



hawle

2023

Water Catalogue

made for generations.



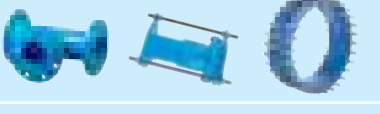








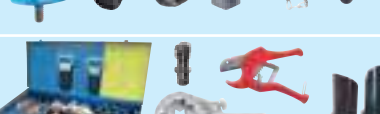
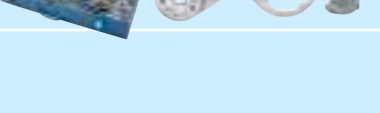


ТЕХМАРКЕТ



ЗАПОРНАЯ И РЕГУЛИРУЮЩАЯ АРМАТУРА



Valves Combi valves		A
Butterfly valves Non return valves		B
Flange connections		C
Pipe fittings		D
System Synoflex		E
System 2000		F
BAIO System		G
Hydrants		H
Saddles and pipe repair clamps		I
Service valves		J
Fittings		K
ZAK System		L
Accessories		M
Air release valves		N
Filter		O
Spare parts		P
Tools		Q
Technical information		R



Notes



Welcome

... to the world of Hawle

A family company with a proud tradition and an eye on the future.

Hawle, a purely family-owned company founded in 1948 is the worldwide leader in the production of an extensive product range of valves and connecting pieces. Hawle is an innovation leader in the development of high-quality valve solutions. In compliance with European and additionally applicable standards, Hawle produces high-performance and durable quality fittings for the construction and the use of water pipelines, as well as the necessary accessories and the required equipment.

Our specialist area of water and wastewater systems also includes customised fittings for special applications and special conditions.

An excellent understanding of the manufacturing process and the production requirements, extensive knowledge in water supply, years of experience and a broad service program enables us to create the optimum product for pipeline connections in all areas of international water supply.

The unique **10 year quality guarantee** for Hawle products in the drinking water area confirms our leading position for innovation and quality.

The employees of our company, which has its registered office in Vöcklabruck (Austria), bring all their service and subject knowledge into the research, design, development as well as the production process.

HAWLE products are exclusively produced in Europe in the most up-to-date production facilities. More than 98% of the raw materials used in the products come from Europe. HAWLE products are manufactured by well-trained specialists, thus guaranteeing careful monitoring of the quality in each phase of the production process. The majority of the components are also produced by HAWLE. So the functionality and the quality is assured and guaranteed in each production step.

Hawle stands for high quality, efficiency and durability. Therefore international customers trust in our products and technologies - for generations.

For more details go to **hawle.com**

Hawle - the best solution

a reliable partner

100% Hawle, 100% proven quality

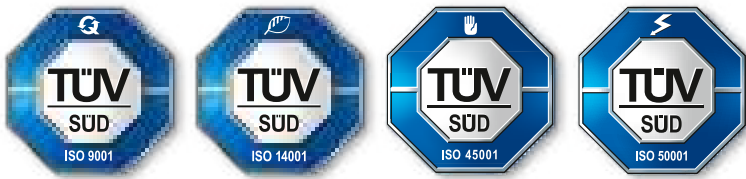
We are constantly striving for improvements together with our partner companies all over the world. In order to achieve this we focus on the requirements of our customers, invest in the most up-to-date technology and offer professional service and technical support.

HAWLE has an excellent network of partners, which ensures an efficient and competent distribution of all our products. Our central warehouse in Frankenmarkt, Austria, supplies this network with numerous finished products, which are stored in over 10,000 pallet spaces.

The pipe connections which our technicians develop today will be used tomorrow for your secured water supply.

Hawle offers a competent, round-the-clock service. As soon as we receive your call we immediately put all our efforts into finding a solution to your problem.

made for generations.



Vöcklabruck plant
Austria



Frankenmarkt plant
Austria

Hawle - Guarantee and warranty



10-Years Quality Guarantee (Water for Human Consumption and Natural Gas)

E. Hawle Armaturenwerke GmbH (hereinafter referred to as “HAWLE”) guarantees the functional capability of all valves and fittings manufactured by HAWLE with the original “HAWLE” inscription, which are used as intended for water for human consumption in accordance with Directive 98/83/EC or for natural gas in accordance with ÖVGW (Austrian Association for the Gas and Water Industry) G 31, for a period of 10 (ten) years from the date of delivery from our works. However, the maximum guarantee period afforded by HAWLE is 11 (eleven) years from the date of manufacture of the product. In the event of a guarantee claim, it is the responsibility of the customer to prove that the guarantee has not expired, e.g. by presenting the invoice or the original product label.

Should a valve or fitting lose its functional capability during the guarantee period, HAWLE shall either repair the product or deliver an equivalent replacement product to the place of performance agreed with HAWLE, at its discretion. HAWLE will not assume any additional costs or damages incurred by the customer or third parties within the scope of this guarantee, in particular no costs in connection with disassembly and installation, location or reinstallation. Purely optical flaws that in no way impair tightness, tensile safety or the operation of the valve or fitting do not constitute a guarantee claim.

The guarantee also excludes, but is not limited to, wear parts and damage caused by improper storage, transport and assembly, non-compliance with instructions for use, failure to perform pressure tests, utilisation outside the limits of standard applications and general operating parameters, inadequate maintenance, subsequent manipulation or utilisation with unsuitable liquids or gases. The guarantee does not extend to extraordinary environmental conditions, vibrations or residues from the medium or similar external influences, nor to actions by third parties, accidents and other events over which HAWLE has no control.

Please also note the exceptions and special regulations applicable to certain products in our catalogue and on our homepage hawle.com.

This guarantee is subject exclusively to Austrian law to the exclusion of international conflict of law rules. Any warranty claims arising from the purchase contract shall not be restricted by this guarantee.

This guarantee applies to all deliveries as of 01.01.2019 for valves and fittings manufactured by HAWLE which are used for water intended for human consumption in accordance with Directive 98/83/EC or for natural gas in accordance with ÖVGW (Austrian Association for the Gas and Water Industry) G 31. Any guarantees or warranties issued by HAWLE prior to this effective date shall not be valid for any deliveries made thereafter.



Hawle - Guarantee and warranty



5-Years Quality Guarantee (Municipal Waste Water)

E. Hawle Armaturenwerke GmbH (hereinafter referred to as "HAWLE") guarantees the function of all valves and fittings manufactured by HAWLE with the original "HAWLE" inscription, which are used for municipal wastewater as intended in accordance with EN 1085, for a period of 5 (five) years from the date of delivery from our works. However, the maximum guarantee period afforded by HAWLE is 6 (six) years from the manufacturing date of the product. In the event of a guarantee claim, it is the responsibility of the customer to prove that the guarantee has not expired, e.g. by presenting the invoice or the original product label.

Should a valve or fitting cease to function during the guarantee period, HAWLE shall at its discretion, either repair the product or deliver an equivalent replacement product to the place of performance agreed with HAWLE. HAWLE will not assume any additional costs or damages incurred by the customer or third parties within the scope of this guarantee. In particular any costs incurred by disassembly, installation, localization or reinstallation shall not be covered by HAWLE. Purely optical flaws that in no way impair tightness, tensile strength, nor the operation of the valve or fitting, do not constitute a guarantee claim.

The guarantee also excludes, but is not limited to, wear parts and damage caused by improper storage, transport and assembly, non-compliance with instructions for use, failure to perform pressure tests, utilisation outside the limits of standard applications and general operating parameters, inadequate maintenance, subsequent manipulation or utilisation with unsuitable liquids or gases. The guarantee does not extend to exceptional environmental conditions, vibrations or residues from the medium or similar external influences, including third-party actions, accidents and other events over which HAWLE has no influence.

Please also note the exceptions and special regulations applicable to certain products in our catalogue and on our homepage hawle.com.

This guarantee is subject exclusively to Austrian law under the exclusion of international conflict of law rules. Any warranty claims arising from the contract of sale shall not be limited by this guarantee.

This guarantee applies to all deliveries as of 01.01.2019 of valves and fittings manufactured by HAWLE, which are used as intended for municipal wastewater according to EN1085. Any guarantees or warranties issued by HAWLE prior to this effective date shall not be valid for any deliveries made thereafter.



2-year warranty

In addition to our quality guarantees, Hawle warrants in accordance with Austrian law that our products correspond to the relevant contract at the time of delivery. In the event of incorrect storage, transport, assembly, usage regulations not being observed, failure to pressure-test, insufficient maintenance, subsequent manipulation or usage for non-suitable fluids or gases there is not entitlement to warranty claims. The warranty period runs for a maximum of two years ex-works delivery. Please see the Hawle delivery conditions for further details of the warranty.

Hawle - Corrosion protection



High quality corrosion protection using the GSK fluidised bed Epoxy coating system.
The environmental friendly solvent and pollution free powder coating technology!



Epoxy Powder-Coated coating according to GSK:

- ⦿ Fulfils the requirements according to EN 14901 (pipes, fittings and accessories)
- ⦿ Minimum coated thickness 250 µm
- ⦿ Zero porosity
- ⦿ High adhesion to metal (min. 16 N/mm²)
- ⦿ High resilience (no cracking)
- ⦿ Smooth surface (makes incrustation more difficult)
- ⦿ Suitable for food use according to the guidelines for hygienic evaluation of organic coating in contact with drinking water (coating guideline) of the German Federal Health Office
- ⦿ High impact resistance
- ⦿ Bacteriological approval to DVGW recommendation W270
- ⦿ Regular quality tests according to DIN 3476-1 and EN 14901 coating thickness, adhesion, spark-testing, impact resistance
- ⦿ Independant auditing of quality control systems by e.g. MPA Hannover in accordance with the test methods of **GSK** (Gütegemeinschaft **S**chwerer **K**orrosionsschutz - the association for high quality corrosion protection)
- ⦿ Hawle standard colour RAL 5012

Hawle - Standard- and special applications

Standard applications:

Our products are intended for localised installation in drinking water pipelines made from PE, PVC, cast iron, steel or AC pipes.

Before installing stainless steel hydrants and air-release hydrants, we recommend applying additional corrosion protection (corrosion protection tape on site or overpainting on request) to the stainless steel surfaces in contact with the ground.

Standard medium:

- **Water for human consumption**
according to EU Guideline 98/83/EC and its Appendix I, Parts A to C

General operating parameters:

Water for human consumption:

Medium temperature: 0 °C to max. 40 °C
max. 250 mg/l chloride, max. 0.3 mg/l free chlorine
min. 8.0° dH total hardness
pH value of min. 5 to max. 9.5

For the specific operating parameters of our products, please refer to the respective product pages of our catalogue and our homepage hawle.com.

Special applications:

In case of deviating conditions of use or ambient conditions, please inform us right on your first inquiry about the specific operating conditions. If you have any questions regarding the suitability of products for certain operating conditions, please contact our Application Engineering department (phone: +43 (0) 7672 72576-0).

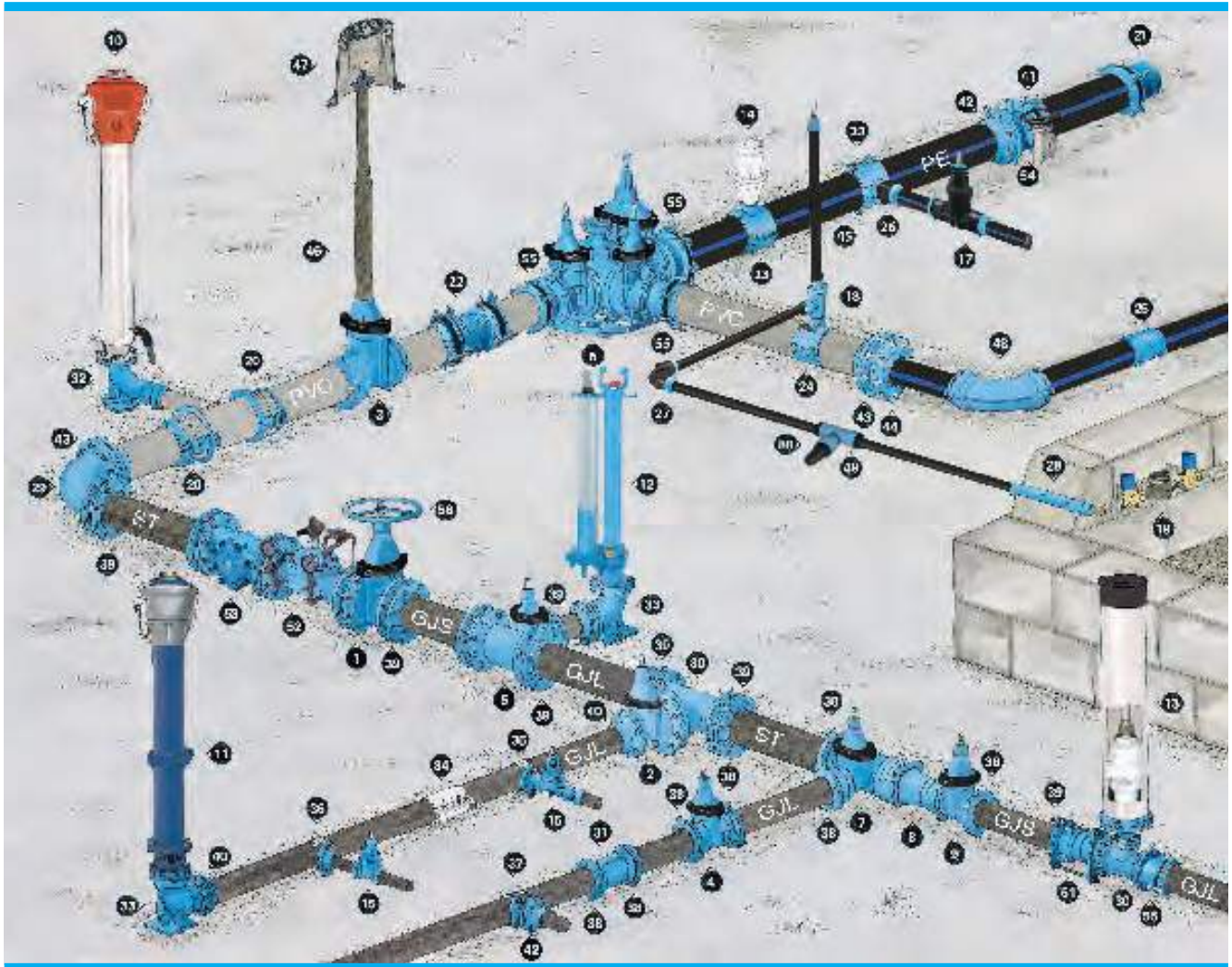
If our valves and fittings are used for other than the standard applications and without the approval granted by our Application Engineering department regarding the conditions of use, we cannot assume any liability.

Application instructions:

Valves and fittings should be stored in a cool, dry and low-dust environment protected from weather. Avoid exposure to direct sunlight or UV light, unless the valves and fittings are designed for use above ground. For the correct installation and maintenance of our valves and fittings, please observe our instructions as well as the pertinent European standards (EN), as well as the directives of the ÖVGW (the Austrian Association for Gas and Water) and/or comparable national technical standards.

Hawle - Product range

(extract)



1	<i>E3</i> Valve, flanged ends	4000E3	29	Double flanged bend 90°	8530
2	<i>E3</i> Reducing Valve	4150E3	30	All flanged tee	8510
3	<i>E3</i> Valve "System 2000"	4040E3	31	Connector, restraint	NL50
4	<i>E3</i> Valve, Socket ends for cast iron	4500E3	32	Flange duck foot bend with PVC socket 90°	5046
5	<i>E3</i> Combi-T, single valve tee	4340E3	33	Flange duck foot bend 90° N-piece	5049
6	<i>E3</i> Hawle-Combiflex	4420E3	34	Repair clamps, single lug	0750
7	<i>E3</i> MMB-Valve (<i>E3</i> Combi-T socket ends)	NL10E3	35	Universal-pipe saddle	3500
8	Concentric taper	NL40	36	Universal-shut-off saddle	3800
9	<i>E3</i> HSM-Valve (spigot socket valve)	NL00E3	37	Universal-pipe saddle, flanged outlet	3510
10	<i>H4</i> Corrosion free hydrant - rigid type	5151H4	38	Pipe-Lock-Ring for restraint clamp	1200
11	<i>H4</i> Above ground hydrant - break away	5096H4	39	Restraint flange adaptor for cast iron	7602
12	Freeflow below ground hydrant	5060	40	Double chamber flange adaptor for cast iron	7102
13	Combined air release valve	9822	41	restraint flange adaptor for PE/PVC,	0400
14	Automatic air valve	9876	42	ISO pipe-flange adaptor for PE	5500
15	Service valve	2500	43	Double chamber flange adaptor for PVC	5600
16	Service valve	2800	44	Double chamber flange adaptor for PVC, reducing	5630
17	Service valve, POM	2630	45	Extension spindle, for service valves	9101
18	Service valve	3130	46	Telescopic extension spindle, for <i>E3</i> valves	9500E2/ <i>E3</i>
19	Water meter console	2963	47	Surface box adjustable	2050
20	Restraint clamp, for PVC	1254	48	Bend 90° "System 2000"	8535
21	Endcap "Synoflex"	7980	49	Hawle-FIT fitting, T-piece with threaded outlet, POM	6520HF
22	Connector "Synoflex"	7974	50	Hawle-FIT fitting, external thread, POM	6120HF
23	HAKU-saddle for plastic pipes	5250	51	Hawle-VARIO	8010S
24	HAKU-saddle for plastic pipes	5310	52	Pressure reducing valve	9700
25	Split collar (Pipe-Pipe)	9240	53	Strainer	9911
26	ISO-fitting, external thread, POM	6120	54	Hawle-butterfly valve	9881K
27	ISO-fitting, elbow, POM	6420	55	Flange "Synoflex"	7994
28	Wall inlet fitting	6990	56	Handwheel	7800

Pressure test

“buried valves”

Pressure testing of buried Hawle valves for water supply

Hawle valves are produced to the highest precision and accuracy and are subjected to routine quality control. Therefore, we can offer top-quality products and grant Hawle’s 10 years quality guarantee unequalled in the market.

To ensure this quality for our customers it is necessary that installation be done professionally. Therefore, the Hawle valves as well as their connections to the pipeline system must be subjected to pressure testing after installation. In this test the tightness of pipes, pipe connections as well as components of the pipeline shall be demonstrated.



Application note:

The pressure test must be carried out according to EN 805. Prior to the pressure test, fill the trench covering only the pipes in order to prevent any expansion damage to the pipeline, but make sure to leave enough space completely open for inspection of each pipe connections site. Pipelines without restraint connections must be sufficiently secured by propping up and/or anchoring at each end, bend and branch.

We strongly recommend performing the pressure test **prior** to filling the space around the pipeline connections. **The Hawle warranty does not cover incurred excavation and filling or any other associated costs if the pressure test is done only after filling the entire trench. With regard to pressure testing, the Hawle warranty only encompasses replacement of defective products.**

The products listed in our catalogue are intended for potable, water in connection with PE, PVC, ductile iron, steel or asbestos pipe type installations in the ground.

Valve maintenance should be carried out every five years according to national standards (e.g.: ÖNORM B2539). Hawle recommends an annual actuation of the valve.

Conditions of Sale

Last updated January 2019 | valid as of 01.01.2019



1 General

1.1 All offers, sales transactions, deliveries and other services provided by E. Hawle Armaturenwerke GmbH (henceforth referred to as „Hawle“) to our customers as of 01.01.2019 are subject exclusively to the following Conditions of Sale.

1.2 Hawle shall not recognise any conflicting or deviating terms and conditions of the customer unless Hawle has expressly agreed to their validity in writing.

1.3 Supplements and amendments to these Conditions of Sale as well as ancillary agreements must be made in writing in order to be effective. This also applies to the waiver of the written form requirement.

1.4 In the event that individual provisions of these Conditions of Sale are or become invalid, the remaining provisions shall remain effective. Ineffective provisions shall automatically be replaced by legally effective provisions which come as close as possible to the economic intent of the contracting parties.

1.5 It is the responsibility of the customer to assess the technical and legal suitability of the goods offered by Hawle for the use intended by the customer or his buyers. The customer is also required to observe export and import restrictions.

1.6 Any administrative authorisations required for the import of goods into their country of destination or for the use intended by the customer or his buyers must be obtained by the customer in good time. In the event that such authorisations are not obtained in good time, delivery dates and periods shall be extended accordingly.

1.7 Hawle reserves the property rights and copyrights to the product catalogue sheets, drawings, product photos, cost estimates and other documents prepared by Hawle. These documents may not be disclosed to third parties without the prior permission of Hawle.

2 Conclusion of contract

2.1 All offers and price lists issued by Hawle are subject to change and non-binding, unless expressly agreed otherwise, and only become binding once Hawle has confirmed the order in writing or performed an action set by Hawle in fulfilment of the contract (e.g. delivery/shipment of the goods).

2.2 Following the confirmation of the order or the performance of an action in fulfilment of the contract by Hawle, the customer may withdraw from the contract only with the prior written consent of Hawle. Unilateral withdrawal from the contract on the part of the customer is not permitted.

3 Prices and terms of payment

3.1 All documents pertaining to an offer such as drawings, illustrations and weight specifications shall only be regarded as approximate unless they are expressly designated as being binding. This reservation applies in particular to obvious errors, typographical errors, printing errors and miscalculations.

3.2 Unless otherwise agreed, the prices quoted by Hawle are in EURO Ex Works Frankenmarkt (EXW, Incoterms 2010), excluding in particular packaging, transport costs, transport insurance, sales tax and export and import duties. Packaging, loading, transport costs and transport insurance as well as potential taxes and duties shall be invoiced separately by Hawle.

3.3 Any changes in wage costs due to collective or statutory regulations or internal agreements as well as changes in other costs relevant to the calculation of costs necessary for the provision of the service, such as the costs incurred for materials, energy, transport, third-party work, financing, etc., shall entitle Hawle to increase the prices accordingly. For this reason, the customer shall have neither the right to withdraw from the contract nor the right to assert that the basis of the transaction has ceased to exist. Orders confirmed by Hawle are exempt from potential price changes.

3.4 Unless otherwise agreed, net payment must be made by the customer within 30 days from the date of invoice. Payments will be offset against the oldest claim due in each respective case.

3.5 The possibility of offsetting payments against claims made by Hawle is excluded.

3.6 In the event that the customer defaults on payment, Hawle shall be released from all further service and delivery obligations and be entitled to withhold any outstanding deliveries or services or to demand advance payments or guarantees.

3.7 In the event that, upon conclusion of the contract, a significant deterioration in the financial circumstances of the customer occurs, or if circumstances become known which from Hawle's point of view are likely to reduce the creditworthiness of the customer, Hawle shall have the right to change due dates for outstanding claims, withhold deliveries to the customer and adjust conditions for future legal transactions with immediate effect.

4 Delivery

4.1 Orders confirmed by Hawle shall be fulfilled by Hawle as swiftly and diligently as possible. The delivery dates and periods announced by Hawle are merely intended to serve as a guideline and are always non-binding unless the stated delivery dates and periods have been expressly designated as binding by Hawle.

4.2 In the event of force majeure or any unforeseeable obstacle for which Hawle is not responsible, delivery dates and deadlines shall be reasonably extended by the duration of the impediment. This shall also apply if Hawle's sub-suppliers encounter such impediments. These include, in particular, official measures, strikes and lock-outs, natural disasters, market-related problems with material procurement as well as import and export restrictions.

4.3 Hawle deliveries may always be divided into sub-deliveries. Hawle is at liberty to make partial deliveries or provide partial services and to issue partial invoices to the customer.

4.4 National and international goods traffic is subject to the terms of delivery FCA, 4890 Frankenmarkt, Hawle dispatch warehouse (Incoterms 2010), unless another delivery clause has been explicitly agreed.

4.5 In the case of a sales shipment, the transfer of risk takes place once the purchased item has been handed over to the first carrier. Where acceptance of a service is required, Hawle's notification of readiness for acceptance shall be decisive for the transfer of risk.

4.6 The customer is obliged to accept the deliveries and services provided by Hawle as per contract. In the event of default of acceptance or a culpable breach of other obligations to cooperate on the part of the customer, Hawle is entitled to demand compensation from the customer for any damage incurred as a result, including any additional expenses.

Conditions of Sale

Last updated January 2019 | valid as of 01.01.2019

4.7 Hawle is entitled to make changes to the technical design of the goods ordered, provided that these do not result in significant functional changes and the customer does not demonstrate the unreasonable nature of such changes. Unreasonableness is to be ruled out if the change constitutes a technical improvement or is caused by the further development of the state of the art or by legal or official measures.

4.8 In principle, the customer is not entitled to refunds or replacements. Refunds and replacements are only possible in exceptional cases and require the prior written consent of Hawle.

4.9 The goods delivered by Hawle to the customer are intended for use or resale in the customer's country of residence or in the country of the place of delivery.

5 Reservation of title

5.1 All goods delivered by Hawle remain the property of Hawle until payment has been made in full.

5.2 The customer is authorised to resell the goods in the regular course of business, even during the period in which the goods are subject to reservation of title. If, however, the customer is in default of payment to Hawle, Hawle may prohibit the resale of the goods subject to reservation of title.

5.3 The customer herewith cedes to Hawle all purchase price claims, including all ancillary rights, arising from a resale of the goods to his customers. Hawle accepts this assignment. These purchase price claims serve as security for the goods subject to retention of title.

6 Warranty

6.1 The customer must inspect the received goods with respect to quantity and quality immediately upon receipt. Written notices of defects must be submitted by the customer immediately after receipt of the delivery, but at the latest within 10 days from the date of delivery and prior to any handling or processing, otherwise excluding any warranty claims and/or claims for damages and/or avoidance on account of mistake, but do not entitle the customer to retain the invoiced amounts or portions thereof.

6.2 The warranty period for defects which were not detected during the inspection of the shipment is six months from the date of delivery and is neither extended nor interrupted by attempts at improvement; it also applies to partial deliveries. Notification of any such defects must be given in writing within 10 days from the date the defect was discovered, otherwise excluding warranty claims and/or claims for damages and/or avoidance on account of mistake, but do not entitle the customer to retain the invoiced amounts or portions thereof.

6.3 It has been agreed between Hawle and the customer that a hydrostatic pressure test in accordance with EN 805 is to be performed after laying a pipeline but prior to the main backfilling of the pipe trench or further constructional measures in shafts, plants or buildings which restrict accessibility to the valves and pipe fittings. If such a test is not performed, the customer or his customers shall be charged with contributory negligence of at least 50% in the event of damage. The customer agrees to inform his customers accordingly and to pass on this obligation to perform the described hydrostatic pressure test to his customers.

6.4 Possible warranty obligations generally cover the defective goods, but not the expenses otherwise associated with correcting the defect such as excavation costs, working hours and travel expenses.

6.5 The customer always bears the burden of proving that the delivered goods were defective at the time of delivery.

6.6 The place of performance for warranty obligations is always the place of delivery agreed for the original delivery.

6.7 Hawle shall be free to decide whether to fulfil possible warranty claims by means of replacements, improvement measures, price reductions or conversions.

7 Damages and liability

7.1 Any consulting provided by Hawle, whether verbal or in writing, is non-binding and does not release the customer from his obligation to examine the goods with respect to their suitability and the intended purpose. This applies above all, but not exclusively, to the suitability of the goods for the use intended by the customer or his customers, in particular to their suitability for the substances (gases and/or liquids) to be conveyed.

7.2 Hawle shall be liable for damages caused to the customer in the course of processing the business transaction in an amount not exceeding the value of the order placed with Hawle, and only in the event of gross negligence on the part of Hawle or gross negligence on the part of the executors working for Hawle, with the exception of personal injuries in which case Hawle shall be liable even in the event of minor negligence. The burden of proving gross negligence always lies with the injured party.

7.3 IN NO EVENT SHALL HAWLE BE HELD LIABLE, WHETHER IN TORT OR CONTRACT, FOR INDIRECT DAMAGES, CONSEQUENTIAL DAMAGES, PURELY PECUNIARY LOSSES, FOREGONE PROFITS OR DAMAGES ARISING FROM DELAYS OR OUT OF THIRD PARTY CLAIMS.

7.4 The time limit for asserting claims for damages is one year from the date on which the customer gains knowledge of, or is subject to, negligent ignorance of the damage and the injuring party.

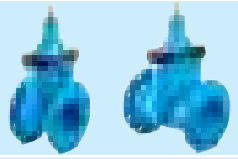





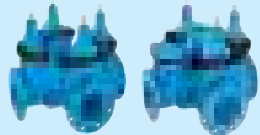



7.5 In the event that the customer himself is held liable under product liability law, he undertakes to immediately notify Hawle thereof by telephone or in writing and to immediately inform Hawle of the address of the claimant, failing which the customer's right of recourse against Hawle arising from product liability will cease to apply. Negotiations of claims arising from product liability with respect to Hawle products shall be conducted exclusively by Hawle.

8 Place of performance, court of jurisdiction, applicable law

8.1 The place of performance for both delivery and payment is always 4840 Vöcklabruck/Austria, even if a different place of delivery has been agreed individually.

8.2 The exclusive court of jurisdiction for all disputes arising from legal transactions between the customer and Hawle is the competent court in 4840 Vöcklabruck/Austria. Moreover, Hawle is also entitled to sue at the customer's registered office.

8.3 All legal transactions between the customer and Hawle are subject exclusively to Austrian substantive law, excluding international conflict of law rules. The application of the UN Convention on Contracts for the International Sale of Goods (CISG) is explicitly excluded.

<p>Page A 2</p>	<p>E3 Flange gate valve Standard DN 50 – 600 Reductions E-valve DN 20 – 40</p>	<p>Page A 2/3 Page A 2/7 Page J 3/1</p>	
<p>Page A 3</p>	<p>E3 Valve spigot ends E3 Valve spigot ends With flange</p>	<p>Page A 3/1 Page A 3/3</p>	
<p>Page A 4</p>	<p>E3 Valve for PE and PVC pipes Valve system 2000 socket-socket Valve system 2000 socket-flange Valve system BAIO socket-socket Valve for PE fusion PE-PE Valve for PE fusion PE-flange</p>	<p>Page F 2/3 Page F 2/5 Page G 3/1 Page A 4/1 Page A 4/3</p>	
<p>Page A 5</p>	<p>E3 Valve for ductile iron pipes Valve system BAIO socket-socket Valve system BAIO socket-spigot Valve system VRS socket-spigot</p>	<p>Page G 3/1 Page G 4/1 Page A 5/1</p>	
<p>Page A 6</p>	<p>E3 Combi-T Combi-T with flange Combi-T System 2000 socket Combi-T System BAIO socket</p>	<p>Page A 6/1 Page F 3/1 Page G 5/1</p>	
<p>Page A 7</p>	<p>E3 Combi-III Combi-III with flange Combi-III system BAIO</p>	<p>Page A 7/1 Page G 5/2</p>	
<p>Page A 8</p>	<p>E3 Combi-IV Combi-IV with flange</p>	<p>Page A 8/1</p>	
<p>Page A 9</p>	<p>E3 Hawle-Combiflex With flange DN 150 With flange DN 250, DN 300</p>	<p>Page A 9/1 Page A 9/5</p>	
<p>Page A 10</p>	<p>Hawle-E1+ valve</p>	<p>Page A 10/1</p>	
<p>Page A 11</p>	<p>Hawle-E2 valve With flange DN 450 – 600</p>	<p>Page A 11/1</p>	

E3 Gate valve

Overview

- Medium: Water, seawater, gas*
- In accordance to EN 1074-1 and -2

Advantages Hawle-E3 Gate valve

- O-ring carrier with double bayonet (up to DN 200) or heavy-duty O-ring carrier with centering flange (> DN 200) in inside and outside fully coated bonnet
- POM sliding disks (up to DN 200) and an additional axial ball bearing (> DN 200) ensure low torque actuation
- Duplex stainless steel spindle
- Extended edge protection
- Wedge and wedge nut fully coated with vulcanized elastomer
- The wedge is connected to the wedge nut with a flexible link and embedded in elastomer. This snug fit dampens vibration during opening and closing of the wedge
- Stainless steel allen screws in bonnet
- 100% corrosion protection
- E3 bonnets are entirely compatible with all E2 bodies and accessories
- Full straight bore – suitable for pigging the pipeline
- Spindle O-rings replaceable under operating pressure up to DN 400
- All components made in the EU, including ductile iron parts

Hawle-quality Guarantee



E3 Gate valve | Combi valves

Overview

Design features

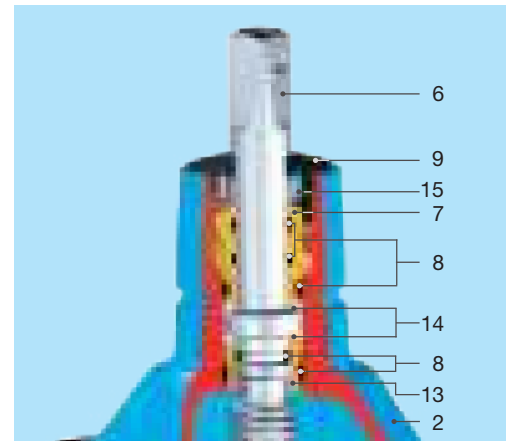
- Resilient seated gate valve according to EN 1171, EN 1074-1 and EN 1074-2 with smooth, straight-through bore
- Double bayonet O-ring carrier is connecting the spindle to the bonnet, allowing a fully encased, uniform epoxy powder coated bonnet for further improved corrosion protection
- Wedge guide made of wear resistant POM material in load optimized design minimizes attrition and ensures lowest torque actuation
- Wedge is flexible and fully linked in vulcanized elastomer to the wedge nut. This snug fit dampens vibration during opening and closing of the wedge
- Wedge nut has a long thread length allowing significantly higher torques than the standard before breaking
- O-rings, lip-seals mounted in the bonnet are replaceable under operating pressure
- Extended edge protection to avoid damages during transport, storage and assembly
- Sliding disks and ball bearing assure low friction performance of the spindle
- 100% suitable for buried installations

Material | Technical features

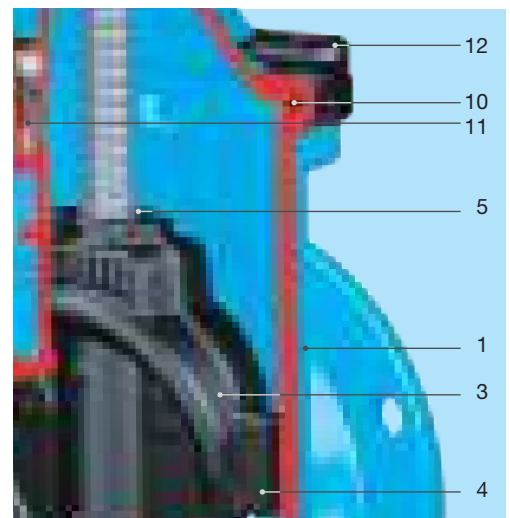
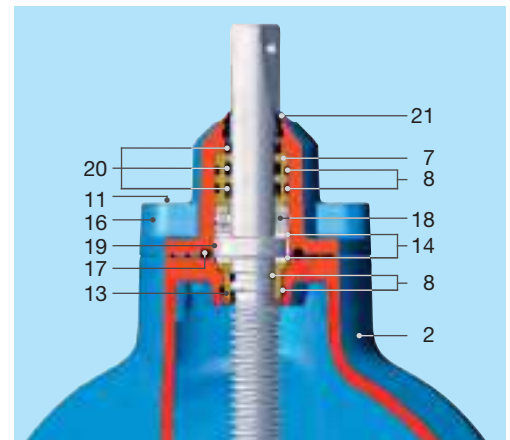
- 1,2 Body (1), bonnet (2), centering flange (16) made of ductile iron, epoxy powder coated inside and out
- 3 Wedge made of ductile iron (DN 50 made of dezincification-resistant brass) with vulcanized elastomer all-over
- 4 Wedge guide made of wear-resistant plastic
- 5 Wedge nut made of dezincification-resistant brass
- 6 Duplex stainless steel spindle with rolled thread and flat-rolled anti-friction surface
- 7 O-ring carrier made of brass, DN 50 – 200 with double bayonet
- 8 O-rings made of elastomer
- 9 Wiper ring made of PE
- 10 Bonnet gasket made of elastomer
- 11 Allen screws made of stainless steel, encased into the body with interlacing gasket and sealing compounds, ensuring full corrosion protection
- 12 Extended edge protection made of PE
- 13 Spindle bearing made of dezincification resistant brass
- 14 Sliding disks made of POM
- 15 Safety screw made of stainless steel
- 17 Centering flange gasket made of elastomer
- 18 Axial ball bearing permanently lubricated
- 19 Centering ring made of POM
- 20 Lip seals made of elastomer
- 21 Wiper ring made of elastomer

DN 50 – 200

Spindle bearing with sliding disks



DN 250 – 400 Spindle bearing with ball bearing and additional sliding disks



DN 500 – 600 in preparation - currently available - see page A 11/3

Valves | Combi valves

Accessories

Handwheels	Page M 4/1
Extension spindles	Page M 2/1
Surface boxes	Page M 3/1
Base plate	Page M 3/7
Adapter and coupling socket	Page M 4/3
Operating cap	Page M 4/1
Spindle extension	Page M 4/1
Actuator	Page M 4/3
Position indicator	Page M 4/2
Bolts	Page M 4/4
HAWAK-pillar	Page M 5/1
Flat gaskets	Page M 7/1
Blanking cap	Page M 4/1
Flanges	Page C 4/1
Dismantling pieces	Page D 6/1

Tools

Operating key	Page Q 4/2
---------------	------------

Technical information

Tightening torques for flange assembly	Page R 3/1
Pressure loss diagram	Page R 4/1
Spindle rotations per stroke	Page R 1/2

Application examples



E3 Gate valve

With flange DN 50 – 200, PN 10 | PN 16 | PN 25



Design features

- Resilient seated gate valve with smooth straight-through bore
- Flanges sized in accordance with EN 1092-2, drilled according to
EN 1092-2 | PN 10 standard (4000E3, 4700E3);
EN 1092-2 | PN 16 from DN 200 (4000E3, 4700E3)
EN 1092-2 | PN 25 (4010E3, 4710E3)
Please specify on order - other standards on request
- Suitable for cleaning with a cleaning pig
- One extension spindle for several dimensions
- Suitable for operation by automatic actuators
- Easy retrofitting of position indicator and automatic actuators on the standard bonnet
- Duplex stainless steel spindle

Standard version: without handwheel and extension spindle

Design versions: for actuator: No. 4000ELE3
with actuator: No. 4000EME3
with position indicator: No. 4000STE3
for seawater: No. 4002E3,
No. 4702E3

Special versions: on request

No. 4000E3

No. 4700E3

No. 4010E3

No. 4710E3*

No. 4060E3*



Suitable accessories

Suitable accessories: see page A 2/2

Handwheel: No. 7800
Extension spindles: rigid No. 9000E2/E3
telescopic No. 9500E2/E3
Surface boxes: rigid No. 1750
telescopic No. 2050
No. 2051K
Valve actuator: No. 9920
Adapter for actuator (E2/E3 adapter): No. 8630E2/E3
Base plate: No. 3481, No. 3482
Operating cap: No. 2156, No. 2157, No. 2158
Extension spindle: No. 7820, No. 7825
Position indicator: No. 2170E2/E3
Bolts: No. 8810, No. 8830, No. 8840
HAWAK-pillar: No. 9894, No. 9895
Flat gasket: No. 3390, No. 3470

Order no.	Version	MOP (PN)	Dimensions/DN							
			50	65	80	100	125	150	200	
4000E3	short EN 558 GR 14	16								
4700E3	long EN 558 GR 15	16								
4010E3	short EN 558 GR 14	25								
4710E3*	long EN 558 GR 15	25								
4060E3*	to BS 5163 to AS 2638	16			*	*		*	*	

*in preparation

Application examples



E3 Gate valve

With flange DN 50 – 200, PN 10 | PN 16 | PN 25

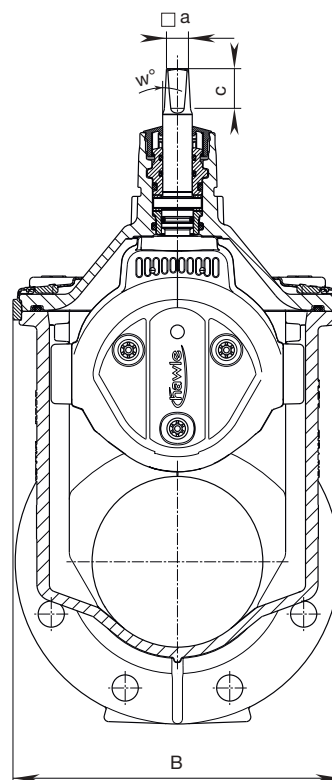
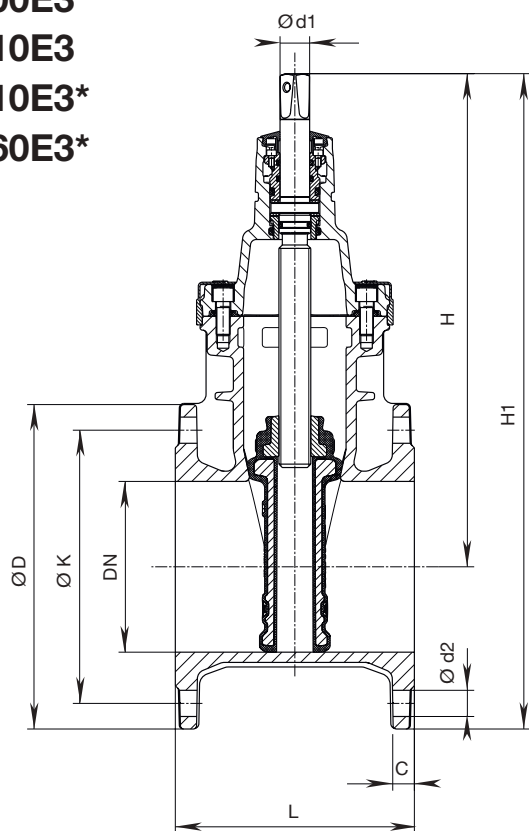
No. 4000E3

No. 4700E3

No. 4010E3

No. 4710E3*

No. 4060E3*



DN	MOP (PN)	Flange			Bolts		Spindle			Valve						Weight				
		ØD	C	ØK	Qty.	Thread	Ød2	a	c	w°	Ød1	H	H1	L short	L long	BS 5163 AS 2638	B	short	long	BS 5163 AS 2638
50	10																	10,0	11,5	10,5
	16	165	19	125	4	M 16	19	14,8	33	20,5	234	316,5	150	250		143	10,0			
	25																			
65	10																	15,5	17,5	
	16	185	19	145	4	M 16	19	17,3	35	24	305	397,5	170	270		180	16,0			
	25*				8															
80	10																	16,5	20,0	18,0
	16	200	19	160	8	M 16	19	17,3	38	24	312,5	412,5	180	280	203	180	18,0			
	25*																			
100	10																	20,5	25,5	23,5
	16	220	19	180	8	M 16	19	19,3	39	3°	24	343	453	190	300	229	212	24,5		
	25*	235		190		M 20	23						460							
125	10																	33,0	37,5	
	16	250	19	210	8	M 16	19	19,3	39	26	421	546	200	325		289	34,0			
	25*	270		220		M 24	28					556								
150	10																	37,0	43,5	41,0
	16	285	19	240	8	M 20	23	19,3	39	26	433	576	210	350	267	289	47,0	49,0		
	25*	300		250		M 24	28					583								
200	10																	60,5	71,5	65,0
	16	340	20	295	8	M 20	23	24,3	49	30	541	711	230	400	292	356	79,0			
	25*	360		310	12	M 24	28					721								

*in preparation

E3 Gate valve

With flange DN 250 – 400, PN 10 | PN 16 | PN 25



Design features

- Resilient seated gate valve with smooth straight-through bore
- Flanges sized in accordance with EN 1092-2, drilled according to
 - EN 1092-2 | PN 10 standard (4000E3, 4700E3);
 - EN 1092-2 | PN 16 from DN 200 (4000E3, 4700E3);
 - EN 1092-2 | PN 25 (4710E3)
 Please specify on order - other standards on request
- Suitable for cleaning with a cleaning pig
- Suitable for operation by automatic actuators
- O-rings lip-seals replaceable under operating pressure up to DN 400
- Ball bearings in the spindle seating minimizes closing forces
- Easy to actuate without bypass and without power boost - even for 16 bar differential pressure
- For mounting a position indicator it is necessary to remove the centering flange and attach the adapter for position indicator

No. 4000E3
No. 4700E3
No. 4710E3
No. 4060E3*



Standard version: without handwheel and extension spindle

Design versions:

for actuator:	No. 4000ELE3
with actuator:	No. 4000EME3
with position indicator:	No. 4000STE3
for seawater:	No. 4002E3, No. 4702E3

Special versions: on request
 - Bevel gearing

Suitable accessories

Suitable accessories: see page A 2/2

Handwheel:	No. 7800
Extension spindles:	rigid No. 9000E2/E3 telescopic No. 9500E2/E3
Surface boxes:	rigid No. 1750 telescopic No. 2050 No. 2051K No. 9920
Valve actuator:	No. 9920
Adapter for actuator (E3 adapter):	No. 8630E3
Base plate:	No. 3481, No. 3482
Operating cap:	No. 2156, No. 2157, No. 2158
Extension spindle:	No. 7820, No. 7825
Bolts:	No. 8810, No. 8830, No. 8840
HAWAK-pillar:	No. 9894, No. 9895
Flat gasket:	No. 3390, No. 3470

Order no.	Version	MOP (PN)	Dimensions/DN					
			250	300	350	400	500*	600*
4000E3	short EN 558 GR 14	16					*	*
4700E3	long EN 558 GR 15	16					*	*
4710E3	long EN 558 GR 15	25						
4060E3	to BS 5163 to AS 2638	16						

*in preparation - currently available in E2 version, see page A 11/3

E3 Gate valve

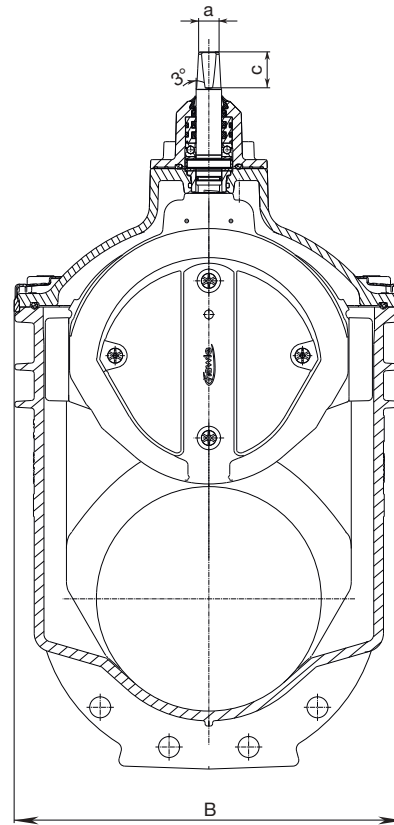
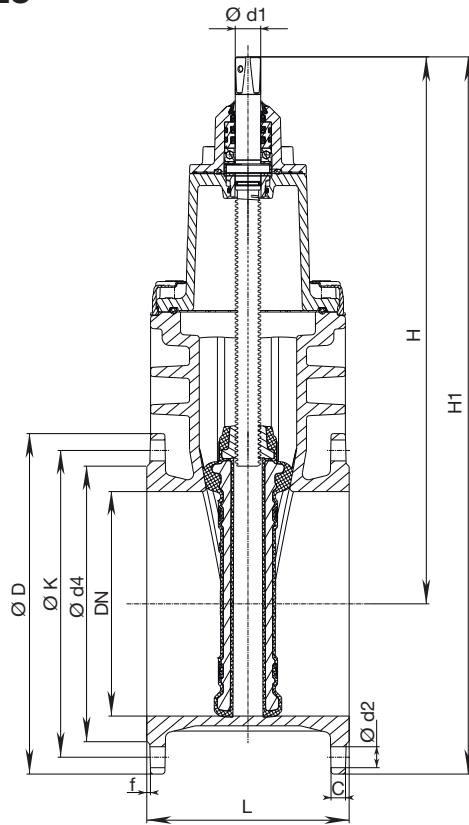
With flange DN 250 – 400, PN 10 | PN 16 | PN 25

No. 4000E3

No. 4700E3

No. 4710E3

No. 4060E3*



DN	MOP (PN)	Flange					Bolts			Spindle			Valve				Weight				
		Ø D	C	Ø K	Ø d4	f	Qty.	Thread	Ø d2	a	c	Ø d1	H	H1	L short	L long	BS 5163 AS 2638	B	short	long	BS 5163 AS 2638
250	10	400	22	350	319	3	12	M 20 23											98,5	114,5	
	16	400	22	355	319	3	12	M 24 28	27,3	48	34	649	849	250	450		330	436	102,0	110,0	109,0
300	25	425	24,5	370	330			M 27 31					862							136,0	
	10	455	24,5	400	367	4	12	M 20 23											151,0	169,5	
	16	455	24,5	410	367	4	12	M 24 28	27,3	48	34	731	958	270	500		356	520	150,0	169,0	167,0
350	25	485	27,5	430	389	5	16	M 27 31					973						196,0		
	10	520	26,5	460	427	4	16	M 20 23	27,3	48	34	816	1076	290				604	205,5		
400	16	520	26,5	470	427	4	16	M 24 28													
	10	580	28	515	477	4	16	M 24 28	32,3	55	44	925	1215	310	600		687	266,0	310,0		
500*	10*																				
	16*																				
600*	10*																				
	16*																				

*in preparation - currently available in E2 version, see page A 11/3

E3 Reducing valve

With flange DN 65 – 300, PN 10 | PN 16

Design features

- Resilient seated gate valve with unequal flange sizes
- Flanges sized in accordance with EN 1092-2, drilled according to EN 1092-2 | PN 10 standard; EN 1092-2 | PN 16 DN 200 please specify on order - other standards on request
- This E3 reduction valve is a gate valve and a reducing connector in one piece; this feature provides for a multitude of application possibilities for the most efficient material and space requirements
- One extension spindle for several dimensions
- Suitable for operation by automatic actuators
- Easy retrofitting of position indicator and automatic actuators on the standard bonnet
- Duplex stainless steel spindle

Standard version: without handwheel and extension spindle

Design versions: for actuator: No. 4150ELE3
with position indicator: No. 4150STE3

Special versions: on request

No. 4150E3



Suitable accessories

Suitable accessories: see page A 2/2

Handwheel:		No. 7800
Extension spindles:	rigid	No. 9000E2/E3
	telescopic	No. 9500E2/E3
Surface boxes:	rigid	No. 1750
	telescopic	No. 2050
		No. 2051K
Valve actuator:		No. 9920
Adapter for actuator (E2/E3 adapter):		No. 8630E2/E3
Base plate:		No. 3481, No. 3482
Operating cap:		No. 2156, No. 2157, No. 2158
Extension spindle:		No. 7820, No. 7825
Position indicator:		No. 2170E2/E3
Bolts:		No. 8810, No. 8830, No. 8840
HAWAK-pillar:		No. 9894, No. 9895
Flat gasket:		No. 3390, No. 3470

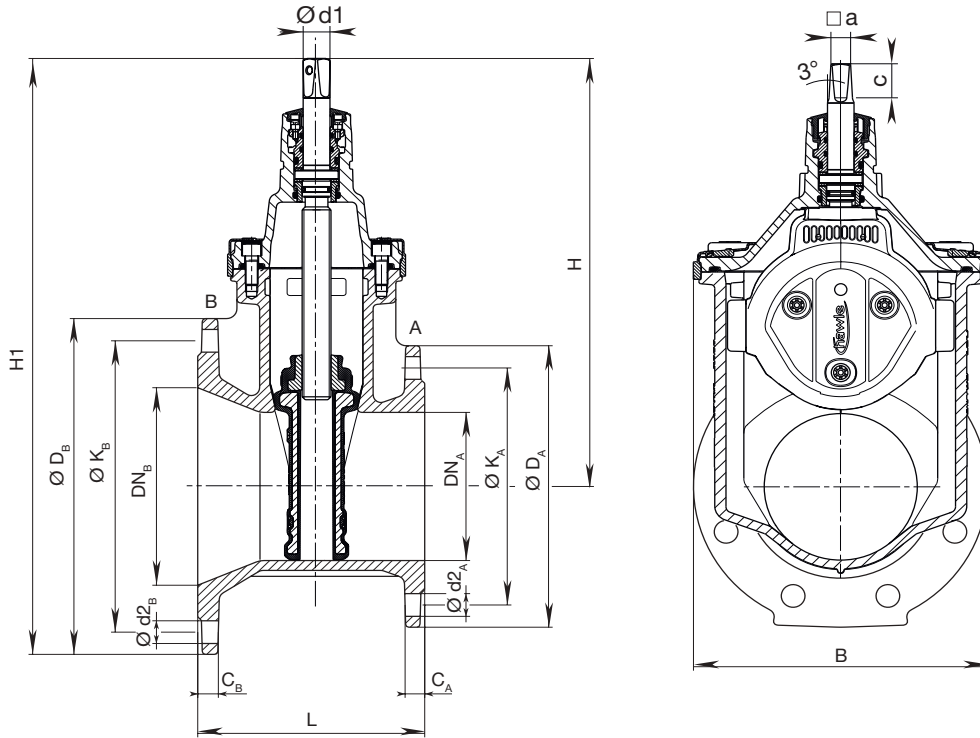
Order no.	MOP (PN)	Dimensions/DN*													
		100 65	100 80	125 80	125 100	150 80	150 100	150 125	200 100	200 150	250 150	250 200	300 150	300 200	300 250
4150E3	16														

* The valve is sized in accordance with the smaller flange

E3 Reducing valve

With flange DN 65 – 300, PN 10 | PN 16

No. 4150E3



DN	MOP (PN)	Flange A					Flange B					Spindle			Valve				Weight
		ØD _A	C _A	ØK _A	Ød _{2A}	n _A *	ØD _B	C _B	ØK _B	Ød _{2B}	n _B *	a	c	Ød1	H	H1	L	B	
100 – 65	10 16	185	19	145	19	4	220	19,0	180	19	8	17,3	35	25	305	415	180	180	18,0
100 – 80	10 16	200	19	160	19	8	220	19,0	180	19	8	17,3	35	25	313	423	190	180	19,5
125 – 80	10 16	200	19	160	19	8	250	19,0	210	19	8	17,3	35	25	313	438	200	180	21,5
125 – 100	10 16	220	19	180	19	8	250	19,0	210	19	8	19,3	38	25	343	468	200	213	24,0
150 – 80	10 16	200	19	160	19	8	285	19,0	240	23	8	17,3	35	25	313	456	200	180	24,0
150 – 100	10 16	220	19	180	19	8	285	19,0	240	23	8	19,3	38	25	343	486	210	213	26,5
150 – 125	10 16	250	19	210	19	8	285	19,0	240	23	8	19,3	38	28	421	564	210	285	36,0
200 – 100	10 16	220	19	180	19	8	340	20,0	295	23	8 12	19,3	38	25	343	513	210	213	29,0
200 – 150	10 16	285	19	240	23	8	340	20,0	295	23	8 12	19,3	38	28	433	603	220	285	42,5
250 – 150	10 16	285	19	240	23	8	400	22,0	350 355	23 28	12	19,3	38	28	433	633	230	285	49,0
300 – 150	10 16	285	19	240	23	8	455	24,5	400 410	23 28	12	19,3	38	28	433	661	240	285	68,0
250 – 200	10 16	340	20	295	23	8 12	400	22,0	350 355	23 28	12	24,3	48	32	541	741	240	357	69,0
300 – 200	10 16	340	20	295	23	8 12	455	24,5	400 410	23 28	12	24,3	48	32	541	769	250	357	74,0
300 – 250	10 16	400	22	350 355	23 28	12	455	24,5	400 410	23 28	12	27,3	48	34	649	877	260	432	105,0

The valve is sized in accordance with the smaller flange n_A*, n_B* = bolts per flange

E3 Valve spigot ends

PN 16

Design features

- Resilient seated gate valve with smooth straight-through bore
- The Hawle E3 spigot valve with smooth spigot ends is a universal type, suitable for both flange as well as for socket connections
- Easy replacement of old flange valve to insertion of HAWLE-flange, as insertion of flat gaskets is not required; special lengths can even be produced through shortening of the spigot ends
- The outside diameters of the spigot ends correspond to that of the cast iron pipes (other size on request)
- Suitable for cleaning with a cleaning pig
- One extension spindle for several dimensions
- Suitable for operation by automatic actuators
- Easy retrofitting of position indicator and automatic actuators on the standard bonnet

Standard version: without flanges, handwheel and extension spindle

No. 4100E3



No. 4140E3



Suitable accessories

Suitable accessories: see page A 2/2

Flange:		No. 7102
		No. 0102
Handwheel:		No. 7800
Extension spindles:	rigid	No. 9000E2/E3
	telescopic	No. 9500E2/E3
Surface boxes:	rigid	No. 1750
	telescopic	No. 2050
		No. 2051K
Valve actuator:		No. 9920
Adapter for actuator (E2/E3 adapter):		No. 8630E2/E3
Base plate:	No. 3481, No. 3482	
Operating cap:	No. 2156, No. 2157, No. 2158	
Extension spindle:	No. 7820, No. 7825	
Position indicator:	No. 2170E2/E3	
Bolts:	No. 8810, No. 8830, No. 8840	
HAWAK-pillar:	No. 9894, No. 9895	

Order no.	Version Face-to-face length	MOP (PN)	Dimensions/DN										
			50	65	80	100	125	150	200	250	300	400	
4100E3	Standard	16											*
	600 mm												
4140E3	810 mm												
	860 mm												

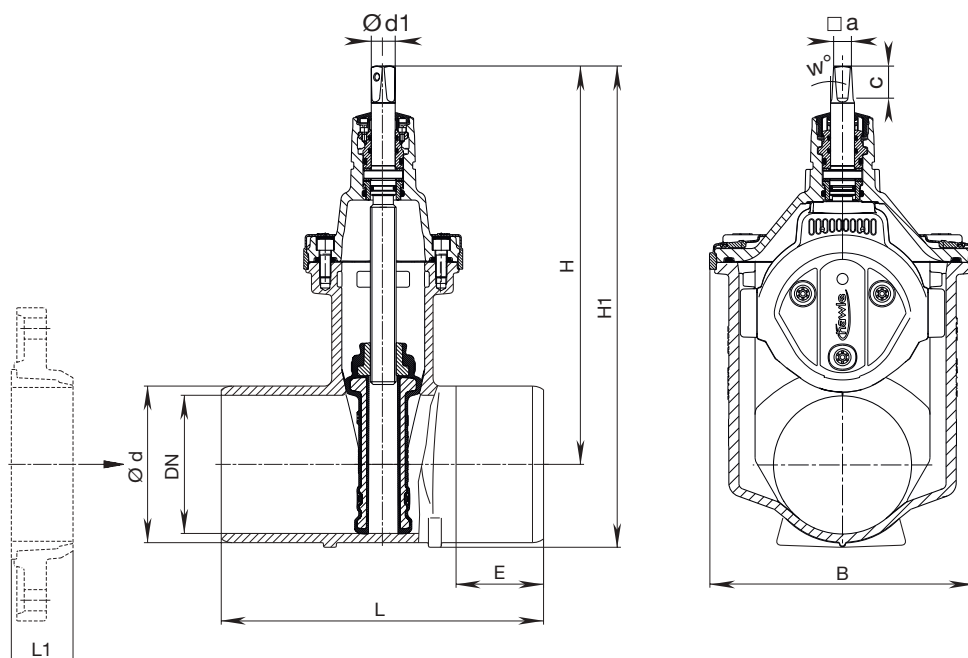
*in preparation

E3 Valve spigot ends

PN 16

No. 4100E3

No. 4140E3



For a shorter face-to-face dimension, shorten the spigot ends¹⁾ and assemble with Hawle flanges No. 7102 / No. 0102 (see water catalogue chapter „Flange connections”)

Caution: Compare flange length „L 1” with spigot length „E”

¹⁾ Protect cutting surfaces against corrosion with Hawle repair material No. 3442 (see water catalogue page P 5/2)

DN	MOP (PN)	Valve						Spindle				Weight
		Ød*	L	E	H	H1	B	□ a	c	w°	Ød1	
50	16	66	250	80	234	270	143	14,8	30	3°	20,5	8,0
65		82	270	85	305	350	180	17,3	35		24	12,0
80		98	280	85	313	366,5	180	17,3	35		24	13,5
			600	245								
100		118	300	90	343	408	213	19,3	38		24	18,0
			600	240								
125		144	325	95	421	498	285	19,3	38		26	28,5
150		170	350	95	433		523	285	19,3		38	26
			600	220		40,0						
200		222	400	115	541	657	357	24,3	48		30	55,0
			600	215								64,0
250		274	450	120	649	792	432	27,3	48		34	91,0
			810	300								112,5
300		326	500	120	731	897	518	27,3	48		34	139,0
	860		300	177,0								
400*	429	600	133	925	1149	687	32,3	55	44	267,0		

*in preparation

*Other outside diameters on request

E3 Valve spigot ends

With flange, PN 10 | PN 16

Design features

- Resilient seated gate valve with smooth straight-through bore
- Flanges sized in accordance with EN 1092-2, drilled according to EN 1092-2 | PN 10 standard; EN 1092-2 | PN 16 DN 200 please specify on order - other standards on request
- The Hawle E3 spigot ends valve with the high-tensile loose flange system is especially suitable for use with new builds in addition to being a replacement for existing valves
- The flat gaskets are already contained in the conical seals
- Suitable for cleaning with a cleaning pig
- One extension spindle for several dimensions
- Suitable for operation by automatic actuators
- Easy retrofitting of position indicator and automatic actuators on the standard bonnet

No. 4120E3

Standard version: without handwheel and extension spindle



Suitable accessories

Suitable accessories: see page A 2/2

Handwheel:		No. 7800
Extension spindles:	rigid	No. 9000E2/E3
	telescopic	No. 9500E2/E3
Surface boxes:	rigid	No. 1750
	telescopic	No. 2050
		No. 2051K
Valve actuator:		No. 9920
Adapter for actuator (E2/E3 adapter):		No. 8630E2/E3
Base plate:	No. 3481, No. 3482	
Operating cap:	No. 2156, No. 2157, No. 2158	
Extension spindle:	No. 7820, No. 7825	
Position indicator:	No. 2170E2/E3	
Bolts:	No. 8810, No. 8830, No. 8840	
HAWAK-pillar:	No. 9894, No. 9895	

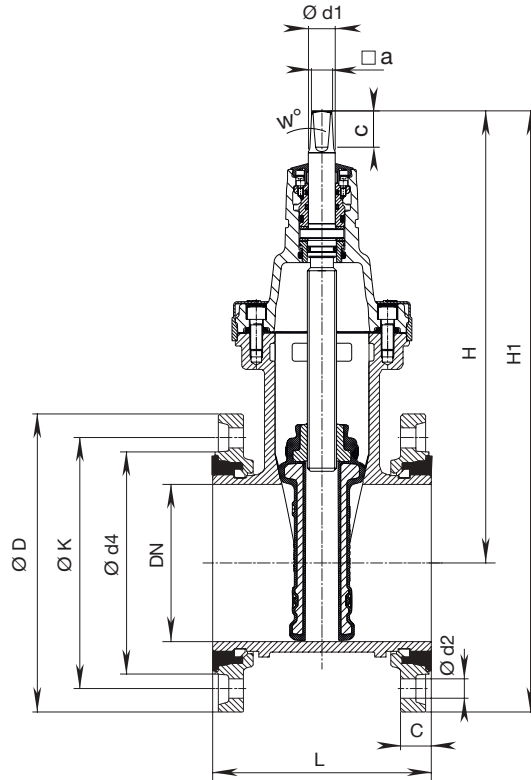
Order no.	Version	MOP (PN)	Dimensions/DN		
			100	150	200
4120E3	short EN 558 GR 14	16			

Face-to-face length EN 558 GR 15 on request

E3 Valve spigot ends

With flange, PN 10 | PN 16

No. 4120E3



DN	MOP (PN)	Flange				Bolts			Spindle			Valve				Weight	
		$\varnothing D$	C	$\varnothing K$	$\varnothing d4$	Qty.	Thread	$\varnothing d2$	$\square a$	c	w°	$\varnothing d1$	H	H1	L		B max. width
100	10	220	19	180	153	8	M 16	19	19,3	38		24	343	453	190	213	23,5
	16																
150	10	285	19	240	209	8	M 20	23	19,3	38	3°	26	433	576	210	285	40,0
	16																
200	10	340	20	295	264	8	M 20	23	24,3	48		30	541	711	230	357	61,0
	16					12											64,0

E3 Valve for PE fusion

DN 50 – 200, PN 10 | PN 16

Design features

- Resilient seated gate valve with PE fusion tails in combination with PE pipes according to EN 12201, DIN 8074
- This resilient seated valve has PE tails screwed and sealed into the sockets
- High performance sealing of the PE tails within the sockets is assured by two separate seals and a support liner
- The valve can be connected to the PE pipeline by either butt fusion or electrofusion
- One extension spindle for several dimensions
- Suitable for operation by automatic actuators
- Easy retrofitting of position indicator and automatic actuators on the standard bonnet
- Duplex stainless steel spindle

Standard version: without handwheel and extension spindle

Special versions: on request

No. 4050E3

No. 4051E3



Material | technical features

1 PE-fusion tail

Standard version PE 100-RC injection moulded

Support liner DN 50 made of POM,
from DN 65 – DN 200 made of stainless steel for PE-fusion tail(see drawing)

2 **Socket sealing** made of elastomer

3 **O-Ring** made of elastomer

Suitable accessories

Suitable accessories: see page A 2/2

Handwheel:		No. 7800
Extension spindles:	rigid	No. 9000E2/E3
	telescopic	No. 9500E2/E3
Surface boxes:	rigid	No. 1750
	telescopic	No. 2050, No. 2051K
Valve actuator:		No. 9920
Adapter for actuator (E2/E3 adapter):		No. 8630E2/E3
Base plate:		No. 3481, No. 3482
Operating cap:		No. 2156, No. 2157, No. 2158
Extension spindle:		No. 7820, No. 7825
Position indicator:		No. 2170E2/E3
HAWAK-pillar:		No. 9894, No. 9895

Order no.	MOP (PN)	Dimensions/DN Pipe Ø									
		50	65	80	100	100	125	150	150	200	200
		63	75	90	110	125	140	160	180	200	225
4050E3	16										
4051E3	10										

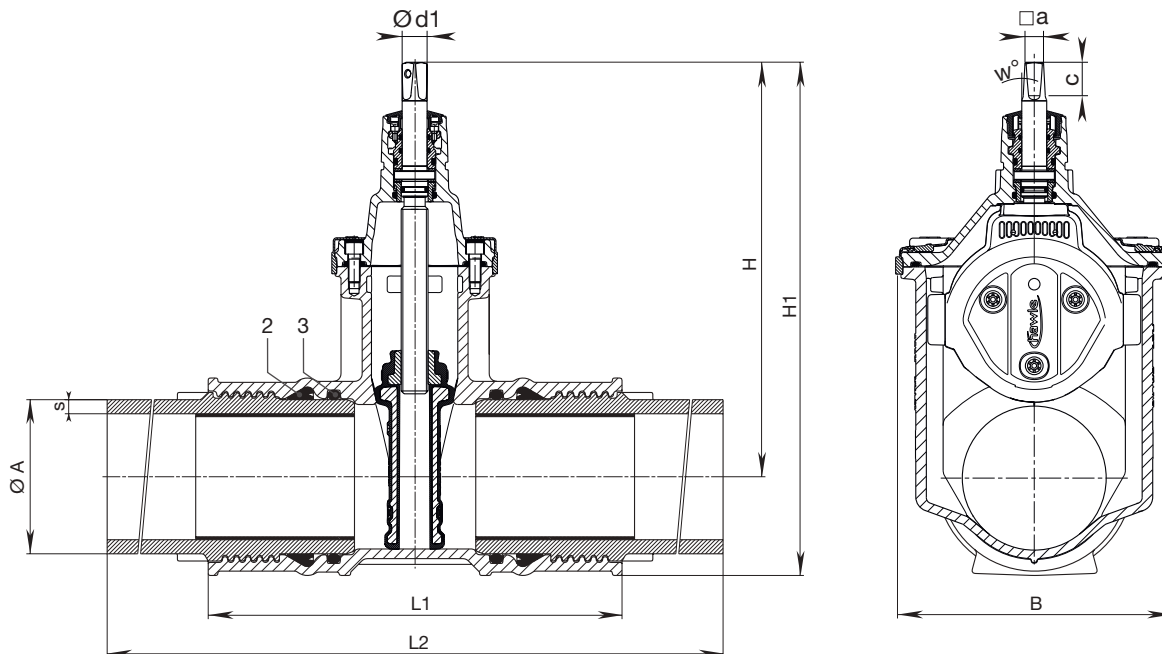
PE-fusion tail: No. 4050E3 PN 16 / SDR 11
No. 4051E3 PN 10 / SDR 17
(No. 4051E3 PN 10 / SDR 17.6 on request)

E3 Valve for PE fusion

DN 50 – 200, PN 10 | PN 16

No. 4050E3

No. 4051E3



PE-fusion tail: No. 4050E3 PN 16 / SDR 11
 No. 4051E3 PN 10 / SDR 17
 (No. 4051E3 PN 10 / SDR 17.6 on request)

DN	ØA	Valve with PE tails							Spindle				Weight
		s (SDR 17)	s (SDR 11)	H	H1	L1	L2	B	□ a	c	w°	Ø d1	
50	63	3,8	5,8	234	283	280	648	143	14,8	30	3°	20,5	11,0
65	75	4,5	6,8	305	361	295	657	180	17,3	35		24	17,0
80	90	5,4	8,2	313	377	310	668	180	17,3	35		24	19,0
100	110	6,6	10,0	343	419	340	710	213	19,3	38		24	26,0
100	125	7,4	11,4	343	428	395	761	213	19,3	38		24	30,5
125	140	8,3	12,7	421	513	390	756	285	19,3	38		26	31,5
150	160	9,5	14,6	433	536	430	796	285	19,3	38		26	50,0
150	180	10,7	16,4	433	548	458	814	285	19,3	38		26	57,5
200	200	11,9	18,2	541	679	514	900	357	24,3	48		30	88,0
200	225	13,4	20,5	541	679	514	900	357	24,3	48		30	90,0

E3 Valve flange | PE tail

DN 50 – 200, PN 10 | PN 16



Design features

- Resilient seated gate valve with flange and PE fusion tail in combination with PE pipes according to EN 12201, DIN 8074
- This resilient seated valve has one flange and one PE tail screwed and sealed into the sockets
- High performance sealing of the PE tails within the sockets is assured by two separate seals and a support liner
- The valve can be connected to the PE pipeline by either butt fusion or electrofusion
- Flanges sized in accordance with EN 1092-2, drilled according to EN 1092-2 | PN 10 standard; EN 1092-2 | PN 16 DN 200 please specify on order - other standards on request
- One extension spindle for several dimensions
- Suitable for operation by automatic actuators
- Easy retrofitting of position indicator and automatic actuators on the standard bonnet
- Duplex stainless steel spindle

No. 4090E3
No. 4091E3

Standard version: without handwheel and extension spindle
Special versions: on request



Material | technical features

- PE-fusion tail**
Standard version PE 100-RC injection moulded
Support liner DN 50 made of POM, from DN 65 – DN 200 made of stainless steel for PE-fusion tail (see drawing)
- Socket sealing** made of elastomer
- O-Ring** made of elastomer

Suitable accessories

Suitable accessories: see page A 2/2

- Handwheel: No. 7800
- Extension spindles: rigid No. 9000E2/E3
telescopic No. 9500E2/E3
- Surface boxes: rigid No. 1750
telescopic No. 2050, No. 2051K
- Valve actuator: No. 9920
- Adapter for actuator (E2/E3 adapter): No. 8630E2/E3
- Base plate: No. 3481, No. 3482
- Operating cap: No. 2156, No. 2157, No. 2158
- Extension spindle: No. 7820, No. 7825
- Position indicator: No. 2170E2/E3
- Bolts: No. 8810, No. 8830, No. 8840
- HAWAK-pillar: No. 9894, No. 9895
- Flat gasket: No. 3390, No. 3470

Order no.	MOP (PN)	Dimensions/DN Pipe Ø								
		50 63	65 75	80 90	100 110	100 125	125 140	150 160	150 180	200 225
4090E3	16									
4091E3	10									

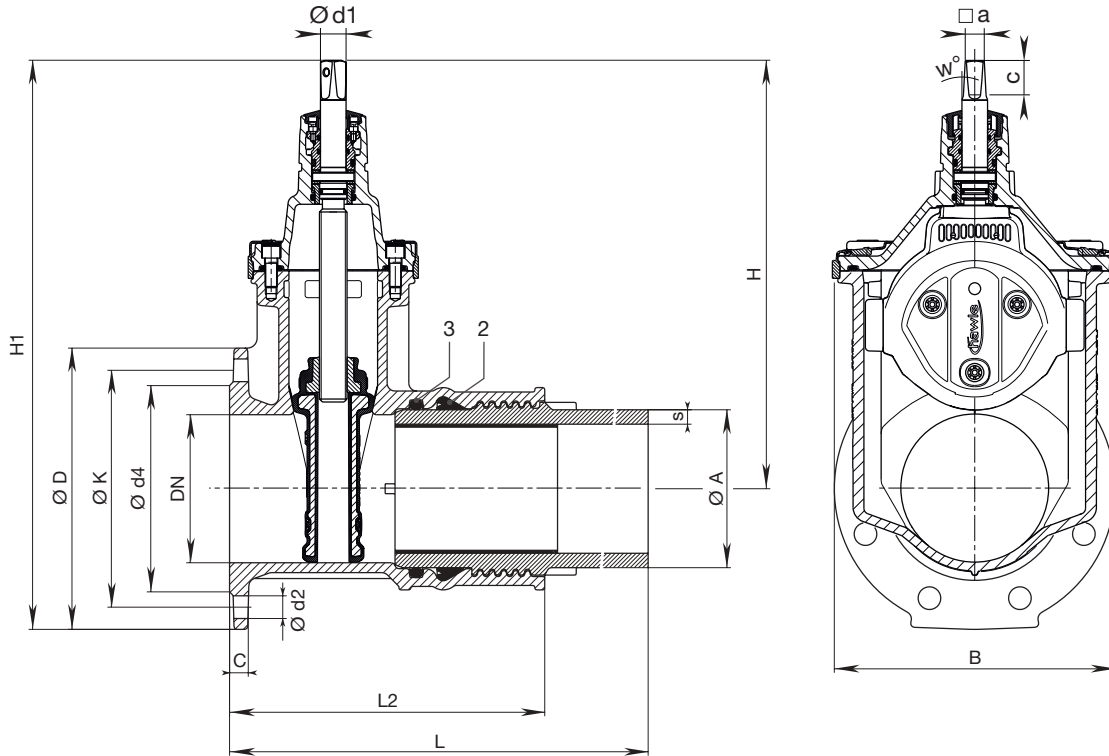
PE-fusion tail: No. 4090E3 PN 16 / SDR 11
No. 4091E3 PN 10 / SDR 17
(No. 4091E3 PN 10 / SDR 17.6 on request)

E3 Valve flange | PE tail

DN 50 – 200, PN 10 | PN 16

No. 4090E3

No. 4091E3



PE-fusion tail:

No. 4090E3 PN 16 / SDR 11
 No. 4091E3 PN 10 / SDR 17
 (No. 4091E3 PN 10 / SDR 17.6 on request)

DN	Ø Pipe	Flange			Bolts			Valve with PE tails						Spindle			Weight			
		ØD	C	ØK Ød4	Qty.	Thread	Ød2	s (SDR 17)	s (SDR 11)	H	H1	L	L2	B	□ a	c		w°	Ød1	
50	63	165	19	125	98	4	M 16	19	3,8	5,8	234	316	399	215	143	14,8	30	3°	20,5	11,5
65	75	185		145	118	4	M 16	19		6,8	305	397	416	235	180	17,3	35		24	17,0
80	90	200		160	133	8	M 16	19	5,4	8,2	313	413	425	245	180	17,3	35		24	18,0
100	110	220		180	153	8	M 16	19	6,6	10,0	343	453	450	265	213	19,3	38		24	25,0
100	125	220		180	153	8	M 16	19		11,4	343	453	476	293	213	19,3	38		24	26,5
125	140	250		210	183	8	M 16	19		12,7	421	546	485	310	285	19,3	38		26	38,0
150	160	285		240	209	8	M 20	23		14,6	433	576	503	320	285	19,3	38		26	44,5
150	180	285		240	209	8	M 20	23		16,4	433	576	512	334	285	19,3	38		26	49,5
200	225	340	20	295	264	8/12	M 20	23	13,4	20,5	541	711	565	372	357	24,3	48	30	78,0	

E3 VRS-socket valve

For cast iron pipes and pipes with VRS-socket,
DN 80 – 300, PN 16

Design features

- Resilient seated gate valve with one-sided VRS-socket and one-sided VRS-spigot
- With VRS grip ring and VRS pipe restraint clamp (not included), a pipe connection can be made restraint
- Suitable for cleaning with a cleaning pig
- One extension spindle for several dimensions
- Suitable for operation by automatic actuators
- Easy retrofitting of position indicator and automatic actuators on the standard bonnet
- Duplex stainless steel spindle

No. 4027E3

Standard version: without handwheel and extension spindle



Material | technical features

- 1 **Socket sealing** made of elastomer
- 2 **Pipe restraint clamp** (not included)

Suitable accessories

Suitable accessories: see page A 2/2

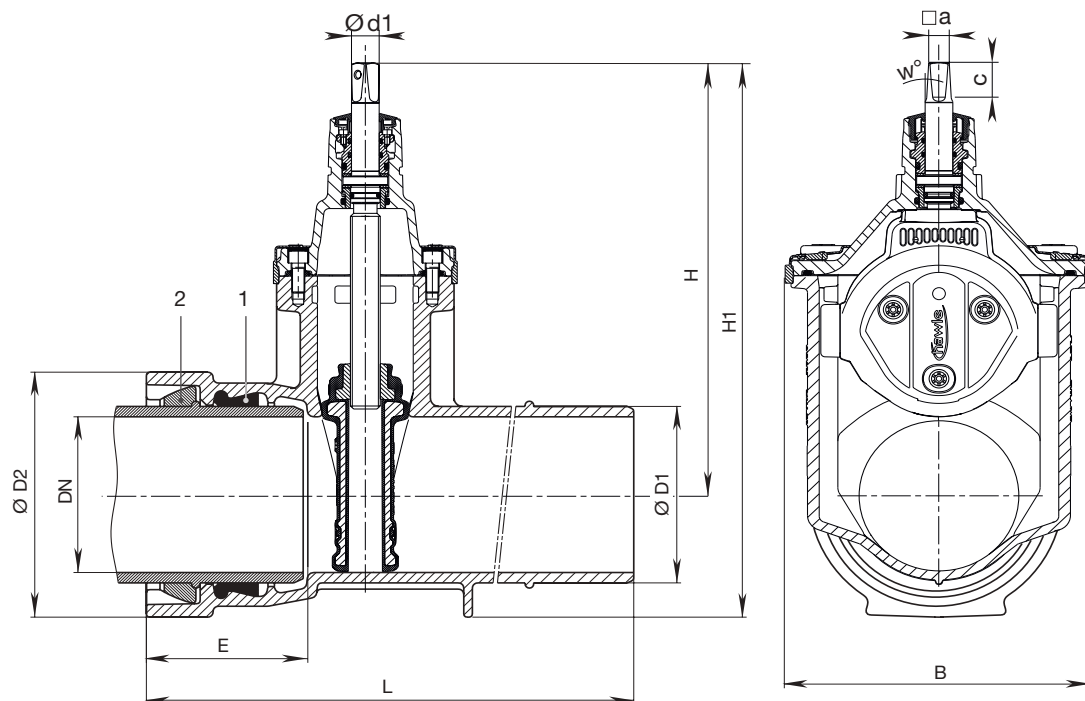
Handwheel:		No. 7800
Extension spindles:	rigid	No. 9000E2/E3
	telescopic	No. 9500E2/E3
Surface boxes:	rigid	No. 1750
	telescopic	No. 2050, No. 2051K
Valve actuator:		No. 9920
Adapter for actuator (E2/E3 adapter):		No. 8630E2/E3
Base plate:		No. 3481, No. 3482
Operating cap:		No. 2156, No. 2157, No. 2158
Extension spindle:		No. 7820, No. 7825
Position indicator:		No. 2170E2/E3
HAWAK-pillar:		No. 9894, No. 9895

Order no.	Version	MOP (PN)	Dimensions/DN						
			80	100	125	150	200	250	300
4027E3	Socket-Spigot	16							

E3 VRS-socket valve

For cast iron pipes and pipes with VRS-socket,
DN 80 – 300, PN 16

No. 4027E3



DN	Ø Pipe	MOP (PN)	Valve							Spindle				Weight
			ØD1	ØD2	E	H	H1	L	B	□ a	c	w°	Ød1	
80	98	16	98	156	127	313	391	422	180	17,3	35	3°	24	20,5
100	118		118	178	135	343	432	440	213	19,3	38		24	24,5
125	144		144	208	143	421	525	494	285	19,3	38		24	37,5
150	170		170	235	150	433	551	513	285	19,3	38	26	44,5	
200	222		222	295	160	541	689	535	357	24,3	48	30	72,0	
250	274		274	356	165	649	827	577	432	27,3	48	36	114,0	
300	326		326	414	170	731	938	638	518	27,3	48	36	168,5	

E3 Combi-T

Flange T-piece with integrated E3-valve, PN 10 | PN 16

Design features

- Resilient seated gate valve combined with flange T-piece
- Short style, equal and reduced
- Space saving installation through short design as well as savings in material, work, transport and storage costs
- The compact design enables the valve chamber to be made from sectional concrete giving typical savings of 25 % in chamber construction costs
- A combination of E3 Combi-T with E3 reducing valve creates a multitude of application possibilities
- Flanges sized in accordance with EN 1092-2, drilled according to EN 1092-2 | PN 10 standard; EN 1092-2 | PN 16 DN 200 please specify on order - other standards on request
- Suitable for cleaning with a cleaning pig
- One extension spindle for several dimensions
- Suitable for operation by automatic actuators
- Easy retrofitting of position indicator and automatic actuators on the standard bonnet
- Duplex stainless steel spindle

Standard version: without handwheel and extension spindle

Special versions: on request

No. 4340E3



Suitable accessories

Suitable accessories: see page A 2/2

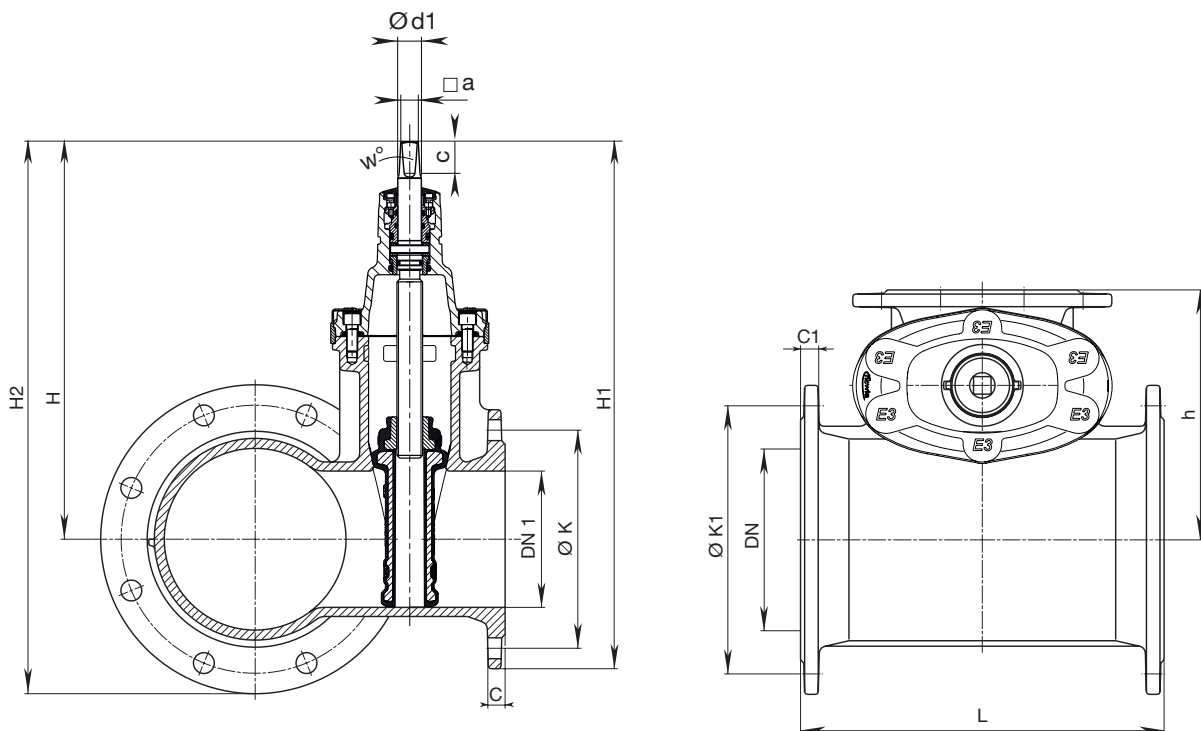
Handwheel:		No. 7800
Extension spindles:	rigid	No. 9000E2/E3
	telescopic	No. 9500E2/E3
Surface boxes:	rigid	No. 1750
	telescopic	No. 2050, No. 2051K
Valve actuator:		No. 9920
Adapter for actuator (E2/E3 adapter):		No. 8630E2/E3
Base plate:		No. 3481, No. 3482
Operating cap:		No. 2156, No. 2157, No. 2158
Extension spindle:		No. 7820, No. 7825
Position indicator:		No. 2170E2/E3
Bolts:		No. 8810, No. 8830, No. 8840
Flat gasket:		No. 3390, No. 3470
HAWAK-pillar:		No. 9894, No. 9895

Order no.	MOP (PN)	Dimensions DN	Valve DN1				
			65	80	100	150	200
4340E3	16	80					
		100					
		125					
		150					
		200					

E3 Combi-T

Flange T-piece with integrated E3-valve, PN 10 | PN 16

No. 4340E3



DN	DN 1 Valve	E3 Combi-T					Flange				Spindle				Weight
		L	H	H1	H2	h	ØK	C	ØK1	C1	□ a	c	w°	Ød1	
80	80	280	313	413	413	170	160	19	160	19	17,3	35	3°	24	24,0
100	65	260	305	397	408	180	145	19	180	19	17,3	35		24	29,5
100	80	280	313	413	416	200	160	19	180	19	17,3	35		24	30,0
100	100	310	343	453	453	200	180	19	180	19	19,3	38		24	34,0
125	80	280	313	413	432	200	160	19	210	19	17,3	35		24	30,5
125	100	310	343	453	469	215	180	19	210	19	19,3	38		24	36,5
150	65	260	305	397	441	210	145	19	240	19	17,3	35		24	33,0
150	80	280	313	413	444	220	160	19	240	19	17,3	35		24	36,0
150	100	310	343	453	487	220	180	19	240	19	19,3	38		24	40,5
150	150	400	433	576	576	250	240	19	240	19	19,3	38		26	55,5
200	80	280	313	413	484	250	160	19	295	20	17,3	35	24	43,0	
200	100	310	343	453	521	250	180	19	295	20	19,3	38	24	49,5	
200	150	400	433	576	610	275	240	19	295	20	19,3	38	26	68,5	
200	200	460	541	711	711	295	295	20	295	20	24,3	48	30	90,0	

E3 Combi-III

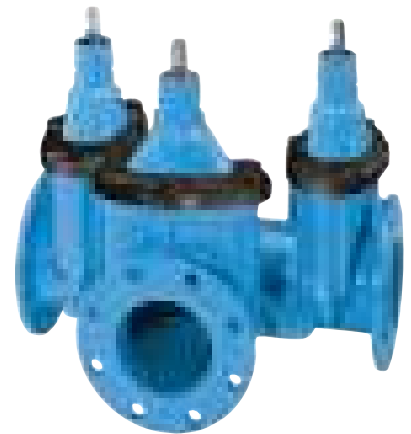
Flanged T-piece with 3 flanged outlets and 2 or 3 integral E3 valves, PN 10 | PN 16

Design features

- Resilient seated gate valve combined with flange-T-piece
- Space saving installation through short design as well as savings in material, work, transport and storage costs
- The compact design enables the valve chamber to be made from sectional concrete giving typical savings of 25 % in chamber construction costs
- Vertical connection DN 100 optional
- Internal thread connection 3/4" - optional for manometer, ball valve outlet etc.
- Flanges sized in accordance with EN 1092-2, drilled according EN 1092-2 | PN 10 standard; EN 1092-2 | PN 16 DN 200 please specify on order - other standards on request
- Suitable for cleaning with a cleaning pig
- Duplex stainless steel spindle

No. 4450E3

No. 4460E3

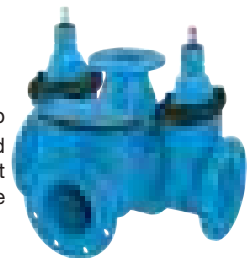


Suitable accessories

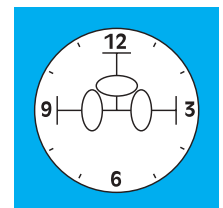
Suitable accessories: see page A 2/2

Handwheel:		No. 7800
Extension spindles:	rigid	No. 9000E2/E3
	telescopic	No. 9500E2/E3
Surface box:		No. 4550
Operating cap:	No. 2156, No. 2157, No. 2158	
Extension spindle:	No. 7820, No. 7825	
Position indicator:	No. 2170E2/E3	
Bolts:	No. 8810, No. 8830, No. 8840	
Flat gasket:	No. 3390, No. 3470	
Blanking cap:	No. 8570E2/E3	

Instead of a bonnet, a cap No. 8570E2/E3 can be fitted onto the body of any outlet not requiring a valve



Please specify the arrangement of the valves in a clockwise direction!

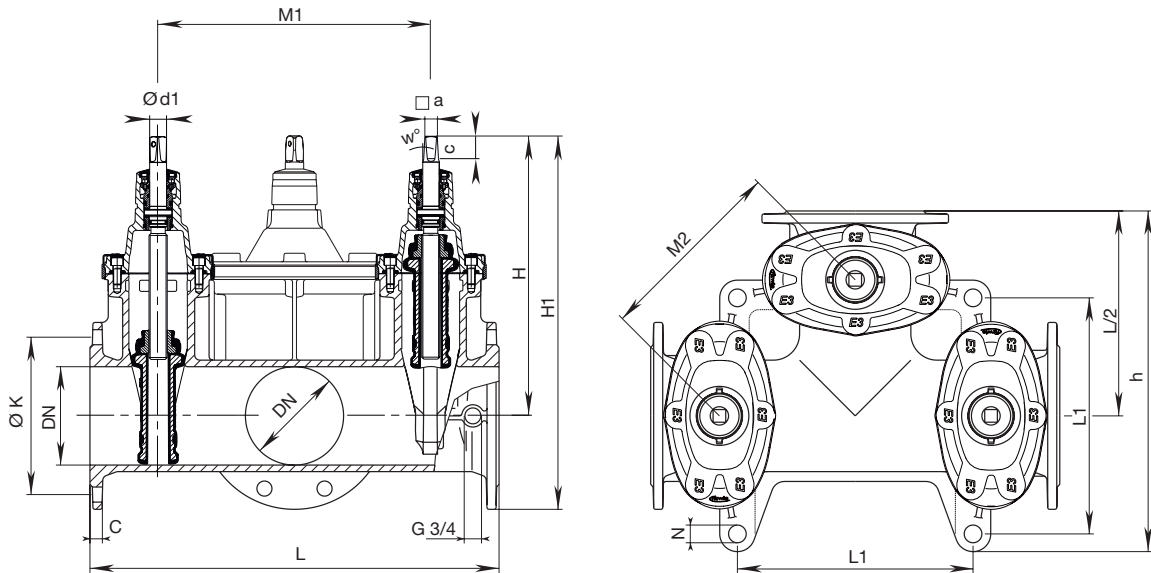


Order no.	Version	MOP (PN)	No. of valves	Dimensions/DN				
				80	100	125	150	200
4450E3	Without vertical centre outlet	16	2					
			3					
4460E3	With vertical outlet		2					
			3					

E3 Combi-III

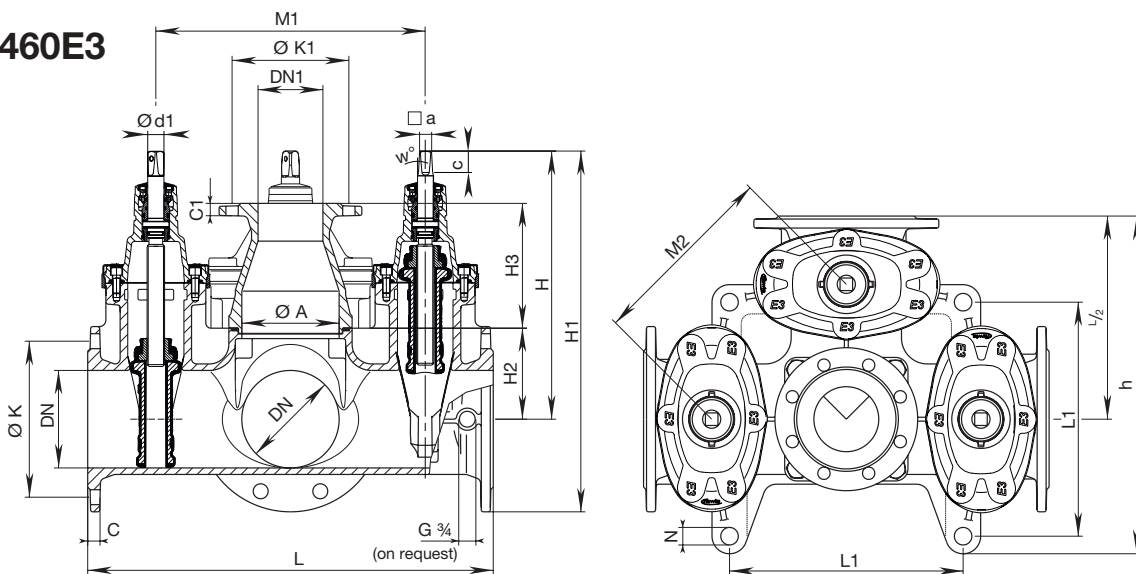
Flanged T-piece with 3 flanged outlets and 2 or 3 integral E3 valves, PN 10 | PN 16

No. 4450E3



DN	E3 Combi III without vertical centre outlet										Spindle			Weight (no. of valves)		
	L	H	H 1	ØK	C	M1	M2	L1	h	N	□ a	c	w°	Ød1	2	3
80	435	313	413	160	19	255	180	-	318	-	17,3	35		24	45,0	47,0
100	555	343	453	180	19	365	258	212	411	27	19,3	38		24	68,0	67,0
125	615	421	571	210	19	415	294	360	515	27	19,3	38	3°	26	101,0	153,0
150	625	433	576	240	19	415	294	360	520	27	19,3	38		26	105,0	114,5
200	695	541	711	295	20	465	329	445	602	32	24,3	48		30	167,0	183,0

No. 4460E3



DN	E3 Combi III with vertical centre outlet													Spindle			E3 Combi III with vertical centre outlet					
	ØA	DN 1	L	L1	H	H1	H2	H3	C	C1	ØK	ØK1	M1	M2	h	N	□ a	c	w°	Ød1	2	3
100	100	100	555	212	343	453	90	+	19	+	180	+	365	258	411	27	19,3	38		24	71,0	76,0
150	150	100	625	360	433	576	140	192	19	19	240	180	415	293,5	520	27	19,3	38	3°	26	120,0	130,0
200	200	100	695	445	541	711	180	192	20	19	295	180	465	329	602	32	24,3	48		30	198,0	205,0

+ flange connection directly on the body - stud

A 7/2

E3 Combi-IV

Flanged T-piece with 4 flanged outlets and 2, 3 or 4 integral E3 valves, PN 10 | PN 16

Design features

- Resilient seated gate valve combined with flange cross piece
- Space saving installation through short design as well as savings in material, work, transport and storage costs
- The compact design enables the valve chamber to be made from sectional concrete giving typical savings of 25 % in chamber construction costs
- Vertical connection DN 100 optional
- Internal thread connection 3/4" - optional for manometer, ball valve outlet etc.
- Flanges sized in accordance with EN 1092-2, drilled according EN 1092-2 | PN 10 standard; EN 1092-2 | PN 16 DN 200 please specify on order - other standards on request
- Suitable for cleaning with a cleaning pig
- Duplex stainless steel spindle

No. 4400E3

No. 4410E3



Instead of a bonnet, a cap No. 8570E2/E3 can be fitted onto the body of any outlet not requiring a valve

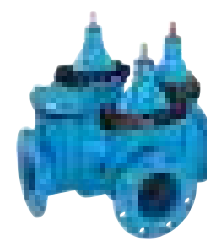
Suitable accessories

Suitable accessories: see page A 2/2

- Handwheel: No. 7800
- Extension spindles: rigid No. 9000E2/E3
telescopic No. 9500E2/E3
- Surface box: No. 4550
- Operating cap: No. 2156, No. 2157, No. 2158
- Extension spindle: No. 7820, No. 7825
- Position indicator: No. 2170E2/E3
- Bolts: No. 8810, No. 8830, No. 8840
- Flat gasket: No. 3390, No. 3470
- Blanking cap: No. 8570E2/E3

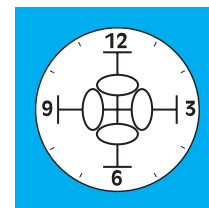


No. 4410E3 cross connection with 3 valves and vertical centre outlet



With 3 valves and no vertical outlet

Please specify the arrangement of the valves in a clockwise direction!

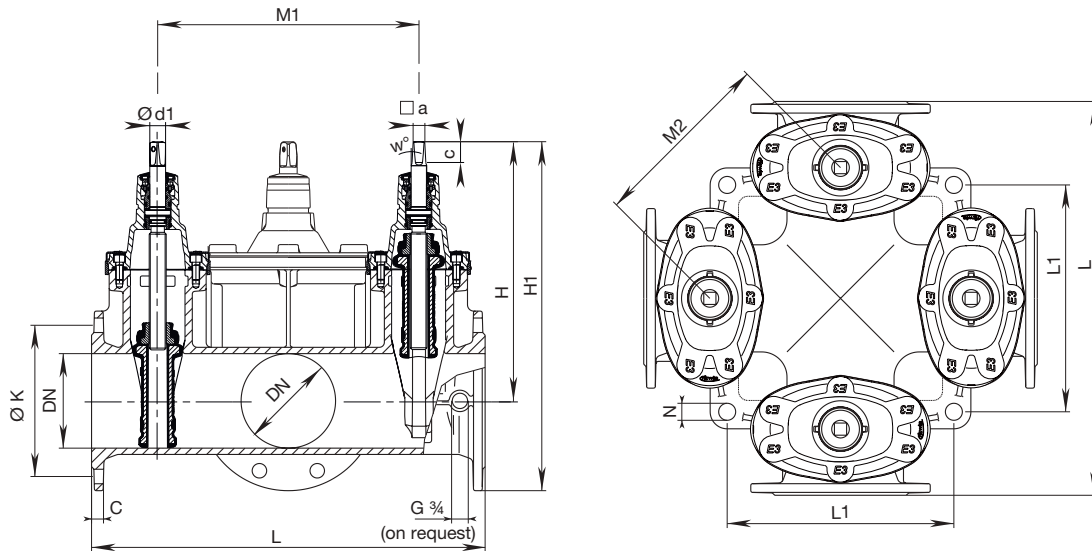


Order no.	Version	MOP (PN)	No. of valves	Dimensions/DN				
				80	100	125	150	200
4400E3	Without vertical centre outlet	16	2					
			3					
			4					
4410E3	With vertical outlet	16	3					
			4					

E3 Combi-IV

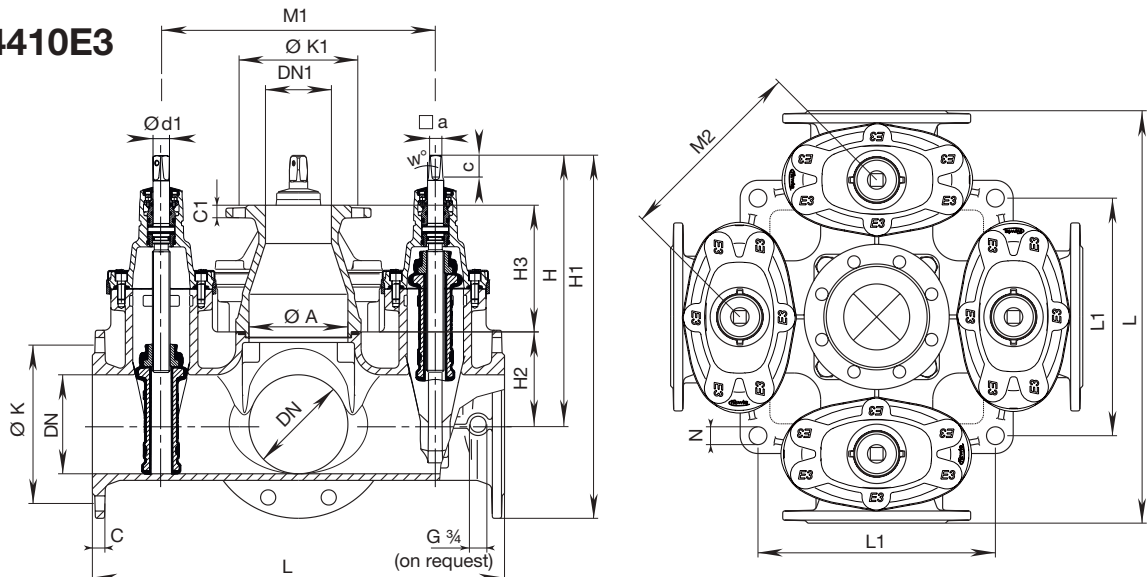
Flanged T-piece with 4 flanged outlets and 2, 3 or 4 integral E3 valves, PN 10 | PN 16

No. 4400E3



DN	E3 Combi IV without vertical centre outlet									Spindle				Weight (no. of valves)		
	L	H	H1	ØK	C	M1	M2	L1	N	a	c	w°	Ød1	2	3	4
80	435	313	413	160	19	255	180			17,3	35	3°	24	55,0	60,0	65,0
100	555	343	453	180	19	365	258	212	27	19,3	38		24	76,0	84,0	90,0
125	615	421	571	210	19	415	293,5	360	27	19,3	38		26	125,0	135,0	139,0
150	625	433	576	240	19	415	293,5	360	27	19,3	38		26	135,0	143,0	151,0
200	695	541	711	295	20	465	329	445	32	24,3	48	30	207,0	223,0	238,0	

No. 4410E3



DN	E3 Combi IV with vertical centre outlet														Spindle				Weight (no. of valves)		
	ØA	DN1	L	L1	H	H1	H2	H3	C	C1	ØK	ØK1	M1	M2	N	a	c	w°	Ød1	3	4
100	100	100	555	212	343	453	90	+	19	+	180	+	365	258	27	19,3	38		24	90,0	96,0
150	150	100	625	360	433	576	140	192	19	19	240	180	415	293,5	27	19,3	38	3°	26	154,0	164,0
200	200	100	695	445	541	711	180	192	20	19	295	180	465	329	32	24,3	48		30		265,0

+ flange connection directly on the body - stud

E3 Hawle-Combiflex

DN 150, PN 10 | PN 16



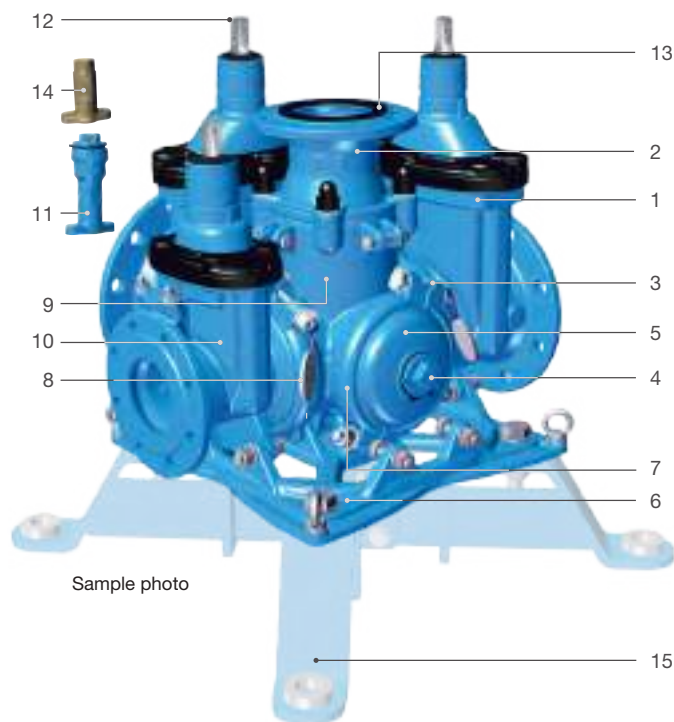
Design features

- Modular Combi-valve system enables flexible assembly arrangements
- Standardized compact construction regardless of valve configuration
- Suitable for cleaning with a cleaning pig
- Comprehensive range of interchangeable ZAK connections possible in every module
- Unique design facilitates easy, rapid exchange of any module
- Duplex stainless steel spindle

Material | technical features

- 1 Resilient seated E3 valve according to EN 1074-1 and 1074-2
- 3 Molybdenum coated, A4 type clamping ring bolts
- 4/11 ZAK-46 (4) or ZAK-34 (11) socket for corrosion-free connection of sensors or ZAK Service valve
- 2/5/7/ Hawle Combiflex vertical outlet (2) optionally
- 9/10 DN 80 or DN 100 end cap (5), clamping ring (7), middle section DN 150 (9), E3 body (10) reduced in DN 80, DN 100, DN 125; DN 150; or expanded to DN 200: ductile iron, epoxy powder coated
- 6 HAWLE-COMBIFLEX mounting frame: ductile iron, epoxy powder coated, with ring bolts for fastening hoists and integrated rings for floor connections
- 8 Quality inspection seal
- 12 Operating cap made of aluminum, including covering cap with direction indicator
- 13 Vertical outlet with affixed flat elastomer gasket
- 14 Outlet ET 1", optional (not installed)
- 15 Anchoring system, optional

No. 4420E3



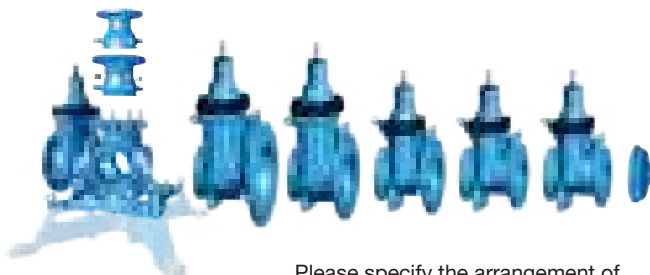
Sample photo

Suitable accessories

Suitable accessories: see page A 2/2

- Handwheel: No. 7800
- Extension spindles: rigid No. 9000E2/E3
telescopic No. 9500E2/E3
- Surface boxes: rigid No. 1750
telescopic No. 2050, No. 2051K
- Operating cap: No. 2156, No. 2157, No. 2158
- Extension spindle: No. 7820, No. 7825
- Bolts: No. 8810, No. 8830, No. 8840
- Ground-distance sets: No. 8644
- Flat gasket: No. 3390, No. 3470
- Operating cap: No. 2157, No. 2158
- ET 1" outlet: No. 6979
- ZAK 34 outlet: No. 6979
- ZAK 34 plug: No. 6980
- Blanking cap: No. 8570E2/E3

Individual combination options see page A 9/3



Please specify the arrangement of the valves in a clockwise direction!

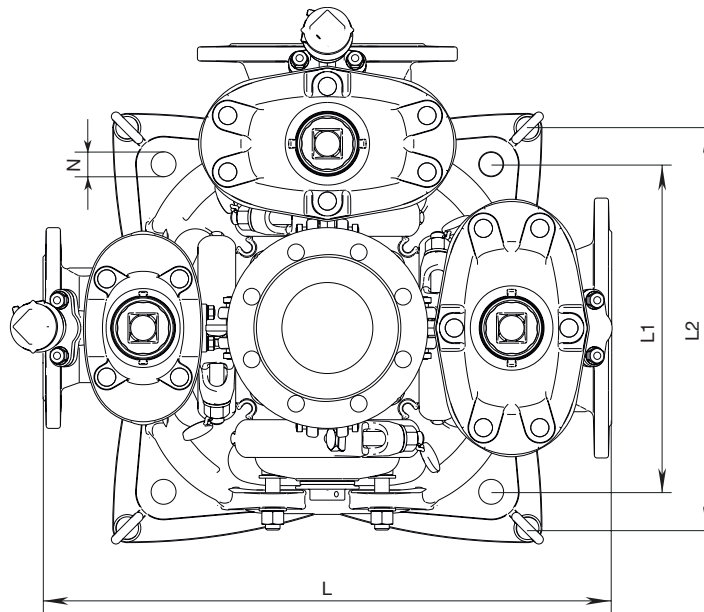
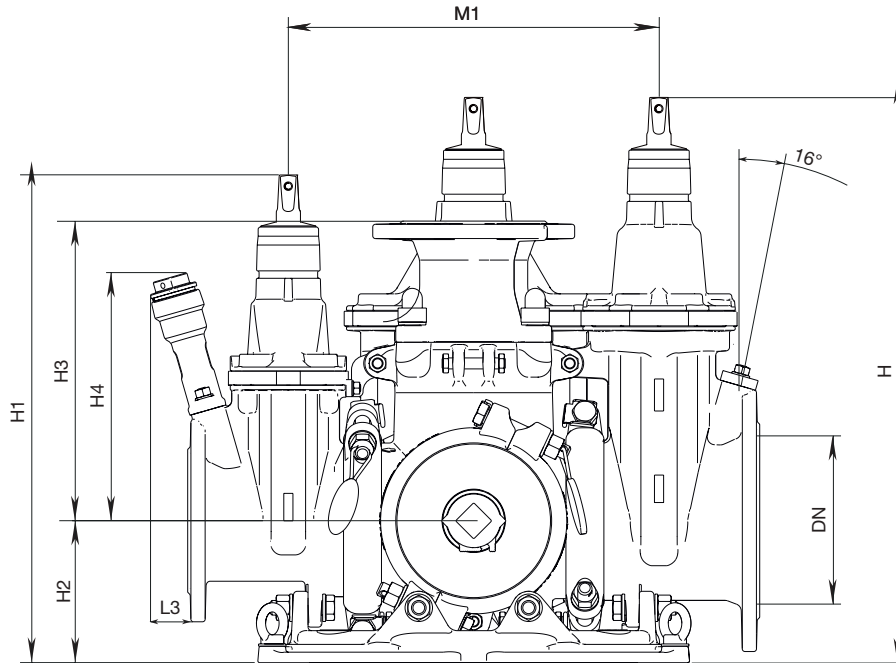
Order no.	Version	MOP (PN)	Dimensions / DN	Possible reduction / DN	Possible vertical outlet / DN	Weight min. — max.
4420E3	Individually configurable	10/16	150	80	80/100	57 — 212
				100		
				125		
				150		
				200		

Flange sized and drilled in accordance with EN 1092-2 standard PN 10. Please specify PN 16 when ordering. Standard version inclusive operating caps (remove in case of actuation by extension spindle or handwheel!) Please use the HAWLE-COMBIFLEX order form. It can be found on our homepage.

E3 Hawle-Combiflex

DN 150, PN 10 | PN 16

No. 4420E3



DN	E3 Hawle-Combiflex												
	MOP (PN)	DN	L*	L1	L2	L3	H	H1	H2	H3	H4	M1*	Ø N
150	10/16	80	625	360	440	37	609	518	155	328	262	405	27,4
		100				40					271		
		125				38					284		
		150				40					298		
		200*				24					335		

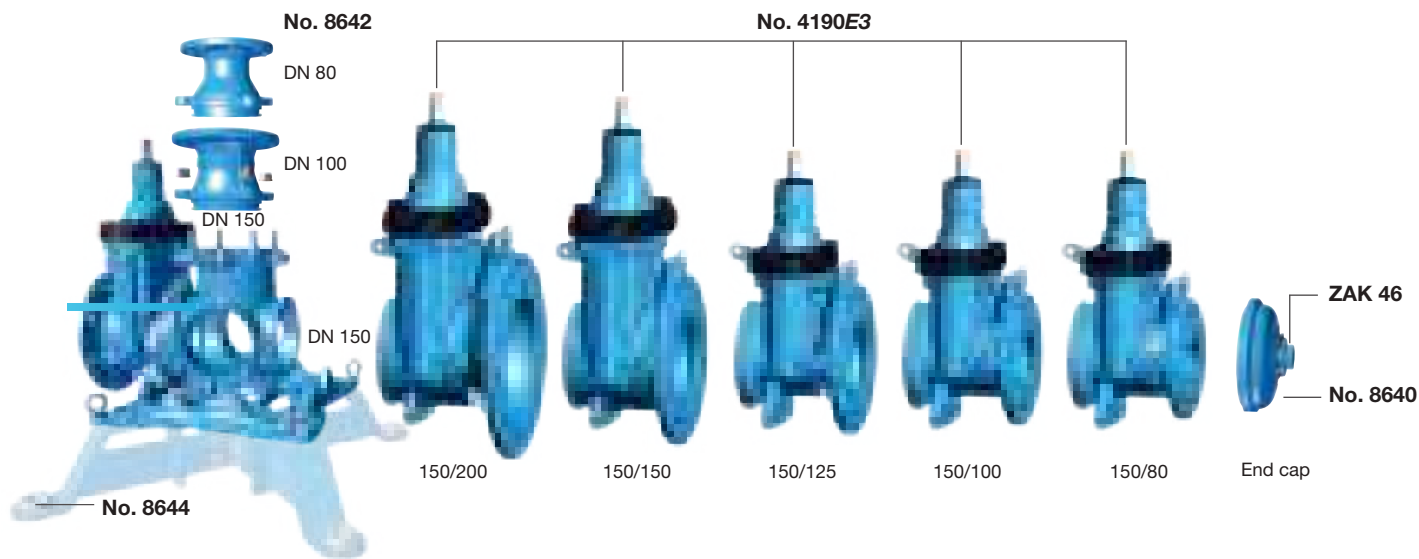
*The external dimensions (L, M1) remain the same with reducing valves!

* height compensation due to flange necessary

#Transport dimensions = L

E3 Hawle-Combiflex

Individual parts DN 150



No. 4190E3

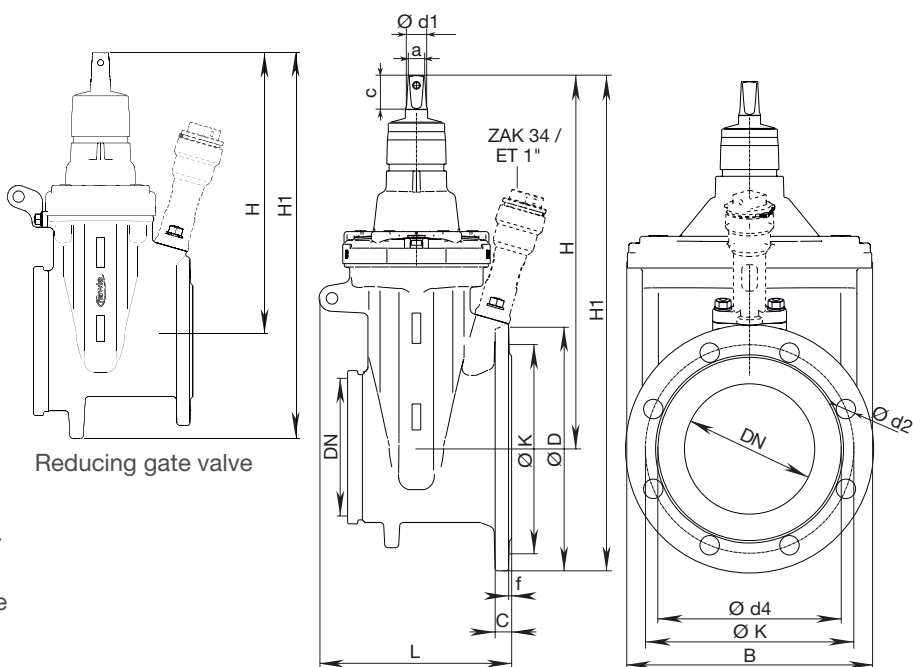


Optional
Operating cap
Order-No. 2156
Order-No. 2157
Order-No. 2158

Optional
Outlet ET 1"
Order-No. 6979

Optional
ZAK 34 outlet
Order-No. 6979
ZAK-plug
Order-No. 6980

- Incl. bolt fastener for the middle section
- Fits through manhole openings



DN	Hawle-Combiflex E3 gate valve																			
	Flange						Bolts			Spindle				Valve						
	DN	MOP (PN)	$\varnothing D^*$	C	$\varnothing K$	$\varnothing d4$	f	Qty.	Thread	$\varnothing d2$	a	c	$\varnothing d1$	Wedge DN	Service outlet	H	H1*	L*	B*	~ Max. weight
150	80	10 16	200	19	160	133		8	M16	19			25	100		343	453	258	213	21,8
	100	10 16	220	19	180	153		8	M16	19			25	100		343	453	261	213	22,5
	125	10 16	250	19	210	183	3	8	M16	19	19,3	38	25	100	ZAK 34 ET 1"	343	468	259	213	23,7
	150	10 16	285	19	240	209		8	M20	23			28	150		433	576	262	283	34,7
	200	10 16	340	20	295	264		8 12	M20	23			28	150		433	603	281	283	40,0

* Transport dimensions

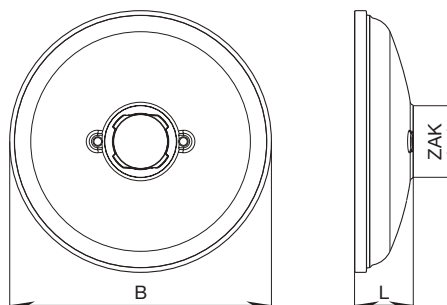
E3 Hawle-Combiflex

Individual parts DN 150

Hawle-Combiflex end cap No. 8640



- ZAK 69 socket

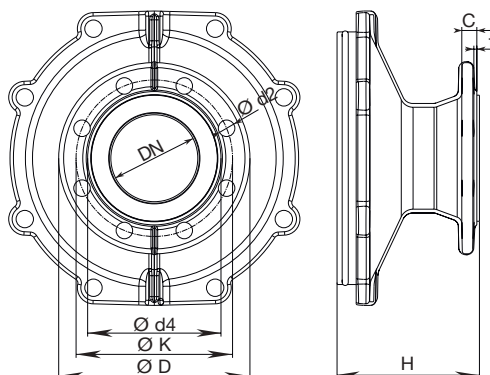


DN	Hawle-Combiflex end cap			
	B	ZAK-socket	L	Weight
150	177	ZAK 46	47	2,5

Hawle-Combiflex vertical outlet No. 8642



- Incl. affixed elastomer flange gasket



DN	Hawle-Combiflex vertical outlet											
	Flange							Bolts			Vertical outlet	
	DN	MOP (PN)	Ø D	C	Ø K	Ø d4	f	Qty.	Thread	Ø d2	H	Weight
150	80	10/16	200	19	160	133	3	8	M16	19	155	7,0
	100	10/16	220	19	180	153	3	8	M16	19	155	8,0

Blanking cap No. 8570E2/E3

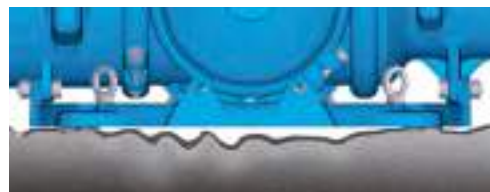


- For combi valves in place of valve bonnet
- Made of ductile iron, epoxy powder coated without screws and hood seal

Order No.	DN	Weight
8570E2/E3	80	1,6
	100	1,9
	125 – 150	3,2
	200	5,0

Hawle-Combiflex ground-distance set No. 8644 (order separately)

Stainless steel



E3 Hawle-Combiflex

DN 250 / DN 300, PN 10 | PN 16

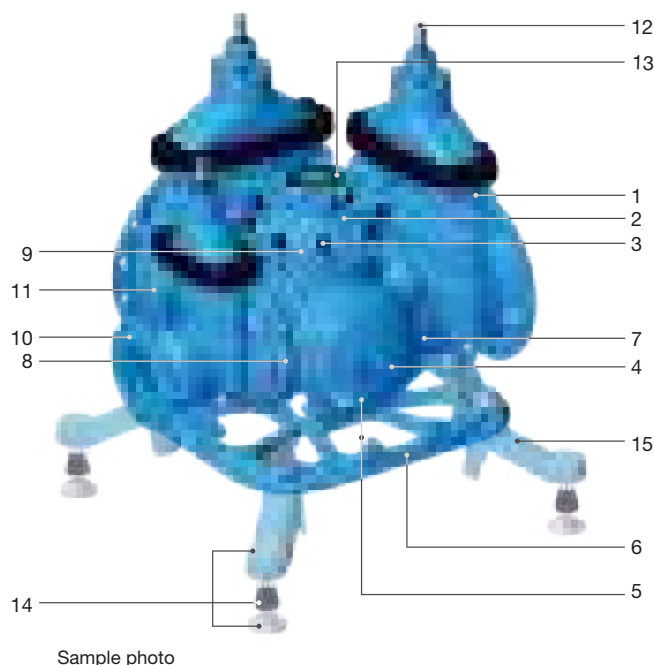
Design features

- Modular Combi-valve system enables flexible assembly arrangements
- Standardized compact construction regardless of valve configuration
- Suitable for cleaning with a cleaning pig
- Comprehensive range of interchangeable ZAK connections possible in every module
- Unique design facilitates easy, rapid exchange of any module
- Duplex stainless steel spindle

No. 4420E3

Material | technical features

- 1 Resilient seated E3 valve in DN 150 to DN 400 according to EN 1074-1 and 2
- 3 Molybdenum coated, A4 type clamping ring bolts
- 4/11 ZAK-69 (4) or ZAK-46 (11) socket for corrosion-free connection of sensors or ZAK Service valve
- 2/5/7/9/10 Hawle-Combiflex vertical outlet (2) optionally DN 100 or DN 150 end cap (5), clamping ring (7), 2 types of middle section DN 250 or DN 300 (9), E3 body (10) reduced in DN 150 and DN 200 or expanded to DN 400: ductile iron, epoxy powder coated
- 6 Hawle-Combiflex mounting frame: ductile iron, epoxy powder coated, with ring bolts for fastening hoists and integrated rings for floor connections
- 8 Quality inspection seal
- 12 Operating cap made of aluminum, including covering cap with direction indicator
- 13 Vertical outlet with affixed flat elastomer gasket
- 14 Assembly fittings kit (4 items each: plastic support liner; hot-dip galvanized spacer disk; hot-dip galvanized washer)
- 15 Anchoring system, optional



Sample photo

Individual combination options see page A 9/7



Suitable accessories

Suitable accessories: see page A 2/2

- Handwheel: No. 7800
- Extension spindles: rigid No. 9000E2/E3
telescopic No. 9500E2/E3
- Surface boxes: rigid No. 1750
telescopic No. 2050, No. 2051K
- Operating cap: No. 2156, No. 2157, No. 2158
- Extension spindle: No. 7820, No. 7825
- Bolts: No. 8810, No. 8830, No. 8840
- Assembly fittings kit: No. 8647
- Flat gasket: No. 3390, No. 3470
- Blanking cap: No. 8570E2/E3

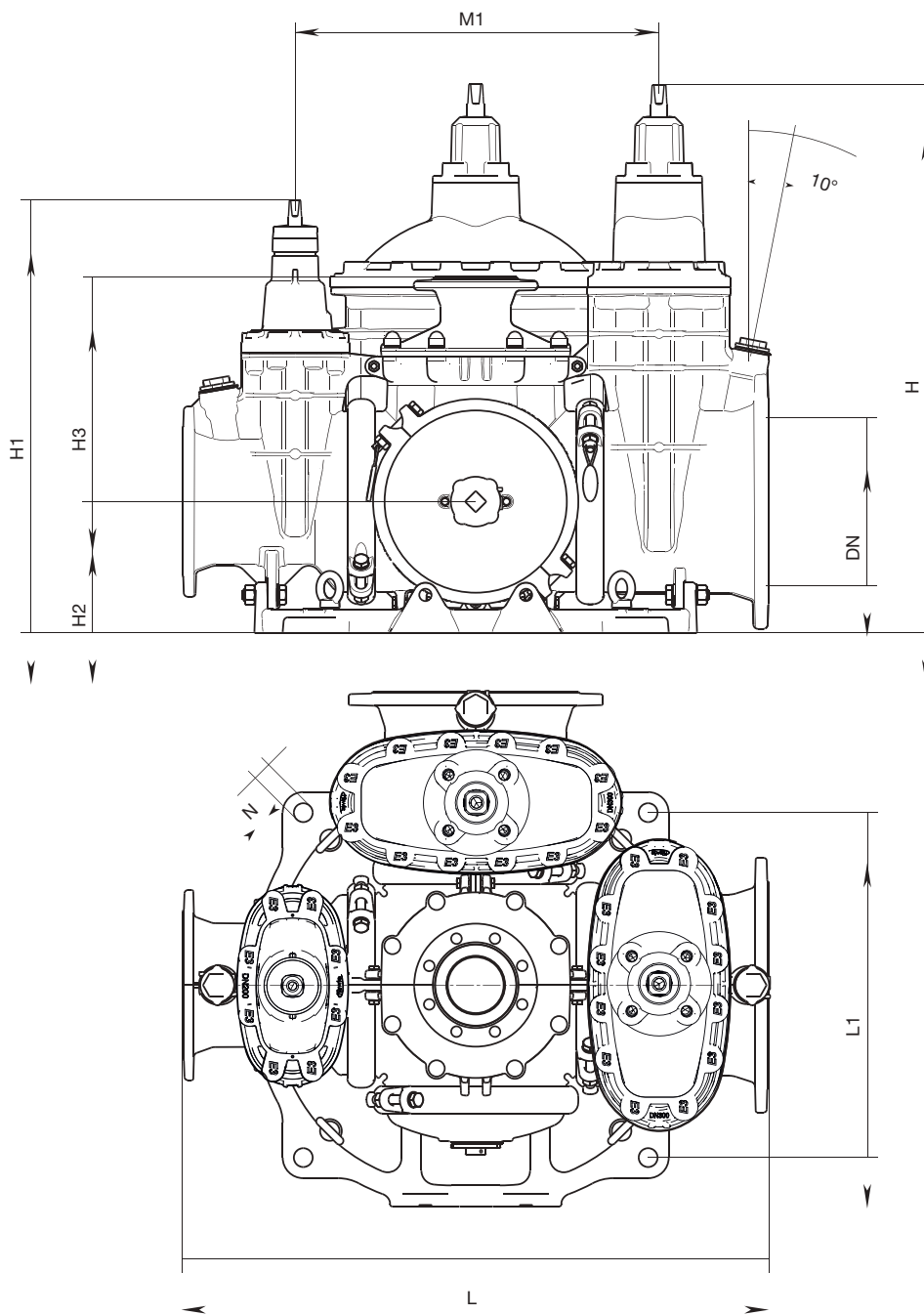
Order no.	Version	MOP (PN)	Dimensions / DN	Possible reduction / DN	Possible vertical outlet / DN	Weight min. - max.	
4420E3	Individually configurable	10	250	150	100	265 – 465	
				200			
		16	250	250	150		
				250			
		10	300	10	150	100	330 – 706
					200		
					250		
					300		
16	400	150					

Flange sized and drilled in accordance with EN 1092-2 standard PN 10. Please specify PN 16 when ordering. Standard version including operating cap (to be removed during operation using extension spindle or hand wheel!) Please use the HAWLE-COMBIFLEX order form. It can be found on our homepage.

E3 Hawle-Combiflex

DN 250 / DN 300, PN 10 | PN 16

No. 4420E3

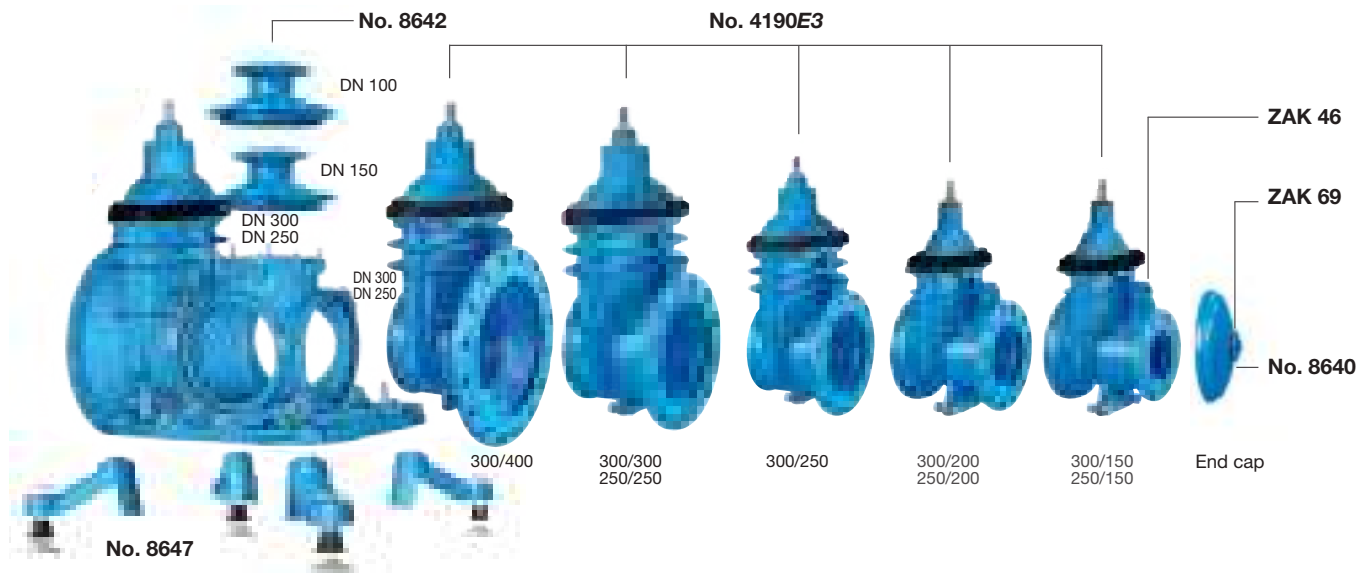


DN	Hawle-Combiflex									
	MOP (PN)	L*	L1	H	H1	H2	H3	DN	M1*	ØN
250	10	960	617	911	755	210	359	150	590	34
	16							200		
								250		
300	10	1050	617	1021	809	235	399	150	646	34
								200		
								250		
								300		
	16							400		

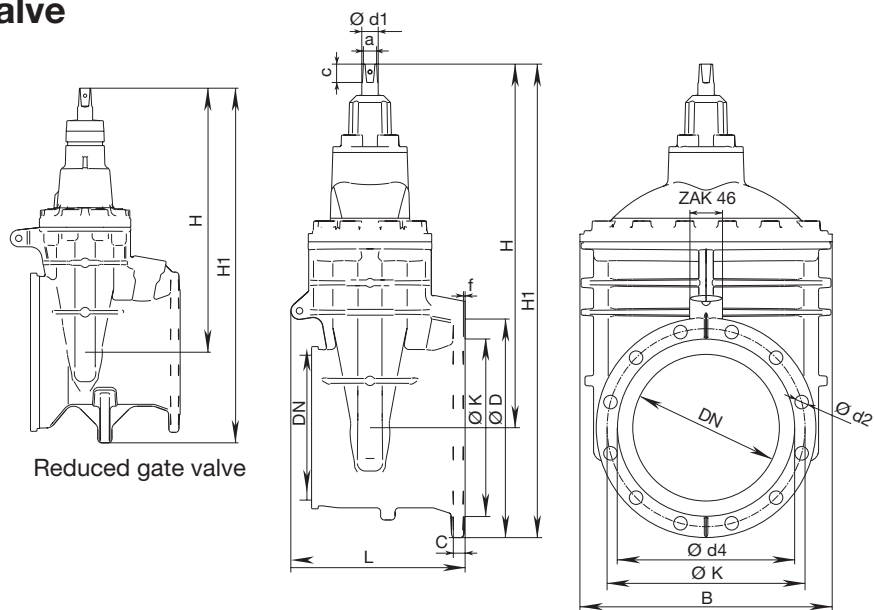
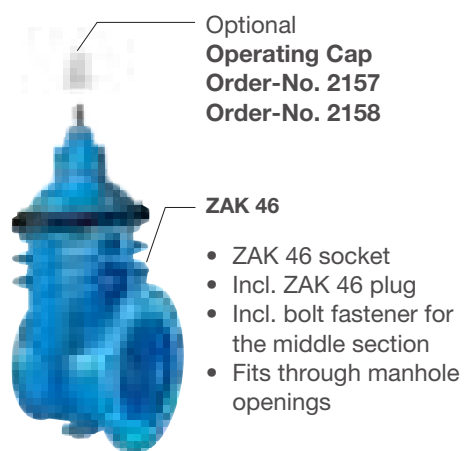
*The external dimensions (L, M1) remain the same with reducing valves!

E3 Hawle-Combiflex

Individual parts DN 250 / DN 300



Hawle-Combiflex E3 gate valve No. 4190E3

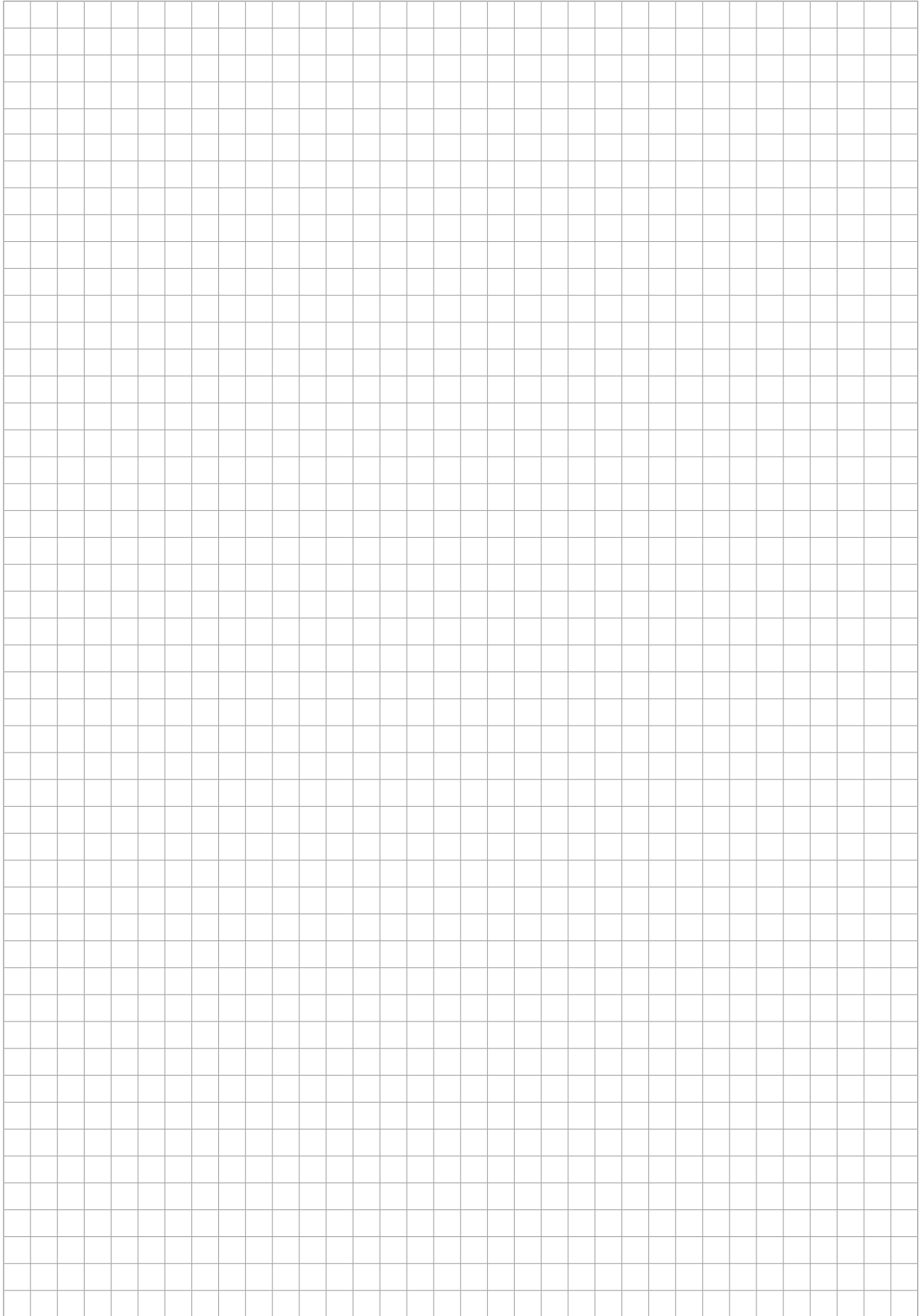


Hawle-Combiflex E3 gate valve																		
DN	Flange				Bolts			Spindle			Valve							
	DN	MOP (PN)	Ø D	C	Ø K	Qty.	Thread	Ø d2	a	c	Ø d1	Wedge DN	Service outlet	H	H1*	L*	B*	Weight
250	150	10 16	285	19	240	8	M20	23	24,3	48	32	200	ZAK 46	541	707	337	356	61,0
	200	10 16	340	20	295	8 12	M20	23	24,3	48	32	200		541	710	337	356	62,0
	250	10 16	400	22	350 355	12	M20 M24	23 28	27,3	48	34	250		649	850	337	438	89,0
300	150	10 16	285	19	240	8	M20	23	24,3	48	32	200		541	734	361	356	65,0
	200	10 16	340	20	295	8 12	M20	23	24,3	48	32	200		541	734	361	356	66,0
	250	10 16	400	22	350 355	12	M20 M24	23 28	27,3	48	34	250		649	850	361	438	93,0
	300	10 16	455	24,5	400 410	12	M20 M24	23 28	27,3	48	34	300	731	960	361	523	132,0	
400*	10 16	580	28	515 525	16	M24 M27	28 31	27,3	48	34	300	731	1030	361	523	146,0		

* Transport dimensions

*height adjustment necessary due to flange sheet

Notes



E3 Hawle-Combiflex

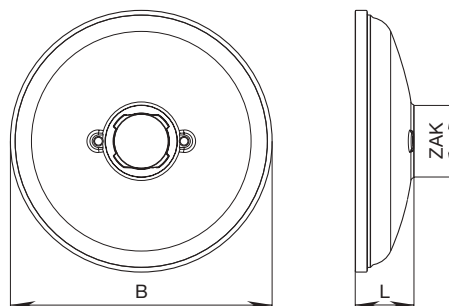
Individual parts DN 250 / DN 300



Hawle-Combiflex end cap No. 8640



- ZAK 69 socket

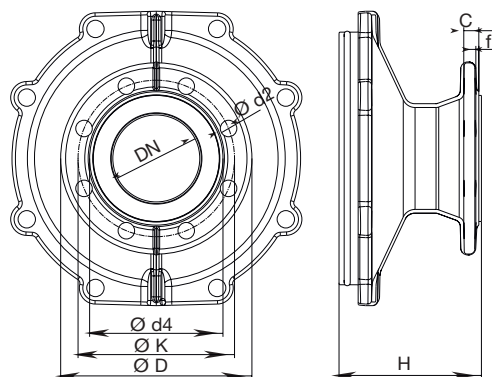


DN	Hawle-Combiflex end cap			
	B	ZAK-socket	L	Weight
250	284	ZAK 69	67	6,0
300	335	ZAK 69	77	7,5

Hawle-Combiflex vertical outlet No. 8642



- Incl. affixed elastomer flange gasket

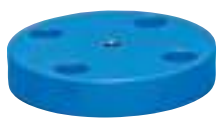


DN	Hawle-Combiflex vertical outlet											
	Flange							Bolts			Vertical outlet	
	DN MOP (PN)	Ø D	C	Ø K	Ø d4	f	Qty.	Thread	Ø d2	H	Weight	
250	100	10/16	220	19	180	153	3	8	M16	19	146	12,0
	150	10/16	285	19	240	209	3	8	M20	23	146	11,0
300	100	10/16	220	19	180	153	3	8	M16	19	160	13,0
	150	10/16	285	19	240	209	3	8	M20	23	160	13,0

Blanking cap No. 8570E2/E3



DN 150 – 200

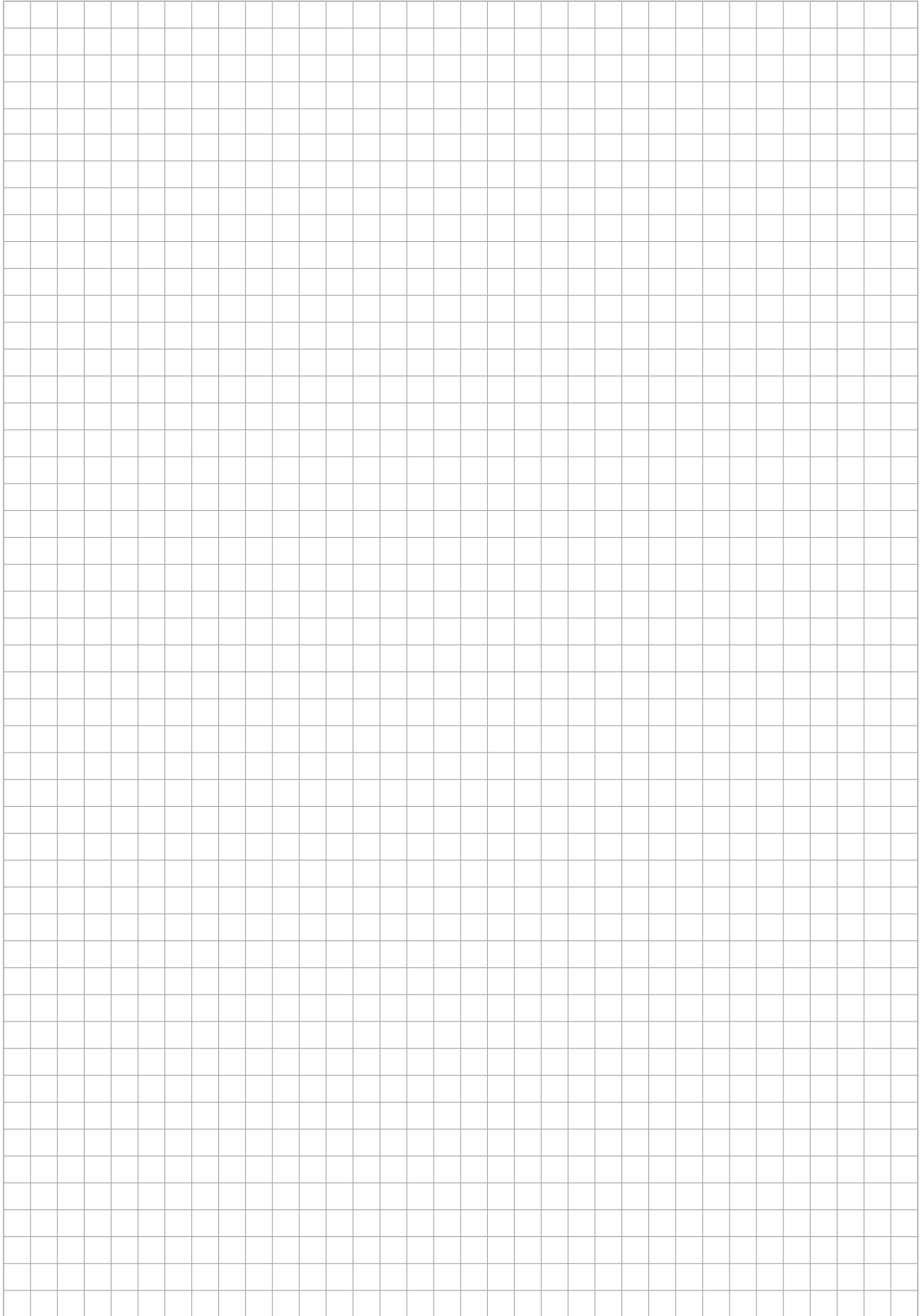


DN 250 – 300

Order No.	DN	Weight
8570E2/E3	150	3,2
	200	5,0
	250 – 300	5,0

- For combi valves in place of valve bonnet
- Made of ductile iron, epoxy powder coated without screws and hood seal

Notes

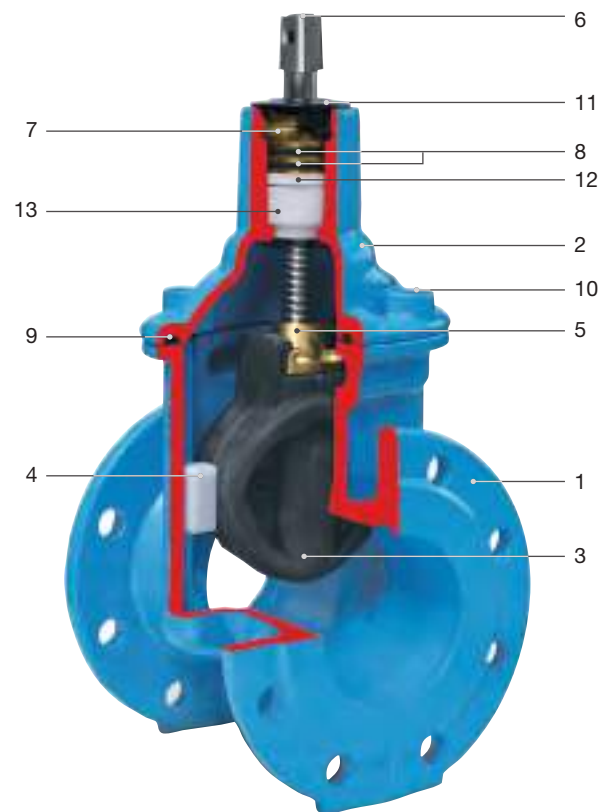


Hawle-E1+ gate valve

Overview

Design features

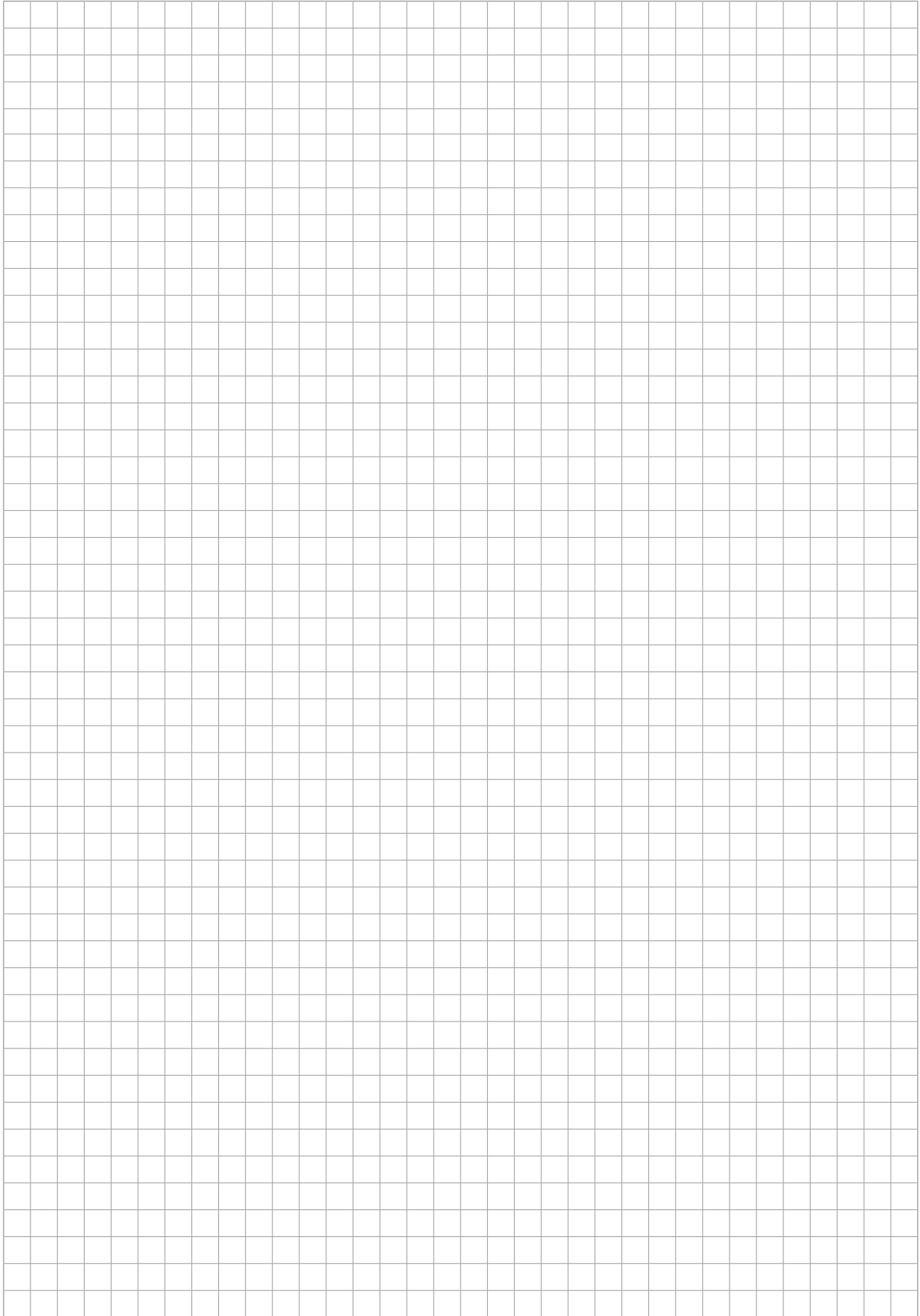
- Resilient seated gate valve according to EN 1074-1 and EN 1074-2 with smooth, straight bore
- Flanged valve, short face-to-face dimension
- Wedge guide with high glide characteristics; load-optimised design guarantees very low wear and closing torques
- Wedge nut resists high torque load due to its larger size with more than the required thread length
- Spindle bearing attached in bonnet by bayonet connection
- O-rings on all sides mounted in corrosion-proof material
- Friction washers guarantee smooth spindle guiding
- Suitable for underground installation
- Duplex stainless steel spindle



Material | Technical features

- 1,2 Body (1), bonnet (2) made of ductile iron, epoxy powder coated inside and out (see page 4)
- 3 Wedge made of ductile iron, fully rubberized with vulcanized elastomer inside and out
- 4 Wedge guide made of wear-resistant POM
- 5 Wedge nut made of brass
- 6 Duplex stainless steel spindle with rolled thread and polished O-ring slide faces, bearing made of POM
- 7 O-ring bush made of brass, attached in bonnet by bayonet connection, anti-rotation, multiple O-ring sealing
- 8 O-rings made of elastomer
- 9 Bonnet gasket made of elastomer
- 10 Allen screws corrosion protected by being encased into the body with an enclosing gasket and wax
- 11 Covering cap as dirt protection of the spindle bearing made of PE
- 12 Friction washer made of POM
- 13 Spindle bearing made of POM

Notes



Hawle-E1+ gate valve

With flange DN 50 – 300, PN 10 | PN 16

Design features

- Resilient seated gate valve with smooth, straight bore
- Flanges sized in accordance with EN 1092-2, drilled according to EN 1092-2 | PN 10 standard; EN 1092-2 | PN 16 for DN 200 Please specify on order - other standards on request
- Suitable for cleaning with a cleaning pig
- Short face-to-face length (EN 558 GR 14)
- Long face-to-face length (EN 558 GR 15)

No. 4000E1+
No. 4700E1+

Standard version: without handwheel and extension spindle (only suitable for manual actuation)

Special versions: on request



Suitable accessories

Suitable accessories: see page A 2/2

Handwheel:		No. 7800
Extension spindles:	rigid	No. 9000
	from DN 65	No. 9000A
	telescopic	No. 9500
	from DN 65	No. 9500A
Surface boxes:		No. 9500
	rigid	No. 1750
	telescopic	No. 2050
		No. 2051K
Base plate:		No. 3480, No. 3481
Operating cap:		No. 2156, No. 2157, No. 2158
Spindle extension:		No. 7820, No. 7825
Bolts:		No. 8810, No. 8830, No. 8840
HAWAK-pillar:		No. 9894
Flat gasket:		No. 3390, No. 3470

Application example



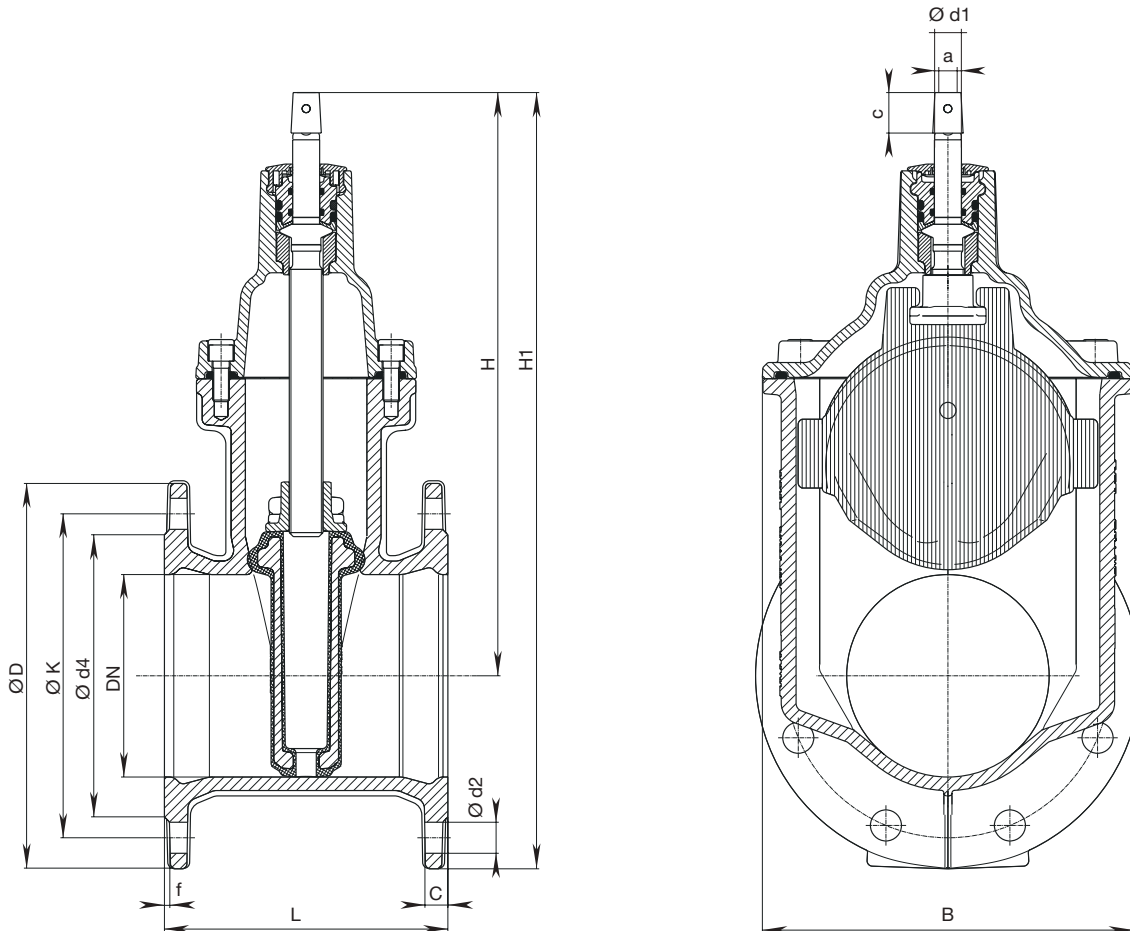
Order no.	Version	MOP (PN)	Dimensions/DN									
			50	65	80	100	125	150	200	250	300	
4000E1+	short EN 558-1 GR 14	10										
		16										
4700E1+	long EN 558-1 GR 15	10										
		16										

Hawle-E1+ gate valve

With flange DN 50 – 300, PN 10 | PN 16

No. 4000E1+

No. 4700E1+



DN	MOP (PN)	Flange					Bolts			Spindle			Valve				Weight		
		ØD	C	ØK	Ød4	f	Qty	Thread	Ød2	a	c	Ød1	H	H1	L		B	short	long
50	10	165	18	125	98	5	4	M 16	19	14,8	30	18	230	313	150	250	135	8,8	10,7
	16																		
65	10	185	18	145	118	5	4	M 16	19	17,3	30	20	298	390	170	270	172	13,5	16,9
	16																		
80	10	200	18	160	133	5	8	M 16	19	17,3	30	20	305	405	180	280	172	14,5	19,0
	16																		
100	10	220	18	180	153	5	8	M 16	19	19,3	30	20	339	449	190	300	203	18,5	25,2
	16																		
125	10	250	17	210	183	4	8	M 16	19	19,3	30	20	420	545	200	325	275	30,5	36,7
	16																		
150	10	285	17	240	209	4	8	M 20	23	19,3	30	20	432	575	210	350	275	34,0	42,9
	16																		
200	10	340	19,5	295	264	4,5	8	M 20	23	24,3	38	25	534	704	230	400	345	54,6	68,0
	16																	12	M 24
250	10	400	21,5	350	318	4,5	12	M 20	23	27,3	38	32	626	826	250	450	422	125,0	
	16																	12	M 24
300	10	455	24	400	371	5,5	12	M 20	23	27,3	38	32	709	937	270	500	506	125,0	
	16																	12	M 24

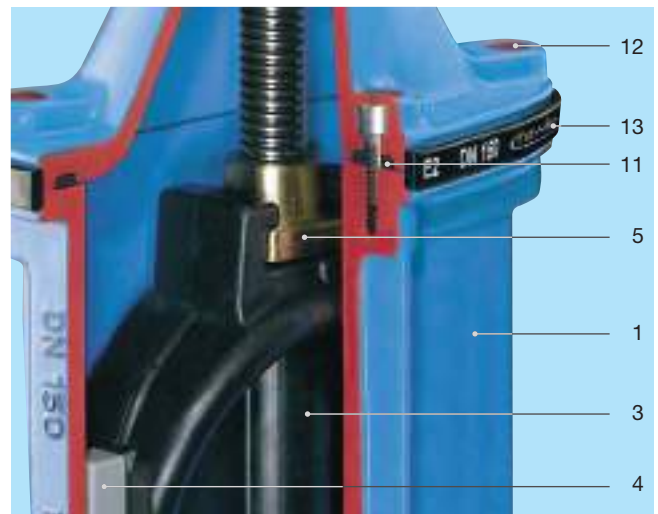
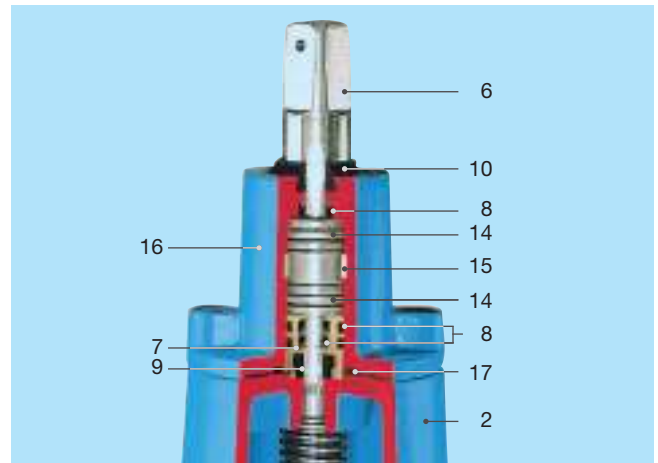
E2 Gate Valve

Overview

Design features

- Resilient seated gate valve according to EN 1171, EN 1074-1 and EN 1074-2 with smooth straight-through bore
- Flange valve
- Wedge guide with high glide characteristics; load-optimised design guarantees lowest wear and minimum closing torques
- Wedge nut allows high torque load through large dimensioning of the required thread length
- O-rings, lip seals mounted in rust-proof material on all sides, can be replaced in depressurised state
- Edge protection protects during transport and storage
- Roller bearings guarantee low friction mounting of the spindle
- 100% suitable for underground installation

DN 450 – 600 Spindle bearing on ball bearing



Material | Technical features

- 1, 2, Body (1), bonnet (2), centering flange (16)
- 16 made of ductile iron, epoxy powder coated inside and out (see page 5)
- 3 Wedge made of ductile iron, inside and out with vulcanized elastomer
- 4 Wedge guide made of wear-resistant plastic
- 5 Wedge nut made of dezincification-resistant brass
- 6 Duplex stainless steel spindle with rolled thread and flat-rolled sealed sliding surface
- 7 O-ring bush made of brass
- 8 O-rings, lip seals made of elastomer
- 9 Back seal made of elastomer
- 10 Wiper ring made of elastomer
- 11 Bonnet gasket made of elastomer
- 12 Allen screws encased into the body with an enclosing gasket and wax, ensuring full corrosion protection
- 13 Edge protection made of PE
- 14 Ball bearing permanently lubricated
- 15 Centering ring made of POM
- 17 Centering flange gasket made of elastomer

E2 Gate valve

With flange DN 450 – 600, PN 10 | PN 16

Accessories

Handwheels	Page M 4/1
Extension spindles	Page M 2/1
Surface boxes	Page M 3/1
Base plate	Page M 3/7
Adapter and coupling socket	Page M 4/3
Operating cap	Page M 4/1
Spindle extension	Page M 4/1
Actuator	Page M 4/3
Position indicator	Page M 4/2
Bolts	Page M 4/4
HAWAK-pillar	Page M 5/1
Flat gaskets	Page M 7/1
Blanking cap	Page M 4/1
Flanges	Page C 4/1
Dismantling pieces	Page D 6/1

Spare parts

Valve bonnet	Page P 2/1
Valve wedge	Page P 2/1
Valve bonnet flat gasket	Page P 2/2

Tools

Operating key	Page Q 4/2
---------------	------------

Technical information

Tightening torques for flange assembly	Page R 3/1
Pressure loss diagram	Page R 4/1
Spindle rotations per stroke	Page R 1/2

Application examples



E2 Gate valve

With flange DN 450 – 600, PN 10 | PN 16

Design features

- Resilient seated gate valve with smooth straight-through bore
- Flanges sized in accordance with EN 1092-2, drilled according to
EN 1092-2 | PN 10 standard 4000E2, 4700E2;
EN 1092-2 | PN 16 4000E2, 4700E2

Please specify on order - other standards on request

- Suitable for cleaning with a cleaning pig
- Suitable for operation by automatic actuators
- O-rings replaceable without pressure
- Ball bearings in the spindle seating minimizes closing forces
- Easy to actuate without bypass and without power boost - even for 16 bar differential pressure
- For the assembling of a position indicator it is necessary to remove the centering flange and mount the adapter for position indicator

Standard version: without handwheel and extension spindle

Design versions: for actuator: No. 4000ELE2
with position indicator: No. 4000STE2
for seawater: No. 4002E2,
No. 4702E2

Special versions: on request

- Bevel gearing
- for DN 500/DN 600 - version with bypass (DN 50) available
- Ventilation and exhausting;
small amounts of air in the bonnet

No. 4000E2

No. 4700E2



Order no.	Version	MOP (PN)	Dimensions/DN			
			450*	500*	500	600
4000E2	short	16				
	EN 558 GR 14					
4700E2	long	16				
	EN 558 GR 15					

* Body: DN 400 - flange connection: DN 450 or 500

Suitable accessories: see page A 11/2

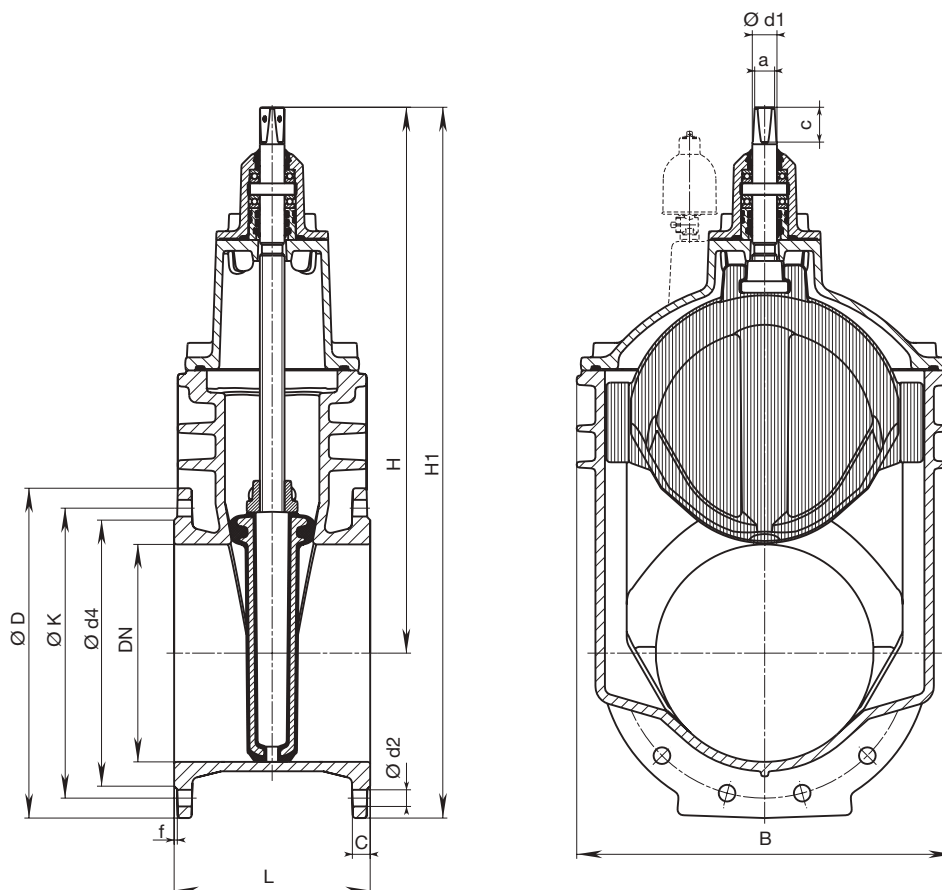
Handwheel: No. 7800
 Extension spindles: rigid No. 9000E2
 telescopic No. 9500E2
 Surface boxes: rigid No. 1750
 telescopic No. 2050
 No. 2051K
 Valve actuator: No. 9920
 Adapter for actuator (E2 adapter): No. 8630E2
 Base plate: No. 3481, No. 3482
 Operating cap: No. 2156, No. 2157, No. 2158
 Extension spindle: No. 7820, No. 7825
 Bolts: No. 8810, No. 8830, No. 8840
 HAWAK-pillar: No. 9894, No. 9895
 Flat gasket: No. 3390, No. 3470

E2 Gate valve

With flange DN 450 – 600, PN 10 | PN 16

No. 4000E2

No. 4700E2



DN	MOP (PN)	Flange					Bolts			Spindle			Valve				Weight		
		Ø D	C	Ø K	Ø d4	f	Qty.	Thread	Ø d2	a	c	Ø d1	H	H1	L short	L long	B	short	long
450*	10	640	30	565	530	4	20	M 24	28	32,3	55	44	974	1310	650	687			332,0
	585			M 27				31											
500*	10	715	31,5	620	582	4	20	M 24	28	32,3	55	44	974	1345	700	687			371,0
	650			M 30				34											
500	10	715	31,5	620	582	4	20	M 24	28	36,3	66	50	1220	1578	350	700	800	488,0	542,0
	650			M 30				34											
600	10	840	36	725	720	5	20	M 27	31	36,3	66	50	1377	1797	390	800	944	720,0	789,0
	770			M 33				37											

* Body: DN 400 - flange connection: DN 450 or 500

**Page
B 2**

Double eccentric butterfly valve

Hawle butterfly valve

Page B 2/3



**Page
B 3**

Non return valves

Without lever and counterweight

Page B 3/1



Butterfly valves

Accessories

Actuator		Page M 4/3
Bolts		Page M 4/4
Flat gaskets		Page M 7/1
Dismantling Joints		Page D 6/1

Adapter extension spindle E2	No. 9211	Page B 2/3
Adapter square cap	No. 2161	Page B 2/3

Technical information

Tightening torques for flange assembly	Page R 3/1
--	------------

Application example

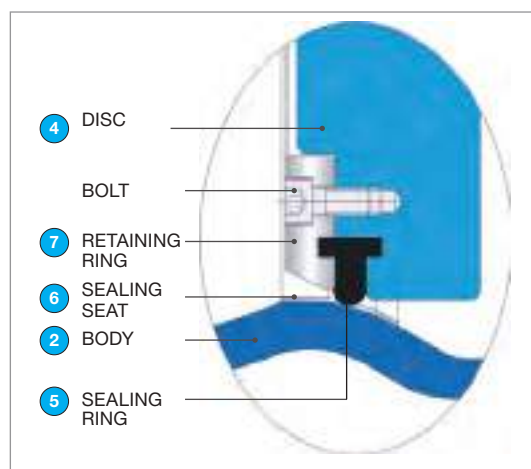
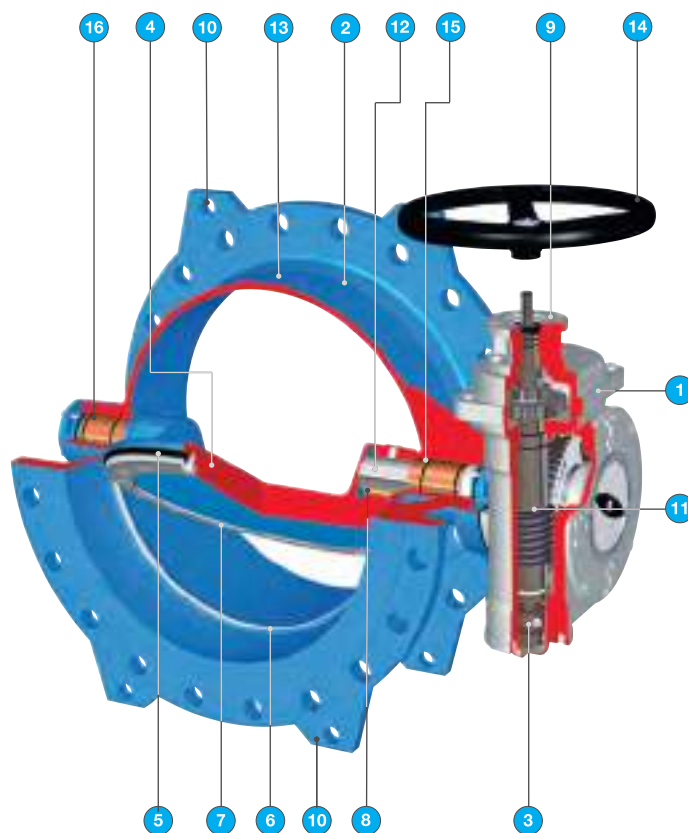


Butterfly valves

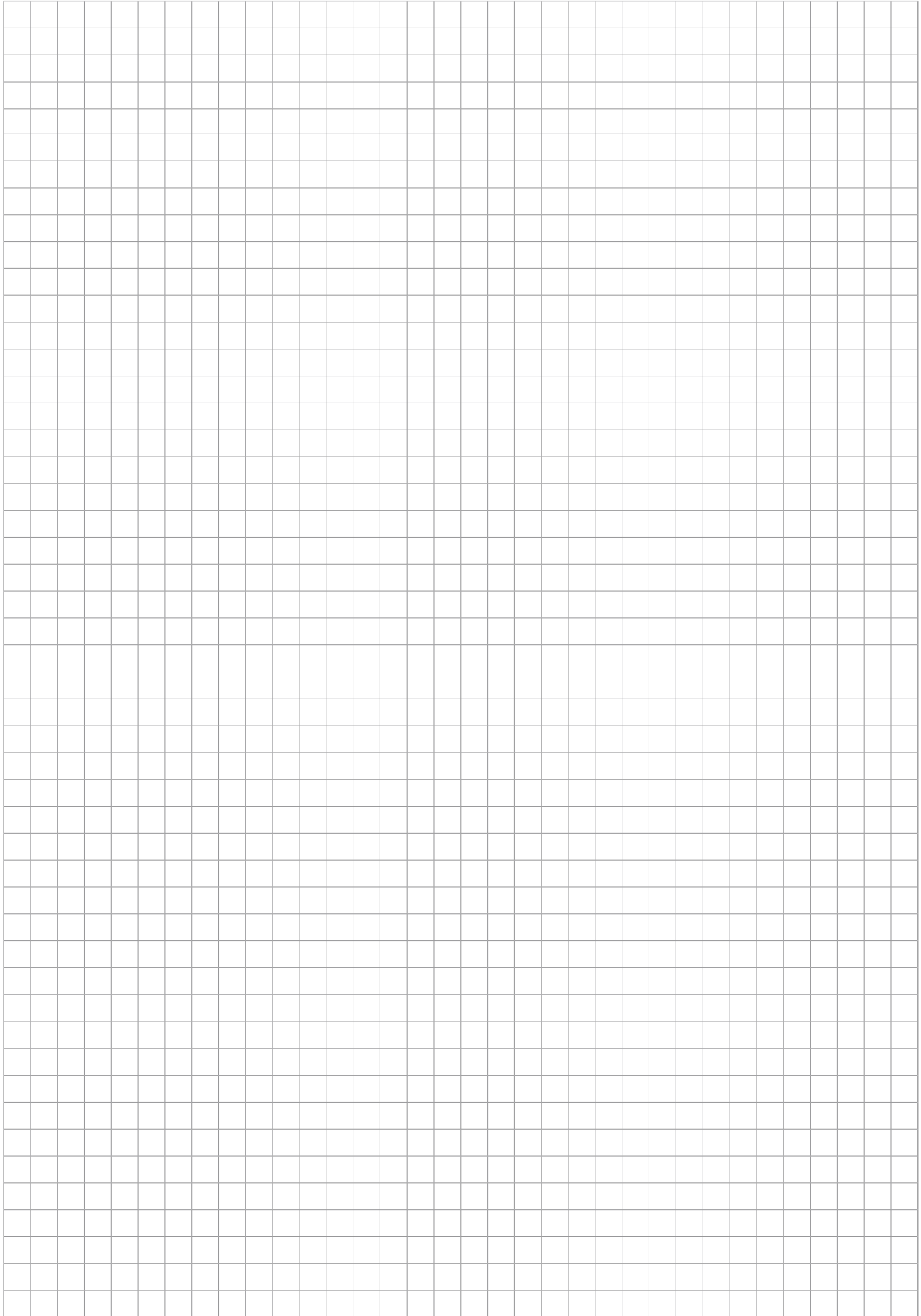
Double eccentric DN 150 – 1400

Design features

- 1 **Butterfly valve and gearbox**
Standard butterfly valve is suitable for either buried installations or chamber installations
- 2 **Body**
Streamlined design and smooth finish of the body provides minimum resistance to flow
- 3 **Travelling nut**
Bottom end of the worm shaft is threaded and a travelling nut moves up and down on this threaded spindle. When operating the gear (valve) in "open" or "close" direction, the travelling nut also moves towards the corresponding end stop and safe guards the correct travel of the valve disc to fully closed position
- 4 **Disc lenght**
Streamlined and low profiled disc including closed hubs ensures higher Kv values. Double offset disc design reduces seal wear and torque
- 5 **Sealing system**
Sealing on seat face is ensured by an endless T-profile resilient sealing ring which is held on the periphery of the disc by a retaining ring. In closed position the sealing ring is pressed against the conically shaped seat face of the body and **provides safe sealing in either direction of flow**. In opened position the sealing ring is completely unstressed due to the double eccentric disc design
- 6 **Body seat**
Stainless steel weld filled and finished integral body seat enables a corrosion and erosion resistant seat face. With this special type of seating it is possible to manufacture the valve drop tight
- 7 **Retaining ring**
The one piece retaining ring prevents sealing ring from rolling out. Sealing ring can be replaced easily at site without dismantling the valve disc and without requirement of any special tool
- 8 **Shaft connection**
Positive disc to shaft connection by use of key
- 9 **Connection flange for actuator**
All butterfly valves are provided with standard flanges according to EN ISO 5210 for installation of actuators
- 10 **Lifting holes and feet**
Integral lifting holes provide easy installation and the feet provides strong ground support
- 11 **Worm gear operators**
The drive is designed so that the disk can be actuated by just one operator with little force
- 12 **Shafts**
Split shaft guarantees maximum restriction to flow
- 13 **Unique tracking number**
Every valve is equipped with a cast tracking number for easy traceability and identification
- 14 **Handwheel**
Every valve is equipped with a handwheel (standard version)
- 15 **Shaft sealing**
Multiple O-ring shaft sealing system guarantees maintenance free sealing
- 16 **Bearing system**
Self lubricating plain bearings reduce shaft friction and operating torque. These bearings keep the shaft centralised and prevent axial movement



Notes



Hawle butterfly valve

Double eccentric, DN 150 – 1400, PN 10 | PN 16

Design features

- Standard version including actuation device: Wormgearbox and handwheel
- Protection class IP 68
- Applicable for below ground installation, simple assembly of the extension spindle
- Applicable for actuator
- Face-to-face dimension according EN 558 – 1 SERIES 14
- Flange connection dimensions according to EN 1092-2
- Pressure rating PN 10 | PN 16

Material | Technical features

- 1 **Sealing seat** made of stainless steel welded and microfinished
 - 2 **Body and disk** made of ductile iron, epoxy powder coated inside and out
 - 3 **Sealing rings** made of elastomer
 - 4 **Retaining ring** made of stainless steel
- **Shafts** made of stainless steel
 - **All connections** made of stainless steel
 - **Bearings** made of bronze
 - **Handwheel** made of cast iron, epoxy powder coated

Suitable accessories

Suitable accessories:

- Adapter extension spindle **E2/E3**, DN 200: No. 9211
- Adapter square cap: No. 2161
- Actuator: No. 9920
- Flat gasket: No. 3390
- Dismantling piece: No. 9810



Adapter for extension spindle **E2/E3**
(underground installation), DN 200

No. 9211



Square cap

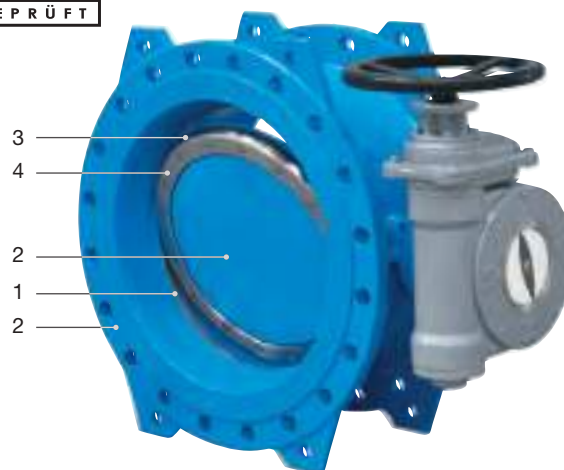
No. 2161



Actuator

No. 9920

No. 9881K



Order No.	MOP (PN)	Dimension/DN																
		150	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200	1400	
9881K	10																	*
	16																	*

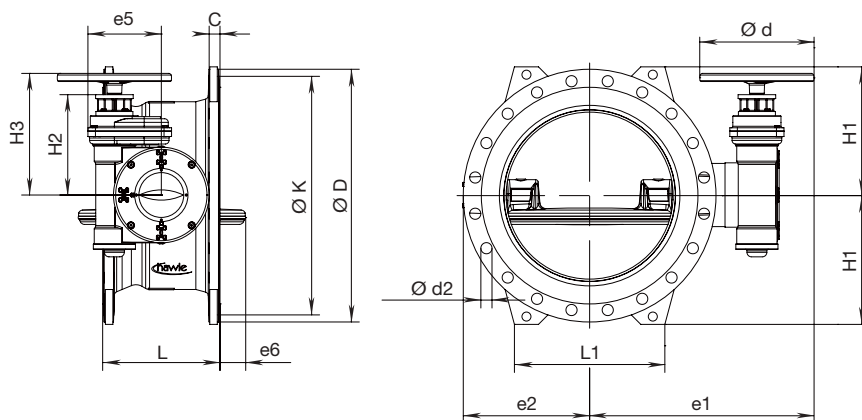
* Without ÖVGW (Austrian Association for Gas and Water) certificate.

Application example



Hawle butterfly valve

Double eccentric, DN 150 – 1400, PN 10 | PN 16



No. 9881K

Pressure rating PN 10

DN	MOP (PN)	L Serie 14	L1	e1	e2	e5	e6	Ø d	Ø D	Ø K	C	Bolts		H1	H2	H3	Turns to open/close	Weight
												Qty.	Ø d2					
150	10	210	190	378	151	134	0	245	285	240	19,0	8	23	143	145	212	11,25	45
200		230	180	405	177	134	0	245	340	295	20,0	8	23	180	145	212	11,25	60
250		250	220	481	214	158	5	245	405	350	22,0	12	23	213	165	239	10	95
300		270	280	503	237	158	11	245	460	400	24,5	12	23	242	165	239	10	115
350		290	320	595	283	175	28	370	505	460	24,5	16	23	264	186	271	12,5	155
400		310	335	626	297	175	43	370	565	515	24,5	16	28	293	186	271	12,5	165
450		330	380	670	333	198	57	370	615	565	25,5	20	28	320	287	372	36,25	220
500		350	400	701	344	244	67	370	670	620	26,5	20	28	345	336	420	43,5	285
600		390	440	749	414	244	98	370	780	725	30,0	20	31	400	336	420	43,5	350
700		430	540	838	511	313	126	370	895	840	32,5	24	31	460	399	484	104	575
800		470	610	855	530	313	153	370	1015	950	35,0	24	34	520	399	484	104	680
900		510	670	965	618	365	181	370	1115	1050	37,5	28	34	568	435	519	192,5	980
1000		550	740	1039	650	365	206	370	1230	1160	40,0	28	37	625	435	519	192,5	1155
1100		590	750	1022	720	365	237	370	1355	1270	53,5	32	37	695	435	519	192,5	1558
1200	630	900	1251	782	515	264	485	1455	1380	45,0	32	41	738	576	625	362,5	1965	
1400	710	1160	1349	917	515	323	485	1675	1500	46,0	36	44	848	538	625	362,5	2690	

No. 9881K

Pressure rating PN 16

DN	MOP (PN)	L Serie 14	L1	e1	e2	e5	e6	Ø d	Ø D	Ø K	C	Bolts		H1	H2	H3	Turns to open/close	Weight
												Qty.	Ø d2					
150	16	210	190	378	151	134	0	245	285	240	19,0	8	23	143	145	212	11,25	45
200		230	180	405	177	134	0	245	340	295	20,0	12	23	180	145	212	11,25	60
250		250	220	481	214	158	6	245	405	355	22,0	12	28	213	165	239	10	95
300		270	280	503	237	158	11	245	460	410	24,5	12	28	242	165	239	10	115
350		290	320	595	283	175	28	370	520	470	26,5	16	28	272	186	271	12,5	162
400		310	335	626	297	198	43	370	580	525	28,0	16	31	300	287	372	36,25	204
450		330	380	670	333	198	57	370	640	585	30,0	20	31	330	287	372	36,25	240
500		350	400	721	344	244	67	370	715	650	31,5	20	34	370	336	420	43,5	325
600		390	500	779	414	244	98	370	840	770	36,0	20	37	432	336	420	43,5	435
700		430	540	838	511	313	126	370	910	840	39,5	24	37	467	399	484	104	610
800		470	615	928	530	313	153	370	1025	950	43,0	24	41	525	399	484	104	780
900		510	675	1007	618	365	181	370	1125	1050	46,5	28	41	573	435	519	192,5	1065
1000		550	740	1039	650	365	206	370	1255	1170	50,0	28	44	638	435	519	192,5	1320
1100		590	750	1091	720	365	237	370	1355	1270	53,5	32	44	696	435	519	192,5	1558
1200	630	900	1251	782	515	264	485	1485	1390	57,0	32	50	753	576	625	362,5	2375	
1400	710	1160	1349	917	515	323	485	1685	1590	60,0	36	50	848	538	625	362,5	2870	

Check valves

Without/with lever and counterweight, PN 10 | PN 16

Design features

- Reliable prevention of medium back flow by automatic mechanical closing of the non-return valve.
- The disc opens automatically, if the medium flows in the direction indicated by the arrow on the valve body.
- Face-to-face dimensions according to EN 558-1 GR 48
- Flanges sized in accordance with EN 1092-2, drilled according to EN 1092-2 | PN 10 standard; EN 1092-2 | PN 16 from DN 200 Please specify on order; other standards on request
- **No. 9831:**
 - Reduced weight, simple cleaning, fully corrosion free, optimised velocity, simple maintenance
 - Min. opening pressure 0,03 bar
 - Min. closing pressure 0,5 bar (tight)
- **No. 9830:**
 - Min. opening pressure 0,03 bar
 - Min. closing pressure 0,1 bar (tight)
- **No. 9820:**
 - With lever and counterweight
 - Min. opening pressure 0,03 bar
 - Min. closing pressure 0,1 bar (tight)

Material | Technical features

- **Body**
No. 9831: ductile iron, epoxy powder coated
No. 9830/9820: grey iron, epoxy powder coated
- **Disc/disc lever**
No. 9831: elastomer/polyamide
No. 9830/9820: grey iron, epoxy powder coated
- **Bolts/nuts**
No. 9831: stainless steel
No. 9830/9820: stainless steel
- **Disc gasket**
No. 9831: elastomer
No. 9830/9820: Klingerit
- **Shaft**
No. 9831: polyamide
No. 9830/9820: stainless steel
- **Bolts**
No. 9830/9820: stainless steel
- **Gasket**
No. 9830/9820: elastomer
- **Lever and counterweight**
9820: grey iron, epoxy powder coated

Installation advice

- In general non-return valves are designed to be installed in horizontal pipe lines. An installation in sloping and vertical pipe lines is possible if the flow of the medium is upwards.
- Direction of flow has to be according to the arrow indicated on the body. Axle of the disc shaft has to be fully horizontal.

Check valves

Without lever and counterweight

No. 9831



No. 9830



No. 9820

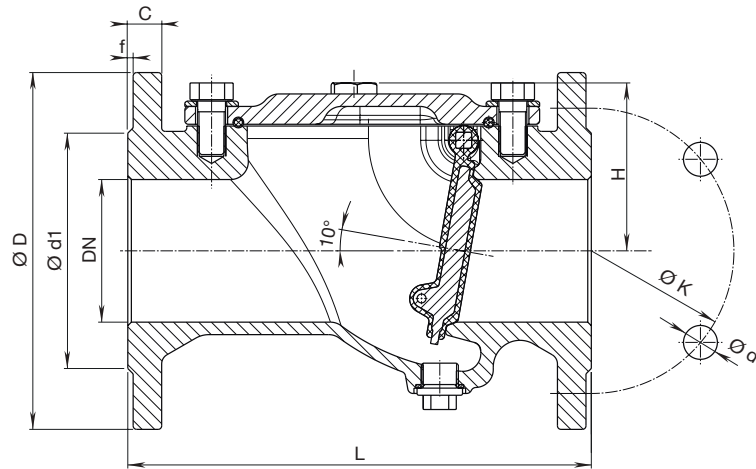
With lever and counterweight (without illustration)

Order No.	Version	MOP (PN)	Dimension/DN												
			40	50	65	80	100	125	150	200	250	300			
9831	Without lever and counterweight	16													
9830															
9820	With lever and counterweight														

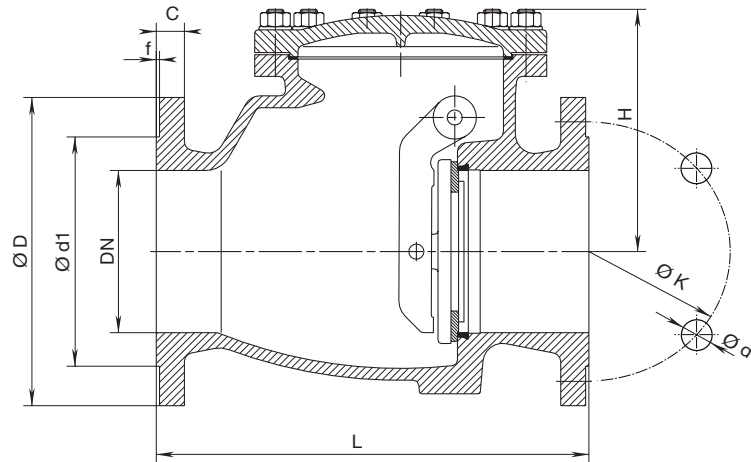
Check Valves

Without/with lever and counterweight, PN 10 | PN 16

No. 9831



No. 9830



No. 9820 with lever and counterweight (without illustration)

DN	MOP (PN)	L	H	ØD	Ød1	ØK	Ød	f	C	Bolts		Kv m³/h	Weight 9831/9830
										Qty.	Ød2		
40	16	180	119	150	88	110	19	3	18	4	16	60	9,0
50		200	77	165	102	125	19	3	19	4	16	126	9,5
65		240	141	185	122	145	19	3	20	4	16	163	15,0
80		260	95	200	138	160	19	3	19	8	16	271	14,5
100		300	113	220	158	180	19	3	19	8	16	517	22,0
125		350	199	250	188	210	19	3	26	8	16	588	46,0
150		400	155	285	212	240	23	3	19	8	20	1028	45,0
200	10	500	187	340	268	295	23	3	20	8	20	1103	82,0
	12									20			
250	10	600	337	405	320	350	23	3	32	12	20	180,0	
	16					355				27	12		24
300	10	700	374	460	378	400	23	4	32	12	20	270,0	
	16					410				27	12		24

<p>Page C 2</p>	<p>Flange connections For PE pipes, restraint <i>Synoflex flange</i> <i>System 2000 flange</i></p>	<p>Page C 2/1 Page E 4/1 Page F 4/1</p>	
<p>Page C 3</p>	<p>Flange connections For PVC pipes For AC pipes <i>Synoflex flange</i> <i>System 2000 flange</i></p>	<p>Page C 3/1 Page C 3/2 Page E 4/1 Page F 4/1</p>	
<p>Page C 4</p>	<p>Flange connections For ductile iron pipes, standard, restraint <i>Synoflex flange</i></p>	<p>Page C 4/1 Page E 4/1</p>	
<p>Page C 5</p>	<p>Flange connections For steel pipes, standard, restraint Transition flange <i>Synoflex flange</i></p>	<p>Page C 5/1 Page C 5/2 Page E 4/1</p>	
<p>Page C 6</p>	<p>Threaded, blank flange <i>Flange with ZAK-Socket</i> XR reducing flange</p>	<p>Page C 6/1 Page L 5/1 Page C 6/2</p>	
<p>Page C 7</p>	<p>Restraint systems For PVC pipes Split collar For PE and PVC pipes</p>	<p>Page C 7/1 Page C 7/2</p>	

Flange connections

Accessories

Bolts	Page M 4/4
Washers	Page M 4/4
Screw insulation	Page M 4/4
Flat gasket	Page M 7/1

Spare parts

Gasket	Page P 3/2
Grp ring	Page P 4/1
O-ring	Page P 4/1
	Page P 4/2

Technical information

Tightening torques for flange assembly	Page R 3/1
--	------------

Flange connections

For PE pipes, restraint, PN 10 | PN 16

Design features

- For PE pipes according to EN 12201, DIN 8074
- Flange sized in accordance with EN 1092-2, drilled in accordance with EN 1092-2 | PN 10 standard; PN 16 for DN 200 please specify on order - other standards on request

No. 0310 / 0311:

- Flange adapter with PE fusion tail
- In a flange with a combined push-screw socket, a PE fusion socket is inserted from factory
- High performance sealing of the PE tail is assured by two separate seals and a stainless steel support liner within the tail
- The fusion of the valve in the PE line can take place through butt fusion or electrofusion socket; twisting is not permissible after fusion of the valve

No. 5500 / 5530:

- Flange with ISO pipe socket
- The sealing and hold function acts exclusively on the external diameter of the pipe
- Corresponding to the line pressure and/or mechanical tensile forces, the seal and grip ring are pressed into the conical chamber, which increases its effectiveness
- Assembly instructions see Page K 3/2

Material | Technical features

- **Flange** made of ductile iron, epoxy powder coated
- **Fusion tail** made of PE 100-RC
- **Support liners** made of stainless steel (No. 0310, No. 0311)
- **Seals** made of elastomer
- **Grip ring** made of POM

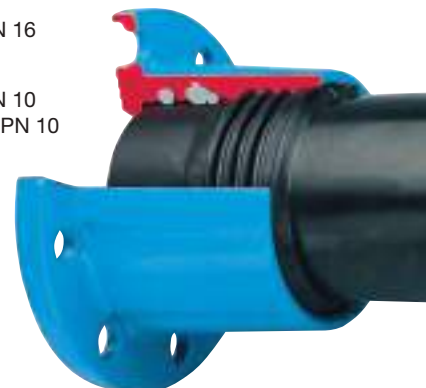
Flange adapter with PE fusion tail

No. 0310

PE 100-RC / SDR 11 - PN 16

No. 0311

PE 100-RC / SDR 17 - PN 10
(PE 100-RC / SDR 17,6 - PN 10 on request)



ISO pipe flange adapter

No. 5500

equal

No. 5530

reducing

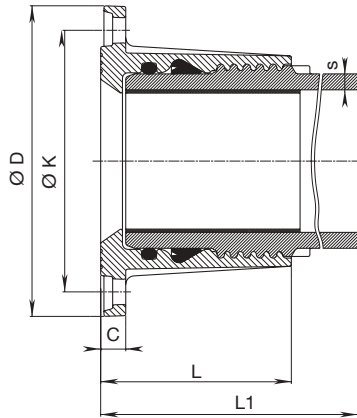


Order No.	Version	MOP (PN)	Flange DN / Ø pipe																	
			40 32	40 40	40 50	50 50	50 63	60 63	60 75	65 63	65 75	80 75	80 90	100 90	100 110	100 125	150 160	150 180	200 200	200 225
0310	Flange with PE fusion tail	16																		
0311		10																		
5500	ISO pipe flange, equal	16																		
5530	ISO pipe flange, reducing																			

Flange connections

For PE pipes, restraint, PN 10 | PN 16

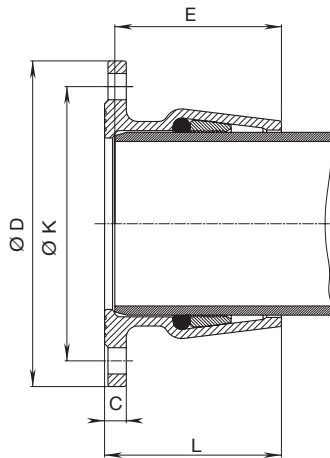
No. 0310 / 0311



Flange DN	Ø Pipe	ØD	ØK	C	L	L1	s		Bolts		Weight
							SDR 17	SDR 11	Quantity	Thread	
50	63	165	125	19	106	291		5,8	4	M 16	4,0
80	90	200	160	20	125	305	5,1	8,2	8	M 16	6,7
100	110	220	180	21	142	327	6,3	10,0	8	M 16	9,3
100	125	220	180	19	190	373		11,4	8	M 16	12,4
150	160	285	240	23	175	358	9,1	14,6	8	M 20	16,0
150	180	285	240	20	260	437	10,2	16,4	8	M 20	23,0
200	200	340	295	20	210	403		18,3	8	M 20	28,0
200	225	340	295	20	210	403	12,8	20,5	8	M 20	28,0

(PE 100-RC / SDR 17,6 - PN 10 on request)

No. 5500



Flange DN	Ø Pipe	ØD	ØK	C	L	E	Bolts		Weight
							Quantity	Thread	
40	50	150	112	23	97	93	4	M 16	2,5
50	63	165	125	23	94	80	4	M 16	3,2
60	75	175	138	24	105	100	4	M 16	3,9
65	75	185	145	24	105	99	4	M 16	4,0
80	90	200	160	24	101	96	8	M 16	4,2
100	110	220	180	25	124	119	8	M 16	6,7

No. 5530

Flange DN	Ø Pipe	ØD	ØK	C	L	E	Bolts		Weight
							Quantity	Thread	
40	32	150	110	19	66	62	4	M 16	1,7
40	40	150	110	21	85	80	4	M 16	2,4
50	50	165	125	23	97	93	4	M 16	3,0
60	63	175	135	24	94	90	4	M 16	3,6
65	63	185	145	24	94	90	4	M 16	4,2
80	75	200	160	24	105	100	8	M 16	5,0
100	90	220	180	25	101	96	8	M 16	5,9

Flange connections

For PVC pipes, PN 16

Design features

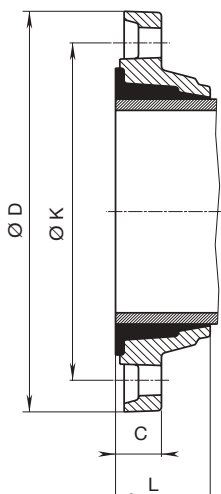
- For PVC pipes according to EN ISO 1452-2
- Flange sized according to EN 1092-2 and drilled in accordance with EN 1092-2 PN 10 standard; PN 16 for DN 200 to DN 400 please specify on order - other standards on request
- The resilience of the connection prevents tension in the pipe and minimises the danger of breakage

Assembly instructions

- Cut the pipe end straight, do not chamfer or moisten - push the flange onto the pipe and then push the gasket on

Material | Technical features

- **Flange** made of ductile iron, epoxy powder coated
- **Sleeve gasket** made of elastomer



Double chamber flange adapter No. 5600



Order No.	MOP (PN)	Flange DN / Ø Pipe									
		50	60	65	80	100	125	125	150	200	300
		63	63	75	90	110	125	140	160	225	315
5600	16									*1	*

Explanation:

* also available in PN 16

¹ Flange with an extended hole circle are not suitable for use with fixed studs!

Flange DN	Ø Pipe	Ø D	Ø K	C	L	Bolts		Weight
						Qty.	Thread	
50	63	165	125	24	54	4	M 16	2,0
60	63	175	135	24	54	4	M 16	2,6
65	75	185	145	24	54	4	M 16	2,7
80	90	200	160	25	60	8	M 16	3,2
100	110	220	180	26	62	8	M 16	4,1
125	125	250	210	28	66	8	M 16	5,8
125	140	250	210	28	66	8	M 16	5,0
150	160	285	240	29	66	8	M 20	5,6
200	225	345	300	29	93	8	M20	7,9
300	315	445	400	33	117	12	M 20	15,8

Flange connections

For AC pipes, PN 16

Design features

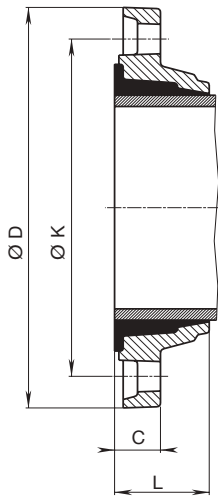
- For asbestos cement pipes
- Flange sized and drilled according to EN 1092-2 | PN16
- The long draw of the fitting and the double chambered gasket result in the pressure being spread well back from the pipe end
- The resilience of the connection prevents tension in the pipe and minimises the danger of breakage

Assembly instructions

- Cut the pipe end straight, do not chamfer or moisten - push the flange onto the pipe and then push the gasket on

Material | Technical features

- **Flange** made of ductile iron, epoxy powder coated
- **Sleeve gasket** made of elastomer



Double chamber flange adapter No. 7103



Order No.	MOP (PN)	Flange DN / Ø Pipe			
		80 98	100 120	150 174	150 178
7103	16	x	+		+

Explanation: + also available DIN 1882, x see page C 4/1

Flange DN	Ø Pipe	Ø D	Ø K	C	L	Bolts		Weight
						Quantity	Thread	
100	120	220	180	23	62	8	M 16	2,8
150	174	285	240	46	66	8	M 20	5,8
150	178	290	244	48	66	8	M 20	5,8

Flange connections

For ductile iron pipes, PN 10 | PN 16

Design features No. 7102

- For ductile iron pipes according to EN 545
- Flange sized and drilled in accordance with EN 1092-2, PN 10 standard; EN 1092-2, PN 16 for DN 200 to DN 400 please specify on order - other standards on request
- The long draw of the fitting and the double chambered gasket result in the pressure being spread well back from the pipe end
- The resilience of the connection prevents tension in the pipe and minimises the danger of breakage

Assembly instructions

- Cut the pipe end straight, do not chamfer or moisten - push the flange onto the pipe and then push the gasket on

Design features No. 7602

- For ductile iron pipes according to EN 545
- Flanges sized and drilled in accordance with EN 1092-2, PN 10 standard; EN 1092-2, PN 16 for DN 200 to DN 300 please specify on order - other standards on request
- Simultaneous pipe restraint and sealing
- This avoids the need for pipe support and additional bolts to counter the effect of axial load and pressure. This connection can be easily dismantled at any time

Assembly instructions

- Assemble the flange with the sleeve gasket and pressure ring, and push onto the pipe. Offer up the complete flange to the opposing flange, ensuring that the pressure ring projects approx. 10 mm over the end of the pipe. Cross tighten the nuts and bolts to make the connection. This fitting has the advantage that it can cope with a gap or an uneven cut that extends up to 15 mm from the opposing flange

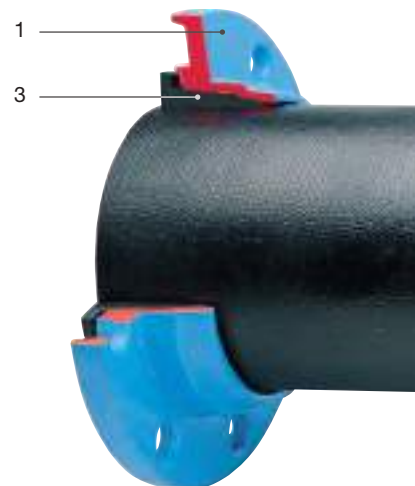
Material | Technical features

- 1 **Flange** made of ductile iron, epoxy powder coated
- 2 **Grip ring** hardened steel
- 3 **Sleeve gasket** made of elastomer
- 4 **Pressure ring** made of ductile iron, epoxy powder coated
- 5 **Seal** made of elastomer

Double chamber flange adapter

No. 7102

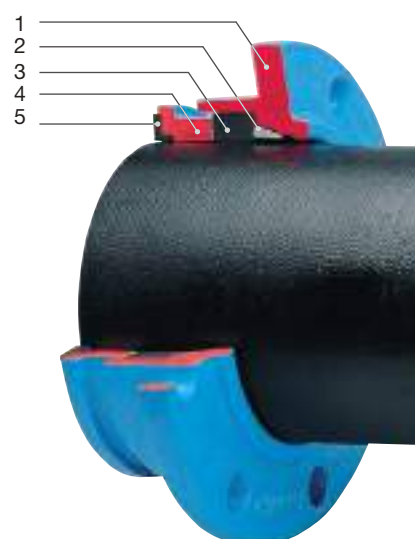
Standard



Flange adapter

No. 7602

Restraint



Tip: When shortening ductile iron pipes, observe the Ø; Heed pipe manufacturer's advice

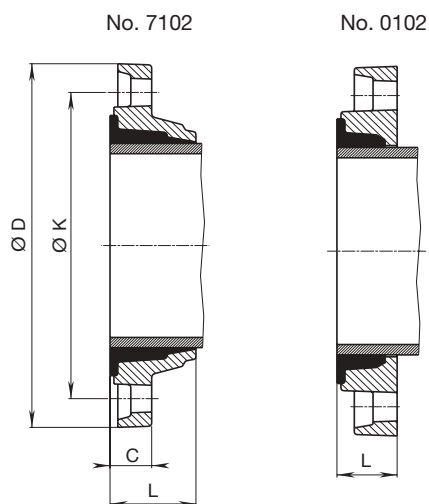
Order No.	Version	MOP (PN)	Flange DN / ØPipe													
			40	50	60	60	65	80	80	100	125	150	200	250	300	400
			56	66	77	82	82	98	101	118	144	170	222	274	326	429
7102	Double chamber flange adapter, standard	16											*	*	*	*
7602	Flange adapter, restraint											1	*1	*1	*1	
0102	Flange adapter, standard															

Explanation: * also available in PN 16, ¹ Flange with larger an extended hole circle are not suitable for use with fixed studs!

Flange connections

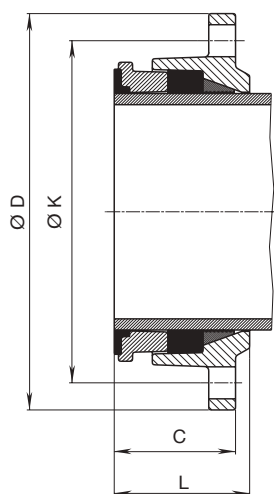
For ductile iron pipes, PN 10 | PN 16

No. 7102 / 0102



Flange DN	Ø Pipe	ØD		ØK	C	L		Bolts		Weight	
		7102	0102			7102	0102	Quantity	Thread	7102	0102
50	66	165		125	22	56		4	M 16	1,8	
60	82		175	135			35	4	M 16		2,4
65	82	185		145	29	58		4	M 16	3,4	
80	98	200		160	22	64	38	8	M 16	2,6	
80	101	200		160	22	64		8	M 16	2,4	
100	118	220	220	180	23	62	38	8	M 16	2,8	3,8
125	144	250	250	210	24	66	42	8	M 16	4,2	5,3
150	170	285	285	240	25	66	45	8	M 20	4,7	7,0
200	222	340	340	295	30	71	45	8	M 20	7,6	10,5
250	274	400		350	32	78		12	M 20	10,9	
300	326	455		400	33	82		12	M 20	13,8	
400	429	570		515	37	103		16	M 24	22,0	

No. 7602



Flange DN	Ø Pipe	ØD	ØK	C	L	Bolts		Weight
						Quantity	Thread	
40*	56	150	110	26	58	4	M 16	1,6
50	66	165	125	60	71	4	M 16	2,9
60	77	175	135	60	73	4	M 16	3,2
65	82	185	145	63	79	4	M 16	3,7
80	98	200	160	59	76	8	M 16	3,9
80	101	200	160	59	76	8	M 16	3,5
100	118	220	180	60	78	8	M 16	4,6
125	144	250	210	62	85	8	M 16	6,0
150	170	285	240	87	98	8	M 20	9,3
200	222	340	295	90	105	8	M 20	14,0
250	274	400	355	90	105	12	M 20	17,5
300	326	455	405	90	105	12	M 20	21,7

* DC flange with thread pin

Flange connections

For steel pipes, PN 16

Design features No. 7101

- For steel pipes according to EN 10220
- Flanges sized and drilled in accordance with EN 1092-2, PN 10 standard; EN 1092-2, PN 16 for DN 200 to DN 300 please specify on order - other standards on request
- The long draw of the fitting and the double chambered gasket result in the pressure being spread well back from the pipe end
- The resilience of the connection prevents tension in the pipe and minimises the danger of breakage

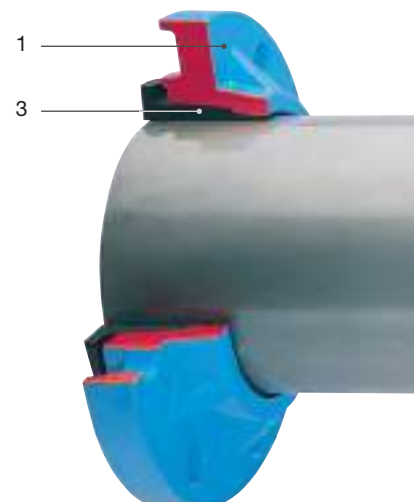
Assembly instructions

- Cut the pipe end straight, do not chamfer or moisten - push the flange onto the pipe and then push the gasket on

Double chamber flange adapter

No. 7101

Standard



Design features No. 7601

- For steel pipes according to EN 10220
Flange sized and drilled in accordance with EN 1092-2, PN 10 standard; EN 1092-2, PN 16 for DN 200 to DN 250 please specify on order - other standards on request
- Simultaneous pipe restraint and sealing
- This avoids the need for pipe support and additional bolts to counter the effect of axial load and pressure. This connection can be easily dismantled at any time

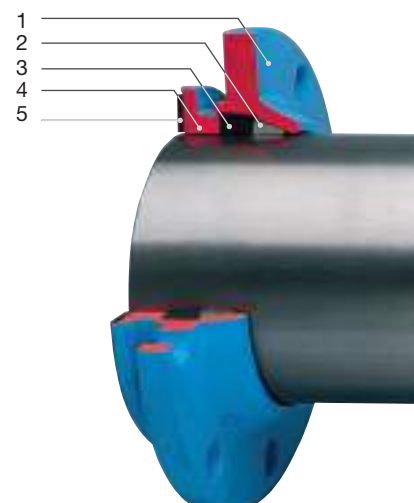
Assembly instructions

- Assemble the flange with the sleeve gasket and pressure ring, and push onto the piece. Offer up the complete flange to the opposing flange, ensuring that the pressure ring projects approx. 10 mm over the end of the pipe. Cross tighten the nuts and bolts to make the connection. This fitting has the advantage that it can cope with a gap or an uneven cut that extends up to 15 mm from the opposing flange

Flange adapter

No. 7601

Restraint



Material | Technical features

- 1 **Flange** made of ductile iron, epoxy powder coated
- 2 **Grip ring** hardened steel
- 3 **Sleeve gasket** made of elastomer
- 4 **Pressure ring** made of ductile iron, epoxy powder coated
- 5 **Seal** made of elastomer

Order No.	Version	MOP (PN)	Flange DN / Ø Pipe																
			40	50	50	60	65	80	80	100	100	100	125	150	150	200	250	250	500
			48	56-57	59-61	67	76	84	89	104-106	108	114	133	159	168	219	267	273	508
7101	Double chamber flange adapter, standard	16														*		*x	
7601	Flange adapter, restrained										1					1		*x	
0101	Spar flange, standard																		

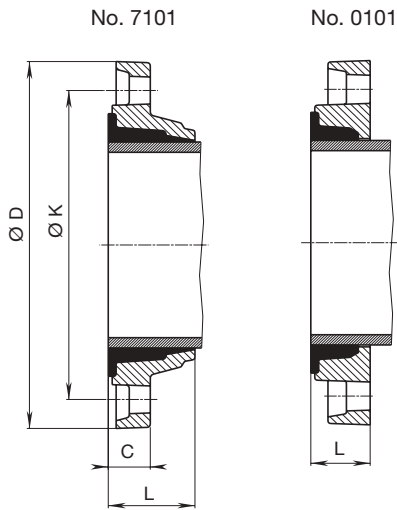
Explanation: * also available in PN 16, * see page C 4/1

¹ Flange with larger an extended hole circle are not suitable for use with fixed studs!

Flange connections

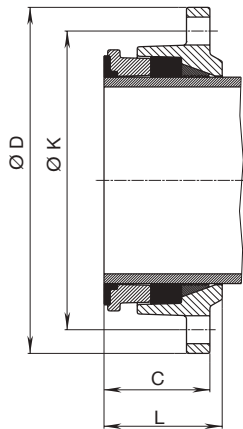
For steel pipes, PN 16

No. 7101 / 0101



Flange DN	Ø Pipe	Ø D		Ø K	C			L		Bolts		Weight	
		7101	0101		7101	7101	0101	Quantity	Thread	7101	0101		
40	48		150	110			30	4	M 16		0,9		
50	56-57	165		125	26	54		4	M 16		2,6		
50	59-61	165		125	26	54		4	M 16		2,6		
60	67		175	135			37	4	M 16		2,5		
65	76	185		145	28	56		8	M 16		3,5		
80	84		200	160			37	8	M 16		3,5		
100	104-106		220	180			38	8	M 16		4,4		
100	108	220	220	180	25	63	38	8	M 16		3,6	4,4	
100	114	220		180	23	63		8	M 16		4,4		
125	133	250		210	33	64		8	M 16		6,8		
150	159		285	240			45	8	M 20		7,5		
200	219	340		295	30	71		8	M 20		8,6		
250	267		400	350			48	12	M 20		14,5		
500	508		690	620			76	20	M 24		50,9		

No. 7601



Flange DN	Pipe Ø	Ø D	Ø K	C	L	Bolts		Weight
						Quantity	Thread	
50	60	165	125	39	61	4	M 16	2,7
65	76	185	145	38	61	4	M 16	3,5
80	89	200	160	39	67	8	M 16	3,9
100	108	220	180	39	69	8	M 16	4,7
100	114	220	180	44	69	8	M 16	4,4
125	133	250	210	39	69	8	M 16	5,7
150	159	285	240	49	73	8	M 20	7,8
150	168	285	240	49	73	8	M 20	7,5
200	219	340	295	52	81	8	M 20	10,5

Design features

- From 4 hole to 8 hole
- Made of ductile iron, epoxy powder coated
- PN 16

DN	MOP (PN)	Length	Weight
80	16	42	5,0

Transition flange

No. 0800

DN 80



Threaded, blank flange

Design features

- Made of ductile iron, epoxy powder coated
- Flange sized according to EN 1092-2 and drilled in accordance with EN 1092-2 | PN 10 standard; PN 16 for DN 200 to DN 300 please specify on order - other standards on request

DN	MOP (PN)	Thread No. 8100						Thread No. 8100L							
		1"	1¼"	1½"	2"	2½"	3"	4"	1"	1¼"	1½"	2"	2½"	3"	4"
40	10														
50															
60															
65															
80															
100															
125															
150															
200															
250															
300															

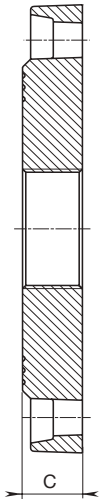
DN	MOP (PN)	C	Weight No. 8100							
			1"	1¼"	1½"	2"	2½"	3"	4"	
40	10	19			1,80	1,70				
50			2,30	2,20	2,20	2,10				
60						3,00				
65			3,20	3,10	3,00	3,00	2,70			
80			3,60	3,50	3,40	3,40	3,40	2,90		
100			4,30	4,20	4,20	4,20	3,90	3,70	3,30	
125			5,40	5,50	5,50	5,30	5,20	5,10	4,70	
150			7,00	6,90	6,90	6,80	6,70	6,60	6,20	
200			20	11,50	11,30	11,30	11,00	10,60	10,30	
250			22			16,20	16,00	15,00		
300	25				23,10					

Threaded flange

No. 8100

No. 8100L

with internal thread ISO 228



DN	MOP (PN)	C	Weight No. 8100L						
			1"	1¼"	1½"	2"	2½"	3"	4"
50	10	32	2,70	2,60	2,60	2,50			
60			3,40	3,20	3,00	2,80	2,60		
65			3,40	3,20	3,00	2,80	2,60		
80			4,00	3,90	3,90	3,90	3,80	3,40	
100			5,90	5,70	5,70	5,50	5,20	4,80	4,50
125			8,20	8,10	8,10	7,90	7,50	7,00	6,60
150			9,50	9,30	9,20	9,10	8,70	8,50	8,10
200			15,50	15,40	15,30	15,10	14,80	14,50	14,20

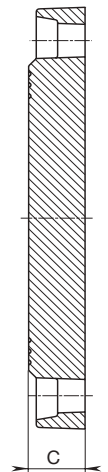
Design features

- Made of ductile iron, epoxy powder coated
- Flange sized according to EN 1092-2, and drilled in accordance with EN 1092-2, | PN 10 standard; PN 16 for DN 200 to DN 400 please specify on order - other standards on request
- Other nominal diameters on request

DN	MOP (PN)	C	Weight	
40	10	19	2,00	
50			2,90	
60			2,80	
65			3,80	
80			4,00	
100			4,60	
125			5,70	
150			7,60	
200			20	11,40
250			22	17,20
300	25	25,50		
400		38,00		

Blank flange

No. 8000



XR reducing flange

Design features

- Made of ductile iron, epoxy powder coated
- Flange sized and drilled according to EN 1092-2
- Threaded bolts made of stainless steel
- The low profile enables transitions to be made between dimensions in the shortest possible space

Standard version:

DN	MOP (PN)	Bolts DN 1		Bolts DN 2		C	Weight
		Qty.	Thread	Qty.	Thread		
65-50	16	4	M 16 x 50	4	M 16 x 50	47	5,6
80-40		8	M 16 x 50	4	M 16 x 50	30	5,1
80-50		8	M 16 x 50	4	M 16 x 50	29	5,6
80-65		8	M 16 x 50	4	M 16 x 50	25	5,4
100-50		8	M 16 x 50	4	M 16 x 50	27	5,5
100-65		8	M 16 x 50	4	M 16 x 50	30	6,5
100-80		8	M 16 x 50	8	M 16 x 50	47	8,4
125-65		8	M 16 x 50	4	M 16 x 50	30	8,2
125-80		8	M 16 x 50	8	M 16 x 50	30	8,0
125-100		8	M 16 x 50	8	M 16 x 50	30	7,6
150-100		8	M 20 x 60	8	M 16 x 50	30	12,0
150-125		8	M 20 x 60	8	M 16 x 50	30	11,2
200-150	10	8	M 20 x 60	8	M 20 x 60	30	17,2
200-150	16	12	M 20 x 60	8	M 20 x 60	30	18,7
250-200	10	12	M 20 x 60	8	M 20 x 60	32	20,0
250-200	16	12	M 24 x 70	12	M 20 x 60	32	22,0
300-250	10	12	M 20 x 60	12	M 20 x 60	33	22,6
300-250	16	12	M 24 x 70	12	M 24 x 70	33	32,4

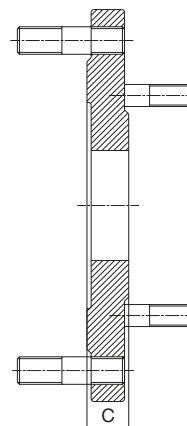
Other diameters on request

Standard version:

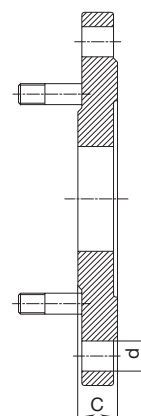
DN	MOP (PN)	Bolts DN 1		Bolts DN 2		C	Weight
		Qty.	d	Qty.	Thread		
125-50	16	8	19	4	M 16 x 50	30	6,3
150-50		8	23	4	M 16 x 50	30	11,0
150-65		8	23	4	M 16 x 50	30	11,0
150-80		8	23	8	M 16 x 50	30	10,7
200-80	10	8	23	8	M 16 x 50	30	14,7
200-80	16	12	23	8	M 16 x 50	30	14,5
200-100	10	8	23	8	M 16 x 50	30	15,0
200-125	10	8	23	8	M 16 x 50	30	13,7
250-50	10	12	23	4	M 16 x 50	31	22,3
250-50	16	12	28	4	M 16 x 50	31	22,3
250-80	10	12	23	8	M 16 x 50	31	22,1
250-80	16	12	28	8	M 16 x 50	31	22,1
250-100	10	12	23	8	M 16 x 50	31	21,9
250-125	10	12	23	8	M 16 x 50	31	21,5
250-150	10	12	23	8	M 20 x 60	40	18,6
250-150	16	12	28	8	M 20 x 60	40	18,6
300-100	10	12	23	8	M 16 x 50	31	27,1
300-100	16	12	28	8	M 16 x 50	31	27,1
300-200	10	12	23	8	M 20 x 60	32	24,8
400-300	10	16	28	12	M 20 x 60	39	39,8

Other diameters on request

XR reducing flange "Type A" No. 0801



XR reducing flange "Type B" No. 0802



Restraint systems

For PVC pipes, PN 10 | PN 16

Design features

- 1254/1255 the restraint clamp for PVC-U pipe fittings and pipes according to EN ISO 1452-2
- 1256: the restraint clamp for a Molecor PVC-O Tom® pipe PN 25 according to ISO 16422
- This two-part body can be assembled onto an existing pipeline. If required it can be dismantled and reused
- The grip ring is self tightening within its tapered seating
- The design of the teeth avoids cutting into the pipe resulting in the highest gripping force without pipe damage
- Wedge fastening on both sides
- Hammer the wedges until the clamp is tightly closed

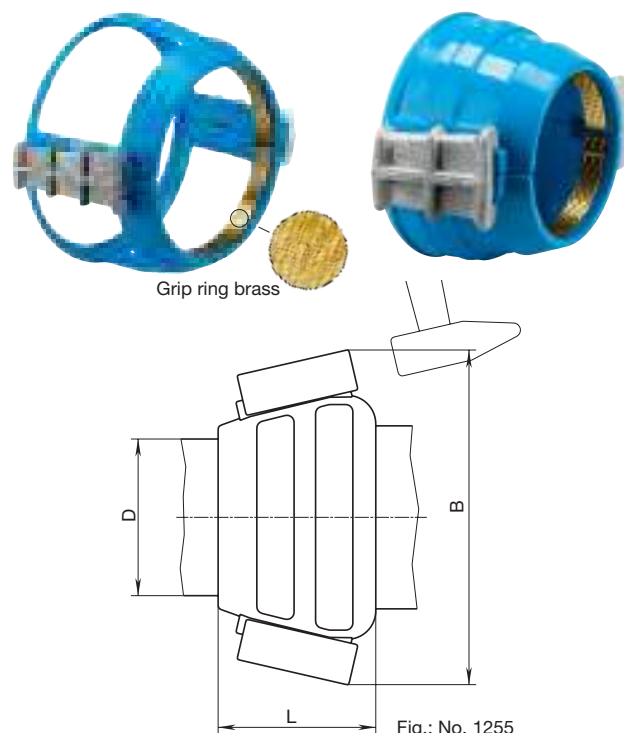
Material | Technical features

- **Body** made of ductile iron, epoxy powder coated
- **Grip ring** made of brass
- **Wedge fastener** made of ductile iron, galvanised

Restraint clamp

No. 1254 / 1255 / 1256

(Socket - Pipe)

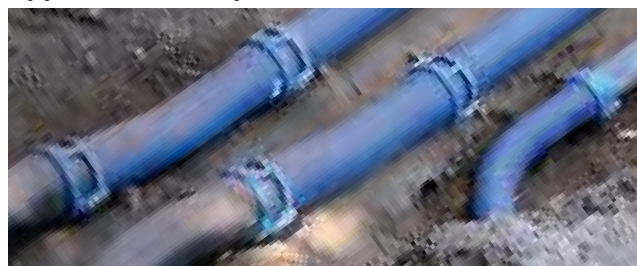


Order No.	Version	MOP (PN)	Dimension/DN Ø PVC-Pipe											
			50 63	65 75	80 90	100 110	125 140	150 160	200 225	250 280	300 315			
1254	Restraint clamp	10	+	+	+									
1255		16												
1256 [#]		16			#	#		#						

+ PN 10 and PN 16

PVC-O pipe PN 25

Application example



DN	Ø PVC pipe	B			L			Weight	
		1254	1255	1256 [#]	1254	1255	1256 [#]	1254/1255	1256 [#]
50	63	180			91			2,5	
65	75	200			96			2,8	
80	90	220			103		114	3,0	3,2
100	110	240			110		120	3,5	3,8
125	140	280			123			3,9	
150	160	300	320	287	140	152	144	6,0	6,8
200	225	380	400		165	185		9,5	
250	280	455			195			13,5	
300	315	495			200			16,3	



ТЕХМАРКЕТ

ЗАПОРНАЯ И РЕГУЛИРУЮЩАЯ АРМАТУРА

techmarcet.ru

(812) 337-10-80