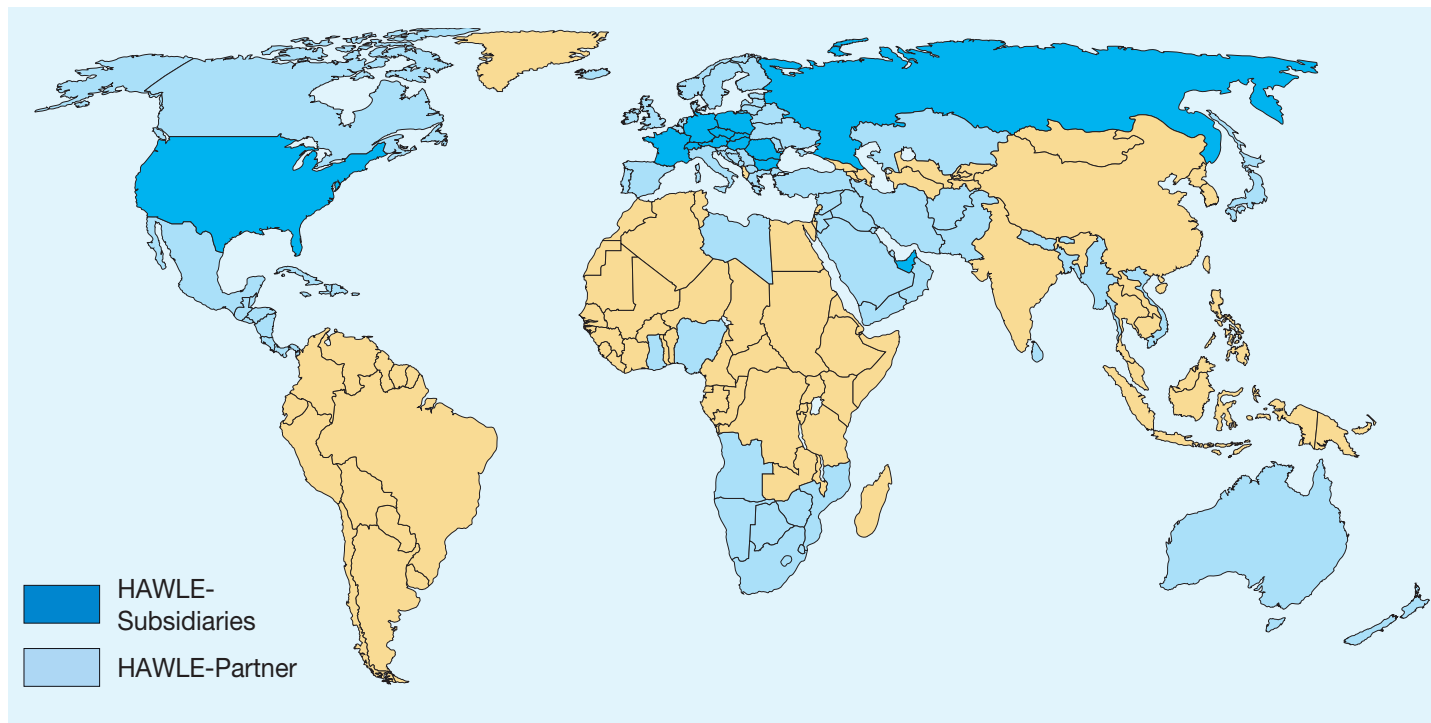


hawle



HAWLE-PIPELINE FITTINGS ALL OVER THE WORLD since 1948

YOUR SUPPLIER OF
HIGH QUALITY PIPELINE
CONNECTIONS

- Leaders in development, quality and breadth of range
- recognized for service, reliability and adaptability



HAWLE. **MADE FOR GENERATIONS.**



6. 2010

E. Hawle Armaturenwerke GmbH

A-4840 Vöcklabruck - AUSTRIA
Wagrainer Straße 13
www.hawle.at

Telefon: +43 (0)7672 725 76-0
Telefax: +43 (0)7672 784 64
E-mail: hawle@hawle.at

hawle

HAWLE-Manufacturing plants in Austria



I: Vöcklabruck



II: Frankenmarkt

Products of HAWLE — well-known throughout the world for quality and durability.

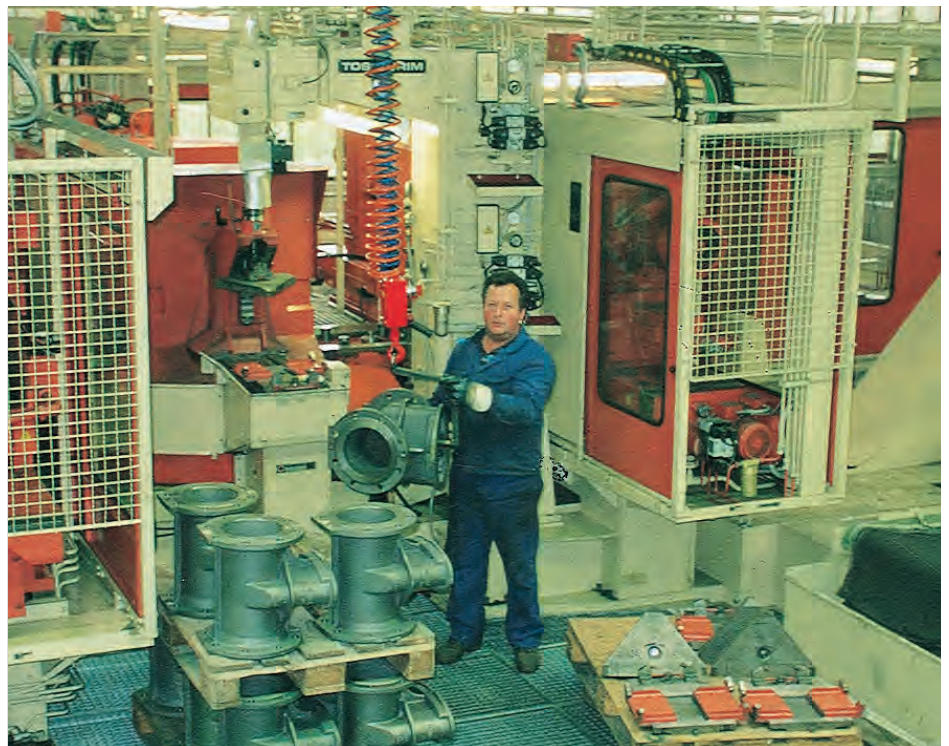
Licensees all over the world use HAWLE-know-how.

Two thirds of HAWLE output is exported to all 5 continents, comprising more than 60 countries.

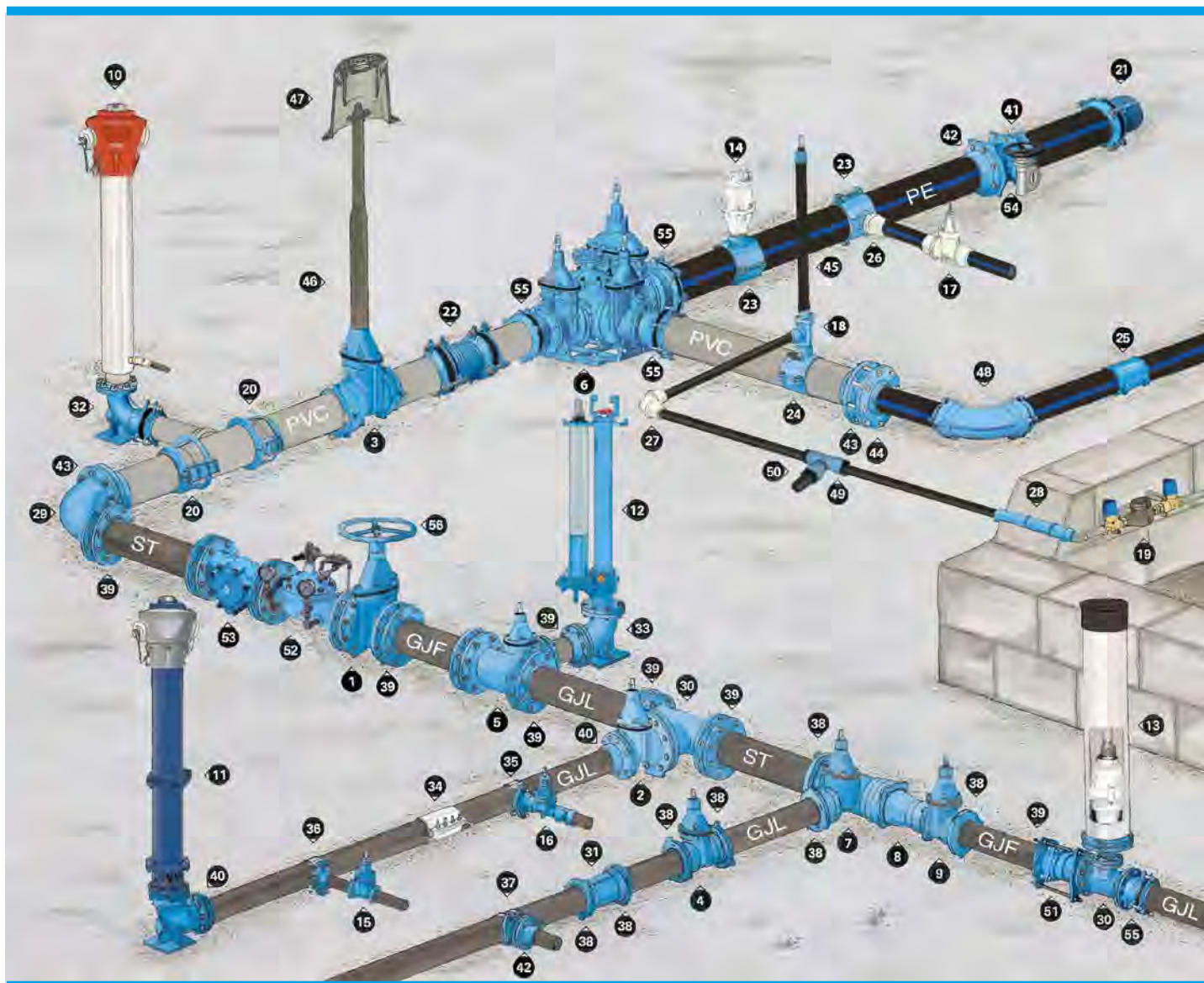
HAWLE recognized for innovation:

- first resilient-seated gate valve in the world
- first combination valve
- first corrosion free hydrant and many other major firsts.

HAWLE — the name for durability and reliability



HAWLE-Product range

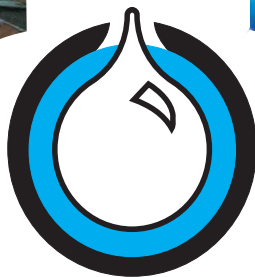


		Order no.
1	E2 VALVE FLANGED ENDS	4000E2
2	E2 REDUCING VALVE	4150E2
3	E2 VALVE „SYSTEM 2000“	4040E2
4	E2 VALVE, SOCKET ENDS FOR CAST IRON	4500E2
5	E2 COMBI-T, SINGLE VALVE TEE	4340E2
6	HAWLE-COMBIFLEX	4420E2
7	E2 COMBI-T, SOCKET ENDS	NL10E2
8	CONCENTRIC TAPER	NL40
9	E2 SPIGOT SOCKET VALVE	NL00E2
10	H4 CORROSION FREE HYDRANT - RIGID TYPE	5151H4
11	H4 ABOVE GROUND HYDRANT - BREAK AWAY	5096H4
12	FREEFLOW BELOW GROUND HYDRANT	5060
13	COMBINED AIR RELEASE VALVE	9822
14	AUTOMATIC AIR VALVE	9876
15	SERVICE VALVE	2500
16	SERVICE VALVE	2800
17	SERVICE VALVE, POM	2630
18	SERVICE VALVE	3130
19	WATER METER CONSOLE	2961
20	RESTRAINT CLAMP, for PVC	1254
21	ENDCAP „Synoflex“	7980
22	CONNECTOR „Synoflex“	7974
23	HAKU SADDLE FOR PLASTIC PIPES	5250
24	HAKU SADDLE FOR PLASTIC PIPES	5310
25	SPLIT COLLAR (Pipe to Pipe)	9240
26	ISO-FITTING, external thread, POM	6120
27	ISO-FITTING, ELBOW, POM	6420
28	WALL INLET FITTING	6990

		Order no.
29	DOUBLE FLANGED BEND 90°	8530
30	ALL FLANGED TEE	8510
31	CONNECTOR, restraint	NL50
32	FLANGED DUCK FOOT BEND 90° „Synoflex“	7981
33	FLANGED DUCK FOOT BEND 90° N-piece	5049
34	REPAIR CLAMP, single lug	0750
35	UNIVERSAL PIPE SADDLE	3500
36	UNIVERSAL SHUT-OFF SADDLE	3800
37	UNIVERSAL PIPE SADDLE, FLANGED OUTLET	3510
38	PIPE-LOCK-RING	1200
39	RESTRAINT FLANGE ADAPTOR FOR CAST IRON	7602
40	DOUBLE CHAMBER FLANGE ADAPTOR FOR CAST IRON	7102
41	RESTRAINT FLANGE ADAPTOR FOR PVC	0400
42	ISO PIPE FLANGE ADAPTOR FOR PE	5500
43	DOUBLE CHAMBER FLANGE ADAPTOR FOR PVC	5600
44	DOUBLE CHAMBER FLANGE ADAPTOR FOR PVC, reducing	5630
45	EXTENSION SPINDLE FOR SERVICE VALVES	9101
46	TELESCOPIC EXTENSION SPINDLE FOR E2 VALVES	9500E2
47	SURFACE BOX ADJUSTABLE	2050
48	BEND „System 2000“	8535
49	HAWLE-FIT FITTING, T-piece with threaded outlet, POM	6520HF
50	HAWLE-FIT FITTING, external thread, POM	6120HF
51	HAWLE-VARIO	8010S
52	PRESSURE REDUCING VALVE	9700
53	STRAINER	9911
54	HAWLE-BUTTERFLY VALVE	9881K
55	FLANGE „Synoflex“	7994
56	HANDWHEEL	7800



Fluidised bed
Epoxy powder coating at 200° C

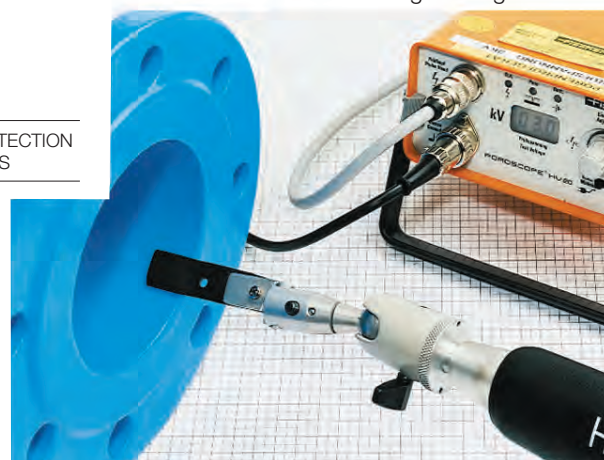


RAL QUALITY

HIGH QUALITY CORROSION PROTECTION
FOR VALVES AND FITTINGS



Measuring coating thickness



Spark-test for coating integrity
(min. 3000 V)

High quality corrosion protection using the GSK fluidised bed Epoxy coating system

The environmentally friendly solvent- and pollution free powder coating technology

Epoxy coating

- Minimum coating thickness 250 µm
- Zero porosity
- High adhesion to metal (min. 12 N/mm²)
- High resilience (no cracking)
- Smooth surface (no encrustation)
- Approved for food handling to KTW standard (German Federal health standard)
- High impact resistance
- Bacteriological approval to DVGW recommendation W270
- Regular quality tests according DIN 30 677 T2 - coating thickness, adhesion, spark-testing, impact resistance
- Independant auditing of quality control systems by MPA Hannover in accordance with the test methods of **GSK** (Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)
- HAWLE Standardcolour RAL 5012

HAWLE Conditions of Sale

1. General

All our legal transactions, deliveries, other services and offers are exclusively subject to the Conditions of Sale given below. Any terms and conditions of the buyer to the contrary of or in deviation from our Conditions will not be accepted, unless we have expressly consented to the applicability thereof.

2. Prices and terms of payment

The documents included in the our offers such as drawings, figures and weight specifications shall be taken for approximate values only, unless they are expressly defined as binding. This shall apply, in particular, to obvious errors, typing errors, misprints and calculation errors. We reserve ownership and copyright in drawings, cost estimates and other documents. No such documents may be disclosed to any third party.

Our offers and price lists are subject to confirmation - unless expressly agreed otherwise - and shall become binding only upon our written confirmation of the order or any act of implementation performed by us (such as delivery/dispatch of goods). Unless otherwise agreed, the prices are ex works, not including packaging. In national and international merchandise traffic the delivery clause pursuant to Incoterms 2000 EXW (ex works) shall apply, unless otherwise agreed upon in writing.

Any changes in the cost of labour as a consequence of collective bargaining, legal regulations or in-house arrangements, as well as changes in other costs relevant for calculation and for goods and services, such as costs for material, energy, transportation, outsourcing, financing, etc., shall entitle us to increase our prices accordingly. Any orders confirmed by us are excluded from a possible price change. On grounds of such price increase, the customer shall not be entitled to withdraw nor to assert frustration of the contract.

Unless otherwise agreed, payment shall be effected within 30 days net. Payments are always credited against the oldest debts. Any offsetting against claims raised on our part shall be excluded.

In the event that the customer is in arrears with his payments, we shall be discharged from any further contractual obligation and delivery commitment. Moreover, we shall be entitled to retain outstanding deliveries and services or to demand payment in advance and/or guarantees. If the customer's financial circumstances are substantially worsening after conclusion of the contract, or if we come to know of circumstances that are apt to reduce the customer's creditworthiness in our opinion, then we shall be entitled to change the maturity of unsettled claims, and to adjust the terms and conditions for future legal transactions with immediate effect.

3. Delivery

Orders confirmed by us will be fulfilled by us as quickly and as far as possible. The delivery dates specified by us are for information only and without responsibility.

4. Reservation of title

Until payment in full we retain title to all goods delivered by us.

Standard EN 805 or an equivalent international standard is deemed to be agreed between us and the customer. In cases of warranty it is deemed to be agreed that the pressure test is performed before filling the pipe trench.

The customer shall inspect the quantity and quality of the goods received immediately after their arrival. Any notice of defect shall be asserted in writing by the customer immediately after receipt of the shipment, but not later than within 10 days after delivery and before machining or processing. Otherwise any warranty claims and/or claims for damages and/or avoidance on the ground of error shall be excluded. However, a notice of defect does not entitle the customer to retain amounts invoiced or parts thereof. In general, warranty obligations relate to the defective product and do not extend to expenditures otherwise related to the remedy of the defect, such as excavation costs, labour time and travel expenses. It is left to our discretion whether we prefer to fulfil our warranty obligations by way of replacement, improvement, price reduction or cancellation of the contract.

The onus of proof that the delivered goods were defective at the time of delivery lies with the customer.

6. Compensation and liability

Our advisory service, whether provided verbally or in writing, is for information only and without responsibility, and it does not release our customer from his own duty to check, if our products are suitable and qualified for the intended purpose. This particularly applies, without being restricted thereto, to the suitability of our products for the media intended to be conducted therein (gases and/or liquids).

For any damage incurred by our customer in the course of a business transaction we shall be liable up to a maximum amount not exceeding the value of goods ordered, and only in case of our own gross negligence or the gross negligence of any person acting on our behalf, excepting personal injuries, in case of which we shall be liable already in case of slight negligence. Any compensation for consequential damage, pure financial loss, loss of profit and damages resulting from third party claims shall be excluded. The onus of proof for gross negligence lies with the injured party. The time limit for asserting any compensation claims is one year from getting knowledge of the damage and of the injuring party.

In the event that our customer should be held liable on grounds of the Product Liability Act, he undertakes to inform us immediately by phone or in writing, and to tell us the address of the claimant, otherwise any right of recourse of the customer against us under product liability will expire. Negotiations regarding claims under product liability regarding any of our products shall be held exclusively by us.

7. Place of performance, place of venue, applicable law

The place of performance for delivery and payment shall be A-4840 Vöcklabruck. The exclusive place of venue for all disputes arising out of this contract shall be the court having jurisdiction as regards the subject matter for A-4840 Vöcklabruck. This agreement shall be exclusively subject to the substantive law of Austria, expressly excluding the conflict of law rules as well as the UN Sales Convention (CISG).



Hawle-quality-warranty

Hawle-products are produced according to the latest state of the art technology.

For original Hawle-products labeled with the "hawle" logo, we guarantee satisfactory operation for a period of ten years from the day of delivery. The warranty refers to products appropriately used for drinking water supply – concerning the usage of gas products the warranty refers to the distribution of fuel gases according to EN 437.

Damages caused by careless storage, transport, treatment and unqualified installation, failure to observe the applications regulations, unsatisfactory maintenance and care and the inadequate usage of products and replacement parts will not be covered by the warranty.

Damaged products will be repaired and/or replaced with equivalent products by Hawle during the warranty period.

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 year 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:

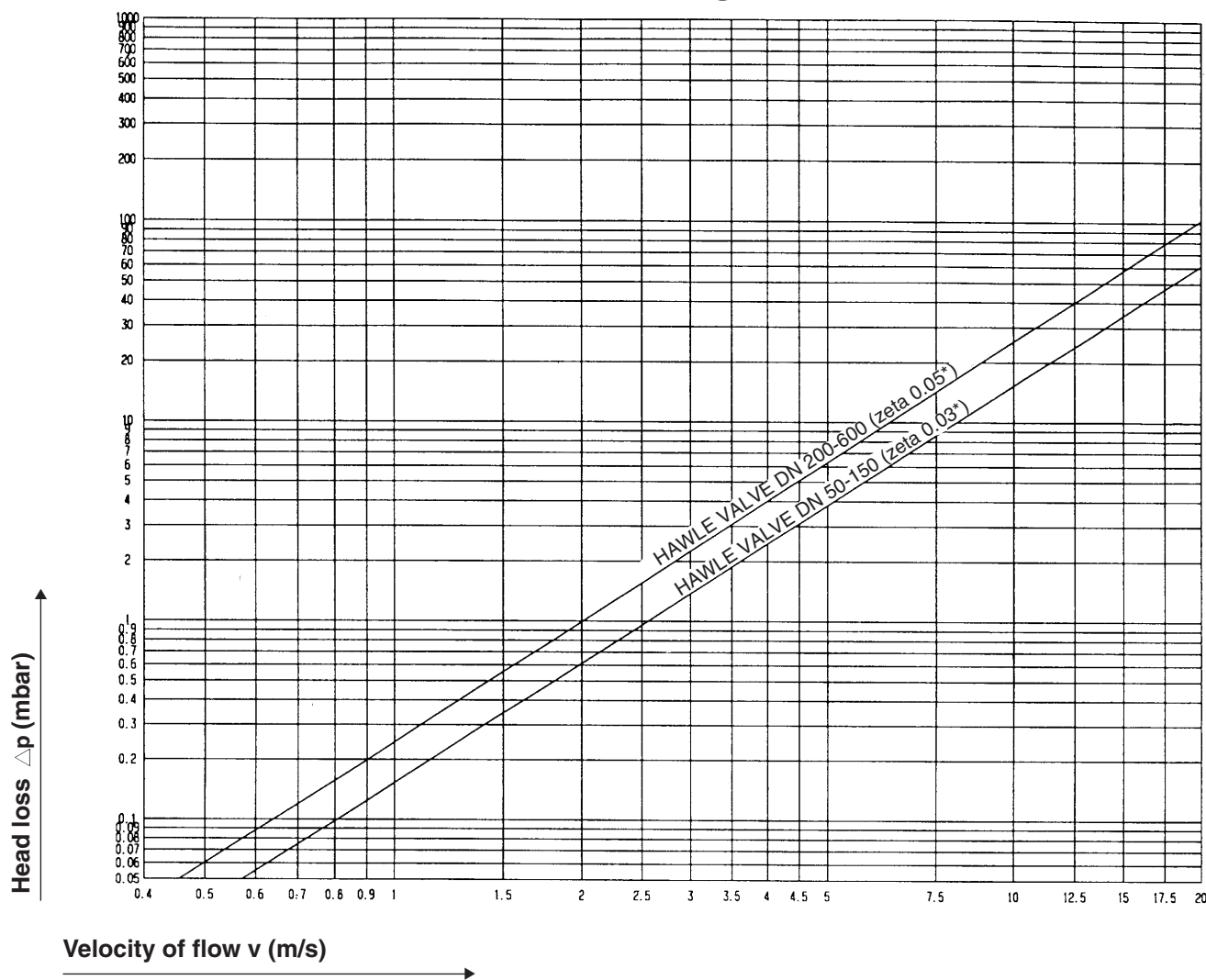
The pressure test must be carried out according to EN 805. Prior to the pressure test, fill the hole to cover only the pipes in order to prevent any expansion damage to the pipeline, but make sure to leave enough space completely open for inspection of each pipe connections site. Pipelines without restraint 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 either potable, drainage or sewage water in connection with PE, PVC, ductile iron, steel or asbestos pipe type installations in the ground.

Head loss diagramm



* ... Zeta = resistance value when valve fully opened.
 Established during test, and rounded. ($zeta = 2 \cdot \Delta p / \rho \cdot v^2$)
 Δp ... Head loss v ... Velocity of flow
 ρ ... Density of water

Table of flow capacity of HAWLE valves (m³/h)

DN	Velocity of flow v (m/s)								
	1	1,5	2	2,5	3	3,5	4	4,5	5
50	6,9	10,4	13,8	17,3	20,7	24,2	27,6	31,1	34,5
80	17,4	26,0	34,7	43,4	52,1	60,8	69,5	78,2	89,8
100	27,6	41,5	55,3	69,1	82,9	96,7	110,6	124,4	138,2
125	41,5	62,2	82,9	103,7	124,4	145,1	165,9	186,6	207,4
150	62,2	93,3	124,4	155,5	186,6	217,7	248,8	279,9	311,0
200	107,1	160,7	214,3	267,8	321,4	374,9	428,5	482,1	535,7
250	169,3	254,0	338,7	423,4	508,0	592,7	677,4	762,0	846,7
300	245,4	368,1	490,7	613,4	736,1	858,8	981,5	1104,2	1226,9
400	435,5	653,2	870,9	1088,6	1306,4	1524,1	1741,8	1959,5	2177,3
500	706,7	1060,3	1413,7	1767,1	2120,6	2474	2827,5	3180,9	3534,3
600	1018	1526,8	2035,8	2544,7	3053,6	3562,6	4071,5	4580,5	5089,4

SOURCE: VALVE TEST REPORT No. 713/2/2495 VITUKI BUDAPEST

Order no.	Face-to-face dim.	Application	PN	50	65	80	100	125	150	200	250	300	
4000A	short EN 558-1 GR 14	Potable water, other applications on request!	16	●	●	●	●	●	●	●	●	●	
4700A	long EN 558-1 GR 15			●	●	●	●	●	●	●			
4288A	CSN 133045						●	●		●			

The HAWLE-A valve is the first mono-design resilient-seated shut-off valve world-wide. Due to its singular mono design an unequalled strength of the valve is achieved.

Material and design features:

No screwed-on bonnet - spindle bearing fixed in the housing via bayonet lock - these unique design features permit 100% all-over epoxy powder coating, thus providing an unequalled corrosion protection according to the regulations of GSK - The Quality Association for Heavy Duty Corrosion Protection of Powder Coated Valves and Fittings.

Body of ductile iron EN-GJS-400/500 acc. to EN 1563 inside and outside powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - The Quality Association for Heavy Duty Corrosion Protection of Powder Coated Valves and Fittings).
cleaning with pig possible
flange bores PN 10 acc. to EN 1092-2
PN 16 - DN 200 to be specified on order

Stainless steel spindle
min. quality St 1.4021, with rolled thread and polished O ring slide faces
plain bearing of POM

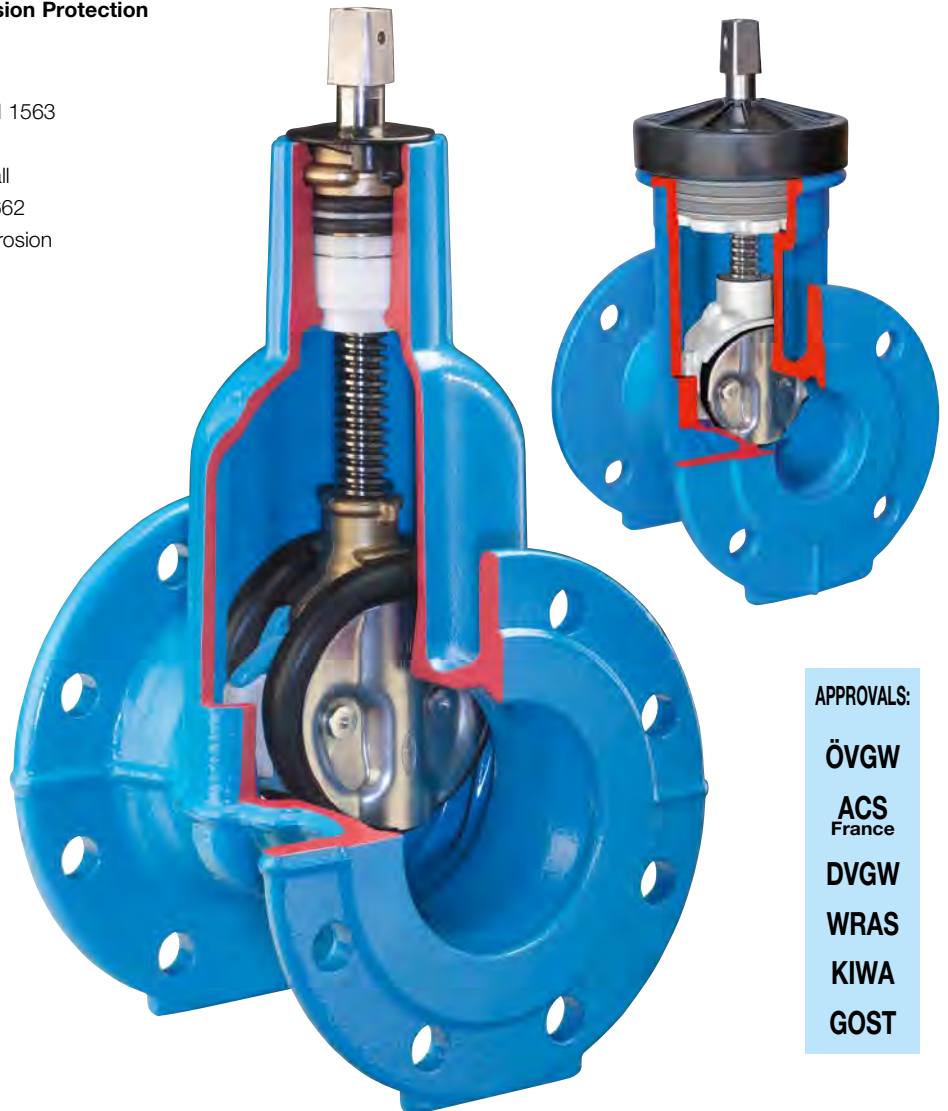
O-ring bush
of dezincification resistant brass / POM, fixed in housing with bayonet lock, with locking piston, multiple O-ring sealing

Wedge
of ductile iron EN-GJS-400/500 / 1.4301 / POM / elastomer (suitable for potable water) in sandwich design with two separate rubber gaskets. This new wedge and sealing geometry as well as the special wedge guide ensure low closing torques in every situation.

The movable wedge nut, made of dezincification resistant brass, ensures a perfect function of the valve even under high loads.

Cap
Dirt control for spindle bearing of PE

The HAWLE-A valve -
the revolution in valve technology



APPROVALS:

ÖVGW

ACS
France

DVGW

WRAS

KIWA

GOST

HAWLE-A Valve Flanged Ends

Standard version:

without handwheel and extension spindle

Design versions:

short or long face-to-face dimension
clockwise or anticlockwise closing

Suitable accessories:

Handwheel: Nr. 7800

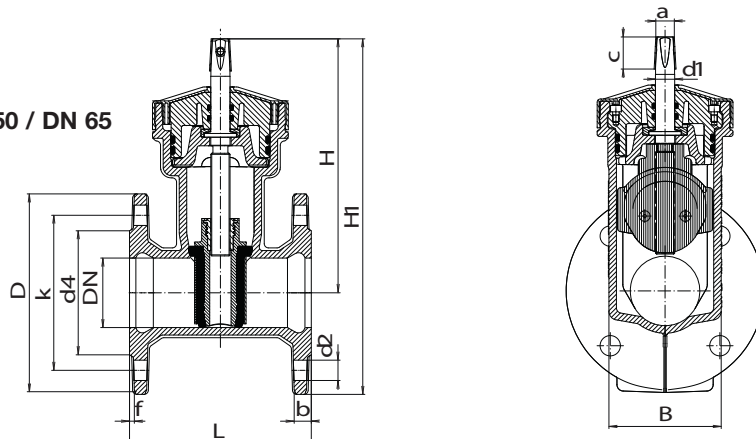
Extension spindles:

rigid No. 9000A
telescopic No. 9500A

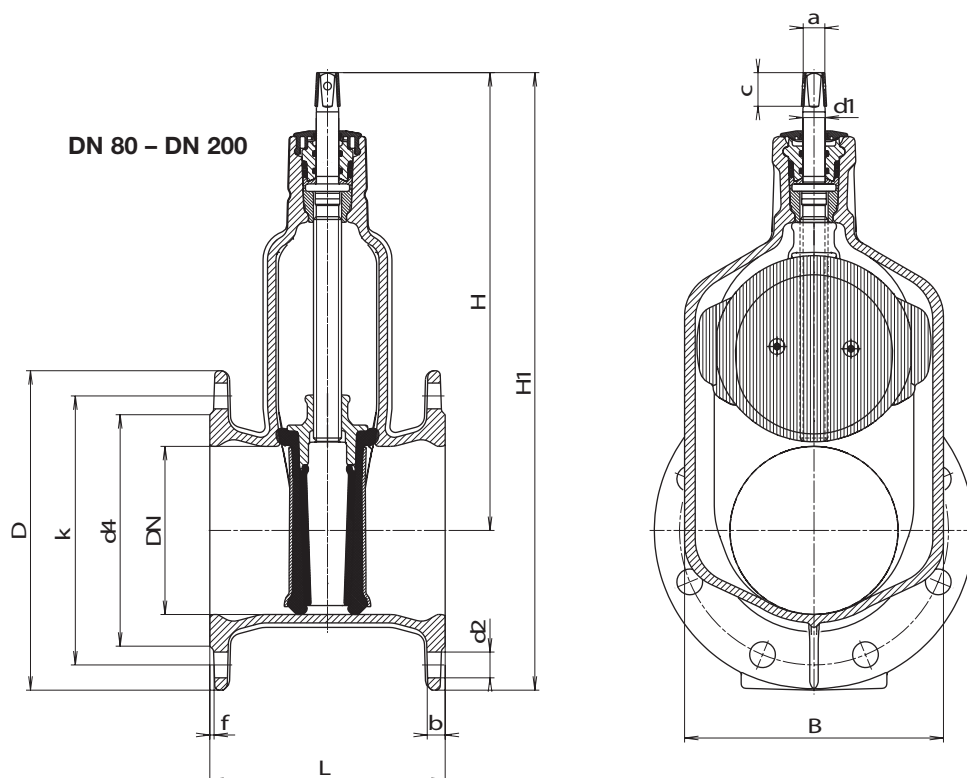
Surface boxes:

rigid No. 1750
telescopic No. 2050
No. 2051K

DN 50 / DN 65



DN 80 - DN 200



DN	PN	Flange					Bolts			Spindle			Valve				Weight kg		
		D	b	k	d4	f	Qty.	Thread	d2	a	c	d1	H	H1	L short	L long	B	short	long
50	10	165	16	125	96	4,5	4	M 16	19	14,8	30	18	230	315	150	250	105	8,2	9,0
	16																		
65	10	185	16	145	116	4,5	4	M 16	19	17,3	30	18	238	333	170	270	105	9,4	10,5
	16																		
80	10	200	16	160	133	4	8	M 16	19	17,3	30	20	286	386	180	280	136	10,5	12,8
	16																		
100	10	220	16	180	153	4	8	M 16	19	19,3	30	20	317	427	190	300	158	15,0	16,3
	16																		
125	10	250	16	210	183	4,5	8	M 16	19	19,3	30	20	359	485	200	325	207	19,0	21,8
	16																		
150	10	285	16	240	207	4	8	M 20	23	19,3	30	20	409	552	210	350	231	26,5	30,0
	16																		
200	10	340	17	295	264	4	8	M 20	23	24,3	38	25	509	679	230	400	282	41,2	46,5
	16						12												

Order no.	Face-to-face dimension	Application	PN	Dimensions/DN			
				20	25	32	40
4000	short EN 558-1 GR 14	Water, other applications on request	16	●	●	●	●
4700	long EN 558-1 GR 15						●

Resilient seated gate valve with smooth straight-through bore

Material and design features:



1/2 **Body (1) and Bonnet (2)** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)

3 **Stainless steel spindle** St 1.4021 (X20Cr13), with rolled thread

4 **Wedge** fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole
DN 20 - 40 of Ms 58 - DIN 17660

7 **Bush** of Ms 58 - DIN 17660, solide spindle support of drawn brass

8 **O rings** of elastomer, the perfect spindle seal

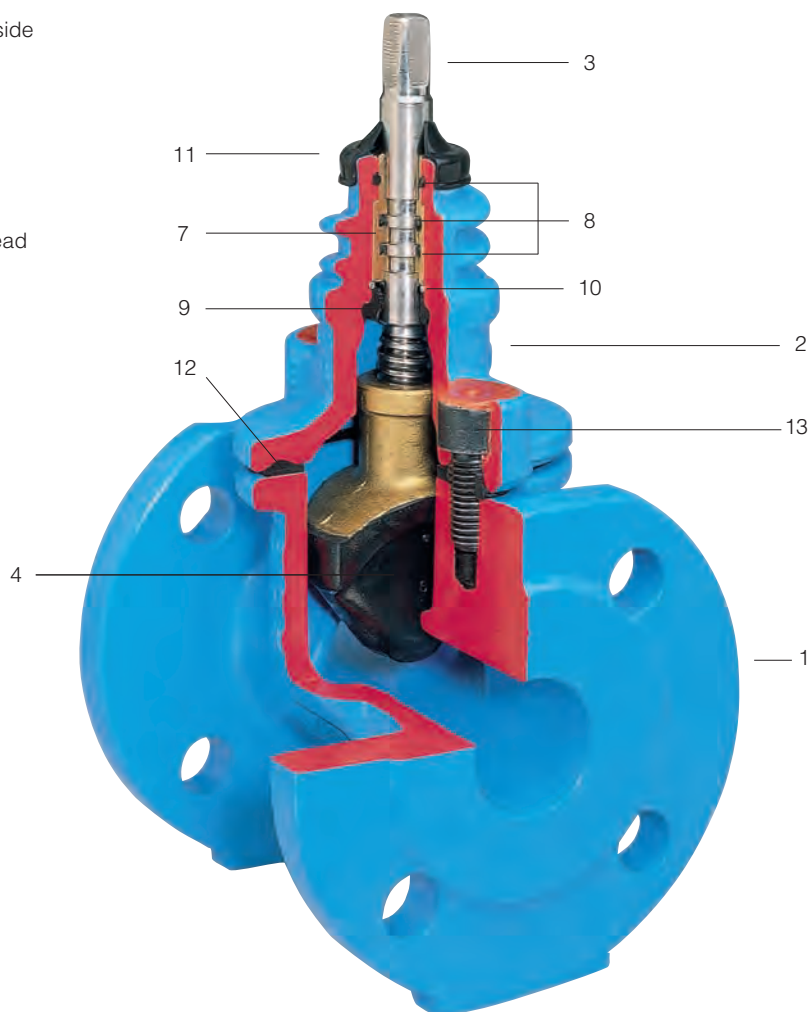
9 **Back seal** of elastomer (suitable for potable water)

10 **Circlip** 1.4301

11 **Wiper ring** of elastomer

12 **Bonnet gasket** of elastomer (suitable for potable water)

13 **Allen screws** St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket



Flanges according to EN 1092-2 (DIN 28605), drilled to DIN 2501 - PN 10 (standard)

Elypso Valve Flanged Ends DN 20-40

The Hawle Elypso valve is constructed plainly and made up of a limited number of components.

Sealing system: The contact between wedge and body is **friction free**. Therefore no scuffing or abrasion of the wedge.

Standard version:

Drilled to PN 10 - DIN 2501;
Without handwheel and extension spindle

Special versions on request

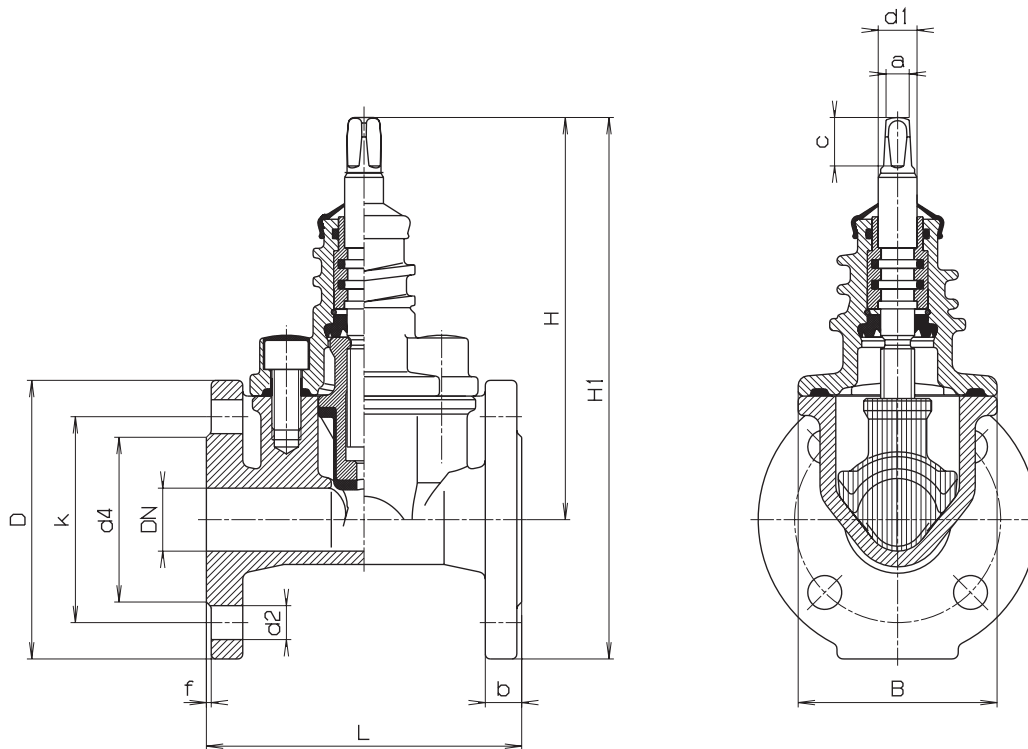
Suitable handwheel: No. 7800

Suitable extension spindles:

rigid No. 9101, telescopic No. 9601

Suitable surface boxes:

rigid No.1550 or 1650,
telescopic No.1850 or 1851K



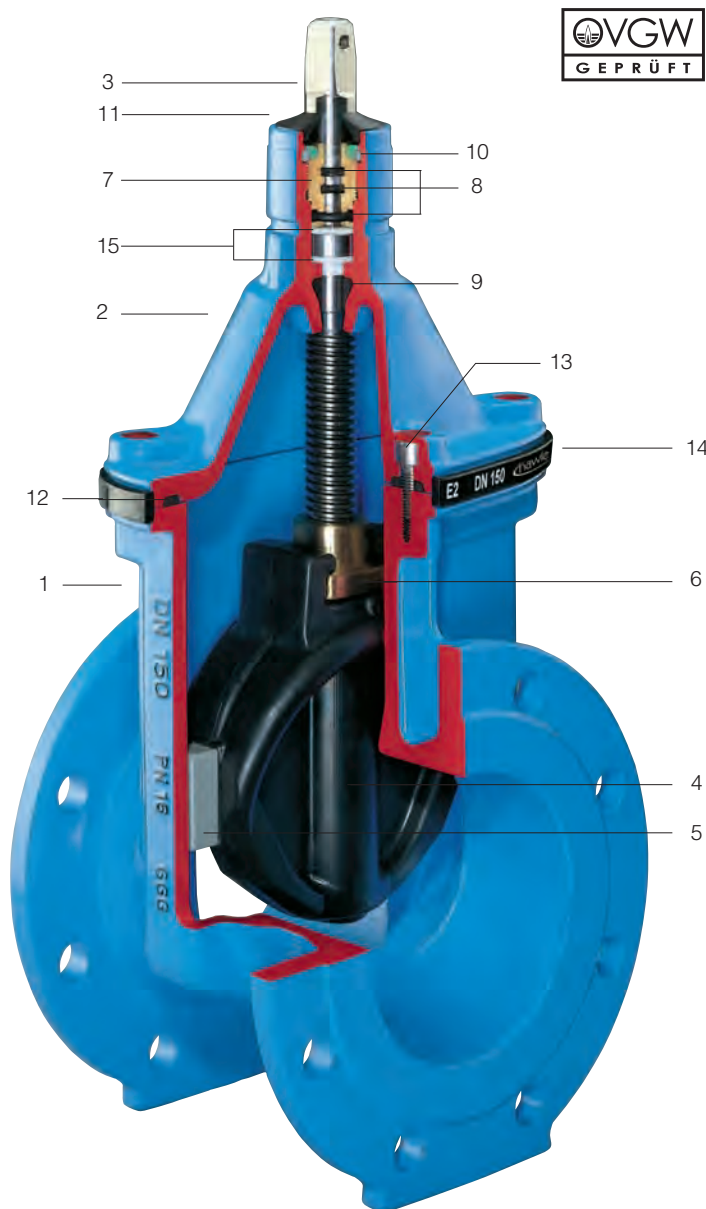
DN	PN	Flange					Bolts			Spindle			Valve				Weight kg		
		D	b	k	d4	f	Qty.	Thread	d2	a	c	d1	H	H1	L		B	short	long
20	10	115	16	75	58	2	4	M 12	14	10,3	20	16	164	223	130		80	4,5	
	16																		
25	10	115	16	85	68	2	4	M 12	14	10,3	20	16	164	223	130		80	4,5	
	16																		
32	10	150	18	100	78	2	4	M 16	18	10,3	20	16	200	275	140		103	7,0	
	16																		
40	10	150	18	110	88	2	4	M 16	18	10,3	20	16	200	275	140	240	103	7,0	8,5
	16																		

Order no.	Face-to-face dimension	Applications	PN	Dimensions/DN						
				50	65	80	100	125	150	200
4000E2	short EN 558-1 GR 14	Water, other applications on request!	16	●	●	●	●	●	●	●
4700E2	long EN 558-1 GR 15			●	●	●	●	●	●	●
4060E2	to BS 5163			●	●	●	●	●	●	

Resilient seated gate valve with smooth straight-through bore

Material and design features:

- 1/2 **Body (1) and Bonnet (2)** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)
- 3 **Stainless steel spindle** St 1.4021 (X20Cr13), with rolled thread
- 4 **Wedge** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole
- 5 **Wedge guide** of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques
- 6 **Wedge nut** of dezincification resistant brass CuZn36Pb2As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- 7 **O ring bush** of Ms 58
- 8 **O rings** of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure (according to ISO 7259)
- 9 **Back seal** of elastomer, suitable for potable water
- 10 **Circlip** of POM
- 11 **Wiper ring** of elastomer
- 12 **Bonnet gasket** of elastomer, suitable for potable water
- 13 **Allen screws** St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket
- 14 **Edge protecting ring** of PE avoids damages during transport and storage
- 15 **Friction washers** of POM guarantee smooth spindle guiding



Flanges according to EN 1092-2, drilled to DIN 2501-PN10 (standard);
For DIN 2501-PN 16 in sizes of DN 200 mm please specify on order - other standards on request !

E2 Valve Flanged Ends DN 50-200

Standard version: without handwheel and extension spindle

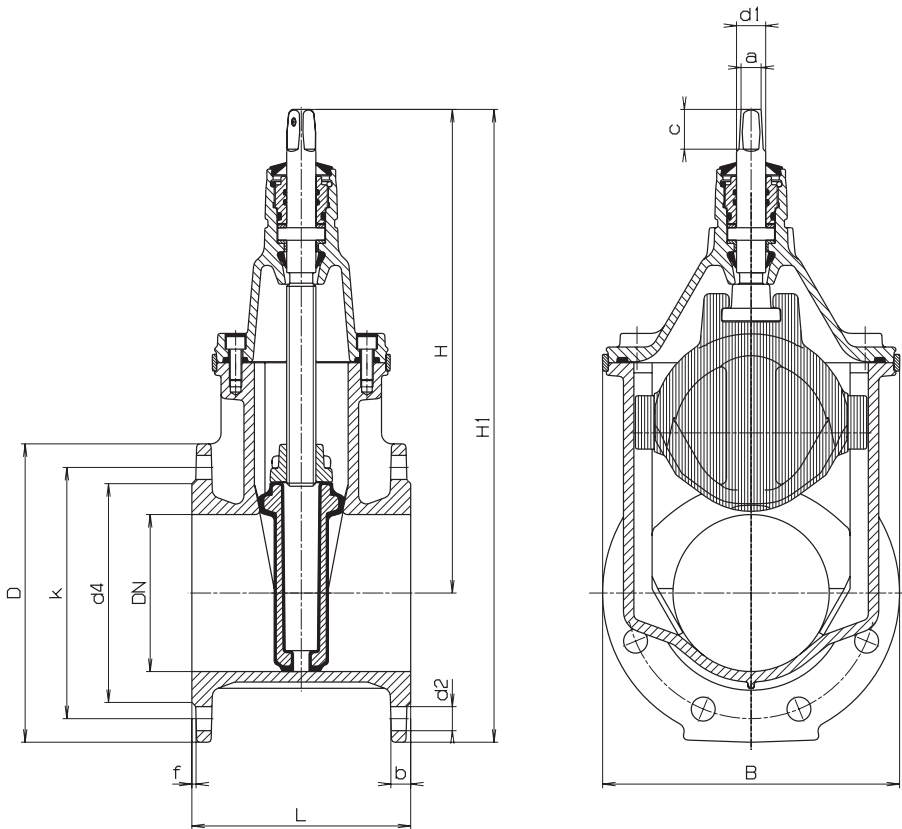
Suitable accessories: **Handwheel:** No. 7800

Design versions: for electric actuator: No. 4000ELE2;
with position indicator: No. 4000STE2

Extension Spindles:
rigid No. 9000E2
telescopic No. 9500E2

Special versions: on request!

Surface Boxes:
rigid No. 1750
telescopic No. 2050
No. 2051K



Design features:

- easiest retrofitting of position indicator and automatic actuator on the standard bonnet possible
- one extension spindle for several dimensions
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 16 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings under pressure (according ISO 7259)
- cleaning with pig possible

DN	PN	Flange					Bolts			Spindle			Valve				Weight kg				
		D	b	k	d 4	f	Qty.	Thread	d 2	a	c	d1	H	H1	L			B	short	long	BS 5163
															short	long	BS 5163				
50	10	165	19	125	98	3	4	M 16	19	14,8	30	22	260	342	150	250	178	143	11,0	12,0	11,5
	16																				
65	10	185	19	145	118	3	4	M 16	19	17,3	35	25	328	420	170	270		180	17,0	18,5	
	16																				
80	10	200	19	160	133	3	8	M 16	19	17,3	35	25	336	436	180	280	203	180	18,5	20,5	19,0
	16																				
100	10	220	19	180	153	3	8	M 16	19	19,3	38	25	373	483	190	300	229	213	24,5	27,5	26,0
	16																				
125	10	250	19	210	183	3	8	M 16	19	19,3	38	28	450	575	200	325		285	35,0	38,0	
	16																				
150	10	285	19	240	209	3	8	M 20	23	19,3	38	28	462	605	210	350	267	285	40,5	46,0	45,0
	16																				
200	10	340	20	295	264	3	8	M 20	23	24,3	48	32	563	733	230	400	292	357	64,0	72,0	67,5
	16																				

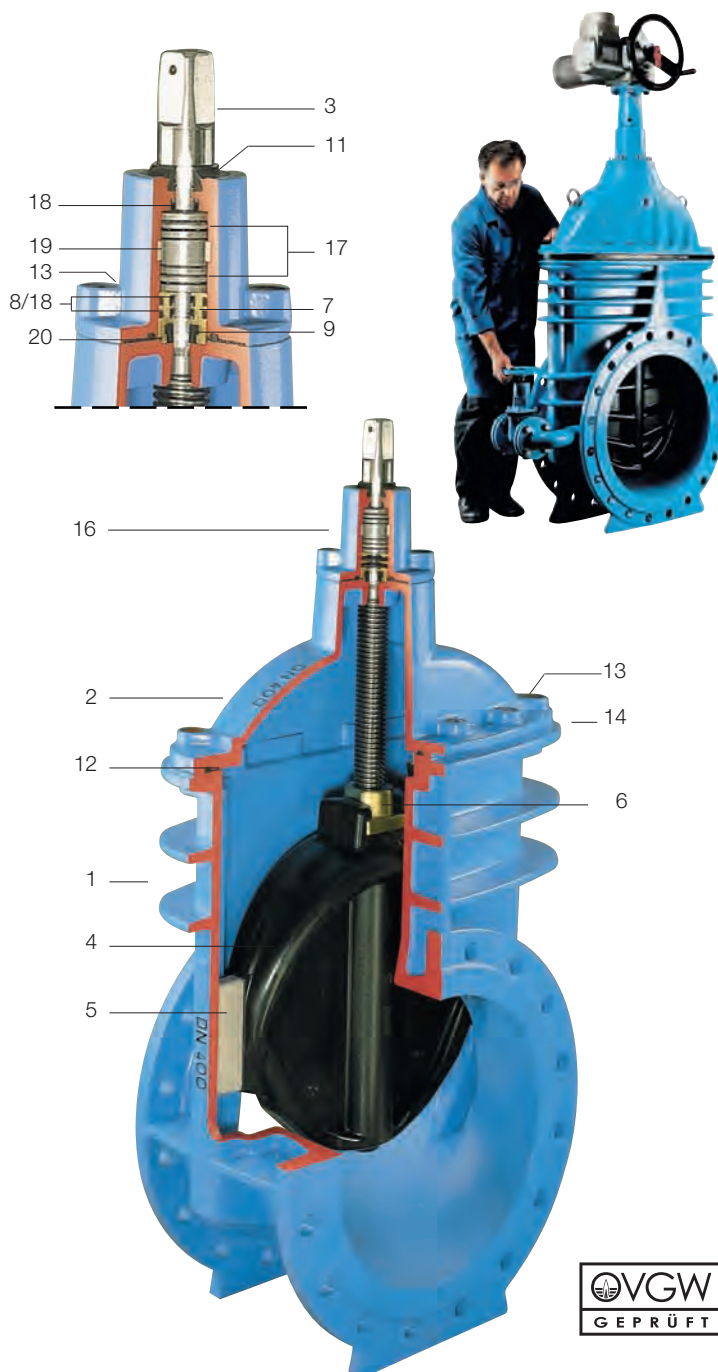
Order no.	Face-to-face dimension	Application	PN	Dimensions/DN							
				250	300	350	400	450*	500*	500	600
4000E2	short EN 558-1 GR 14	Water, other applications on request!	16	●	●	●	●			●	●
4700E2	long EN 558-1 GR 15			●	●		●	●	●	●	●
4060E2	to BS 5163			●	●						

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

Resilient seated gate valve with smooth straight-through bore

Material and design features:

- 1/2/16 **Body (1), Bonnet (2) and Center housing (16)** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)
- 3 **Stainless steel spindle** St 1.4021 (X20Cr13), with rolled thread
- 4 **Wedge** of ductile cast iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole
- 5 **Wedge guide** of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques
- 6 **Wedge nut** of dezincification resistant brass CuZn36Pb2As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- 7 **O ring bush** of Ms 58
- 8/18 **O rings (8), sealing rings (18)** of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable without pressure
- 9 **Back seal** of elastomer, suitable for potable water
- 11 **Wiper ring** of elastomer, suitable for potable water
- 12 **Bonnet gasket** of elastomer, suitable for potable water
- 13 **Allen screws** St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket
- 14 **Edge protecting ring** of PE avoids damages during transport and storage
- 17 **Ball bearing**
- 19 **Center ring** of POM
- 20 **Center housing gasket** of elastomer, suitable for potable water



Flanges according to EN 1092-2, drilled to DIN 2501-PN10 (standard); For DIN 2501-PN 16 please specify on order - other standards of request !

E2 Valve Flanged Ends DN 250-600

Standard version: without handwheel and extension spindle

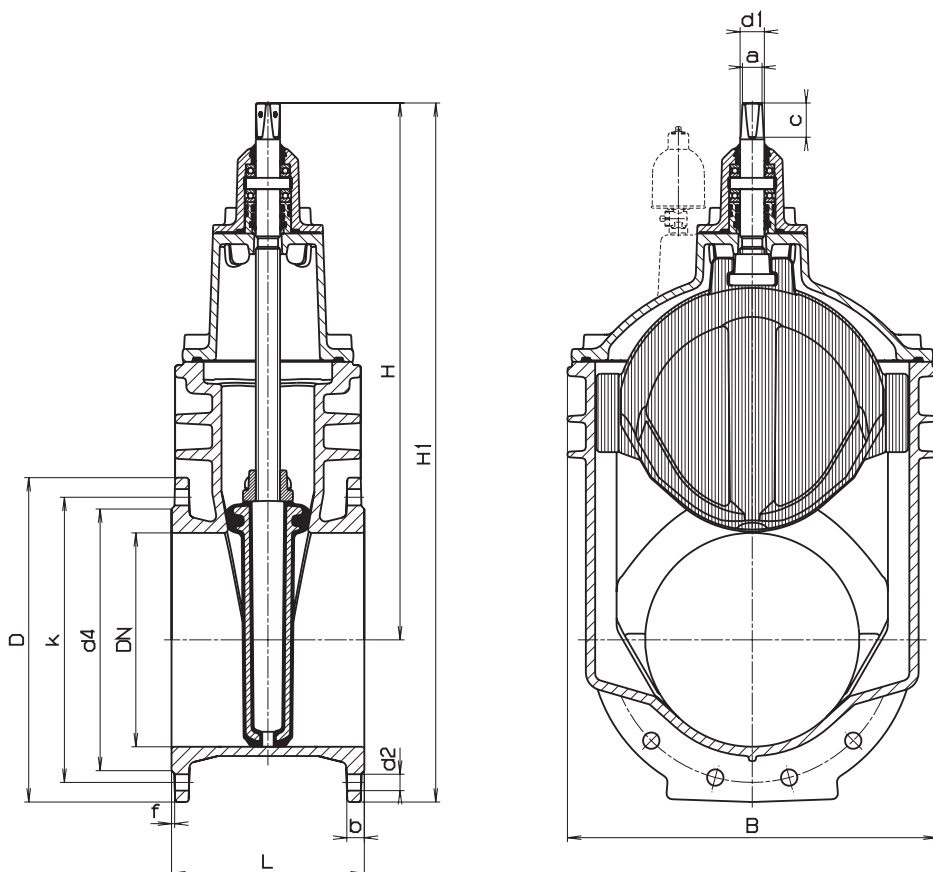
Design versions: for electric actuator: No. 4000E2;
with position indicator: No. 4000SE2

Special versions: **on request!** - angular gear drive
- for DN 500/DN 600 - type with bypass available!
- air release valve; for small air volume in the bonnet!
(not for the main pipeline !)

Suitable accessories: **Handwheel:** No. 7800
Extension Spindles: rigid No. 9000
telescopic No. 9500
Surface Boxes: rigid No. 1750, telescopic No. 2050, No. 2051K

Design features:

- can be easily actuated without by-pass and without power assist - even at a differential of 16 bar
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 16 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in wedge nut guarantees highest possible breaking torques
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings without pressure
- spindles borne in ball bearings permit minimum closing forces
- for attaching in actuator or a position indicator: take off centering flange and put on position indicator or actuator with louver
- 100% suitable for underground installation
- cleaning with pig possible



DN	PN	Flange					Bolts			Spindle			Valve					Weight kg			
		D	b	k	d4	f	Qty.	Thread	d2	a	c	d1	H	H1	L			B	short	long	BS 5163
															short	long	BS 5163				
250	10	400	22	350	319	3	12	M 20	23	27,3	48	34	670	870	250	450	330	432	100,0	121,0	104,0
	M 24			28																	
300	10	455	24,5	400	367	4	12	M 20	23	27,3	48	34	753	981	270	500	356	518	147,0	170,0	153,5
	M 24			28																	
350	10	520	26,5	460	427	4	16	M 20	23	27,3	48	34	838	1098	290			604	205,0		
	M 24			28																	
400	10	580	28	515	477	4	16	M 24	28	32,3	55	44	974	1264	310	600		687	261,0	300,0	
	M 27			31																	
450*	10	640	30	565	530	4	20	M 24	28	32,3	55	44	974	1310		650		687		332,0	
	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	
	M 30			34																	
500	10	715	31,5	620	582	4	20	M 24	28	36,3	66	50	1220	1578	350	700		800	479,0	542,0	
	M 30			34																	
600	10	840	36	725	720	5	20	M 27	31	36,3	66	50	1377	1797	390	800		944	710,0	810,0	
	M 33			37																	

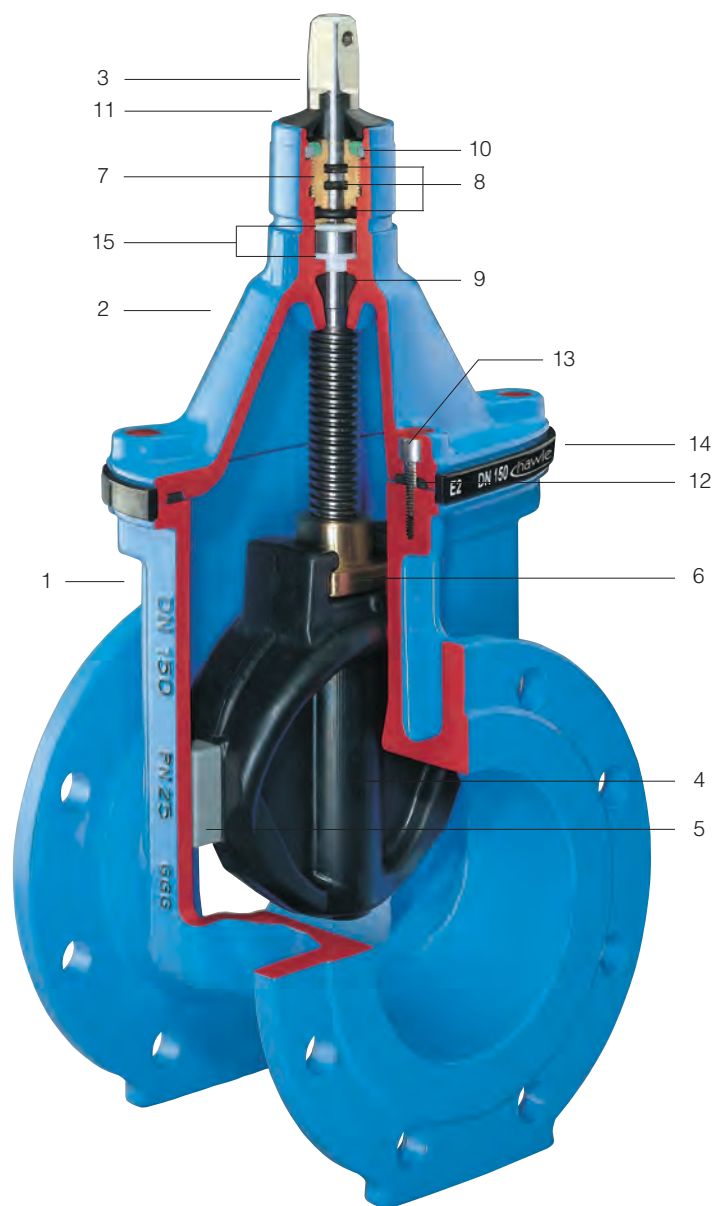
* Body: DN 400 - flange connection: DN 450 &/or 500

Order no.	Face-to-face dimension	Application	PN	Dimensions/DN								
				50	65	80	100	125	150	200	250	300
4010E2	short EN 558-1 GR 14	Water	25	•	•	•	•	•	•	•		
4710E2	long EN 558-1 GR 15									•	•	•

Resilient seated gate valve with smooth straight-through bore

Material and design features:

- 1/2 **Body (1), Bonnet (2)**
of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)
- 3 **Stainless steel spindle** St 1.4021 (X20Cr13), with rolled thread
- 4 **Wedge** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized of elastomer, suitable for potable water, with drain hole
- 5 **Wedge guide** of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques
- 6 **Wedge nut** of dezincification resistant brass CuZn36Pb3As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- 7 **O ring bush** of Ms 58
- 8 **O rings** of elastomer, suitable for potable water, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure (according to ISO 7259)
- 9 **Back seal** of elastomer, suitable for potable water
- 10 **Circlip** of POM
- 11 **Wiper ring** of elastomer
- 12 **Bonnet gasket** of elastomer, suitable for potable water
- 13 **Allen screws** St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket
- 14 **Edge protecting ring** of PE avoids damages during transport and storage
- 15 **Friction washers** of POM guarantee smooth spindle guiding



Flanges according to EN 1092-2, drilled to DIN 2501-PN 25 (standard);
For DIN 2501-PN 16 in sizes of DN 200 mm and above please specify on order - other standards on request !

E2 Valve Flanged Ends „PN 25”

Standard version: without handwheel and extension spindle

Design versions: for electric actuator: Nr. 4010ELE2;
with position indicator: No. 4010STE2

Special versions: on request!

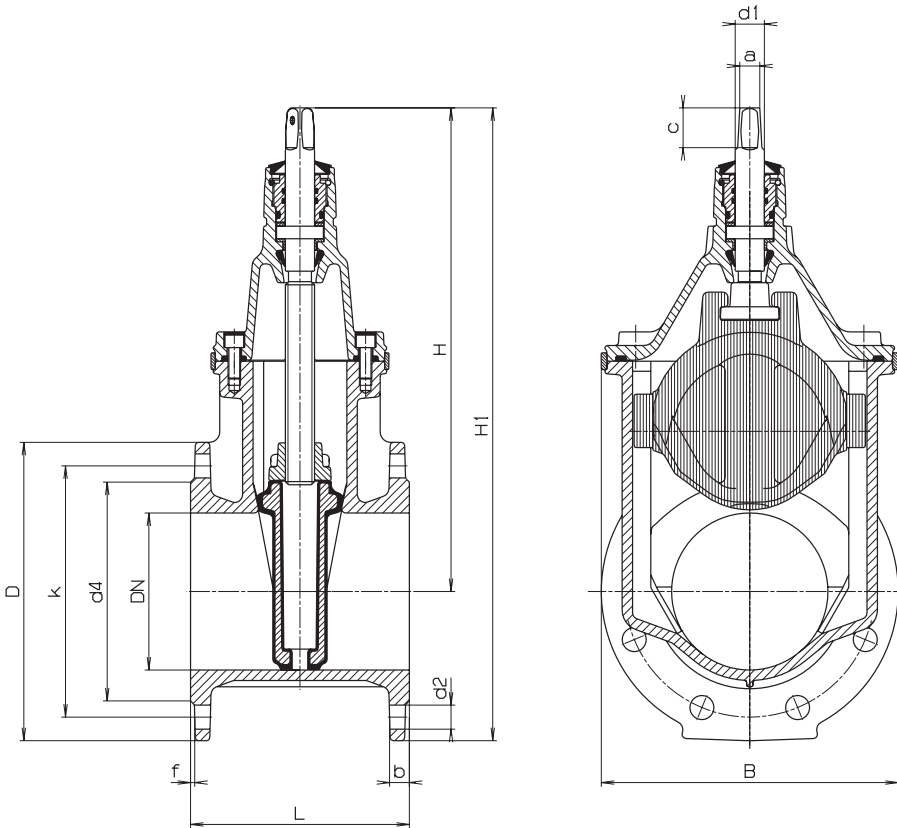
Suitable accessories: **Handwheel:** No. 7800

Extension Spindles: rigid No.9000E2, for DN 250 and above No. 9000 telescopic No. 9500E2, for DN 250 No. 9500

Surface Boxes: rigid No. 1750, telescopic No. 2050, 2051K

Design features:

- easiest retrofitting of position indicator and automatic actuator on the standard bonnet possible
- one extension spindle for several dimensions
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 25 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings
 - up to DN 200 under pressure (according ISO 7259)
 - from DN 250 without pressure
- cleaning with pig possible



DN	PN	Flange					Bolts			Spindle			Valve				Weight kg		
		D	b	k	d 4	f	Qty.	Thread	d 2	a	c	d1	H	H1	L		B	short	long
															short	long			
50	25	165	19	125	98	3	4	M 16	19	14,8	30	22	260	342	150		143	11,0	
65		185	19	145	118	3	8	M 16	19	17,3	35	25	328	420	170		180	17,0	
80		200	19	160	133	3	8	M 16	19	17,3	35	25	336	436	180		180	18,5	
100		235	19	190	153	3	8	M 20	23	19,3	38	25	373	480	190		213	24,5	
125		270	19	220	183	3	8	M 24	28	19,3	38	28	450	585	200		285	35,0	
150		300	19	250	209	3	8	M 24	28	19,3	38	28	462	602	210	350	285	40,5	49,0
200		360	20	310	264	3	12	M 24	28	24,3	48	32	563	743	230	400	357	64,0	81,0
250		425	24,5	370	330	3	12	M 27	31	27,3	48	34	670	883		450	432		136,0
300		485	27,5	430	389	4,5	16	M 27	31	27,3	48	34	753	996		500	518		196,0

Order no.	Application	PN	Dimensions/DN The valve is sized in accordance with the smaller flange													
			100 65	100 80	150 80	125 100	150 100	200 100	200 150	250 150	300 150	250 200	300 200	300 250		
4150E2	Water, other applications on request	16	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Resilient seated gate valve with unequal flange sizes

of ductile iron

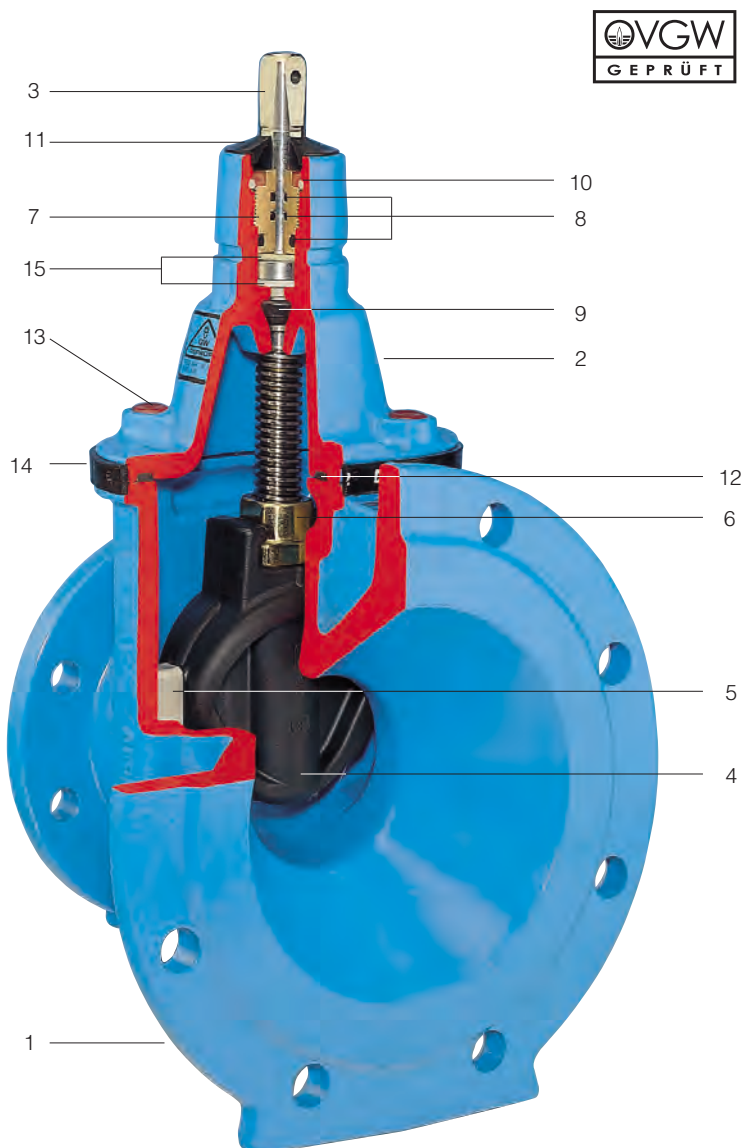
epoxy powder coated

This **E2 Elypso Reducing Valve** is a valve and a reducing connector in one piece. This feature offers major material and space saving benefits, particularly at junctions and branches where a reduction is needed.

The E2 Elypso Reducing Valves when used in conjunction with the Hawle cross connection fittings enable crossing points to be designed with excellent savings in the number of joints and fittings, and in labour and stock holding costs.

Material and design features:

- 1/2 **Body (1) and Bonnet (2)** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)
- 3 **Stainless steel spindle** St 1.4021 (X20Cr13), with rolled thread
- 4 **Wedge** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole
- 5 **Wedge guide** of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques
- 6 **Wedge nut** of dezincification resistant brass CuZn36Pb3As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- 7 **O ring bush** of Ms 58
- 8 **O rings** of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure up to DN 200 (according to ISO 7259), for DN 250 and higher without pressure
- 9 **Back seal** of elastomer, suitable for potable water
- 10 **Circlip** of POM
- 11 **Wiper ring** of elastomer
- 12 **Bonnet gasket** of elastomer, suitable for potable water
- 13 **Allen screws** St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket
- 14 **Edge protecting ring** of PE avoids damages during transport and storage
- 15 **Friction washers** of POM guarantee smooth spindle guiding



Flanges according to EN 1092-2, drilled to DIN 2501 - PN 10 (standard);

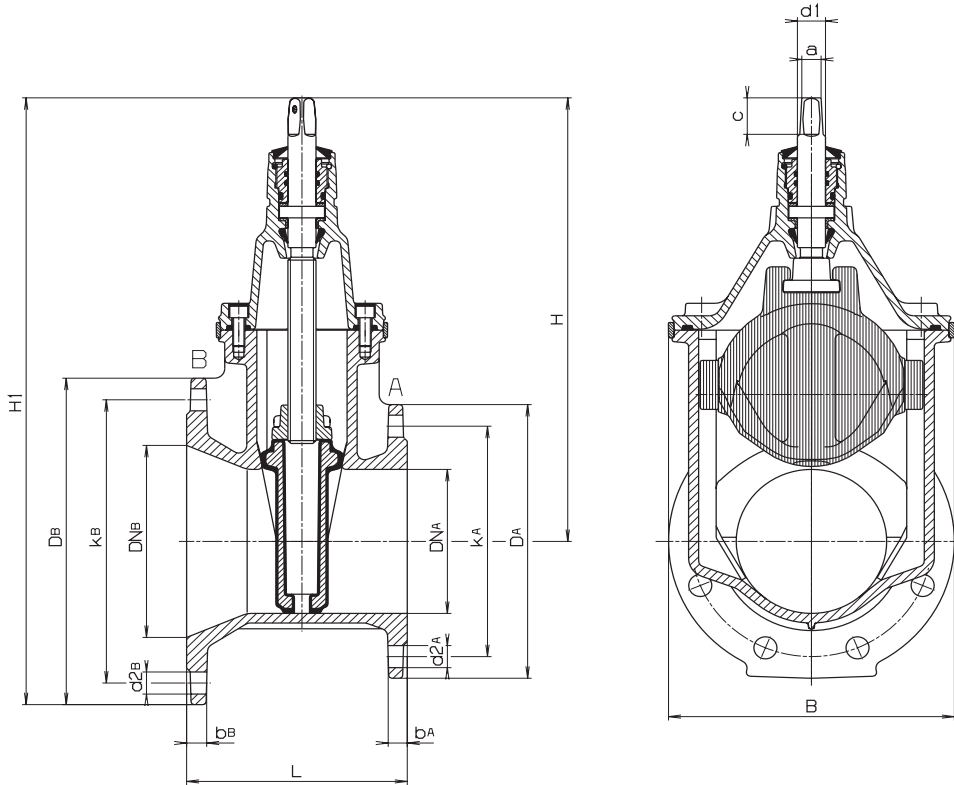
For DIN 2501 - PN 16 in sizes of DN 200 mm and above please specify on order - other standards of request !

E2 Elypso Reducing Valve

- Standard version:** without handwheel and extension spindle
- Design versions:** for electric actuator: No. 4150ELE2;
with position indicator: No. 4150STE2
- Special versions:** **on request !**
- Suitable accessories:** **Handwheel:** No. 7800
- Extension Spindles:** rigid No. 9000E2, for DN 250 and higher No. 9000
telescopic No. 9500E2, for DN 250 and higher No. 9500
- Surface Boxes:** rigid No. 1750, telescopic No.2050, No. 2051K

Design features:

- easy retrofitting of position indicator and automatic actuator on the standard bonnet
- one extension spindle for several dimensions
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 16 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in the wedge nut guarantees highest possible strength
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings
 - up to DN 200 under pressure (according ISO 7259)
 - from DN 250 without pressure



The valve is sized in accordance with the smaller flange nb*, nA* = bolts per flange

DN	PN	Flange A					Flange B					Valve				Spindle			Weight kg
		DA	ba	KA	d2A	nA*	DB	bb	KB	d2B	nb*	H	H 1	L	B	a	c	d 1	
100 - 65	10/16	185	19	145	19	4	220	19,0	180	19	8	328	438	180	180	17,3	35	25	19,0
100 - 80	10/16	200	19	160	19	8	220	19,0	180	19	8	336	446	190	180	17,3	35	25	20,0
150 - 80	10/16	200	19	160	19	8	285	19,0	240	23	8	336	479	200	180	17,3	35	25	24,0
125 - 100	10/16	220	19	180	19	8	250	19,0	210	19	8	373	498	200	213	19,3	38	25	25,5
150 - 100	10/16	220	19	180	19	8	285	19,0	240	23	8	373	516	210	213	19,3	38	25	28,0
200 - 100	10/16	220	19	180	19	8	340	20,0	295	23	8/12	373	543	210	213	19,3	38	25	32,0
200 - 150	10/16	285	19	240	23	8	340	20,0	295	23	8/12	462	632	220	285	19,3	38	28	46,5
250 - 150	10/16	285	19	240	23	8	400	22,0	350/355	23/28	12	462	662	230	285	19,3	38	28	52,5
300 - 150	10/16	285	19	240	23	8	455	24,5	400/410	23/28	12	462	690	240	285	19,3	38	28	57,0
250 - 200	10/16	340	20	295	23	8/12	400	22,0	350/355	23/28	12	563	763	240	357	24,3	48	32	68,0
300 - 200	10/16	340	20	295	23	8/12	455	24,5	400/410	23/28	12	563	791	250	357	24,3	48	32	74,0
300 - 250	10/16	400	22	350/355	23/28	12	455	24,5	400/410	23/28	12	670	898	260	432	27,3	48	34	105,0

Order no.	Version	Application	PN	Dimensions/DN											
				50	65	80	100	125	150	200	250	300	400		
4100E2	standard length	Water, other applications on request !	16	●	●	●	●	●	●	●	●	●	●	●	
4140E2	Length 600 mm					●	●		●	●					
	Length 810 mm											●			
	Length 860 mm													●	

Resilient seated gate valve with smooth straight-through bore

of ductile iron

epoxy powder coated

Material and design features:

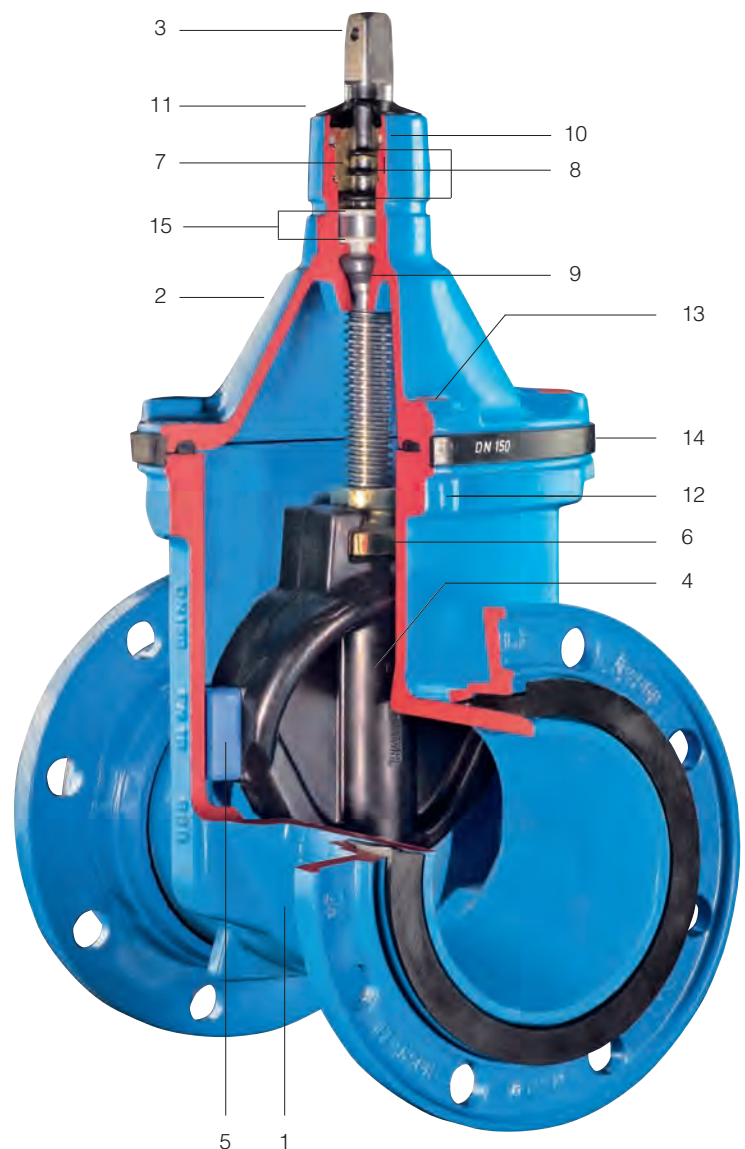
- 1/2 **Body (1) and Bonnet (2)** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)
- 3 **Stainless steel spindle** St 1.4021 (X20Cr13), with rolled thread
- 4 **Wedge** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole
- 5 **Wedge guide** of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques
- 6 **Wedge nut** of dezincification resistant brass CuZn36Pb3As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- 7 **O ring bush** of Ms 58
- 8 **O rings** of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure (according to ISO 7259) up to DN 200, for DN 250 and higher without pressure
- 9 **Back seal** of elastomer, suitable for potable water
- 10 **Circlip** of POM
- 11 **Wiper ring** of elastomer
- 12 **Bonnet gasket** of elastomer, suitable for potable water
- 13 **Allen screws** St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket
- 14 **Edge protecting ring** of PE avoids damages during transport and storage
- 15 **Friction washers** of POM guarantee smooth spindle guiding

The **Hawle E2 Valve** with smooth spigot ends is a universal design suitable for both flange and socket connections.

Makes easy the replacement of old valves with flanged ends; if Hawle flanges are used on the valve spigot ends, then flat gaskets are not necessary.

Face-to-face dimension of the valve can be adjusted by shortening the spigots.

The outside diameters of the spigots are the same as those of cast iron pipes; (other sizes on request).



E2 Valve Spigot Ends

Standard version: without handwheel and extension spindle

Special versions: for example: **restraint type on request !**

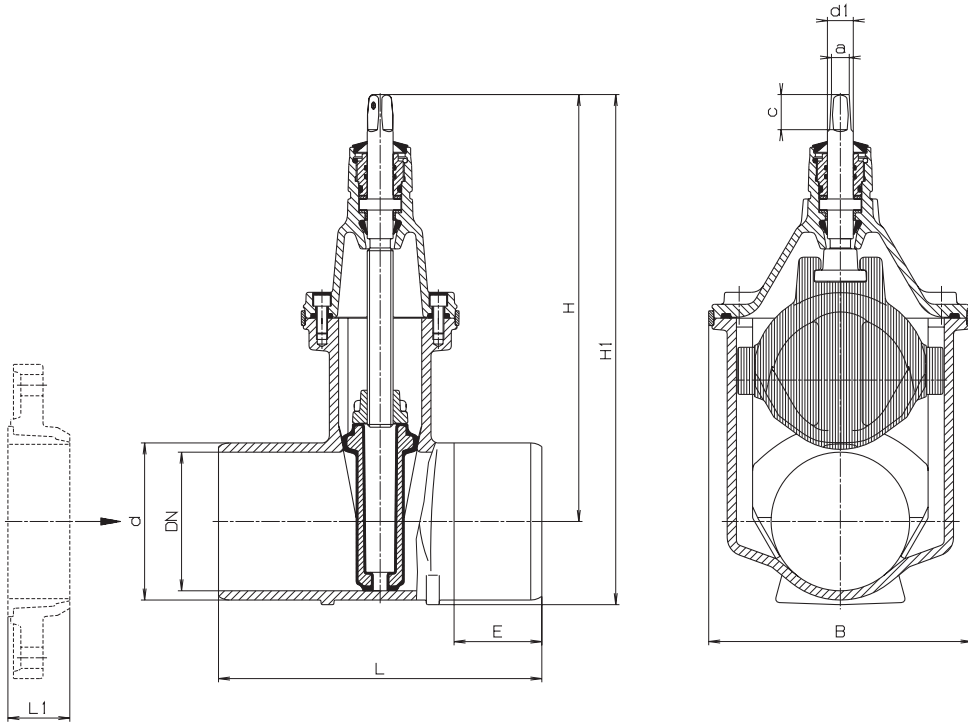
Suitable accessories: **Handwheel:** No. 7800

Extension Spindles: rigid No. 9000E2, for DN 250 and higher No. 9000
telescopic No. 9500E2, for DN 250 and higher No. 9500

Surface Boxes: rigid No. 1750, telescopic No. 2050, 2051K

Design features:

- easiest retrofitting of position indicator and automatic actuator on the standard bonnet possible
- one extension spindle for several dimensions
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 16 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings
 - up to DN 200 under pressure (according ISO 7259)
 - from DN 250 without pressure
- cleaning with pig possible



For a shorter face-to-face dimension, shorten the spigot ends and assemble with HAWLE flanges (see "Flanges" in the catalogue index).

Note: ensure that spigot length "E" is not less than flange body depth "L".

DN	Valve						Spindle			Weight kg
	d*	L	E	H	H1	B	a	c	d 1	
50	66	250	80	260	296	143	14,8	30	22	7,8
65	82	270	85	328	373	180	17,3	35	25	13,0
80	98	280	85	336	390	180	17,3	35	25	14,5
		600	245							19,5
100	118	300	90	373	438	213	19,3	38	25	20,0
		600	240							26,0
125	144	325	95	450	527	285	19,3	38	28	30,0
150	170	350	95	462	552	285	19,3	38	28	34,5
		600	220							41,5
200	222	400	115	563	679	357	24,3	48	32	55,5
		600	215							65,0
250	274	450	120	670	813	432	27,3	48	34	93,0
		810	300							117,8
300	326	500	120	753	919	518	27,3	48	34	137,0
		860	300							173,0
400	429	600	133	974	1198	687	32,3	55	44	254,0

* other outside diameters on request

for ductile cast iron pipes to ÖNORM M 6072 – DIN 28603

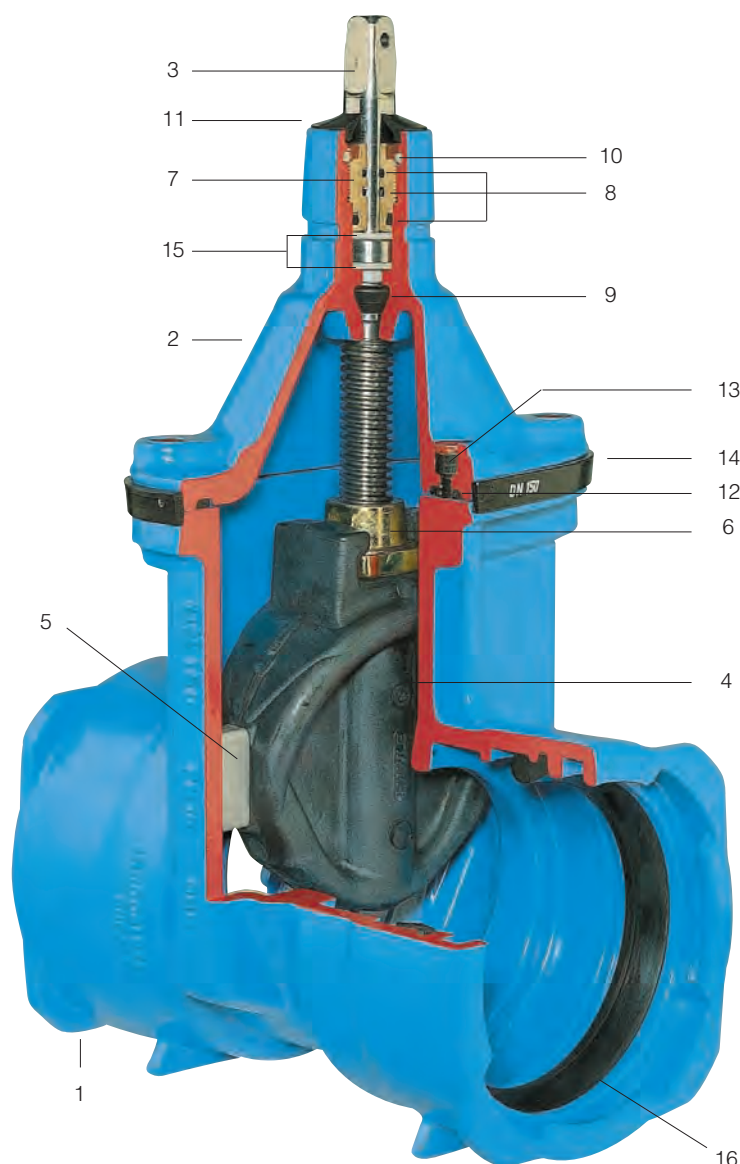
Order no.	Application	PN	Dimensions/DN						
			80	100	125	150	200	250	300
4500E2	Water, other applications on request	16	●	●	●	●	●	●	●

Resilient seated gate valve with sockets for cast iron pipes

of ductile iron

epoxy powder coated

- 1/2 **Body (1) and Bonnet (2)** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)
- 3 **Stainless steel spindle** St 1.4021 (X20Cr13), with rolled thread
- 4 **Wedge** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole
- 5 **Wedge guide** of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques
- 6 **Wedge nut** of dezincification resistant brass CuZn36Pb3As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- 7 **O ring bush** of Ms 58
- 8 **O rings** of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure (according to ISO 7259) up to DN 200, for DN 250 and higher without pressure
- 9 **Back seal** of elastomer, suitable for potable water
- 10 **Circlip** aus POM
- 11 **Wiper ring** of elastomer
- 12 **Bonnet gasket** of elastomer, suitable for potable water
- 13 **Allen screws** St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket
- 14 **Edge protecting ring** of PE avoids damages during transport and storage
- 15 **Friction washers** of POM guarantee smooth spindle guiding
- 16 **Socket seal** of elastomer, suitable for potable water



E2 Elypso Valve Socket Ends for ductile cast iron pipes

Standard version: without handwheel and extension spindle

Suitable accessories: **Handwheel:** No. 7800

Design versions: for electric actuator: No. 4500ELE2
with position indicator: No. 4500STE2

Extension Spindles:
rigid No. 9000E2, for DN 250 and higher No. 9000
telescopic No. 9500E2, for DN 250 and higher No. 9500

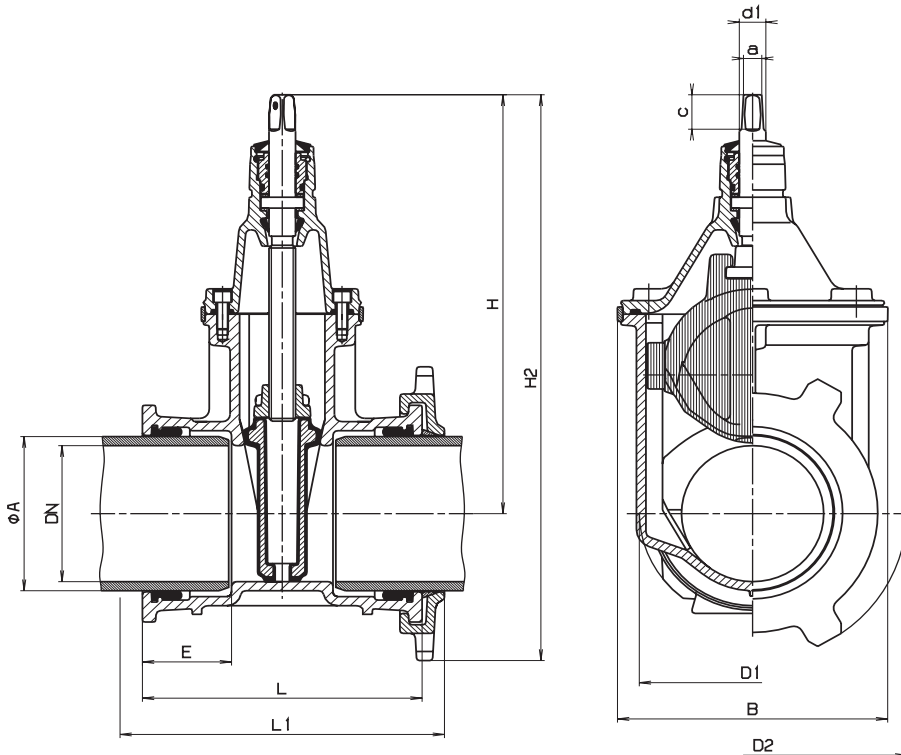
Special versions: on request!

Surface Boxes:
rigid No. 1750, telescopic No. 2050, 2051K

Restraint joints: Hawle-Stop No. NL 80, NL 78

Design features:

- easy retrofitting of position indicator and automatic actuator on the standard bonnet
- one extension spindle for several dimensions
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 16 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in the wedge nut guarantees highest possible strength
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings
 - up to DN 200 under pressure (according ISO 7259)
 - from DN 250 without pressure
- cleaning with pig possible



DN	Pipe Ø A	Valve								Spindle			Hawle Stop
		D1	E	H	H 2	L	L1	B	Weight	a	c	d 1	Weight/kg
80	98	165	110	336	456	300	414	180	18,5	17,3	35	25	3,7
100	118	187	105	373	505	300	430	213	24,0	19,3	38	25	4,7
125	144	213	115	450	595	345	474	285	30,0	19,3	38	28	5,0
150	170	239	115	462	624	340	474	285	39,5	19,3	38	28	5,5
200	222	302	125	563	757	365	511	357	63,0	24,3	48	32	9,6
250	274	360	105	670	895	470	562	432	102,0	27,3	48	36	11,1
300	326	421	110	753	1008	537	628	518	162,0	27,3	48	36	14,9

for ductile cast iron pipes and pipes with VRS-Socket

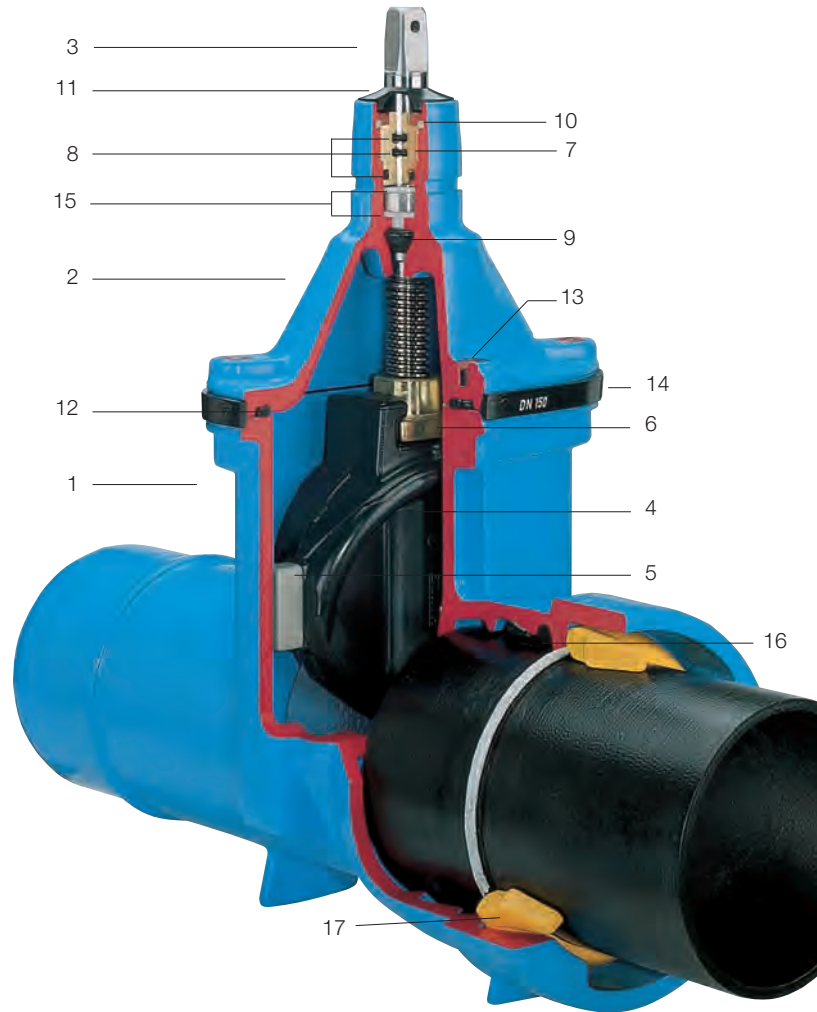
Order no.	Version	Application	PN	Dimensions/DN						
				80	100	125	150	200	250	300
4027E2	Socket - Spigot	Water, other applications on request	16	•	•	•	•	•	•	•

of ductile iron

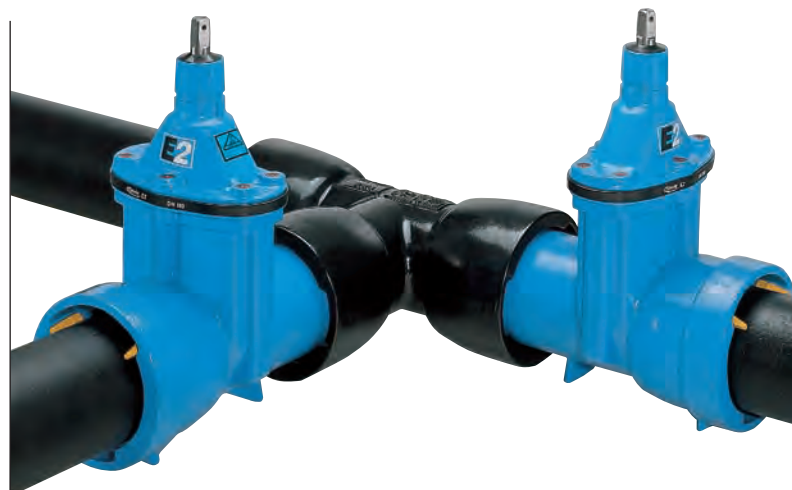
epoxy powder coated

Material and design features:

- 1/2 **Body (1) and Bonnet (2)** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)
- 3 **Stainless steel spindle** St 1.4021 (X20Cr13), with rolled thread
- 4 **Wedge** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole
- 5 **Wedge guide** of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques
- 6 **Wedge nut** of dezincification resistant brass CuZn36Pb3As, generous oversizing of the required thread length in the wedge nut according to prEN 1171 (draft) guarantees highest possible breaking torques
- 7 **O ring bush** of Ms 58
- 8 **O rings** of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure (according to ISO 7259) up to DN 200, for DN 250 and higher without pressure
- 9 **Back seal** of elastomer, suitable for potable water
- 10 **Circlip** of POM
- 11 **Wiper ring** of elastomer
- 12 **Bonnet gasket** of elastomer, suitable for potable water
- 13 **Allen screws** St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket
- 14 **Edge protecting ring** of PE avoids damages during transport and storage
- 15 **Friction washers** of POM guarantee smooth spindle guiding
- 16 **Socket seal** of elastomer, suitable for potable water
- 17 **Standard version** without pipe restraint clamp



The no-flange pipeline!

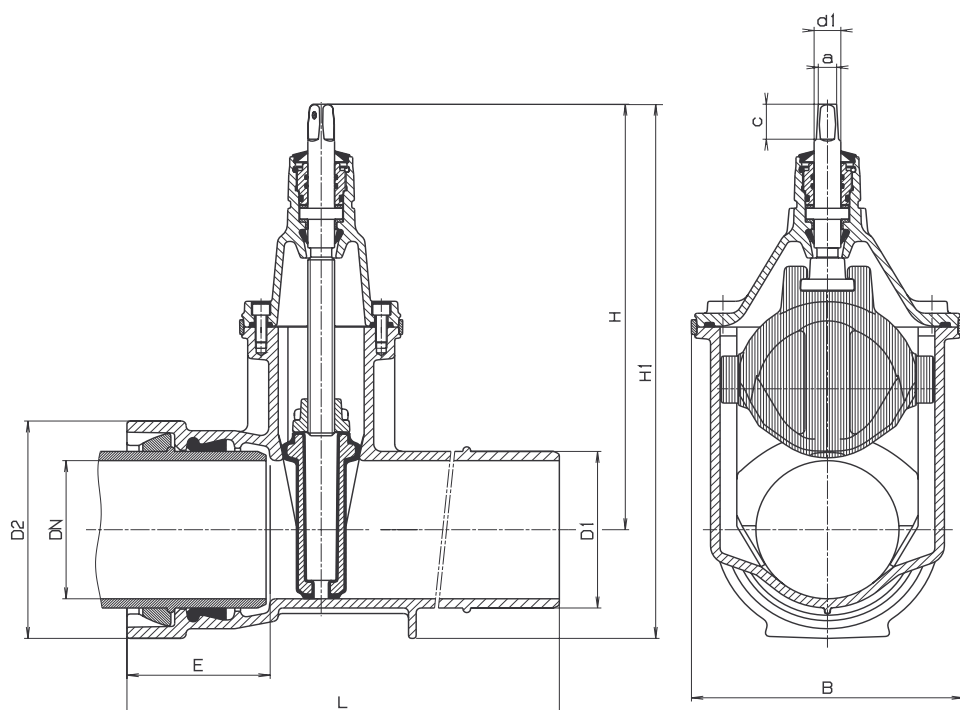


E2 VRS-Socket Valve

Standard version:	without handwheel and extension spindle
Design versions:	for electric actuator: No. 4027ELE2; with position indicator: No. 4027STE2
Special versions:	on request!
Suitable accessories:	
Handwheel:	No. 7800
Extension Spindles:	rigid No. 9000E2, from DN 250 No. 9000 telescopic No. 9500E2, from DN 250 No. 9500
Surface Boxes:	rigid No. 1750, telescopic No. 2050, 2051K

Design features:

- easiest retrofitting of position indicator and automatic actuator on the standard bonnet possible
- one extension spindle for several dimensions
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 16 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in the wedge nut according to prEN 1171 guarantees highest possible breaking torques
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings
 - up to DN 200 under pressure (according ISO 7259)
 - from DN 250 without pressure
- cleaning with pig possible



DN	Pipe Ø mm	Valve							Spindle			Weight kg
		D1	D2	E	H	H1	L	B	a	c	d1	
80	98	98	156	127	336	414	422	180	17,3	35	25	20,5
100	118	118	178	135	373	462	440	213	19,3	38	25	26,5
125	144	144	208	143	450	554	494	285	19,3	38	25	35,0
150	170	170	235	150	462	580	513	285	19,3	38	28	46,5
200	222	222	295	160	563	711	535	357	24,3	48	32	74,0
250	274	274	356	165	670	848	577	432	27,3	48	36	112,0
300	326	326	414	170	753	960	638	518	27,3	48	36	168,0

Order no.	PE-fusion tails	PN	Application	Dimensions/DN Pipe-Ø mm													
				25 32	32 40	40 50	50 63	65 75	80 90	100 110	100 125	125 140	150 160	150 180	200 200	200 225	
4050	PE 80 / SDR 11	10	Cold water, other application on request	●	●	●											
	PE 100 / SDR 11	16															
4050E2	PE 80 / SDR 11	10					●	●	●	●	●	●	●	●	●	●	●
	PE 100 / SDR 11	16															
4051E2	PE 80 / SDR 17.6	6					●	●	●	●	●	●	●	●	●	●	●
	PE 100 / SDR 17.6	10															

please specify on order PE (standard PE 80)

Resilient seated gate valve with PE fusion tails for use with PE piping according to ÖNORM B 5172, DIN 8075 of ductile iron, epoxy powder coated



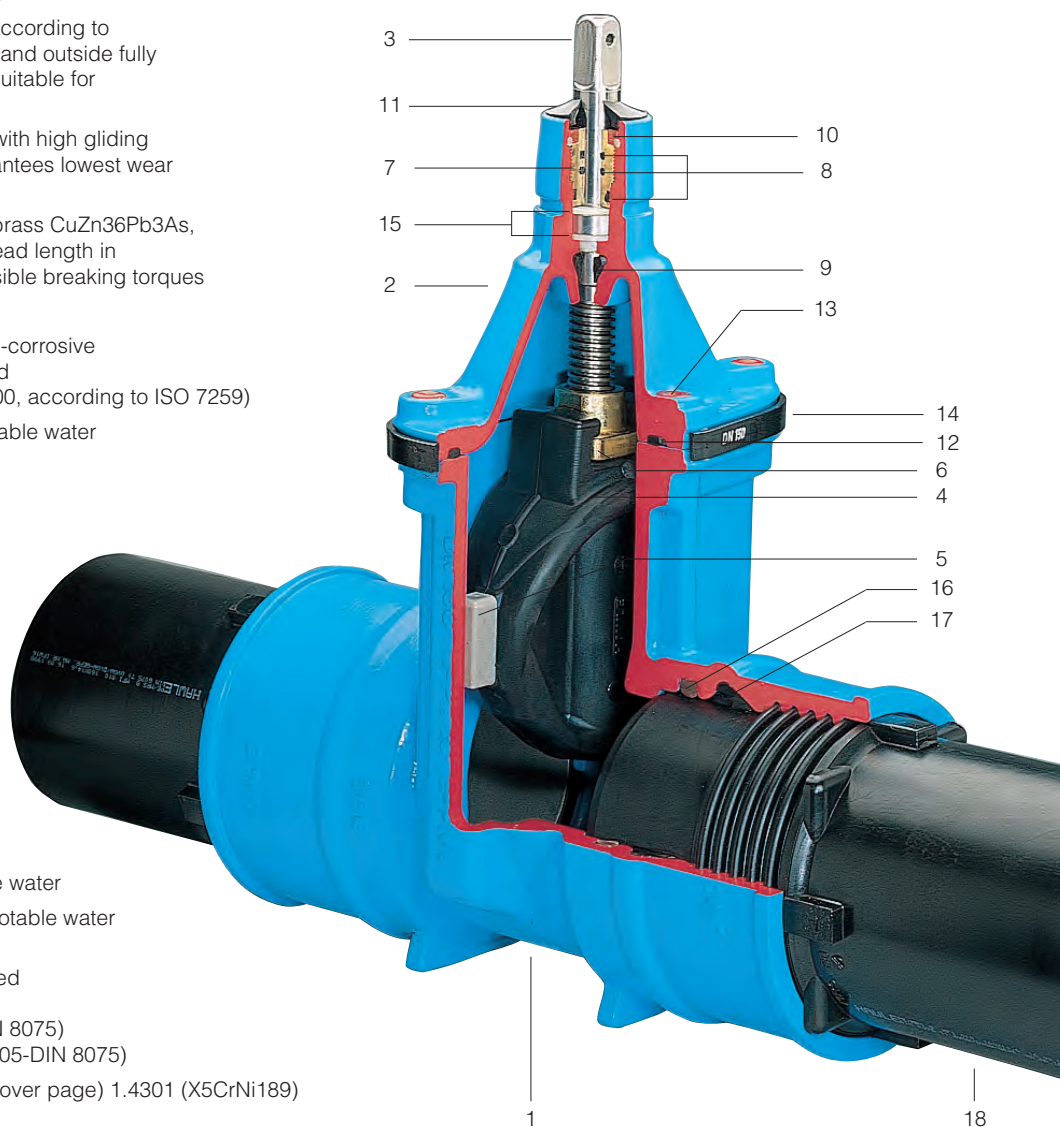
Material and design features:

- 1/2 **Body (1) and bonnet (2)** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)
 - 3 **Stainless steel spindle** St 1.4021 (X20Cr13), with rolled thread and O ring slide faces
 - 4 **Wedge** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole
 - 5 **Wedge guide** of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques
 - 6 **Wedge nut** of dezincification resistant brass CuZn36Pb3As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
 - 7 **O ring bush** of Ms 58
 - 8 **O rings** of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure (DN 50 - 200, according to ISO 7259)
 - 9 **Back seal** of elastomer, suitable for potable water
 - 10 **Circlip** of POM
 - 11 **Wiper ring** of elastomer
 - 12 **Bonnet gasket** of elastomer, suitable for potable water
 - 13 **Allen screws** St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket
 - 14 **Edge protecting ring** of PE avoids damages during transport and storage
 - 15 **Friction washers** of POM guarantee smooth spindle guiding
 - 16 **O ring** of elastomer, suitable for potable water
 - 17 **Socket seal** of elastomer, suitable for potable water
 - 18 **PE tails**
standard version PE 80 injection moulded
Melt flow rate: MFR 190/5 kg - 09
MFR-group 010 (DIN 8075)
(PE 100 MFR-group 05-DIN 8075)
- Support liner** for PE tails (see drawing over page) 1.4301 (X5CrNi189)

This resilient seated valve has PE tails screwed into and sealed in the sockets.

High performance sealing of the PE tails within the sockets is assured by two separate seals and a stainless steel support liner within the tails.

The valve can be connected to the PE pipeline by either butt fusion or electrofusion.

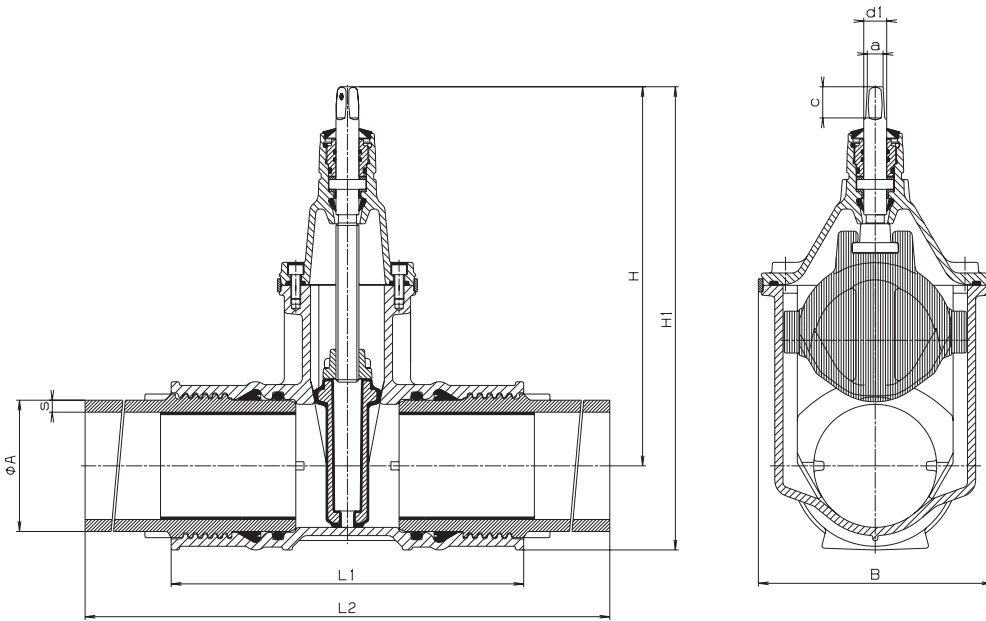


E2 Elypso Valve for PE fusion

- Standard version:** without handwheel and extension spindle
- Design versions:** for electric actuator: No. 4050ELE2, No. 4051ELE2
with position indicator: No. 4050STE2, No. 4051ELE2
- Special versions:** on request
- Suitable accessories:** **Handwheel:** No. 7800
- Extension Spindles:** rigid No. 9000E2, up to DN 40 No. 9101
Teleskopisch No. 9500E2, up to DN 40 No. 9601
- Surface Boxes:** rigid No. 1750, telescopic No. 2050, No. 2051K

Design features:
DN 50 - DN 200

- easy retrofitting of position indicator and automatic actuator on the standard bonnet
- one extension spindle for several dimensions
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 16 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in the wedge nut guarantees highest possible strength
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings under pressure (DN 50 - 200, according ISO 7259)
- cleaning with pig possible



DN	Ø A	Valve with PE tails							Spindle			Weight kg
		s (PN 6)*	s (PN 10)**	H	H 1	L 1	L 2	B	a	c	d 1	
25	32		3,0	164	192	196	518	80	10,3	20	14	11,5
32	40		3,7	199	234	230	556	103	10,3	20	16	11,5
40	50	2,9	4,6	199	242	240	576	103	10,3	20	16	11,5
50	63	3,6	5,8	260	309	280	648	143	14,8	30	22	11,5
65	75	4,3	6,9	328	384	295	657	180	17,3	35	25	17,5
80	90	5,1	8,2	336	400	310	668	180	17,3	35	25	20,0
100	110	6,3	10,0	373	449	340	710	213	19,3	38	25	27,5
100	125	7,1	11,4	373	458	395	761	213	19,3	38	25	30,0
125	140	8,0	12,8	450	542	390	756	285	19,3	38	28	44,0
150	160	9,1	14,6	462	565	430	796	285	19,3	38	28	52,0
150	180	10,4	16,4	462	577	458	814	285	19,3	38	28	61,5
200	200	11,4	18,2	563	701	514	900	357	24,3	48	32	92,0
200	225	12,8	20,5	563	701	514	900	357	24,3	48	32	94,0

*SDR 17.6 **SDR 11

Order no.	PE-fusion tails	PN	Application	Dimensions/DN Pipe Ø mm									
				50 63	65 75	80 90	100 110	100 125	125 140	150 160	150 180	200 225	
4090E2	PE 80 / SDR 11	10	Cold water, other applications on request	●	●	●	●	●	●	●	●	●	
	PE 100 / SDR 11	16											
4091E2	PE 80 / SDR 17.6	6		●		●	●						●
	PE 100 / SDR 17.6	10											

please specify on order PE (standard PE 80)

Resilient seated gate valve with flange and PE tail

for use with PE piping according to ÖNORM B 5172, DIN 8075,

of ductile iron, epoxy powder coated

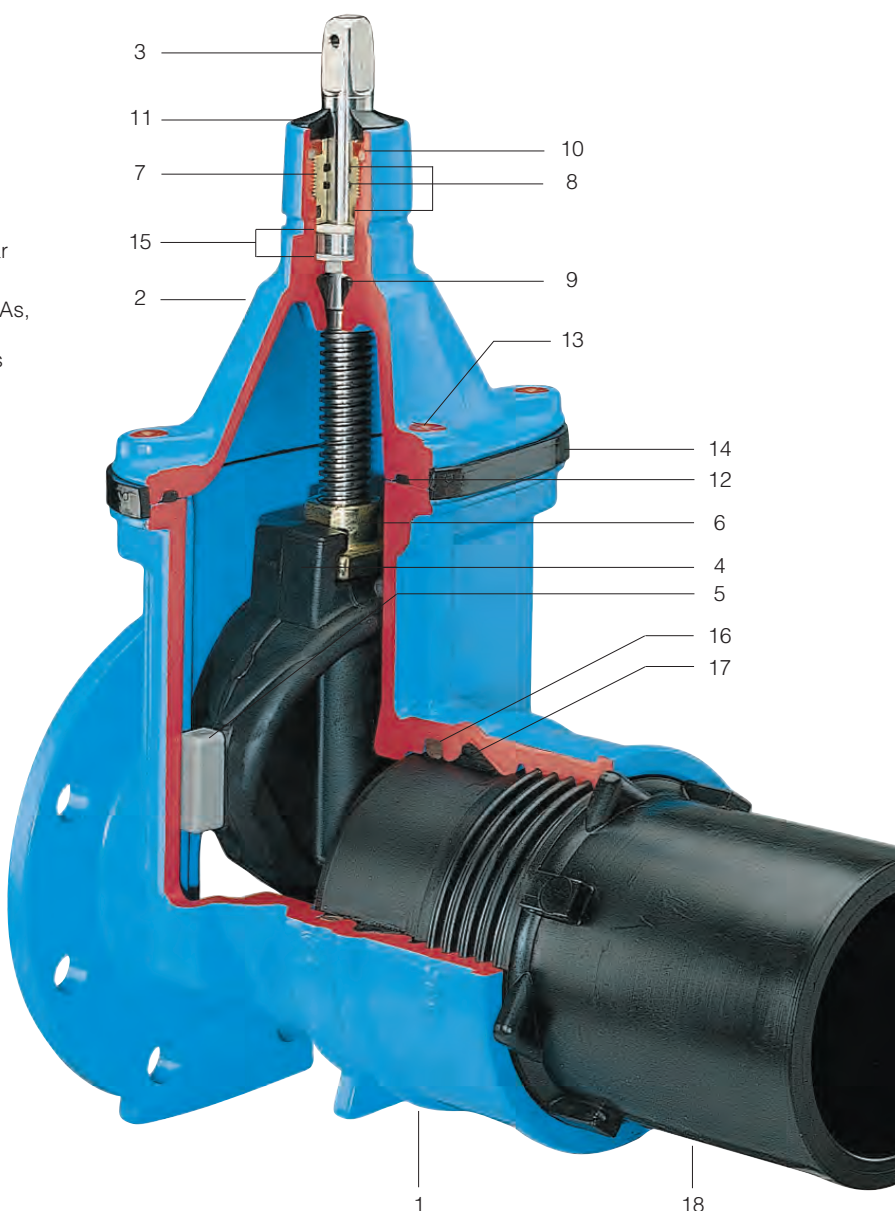
Material and design features:

- 1/2 **Body (1) and Bonnet (2)** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)
 - 3 **Stainless steel spindle** St 1.4021 (X20Cr13), with rolled thread and O ring slide faces
 - 4 **Wedge** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole
 - 5 **Wedge guide** of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques
 - 6 **Wedge nut** of dezincification resistant brass CuZn36Pb3As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
 - 7 **O ring bush** of Ms 58
 - 8 **O rings** of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure (according to ISO 7259)
 - 9 **Back seal** of elastomer, suitable for potable water
 - 10 **Circlip** of POM
 - 11 **Wiper ring** of elastomer
 - 12 **Bonnet gasket** of elastomer, suitable for potable water
 - 13 **Allen screws** St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket
 - 14 **Edge protecting ring** of PE avoids damages during transport and storage
 - 15 **Friction washers** of POM guarantee smooth spindle guiding
 - 16 **O ring** of elastomer, suitable for potable water
 - 17 **Socket seal** of elastomer, suitable for potable water
 - 18 **PE tails**
standard version PE 80 injection moulded
Melt flow rate: MFR 190/5 kg - 09
MFR-group 010 (DIN 8075)
(PE 100 MFR-group 05-DIN 8075)
- Support liner** for PE tails (see drawing over page)
1.4301 (X5CrNi189)

Flanges according to EN 1092-2, drilled to DIN 2501 - PN 10

This resilient seated valve has one flange and one PE tail screwed into and sealed in the socket.

High performance sealing of the PE tail within the sockets is assured by two separate seals and a stainless steel support liner within the tail. The valve can be connected to the PE pipeline by either butt fusion or electrofusion.



E2 Elypso Valve Flange/PE tail

Standard version: without handwheel and extension spindle

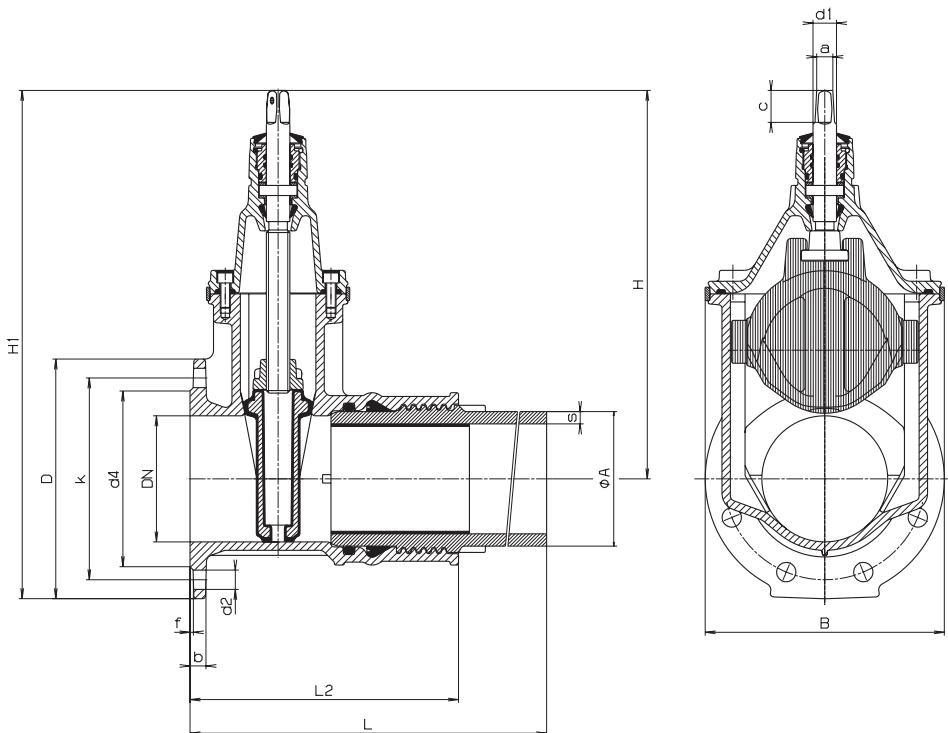
Design versions: for electric actuator: No. 4090ELE2, No. 4091ELE2
with position indicator: No. 4090STE2, No. 4091STE2

Special versions: on request!

Suitable accessories: **Handwheel:** No. 7800
Extension Spindles: rigid No. 9000E2
telescopic No. 9500E2
Surface Boxes: rigid No. 1750
telescopic No. 2050, No. 2051K

Design features:

- easy retrofitting of position indicator and automatic actuator on the standard bonnet
- one extension spindle for several dimensions
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 16 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in the wedge nut guarantees highest possible strength
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings under pressure (according to ISO 7259)
- cleaning with pig possible



DN	Pipe Ø mm	Flange					Bolts			Valve with PE tail							Spindle			Weight kg
		D	b	k	d 4	f	Qty.	Thread	d 2	s (PN 6)*	s (PN 10)**	H	H 1	L	L 2	B	a	c	d 1	
50	63	165	19	125	98	3	4	M 16	19	3,6	5,8	260	342	399	215	143	14,8	30	22	11,5
65	75	185	19	145	118	3	4	M 16	19		6,9	328	420	416	235	180	17,3	35	25	17,5
80	90	200	19	160	133	3	8	M 16	19	5,1	8,2	336	436	425	245	180	17,3	35	25	18,5
100	110	220	19	180	153	3	8	M 16	19	6,3	10,0	373	483	450	265	213	19,3	38	25	26,0
100	125	220	19	180	153	3	8	M 16	19		11,4	373	483	476	293	213	19,3	38	25	28,0
125	140	250	19	210	183	3	8	M 16	19		12,8	450	575	485	310	285	19,3	38	28	39,5
150	160	285	19	240	209	3	8	M 20	23		14,6	462	605	503	320	285	19,3	38	28	46,0
150	180	285	19	240	209	3	8	M 20	23		16,4	462	605	512	334	285	19,3	38	28	50,5
200	225	340	20	295	264	3	8	M 20	23	12,8	20,5	563	733	565	372	357	24,3	48	32	79,5

*SDR 17.6 **SDR 11

Order no.	PN	Dimensions/DN Pipe Ø mm													
		50 63	65 75	80 90	100 110	100 125	125 125	125 140	150 160	150 180	200 200	200 225	250 250	250 280	300 315
4040E2	16	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Resilient seated gate valve with sockets for PE (PE 80/100) and PVC pipes

(DIN 8074, EN 1452-2) - total restraint

Material and design features:

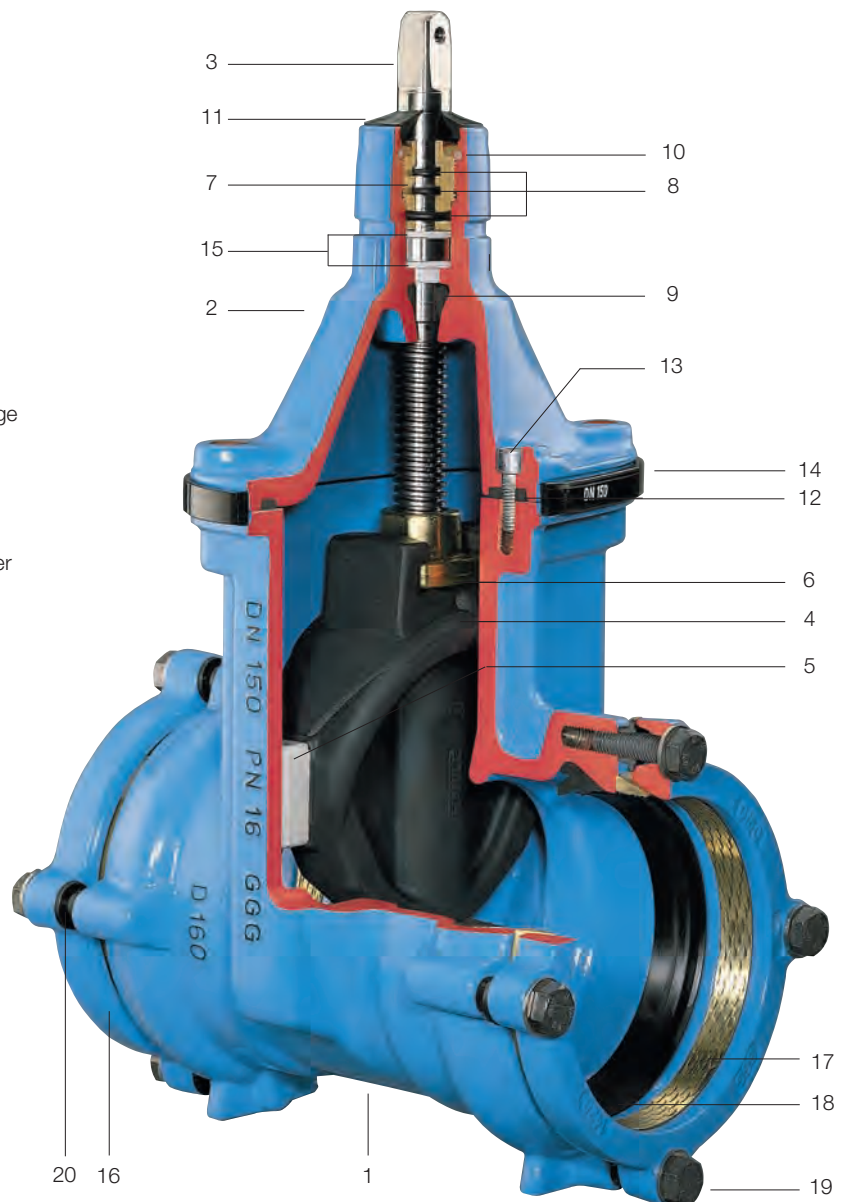
- 1/2/16 **Body (1) bonnet (2) and lock ring (16)** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)
- 3 **Stainless steel spindle** St 1.4021 (X20Cr13), with rolled thread and O ring slide faces
- 4 **Wedge** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole
- 5 **Wedge guide** of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques
- 6 **Wedge nut** of dezincification resistant brass CuZn36Pb3As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- 7 **O ring bush** of Ms 58
- 8 **O rings** of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure up to DN 200 (according to ISO 7259), for DN 250 and higher without pressure
- 9 **Back seal** of elastomer, suitable for potable water
- 10 **Circlip** of POM
- 11 **Wiper ring** of elastomer
- 12 **Bonnet gasket** of elastomer, suitable for potable water
- 13 **Allen screws** St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket
- 14 **Edge protecting ring** of PE avoids damages during transport and storage
- 15 **Friction washers** of POM guarantee smooth spindle guiding
- 17 **Grip ring** of Ms 58 (from DN 300 Rg 7)
- 18 **Lip seal** of elastomer, suitable for potable water
- 19 **Bolts and washers** of A2 (stainless steel)
- 20 **Spacer bushes** of PE

The pipe is sealed with a lip seal.

Minimal pipe insertion force is required for pushing the pipe end into the seal chamfer with an appropriate chamfer.

The pipe restraining system is effective separately from the sealing system and is activated by tightening the lock ring.

For thinwalled PE pipes (up to 3 mm wall thickness) and low internal pressure we recommend using a support liner (see page D 2/4).



Assembly instructions: see page M 6/2
Tensile load: see page M 6/2

E2 Valve SYSTEM 2000

Standard version: without handwheel and extension spindle

Special versions: on request

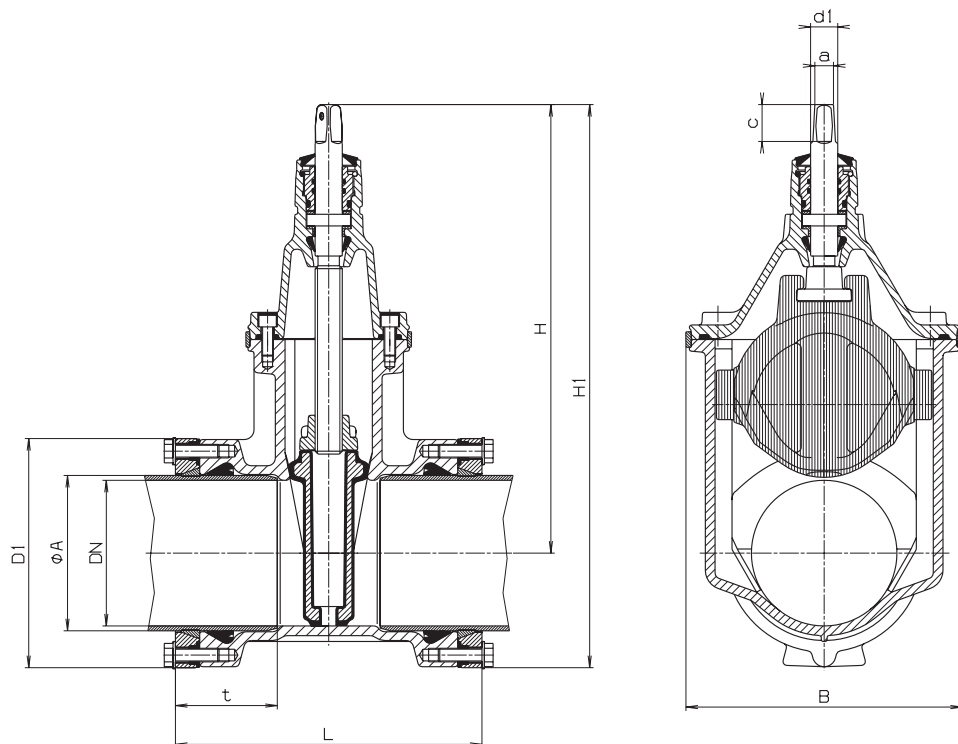
Suitable accessories: **Handwheel:** No. 7800

Extension Spindles: rigid No. 9000E2, from DN 250 No. 9000
telescopic No. 9500E2, from DN 250 No. 9500

Surface Boxes: rigid No. 1750, telescopic No. 2050, No. 2051K

Design features:

- easiest retrofitting of position indicator and automatic actuator on the standard bonnet possible
- one extension spindle for several dimensions
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 16 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings
 - up to DN 200 under pressure (according ISO 7259)
 - from DN 250 without pressure
- cleaning with pig possible



DN	Pipe Ø mm	Valve						Spindle			Weight kg
		D1	t	H	H 1	L	B	a	c	d 1	
50	63	124	83	260	322	226	143	14,8	30	22	8,1
65	75	138	85	328	397	240	180	17,3	35	25	14,3
80	90	152	88	336	412	242	180	17,3	35	25	13,8
100	110	174	88	373	460	252	213	19,3	38	25	18,3
	125	195	88	373	470	260	213	19,3	38	25	19,0
125	125	195	90	450	547	280	285	19,3	38	28	32,0
	140	212	96	450	556	278	285	19,3	38	28	33,0
150	160	236	108	462	580	316	285	19,3	38	28	34,0
	180	258	118	462	591	342	285	19,3	38	28	36,0
200	200	284	128	563	705	366	357	24,3	48	32	65,0
	225	314	130	563	720	366	357	24,3	48	32	69,0
250	250	347	147	670	844	400	432	27,3	48	34	103,0
	280	376	150	670	858	420	432	27,3	48	34	110,0
300	315	422	176	753	964	472	518	27,3	48	34	168,0

Order no.	PN	Dimension/DN Pipe Ø mm												
		50 63	65 75	80 90	100 110	100 125	125 140	150 160	150 180	200 200	200 225	250 250	250 280	300 315
4041E2	16	●	●	●	●	●	●	●	●	●	●	●	●	●

Resilient seated gate valve with flange and socket for PE (PE 80/100) and PVC pipes (DIN 8074, EN 1452-2) - total restraint

Material and design features:

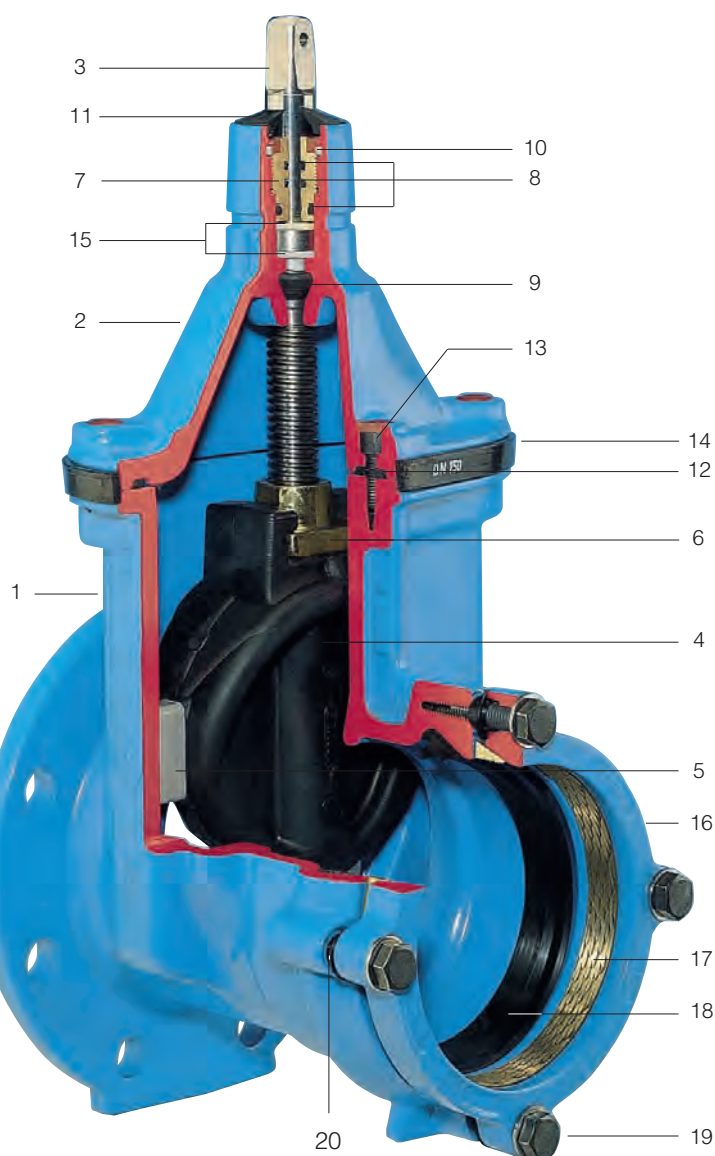
- 1/2/16 **Body (1) bonnet (2) and lock ring (16)** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)
- 3 **Stainless steel spindle** St 1.4021 (X20Cr13), with rolled thread and O ring slide faces
- 4 **Wedge** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole
- 5 **Wedge guide** of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques
- 6 **Wedge nut** of dezincification resistant brass CuZn36Pb3As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- 7 **O ring bush** of Ms 58
- 8 **O rings** of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure up to DN 200 (according to ISO 7259), DN 250 and higher without pressure
- 9 **Back seal** of elastomer, suitable for potable water
- 10 **Circlip** of POM
- 11 **Wiper ring** of elastomer
- 12 **Bonnet gasket** of elastomer, suitable for potable water
- 13 **Allen screws** St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket
- 14 **Edge protecting ring** of PE avoids damages during transport and storage
- 15 **Friction washers** of POM guarantee smooth spindle guiding
- 17 **Grip ring** of Ms 58 (from DN 300 Rg 7)
- 18 **Lip seal** of elastomer, suitable for potable water
- 19 **Bolts and washers** of A2 (stainless steel)
- 20 **Spacer bushes** of PE

The pipe is sealed with a lip seal.

Minimal pipe insertion force is required for pushing the pipe end into the seal chamfer with an appropriate chamfer.

The pipe restraining system is effective separately from the sealing system and is activated by tightening the lock ring.

For thinwalled PE pipes (up to 3 mm wall thickness) and low internal pressure we recommend using a support liner (see page D 2/4).



Assembly instructions: see page M 6/2
Tensile load: see page M 6/2

Flange according to EN 1092-2, drilled to DIN 2501-PN10 (standard);
 For DIN 2501-PN 16 in sizes of DN 200 mm and above please specify on order - other standards on request !

E2 Valve Flange/socket SYSTEM 2000

Standard version: without handwheel and extension spindle

Design versions: for electric actuator: No.4041ELE2;
with position indicator: No. 4041STE2

Special versions: on request

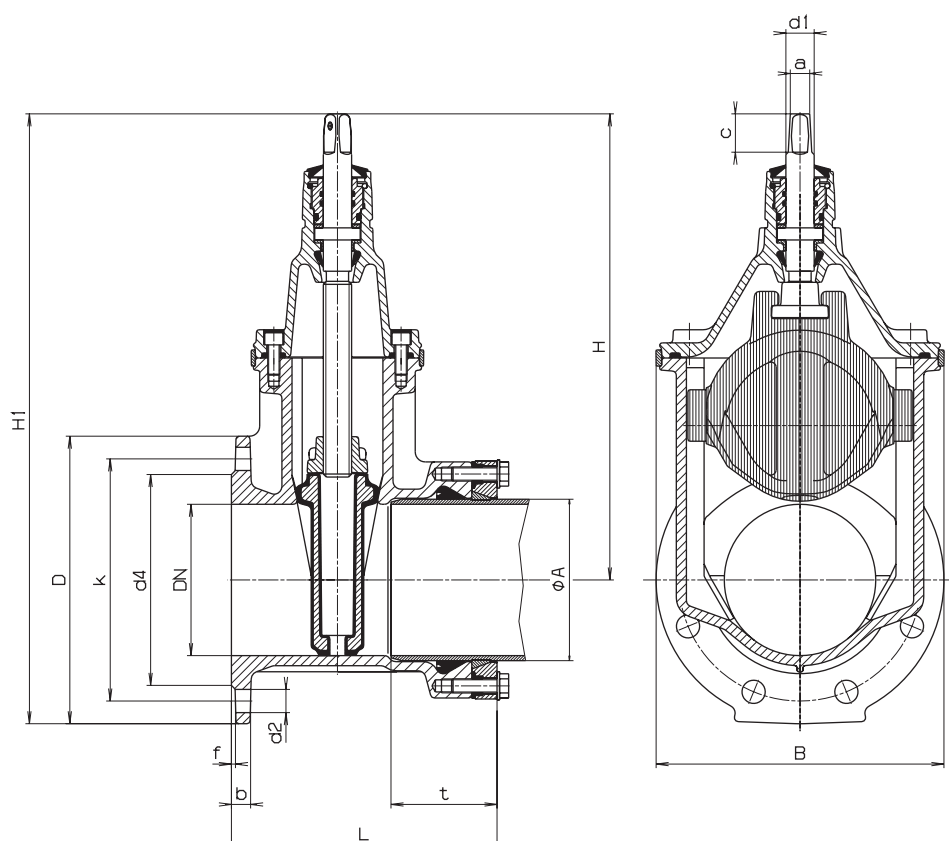
Suitable accessories: **Handwheel:** No. 7800

Extension Spindles: rigid No. 9000E2, from DN 250 No. 9000
telescopic No. 9500E2, from DN 250 No. 9500

Surface Boxes: rigid No. 1750, telescopic No. 2050, No.2051K

Design features:

- easy retrofitting of position indicator and automatic actuator on the standard bonnet
- one extension spindle for several dimensions
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 16 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in the wedge nut guarantees highest possible strength
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings
 - up to DN 200 under pressure (according ISO 7259)
 - from DN 250 without pressure
- cleaning with pig possible



DN	PN	Pipe Ø mm	Flange					Bolts			Valve				Spindle			Weight kg	
			D	b	k	d 4	f	Qty.	Thread	d 2	t	H	H 1	L	B	a	c		d 1
50	10	63	165	19	125	98	3	4	M 16	19	83	260	342	188	143	14,8	30	22	10,5
	16																		
65	10	75	185	19	145	118	3	4	M 16	19	85	328	420	205	180	17,3	35	25	15,5
	16																		
80	10	90	200	19	160	133	3	8	M 16	19	88	336	436	211	180	17,3	35	25	17,5
	16																		
100	10	110	220	19	180	153	3	8	M 16	19	88	373	483	221	213	19,3	38	25	22,0
	16																		
125	10	140	250	19	210	183	3	8	M 16	19	96	450	575	239	285	19,3	38	28	33,5
	16																		
150	10	160	285	19	240	209	3	8	M 20	23	108	462	605	263	285	19,3	38	28	40,0
	16																		
200	10	200	340	20	295	264	3	8	M 20	23	128	563	733	298	357	24,3	48	32	65,0
	16																		
250	10	250	400	22	350	319	3	12	M 20	23	147	670	870	325	432	27,3	48	34	102,0
	16																		
300	10	315	455	24,5	400	367	4	12	M 20	23	176	753	981	371	518	27,3	48	34	158,0
	16																		

Order no.	Version	PN	Dimensions/DN										
			50	65	80	100	125	150	200	250	300	350	400
3600	with non-rising spindle	10	●	●	●	●	●	●	●				
		6								●	●	●	●
3600EL	with non-rising spindle and adaptor for connecting electric actuator	10			●	●	●	●	●				
		6								●	●		●

Ask for a special leaflet.

Resilient seated gate valve for many applications in for example sewage treatment plants, the paper industry, the mining industry, the chemical and animal feed stuff industries and for low viscosity fluids and dry products.

High corrosion resistance is ensured by the use of high grade stainless steel for the knife and spindle and epoxy powder coating for the grey cast iron body.

The Knife Gate Valve can be mounted either between two flanges in a pipeline or with an opposing flange at the end of a pipeline.

The bore is clear and unobstructed.

The valve can be operated with a handwheel, a key, an extension spindle or by an electrically powered actuator. Please specify as required.

Material and design features:

- | | |
|------------------------------------|---|
| 1 Body | of grey iron EN-GJL -250 according to EN 1561 (GG 250-DIN 1691) epoxy powder coated inside and outside (undivided up to DN 200) |
| 2 Thrust block | DN 50 - 200 of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400-DIN 1693)
DN 250 - 400 of grey iron EN-GJL -250 according to EN 1561 (GG 250-DIN 1691) epoxy powder coated |
| 3 Stainless steel spindle | 1.4021, with rolled thread, long heavy duty spindle for high resistance to wear and tear |
| 4 Knife | stainless steel 1.4301, other materials on request |
| 5 Back rest | up to DN 200, of grey iron EN-GJL -250 according to EN 1561 (GG 250-DIN 1691) inside and outside epoxy powder coated |
| 6 Spindle nut | Rg 7 |
| 7 Tie bar | stainless steel 1.4021 |
| 8 Hexagon bolts | A 2 |
| 9 Hexagon nut | A 2 |
| Cross sealing and U-sealing | of elastomer |
| Friction washer | of POM |
| Handwheel | of grey iron EN-GJL -250 according to EN 1561 (GG 250-DIN 1691) epoxy powder coated |

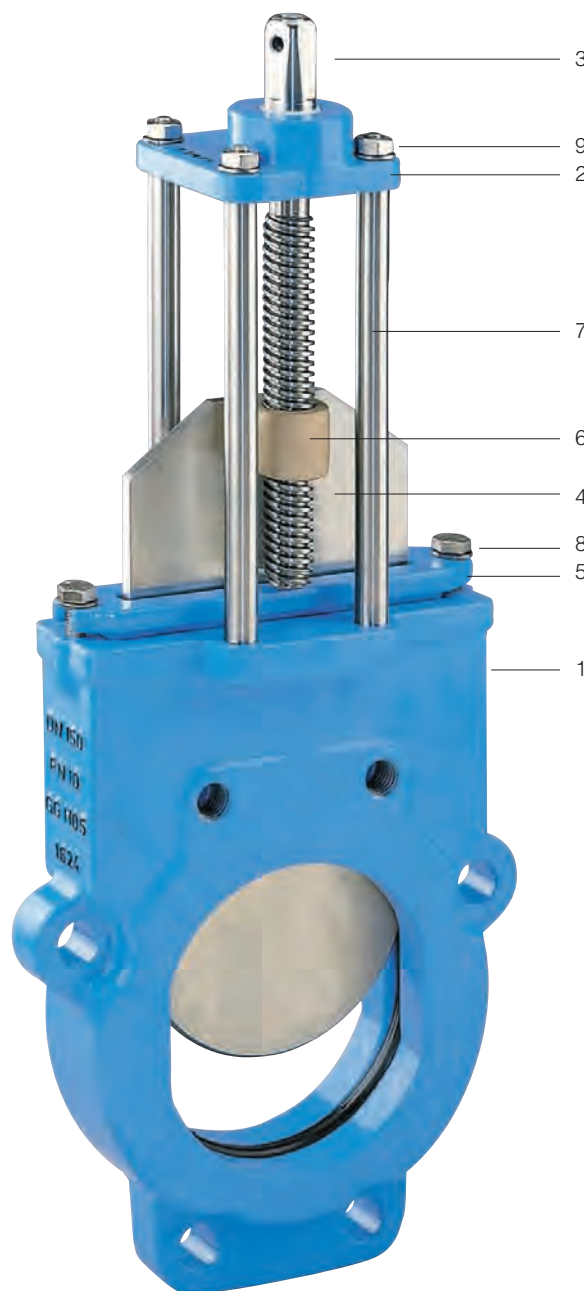


illustration DN 50 - 200

Flanges according to EN 1092-2, PN 10

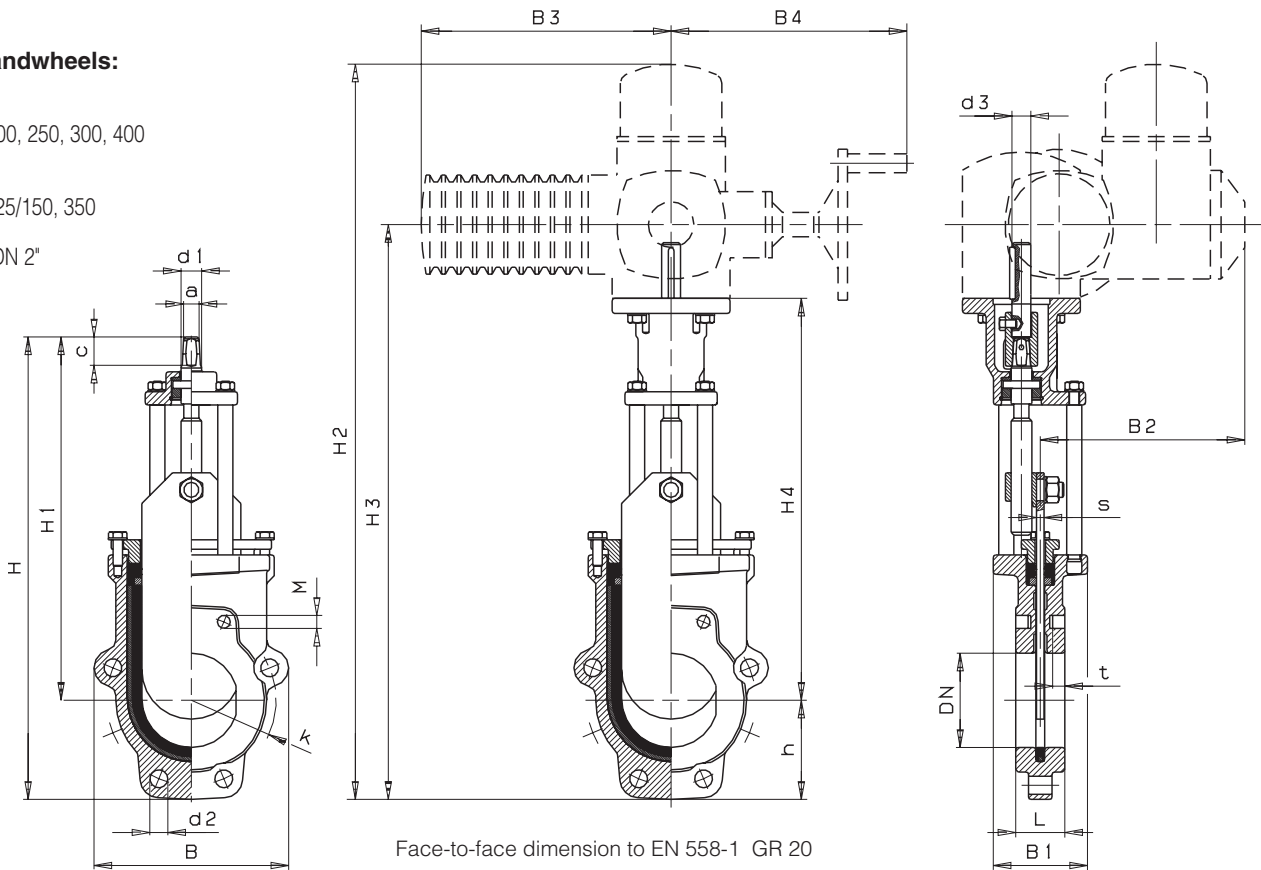
Knife Gate Valve

suitable handwheels:

No. 7840
DN 80, 100, 200, 250, 300, 400

No. 7800
DN 50*/65*, 125/150, 350

* = No. 7800 DN 2"



Face-to-face dimension to EN 558-1 GR 20

Dimensions	DN	50	65	80	100	125	150	200	250	300	350	400
Working pressure	PN	10	10	10	10	10	10	10	6	6	6	6
Flange	k	125	145	160	180	210	240	295	350	400	460	515
	d2	19	19	19	19	19	23	23	23	23	23	28
Bolts	Thread	M 16	M 16	M 16	M 16	M 16	M 20	M 20	M 20	M 20	M 20	M 24
	Qty.	2	2	6	6	6	6	6	8	8	10	10
- Through bore holes	Qty	4	4	4	4	4	4	4	8	8	12	12
	Qty	4	4	4	4	4	4	4	8	8	12	12
- Blind tapped holes	Qty	4	4	4	4	4	4	4	8	8	12	12
	t Depth	9,5	11	10	13	14	14	14	14	19	19	26
Bolt length with washer	Through bore holes	110	110	110	120	120	130	130	150	160	160	200
	Blind tapped holes	34	35	35	36	38	38	38	40	48	48	56
Valve	H	349	381	450	490	559	619	753	957	1081	1242	1353
	h	65	72	95	105	120	136	162	169	193	226	250
	H 1	284	309	355	385	439	483	591	788	888	1016	1103
	B	125	139	188	206	234	268	319	347	399	462	512
	L	43	46	46	52	56	56	60	68	78	78	102
	B 1	88	88	100	100	100	100	127	160	160	180	180
	DN											
Spindle	a	10,3	10,3	16,3	16,3	19,3	19,3	19,3	24,3	24,3	27,3	27,3
	c	20	20	30	30	38	38	38	48	48	48	48
	d 1	16	16	22	22	25	25	28	32	32	36	36
Knife	s	6	6	8	8	8	8	10	12	12	15	15
Electric actuator	Type			SA07.5	SA07.5	SA07.5	SA07.5	SA10.1	SA10.1	SA10.1	SA14.1	SA14.1
	H 2			739	779	852	912	1048	1256	1380	1584	1695
	H 3			569	609	682	742	878	1086	1210	1404	1514
	H 4			396	426	484	528	636	837	937	1068	1155
	B 2			273	273	273	273	287	279	279	318	318
	B 3			265	265	265	265	282	282	282	385	385
	B 4			250	250	250	250	256	256	256	325	325
	Open/close revolutions			8	10	13	15	20	21	25	29	34
	d 3			20	20	20	20	20	20	20	30	30
	Weight kg	No. 3600	6,3	7,0	11,0	14,0	17,0	22,0	33,0	73,0	99,0	140,0
No. 3600EL				13,0	16,0	19,5	24,5	36,0	76,0	102,0	144,0	184,0

Order no.	Application	PN	Dimensions/DN 1					
			DN	65	80	100	150	200
4340E2	Water, other applications on request	16	80		●			
			100	●	●	●		
			125		●	●		
			150	●	●	●	●	
			200	●	●	●	●	●

Flanged Tee Piece with one integral E2 Elypso Valve

short style, equal and reduced

The short style provides for space saving installation and lower material, labour, transport and stockholding costs.

The compact design enables the valve chamber to be made from sectional concrete giving typical savings of 25 % in chamber construction costs.

Note:

Combining the E2 Combi-T with E2 Elypso Reducing Valves can provide solutions to many common problems.



Material and design features:

Body and bonnet of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)

Wedge of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer (suitable for potable water) with drain hole

Wedge nut of dezincification resistant brass CuZn36Pb3As

Wedge guide of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques

Stainless steel spindle St 1.4021 (X20Cr13), with rolled thread and O ring slide faces

Edge protecting ring of PE avoids damages during transport and storage

Allen screws St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket

Flanges according to EN 1092-2 (DIN 28605), drilled to DIN 2501 - PN 10 (standard); For DIN 2501 - PN 16 in sizes of DN 200 mm please specify on order - other standards on request !



E2 Combi-T

Standard version: without handwheel and extension spindle

Design versions: for electric actuator: No. 4340ELE2;
with position indicator: No. 4340STE2

Special versions: on request

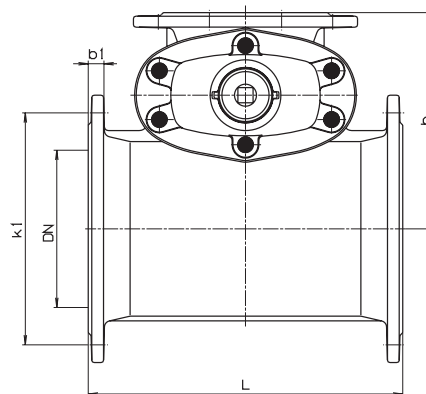
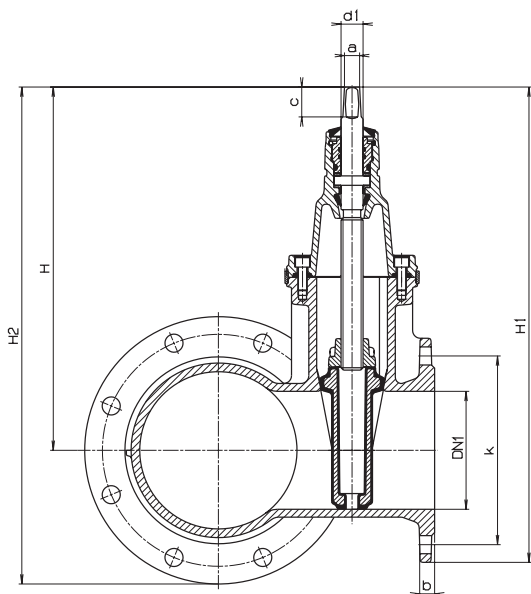
Suitable accessories: Handwheel: No. 7800

Extension Spindles: rigid No. 9000E2
telescopic No. 9500E2

Surface Boxes: rigid No. 1750,
telescopic No. 2050. No. 2051K

Design features:

- easy retrofitting of position indicator and automatic actuator on the standard bonnet
- one extension spindle for several dimensions
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 16 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torque
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings under pressure (according ISO 7259)
- cleaning with pig possible



DN	DN 1	E2 Combi-T					Flanges				Spindle			Weight kg
		L	H	H 1	H 2	h	k	b	k 1	b 1	a	c	d 1	
80	80	280	336	436	436	170	160	19	160	19	17,3	35	25	25,0
100	65	260	328	420	438	180	145	19	180	19	17,3	35	25	29,5
100	80	280	336	436	446	200	160	19	180	19	17,3	35	25	30,5
100	100	310	373	483	483	200	180	19	180	19	19,3	38	25	34,5
125	80	280	336	436	461	200	160	19	210	19	17,3	35	25	30,0
125	100	310	373	483	498	215	180	19	210	19	19,3	38	25	38,0
150	65	260	328	420	470	210	145	19	240	19	17,3	35	25	33,0
150	80	280	336	436	473	220	160	19	240	19	17,3	35	25	36,5
150	100	310	373	483	516	220	180	19	240	19	19,3	38	25	40,0
150	150	400	462	605	605	250	240	19	240	19	19,3	38	28	56,0
200	65	260	328	420	498	250	145	19	295	19	17,3	35	25	43,5
200	80	280	336	436	506	250	160	19	295	20	17,3	35	25	46,5
200	100	310	373	483	543	250	180	19	295	20	19,3	38	25	49,0
200	150	400	462	605	632	275	240	19	295	20	19,3	38	28	66,0
200	200	460	563	733	733	295	295	20	295	20	24,3	48	32	88,0

Order no.	Application	PN	Dimensions/DN 1					Pipe Ø mm	
			DN / Pipe Ø mm	50 63	80 90	100 110	100 125	150 160	
4343E2	Water, other applications on request !	16	80 / 90		●				
			100 / 110	●	●	●			
			100 / 125				●		
			150 / 160		●	●	●	●	
			200 / 225		●	●			

All socket tee with one integral E2Valve

for PE (PE 80/100) and PVC Pipes (DIN 8074, EN 1452-2) - absolut restraint

The short style provides for space saving installation and lower material, labour, transport and stockholding costs.

Material and design features:

Stainless steel spindle St 1.4021 (X20Cr13), with rolled thread and O ring slide faces

O ring bush of Ms 58

Friction washers of POM guarantee smooth spindle guiding

Bonnet, body and lock ring

of ductile iron EN-GJS-400-18 according EN 1563 (GGG 400 - DIN 1693)

inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)

Circlip of POM

O rings of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure (according to ISO 7259)

Bonnet gasket, Wiper ring and Back seal of elastomer, suitable for potable water

Allen screws St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket

Wedge nut of dezincification resistant brass CuZn36Pb3As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques

Wedge of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole

Wedge guide of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques

Edge protecting ring of PE

avoids damages during transport and storage

Grip ring of Ms 58 (from DN 300 Rg 7)

Lip seal of elastomer

Bolts and washers for lock ring of A2

Spacer bush of PE

The pipe is sealed with a lip seal.

Minimal pipe insertion force is required for pushing the pipe end into the seal chamfer with an appropriate chamfer.

The pipe restraining system is effective separately from the sealing system and is activated by tightening the lock ring.

For thinwalled PE pipes (up to 3 mm wall thickness) and low internal pressure we recommend using a support liner (see page D 2/4).



Assembly instructions: see page M 6/2

Tensile load: see page M 6/2

E2 Combi-T SYSTEM 2000

Design features:

- easy retrofitting of position indicator and automatic actuator on the standard bonnet
- one extension spindle for several dimensions
- optimally placed wedge guide of wear resistant plastic guarantees lowest wear and tear and lowest closing torques, suitable for frequent operations at a differential pressure up to 16 bar
- 100 % suitable for operation by automatic actuators
- generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques
- O rings embedded in non-corrosive material (according to DIN 3547-T1)
- replaceable O rings under pressure (according ISO 7259)
- cleaning with pig possible

Standard version: without handwheel and extension spindle

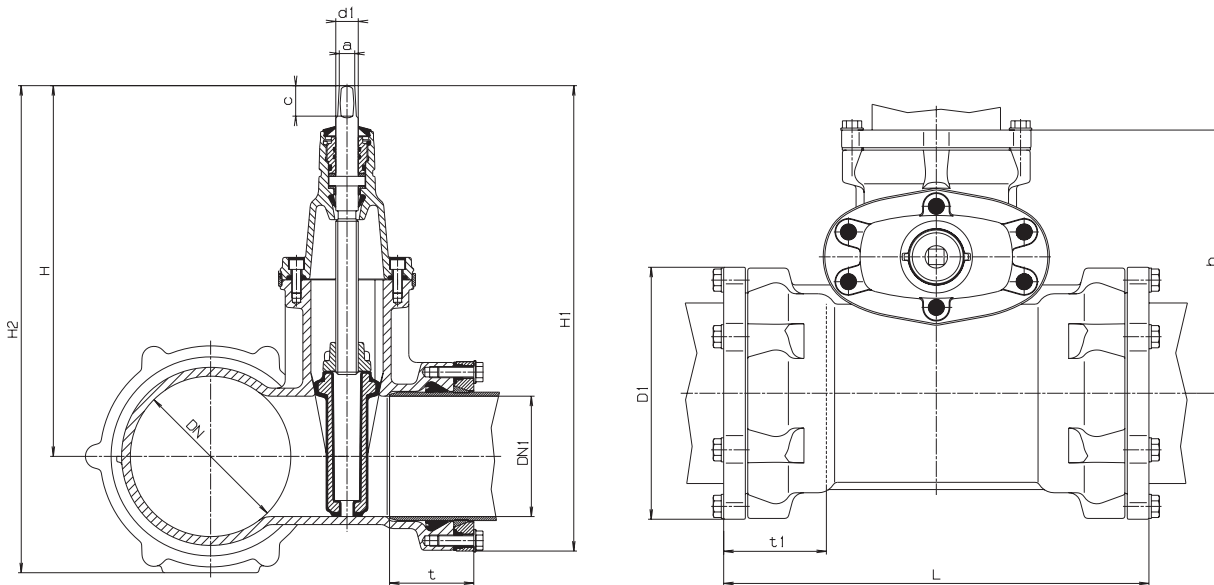
Design versions: for electric actuator: No. 4343ELE2
with position indicator: No. 4343STE2

Special versions: on request!

Suitable accessories: Handwheel: No. 7800

Extension Spindles: rigid No. 9000E2
telescopic No. 9500E2

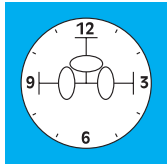
Surface Boxes: rigid No. 1750
telescopic No. 2050, No. 2051K



DN Pipe Ø	DN 1 Pipe Ø	E2 Combi-T					Socket			Spindle			Weight kg
		H	H 1	H 2	t	L	t 1	D 1	h	a	c	d 1	
80 / 90	80 / 90	336	412	412	88	310	88	150	201	17,3	35	25	21,0
100 / 110	50 / 63	260	322	346	83	290	88	172	218	14,8	30	22	17,0
100 / 110	80 / 90	336	412	422	88	320	88	172	231	17,3	35	25	23,5
100 / 110	100 / 110	373	460	460	88	340	88	172	231	19,3	38	25	28,0
100 / 125	100 / 125	373	470	470	88	345	88	193	235	19,3	38	25	31,0
150 / 160	80 / 90	336	412	453	88	350	108	234	251	17,3	35	25	31,0
150 / 160	100 / 110	373	460	490	88	370	108	234	251	19,3	38	25	35,0
150 / 160	100 / 125	373	470	490	88	370	108	234	255	19,3	38	25	38,5
150 / 160	150 / 160	462	580	580	108	420	108	234	303	19,3	38	28	51,0
200 / 225	80 / 90	336	412	481	88	410	130	312	281	17,3	35	25	48,0
200 / 225	100 / 110	373	460	518	88	430	130	312	291	19,3	38	25	52,0

Order no.	Version	Application	PN	No. of Valves	Dimensions/DN				
					80	100	125	150	200
4450E2	without vertical centre outlet	Water, other applications on request	16	2	●	●	●	●	●
				3	●	●	●	●	●
4460E2	with vertical outlet			2		●		●	●
				3		●		●	●

Flanged Tee Piece with 3 flanged outlets and 2 or 3 integral E2 Elypso Valves



Please specify the arrangement of the valves in a clockwise direction

The short style provides for space saving installation and lower material, labour, transport and stockholding costs.

The compact design enables the valve chamber to be made from sectional concrete giving typical savings of 25 % in chamber construction.



Stainless steel spindle St 1.4021 (X20Cr13), with rolled thread

Wipe ring of elastomer

O ring bush of Ms 58

Friction washers, Protecting ring of POM guarantees smooth spindle guiding

Body and bonnet of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)

O rings of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure (according to ISO 7259)

Back seal of elastomer

Allen screws St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket

Edge protecting ring of PE avoids damages during transport and storage

Bonnet gasket of Elastomer

Wedge nut of dezincification resistant brass CuZn36Pb3As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques

Wedge of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole

Wedge guide of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques

Mounting points undrilled in standard version; surcharge for drilling

Flanges according to EN 1092-2, drilled to DIN 2501 - PN 10 (standard); For DIN 2501 - PN 16 in sizes of DN 200 mm and above please specify on order - other standards on request



A cap No. 8570E2 can be fitted instead of the bonnet at any outlet not requiring a valve



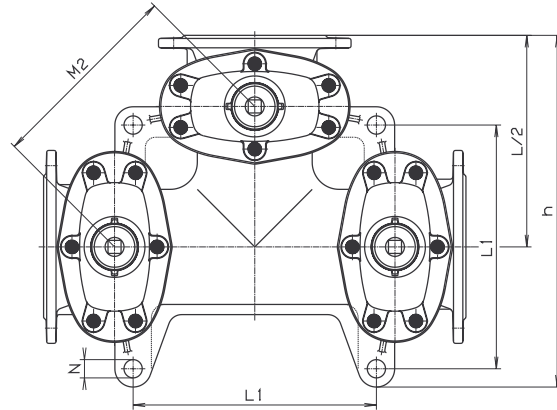
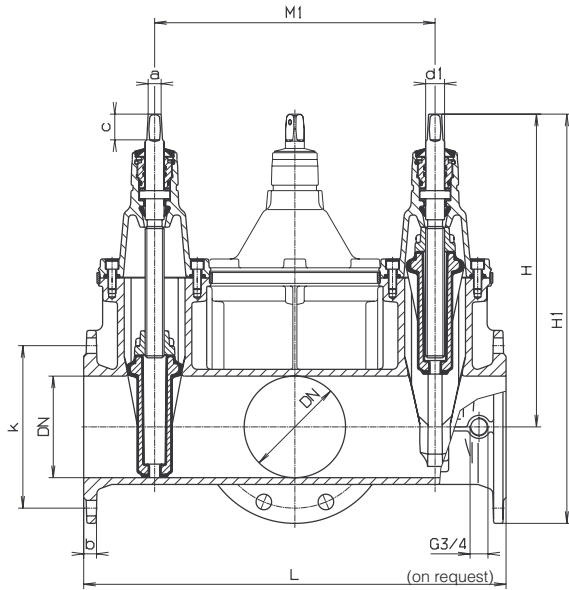
No. 4460E2 Flange Tee piece with 2 valves and vertical centre outlet

E2 Combi-III

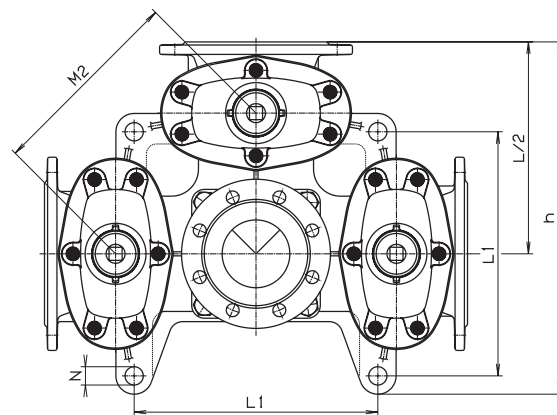
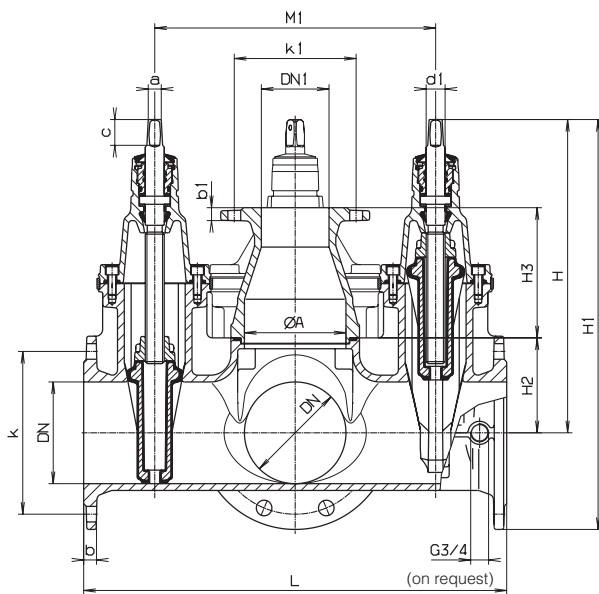
The wedge and the bonnet can be interchanged between various HAWLE E2 Elypsso and E2 combination valves.

Suitable extension spindles: rigid No. 9000E2, telescopic No. 9500E2
Suitable handwheel: No. 7800

Suitable surface box: No. 4550
Cleaning with pig possible



DN	E2 Combi III without vertical centre outlet										Spindle			Weight kg (no. of valves)	
	L	H	H1	k	b	M1	M2	L1	h	N	a	c	d1	2	3
80	435	336	436	160	19	255	180	-	318	-	17,3	35	25	45,0	50,0
100	555	373	483	180	19	365	258	212	411	27	19,3	38	25	68,0	74,0
125	615	475	600	210	19	415	293,5	360	515	27	19,3	38	28	101,0	111,0
150	625	462	605	240	19	415	293,5	360	520	27	19,3	38	28	105,0	115,0
200	695	563	733	295	20	465	329	445	602	32	24,3	48	32	167,0	183,0

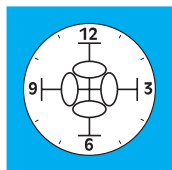


DN	E2 Combi III with vertical centre outlet													Spindle			Weight (no. of valves)				
	Ø A	DN1	L	L1	H	H1	H2	H3	b	b1	k	k1	M1	M2	h	N	a	c	d1	2	3
100	100	100	555	212	373	483	90	+	19	+	180	+	365	258	411	27	19,3	38	25	71,0	76,0
150	150	100	625	360	462	605	140	192	19	19	240	180	415	293,5	520	27	19,3	38	28	120,0	130,0
200	200	100	695	445	563	733	180	192	20	19	295	180	465	329	602	32	24,3	48	32	185,0	201,0

+ flange connection directly on the body (blind tapped holes M 16 x 23)

Order no.	Version	Application	PN	No. of Valves	Dimensions/DN				
					80	100	125	150	200
4400E2	without vertical centre outlet	for Water, other applications on request	16	2	●	●	●	●	●
				3	●	●	●	●	●
				4	●	●	●	●	●
4410E2	with vertical outlet			3		●			
				4		●		●	●

Flanged Tee Piece with 4 flanged outlets and 2, 3 or 4 integral E2 Elypso Valves



Please specify the arrangement of the valves in a clockwise direction

Stainless steel spindle St 1.4021 (X20Cr13), with rolled thread

Wipe ring of elastomer

O ring bush of Ms 58

Friction washers, Protecting ring of POM guarantees smooth spindle guiding

Body and bonnet of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)

O rings of elastomer, embedded in non-corrosive material (according to DIN 3547-T1) and replaceable under pressure (according to ISO 7259)

Back seal of elastomer

Allen screws St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket

Edge protecting ring of PE avoids damages during transport and storage

Bonnet gasket of Elastomer

Wedge nut of dezincification resistant brass CuZn36Pb3As, generous oversizing of the required thread length in the wedge nut guarantees highest possible breaking torques

Wedge of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), inside and outside fully rubberized with vulcanized elastomer, suitable for potable water, with drain hole

Wedge guide of wear resistant plastic with high gliding features; optimally placed design guarantees lowest wear and tear and lowest closing torques

Mounting points undrilled in standard version; surcharge for drilling

Flanges according to EN 1092-2, drilled to DIN 2501-PN10 (standard);

For DIN 2501-PN 16 in sizes of DN 200 mm and above please specify on order - other standards on request

The short style provides for space saving installation and lower material, labour, transport and stockholding costs.

The compact design enables the valve chamber to be made from sectional concrete giving typical savings of 25 % in chamber construction.



A cap No. 8570E2 can be fitted instead of the bonnet at any outlet not requiring a valve



No. 4410E2 Cross connection
with 3 valves and vertical
centre outlet



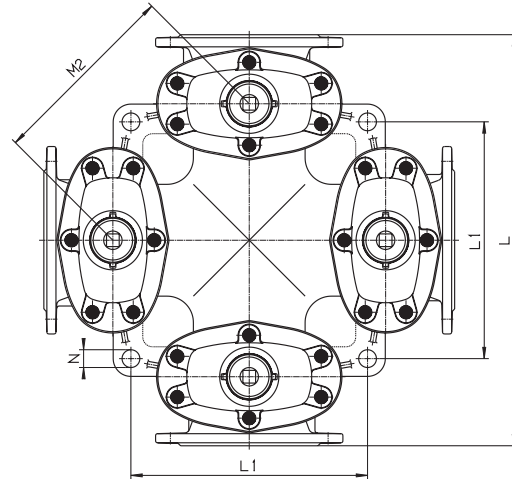
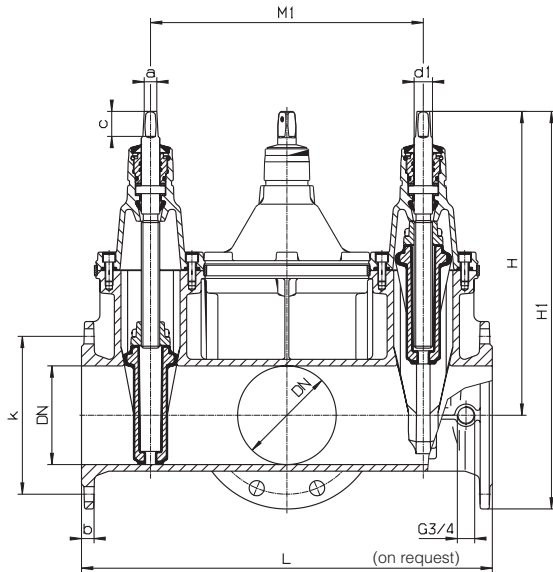
No. 4400E2 Cross connection
with 3 valves

E2 Combi-IV

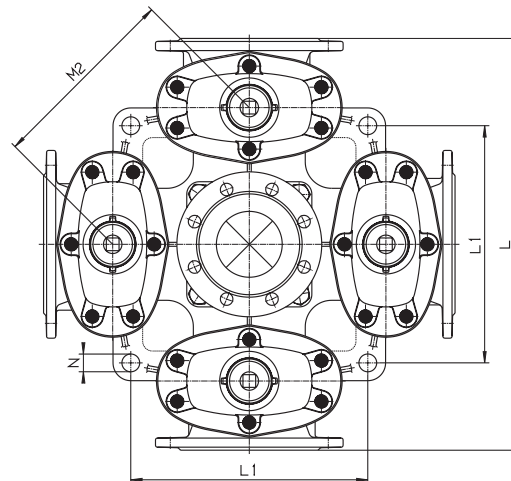
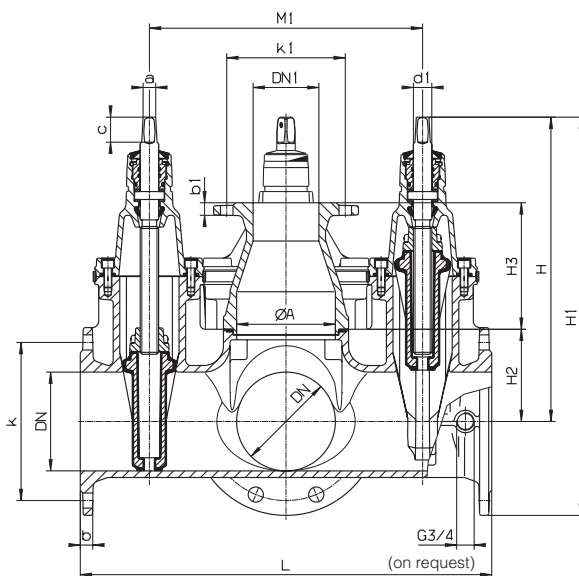
The wedge and the bonnet can be interchanged between various HAWLE E2 Elypso and E2 combination valves.

Suitable extension spindles:
rigid No. 9000E2, telescopic No. 9500E2
Suitable handwheel: No. 7800

Suitable surface box: No. 4550
Cleaning with pig possible



DN	E2 Combi IV without vertical centre outlet									Spindle			Weight kg (no. of valves)		
	L	H	H1	k	b	M1	M2	L1	N	a	c	d1	2	3	4
80	435	336	436	160	19	255	180	-	-	17,3	35	25	55,0	60,0	65,0
100	555	373	483	180	19	365	258	212	27	19,3	38	25	76,0	84,0	90,0
125	615	475	600	210	19	415	293,5	360	27	19,3	38	28	125,0	135,0	145,0
150	625	462	605	240	19	415	293,5	360	27	19,3	38	28	133,0	143,0	153,0
200	695	563	733	295	20	465	329	445	32	24,3	48	32	207,0	223,0	239,0



DN	E2 Combi IV with vertical centre outlet													Spindle			Weight kg (no. of valves)			
	Ø A	DN1	L	L1	H	H1	H2	H3	b	b1	k	k1	M1	M2	N	a	c	d1	3	4
100	100	100	555	212	373	483	90	+	19	+	180	+	365	258	27	19,3	38	25	90,0	96,0
150	150	100	625	360	462	605	140	192	19	19	240	180	415	293,5	27	19,3	38	28		165,0
200	200	100	695	445	563	733	180	192	20	19	295	180	465	329	32	24,3	48	32		264,0

+ flange connection directly on the body (blind tapped holes M 16 x 23)

Order no.	Design	Nominal diameter / DN	MOP (PN)	Possible reduction / DN	Possible vertical outlet / DN	max. weight
4420E2	Configurable	250	10	150	100	465
			16	200	150	
				250		
		300	10	150	100	650
			16	200	150	
				300		

Hawle-Combiflex

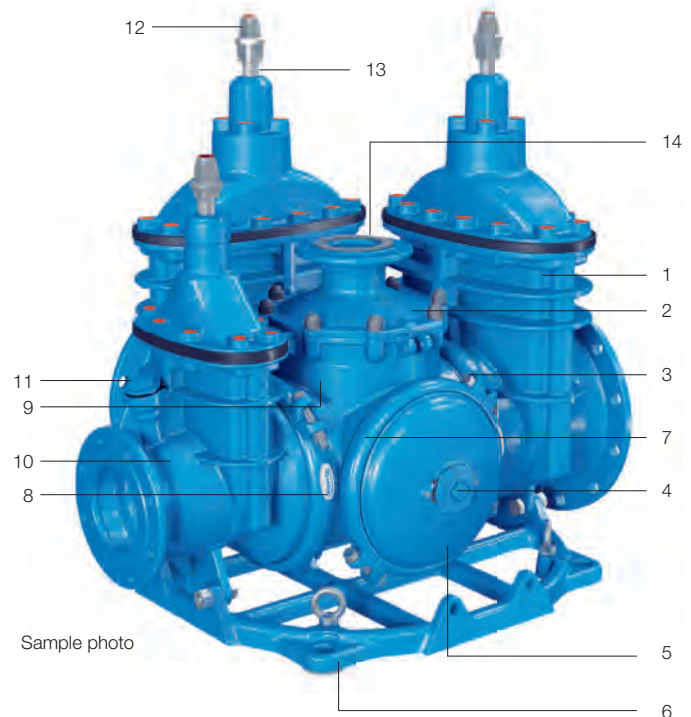
Product description

- Modular Combi-valve system enables flexible assembly arrangements
- Standardized compact construction regardless of valve configuration
- Outstanding corrosion protection
- Several, unique access points for sensors, service work and connections.
- Comprehensive range of interchangeable ZAK connection possibility in every module
- Unique design facilitates easy, rapid exchange of any module
- E2 accessories and spare parts can be used

Technical features

- 1 **Soft seated E2 Valve** in DN 250 or DN 300 according to EN1074 – 1 and 2
- 3 Molybdenum coated, A4 type **clamping ring bolts**
- 4/11 **ZAK 69 (4) or ZAK 46 (11) outlet connections**
- 2/5/7/ 9/10 Hawle Combiflex **vertical outlet (2)** optionally DN 100 or DN 150, **end cap (5), clamping ring (7), middle section (9), E2 body (10)** reduced in DN 150 and DN 200: GJS-400, epoxy powder coated
- 6 Hawle Combiflex **mounting frame: GJS-400**, epoxy powder coated, with ring bolts for fastening hoists
- 8 **Quality seal**
- 12 **Aluminium operating cap** with turn direction indicator
- 13 **Duplex stainless steel spindle**
- 14 Vertical outlet with affixed flat elastomer gasket

No. 4420E2



Combination options



Typical application



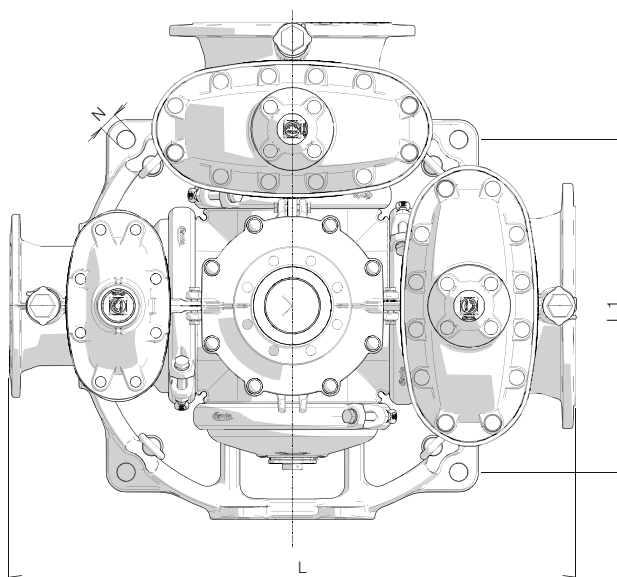
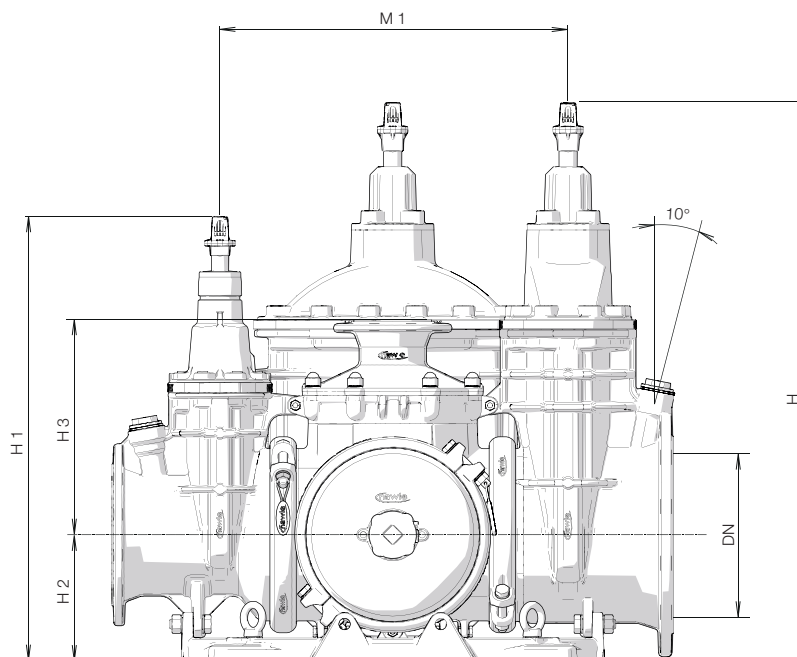
Product additions

Extension spindles and hand wheels	see chapter	D
Actuators	see chapter	D
Flanges	see chapter	G
Ground-distance sets	see chapter	B
HAWLE ZAK SYSTEM (HAS & Fittings)	see appendix	ZAK
Hydrants	see chapter	I
Ventilation and air release valves	see chapter	E

Flange measured and drilled in accordance with EN 1092-2. PN 10 Standard. Please specify PN 16 standard when ordering. Please use the Hawle Combiflex order form. It can be found on our home page.

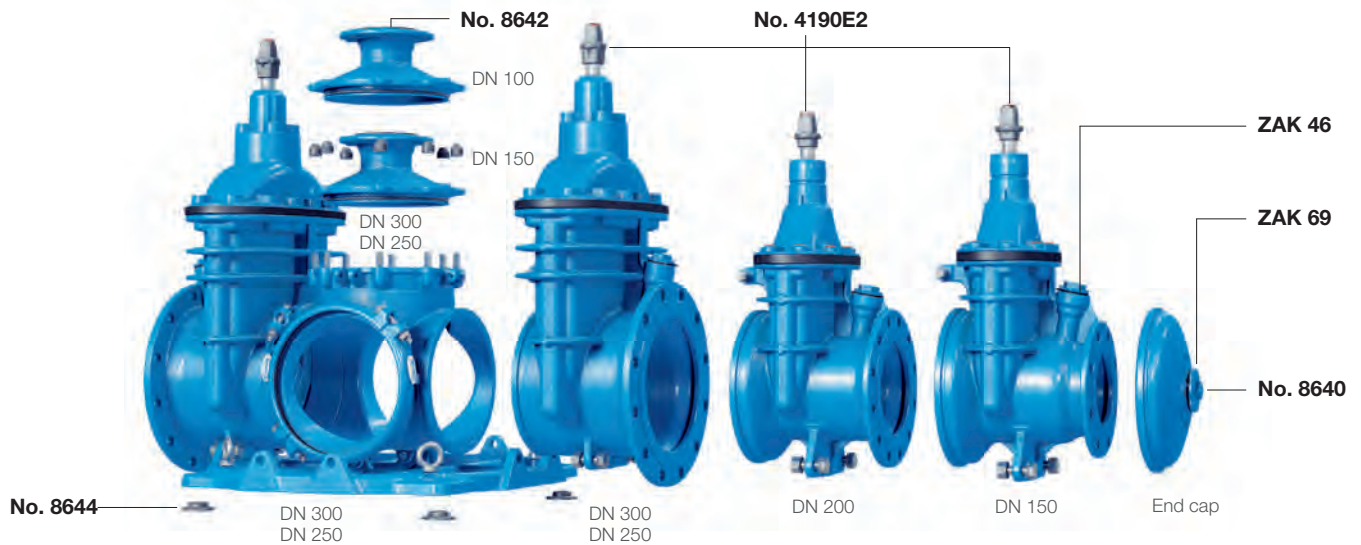
Hawle-Combiflex

No. 4420E2



DN	Hawle Combiflex										
	MOP (PN)	L*	L1	H	H1	H2	H3	DN	M1*	Ø N	max. kg
250	10	960	617	932	777	210	359	150	590	34	465
	16							200			
								250			
300	10	1050	617	1043	830	235	399	150	646	34	650
	16							200			
								300			

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

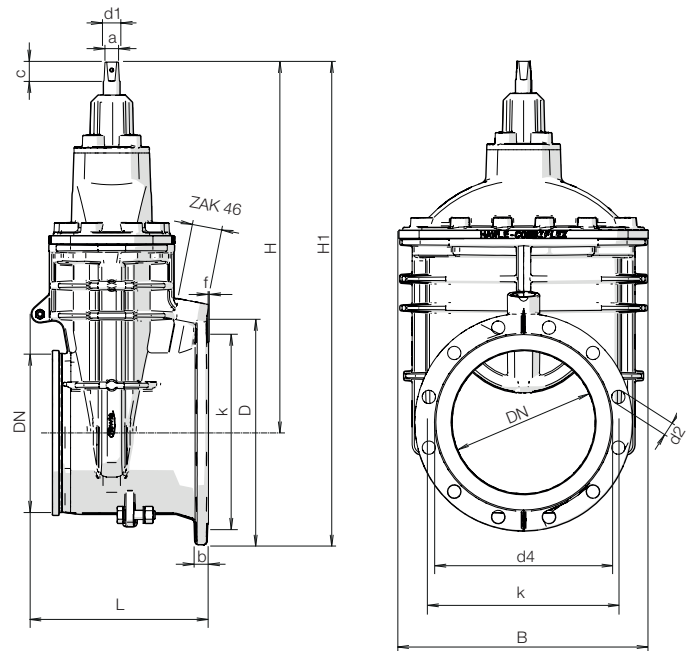
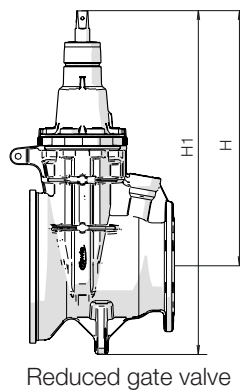


Hawle Combiflex E2 gate valve No. 4190E2



ZAK 46

- ZAK 46 socket
- Incl. ZAK 46 plug
- Incl. operating cap
- Incl. bolt fastener
- Fits through man hole openings



Hawle Combiflex E2 gate valve																				
DN	Flange							Bolts		Spindle			Gate valve							
	DN	PN	D	b	k	d4	f	Quantity	Thread	d2	a	c	d1	Wedge DN	Service outlet	H	H1*	L*	B*	kg
250	150	10 16	285	19	240	209	3	8	M20	23	19,3	38	28	200	ZAK 46	561	727	337	356	61,0
	200	10 16	340	20	295	264	3	8 12	M20	23	24,3	48	32	200	ZAK 46	561	730	337	356	62,0
	250	10 16	400	22	350 355	319	3	12	M20 M24	23 28	27,3	48	34	250	ZAK 46	670	870	337	438	89,0
300	150	10 16	285	19	240	209	3	8	M20	23	19,3	38	28	200	ZAK 46	561	754	361	356	65,0
	200	10 16	340	20	295	264	3	8 12	M20	23	24,3	48	32	200	ZAK 46	561	754	361	356	66,0
	300	10 16	455	24,5	400 410	367	4	12	M20 M24	23 28	27,3	48	34	300	ZAK 46	753	981	361	523	132,0

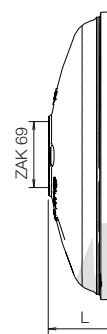
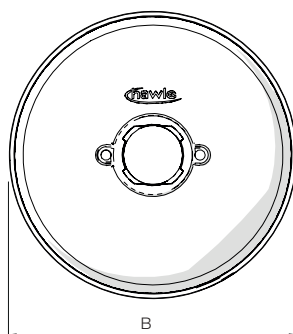
* Shipping dimensions

Hawle-Combiflex

Hawle Combiflex end cap No. 8640



- ZAK 69 socket

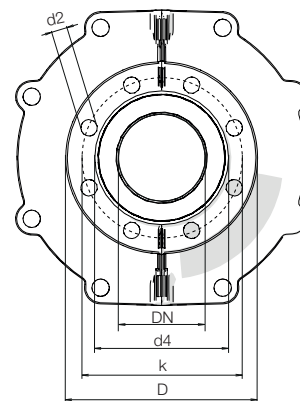
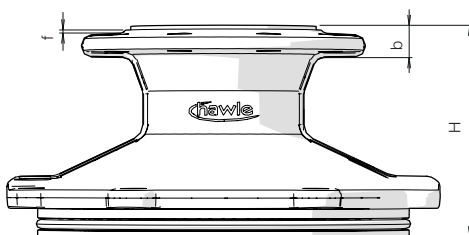


DN	Hawle Combiflex end cap			
	B	ZAK socket	L	kg
250	284	ZAK 69	67	5,5
300	335	ZAK 69	77	7,5

Hawle Combiflex vertical outlet No. 8642

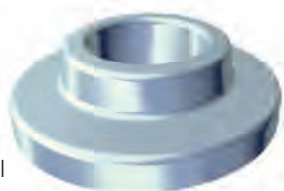


- Incl. affixed elastomer flange gasket (suitable for potable water)

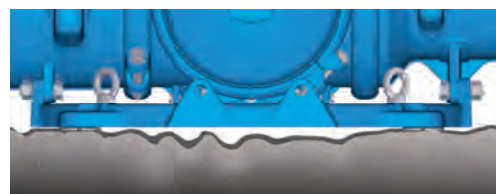


DN	Hawle Combiflex vertical outlet											
	Flange							Bolts			Vertical outlet	
	DN	PN	D	b	k	d4	f	Quantity	Thread	d2	H	kg
250	100	10	220	19	180	153	3	8	M16	19	146	12,0
		16										
250	150	10	285	19	240	209	3	8	M20	23	146	11,0
		16										
300	100	10	220	19	180	153	3	8	M16	19	160	14,0
		16										
300	150	10	285	19	240	209	3	8	M20	23	160	13,0
		16										

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



Stainless steel



Order no.	Version	Application	PN	Dimensions/DN				
				3/4"	1"	1 1/4"	1 1/2"	2"
2500	ductile iron, epoxy powder coated, internal iron threads both ends	for water, other applications on request	16	•	•	•	•	•
2510	stamped brass, internal iron threads both ends	for water that is aggressive or subject to sedimentation		•	•	•	•	

Design features:

- multiple O ring spindle seals
- stainless steel spindle
- unobstructed waterway
- wedge encapsulated with vulcanized elastomer, suitable for potable water
- threaded connection for extension spindles
- no. 2500: allen screws absolutely corrosion protected by being sunk into the body and sealed, and by passing through flat gasket

Sealing system:

The contact between wedge and body is friction free. Therefore no scuffing or abrasion of the wedge.



No. 2500



No. 2510



Material:

Body and bonnet:

No. 2500 of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) epoxy powder coated

No. 2510 CuZn39Pb3 (Ms 58)
Bonnet is screwed and glued to the body.
To unscrew, the thread must be heated to 250° C.

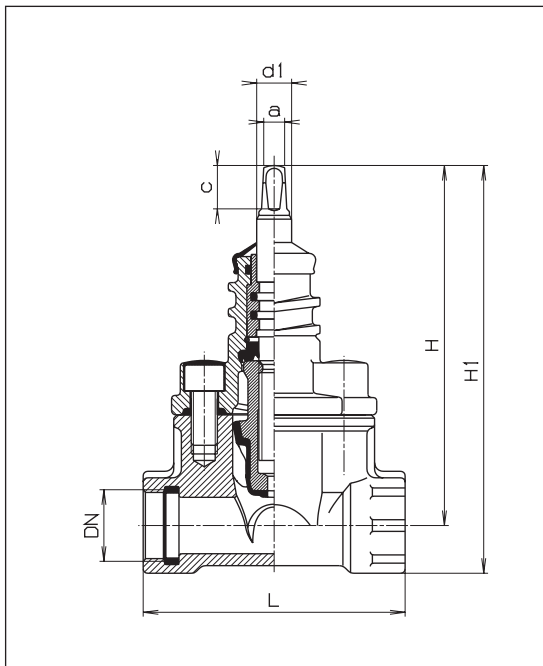
Wedge: CuZn39Pb3 (Ms 58)
wedge rubber elastomer, suitable for potable water

Spindle: stainless steel min. 1.4021 (X20 Cr13)

Service Valve

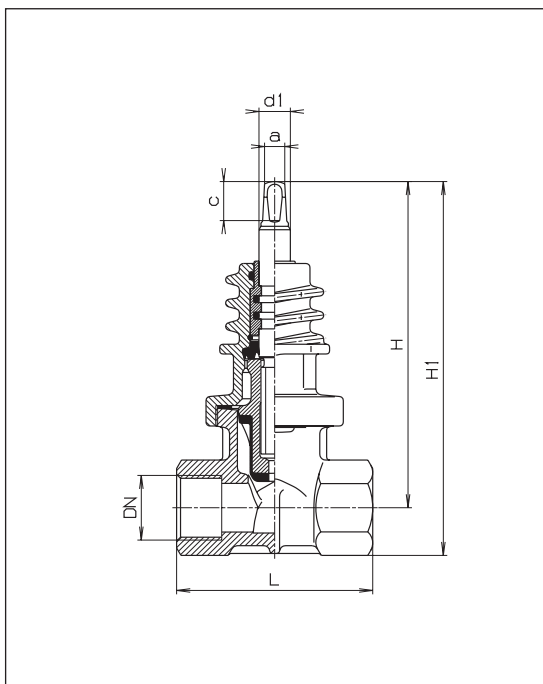
Suitable handwheel: No. 7800
Suitable extension spindles: rigid No. 9101,
 telescopic No. 9601

Suitable surface boxes: rigid No. 1550 light duty,
 rigid No. 1650 heavy duty
 telescopic No. 1850, 1851K



No. 2500
Service Valve, of ductile cast iron
 internal thread both ends ISO 228

DN	Valve			Spindle			Weight kg
	L	H	H 1	a	c	d 1	
3/4"	120	164	184	10,3	20	16	2,60
1"	120	164	188	10,3	20	16	2,50
1 1/4"	140	200	229	10,3	20	16	4,20
1 1/2"	140	200	232	10,3	20	16	4,40
2"	150	219	258	10,3	20	16	5,20



No. 2510
Service Valve, of Ms 58
 internal thread both ends ISO 228

DN	Valve			Spindle			Weight kg
	L	H	H 1	a	c	d 1	
1"	100	161	182	10,3	20	16	1,90
1 1/4"	100	194	223	10,3	20	16	2,60
1 1/2"	100	194	223	10,3	20	16	2,70
2"	100	219	256	10,3	20	16	4,00

Order no.	Version	Application	PN	Dimensions/DN			
				1"	1¼"	1½"	2"
2520	1 internal thread 1 external thread Dimensions for connection see table overleaf	for water, other applications on request	16	●	●	●*	●
2800	1 external thread, 1 ISO-fitting for PE pipe 1 internal thread for attaching an under pressure drilling machine, or for steel pipe connection Dimensions for connection see table overleaf	for cold water, other applications on request		●	●	●	●

* also available with 1½" external thread - No. 2800 can be adapted for PVC pipe with carborundum grip ring at extra cost



These valves can be attached directly to pipe saddles for under pressure drilling without the need for additional threaded fittings.

Design features

- multiple O ring spindle seals
- stainless steel spindle
- unobstructed waterway
- wedge encapsulated with vulcanized elastomer, suitable for potable water
- epoxy powder coated
- threaded connection for extension spindles
- allen screws absolutely corrosion protected by being sunk into the body and sealed, and by passing through flat gasket

Sealing system:

The contact between wedge and body is friction free. Therefore no scuffing or abrasion of the wedge.

Material:

Body and bonnet:

of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) epoxy powder coated

Wedge: CuZn39Pb3 (Ms 58) wedge rubber elastomer, suitable for potable water

Spindle: stainless steel min. 1.4021

No. 2520



No. 2800

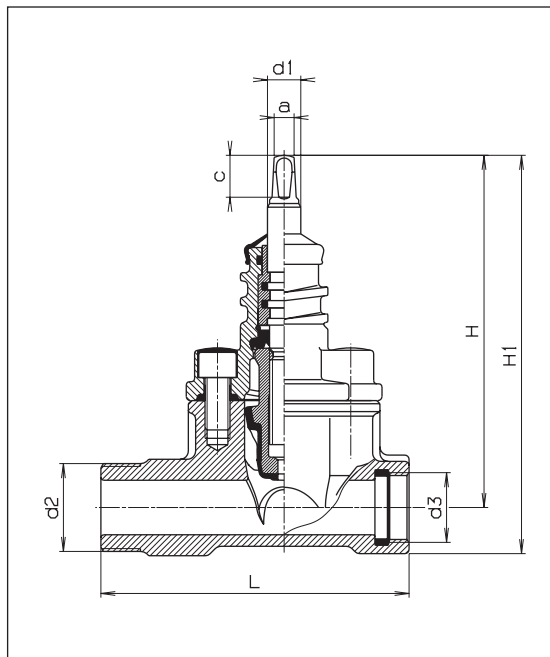


STRUCTURE of grip ring for PE pipes

Service Valve

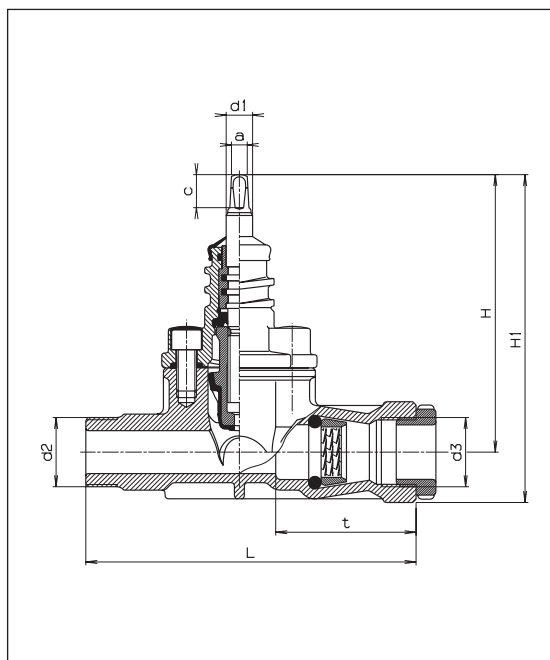
Suitable handwheel: No. 7800
Suitable extension spindles: rigid No. 9101,
 telescopic No. 9601

Suitable surface boxes: rigid No. 1550 light duty,
 rigid No. 1650 heavy duty
 telescopic No. 1850, No. 1851K



**No. 2520
 Service Valve**
 with one internal ISO 228 and one external thread EN 10226-1

DN	Valve					Spindle			Weight kg
	L	H	H 1	d 2	d 3	a	c	d 1	
1"	148	164	191	1¼"	1"	10,3	20	16	2,80
1¼"	167	200	234	2"	1¼"	10,3	20	16	4,70
1½"	167	200	238	2"	1½"	10,3	20	16	4,80
1½"	167	200	238	1½"	1½"	10,3	20	16	4,80
2"	172	219	264	2"	2"	10,3	20	16	5,20



**No. 2800
 Service Valve**
 1 external thread EN 10226-1, 1 ISO-fitting,
 1 internal thread ISO 228

DN	Pipe o.d. Ø	Valve						Spindle			Weight kg
		d 2	d 3	t	L	H	H 1	a	c	d 1	
1"	32	1¼"	1¼"	85	200	164	193	10,3	20	16	3,10
1¼"	40	2"	1½"	101	245	200	234	10,3	20	16	4,90
1½"	50	2"	2"	121	255	200	239	10,3	20	16	5,60
2"	63	2"	2½"	137	264	219	267	10,3	20	16	6,50

Order no.	Version	Application	PN	Dimensions/DN	
				1" - 1"	1" - 2"
2650	of POM with twin conical external threads acc. to EN 10226-1	for cold water, other applications on request	16	●	●

Design features

- multiple O ring spindle seals
- stainless steel spindle
- unobstructed waterway
- wedge encapsulated with vulcanized elastomer, suitable for potable water
- threaded connection for extension spindles

Sealing system:

The contact between wedge and body is friction free. Therefore no scuffing or abrasion of the wedge.

Material:	
Body and bonnet:	POM - tensile strength 7000 N/cm ²
Wedge:	CuZn39Pb3 (Ms 58) wedge rubber elastomer, suitable for potable water
Spindle:	stainless steel min. 1.4021



Service Valve of POM

The bonnet is spin welded to the body.

Maximum spindle torque: 80 Nm

The material is entirely resistant to corrosion.

The valve design prevents sediment accumulating irrespective of water quality.

Suitable for installation of service lines in aggressive grounds.

Twin conical external threads for flexible usage
e.g. Reducing valves, or under pressure drilling applications

Max. torque for tightening the threads (observe pipe fitter rules acc. to national standards)					
1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
16 Nm	18 Nm	40 Nm	42 Nm	42 Nm	45 Nm

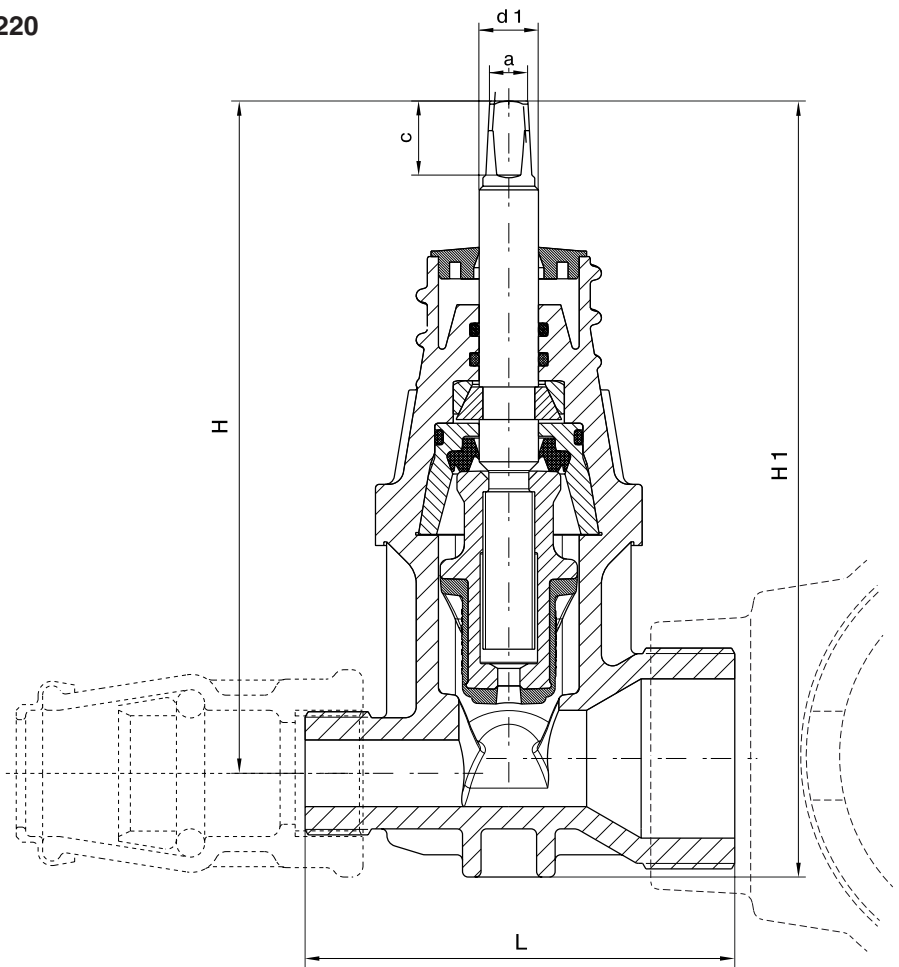
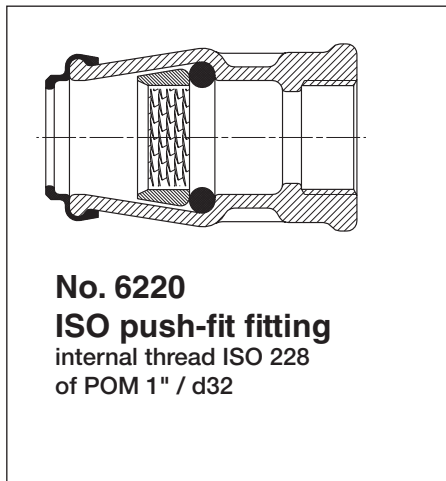
Service Valve

Suitable handwheel: No. 7800
Suitable extension spindles: rigid No. 9101,
 telescopic No. 9601

Suitable surface boxes: rigid No. 1550 light duty,
 rigid No. 1650 heavy duty
 telescopic No. 1850, No. 1851K

No. 2650 Service Valve with twin conical external threads acc. to EN 10226-1

2" for pipe saddles
 1" only for POM - ISO push-fit fitting No. 6220



DN	Valve			Spindle			Weight kg
	L	H	H 1	a	c	d 1	
1" - 1"	110	182	201	10,3	27	16	0,80
1" - 2"	116	182	210	10,3	27	16	0,85

Order no.	Version	PE fusion tail	PN	Application	Dimensions/DN	
					1" / d 32	1½" / d 63
2660	of POM with PE fusion tails for welding to PE pipes acc. to EN 12201	PE 100 / SDR 11	16	cold water other applications on request	●	●

Design features

- the bonnet is spin welded to the body
- multiple O ring spindle seals
- stainless steel spindle
- unobstructed waterway
- wedge encapsulated with vulcanized elastomer, suitable for potable water
- threaded connection for extension spindles

Sealing system:

The contact between wedge and body is friction free. Therefore no scuffing or abrasion of the wedge.



Material:

Body and Bonnet: of POM - tensile strength 7000 N/cm²

PE fusion tails: Standard version PE 100 injection moulded

Melt flow index: PE 100 MFR group 05-DIN 8075 on request

Support liner: stainless steel 1. 4301 (X5CrNi189)

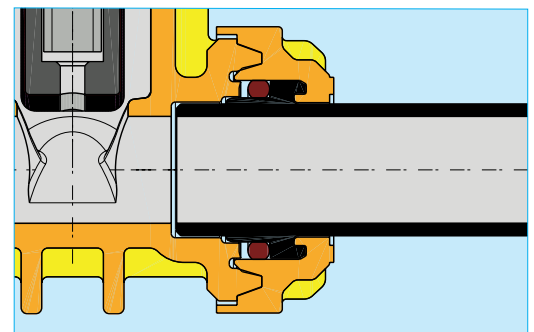
Wedge: DN 1" CuZn39Pb3 (Ms 58)
DN 1¼" - 2" CuSn7ZnPb (Rg 7)
wedge rubber of elastomer, suitable for potable water

Spindle: stainless steel min. 1.4021 (X20 Cr13)

Resilient seated valve with 2 permanently attached PE tails, factory welded.

The valve design prevents sediment accumulating irrespective of water quality.

The valve can be connected to the PE pipeline by either butt fusion or electrofusion.



Service Valve for PE fusion

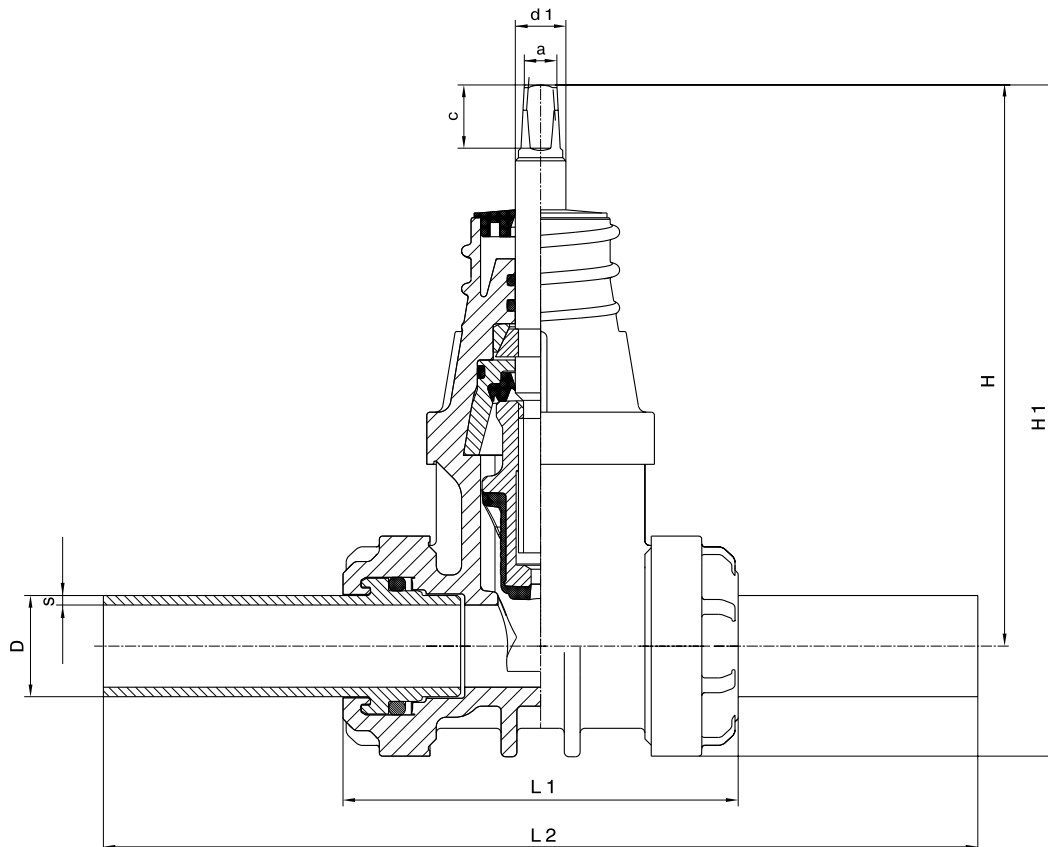
Suitable handwheel: No. 7800
Suitable extension spindles: rigid No. 9101,
 telescopic No. 9601

Suitable surface boxes: rigid No. 1550 light duty,
 rigid No. 1650 heavy duty
 telescopic No. 1850, No. 1851K

No. 2660 - PN 16

Valve for PE fusion, of POM with PE fusion tails

Pressure rating: PN 16
Maximum spindle torque: 80 Nm



DN	Ø D	Valve with PE tails					Spindle			Weight kg
		s (SDR11)	H	H 1	L 1	L 2	a	c	d 1	
1"	32	2,9	177	216	125	277	10,3	27	16	1,05
1½"	63	5,8	206	261	184	391	10,3	27	16	2,05

Order no.	Version	Application	PN	Dimensions/DN					
				1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
2600	grey iron / ductile iron ISO-fitting for PE pipe both ends	for cold water, other applications on request	16		●	●*	●	●	●
2630	of POM ISO-fitting for PE pipe both ends			●	●	●	●	●	●

both valves can be adapted for PVC pipe with carborundum grip ring at extra cost

Design features

- multiple O ring spindle seals
- stainless steel spindle
- unobstructed waterway
- wedge encapsulated with vulcanized elastomer, suitable for potable water
- threaded connection for extension spindles
- no. 2600: allen screws absolutely corrosion protected by being sunk into the body and sealed, and by passing through flat gasket

Sealing system:

The contact between wedge and body is friction free. Therefore no scuffing or abrasion of the wedge.

Material:

- Body No. 2600:** of grey iron EN-GJL -250 according to EN 1561 (GG 250-DIN 1691) epoxy powder coated
- Bonnet No. 2600:** of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400-DIN 1693) epoxy powder coated
- Body and bonnet No. 2630:** POM - tensile strength 7000 N/cm²
- Wedge:** CuZn39Pb3 (Ms 58) wedge rubber elastomer, suitable for potable water
- Spindle:** stainless steel min. 1.4021

Service Valve of POM

The bonnet is spin welded to the body.

Maximum spindle torque: 80 Nm

The material is entirely resistant to corrosion.

The valve design prevents sediment accumulating irrespective of water quality.

Suitable for installation of service lines in aggressive grounds.

No. 2600



STRUCTURE of grip ring for PE pipes



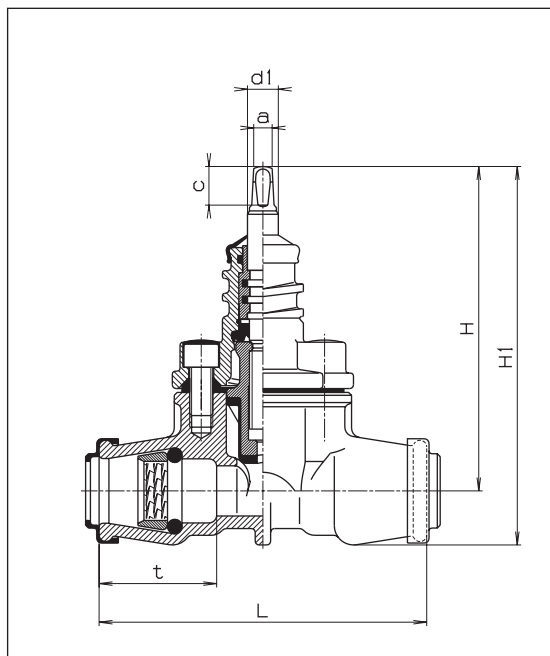
No. 2630

Service Valve

Suitable handwheel: No. 7800

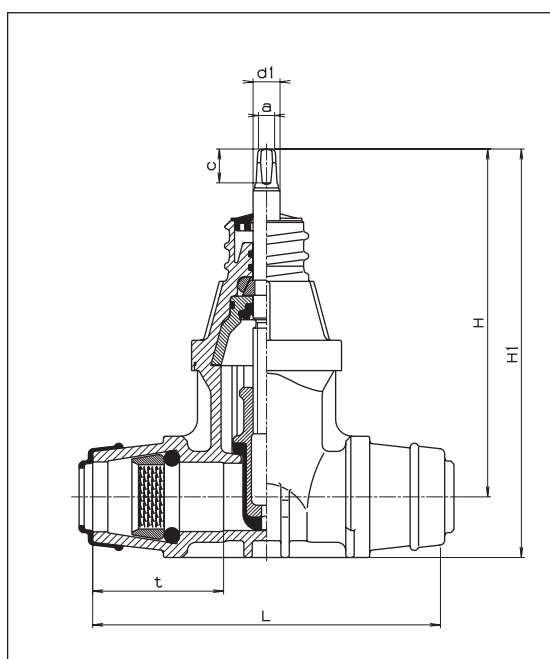
Suitable extension spindles: rigid No. 9101,
telescopic No. 9601

Suitable surface boxes: rigid No. 1550 light duty,
rigid No. 1650 heavy duty
telescopic No. 1850, No. 1851K



No. 2600
Service Valve, of grey iron / ductile iron
ISO-fitting for PE pipe both ends

DN	Pipe o.d. Ø	Valve				Spindle			Weight kg
		t	L	H	H 1	a	c	d 1	
¾"	25	52	165	164	187	10,3	20	16	2,50
1"	32	61	170	164	192	10,3	20	16	2,80
1¼"	40	76	220	200	235	10,3	20	16	4,80
1½"	50	91	232	200	240	10,3	20	16	5,10
2"	63	103	270	219	267	10,3	20	16	6,80



No. 2630
Service Valve, of POM
ISO-fitting for PE pipe both ends

DN	Pipe o.d. Ø	Valve				Spindle			Weight kg
		t	L	H	H 1	a	c	d 1	
½"	20	43	125	178	200	10,3	20	16	0,85
¾"	25	52	152	177	205	10,3	20	16	0,85
1"	32	63	174	177	205	10,3	20	16	0,95
1¼"	40	78	208	205	241	10,3	20	16	1,50
1½"	50	92	246	205	247	10,3	20	16	1,65
2"	63	100	261	221	271	10,3	20	16	2,10

Order no.	Version	PE fusion tail	PN	Application	Dimensions/DN			
					1"	1¼"	1½"	2"
2670	of POM with PE fusion tails for welding to PE pipes to ÖNORM 5172, DIN 8075	PE 80 / SDR 11	10	cold water other applications on request	●	●	●	●

Design features

- the bonnet is spin welded to the body
- multiple O ring spindle seals
- stainless steel spindle
- unobstructed waterway
- wedge encapsulated with vulcanized elastomer, suitable for potable water
- threaded connection for extension spindles

Sealing system:

The contact between wedge and body is friction free. Therefore no scuffing or abrasion of the wedge.

Material:

Body and Bonnet:	of POM - tensile strength 7000 N/cm ²
PE fusion tails:	Standard version PE 80 injection moulded
Melt flow index:	MFR 190/5 kg - 09 MFR-group 010 (DIN 8075) (PE 100 MFR group 05-DIN 8075 on request)
Support liner:	stainless steel 1. 4301 (X5CrNi189)
Wedge:	DN 1" CuZn39Pb3 (Ms 58) DN 1¼" - 2" CuSn7ZnPb (Rg 7) wedge rubber of elastomer, suitable for potable water
Spindle:	stainless steel 1.4021 (X20 Cr13)

This resilient seated valve has PE tails screwed into and sealed in the sockets.

High performance sealing of the PE tails within the sockets is assured by two separate seals and a stainless steel support liner within the tails.

The valve can be connected to the PE pipeline by either butt fusion or electrofusion.



Service Valve for PE fusion

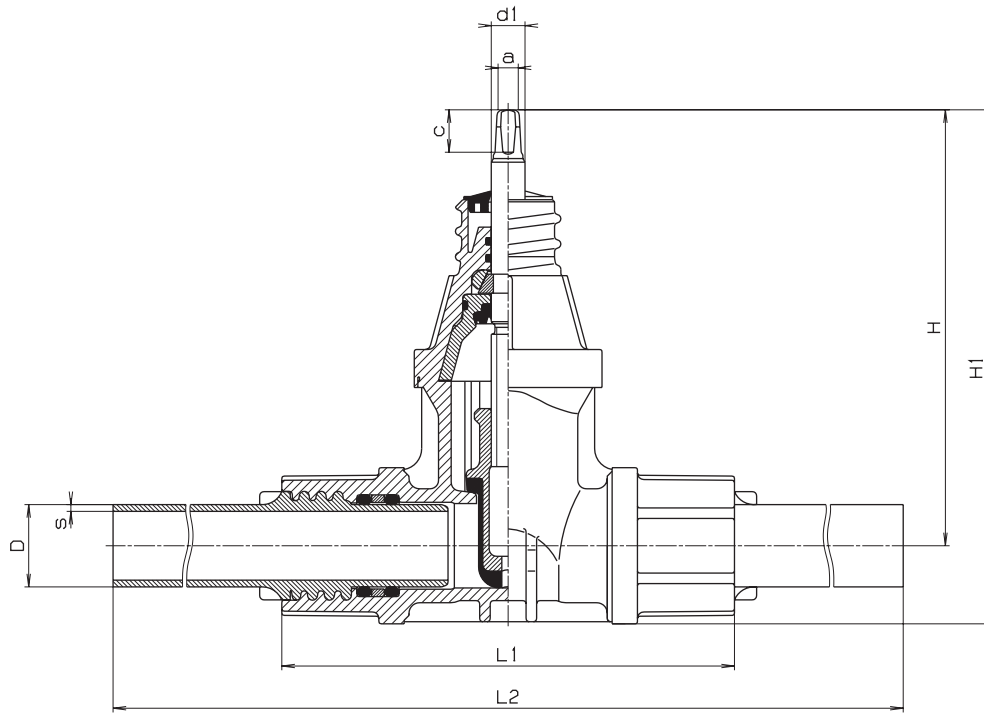
Suitable handwheel: No. 7800
Suitable extension spindles: rigid No. 9101,
 telescopic No. 9601

Suitable surface boxes: rigid No. 1550 light duty,
 rigid No. 1650 heavy duty
 telescopic No. 1850, No. 1851K

No. 2670 - PN 10

Valve for PE fusion, of POM
 with PE fusion tails

Pressure rating: PN 10
Maximum spindle torque: 80 Nm

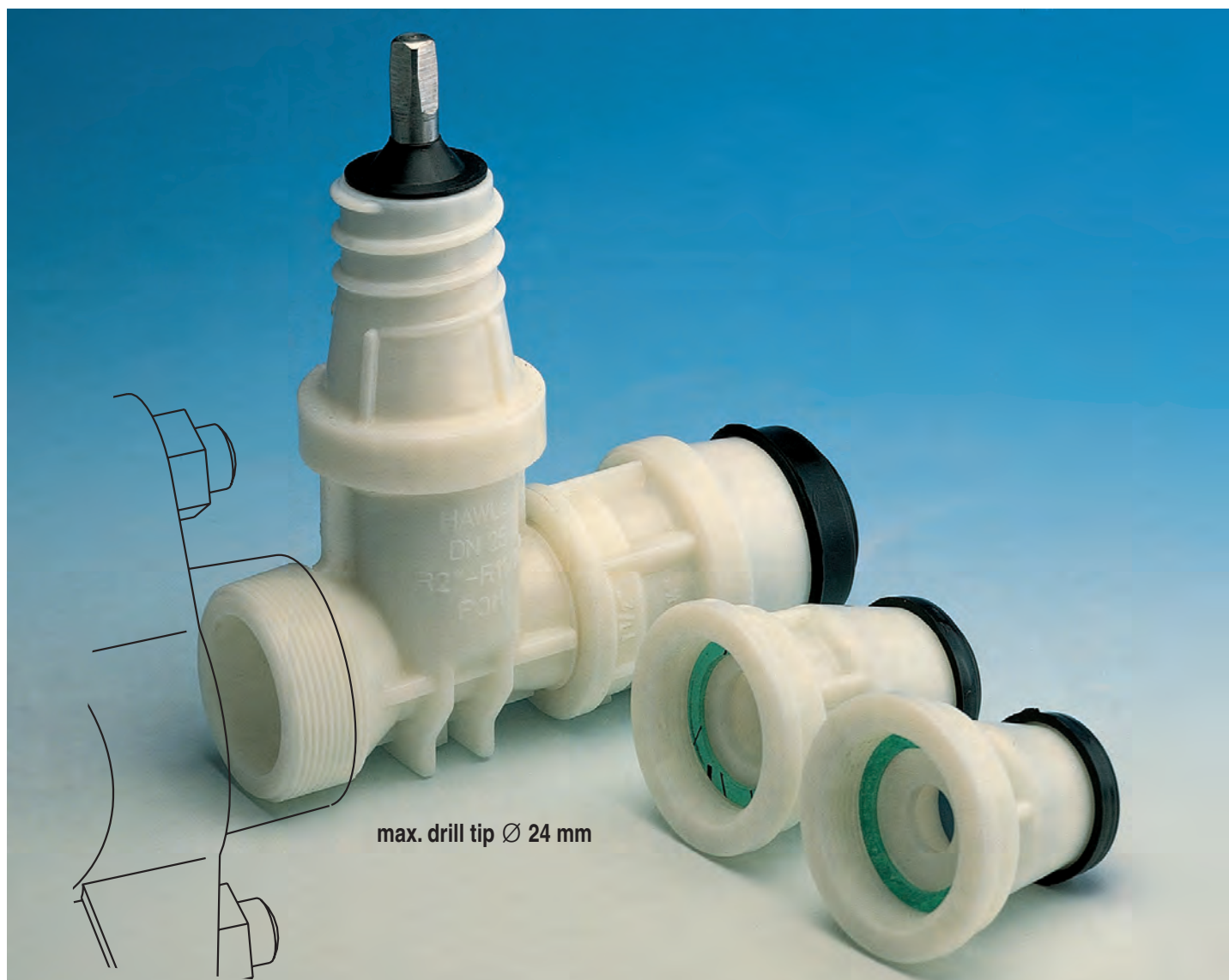


DN	Ø D	Valve with PE tails					Spindle			Weight kg
		s	H	H 1	L 1	L 2	a	c	d 1	
1"	32	3,0	177	212	180	502	10,3	20	14	1,25
1¼"	40	3,7	205	241	218	544	10,3	20	16	1,85
1½"	50	4,6	205	247	251	587	10,3	20	16	2,30
2"	63	5,8	221	271	271	639	10,3	20	16	3,10

Order no.	Version	Appli- cation	PN	DN	Thread	PE pipe Ø mm	
2681	ISO Combination Tapping Valve DN 1" with 2" male iron thread for mounting onto saddle and 1½" male iron thread <u>only for</u> ISO push-fit fitting No. 6221F (without ISO push-fit fitting)	cold water other applications on request	16	1"	2" - 1½"		●
2680	ISO Combination Tapping Valve DN 1" with 2" male iron thread for mounting onto saddle and 1½" male iron thread <u>only for</u> ISO push-fit fitting No. 6221F (complete with choice of ISO push-fit fitting)					25	●
				32	●		
				40	●		
				50	●		
6221F	ISO push-fit fitting with backing washer			1½"	63	●	
					25	●	
					32	●	
					40	●	
5940	Adaptor for HAWLE drilling machine (2")				50	●	
					63	●	
				1½" - 2"		●	

- One valve with 5 ISO push-fit fittings for PE pipes (pipe Ø 25/32/40/50/63 mm) - reduces stockkeeping
- A robust valve of POM
- For the easiest under pressure tapping and the quickest installation of ISO push-fit fittings

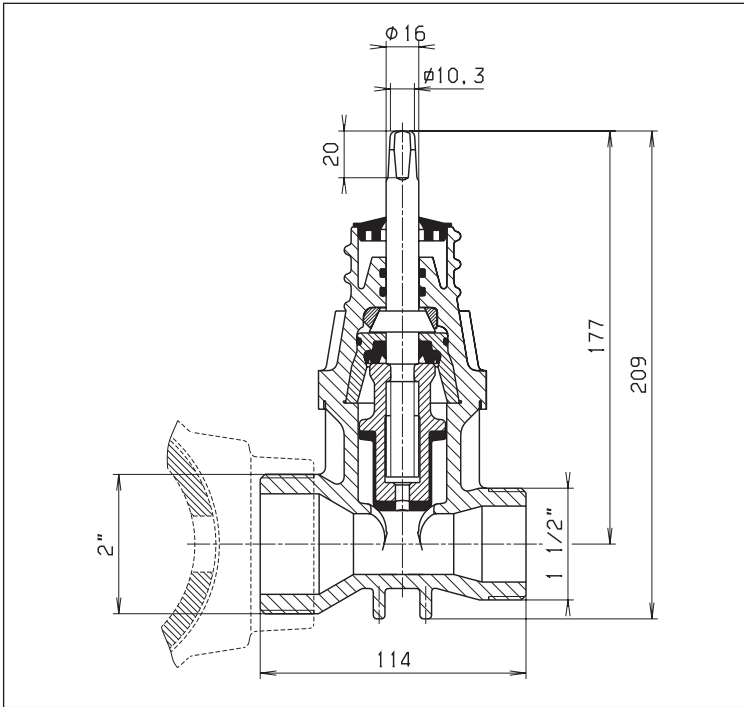
For technical details and instructions for use, see over page.



ISO Combination Tapping Valve

Suitable handwheel: No. 7800
Suitable extension spindles: rigid No. 9101, telescopic: No. 9601

Suitable surface boxes: rigid No. 1550 light duty, rigid No. 1650 heavy duty, telescopic: No. 1850, No. 1851K



No. 2681

Tapping Valve DN 1"

with 2" external thread EN 10226-1 for mounting onto saddle

and 1 1/2" external thread ISO 228 only for ISO push-fit fitting No. 6221F

Sealing system:

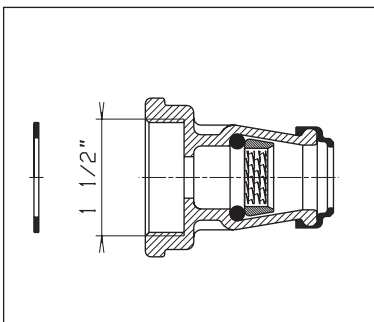
The contact between wedge and body is friction free. Therefore no scuffing or abrasion of the wedge.

Material:

Body: POM
 tensile strength 7000 N/cm²

Wedge: CuZn39Pb3 (Ms 58)
 wedge rubber of elastomer, suitable for potable water

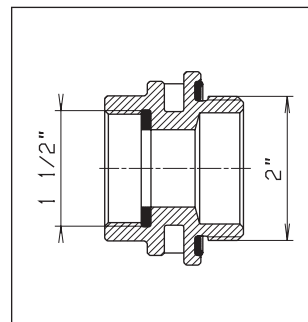
Spindle: stainless steel min. 1.4021 (X20Cr13)



No. 6221F ISO push-fit fitting

POM
 internal thread 1 1/2" ISO 228
 push-fit socket for PE pipes up to PN 16, pipe Ø 25/32/40/50/63 mm

The backing washer (made of Aqua-Gummi) eliminates time-consuming sealing with hemp or PTFE tape.



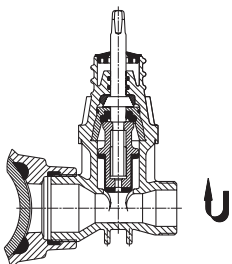
No. 5940 Adaptor

G-CuSn7ZnPb (Rg7)
 internal thread 1 1/2" ISO 228
 external thread 2" ISO 228
 for HAWLE drilling machines No. 5800 or No. 5805

DRILLING AND ASSEMBLY INSTRUCTIONS

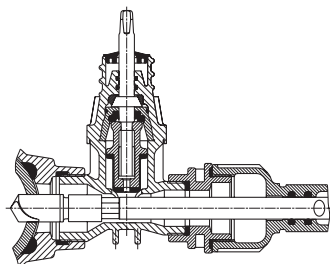
1. Mounting onto the saddle:

Screw the 2" external thread into the internal thread of the saddle.



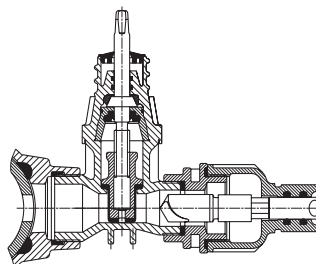
2. Drilling:

Open the valve completely; if necessary use adaptor no. 5940.



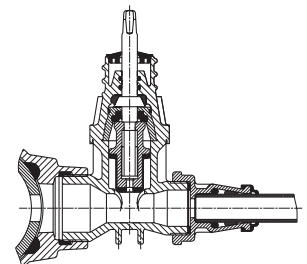
3. Shut off:

After drilling, retract the drill and close the valve.



4. Pipe assembly:

Screw on one of the three ISO push-fit fittings — push the pipe in — finished.



Order no.	Version	Application	PN	Dimensions/DN			
				1"	1¼"	1½"	2"
3120	with internal thread outlet	for cold water other applications on request	16	●	●	●	●
3128	with internal thread outlet and automatic drainage device*			●		●	
3130	with ISO-fitting for PE pipe			●	●	●	●

*see over page - No. 3130 can be adapted for PVC pipe with carborundum grip ring at extra cost



For vertical installation on pipe saddles

Design features

- multiple O ring spindle seals
- robust construction with good waterway flow characteristics
- allen screws absolutely corrosion protected by being sunk into the body and sealed, and by passing through flat gasket
- stainless steel spindle
- shut off plug encapsulated with vulcanized elastomer, suitable for potable water
- threaded connection for extension spindles
- epoxy powder coated

Material:

Body and bonnet: of ductile iron EN GJS-400-18 according to EN 1563 (GGG 400-DIN 1693), epoxy powder coated

Shut off plug: of CuZn39Pb3 (Ms58)

Plug seal: of elastomer, suitable for potable water

Spindle: stainless steel min. 1.4021 (X20 Cr13)

O rings: of elastomer

Sealing system:

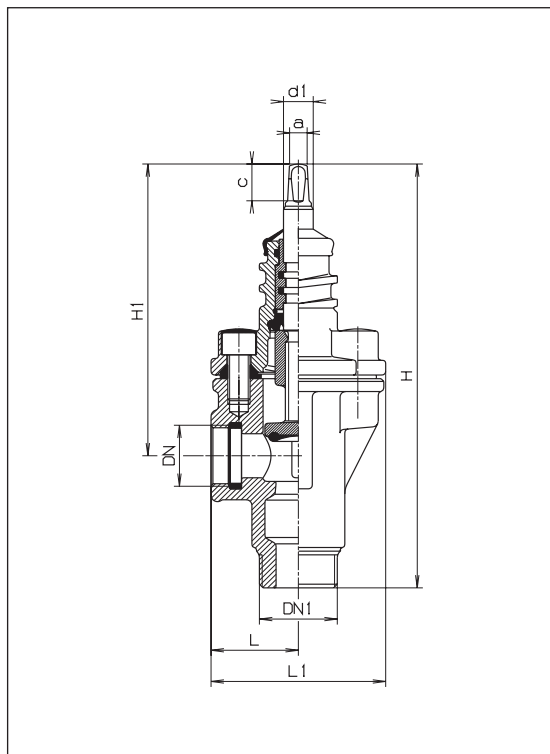
The contact between shut off plug and the body is friction free. Therefore no scuffing or abrasion of the seal.



Service Valve

Suitable handwheel: No. 7800
Suitable extension spindles: rigid No. 9101,
 telescopic No. 9601

Suitable surface boxes: rigid No. 1550 light duty,
 rigid No. 1650 heavy duty
 telescopic No. 1850, 1851K



No. 3120 Service Valve with internal thread outlet

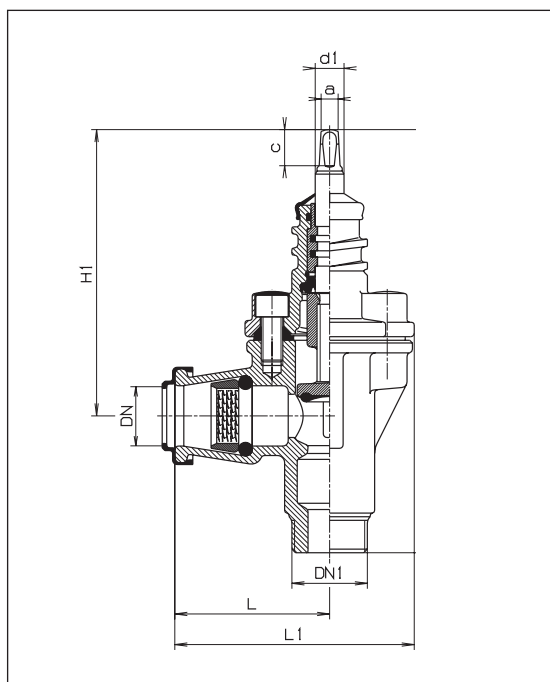
No. 3128 Service Valve with internal thread outlet and automatic drainage device (not shown)

* **NOT** suitable for locations with a drainage hole under the water table

Please observe the flow directional arrow.
 Protection against pressure water only when fully opened.

The automatic drainage of the service is only available when the valve is fully shut.

DN ISO 228	DN 1 EN 10226-1	Valve						Spindle			Weight kg
		L	L 1	H No.		H 1 No.		a	c	d 1	
				3120	3128	3120	3128				
1"	1 1/4"	47	93	227	242	159	170	10,3	20	16	2,20
1 1/4"	2"	55	108	271	-	191	-	10,3	20	16	3,60
1 1/2"	2"	56	109	280	292	193	205	10,3	20	16	3,90
2"	2"	60	113	289	-	196	-	10,3	20	16	4,40



No. 3130 Service Valve with ISO-fitting for PE pipe

DN	Pipe o.d. Ø	DN 1 EN 10226-1	Valve					Spindle			Weight kg
			t	L	L 1	H	H 1	a	c	d 1	
1"	32	1 1/4"	63	86	132	231	159	10,3	20	16	2,50
1 1/4"	40	2"	77	106	159	273	191	10,3	20	16	4,00
1 1/2"	50	2"	91	120	173	283	193	10,3	20	16	4,40
2"	63	2"	103	135	188	289	196	10,3	20	16	5,50

Order no.	Version	Appli- cation	PN	DN	Thread	PE pipe Ø mm	
3151	ISO Combination Service Valve DN 1" with 2" external thread for mounting onto saddle and 1½" external thread <u>only for ISO push-fit fitting No. 6221F (without ISO push-fit fitting)</u>	cold water other applications on request	16	1"	2" - 1½"		●
3150	ISO Combination Service Valve DN 1" with 2" external thread for mounting onto saddle and 1½" external thread <u>only for ISO push-fit fitting No. 6221F (complete with choice of ISO push-fit fitting)</u>					25	●
				32	●		
				40	●		
				50	●		
				63	●		
6221F	ISO push-fit fitting with backing washer			1½"		25	●
					32	●	
					40	●	
					50	●	
						63	●

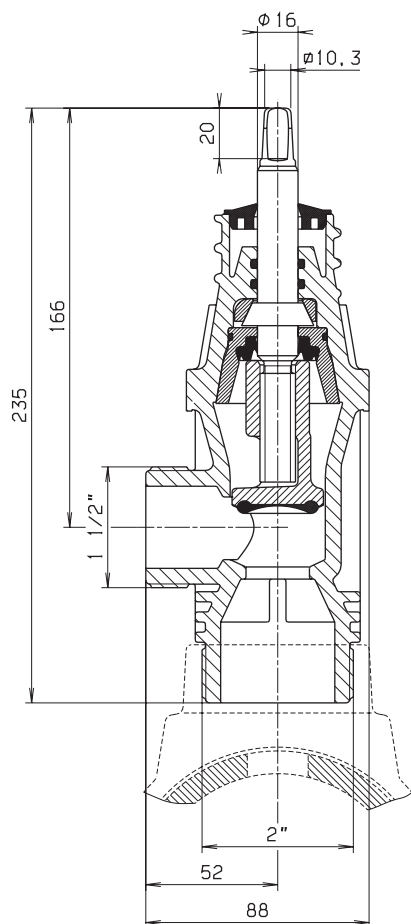
- one valve with 5 ISO push-fit fittings for PE pipes (pipe Ø 25/32/40/50/63 mm) - reduces stockkeeping
- a robust design of POM
- totally corrosion-free



ISO Combination Service Valve

Suitable handwheel: No. 7800
Suitable extension spindles: rigid No. 9101,
telescopic: No. 9601

Suitable surface boxes: rigid No. 1550 light duty,
rigid No. 1650 heavy duty,
telescopic: No. 1850, No. 1851K



ISO Combination Service Valve DN 1"

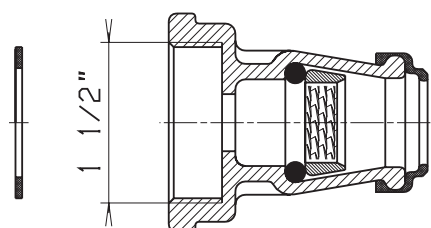
with 2" external thread EN 10226-1 for mounting onto saddle and 1 1/2" external thread ISO 228 only for ISO push-fit fitting No. 6221F

Sealing system:

The contact between plug and body is friction free. Therefore no scuffing or abrasion on the plug.

Materials:

- Body:** POM
tensile strength 7000 N/cm²
- Plug:** CuZn39Pb3 (Ms 58)
- Plug seal:** of elastomer, suitable for potable water
- Spindle:** stainless steel min. 1.4021 (X20Cr13)



No. 6221F ISO push-fit fitting

of POM

internal thread 1 1/2" ISO 228

push-fit socket for PE pipes up to PN 16, pipe Ø 25/32/40/50/63 mm

The backing washer ("Aqua-rubber") eliminates sealing with hemp, therefore quick assembly!

Order no.	Version	Application	PN	Dimensions/DN				
				3/4"	1"	1 1/4"	1 1/2"	2"
2491	internal iron threads both ends, automatic drainage device	for water other applications on request	16	●	●	●	●	●

Suitable for draining of pipes which might freeze e.g. irrigation pipes etc.

In below ground applications sufficient draining for the valve has to be considered (e.g. drainage pit)

Design features:

- secured drain hole
- automatic drainage device
- multiple O ring spindle seals
- solid construction
- allen screws St 8.8 DIN 912 absolutely corrosion protected by being sunk into the body and sealed, and by passing through bonnet gasket
- stainless steel spindle
- vulcanised plug (suitable for potable water)
- threaded connection for extension spindles
- inside and outside epoxy powder coated according to DIN 30677-T2 in accordance with DIN 3476 and all quality and test requirements of RAL quality mark 662 (GSK - Gütegemeinschaft Schwerer Korrosionsschutz - the association for high quality corrosion protection)

Material:

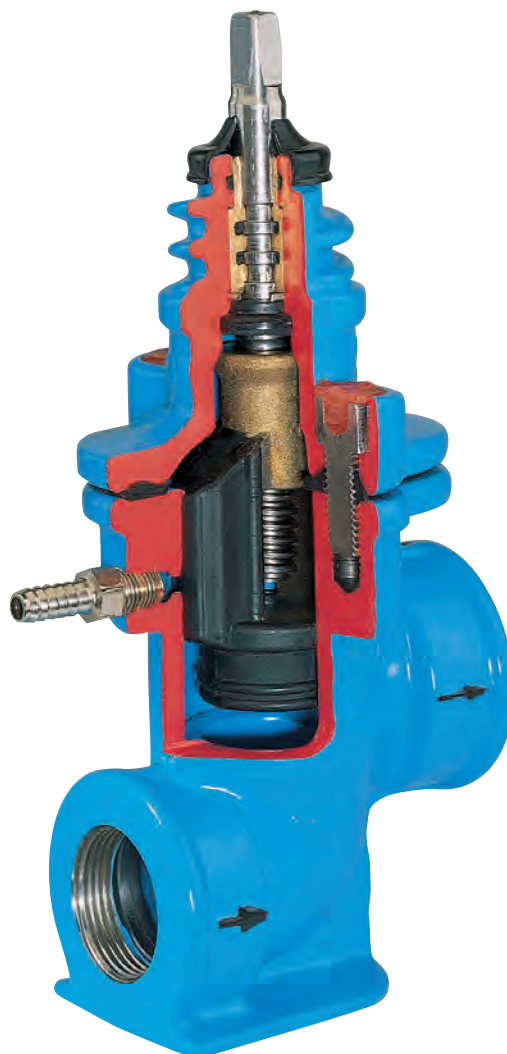
Body and Bonnet:

of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400-DIN 1693), epoxy powder coated

Plug: of brass/elastomer, suitable for potable water

Spindle: stainless steel min. 1.4021 (X20 Cr13)

O rings: of elastomer



Closing system (secured):

Automatic secured draining when valve is completely closed.

No cleaning when the valve is partly or completely open.

Service Valve

Suitable handwheel: No. 7800
Suitable extension spindles: rigid No. 9101,
 telescopic No. 9601

Suitable surface boxes: rigid No. 1550 light duty,
 rigid No. 1650 heavy duty
 telescopic No. 1850, No. 1851K

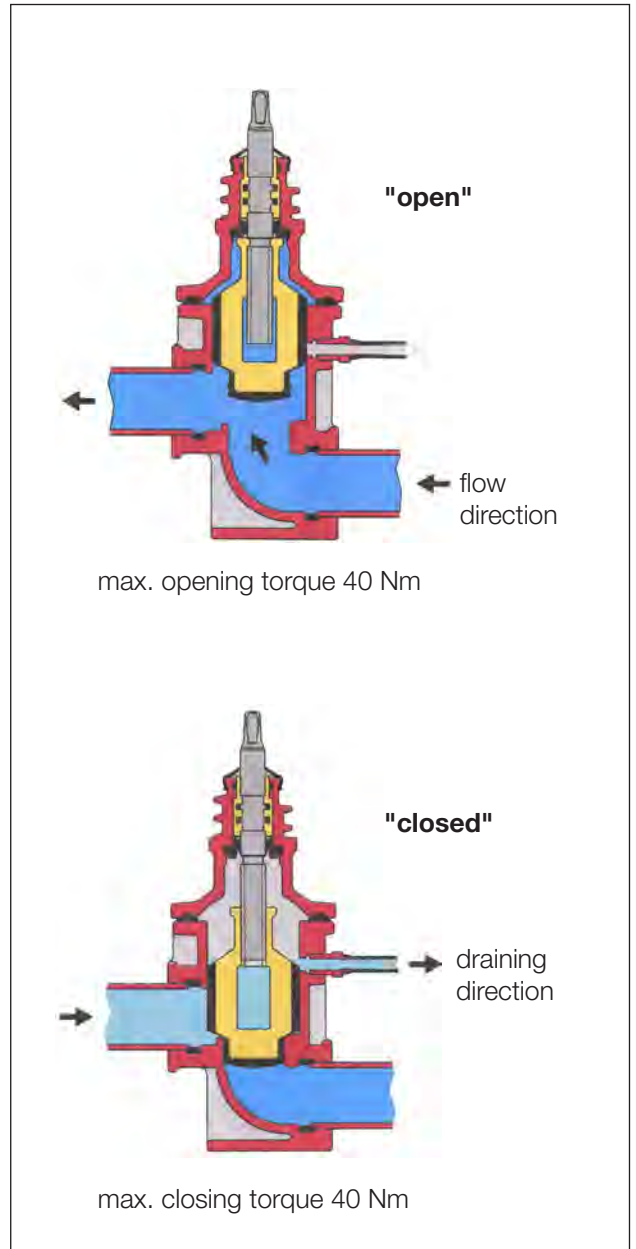
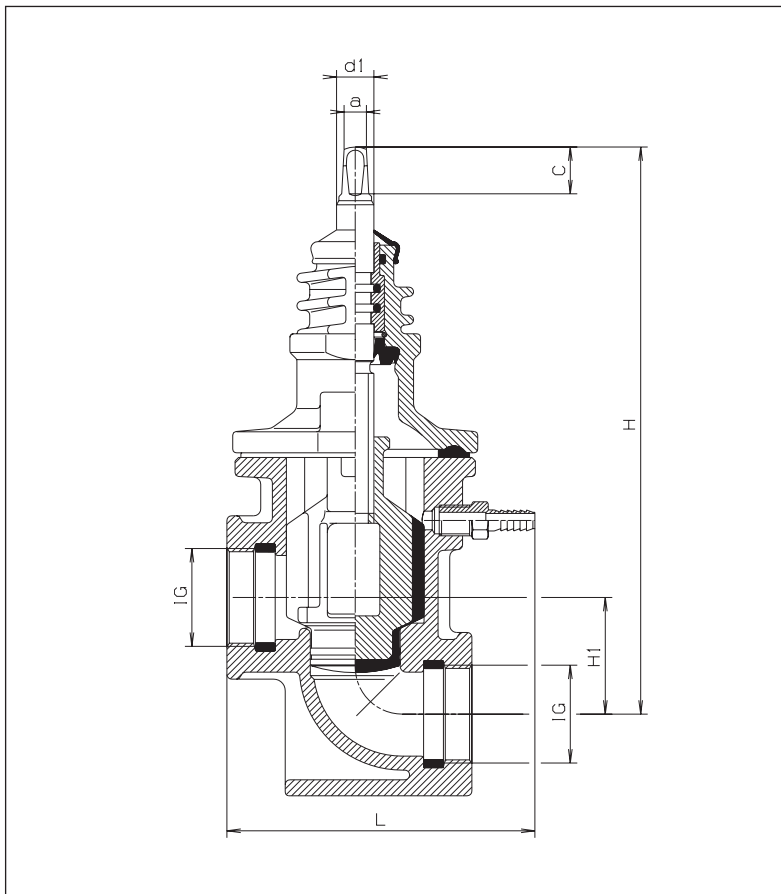
No. 2491

with threaded drainhole* and automatic draining

Note (arrow) installation direction

Draining only when the valve is completely closed

* Note that drainhole must be positioned above ground water level in case of below ground installation (no backflow prevention in the drainhole).



DN IG (ISO 228)	Valve			Spindle			Weight kg
	L	H	H 1	a	c	d 1	
¾"	115	207	41	10,3	20	16	2,30
1"	115	207	41	10,3	20	16	2,40
1¼"	130	243	50	10,3	20	16	4,20
1½"	130	243	50	10,3	20	16	4,10
2"	140	243	50	10,3	20	16	4,50

Order no.	Version	Application	PN	Dimensions/DN								
				80	100	125	150	200	250	300	350	400
2402	Universal-Hawlinger for DCI, steel an AC pipes	for water other applications on request	16	●	●	●	●	●	●	●	●	●

Order no.	Version	Application	PN	Pipe Ø mm				
				90	110	140	160	225
2300	HAKU-Hawlinger for PVC and PE pipes	for water other applications on request	16	●	●	●	●	●

Order no.	Version	Application	PN	external thread				
					1¼"	1½"	2"	
2200	Hawlinger Adaptor Valve for use with any pipe saddle	for water other applications on request	16	internal thread	1"	●		
					1¼"	●		
					1½"		●	●

Design features

- robust and simple design
- in the open position:
clear, unobstructed waterway
working parts not in contact with water
- just half a turn to open or close
- eccentric disc and shut off plate of high grade stainless steel (1.4021 = X20 Cr13 / 1.4310 = X12 CrNi17 7)
- outlet is 1", 1¼" and 1½" internal thread on all models and sizes
- reducer elbow fittings available for PE pipes
- can be used with all commercial drilling machines (e.g. Hawle Drilling Machine No. 5800 or No. 5805)

**for vertical drilling only
includes shut-off valve**



No. 2200

No. 2300

No. 2402



Material:

Body: of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) epoxy powder coated

Saddle strap: for No. 2402, stainless steel 1.4571 (X10 CrNiMoTi18 10)

Seals: elastomer, suitable for potable water

Supplied complete with plastic operating key.
Please specify type of pipe or pipe o.d.

Hawlinger Pipe Drilling Saddle

Suitable extension spindles: on request

No. 2402

Universal-Hawlinger

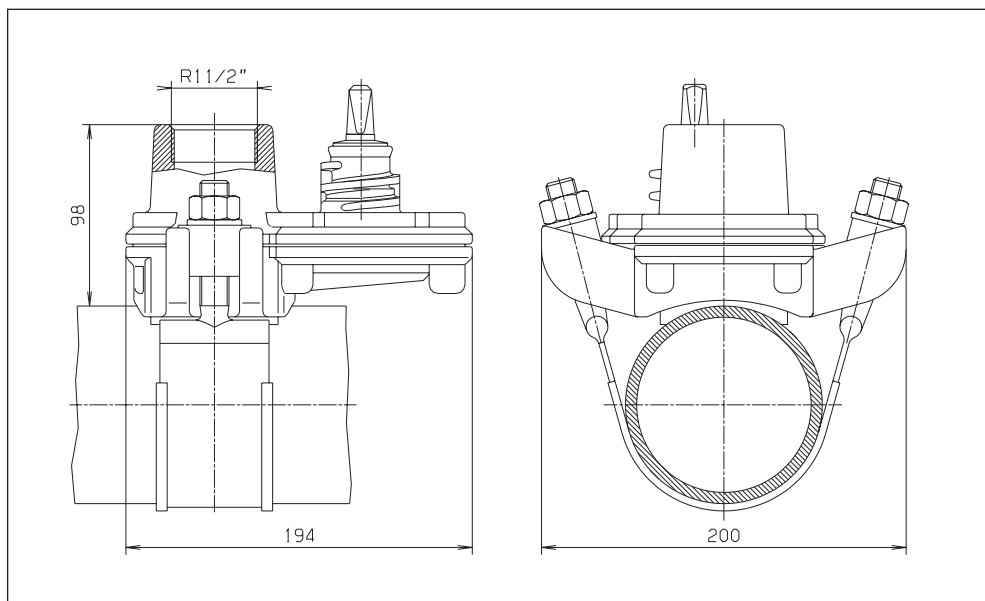
for DCI, steel and AC pipes

DN 80 - DN 400

with internal thread 1" / 1¼" / 1½"

Dimensions and weights for internal thread 1½"

DN	Weight	DN	Weight
80	7,90	250	8,40
100	7,90	300	8,50
125	8,00	350	8,70
150	8,10	400	8,90
200	8,30		



No. 2200

Hawlinger Adaptor Valve

R 1" Drilling-Ø max. 24 mm

R 1¼" Drilling-Ø max. 24 mm

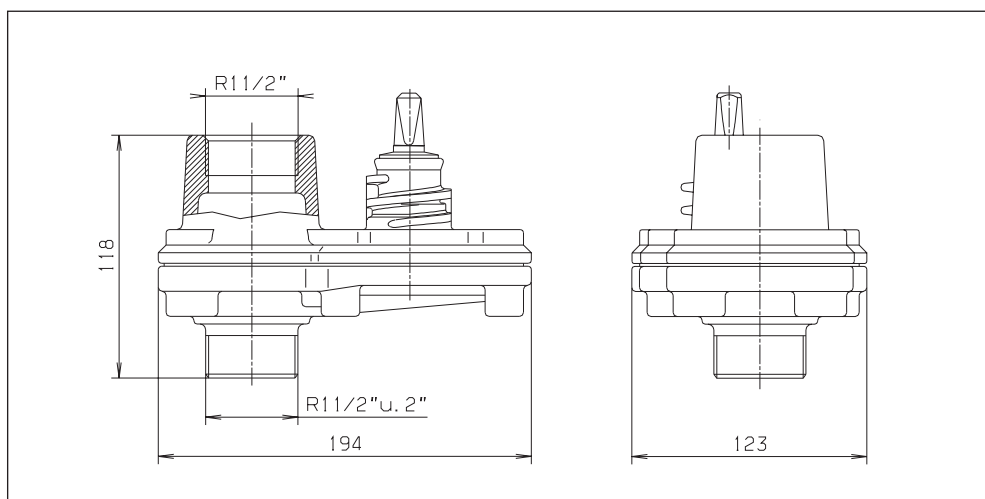
R 1½" Drilling-Ø max. 28 mm

R 2" Drilling-Ø max. 35 mm

with internal thread 1" / 1¼" / 1½"

Dimensions and weights for internal thread 1½"

Weight: 5,6 kg



No. 2300

HAKU-Hawlinger

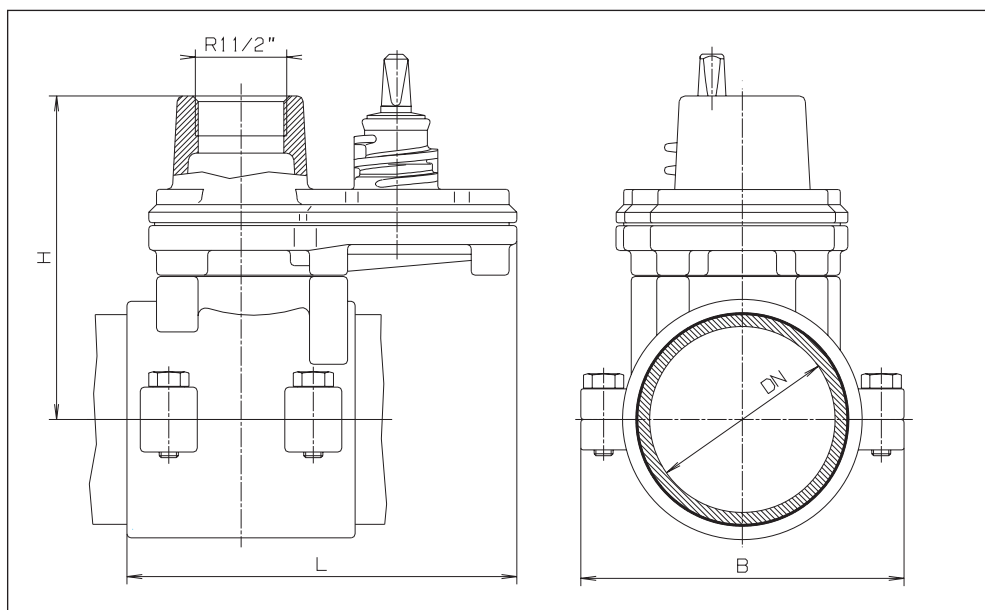
for PVC and PE pipes

DN 80 - DN 200

with internal thread 1" / 1¼" / 1½"

Dimensions and weights for internal thread 1½"

DN	Pipe Ø	B	L	H	Weight kg
80	90	154	194	146	8,30
100	110	170	194	160	8,50
125	140	204	194	177	9,35
150	160	228	194	188	10,30
200	225	298	200	240	11,80



Order no.	DN	Valve connection	k_v -value m ³ /h to 1 bar Δp	for water meter EN 14154-1	
2963	1"	2 internal threads G 1 ISO 228	11,4	3(5) m ³ /h - 7(10) m ³ /h	●
	1¼" *	2 external threads R 1¼" EN 10226-1	11,4	3(5) m ³ /h - 7(10) m ³ /h	●
2931	1"	2 internal threads G 1 without meter substitution connector	11,4	3(5) m ³ /h - 7(10) m ³ /h	●
	1¼" *	2 external threads R 1¼" without meter substitution connector	11,4	3(5) m ³ /h - 7(10) m ³ /h	●
2960	1½"	2 internal threads G 1½ ISO 228	32,1	20 m ³ /h	●
	2"	2 internal threads G 2 ISO 228 without meter substitution connector	47,2	30 m ³ /h	●
2930	1½"	2 internal threads G 1½ without meter substitution connector	32,1	20 m ³ /h	●

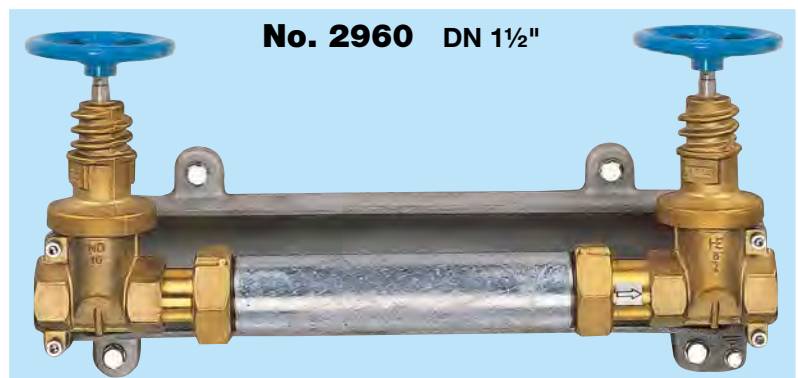
Potable water up to 30° C - PN 16

Special versions: * DN 1¼" with internal thread G 1¼ ISO 228



Design features:

- compact design - with integral back flow preventer
- problem-free assembly and dismantling of the water meter by length adjustment (supplied without water meter)
- body of brass, wall plate of aluminium (including fastening set for water meter console)
- electrical earthing link to base plate
- Order no. 2963 with drainage plug
- DN 1", 1¼" and 1½" supplied with meter substitution connector

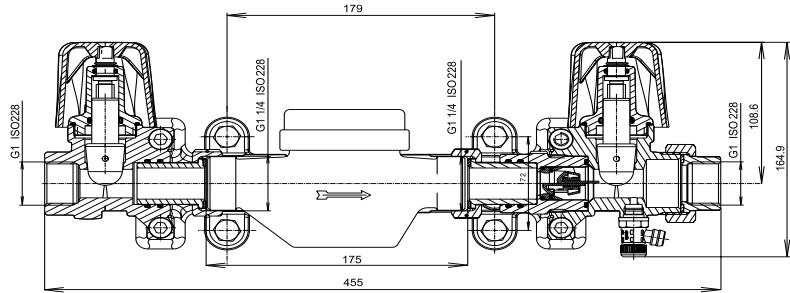


Water Meter Console

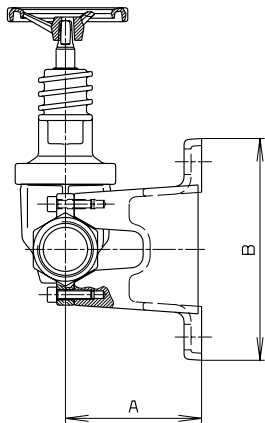
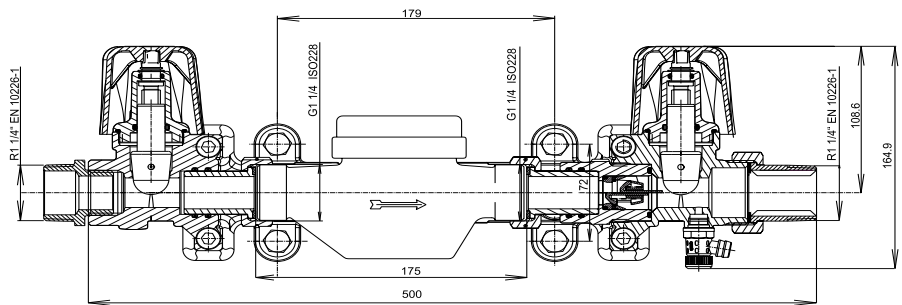
DN	Meter connection	A mm	Weight kg
1"	1 1/4"	90	5,20
1 1/4"	1 1/4"	90	5,40
1 1/2"	2"	115	11,50
2"	Flansch DN 50	115	19,40

DN	Wall plate	
	L mm	B mm
1"	300	100
1 1/4"	300	100
1 1/2"	590	190
2"	590	190

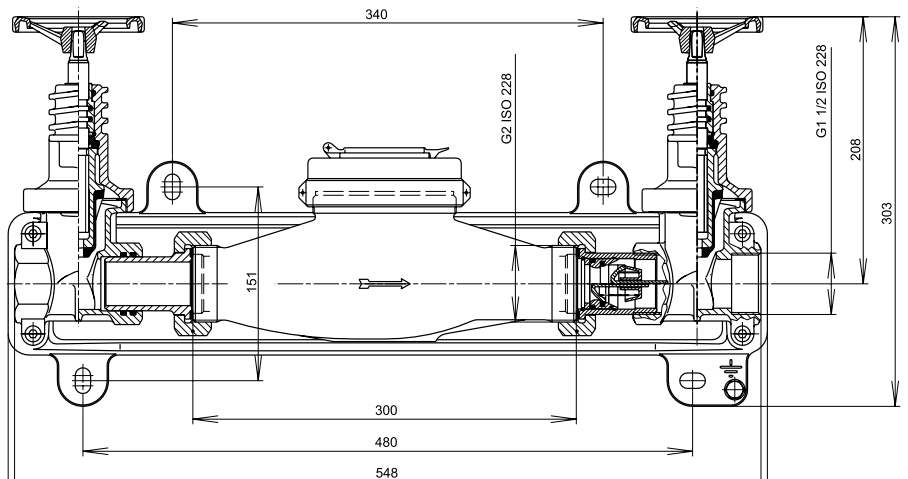
No. 2963 DN 1"



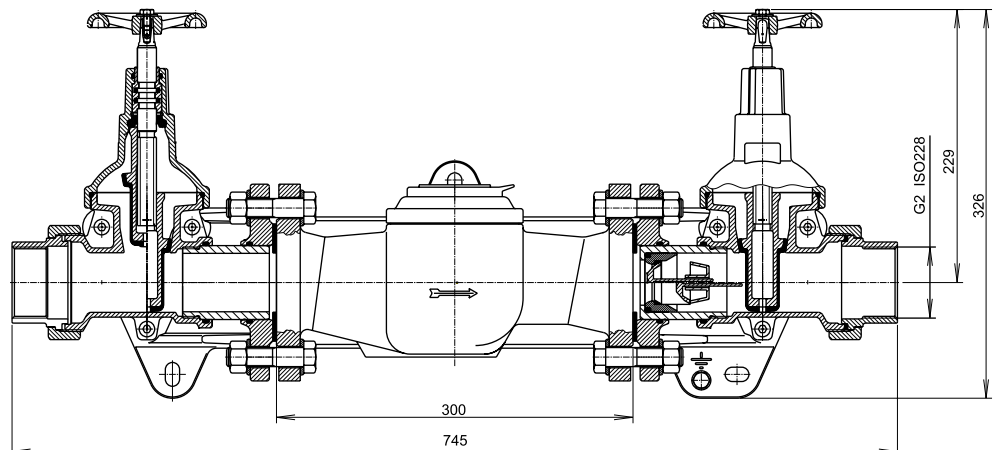
No. 2963 DN 1 1/4"



No. 2960 DN 1 1/2"



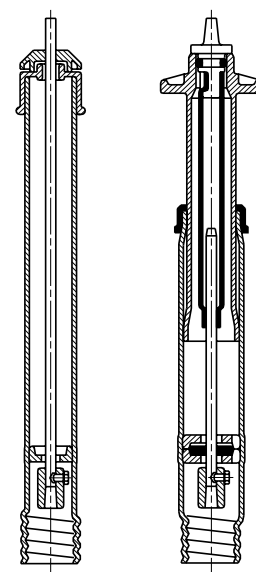
No. 2960 DN 2"



rigid or telescopic

Extension Spindle for Service Valves with threaded connection for spindle DN 3/4"-2"

Order no.	Version	Pipe cover depth	
9101	rigid	0,75 m	●
		1,00 m	●
		1,25 m	●
		1,50 m	●
		2,00 m	●
		2,50 m	●
9601	telescopic	0,60 - 0,80 m	●
		0,80 - 1,20 m	●
		1,30 - 1,80 m	●
		2,00 - 2,50 m	●
		2,50 - 3,50 m	●



rigid

telescopic

Extender for rigid spindle

Order no. 7830 price for 1st m

Order no. 7831 price for each additional 0,5 m
please specify dimension and length

Extension Spindle for Hawle-A Valves and Elypso Valves DN 50-200

Order no.	Version	Pipe cover depth	Dimensions/DN				
			Hawle-A only	Elypso 50-80	Hawle-A + Elypso		
			50/65	Hawle-A 80	100/125	150	200
9000A	rigid	1,00 m	●	●	●	●	●
		1,50 m	●	●	●	●	●
9500A	teles- copic	0,90 - 1,15 m	●				
		1,30 - 1,80 m	●	●	●	●	
		1,35 - 1,80 m					●
		2,00 - 2,50 m	●	●	●	●	●
		2,50 - 3,50 m		●	●	●	●

- High quality materials for optimal corrosion protection
- Easy installation and efficient operation
- Manufactured with environmentally friendly processes and responsible use of resources
- Extension Spindles for Elypso-Valves: one extension spindle for several dimensions
- Can be located by metal detectors

Hawle's Telescopic Extension Spindle is the best solution for efficient below ground installation.

Hawle's Telescopic Extension Spindle is infinitely adjustable for a perfect match to any ground level.



rigid telescopic
DN 50/65
Version Hawle-A

rigid telescopic
DN 50/200

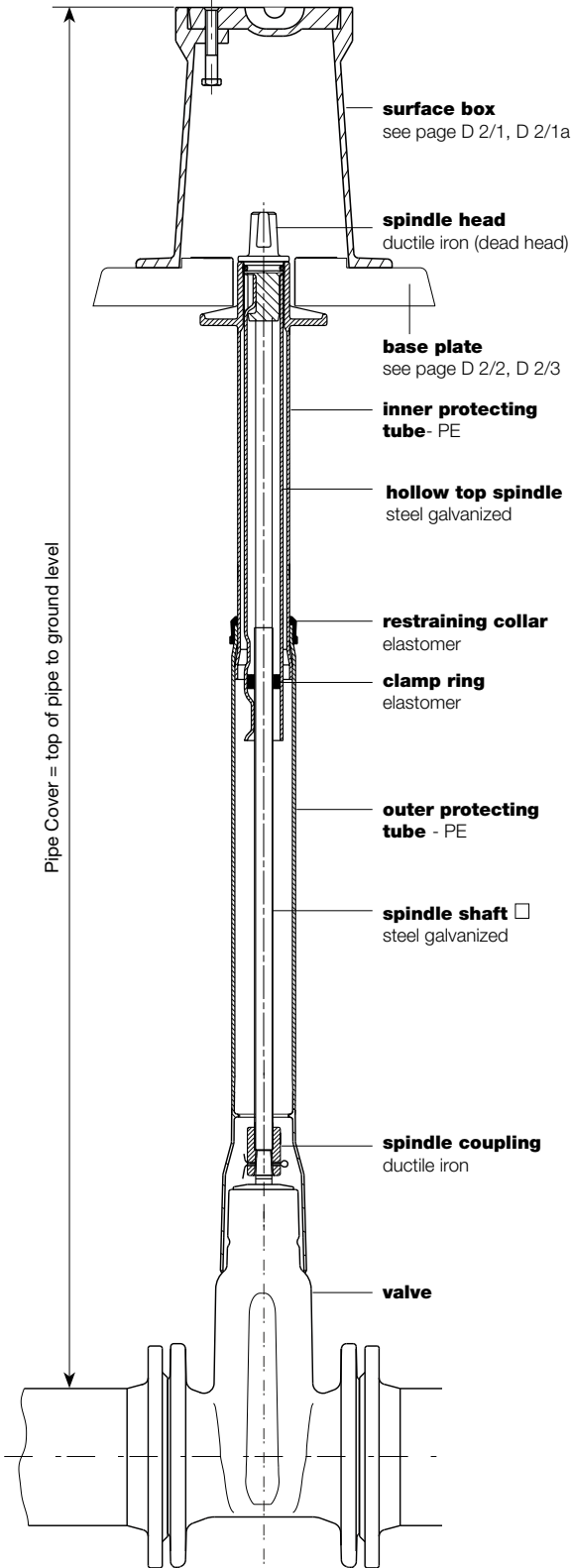
Extension Spindles

All extension spindle dimensions and types (rigid or telescopic) are protected against dirt and surface water.

The telescopic extension spindle can be progressively adjusted to ground level. This is done by pushing or pulling the protecting tube and the spindle shaft.

and fitting from surface impact. Supplied with or without surface box and base plate.

The telescopic effect protects the pipe



Spindle head

	for service valves	rigid / telescopic	a 13 mm
			b 15 mm
			c 24 mm
	for gate valves	telescopic	a 27 mm
			b 32 mm
	rigid	□ 30 mm	

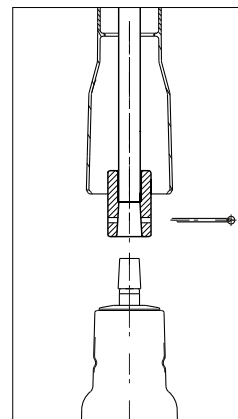
Weight of Extension Spindle with threaded connection for Service Valves

Order-No.	9101					9601					
Length m	0,75	1,00	1,25	1,50	2,00	2,50	0,6-0,8	0,8-1,2	1,3-1,8	2-2,5	2,5-3,5
Weight Kg	1,20	1,70	2,20	2,70	3,70	4,70	3,50	4,90	2,40	1,60	6,90

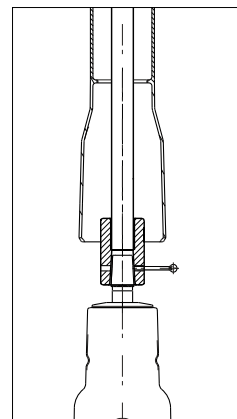
Weight of Extension Spindle for Hawle-A & Elypso-Valves

Version	Order-No.	Pipe cover depth	Dimensions/DN				
			Hawle-A only		Hawle-A + Elypso		
			50/65	Hawle-A 80	100/125	150	200
rigid	9000A	1,00 m	3,30	3,20	3,30	2,95	2,80
		1,50 m	5,30	5,30	5,30	5,00	4,80
telescopic	9500A	0,90 - 1,15 m	4,30				
		1,30 - 1,80 m	6,80	6,80	6,80	6,50	
		1,35 - 1,80 m					6,30
		2,00 - 2,50 m	9,40	9,40	9,50	9,20	9,00
		2,50 - 3,50 m		12,87	12,90	12,70	12,50

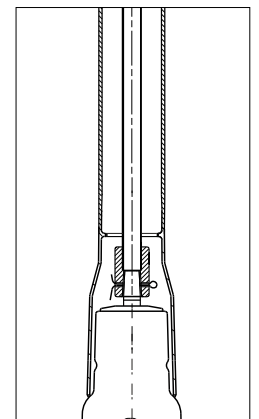
Assembly:



Slide back outer protecting tube, remove split pin



Place extension spindle shaft over valve spindle



Slide outer protecting tube over gate valve housing

Telescopic Extension Spindle for Hawle-A & E0-Valves, DN 80-200

rigid or telescopic

for E2 Valves and E2 Combi Valves DN 50 - 200

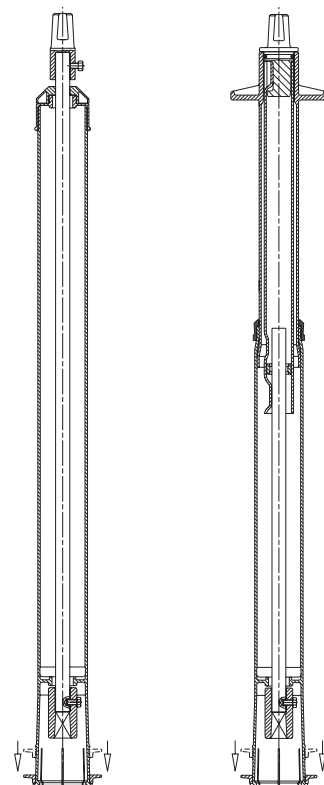
- one extension spindle for several dimensions
- protective cover with integrated locking mechanism
- No additional fixing (bolt/pin) necessary

Order no.	Version	Pipe cover depth	for dimensions/DN		
			50/65/80/100	125/150	200
9000E2	rigid	1,00 m	●	●	●
		1,25 m	●	●	●
		1,50 m	●	●	●
		2,00 m	●	●	●
		2,50 m	●	●	●
9500E2	telescopic	1,30 - 1,80 m	●	●	
		1,35 - 1,80 m			●
		2,00 - 2,50 m	●	●	●
		2,50 - 3,50 m	●	●	●

Extender for rigid spindle

Order no. 7830 price for 1st m

Order no. 7831 price for each additional 0,5 m
please specify dimension and length



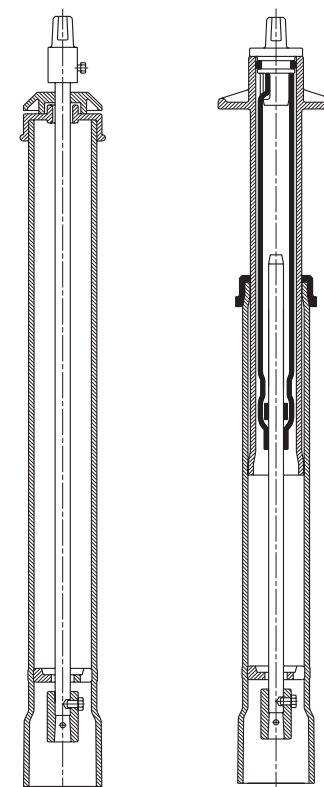
rigid

telescopic

for E2 Valve DN 250 - 600

Order no.	Version	Pipe cover depth	for dimensions/DN						
			250	300	350	400-500*	500	600	
9000E2	rigid	1,00 m	●	●					
		1,25 m	●	●	●	●			
		1,50 m	●	●	●	●			
		1,90 m					●		
		2,00 m	●	●	●	●		●	
		2,40 m					●		
		2,50 m	●	●				●	
9500E2	telescopic	1,40 - 1,80 m	●						
		1,50 - 1,80 m		●	●	●			
		1,90 - 2,20 m					●		
		2,00 - 2,30 m						●	
		2,00 - 2,50 m	●	●	●	●			
		2,50 - 3,50 m	●	●	●	●			
		2,60 - 3,50 m					●	●	

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



rigid

telescopic

E2 Extension Spindles

All extension spindles (rigid and telescopic) of all types and dimensions are protected against dirt and surface water.

The telescopic extension spindle can be progressively adjusted to the ground level.

This is done by pushing or pulling the tube and the spindle shaft.

The telescopic effect protects the pipe and fitting from surface impact.

Supplied with or without surface box and base plate.

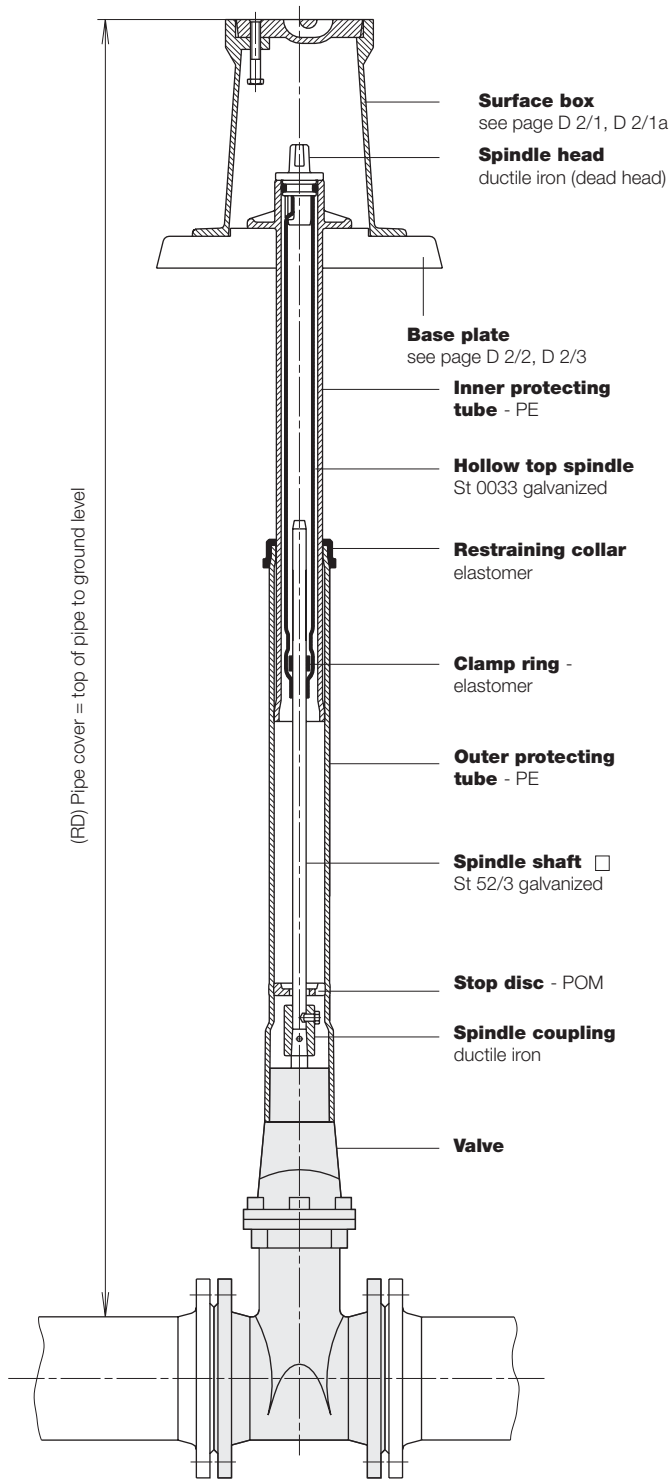
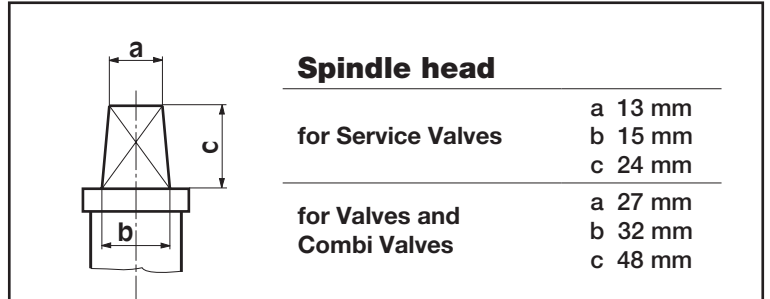


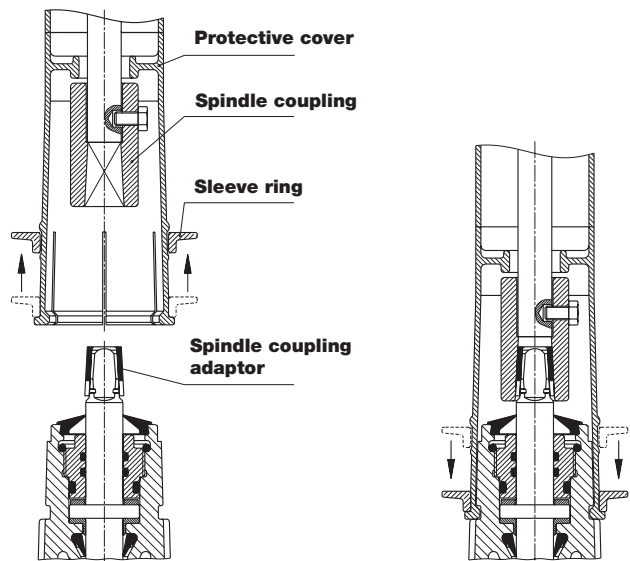
Illustration: 9500E2 DN 250 - 600



9500E2	Weights / kg Extension spindles rigid – for DN								
RD	50/65/80/100	125/150	200	250	300	350	400-500	500	600
1,00 m	3,45	2,90	2,70	3,20	2,90				
1,25 m	4,45	3,90	3,70	4,70	4,40	4,00	3,55		
1,50 m	5,45	4,90	4,70	6,15	5,85	5,50	5,00		
1,90 m								7,40	
2,00 m	7,45	6,90	6,70	9,15	8,80	8,45	8,00		7,40
2,40 m								9,70	
2,50 m	9,50	8,90	8,70	12,30	12,00				9,70

9500E2	Weights / kg Extension spindles telescopic – for DN								
RD	50/65/80/100	125/150	200	250	300	350	400-500*	500	600
1,30 - 1,80 m	6,75	6,25							
1,35 - 1,80 m			6,10						
1,40 - 1,80 m				7,30					
1,50 - 1,80 m					6,85	6,60	6,25		
1,90 - 2,20 m								8,70	
2,00 - 2,30 m									8,70
2,00 - 2,50 m	9,40	8,90	8,60	11,10	10,70	10,30	9,80		
2,50 - 3,50 m	12,80	12,00	11,90	15,30	14,90	14,50	14,20		
2,60 - 3,50 m								14,00	14,00

Illustration: Assembly of E2 Extension Spindle DN 50-200



Infinitely height adjustable

No. 1851K



No. 2051K



No. 1950K



Order No.	Version for	Weight kg	
1851K	Service Valves DIN 4057	4,5	●
2051K	Gate Valves DIN 4056	8,0	●
1950K	Below Ground Hydrants DIN 4055	18,6	●

Advantages

- Adjustable height enables fixation of street cover at the desired level
- 4° Angular offset possible, depending on level of extension
- Height of street cover remains fixed also during road work
- Less hands on work during road construction
- Homogenous connection with the tarmac, minimizing frost damage
- Quiet, no rattling of street cover
- Low maintenance (no rust problems, application of grease not necessary)
- 10 Year Hawle warranty

Design features

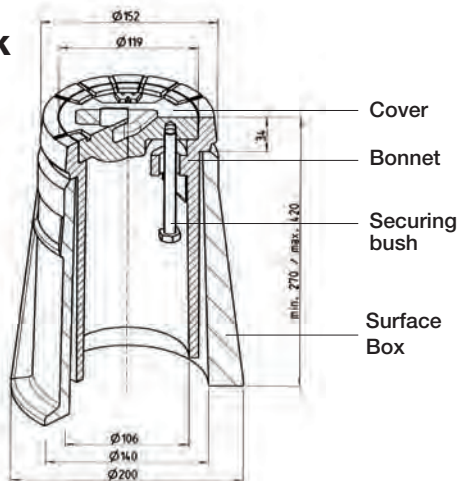
- Low weight
- No loose parts
- High stability, pressure load according to DIN 3580
- Extremely durable glass fibre construction
- Temperature invariant between: -20°C bis 245°C
- DVGW certified to VP 310-2

Accessories: see overleaf

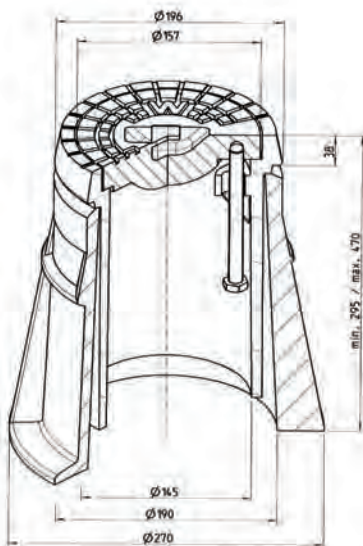
Materials	
Coverlid	EN-GJL-200
Surface box body	Polyamide 66 with 30% glass fibre
Safety pin	Stainless steel X5CrNi 1810

Telescopic Plastic Surface Box

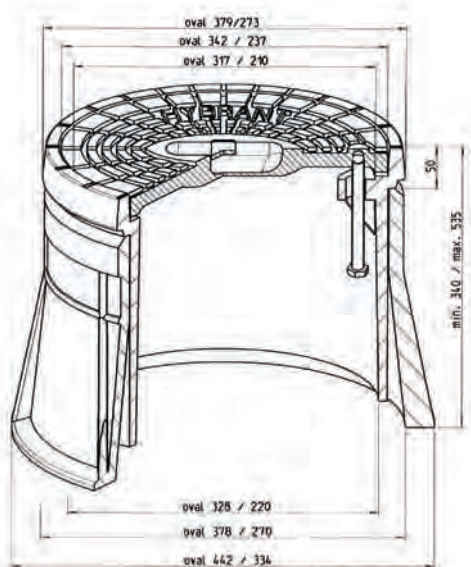
No. 1851K



No. 2051K



Nr. 1950K



Infinitely height adjustable

Installation instructions

New road construction

Warning:

To avoid damage, surface boxes must be installed only after laying the gravel.

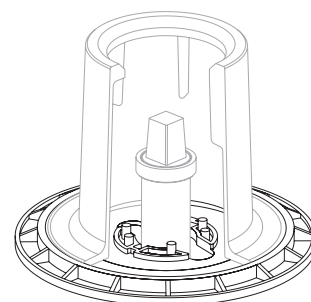
- Lay and compact the gravel
- Position and align the surface box
- Mark location of surface box at the roadside
- Spray the surface box with a releasing agent
- Lay the bitumen binder
- Free the surface box cover of and fresh bitumen binder
- Pull the surface box top approximately 2 cm above the ground and fill the surrounding base space with tarmac.
- Clean and free the surface box cover from all foreign material
- Roll the tarmac surrounding the surface box
- Immediately loosen and clean the surface box and cap

Final surfacing

- Mark position of the surface box body at the roadside, spray box with a releasing agent
- Apply the tarmac layer
- Pull the surface box approximately 2 cm above the final tarmac layer. Fill the space with tarmac
- Clean cover of surface box from all foreign material
- Roll the tarmac surrounding the surface box
- Immediately loosen and clean the surface box and cap

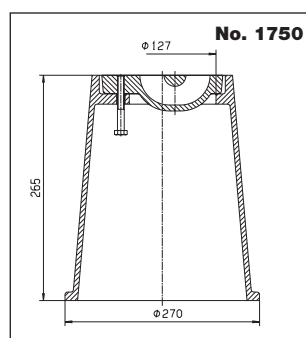
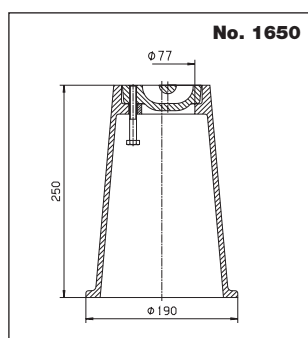
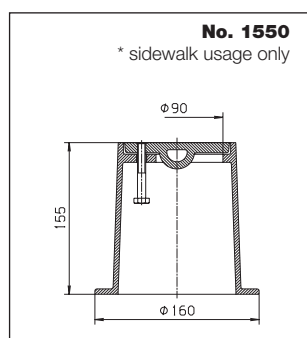
Accessories: base plate
Made from recycled plastic

- Robust and stable
- Easy assembly
- Low weight
- Non-degradable

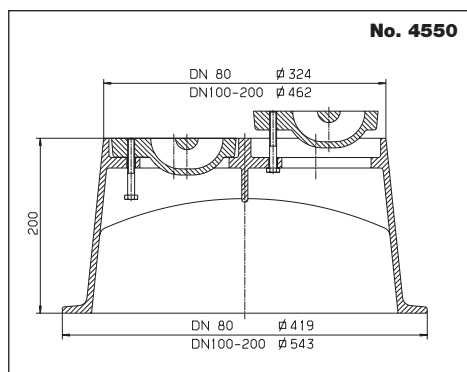
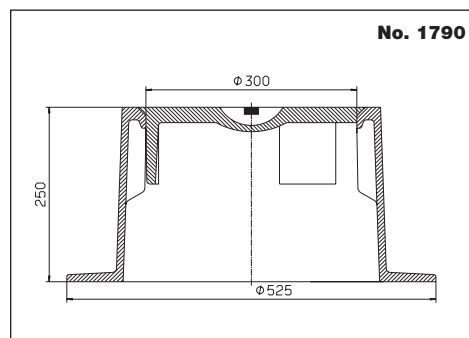
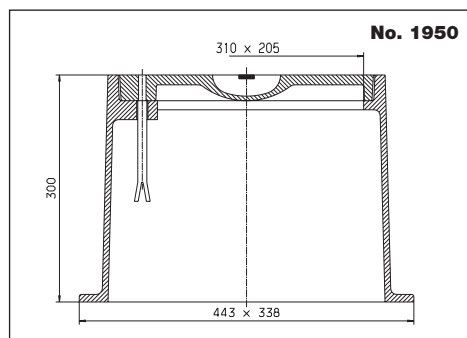


Order No.	Suitable for surface box acc. to	Weight kg
3481	DIN 4056 and DIN 4057	0,6
3482	DIN 4055 (for Below Ground Hydrants)	2,0

Model for:	Order no.	Version	Material	Weight kg	
Service Valves	1550	light*	grey iron, bitumen coated	2,8	●
	1650	heavy		6,5	●
Elypso Valves and Combi-T	1750		grey iron, bitumen coated	11,3	●
Below Ground Hydrants	1950		grey iron, bitumen coated	32,0	●
Air-Release Hydrants	1790		grey iron, bitumen coated	41,5	●
Combi-III and Combi-IV	4550	DN 80+	ductile iron, bitumen coated	34,0	●
	4550	DN 100-200++		54,5	●



- + E-type DN 80-150
E2-type DN 80
- ++ E-type DN 200
E2-type DN 100-200

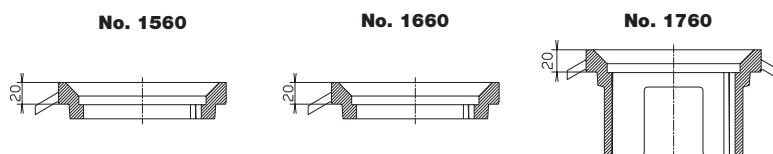


max. load 200 kN
(excluding No. 1550)



Conversion Rings

these rings are used to adapt non adjustable surface boxes already installed to HAWLE adjustable types.



for surface box no. 1550	Order no. 1560	grey iron, bitumen coated	Weight 0,9 kg	●
for surface box no. 1650	Order no. 1660	grey iron, bitumen coated	Weight 0,9 kg	●
for surface box no. 1750	Order no. 1760	grey iron, bitumen coated	Weight 2,7 kg	●

Surface Box adjustable

Model for:	Order no.	Version	Material	Weight kg	
Service valves	1850	complete box, without extension rings	grey iron, bitumen coated	7,4	●
Elypso Valves and Combi-T	2050			12,9	●

Height adjustable Surface Box to DIN see page D 2/1a



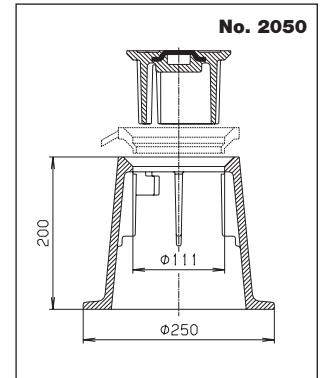
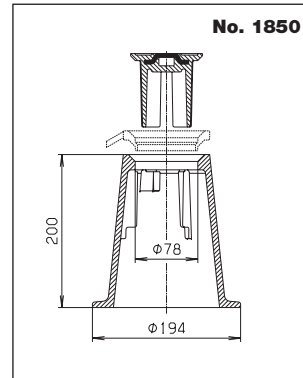
max. load 200 kN

Surface Box adjustable

with extension rings to adjust to ground level

The cylindrical guide combined with machined conical seating results in tight and noiseless fitting of the lid.

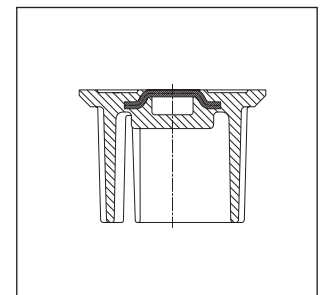
The design enables the lid to be easily removed.



Lid for adjustable Surface Boxes

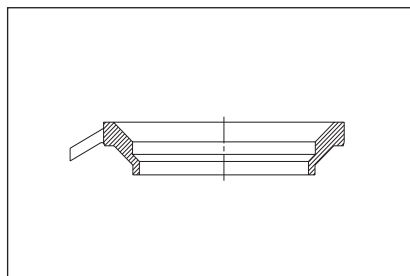
of grey iron, bitumen coated

Order no.	suitable for	Weight kg	
1860	surface box No. 1850	1,30	●
2060	surface box No. 2050	2,90	●



Extension Rings

for adjusting to ground level
of grey iron, bitumen coated

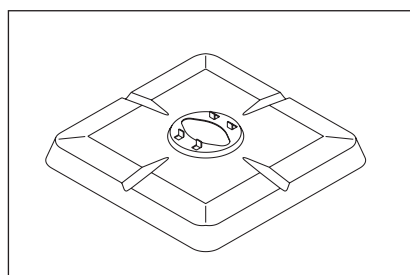


Height mm	Weight kg					
	12	15	20	30	40	50
No. 2030	0,50	0,60	0,80	1,20	1,50	1,90
No. 2040		1,00	1,40	2,00	2,80	3,50

Order no.	suitable for	Height mm					
		12	15	20	30	40	50
2030	adjustable surface box No. 1850	●	●	●	●	●	●
2040	adjustable surface box No. 2050		●	●	●	●	●

Base plate

of stamped sheet steel, galvanized
Measurement: 360 x 360 mm



Order no.	suitable for	Weight kg	
3480	surface box No. 1550, 1650, 1850	1,70	●
3490	surface box No. 1750, 2050	1,70	●

with separate removable mounting ring for road surfaces which have to be milled down

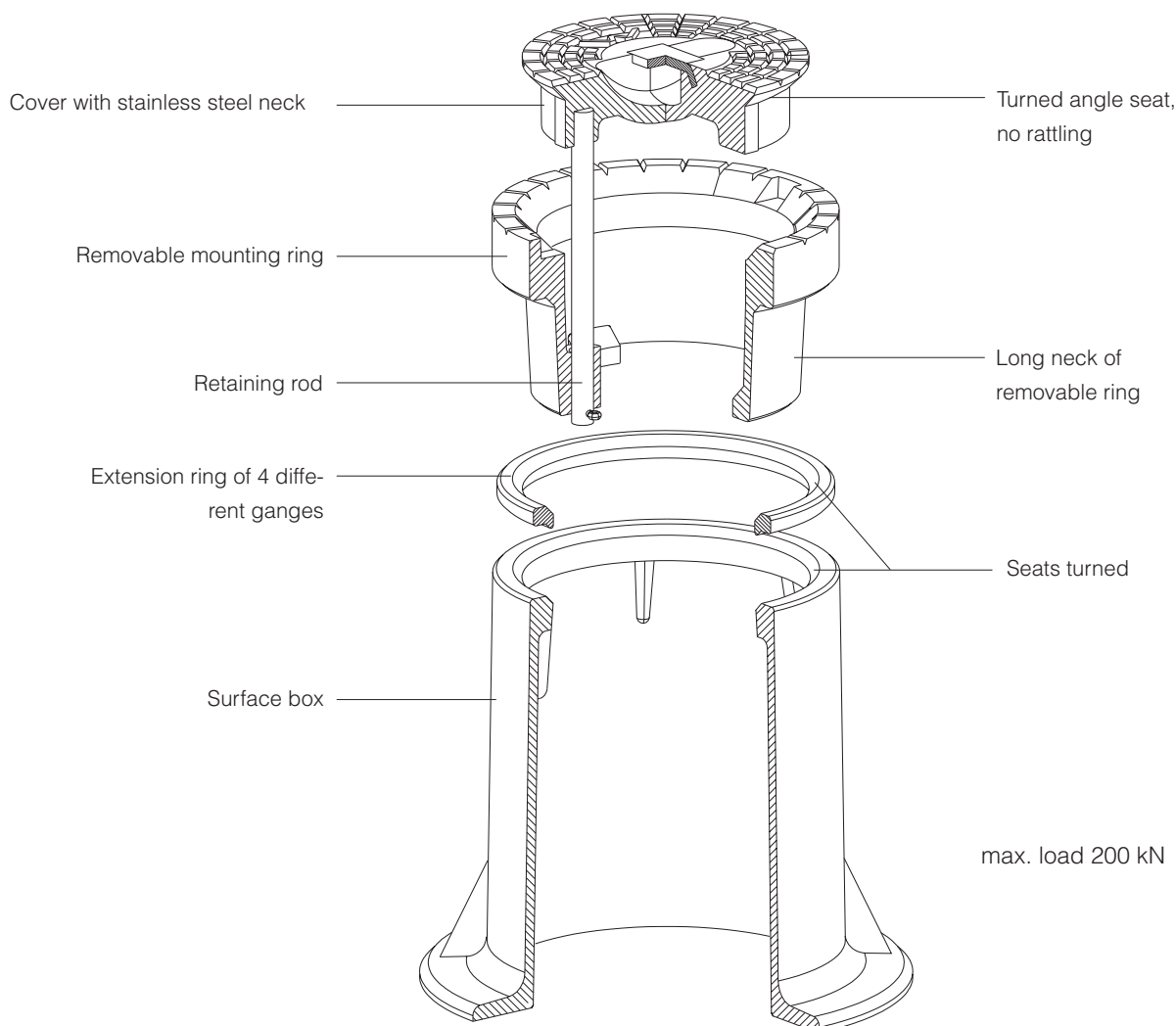
Surface Boxes

Order no.	Version	Weight kg	
2051	DIN 4056 (gate valves)	21,5	●
1851	DIN 4057 (service valves)	11,0	●

Surface Boxes

Order no.	suitable for	Height mm			
		10	20	30	50
2045	Surface Box No. 2051	●	●	●	●
		0,5 kg	1,1 kg	1,6 kg	3,0 kg
2035	Surface Box No. 1851	●	●	●	●
		0,4 kg	0,8 kg	1,2 kg	2,0 kg

Accessories: Puller No. 5971 (see illustration 1)

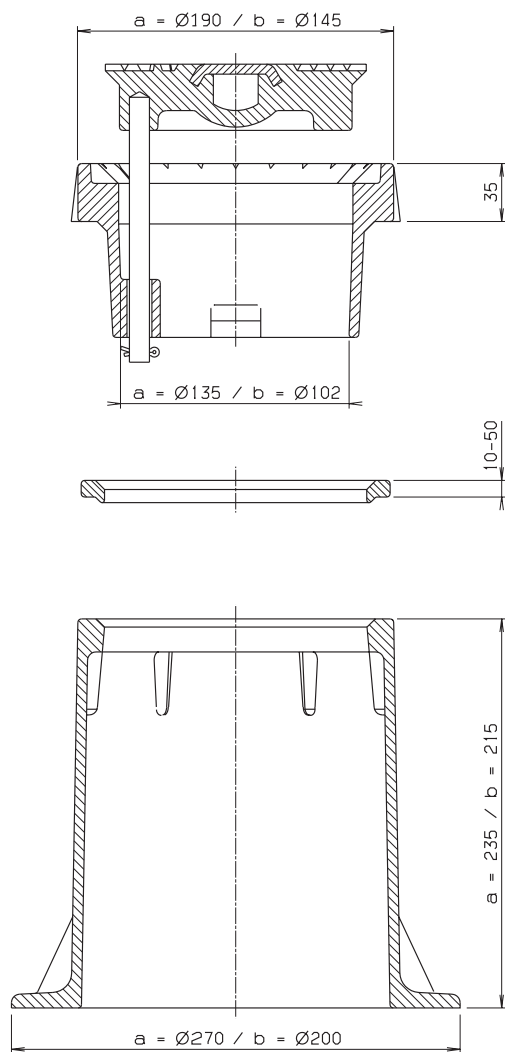


Advantages:

- Proven angle seat prevents the cover from rattling.
- **High quality corrosion protection** using the GSK fluidised bed Epoxy coating system.
- The removable mounting ring enables a milling down of the road surface without removing the surface box.
- **Height adjustable** with extension rings.
- **Cover secured** by stainless steel retaining rod.
- Available on request: special wedged extension ring for sloping roads (see illustration 2).

Height adjustable Surface Box to DIN

Dimensions for Surface Box to DIN a = DIN 4056 b = DIN 4057



Puller No. 5971

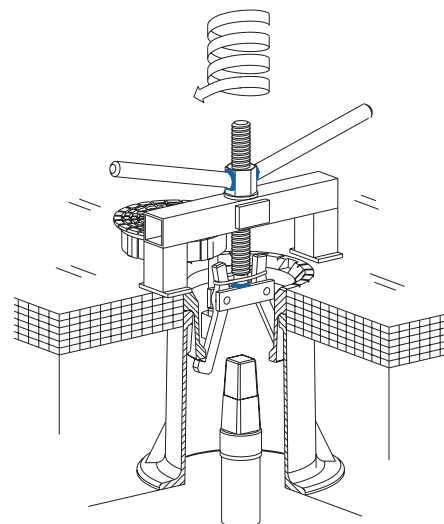


Illustration 1

Extension ring for sloping roads

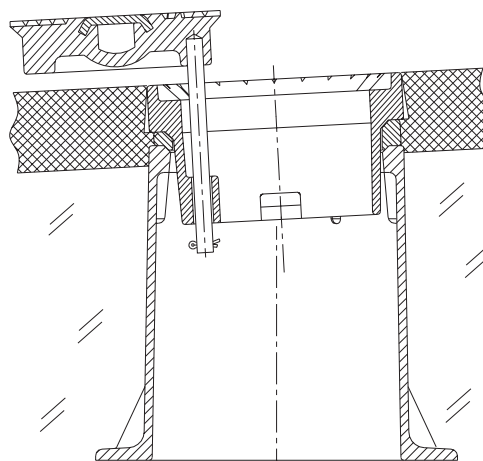


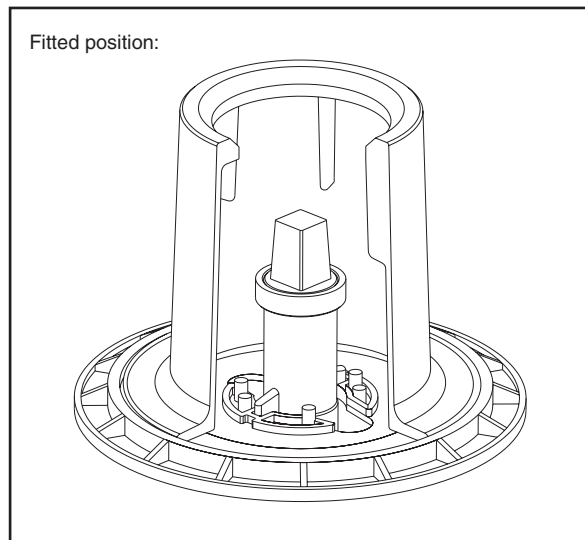
Illustration 2

Material: - box of grey iron, epoxy powder coating in accordance with GSK

- retaining rod and cover neck of stainless steel

Angle seats are turned!

suitable for surface boxes according:	Order no.	Weight kg	
DIN 4056 and DIN 4057	3481	0,6	●
DIN 4055	3482	2,0	●



of recycled plastic

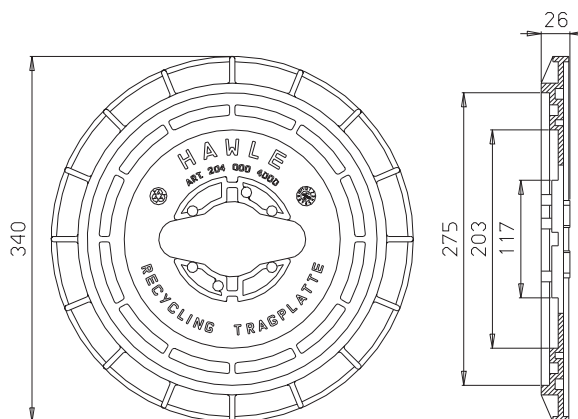
- unbreakable and solid
- easiest assembly
- small weight
- unrottable

Universal Base Plate No. 3481

for surface boxes according:

- DIN 4056 (Gate Valves)
- DIN 4057, Edition 9.38 and 11.74 (Service Valves)

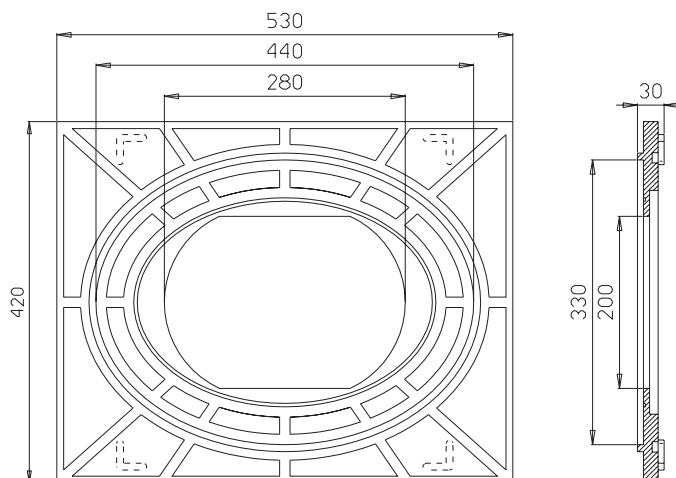
Safe fixture of HAWLE Telescopic Extension
Spindles for Gate Valves, Combi-T and
Service Valves



Base Plate No. 3482

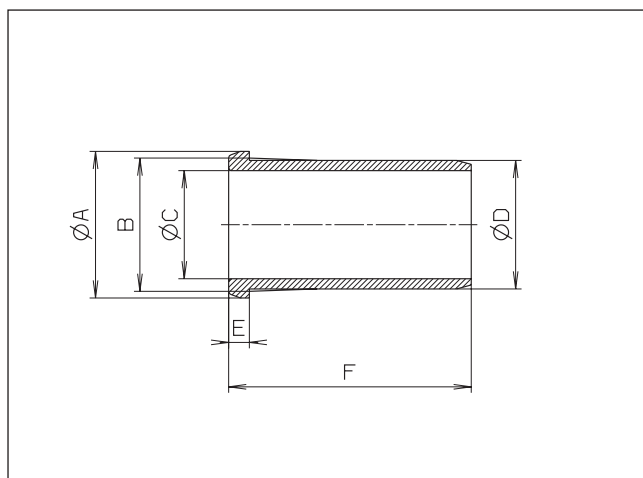
for surface boxes according:

DIN 4055 (for Below Ground Hydrants)



Support liners for PE Pipes

No. 6031 Support liner for ISO Pipe Fittings of POM



CLASS SDR 11 PE 80 - PN 10

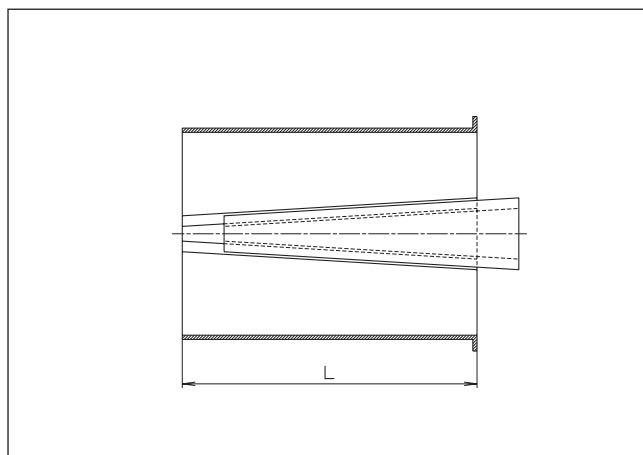
Pipe o.d. Ø	D	C	A	F	E	B	
20	15,4	10,3	19,5	42	4	16,5	●
25	19,8	14,3	24,5	52	5	20,9	●
32	25,2	19,3	31,5	62	6	26,5	●
40	31,6	25,3	39,5	72	7	33,2	●
50	39,6	32,7	49,5	82	7	41,5	●
63	50	42,1	62,5	91	8	52,2	●

CLASS SDR 17,6 PE 80 - PN 6

Pipe o.d. Ø	D	C	A	F	E	B	
20	15,4	10,3	19,5	42	4	16,5	●
25	20,4	15,2	24,5	52	5	21,5	●
32	27,4	22,2	31,5	67	6	28,5	●
40	34,8	28,5	39,5	84	7	36	●
50	43,4	36,5	49,5	82	7	44,9	●
63	54,8	46,9	62,5	92	8	56,6	●

Support liner for PE pipe of stainless steel 1.4301

No. 6035 Class SDR 17,6 PE 80 - PN 6 (PE 100 - PN 10) — No. 6036 Class SDR 11 PE 80 - PN 10 (PE 100 - PN 16)



Pipe o.d. Ø	L	Weight kg	
63	170	0,10	●
75	170	0,25	●
90	170	0,33	●
110	170	0,39	●
125	170	0,48	●
140	170	0,55	●
160	200	0,67	●
180	220	0,86	●
200	220	1,50	●
225	220	1,62	●
250	220	1,85	●
280	220	2,15	●
315	220	2,55	●

No. 7800 Handwheel

for Service Valves, Gate Valves and Combi Valves

of steel, epoxy powder coated
(on request, of grey iron, epoxy powder coated)

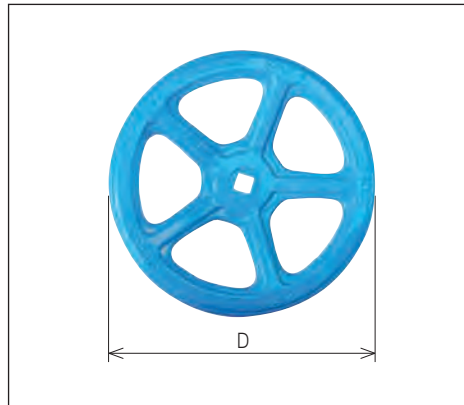
* and for Knife Gate Valve No. 3600

** and for Knife Gate Valve No. 3600 DN 50-65

No. 7840 Handwheel

for Knife Gate Valve No. 3600

DN 80/100/200 of steel, epoxy powder coated
DN 250/300/400 of grey iron, epoxy powder coated



Order no.	DN	D	Weight (Steel)	
7800	3/4" - 2" **	140	0,28	●
	50	160	0,39	●
	65-80	190	0,80	●
	100	240	0,97	●
	125* - 150*	320	1,88	●
	200	360	2,69	●
	250 - 350*	486	4,82	●
	400	600	6,50	●
	500 - 600	800	9,00	●

Operating Cap

of aluminium, with cap and direction indicator

No. 2157 „clockwise closing”

No. 2158 „anti clockwise closing”

No. 2156 of ductile iron, galvanized
(without illustration)



DN	No. 2157	No. 2158	No. 2156
20-40	●	●	
50	●	●	
65	●	●	
80	●	●	
100-150	●	●	
200	●	●	
250-350	●	●	
400			●
500-600			●

Additional Extension Spindle

Material: St 0037 (steel)

No. 7820 price for 1st m

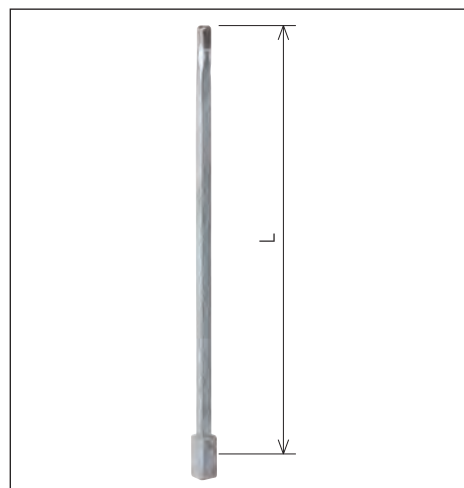
No. 7821 price for each additional 0,5 m

Material: stainless steel

No. 7825 price for 1st m

No. 7826 price for each additional 0,5 m

Please specify total length on order



DN	No. 7820 No. 7821	No. 7825 No. 7826
3/4" - 2"	●	
50	●	●
65	●	●
80	●	●
100 - 150	●	●
200	●	●
250 - 300	●	●
400	●	●
500 - 600		●

No. 8570E2

No. 8570

Blanking Cap

for Combi Valves in place of valve bonnet

of ductile iron, epoxy powder coated



Order no.	DN	Weight	
8570	80	1,20	●
8570E2	65 - 80	1,80	●
	100	1,90	●
	125 - 150	3,20	●
	200	5,00	●

Accessories

No. 2170E2

Position indicator

for E2 valves DN 50 - 200

(simple retrofit)

DN 250 - 500 available in set with gate valve only.



No. 2190

Limit switch



No. 4000STE2

E2 Elypso Valve - short version

with position indicator

No. 4700STE2

E2 Eypso Valve - long version

with position indicator



DN	No. 2170E2	No. 4000STE2	No. 4700STE2
50	●	●	●
65	●	●	●
80	●	●	●
100	●	●	●
125	●	●	●
150	●	●	●
200	●	●	●
250		●	●
300		●	●
350		●	
400		●	●

further Hawle Elypso Valves with position indicator and version with limit switch on request

Flap Valve

No. 9930

with flange PN 10 - DIN 2501

of ductile iron,
epoxy powder coated



DN	L mm	Weight kg	
50	105	4,70	●
65	125	4,40	●
80	125	7,70	●
100	135	9,80	●
125	200	10,00	●
150	150	20,50	●
200	235	17,50	●
250	185	26,50	●
300	200	34,00	●

Order no.	Version	for valves of nominal widths/DN													
		50	65	80	100	125	150	200	250	300	350	400	450	500	600
9894	with handwheel and position indicator	●	●	●	●	●	●	●	●	●	●	●			
9895	with connection for electric actuator				●								●		

When ordering please specify the valve type and the nominal width

Pillar for the ergonomic above-ground operation of shut-off valves buried in the ground or installed in manholes and valve chambers.

Design features:

- Standpipe and connecting flanges of stainless steel
- Connecting flange for fixing on support base DN 65 drilled to EN1092
- Extended inner pipe of galvanized steel permits the quick and easy connection of the HAWAK pillar by means of square bar, spindle extension or extension spindle

Version with handwheel

- Spindle of stainless steel, spindle bearing of POM, wiper ring of elastomer
- Position indicator for monitoring of valve position
- Maintenance-free

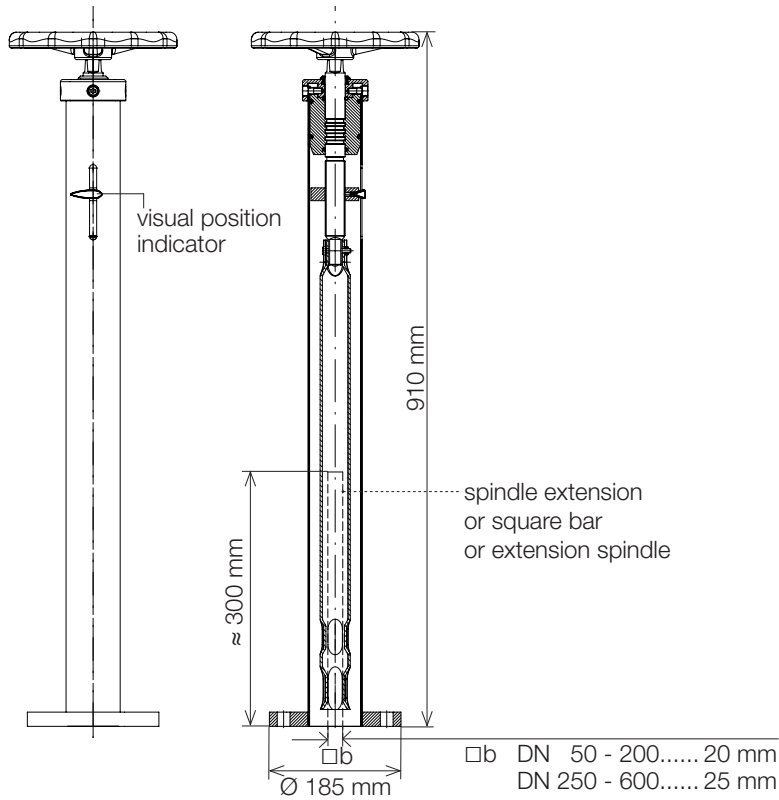
Version for electric actuator

- Connecting flange for actuator acc. to EN ISO 5210

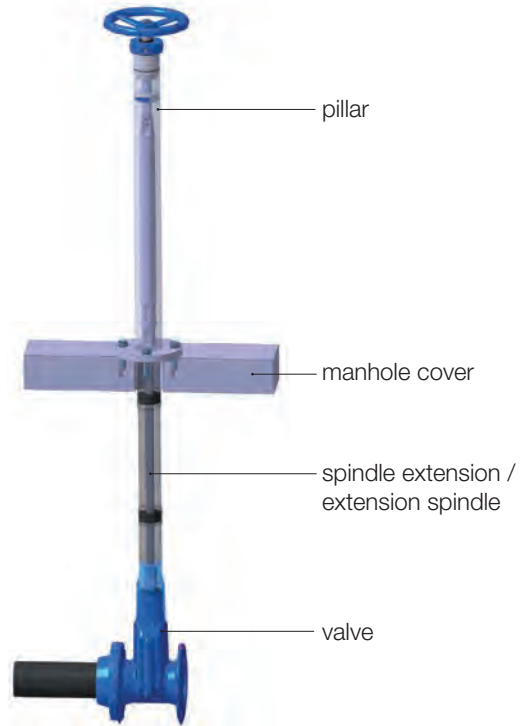


HAWAK-Pillar for Valves

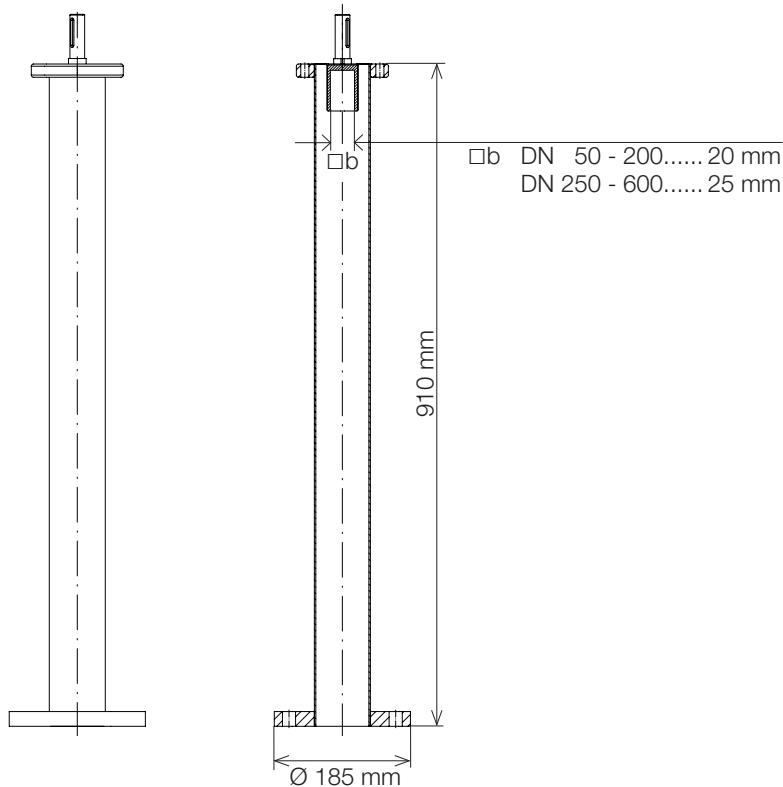
No. 9894 with handwheel and position indicator



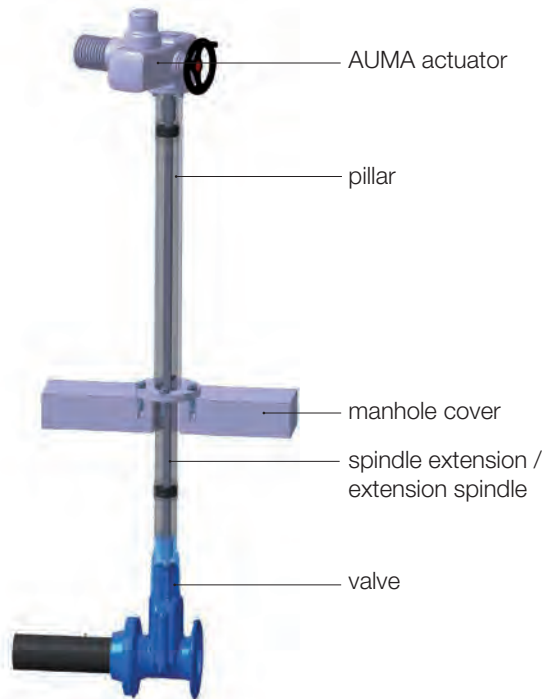
Example of use



No. 9895 with motor adaptor



Example of use



No. 8653

Suction Strainer

of stainless steel 1.4301



DN	Length	Weight	
50	300	0,9	●
65		1,1	●
80		1,3	●
100		1,5	●
125		1,9	●
150		2,4	●
200		3,2	●

other dimensions on request

No. 3470

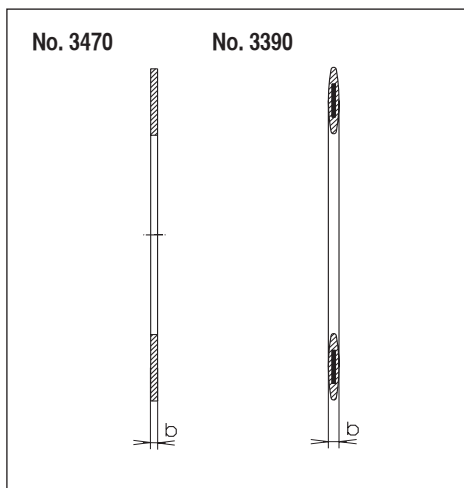
Flat Gasket

PN 10, with fabric liner
of elastomer, suitable for potable water

No. 3390

Flat Gasket

steel reinforced
keeps its shape and therefore easy to position
of elastomer, suitable for potable water
Standard version PN 10
PN 16 and PN 25 on request



DN	b No.		Weight kg		
	3470	3390	3470	3390	
50	3	4	0,02	0,04	●
65	3	4	0,03	0,06	●
80	3	4	0,04	0,07	●
100	3	5	0,04	0,07	●
125	3	5	0,05	0,12	●
150	4	5	0,06	0,13	●
200	4	6	0,10	0,18	●
250	4	6	0,13	0,23	●
300	4	6	0,17	0,60	●
350	4	7	0,21	0,70	●
400	4	7	0,23	0,77	●

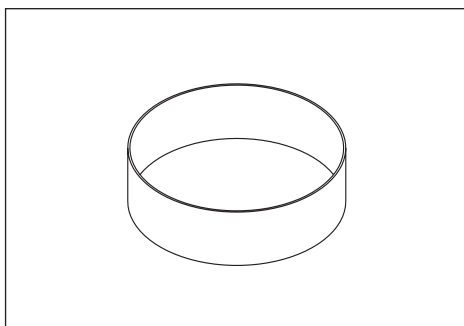
Enlarging Sleeve

for flange adaptors
to increase pipe outside diameter to fit flange adaptor

No. 7540 Sleeve gauge 2 mm
(60 mm wide)

No. 7560 Sleeve gauge 3 mm
(80 mm wide)

Please specify pipe material and diameter



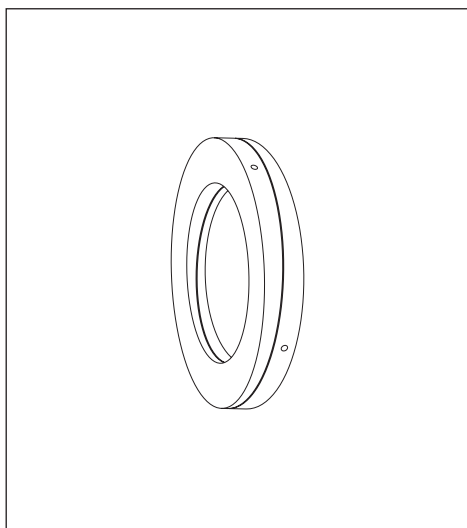
No. 7540		No. 7560		
DN				
80		80		●
100				●
		125		●
300				●

Accessories

No. 8730

Angle Piece adjustable 0°-8°

PN 10,
of steel, galvanized



DN	Weight kg	
80	1,70	●
100	2,00	●
125	2,90	●
150	3,70	●
200	5,20	●
250	7,70	●
300	9,10	●
350	17,50	●
400	21,50	●

Angle Piece adjustable mm		
DN	bei 0°	bei 8°
80	27	18/37
100	25	14/38
125	29	16/43
150	33	18/48
200	35	18/56
250	40	22/65
300	44	21/70
350	55	28/85
400	57	28/90

No. 7850

Anti-operating cap

for extension spindles for service valves and
E2 valves



DN	Weight kg	
¾"-2"	0,08	●
50-200	0,30	●

No. 7851

T-key adaptor

for anti-operating cap No. 7850



DN	Weight kg	
¾"-2"	0,20	●
50-200	1,30	●

Theft indicator

for HAWLE-Above Ground Hydrants

effective protection against unauthorised
access

-for Hawle Hydrants supplied after 1997

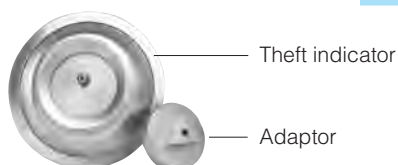
(for Hawle Hydrants supplied before please
specify in your inquiry)



Theft indicator			
Order no.	Outlet	Weight	
5397	for A-coupling	3,70	●
5398	for B-coupling	2,20	●
5399	for C-coupling	1,70	●
Adaptor			
Order no.	for coupling	Weight	
3453	A + B + C	0,50	●

Adaptor

Opening of Hydrant solely with adaptor
and operating key no. 3460 (see page
K 3/2) possible

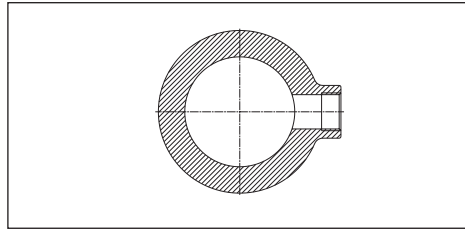


No. 8580

Wafer Tee Piece 1 threaded outlet ISO 228

PN 16

of grey iron
epoxy powder coated



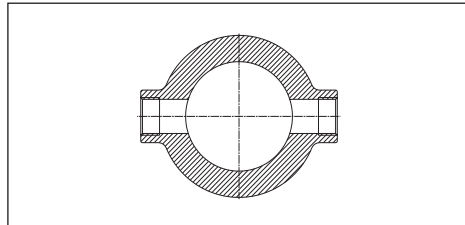
DN	Thread	Height	Weight	
80	1¼"	60	3,90	●
100	1¼"	60	4,20	●
150	1¼"	60	7,90	●

No. 8590

Wafer Tee Piece 2 threaded outlets ISO 228

PN 16

of grey iron
epoxy powder coated



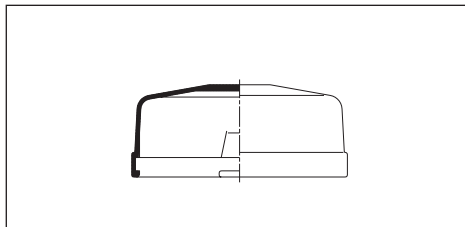
DN	Thread	Height	Weight	
100	1¼"	60	4,30	●
125	1¼"	60	6,30	●
150	1¼"	60	7,80	●
250	1¼"	90	19,20	●

No. 5417

Theft Indicator Cap

for Above-Ground Hydrant

Since September 1988 all HAWLE Above-Ground Hydrants have been supplied in a form that can accept theft indicator caps.



No. 5417	●
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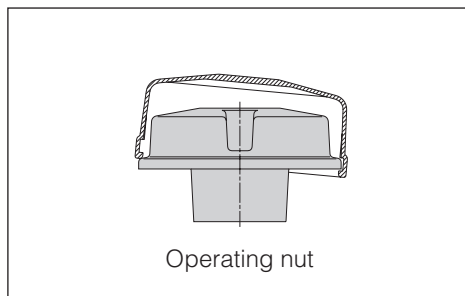
Conversion Kits for Theft Indicator Cap

for hydrants made before September 1988

No. 5416 standard,
for all HAWLE hydrants with the standard
ÖNORM-F 2010

No. 5418 for hydrants type
No. 480 and 482 old, spindle □18 mm

No. 5419 for hydrants type
No. 481 and 482, spindle □22 mm conical



No. 5416	●
No. 5418	●
No. 5419	●

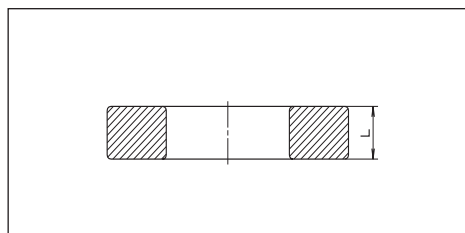
No. 8615

Spacer Ring

to fill a gap

Steel 1.0037

Please specify length "L" on order



DN	
50	●
65	●
80	●
100	●
125	●
150	●
200	●

Push Fit Swivel Converter

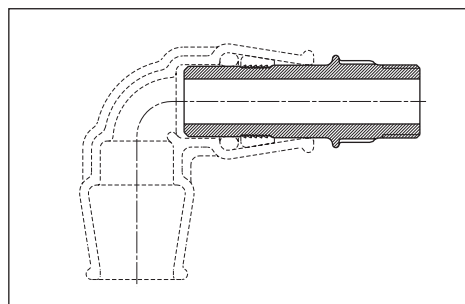
No. 6630 equal ends

No. 6631 unequal ends

with one male thread outlet EN 10226-1

of POM

Every push fit end can be modified to a male thread outlet



Order no.	DN	Thread	L	Weight kg	
6630	¾"	¾"	92	0,04	●
	1"	1"	105	0,05	●
	1¼"	1¼"	123	0,10	●
	1½"	1½"	144	0,20	●
	2"	2"	160	0,35	●
6631	1"	1¼"	111	0,06	●
	1"	1½"	117	0,07	●
	1"	2"	126	0,12	●

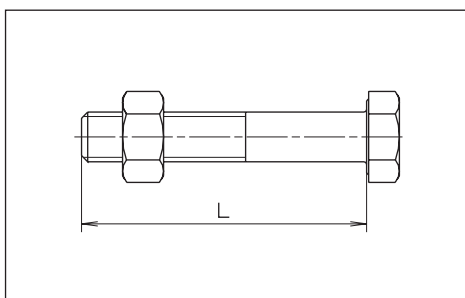
Accessories

Nut and Bolt

No. 8810 electro galvanized

No. 8830 A 2 corrosion proofing

No. 8840 A 4 corrosion and acid proofing

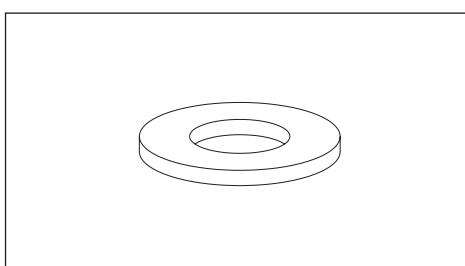


Bolt Length L	No. 8810		No. 8830		No. 8840	
	M 16	M 20	M 16	M 20	M 16	M 20
60	●	●	●	●	●	●
70	●	●	●	●	●	●
80	●	●	●	●	●	●
90	●	●	●	●	●	●
100	●	●	●	●	●	●
110	●	●				
120	●	●				
130		●				
140		●				
150		●				

Washer

No. 8873 A 2 corrosion proofing

No. 8874 A 4 corrosion and acid proofing



No. 8873	for M 16	●
	for M 20	●
No. 8874	for M 16	●
	for M 20	●

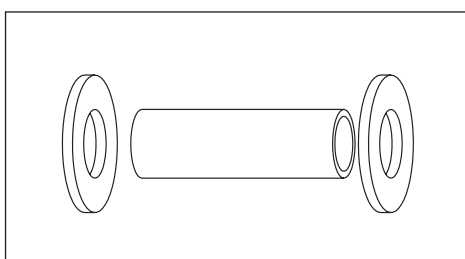
Bolt insulator

for electrical insulation of bolts for prevention of electrolytic corrosion

No. 8877 Washer 3 mm

gauge, of epoxy glass

No. 8820 Pipe of polyester



	for thread	
Washer	M 16	●
	M 20	●
Pipe Length 1 m	M 16	●
	M 20	●

Required bolt lengths: Flanged Valves - Flange (PN 10)

Flanged Valve DN	Bolt dimension	No. of bolts	Bolt length for flange No.								
			0101 0102	7101 7102 7103	0400	5500	5600	0310 0311	7602	7601	8100
50	M 16	4	70	70	60	60	70	60	90	80	60
65	M 16	4	70	70	70	70	70	70	100	80	70
80	M 16	8	80	70	70	70	70	70	100	80	70
100	M 16	8	80	70	70	70	70	70	100	80	70
125	M 16	8	80	80	70	70	80	70	100	80	70
150	M 20	8	90	80	70	70	80	70	140	100	70
200	M 20	8	90	80	70		80	70	140	100	70
250	M 20	12	100	90	80		90	80	140		80
300	M 20	12	100	90	90		90	90	140		90
350	M 20	16	120								100
400	M 24	16	120								100

Order no.	DN	Version	Application	Working pressure bar	
9876	1"	standard	for cold water	PN 0,1 - PN 6	●
				PN 0,8 - PN 16	●
9876	2"	standard	for cold water	PN 0,1 - PN 6	●
				PN 1 - PN 16	●
9874	2"	with flange DN 50 (ductile iron)	for cold water	PN 0,1 - PN 6	●
				PN 1 - PN 16	●

Air valve for releasing air only: on request
(minimum pressure required: 0,3 bar)

The internal thread inlet is reinforced with a stainless steel ring

Installation: upright, preferably at the highest point in the pipeline with isolating valves.

PE shield for UV protection

No. 9876
DN 2"

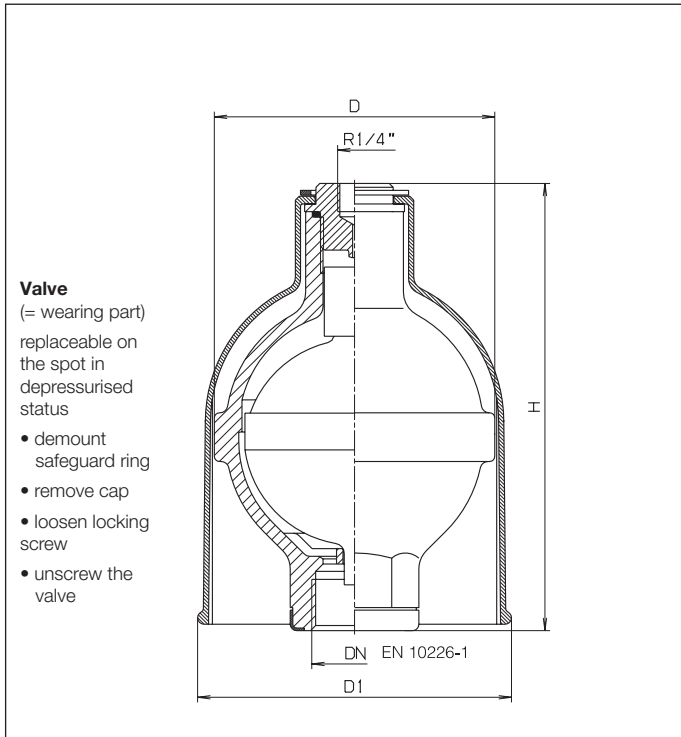
No. 9876
DN 1"



No. 9874
DN 2"



Automatic Air Valve



DN 1" for small air discharge

Max. Air release capacity:
0,13 m³/min.

Test pressure:
Body 24 bar

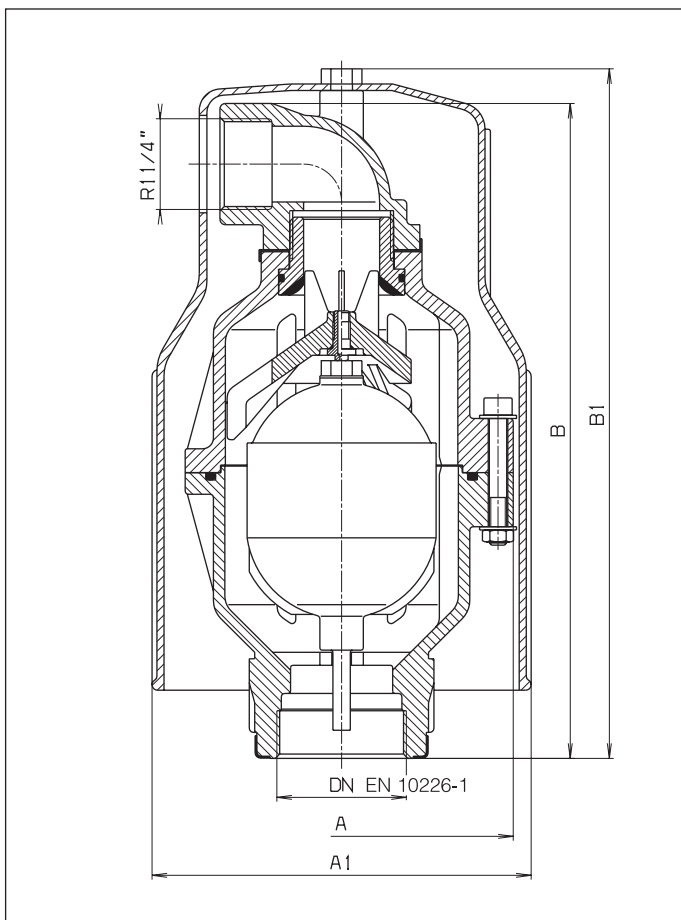
Working pressure:
0,1 — 6 bar
0,8 — 16 bar

Material:

Body: POM
Orifice and valve plug: CuAl10
Float: POM
Seal: elastomer
UV shield: PE

Please specify working pressure

DN	PN	Working pressure	Size of the opening	Ø D	Ø D 1	H	Weight kg
1"	6	0,1 - 6	1,77 mm ²	109	122	172	0,90
1"	16	0,8 - 16	1,77 mm ²	109	122	172	0,90



DN 2"

Max. Air release capacity:
3,2 m³/min.

Test pressure:
Body 24 bar

Working pressure:
0,1 — 6 bar
1 — 16 bar

Material:

Body and outlet elbow: POM
Valve seat: CuZn35Pb3As
Float: POM
Seal: elastomer
UV shield: PE

Please specify working pressure

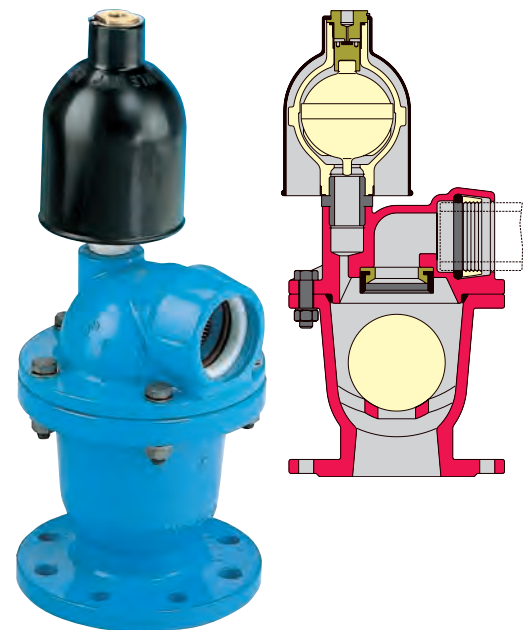
DN	PN	Working pressure	Size of the opening	Ø A	Ø A 1	B	B 1	Weight kg
2"	6	0,1 - 6	900/2,0 mm ²	160	175	305	320	2,80
2"	16	1 - 16	900/2,0 mm ²	160	175	305	320	2,80

Order no.	Version	Working pressure bar	DN 80 PE pipe connection d 63	DN 100 PE pipe connection d 75	DN 150	DN 200
9835	double orifice (with travelling valve)	PN 6 (0,2 - 6 bar)	●	●	●	●
		PN 16 (0,8 - 16 bar)	●	●	●	●
9836	double orifice (with travelling valve) with PE pipe and insect protective grid	PN 6 (0,2 - 6 bar)	●	●		
		PN 16 (0,8 - 16 bar)	●	●		
9837	single orifice (without travelling valve)	PN 16 (0,2 - 16 bar)	●	●	●	●
9838	single orifice (without travelling valve) with PE pipe and insect protective grid	PN 16 (0,2 - 16 bar)	●	●		

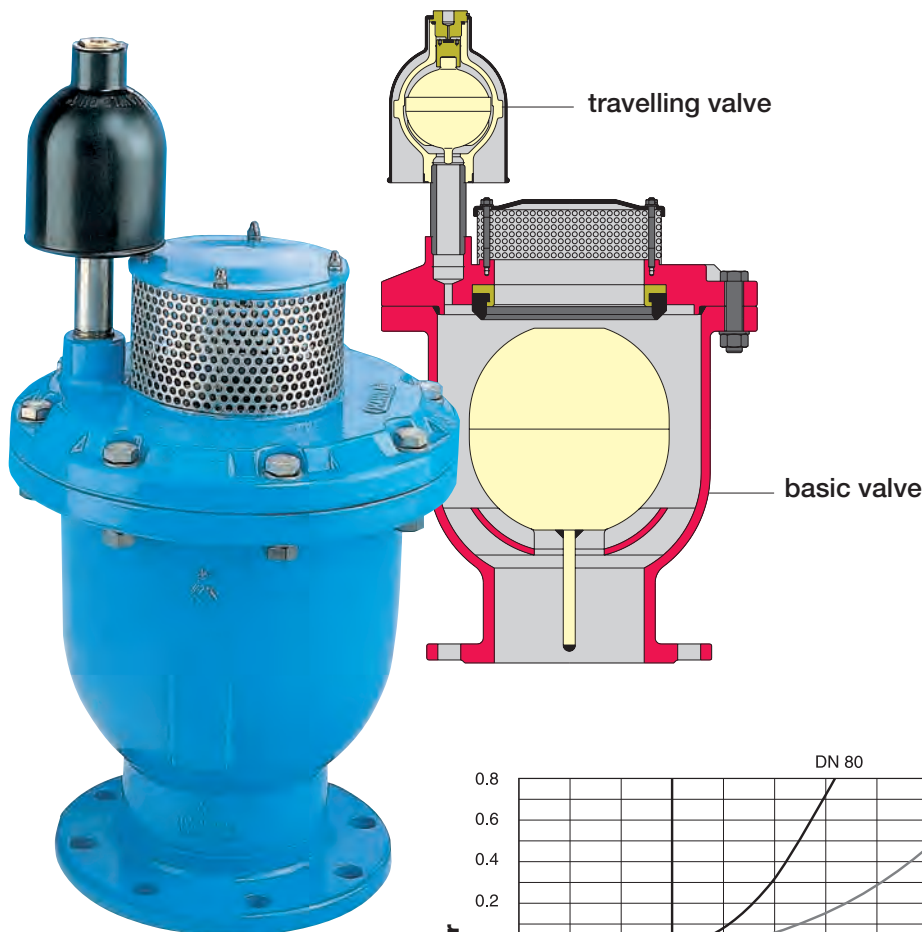
for cold water

- automatic
- all mechanical parts made from corrosion resistant materials

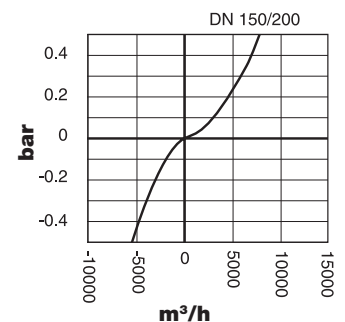
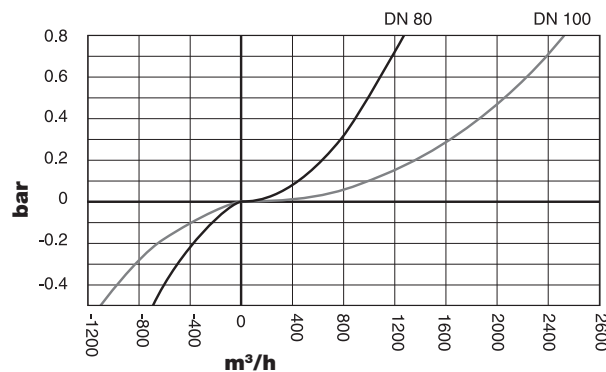
DN 80 / DN 100



DN 150 / DN 200



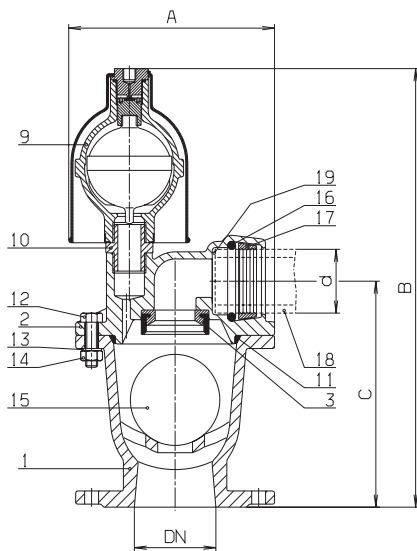
Air release rate



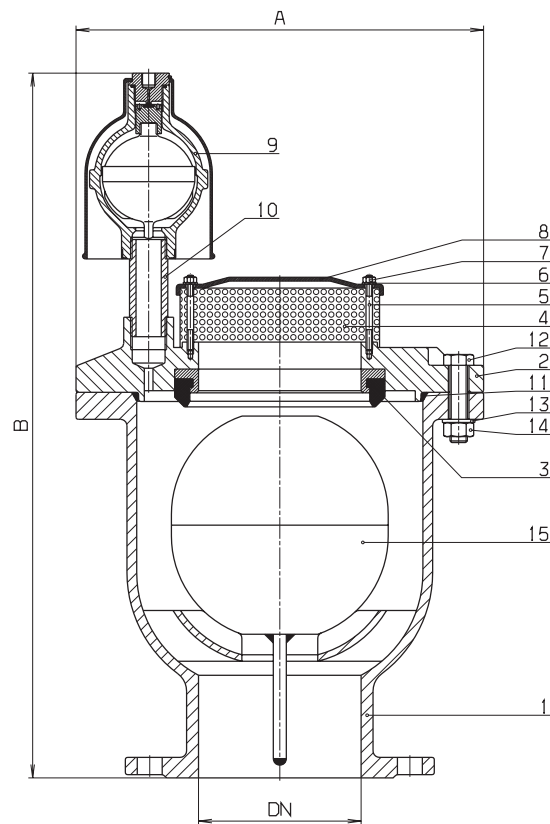
Air inflow rate

Automatic Air Valve

DN 80 / DN 100



DN 150 / DN 200



Material

1, 2 body and bonnet	grey iron, epoxy powder coated
3 seat	Ms 58 /elastomer, suitable for potable water
4 grid	stainless steel A 2
5 bolt	stainless steel A 2
6 washer	stainless steel A 2
7 nut	stainless steel A 2
8 cap	St 37, epoxy powder coated
9 Automatic air valve 1"	divers (see page E 1/2)
10 nipple	POM (DN 80, 100) / A 2 (DN 150, 200)
11 O ring	elastomer, suitable for potable water
12 hexagonal bolt	stainless steel A 2
13 washer	stainless steel A 2
14 hexagonal nut	stainless steel A 2
15 float	DN 80 - 100 polycarbonat DN 150 - 200 A 2 passivated
16 O ring	elastomer, suitable for potable water
17 clamp ring	POM
18 pipe tail (on request)	PE
19 insect protective grid (on request)	stainless steel A 2

Please specify dimension on order !

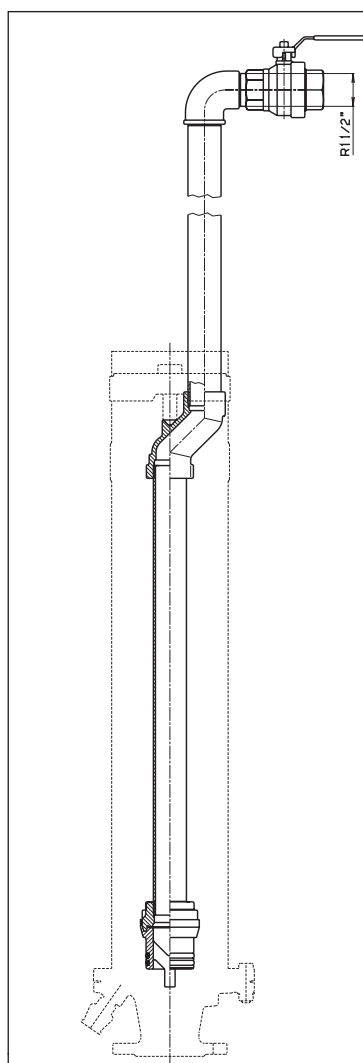
DN	A	B	C	d	Weight kg
80	212	455	230	63	17,0
100	250	505	260	75	26,0
150	387	686	-	-	69,0
200	387	686	-	-	77,0

Technical details:

Dimensions	DN 80	DN 100	DN 150	DN 200*
Test pressure (body)	24 bar			
Working pressure PN 16 (standard)	0,8 - 16 bar			
Working pressure PN 6	0,2 - 6 bar			
Maximum air release capacity	1305 m ³ /h	2450 m ³ /h	7500 m ³ /h	
Size of the opening	1810/1,77 mm ²	3320/1,77 mm ²	17670/1,77 mm ²	
PE pipe connection	d 63	d 75	-	-
Flange connection PN 10 EN 1092-2 (DIN 2501)	*DN 200 PN 16 EN 1092-2 (DIN 2501) please specify on order			

Order no.	Working pressure	DN	Installation depth		L= total length*	Weight kg	
			above-ground (fig. 1)	below-ground (fig. 2)			
9822	PN 1 - PN 16	50	0,75 m	1,00 m	755	23,0	●
			1,00 m	1,25 m	1055	27,0	●
			1,25, m	1,50 m	1305	30,0	●
			1,50 m		1555	33,0	●
		80	0,75 m	1,00 m	755	24,0	●
			1,00 m	1,25 m	1055	28,0	●
			1,25, m	1,50 m	1305	31,0	●
			1,50 m		1555	34,0	●
9823	PN 0,1 - PN 6	50	0,75 m	1,00 m	755	23,0	●
			1,00 m	1,25 m	1055	27,0	●
			1,25, m	1,50 m	1305	30,0	●
			1,50 m		1555	33,0	●
		80	0,75 m	1,00 m	755	24,0	●
			1,00 m	1,25 m	1055	28,0	●
			1,25, m	1,50 m	1305	31,0	●
			1,50 m		1555	34,0	●

**Air valve for releasing air only:
(with air inflow stop) on request**
(see over page figure 3)



*Length= reducible 100 mm minimum Length= 650 mm
maximum Length= 2500 mm

This arrangement eliminates expensive valve chambers.

The stainless steel stand pipe protects the automatic air valve.

An automatic shut-off valve enables the equipment easily to be removed for inspection and reinstalled under pressure.

The materials from which the valve is made, namely POM and bronze assure complete corrosion resistance.

Excess water is drained away through an ISO-Pipe-Fitting DN 1/2".

For below-ground installation a surface box with minimum opening of 300 mm diameter is required.

Gravel backfilling should be used to prevent rain water from accumulating in the surface box (see figure 2, page E 2/2)

The air release valve can be shortened by 100 mm by cutting the standpipe 5 and extension tube 3 at the red marks (see over page).

Max. air release capacity: 3,2 m³/min

Inlet flange: DN 50 or DN 80
drilled to DIN 2501

Air valve for releasing air only: on request
(minimum pressure required: 0,3 bar)

Flushing Stand Pipe

including shut-off valve

Instead of the air valve assembly a stand pipe can be supplied for water main flushing and for water discharge generally.

Order no.	L	Weight kg	
9824	755	4,70	●
	1055	5,80	●
	1305	6,75	●
	1555	7,60	●

L= Total length of the hydrant



Combined Air Release Valve

fig. 1

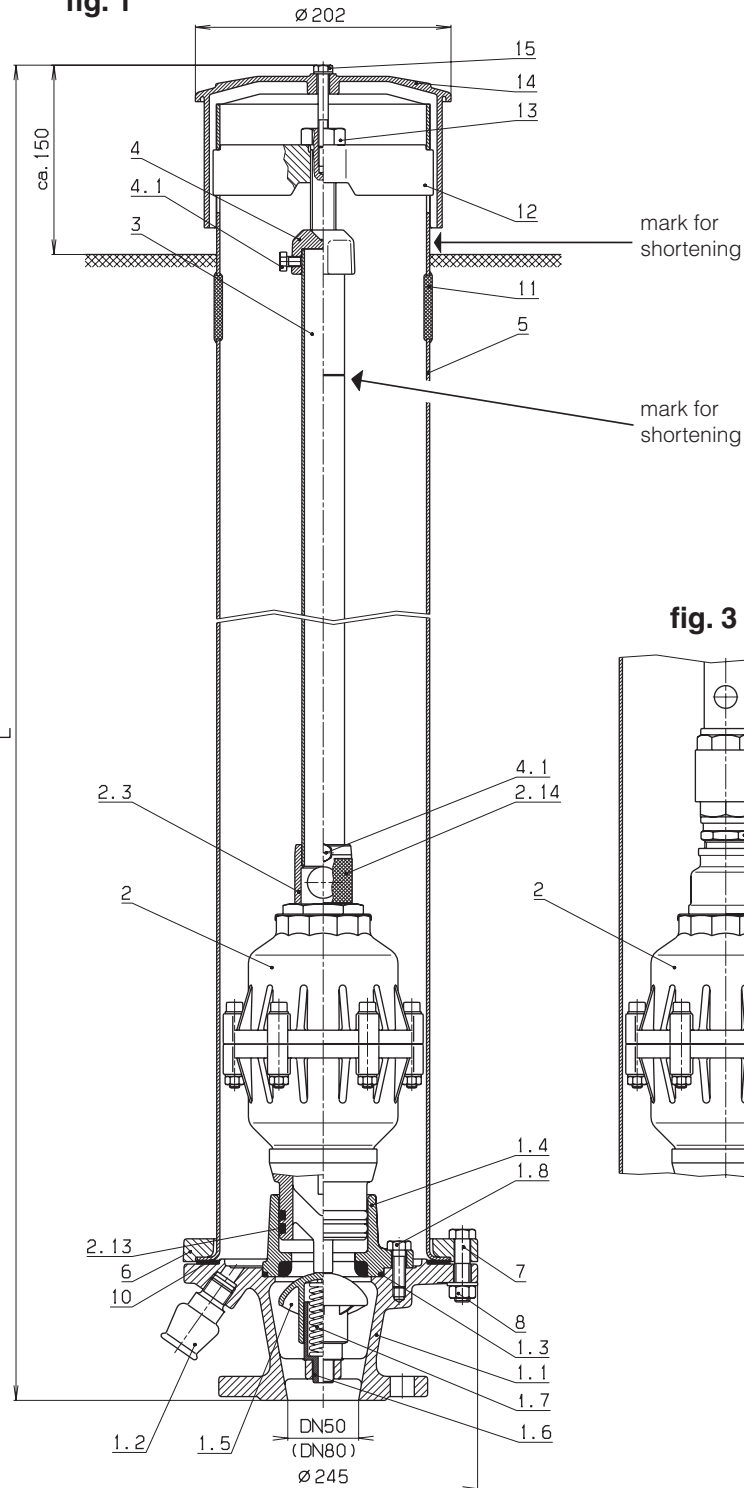


fig. 2

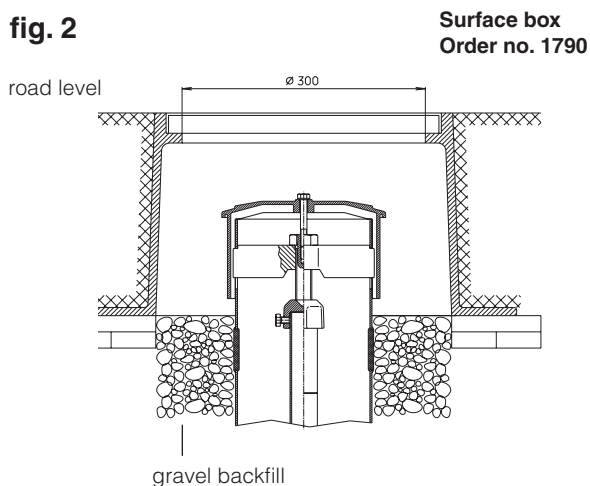
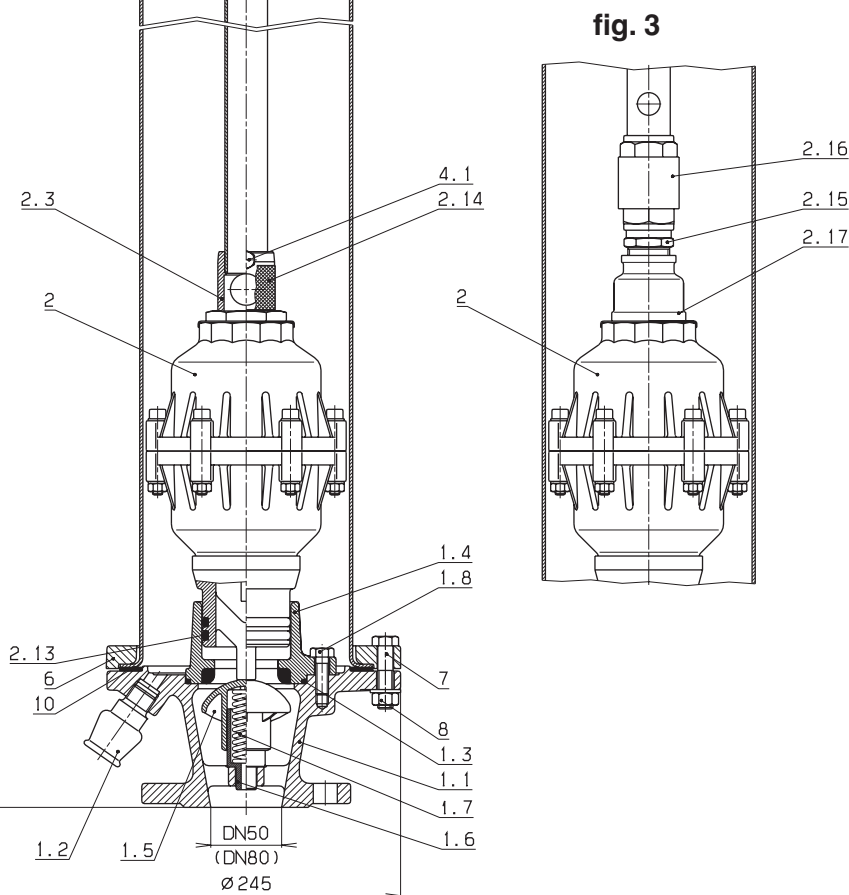


fig. 3



Parts

Material

1.1	inlet flange	EN-GJS (GGG)
1.2	drain-off fitting	EN-GJS (GGG)
1.3	O ring	elastomer
1.4	foot valve flange	Ms
1.5	foot valve	POM
1.6	spring case	POM
1.7	spring	A2
1.8	hexagon bolt M 10 DIN 934	A2
2	air valve	see page E 1/2
2.3	air outlet	Ms/elastomer
2.13	O ring	elastomer
2.14	insect protective grid	A2
2.15	double nipple	Ms
2.16	non return valve Europa	Ms
2.17	reducing socket	Ms
3	tube, galvanized	A2
4	coupling	EN-GJS (GGG)
4.1	hexagon bolt DIN 933	A2
5	stand pipe	A4
6	lock ring	EN-GJS (GGG)
7	hexagon bolt M 12 x 55 DIN 931	A2
8	hexagon nut DIN 934	A2
10	seal	elastomer
11	blind cover	elastomer
12	spindle support	EN-GJS (GGG)
13	operating bolt	A2
14	hood	HDPE
15	hexagon bolt DIN 933	A2

Removal:

- unscrew the bolts (15)
- take off the hood (14)
- Undo bolt (13), until spindle support (12) disconnects from standpipe (5)

- the foot valve will close (1.5)
- lift off the air valve assembly with the extension tube (3)

Installation:

reverse the above instructions

Order no.	Version	Application	Working pressure bar	Dimensions/DN					
				2"	50	80	100	150	200
9864	stainless steel with flanged connection	wastewater	PN 0 - PN 16		●	●	●	●	
9864	stainless steel with internal thread connection 2"			●					
9863	St 37, epoxy powder coated with flanged connection				●	●	●	●	●
9863	St 37, epoxy powder coated with internal thread connection 2"			●					

Design features:

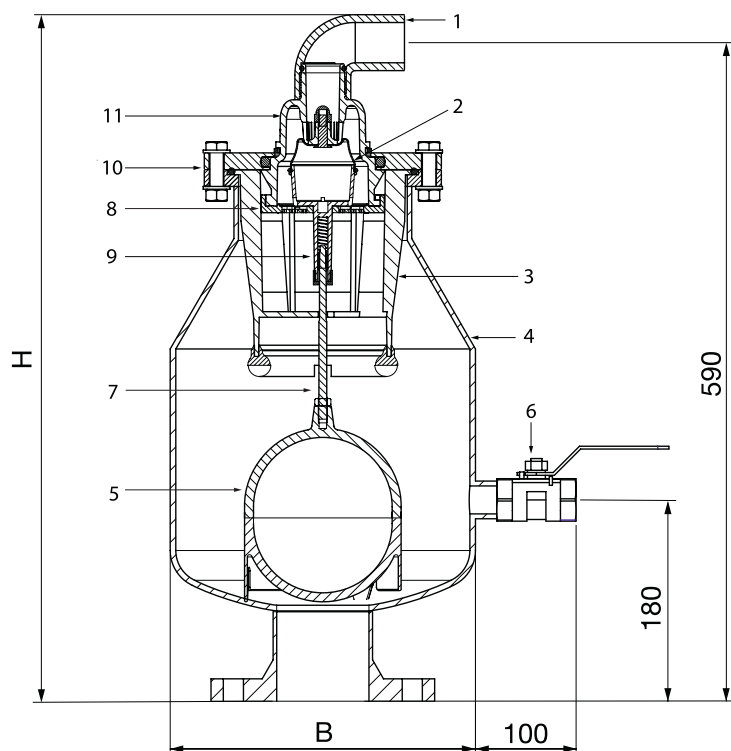
- direct automatic air inflow and release valve for wastewater
- operates automatically
- max. air release capacity: 230 m³/h
- max. size of the opening: 480 mm²
- sealing face is not in contact with the wastewater
- the two joints facilitate easy and excellent flushing at maintenance (above joint = inlet for flushing)
- all mechanical parts of corrosion resistant materials
- flange drilled according to DIN 2501 (= BS 4504) - PN 10 (for PN 16 - DIN 2501 = BS 4504 in DN 200 size please specify on order)
- due to the direct operation the release of lots of air is possible, even under full working pressure
- please take the direction and maintenance instructions into consideration



Maintenance:

Automatic Air Valves have to be maintained regularly:
Flush the valve via the two joints in non operating condition.

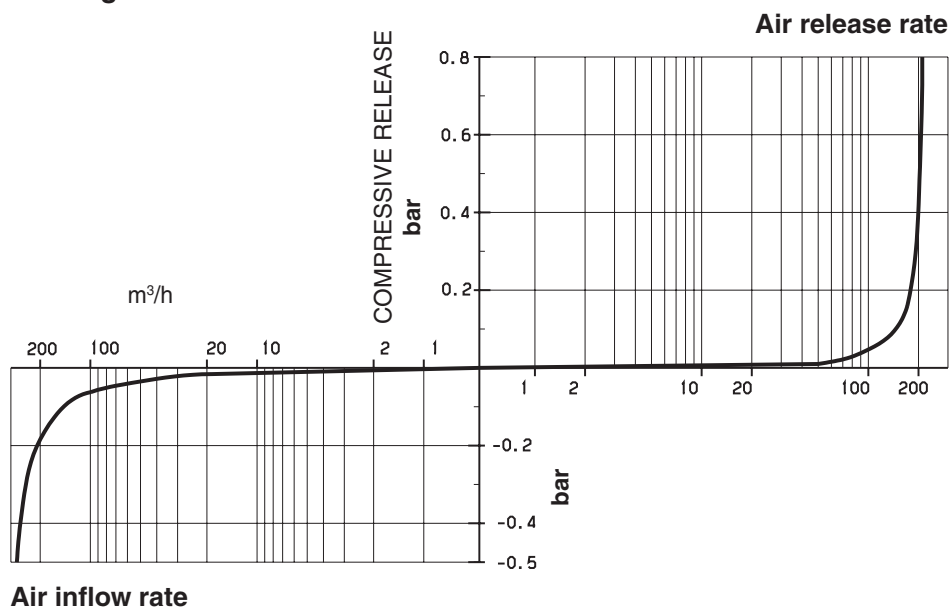
Automatic Air Valve for wastewater



Part		Material
1	Outlet elbow with dirt sieve	PE 100 / St 1.4301
2	Diaphragm with retaining ring	(POM) elastomer
3	Protector	PE
4	Body	No. 9864 St 1.4571 No. 9863 St 37, epoxy powder coated
5	Float	POM
6	Ball valve outlet 1"	stainless steel
7	Rod	St 1.4571
8	Body nut with sieve	POM / St 1.4301
9	Diaphragm holder	POM
10	Fix flange	No. 9864 St 1.4571 No. 9863 St 37, epoxy powder coated
11	Valve body-bonnet	POM
	Bolts, nuts and springs	A4

Flange ID DN	B	H	Weight kg
2"	270	615	23,0
50	270	615	23,5
80	270	615	25,0
100	270	615	26,0
150	270	615	28,0
200	270	615	33,0

Flow performance diagram



Working pressure:	PN 16 / 0 - 16 bar
Max. air release capacity:	230 m ³ /h
Orifice:	480 mm ²
Connections:	Flange DN 80

Order no.	Version	pipe cover	
9827	spigot end DN 80	1,25 m	
		1,50 m	
9828	flange connection DN 80	1,25 m	●
		1,50 m	●

Technical features:

The air valve assembly consists of a PE shaft with a shut-off valve and air valve, thus eliminating expensive chamber constructions.

The air valve assembly can be installed later on sewage pipes via a saddle. For covering we recommend a commercial ventilating cover (the saddle and the cover are not included in the scope of supply).

All maintenance and service work can be done from the road surface, thus avoiding the dangers arising shafts.

Excess water is drained away through the drain off system. We recommend the installation of coarse gravel backfill reaching from the road surface down to the piping. If installed in groundwater, additional measures are necessary (closing the drain hole).

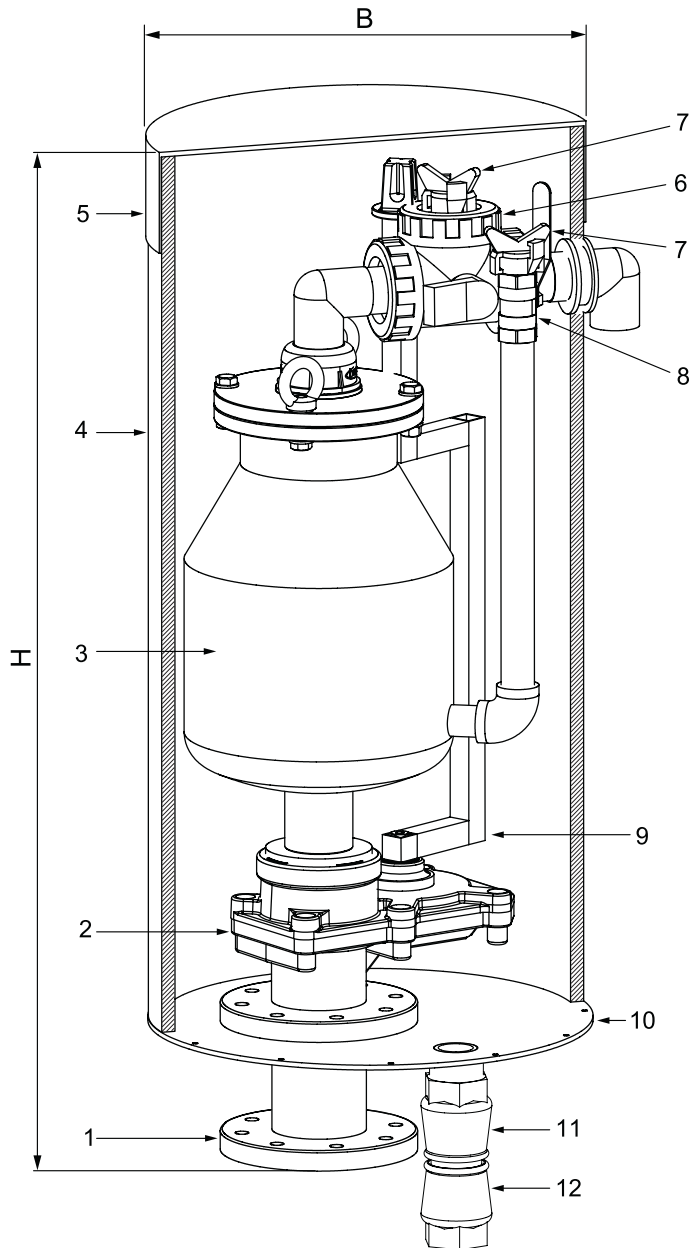
Please use dirt protection and locking device !

The air release pipe lead through laterally serves for letting off the outgoing air.

Application: Waste water from private homes.



Automatic Air Valve for waste water



Parts	Material
1 Flange/Spigot end	ductile iron
2 Shut-off valve	ductile iron
3 Air valve	stainless steel
4 Shaft pipe	PE-HD
5 Cover	PE
6 Three-way ball valve	PVC
7 Hose coupling	Brass
8 Ball valve outlet	A2
9 Rod	square bar steel St 37 epoxy coated
10 Base plate	Steel St 37 epoxy coated
11 Drain-off fitting	ductile iron
12 End fitting (please note surcharge !)	POM

Valve maintenance:

Close the shut-off valve.

The valve is provided with two flushing inlets, which are pulled up to the cover.

By connecting flushing lines, dirt can be easily and quickly flushed out of the valve.

Opening of the valve and manual cleaning and/or removal of dirt is required only in case of larger dirt particles.

Order no.	Version	Pipe cover	total height H	total width B	Weight kg
9827	Spigot end DN 80	1,25 m	1050	455	
		1,50 m	1300	455	
9828	Flange DN 80	1,25 m	975	455	62,0
		1,50 m	1225	455	80,0

Order no.	Version	Dimensions/DN														
		50	65	80	100	125	150	200	250	300	350	400	450	500	600	
3500	Universal Pipe Saddle with female threaded outlet	1"	●	●	●	●	●	●	●	●	●					
		1¼"	●	●	●	●	●	●	●	●						
		1½"			●	●	●	●	●	●						
		2"			●	●	●	●	●	●	●	●	●	●	●	●
		2½"						●	●							
		3"						●		●						
3510	Universal Pipe Saddle with flanged outlet	DN 40			●	●	●	●	●							
		DN 50			●	●	●	●	●	●						
		DN 80						●	●	●	●	●	●	●	●	
		DN 100						●	●	●	●	●	●	●	●	
		DN 150										●	●	●	●	
3530	Undrilled Saddle (see page F 1/2)		●	●	●	●	●	●	●		●				●	

larger sizes on request; surcharge for electrical earthing arrangement

for DCI, steel and AC pipes

Please specify pipe material on order
up to PN 16

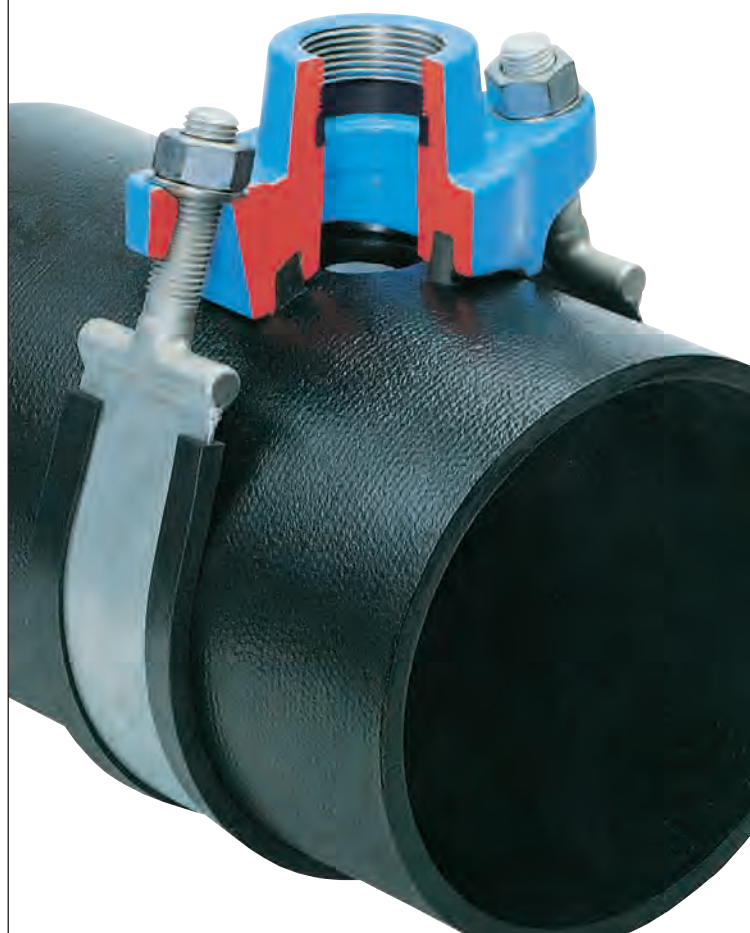
Design features

- stainless steel rubber insulated strap
- solid epoxy powder coated body
- favourable angle of contact
- flexible wrap around straps for easy installation
- the saddle seal is moulded to fit the pipe diameter and is prefixed in the saddle body
- easily accessible nut on stainless steel dished washer (No. 3500/3530) resp. on stainless steel flat washer (No. 3510)

No. 3510
with flanged outlet



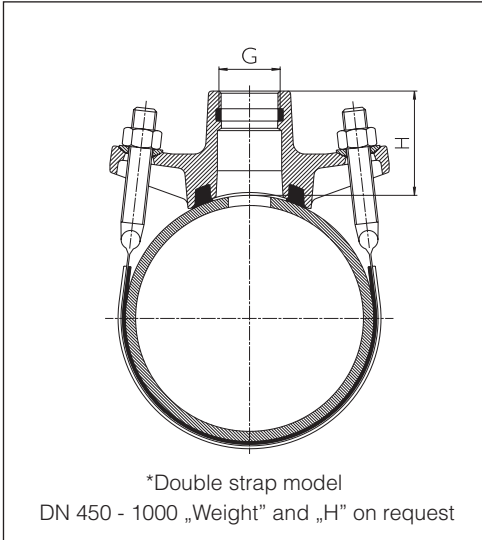
No. 3500
with internal thread



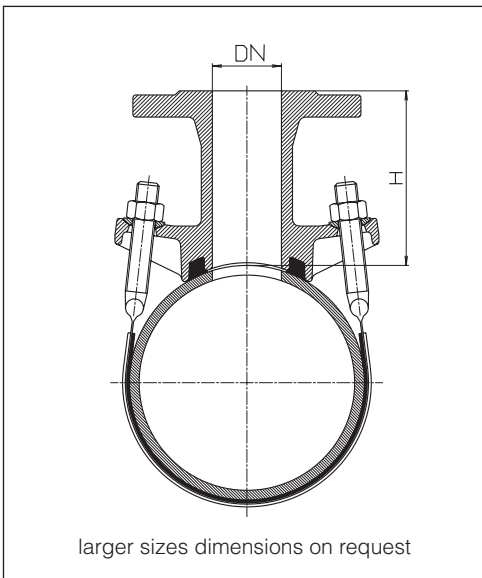
Universal Pipe Saddle, Undrilled Saddle

Material		Strap insulation:	elastomer
Saddle body:	ductile iron, epoxy powder coated	Bolts:	M 16 - stainless steel 1.4308 DIN 17006 (G-X6 Cr NiMo 18 10)
Saddle seal:	elastomer, suitable for potable water	Nuts:	DIN 934, rust & acid proof steel 1.4401, DIN 17006 (X5 CrNiMo 18 10) molybdenum coating
Strap:	1.5 mm gauge, stainless steel 1.4571 DIN 17006 (X10 CrNiMoTi 18 10)		

No. 3500 Universal Pipe Saddle with internal threaded outlet DIN 2999 used in conjunction with shut-off adaptor no. 3720 for under pressure drilling

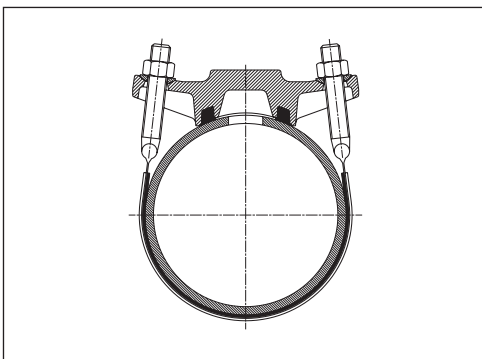


Threaded outlet G		Dimensions/DN										
		50	65	80	100	125	150	200	250	300	350	400
1"	Weight	2,30	2,20	2,40	2,50	3,30	3,40	3,90	4,60	4,70		
	H	64	64	61	61	78	78	86	89	89		
1¼"	Weight	2,30	2,20	2,40	2,50	3,40	3,50	4,10	4,60	4,70		
	H	64	64	61	61	78	78	86	89	89		
1½"	Weight			2,40	2,50	3,60	3,60	4,20	4,80	4,90		
	H			57	57	78	78	86	89	89		
2"	Weight			2,45	2,50	3,80	3,90	4,40	5,00	5,10	6,40	6,60
	H			57	57	78	78	86	89	89	74*	74*
2½"	Weight						5,30	5,70				
	H						54*	56*				
3"	Weight						5,40		5,90	6,00		
	H						54*		56*	56*		



No. 3510 Universal Pipe Saddle with flanged outlet - DIN 28504 all models have a double strap, flange drilling to DIN 2501 - PN 16

Flanged outlet DN		Dimensions/DN											
		80	100	125	150	200	250	300	350	400	450	500	600
40	Weight	6,60	6,60	6,80	6,90	7,70							
	H	114	114	126	126	145							
50	Weight	6,60	6,60	6,80	6,90	7,70	7,90	8,00					
	H	114	114	126	126	145	153	153					
80	Weight				8,80	10,00	10,40	10,50	11,00	12,20	12,30	12,50	11,80
	H				135	150	147	147	146	146	146	146	146
100	Weight				10,30	10,10	11,60	11,70	12,50	12,70	12,80	12,90	13,30
	H				140	155	158	158	165	165	165	165	165
150	Weight									27,50	28,00	29,00	30,50
	H									186	186	186	186



No. 3530 Undrilled Saddle

ductile iron, epoxy powder coated

suitable for covering of drill holes up to Ø 40 mm

Dimensions / DN	65	80	100	125	150	200	350	600
Weight kg	2,60	2,70	2,70	3,50	3,60	4,30	6,50	10,00

for DCI, steel and AC pipes

Please specify pipe material on order !

for under pressure drilling

up to DN 600 mm on request

Order no.	Version	Dimensions/DN											
		50	65	80	100	125	150	200	250	300	350	400	
3800	with internal threaded outlet	1"	●	●	●	●	●	●	●	●	●		
		1¼"	●	●	●	●	●	●	●	●	●		
		1½"			●	●	●	●	●	●	●	●	
		2"			●	●	●	●	●	●	●	●	●

larger sizes on request; surcharge for electrical earthing arrangement

up to PN 16

Design features

- stainless steel rubber insulated strap
- solid epoxy powder coated body
- flexible wrap around straps for easy installation
- favourable angle of contact
- the saddle seal is moulded to fit the pipe diameter and is prefixed in the saddle body
- easily accessible nuts with stainless steel dished washers
- can be pressure tested from both directions

Drilling instructions

Drilling:

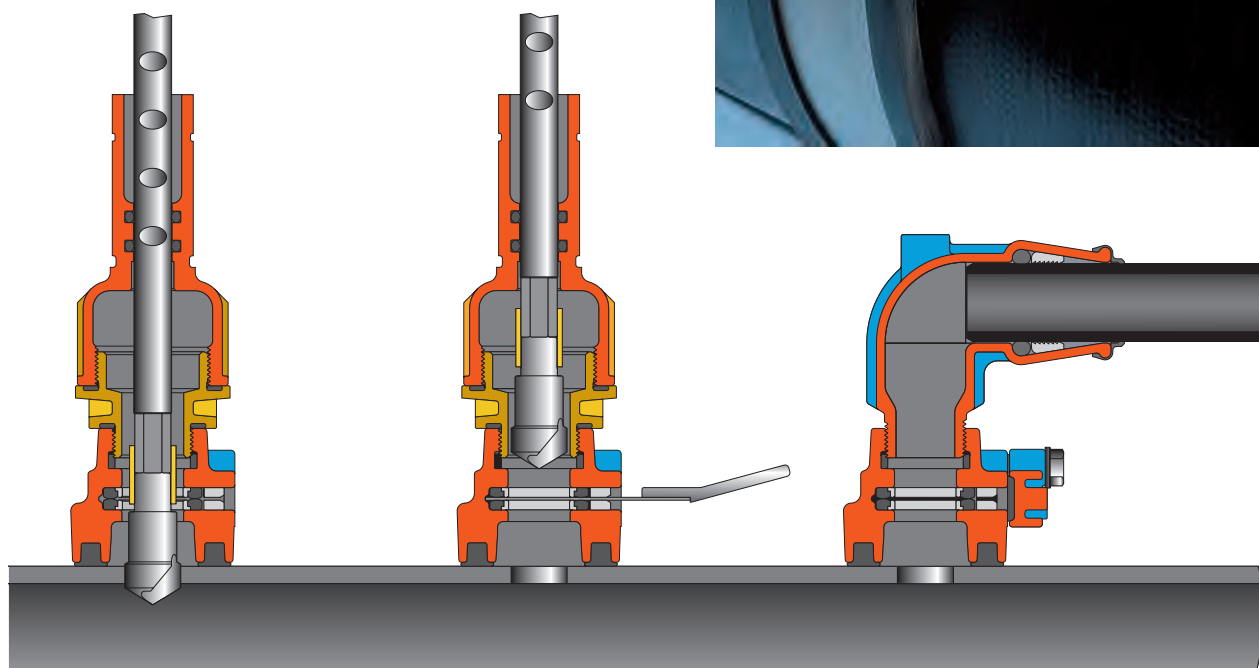
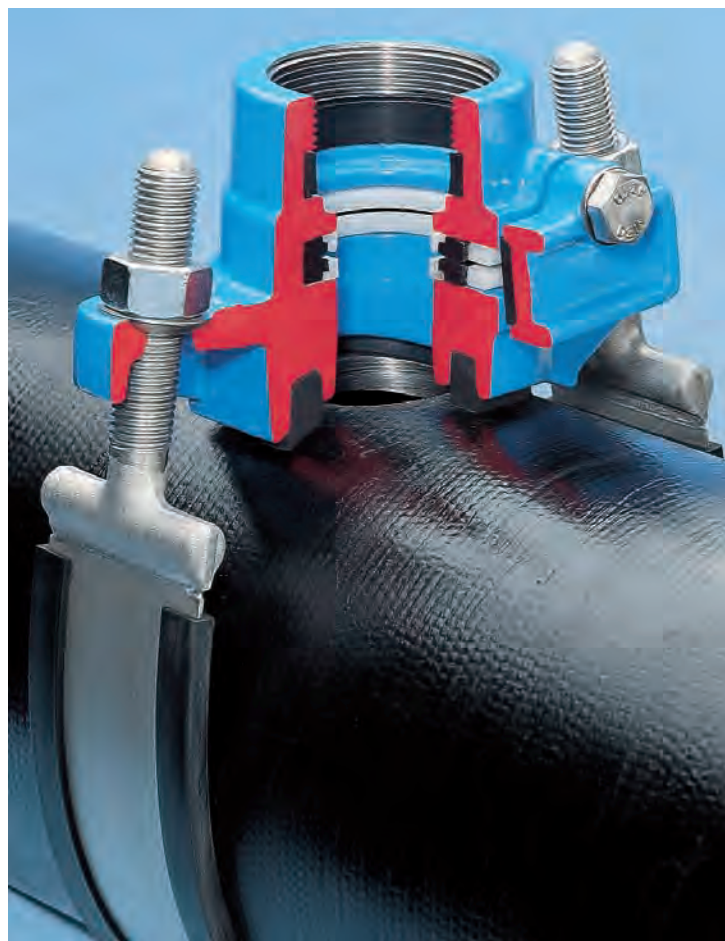
drill the pipe with a drilling machine (Hawle drilling machines, see special leaflets) — retract the drill

Shut-off:

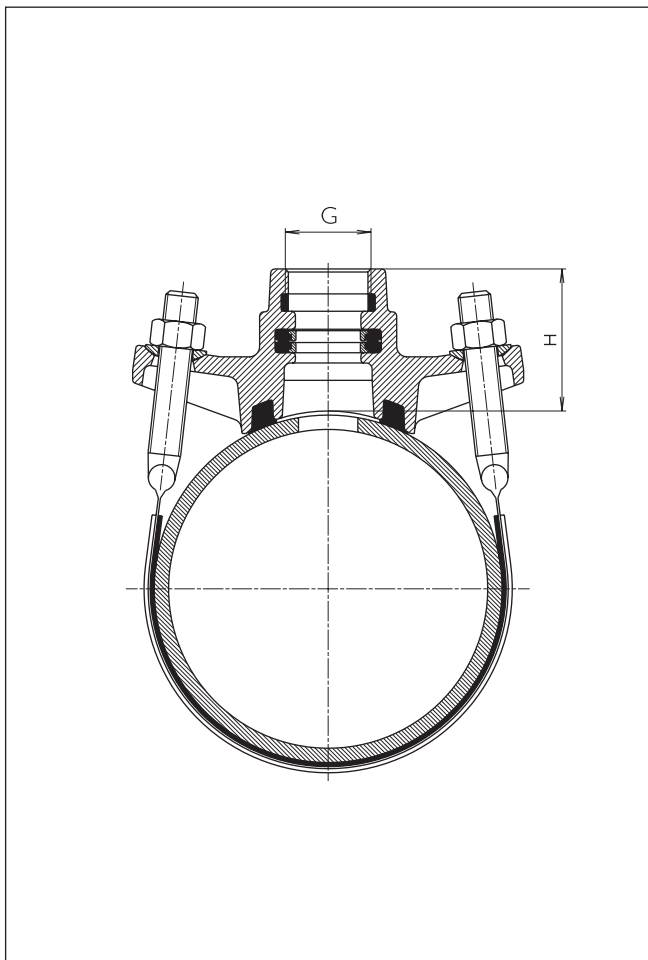
lubricate the saddle blade (Order no. 8401) — insert it — shut-off

Connection:

connect the pipe — remove saddle blade — cover must be replaced (to ensure water tightness)



Shut-Off Saddle with O ring



No. 3800

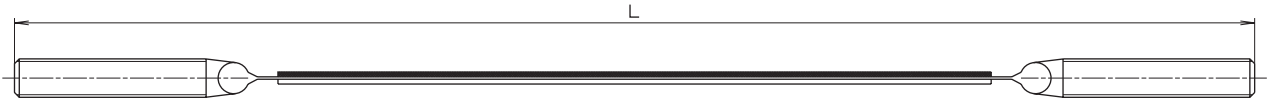
Shut-Off Saddle with O ring

with female thread outlet ISO 228

Material:

Saddle body:	ductile iron - DIN 1693, epoxy powder coated
Cover:	POM, glass fiber reinforced
Seals:	elastomer, suitable for potable water
O ring carrier:	POM
Strap:	1.5 mm gauge, stainless steel 1.4571 - DIN 17006 (X10CrNiMoTi 18 10)
Strap insulation:	elastomer
Bolts:	M 16 - stainless steel 1.4308 - DIN 17006 (G-X6CrNiMo 18 10)
Nuts:	DIN 934, stainless & acid resistant steel 1.4401 - DIN 17006 (X5CrNiMo 18 10) (molybdenum coating)

Threaded outlet G		Dimensions/DN										
		50	65	80	100	125	150	200	250	300	350	400
1"	Weight kg	2,10	2,10	2,60	2,70	3,10	3,20	4,00	4,60	4,70		
	H	67	68	69	69	70	70	80	82	82		
1¼"	Weight kg	2,10	2,10	2,70	2,70	3,20	3,30	4,10	4,70	4,70		
	H	70	71	72	72	73	73	80	82	82		
1½"	Weight kg			3,00	3,00	3,60	3,70	4,30	4,90	4,90	6,60	
	H			73	73	74	74	80	82	82	78	
2"	Weight kg			3,10	3,10	3,80	3,80	4,60	5,30	5,40	6,40	6,60
	H			78	78	78	78	81	83	83	78	78



Dimensions DN	Pipe material			Markings					
	Steel	DI	AC	Ø - Diameter range of strap	Total length "L"	DN	Pipe material		
*50	●	●	●	60 - 70	330	50	ST	G	AZ
*65	●	●	●	70 - 82	360	65	ST	G	AZ
*80	●	●	●	89 - 108	400	80	ST	G	AZ
*100	●	●	●	102 - 130	450	100	ST	G	AZ
*125	●	●	●	132 - 158	520	125	ST	G	AZ
*150	●	●	●	159 - 185	595	150	ST	G	AZ
175	●	●		185 - 210	685	175	ST	G	
200	●	●		210 - 235	760	200	ST	G	
*200		●	●	219 - 244	785	200		G	AZ
*250	●	●		264 - 288	905	250	ST	G	
250			●	288 - 310	975	250			AZ
*300	●	●		316 - 340	1055	300	ST	G	
300			●	335 - 360	1130	300			AZ
*350	●	●		355 - 380	1155	350	ST	G	
350			●	385 - 408	1250	350			AZ
400	●	●		406 - 429	1300	400	ST		
*400	●	●		415 - 440	1325	400	ST	G	
400			●	450 - 475	1425	400			AZ
*450	●	●		467 - 485	1480	400	ST	G	
450			●	496 - 520	1570	450			AZ
*500	●	●		518 - 535	1630	450	ST	G	
500			●	578 - 600	1810	500			AZ
*600	●	●		620 - 640	1945	600	ST	G	
600			●	680 - 700	2120	600			AZ

* If the pipe material and diameter is not specified in the order, the saddle will be supplied with a strap for the size range indicated.

Illustrations, technical data, dimensions and weights are subject to alteration without notice.

No. 5250 HAKU Saddle

Pipe Ø mm	internal threaded outlet			
	1"	1¼"	1½"	2"
40	●			
50	●			
63	●	●	●	●
75	●	●	●	●
90	●	●	●	●
110	●	●	●	●
125	●	●	●	●
140	●	●	●	●
160	●	●	●	●
180	●	●	●	●
200	●	●	●	●
225	●	●	●	●
250	●	●	●	●
280				●
280*	●	●	●	●
315				●
315*		●	●	●
400*			●	●
450*			●	●
500*			●	●

* supplied as saddle piece with strap

Caution: When being used on **PE pipes**, this type is suitable on **class SDR 11** and higher qualities, **only**



For PE and PVC pipes of all pressure ratings up to PN 16 to DIN 8074, EN 1452-2

for cold water, other applications on request

The HAKU sealing system is the best method for sealing outlets in plastic pipes.

The HAKU seal is in full contact with the entire diameter of the PE or PVC pipe and is glued into the saddle for ease of assembly.

In addition several concentric seals with increasing diameter surround the outlet thus relieving the pressure upon the drill hole and protecting it from deformation.

Material:

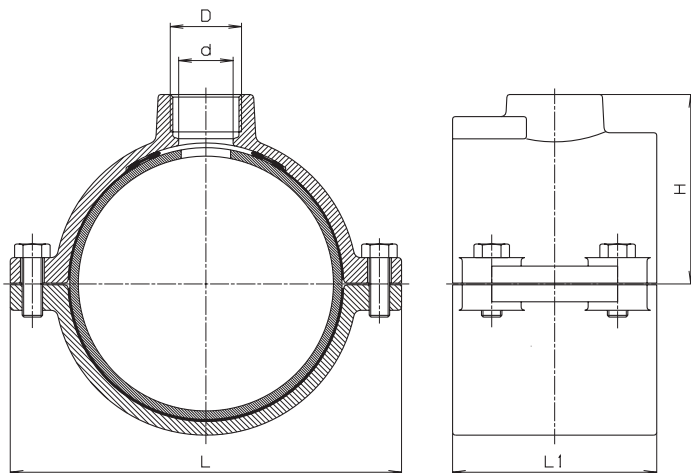
d 40	EN-GJL-250 (GG 250) - EN 1561, epoxy powder coated
d 50 - 500	EN-GJS-400-18 (GGG 400) - EN 1563 epoxy powder coated
Rubber seals:	elastomer, suitable for potable water
Bolts and washers:	stainless steel - A 2

HAKU Saddle

No. 5250 HAKU Saddle

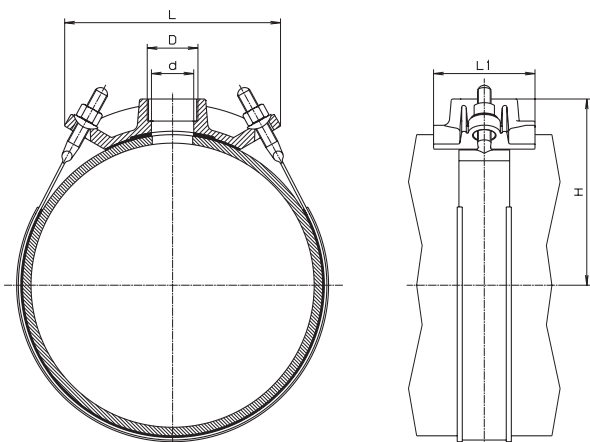
Pipes	ÖNORM	DIN
PE	B 5172	8074
PVC	EN 1452-2	

Pipe Ø mm 40 - 315



+ max. 35 mm drill tips

* Pipe Ø mm 280 - 500 (supplied as saddle piece with strap)
Caution: When being used on **PE pipes**, this type is suitable on **class SDR 11** and higher qualities, **only**



Pipe Ø mm	D ISO 228	d Ø	H	L	L 1	Weight kg
40	1"	27	42	98	70	0,95
50	1"	27	56	110	80	1,20
63	1"	27	57	124	100	1,80
	1¼"	33	62			2,00
	1½"	40	62			1,90
	2"	40+	68			2,10
75	1"	27	63	135	110	2,15
	1¼"	33	68			2,25
	1½"	40	68			2,20
	2"	50	73			2,30
90	1"	27	71	150	110	2,60
	1¼"	33	75			2,70
	1½"	40	75			2,60
	2"	50	80			2,70
110	1"	27	81	170	120	3,60
	1¼"	33	85			3,60
	1½"	40	85			3,80
	2"	50	90			3,60
125	1"	27	87	192	120	3,70
	1¼"	33	93			3,70
	1½"	40	93			4,15
	2"	50	98			4,10
140	1"	27	96	208	120	4,40
	1¼"	33	100			4,30
	1½"	40	100			4,60
	2"	50	106			4,50
160	1"	27	106	230	120	5,90
	1¼"	33	111			6,10
	1½"	40	111			6,30
	2"	50	116			6,20
180	1"	27	125	262	120	8,00
	1¼"	33	125			8,00
	1½"	40	127			8,10
	2"	50	127			8,10
200	1"	30	132	282	120	8,10
	1¼"	33	132			7,80
	1½"	40	137			8,30
	2"	50	137			8,10
225	1"	27	143	310	120	9,10
	1¼"	33	145			9,40
	1½"	40	145			9,70
	2"	50	150			9,60
250	1"	27	156	347	180	11,00
	1¼"	33	156			11,30
	1½"	40	163			11,50
	2"	50	163			12,00
280	1"	27	176	204	120	3,80
	1¼"	38	176			3,60
	1½"	44	176			3,60
	2"	50	176			3,30
	2"	51	178			14,20
315	1¼"	38	196	377	180	3,80
	1½"	44	196			3,75
	2"	50	196			3,55
	2"	51	196			16,70
400	1½"	40	243	270	120	4,90
	2"	50	243			4,90
450	1½"	40	268	235	120	4,60
	2"	50	268			4,60
500	1½"	40	292	255	120	4,90
	2"	50	292			4,90

Order no.	Application	Flange DN	Pipe-Ø mm										
			110	140	160	180	200	225	250	280	315	630	
5230	Cold water, other applications on request!	80	●	●	●	●	●	●	●	●		●	
		100		●	●	●	●	●					
		150									●	●	●

up to PN 16

for **PE-pipes** according to DIN 8074 PN 10 (SDR 11) and PN 16 (SDR 7.4) d 110-630 mm
and **PVC-pipes** according to EN 1452-2 PN 10 (SDR 21) and PN 16 (SDR 13.5) d 110-315 mm

Flanged outlet - EN 1092-2

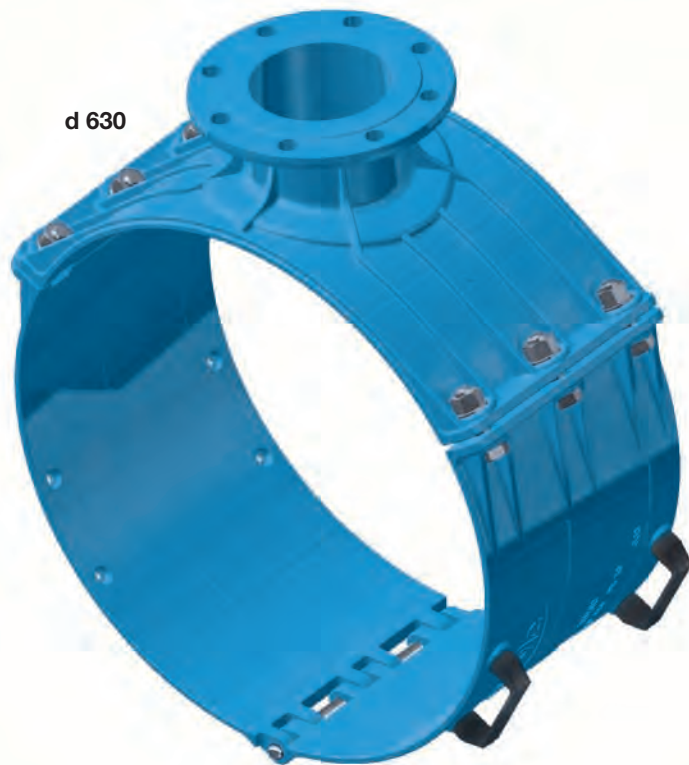
Design features:

- solid construction of ductile iron epoxy powder coated
- bolts, nuts and washers of stainless steel
- the drilled hole is sealed by an O ring inserted in the upper part of saddle (d 630, 2 O rings)
- the rubber linings are bonded to the lower part of saddle – this ensures positive positioning of saddle (only d 110-315)

d 110-315



d 630



Special Hawle Drilling Machine available for drilling d 630 PE pipes.

Material:

Saddle body:

of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693)
epoxy powder coated

Rubber-in the lower part:

Elastomer

O ring seal-in the bonnet:

Elastomer, (suitable for potable water)

Bolts, Nuts and Washers:

stainless steel - A2

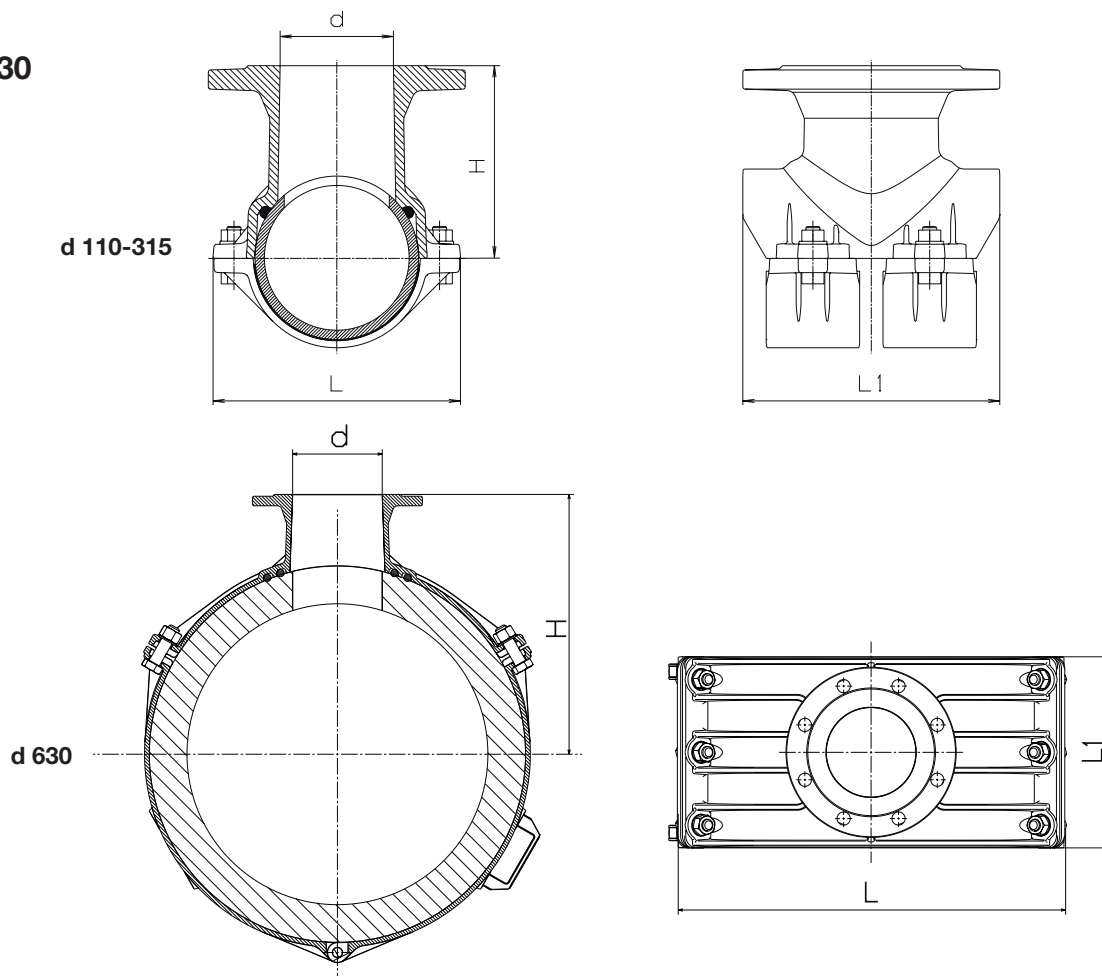
Nuts:

molybdenum coated

HAKU Pipe Saddle with flanged outlet

for PE-pipes according to DIN 8074 PN 10 (SDR 11) and PN 16 (SDR 7.4) d 110-630 mm
 and PVC-pipes according to EN 1452-2 PN 10 (SDR 21) and PN 16 (SDR 13.5) d 110-315 mm
 Flanged outlet - EN 1092-2

No. 5230



Ripe Ø mm	Flange DN	d Ø	H	L	L 1	Weight kg
110	80	80	150	182	180	8,30
140	80	80	166	212	220	10,2
	100	100	166	212	220	10,9
160	80	80	176	234	220	10,1
	100	100	176	234	220	11,0
180	80	80	186	254	220	9,0
	100	100	186	254	220	12,2
200	80	80	191	270	220	11,8
	100	100	191	270	220	13,8
225	80	80	206	301	220	14,0
	100	100	206	301	220	16,0
250	80	80	221	347	220	14,7
280	150	150	239	374	285	21,0
315	80	80	255	410	285	20,0
	150	150	257	409	285	24,5
630	150	150	435	649	320	55,0

Illustrations, technical data, dimensions and weights are subject to alteration without notice.

2. 2010

No. 5310

Pipe Ø mm	internal threaded outlet				
	¾"	1"	1¼"	1½"	2"
63		●	●		
75		●	●	●	●
90	●	●	●	●	●
110		●	●	●	●
160		●	●	●	●

No. 5210 Combined Assembly: HAKU Saddle No. 5250 (page F 3/1) with Shut-Off Adaptor No. 3720

125		●	●	●	●
140		●	●	●	●
225		●	●	●	●

other dimensions on request

For PE and PVC Tubes of all pressure ratings up to PN 16 (DIN 8074, EN 1452-2)

for cold water, other applications on request

Under pressure drilling with the O ring shut-off saddle system has been proven over many decades.

The HAKU sealing system is the best method for sealing outlets in plastic Tubes.

The HAKU seal is in full contact with the entire diameter of the PE or PVC Tube and is glued into the saddle for ease of assembly.

In addition several concentric lip seals with increasing diameter surround the outlet thus relieving the pressure upon the drill hole and protecting it from deformation.

No. 5310 HAKU Shut-Off Saddle



Material:

Body:	of ductile iron EN-GJS-400-18 (GGG 400) - EN 1563, epoxy coated
Rubber seals:	élastomer, suitable for potable water
Bolts:	stainless steel - A2 DIN 933
O ring seal:	élastomer, suitable for potable water

Drilling instructions: see over page

Under pressure drilling with the O ring shut-off saddle system has been proven over decades.

This shut-off adaptor can be used for under pressure drilling with every type of standard saddle.

for water, other applications on request

Note:

The male thread is one size larger than the female threaded outlet, except on the 2" size, this to provide greater strength.

Material:

of ductile iron EN-GJS-400-18 (GGG 400) - EN 1563, epoxy coated
O ring seal: élastomer, suitable for potable water

No. 3720 Shut-Off Adaptor



PN 16

Drilling instructions: see over page

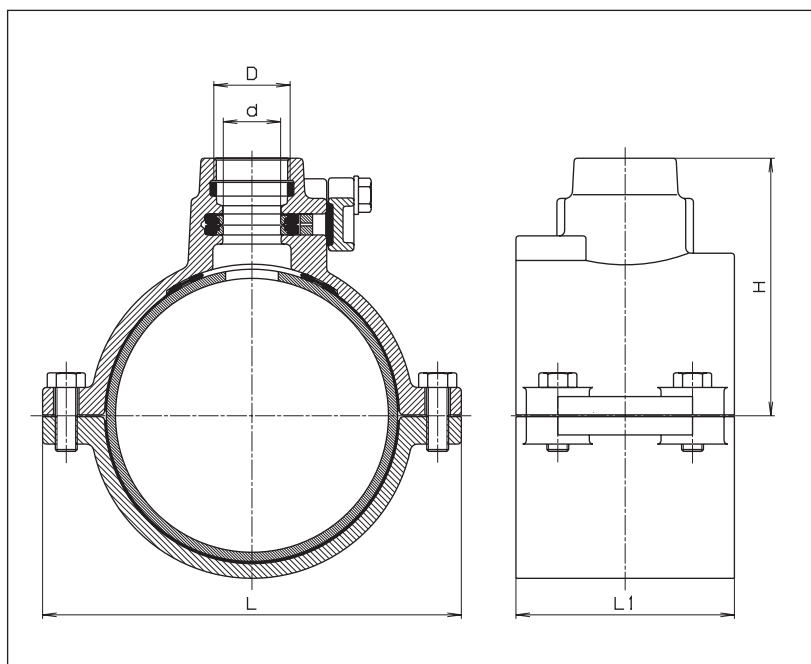
HAKU Shut-Off Saddle, Shut-Off Adaptor

Drilling instructions:

Drilling: drill the pipe with a drilling machine (HAWLE drilling machine see „Tools“) — retract the drill

Shut-off: lubricate the saddle blade (order no. 8401 - see page K 3/1) — insert it — shut-off

Connection: connect the branch pipe — remove saddle blade — cover must be replaced (to ensure water tightness)



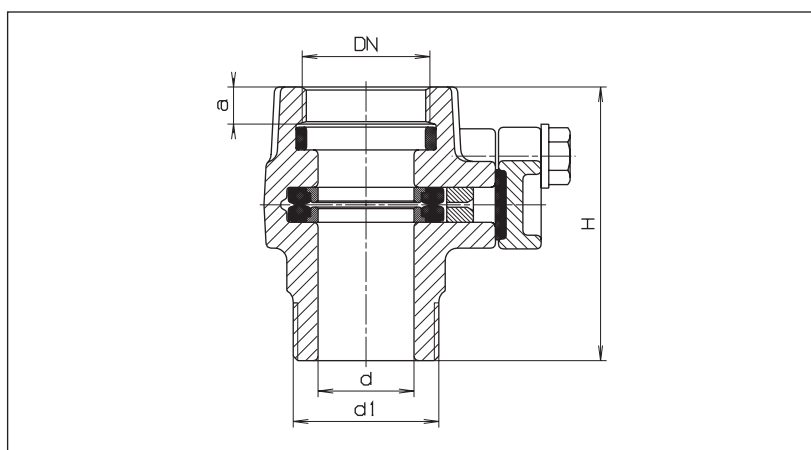
Pipes	ÖNORM	DIN
PE	B 5170	8072
PE	B 5172	8074
PVC	B 5182	EN 1452-2

No. 5310 HAKU Shut-Off Saddle

Pipe Ø mm	D ISO 228	d Ø	H	L	L 1	Weight kg
63	1"	28	84	124	100	2,5
	1¼"	32	87			2,4
75	1"	28	91	135	110	2,8
	1¼"	32	94			2,6
	1½"	43	91			3,3
	2"	43	95			3,0
90	¾"	24	100	150	110	3,0
	1"	28	100			3,0
	1¼"	32	103			2,5
	1½"	43	101			3,6
	2"	43	105			3,4
110	1"	28	110	170	120	3,6
	1¼"	32	113			3,6
	1½"	43	113			4,3
	2"	43	117			4,0
160	1"	28	138	230	120	5,5
	1¼"	32	141			5,4
	1½"	43	140			5,6
	2"	43	145			5,6

No. 5210 Combined Assembly: HAKU Saddle No. 5250 with Shut-Off Adaptor No. 3720

125	1"	27	167	192	120	4,8
	1¼"	31	170			5,5
	1½"	37	180			5,8
	2"	42	183			5,8
140	1"	27	174	208	120	5,4
	1¼"	31	177			5,9
	1½"	37	188			6,2
	2"	42	191			6,2
225	1"	27	219	310	120	10,5
	1¼"	31	222			11,0
	1½"	37	232			11,3
	2"	42	235			12,0



No. 3720 Shut-Off Adaptor

DN ISO 228	d 1 EN 10226-1	H	a	d Ø	Weight kg
1"	1¼"	85	10	27	1,1
1¼"	1½"	90	12	31	1,3
1½"	2"	95	12	37	1,7
2"	2"	100	15	42	1,8

stainless steel

all metallic parts - chromium-nickel-steel

fully encircling elastomer gasket seals complete gaps and other pipe damage

Application: water up to 40° C, other applications on request

The clamp with the self-centering lug system

The short bolts (3) are welded to the bolt bar (4). The handle makes for easy assembly onto the pipe. The nuts are fed directly to the bolts from a special nut dispenser (8). This eases the positioning of lugs and bolts, and avoids handling of loose parts.

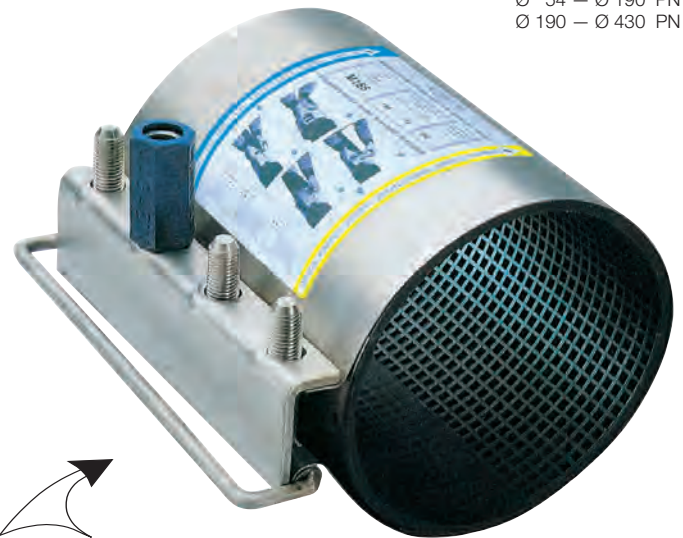
Pipe repair clamps cannot be used for restraint connections.

Special version such as larger diameters and other lengths on request.

for steel, DCI, AC and PVC pipes

No. 0750

tested under normal conditions:
 Ø 54 – Ø 190 PN 16
 Ø 190 – Ø 430 PN 10



The quick assembly system with the easy to handle and nut dispenser

use

No. 0750 „single lug”

for pipe outside diameters of 54 - 430 mm
 length 150 - 380 mm

No. 0751 „double lug”

for pipe outside diameter of 87 - 471 mm
 length 200 - 380 mm

The advantage of the double lug is that each clamp covers a bigger diameter range.

This system enables larger diameter clamps to be manufactured more quickly.

Clamps of over 400 mm are sometimes made with more than 2 lugs.

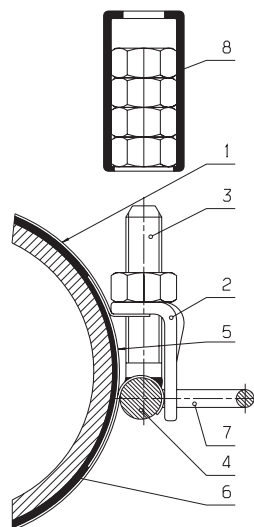
No. 0751

tested under normal conditions:
 Ø 87 – Ø 186 PN 16
 Ø 208 – Ø 430 PN 10
 Ø 425 – Ø 471 PN 6



No. 0750/0751

1. Band
1.4571
2. Lug
1.4301
3. Bolts
A 2 1.4301
4. Bolt-bar
1.4301
5. Bridging plate
1.4301
6. Gasket
Elastomer
7. Handle
1.4301
8. Nut dispenser
Elastomer



No. 0501 „light weight model”

not suitable for plastic pipes

Application: water up to 70° C

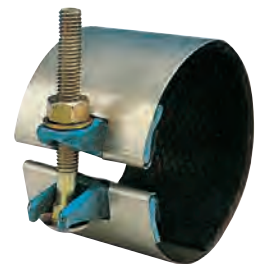
for Pipe diameter of
 21 – 64 mm, length 76 mm

Band: stainless steel 1.4301

Gasket: Elastomer

Lug: malleable iron

Bolts: electro galvanized, imperial threads



Pipe Repair Clamp

Order no. 0750 single lug

Type	Pipe Ø mm	Length mm	suitable for pipe DN						Weight kg		
			Steel	DI	AC-PN 10		AC-PN 16				PVC
					raw	machined	raw	machined			
K 54	54-58	150	50						1,1	●	
M 54		200							1,5	●	
K 58	58-64	150	50						1,1	●	
M 58		200							1,5	●	
K 63	63-68	150		50					1,2	●	
M 63		200							1,6	●	
K 68	68-76	150		50	50				1,2	●	
M 68		200							1,7	●	
K 75	75-83	150	65	60	60				1,3	●	
M 75		200							1,7	●	
K 82	82-91	150	80	65					1,3	●	
M 82		200							1,8	●	
K 95	95-104	150		80	80	80		80	1,4	●	
M 95		200							1,9	●	
K 104	104-112	150	100			80	80	110	1,5	●	
M 104		200							2,0	●	
K 112	112-121	150	100	100	100				1,5	●	
M 112		200							2,1	●	
K 115	115-125	150		100	100				1,5	●	
M 115		200							2,1	●	
K 120	120-130	150		100	100		100	125	1,7	●	
M 120		200							2,2	●	
K 131	131-141	200	125				100		3,2	●	
M 131		250							4,0	●	
K 140	140-150	200		125		125			3,2	●	
M 140		250							4,0	●	
L 140		315							5,2	●	
K 151		200							3,4	●	
M 151	151-161	250	150	125			125	160	4,3	●	
L 151		315							5,4	●	
K 166	166-178	200	150	150	150				3,5	●	
M 166		250							4,4	●	
L 166		315							5,5	●	
K 178	178-190	200		150	150		150	180	3,6	●	
M 178		250							4,5	●	
L 178		315							5,7	●	
K 190	190-202	200				150	150	200	3,9	●	
M 190		250							4,7	●	
L 190		315							5,8	●	
K 200	200-212	250	200						5,0	●	
M 200		315							6,2	●	
L 200		380							7,5	●	
K 215	215-227	250	200	200					5,0	●	
M 215		315							6,3	●	
L 215		380							7,6	●	
K 233	233-246	250			200	200			5,2	●	
M 233		315							6,3	●	
L 233		380							7,8	●	
K 250	250-262	250					200	200	5,4	●	
M 250		315							6,8	●	
L 250		380							8,1	●	
K 269	269-281	250	250	250				280	5,6	●	
M 269		315							7,1	●	
L 269		380							8,5	●	
K 285	285-297	250			250	250			6,0	●	
M 285		315							7,5	●	
L 285		380							9,0	●	
K 306	306-318	250					250	250	6,0	●	
M 306		315							7,8	●	
L 306		380							9,2	●	
K 315	315-327	250	300	300					6,2	●	
M 315		315							7,8	●	
L 315		380							9,5	●	
K 345	345-357	250							6,7	●	
M 345		315							8,3	●	
L 345		380							10,0	●	
K 366	366-379	250	350	350			300	300	7,0	●	
M 366		315							8,7	●	
L 366		380							10,5	●	
K 400	400-412	250	400		350	350			7,4	●	
M 400		315							9,2	●	
L 400		380							10,9	●	
K 418	418-430	250	400	400					7,6	●	
M 418		315							9,7	●	
L 418		380							11,8	●	

Order no. 0751 double lug

Type	Pipe Ø mm	Length mm	suitable for pipe DN						Weight kg		
			Steel	DI	AC-PN 10		AC-PN 16				PVC
					raw	machined	raw	machined			
M 87	87-102	200	80	80	80	80			90	2,7	●
M 106	106-124	200	100	100	100	100	80		110	2,8	●
M 114	114-132	200	125	100	100	100		100	125	2,9	●
K 132	132-152	200	125	125	125	125	100		140	4,9	●
M 132		250								6,2	●
K 142	142-162	200	150	125	125	125	125	125	160	5,0	●
M 142		250								6,4	●
K 160	160-180	200	150	150					160	5,3	●
M 160		250								6,5	●
L 160	315	8,1	●								
K 166	166-186	200	150	150	150	150				5,3	●
M 166		250								6,7	●
L 166		315								8,3	●
K 208	208-230	250	200	200					225	7,2	●
M 208		315								8,8	●
L 208		380								10,7	●
K 220	220-242	250		200		200			225	7,3	●
M 220		315								9,0	●
L 220		380								11,1	●
K 236	236-258	250			200	200	200	200	250	7,5	●
M 236		315								9,4	●
L 236		380								11,1	●
K 271	271-293	250	250	250	250	250			280	7,8	●
M 271		315								9,9	●
L 271		380								11,8	●
K 306	306-328	250	300	300			250	250	315	8,4	●
M 306		315								10,0	●
L 306		380								12,0	●
K 330	330-352	250			300	300				8,9	●
M 330		315								10,7	●
L 330		380								13,1	●
K 346	346-368	250	350		300	300			355	8,9	●
M 346		315								11,0	●
L 346		380								13,3	●
K 369	369-392	250		350			300	300		9,1	●
M 369		315								11,2	●
L 369		380								13,8	●
K 406	406-430	250	400	400	350					9,7	●
M 406		315								11,7	●
L 406		380								14,5	●
K 425	425-448	250		400			350	350		9,8	●
M 425		315								12,3	●
L 425		380								14,8	●
K 448	448-471	250			400	400			450	10,2	●
M 448		315								12,8	●
L 448		380								15,1	●

Order no. 0501

Type	Pipe Ø mm	Length	Weight kg	
D 21	21-25	76	0,25	●
D 26	26-30	76	0,30	●
D 33	33-37	76	0,35	●
D 42	42-45	76	0,35	●
D 48	48-51	76	0,45	●
D 50	50-54	76	0,45	●
D 60	60-64	76	0,45	●

For cast iron pipes PN 10

Order no.	Design	Applications	Installation length mm	PN	DN		
					80	100	150
0760	Ductile iron EN-GJS-400-15	Water, not aggressive sewage! Other media on request!	200	10	•	•	•

The TOL pipe repair clamp is intended for a permanent repair of cast iron pipes where a restraint function is not required.

Materials and design features:

1. - 3. Ductile iron
EN-GJS-400-15
4. Elastomer sleeve gasket
5. Stainless steel hinge rods
6. Bolts of Teflon coated A2 stainless steel
7. Nuts of galvanized A2 stainless steel
8. Washers of A2 stainless steel
9. Protective plastic end caps for threads M12
10. Protective plastic end cap for rod ends \varnothing 8mm

Fully encircling elastomer gasket seals transverse cracks and other damage to cast iron pipes.

"TOL" repair clamp surface coat:

- Epoxy powder coated inside and outside
(Exceeds requirements set by GSK - Quality association for heavy corrosion protection)

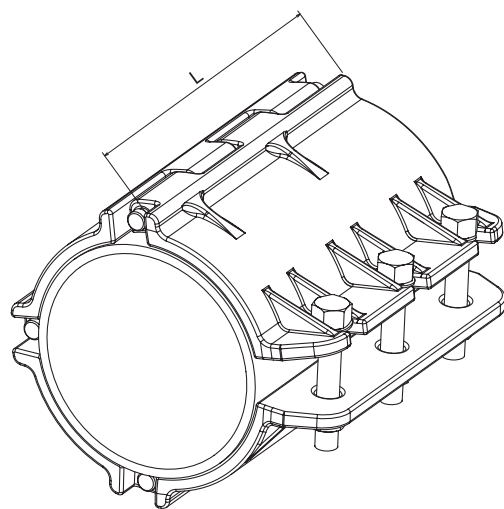
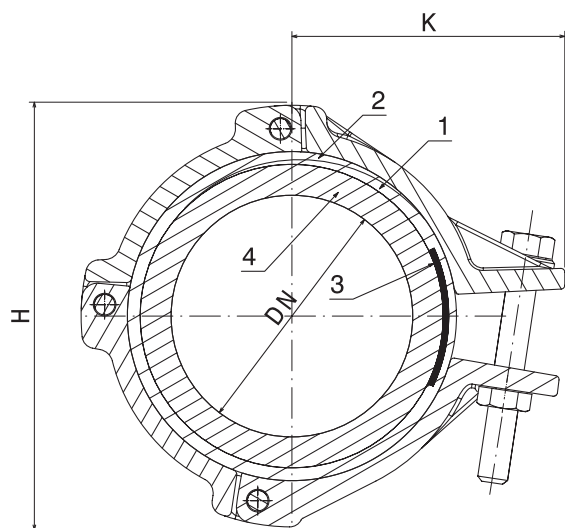
Applications:

- Ensure a minimum distance of 60 mm between pipe damage and the edge of TOL pipe repair clamp
- The gap width between two connected pipes may not exceed 5 mm



„TOL” pipe repair clamp

No. 0760



Installation:

- The segmented design permits an easy and quick installation.
- The pipe must be cleaned in advance, and any insulating layers have to be removed.
- In case of complete breaks it has to be ensured that the pipe is not subjected to tensile stress.
- Prior to installation of DN 80 and 100 loosen the bolts as far as possible, though without removing the nuts from the bolts. In case of DN 150 the bolts of the two rows of fasteners have to be opened as far as possible - just as in case of DN 80 and 100.
- When installing the clamp care shall be taken that the end of the gasket (1) that is closer to the pressure sheet (3) is located between the pipe (4) and the other end of the gasket (2). The rubber ends shall sufficiently overlap to ensure the sealing effect.
- We recommend positioning the clamp in such a way that the bolt heads are well accessible so they can be tightened properly. The nuts are fixed in the locating slots of the opposite segment.
- The bolts shall be tightened evenly (in optional order); in case of DN 150 take care that the two clamping rows are tightened evenly to ensure that the distance is as regular as possible.
- Max. tightening torque - see below table.
- The correct installation of the clamp is indicated by the gaskets flowing out at the edges.
- The clamp can be used for one installation process.
- After installation, please perform a leakage test while the trench is still open. The maximum operating pressures as a function of the medium and pipe outside diameter (see 'Intended use') have to be complied with.

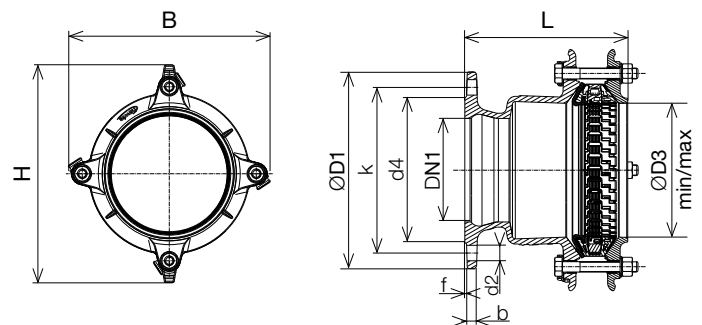
DN	L	H	K	Tolerance range	Max. tightening torque / Nm	Max. tightening torque in case of transverse crack/Nm	Weight / kg
80	200	144	97	95 - 102	40	70	6,2
100	200	164	107	115 - 122	40	70	6,7
150	200	242	145	167 - 175	60	95	14,1

Restraint multi-range connection for all kinds of pipes

Product description

- Acc. to EN 14525
- Flanges according to EN 1092-2 PN10 (alternatively PN16)
- Body and lock ring of ductile iron EN-GJS-400 epoxy powder coated
- Flexible gasket of elastomer acc. to EN 681-1 (suitable for potable water)
- Flexible **Synoflex** ring of POM
- Tension locks corrosion resistant. Each support element holds a tension lock element.
- Bolts and nuts of stainless steel, coated against seizing
- Bolt head locking devices of stainless steel, with protective cap of elastomer
- Bolts reversible
- Spacer bushes of plastic
- Angle compensation max. 8° (+/- 4° each socket)
- For restraint connections with PE pipes a stainless steel support liner is required (e.g. No. 6035 or 6036).

No. 7994



Example of use



Certificates



Flange DN1	Socket DN	PN	Flange					Bolts (Flange)			B	H	Pipe ØD3 min / max	L	Bolts	Weight kg
			ØD1	b	k	d4	f	Qty.	Thread	d2						
50	50	10 16	165	14	125	98	4	4	M 16	19	141	170	56 - 71	203	3xM12-80	5,1
65	65	10 16	185	14	145	118	4	4	M 16	19	156	187	71 - 88	203	3xM12-80	6,1
80	65	10 16	198	14	160	133	4	8	M 16	19	156	187	71 - 88	203	3xM12-80	6,3
80	80	10 16	198	14	160	133	4	8	M 16	19	171	204	85 - 105	193	3xM12-80	6,7
80	100	10 16	198	14	160	133	4	8	M 16	19	226	260	104 - 132	263	3xM16-100	10,0
100	80	10 16	220	14	180	153	4	8	M 16	19	171	204	85 - 105	188	3xM12-80	7,3
100	100	10 16	220	14	180	153	4	8	M 16	19	226	260	104 - 132	228	3xM16-100	10,3
100	125	10 16	220	14	180	153	4	8	M 16	19	250	290	131 - 160	278	3xM16-110	12,5
125	125	10 16	250	14	210	183	4	8	M 16	19	250	290	131 - 160	248	3xM16-110	12,9
*150	125	10 16	285	14	240	209	4	8	M 20	23	250	290	131 - 160	245	3xM16-110	13,8
*150	150	10 16	285	14	240	209	4	8	M 20	23	315	350	155 - 192	258	4xM16-110	16,5
*200	200	10 16	340	15	295	264	4	8 12	M 20	23	326	405	198 - 230	277	6xM16-120	25,4
*200	225	10 16	340	15	295	264	4	8 12	M 20	23	361	445	230 - 260	322	6xM20-130	32,8
*250	250	10 16	400	16	350 355	319	4	12	M 20 M 24	23 28	408	499	265 - 310	335	6xM20-130	42,7
*300	300	10 16	455	18	400 410	367	4	12	M 20 M 24	23 28	510	545	313 - 356	353	8xM20-130	59,1
*350	350	10	520	20	460	427	4	16	M 20	23	550	550	352 - 396	358	12xM20-130	71,0
*400	400	10	580	21	515	477	4	16	M 24	28	596	596	398 - 442	373	12xM20-130	83,0

* Certificates: ÖVGW, kiwa in preparation

SYNOFLEX connector

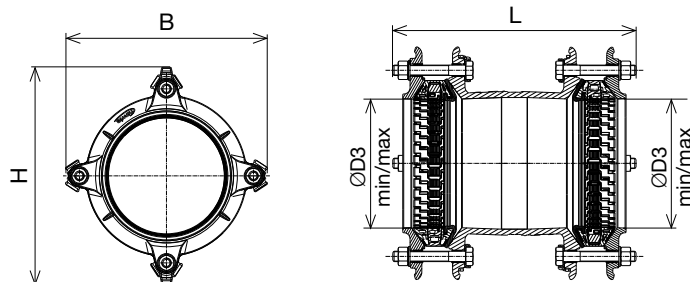
Restraint multi-range connection for all kinds of pipes

Product description

- Acc. to EN 14525
- Body and lock ring of ductile iron EN-GJS-400 epoxy powder coated
- Flexible gasket of elastomer acc. to EN 681-1 (suitable for potable water)
- Flexible **Synoflex** ring of POM
- Tension locks corrosion resistant. Each support element holds a tension lock element.
- Bolts and nuts of stainless steel, coated against seizing
- Bolt head locking devices of stainless steel A4, with protective cap of elastomer
- Bolts reversible 180°
- Spacer bushes of plastic
- Angle compensation max. 8° (+/- 4° each socket)
- For restraint connections with PE pipes a stainless steel support liner is required (e.g. No. 6035 or 6036).



No. 7974



Example of use



Certificates



Socket1 DN	Socket2 DN	PN	Socket1				Socket2				L	Weight kg
			B	H	Pipe ØD3 min / max	Bolts	B	H	Pipe ØD3 min / max	Bolts		
*40	40	16	130	157	46 - 58	3xM12-80	130	157	46 - 58	3xM12-80	243	3,9
50	50		141	170	56 - 71	3xM12-80	141	170	56 - 71	3xM12-80	253	5,0
65	65		156	187	71 - 88	3xM12-80	156	187	71 - 88	3xM12-80	264	5,6
80	65		171	204	85 - 105	3xM12-80	156	187	71 - 88	3xM12-80	274	6,2
80	80		171	204	85 - 105	3xM12-80	171	204	85 - 105	3xM12-80	270	6,5
100	80		226	260	104 - 132	3xM16-100	171	204	85 - 105	3xM12-80	312	9,5
100	100		226	260	104 - 132	3xM16-100	226	260	104 - 132	3xM16-100	332	11,7
125	100		250	290	131 - 160	3xM16-110	226	260	104 - 132	3xM16-100	355	13,7
125	125		250	290	131 - 160	3xM16-110	250	290	131 - 160	3xM16-110	357	14,5
*150	100		315	350	155 - 192	4xM16-110	226	260	104 - 132	3xM16-100	361	16,2
*150	125		315	350	155 - 192	4xM16-110	250	290	131 - 160	3xM16-110	375	17,4
*150	150		315	350	155 - 192	4xM16-110	315	350	155 - 192	4xM16-110	367	18,7
*200	200		326	405	198 - 230	6xM16-120	326	405	198 - 230	6xM16-120	406	31,1
*225	200		361	445	230 - 260	6xM20-130	326	405	198 - 230	6xM16-120	450	38,8
*225	225		361	445	230 - 260	6xM20-130	361	445	230 - 260	6xM20-130	429	41,8
*250	200		408	499	265 - 310	6xM20-130	326	405	198 - 230	6xM16-120	468	45,6
*250	250	408	499	265 - 310	6xM20-130	408	499	265 - 310	6xM20-130	441	51,0	
*300	300	510	545	313 - 356	8xM20-130	510	545	313 - 356	8xM20-130	460	68,0	
*350	350	10	550	550	352 - 396	12xM20-130	550	550	352 - 396	12xM20-130	499	86,0
*400	400	10	596	596	398 - 442	12xM20-130	596	596	398 - 442	12xM20-130	519	100,0

* Certificates: ÖVGW, kiwa in preparation

Flange Adaptor „System 2000“ restraint

for PE (PE 80/100) pipes
up to PN 16

No. 0400

Material:

Flange and locking ring:
ductile iron,
epoxy powder coated

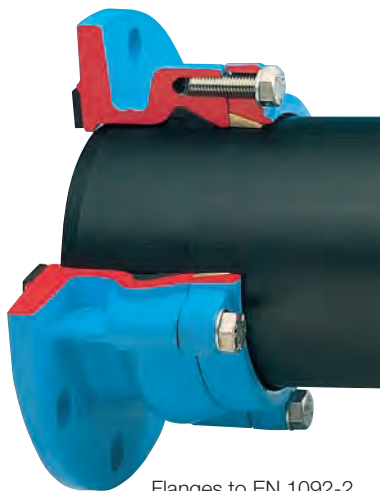
Lip seal: Elastomer, suitable
for potable water
(durably lubricated)

Flat gasket: Elastomer

Grip ring: Ms 58
(up to DN 300 Rg7)

Hexagonal bolts: A 2
stainless

For thinwalled PE-pipes (up to 3mm wall thickness) and low internal pressure we recommend using a support liner (see page D2/4).



Flanges to EN 1092-2

The use of lip seals enables the pipe to be pushed in with minimal force.

The flange to flange seal is incorporated onto the flange.

The pipe restraining system is effective separately from the sealing system and is activated by tightening the locking ring.

Assembly: 1. Chamfer the pipe end 30° and moisten, then
a) push the pipe end into the loosely assembled flange until it stops, or
b) push the loose bride onto the pipe end until it stops.

2. Bolt up the locking ring until it stops. This shall be done only after firmly assembling the flange adaptor with the opposing flange.

Flange Adaptor with PE fusion tail

No. 0310

PE 80 / SDR 11 - PN 10
PE 100 / SDR 11 - PN 16

No. 0311

PE 80 / SDR 17.6 - PN 6
PE 100 / SDR 17.6 - PN 10

Material:

Flange:
ductile iron,
epoxy powder coated

PE tail injection moulded
PE 80 (standard)

Melt flow index:
MFR 190/5 kg
MFR group 10 (DIN 8075)
(PE 100 MFR group 05-
DIN 8075)

Support liner: 1.4301

Seals: Elastomer, suitable for
potable water



High performance sealing of the PE tail is assured by two separate O ring seals and a stainless steel support liner within the tail.

The flange can be connected to the PE pipeline by either butt fusion or electrofusion.

for PE pipes according to ÖNORM B 5172, DIN 8074/8075
standard version: PN 10 - DIN 2501

Flange DN	Pipe Ø mm	Flange Adaptor „System 2000“		ISO Pipe Flange		Flange with PE fusion tail					
				equal	reducing						
		No. 0400	No. 5500	No. 5530	No. 0310	No. 0311					
40	40										
40	50			●	G						
50	50					●	G				
50	63	●	S	●	G			●	S		
60	50										
60	63	●	S			●	G				
60	75	●	S	●	G						
65	63	●	S			●	G				
65	75	●	S	●	G						
80	63	●	S								
80	75	●	S			●	G				
80	90	●	S	●	G			●	S		
100	90	●	S			●	G				
100	110	●	S	●	G			●	S	●	S
100	125	●	S	●	G			●	S		
125	110	●	S								
125	125	●	S								
125	140	●	S								
125	160	●	S								
150	140	●	S								
150	160	●	S	●	S			●	S	●	S
150	180	●	S					●	S	●	S
200	200	●	S*					●	S		
200	225	●	S*					●	S		
200	250	●	S*								
250	250	●	S*								
250	280	●	S*								
300	315	●	S*								
300	355	●	S*								
400	400	●	S*								
400	450	●	S*								
600	630	●	S*								

Explanation: *also available in PN 16
S of ductile iron G of grey iron

ISO Pipe Flange Adaptor

No. 5500 equal

No. 5530 reducing

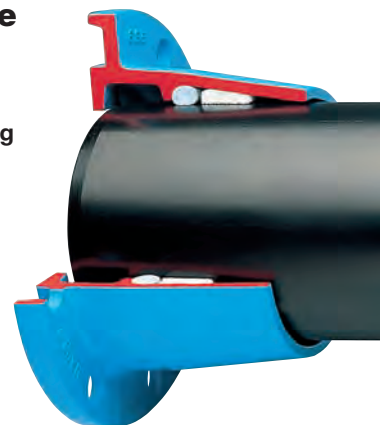
up to PN 16

Material:

Flange:
see above table,
epoxy powder coated

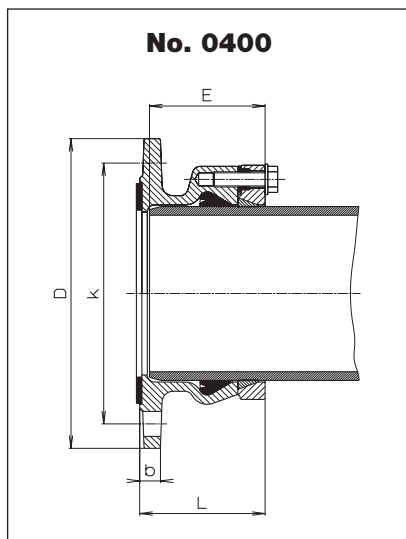
Grip ring: POM

Seal ring: Elastomer,
suitable for potable
water



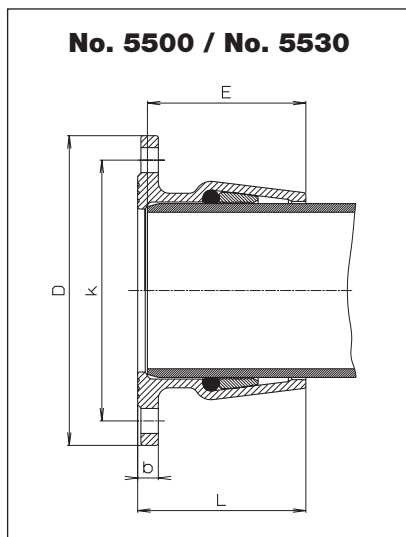
Assembly instructions: chamfer the pipe 30° and moisten, and push into the socket until it stops.

Flanged Connections for PE pipes, restraint



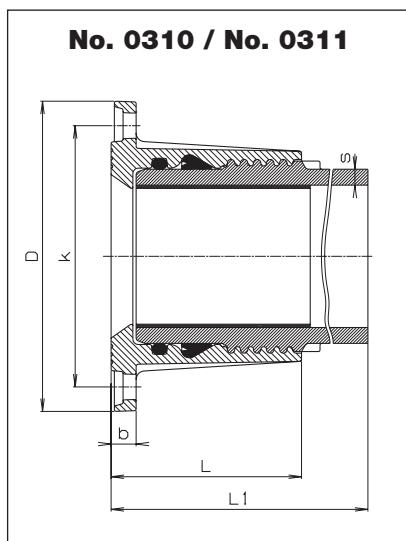
No. 0400 / No. 5500

Flange DN	Pipe Ø mm	D	K	b - No.		~ L (assembled)		E - No.		Bolts		Weight No.	
				0400	5500	0400	5500	0400	5500	Qty.	Thread	0400	5500
40	50	150	112		23		97		93	4	M 16		2,6
50	63	165	125	19	23	90	94	80	80	4	M 16	3,6	3,2
60	63	175	135	19		90		80		4	M 16	3,8	
60	75	175	138	19	24	92	105	82	100	4	M 16	4,0	3,9
65	63	185	145	19		90		80		4	M 16	4,3	
65	75	185	145	19	24	92	105	82	99	4	M 16	4,3	4,0
80	63	200	160	19		90		80		8	M 16	4,7	
80	75	200	160	19		92		82		8	M 16	5,0	
80	90	200	160	19	24	95	101	85	96	8	M 16	5,5	4,2
100	90	220	180	19		95		85		8	M 16	6,8	
100	110	220	180	19	25	95	124	85	119	8	M 16	6,2	6,7
100	125	220	180	19	25	97	173	87	162	8	M 16	7,0	8,2
125	110	250	210	19		95		85		8	M 16	7,8	
125	125	250	210	19		97		87		8	M 16	8,2	
125	140	250	210	19		103		93		8	M 16	8,5	
125	160	250	210	19		145		110		8	M 16	11,5	
150	140	285	240	19		103		93		8	M 16	11,3	
150	160	285	240	19	19	115	155	105	148	8	M 20	10,5	9,3
150	180	285	240	19		125		115		8	M 20	11,6	
200	200	340	295	20		135		125		8	M 20	18,0	
200	225	340	295	20		138		128		8	M 20	16,0	
200	250	340	295	20		225		145		8	M 20	27,0	
250	250	400	350	22		155		145		12	M 20	22,0	
250	280	400	350	22		158		148		12	M 20	29,0	
300	315	455	400	25		184		174		12	M 20	44,0	
300	355	455	400	25		277		237		12	M 20	61,0	
400	400	565	515	25		242		230		16	M 24	97,0	
400	450	565	515	25		302		260		16	M 24	81,0	
600	630	760	725	36		459		399		20	M 27	260,0	



No. 5530

Flange DN	Pipe Ø mm	D	K	b	L	E	Bolts		Weight kg
							Qty.	Thread	
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	3,9
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



No. 0310 / No. 0311

Flange DN	Pipe Ø mm	D	K	b	L	L 1	s		Bolts		Weight kg
							(PN 6)*	(PN 10)*	Qty.	Thread	
50	63	165	125	19	106	291		5,8	4	M 16	4,0
80	90	200	160	20	125	305		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		20,5	8	M 20	28,0

*SDR 17.6 *SDR 11

Flange Adaptor „System 2000” restraint

for PVC pipes
up to PN 16

No. 0400

Material:

Flange and locking ring:
ductile iron,
epoxy powder coated

Lip seal: elastomer
suitable for potable water
(durably lubricated)

Flat gasket: elastomer

Grip ring: Ms 58
(from DN 300 Rg7)

Hexagonal bolts: A 2



Flanges to EN 1092-2

The use of lip seals enables the pipe to be pushed in with minimal force.

The flange to flange seal is incorporated onto the flange.

The pipe restraining system is effective separately from the sealing system and is activated by tightening the locking ring.

- Assembly:**
1. Chamfer the pipe end 30° and moisten, then
 - a) push the pipe end into the loosely assembled flange until it stops, or
 - b) push the loose bride onto the pipe end until it stops.
 2. Bolt up the locking ring until it stops. This shall be done only after firmly assembling the flange adaptor with the opposing flange

Double Chamber Flange Adaptor

up to PN 16

No. 5600

Material:

Flange:
see table above right,
epoxy powder coated

Sleeve gasket:
elastomer, suitable for
potable water



Assembly: Cut the pipe end square, do not chamfer or moisten – push the flange onto the pipe and then push the gasket on.

for PVC pipes according to EN 1452-2
standard version: PN 10 - DIN 2501

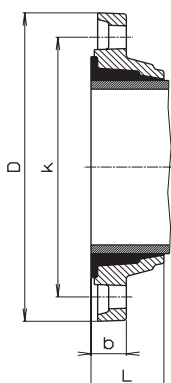
Flange DN	Pipe Ø mm	Flange Adaptor "System 2000"		Double Chamber Flange Adaptor	
		No. 0400		No. 5600	
50	63	●	S	●	G
60	63	●	S		
60	75	●	S		
65	63	●	S		
65	75			●	G
80	63	●	S		
80	75	●	S		
80	90	●	S	●	G
100	90	●	S		
100	110	●	S	●	G
100	125	●	S		
125	110	●	S		
125	125	●	S	●	G
125	140	●	S	●	G
125	160	●	S		
150	110				
150	140	●	S		
150	160	●	S	●	G
150	180	●	S		
200	200	●	S*	●	S*
200	225	●	S*	●	S* ¹
200	250	●	S*		
250	250	●	S*		
250	280	●	S*	●	S* ¹
300	315	●	S*	●	S*
300	355	●	S*		
400	400	●	S*	●	S*
400	450	●	S*		

Explanation: * also available in PN 16
S of ductile iron
G of grey iron
¹ Flanges with an extended hole circle are not suitable for use with fixed studs.

Flanged Connections for PVC pipes

No. 5600

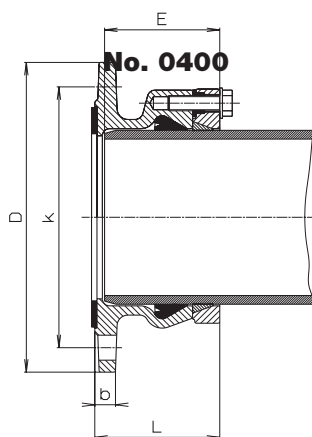
No. 5630



No. 5600

Flange DN	Pipe Ø mm	D	K	b	L (assembled)	Bolts		Weight kg
						Qty.	Thread	
50	63	165	125	24	54	4	M 16	2,0
65	75	185	145	24	54	4	M 16	3,0
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	M16	5,8
125	140	250	210	28	66	8	M16	5,0
150	160	285	240	29	66	8	M 20	6,7
200	200	340	295	31	93	8	M 20	9,4
200	225	340	295	24	92	8	M 20	7,9
250	280	400	350	32	114	12	M 20	15,5
300	315	445	400	33	117	12	M 20	15,8
400	400	565	515	33	134	16	M 24	27,0

No. 0400



Flange DN	Pipe Ø mm	D	K	E	b	L	Bolts		Weight kg
							Qty.	Thread	
50	63	165	125	80	19	90	4	M 16	3,6
60	63	175	135	80	19	90	4	M 16	3,8
60	75	175	135	82	19	92	4	M 16	4,0
65	63	185	145	80	19	90	4	M 16	4,3
65	75	185	145	82	19	92	4	M 16	4,3
80	63	200	160	80	19	90	8	M 16	4,7
80	75	200	160	82	19	92	8	M 16	5,0
80	90	200	160	85	19	95	8	M 16	5,5
100	90	220	180	85	19	95	8	M 16	6,8
100	110	220	180	85	19	95	8	M 16	6,2
100	125	220	180	87	19	97	8	M 16	7,0
125	110	250	210	85	19	95	8	M 16	7,8
125	125	250	210	87	19	97	8	M 16	8,2
125	140	250	210	93	19	103	8	M 16	8,5
125	160	250	210	110	19	145	8	M 16	11,5
150	140	285	240	93	19	103	8	M 16	11,3
150	160	285	240	105	19	115	8	M 20	10,5
150	180	285	240	115	19	125	8	M 20	11,6
200	200	340	295	125	20	135	8	M 20	18,0
200	225	340	295	128	20	138	8	M 20	16,0
200	250	340	295	145	20	225	8	M 20	27,0
250	250	400	350	145	22	155	12	M 20	22,0
250	280	400	350	148	22	158	12	M 20	29,0
300	315	455	400	174	25	184	12	M 20	44,0
300	355	455	400	237	25	277	12	M 20	61,0
400	400	565	515	230	25	242	16	M 24	97,0
400	450	565	515	260	25	302	16	M 24	81,0

Double Chamber Flange Adaptor to PN 16

No. 7102 standard
No. 7101 reducing

Material:

- 1 Flange: see right table epoxy powder coated
- 2 Sleeve gasket: elastomer, suitable for potable water



These Hawle flanges are a further development of the well proven Hawle Spar Flanges.

The long draw of the fitting and the double chambered gasket result in the pressure being spread well back from the pipe end.

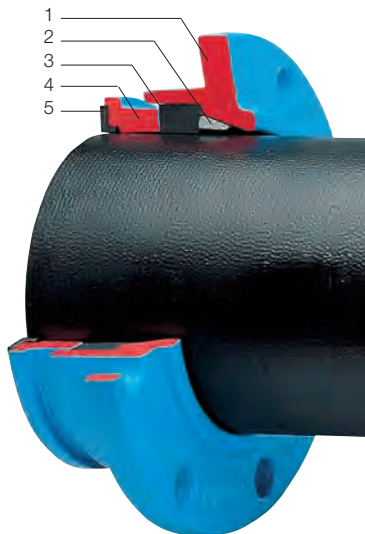
The resilience of the connection prevents tension in the pipe and minimises the danger of breakage.

Flange Adaptor restraint to PN 16

No. 7602

Material:

- 1 Flange: ductile iron, epoxy powder coated
- 2 Grip ring: steel 1.0037 hardened
- 3 Sleeve gasket: elastomer, suitable for potable water
- 4 Pressure ring: grey iron
- 5 Seal: elastomer, suitable for potable water



Simultaneous pipe restraint and sealing.

This avoids the need for pipe supports and additional bolting to counter the effect of axial load and pressure.

This connection can be easily dismantled at any time.

Assembly: 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 unsquare cut that extends up to 15 mm from the opposing flange.

Flange DN	Pipe Ø mm	Double Chamber Flange Adaptor		Double Chamber Flange Adaptor		Spar Flange see picture over page	
		standard	reducing	standard	reducing	standard	reducing
		Order no. 7102	Order no. 7101	Order no. 7602	Order no. 7602	Order no. 0102	Order no. 1001
50	56		x G				
50	66	● S		● S			
60	77	● S		● S	● G		
60	82				● G		
65	66					x G	
65	82	● G		● S			
80	98	● S		● S	● G		
80	101	● S					
100	118	● S		● S	● G		
125	118						
125	144	● S		● S	● G		
150	144						
150	170	● S		● S ¹	● G		
175	196				● G		
200	170						
200	222	● S*		● S ¹	● G ¹		
250	273-274	● S*		● S ¹			
300	326	● S*		● S ¹	● G		
350	378				● G		
400	429	● S*			● S		
500	532				● S*		
600	635				● S		

Explanation:

* also available in PN 16

S of ductile iron

G of grey iron

x see picture G 4/1

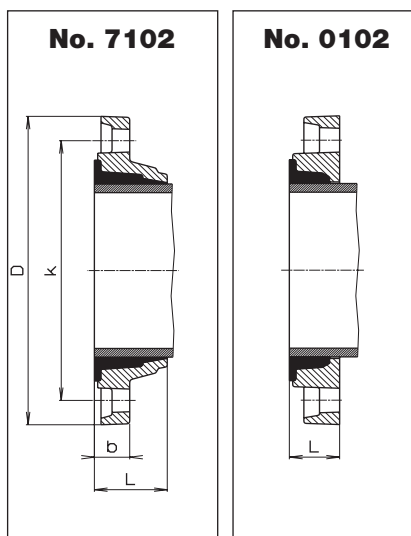
¹ Flanges with an extended hole circle are not suitable for use with fixed studs.

Standard version: drilled to PN 10 - DIN 2501

Note: do not chamfer the pipe

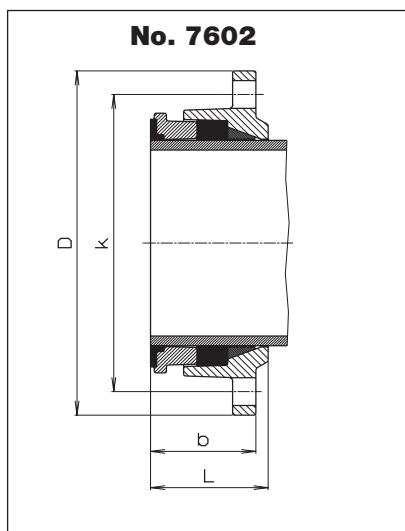
special dimensions: on request

Flanged Connections for DCI pipes



No. 7102 / No. 0102

Flange DN	Cl pipe Ø mm	D - No.		K	b - No. - L (assembled) - No.			Bolts		Weight- No.	
		7102	0102		7102	7102	0102	Qty.	Thread	7102	0102
50	66	165	165	125	22	56	35	4	M 16	1,8	2,2
60	77	175	175	135	28	56	35	4	M 16	3,1	2,4
60	82		175	135			35	4	M 16		3,0
65	82	185		145	29	58		4	M 16	3,4	
80	98	200	200	160	22	64	38	8	M 16	2,6	3,2
80	101	200		160	22	64		8	M 16	2,8	
100	118	220	220	180	23	62	38	8	M 16	3,1	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	5,2	7,0
175	196		315	270			46	8	M 20		6,8
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	455	400	33	82	51	12	M 20	13,8	15,0
350	378		510	460			61	16	M 20		23,0
400	429	570	580	515	37	103	61	16	M 24	22,0	22,5
500	532		690	620			74	20	M 24		35,0
600	636		776	730			74	20	M 27		38,0



No. 7602

Flange DN	Cl pipe Ø mm	D	K	b	- L (unassembled)	Bolts		Weight kg
						Qty.	Thread	
50	66	165	125	60	71	4	M 16	3,0
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
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	10,0
200	222	340	295	90	105	8	M 20	14,5
250	274	400	355	90	105	12	M 20	17,5
300	326	455	405	90	105	12	M 20	21,5

Double Chamber Flange Adaptor No. 7101 to PN 16

Working pressure:
up to **PN 16**

Material:

Flange:
see table on right
epoxy powder coated

Sleeve gasket:
elastomer, suitable for
potable water



These Hawle flanges are a further development of the well proven Hawle Spar Flanges.

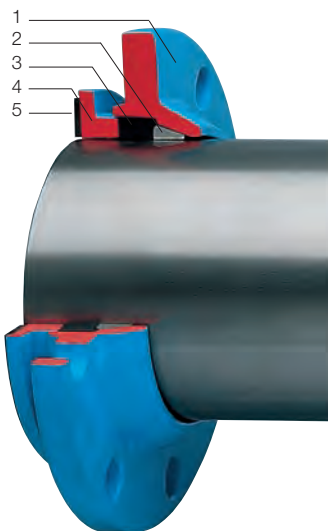
The long draw of fitting and the double chambered gasket result in the pressure being spread well back from the pipe end.

The resilience of the connection prevents tension in the pipe and minimises the danger of breakage.

Flange Adaptor restraint to PN 16 No. 7601

Material:

- 1 Flange: ductile iron, epoxy powder coated
- 2 Grip ring: steel 1.0037 hardened
- 3 Sleeve gasket: elastomer, suitable for potable water
- 4 Pressure ring: ductile iron
- 5 Seal: elastomer, suitable for potable water



Simultaneous pipe restraint and sealing.

This avoids the need for pipe supports and additional bolting to counter the effect of axial load and pressure.

This connection can be easily dismantled at any time.

Assembly: 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 unsquare cut that extends up to 15 mm from the opposing flange.

Note: do not chamfer the pipe

Flange DN	Steel pipe Ø mm	Double Chamber Flange Adaptor		Flange Adaptor restraint		Spar Flange picture see over page			
						standard		reducing	
		Order no. 7101		Order no. 7601		Order no. 0101		Order no. 1001	
40	48					●	G		
50	56-57	●	S						
50	59-61	●	S	●	S				
60	67					●	G		
65	66-68							●	G
65	76	●	G	●	S				
80	89			●	S	●	G		
100	108	●	S	●	S	●	G		
100	114	●	S	●	S ¹				
125	133	●	G	●	S				
150	159			●	S	●	G		
150	168			●	S				
200	219	●	S*	●	S ¹				
250	267					●	G		
250	273	x	S*	x	S*				
300	316	●	G						
400	406					●	S		
400	419					●	G		
500	508					●	G		

Explanation:

* also available in PN 16

S of ductile iron

G of grey iron

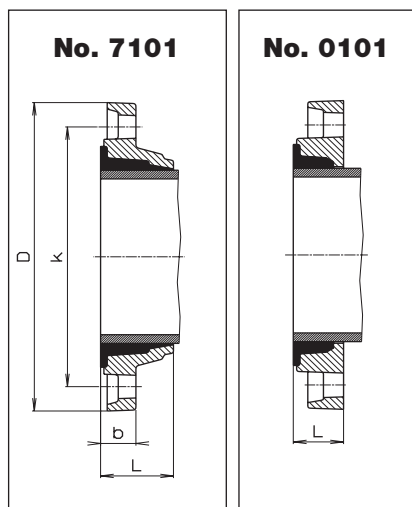
x see picture G 3/1

¹ Flanges with an extended hole circle are not suitable for use with fixed studs.

Standard version: PN 10 - DIN 2501

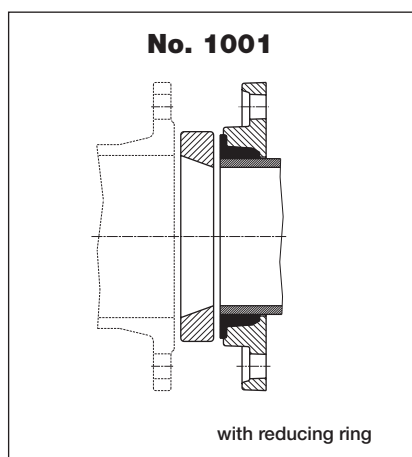
special dimensions: on request

Flanged Connections for steel pipes



No. 7101 / No. 0101

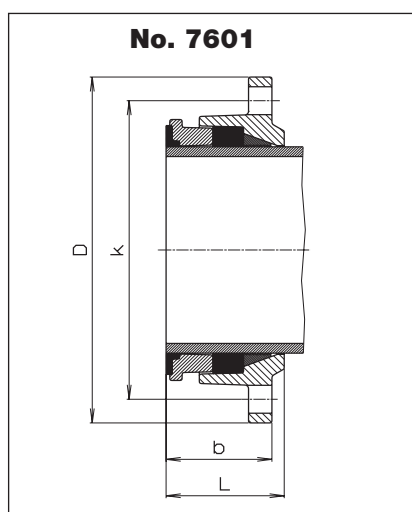
Flange DN	Steel Pipe Ø mm	D - No.		K	b - No.		~ L (assembled)		Bolts		Weight kg - No.	
		7101	0101		7101	0101	7101	0101	Qty.	Thread	7101	0101
40	48		150	110			30	4	M 16		0,9	
50	56-57	165		125	26	54		4	M 16	2,6		
50	59/61	165		125	26	54		4	M 16	2,6		
60	67		175	135			37	4	M 16		2,5	
65	76	185		145	28	56		4	M 16	3,5		
80	89		200	160			37	8	M 16		3,2	
100	108	220	220	180	25	63	38	8	M 16	3,8	4,4	
100	114	220		180	23	63		8	M 16	3,5		
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	
300	316	455		400	49	82		12	M 20	18,5		
400	406		565	515			60	16	M 24		22,0	
400	419		565	515			60	16	M 24		36,5	
500	508		690	620			76	20	M 24		43,0	



No. 1001

Flange DN	Steel pipe Ø mm	D	K	~ L with reducer	Bolts		Weight kg
					Qty.	Thread	
65	66-68	185	145	60	4	M 16	5,0

Weight including reducing ring



No. 7601

Flange DN	Steel pipe Ø mm	D	K	b	~ L (unassembled)	Bolts		Weight kg
						Qty.	Thread	
50	60	165	125	39	61	4	M 16	2,7
65	76	185	145	38	61	4	M 16	3,4
80	89	200	160	39	67	8	M 16	3,9
100	108	220	180	39	69	8	M 16	4,6
100	114	220	180	44	69	8	M 16	4,4
125	133	250	210	39	69	8	M 16	5,8
150	159	285	240	49	73	8	M 20	7,8
150	168	285	240	52	73	8	M 20	7,3
200	219	340	295	52	81	8	M 20	10,0

Double Chamber Flange Adaptor No. 7103

to PN 16



Material:

Flange:
see table on right
epoxy powder coated

Sleeve gasket: elasto-
mer, suitable for potable water

Flange DN	Ø mm	Double Chamber Flange Adaptor Order No. 7103	
80	98	x	S
100	120	●	G +
150	176	●	S
150	178	●	S +

Explanation: + also available DIN 1882
S of ductile iron
G of grey iron
X see picture G 3/1 No. 7102/0102

These Hawle flanges are a further development of the well proven Hawle Spar Flanges.

The long draw of the fitting and the double chambered gasket result in the pressure being spread well back from the pipe end.

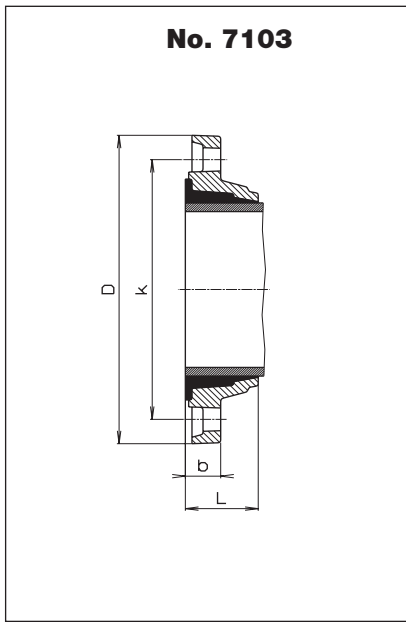
The resilience of the connection prevents tension in the pipe and minimises the danger of breakage.

standard version: drilled to PN 10 - DIN 2501

Note: do not chamfer the pipe

special dimensions: on request

Flanged Connections for AC pipes



No. 7103

Flange DN	Ø mm	D	k	b	~ L (assembled)	Bolts		Weight kg
						Qty.	Thread	
80	98	200	160	22	64	8	M 16	2,6
100	120	220	180	23	62	8	M 16	2,8
150	176	285	240	46	66	8	M 20	5,8
150	178	290	244	48	66	8	M 20	5,8

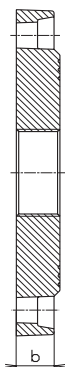
No. 8100

Threaded Flange internal thread

of grey iron
epoxy powder coated

Flange drilling to
DIN 2501 - PN 10

special dimensions on request



b
see No.
8000

DN	Thread							
	1"	1¼"	1½"	2"	2½"	3"	4"	
25	●							
32	●	●	●					
40	●	●	●	●				
50	●	●	●	●				
60	●	●		●				
65	●	●	●	●	●	●		
80	●	●	●	●	●	●		
100	●	●	●	●	●	●	●	
125	●	●	●	●	●	●	●	
150	●	●	●	●	●	●	●	
200	●	●	●	●	●	●	●	

DN	Weight kg							
	1"	1¼"	1½"	2"	2½"	3"	3½"	4"
25	1,15							
32	1,70	1,65	1,60					
40	1,75	1,60	1,60	1,45				
50	2,10	2,10	2,00	2,10				
60	2,60	2,60		2,30				
65	3,70	3,50	3,50	4,00	3,60	3,30		
80	4,00	3,90	3,90	4,30	3,90	3,70	3,10	
100	5,20	5,00	4,80	5,60	5,10	4,60		2,80
125	7,80	7,80	7,70	7,60	7,30	7,00	6,60	3,40
150	9,50	9,30	9,10	9,10	8,70	8,60	8,10	8,00
200	15,50	15,50	14,90	15,10	14,70	14,10	13,90	13,70

No. 8000

Blank Flange

of grey iron
epoxy powder coated

Flange drilling to
DIN 2501 - PN 10



DN	b	Weight kg	
40	20	1,90	●
50	20	2,20	●
60	23	2,80	●
65	23	3,80	●
80	20	4,10	●
100	22	5,10	●
125	30	7,90	●
150	27	9,50	●
200	27	15,80	●
250	36	24,00	●
300	40	39,00	●
400	50	62,00	●

Reducing, Transition Flanges

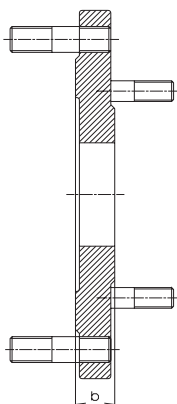
No. 0801

Reducing Flange "Type A"

of ductile iron
epoxy powder coated

Bolts: stainless steel

The low profile enables transitions to be made between dimensions in the shortest possible space.



DN	Bolts DN 1		Bolts DN 2		b	Weight kg	
	Qty.	Thread	Qty.	Thread			
80-50	8	M 16 x 50	4	M 16 x 50	28	5,6	●
80-65	8	M 16 x 50	4	M 16 x 50	28	5,4	●
100-80	8	M 16 x 50	8	M 16 x 50	30	6,9	●
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	11,2	●
150-125	8	M 20 x 60	8	M 16 x 50	30	11,2	●
200-150	8	M 20 x 60	8	M 20 x 60	32	16,5	●
250-200	12	M 20 x 60	8	M 20 x 60	32	21,3	●

Other dimensions on request

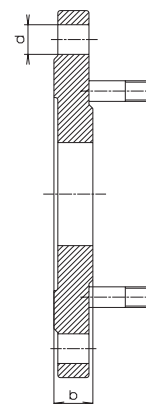
No. 0802

Reducing Flange "Type B"

of ductile iron
epoxy powder coated

Bolts: stainless steel

The low profile enables transitions to be made between dimensions in the shortest possible space.



DN	DN 1		Bolts DN 2		b	Weight kg	
	Qty.	d	Qty.	Thread			
150-80	8	23	8	M 16 x 50	30	10,7	●
200-80	8	23	8	M 16 x 50	30	14,5	●
200-100	8	23	8	M 16 x 50	30	15,0	●

Other dimensions on request

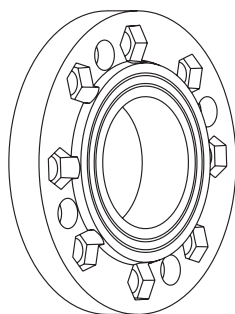
No. 0800

Transition Flange DN 80

from 4 holes (old standard)
to 8 holes (new standard)

of grey iron
epoxy powder coated

PN 10 - PN 16



DN	Length	Weight kg	
80	42	5,00	●

Product name	Order no.	PN	Dimensions/DN PVC pipe Ø mm								
			50 63	65 75	80 90	100 110	125 140	150 160	200 225	250 280	300 315
Restraint Clamp	1254	PN 10 *PN10 + PN 16	●*	●*	●*	●	●	●	●	●	●
	1255	PN 16				●	●	●	●		
Split Collar	9240	PN 10		●	●	●	●	●	●		

No. 1254 Restraint Clamp (Socket to Pipe)

of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), epoxy powder coated



Grip ring
Ms 58 (CuZn36Pb3)



No. 9240 Split Collar (Pipe to Pipe)

Body: ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), epoxy powder coated

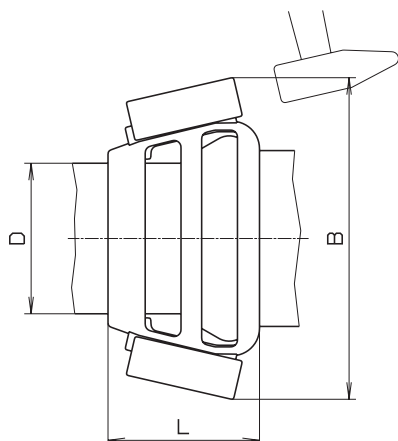
Grip ring: Ms 58 (CuZn36Pb3)

Bolts: A 2 DIN 933

Seal: elastomer, suitable for potable water



Restraint Systems for PVC pipes



No. 1254 Restraint Clamp

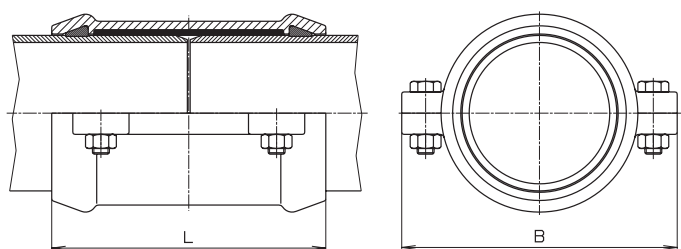
The Restraint Clamp for all PVC pipes and sockets.

The 2-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.



No. 9240 Split Collar

**Restraint connection for 2 spigot ends;
can also be used as a repair coupling**

The teeth of the grip ring do not abrade the pipe; it is not necessary to chamfer the pipe.

For thick walled PE pipes and for joining PE pipes to PVC pipes. For thin walled PE pipes support liners should be used.

DN	PVC-pipe Ø	B		L		Weight kg	
		No. 1254/1255	No. 9240	No. 1254/1255	No. 9240	No. 1254/1255	No. 9240
50	63	180		91		2,5	
65	75	200	156	96	170	2,8	3,4
80	90	220	174	103	174	3,0	4,5
100	110	240	196	110	195	3,5	5,8
125	140	280	228	123	220	3,9	7,3
150	160	300/320	254	140/152	245	6,0	10,5
200	225	380/400	332	165/185	350	9,5	21,0
250	280	455		195		13,5	
300	315	495		200		16,3	

for PE pipes (to ÖNORM B 5172, DIN 8074) up to PN 16 - for cold water



The HAWLE ISO Pipe Fitting is the easiest way of joining polyethylene pipes up to PN 16.

The gripping and sealing functions act only on the o.d. of the pipe; therefore only one fitting is required for all pressure ratings.

The function of the ISO Pipe Fitting is clear and simple. The O ring is made of elastomer and seals well even when the pressure is nil, because it is compressed onto the pipe.

As the water pressure and pipe tension increase, the sealing and grip rings are compressed further into the conical chamber, thus increasing the sealing and gripping effect.

The joint is flexible and the fitting can be turned on the pipe without affecting the grip or seal. The fitting can be dismantled if required. Assembly is quick and simple.

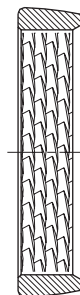
The HAWLE ISO Pipe Fitting of POM has been developed from the grey iron version.

The underlying principle is to use a fitting that is as corrosion free as the plastic pipe itself. POM is a high grade engineering plastic.

This design has been well proven for many years in water distribution and is used in pipelines of all pressure ratings including vacuum levels.

All internal threads are strengthened with a stainless steel ring.

All ISO Pipe Fittings can also be supplied for PVC pipes with a carborundum grip ring at extra cost. (Carborundum grip ring see page J 3/1)



Grip ring "standard"
Interlocking teeth

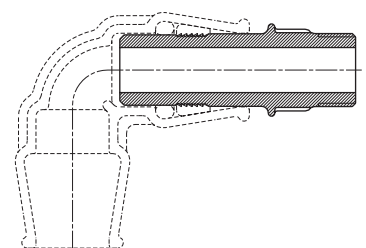


Grip ring "carborundum"

Push Fit Swivel Converter

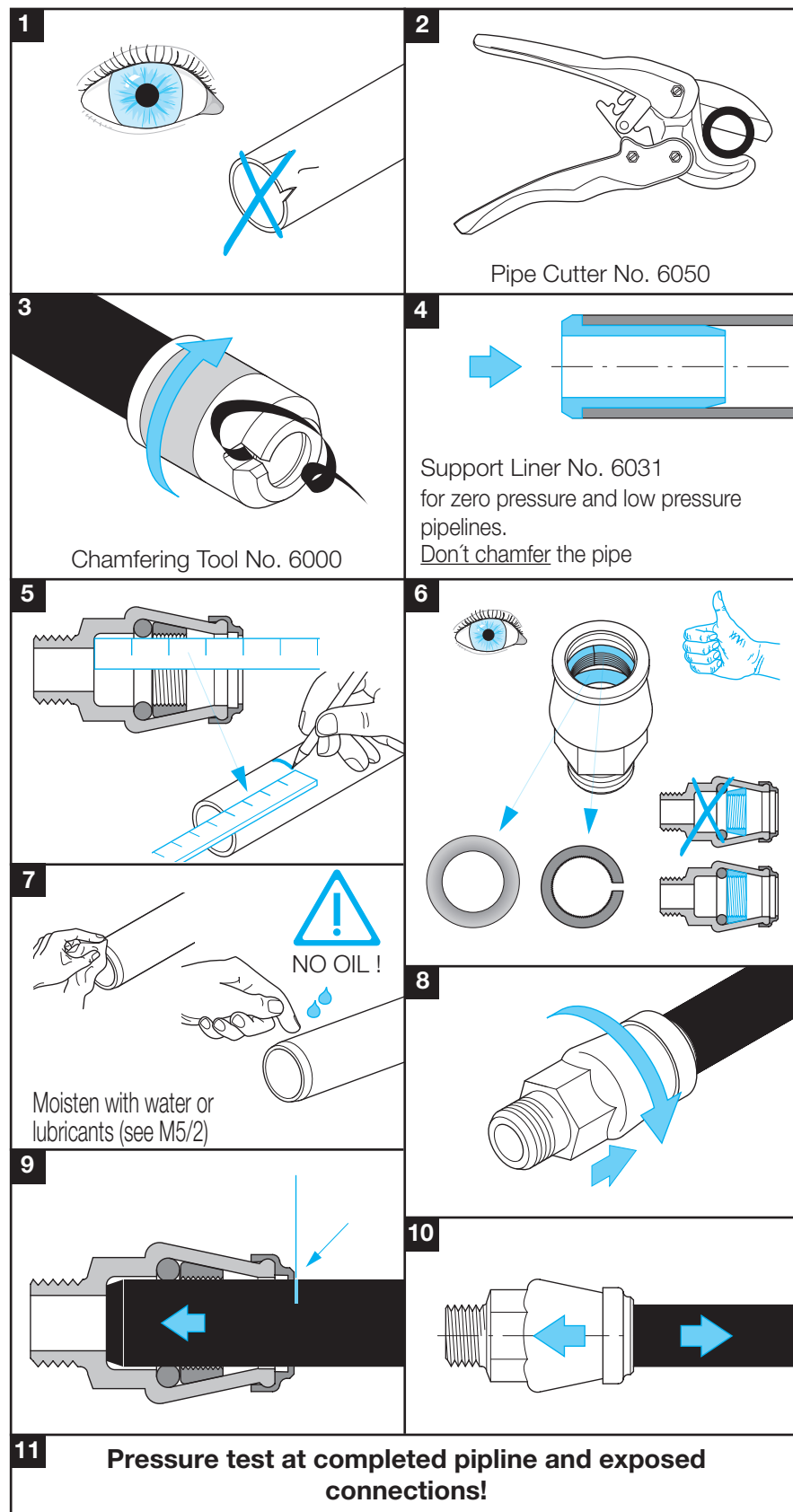
of POM
with male thread end
every fitting in the range can be converted to a swivel male thread outlet.

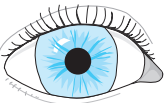
see page D 5/1

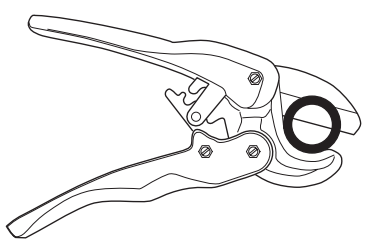


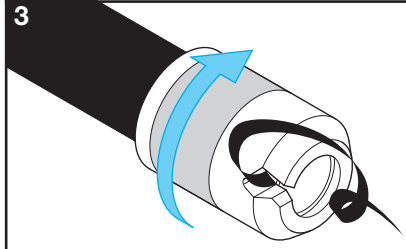
ISO Pipe Fitting Instruction for Assembly and Dismantling

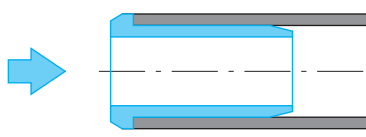
ASSEMBLY for Gas always new Fittings

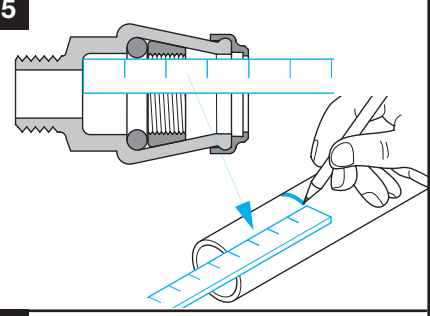


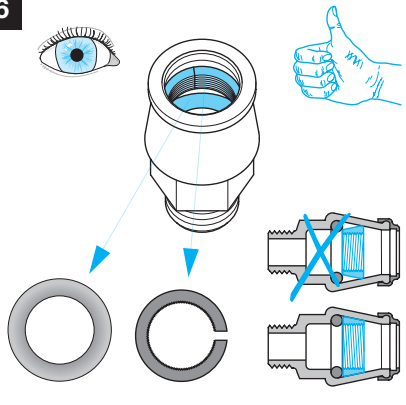
1 

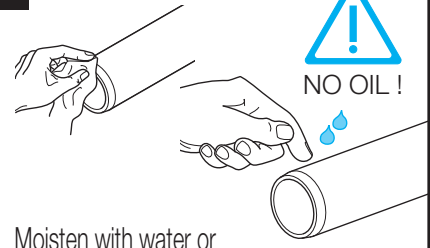
2 
Pipe Cutter No. 6050

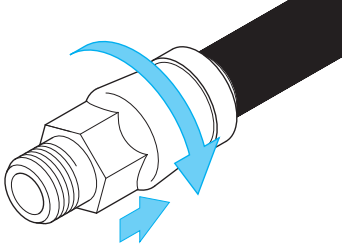
3 
Chamfering Tool No. 6000

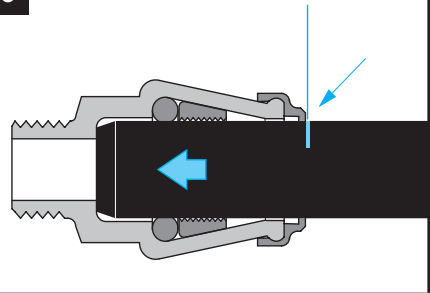
4 
Support Liner No. 6031
for zero pressure and low pressure pipelines.
Don't chamfer the pipe

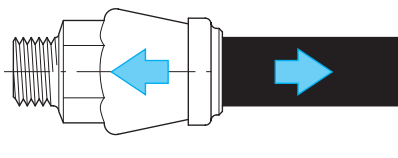
5 

6 

7 
NO OIL !
Moisten with water or lubricants (see M5/2)

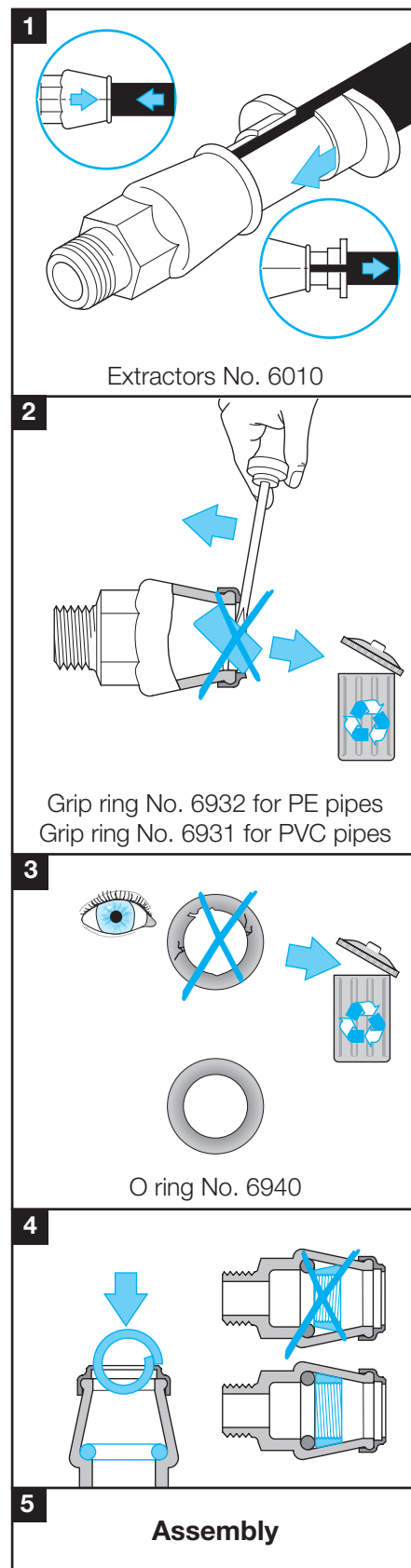
8 

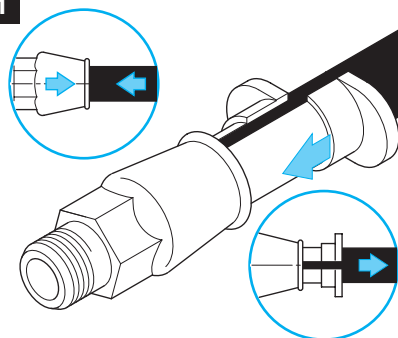
9 

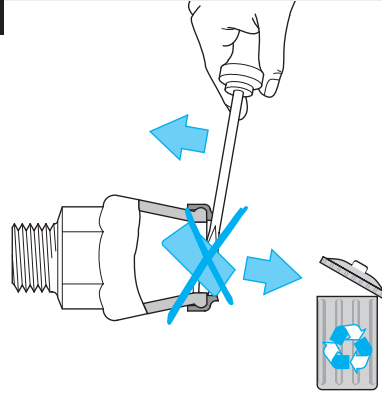
10 

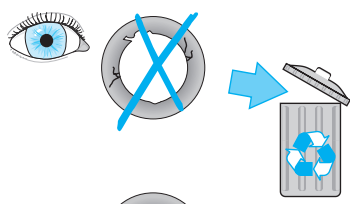
11 **Pressure test at completed pipeline and exposed connections!**

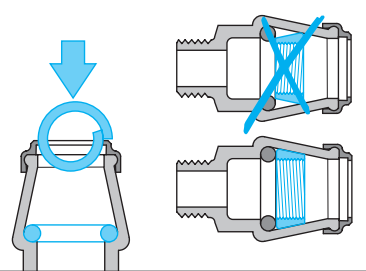
DISMANTLING



1 
Extractors No. 6010

2 
Grip ring No. 6932 for PE pipes
Grip ring No. 6931 for PVC pipes

3 
O ring No. 6940

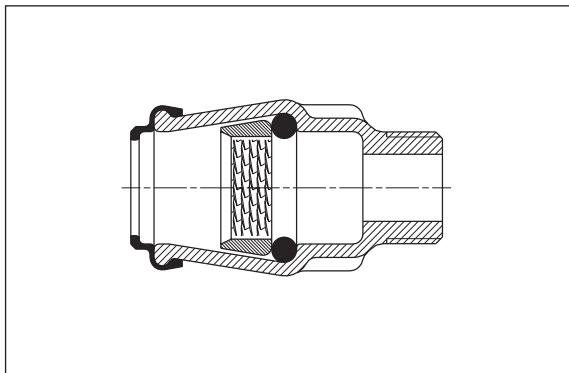
4 

5 **Assembly**

Max. torque for tightening the threads (observe pipe fitter rules acc. to national standards)

1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
16 Nm	18 Nm	40 Nm	42 Nm	42 Nm	45 Nm

Adaptor with external thread



No. 6100 of ductile iron

No. 6120 of POM

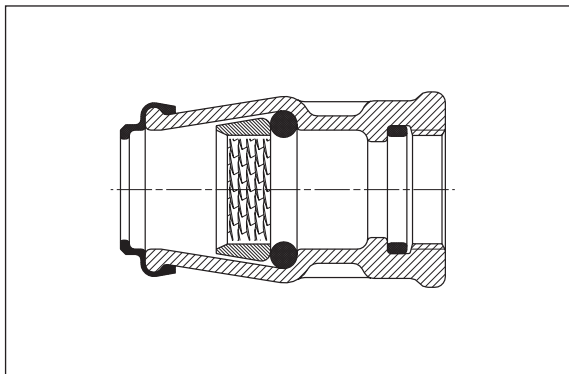
Special dimensions

No. 6110 of ductile iron

Pipe Ø mm	Thread EN 10226-1	Order No. 6100		Order No. 6120	
			Weight kg		Weight kg
20	1/2"	●	0,16	●	0,04
25	3/4"	●	0,24	●	0,06
32	1"	●	0,35	●	0,10
40	1 1/4"	●	0,63	●	0,21
50	1 1/2"	●	0,93	●	0,28
63	2"	●	1,45	●	0,44

Pipe Ø mm	Thread EN 10226-1	Order No. 6110	
			Weight kg
32	1 1/4"	●	0,39
32	2"	●	0,67
40	1"	●	0,64
40	1 1/2"	●	0,66
40	2"	●	0,72
50	1 1/4"	●	0,90
50	2"	●	0,95
63	1 1/2"	●	1,45
75	2"	●	2,50

Adaptor with internal thread



No. 6200 of ductile iron

No. 6220 of POM

Special dimensions

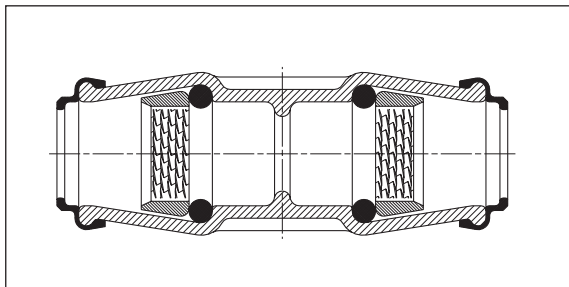
No. 6210 of ductile iron

Pipe Ø mm	Thread ISO 228	Order No. 6200		Order No. 6220	
			Weight kg		Weight kg
20	1/2"	●	0,16	●	0,06
25	3/4"	●	0,24	●	0,08
32	1"	●	0,42	●	0,12
40	1 1/4"	●	0,70	●	0,23
50	1 1/2"	●	1,00	●	0,34
63	2"	●	1,70	●	0,47
75	2 1/2"	●	3,20		
90	3"	●	3,60		

Pipe Ø mm	Thread ISO 228	Order No. 6210	
			Weight kg
32	1 1/4"	●	0,57
50	1 1/4"	●	1,10
90	2"	●	4,00

ISO Pipe Fitting

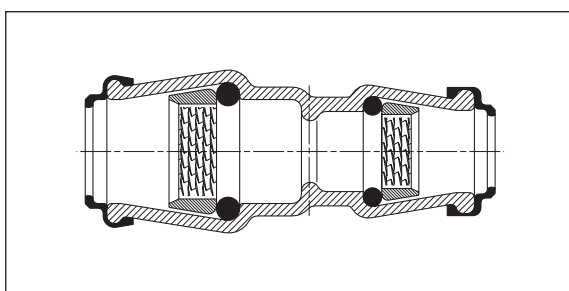
Connector



No. 6300 of ductile iron
No. 6320 of POM

Pipe Ø mm	Order No. 6300		Order No. 6320	
		Weight kg		Weight kg
20	●	0,26	●	0,07
25	●	0,35	●	0,10
32	●	0,65	●	0,15
40	●	0,97	●	0,30
50	●	1,40	●	0,50
63	●	2,30	●	0,75
75	●	3,20		
90	●	3,15		

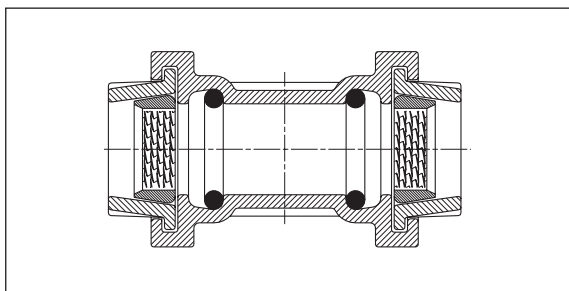
Connector Special dimensions



No. 6310 of ductile iron
No. 6330 of POM

Pipe Ø 1 mm	Pipe Ø 2 mm	Order No. 6310		Order No. 6330	
			Weight kg		Weight kg
25	20	●	0,30	●	0,08
32	20	●	0,63		
32	25	●	0,51	●	0,13
40	25	●	1,00	●	0,20
40	32	●	0,80	●	0,23
50	32	●	1,70	●	0,30
50	40	●	1,40	●	0,42
63	40			●	0,50
63	50	●	1,70	●	0,60
75	63	●	2,65		
90	75	●	3,30		

Connector with detachable ends for subsequent assembly

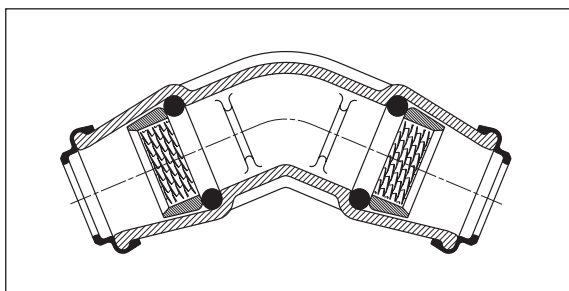


No. 6301 of ductile iron

Pipe Ø mm	Order No. 6301	
		Weight kg
32	●	1,10
40	●	1,90
50	●	2,10
63	●	3,20

Attention: no stop !

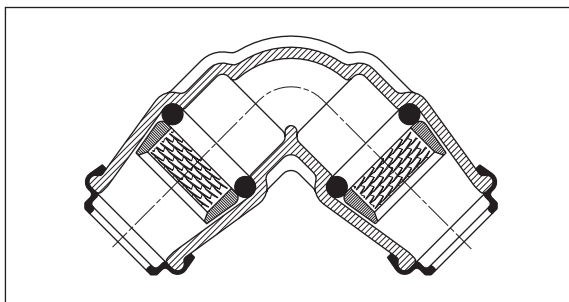
Elbow 45°



No. 6440 of ductile iron

Pipe Ø mm	Order No. 6440	
		Weight kg
40	●	1,20
50	●	1,80
63	●	2,60
90	●	5,00

Elbow 90°



No. 6400 of ductile iron

No. 6420 of POM

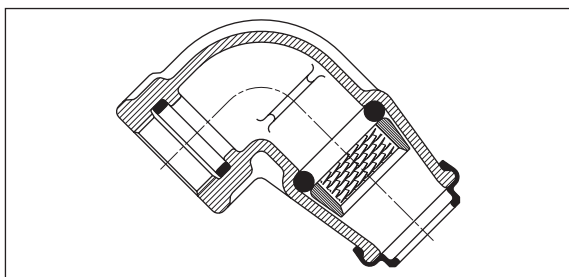
Special dimensions

No. 6490 of POM

Pipe Ø mm	Order No. 6400		Order No. 6420	
		Weight kg		Weight kg
20	●	0,30	●	0,06
25	●	0,45	●	0,10
32	●	0,80	●	0,18
40	●	1,20	●	0,37
50	●	1,90	●	0,52
63	●	3,00	●	0,80

Pipe Ø 1 mm	Pipe Ø 2 mm	Order No. 6490	
			Weight kg
32	25	●	0,13
40	32	●	0,25

Elbow 90° with internal thread

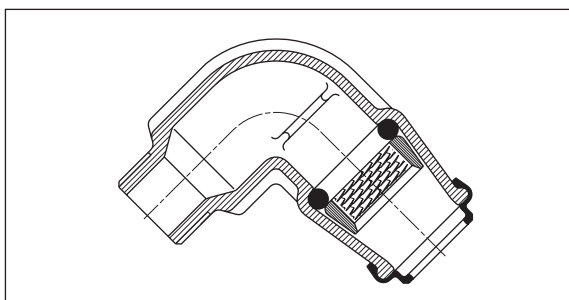


No. 6410 of ductile iron

No. 6430 of POM

Pipe Ø mm	Thread ISO 228	Order No. 6410		Order No. 6430	
			Weight kg		Weight kg
20	1/2"			●	0,07
25	3/4"	●	0,38	●	0,10
32	1"	●	0,65	●	0,14
40	1 1/4"	●	0,98	●	0,28
50	1 1/2"	●	1,50	●	0,42
63	2"	●	2,20	●	0,67

Elbow 90° with external thread



No. 6460 of ductile iron

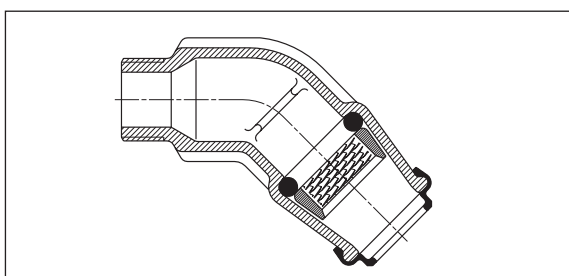
Special dimensions

No. 6470 of ductile iron

Pipe Ø mm	Thread EN 10226-1	Order No. 6460	
			Weight kg
25	3/4"	●	0,40
32	1"	●	0,65
40	1 1/4"	●	1,10
50	1 1/2"	●	1,70
63	2"	●	2,25

Pipe Ø mm	Thread EN 10226-1	Order No. 6470	
			Weight kg
32	1 1/4"	●	0,60
32	1 1/2"	●	0,90
40	1 1/2"	●	1,10

Elbow 45° with external thread



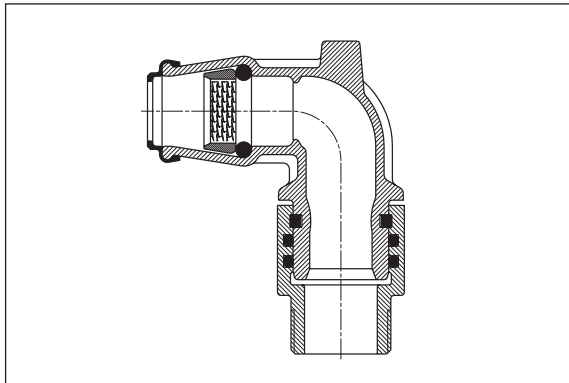
No. 6411 of ductile iron

Pipe Ø mm	Thread EN 10226-1	Order No. 6411	
			Weight kg
32	1"	●	0,60
50	1 1/2"	●	1,45
63	2"	●	1,90

ISO Pipe Fitting

Elbow 90°

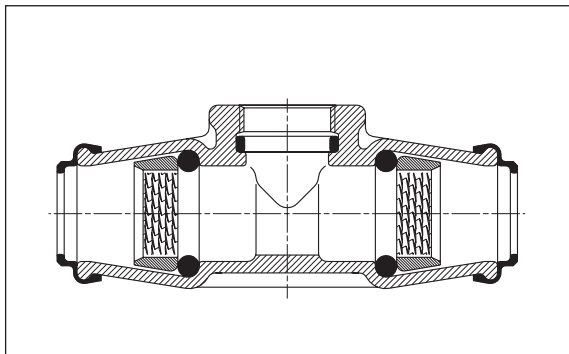
Swivelling fitting, with external Thread



No. 6462 of ductile iron

Pipe Ø mm	Thread EN 10226-1	Order No. 6462	
			Weight kg
63	1½"	●	2,65

Tee with internal thread outlet



No. 6500 of ductile iron

No. 6520 of POM

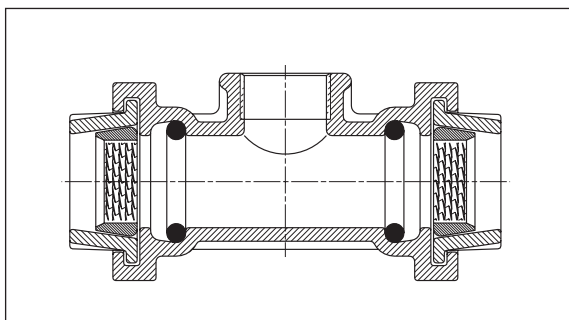
Special dimensions

No. 6510 of ductile iron

Pipe Ø mm	Thread ISO 228	Order No. 6500		Order No. 6520	
			Weight kg		Weight kg
20	½"	●	0,38	●	0,10
25	¾"	●	0,56	●	0,15
32	1"	●	0,83	●	0,22
40	1¼"	●	1,45	●	0,43
50	1½"	●	2,20	●	0,60
63	2"	●	3,70	●	0,90

Pipe Ø mm	Thread ISO 228	Order No. 6510	
			Weight kg
50	2"	●	2,40
75	1"	●	5,20
75	2"	●	4,60

Tee with internal thread outlet, with detachable ends for subsequent assembly

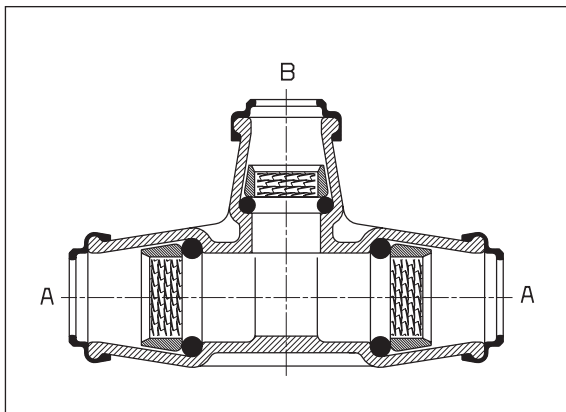


No. 6501 of ductile iron

Pipe Ø mm	Thread ISO 228	Order No. 6501	
			Weight kg
32	1"	●	1,50
40	1¼"	●	2,40
50	1½"	●	2,70
63	2"	●	4,10

if used as sleeve - Attention: no stop !

Tee with 3 sockets



No. 6530 of ductile iron

No. 6550 of POM

Special dimensions

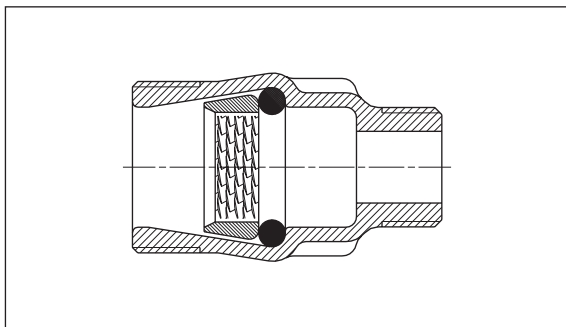
No. 6531 of ductile iron

Pipe Ø A mm	Pipe Ø B mm	Order No. 6530		Order No. 6550	
			Weight kg		Weight kg
25	25			●	0,16
32	32	●	0,95	●	0,25
40	40	●	1,55	●	0,57
50	50	●	3,00	●	0,75
63	63	●	4,45	●	1,20

Pipe Ø A mm	Pipe Ø B mm	Order No. 6531	
			Weight kg
32	25	●	0,90
40	25	●	1,50
50	25	●	1,90
50	32	●	2,00
50	40	●	2,70
63	32	●	2,60
63	40	●	3,20
63	50	●	3,45

Fitting

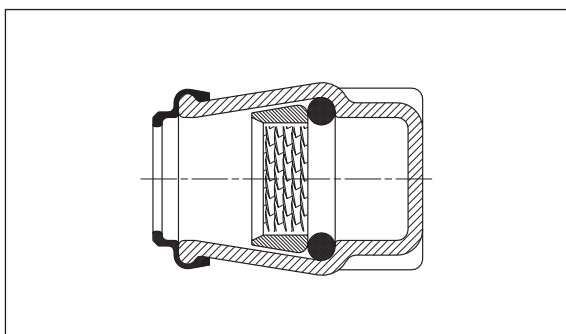
for wall inlet fitting No. 690 (old version)



No. 6901 of ductile iron

Pipe Ø mm	Connecting thread EN 10226-1	Protective sleeve thread EN 10226-1	Order No. 6901	
				Weight kg
32	1"	1½"	●	0,40
40	1¼"	2"	●	0,70
50	1½"	2½"	●	1,10

End Stop

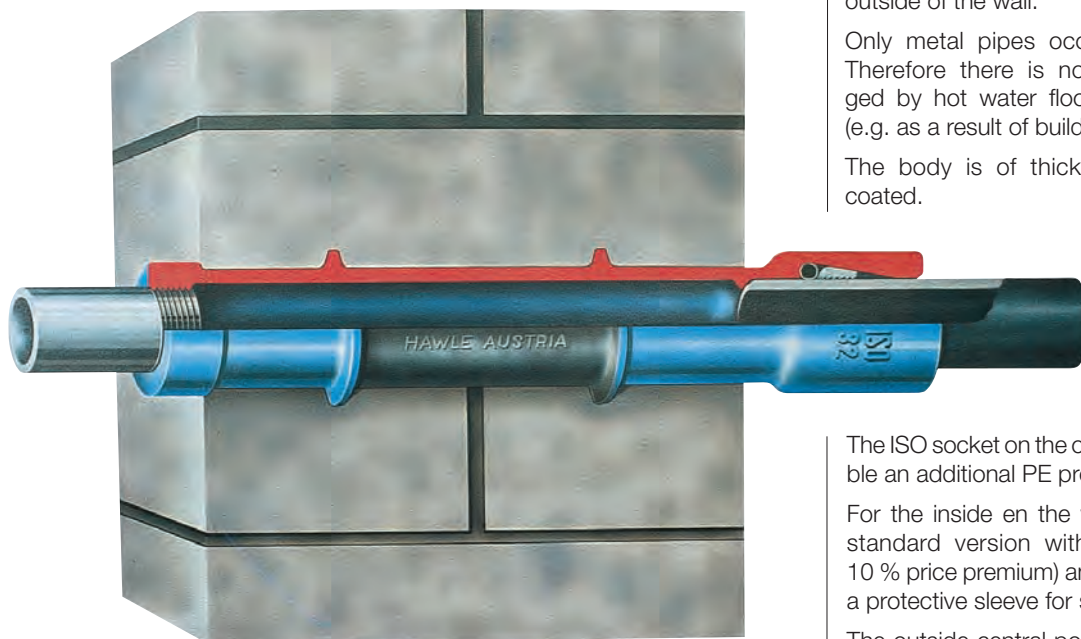


No. 6223 of POM

Pipe Ø mm	Order No. 6223	
		Weight kg
20	●	0,04
25	●	0,06
32	●	0,09
40	●	0,20
50	●	0,28
63	●	0,40

ISO Pipe Fitting

Hawle Wall Inlet Fitting for PE pipes up to PN 16 - without protective sleeve - for cold water - single piece version - simple and economical to install.



This wall inlet fitting enables the plastic pipe to end on the outside of the wall.

Only metal pipes occur in the wall and in the cellar. Therefore there is no risk of PE pipes being damaged by hot water flooding the cellar or other damages (e.g. as a result of building works).

The body is of thickwalled ductile iron and is epoxy coated.

The ISO socket on the outside of the wall is cylindrical to enable an additional PE protective sleeve to be pushed on.

For the inside of the wall there are two possibilities: the standard version with internal thread; alternatively (at 10 % price premium) an additional male thread for installing a protective sleeve for special application.

The outside central portion of the wall inlet body is ribbed and uncoated to ensure good adhesion to cement.

No. 6990

of ductile iron, epoxy coated

Pipe Ø mm	d 1*	R" ISO 228	d 2** ISO 228	t	L	L 1+	d 3	Weight kg	
32	56	1"	R 2"	75	440	410	80	4,65	●
40	66,5	1¼"	R 2½"	90	440	410	87	5,40	●
50	80	1½"	R 2½"	105	440	410	87	5,70	●
63	97	2"	R 3"	115	510	470	101	8,40	●

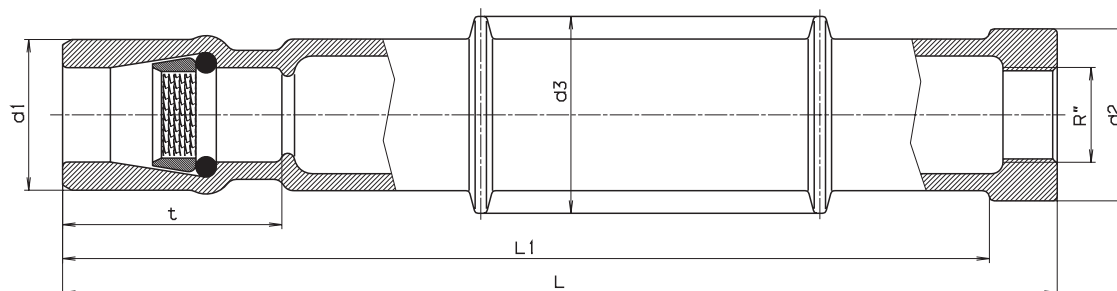
* a protective sleeve can be pushed on

** can be threaded if required

+ maximum wall thickness

Electrical earthing arrangement available on request

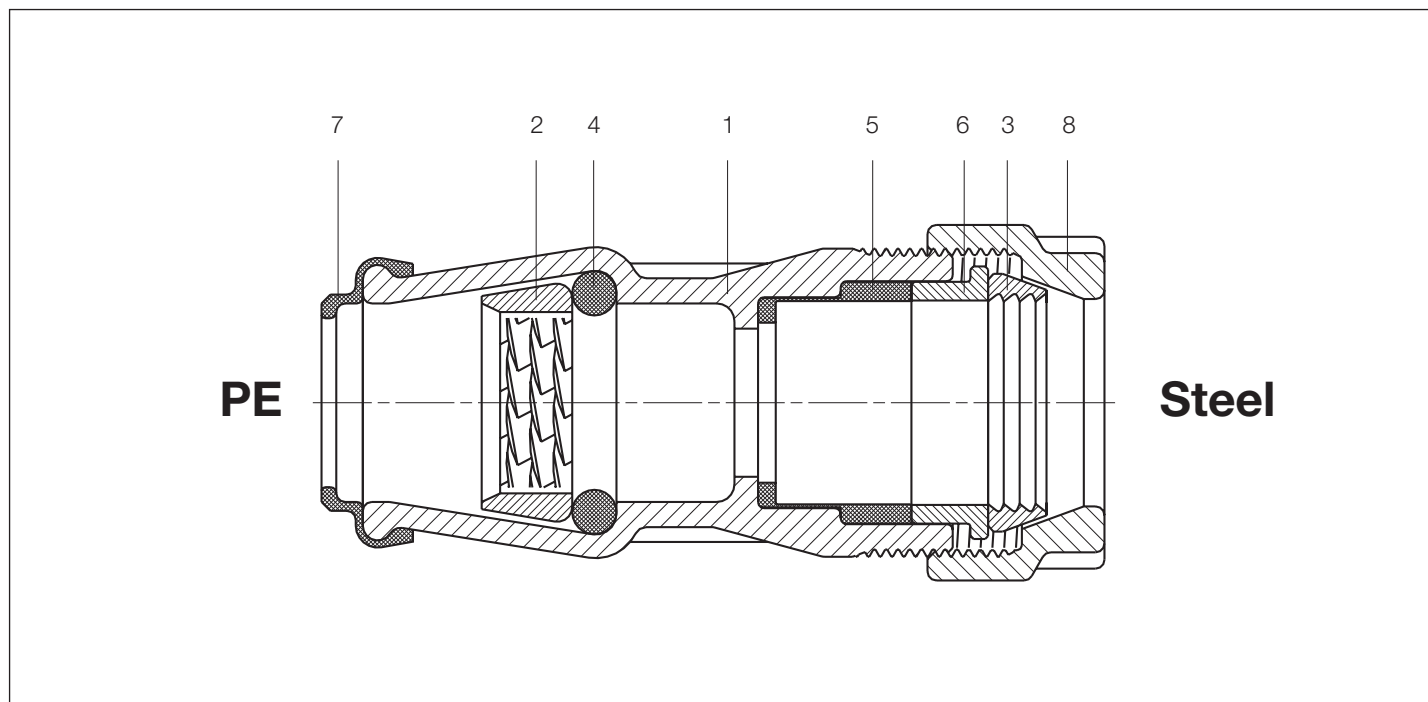
Assembly instruction:
see page H 1/2



Connector „PE Pipe – Steel Pipe” total restraint

of ductile iron
epoxy powder coated

Order no.	PE pipe Ø mm	Steel Pipe	
6310ST	32	¾"	●
6300ST	32	1"	●



Material:

- | | |
|--------------------|--|
| 1/8 Body (1) | |
| Tension nut (8): | of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) epoxy powder coating |
| 2 Grip ring PE: | POM |
| 3 Grip ring acier: | hardened acier |
| 4 O ring: | Elastomer, suitable for potable water |
| 5 Gasket: | Elastomer, suitable for potable water |
| 6 Thrust collar: | POM |
| 7 Protection cap: | Elastomer, suitable for potable water |

Order no.	PE pipe Ø mm	Steel Pipe	Weight kg
6310ST	32	¾" (D 26,9 mm)	0,66
6300ST	32	1" (D 33,7 mm)	0,73

Illustrations, technical data, dimensions and weights are subject to alteration without notice.

Order no.	Colour / RAL	DN	Outlet			Weight kg	
			A	B	C		
5151H4	red* / 3003	80		1	2	59,0	●
5151H4B	blue** / 5003						●
5140H4	red* / 3003	80		2		58,0	●
5140H4B	blue** / 5003						●
5151H4	red* / 3003	100	1	2		62,0	●
5151H4B	blue** / 5003						●
5140H4	red* / 3003	100		2		59,0	●
5140H4B	blue** / 5003						●

* standard colour red ** special colour blue - other colours on request

Standard: ÖNORM F 2010 – EN 14384, EN 1074-6

Tested acc. to: ÖVGW / DVGW

Max. working pressure: 16 bar

Standard pipe cover: 1,50 m (on request 1,25 m and 1,00 m possible)

Remaining water content: <EN 14384

Instructions for use: see page I 8
Theft indicator cap: see page D 5/1
Security cap: see page D 4/2
Operating key: see page K 3/2
Other pipe cover: double flanged pipe see page L 1/1

Design features:

- entirely of corrosion free materials
- O rings embedded in non-corrosive material (according DIN 3547-T1)
- minimum torque for operation, (MOT <80Nm, mst >250Nm)
- noticeable stop at the limits when opening and closing
- hydrant head can be turned from 0° to 360°
- automatic drain off system with pressure control, drain time less than 10 min.
- drain outlet connection possible with PE pipe Ø 32 mm
- easy exchange of all inner parts
- several outlets on the stand pipe possible, positions on request
- outlets according to other standards possible
- resistant against desinfectants acc. to EN 1074-1

Hydrant head: sea water proof tempered aluminium alloy, UV resistant coated

Stand pipe: thick walled stainless steel tube, polished

Operating controls: stainless steel

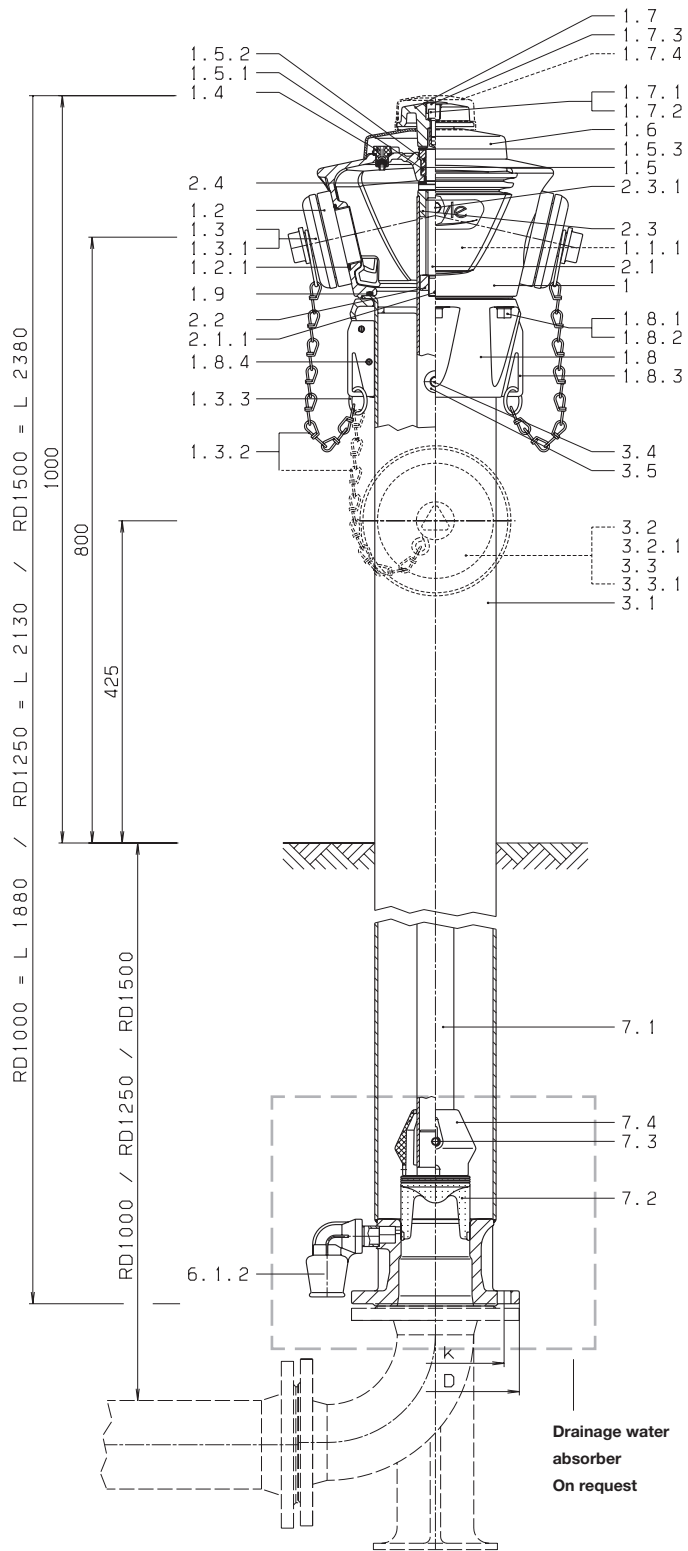
Base: cast stainless steel

Rate of flow: rate of flow Q (m³/h) at a differential pressure of 1 bar is for all HAWLE H4-Hydrants higher than requested by ÖNORM F 2010 and EN 14384
 K_v [m³/h]



Certifying Office 1085
07
Registration No.:
1085-CPD-0022

H4 Corrosion Free Hydrant - rigid type



Upper coupling connecting angle 77°

DN	Outlets			Pipe cover RD	Base flange according EN 1092-1, drilled to DIN 2501				
	A	B	C		DN	D	k	Bolts	Qty.
80	1	2		1500	80	200	160	M 16	8
	2			1250					
100	1	2		1000	100	220	180	M 16	8
	2								

Required details for ordering spare parts:

order no. / DN / pipe cover / year of construction

(see identification plate on back of the hydrant head)

Parts	Material
1 Hydrant head	G-Al
1.1.1 Identification plate	various
1.2 DN 80 C coupling DIN 14317 - C1 52 mm DN 100 B coupling DIN 14318 - B1 75 mm	Al
1.2.1 DN 80 O-ring 64 x 4 DN 100 O-ring 79 x 4	elastomer
1.3 DN 80 C cap DIN 14317 - C 4 DN 100 B cap DIN 14318 - B 4	G-Al
1.3.1 DN 80 C flat seal ring DIN 14317 - C3 DN 100 B flat seal ring DIN 14318 - B3	elastomer
1.3.2 Chain with S-hooks	A2
1.3.3 Ring for chain	A2
1.4 Air valve	POM
1.5 O ring bush	brass
1.5.1 O ring 32 x 4	elastomer
1.5.2 O ring 25 x 3,5	elastomer
1.5.3 Friction washer	POM
1.6 Cap	G-Al
1.7 Operating nut	G-Al
1.7.1 Washer DIN 125 - A 13	A2
1.7.2 Allen bolt DIN 912 - M 12 x 25	A2
1.7.3 Isolating cap	PE
1.7.4 Theft safety device	polystyrene
1.8 Head flange for hydrant head	G-Al
1.8.1 Washer DIN 433 - 13	A2
1.8.2 Allen bolt DIN 912 - M 12 x 40	A2
1.8.3 Fixing strap	A2
1.8.4 Brace DIN 1481 - 8 x 16	A2
1.9 O ring 170 x 6	elastomer
2.1 Spindle rigid	A2
2.1.1 Pin DIN 94 - 4 x 25	A2
2.2 Stop nut	A2
2.3 Stem nut	brass
2.3.1 Hexagonal bolt DIN 933 - M 8 x 10	A2
2.4 Friction washer	POM
3.1 Stand pipe	A4 (EN 1503-3)
3.2 DN 80 B coupling DIN 14318 - B1 75 mm DN 100 A coupling DIN 14319 - A1 110 mm	Al
3.2.1 DN 80 O ring 79 x 4 DN 100 O ring 116 x 4	elastomer
3.3 DN 80 B cap DIN 14318 - B 4 DN 100 A cap DIN 14319 - A 4	G-Al
3.3.1 DN 80 B flat seal ring DIN 14318 - B3 DN 100 A flat seal ring DIN 14319 - A3	elastomer
3.4 Guide pin	A2
3.5 Guide bush	POM
6.1.2 Fitting 1" / 90°	POM
7.1 Operating controls	A2
7.2 Valve plug	brass/elastomer
7.3 Securing pin for valve plug	A2
7.4 Flow former	PE

Order no.	Colour / RAL	DN	Outlet			Weight kg	
			A	B	C		
5195H4	red* / 3003	80		1	2	69,0	●
5195H4B	blue** / 5003						
5196H4	red* / 3003	80		2		68,0	●
5196H4B	blue** / 5003						
5195H4	red* / 3003	100	1	2		72,0	●
5195H4B	blue** / 5003						
5196H4	red* / 3003	100		2		69,0	●
5196H4B	blue** / 5003						

*standard colour red **special colour blue - other colours on request

- Instructions for use:** see page I 8
- Theft indicator cap:** see page D 5/1
- Security cap:** see page D 4/2
- Operating key:** see page K 3/2
- Other pipe cover:** double flanged pipe see page L1/1
- Distance piece for break away line:** on request

Design features:

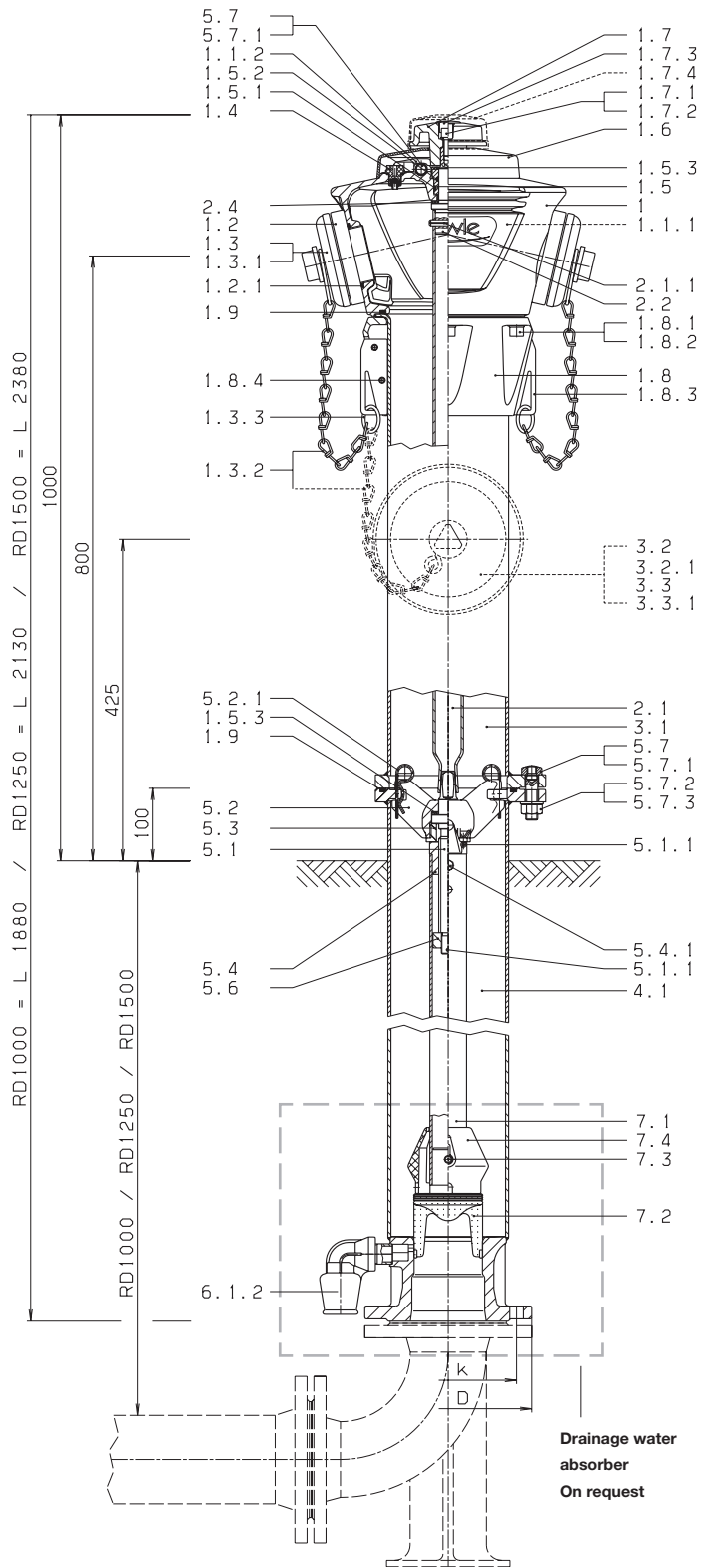
- entirely of corrosion free materials
- O rings embedded in non-corrosive material (according DIN 3547-T1)
- minimum torque for operation, (MOT <80Nm, mst >250Nm)
- noticeable stop at the limits when opening and closing
- hydrant head can be turned from 0° to 360°
- easy and quick repair of the break away line
- spare bolts Order no. 8841 for quick repair of the break away line are contained under the cap of the hydrant head
- safety bar for spindle housing in the area of the break away line
- automatic drain off system with pressure control, drain time less than 10 min.
- drain outlet connection possible with PE pipe Ø 32 mm
- easy exchange of all inner parts
- several outlets on the stand pipe possible, positions on request
- outlets according to other standards possible
- resistant against desinfectants acc. to EN 1074-1

- Hydrant head:** sea water proof tempered aluminium alloy, UV resistant coated
- Stand pipe:** thick walled stainless steel tube, polished
- Operating controls:** stainless steel
- Base:** cast stainless steel
- Rate of flow:** rate of flow Q (m³/h) at a differential pressure of 1 bar is for all HAWLE H4-Hydrants higher than requested by ÖNORM F 2010 and EN 14384
- K_v [m³/h]

- Standard:** ÖNORM F 2010 – EN 14384, EN 1074-6
- Tested acc. to:** ÖVGW / DVGW
- Max. working pressure:** 16 bar
- Standard pipe cover:** 1,50 m (on request 1,25 m and 1,00 m possible)
- Remaining water content:** <EN 14384



H4 Corrosion Free Hydrant - break away



Upper coupling connecting angle 77°

DN	Outlets			Pipe cover RD	Base flange according EN 1092-1, drilled to DIN 2501				
	A	B	C		DN	D	k	Bolts	Qty.
80	1	2		1500	80	200	160	M 16	8
	2			1250					
100	1	2		1000	100	220	180	M 16	8
	2								

Required details for ordering spare parts:

order no. / DN / pipe cover / year of construction

(see identification plate on back of the hydrant head)

Parts	Material
1 Hydrant head	G-Al
1.1.1 Identification plate	various
1.1.2 Bolt fastener	elastomer
1.2 DN 80 C coupling DIN 14317 - C1 52 mm DN 100 B coupling DIN 14318 - B1 75 mm	Al
1.2.1 DN 80 O ring 64 x 4 DN 100 O ring 79 x 4	elastomer
1.3 DN 80 C cap DIN 14317 - C 4 DN 100 B cap DIN 14318 - B 4	G-Al
1.3.1 DN 80 C flat seal ring DIN 14317 - C3 DN 100 B flat seal ring DIN 14318 - B3	elastomer
1.3.2 Chain with S-hooks	A2
1.3.3 Ring for chain	A2
1.4 Air valve	POM
1.5 O ring bush	brass
1.5.1 O ring 32 x 4	elastomer
1.5.2 O ring 25 x 3,5	elastomer
1.5.3 Friction washer	POM
1.6 Cap	G-Al
1.7 Operating nut	G-Al
1.7.1 Washer DIN 125 - A 13	A2
1.7.2 Allen bolt DIN 912 - M 12 x 25	A2
1.7.3 Isolating cap	PE
1.7.4 Theft safety device	polystyrene
1.8 Head flange for hydrant head	G-Al
1.8.1 Washer DIN 433 - 13	A2
1.8.2 Allen bolt DIN 912 - M 12 x 40	A2
1.8.3 Fixing strap	A2
1.8.4 Brace DIN 1481 - 8 x 16	A2
1.9 O ring 170 x 6	elastomer
2.1 Extension spindle	A2
2.1.1 Brace DIN 1481 - 8 x 50	A2
2.2 Pin	A2
2.4 Friction washer	POM
3.1 Stand pipe - upper part	A4 (EN 1503-3)
3.2 DN 80 B coupling DIN 14318 - B1 75 mm DN 100 A coupling DIN 14319 - A1 110 mm	Al
3.2.1 DN 80 O ring 79 x 4 DN 100 O ring 116 x 4	elastomer
3.3 DN 80 B cap DIN 14318 - B 4 DN 100 A cap DIN 14319 - A 4	G-Al
3.3.1 DN 80 B flat seal ring DIN 14318 - B3 DN 100 A flat seal ring DIN 14319 - A3	elastomer
4.1 Stand pipe - lower part	A4 (EN 1503-3)
5.1 Spindle break away	A2
5.1.1 Pin DIN 94 - 4 X 25	A2
5.2 Spindle housing	brass
5.2.1 Spring clip	A2
5.3 Securing bush	POM
5.4 Stem nut	brass
5.4.1 Hexagonal bolt DIN 933 - M 8 x 10	A2
5.6 Stop nut	A2
5.7 Hexagonal bolt with break away line M 16 x 60	A2
5.7.1 Plug for bolt	PE
5.7.2 Washer DIN 125 - A 17	A2
5.7.3 Hexagonal nut DIN 934 - M 16	A4
6.1.2 Fitting 1" / 90°	POM
7.1 Shaft	A2
7.2 Valve plug	brass/elastomer
7.3 Securing pin for valve plug	A2
7.4 Flow former	PE

Standard:	ÖNORM F 2010 – EN 14384, EN 1074-6
Tested acc. to:	ÖVGW / DVGW
Max. working pressure:	16 bar
Standard pipe cover:	1,50 m (on request 1,25 or 1,00 m possible)
Remaining water content:	<EN 14384
Instructions for use:	see page I 8
Theft indicator cap:	see page D 5/1
Security cap:	see page D 4/2
Operating key:	see page K 3/2
Other pipe cover:	double flanged pipe see page L1/1

Order no.	DN	Outlet			Weight kg	
		A	B	C		
5051H4	80		1	2	69,0	●
5053H4	80		2		68,0	●
5051H4	100	1	2		72,0	●
5053H4	100		2		70,0	●

DN 150 on request

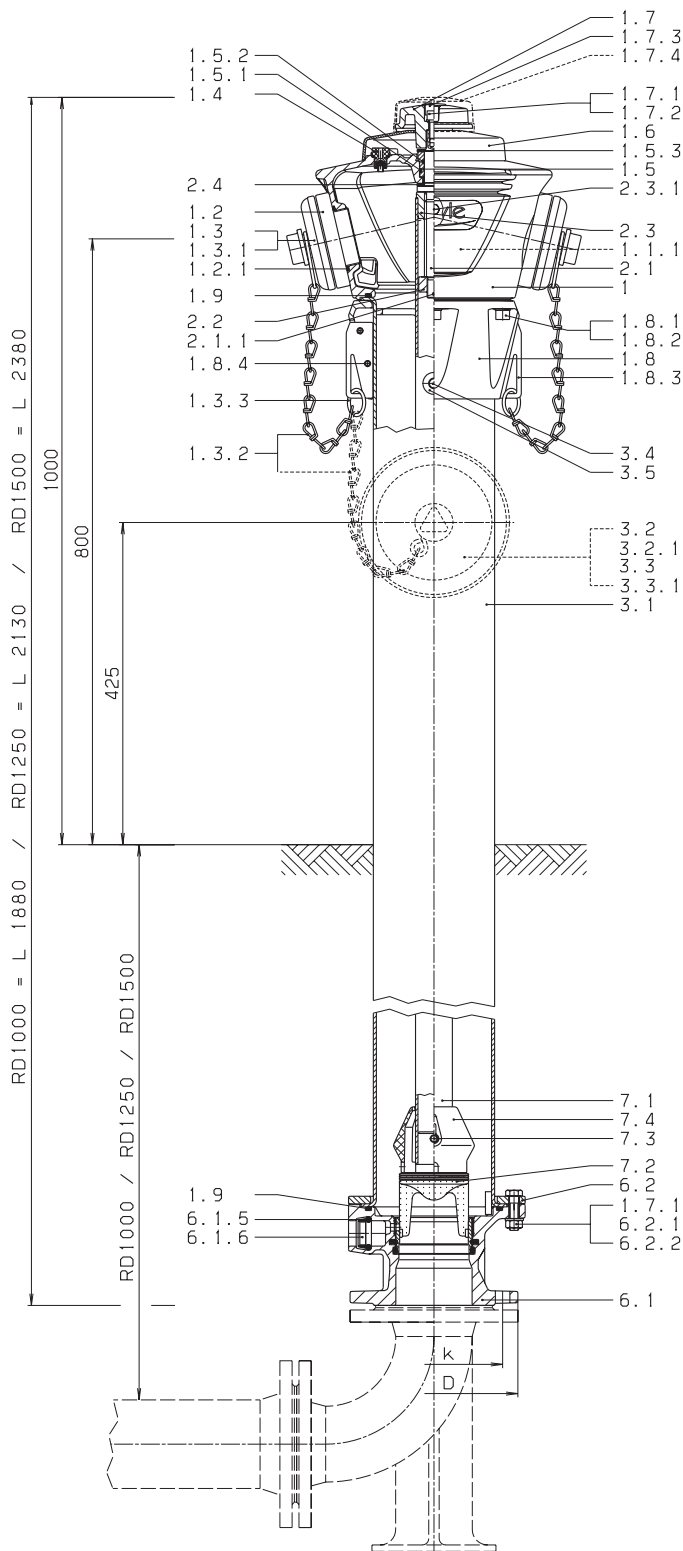
Design features:

- inner parts entirely of corrosion free materials
- stand pipe, base and hydrant head with corrosion resistant coating
- several outlets on the stand pipe possible, positions on request
- O rings embedded in non-corrosive material (according DIN 3547-T1)
- minimum torque for operation, (MOT <80Nm, mst >250Nm)
- noticeable stop at the limits when opening and closing
- hydrant head can be turned from 0° to 360°
- automatic drain off system with pressure control, drain time less than 10 min.
- drain outlet connection possible with PE pipe Ø 32 mm
- easy exchange of all inner parts
- outlets according to other standards possible
- resistant against desinfectants acc. to EN 1074-1

Hydrant head:	of grey iron, epoxy powder + UV resistant coated RAL 9006, (see page 5)
Stand pipe:	thick walled steel tube Steel 1.0037 galvanized, UV resistant coated RAL 5003
Operating controls:	stainless steel
Base:	of ductile iron, epoxy powder coated RAL 5012, (see page 5)
Rate of flow:	rate of flow Q (m³/h) at a differential pressure of 1 bar is for all HAWLE H4-Hydrants higher than requested by ÖNORM F 2010 and EN 14384
K_V [m³/h]	



H4 Above Ground Hydrant - rigid type



Upper coupling connecting angle 77°

DN	Outlets			Pipe cover RD	Base flange according EN 1092-2, drilled to DIN 2501				
	A	B	C		DN	D	k	Bolts	Qty.
80	1	2		1500 1250	80	200	160	M 16	8
	2								
100	1	2		1000	100	220	180	M 16	8
	2								

Required details for ordering spare parts:
order no. / DN / pipe cover / year of construction
 (see identification plate on back of the hydrant head)

Parts	Material
1 Hydrant head	grey iron (EN 1503-3)
1.1.1 Identification plate	various
1.2 DN 80 C coupling DIN 14317 - C1 52 mm DN 100 B coupling DIN 14318 - B1 75 mm	Al
1.2.1 DN 80 O ring 64 x 4 DN 100 O ring 79 x 4	elastomer
1.3 DN 80 C cap DIN 14317 - C4 DN 100 B cap DIN 14318 - B4	G-Al
1.3.1 DN 80 C flat seal ring DIN 14317 - C3 DN 100 B flat seal ring DIN 14318 - B3	elastomer
1.3.2 Chain with S-hooks	A2
1.3.3 Ring for chain	A2
1.4 Air valve	POM
1.5 O ring bush	brass
1.5.1 O ring 32 x 4	elastomer
1.5.2 O ring 25 x 3,5	elastomer
1.5.3 Friction washer	POM
1.6 Cap	G-Al
1.7 Operating nut	G-Al
1.7.1 Washer DIN 125 - A 13	A2
1.7.2 Allen bolt DIN 912 - M 12 x 25	A2
1.7.3 Isolating cap	PE
1.7.4 Theft safety device	polystyrene
1.8 Head flange for hydrant head	G-Al
1.8.1 Washer DIN 433 - 13	A2
1.8.2 Allen bolt DIN 912 - M 12 x 40	A2
1.8.3 Fixing strap	A2
1.8.4 Brace DIN 1481 - 8 x 16	A2
1.9 O ring 170 x 6	elastomer
2.1 Spindle rigid	A2
2.1.1 Pin DIN 94 - 4 x 25	A2
2.2 Stop nut	A2
2.3 Stem nut	brass
2.3.1 Hexagonal bolt DIN 933 - M 8 x 10	A2
2.4 Friction washer	POM
3.1 Stand pipe	steel (EN 1503-3)
3.2 DN 80 B coupling DIN 14318 - B1 75 mm DN 100 A coupling DIN 14319 - A1 110 mm	Al
3.2.1 DN 80 O ring 79 x 4 DN 100 O ring 116 x 4	elastomer
3.3 DN 80 B cap DIN 14318 - B4 DN 100 A cap DIN 14319 - A4	G-Al
3.3.1 DN 80 B flat seal ring DIN 14318 - B3 DN 100 A flat seal ring DIN 14319 - A3	elastomer
3.4 Guide pin	A2
3.5 Guide bush	POM
6.1 Base	DCI (EN 1503-3)
6.1.5 O ring 30,3 x 7,5	elastomer
6.1.6 Clamp	POM
6.2 Head flange for base	steel
6.2.1 Hexagonal bolt DIN 933 - M 12 x 45	A2
6.2.2 Hexagonal nut DIN 934 - M 12	A2
7.1 Operating controls	A2
7.2 Valve plug	brass/elastomer
7.3 Securing pin for valve plug	A2
7.4 Flow former	PE

Standard:	ÖNORM F 2010 – EN 14384, EN 1074-6
Tested acc. to:	ÖVGW / DVGW
Max. working pressure:	16 bar
Standard pipe cover:	1,50 m (on request 1,25 or 1,00 m possible)
Remaining water content:	<EN 14384
Instructions for use:	see page I 8
Theft indicator cap:	see page D 5/1
Security cap:	see page D 4/2
Operating key:	see page K 3/2
Other pipe cover:	double flanged pipe see page L1/1

Order no.	DN	Outlet			Weight kg	
		A	B	C		
5095H4	80		1	2	79,0	●
5096H4	80		2		78,0	●
5095H4	100	1	2		82,0	●
5096H4	100		2		79,0	●

DN 150 on request

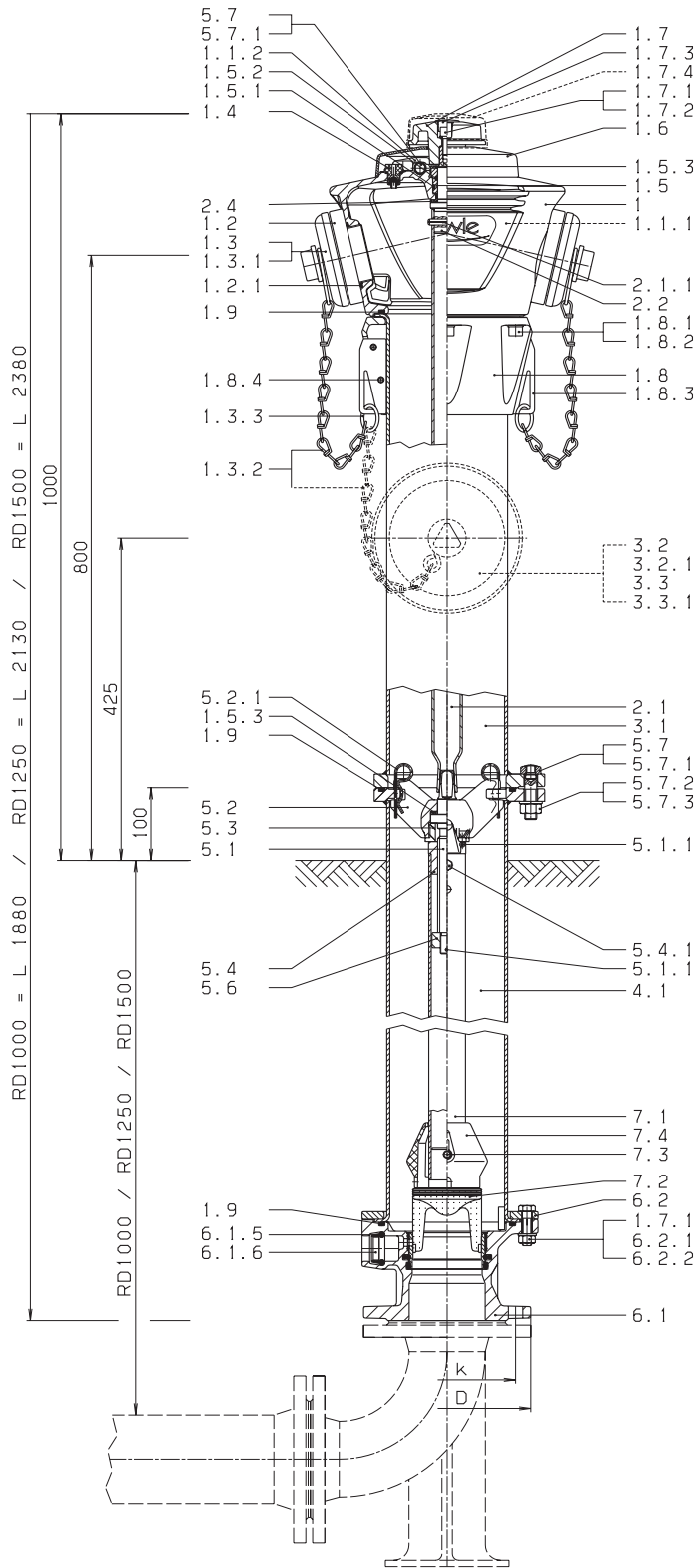
Design features:

- inner parts entirely of corrosion free materials
- stand pipe, base and hydrant head with corrosion resistant coating
- O rings embedded in non-corrosive material (according DIN 3547-T1)
- minimum torque for operation, (MOT <80Nm, mst >250Nm)
- noticeable stop at the limits when opening and closing
- hydrant head can be turned from 0° to 360°
- easy and quick repair of the break away line
- spare bolts Order no. 8841 for quick repair of the break away line are contained under the cap of the hydrant head
- safety bar for spindle housing in the area of the break away line
- several outlets on the stand pipe possible, positions on request
- automatic drain off system with pressure control, drain time less than 10 min.
- drain outlet connection possible with PE pipe Ø 32 mm
- easy exchange of all inner parts
- outlets according to other standards possible
- resistant against disinfectants acc. to EN 1074-1



Hydrant head:	of grey iron, epoxy powder + UV resistant coated RAL 9006 (see page 5)
Stand pipe:	thick walled steel tube St. 1.0037, galvanized, UV resistant coated RAL 5003
Operating controls:	stainless steel
Base:	of ductile iron, epoxy powder coated RAL 5012 (see page 5)
Rate of flow: K _v [m ³ /h]	rate of flow Q (m ³ /h) at a differential pressure of 1 bar is for all HAWLE H4-Hydrants higher than requested by ÖNORM F 2010 and EN 14384

H4 Above Ground Hydrant - break away



Upper coupling connecting angle 77°

DN	Outlets			Pipe cover RD	Base flange according EN 1092-2, drilled to DIN 2501				
	A	B	C		DN	D	k	Bolts	Qty.
80	1	2		1500	80	200	160	M 16	8
	2			1250					
100	1	2		1000	100	220	180	M 16	8
	2								

Required details for ordering spare parts:
order no. / DN / pipe cover / year of construction
(see identification plate on back of the hydrant head)

Parts	Material
1 Hydrant head	grey iron (EN 1503-3)
1.1.1 Identification plate	various
1.1.2 Bolt fastener	elastomer
1.2 DN 80 C coupling DIN 14317 - C1 52 mm DN 100 B coupling DIN 14318 - B1 75 mm	Al
1.2.1 DN 80 O ring 64 x 4 DN 100 O ring 79 x 4	elastomer
1.3 DN 80 C cap DIN 14317 - C 4 DN 100 B cap DIN 14318 - B 4	G-Al
1.3.1 DN 80 C flat seal ring DIN 14317 - C3 DN 100 B flat seal ring DIN 14318 - B3	elastomer
1.3.2 Chain with S-hooks	A2
1.3.3 Ring for chain	A2
1.4 Air valve	POM
1.5 O ring bush	brass
1.5.1 O ring 32 x 4	elastomer
1.5.2 O ring 25 x 3,5	elastomer
1.5.3 Friction washer	POM
1.6 Cap	G-Al
1.7 Operating nut	G-Al
1.7.1 Washer DIN 125 - A 13	A2
1.7.2 Allen bolt DIN 912 - M 12 x 25	A2
1.7.3 Isolating cap	PE
1.7.4 Theft safety device	polystyrene
1.8 Head flange for hydrant head	G-Al
1.8.1 Washer DIN 433 - 13	A2
1.8.2 Allen bolt DIN 912 - M 12 x 40	A2
1.8.3 Fixing strap	A2
1.8.4 Brace DIN 1481 - 8 x 16	A2
1.9 O ring 170 x 6	elastomer
2.1 Extension spindle	A2
2.1.1 Brace DIN 1481 - 8 x 50	A2
2.2 Pin	A2
2.4 Friction washer	POM
3.1 Stand pipe	steel (EN 1503-3)
3.2 DN 80 B coupling DIN 14318 - B1 75 mm DN 100 A coupling DIN 14319 - A1 110 mm	Al
3.2.1 DN 80 O ring 79 x 4 DN 100 O ring 116 x 4	elastomer
3.3 DN 80 B cap DIN 14318 - B 4 DN 100 A cap DIN 14319 - A 4	G-Al
3.3.1 DN 80 B flat seal ring DIN 14318 - B3 DN 100 A flat seal ring DIN 14319 - A3	elastomer
4.1 Stand pipe	steel (EN 1503-3)
5.1 Spindle break away	A2
5.1.1 Pin DIN 94 - 4 X 25	A2
5.2 Spindle housing	brass
5.2.1 Spring clip	A2
5.3 Securing bush	POM
5.4 Stem nut	brass
5.4.1 Hexagonal bolt DIN 933 - M 8 x 10	A2
5.6 Stop nut	A2
5.7 Hexagonal bolt with break away line M 16 x 60	A2
5.7.1 Plug for bolt	PE
5.7.2 Washer DIN 125 - A 17	A2
5.7.3 Hexagonal nut DIN 934 - M 16	A4
6.1 Base	DCI (EN 1503-3)
6.1.5 O ring 30,3 x 7,5	elastomer
6.1.6 Clamp	POM
6.2 Head flange for base	steel
6.2.1 Hexagonal bolt DIN 933 - M 12 x 45	A2
6.2.2 Hexagonal nut DIN 934 - M 12	A2
7.1 Operating controls	A2
7.2 Valve plug	brass/elastomer
7.3 Securing pin for valve plug	A2
7.4 Flow former	PE

Standard:	ÖNORM F 2010 — EN 14384, EN 1074-6
Tested acc. to:	DVGW
Max. working pressure:	16 bar
Standard pipe cover:	1,50 m (on request 1,25 m and 1,00 m possible)
Remaining water content:	<EN 14384
Security cap:	see page D 4/2
Operating key:	see page K 3/2
Other pipe cover:	double flanged pipe see page L1/1

Order no.	DN	Outlet		Weight kg	
		A	B		
5186	80		1	82,0	●
5186	100		2	83,0	●
5185	100	1	2	86,0	●

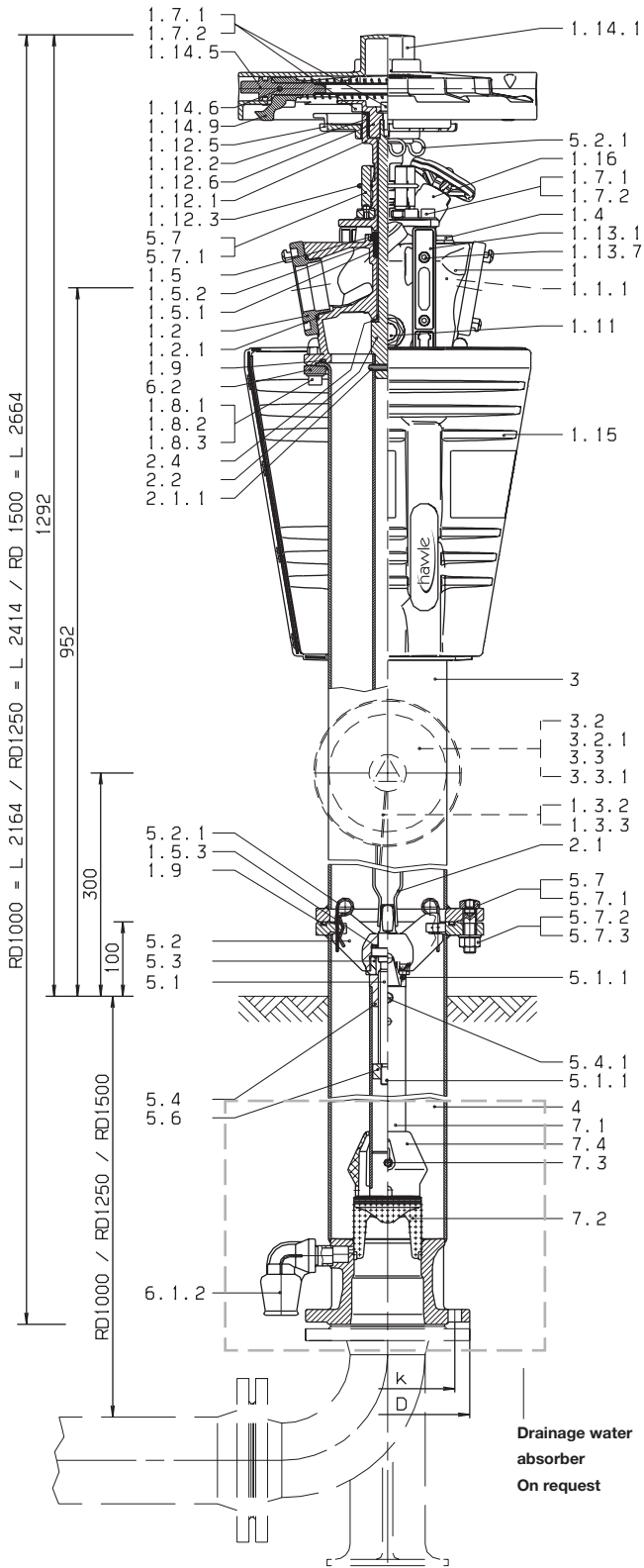
Design features:

- this above ground hydrant is convincing both in terms of technology and its non-corroding material and in terms of the optical effect of its remarkable and clear design.
- the „drop jacket technology” protects the upper outlets from unauthorized use. Only after the plastic jacket is unlocked and drops downwards the two individually lockable B-outlets can be opened.
- entirely of corrosion free materials
- new flow technique to the shut-off valve at the hydrant head
- simple locking and loosening of the drop jacket by means of snap. „Shock absorbers” prevent the drop jacket from bumping hard
- minimum torque for operation, (MOT <80Nm, mst >250Nm)
- noticeable stop at the limits when opening and closing
- hydrant head can be turned from 0° to 360°
- easy and quick repair of the break away line
- spare bolts Order no. 8841 for quick repair of the break away line are stored in the head of the hydrant
- safety bar for spindle housing in the area of the break away line
- automatic drain-off system with pressure control, drain time less than 10 min.
- drain outlet connection possible with PE pipe Ø 32 mm
- easy exchange of all inner parts
- resistant against desinfectants acc. to EN 1074-1



Hydrant head:	sea water proof tempered aluminium alloy, UV resistant coated
Drop jacket:	shock-proof UV-resistant plastic
Stand pipe:	thick walled stainless steel tube, polished
Operating controls:	stainless steel
Base:	stainless steel
Rate of flow: K _v [m³/h]	rate of flow Q (m³/h) at a differential pressure of 1 bar is for all HAWLE H4-Hydrants higher than requested by ÖNORM F 2010 and EN 14384

H4 Corrosion Free Hydrant with drop jacket



Upper coupling connecting angle 80°

DN	Outlets		Pipe cover RD	Base flange according EN 1092-1, drilled to DIN 2501				
	A	B		DN	D	k	Bolts	Qty.
80		2	1500	80	200	160	M 16	8
100		2	1250	100	220	180		
	1	2	1000					

Required details for ordering spare parts:
order no. / DN / pipe cover / year of construction
(see identification plate on the back of the hydrant head)

Parts	Material	
1	Hydrant head	G-Al
1.1.1	Identification plate	divers
1.2	B-coupling DIN 14318 - B1 75 mm	Al
1.2.1	O ring	elastomer
1.3.2	Grip ring	divers
1.3.3	Rope	A2
1.4	Air valve	POM
1.5	O ring bush	brass
1.5.1	O ring 32 x 4	elastomer
1.5.2	O ring 25 x 3.5	elastomer
1.5.3	Friction washer	POM
1.7.1	Washer DIN 125 - A 13	A2
1.7.2	Allen bolt DIN 912 - M 12 x 25	A2
1.8.1	Washer DIN 125 - A13	A2
1.8.2	Allen bolt DIN 912 - M 12 x 40	A2
1.8.3	Cap nut DIN 1587 - M 12	A2
1.9	O ring 170 x 6	elastomer
1.11	Pressure indicator	brass
1.12.1	Hood column	G-Al
1.12.2	Bearing bush	POM
1.12.3	O ring	elastomer
1.12.5	Hood lock	G-Al
1.12.6	Hood support	G-Al
1.13.1	Guide strip	POM
1.13.7	Allen bolt DIN 912 M 8 x 20	A2
1.14.1	Hood cover	G-Al
1.14.5	Spindle	1.4021
1.14.6	Straight pin	1.4305
1.14.9	Locking bar	brass
1.15	Drop jacket	ABS
1.16	Valve bonnet, complete	Al
2.1	Extension spindle	1.4301
2.1.1	Brace DIN 1481 - 8 x 50	A2
2.2	Pin for Extension spindle	1.4301
2.4	Friction washer	POM
3	Stand pipe, complete	A4 (EN 1503-3)
3.2	A coupling DIN 14319 - A1 110 mm	Al
3.2.1	O ring 116 x 4	elastomer
3.3	A cap DIN 14319 - A 4	Al
3.3.1	Flat seal ring	elastomer
4	Stand pipe	A4 (EN 1503-3)
5.1	Spindle	1.4021
5.1.1	Pin DIN 94 - 4 x 25	A2
5.2	Spindle housing	brass
5.2.1	Spring clip	A2
5.3	Securing bush	POM
5.4	Stem nut	brass
5.4.1	Hexagonal bolt DIN 933 - M 8 x 10	A2
5.6	Stop nut	1.4021
5.7	Hexagonal bolt for break away M 16 x 60	A2
5.7.1	Plug for bolt	PE
5.7.2	Washer DIN 125 - A17	A2
5.7.3	Hexagonal nut DIN 934 - M16	A4
6.1.2	Fitting 1" / 90°	POM
6.2	Lock ring	G-Al
7.1	Shaft	A2
7.2	Valve plug	brass/elastomer
7.3	Securing pin for valve plug	A2
7.4	Flow former	PE

Standard: EN 14339
Approved by: ÖVGW / DVGW
max. operating pressure: 16 bar
Standard pipe cover: 1,5 m

Order no.	Version	PN	Pipe*		
			1,00 m	1,25 m	1,50 m
5060	Flange connection DN 80	16	●	●	●
5061	Spigot connection DN 80		●	●	●

* optional intermediate lengths possible (smallest pipe cover 0,85 m)
 Overlengths up to 3 m on request

Design features:

- free passage
- Rate of flow: K_V [m³/h]
 rate of flow Q (m³/h) at a differential pressure of 1 bar is for all HAWLE H4-Hydrants higher than requested by ÖNORM F 2010 and EN 14384
- stainless steel plate mechanism with fixed opening and closing points, which will not be affected by encrustation or pollution
- good corrosion protection by epoxy coating and non-corroding materials (see page 5)
- maintenance free
- automatic drain off system with pressure control, drain time less than 10 min.
 Remaining water content: <EN 14384
- minimum torque for operation, (MOT <80Nm, mst >250Nm)
- suitable for installation by under pressure drilling, (installation afterwards)

Connecting possibilities:

Flange connection:

EN piece, F piece, drilling clamp

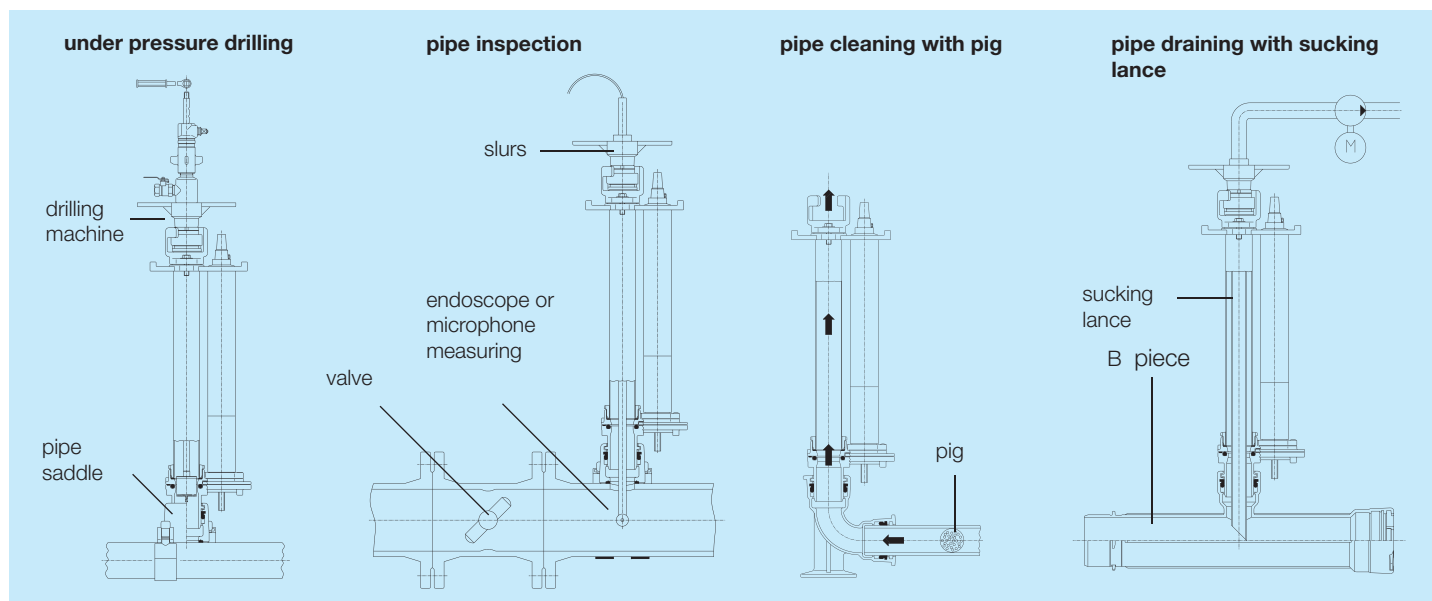
Spigot connection:

B piece, MMB piece, SM piece, MMN piece, hydrant clamp, electrofusion socket

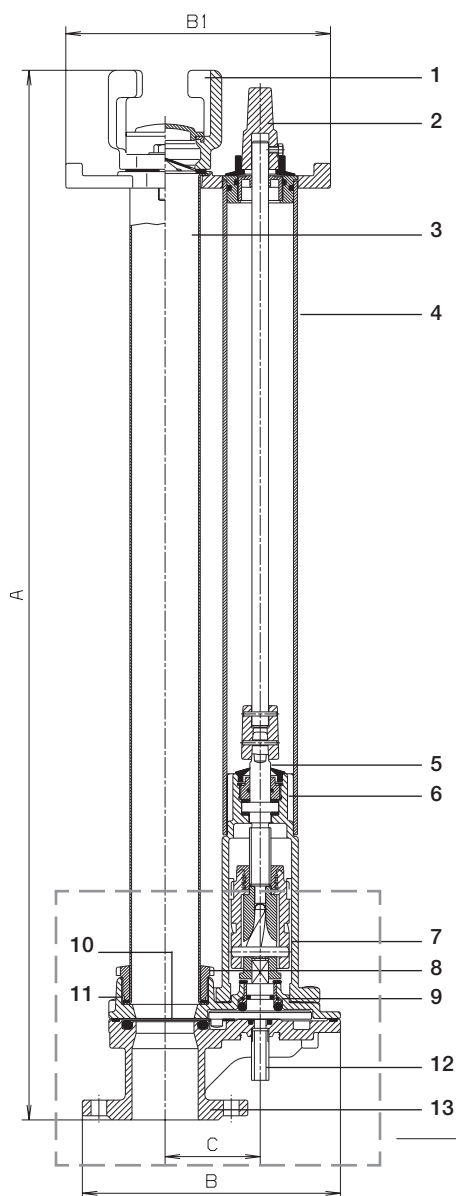
On request:

below ground extensions 100 – 500 mm

protection against dirt and twisting



Freeflow below ground hydrant



Parts	Material
1 Jaw coupling	DCI (EN 1503-3)
2 Operating nut	DCI
3 Pipe	SS (EN 1503-3)
4 Plastic protection pipe	PP
5 Spindle	SS
6 Gear	DCI
7 Plate drive	SS
8 Ring nut	PA
9 Driving worm	Ms
10 Valve plate	SS
11 Hydrant top	DCI (EN 1503-3)
12 Drain connection	
13 Hydrant end with spigot or flange	DCI (EN 1503-3)

Recommendation
Drainage water
absorber
Order no. 5062



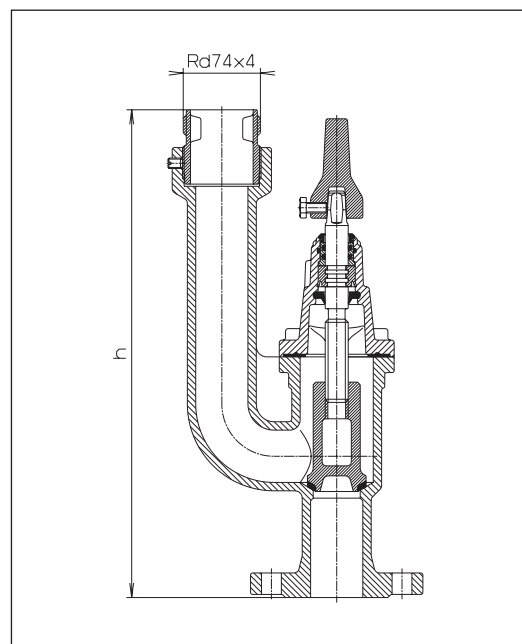
Order no.	Connection	Pipe length	A	B	B 1	C	Weight kg
5060	Flange DN 80	1,00 m	740	280	320	115	35,0
		1,25 m	990	280	320	115	37,5
		1,50 m	1240	280	320	115	39,5
5061	Spigot DN 80	1,00 m	785	280	320	115	31,5
		1,25 m	1045	280	320	115	34,0
		1,50 m	1295	280	320	115	36,0

Order no.	Version	PN	DN	Total height / mm	Weight kg	
5080	Round thread outlet	10	50	466	16,0	●
5081	Bayonet coupling			555	19,0	●

with round thread outlet

flange DN 50

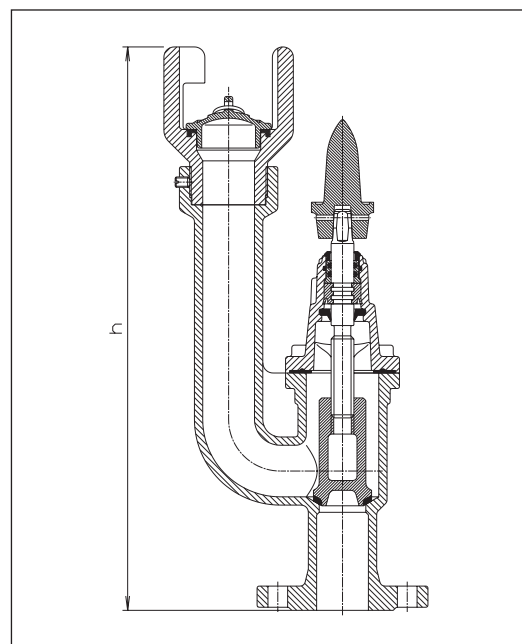
of grey iron, epoxy powder coated
without drainage outlet



with bayonet coupling DN 50

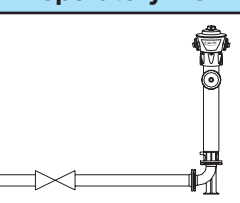
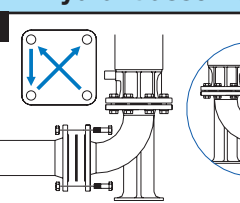
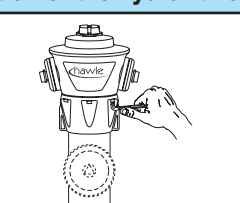
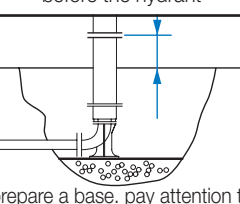
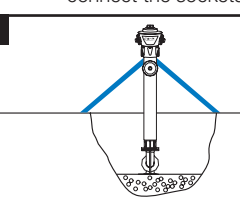
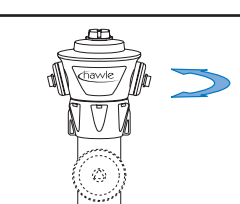
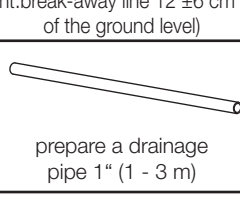
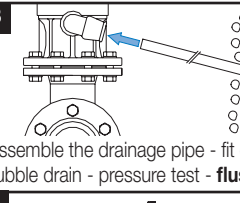
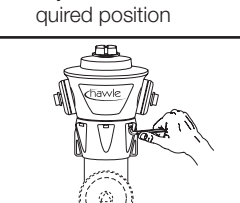
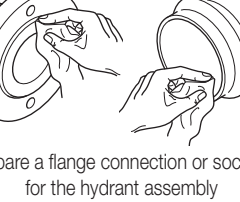
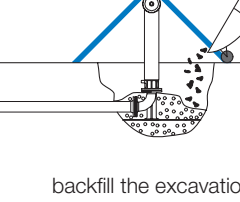
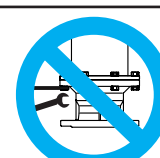
flange DN 50

of grey iron, epoxy powder coated
without drainage outlet

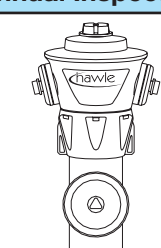
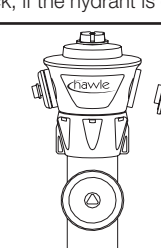
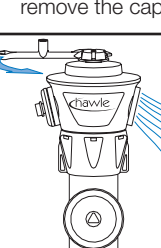
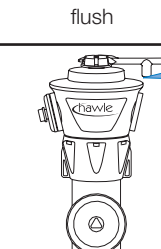
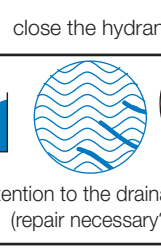
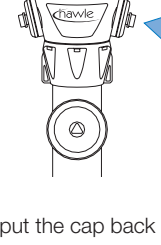


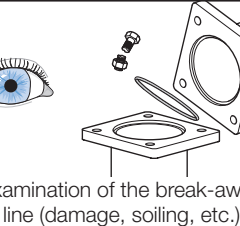
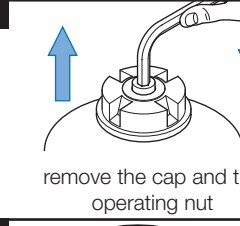
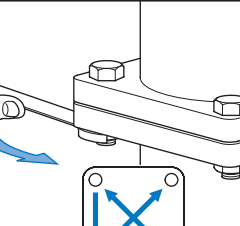

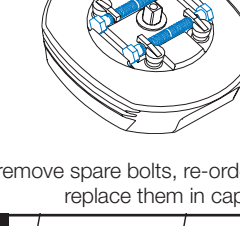
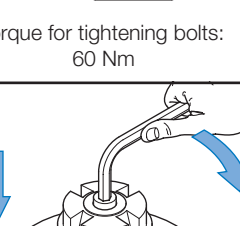
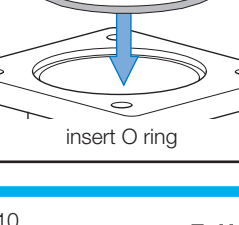
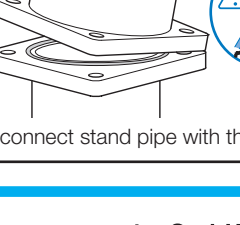
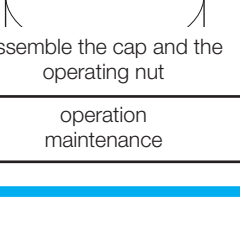
Illustrations, technical data, dimensions and weights are subject to alteration without notice.

ASSEMBLY

Preparatory work		Hydrant assembly		Rotation of the hydrant head	
1	 Advice: install a gate valve before the hydrant	1	 bolt the flanges crosswise or connect the sockets	1	 loosen the bolts at the tension ring
2	 prepare a base. pay attention to the installation height (break-away hydrant: break-away line 12 ±6 cm above of the ground level)	2	 support the hydrant	2	 rotate the hydrant head to the required position
3	 prepare a drainage pipe 1" (1 - 3 m)	3	 assemble the drainage pipe - fit on the rubble drain - pressure test - flush	3	 tighten the bolts
4	 prepare a flange connection or sockets for the hydrant assembly	4	 backfill the excavation	 <p>Caution! It's not allowed to open the bolts of the base flange!</p>	

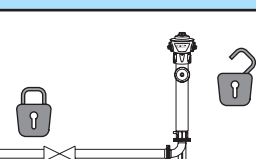
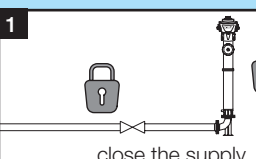
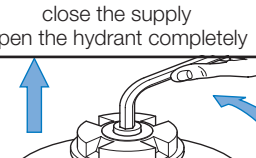
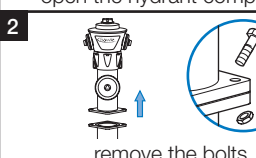
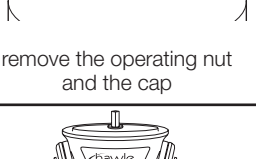
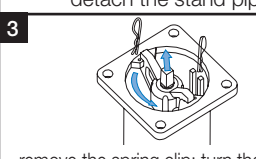
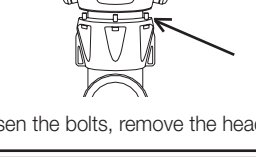
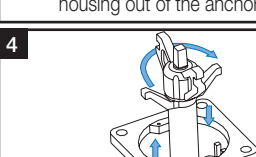

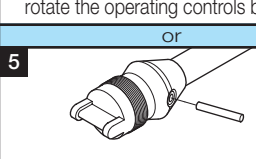
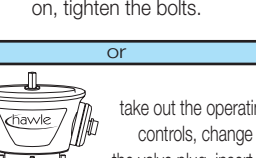
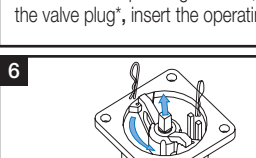


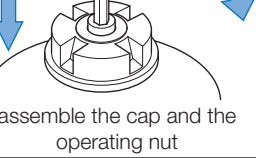
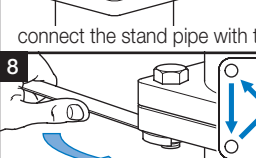
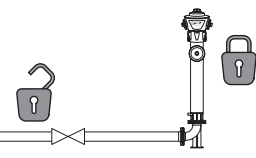

OPERATION MAINTENANCE

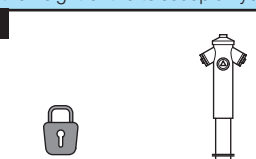


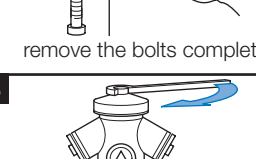
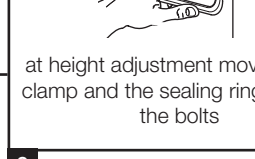
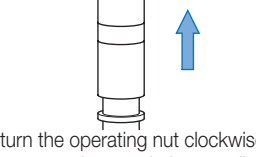

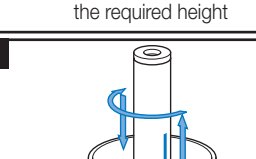
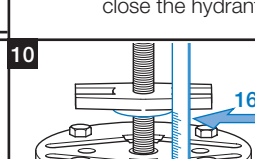
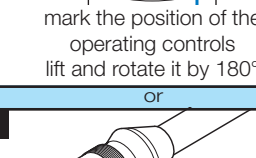
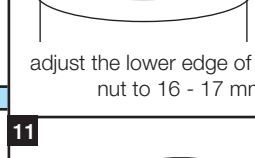
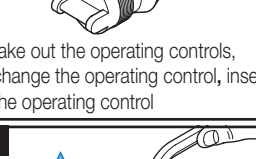
Annual Inspection	
1	 check, if the hydrant is closed
2	 remove the cap
3	 flush
4	 close the hydrant
5	 pay attention to the drainage noise (repair necessary?)
6	 put the cap back on

Damage of the break away line (break away hydrant)					
1	 examination of the break-away line (damage, soiling, etc.)	4	 remove the cap and the operating nut	7	 torque for tightening bolts: 60 Nm
2	 if necessary: clean the flange	5	 remove spare bolts, re-order bolts, replace them in cap	8	 assemble the cap and the operating nut
3	 insert O ring	6	 connect stand pipe with the base	9	 operation maintenance

Above ground hydrant Operating instructions

Above Ground Hydrant - DRAINAGE UNTIGHT or CHANGE OF THE VALVE PLUG and Above Ground Hydrant telescopic - HEIGHT ADJUSTMENT

rigid	break-away
If the drainage is untight, skip step 5. If the valve plug has to be changed, skip step 4.	
1  close the supply open the hydrant completely	1  close the supply open the hydrant completely
2  remove the operating nut and the cap	2  remove the bolts detach the stand pipe
3  loosen the bolts, remove the head	3  remove the spring clip; turn the spindle housing out of the anchoring
4  take out the operating controls, mark the position of the operating controls, rotate it by 180°. Put the hydrant head on, tighten the bolts.	4  rotate the operating controls by 180°
or	or
5  take out the operating controls, change the valve plug, insert the operating control, put head in place again, tighten the bolts	5  take out the operating controls, change the valve plug*, insert the operating control
6  lock the spindle housing connect the spring clip	6  lock the spindle housing connect the spring clip
7  assemble the cap and the operating nut	7  connect the stand pipe with the base
8  close the hydrant; open the supply	8  60 Nm tighten the bolts
9  close the hydrant, open the supply	9  close the hydrant, open the supply
10 operation maintenance	10 operation maintenance

telescopic	
If the drainage is untight, skip step 5. If the valve plug has to be changed, skip step 3. If the height of the telescopic hydrant has to be adjusted, skip step 4, 5 and 7.	
1  close the supply, open the hydrant completely	Attention: note the insert inside of the cap
2  remove the bolts completely	8  at height adjustment move up the clamp and the sealing ring; tighten the bolts
3  turn the operating nut clockwise and remove the stand pipe or adjust to the required height	9  close the hydrant
4  mark the position of the operating controls lift and rotate it by 180°	10  16 - 17 mm adjust the lower edge of the stop nut to 16 - 17 mm
or	or
5  take out the operating controls, change the operating control, insert the operating control	11 
6  remove the operating nut and the cap	12 
7  put on the stand pipe and by turning the spindle anticlockwise the initial situa- tion is recovered	13 operation maintenance

No. 8690

Elypso Valve Bonnet (without illustr.)

for Service Valves, Elypso Valves and Combination Valves

No. 8690E2

E2 Elypso Valve Bonnet

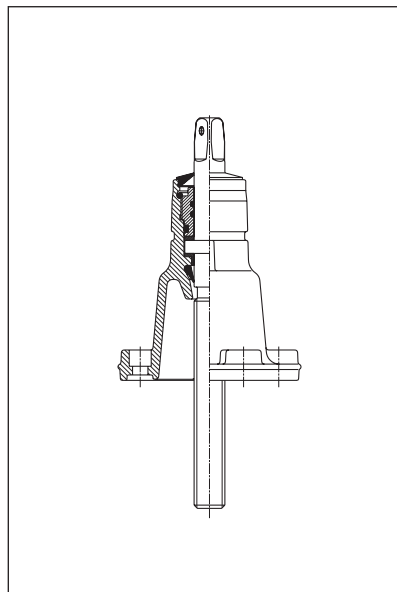
for E2 Valves and E2 Combi Valves

of ductile iron

epoxy powder coated

with spindle, flat gasket and bolts

also available with anti clockwise closing



DN	No. 8690	No. 8690E2
	Weight	Weight
¾" - 1"	● 0,90	
1¼"-1½"	● 1,30	
2"	● 1,40	
50	● 2,00	● 3,10
65	● 2,60	● 4,70
80	● 3,20	● 4,70
100	● 4,50	● 5,30
125	● 5,80	● 7,80
150	● 5,90	● 7,80
200	● 11,00	● 12,40
250	● 14,00	● 21,50
300	● 29,50	● 27,50
350	● 36,00	● 34,00
400	● 48,00	● 43,00
500		● 95,00
600		● 134,00

No. 8700

Elypso Valve Wedge (without illustr.)

for Service Valves, Elypso Valves and Combination Valves

DN ¾" — 2" of brass (Ms58)

DN 50 — 400 of ductile iron

outside rubberised with elastomer, suitable for potable water (inside bitumen coated)

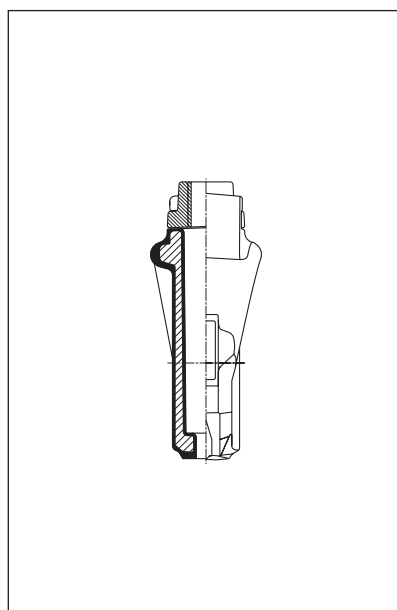
No. 8700E2

E2 Elypso Valve Wedge

for E2 Valves and E2 Combi Valves

inside and outside rubberised with elastomer, suitable for potable water

DN 50 — 600 of ductile iron



DN	No. 8700	No. 8700E2
	Weight	Weight
¾" - 1"	● 0,25	
1¼"-1½"	● 0,40	
2"	● 0,50	
50	● 0,75	● 0,70
65	● 0,90	● 1,60
80	● 1,35	● 1,60
100	● 2,05	● 2,30
125	● 2,90	● 5,20
150	● 4,30	● 5,20
200	● 7,30	● 9,30
250	● 14,30	● 13,00
300	● 21,00	● 21,00
350	● 28,00	● 30,00
400	● 38,00	● 40,00
500		● 82,00
600		● 130,00

also available with anti clockwise closing

Spare Parts

No. 8710

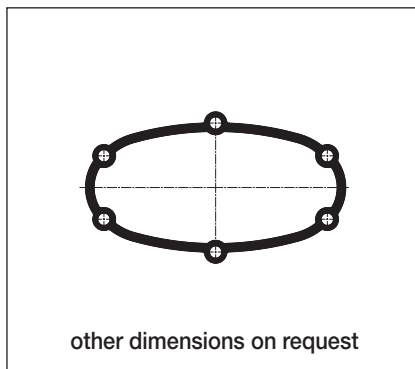
Elypso Valve Flat Gasket

of elastomer, suitable for potable water
(without illustr.)

No. 8710E2

E2 Elypso Valve Flat Gasket

of elastomer, suitable for potable water



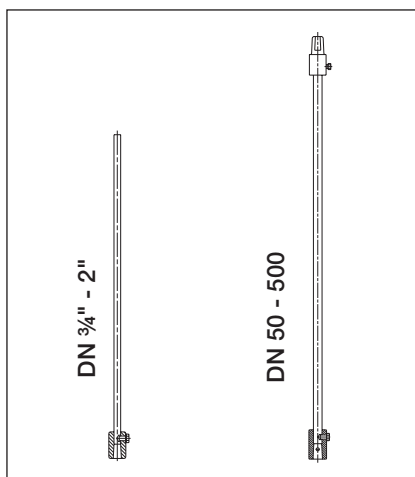
DN	No. 8710 Weight	No. 8710E2 Weight
¾" - 1"	● 0,010	
1¼" - 2"	● 0,015	
50	● 0,010	● 0,010
65	● 0,025	● 0,025
80	● 0,022	● 0,022
100	● 0,030	● 0,030
125	● 0,035	● 0,035
150	● 0,030	● 0,030
200	● 0,080	● 0,080
250	● 0,180	● 0,180
300	● 0,175	● 0,175
350	● 0,210	● 0,210
400	● 0,250	● 0,250
500		● 0,350
600		● 0,580

No. 9620

Spindle Shaft

for all rigid type extension spindles

please specify length, see page D 1



DN	Square head dimension	Weight	
¾" - 2"	14	2,05	●
50	20	3,60	●
65	20	3,60	●
80	20	3,60	●
100	20	3,60	●
200	20	4,10	●
250	25	3,75	●
300	25	3,55	●
350	25	3,45	●
400 - 500	25	3,10	●

Outer Protecting Tube

for all rigid type extension spindles

No. 9631 for DN ¾" - 2"

Service Valves (threaded connection)

No. 9630 for DN 50 - 300

Elypso and Combination Valves

No. 9630E2 for DN 50 - 200

E2 Elypso and E2 Combination Valves

Outer and Inner Protecting Tube

for all telescopic type extension spindles

No. 9691 for DN ¾" - 2"

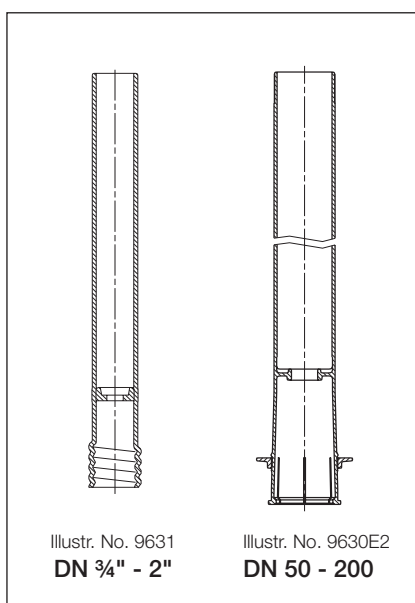
Service Valves (threaded connection)

No. 9591 for DN 50 - 300

Elypso and Combination Valves

No. 9591E2 for DN 50 - 200

E2 Elypso and E2 Combination Valves



DN	No. 9631	No. 9691
¾" - 2"	●	●

DN	No. 9630	No. 9591
50 - 100	●	●
125 - 150	●	●
200	●	●
250	●	●
300	●	●

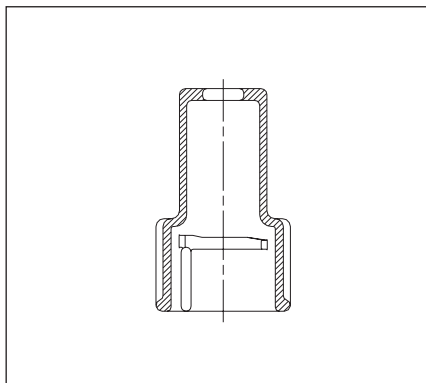
DN	No. 9630E2	No. 9591E2
50 - 100	●	●
125 - 150	●	●
200	●	●

please specify length, see page D 1

No. 9640

Protective Cover

for extension spindles with bayonet connection (old version of service valves)

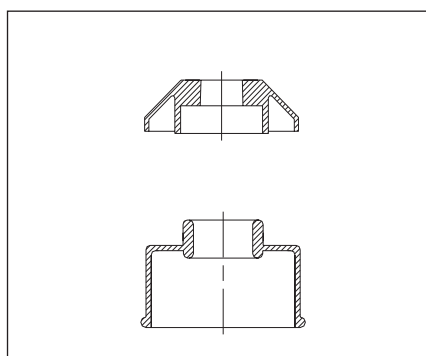


Weight kg	
0,08	●

No. 9651

Sealing cap

for all rigid type extension spindles



DN	No. 9650	No. 9651
3/4" - 2"	●	●
50 - 200	●	●
250 - 600	●	●

No. 9650

Cap

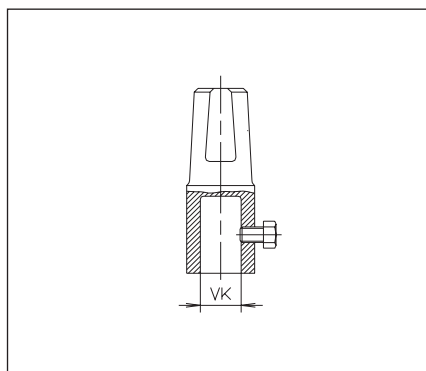
for all rigid type extension spindles

No. 8670

Spindle Head

for rigid extension spindles for Elypso Valves

of ductile iron
with set bolt



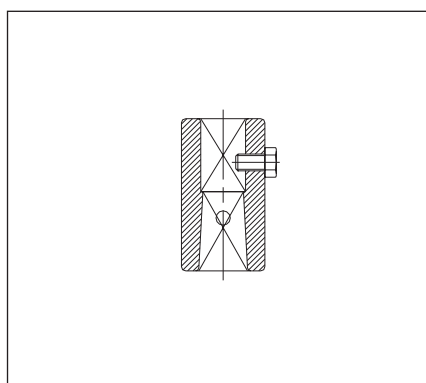
DN	Square head dimension	Weight kg	
50 - 200	20,5	0,65	●
250 - 600	25,5	0,68	●

No. 8660

Spindle Coupling

for all extension spindles

of ductile iron
with set bolt



DN	Weight kg	
3/4" - 2"	0,15	●
50	0,30	●
65	0,30	●
80	0,40	●
100 - 150	0,40	●
200	0,60	●
250 - 350	0,80	●
400 - 500	0,80	●
500 - 600	1,44	●

Spare Parts

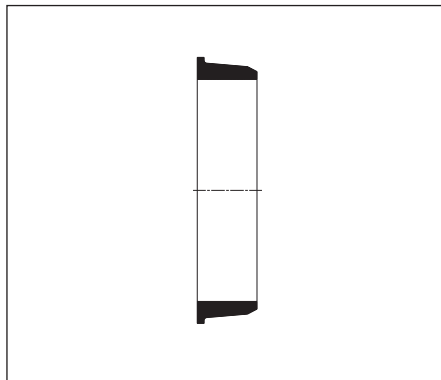
No. 7500

Sleeve Gasket

for Spar Flange

No. 0101, 0102, 1001, 1002

Please specify type of pipe and outside diameter



DN	Weight kg	
50	0,07	●
60	0,11	●
65	0,11	●
80	0,14	●
100	0,18	●
125	0,23	●
150	0,30	●
200	0,50	●
250	0,60	●
300	0,90	●
400	1,70	●

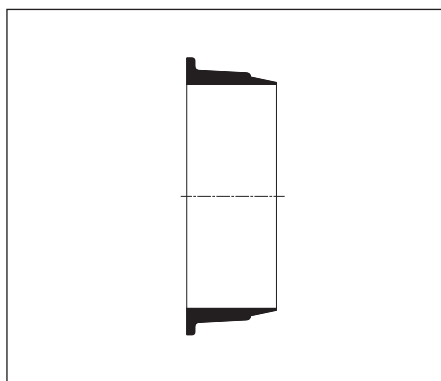
No. 7510

Sleeve Gasket

for Double Chamber Flange Adaptor

No. 7101, 7102, 7103, 7402

Please specify type of pipe and outside diameter



DN	Weight kg	
40	0,07	●
50	0,09	●
65	0,14	●
80	0,17	●
100	0,26	●
125	0,30	●
150	0,40	●
200	0,60	●
250	0,85	●
300	1,20	●
400	2,20	●

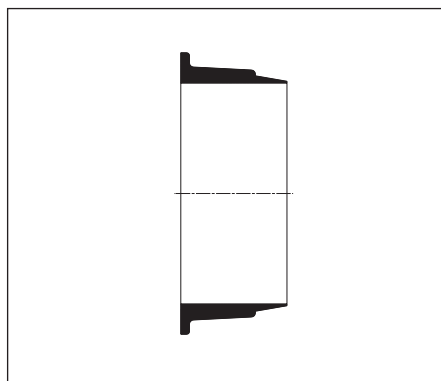
No. 7524

Sleeve Gasket

for Double Chamber Flange Adaptor

No. 5600, 5630 (PVC)

Please specify outside diameter of pipe



DN	Pipe Ø mm	Weight kg	
50	63	0,10	●
65	75	0,13	●
80	90	0,17	●
100	110	0,20	●
150	160	0,40	●
200	200	0,70	●
200	225	0,85	●
250	250	1,30	●
250	280	1,30	●
300	315	1,50	●
400	400	2,80	●

No. 7532

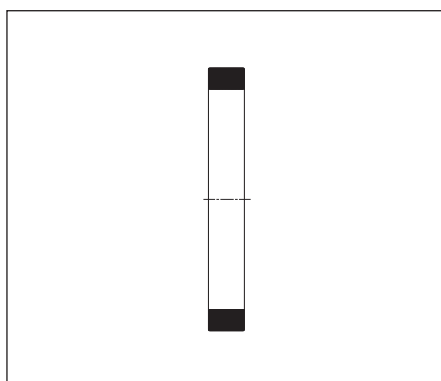
Sleeve Gasket

for Flange Adaptor, restraint

No. 7602 (cast iron)

Please specify outside diameter of pipe

The gasket has grip ring segments glued to it



DN	Pipe Ø mm	Weight kg	
50	66	0,14	●
60	77	0,14	●
65	82	0,16	●
80	98	0,25	●
100	118	0,30	●
125	144	0,40	●
150	170	0,70	●
200	222	1,30	●
250	274	1,70	●
300	326	2,00	●

No. 7531

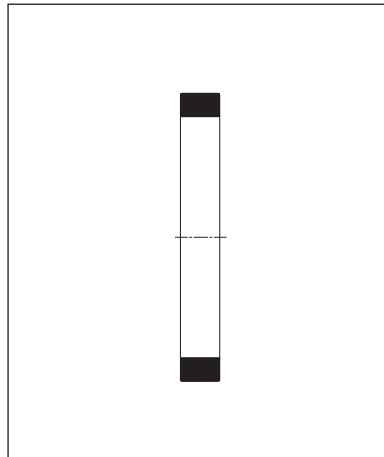
Sleeve Gasket

for Flange Adaptor, restraint

No. 7601 (steel)

Please specify outside diameter of pipe

The gasket has grip ring segments glued to it



DN	Pipe Ø mm	Weight kg	
50	60	0,12	●
80	89	0,21	●
100	108	0,26	●
100	114	0,26	●
125	133	0,35	●
150	159	0,65	●
150	168	0,65	●
200	219	1,20	●

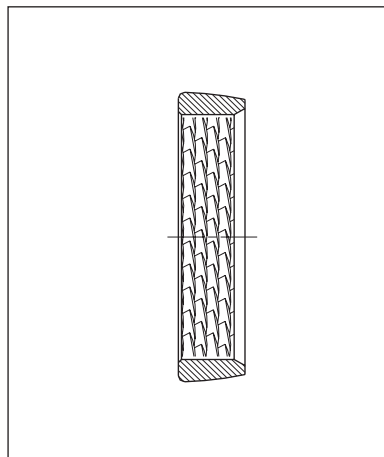
No. 6932

Grip ring „standard”

for PE Pipes

for all Hawle products with ISO pipe push fit fittings

Interlocking teeth



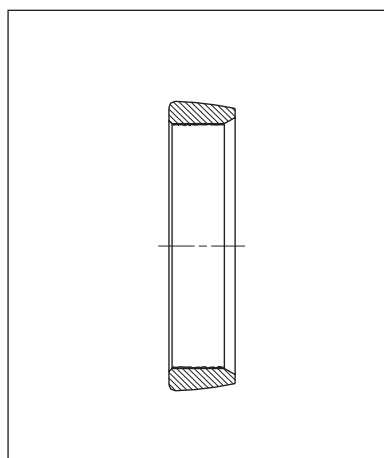
DN	Pipe Ø mm	Weight kg	
20	1/2"	0,003	●
25	3/4"	0,004	●
32	1"	0,007	●
40	1 1/4"	0,015	●
50	1 1/2"	0,021	●
63	2"	0,032	●
75		0,044	●
90		0,049	●
110		0,098	●
125		0,134	●
140		0,155	●
160		0,181	●

No. 6931

Grip ring „carborundum”

for PVC pipes

for all Hawle products with ISO pipe push fit fittings



DN	Pipe Ø mm	Weight kg	
20	1/2"	0,004	●
25	3/4"	0,005	●
32	1"	0,009	●
40	1 1/4"	0,016	●
50	1 1/2"	0,025	●
63	2"	0,037	●
75		0,050	●
90		0,070	●
110		0,131	●
125		0,166	●

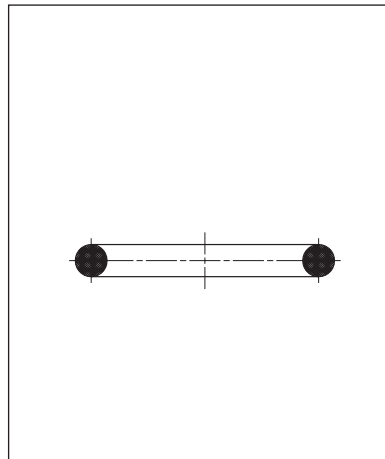
Spare Parts

No. 6940

O ring

of elastomer (suitable for potable water)

for all Hawle products with ISO pipe push fit fittings

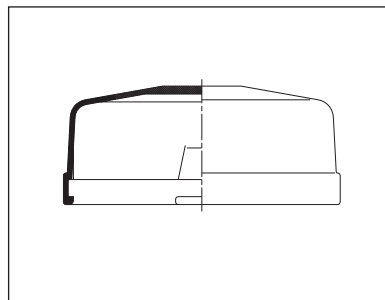


Pipe Ø mm	DN	Weight kg	
20	½"	0,003	●
25	¾"	0,004	●
32	1"	0,006	●
40	1¼"	0,011	●
50	1½"	0,020	●
63	2"	0,030	●
75		0,040	●
90		0,040	●
110		0,070	●
125		0,100	●
160		0,140	●

No. 5417

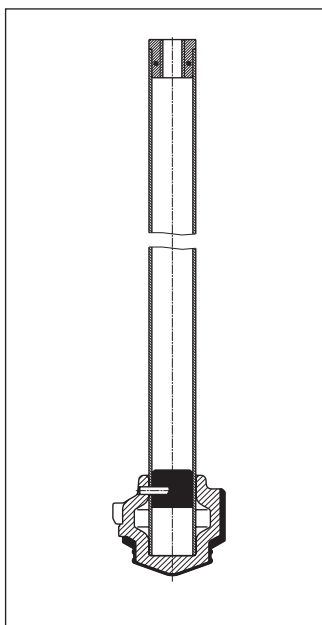
Theft Indicator Cap

for all above ground hydrants



No. 5417	●
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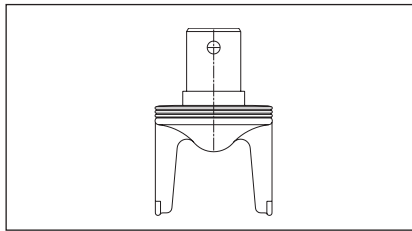
Operating Controls for Hydrants



Order No.	Operating Controls for	DN	Pipe cover	Weight kg	
5430	Above Ground Hydrant - rigid	80	1,50	11,00	●
		100	1,50	11,80	●
		150	1,50	12,30	●
5431	Above Ground Hydrant - break away	80	1,50	8,00	●
		100	1,50	8,80	●
		150	1,50	9,30	●
5437	Above Ground Hydrant - break away with distance piece 250 mm	80	1,75 (250)	8,90	●
		100	1,75 (250)	9,70	●
5438	Above Ground Hydrant - break away with distance piece 400 mm	80	1,90 (400)	9,40	●
		100	1,90 (400)	10,20	●
5432	Above Ground Hydrant - telescopic	80	1,30 - 1,80	9,00	●
5433	Below Ground Hydrant	80	1,25	5,00	●
		80	1,50	7,00	●

Valve plug

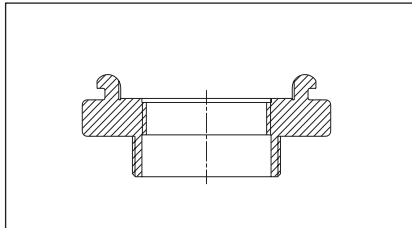
for H4 above ground hydrants



Order no.	DN	Weight kg	
5440	80-100	1,15	●

Coupling

for above ground hydrants

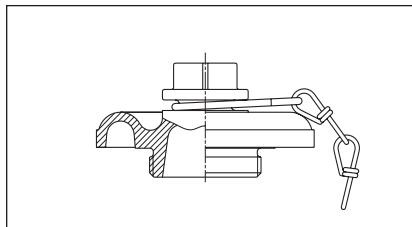


Order no.	Type	Weight kg	
5403	A coupling 4" DIN 14319	1,60	●
5404	B coupling 2½" DIN 14318	0,40	●
5405	C coupling 2" DIN 14317	0,22	●

Cap

for above ground hydrants

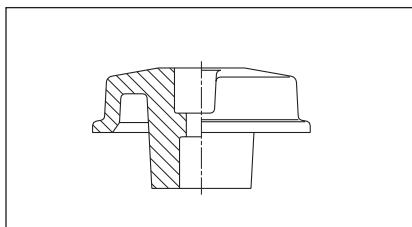
with chain and gasket



Order no.	for	Weight kg	
5400	A coupling	3,45	●
5401	B coupling	1,45	●
5402	C coupling	1,10	●

Operating Nut

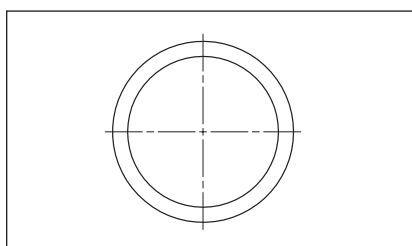
for above ground hydrants



Order no.	Weight kg	
5415	1,80	●

Flat gasket

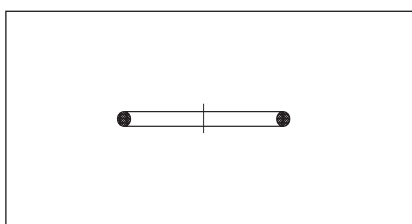
for cap



Order no.	for	Weight kg	
5406	A-cap	0,15	●
5407	B-cap	0,09	●
5408	C-cap	0,05	●

O ring

for coupling

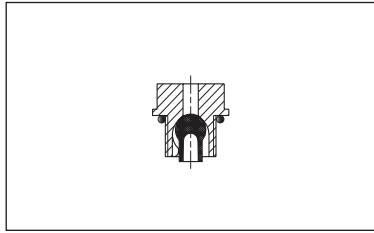


Order no.	for	Weight kg	
5410	A coupling	0,006	●
5411	B coupling	0,004	●
5412	C coupling	0,003	●

Spare Parts

Air Valve for above ground hydrant

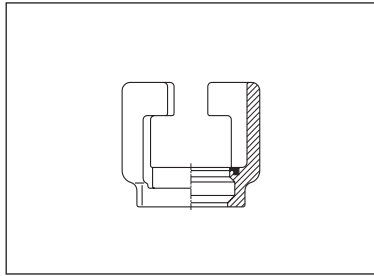
of POM



Order no.	Thread	Weight kg	
5180	3/8"	0,02	●

Bayonet Coupling

without cap



Order no.	for	Weight kg	
5171	Below ground hydrant DN 80	4,40	●
5170	Garden hydrant DN 50	2,70	●

Colour Repairs

blue synthetic resin coating,
UV resistant

Attention! Not suitable for potable water

Colour repairs for potable water on request



Order no.	Contents of can	
3441	1 kg	●

Repair Cartridge

for powder coated Hawle products

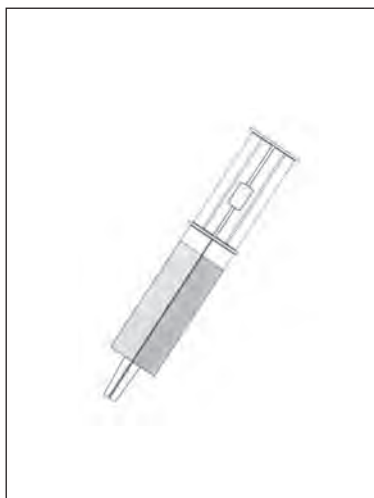
For repairing minor mechanical damage caused by transport or installation.

Cartridge with plunger

Exact 1:1 proportional dosing of resin and hardener.

Good mixing is essential.

For repairing large areas we recommend No. 3441 (see above).



Order no.	Cartridge content	
3442	32 cm ³	●



No. 5800

Drilling Machine
for under pressure drilling

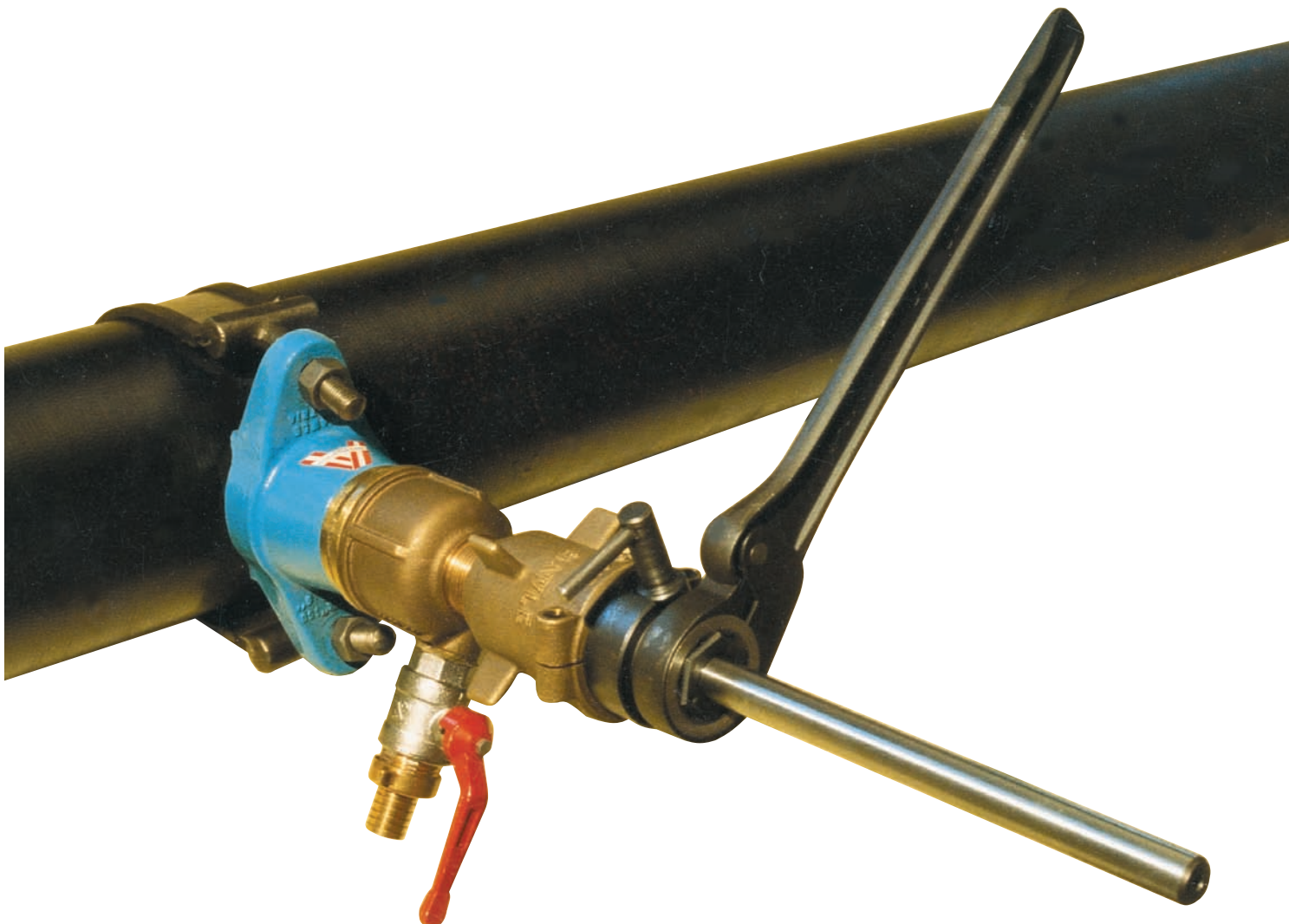
Can be used for drilling pipes of steel, cast iron, AC or plastic.

When drilling under pressure, swarf is washed out through a purpose - designed outlet.

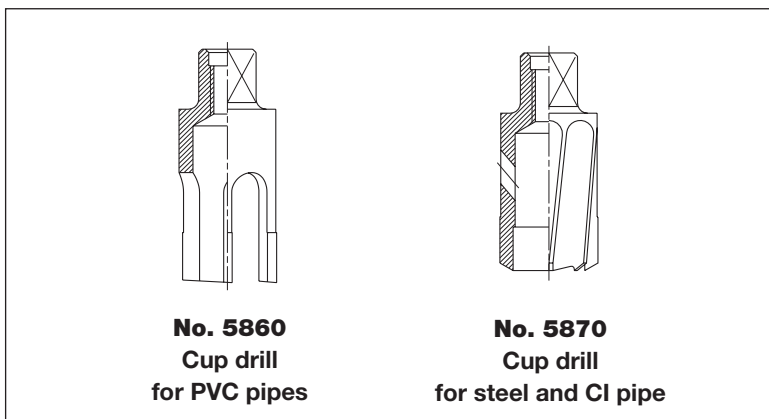
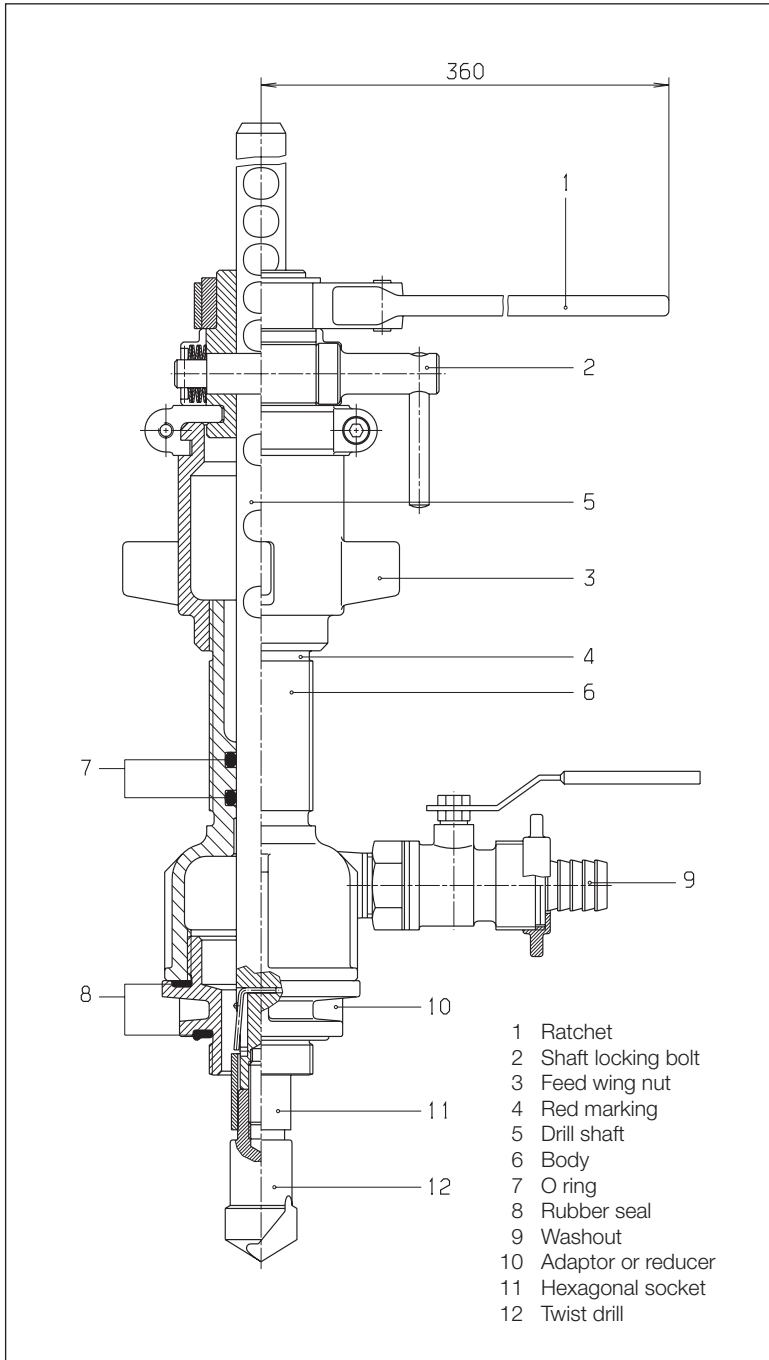
Rotated by ratchet handle and fed by feed wing nut.

The ratchet is connected to the drill shaft with a simple locking device.

Pipe saddle adaptors and reducers are sealed with captivated rubber rings.



Drilling Machine



No. 5800 Drilling Machine for under pressure drilling

No. 5820	Drilling Machine
No. 5810	Case
No. 5830	Ratchet
No. 5840	Shaft
	Twist drill for steel-, CI and AC pipes
	Twist drill 1" - 24 Ø
No. 5850	Twist drill 1¼" - 29 Ø
	Twist drill 1½" - 35 Ø
	Twist drill 2" - 40 Ø
	Cup drill for PVC pipes
	Cup drill 1" - 24 Ø
No. 5860	Cup drill 1¼" - 29 Ø
	Cup drill 1½" - 35 Ø
	Cup drill 2" - 40 Ø
	Reducing adaptor with rubber seals
	2" - 1"
No. 5890	2" - 1¼"
	2" - 1½"
	2" - 2½"
	Equal adaptor with rubber seals
No. 5900	2" - 2"
No. 5910	1 pc. Allen key size 5
No. 5920	2 pcs. C spanner for adaptor
	Saddle blade for shut off
No. 8401	1" - 1¼"
	1½" - 2"
No. 5800	Complete in case
	Weight: 17,5 kg

Alternative to twist drill No. 5850

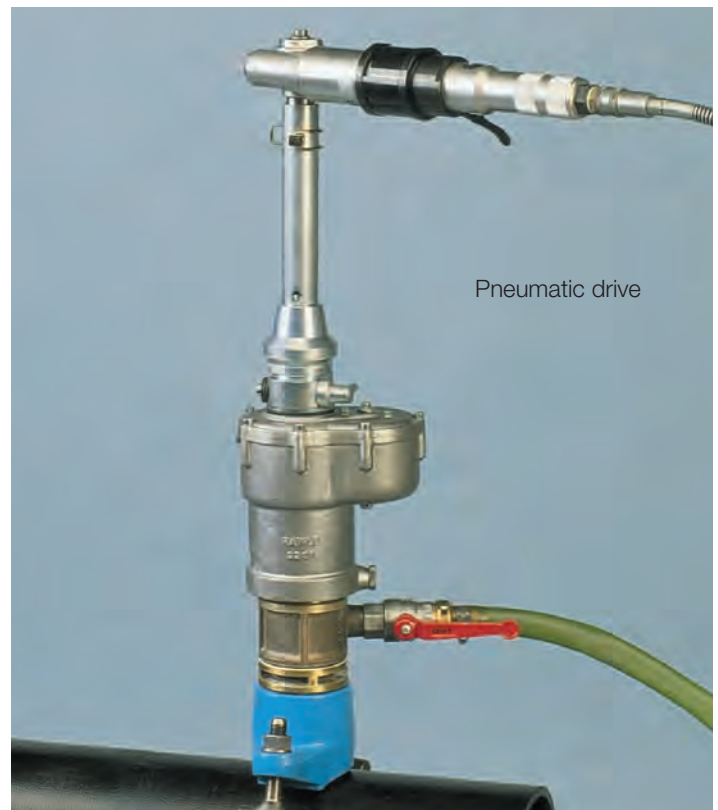
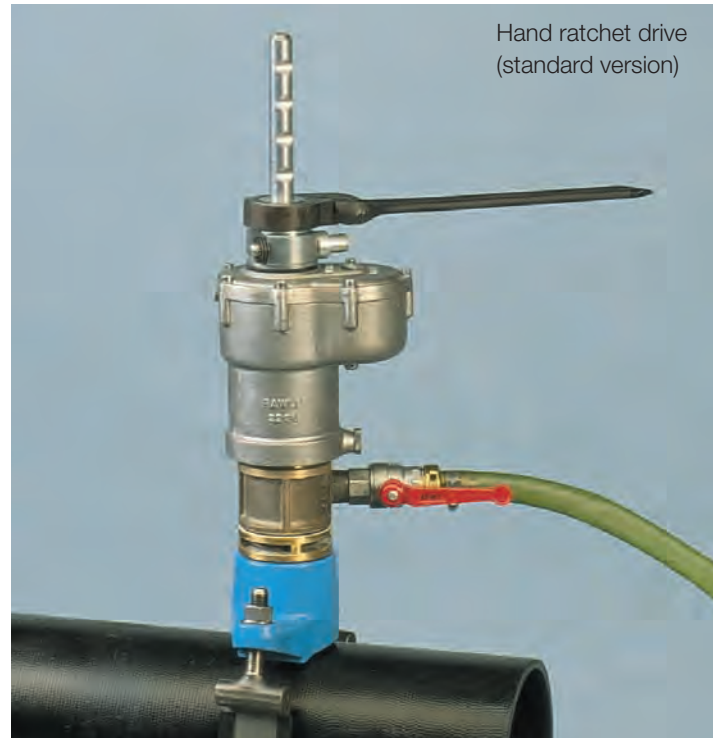
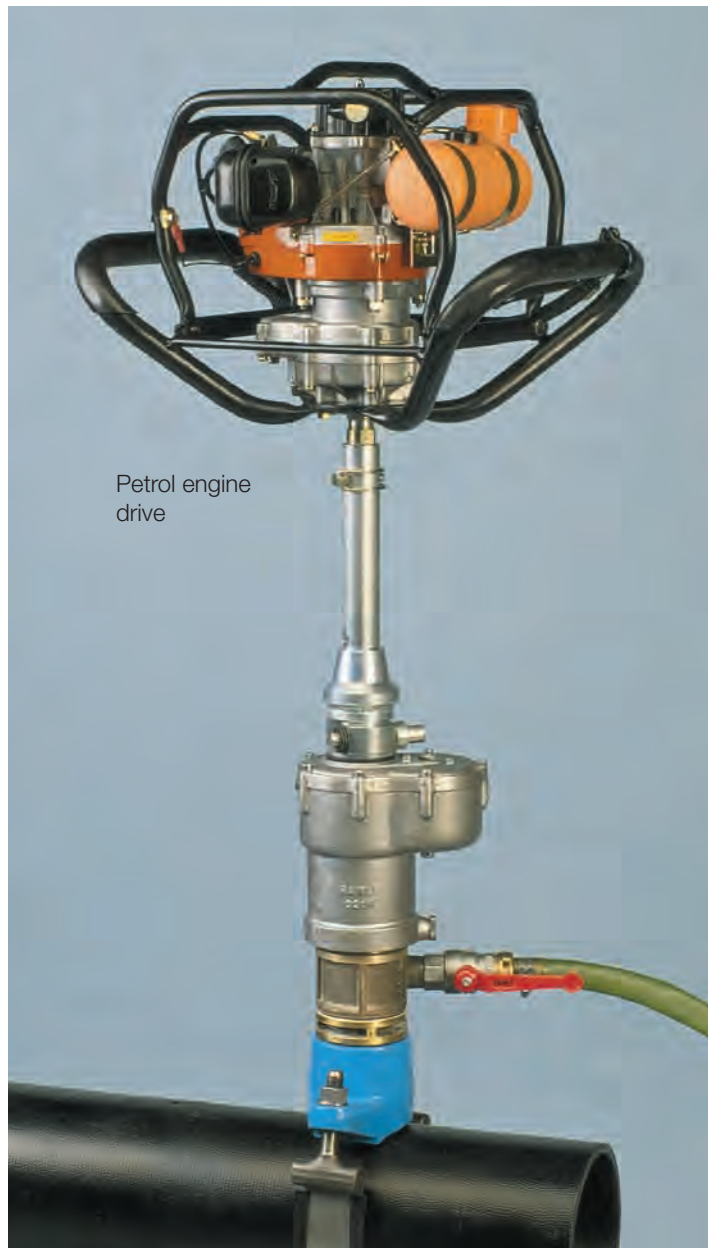
	Cup drill for steel and CI pipes
	Cup drill 1" - 24 Ø
No. 5870	Cup drill 1¼" - 29 Ø
	Cup drill 1½" - 35 Ø
	Cup drill 2" - 40 Ø
No. 5940	Adaptor 2" - 1½"
	for ISO Combination Tapping Valve (Page C 4/3)

One Powered Drilling Machine with

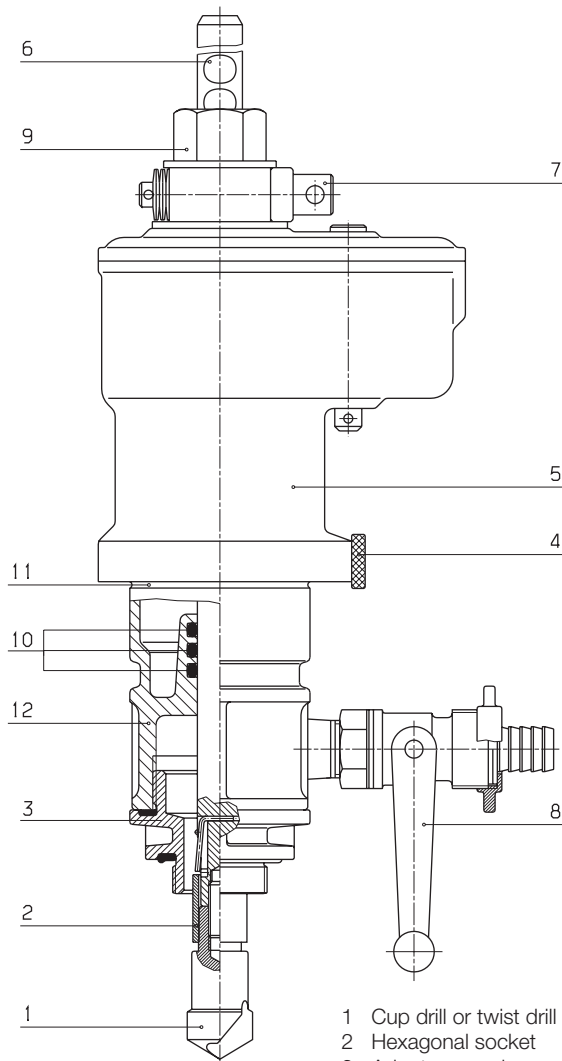
- Three Options**
- hand ratchet
 - petrol engine
 - pneumatic

- Also for under pressure drilling
- For quick and simple drilling of CI, steel, AC and plastic pipes
- Motorised power and continuous feed are necessary for driving the special carbide drills which are needed for cement lined cast iron pipes.

No. 5805	Machine with handratchet Standard version (in metal case)	●
No. 5835	Petrol engine including Adaptor for drilling machine No. 5805	●
No. 5836	Pneumatic including Adaptor (air consumption: 540 l/min) for drilling machine No. 5805	●



Motorised Drilling Machine



- 1 Cup drill or twist drill
- 2 Hexagonal socket
- 3 Adaptor or reducer
- 4 Knurled nut
- 5 Gear transmission
- 6 Shaft
- 7 Shaft locking bolt
- 8 Ball valve (washout)
- 9 Carrier
- 10 O ring
- 11 Red marking
- 12 Body

No. 5825 Drilling Machine

No. 5815 Case

No. 5830 Ratchet

No. 5840 Shaft

No. 5845 Short Shaft

Twist drill for steel, CI and AC pipes

Twist drill 1" - 24 Ø

No. 5850 Twist drill 1¼" - 29 Ø

Twist drill 1½" - 35 Ø

Twist drill 2" - 40 Ø

Cup drill for PVC pipes

Cup drill 1" - 24 Ø

No. 5860 Cup drill 1¼" - 29 Ø

Cup drill 1½" - 35 Ø

Cup drill 2" - 40 Ø

Reducing adaptor with rubber seals

2" - 1"

No. 5890 2" - 1¼"

2" - 1½"

2" - 2½"

No. 5900 Equal adaptor with rubber seals

2" - 2"

No. 5920 2 pcs. C spanner for adaptor

Saddle blade for shut off

No. 8401 1" - 1¼"

1½" - 2"

No. 5805 Complete in case Weight: 22,5 kg

Alternative to twist drill No. 5850

Cup drill for steel and CI pipes

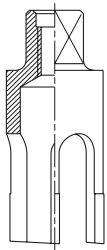
Cup drill 1" - 24 Ø

No. 5870 Cup drill 1¼" - 29 Ø

Cup drill 1½" - 35 Ø

Cup drill 2" - 40 Ø

No. 5940 Adaptor 2" - 1½" for ISO Combination Tapping Valve (Page C 4/3)



**No. 5860
Cup drill
for PVC pipes**



**No. 5870
Cup drill
for steel and CI pipes**



**No. 5855W
Carbide drill**

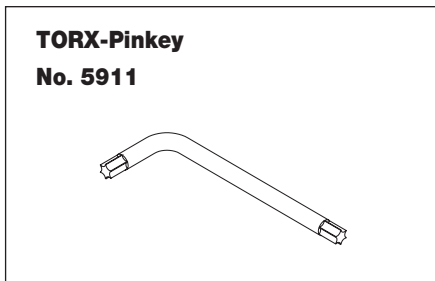
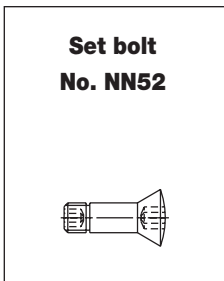
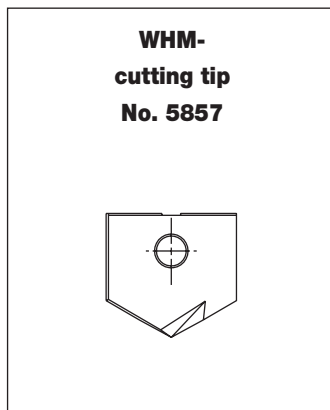
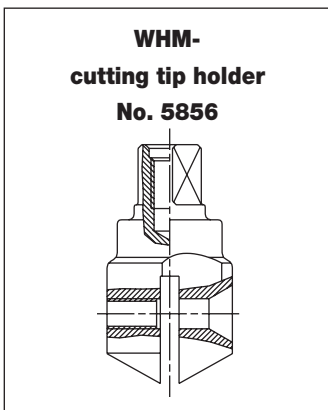
Continous feed and motorised drive are required

Special equipment:

for cast iron, cement lined cast iron, and AC pipes

**No. 5805W
complete in case**

same as No. 5805, but instead of twist drill No. 5850 with carbide drill No. 5855



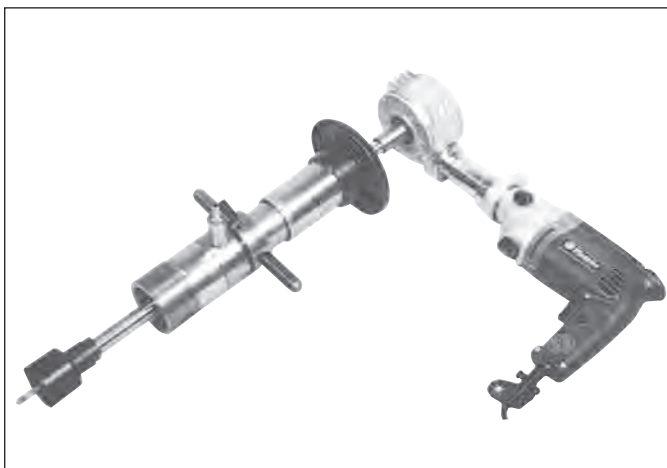
WHM-drill for cement lined DCI pipes, standard coated DCI pipes and AC pipes

Continuous feed and motorised power are necessary!

	WHM-drill complete
No. 5855W	1" - 24 Ø
	1¼" - 29 Ø
	1½" - 35 Ø
	2" - 40 Ø
No. 5856	WHM-cutting tip holder including set bolt
	1" - 1¼"
	1½" - 2"
No. 5857	WHM-cutting tip
	1" - 24 Ø
	1¼" - 29 Ø
	1½" - 35 Ø
	2" - 40 Ø
No. NN52	Set bolt for WHM-cutting tip holder
	GWS 25 for 1" - 1¼"
	GWS 32 for 1½" - 2"
No. 5911	TORX-Pin key

Characteristic features:

- Easy and cost saving replacement of worn cutting tips without any technical efforts;
- ONE cutting tip holder for each TWO dimensions of cutting tips;
- Available as set for one dimension each and in single components for an individual demand;



No. 5807

TONISCO-Drilling Machine

Tonisco drilling machines are suitable for drilling up to 90 mm Ø.

Attention: 220 V - please observe safety regulations

Please ask for a special leaflet!

Illustrations, technical data, dimensions and weights are subject to alteration without notice.

Pipe Cutter

cuts PE and PVC pipes

Cuts pipes square and straight.

The lever design minimises the force required.

Order no.		for pipe Ø	Weight kg	
6050	Model I:	up to 1¼" or 40 Ø mm	0,30	●
	Model II:	up to 2" or 63 Ø mm	1,10	●



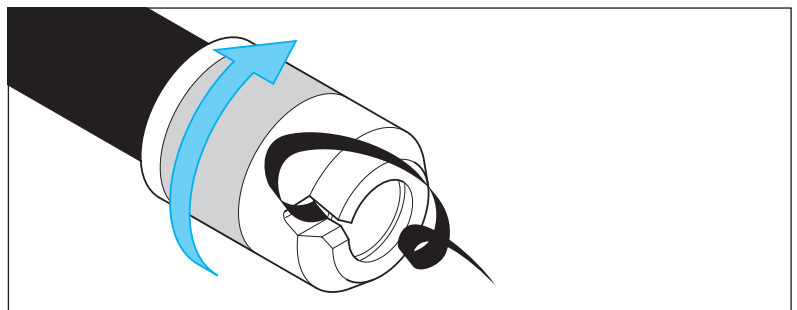
Chamfering Tool

for beveling PE pipes

For easy assembly of ISO push fit fittings the pipe should be beveled.

We recommend our precision-made steel chamfering tool. This provides the correct chamfer when turned clockwise a few times on the pipe end.

Order no.	Pipe Ø mm	DN	Weight kg	
6000	20	½"	0,07	●
	25	¾"	0,07	●
	32	1"	0,10	●
	40	1¼"	0,17	●
	50	1½"	0,22	●
	63	2"	0,62	●



Saddle Blade

for shut-off saddles and shut-off adaptors

for under pressure drilling

Oder no.		Size	Weight kg	
8401	Model I:	for saddle 1" - 1¼"	0,20	●
	Model II:	for saddle 1½" - 2"	0,25	●



Tools

Extractors

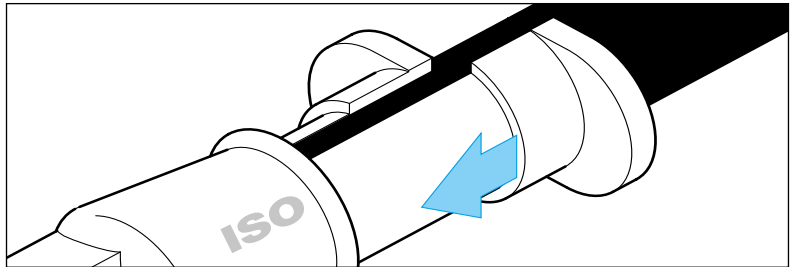
for dismantling ISO push fit fittings

First ensure that the grip ring is not under tension. When pushed in, the extractors separate the grip ring from the pipe, which can then be pulled out.

Application:

for all Hawle products with ISO push fit fittings

Order no.	Pipe Ø mm	DN	Qty. Extractors	Weight kg	
6010	20	1/2"	2	0,02	●
	25	3/4"	2	0,04	●
	32	1"	2	0,05	●
	40	1 1/4"	2	0,07	●
	50	1 1/2"	2	0,10	●
	63	2"	2	0,17	●
	75		3	0,26	●
	90		3	0,32	●
	110		3	0,40	●
	125		3	0,48	●
	140		3	0,54	●
160		3	0,65	●	



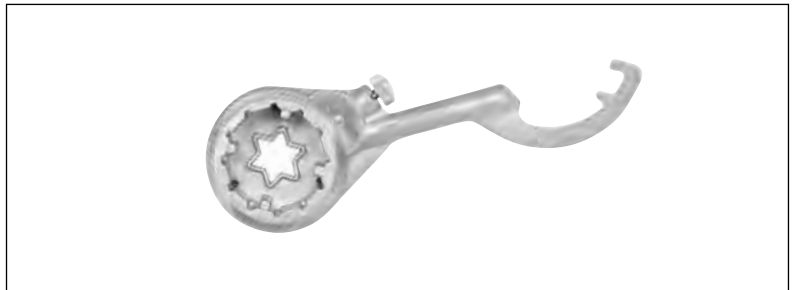
Hydrant-Master Universal Key

lightweight - robust - practical

of aluminium and ductile iron
with reversible ratchet

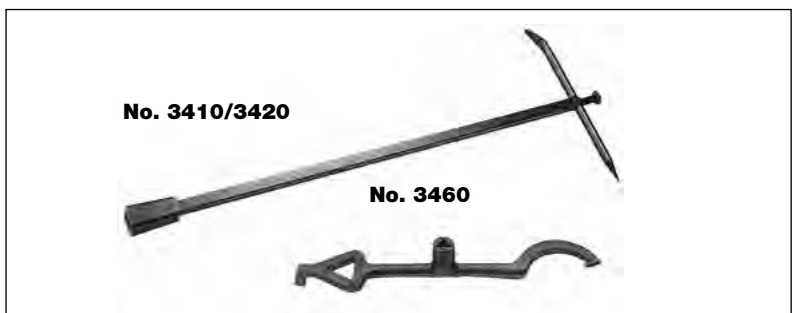
- for opening and closing
- for operating coupling caps A + B + C
- for operating hose couplings B + C
- for breaking theft indicator caps

Order no.	Weight kg	
3461	1,65	●



Operating Key

Order no.	for	Length mm	Weight kg	
3410	Service Valves	850	2,00	●
3420	Valves and Below Ground Hydrants	1130	4,10	●
3460	Above Ground Hydrants	420	1,25	●



No. 8500

Double Flanged Pipe FF

EN 545

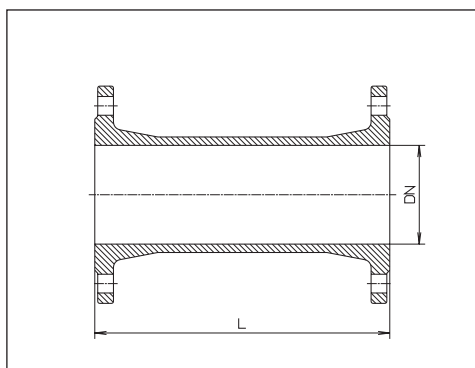
working pressure max. PN 16

of ductile iron EN-GJS-400-18
according to EN 1563 (GGG 400 -
DIN 1693) epoxy powder coated

flanges according to EN 1092-2

standard drilling to DIN 2501 - PN 10

* also available drilled to DIN 2501 - PN
16 (please specify on order)



DN	L	Weight kg	
50	200	7,50	●
	400	10,00	●
65	200	9,50	●
	400	13,00	●
80	200	9,20	●
	400	12,50	●
	600	15,50	●
	800	19,00	●
100	1000	22,00	●
	200	10,50	●
	400	15,00	●
	600	19,00	●
125	800	23,00	●
	1000	27,00	●
	200	13,50	●
	400	18,50	●
150	600	24,00	●
	800	29,00	●
	1000	34,50	●
	200	16,50	●
*200	400	23,00	●
	600	29,50	●
	800	36,00	●
	1000	42,50	●
*200	200	23,00	●
	400	32,50	●
	600	41,50	●
	800	51,00	●
1000	60,00	●	

No. 8550

Double Flanged Taper FFR

FFR

EN 545

working pressure max. PN 16

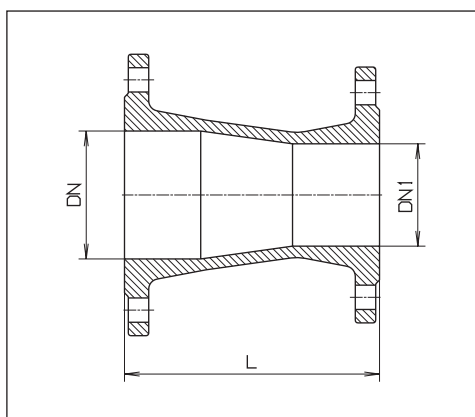
of ductile iron EN-GJS-400-18
according to EN 1563 (GGG 400 -
DIN 1693) epoxy powder coated

flanges according to EN 1092-2

standard drilling to DIN 2501 - PN 10

* also available drilled to DIN 2501 -
PN 16 (please specify on order)

+ of grey iron



DN	DN 1	L	Weight kg	
65	50	200	9,00	●
80	50	200	7,40	●
	65	200	8,20	●
100	50	200	8,10	●
	65	200	8,80	●
125	80	200	9,50	●
	65+	400	19,00	●
	80	200	10,70	●
150	100	200	11,50	●
	80	200	12,20	●
	125	200	14,00	●
*200	100	300	18,50	●
	125	300	20,00	●
	150	300	22,00	●

Flanged Fittings

No. 8540

Double Flanged Bend 45° FFK 45°

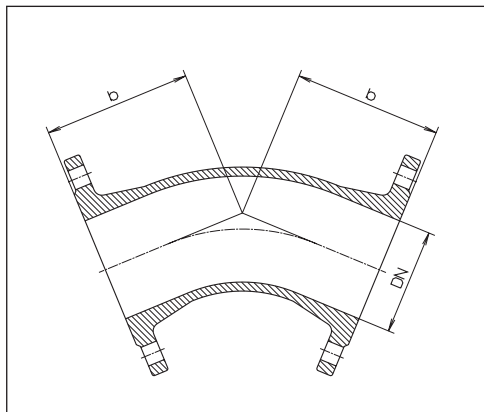
EN 545

working pressure max. PN 16

of ductile iron EN-GJS-400-18
according to EN 1563 (GGG 400 -
DIN 1693) epoxy powder coated
flanges according to EN 1092-2

standard drilling to DIN 2501 - PN 10

* also available drilled to DIN 2501 - PN 16
(please specify on order)



DN	b	Weight kg	
50	150	9,00	●
65	165	12,00	●
80	130	9,50	●
100	140	11,50	●
125	150	14,50	●
150	160	18,50	●
*200	180	27,50	●

No. 8530

Double Flanged Bend 90° Q 90°

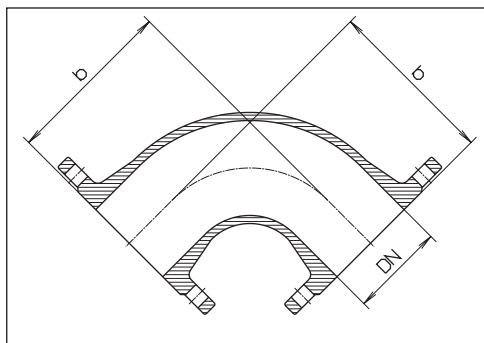
EN 545

working pressure max. PN 16

of ductile iron EN-GJS-400-18
according to EN 1563 (GGG 400 -
DIN 1693) epoxy powder coated
flanges according to EN 1092-2

standard drilling to DIN 2501 - PN 10

* also available drilled to DIN 2501 - PN 16
(please specify on order)



DN	b	Weight kg	
50	150	9,30	●
65	165	9,70	●
80	165	9,90	●
100	180	12,00	●
125	200	15,50	●
150	220	20,50	●
*200	260	31,00	●

No. 8510

All Flanged Tee

T

EN 545

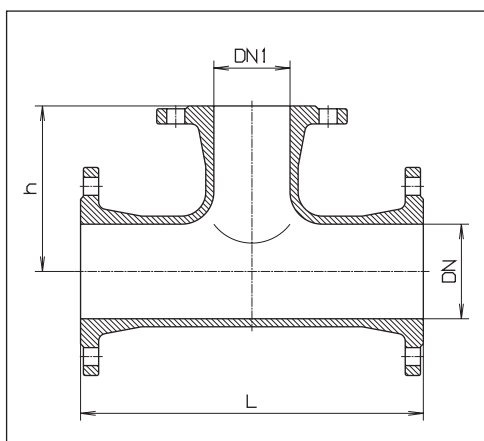
working pressure max. PN 16

of ductile iron EN-GJS-400-18
according to EN 1563 (GGG 400 -
DIN 1693) epoxy powder coated
flanges according to EN 1092-2

standard drilling to DIN 2501 - PN 10

* also available drilled to DIN 2501 - PN 16
(please specify on order)

+ of grey iron



DN	DN 1	L	h	Weight	
50	50	300	150	12,50	●
	50	330	157	15,50	●
65	65	330	165	16,50	●
	50	330	160	14,00	●
80	65	330	165	14,70	●
	80	330	165	16,00	●
	50	360	170	16,50	●
100	65	360	170	17,50	●
	80	360	175	18,50	●
	100	360	180	19,50	●
	50	400	185	21,50	●
125	65+	450	195	31,00	●
	80	400	190	23,00	●
	100	400	195	24,00	●
	125	400	200	25,50	●
	50+	500	200	27,50	●
150	65+	500	207	39,00	●
	80	440	205	29,00	●
	100	440	210	29,50	●
	125	440	215	31,00	●
	150	440	220	32,00	●
	80	520	235	42,50	●
*200	100	520	240	43,00	●
	125	520	245	44,00	●
	150	520	250	46,50	●
	200	520	260	50,00	●

No. 8740

All Flanged Short Tee

working pressure max. PN 16

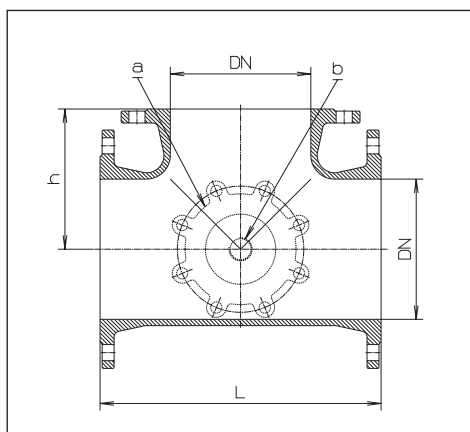
of ductile iron GGG EN-GJS-400-18
according to EN 1563 (GGG 400 - DIN 1693)
epoxy powder coated

on request:

No. 8741

with vertical outlet DN 100 (surcharge)

flanges according to EN 1092-2 standard
drilling to DIN 2501 - PN 10 (DIN 2501 -
PN 16 please specify on order)



DN	L	h	Weight kg	
200	400	200	45,0	●
250	460	230	66,0	●

No. 8520

All Flanged Crosses TT

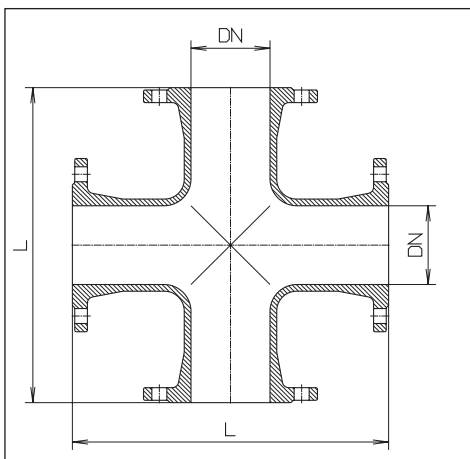
working pressure max. PN 16

of grey iron EN-GJL-250
according to EN 1561 (GG - DIN 1691)
epoxy powder coated

flanges according to EN 1092-2

standard drilling to DIN 2501 - PN 10

* also available drilled to DIN 2501 - PN 16
(please specify on order)



DN	L	Weight kg	
80	360	27,0	●
100	400	34,0	●
150	500	60,0	●
200*	600	93,0	●

No. 8750

All Flanged Short Cross

working pressure max. PN 16

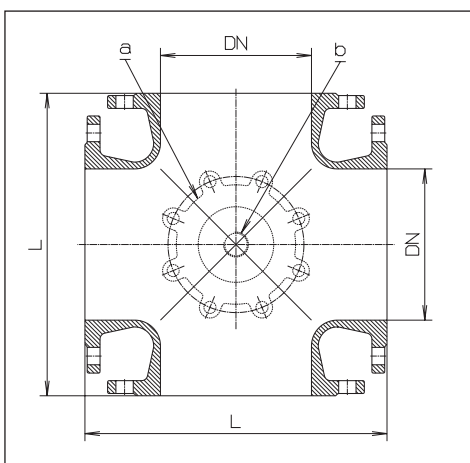
of ductile iron EN-GJS-400-18
according to EN 1563 (GGG 400 - DIN 1693)
epoxy powder coated

on request:

No. 8751

with vertical outlet DN 100 (surcharge)

flanges according to EN 1092-2
standard drilling to DIN 2501 - PN 10
(DIN 2501 - PN 16 please specify on order)



DN	L	Weight kg	
200	400	60,0	●
250	460	91,0	●
400	700	213,0	●

Fittings

No. 5049

Double Flanged Duck Foot Bend 90°

N

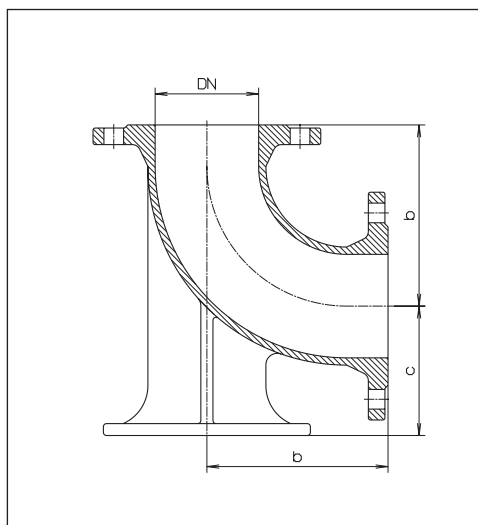
EN 545

working pressure max. PN 16

of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) epoxy powder coated

flanges according to EN 1092-2

standard drilling to DIN 2501 - PN 10



DN	b	c	Weight kg	
80	165	110	13,5	●
100	180	125	17,0	●
150	220	160	29,5	●

DN 80 also available with loose flange
Order No. 5044

No. 5046

Flanged Duck Foot Bend with PVC socket 90°

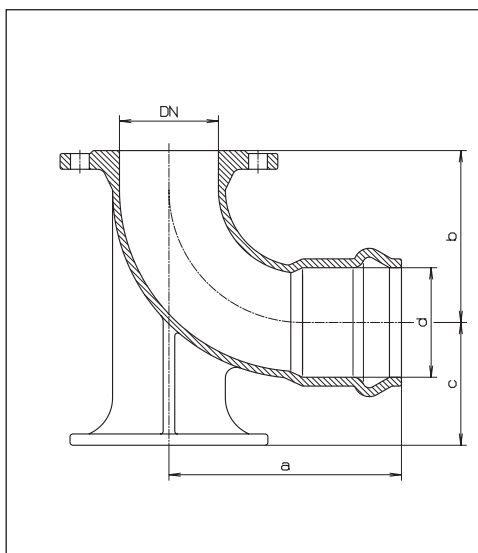
EN-KS 90°

working pressure max. PN 16

of grey iron EN-GJL-250 according to EN 1561 (GG - DIN 1691) epoxy powder coated

flanges according to EN 1092-2

standard drilling to DIN 2501 - PN 10



DN	a	b	c	d	Weight kg	
80	260	165	110	90	16,5	●
100	280	180	125	110	19,5	●

No. 5046 - No. 5045 see page L 2/5

No. 5045

Flanged Duck Foot Bend 90° „System 2000”, restraint, for PE and PVC pipes

No. NL44

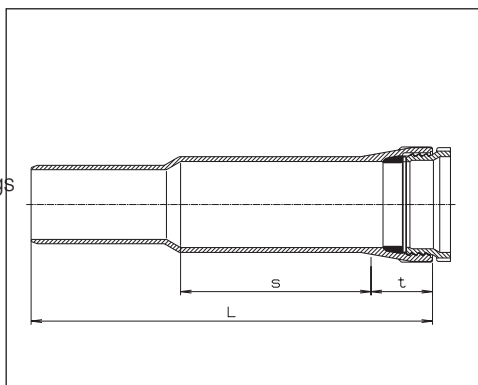
Cut-in Socket Fitting

EMS

PN 16

for subsequent installation of valves and fittings in grey iron and ductile iron pipelines

of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693) epoxy powder coated



DN	L	t	s	Weight kg	
80	465	84	155	12,5	●
100	507	88	175	13,5	●
125	550	91	185	19,5	●
150	550	94	185	28,5	●
200	590	100	195	36,5	●

Connector		Double Socket Tee with flanged branch			All Socket Tee		
Pipe Ø		Pipe Ø	Flange DN		Pipe A Ø	Pipe B Ø	
63	●	63	50	●	63	63	●
75	●	75	65	●	75	75	●
90	●	90	80	●	90	90	●
110	●	110	50	●	110	63	●
125	●		80	●		90	●
140	●		100	●		110	●
160	●	125	80	●	125	90	●
180	●		100	●		110	●
200	●	140	80	●	140	125	●
225	●		100	●		90	●
250	●		125	●		110	●
280	●	160	80	●	160	140	●
315	●		100	●		90	●
355	●		150	●		110	●
		180	80	●	180	125	●
			150	●		180	●
		200	200	●	200	200	●
			80	●		90	●
		225	100	●	225	110	●
			200	●		225	●

for PE (PE 80/100) and PVC pipes up to PN 16
(DIN 8074, EN 1452-2)

total restraint -

minimal pipe insertion force - easy to dismantle
for water

The pipe is sealed with a lip seal.

Minimal pipe insertion force is required for pushing the pipe end into the seal chamfer with an appropriate chamfer.

The pipe restraining system is separate from the sealing system and is activated by tightening the lock ring.

For thinwalled PE-pipes (up to 3mm wall thickness) and low internal pressure we recommend using a support liner (see page D 2/4).

**Connector
No. 0430**

Chamfer the pipe (by use of a connector as a sleeve: chamfer the pipe strongly)



Assembly instructions and tensile load see "page M 6/2"

Material:

Body (1), Lock ring (5)

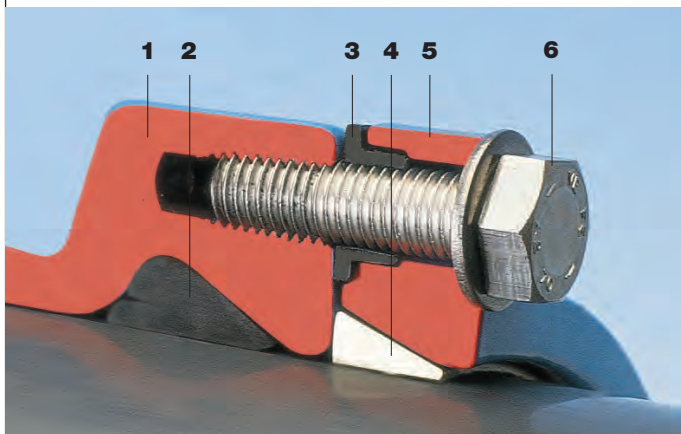
of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693), epoxy powder coated

Lip seal (2) of elastomer, suitable for potable water

Spacer bushes (3) of PE

Grip ring (4) Ms 58 (from DN 300 Rg7)

Bolts (6) A 2 (stainless)



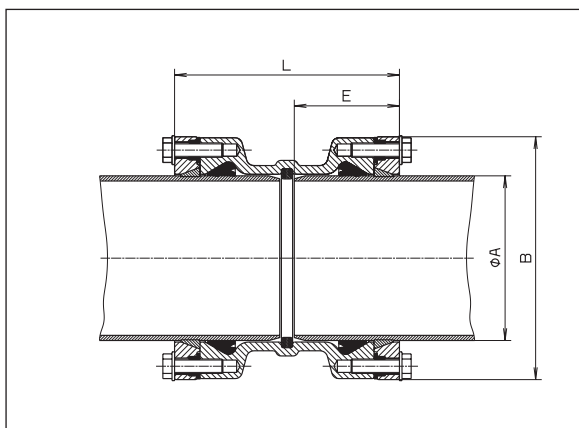
**No. 8525
Double Socket
Tee with flanged
branch
equal and reducing**



**No. 8515
All Socket
Tee
equal and reducing**

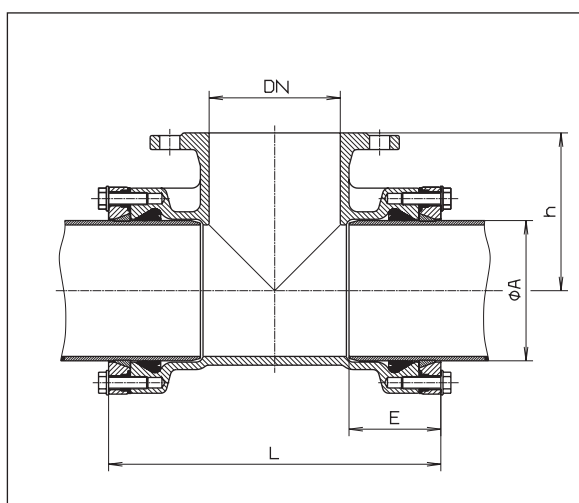


No. 0430 Connector



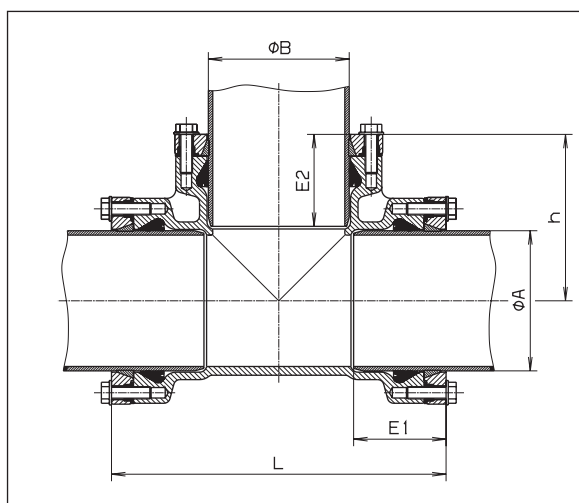
Pipe \varnothing A mm	L	E	B	Weight kg
63	171	80	124	3,2
75	175	82	138	4,0
90	181	85	152	5,4
110	181	85	172	6,4
125	185	87	193	7,8
140	197	93	210	9,0
160	221	105	236	12,0
180	241	113	258	14,5
200	261	125	284	21,5
225	265	128	314	26,0
250	300	145	347	33,0
280	306	148	376	38,5
315	358	174	422	58,5
355	464	237	472	96,0

No. 8525 Double Socket Tee with flanged branch equal and reducing



\varnothing A mm	DN	L	E	h	Weight kg
63	50	236	83	100	8,0
75	65	250	85	110	9,0
90	80	268	85	140	11,0
110	50	240	85	150	10,0
	80	270	85	150	11,5
125	100	290	85	150	12,0
	80	274	87	160	14,0
140	100	294	87	160	14,0
	80	288	93	170	15,0
160	100	308	93	170	15,5
	125	334	93	170	16,0
180	80	300	105	180	16,5
	100	320	105	180	17,0
200	150	380	105	180	20,0
	80	310	113	200	23,0
225	150	415	113	200	31,0
	200	480	130	220	47,0
250	80	356	130	220	33,5
	100	376	130	220	33,0
280	200	488	130	230	55,0

No. 8515 All Socket Tee equal and reducing



\varnothing A mm	\varnothing B mm	L	E 1	E 2	h	
63	63	236	83	83	118	6,0
75	75	250	85	85	125	7,7
90	90	268	85	85	134	9,0
110	63	240	85	80	140	7,7
	90	270	85	85	145	8,9
125	110	290	85	85	145	9,2
	90	274	87	85	150	10,4
140	110	294	97	85	150	10,7
	125	306	90	90	153	15,0
160	90	288	93	85	157,5	12,2
	110	305	93	85	160	12,5
180	140	344	96	96	167	19,0
	90	310	105	85	170	14,0
200	110	330	105	85	170	14,5
	160	380	105	105	190	16,5
225	125	360	113	87	180	24,0
	180	415	113	113	207,5	29,0
250	200	460	128	128	230	35,0
	90	356	128	85	200	29,5
280	110	376	128	128	200	30,0
	225	488	130	130	244	55,0

Bend					End Cap		Duck Foot Bend		
Pipe Ø	90°	45°	30°	11°	Pipe Ø		Pipe Ø A	Flange DN	
63	●	●			63	●	90	80	●
75	●	●			75	●	110	100	●
90	●	●	●	●	90	●			
110	●	●	●	●	110	●			
125	●	●			125	●			
140	●	●			140	●			
160	●	●	●		160	●			
180	●	●			180	●			
200	●	●			200	●			
225	●	●			225	●			
250	●	●			250	●			
280	●	●			280	●			
315	●	●			315	●			

for PE (PE 80/100) and PVC pipes up to PN 16
(DIN 8074, EN 1452-2)

total restraint -

minimal pipe insertion force - easy to dismantle

for water and non aggressive effluent

The pipe is sealed with a lip seal.

Minimal pipe insertion force is required for pushing the pipe end into the seal chamfer with an appropriate chamfer.

The pipe restraining system is separate from the sealing system and is activated by tightening the lock ring.

For thinwalled PE-pipes (up to 3mm wall thickness) and low internal pressure we recommend using a support liner (see page D 2/4).

Bend

No. 8535 90°

No. 8545 45°

No. 8555 30°

No. 8557 11°



Assembly instructions and tensile load see "page M 6/2"

Material:

Body (1), Lock ring (5)

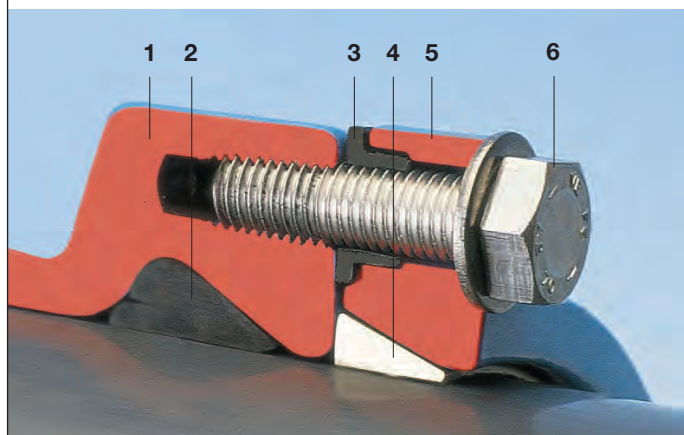
of ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 - DIN 1693)
epoxy powder coated

Lip seal (2) of elastomer, suitable for potable water

Spacer bushes (3) of PE

Grip ring (4) Ms 58 from DN 300 Rg7

Bolts (6) A 2 (stainless)



End Cap

No. 8075

with lateral G 1" internal threaded outlet

Threaded outlets
G 1¼", G 1½", G 2"
as well as axial version on request



Duck Foot Bend

No. 5045



Fittings SYSTEM 2000

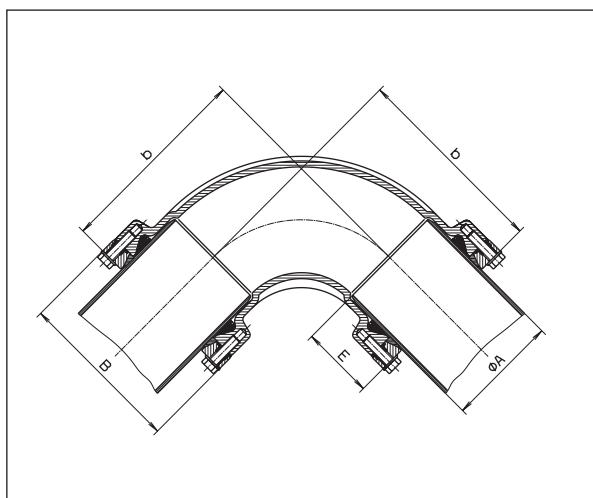
Bend

No. 8535 90°

No. 8545 45°

No. 8555 30°

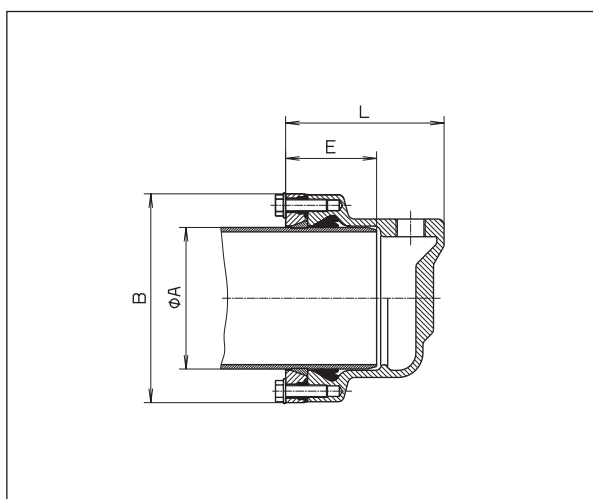
No. 8557 11°



Pipe Ø mm	b				t	B	Weight kg			
	90°	45°	30°	11°			90°	45°	30°	11°
63	153	112			80	124	4,2	3,7		
75	170	120			82	138	5,5	4,5		
90	188	129	115	98	85	152	7,1	6,4	6,0	5,7
110	213	140	122	100	85	172	9,2	7,5	7,3	6,6
125	240	153			87	193	11,7	9,9		
140	246	159			93	210	15,0	12,3		
160	283	181	155		105	236	19,5	16,0	16,0	
180	293	191			113	258	24,0	19,5		
200	353	221			125	284	37,5	30,0		
225	355	224			128	314	43,0	39,0		
250	427	263			145	347	57,0	43,5		
280	430	266			148	376	69,0	55,0		
315	506	313			174	422	101,0	67,0		

End Cap

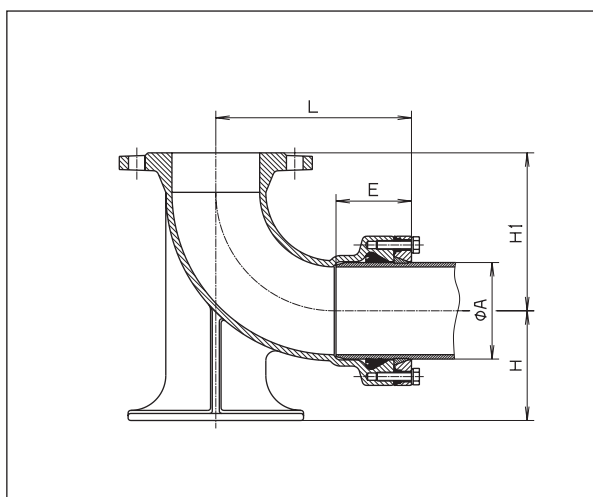
No. 8075



Pipe Ø mm	L	E	B	Weight kg
63	106	80	124	2,7
75	138	82	138	3,2
90	141	85	152	4,5
110	159	85	172	5,8
125	162	87	193	6,1
140	169	93	210	7,4
160	180	105	236	8,6
180	192	113	258	11,7
200	203	125	284	14,5
225	207	128	314	16,5
250	225	145	347	20,5
280	228	148	376	25,0
315	254	174	422	33,5

Duck Foot Bend

No. 5045



DN	Pipe Ø mm	L	E	H	H 1	Weight kg
80	90	210	85	110	165	12,7
100	110	223	85	125	180	16,0

Order no.	Set version	PN	Dimensions/DN				
			50	80	100	150	200
8010S	short	16	●	●	●	●	●
8011S	long	16	●	●	●	●	●

HAWLE-VARIO - the innovative flexible fitting
Material and design features:

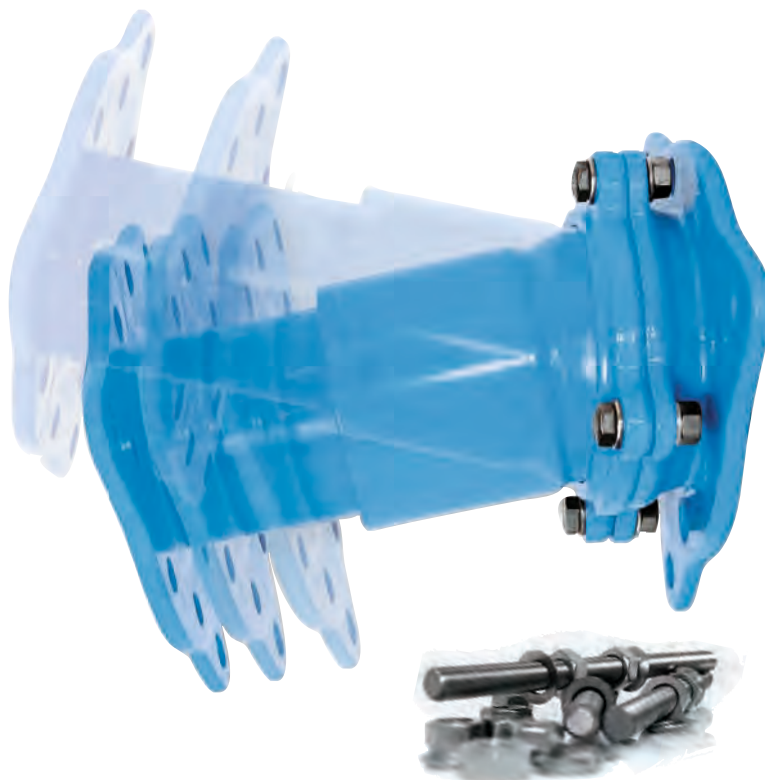
HAWLE-VARIO is a flanged telescopic fitting with integral ball-and-socket joint, permitting bending to all sides up to 10 degrees.

All parts made of ductile iron EN-GJS-400/500-18 acc. to EN 1563 (GGG 400 - DIN 1693) GSK epoxy powder coated inside and outside acc. to DIN 30677-T2, subject to DIN 3476, as well as all quality and testing provisions acc. to RAL Quality Mark 662 (GSK – The Quality Association for Heavy Duty Corrosion Protection)

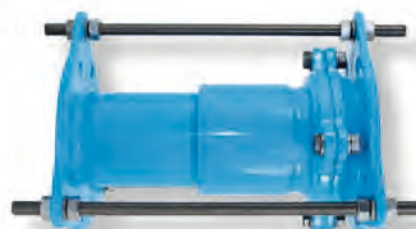
Locking ring, bolts, nuts and washers of stainless steel A2

O-rings of elastomer (suitable for potable water)

Tension lock of stainless steel A2


Tension lock:

By means of the tension lock assembly the HAWLE-VARIO will be fixed in the installed position.

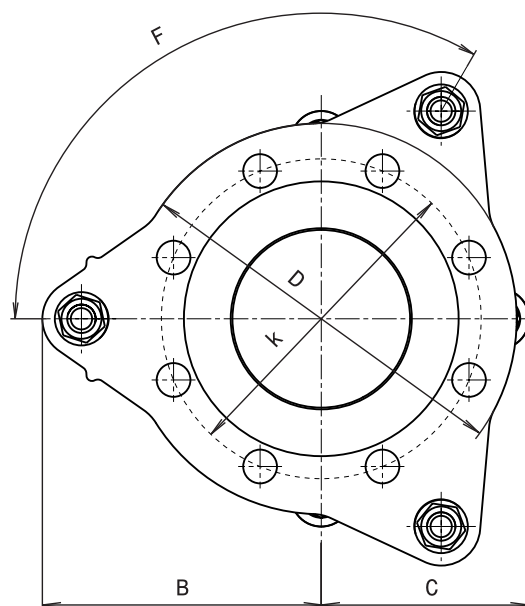
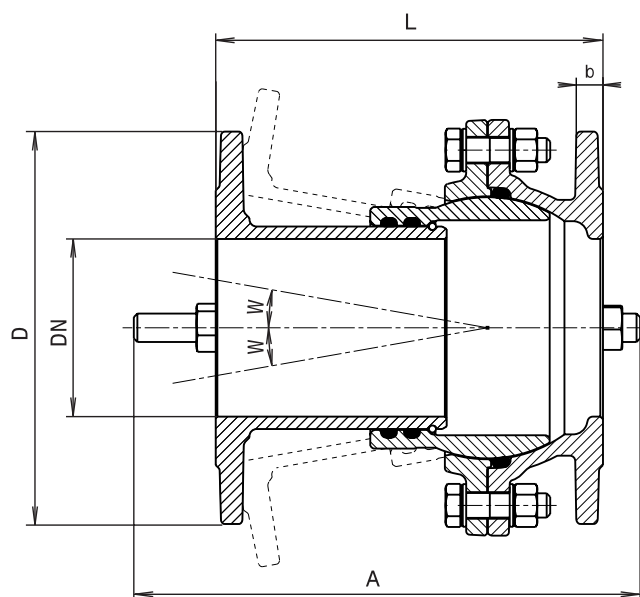


Flanges according to EN 1092-2, drilled to DIN 2501-PN10 (standard);
For DIN 2501-PN 16 in sizes of DN 200 mm please specify on order - other standards on request !

HAWLE-VARIO

No. 8010S Version short, with tension lock

No. 8011S Version long, with tension lock



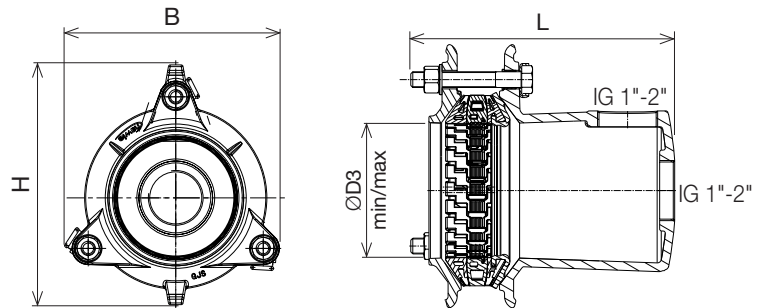
DN	PN	Version	Adjusting range L in mm	A	B	C	D	F	k	Angle W	Weight kg
50	16	short	150-207	285	212	87	165	3x120°	125	0-10°	8,90
		long	207-323	415							10,20
80	16	short	150-214	285	247	107	200	3x120°	160	0-10°	14,30
		long	214-344	415							16,85
100	16	short	150-216	285	267	117	220	3x120°	180	0-10°	16,20
		long	216-350	415							18,90
150	16	short	175-250	330	380	190	285	4x90°	240	0-10°	25,40
		long	250-408	480							29,30
200	10/16	short	195-292	360	229	229	340	4x90°	297	0-8°	48,00
		long	280-462	530							52,00

Restraint multi-range connection for all kinds of pipes

Product description

No. 7980

- Acc. to EN 14525
- Body and lock ring of ductile iron EN-GJS-400 epoxy powder coated
- Flexible gasket of elastomer acc. to EN 681-1 (suitable for potable water)
- Flexible **Synoflex** ring of POM
- Tension locks of stainless steel. Each support element holds a tension lock element.
- Bolts and nuts of stainless steel, coated against seizing
- Bolt head locking devices of stainless steel A4, with protective cap of elastomer
- Bolts reversible 180°
- Spacer bushes of plastic
- Angle compensation max. 8° (+/- 4° each socket)
- For restraint connections with PE pipes a stainless steel support liner is required (e.g. No. 6035 or 6036).
- optional without or with internal thread 1" - 2" axial or radial



Certificates



DN	PN	Socket				L	Weight kg
		B	H	Pipe \varnothing D3 min / max	Bolts		
80	16	171	204	85 - 105	3x M12 -80	217	5,5
100		226	260	104 - 132	3x M16 -100	256	9,0
*125		250	290	131 - 160	3x M16 -110	274	11,5
150		315	350	155 - 192	4x M16 -110	279	14,6
*200		326	405	198 - 230	6x M16 -120	304	22,4

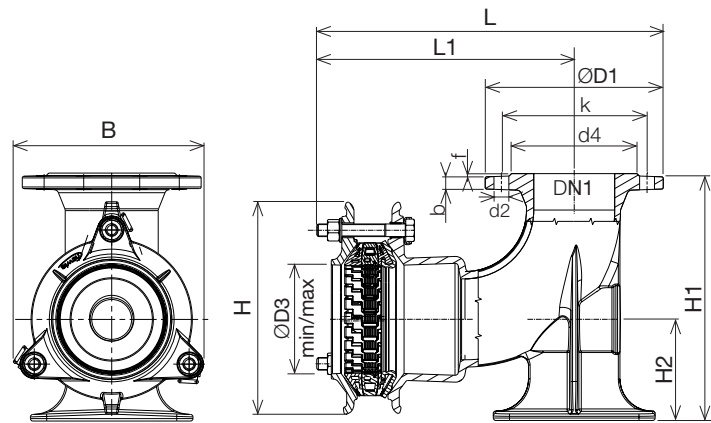
* in preparation

Restraint multi-range connection for all kinds of pipes

Product description

No. 7981

- Acc. to EN 14525
- Flanges according to EN 1092-2 PN10 (alternatively PN16)
- Body and lock ring of ductile iron EN-GJS-400 epoxy powder coated
- Flexible gasket of elastomer acc. to EN 681-1 (suitable for potable water)
- Flexible **Synoflex** ring of POM
- Tension locks of stainless steel. Each support element holds a tension lock element.
- Bolts and nuts of stainless steel, coated against seizing
- Bolt head locking devices of stainless steel A4, with protective cap of elastomer
- Bolts reversible 180°
- Spacer bushes of plastic
- Angle compensation max. 8° (+/- 4° each socket)
- For restraint connections with PE pipes a stainless steel support liner is required (e.g. No. 6035 or 6036).



Certificates



Flange DN1	Socket DN	PN	Flange					Bolts (Flange)			B	H	H1	H2	L	L1	Pipe ØD3 min / max	Bolts	Weight kg
			ØD1	b	k	d4	f	Qty.	Thread	d2									
80	80	16	198	14	160	133	4	8	M 16	19	171	204	110	275	363	263	85 - 105	3xM12 - 80	14,0
100	100		220	14	180	153	4	8	M 16	19	226	260	125	305	422	312	104 - 132	3xM16 - 100	19,6

No. 9920

Valve Actuator

In standard version 400 V, 50 Hz, three phase motor, easily adjustable limit switch, dual torque switch, signal output to control flasher, thermoswitch for motor protection, handwheel for emergency use.

Connection according: DIN 3210 GO resp. G1/2

Shaft coupling: DIN 3210 E

Enclosure of actuator: IP 68

Enclosure of switches: IP 66

Variations from the standard version on request.



symbolic photo



symbolic photo

Actuator control unit
AUMA Matic
on request

E2 Elypso Valve		Valve Actuator		
DN	PN	Type	Weight kg	●
50-100	16	SA 07.6	20,0	●
125-200	16	SA 10.2	23,5	●
250-400	16	SA 14.2	50,5	●
500-600	16	SA 14.6	60,0	●

DN	Valve Actuator U/min	~ Closing time
50-80	16	1,0 min
100-125	16	1,5 min
150-200	16	2,0 min
250	16	2,5 min
300-400	22	2,5 min
500-600	16	4,5 min

other closing times and versions on request

Type	Length	Width	Height
SA 07.6	514	300	288
SA 10.2	536	312	290
SA 14.2	725	375	316
SA 14.6	728	375	316

Important: The actuator should not be used with HAWLE E2 Elypso Valve for partial flow control.

For using the actuator with HAWLE E2 Elypso Valves please specify the following details on order: 1. working pressure, 2. alignment of the valve, 3. how often the valve is to be opened and closed within 24 hours.

No. 4000ELE2 E2 Elypso Valve - short version

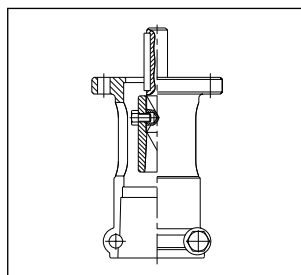
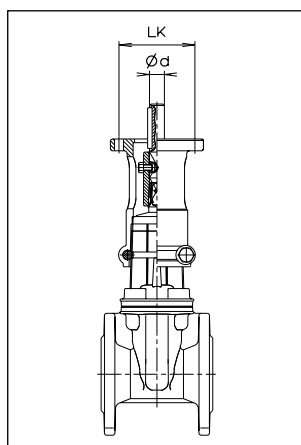
with adaptor for actuator

No. 4700ELE2 E2 Elypso Valve - long version

with adaptor for actuator

including bolts (stud bolts and nuts)
Connection suitable for valve actuator
No. 9920

No. 8630E2 E2 Adaptor



DN	Ø Bolt-circle	Shaft Ø	Weight kg no.					
			4000ELE2	4700ELE2	8630E2			
50	102	20	15,0	●	16,0	●	3,8	●
65	102	20	21,0	●	22,5	●	3,8	●
80	102	20	22,5	●	24,5	●	3,8	●
100	102	20	28,5	●	31,5	●	3,8	●
125	102	20	39,0	●	42,0	●	3,8	●
150	102	20	44,5	●	50,0	●	3,8	●
200	102	20	69,5	●	77,5	●	5,3	●
250	140	30	100,5	●	122,0	●	8,5	●
300	140	30	148,0	●	171,0	●	8,5	●
350	140	30	206,0	●			8,5	●
400	140	30	264,0	●	303,0	●	10,3	●
450	140	30			335,0	●	10,3	●
500	140	30	483,0	●	546,0	●	20,0	●
600	140	30	714,0	●	814,0	●	20,0	●

Sundries

No. 9810

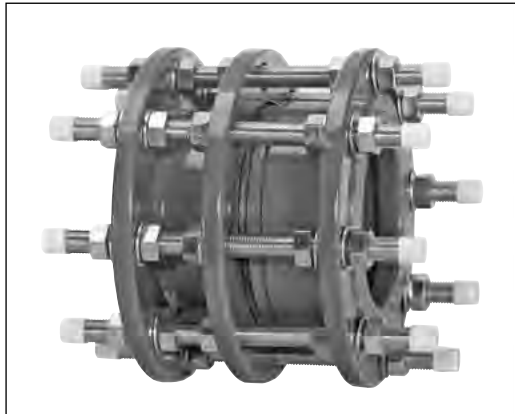
Dismantling Piece

lock type, epoxy coated

PN 10, PN 16*

Length adjustment range: +/- 25 mm

Bolts: galvanized



For DN 200 and higher please specify nominal pressure on order

DN	Length	Weight kg	
50	180	11,0	●
65	180	13,0	●
80	200	17,0	●
100	200	20,0	●
125	200	24,0	●
150	200	30,0	●
200	220	42,0	●
250	220	62,0	●
250*	230	66,0	●
300	220	67,0	●
300*	250	84,0	●
350	230	85,0	●
350*	260	107,0	●
400	230	105,0	●
400*	270	142,0	●

No. 9900

Back Flow Preventer

Standard version:

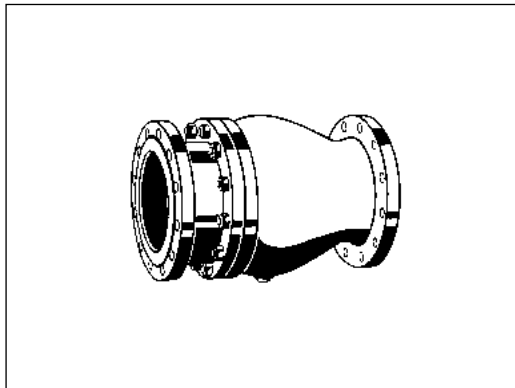
Body: of grey iron

Plug:

DN 50 red brass

DN 65 - 200 stainless steel

PN 10/PN 16



For DN 200 and higher please specify nominal pressure on order

DN	Length	Weight kg	
50	200	11,0	●
65	240	17,0	●
80	260	21,0	●
100	300	29,0	●
125	350	37,0	●
150	400	62,0	●
200	500	79,0	●

Order no.	Version	PN	Dimension/DN										
			40	50	65	80	100	125	150	200	250	300	
9830	without lever and counterweight	16	●		●				●			●	●
9831				●		●	●		●	●			

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 EN 558-1 GR 48 (DIN 3202 T1 - F6)

No. 9831

Design features:

- reduced weight
- simple cleaning
- fully corrosion free
- optimised velocity
- simple maintenance
- PN 25 (on request)

opening pressure min. 0,03 bar
closing pressure min. 0,5 bar (tight)



Installation Instructions:

- 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.

Material:	9831	9830
Body	Ductile iron GJS 400/500 epoxy-powder coated	Grey iron, epoxy powder coated
Disc/ disc lever	Elastomer/polyamide (suitable for potable water)	
Bolts, nuts	Stainless steel A2	Stainless steel A2
Disc gasket	Elastomer (suitable for potable water)	Klingerit
Shaft	Polyamide	
Gaskets		Elastomer (suitable for potable water)

No. 9830

Design features:

- with lever and counterweight (on request)
- opening pressure min. 0,03 bar
closing pressure min. 0,1 bar (tight)

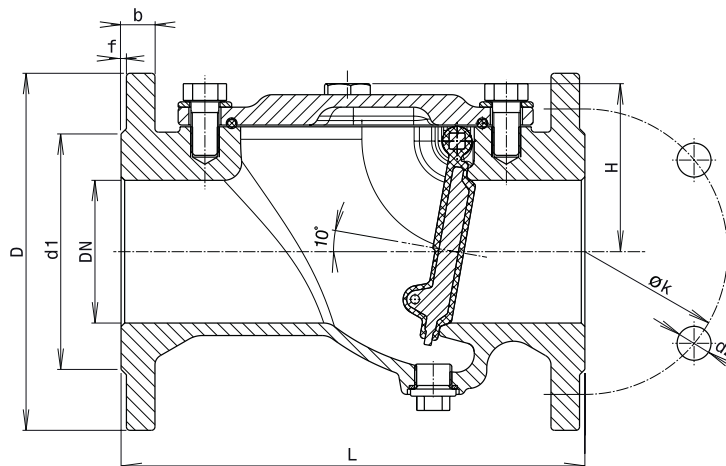


- Direction of flow has to be according to the arrow indicated on the body. Axle of the disc shaft has to be fully horizontal.

Non Return Valve

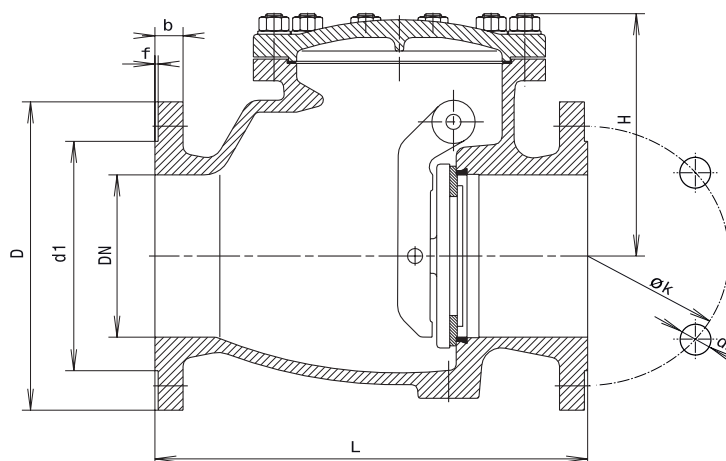
No. 9831

without lever and counterweight



No. 9830

without lever and counterweight



Flanges to EN 1092-2 (DIN 28605), drilled to DIN 2501-PN 10 (standard); for DIN 2501-PN 16 in sizes of DN 200 mm and above please specify on order; other standards on request!

DN	PN	L	H	D	d 1	k	d 2	f	b	Bolts	Kv m ³ /h	Weight kg
40	16	180	119	150	88	110	19	3	18	4 x M 16	60	9,0
50	16	200	77	165	102	125	19	3	19	4 x M 16	170	9,5
65	16	240	141	185	122	145	19	3	20	4 x M 16	163	15,0
80	16	260	95	200	138	160	19	3	19	8 x M 16	366	14,5
100	16	300	113	220	158	180	19	3	19	8 x M 16	698	22,5
125	16	350	199	250	188	210	19	3	26	8 x M 16	588	46,0
150	16	400	155	285	212	240	23	3	19	8 x M 20	1489	45,0
200	10	500	187	340	268	295	23	3	20	8 x M 20	1388	82,0
	12 x M 20											
250	10	600	337	405	320	350	23	3	32	12 x M 20	180,0	
	16					355	27			12 x M 24		
300	10	700	374	460	378	400	23	4	32	12 x M 20	270,0	
	16					410	27			12 x M 24		

Order no.	Version	PN	Dimension/DN										
			40	50	65	80	100	125	150	200	250	300	
9910	with stainless steel double-screen	16	•		•				•			•	•
9911				•		•	•		•	•			

The fine-meshed double screen made from stainless steel reliably restraints all parts bigger than 0,5 mm (DN 40 - DN 150 mm) or bigger than 0,6 mm Ø (DN 200 - 300 mm).

Face-to-face dimension according to EN 558-1 GR 1 (DIN 3202 T1 - F1)

Installation Instructions (No. 9910/9911):

- In general Strainers 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 downwards.

Direction of flow has to be according to the arrow indicated on the body whereby the lid has to look to the bottom.

Material:

Body and lid:

9910 grey iron, epoxy powder coated

9911 ductile iron EN-GJS400/500, epoxy powder coated

Bolts, nuts, plug:

stainless steel

Double screen:

stainless steel, standard

mesh-size: DN 40 – 150: ca. 0,5 mm
DN 200 – 300: ca. 0,6 mm

Gasket:

9910 Klingerit

9911 EPDM

Design features (No. 9911):

The new design enables a simpler and quicker maintenance of the screen, and guarantees a considerably higher flow capacity.



No. 9910

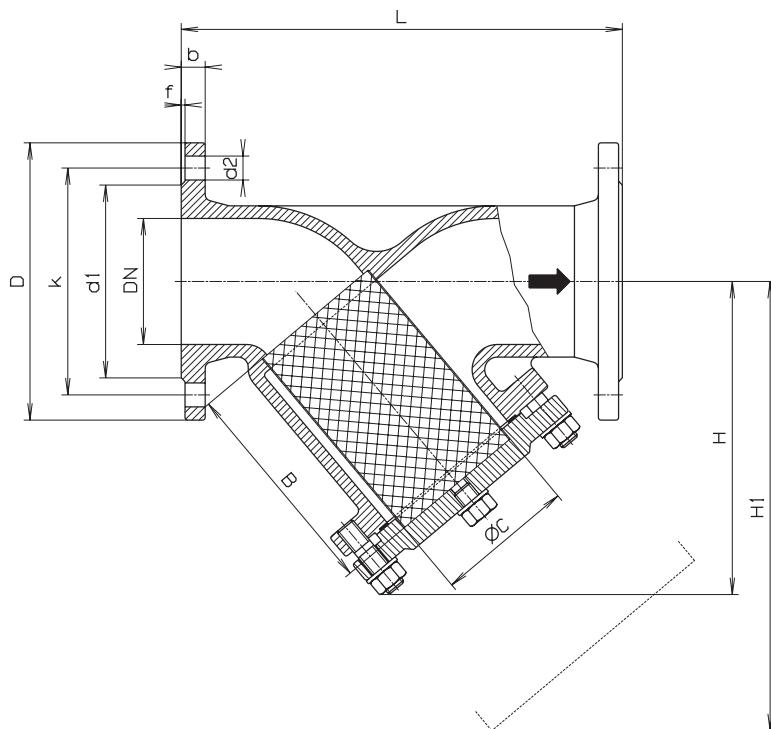


No. 9911

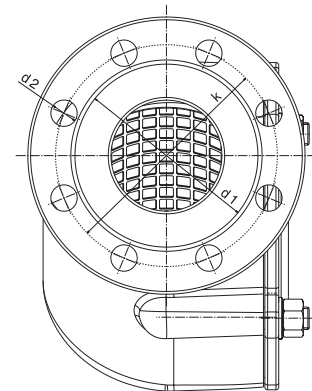
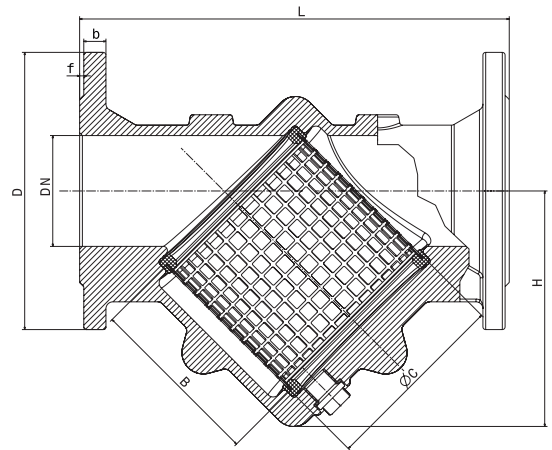
Strainer

No. 9910 (9911)

with stainless steel double-screen



No. 9910



No. 9911

Flanges acc. to EN 1092-2 PN16, drilled acc. to EN 1092-2 PN 10 (standard);
PN 16: from DN 200 mm to be mentioned on order - other standards on request!

DN	PN	L	H	H 1	D	d 1	B	C	k	d 2	f	b	Bolts	Weight kg
40	16	200	150	240	150	88	114	50	110	18	3	18	4 x M 16	8,8
50	16	230	120		165	99	102	90	125	19	3	19	4 x M 16	12,0
65	16	290	180	285	185	122	134	79	145	18	3	20	4 x M 16	17,0
80	16	310	170		200	132	127	136	160	19	3	19	8 x M 16	19
100	16	350	205		220	156	174	170	180	19	3	19	8 x M 16	34,0
125	16	400	280	425	250	188	199	138	210	18	3	26	8 x M 16	42,5
150	16	480	298		285	211	250	248	240	23	3	19	8 x M 20	56,0
200	10	600	379		340	266	311	322	295	23	3	20	8 x M 20	107
	12 x M 20													
250	10	730	540	915	405	320	434	258	350	22	3	32	12 x M 20	165,0
	355								12 x M 24					
300	10	850	680	1110	460	370	555	308	400	22	4	32	12 x M 20	285,0
	410								12 x M 24					

No. 9941

Pipeline spacer (Anti-friction distance clamps)

The dimension and type of spacer is determined by the diameter of the medium carrier pipe.

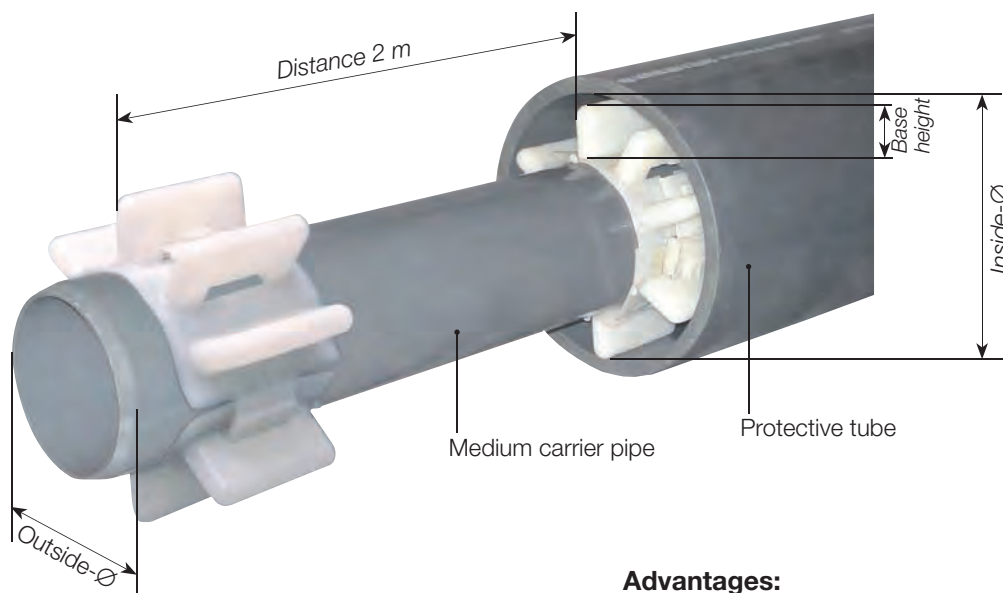
The pipeline spacer height is dependent on the inside diameter of the protective tube.

Additional information available upon request!



$$\frac{(Inside-\varnothing) - (outside-\varnothing)}{2} \leq \text{Base Height}$$

DN	outside Ø medium carrier pipe mm	Base height / mm		
		25	41	60
80	76-115	●	●	
100	103-131	●	●	
125	117-172	●	●	
150	155-195	●	●	
200	207-260	●	●	
250	258-326	●	●	
250	236-312	●	●	●
300	295-390	●	●	●
350		●	●	●
400	353-468	●	●	●
450	413-546	●	●	●
500	472-624	●	●	●
600	501-702	●	●	●



Advantages:

- Fits easily onto pipe
- Preassembled apportioned rings
- No additional tools necessary
- High tolerance, withstands 2000 kg/ring
- Suitable for water, gas and sewage

Sundries

No. 0820

Warning Tape without metal insert
with the message "Beware Water Pipe"

No. 0830

Warning Tape with metal insert

Non-decaying locating and warning tape on non-metallic pipes for installing with the pipeline with the message "Beware Water Pipe"



No. 0820

250 - roll

No. 0830

A up to 1000 m

B 1250 to 5000 m

C from 5000

250 m - roll

Indicator Plates

of plastic, impact resistant, weatherproof, with interchangeable characters

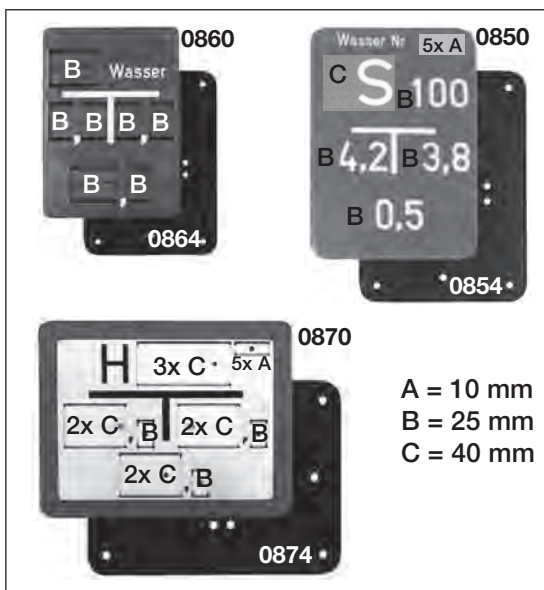
No. 0850 for mains pipes

No. 0860 for service valves

No. 0870 for hydrants

Numbers and Letters

Inserts for indicator plates



Order no.	Dimensions	Type	
0850	200 x 140	L*	●
		V*	●
0854	200 x 140		●
0860	100 x 140	L*	●
		V*	●
0864	100 x 140		●
0870	200 x 250	L*	●
		V*	●
0874	200 x 250		●

L* = Blank

V* = Complete with inserts

when ordering indicator plates, resp. numbers and letters, please specify the colour requested !

- "blue" - water
- "green" - waste water
- "white" - hydrants
- "yellow" - gas

		Numbers and Letters			1-space blank			5-space blank
Order no.		0880W/0881H			0880W/0881H			0880W/0881H
for No.	Size	10 mm	25 mm	40 mm	10 mm	25 mm	40 mm	10 mm
0850		●	●	●	●	●	●	●
0860			●			●		
0870		●	●	●	●	●	●	●

Wooden Box for Inserts

for clearly displayed storage of numbers and letters for indicator plates

No. 0910 Empty

No. 0911 Filled for approx. 160 plates

Please specify the colour requested !

- "blue" - water
- "green" - waste water
- "white" - hydrants
- "yellow" - gas



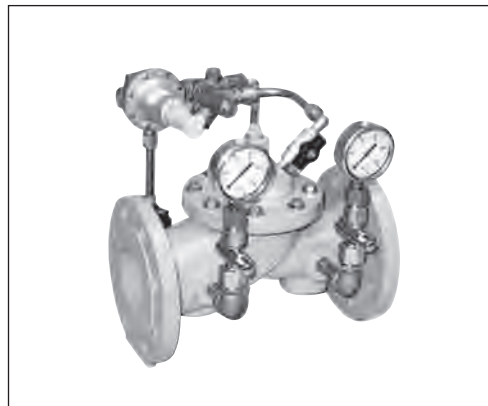
Pressure Reducing Valve

of ductile iron
epoxy powder coated

PN 10 / PN 16

with 2 pressure gauge assemblies (glycerine pressure gauges)

inclusive valve position indicator



For DN 200 and higher please specify nominal pressure on order

DN	Length	Weight kg	
1¼"	184	16,0	●
1½"	184	16,0	●
50	230	16,0	●
65	290	22,0	●
80	310	23,0	●
100	350	37,0	●
125	400	60,0	●
150	480	68,0	●
200	600	124,0	●
250	730	193,0	●
300	850	334,0	●
350	980	544,0	●
400	1100	646,0	●

Float Valve

of ductile iron
epoxy powder coated

PN 10 / PN 16

consisting of:

main valve and pilot valve

(Connecting pipe between main valve and pilot valve not included; to be installed on site)

inclusive valve position indicator



For DN 200 and higher please specify nominal pressure on order

DN	Length	Weight kg	
1¼"	184	10,0	●
1½"	184	10,0	●
50	230	17,0	●
65	290	23,0	●
80	310	24,0	●
100	350	38,0	●
125	400	61,0	●
150	480	68,0	●
200	600	124,0	●
250	730	193,0	●
300	850	334,0	●
350	980	544,0	●
400	1100	646,0	●

Pressure Relief and Safety Valve

of ductile iron
epoxy powder coated

PN 10 / PN 16

with 1 pressure gauge assembly (glycerine pressure gauge)

inclusive valve position indicator



For DN 200 and higher please specify nominal pressure on order

DN	Length	Weight kg	
1¼"	184	15,0	●
1½"	184	15,0	●
50	230	16,0	●
65	290	22,0	●
80	310	23,0	●
100	350	37,0	●
125	400	60,0	●
150	480	68,0	●
200	600	124,0	●
250	730	193,0	●
300	850	334,0	●
350	980	544,0	●
400	1100	646,0	●

Sundries

Check Valve

of ductile iron
epoxy powder coated

PN 10 / PN 16

inclusive valve position indicator



For DN 200 and higher please specify nominal pressure on order

DN	Length	Weight kg	
1¼"	184	8,0	●
1½"	184	8,0	●
50	230	15,0	●
65	290	21,0	●
80	310	22,0	●
100	350	36,0	●
125	400	59,0	●
150	480	67,0	●
200	600	122,0	●

Solenoid Controlled Valve

of ductile iron
epoxy powder coated

PN 10 / PN 16

including solenoid valve
220 V / 50 Hz (other voltages available)

inclusive valve position indicator



For DN 200 and higher please specify nominal pressure on order

DN	Length	Weight kg	
1¼"	184	11,0	●
1½"	184	11,0	●
50	230	15,0	●
65	290	21,0	●
80	310	22,0	●
100	350	36,0	●
125	400	59,0	●
150	480	67,0	●
200	600	122,0	●
250	730	191,0	●
300	850	332,0	●
350	980	541,0	●
400	1100	644,0	●

Pump Control Valve

of ductile iron
epoxy powder coated

PN 10 / PN 16

with integral automatic non-return valve

dry-running protection at extra cost

inclusive valve position indicator

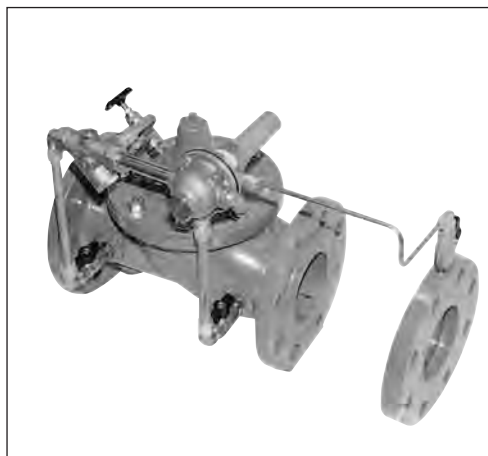


For DN 200 and higher please specify nominal pressure on order

DN	Length	Weight kg	
50	230	17,0	●
65	290	23,0	●
80	310	24,0	●
100	350	38,0	●
125	400	61,0	●
150	480	69,0	●
200	600	124,0	●
250	730	193,0	●
300	850	334,0	●
350	980	544,0	●
400	1100	656,0	●

Flow Control Valve

of ductile iron
epoxy powder coated
PN 10 / PN 16
for constant outlet flow
including orifice plate
(Length 25 mm)
inclusive valve position indicator

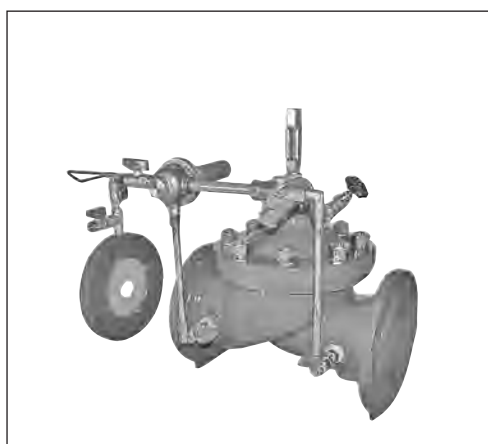


For DN 200 and higher please specify nominal pressure on order

DN	Length excl. plate	Weight kg	
32/40	184	16,0	●
50	230	17,5	●
65	290	23,0	●
80	310	24,0	●
100	350	38,0	●
125	400	61,0	●
150	480	69,0	●
200	600	124,0	●
250	730	193,0	●
300	850	334,0	●
350	980	543,0	●
400	1100	646,0	●

Pipe Burst Safety Shut-Off Valve

of ductile iron
epoxy powder coated
for protection of pipework systems
including orifice plate
inclusive valve position indicator



For DN 200 and higher please specify nominal pressure on order

DN	Length excl. plate	Weight kg	
32/40	184	16,0	●
50	230	17,0	●
65	290	23,5	●
80	310	24,0	●
100	350	38,0	●
125	400	61,0	●
150	480	69,0	●
200	600	124,0	●
250	730	193,0	●
300	850	334,0	●
350	980	544,0	●
400	1100	647,0	●

Sundries

....smoothly, without a hitch!

No. 3443

Mounting-spray

for PE and PVC pipes

for an easy installation

made from pure silicon (with a special solvent)

suitable for potable water

without CFCs

400 ml

Attention:

observe the safety-instructions remarked on the tin



No. 3444

Fitting grease

for potable and waste water valves

suitable for lubrication of valves spindles and O rings

with DVGW-KTW-approval for potable water

90 g



**Valves and fittings for PE and PVC pipes (DIN 8074, EN 1452-2)
total restraint - up to PN 16**

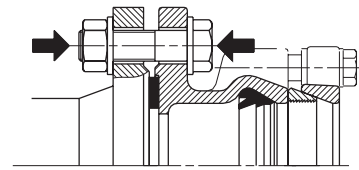
<p>E2 Elypso Valve No. 4040E2 DN 50-300</p> <p>see page A 7/5</p>		<p>E2 Elypso Valve Flange/Socket end No. 4041E2 DN 50-300</p> <p>see page A 7/7</p>	
<p>Flange Adaptor No. 0400 equal and reducing DN 50-400 DN 600</p> <p>see page G 1/1 for PE G 2/1 for PVC</p>		<p>E2 Combi-T No. 4343E2 DN 50-200</p> <p>see page B 1/5</p>	
<p>Double Socket Tee with flanged branch No. 8525 equal and reducing DN 50-200</p> <p>see page L 2/3</p>		<p>Connector No. 0430 DN 50-300</p> <p>see page L 2/3</p>	
<p>Bend No. 8535 90° No. 8545 45° No. 8555 30° No. 8557 11° DN 50-300</p> <p>see page L 2/5</p>		<p>All Socket Tee No. 8515 equal and reducing DN 50-200</p> <p>see page L 2/3</p>	
<p>Duck Foot Bend No. 5045 DN 80, DN 100</p> <p>see page L 2/5</p>		<p>DN 50-300</p> <p>see page L 2/5</p>	

For thinwalled PE pipes (up to 3 mm wall thickness) and low internal pressure we recommend using a support liner.

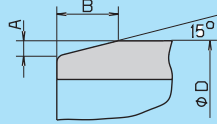
Overall view **SYSTEM 2000**

ASSEMBLY INSTRUCTIONS:

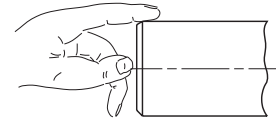
For flange adaptors: bolt the flange to the mating flange first.



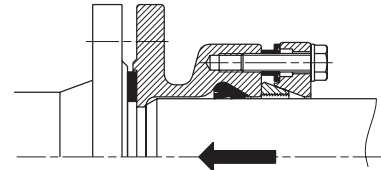
Chamfer the pipe
use lubricant
(see page M 5/2)
Do not use oil !



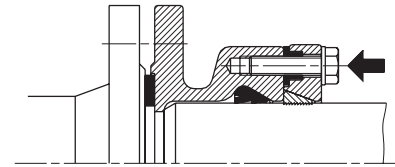
∅ D	A	B
63 - 40	2,5	10
160 -180	4,0	16
200 -225	5,0	20
250 -315	7,0	25
355 -450	9,0	35
600	10,0	40



Push the pipe to the end of the socket.
For thinwalled PE-pipes (up to 3 mm wall thickness) and low internal pressure we recommend using a support liner

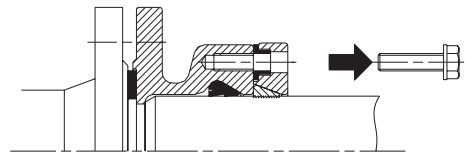


Tighten the lock ring bolts crosswise until lock ring is tight on bushes.

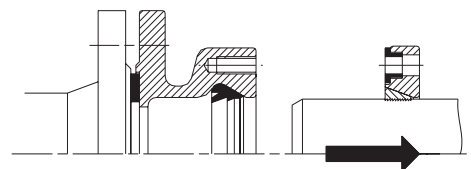


DISMANTLING INSTRUCTIONS:

Undo and remove lock ring bolts.



Twist and withdraw the pipe.



TENSILE TESTING:

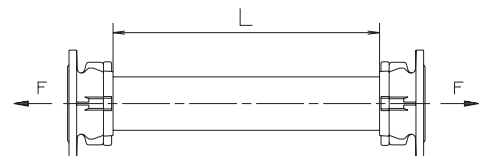
The following maximum tensile loads have been established.

Test data: HAWLE test laboratory tensile testing machine
HDPE pipe (PE 80) DIN 8075 - ÖNORM B 5172 PN 10 (Gas PN 4)

Data established by use of a support liner and under 0 bar internal pressure.
Room temperature: 23°C

Speed of tensile test (mm/min.): 0,1 x the free pipe length (L)

This table shows the maximum end load capacity of a **SYSTEM 2000** connection, compared with the effective theoretical loads in a PE pipeline with 10 bar. A **SYSTEM 2000** connection provides a safety factor of **4 to 6 times!**

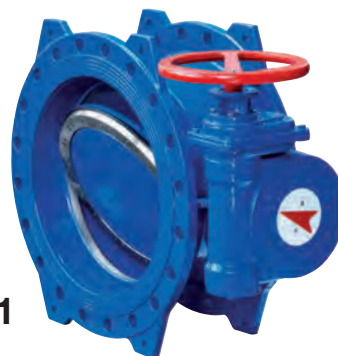


*1 kN = 100 kp

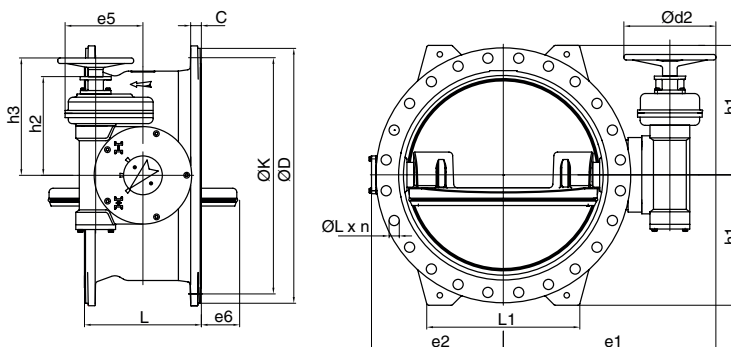
Pipe ∅ mm	Theoretical tensile load - (kN*) at 10 bar internal pressure	Max. tensile load established in tests - (kN*)
63	3,15	20
75	4,42	28
90	6,37	38
110	9,50	56
125	12,27	63
140	15,40	66
160	20,10	98
180	25,45	130
200	31,40	145
225	39,80	153
250	49,10	233
280	61,60	215
315	77,80	270

Product features

- Design according to EN 593
- Face-to-face dimension according EN 558-1 Series 14
- Flanged connections according EN 1092-2
- Body and disc made of ductile iron, epoxy coated
- Sealings made of EPDM
- Shafts made of corrosion resistant steel
- Body seat: Integrated, welded and microfinished steel
- Retaining ring made of carbon steel, epoxy coated
- All connections made of corrosion resistant steel
- Bearings made of bronze
- Coating thickness: minimum 250 microns
- Operator: Wormgearbox and handwheel, epoxy coated
- Suitable liquids: Water
- Special versions available on request



No. 9881



DN	PN	L Series 14	L1	e1	e2	e5	e6	Ød2	ØD	ØK	C	ØL x n	h1	h2	h3	Turns to open / close	Weight kg
150	10	210	-	378	151	134	0	245	285	240	19	23x8	143	136	212	11,25	45
200		230	180	405	177	134	0	245	340	295	20	23x8	180	136	212	11,25	60
250		250	220	481	214	158	5	245	405	350	22	23x12	213	163	239	10	95
300		270	280	503	237	158	11	245	460	400	24.5	23x12	242	163	239	10	115
350		290	320	595	283	175	28	370	505	460	24.5	23x16	264	184	271	12,5	155
400		310	335	626	297	175	43	370	565	515	24.5	28x16	293	184	271	12,5	165
450		330	380	670	333	198	57	370	615	565	25.5	28x20	320	285	372	36,25	220
500		350	400	701	344	245	67	370	670	620	26.5	28x20	345	334	420	43,5	285
600		390	440	749	414	245	98	370	780	725	30	31x20	400	334	420	43,5	350
700		430	540	838	511	313	126	370	895	840	32.5	31x24	460	397	484	104	575
800		470	610	855	530	313	153	370	1015	950	35	34x24	520	397	484	104	680
900		510	670	965	618	365	181	370	1115	1050	37.5	34x28	568	432	519	192,5	980
1000		550	740	1039	650	365	206	370	1230	1160	40	37x28	625	432	519	192,5	1155
1100		590	750	1022	720	365	237	370	1355	1270	53.5	37x32	695	432	519	192,5	1558
1200		630	900	1251	782	515	264	485	1455	1380	45	41x32	738	538	625	362,5	1965
1400		710	1160	1349	917	515	323	485	1675	1590	46	44x36	848	538	625	362,5	2690
1500		750	1080	1411	1015	656	348	485	1820	1700	47	44x36	910	681	768	562	3440
1600		790	1250	1483	1060	656	379	485	1915	1820	49	50x40	970	681	768	562	4366
1800		870	1220	1586	1183	656	431	485	2115	2020	52	50x44	1075	681	768	562	4760
2000		950	1300	1769	1303	656	481	485	2325	2230	55	50x48	1183	681	768	562	7183
2200	1030	1500	1906	1420	656	533	605	2555	2440	65	57x52	1285	809	909	1574	8320	
2400	1110	1600	2095	1593	744	604	605	2760	2650	65	56x56	1390	898	998	1345	12900	
2500	1150	1600	2122	1610	744	628	605	2860	2750	65	56x56	1440	898	998	1345	13820	

Double eccentric Butterfly Valve

DN	PN	L Series 14	L1	e1	e2	e5	e6	Ød2	ØD	ØK	C	ØL x n	h1	h2	h3	Turns to open / close	Weight kg
150	16	210	-	378	151	134	0	245	285	240	19	23x8	143	136	212	11,25	45
200		230	180	405	177	134	0	245	340	295	20	23x12	180	136	212	11,25	60
250		250	220	481	214	158	6	245	405	355	22	28x12	213	163	239	10	95
300		270	280	503	237	158	11	245	460	410	24.5	28x12	242	163	239	10	115
350		290	320	595	283	175	28	370	520	470	26.5	28x16	272	184	271	12,5	162
400		310	335	626	297	198	43	370	580	525	28	31x16	300	285	372	36,25	204
450		330	380	670	333	198	57	370	640	585	30	31x20	330	285	372	36,25	240
500		350	400	721	344	245	67	370	715	650	31.5	34x20	370	334	420	43,5	325
600		390	500	779	414	245	98	370	840	770	36	37x20	432	334	420	43,5	435
700		430	540	838	511	313	126	370	910	840	39.5	37x24	467	397	484	104	610
800		470	615	928	530	313	153	370	1025	950	43	41x24	525	397	484	104	780
900		510	675	1007	618	365	181	370	1125	1050	46.5	41x28	573	432	519	192,5	1065
1000		550	740	1039	650	365	206	370	1255	1170	50	44x28	638	432	519	192,5	1320
1100		590	750	1091	720	365	237	370	1355	1270	53.5	44x32	696	432	519	192,5	1558
1200		630	900	1251	782	515	264	485	1485	1390	57	50x32	753	538	625	362,5	2375
1400		710	1160	1349	917	515	323	485	1685	1590	60	50x36	848	538	625	362,5	2870
1500		750	1153	1385	986	656	348	485	1820	1710	62,5	57x36	930	681	768	562	4055
1600		790	1250	1508	1115	656	379	485	1930	1820	65	57x40	975	681	768	562	5150
1800		870	1220	1630	1217	656	431	485	2130	2020	70	57x44	1080	681	768	562	5580
2000		950	1300	1769	1303	656	481	485	2345	2230	75	62x48	1193	681	768	562	8500
2200	1030	1500	1975	1460	744	533	605	2555	2440	80	62x52	1290	898	998	1345	11220	
2400	1110	1630	2095	1593	744	604	605	*	*	*	*	1390	898	998	1345	14650	
2500	1150	1650	2122	1610	744	628	605	*	*	*	*	1440	898	998	1345	16040	

* upon request

DN	PN	L Series 14	L1	e1	e2	e5	e6	Ød2	ØD	ØK	C	ØL x n	h1	h2	h3	Turns to open / close	Weight kg
150	25	210	-	378	151	134	0	245	300	250	20	28x8	150	136	212	11,25	55
200		230	200	462	198	158	0	245	360	310	22	28x12	190	163	239	10	80
250		250	305	556	250	175	6	370	425	370	24.5	31x12	223	184	271	12,5	160
300		270	340	591	277	198	11	370	485	430	27.5	31x16	253	285	372	36,25	185
350		290	320	619	294	198	28	370	555	490	30	34x16	288	285	372	36,25	216
400		310	375	663	342	245	40	370	620	550	32	37x16	320	334	420	43,5	295
450		330	470	709	382	245	54	370	670	600	34.5	37x20	345	334	420	43,5	352
500		350	430	745	410	313	67	370	730	660	36.5	37x20	375	397	484	104	475
600		390	530	798	461	313	94	370	845	770	42	41x20	433	397	484	104	655
700		430	640	877	535	365	122	370	960	875	46.5	44x24	490	432	519	192,5	900
800		470	575	974	590	365	144	370	1085	990	51	50x24	560	432	519	192,5	1184
900		510	745	1114	685	515	177	485	1185	1090	55.5	50x28	610	538	625	362,5	1800
1000		550	760	1171	741	515	206	485	1320	1210	60	57x28	675	538	625	362,5	2120
1200		630	880	1286	824	515	264	485	1530	1420	69	57x32	775	538	625	362,5	2780
1400		710	1010	1476	964	656	323	485	1755	1640	74	62x36	888	681	768	562	4210
1600		790	1210	1603	1110	656	382	605	1975	1860	81	62x40	1000	809	909	1574	5640
1800		870	1345	1833	1255	744	409	605	2195	2070	88	70x44	1118	898	998	1345	9100
2000		950	1400	1886	1353	744	473	605	2425	2300	95	70x48	1228	898	998	1345	11560

Product description

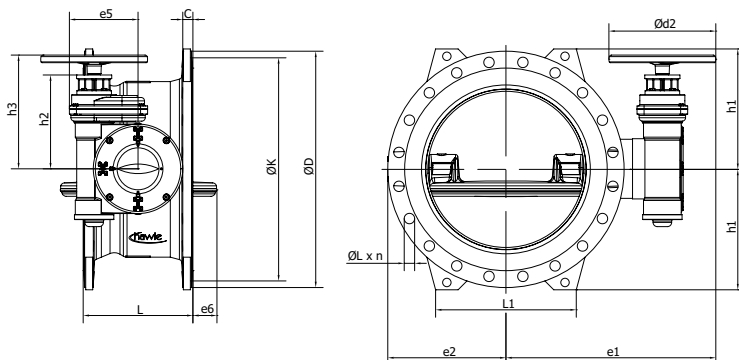
- handwheel and position indicator included
- Protection class IP 68
- Operator: Wormgearbox and handwheel
- applicable for below ground installation
- applicable for electric actuator
- Design according to EN 593
- Face-to-face dimension according EN 558-1 Series 14
- Temperature range according EN 1074

No. 9881K



Technical features

- Body seat: Integrated, welded and microfinished stainless steel
- Body and disc made of ductile iron, inside and outside epoxy powder coated, coating thickness: minimum 250 microns
- Sealings made of EPDM
- Shafts made of stainless steel
- Retaining ring made of stainless steel or epoxy powder coated steel
- All connections made of stainless steel
- Bearings made of bronze
- Application: potable water
- Special versions available on request



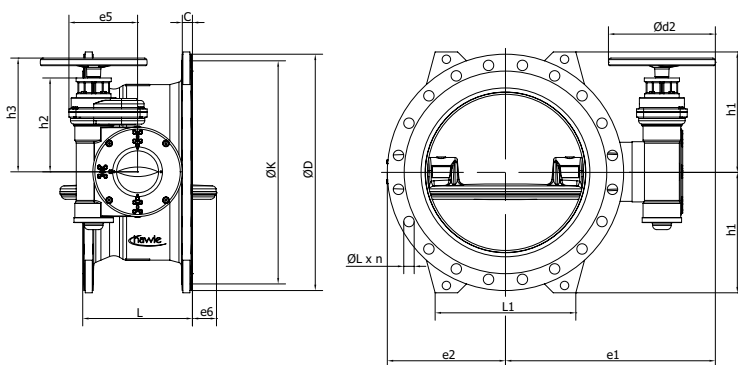
Suitable accessories

Adaptor No. 9211 for extension spindles E2, DN 200
 Adaptor operating cap No. 2161
 Electric actuator No. 9920

Pressure range PN 10

DN	PN	L Series 14	L1	e1	e2	e5	e6	Ød2	ØD	ØK	C	ØL x n	h1	h2	h3	Turns to open / close	Weight kg
150	10	210	-	378	151	134	0	245	285	240	19	23x8	143	136	212	11,25	45
200		230	180	405	177	134	0	245	340	295	20	23x8	180	136	212	11,25	60
250		250	220	481	214	158	5	245	405	350	22	23x12	213	163	239	10	95
300		270	280	503	237	158	11	245	460	400	24.5	23x12	242	163	239	10	115
350		290	320	595	283	175	28	370	505	460	24.5	23x16	264	184	271	12,5	155
400		310	335	626	297	175	43	370	565	515	24.5	28x16	293	184	271	12,5	165
450		330	380	670	333	198	57	370	615	565	25.5	28x20	320	285	372	36,25	220
500		350	400	701	344	245	67	370	670	620	26.5	28x20	345	334	420	43,5	285
600		390	440	749	414	245	98	370	780	725	30	31x20	400	334	420	43,5	350
700		430	540	838	511	313	126	370	895	840	32.5	31x24	460	397	484	104	575
800		470	610	855	530	313	153	370	1015	950	35	34x24	520	397	484	104	680
900		510	670	965	618	365	181	370	1115	1050	37.5	34x28	568	432	519	192,5	980
1000		550	740	1039	650	365	206	370	1230	1160	40	37x28	625	432	519	192,5	1155
1100		590	750	1022	720	365	237	370	1355	1270	53.5	37x32	695	432	519	192,5	1558
1200	630	900	1251	782	515	264	485	1455	1380	45	41x32	738	538	625	362,5	1965	

Double eccentric Butterfly Valve



Pressure range PN 16

DN	PN	L Series 14	L1	e1	e2	e5	e6	Ød2	ØD	ØK	C	ØL x n	h1	h2	h3	Turns to open / close	Weight kg
150	16	210	-	378	151	134	0	245	285	240	19	23x8	143	136	212	11,25	45
200		230	180	405	177	134	0	245	340	295	20	23x12	180	136	212	11,25	60
250		250	220	481	214	158	6	245	405	355	22	28x12	213	163	239	10	95
300		270	280	503	237	158	11	245	460	410	24.5	28x12	242	163	239	10	115
350		290	320	595	283	175	28	370	520	470	26.5	28x16	272	184	271	12,5	162
400		310	335	626	297	198	43	370	580	525	28	31x16	300	285	372	36,25	204
450		330	380	670	333	198	57	370	640	585	30	31x20	330	285	372	36,25	240
500		350	400	721	344	245	67	370	715	650	31.5	34x20	370	334	420	43,5	325
600		390	500	779	414	245	98	370	840	770	36	37x20	432	334	420	43,5	435
700		430	540	838	511	313	126	370	910	840	39.5	37x24	467	397	484	104	610
800		470	615	928	530	313	153	370	1025	950	43	41x24	525	397	484	104	780
900		510	675	1007	618	365	181	370	1125	1050	46.5	41x28	573	432	519	192,5	1065
1000		550	740	1039	650	365	206	370	1255	1170	50	44x28	638	432	519	192,5	1320
1100		590	750	1091	720	365	237	370	1355	1270	53.5	44x32	696	432	519	192,5	1558
1200		630	900	1251	782	515	264	485	1485	1390	57	50x32	753	538	625	362,5	2375

Application example:



Adaptor for extension spindles E2, DN 200
No. 9211



Adaptor operating cap
No. 2161



Electric actuator
No. 9920



HAWLE - **BAIO System**

the solution, easy and time saving



HAWLE. **MADE FOR GENERATIONS.**



HAWLE-BAIO System

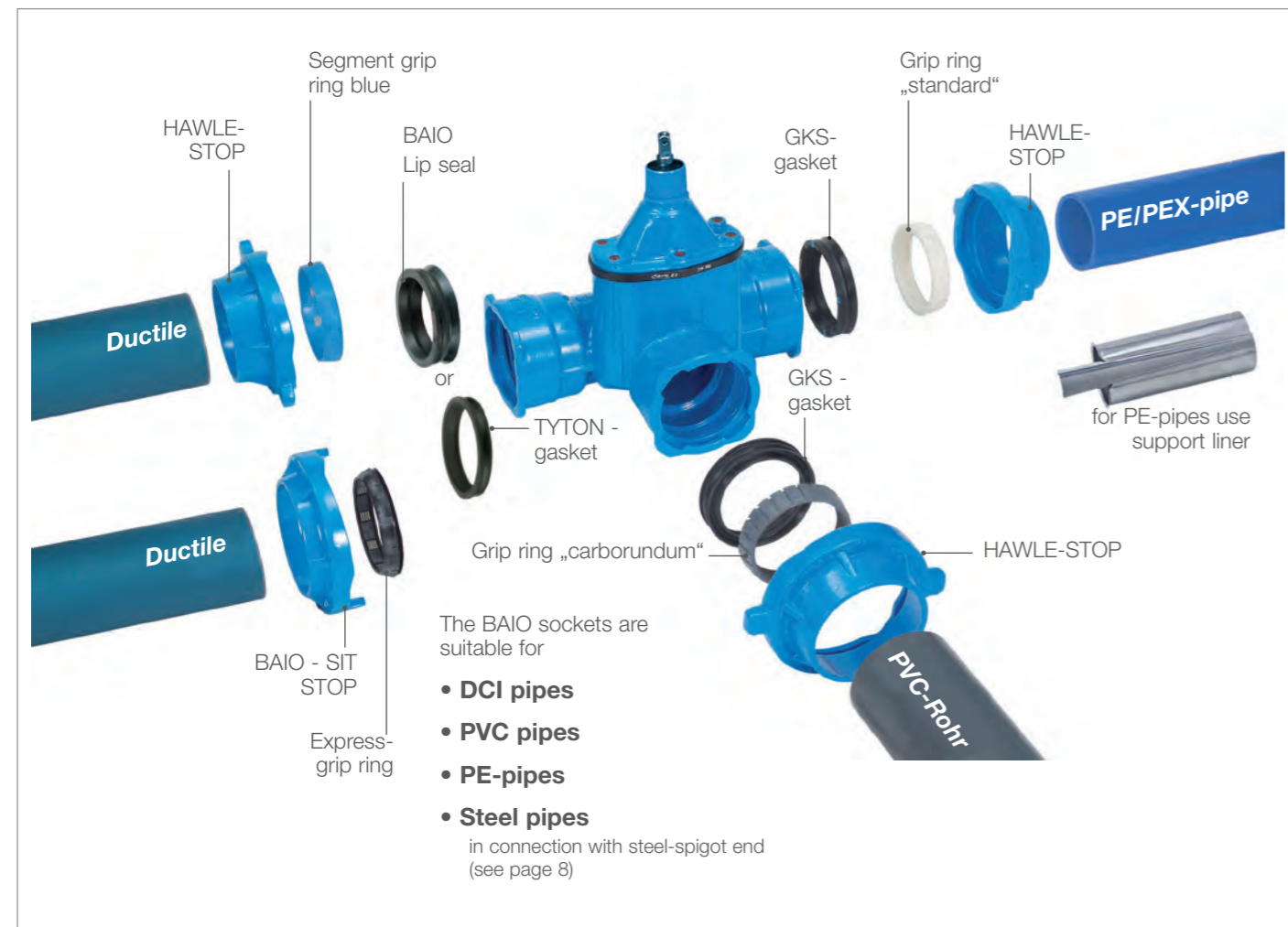
The fastest connection in the pipeline system

- saving in material, joints and piping costs
- joints without flanges or bolts, socket connections allow angular deflection
- low weight and low stock holding costs
- universal application for **ductile iron, steel** and **PE/PVC** pipes
- non-earthed restrainer with Hawle-STOP for DCI-iron and PE/PVC pipes
- high quality corrosion protection due to epoxy coating



RAL QUALITY MARK
HIGH QUALITY CORROSION PROTECTION
FOR VALVES AND FITTINGS

1 SOCKET FOR 4 TYPES OF PIPE



Spigot ends with bayonet lugs for positive connection with the double-function BAIO socket (seal and grip)

All socket fittings are supplied without gasket. Please choose the suitable gasket for the used pipe material.



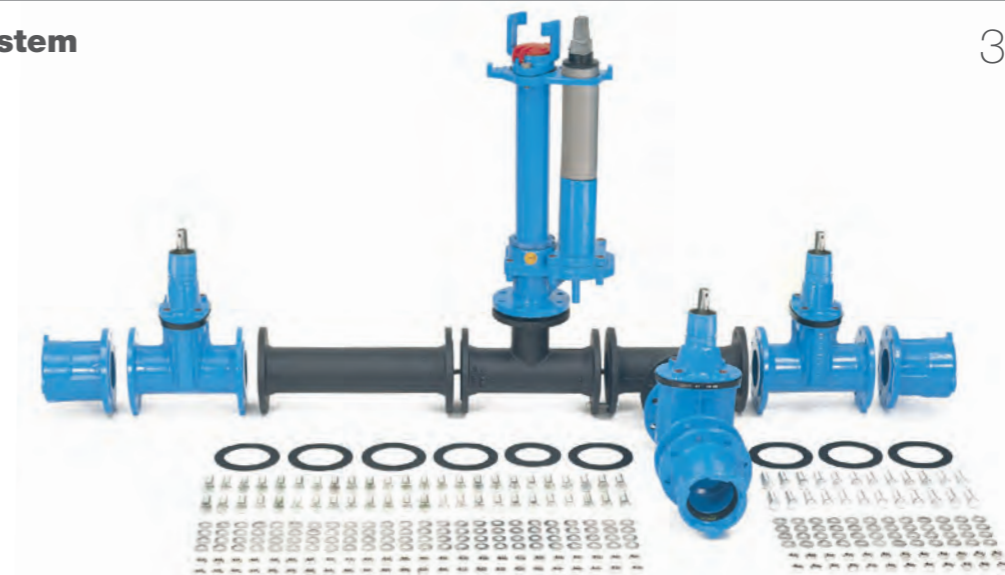
DN 80 - DN 300, PN 16

- Spigot/ Socket or Socket / Socket Gate Valves
- Combi Valves
- Hawle Below-ground hydrant
- Fittings



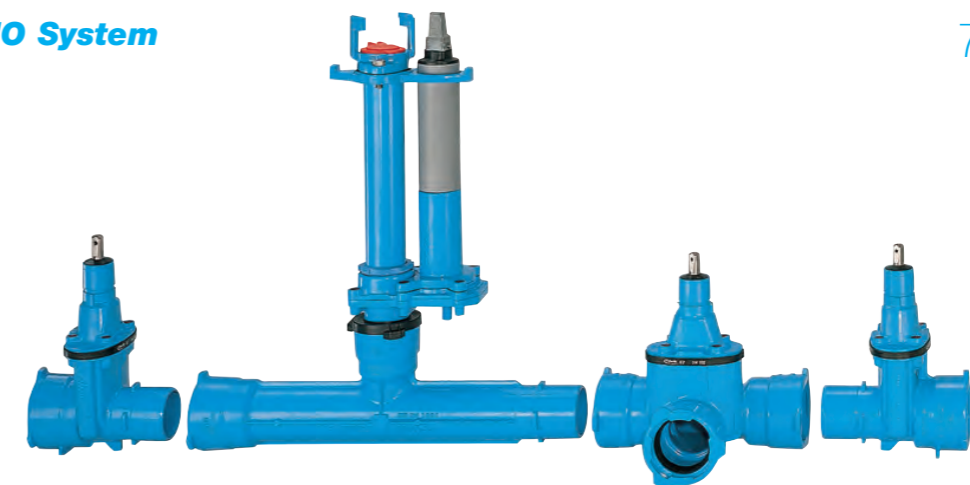
Flange-System

307 Parts



HAWLE - BAIO System

7 Parts



RESTRAINTS, ACCESSORIES, ASSEMBLY INSTRUCTIONS



**Order no. NL80
Hawle-STOP**
with segment grip ring
for DCI pipes
DN 80-200



**Order no. NL84
Hawle-STOP**
with carborundum grip ring
for PVC pipes DN 80-200



**Order no. NL82
Hawle-STOP**
with grip ring
for PE pipes DN 80-200
(use support liner order
no. 6036)

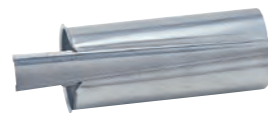


**Order no. NL78
BAIO-SIT**
with special grip ring
for ductile iron, PE- and PVC
pipes DN 250-300
(support liner is recommended when
used with PE pipes)

Accessories



**Order no. NL85
BAIO Lip seal BLD**
PN 16, for use on
DCI pipes in BAIO sockets



Order no. 6035 Class SDR 17,6
Order no. 6036 Class SDR 11
Support liner with wedge made of
stainless steel, for use with PE pipes



**Order no. NL86
GKS-pipe-gasket**
PN 16, for use on PE/PVC pipes in BAIO
sockets



**Order no. NL8B
Union-gasket**
PN 16, for use on PE/PVC pipes in
the EMS socket (for gas on
request)



**Order no. 8716
TYTON gasket**
for use on
DCI pipes in BAIO sockets



**Order no. NL8A
Anti twist device**
for BAIO-connections



ASSEMBLY INSTRUCTION

Assemble the Hawle Stop and grip ring over the chamfered end of the pipe. Insert the pipe end through the seal in the BAIO socket and slide the grip ring along the pipe to the face of the BAIO socket.

Ensure that the gripping location area is free from lubricant.

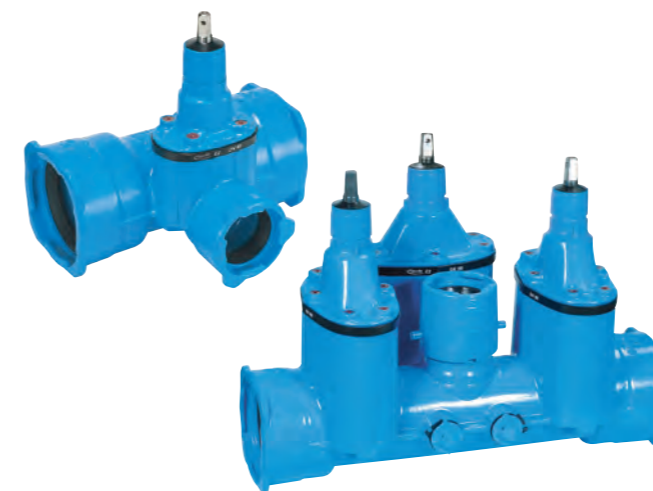
Locate the Hawle-STOP on the external lug of the socket and rotate clockwise to lock.

VALVES, COMBI-VALVES, FITTINGS



Valve, Socket-Spigot
Order no. NL00E2
DN 80 - DN 300, PN 16

Valve, Socket-Socket
Order no. 4500E2
DN 80 - DN 300, PN 16
incl. TYTON gasket for DCI pipes



MMB-Valve
Order no. NL10E2
DN 80 - DN 200, PN 16

Combi-III
Order no. NL15E2
DN 100 - 200, PN 16
available on request with vertical outlet
and/or 2x ZAK 46 outlets



Connector with ZAK 46 outlets
Order no. NL5A
DN 80 - DN 150, PN 16

Connector Socket-Socket
Order no. NL50
DN 80 - DN 200, PN 16

Connector Socket-Socket,
with 2 outlets 2"
Order no. NL51
DN 80 - DN 200, PN 16

Reducing Connector Socket-Spigot
Order no. NL40
DN 80 - DN 300, PN 16

FITTINGS



MMQ-Bend 90° Socket-Socket
Order no. NL30
 DN 80 - DN 200, PN 16

radius angels 11° - 22° - 30° - 45° on request



MSK-Bend 45° Socket-Spigot
Order no. NL57
 DN 80 - DN 200, PN 16



MMB-Tee Piece
Order no. NL20
 DN 80 - DN 300, PN 16



MTT-Cross Piece
Order no. NL25
 DN 80 - DN 200, PN 16

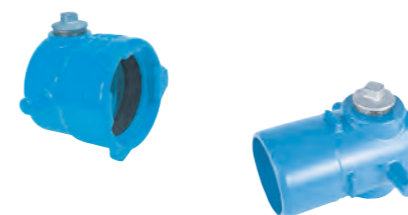


MMN-Duck Foot Bend
Order no. NL60
 DN 80 - DN 100, PN 16
 available on request with 2 or 3 lateral outlets with female iron thread or ZAK



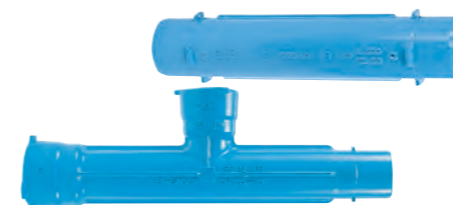
EN-Duck Foot Bend
Order no. NL65
 DN 80 - DN 100, PN 16
 available on request with 2 lateral outlets with female iron thread or ZAK

FITTINGS



Socket-Endcap
Order no. NL47
 DN 80 - DN 200, PN 16

Spigot -Endcap
Order no. NL48
 DN 80 - DN 200, PN 16



S-Piece PN 16
Order no. NL46
 DN 80 - DN 200, PN 16

B-Tee Piece
Order no. NL43
 DN 100/80, 150/80, 200/80, PN 16
 For direct underground hydrant installation in the mainline



EU-Piece Flange - Socket
Order no. NL42
 DN 80 - DN 200, PN 16
Order no. NL42
 DN 150/100, reduced PN 16

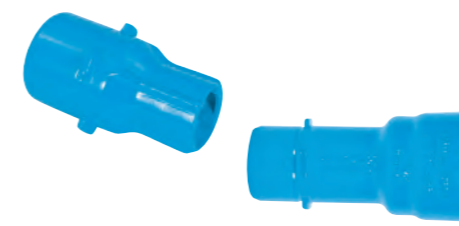


F-Piece Flange - Spigot
Order no. NL41
 DN 80 - DN 200, PN 16



EMS Piece with WAGA Multi/Joint - wide range socket
Order no. NL44 MJ
 DN 80 - DN 200, PN 16

EMS Cut-in Socket Fitting
Order no. NL44
 DN 80 - DN 200, PN 16
 for inserting valves and fittings into existing pipelines



Adaptor Piece
 ZAK-Socket / BAIO-Spigot end
Order no. NL4A
 DN 80 - ZAK 46, PN 16

SM-Adaptor Piece
Order no. NL45
 DN 80 - DN 200
 available on request with ZAK 46 sockets

FITTINGS



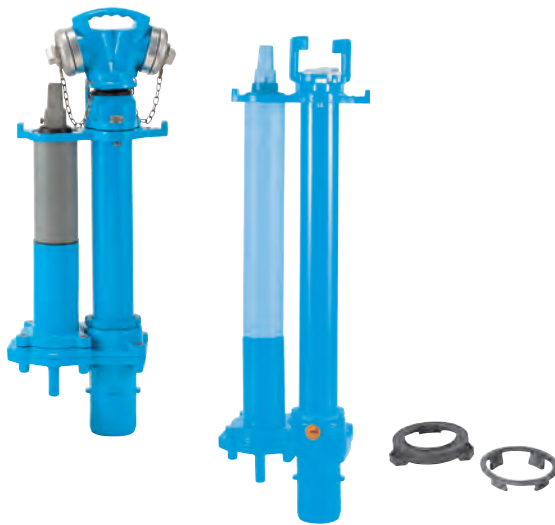
PE-spigot for welding
Order no. NL87
 DN 80 - DN 200



PEi-End PE-End - BAIO-Spigot End
Order no. NL91
 DN 80 - DN 150



SM-BAIO Socket piece with PE-End
Order no. NL93
 DN 80



TELE below ground Hydrant with BAIO
 (spigot) connection
Best.-Nr. 5059
 DN 80, PN 16
 (in combination with BAIO Spigot End)

Freeflow below ground Hydrant
Order no. 5061
 DN 80, PN 16
 (in combination with BAIO Spigot End)

Dirt Cover and Locking Ring
Order no. NL92
 DN 80
 For below ground Hydrant with
 BAIO-Spigot End

distributed by:

HAWLE-**FIT** RANGE



No. 6120HF
with external thread



No. 6430HF
Elbow 90° with internal thread



No. 6220HF
with internal thread



No. 6320HF
Connector



No. 6420HF
Elbow 90°



No. 6520HF
T-piece with threaded outlet

distributed by:

HAWLE-**FIT**

The new generation of pipe fittings



Printed on recycled, chlorine-free bleached paper and aging.

Art.-No.: ZA35000002

Edition 6. 2013

HAWLE-FIT

The new generation of pipe fittings



The new generation of fitting pipes HAWLE-FIT has been designed to connect PE pipes* with an outside diameter of d 25 to d 63 and a working pressure of up to 16 bar.

The new generation of pipe fittings is designed for drinking water applications within a temperature range of up to 30° C.

Installation and dismantling is simple with no special tools required.

* PE 80: SDR 7,4 - SDR 17,6

PE 100: SDR 11

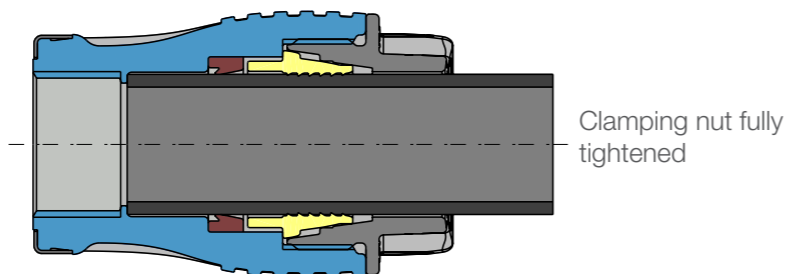
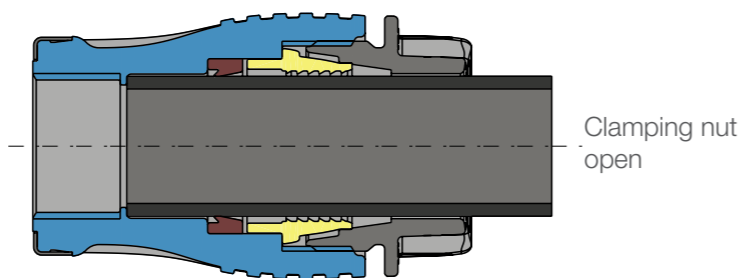
PE 100: SDR 17 (conformity with the standards is only fulfilled when a support liner is used)

Compact and functional design

The innovative design of the new HAWLE generation of fittings is enhanced by the use of highest quality polymers.

The new HAWLE-FIT offers optimum toughness and strength properties.

The concentration of tightening forces around the clamping nut are easily handled by the unique combination of quality materials.



The special clamp toothing (no continuous groove) reduces the impact force on the pipe. This significantly enhances the service life of the pipe.

The stainless steel reinforcing ring prevents the fitting from bursting open in the event of internal thread overload. This reinforcing ring represents an important safety factor since it offers protection from water loss (long-term effect ...).



HAWLE-FIT

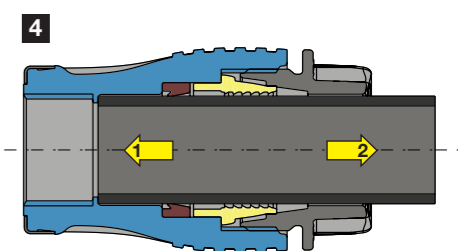
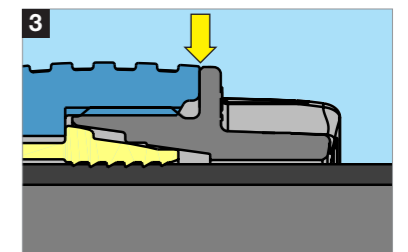
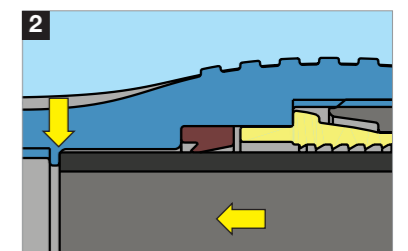
Compact and functional design

The new generation of fitting pipes HAWLE-FIT is supplied ready for installation which means: no screwing on is required before inserting the pipe! The fitting is unpacked and is then ready for use (ill. 1).

The new generation of pipe fittings HAWLE-FIT can be assembled without any pipe chamfering and they feature built-in end stops. This saves time and money (ill. 2/3).

Before assembly, the grip ring does not reveal any initial tension/prestress inwards. For this reason only very low insertion forces are required.

The construction of the new generation of pipe fittings HAWLE-FIT simplifies the dismantling of the pipe since the fitting does not have to be completely dismantled. The clamping nut is loosened but not actually removed. (ill. 4).



Simple installation and high operational reliability





HAWLE - **ZAK System**

the threadless, restraint jointing system



HAWLE. **MADE FOR GENERATIONS.**



HAWLE - ZAK System

DESIGN FEATURES

- the threadless, restraint jointing system for service connections
- integrated in Pipe Saddles, Service Valves and Fittings
- PN 16

SIMPLE INSTALLATION

- push into
- rotate for 90°
- pull out
- fit the snap ring



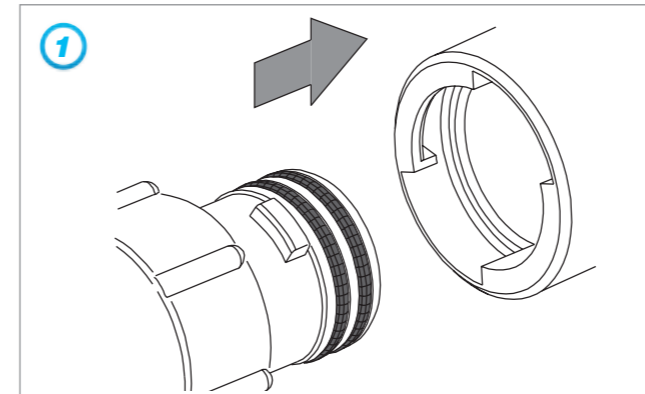
ZAK-sockets d 34 for pipe drilling \varnothing 25 mm
ISO-push fit from PE-pipes \varnothing 25 mm - \varnothing 50 mm

ZAK-sockets d 46 for pipe drilling \varnothing 35 mm
ISO-push fit from PE-pipes \varnothing 32 mm - \varnothing 63 mm

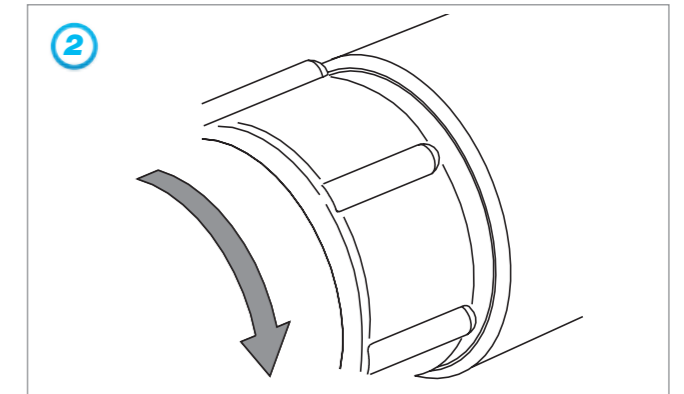
HAWLE - QUALITY-GUARANTEE



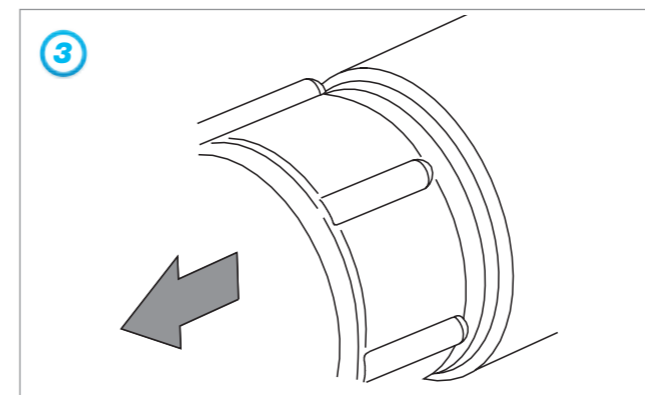
HAWLE - ZAK System ASSEMBLY INSTRUCTIONS



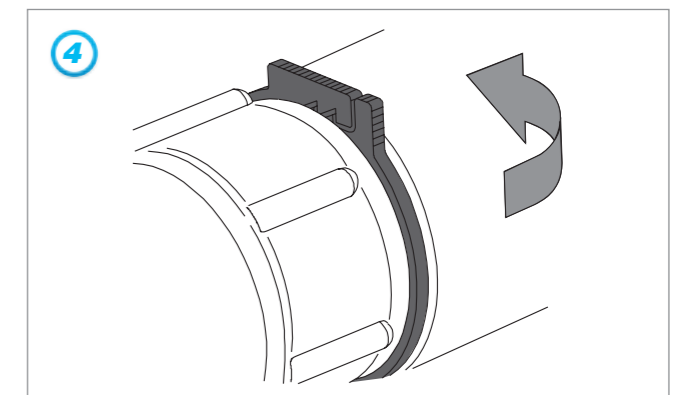
Grease the O-rings of the spigot end. Push the ZAK-spigot end into the ZAK-socket to the stop.



Rotate the ZAK-Fitting for 90° clockwise to the stop.

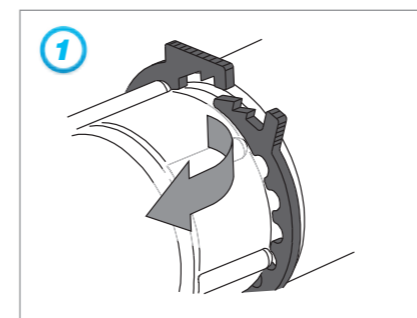


Pull out the ZAK-Fitting to the stop (approx. 4 mm)

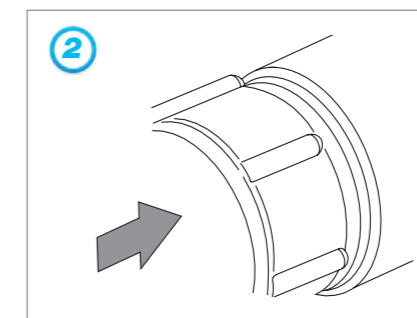


Fit the snap ring in the gap and push the locking ends together.

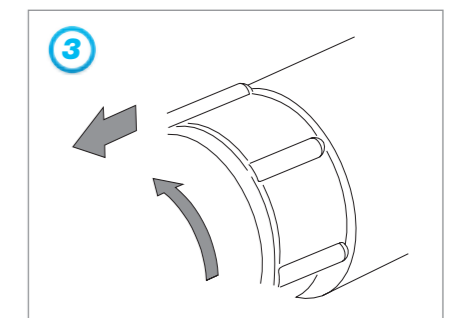
HAWLE - ZAK System DISMANTLING INSTRUCTIONS



Open the snap ring, widen it and pull it back.



Push in the ZAK-Fitting to the stop (approx. 4 mm).

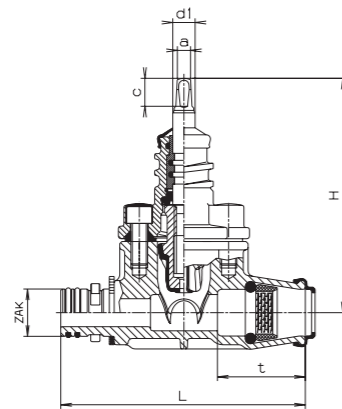


Turn the ZAK-Fitting for 90° counter-clockwise to the stop and pull it out of the ZAK-socket.

HAWLE - ZAK SYSTEM RANGE

ZAK - service valve

- with ZAK-spigot and ISO socket
- for lateral tapping



No. 2810

ZAK 34

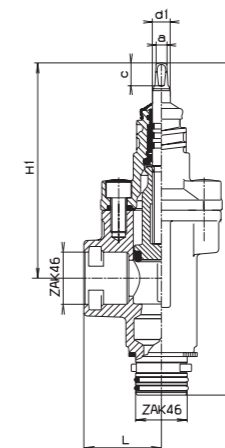
DN	PE-pipe Ø	H	L	t	a	c	d1	Weight
¾"	25	168	173	52	10,3	20	16	2,35
1"	32	168	175	63	10,3	20	16	2,50
1¼"	40	200	205	76	10,3	20	16	2,90
1½"	50	200	232	91	10,3	20	16	3,15

ZAK 46

DN	PE-pipe Ø	H	L	t	a	c	d1	Weight
1¼"	40	200	230	76	10,3	20	16	4,00
1½"	50	200	236	91	10,3	20	16	4,30
2"	63	270	267	103	10,3	20	16	4,80

ZAK - service valve

- with ZAK-spigot and ISO socket
- for vertical tapping



No. 3161

ZAK 46

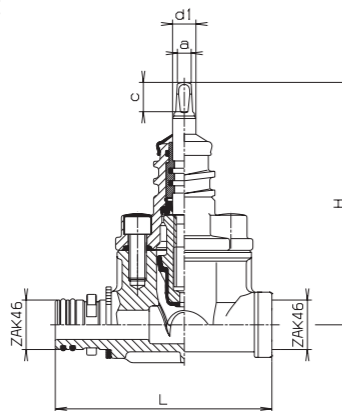
DN	H	H1	L
1½"	297	190	69

ZAK 46

DN	a	c	d1	Weight
1½"	10,3	20	16	3,90

ZAK - service valve

- with ZAK-spigot and ZAK-socket
- for lateral tapping



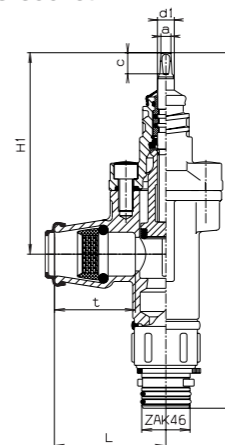
No. 2811

ZAK 46

DN	H	L	a	c	d1	Weight
1½"	200	209	10,3	20	16	4,00

ZAK - service valve

- 360° swivel type, with ZAK-spigot and ISO socket
- for vertical tapping



No. 3162

ZAK 46

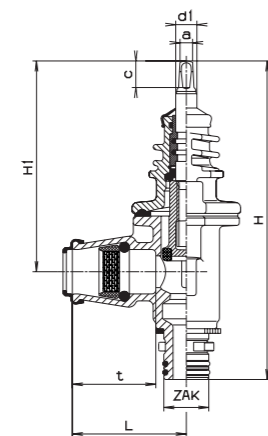
DN	PE-pipe Ø	H	H1	L
1½"	50	355	190	106

ZAK 46

DN	t	a	c	d1	Weight
1½"	76	10,3	20	16	4,85

ZAK - service valve

- with ZAK-spigot and ISO socket
- for vertical tapping



No. 3160

ZAK 34

DN	PE-pipe Ø	H	H1	L
¾"	25	240	159	80
1"	32	240	159	80

ZAK 34

DN	t	a	c	d1	Weight
¾"	52	10,3	20	16	2,30
1"	63	10,3	20	16	2,40

ZAK 46

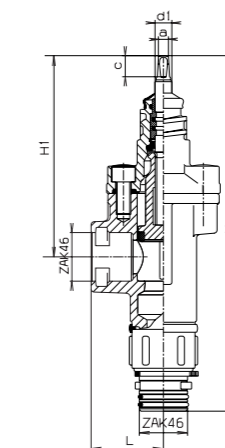
DN	PE-pipe Ø	H	H1	L
1¼"	40	272	190	106
1½"	50	286	190	220

ZAK 46

DN	t	a	c	d1	Weight
1¼"	76	10,3	20	16	4,15
1½"	91	10,3	20	16	4,25

ZAK - service valve

- 360° swivel type, with ZAK-spigot and ZAK socket
- for vertical tapping



No. 3163

ZAK 46

DN	H	H1	L
1½"	355	190	69

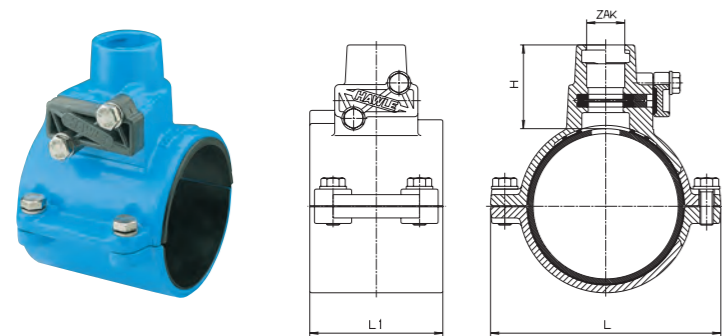
ZAK 46

DN	a	c	d1	Weight
1½"	10,3	20	16	4,53

HAWLE - ZAK SYSTEM RANGE

ZAK - HAKU-shut-off saddle

- for lateral and vertical tapping
- of PE and PVC pipes



No. 5320

ZAK 34, for pipe drilling \varnothing 25 mm

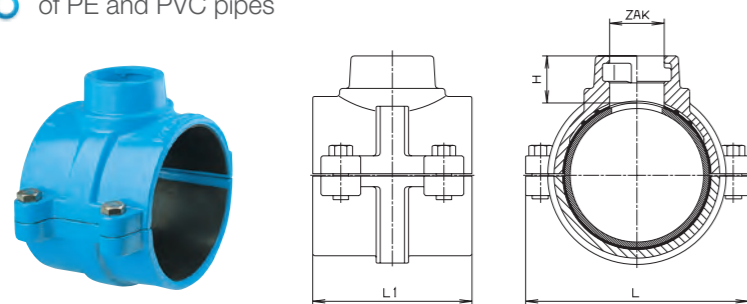
Pipe \varnothing	H	L	L1	Weight
63	107	135	100	2,90
90	73	150	110	3,35
110	73	170	120	3,75
140	76	208	120	5,00
160	80	230	120	5,85
225	83	310	120	7,65

ZAK 46, for pipe drilling \varnothing 35 mm

Pipe \varnothing	H	L	L1	Weight
90	72	150	110	3,55
110	74	170	120	4,00
140	79	208	120	5,20
160	74	230	120	5,95
200	83	285	120	6,90
225	86	310	120	7,70
250	83	350	180	13,15
280	83	380	180	13,40

ZAK - HAKU-pipe saddle

- for lateral and vertical tapping
- of PE and PVC pipes



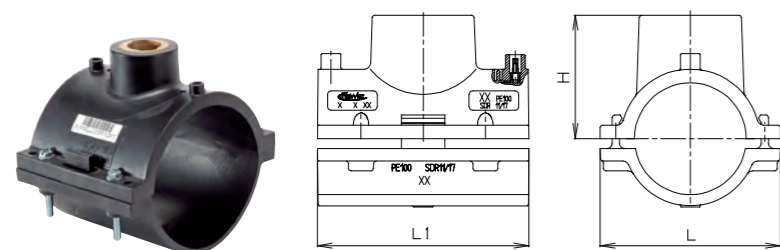
No. 5260

ZAK 46, for pipe drilling \varnothing 35 mm

Pipe \varnothing	H	L	L1	Weight
63	46	135	100	1,90
90	46	150	110	3,00
110	46	170	120	3,10
125	39	190	120	3,80
140	39	205	120	4,80
160	39	230	120	5,00
225	39	300	120	7,00

HA-WELD-fusion saddle

- with ZAK-sockets of PE pipes (of PE 100)
- ZAK-connection of brass



No. 5261

ZAK 34, for pipe drilling \varnothing 25 mm

Pipe \varnothing	H	L	L1	Weight
63	63	120	140	0,80
90	100	145	170	1,05
110	110	180	170	1,35
125	117	180	170	1,30
160	135	220	170	1,60
225	167	295	170	2,30

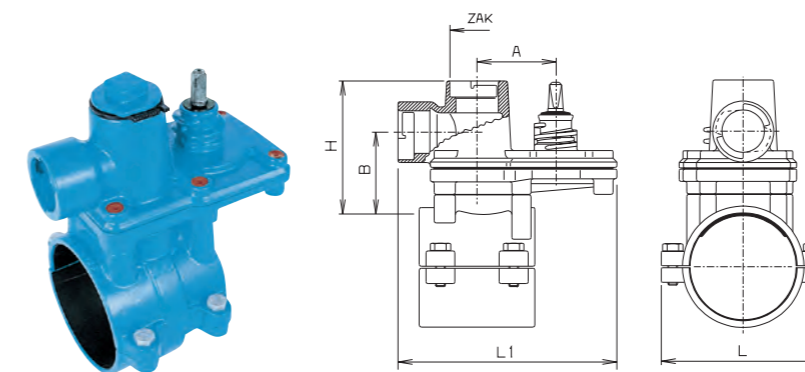
ZAK 46, for pipe drilling \varnothing 35 mm

Pipe \varnothing	H	L	L1	Weight
90	100	145	170	1,05
110	110	180	170	1,35
125	117	180	170	1,30
160	135	220	170	1,60
225	167	295	170	2,30

HAWLE - ZAK SYSTEM RANGE

ZAK - HAKU-Hawlinger

- for lateral and vertical tapping
- of PE and PVC pipes



No. 2310

No. 2305

only for vertical tapping (without illustr.)

ZAK 34, for pipe drilling \varnothing 25 mm, Dimensions No. 2310

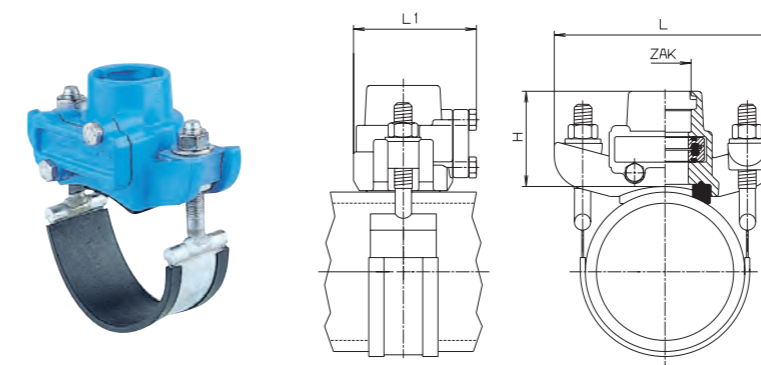
Pipe \varnothing	H	L	L1	A	B	Weight
63	125	155	175	68	75	6,80
90	125	155	175	68	75	6,90
110	125	170	175	68	75	7,30
125	125	190	175	68	75	7,20
140	125	205	175	68	75	8,10
160	125	230	175	68	75	9,00
225	125	305	175	68	75	11,10

ZAK 46, for pipe drilling \varnothing 35 mm

Pipe \varnothing	H	L	L1	A	B	Weight
90	130	155	225	82	65	8,70
110	130	170	225	82	65	9,10
125	130	190	225	82	65	10,40
140	130	205	225	82	65	10,00
160	130	230	225	82	65	11,00
180	130	250	225	82	65	12,50
225	130	305	225	82	65	13,90

ZAK - Universal-shut-off saddle

- for lateral and vertical tapping
- of DCI, Steel- and AC pipes



No. 3810

complete with straps and saddle seal

No. 3810G

without straps and saddle seal

When ordering please state DN, pipe o.d. and pipe material !

ZAK 34, for pipe drilling \varnothing 25 mm Weight without strap

Pipe \varnothing	H	L	L1	Weight
65-500	83	200	112	2,50

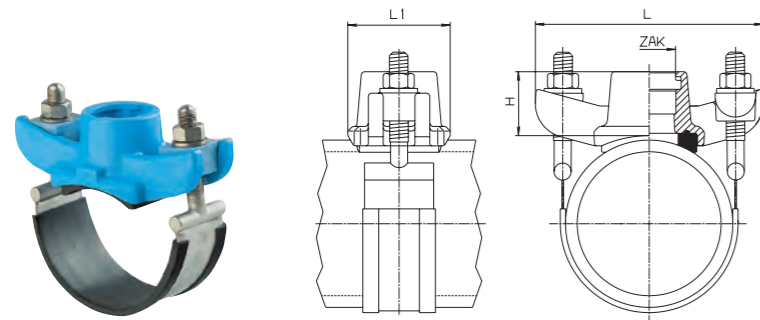
ZAK 46, for pipe drilling \varnothing 35 mm

Pipe \varnothing	H	L	L1	Weight
65-500	86	200	112	3,00

HAWLE - ZAK SYSTEM RANGE

ZAK - Universal pipe saddle

- for lateral and vertical tapping
- of DCI, Steel- and AC pipes



No. 3540
complete

No. 3540G
without straps and saddle seal

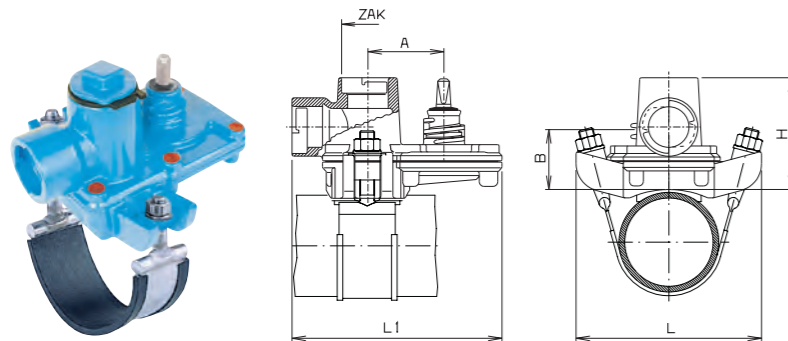
when ordering please state DN, pipe o.d. and pipe material!

ZAK 46, for pipe drilling Ø 35 mm Weight without strap

Pipe Ø	H	L	L1	Weight
65-500	65	200	90	1,70

ZAK - Universal-Hawlinger

- for lateral and vertical tapping
- of DCI, Steel- and AC pipes



No. 2410
complete

No. 2410G
without straps and saddle seal

when ordering please state DN, pipe o.d. and pipe material!

No. 2405
only for vertical tapping (without illustration)

ZAK 34, for pipe drilling Ø 25 mm, Dimensions No. 2410G

DN	H	L	L1	A	B	Weight
65-500	110	200	170	68	60	4,70

ZAK 46, for pipe drilling Ø 35 mm

DN	H	L	L1	A	B	Weight
65-500	120	200	225	82	65	6,10

Strap with saddle seal

- inclusive grip pieces, washers and nuts
- for all ZAK-saddles and ZAK-Hawlinger

No. 3110
DN 65-500

when ordering please state DN, pipe o.d. and pipe material!



HAWLE - ZAK SYSTEM RANGE

ZAK - adaptor



ZAK	PE-pipe Ø	Weight
34	20	0,30
	25	0,40
	32	0,50
	40	0,70

No. 6160

ZAK	PE-pipe Ø	Weight
46	25	0,50
	32	0,70
	40	0,80
	50	1,20
	63	1,60

ZAK - elbow 90°

- 360° swivel type



ZAK	PE-pipe Ø	Weight
34	32	1,60
	40	1,80

No. 6465

ZAK	PE-pipe Ø	Weight
46	32	1,70
	40	1,90
	50	2,30
	63	2,80

ZAK - elbow 90° PE tail



ZAK	PE-pipe Ø	Weight
34	32	0,80
	40	0,90

No. 6479

ZAK	PE-pipe Ø	Weight
46	32	1,00
	40	0,65
	50	0,85
	63	1,30

ZAK - elbow 90°



ZAK	PE-pipe Ø	Weight
34	20	0,40
	25	0,55
	32	0,80
	40	1,10

No. 6480

ZAK	PE-pipe Ø	Weight
46	25	0,90
	32	0,90
	40	1,20
	50	1,65
	63	2,10

ZAK - PE tail



ZAK	PE-pipe Ø	Weight
34	32	0,50
	40	0,95

No. 6180

ZAK	PE-pipe Ø	Weight
46	32	0,60
	40	0,60
	50	0,90
	63	1,20

ZAK - ISO fitting

- sliceable with detachable socket



ZAK	PE-pipe Ø	Weight
34	32	1,05
	40	1,85
	50	1,85

No. 6170

ZAK	PE-pipe Ø	Weight
46	32	1,10
	40	1,50
	50	1,70
	63	2,70

HAWLE - ZAK SYSTEM RANGE, ACCESSORIES

ZAK - elbow 90°

- 360° swivel type with ZAK-spigot and ZAK-socket



No. 6469

ZAK 46

ZAK	Weight
46 - 46	1,10

ZAK - wall inlet fitting



No. 6992



No. 6993



No. 6994

ZAK 46

Order No.	Outlet A	Outlet B	Version	L	Weight
6992	ZAK-Socket 46	IG 1 1/4"	casing ribbed	500	5,30
6993	ZAK-Socket 46	ZAK-Socket 46	casing ribbed	500	5,30
6994	ZAK-Socket 46	IG 1 1/4"	casing smooth	500	5,30

ZAK-thread adaptor

- ZAK-socket - external thread

ZAK 34 with conical external thread
ZAK 46 with cylindrical external thread *)

*) Cylindrical thread not suitable for usage with hemp or teflon.



No. 6189

ZAK 34, for pipe drilling Ø 25 mm

Thread	L	Weight
1 1/4"	60	0,30
1 1/2"	55	0,30

ZAK 64, for pipe drilling Ø 35 mm

Thread	L	Weight
1 1/4"	67	0,30
1 1/2"	67	0,60
2"	50	0,40

ZAK - reduction

ZAK-spigot 46
ZAK-socket 34



No. 6350

ZAK	L	Weight
46 - 34	58	0,35

ZAK - plug

- for ZAK-adaptor



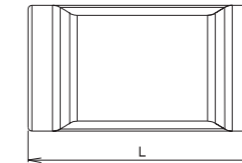
No. 6980

Weight
0,25
Weight
0,45

HAWLE - ZAK SYSTEM RANGE

ZAK - connector

- with double sockets

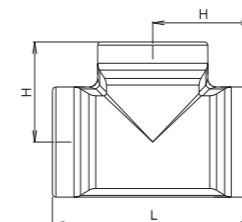


No. 6340

ZAK	L	Weight
46	120	1,00

ZAK - tee piece

- all socketed



No. 6540

ZAK	L	H	Weight
46	120	60	1,40

ZAK - drilling adaptor

- for Hawle drilling machines



No. 5895

ZAK	Weight
34	0,75
46	1,10

O-ring



No. 6945

ZAK
34
46

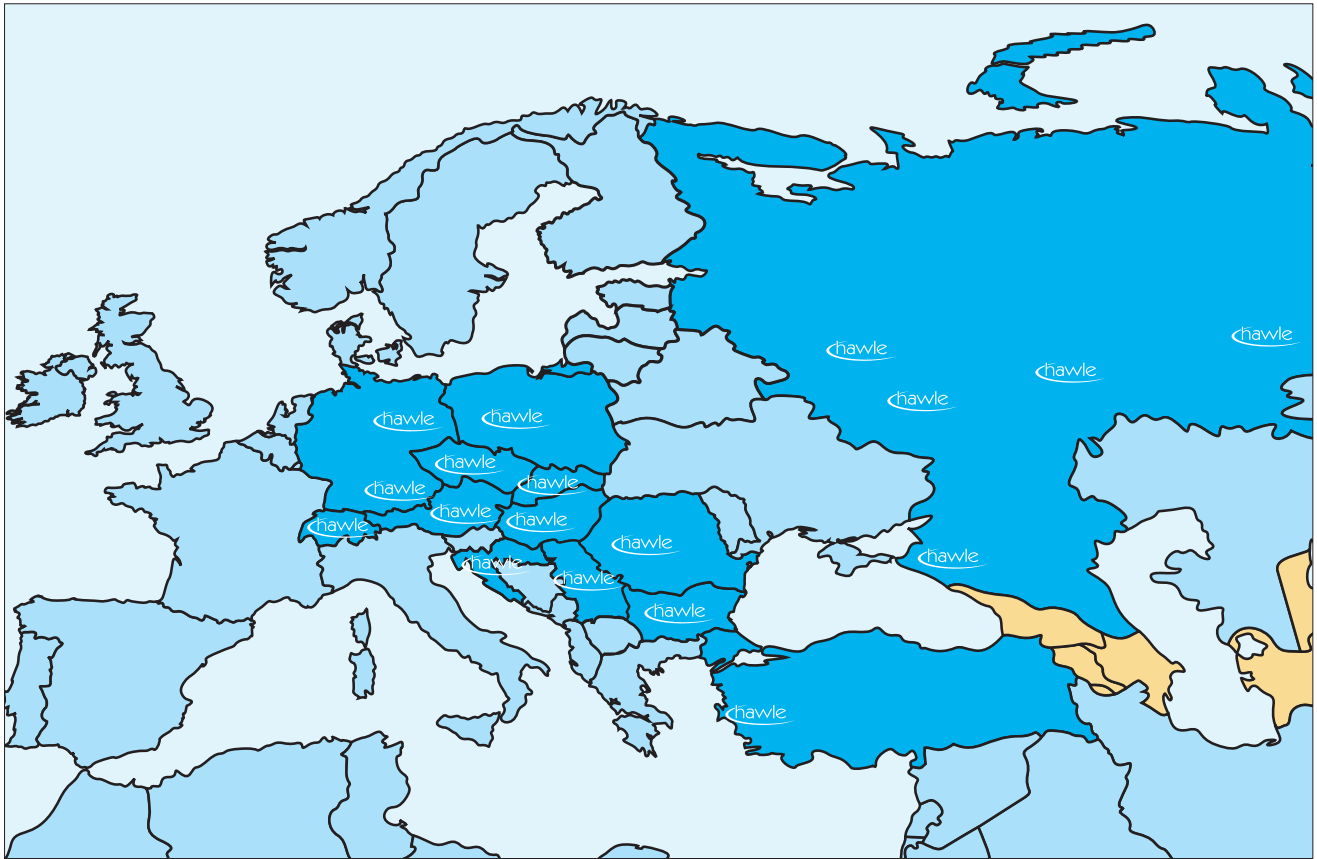
Securityring





No. 6970

ZAK
34
46

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Your distributor:



E. Hawle Armaturenwerke GmbH

Wagrainer Straße 13
A-4840 Vöcklabruck

Tel.: +43 (0)7672 - 72576-0
Fax.: +43 (0)7672 - 78464

E-mail: hawle@hawle.at
www.hawle.com