



FLOW CONTROL

**PRODUCT RANGE.**  
FOR EXCELLENT  
WATER SUPPLY.

Made  
in  
Germany

EXCELLENT.  
WATER.  
SOLUTIONS.

# WHY CHOOSE DÜKER.

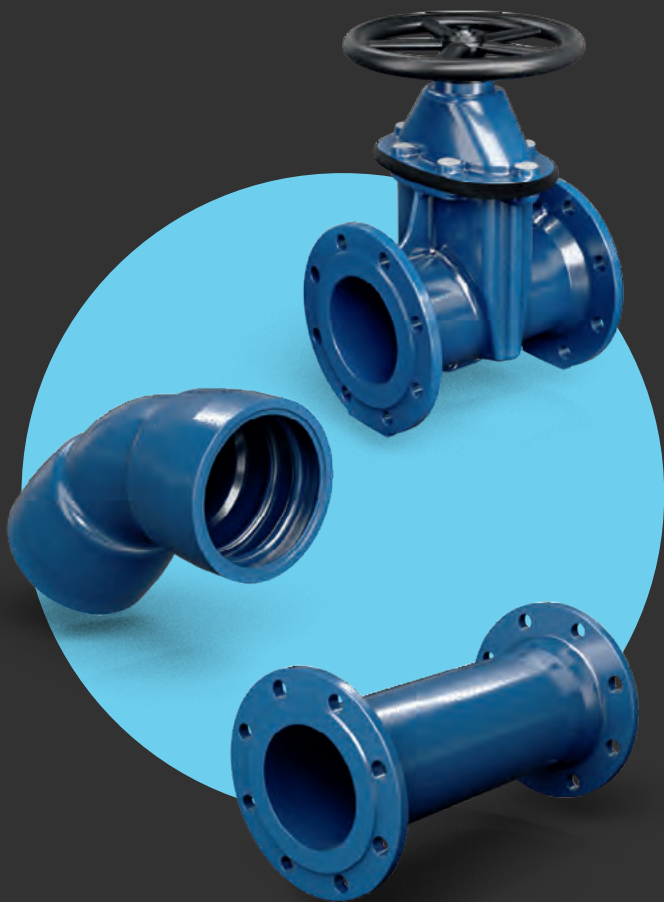
## OUTSTANDING SOLUTIONS FOR A SUSTAINABLE WATER SUPPLY.

The most important application area for our Düker valves and fittings is the supply of drinking water. In addition, our products made from ductile cast iron are used in all water management applications in industrial sewage pipelines, culvert pipelines, bridge pipelines as well as transport and distribution pipelines for irrigation systems. Wherever you use our valves and fittings, we can provide you with sustainable solutions that are robust and remain fully operational for years and years. Perfectly enamelled with etec enamel. Made for a small eternity. Made in Germany. Made by Düker.



# A STRONG COUPLING. FOR FITTINGS, FLANGE PRESSURE PIPES AND VALVES.

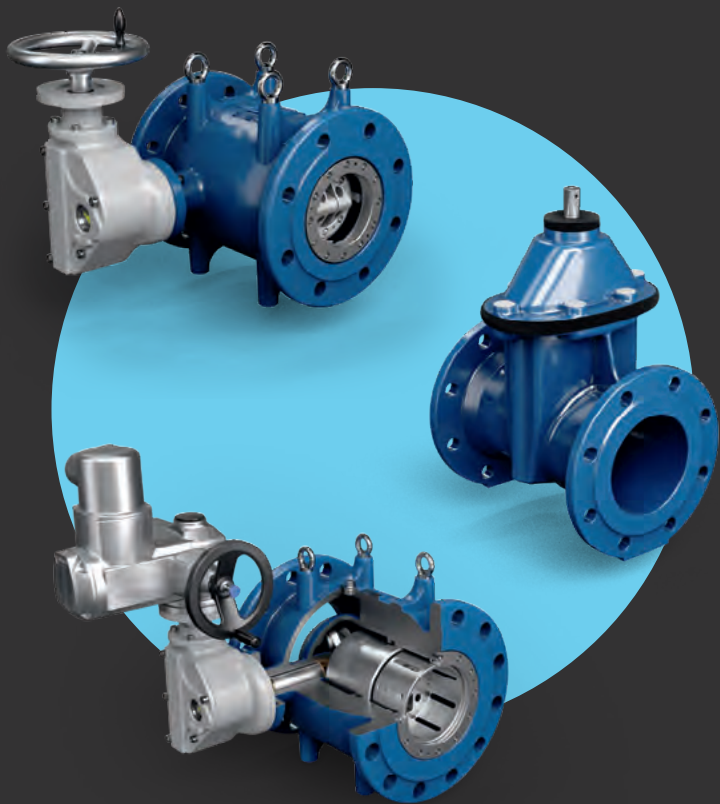
**TYTON**® socket couplings, **SMU** screw socket couplings, gland socket couplings, **Novo** socket couplings, socket couplings that are resistant and non-resistant to tensile forces, flange couplings and even socket couplings for plastic pipelines – you will find the full range of couplings offered by Düker Flow Control here. In all available sizes, weights, dimensions and permissible pressures. All made from ductile cast iron.



# VALVES. EVERYTHING'S UNDER CONTROL.

Gate valves, replacement and repair gate valves, tapping valves, tapping clamps, service connection valves, single and combination valves, underground hydrants, surface hydrants, butterfly valves, non-slam check valves, aeration and ventilation valves, plunger valves and even control valves and strainers. Düker can offer you all this with an array of connection and coupling options – right through to flap valves. Made from ductile cast iron and fully enamelled. And, of course, compliant with all standards. Not to mention complete with all the relevant laying devices and operating keys.

Düker has everything you need for a controlled water supply. Fully enamelled, with optimum corrosion protection, reliable, sustainable and recyclable.

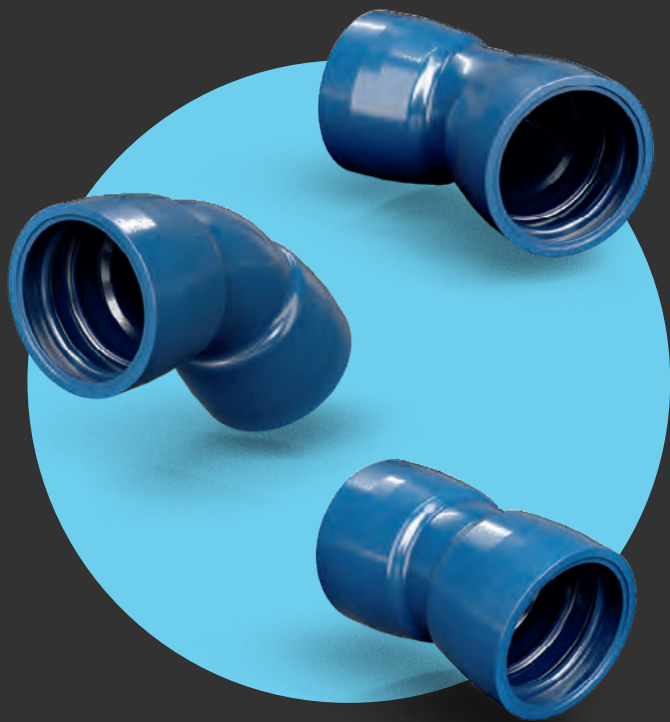


# WITH EADIPS® FGR MARKINGS. FITTINGS AND FLANGE PRESSURE PIPES.

Düker can provide flanged socket fittings, socket bends, double socket bends in a wide variety of angles, single flange fittings, slide-on sockets, double socket fittings with flanged pieces or adapters, flanged duckfoot bends or double flange bends and much more – right through to special fittings, including spherical fittings and fittings for coupling to plastic pipelines. All made from ductile cast iron. All products come with FGR 6 markings, the quality symbol of the European Association for Ductile Iron Pipe Systems (FGR-EADIPS®), a mark of quality for cast iron products.

Düker has everything you need to go with your fittings and flange pressure pipes, all with protective coatings both inside and outside.





# WHY CHOOSE DÜKER.

## OUTSTANDING SOLUTIONS FOR A SUSTAINABLE WATER SUPPLY.

The most important application area for our Düker valves and fittings is the supply of drinking water. In addition, our products made from ductile cast iron are used in all water management applications in industrial sewage pipelines, culvert pipelines, bridge pipelines as well as transport and distribution pipelines for irrigation systems. Wherever you use our valves and fittings, we can provide you with sustainable solutions that are robust and remain fully operational for years and years. Perfectly enamelled with etec enamel. Made for a small eternity. Made in Germany. Made by Düker.

### DÜKER VALVES.

#### EVERYTHING'S UNDER CONTROL.

Turning on, turning off, opening, sealing – valves are required wherever a targeted, controlled supply of water or gas is needed. Whatever the quantity, what matters is precision and durability. That's why corrosion protection is crucial to every pipeline system – and the valves. Düker valves deliver. That is exactly what makes them so reliable, cost-effective and safe.

### DÜKER FITTINGS.

#### IN ALL LENGTHS AND DIAMETERS.

Flanged fittings, socket fittings with or without reduction, special fittings, fittings for plastic pipelines, or sewage pipe fittings – they're all available from Düker. We cover the whole range, because you might just need it. You can get the right fittings from us.

### DÜKER DUCTILE CAST IRON.

#### SUSTAINABLE RECYCLING.

Can cast iron really be sustainable? Well, if cast iron isn't sustainable, what is? Düker cast iron certainly is. And the raw materials prove it. Almost all the iron in our valves and fittings comes from scrap. It is used metal that has already done its job, and is reborn at Düker to lead a new, extensive product life – and there are no barriers to further reprocessing. That is our understanding of recycling, and the term is particularly apt here. It's worth pointing out that

all incoming scrap metal undergoes rigorous quality testing – for instance with a Geiger counter, to ensure that no radioactive material is used. This is hugely important to the health of all our employees – and that of all end users who get their water through Düker valves and fittings.

### DÜKER ENAMEL.

#### TOTALLY NON-STICK.

Sustainable recycling is one thing. A hygienically pure coating for valves and fittings that is made from entirely inorganic materials is another. At Düker, this coating consists of enamel, a special glass made from quartz, feldspar, borax, soda, potash and metal oxides. Nature provides a plentiful and lasting supply of all these ingredients. Extraction is mainly carried out in Germany. Another benefit to the environment and climate. The special thing about enamelling is that it works like the lotus effect – nothing sticks to it. Microorganisms and incrustations don't stand a chance. At the same time, no aromas or contents pass from the flavourless, odourless coating into the drinking water. Consequently, as an inside coating, it protects the drinking water against pollution, and as an external coating, it protects the ductile cast iron against corrosion. Cast iron and glass are chemically bonded to form a composite material. Nothing gets past it. Nothing gets through it. Nothing sticks to it. A clean solution for crystal-clear drinking water.

### DÜKER FLOW CONTROL.

#### PLANTS. VALUES. RECYCLABLE MATERIALS.

Cast and enamelled at our Düker plant in Laufach, assembled at our plant in Karlstadt – Düker valves and fittings are produced in an entirely modern, environmentally sound and sustainable way, in line with the highest standards – and wherever they are used, they are long-lasting. After all, cast iron lasts much longer than other materials – and even then, there are no barriers to reprocessing. Not here. Not at Düker.

### **SHORT DISTANCES IN DISPATCH.**

Short distances from Production to Warehousing and then to Dispatch: that's the basis for providing the right quantity of requested products on time. If the goods movements, stock levels, open orders, etc. are joined up with the average sales volumes of the past few weeks, the right signals can be sent to Production in order to maintain supply capability. Short distances across the entire production chain through to Dispatch make this possible. In tandem with a reliable forwarding agent with a sufficient number of branches in Germany and Europe, all manner of customer requirements such as fixed delivery dates or advance notification of delivery via Cargoclix or by telephone can be met.

### **SHORT DISTANCES FOR MAINTENANCE AND REPAIRS AND AFTER REMOVAL.**

As with all mechanical structures, valves also need to be repaired so that they keep working properly and to extend their service life. Availability of spare parts and short distances to the manufacturer make repairs easier and also increase the service life.

For example, the innovative design of plunger valves means that the spheroidal cast-iron body, the stainless-steel control cylinder, slider crank mechanism gear and screws and the brass liners can be fully separated out at the end of their service life. That is recycling in action, enabled by short distances.





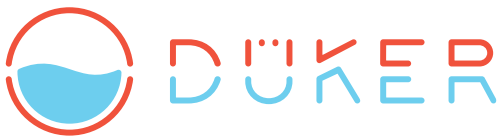
**FITTINGS,  
FLANGED PIPES  
AND VALVES  
MADE OF  
DUCTILE CAST IRON**

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Deviations in dimensions and weights and in the illustrations are possible.  
In the interest of technical progress, we reserve the right to implement changes and improvements to the products without previous announcement.



**Member of FGR**  
**FGR 6**

### **Düker Group**

Laufach:  
Phone +49 6093 87-555  
Fax +49 6093 87-246

Karlstadt:  
Phone +49 9353 791-550  
Fax +49 9353 791-8560

Internet: [www.dueker.de](http://www.dueker.de)

E-Mail: [sales.flowcontrol@dueker.de](mailto:sales.flowcontrol@dueker.de)





As early as in 1469, official documents mentioned a mine, which developed more or less continually into today's company Düker.

The foundry and enamelling works cover a production area of more than 80,000 square meters with approx. 620 employees.

At Laufach / Spessart and Karlstadt / Main, Düker manufactures products used in:

## **DRAINAGE TECHNOLOGY**

- hubless drainage pipe systems
- couplings for hubless drainage pipe systems

## **UNDERGROUND CONSTRUCTION**

- flanged pressure pipes
- fittings
- valves

## **JOBGING FOUNDRY**

- castings in small, medium and large series
- various cast iron qualities (grey cast iron and spheroidal cast iron), raw and machined
- various casting procedures (hand moulding, machine casting, centrifugal casting)

## How to find Düker ...

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20 Dear customers,

we are pleased to present you the new edition of our fittings, flanged pressure pipes and valves catalogue for civil engineering.

Besides quality and reliability, as well as the extension and specification of our product-range, we will continue to offer our support, service and individual customer care.

The consultants, technicians and development engineers at Düker will always be available for any questions or queries you may have.

We are also open to suggestions and criticism at any time.

Your sales department for Flow Control

Phone: +49 6093 87 555

**Joints for fittings, flanged pipes and  
valves made of ductile cast iron**

**A**

**Ductile cast iron valves**

**B**

**Ductile cast iron fittings and  
flanged pressure pipes**

**C**

**Laying and assembly instructions**

**D**



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








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









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










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








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



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Valid Standard		Obsolete Standards			
EN 1563:2012		EN 1563:1997		DIN 1693-1:1973 and DIN 1693-2:1977	
Symbol	Number	Number Table 1	Number Table 3	Symbol	Number
EN-GJS-400-15	5.3106	EN-JS1030	EN-JS1072	GGG-40	0.7040
EN-GJS-400-18LT	5.3103	EN-JS1025	EN-JS1049	GGG-40.3	0.7043
EN-GJS-500-7	5.3200	EN-JS1050	EN-JS1082	GGG-50	0.7050
EN-GJS-500-14	5.3109	—	—	—	—

GJS stands for spheroidal or nodular graphite cast iron, ductile cast iron, formerly GGG

GJL stands for lamellar or flake graphite cast iron, grey cast iron, formerly GG

**A**

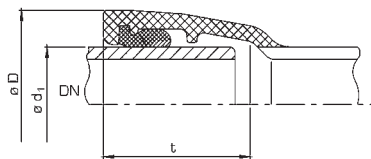
**Joints for fittings,  
flanged pipes and  
valves made of  
ductile cast iron**



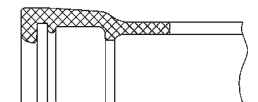
# TYTON® socket joints (TYT) acc. to DIN 28603



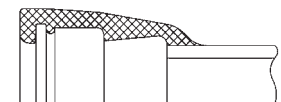
36



Socket for fittings



socket for flange-socket and collar



socket for pipe

## Dimensions and weights

DN	Dimensions in mm			Weight in kg ≈ socket				Item no. EPDM	Item no. NBR
	$\varnothing d_1$	$\varnothing D$	t	Pipes	Fittings	Flanged sockets	Gasket		
<b>80</b>	98	141	84	3,4	2,8	2,4	0,13	101500	101499
<b>100</b>	118	161	88	4,3	3,3	3,1	0,16	502314	101488
<b>125</b>	144	188	91	5,7	4,5	4,0	0,19	101501	101531
<b>150</b>	170	215	94	7,1	5,6	4,9	0,22	101502	101489
<b>200</b>	222	271	100	10,3	8,0	7,1	0,37	101503	101498
<b>250</b>	274	324	105	14,2	11,1	9,7	0,48	101505	101510
<b>300</b>	326	381	110	18,6	14,3	12,5	0,67	101506	101511
<b>350</b>	378	434	110	23,7	17,1	15,2	0,77	101507	101512
<b>400</b>	429	489	110	29,3	20,8	18,6	1,09	101508	101513
<b>450*</b>	480	541,5	120	37,8	27,6	24,3	1,40	101509	101514
<b>500</b>	532	598	120	42,8	31,7	27,6	1,60	101527	101515
<b>600</b>	635	707	120	59,3	42,3	36,2	2,29	101528	101516
<b>700</b>	738	825	150	79,1	71,2	59,1	4,00	101529	101517
<b>800</b>	842	935	160	102,6	95,4	79,8	5,20	101530	101518
<b>900</b>	945	1042	175	129,9	150,3	122,7	6,50	501532	501534
<b>1000</b>	1048	1150	185	161,3	186,9	152,1	8,00	501533	705719
<b>1200</b>	1255	1368	215	–	250,0	193,0	9,50	714359	795372
<b>1400</b>	1462	1610	240	–	468,7	373,0	17,20	721737	–

\* acc. to manufacturer's standard

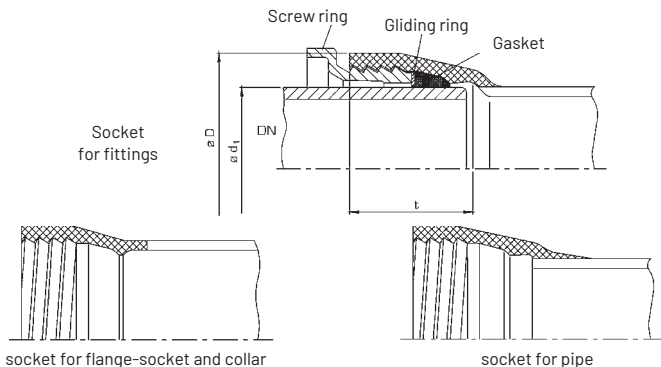
# Screw-gland socket joints (SMU) PN 16<sup>1)</sup> acc. to DIN 28601



37

A

a



## Dimensions and weights

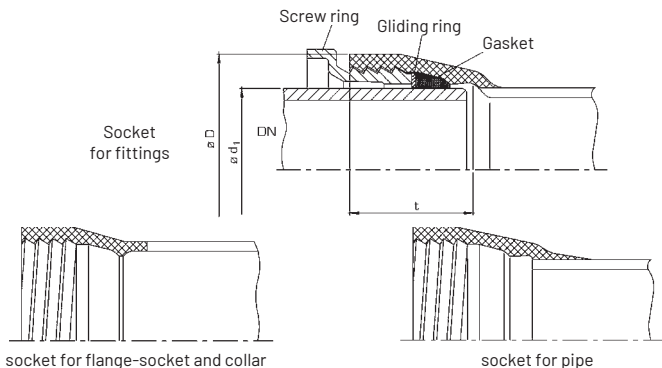
DN	Dimensions in mm			Weight in kg ≈ socket					
	ø d <sub>1</sub>	ø D	t	Pipes	Fittings	Flanged sockets	Screw ring	Gliding ring	Gasket
<b>40</b>	56	101	74	—	1,4	1,3	0,84	0,05	0,06
<b>50</b>	66	113	77	—	1,8	1,6	0,90	0,06	0,08
<b>65</b>	82	129	80	—	2,2	1,9	1,30	0,06	0,10
<b>80</b>	98	146	84	3,4	2,8	2,4	1,40	0,07	0,12
<b>100</b>	118	166	88	4,3	3,3	3,1	1,90	0,08	0,15
<b>125</b>	144	197	91	5,7	4,5	4,0	3,00	0,10	0,19
<b>150</b>	170	224	94	7,1	5,6	4,9	3,20	0,11	0,23
<b>200</b>	222	280	100	10,3	8,0	7,1	4,50	0,17	0,36
<b>250</b>	274	336	106	14,2	11,1	9,7	6,30	0,21	0,50
<b>300</b>	326	391	110	18,6	14,3	12,5	8,10	0,30	0,66
<b>350</b>	378	450	113	23,7	18,6	16,2	10,50	0,35	0,84
<b>400</b>	429	503	116	29,3	22,2	19,5	13,50	0,40	1,05
<b>450*</b>	480	572	164	—	—	—	25,00	0,60	1,50
<b>500*</b>	532	626	174	—	—	28,5	31,50	0,87	1,85

\* acc. to manufacturer's standard <sup>1)</sup> higher pressures on request

# Screw-gland socket joints (SMU) PN 16 <sup>1)</sup> acc. to DIN 28 601



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## Item numbers

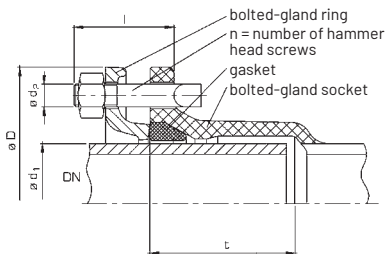
DN	Item no. Screw ring Epoxy blue	Item no. Screw ring Epoxy black	Item no. Gliding ring	Item no. Gasket EPDM	Item no. Gasket NBR
40	871260	871262	555907	102345	502301
50	873677	874081	555908	502346	102304
65	871268	871271	555909	502308	102307
80	871276	871278	555896	102311	502310
100	871283	871284	555897	102350	502313
125	871289	871290	555898	102317	502316
150	871296	871298	555899	502320	502319
200	871303	871304	555900	102326	102325
250	871697	871698	555901	502328	502329
300	871700	871701	555902	502332	502331
350	709984	874240	556026	502335	502334
400	871704	871705	555915	502338	102337
450*	726855	874005	556061	102341	502339
500*	701273	874242	555918	502344	102343

\* acc. to manufacturer's standard <sup>1)</sup> higher pressures on request

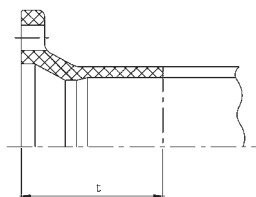


# Bolted-gland socket joints (STB) PN 16<sup>1)</sup> acc. to DIN 28602

40



Socket for pipes and fittings



Socket for flanged sockets

## Dimensions and weights

DN	Dimensions in mm						Weight in kg ≈ socket				
	$\varnothing d_1$	$\varnothing D$	t	$\varnothing d_2$	l	n	Pipes	Flanged sockets collars	Bolted-gland ring	Gasket	Hammer head screws
<b>100*</b>	118	235	116	M20	80	4	—	—	2,7	0,10	0,24
<b>150*</b>	170	290	118	M20	80	8	—	—	4,0	0,20	0,24
<b>200*</b>	222	345	121	M20	80	8	—	—	5,0	0,27	0,24
<b>250*</b>	274	400	124	M20	80	8	—	—	6,0	0,50	0,24
<b>300*</b>	326	460	127	M20	90	8	—	18,7	7,1	0,60	0,27
<b>350*</b>	378	515	129	M20	90	12	26,6	22,9	9,6	0,70	5,5
<b>400*</b>	429	570	132	M20	90	12	32,2	27,6	10,6	0,80	5,5
<b>450*</b>	480	625	135	M20	100	12	45,3	38,7	13,0	1,00	6,0
<b>500</b>	532	680	138	M20	100	16	45,3	38,7	15,0	1,00	7,7
<b>600</b>	635	790	143	M20	100	16	61,2	52,2	20,9	1,50	7,7
<b>700</b>	738	900	149	M20	110	20	80,0	67,9	27,2	1,90	10,0
<b>800</b>	842	1010	154	M20	110	24	101,0	85,4	34,1	2,30	12,0
<b>900</b>	945	1125	160	M20	120	24	128,0	108,4	44,0	2,80	12,0
<b>1000</b>	1048	1250	165	M24	120	24	162,9	138,7	57,0	3,30	13,0
<b>1200</b>	1255	1450	176	M24	130	28	232,4	196,5	75,0	3,80	18,0
<b>1400</b>	1462	1714	187	M24	150	32	—	292,3	128,5	6,90	19,5
<b>1600</b>	1668	1920	198	M24	150	36	—	319,5	142,8	7,90	22,0

Assembly instructions see page 372 – 375 <sup>1)</sup> higher pressures on request





## Item numbers

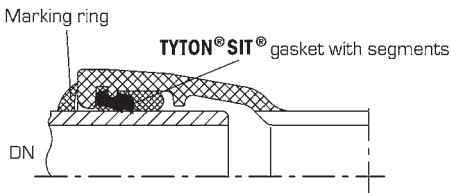
DN	Item no. EPDM	Item no. NBR
<b>100*</b>	751892	703861
<b>150*</b>	715501	703863
<b>200*</b>	715494	766128
<b>250*</b>	715495	762914
<b>300*</b>	715493	704582
<b>350*</b>	766097	785149
<b>400*</b>	755018	703941
<b>450*</b>	706024	—
<b>500</b>	724824	734869
<b>600</b>	724820	734870
<b>700</b>	315839	785474
<b>800</b>	724817	734920
<b>900</b>	724699	321214
<b>1000</b>	739768	777866
<b>1200</b>	752611	—
<b>1400</b>	on request	on request
<b>1600</b>	on request	on request

other coatings on request

# TYTON® socket joints with TYTON® SIT®



42



Pressure classes as per EN 545 : 2011-09

Definitions as per EN 805

Allowable operating pressure PFA (bar)

Allowable maximum operating pressure: PMA (bar) = 1.2 x PFA

Allowable site test pressure: PEA (bar) = 1.2 x PFA + 5

## Dimensions and weights

DN	Number of retaining segments	allowable operating pressure PFA	Pressure class	Deflection max.	Weight in kg ≈ TYTON® SIT® gasket	Item no. EPDM	Item no. NBR
<b>80</b>	4	16	C 100	3°	0,17	874413	874414
<b>100</b>	5	16	C 100	3°	0,19	874415	874416
<b>125</b>	5	16	C 64	3°	0,23	874417	874418
<b>150</b>	7	16	C 64	3°	0,27	874419	874420
<b>200</b>	10	16	C 64	3°	0,45	874421	874422
<b>250</b>	15	10	C 50	3°	0,60	874423	874424
<b>300</b>	20	10	C 50	3°	0,92	874425	874426
<b>400</b>	30	10	C 40	3°	1,58	874427	874428

Assembling acc. laying instruction for thrust resisting joint TYTON® SIT®, page 350 – 353

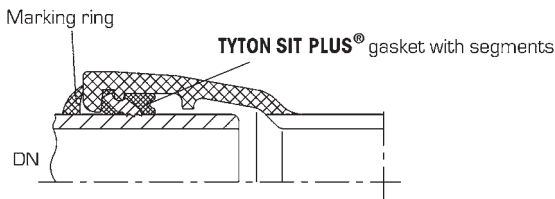
# TYTON® socket joints with TYTON SIT PLUS®



43

A

b



## Dimensions and weights

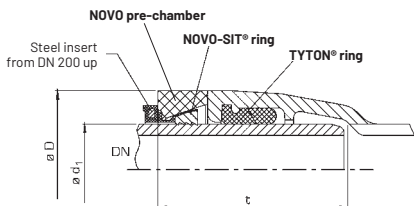
DN	Number of retaining segments	allowable operating pressure PFA	Pressure class	allowable operating pressure PFA	Pressure class	Deflection max.	Weight in kg ≈ TYTON SIT PLUS® gasket	Item no. EPDM	Item no. NBR
80	4	32	C 100	16	C 50	3°	0,14	718291	718302
100	5	32	C 100	16	C 50	3°	0,16	718292	718303
125	5	25	C 100	16	C 50	3°	0,20	718293	718304
150	7	25	C 100	16	C 50	3°	0,23	718294	718305
200	10	25	C 64	16	C 50	3°	0,45	718295	718306
250	15	25	C 64	16	C 50	3°	0,60	718296	718307
300	20	25	C 50	16	C 40	3°	0,95	718297	718308
350	25	25	C 50	—	—	3°	1,25	718298	718309
400	28	16	C 50	—	—	2°	1,50	718299	718310
500	35	16	C 40	—	—	2°	2,30	718300	718311
600	42	10	C 40	—	—	2°	3,00	718301	718312

Assembling acc. laying instruction for thrust resisting joint **TYTON SIT PLUS®**, page 354 – 359

## Novo socket joints with NOVO-SIT®



44



Note: The **Novo** socket does not change the standardised length of fittings and valves.

### Dimensions and weights

DN	Dimensions in mm			Number of locking segments	allow. o. p. PFA	Pressure class	allow. o. p. PFA	Pressure class	Deflection max.	Weight in kg ≈		Item no.
	ø d <sub>1</sub>	ø D	t							Novo pre-chamber	NOVO-SIT® ring	
<b>80</b>	98	141	119	5	60	C 100	25	C 50	3°	1,2	0,15	874590
<b>100</b>	118	161	123	6	56	C 100	16	C 50	3°	1,4	0,20	874591
<b>125</b>	140	188	126	7	25	C 100	16	C 50	3°	1,8	0,25	874593
<b>125</b>	140	188	126	10	52	C 100	16	C 50	3°	1,8	0,25	874594
<b>150</b>	170	215	129	12	48	C 100	16	C 50	3°	2,1	0,35	874595
<b>200</b>	222	271	138	18	43	C 64	16	C 50	3°	3,1	0,65	874597
<b>250</b>	274	324	143	26	40	C 64	16	C 50	3°	4,8	0,80	874599
<b>300</b>	326	381	152	30	40	C 50	16	C 50	3°	5,7	1,00	874601
<b>350</b>	378	434	154	32	25	C 50	—	—	3°	6,4	1,30	874604
<b>400</b>	429	505	154	25	16	C 50	—	—	3°	8,3	1,50	874605
<b>400</b>	429	505	154	36	25	C 50	—	—	3°	8,3	1,70	874606
<b>450</b>	480	572	164	40	25	C 40	—	—	3°	9,5	2,00	874608
<b>500</b>	532	598	168	35	16	C 40	—	—	2°	12,0	2,50	874609
<b>500</b>	532	598	168	50	25	C 40	—	—	2°	12,0	2,50	874610
<b>600</b>	635	707	168	45	16	C 40	—	—	2°	16,6	3,00	874611
<b>700</b>	738	824	205	62	10	C 40	—	—	2°	29,5	3,50	874613
<b>800</b>	842	934	217	70	10	C 40	—	—	1°	36,6	3,60	874614
<b>800</b>	842	934	217	88	16	C 40	—	—	1°	36,6	4,00	774928

Assembling acc. laying instruction for thrust resisting joint **NOVO-SIT®**, page 346 – 349

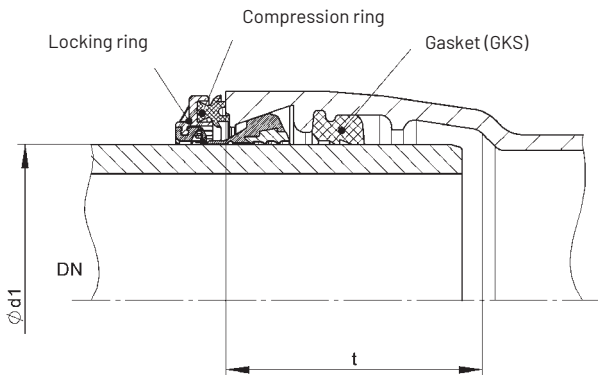
# Restrained socket joints for plastic pipelines with NOVO-Grip® III



45

A

b



## Dimensions and weights (Dimensions in mm)

DN	$\varnothing d1$ plastic pipelines DN/OD in mm	t	PFA at SDR 11 bar	PFA at SDR 17 bar	Weight in kg $\approx$ assembly set	Item no.
80	90	119	16	10	0,20	754347
100	110	123	16	10	0,25	754348
150	160	129	16	10	0,50	754349

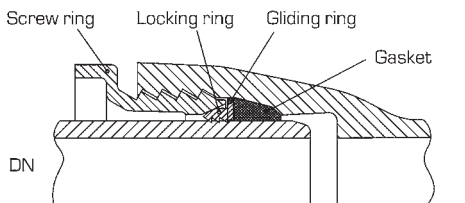
DN 80 up to DN 150 also available as **NOVO-Grip®** PVC for PVC pipes

Assembling acc. laying instruction for thrust resisting joint **NOVO-Grip® III**, page 368 - 371

# Screw-gland socket joints with DÜKER thrust resisting joint SMU DN 40 – DN 65



46



## Dimensions and weights

DN	allowable operating pressure PFA	Pressure class	Deflection max.	Weight in kg ≈ locking ring	Item no.
40	16	C 50	3°	0,075	736549
50	16	C 50	3°	0,100	736550
65	16	C 50	3°	0,140	736551

Assembling acc. laying instruction for thrust resisting joint **SMU**, page 360 – 363

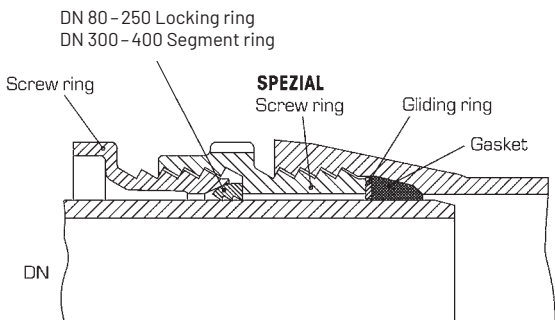
# Screw-gland socket joints with thrust resisting joint Düker SPEZIAL DN 80 – DN 400



47

A

b

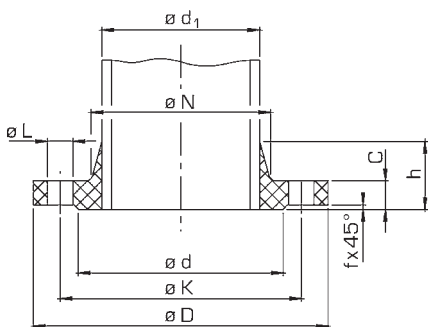


## Dimensions and weights

DN	allowable operating pressure PFA	Pressure class	Deflection max.	Weight in kg ≈ <b>SPEZIAL</b> screw ring and locking ring	Weight in kg ≈ <b>SPEZIAL</b> screw ring and segment ring	Item no.
<b>80</b>	16	C 50	3°	0,22	–	735739
<b>100</b>	16	C 50	3°	0,26	–	735740
<b>125</b>	16	C 50	3°	0,31	–	735741
<b>150</b>	16	C 50	3°	0,37	–	735742
<b>200</b>	16	C 50	3°	0,52	–	735743
<b>250</b>	16	C 40	2°	0,67	–	735744
<b>300</b>	16	C 40	2°	–	10,35	735745
<b>400</b>	16	C 40	2°	–	16,00	735746

# Flanged joints PN 10 acc. to EN 1092-2

48





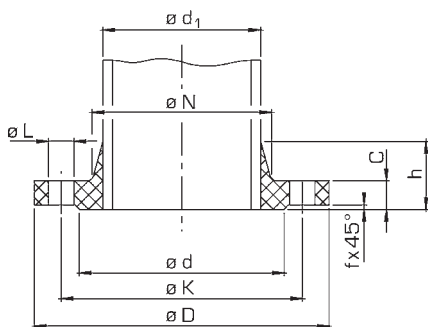


### Dimensions and weights PN 10

DN	Dimensions in mm										Corner radius	Weight in kg ≈
	Pipe		Flange				Neck		Raised face			
	ø d <sub>1</sub>	ø D	C	ø K	n	ø L	ø N	h	ø d	f		
<b>40</b>	56	150	19,0	110	4	19	70	39,0	84	3	5	1,7
<b>50</b>	66	165	19,0	125	4	19	84	40,0	99	3	5	2,1
<b>65</b>	82	185	19,0	145	4	19	104	41,5	118	3	6	2,6
<b>80</b>	98	200	19,0	160	8	19	120	43,0	132	3	6	2,8
<b>100</b>	118	220	19,0	180	8	19	140	45,0	156	3	6	3,3
<b>125</b>	144	250	19,0	210	8	19	170	47,5	184	3	6	4,0
<b>150</b>	170	285	19,0	240	8	23	190	50,0	211	3	8	5,0
<b>200</b>	222	340	20,0	295	8	23	246	55,0	266	3	8	6,9
<b>250</b>	274	400	22,0	350	12	23	298	60,0	319	3	10	9,8
<b>300</b>	326	455	24,5	400	12	23	348	65,0	370	4	10	13,0
<b>350</b>	378	505	24,5	460	16	23	408	70,0	429	4	10	14,7
<b>400</b>	429	565	24,5	515	16	28	456	75,0	480	4	10	17,2
<b>450</b>	480	615	25,5	565	20	28	502	80,0	530	4	12	20,0
<b>500</b>	532	670	26,5	620	20	28	559	85,0	582	4	12	23,2
<b>600</b>	635	780	30,0	725	20	31	658	95,0	682	5	12	32,8
<b>700</b>	738	895	32,5	840	24	31	772	105,0	794	5	12	44,3
<b>800</b>	842	1015	35,0	950	24	34	876	115,0	901	5	12	58,8
<b>900</b>	945	1115	37,5	1050	28	34	976	125,0	1001	5	12	69,6
<b>1000</b>	1048	1230	40,0	1160	28	37	1080	135,0	1112	5	12	87,6
<b>1200</b>	1255	1455	45,0	1380	32	41	1292	155,0	1328	5	12	121,0
<b>1400</b>	1462	1675	46,0	1590	36	44	1496	175,0	1530	5	12	180,0
<b>1600</b>	1668	1915	49,0	1820	40	50	1712	195,0	1750	5	12	262,0

# Flanged joints PN 16 acc. to EN 1092-2

50



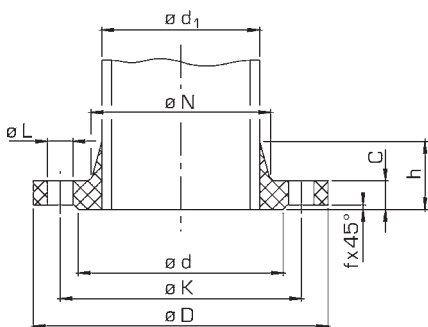


### Dimensions and weights PN 16

DN	Dimensions in mm										Corner radius	Weight in kg ≈
	Pipe		Flange				Neck		Raised face			
	ø d <sub>1</sub>	ø D	C	ø K	n	ø L	ø N	h	ø d	f		
<b>40</b>	56	150	19,0	110	4	19	70	39,0	84	3	5	1,7
<b>50</b>	66	165	19,0	125	4	19	84	40,0	99	3	5	2,1
<b>65</b>	82	185	19,0	145	4	19	104	41,5	118	3	6	2,6
<b>80</b>	98	200	19,0	160	8	19	120	43,0	132	3	6	2,8
<b>100</b>	118	220	19,0	180	8	19	140	45,0	156	3	6	3,3
<b>125</b>	144	250	19,0	210	8	19	170	47,5	184	3	6	4,0
<b>150</b>	170	285	19,0	240	8	23	190	50,0	211	3	8	5,0
<b>200</b>	222	340	20,0	295	12	23	246	55,0	266	3	8	6,7
<b>250</b>	274	400	22,0	355	12	28	296	60,0	319	3	10	9,4
<b>300</b>	326	455	24,5	410	12	28	350	65,0	370	4	10	12,6
<b>350</b>	378	520	26,5	470	16	28	410	70,0	429	4	10	17,5
<b>400</b>	429	580	28,0	525	16	31	458	75,0	480	4	10	22,1
<b>450</b>	480	640	30,0	585	20	31	516	80,0	548	4	12	30,2
<b>500</b>	532	715	31,5	650	20	34	576	85,0	609	4	12	37,4
<b>600</b>	635	840	36,0	770	20	37	690	95,0	720	5	12	57,6
<b>700</b>	738	910	39,5	840	24	37	760	105,0	794	5	12	57,4
<b>800</b>	842	1025	43,0	950	24	41	862	115,0	901	5	12	76,8
<b>900</b>	945	1125	46,5	1050	28	41	962	125,0	1001	5	12	91,4
<b>1000</b>	1048	1255	50,0	1170	28	44	1076	135,0	1112	5	12	127,0
<b>1200</b>	1255	1485	57,0	1390	32	50	1282	155,0	1328	5	12	185,0
<b>1400</b>	1462	1685	60,0	1590	36	50	1482	175,0	1530	5	12	213,0
<b>1600</b>	1668	1930	65,0	1820	40	57	1696	195,0	1750	5	12	315,0

# Flanged joints PN 25 acc. to EN 1092-2

52



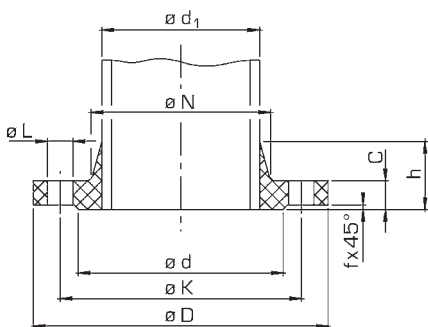


### Dimensions and weights PN 25

DN	Dimensions in mm										Corner radius	Weight in kg ≈
	Pipe		Flange				Neck		Raised face			
	ø d <sub>1</sub>	ø D	C	ø K	n	ø L	ø N	h	ø d	f		
<b>40</b>	56	150	19,0	110	4	19	70	39	84	3	5	1,7
<b>50</b>	66	165	19,0	125	4	19	84	40	99	3	5	2,1
<b>65</b>	82	185	19,0	145	8	19	104	41,5	118	3	6	2,4
<b>80</b>	98	200	19,0	160	8	19	120	43	132	3	6	2,8
<b>100</b>	118	235	19,0	190	8	23	142	45	156	3	6	3,8
<b>125</b>	144	270	19,0	220	8	28	162	47,5	184	3	6	4,7
<b>150</b>	170	300	20,0	250	8	28	192	50	211	3	8	6,0
<b>200</b>	222	360	22,0	310	12	28	252	55	274	3	8	8,7
<b>250</b>	274	425	24,5	370	12	31	304	60	330	3	10	13,0
<b>300</b>	326	485	27,5	430	16	31	364	65	389	4	10	17,7
<b>350</b>	378	555	30,0	490	16	34	418	70	448	4	10	25,4
<b>400</b>	429	620	32,0	550	16	37	472	75	503	4	10	33,2
<b>450</b>	480	670	34,5	600	20	37	520	80	548	4	12	40,2
<b>500</b>	532	730	36,5	660	20	37	580	85	609	4	12	47,2
<b>600</b>	635	845	42,0	770	20	41	684	95	720	5	12	71,5
<b>700</b>	738	960	46,5	875	24	44	780	105	820	5	12	90,0
<b>800</b>	842	1085	51,0	990	24	50	882	115	928	5	12	123,0
<b>900</b>	945	1185	55,5	1090	28	50	982	125	1028	5	12	149,0
<b>1000</b>	1048	1320	60,0	1210	28	57	1086	135	1140	5	12	201,0
<b>1200</b>	1255	1530	69,0	1420	32	57	1296	155	1350	5	12	285,0
<b>1400</b>	1462	1755	74,0	1640	36	62	1508	175	1560	5	12	357,0
<b>1600</b>	1668	1975	81,0	1860	40	62	1726	195	1780	5	12	484,0

# Flanged joints PN 40 acc. to EN 1092-2

54



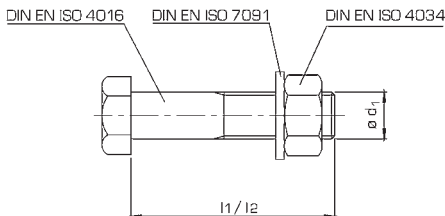


### Dimensions and weights PN 40

DN	Dimensions in mm										Weight in kg ≈
	Pipe		Flange				Neck		Raised face		
	ø d <sub>1</sub>	ø D	C	ø K	n	ø L	ø N	h	ø d	f	
<b>40</b>	56	150	19,0	110	4	19	70	39,0	84	3	1,7
<b>50</b>	66	165	19,0	125	4	19	84	40,0	99	3	2,1
<b>65</b>	82	185	19,0	145	8	19	104	41,5	118	3	2,4
<b>80</b>	98	200	19,0	160	8	19	120	43,0	132	3	2,8
<b>100</b>	118	235	19,0	190	8	23	142	45,0	156	3	3,8
<b>125</b>	144	270	23,5	220	8	28	162	47,5	184	3	5,9
<b>150</b>	170	300	26,0	250	8	28	192	50,0	211	3	8,0
<b>200</b>	222	375	30,0	320	12	31	254	55,0	284	3	14,0
<b>250</b>	274	450	34,5	385	12	34	312	60,0	345	3	23,5
<b>300</b>	326	515	39,5	450	16	34	378	65,0	409	4	33,5
<b>350</b>	378	580	44,0	510	16	37	432	70,0	465	4	43,0
<b>400</b>	429	660	48,0	585	16	41	498	75,0	535	4	62,0
<b>450</b>	480	685	49,0	610	20	41	522	80,0	560	4	57,0
<b>500</b>	532	755	52,0	670	20	44	576	85,0	615	4	82,0
<b>600</b>	635	890	58,0	795	20	50	686	95,0	735	5	124,0

# Hexagon head screws for flanges PN 10 and PN 16 acc. to EN 1092-2

56



## PN 10

Dimensions in mm

DN	ø d <sub>1</sub>	l1*	l2**	qty per joint
40	M16	80	80	4
50	M16	80	80	4
65	M16	80	80	4
80	M16	80	80	8
100	M16	80	80	8
125	M16	80	80	8
150	M20	80	90	8
200	M20	80	90	8
250	M20	90	90	12
300	M20	90	90	12
350	M20	90	90	16
400	M24	100	100	16
450	M24	100	110	20
500	M24	100	110	20
600	M27	110	120	20
700	M27	120	120	24
800	M30	130	130	24
900	M30	130	140	28
1000	M33	140	150	28
1200	M36	160	160	32
1400	M39	170	170	36
1600	M45	180	190	40

## PN 16

Dimensions in mm

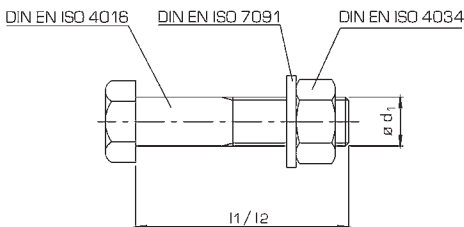
ø d <sub>1</sub>	l1*	l2**	qty per joint
M16	80	80	4
M16	80	80	4
M16	80	80	4
M16	80	80	8
M16	80	80	8
M16	80	80	8
M20	80	90	8
M20	80	90	12
M24	90	100	12
M24	100	100	12
M24	100	110	16
M27	110	110	16
M27	110	120	20
M30	120	120	20
M33	130	140	20
M33	140	150	24
M36	150	160	24
M36	160	160	28
M39	170	180	28
M45	190	200	32
M45	200	210	36
M52	220	230	40

l1\* = Screw length for connection with one washer

l2\*\* = Screw length for connection with two washers



# Hexagon head screws for flanges PN 25 and PN 40 acc. to EN 1092-2



57

A

C

## PN 25

Dimensions in mm

DN	ø d <sub>1</sub>	l1*	l2**	qty per joint
40	M16	80	80	4
50	M16	80	80	4
65	M16	80	80	8
80	M16	80	80	8
100	M20	80	90	8
125	M24	90	90	8
150	M24	90	90	8
200	M24	90	100	12
250	M27	100	110	12
300	M27	110	110	16
350	M30	120	120	16
400	M33	130	130	16
450	M33	130	130	20
500	M33	140	140	20
600	M36	150	150	20
700	M39	170	170	24
800	M45	180	190	24
900	M45	190	200	28
1000	M52	210	210	28
1200	M52	230	230	32
1400	M56	250	250	36
1600	M56	250	260	40

## PN 40

Dimensions in mm

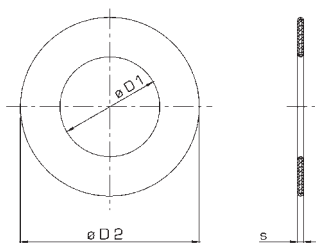
ø d <sub>1</sub>	l1*	l2**	qty per joint
M16	80	80	4
M16	80	80	4
M16	80	80	8
M16	80	80	8
M20	80	90	8
M24	100	100	8
M24	100	110	8
M27	110	120	12
M30	120	130	12
M30	140	140	16
M33	150	150	16
M36	160	170	16
M36	160	170	20
M39	170	180	20
M45	190	200	20

Not specified  
in EN 1092-2

**Special stipulations:** M16 x 80: Thread length min. 44 mm,  
M20 x 90: Thread length min. 52 mm, M24 x 100/110: Thread length min. 60 mm

## Flat gaskets for Flanges acc. to EN 1514-1, type IBC

58



Dimensions (in mm)

DN	$\varnothing D 1$	$\varnothing D 2$ PN 10	$\varnothing D 2$ PN 16	s
<b>40</b>	49	92	92	4
<b>50</b>	61	107	107	4
<b>65</b>	77	127	127	4
<b>80</b>	90	142	142	4
<b>100</b>	115	162	162	5
<b>125</b>	141	192	192	5
<b>150</b>	169	218	218	5
<b>200</b>	220	273	273	6
<b>250</b>	274	328	330	6
<b>300</b>	325	378	385	6
<b>350</b>	368	438	445	7
<b>400</b>	420	490	497	7
<b>500</b>	520	595	618	7
<b>600</b>	620	695	735	7
<b>700</b>	720	810	805	8
<b>800</b>	820	915	910	8
<b>900</b>	920	1015	1005	8
<b>1000</b>	1020	1120	1110	8
<b>1200</b>	1220	1340	1340	8
<b>1400</b>	1420	1545	1540	8
<b>1600</b>	1620	1770	1760	8

Dimensions for gaskets with steel inlay.

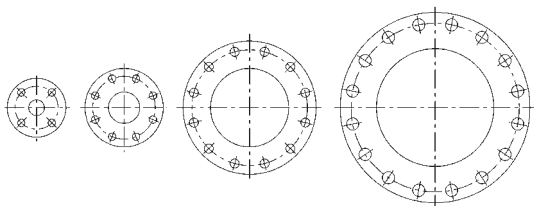


## Arrangement of bolt holes

59

A

C



Number of bolts

DN	EN 1092-2 PN 10	EN 1092-2 PN 16	EN 1092-2 PN 25	EN 1092-2 PN 40
40	4	4	4	4
50	4	4	4	4
65	4	4	8	8
80	8	8	8	8
100	8	8	8	8
125	8	8	8	8
150	8	8	8	8
200	8	12	12	12
250	12	12	12	12
300	12	12	16	16
350	16	16	16	16
400	16	16	16	16
450	20	20	20	20
500	20	20	20	20
600	20	20	20	20
700	24	24	24	—
800	24	24	24	—
900	28	28	28	—
1000	28	28	28	—
1200	32	32	32	—
1400	36	36	—	—
1600	40	40	—	—

The number of bolt holes is always divisible by 4.

The bolt holes are arranged symmetrically to the two main axes, but not on them.



**B**

**Ductile cast iron  
valves**

**B**

## Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems

62 Excerpts from EN 558  
Table 2 - Face-to-face lengths of the basic series

basic series as per EN 558									
	1	2	13	14	15	16	20	26	48
former type series as per German DIN 3202									
DN	F1	F2	F16	F4	F5	K3	K1	F7	F6
<b>40</b>	200	260	106	140	240	33	33	240	180
<b>50</b>	230	300	108	150	250	43	43	250	200
<b>65</b>	340	340	112	170	270	46	46	290	240
<b>80</b>	310	380	114	180	280	64	46	310	260
<b>100</b>	350	430	127	190	300	64	52	350	300
<b>125</b>	400	500	140	200	325	70	56	400	350
<b>150</b>	480	550	140	210	350	76	56	450	400
<b>200</b>	600	650	152	230	400	89	60	550	500
<b>250</b>	730	775	165	250	450	114	68	650	600
<b>300</b>	850	900	178	270	500	114	78	750	700
<b>350</b>	980	1025	190	290	550	127	78	850	800
<b>400</b>	1100	1150	216	310	600	140	102	950	900
<b>450</b>	1200	1275	222	330	650	152	114	1050	1000
<b>500</b>	1250	1400	229	350	700	152	127	1150	1100
<b>600</b>	1450	1600	267	390	800	178	154	1350	1300
<b>700</b>	1650	–	292	430	900	229	165	1550	1500
<b>800</b>	1850	–	318	470	1000	241	190	1750	1700
<b>900</b>	2050	–	330	510	1100	241	203	1950	1900
<b>1000</b>	2250	–	410	550	1200	300	216	2150	2100
<b>1200</b>	–	–	470	630	–	350	254	–	–
<b>1400</b>	–	–	530	710	–	390	279	–	–
<b>1600</b>	–	–	600	790	–	440	318	–	–
<b>1800</b>	–	–	670	870	–	490	356	–	–
<b>2000</b>	–	–	760	950	–	540	406	–	–

## Flow resistance coefficients as per EN 736-3 (Zeta values)

for Düker valves measured in fully open position

63

B

	Gate valves 4004 and 2004 series	Butterfly valve type 4510	Butterfly valve type 451	Non-slam check valve type 8015	Plunger valve type 7015 (seat ring)
<b>40</b>	0,123	–	–	–	–
<b>50</b>	0,177	–	–	–	–
<b>65</b>	0,106	–	–	–	–
<b>80</b>	0,099	–	–	0,60	–
<b>100</b>	0,098	0,80	–	0,69	–
<b>125</b>	0,087	–	–	0,69	–
<b>150</b>	0,084	0,75	–	0,79	1,40
<b>200</b>	0,082	0,56	–	0,77	*
<b>250</b>	0,080	0,50	–	0,65	*
<b>300</b>	0,076	0,40	–	*	*
<b>350</b>	–	0,38	–	–	*
<b>400</b>	–	0,35	–	–	*
<b>500</b>	–	0,25	–	–	–
<b>600</b>	–	0,25	–	–	–
<b>700</b>	–	–	0,21	–	–
<b>800</b>	–	–	0,18	–	–
<b>900</b>	–	–	0,17	–	–
<b>1000</b>	–	–	0,16	–	–
<b>1200</b>	–	–	0,15	–	–

\* on request

# Gate valves type 4004 with flanges PN 10 / 16

## 64 Design features:

Resilient-seated gate valve, with smooth passage, internal stem thread, non-rising stem; edge protection for bonnet and body, countersunk and sealed A2 screws between body and bonnet, medium-free stem bearing  
sealing wedge entirely vulcanised  
flange connection dimensions: as per EN 1092-2  
face-to-face length: as per EN 558, basic series 15  
for potable water, sewerage or gas

### Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1
- with electrical actuator (on request)

### Materials:

ductile cast iron EN-GJS-500-7 as per EN 1563  
stem: chromium steel X20Cr13 (for sewerage: 1.4571)  
stem nut: special brass (for sewerage: aluminium bronze)  
rubber parts made of high-quality elastomer:  
sealing wedge for water: EPDM  
sealing wedge for gas and sewerage: NBR



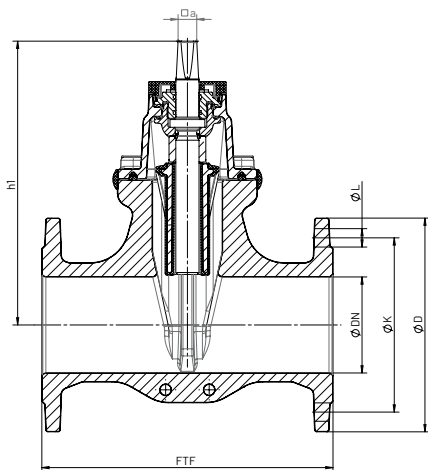
### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)
- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for sewerage)
- inside and outside epoxy finish blue RAL 5005 as per GSK guidelines (for water)
- inside and outside epoxy finish blue RAL 5005 as per GSK guidelines (for sewerage)
- inside and outside epoxy finish yellow RAL 1023 as per GSK guidelines (for gas)

**Field of application:** potable water up to 60 °C; sewerage; gas as per G 260/1

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar			
			Test medium water Body	Test medium water Seat	Test medium air Seat PG 2	Test medium air Seat PG 3 16 bar
potable water	40 – 300	16	24	17,6		
potable water	200 – 300	10	15	11		
sewerage	50 – 300	16	24	17,6		
sewerage	200 – 300	10	15	11		
gas	40 – 300	0,5/16	24		0,5	0,5 and 17,6




**Dimensions and weights** (Dimensions in mm)

DN	PN	FTF	$h_1$	$\phi D$	$\phi K$	Number of screws	$\phi L$	$\square a$	Weight in kg $\approx$
<b>40</b>	16	240	207	150	110	4	19	14	12,5
<b>50</b>	16	250	233	165	125	4	19	14	14,7
<b>65</b>	16	270	270	185	145	4	19	17	18,8
<b>80</b>	16	280	270	200	160	8	19	17	18,4
<b>100</b>	16	300	295	220	180	8	19	19	24,0
<b>125</b>	16	325	330	250	210	8	19	19	28,7
<b>150</b>	16	350	373	285	240	8	23	19	37,7
<b>200</b>	10	400	462	340	295	8	23	24	58,1
<b>200</b>	16	400	462	340	295	12	23	24	57,6
<b>250</b>	10	450	648	400	350	12	23	27	113,6
<b>250</b>	16	450	648	400	355	12	28	27	113,0
<b>300</b>	10	500	723	455	400	12	23	27	161,0
<b>300</b>	16	500	723	455	410	12	28	27	160,0

## Gate valves type 4004 with flanges PN 10 / 16



66

### Item numbers

DN	Item no. water etec enamel	Item no. water EKB blue	Item no. gas EKB yellow	Item no. sewerage etec enamel	Item no. sewerage EKB blue
<b>40</b>	569135	769104	571709	—	—
<b>50</b>	569136	569275	571037	769097	572432
<b>65</b>	569137	569823	572015	—	—
<b>80</b>	567656	571171	568078	572431	572436
<b>100</b>	567614	571173	570239	573113	572438
<b>125</b>	569628	571633	571670	573114	572440
<b>150</b>	567690	571175	568081	573115	572442
<b>200/10</b>	567770	571177	568082	573054	572446
<b>200/16</b>	568088	573197	571034	769044	768948
<b>250/10</b>	324701	324723	324735	324745	324759
<b>250/16</b>	324707	324724	324736	324746	324760
<b>300/10</b>	324708	324725	324737	324749	324761
<b>300/16</b>	324709	324726	324738	324750	324762



# Gate valves type 2004 (short face-to-face length) with flanges PN 10/16

## 68 Design features:

Resilient-seated gate valve, with smooth passage, internal stem thread, non-rising stem; edge protection for bonnet and body, countersunk and sealed A2 screws between body and bonnet, medium-free stem bearing  
sealing wedge entirely vulcanised  
flange connection dimensions: as per EN 1092-2  
face-to-face length: as per EN 558, basic series 14  
for potable water, sewerage or gas

### Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1
- with electrical actuator (on request)

### Materials:

ductile cast iron EN-GJS-500-7 as per EN 1563  
stem: chromium steel X20Cr13 (for sewerage: 1.4571)  
stem nut: special brass (for sewerage: aluminium bronze)  
rubber parts made of high-quality elastomer:  
sealing wedge for water: EPDM  
sealing wedge for gas and sewerage: NBR

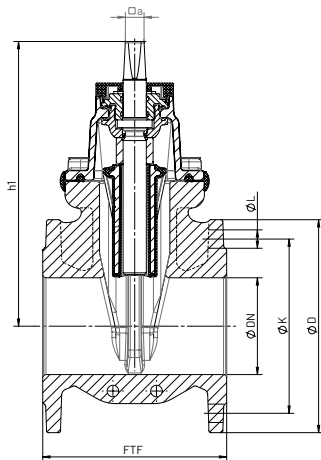


### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)
- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for sewerage)
- inside and outside epoxy finish blue RAL 5005 as per GSK guidelines (for water)
- inside and outside epoxy finish blue RAL 5005 as per GSK guidelines (for sewerage)
- inside and outside epoxy finish yellow RAL 1023 as per GSK guidelines (for gas)

**Field of application:** potable water up to 60 °C; sewerage; gas as per G 260/1

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar			
			Test medium water Body	Test medium water Seat	Test medium air Seat PG 2	Test medium air Seat PG 3 16 bar
potable water	40 – 300	16	24	17,6		
potable water	200 – 300	10	15	11		
sewerage	50 – 300	16	24	17,6		
sewerage	200 – 300	10	15	11		
gas	40 – 300	0,5/16	24		0,5	0,5 and 17,6


**Dimensions and weights** (Dimensions in mm)

DN	PN	FTF	$h_1$	$\varnothing D$	$\varnothing K$	Number of screws	$\varnothing L$	$\square a$	Weight in kg $\approx$
<b>40</b>	16	140	207	150	110	4	19	14	11,2
<b>50</b>	16	150	233	165	125	4	19	14	13,3
<b>65</b>	16	170	270	185	145	4	19	17	17,0
<b>80</b>	16	180	270	200	160	8	19	17	18,7
<b>100</b>	16	190	295	220	180	8	19	19	21,9
<b>125</b>	16	200	330	250	210	8	19	19	25,5
<b>150</b>	16	210	373	285	240	8	23	19	33,1
<b>200</b>	10	230	462	340	295	8	23	24	51,4
<b>200</b>	16	230	462	340	295	12	23	24	51,0
<b>250</b>	10	250	648	400	350	12	23	27	104,4
<b>250</b>	16	250	648	400	355	12	28	27	104,0
<b>300</b>	10	270	723	455	400	12	23	27	146,7
<b>300</b>	16	270	723	455	410	12	28	27	146,0

# Gate valves type 2004 (short face-to-face length) with flanges PN 10/16



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Item numbers					
DN	Item no. water etec enamel	Item no. water EKB blue	Item no. gas EKB yellow	Item no. sewerage etec enamel	Item no. sewerage EKB blue
<b>40</b>	569110	570158	769006	—	—
<b>50</b>	569111	569534	571047	769098	572561
<b>65</b>	569184	570599	571679	—	—
<b>80</b>	567839	570941	571322	573058	760350
<b>100</b>	567843	570944	571131	769045	572562
<b>125</b>	567847	571053	769011	769046	572563
<b>150</b>	567851	570947	571072	769047	572564
<b>200/10</b>	567855	571056	571073	573112	572565
<b>200/16</b>	568173	571070	571048	769048	572787
<b>250/10</b>	324710	324727	324740	324752	324764
<b>250/16</b>	324716	324728	324741	324753	324765
<b>300/10</b>	324717	324729	324743	324754	324766
<b>300/16</b>	324718	324730	324744	324755	324767



# Gate valves type 4004 plug-in socket gate valves with Novo sockets PN 16

## 72 Design features:

Resilient-seated gate valve, with smooth passage, internal stem thread, non-rising stem; edge protection for bonnet and body, countersunk and sealed A2 screws between body and bonnet, medium-free stem bearing  
sealing wedge entirely vulcanised  
connection: as per DIN 28603 (**TYTON**® with pre-chamber)  
face-to-face length: as per EN 558, basic series 13  
for potable water, waste water on request

### Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1
- with electrical actuator (on request)

### Materials:

ductile cast iron EN-GJS-500-7 as per EN 1563

Stem: chromium steel X20Cr13

stem nut: special brass

rubber parts made of high-quality elastomer:

sealing wedge for water: EPDM



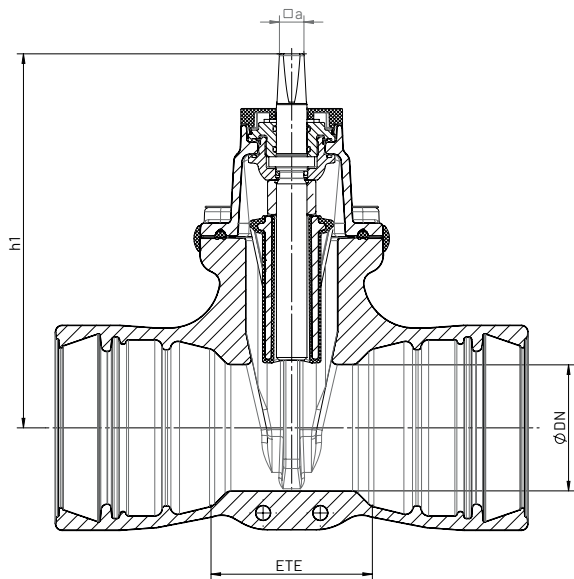
### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)
- inside and outside epoxy finish blue RAL 5005 as per GSK guidelines (for water)

**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Body	Seat
potable water	80 - 300	16	24	17,6




**Dimensions and weights** (Dimensions in mm)

DN	PN	$h_1$	ETE	$\square a$	Weight in kg $\approx$	Item no. water etec enamel
80	16	270	114	17	19,9	567899
100	16	295	127	19	23,4	567903
125	16	330	140	19	27,7	570607
150	16	373	140	19	34,6	567911
200	16	462	152	24	53,6	567915
250	16	648	165	27	107,0	326536
300	16	723	178	27	151,0	326538

# Gate valves type 4004

## Single socket gate valves with Novo sockets and spigot end PN 16

### 74 Design features:

Resilient-seated gate valve, with smooth passage, internal stem thread, non-rising stem; edge protection for bonnet and body, countersunk and sealed A2 screws between body and bonnet, medium-free stem bearing  
sealing wedge entirely vulcanised  
connection: as per DIN 28603 (**TYTON**® with pre-chamber)  
face-to-face length: as per EN 558, basic series 13  
for potable water

### Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1
- with electrical actuator (on request)

### Materials:

ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

stem nut: special brass

rubber parts made of high-quality elastomer:

sealing wedge for water: EPDM

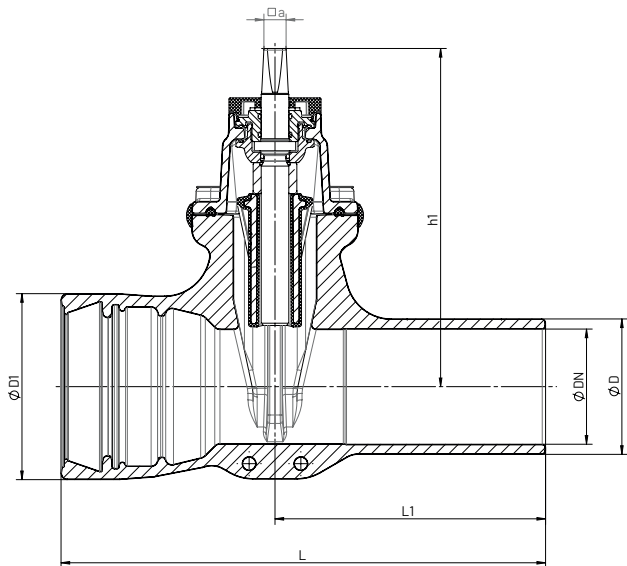


### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)
- inside and outside epoxy finish blue RAL 5005 as per GSK guidelines (for water)

**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Body	Seat
potable water	80 - 300	16	24	17,6


**Dimensions and weights** (Dimensions in mm)

DN	PN	$\varnothing D_1$	$h_1$	$\varnothing D$	$L_1$	L	$\square a$	Weight in kg $\approx$	Item no. water etec enamel
80	16	141	270	97	235	410	17	19,1	567919
100	16	161	295	117	235	422	19	21,9	567923
125	16	188	330	143	290	485	19	27,0	569643
150	16	215	373	169	290	490	19	33,7	567931
200	16	271	462	221	310	525	24	52,6	567935
250	16	324	648	274	310	535	27	109,0	326541
300	16	381	723	326	310	550	27	120,0	326544

# Gate valves type 4004

## socket gate valves

### with screw-gland sockets PN 16

#### 76 Design features:

Resilient-seated gate valve, with smooth passage, internal stem thread, non-rising stem; edge protection for bonnet and body, countersunk and sealed A2 screws between body and bonnet, medium-free stem bearing

sealing wedge entirely vulcanised

connection: as per DIN 28601

face-to-face length: as per EN 558, basic series 13

for potable water

#### Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1
- with electrical actuator (on request)

#### Materials:

ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

stem nut: special brass

rubber parts made of high-quality elastomer:

sealing wedge for water: EPDM

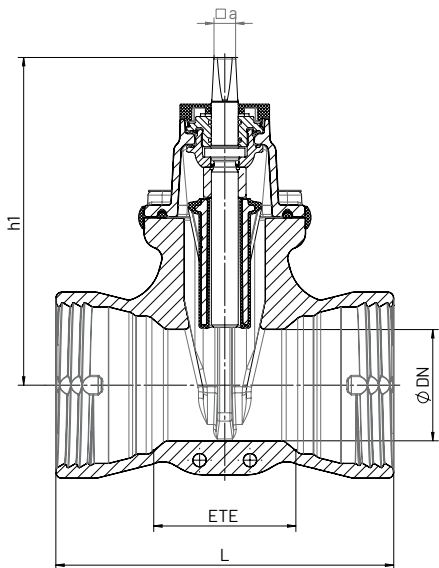


#### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)
- inside and outside epoxy finish blue RAL 5005 as per GSK guidelines (for water)

**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Body	Seat
potable water	40 – 200	16	24	17,6


**Dimensions and weights** (Dimensions in mm)

DN	PN	$h_1$	ETE	L	$\square a$	Weight in kg <sup>1)</sup>	Item no.
<b>40</b>	16	207	106	240	14	10,0	on request
<b>50</b>	16	233	108	250	14	11,8	on request
<b>80</b>	16	270	114	282	17	18,9	on request
<b>100</b>	16	295	127	303	19	21,4	on request
<b>125</b>	16	330	140	322	19	25,7	on request
<b>150</b>	16	373	140	328	19	33,1	on request
<b>200</b>	16	462	152	352	24	50,2	on request

<sup>1)</sup> without screw ring

# Gate valves type 2004 (short face-to-face length) flanged socket gate valves with socket and flange PN 16

## 78 Design features:

Resilient-seated gate valve, with smooth passage, internal stem thread, non-rising stem; edge protection for bonnet and body, countersunk and sealed A2 screws between body and bonnet, medium-free stem bearing

sealing wedge entirely vulcanised

connection: screw-gland socket as per DIN 28601 or socket as per DIN 28603 (TYTON®, Novo); flange as per EN 1092-2

Face-to-face length: as per EN 558, basic series 13/14  
for potable water

### Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1
- with electrical actuator (on request)

### Materials:

ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

stem nut: special brass

rubber parts made of high-quality elastomer:

sealing wedge for water: EPDM

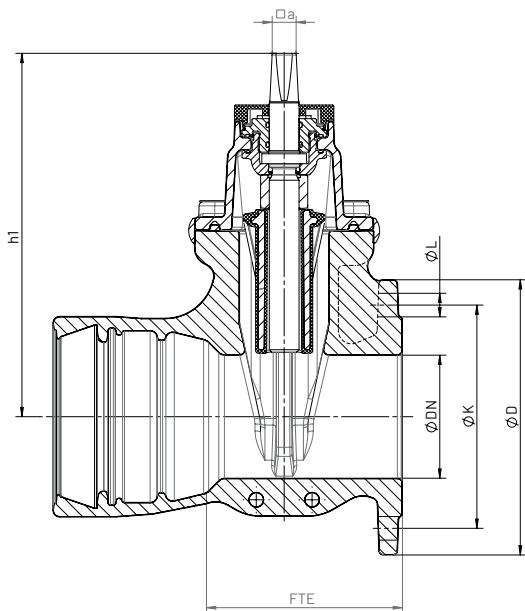


### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)
- inside and outside epoxy finish blue RAL 5005 as per GSK guidelines (for water)

### Field of application: Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Body	Seat
potable water	80 - 200	16	24	17,6


**Dimensions and weights** (Dimensions in mm)

DN	PN	FTE	$h_1$	$\varnothing D$	$\varnothing K$	Number of screws	$\varnothing L$	$\varnothing a$	Weight in kg $\approx$	Item no.
80	16	150	270	200	160	8	19	17	18,7	on request
100	16	160	295	220	180	8	19	19	22,7	on request
125	16	170	330	250	210	8	19	19	26,7	on request
150	16	175	373	285	240	8	23	19	33,6	on request
200	10	190	462	340	295	8	23	24	52,6	on request
200	16	190	462	340	295	12	23	24	52,3	on request

# Gate valves type 4004 with welding studs PE SDR 17/11

## 80 Design features:

Resilient-seated gate valve, with smooth passage, internal stem thread, non-rising stem; edge protection for bonnet and body, countersunk and sealed A2 screws between body and bonnet, medium-free stem bearing

sealing wedge entirely vulcanised

connection: pre-installed PE-HD welding studs as per DVGW G 5600-1 with connection dimensions as per DIN 8074/8075. Suitable for electro-welding and butt-welding

face-to-face length: as per EN 558, basic series 13  
for potable water or gas

### Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1

### Materials:

ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

stem nut: special brass

rubber parts made of high-quality elastomer:

sealing wedge for water: EPDM

sealing wedge for gas: NBR



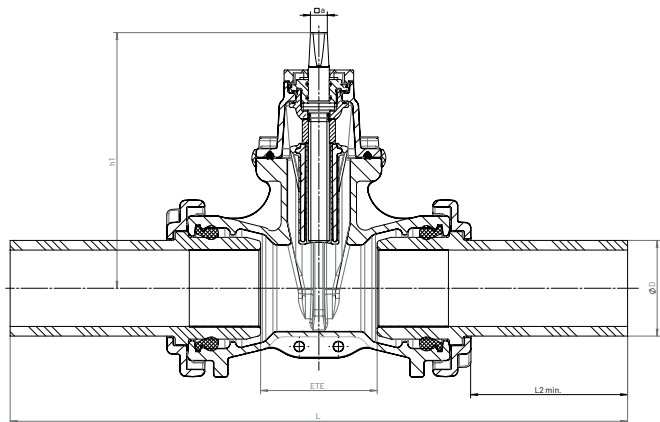
### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)
- inside and outside epoxy finish yellow RAL 1023 as per GSK guidelines (for gas)

**Field of application:** Potable water up to 40° C; gas as per G 260/1

Field of application	Nominal diameter DN	Nominal pressure PN	SDR	Test pressure in bar		
				Test medium water Body	Test medium water Seat	Test medium air Seat PG 3 5 bar or 10 bar
potable water	80 – 200	16	11	24	17,6	
potable water	80 – 200	10	17	15	11	
gas	80 – 200	5	11/17	24		0,5 and 6
gas	80 – 200	10	11	24		0,5 and 11




**Dimensions and weights** (Dimensions in mm)

DN	PN	øD	L	h <sub>1</sub>	ETE	a	L2 max.	Weight in kg ≈
<b>80</b>	16	90	680	270	120	17	175	24,9
<b>100</b>	16	110	710	295	134	19	180	29,4
<b>100</b>	16	125	736	295	136	19	190	30,4
<b>125</b>	16	140	790	330	152	19	203	37,7
<b>150</b>	16	160	840	373	162	19	220	52,1
<b>150</b>	16	180	860	373	160	19	231	52,1
<b>200</b>	16	200	970	462	170	24	265	83,6
<b>200</b>	16	225	954	462	170	24	257	84,6

# Gate valves type 4004 with welding studs PE SDR 17/11



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## Item numbers

DN	ø D	Item no. water PN 10 SDR 17 etec enamel	Item no. water PN 16 SDR 11 etec enamel	Item no. gas PN 5 SDR 17 EKB yellow	Item no. gas PN 5 SDR 11 EKB yellow	Item no. gas PN 10 SDR 11 EKB yellow
<b>80</b>	90	571243	571193	568829	769006	572250
<b>100</b>	110	571206	570280	568831	571047	572355
<b>100</b>	125	571240	570780	568833	571679	571970
<b>125</b>	140	768964	768968	569113	571322	789115
<b>150</b>	160	571207	570980	568834	571131	571715
<b>150</b>	180	571248	571542	569115	769011	789116
<b>200</b>	200	768974	768972	569117	571072	789119
<b>200</b>	225	571319	571328	568836	571073	571660



# Replacement and repair valves type 4004 with rotatable flanges PN 10/16

## 84 Design features:

Resilient-seated gate valve, with smooth passage, internal stem thread, non-rising stem; edge protection for bonnet and body, countersunk and sealed A2 screws between body and bonnet, medium-free stem bearing

sealing wedge entirely vulcanised

connection: thrust-resistant rotatable flanges with integrated sealing, connection dimensions as per EN 1092-2

face-to-face length: as per EN 558, basic series 15  
for potable water

### Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1
- with electrical actuator (on request)

### Materials:

ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

stem nut: special brass

rubber parts made of high-quality elastomer:

sealing wedge for water: EPDM

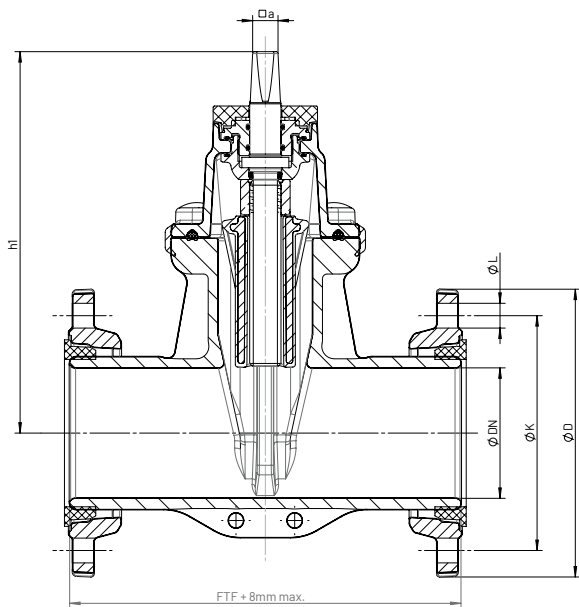


### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)

**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Body	Seat
potable water	80 – 200	16	24	17,6
potable water	200	10	15	11


**Dimensions and weights** (Dimensions in mm)

DN	PN	FTF	$h_1$	$\varnothing D$	$\varnothing K$	Number of screws	$\varnothing L$	$\square a$	Weight in kg $\approx$	Item no. water etec enamel
80	16	280	270	200	160	8	19	17	21,4	573612
100	16	300	295	220	180	8	19	19	25,4	573613
125	16	325	330	250	210	8	19	19	31,2	573614
150	16	350	373	285	240	8	23	19	41,1	573615
200	10	400	462	340	295	8	23	24	62,6	573616
200	16	400	462	340	295	12	23	24	62,1	573617

# Replacement and repair valves type 2004 with rotatable flanges PN 10/16

## 86 Design features:

Resilient-seated gate valve, with smooth passage, internal stem thread, non-rising stem; edge protection for bonnet and body, countersunk and sealed A2 screws between body and bonnet, medium-free stem bearing

sealing wedge entirely vulcanised

connection: thrust-resistant rotatable flanges with integrated sealing, connection dimensions as per EN 1092-2

face-to-face length: as per EN 558, basic series 14  
for potable water

### Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1
- with electrical actuator (on request)

### Materials:

ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

stem nut: special brass

rubber parts made of high-quality elastomer:

sealing wedge for water: EPDM

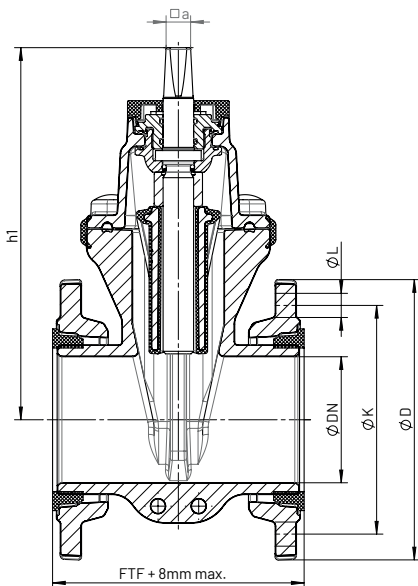


### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)

**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Body	Seat
potable water	80 – 200	16	24	17,6
potable water	200	10	15	11


**Dimensions and weights** (Dimensions in mm)

DN	PN	FTF	$h_1$	$\phi D$	$\phi K$	Number of screws	$\phi L$	$\square a$	Weight in kg $\approx$	Item no. water etec enamel
80	16	180	270	200	160	8	19	17	19,9	572853
100	16	190	295	220	180	8	19	19	20,4	572854
125	16	200	330	250	210	8	19	19	25,7	572855
150	16	210	373	285	240	8	23	19	33,1	572856
200	10	230	462	340	295	8	23	24	51,6	572857
200	16	230	462	340	295	12	23	24	51,6	572858

# Gate valves type 3004 with welding studs for steel pipes PN 16

## 88 Design features:

Resilient-seated gate valve, with smooth passage, internal stem thread, non-rising stem; countersunk and sealed A2 screws between body and bonnet, medium-free stem bearing

sealing wedge entirely vulcanised

connection: welding studs as per EN 12627 for steel pipes

face-to-face length: as per EN 12982, basic series 15

for gas

### Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1

### Materials:

body ductile cast iron EN-GJS-400-18 as per EN 1563

bonnet, sealing wedge ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

studs for welding St 35.8 / P235GH

stem nut: special brass

rubber parts made of high-quality elastomer:

sealing wedge for gas: NBR

**DIN DVGW**  
registered!

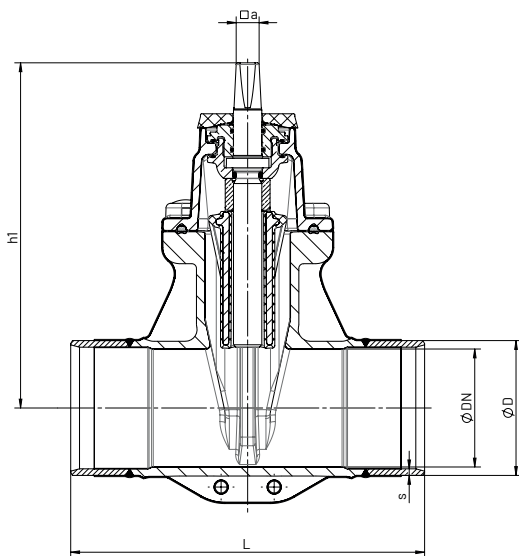
### Surface protection:

- inside Düker enamel
- outside polyurethane as per DIN 3074-2, tested 15 KV

## Field of application: Gas as per G 260/I

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Test medium water Body	Test medium air Seat PG 3 16 bar
gas	50 – 300	16	24	0,5 and 17,6




**Dimensions and weights** (Dimensions in mm)

DN	PN	$\varnothing D$	$h_1$	L	S	a	Weight in kg $\approx$	Item no. water etec enamel
<b>50</b>	16	60,3	233	420	4,5	14	10,5	569307
<b>80</b>	16	88,9	270	280	5,6	17	12,7	572609
<b>100</b>	16	114,3	295	300	5,6	19	15,9	572235
<b>150</b>	16	168,3	373	350	6,3	19	24,8	572735
<b>200</b>	16	219,1	462	400	7,1	24	40,0	572736
<b>250</b>	16	273,1	648	450	6,3	27	86,5	324769
<b>300</b>	16	323,9	723	500	7,1	27	130,0	324771

# Gate valves type 3004 with blow-off pipes and welding studs for steel pipes PN 5 4

## 90 Design features:

Resilient-seated gate valve, with smooth passage, internal stem thread, non-rising stem; countersunk and sealed A2 screws between body and bonnet, medium-free stem bearing

sealing wedge entirely vulcanised

All welding seams are tested as per AD bulletin HP5/3, all welding studs are tested as per EN 12266.

connection: welding studs as per EN 12627 for steel pipes

face-to-face length: as per EN 12982, basic series 15

for gas

## Operation:

- on request

## Materials:

body ductile cast iron EN-GJS-400-18 as per EN 1563

bonnet, sealing wedge ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

studs for welding St 35.8 / P235GH

steam nut: special brass

rubber parts made of high-quality elastomer:

sealing wedge for gas: NBR

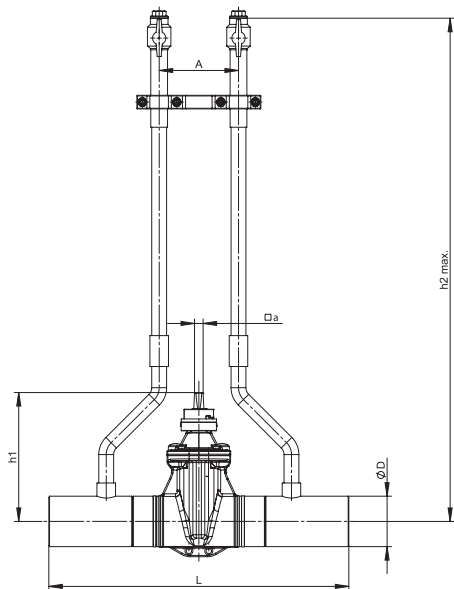
## Surface protection:

- inside Düker enamel
- outside polyurethane as per DIN 3074-2, tested 15 KV

**DIN DVGW**  
registered!

## Field of application: Gas as per G 260/1

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Test medium water Body	Test medium air Seat PG 3 5 bar
gas	80 - 300	5	24	0,5 and 6


**Dimensions and weights** (Dimensions in mm)

DN	øD	h <sub>1</sub>	L	h <sub>2</sub> max.	A	□a	Weight in kg	Item no. gas
<b>80</b>	88,9	270	660	1110	180	17	28,9	571427
<b>100</b>	114,3	295	680	1140	180	19	32,4	571428
<b>150</b>	168,3	373	730	1250	224	19	62,1	571429
<b>200</b>	219,1	462	780	1320	224	24	78,6	571430
<b>250</b>	273,1	648	1050	1380	224	27	120,0	on request
<b>300</b>	323,9	723	1085	1410	224	27	138,0	324776

## The Düker service connection system TOP 1004 – a sophisticated modular design.

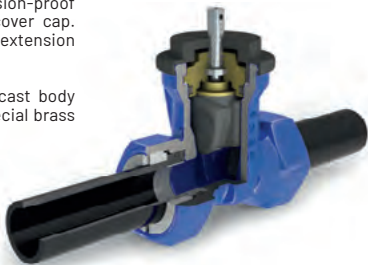
### Service connection gate valves DN 25–50, PN 16

Robust design as per DIN EN 1074 T 1+2 for water and DIN EN 13774 for gas, soft-seated, full passage, sealing wedge made from special brass, fully rubberised.

Stem made from stainless steel, rolled thread, maintenance- and media-free corrosion-proof stem seal with three O-rings and a cover cap. Stem square: 12 mm. Transition to stem extension set as per GW 336-1.

The solid bayonet connection on the cast body and bonnet made from high-quality special brass reliably eliminates the risk of corrosion.

for water up to 16 bar  
for gas up to 4 bar



Service connection gate valves  
with PE ends for welding

### Tapping valve TOP type 1004 for top tapping

### Tapping valve TOPsi type 1004 for lateral tapping

**A valve with a nominal diameter of 80-300, PN 16 for cast-iron, steel, cement-mortar-lined and asbestos cement pipes**

The design principle is based on the tried-and-tested technology underlying the service connection gate valve. The sealing wedge, bonnet and stem of type 1004 DN 40 are identical in the TOP tapping valve. Adjustments to fit the different pipe types are made using flexible retaining brackets with a stainless-steel coating. The saddle seals for sealing on the pipe are packaged as a unit with the clapping bands and assigned to the corresponding nominal diameters and pipe types. Tapping under operating pressure without an auxiliary valve takes place via a valve flap on the side. When the drill rod is pulled out, the valve flap automatically closes tightly.

Tapping diameter: 38 mm  
Torque: < 25 max. 50  
Revolutions: OPEN/CLOSED 10  
for water up to 16 bar

Gate valve and TOP tapping valve versions

- With internal thread Rp 1" to 2", as per DIN EN 10226-1
- With factory-mounted PE transitions for welding for PE pipe



TOP 1004 for top tapping  
with PE ends for welding



TOPsi for lateral tapping

**Düker TOP type 1004 service connection gate valves and tapping valves have been used for decades without any problems.**

**Tested brand quality with Düker etec enamel  
'Made in Germany' – Sustainable. Superior.**

## Tapping Valve TOP (drilling from above) with internal pipe thread, PN 16

### 94 Design features:

Tapping valve for installation on pipes of all nominal diameters between DN 80 and DN 300. Suitable for drilling under pressure. Can be used for pipes made of cast iron, steel and asbestos cement.

### Technical features:

No additional support valves are required for tapping under pressure. The resilient valve flap integrated into the type TOP closes automatically after the drilling bar is drawn back.

maximum drilling diameter: 38 mm

stem square ends: 12 mm

### Outlets:

internal pipe thread as per EN 10226-1:  
Rp 1¼", Rp 1½", Rp 2"

### Clamping band types:

see page 102-103

### Materials:

body ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

bonnet, obturator: special brass

valve flap: rubberised steel

rubber parts of high-quality elastomer (EPDM)

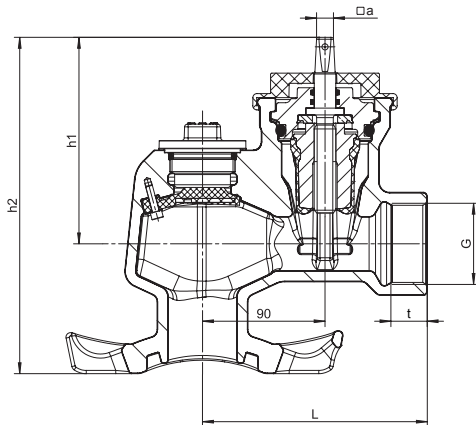
### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)

**DIN DVGW**  
registered!

**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Body	Seat
potable water	25 - 50	16	24	17,6


**Dimensions and weights** (Dimensions in mm)

DN	L	G	$h_1$	$h_2$	t	□a	Weight in kg ≈	Item no.
<b>80 - 300</b>	160	Rp 1¼"	152	247	23	12	8,0	570359
<b>80 - 300</b>	160	Rp 1½"	152	247	28	12	8,0	570360
<b>80 - 300</b>	165	Rp 2"	152	247	29	12	9,5	570382

Clamping bands and saddle sealing are identical for TOP and TOPSi.

## Tapping Valve TOPSi (side drilling) with internal pipe thread 1 1/2", PN 16

### 96 Design features:

Tapping valve for installation on pipes of all nominal diameters between DN 80 and DN 300. Suitable for drilling under pressure. Can be used for pipes made of cast iron, steel and asbestos cement.

### Technical features:

No additional support valves are required for tapping under pressure.

maximum drilling diameter: 38 mm

stem square ends: 12 mm

### Outlets:

internal pipe thread as per EN 10226-1: Rp 1 1/2"

### Clamping band types:

see page 102-103

### Materials:

body ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

bonnet, obturator: special brass

rubber parts of high-quality elastomer (EPDM)

### Surface protection:

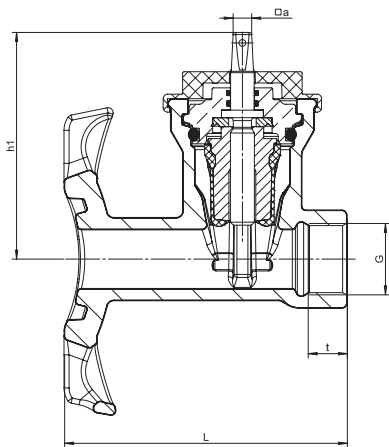
- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)

**DIN DVGW**  
registered!

**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Body	Seat
potable water	25 - 50	16	24	17,6





B

2

**Dimensions and weights** (Dimensions in mm)

DN	L	G	$h_1$	t	a	Weight in kg $\approx$	Item no.
<b>80 - 300</b>	190	Rp 1½"	152	25	12	6,2	570438

Clamping bands and saddle sealing are identical for TOP and TOPsi.

## Tapping valves TOP (drilling from above) with PE-HD connection PN 16

### 98 Design features:

Tapping valve for installation on pipes of all nominal diameters between DN 80 and DN 300. Suitable for drilling under pressure. Can be used for pipes made of cast iron, steel and asbestos cement.

### Technical features:

No additional support valves are required for tapping under pressure. The resilient valve flap integrated into the type TOP closes automatically after the drilling bar is drawn back.

maximum drilling diameter: 38 mm

stem square ends: 12 mm

### Outlets:

pre-installed PE-HD connections as per DVGW G 5600-1  
ø D 32, ø D 40, ø D 50, ø D 63

### Clamping band types:

see page 102-103

### Materials:

body ductile cast iron EN-GJS-500-7 as per EN 1563

welding studs: PE 100 SDR 11

stem: chromium steel X20Cr13

bonnet, obturator: special brass

valve flap: rubberised steel

rubber parts of high-quality elastomer (EPDM)

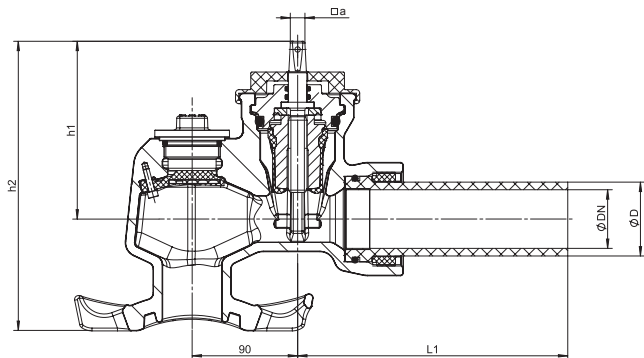
### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)

**DIN DVGW**  
registered!

**Field of application:** Potable water up to 40 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Body	Seat
potable water	25 - 50	16	24	17,6


**Dimensions and weights** (Dimensions in mm)

DN	øD	L <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	□ a	Weight in kg ≈	Item no. with PE-HD connection
<b>25</b>	32	173	152	247	12	8,3	570354
<b>32</b>	40	185	152	247	12	9,2	570355
<b>40</b>	50	210	152	247	12	9,6	570356
<b>50</b>	63	230	152	247	12	10,1	570357

# Tapping clamp type 88

## PN 10 / 16

### 100 Design features:

Tapping clamp type 88 with internal pipe thread outlet as per EN 10226-1 for upper or horizontal drilling

Suitable for installation on pipes of all nominal diameters from DN 80 up to DN 300; can be used on pipes of cast iron, steel and asbestos cement.  
for water

### Clamping band types:

see page 102-103

### Materials:

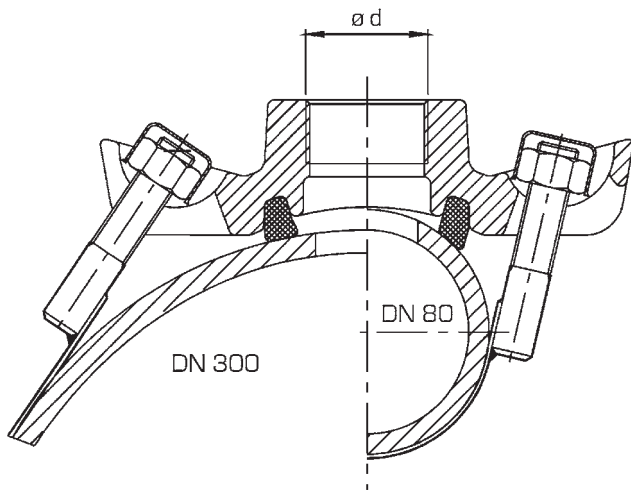
Tapping clamp made of ductile cast iron EN-GJS-500-7 as per EN 1563

### Surface protection:

- inside and outside powder epoxy resin black RAL 9005 as per GSK guidelines

**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar Body
potable water	40 - 50 1" - 2"	16	21



### Dimensions and weights

DN	Rp	Weight in kg $\approx$	Item no.
<b>80 - 300</b>	Blind	3	556560
<b>80 - 300</b>	Rp 1"	3	556561
<b>80 - 300</b>	Rp 1 1/4"	3	556562
<b>80 - 300</b>	Rp 1 1/2"	3	556563
<b>80 - 300</b>	Rp 2"	3	556564

## Clamping bands for tapping clamps type 88 and tapping valves TOP and TOPsi



### 102 Design features:

Flat clamping band for all nominal diameters DN 80 up to DN 300.

for pipes made of cast iron (with bituminous, PE or cement mortar coating), steel and asbestos cement PN 12.5

The clamping bands are packed as a unit with all required accessories and marked for the pipe type and diameter.

### Materials:

flat band with welded-on threaded bolts: stainless steel 1.4301, passivated and plastic-coated

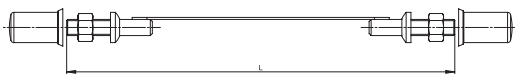
coating: plastic coating

spherical washers: stainless steel 1.4104

hexagonal nuts: stainless steel 1.4571 with sliding coating

protecting caps: plastics

saddle sealing gasket: high-quality elastomer (EPDM) as per DVGW W270 elastomer guideline



### Dimensions (in mm)

DN	cast iron pipe (bituminous coating)		cast iron pipe (PE-coated)		cast iron pipe (cement mortar coated)		steel pipe as per EN 10220 series 1		steel pipe as per EN 10220 series 3		asbestos cement pipe 12.5 as per EN 512	
	Pipe $\varnothing$	L	Pipe $\varnothing$	L	Pipe $\varnothing$	L	Pipe $\varnothing$	L	Pipe $\varnothing$	L	Pipe $\varnothing$	L
<b>80</b>	98	335	101,6	335	104	360	88,9	315	–	–	100	335
<b>100</b>	118	385	121,6	385	126	415	114,3	385	108	370	124	385
<b>125</b>	144	450	148	450	152	480	139,7	435	–	–	153	480
<b>150</b>	170	520	174	520	178	540	168,3	520	159	500	182	540
<b>175</b>	196	590	200	590	–	–	–	–	–	–	–	–
<b>200</b>	222	670	226	670	233	700	219,1	670	–	–	240	700
<b>225</b>	248	750	252	750	–	–	–	–	–	–	–	–
<b>250</b>	274	825	278	825	288	865	273,0	825	–	–	296	865
<b>300</b>	326	990	330,4	990	340	1010	323,9	990	–	–	352	1030

## Dimensions (in mm)

DN	Application	Pipe outside Ø mm	Length	Item no.
80	DI/AC	98 - 101,6	335	791759
80	DI CM	106	360	791760
80	steel	88,9	315	791761
100	DI/steel/AC	114,3 - 124	385	791763
100	DI CM	126	415	791764
100	steel	108	370	791765
125	DI	144 - 148	450	791766
125	DI CM/AC	153 - 154	480	791767
125	steel	139,7	435	791774
150	DI/steel	168,3 - 174	520	791776
150	DI CM/AC	180 - 182	540	791775
150	steel	159	500	791777
175	DI/steel	196 - 200	590	791778
200	DI/steel	219,1 - 226	670	791781
200	DI CM/AC	232 - 240	700	791779
225	DI/steel	248 - 252	750	791782
250	DI/steel	273 - 278	825	791785
250	DI CM/AC	286 - 296	865	791783
300	AC	352	1.030	791787
300	DI/steel	323,9 - 330,4	990	791789
300	DI CM	338	1.010	791788

# Service connection valves type 1004 with internal pipe thread, PN 16 or PN 5

## 104 Design features:

Resilient-seated gate valve, with smooth passage, interior stem thread, non-rising stem obturator entirely vulcanised  
connection dimensions: as per EN 10226-1  
stem square ends: 12 mm  
face-to-face length: as per EN 16722, basic series M4  
for potable water or gas

## Operation:

- with hand wheel
- with stem extension set (for underground installation) – connection as per GW 336-1

## Materials:

body: ductile cast iron EN-GJS-500-7 as per EN 1563  
stem: chromium steel X20Cr13  
bonnet, obturator: special brass  
rubber parts of high-quality elastomer:  
obturator for water: EPDM  
obturator for gas: NBR

## Surface protection:

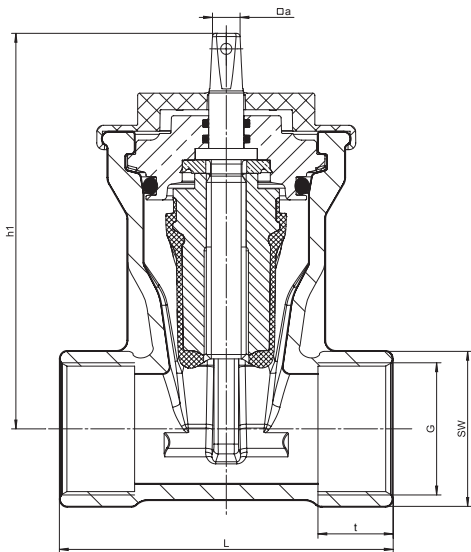
- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)
- inside and outside epoxy resin blue RAL 5005 as per GSK guidelines (for water, on request)
- inside and outside epoxy resin yellow RAL 1023 as per GSK guidelines (for gas)



**Field of application:** Potable water up to 60° C; gas as per G 260/I

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar		
			Test medium water Body	Test medium water Seat	Test medium air Seat PG 3 5 bar
potable water	25 – 50	16	24	17,6	
gas	25 – 50	5	24		0,5 and 6




**Dimensions and weights** (Dimensions in mm)

DN	L	$h_1$	SW	G	t	$\square a$	Weight in kg $\approx$	Item no. water etec enamel	Item no. water EKB blue	Item no. gas PN 5 EKB yellow
25	105	132	46	Rp1"	20	12	2,6	570109	570005	570071
32	120	152	55	Rp1 1/4"	24	12	3,8	570032	570028	570038
40	130	152	60	Rp1 1/2"	27	12	4,5	570053	570056	570059
50	150	178	70	Rp2"	34	12	6,0	570082	570085	570088

## Service Valves or House-Connection Valve with PE-HD Ends SDR 11, PN 16 or PN 5

### 106 Design features:

Resilient-seated gate valve, with smooth passage, interior stem thread, non-rising stem obturator entirely vulcanised

connection: pre-installed transition pieces as per DVGW G 5600-1

ø D 32, ø D 40, ø D 50, ø D 63

with connection dimensions as per DIN 8074/75. Suitable for electric welding and butt welding.

stem square ends: 12 mm

face-to-face length: as per EN 16722, basic series M4

for potable water or gas

### Operation:

- with hand wheel
- with stem extension set (for underground installation) – connection as per GW 336-1

### Materials:

body: ductile cast iron EN-GJS-500-7 as per EN 1563

welding studs: PE 100 SDR 11

stem: chromium steel X20Cr13

bonnet, obturator: special brass

rubber parts of high-quality elastomer:

obturator for water: EPDM

obturator for gas: NBR

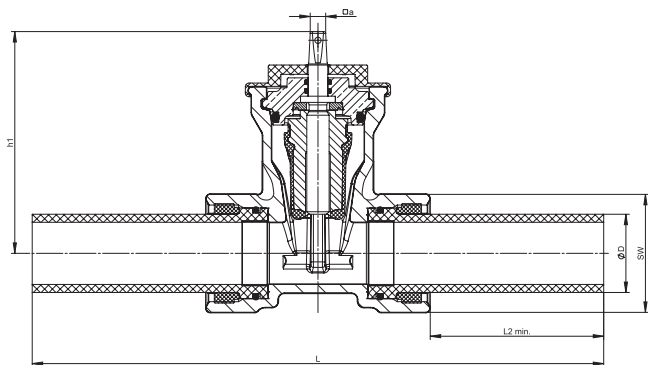


### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)
- inside and outside epoxy resin blue RAL 5005 as per GSK guidelines (for water, on request)
- inside and outside epoxy resin yellow RAL 1023 as per GSK guidelines (for gas)

**Field of application:** Potable water up to 40° C; gas as per G 260/1

Field of application	Nominal diameter DN	Nominal pressure PN	SDR	Test pressure in bar		
				Test medium water Body	Test medium water Seat	Test medium air Seat PG 3 5 bar
potable water	25 – 50	16	11	24	17,6	
gas	25 – 50	5	11	24		0,5 and 6


**Dimensions and weights** (Dimensions in mm)

DN	L	h <sub>1</sub>	SW	øD	a	L2 min.	Weight in kg ≈	Item no. water etec enamel	Item no. gas PN 5 EKB yellow
<b>25</b>	345	132	55	32	12	102	3,3	570001	570007
<b>32</b>	370	152	65	40	12	110	6,0	570026	570037
<b>40</b>	418	152	85	50	12	124	6,2	570052	570058
<b>50</b>	460	178	95	63	12	140	8,3	570081	570087

# Service-Valve or House-Connection Valve with PE-HD-Ends SDR 11, PN 16 or PN 5

## 108 Design features:

Resilient-seated gate valve, with smooth passage, interior stem thread, non-rising stem obturator entirely vulcanised

connection: pre-installed transition piece as per DVGW G 5600-1

ø D 40, ø D 50

with connection dimensions as per DIN 8074/75. Suitable for electric welding and butt welding.

flange connection as per EN 1092-2

stem square ends: 12 mm

face-to-face length: as per EN 16722, basic series M4  
for potable water or gas

## Operation:

- with hand wheel
- with stem extension set (for underground installation) – connection as per GW 336-1

## Materials:

body: ductile cast iron EN-GJS-500-7 as per EN 1563

welding studs: PE 100 SDR 11

stem: chromium steel X20Cr13

bonnet, obturator: special brass

rubber parts of high-quality elastomer:

obturator for water: EPDM

obturator for gas: NBR

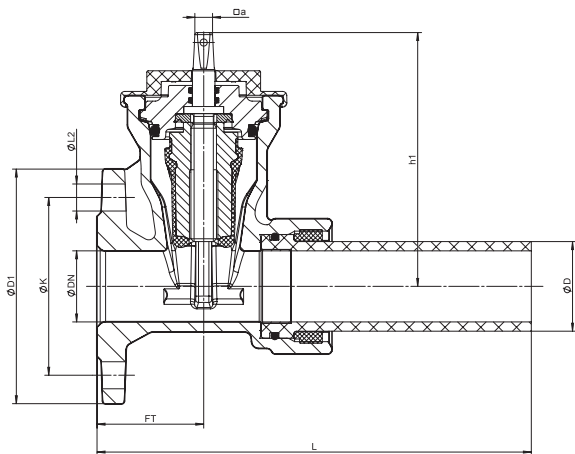


## Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)
- inside and outside epoxy resin blue RAL 5005 as per GSK guidelines (for water, on request)
- inside and outside epoxy resin yellow RAL 1023 as per GSK guidelines (for gas)

**Field of application:** potable water up to 40° C; gas as per G 260/1

Field of application	Nominal diameter DN	Nominal pressure PN	SDR	Test pressure in bar		
				Test medium water Body	Test medium water Seat	Test medium air Seat PG 3 5 bar
potable water	25 – 50	16	11	24	17,6	
gas	25 – 50	5	11	24		0,5 and 6


**Dimensions and weights** (Dimensions in mm)

DN	L	$h_1$	FT	$\varnothing D_1$	K	L2	$\varnothing D$	Number of screws	$a$	Weight in kg $\approx$	Item no. water etec enamel	Item no. gas PN 5 EKB yellow
40	280	152	70	150	110	19	50	4	12	7,3	571301	—
50	305	178	75	165	125	19	63	4	12	9,2	571302	571716

# Gate valve combinations Multi I with Novo sockets PN 10 / 16

## 110 Design features:

Collar with **Novo** sockets with lateral outlet combined with gate valve type 1004 DN 50, resilient-seated, with smooth passage, interior stem thread, non-rising stem

obturator entirely vulcanised

connection: pre-installed transition piece as per DVGW G 5600-1

with connection dimensions as per DIN 8074/75. Suitable for electric welding and butt welding.

in graduated diameters of 63, 50 and 40 mm

stem square ends: 12 mm

face-to-face length of the gate valve: as per EN 16722, basic series M4  
for potable water

### Operation:

- with hand wheel
- with stem extension set (for underground installation) – connection as per GW 336-1

### Materials:

body: ductile cast iron EN-GJS-500-7 as per EN 1563

welding studs: PE 100 SDR 11

stem: chromium steel X20Cr13

bonnet, obturator: special brass

rubber parts of high-quality elastomer:

obturator for water: EPDM

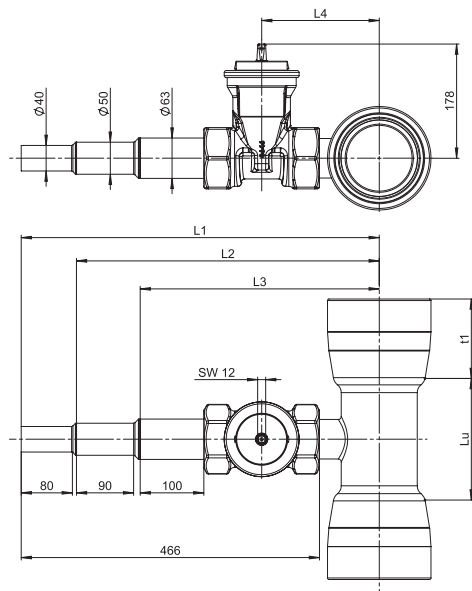
### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)

**DIN DVGW**  
registered!

**Field of application:** Potable water up to 40 °C

Field of application	Nominal diameter DN	Nominal pressure PN	SDR	Test pressure in bar	
				Body	Seat
potable water	32 – 50	16	11	24	17,6



### Dimensions and weights (Dimensions in mm)

DN	$L_1$	$L_2$	$L_3$	$L_4$	$L_u$	$t_1$	Weight in kg $\approx$	Item no. etec enamel
100	559	473	373	183	190	123	22	788904
125	572	486	386	196	195	126	26	788905
150	585	499	399	209	195	129	30	788906
200	612	526	426	236	200	138	40	788907
250	637	551	451	261	200	143	49	788908
300	663	577	476	287	205	152	63	788909

# Düker underground hydrants

**Stable and simple design for long-term, cost-effective service.**  
**Potentially higher investment costs at the procurement stage are offset by greater operational reliability.**

Details of the product characteristics and benefits:

- **One-piece body seamlessly enamelled inside and out – total protection against corrosion and incrustation**

The sealing wedge of the main seal and the EPDM-encased steel balls ensure safe and reliable sealing on the hard, smooth surface of the enamel. An additional seal eliminates the need for material transitions. This excludes the risk of corrosion at the interfaces. For operations, this means long-term impermeability and operational capability.

- **1 Guide piece made from high-quality forging brass, hot-worked** – ensures a smooth surface and even structure without cavities or cracks. High, long-term mechanical stability.

- **2 Obturator linkage** made from solid stainless steel. The sealing wedge and guide piece are screwed with a thread on the rod and secured with stainless-steel pins. This combination allows heavily soiled pipelines to function reliably even under extremely adverse operating conditions (e.g. flushing). The use of solid instead of hollow material stops stagnant water from accumulating.

- **3 Cast-on, fully enamelled automatic drainage system with drying line** – ensures reliable and long-term water drainage. The smooth enamel surface is resistant to water precipitation, incrustations and root penetration. No risk of clogging. Outstanding frost protection included.

- **Protection against pressurised water** – Düker's 304/305/306 series underground hydrants are equipped with the tried-and-tested automatic pressurised water protection system. When the hydrant is being opened (main valve), the pressurised water does not travel from the main pipe to the column until the column drain opening is closed. Conversely, when the main valve is being closed, the drain opening is not

reopened until the main valve is securely closed. This stops pressurised water escaping from the drain opening, and the residual water in the column can flow into the surrounding ground. To ensure that the residual water can always drain off reliably and unimpeded, we recommend using drainage cylinders.

- Sealing wedge on the **main seal** made from ductile cast iron, with three vanes, with EPDM W 270 coating, high stability, no vibrating even at high flow rates and pressures.

- **Dual shut-off** with EPDM-encased steel balls, routed in enamelled cast-iron rails; sealing on enamel.

- **Safety locking device** for the internal mountings – a metallic end stop and additional secured obturator linkage preventing the internal mountings from being catapulted out during maintenance or disassembly work when unwanted line pressure is still present.

- Tried-and-tested, **maintenance-free stem bearing in two O-rings** – for easy and reliable handling.

- **Rolled stem thread** – for high wear resistance.

- **Brass sliding disks** on the stem reduce friction during operation.

- **4 Bayonet hook with cast-on retaining cam** secures the hydrant. Ensures vibration-free operation during water tapping.

- **5 Two-piece drainage cylinder made from shock-resistant plastic with drainage fleece** stops the drainage space from filling with sand.

- **6 Factory-mounted EPDM flange gasket with steel core** – significantly reduces assembly work during installation.





Type 304 with single shut-off

Type 305 with dual shut-off

Underground hydrant, type 304, form A, DN 80, single shut-off  
 Underground hydrant, type 305, form AD, DN 80, dual shut-off  
 Shaft hydrant, type 306, form A, DN 65, single shut-off

#### Flow rate at 1 bar pressure loss (KV) as per EN 14339

- Target minimum flow rate  $\geq 60 \text{ m}^3/\text{h}$
- ACTUAL flow rate of type 304/306  $136 \text{ m}^3/\text{h}$
- ACTUAL flow rate of type 305  $120 \text{ m}^3/\text{h}$

#### Residual water quantities and drainage times EN 1074.T 6

- Target max. residual water quantity: 100 ml
- ACTUAL residual water quantity for type 304/305/306:  $\leq 30 \text{ ml}$
- Target max. drainage time: 15 min.
- ACTUAL drainage time for type 304/305/306:  $\leq 1 \text{ min.}$

#### Permissible flow rate at 16 bar EN 1074.T 1

max. 4 m/s

#### Resistance to actuating forces EN 1074.T 6

- Max. operating torque MOT: 105 Nm
- Min. strength torque MST: 210 Nm

#### Connection types

- Flange coupling as per EN 1092-2
- with cylinder bore as per WN
- Spigot for Novo and TYTON sockets

#### Pressure rating EN 14339

PN 16

#### Pipe coverings DVGW W 386

0.80 - 1.00 - 1.25 - 1.50

#### Operation

- Rotations to open until start of flow: 3 rotations/stroke
- Rotations until fully closed: 9 rotations/stroke

#### Accessories

- Operating keys DIN 3323-C
- Drainage cylinder
- KSGX surface box - height-adjustable
- N-pieces
- Extensions

# Underground hydrants type 304

## PN 16, adjustable height based on EN 1074-6

### 114 Design features:

One-part body with automatic drainage and protection against pressurised water, outlet cover with chain (self-closing cover as an option), integrated flange sealing, secured obturator linkage, CE marking as per EN 14339  
single shut-off  
connection: connection flange DN 80 as per EN 1092-2

### Technical features:

The obturator is shaped flow-optimised and covered on all sides by a firmly vulcanised high-quality elastomer. Automatic drainage and protection against pressurised water are ensured securely due to the construction of the hydrant. The valve stem's maintenance-free bearing is guaranteed due to the use of two O-rings and an insulating ring.

The rolled valve stem ensures high wear resistance.

Safety during an exchange of the linkage is guaranteed by a mechanical linkage safety device.

The pipe covering is visible from above thanks to cast-on markings on the body.

### Materials:

body, bonnet, DIN outlet coupling, outlet cover: ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

obturator linkage, bolts: stainless steel

stem nut and bonnet nut: special brass

O-rings made of high-quality elastomer

obturator: ductile cast iron with PU elastomer

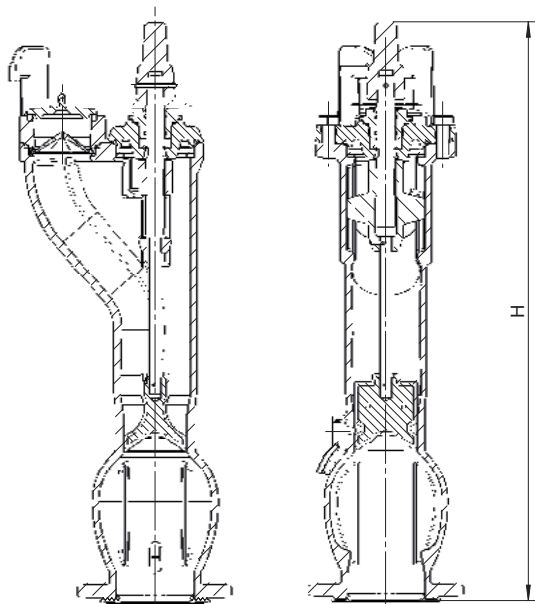


### Surface protection:

inside and outside epoxy finish blue RAL 5005 as per GSK guidelines

### Field of application: Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar		Maximum allowable operating pressure bar
			Body	Seat	
potable water	80	16	24	17,6	16

**Dimensions and weights** (Dimensions in mm)

DN	Pipe covering	H	Weight in kg ≈	Item no. standard etec enamel	Item no. standard Epoxy blue	Item no. self-closing etec enamel	Item no. self-closing Epoxy blue
80	800	575	24,5	570137	331892	300688	332084
80	1000	750	27,5	570138	329766	300851	332085
80	1250	1000	31,5	570139	331893	300852	332086
80	1500	1250	36,5	570140	331894	300853	332087

# Underground hydrants type 305

## PN 16, adjustable height based on EN 1074-6

### 116 Design features:

One-part body with automatic drainage and protection against pressurised water, outlet cover with chain (self-closing cover as an option), integrated flange sealing, secured obturator linkage, CE marking as per EN 14339  
double shut-off  
connection: connection flange DN 80 as per EN 1092-2

### Technical features:

The obturator is shaped flow-optimised and covered on all sides by a firmly vulcanised high-quality elastomer. Automatic drainage and protection against pressurised water are ensured securely due to the construction of the hydrant. The valve stem's maintenance-free bearing is guaranteed due to the use of two O-rings and an insulating ring.

The rolled valve stem ensures high wear resistance.

Safety during an exchange of the linkage is guaranteed by a mechanical linkage safety device.

The pipe covering is visible from above thanks to cast-on markings on the body.

### Materials:

body, bonnet, DIN outlet coupling, outlet cover: ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

obturator linkage, bolts: stainless steel

stem nut and bonnet nut: special brass

O-rings made of high-quality elastomer

obturator: ductile cast iron with PU elastomer

sealing ball: steel with EPDM cover

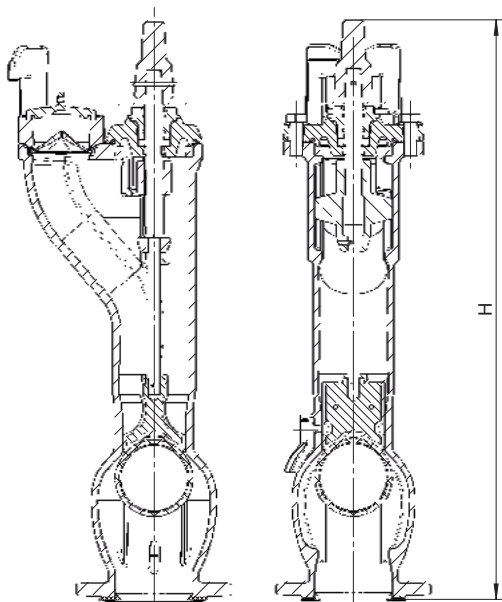


### Surface protection:

inside and outside epoxy finish blue RAL 5005 as per GSK guidelines

### Field of application: Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar		Maximum allowable operating pressure bar
			Body	Seat	
potable water	80	16	24	17,6	16


**Dimensions and weights** (Dimensions in mm)

DN	Pipe covering	H	Weight in kg ≈	Item no. standard etec enamel	Item no. standard Epoxy blue	Item no. self-closing etec enamel	Item no. self-closing Epoxy blue
80	800	575	25,0	568636	331895	300854	332088
80	1000	750	28,0	569278	331896	300855	332089
80	1250	1000	32,0	569283	331897	300857	332090
80	1500	1250	37,0	567822	331898	300858	332091

# Underground hydrants type 304 S

## PN 16, adjustable height based on EN 1074-6

### 118 Design features:

One-part, fully enamelled body with automatic drainage and protection against pressurised water, outlet cover with chain (self-closing cover as an option), integrated flange sealing, secured obturator linkage, CE marking as per EN 14339  
Type 304 S, design A: single shut-off  
connection: connection flange DN 80 as per EN 1092-2

### Technical features:

The obturator is shaped flow-optimised and covered on all sides by a firmly vulcanised high-quality elastomer. Automatic drainage and protection against pressurised water are ensured securely due to the construction of the hydrant. The valve stem's maintenance-free bearing is guaranteed due to the use of two O-rings and an insulating ring. The rolled valve stem ensures high wear resistance.

Safety during an exchange of the linkage is guaranteed by a mechanical linkage safety device.

The pipe covering is visible from above thanks to cast-on markings on the body.

### Materials:

body, bonnet, DIN outlet coupling, outlet cover: ductile cast iron EN-GJS-500-7 as per EN 1563

stem: chromium steel X20Cr13

obturator linkage, bolts: stainless steel

stem nut and bonnet nut: special brass

O-rings made of high-quality elastomer

obturator: ductile cast iron with PU elastomer

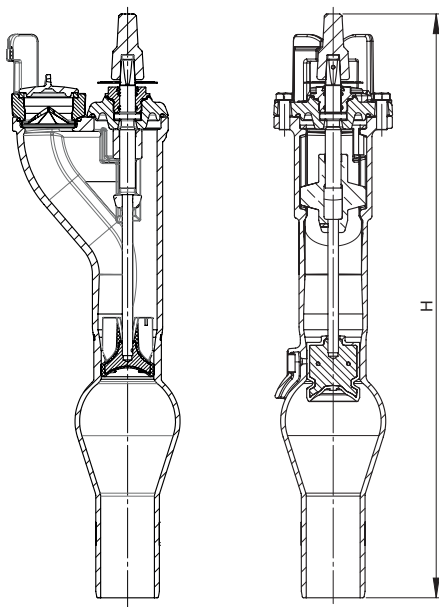


### Surface protection:

inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III

### Field of application: Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar		Maximum allowable operating pressure bar
			Body	Seat	
potable water	80	16	24	17,6	16

**Dimensions and weights** (Dimensions in mm)

DN	Pipe covering	H	Weight in kg ≈	Item no. standard	Item no. self-closing
80	750	670	29	763787	304948
80	1000	890	33	763788	304952
80	1250	1140	38	—	—
80	1500	1390	43	—	—

Note: Other pipe coverings can be realised by using M-pieces (see page 158).

# Underground Hydrant type 306 for Chamber Installation

## DN 65 PN 16, as per EN 1074-6

### 120 Design features:

One-part, fully enamelled body with automatic drainage and protection against pressurised water, integrated flange sealing, secured obturator linkage  
single shut-off  
closing anti-clockwise (clockwise closing on request)  
connection: connection flange DN 65 as per EN 1092-2 and factory standard, 8 hole drilling (double drilling as per "Württembergischer chamber system" for flexible positioning)

### Materials:

body, bonnet, DIN outlet coupling, outlet cover: EN-GJS-500-7  
Massive obturator linkage, stem: X20Cr13  
stem nut and bonnet nut in special brass  
obturator: PU elastomer

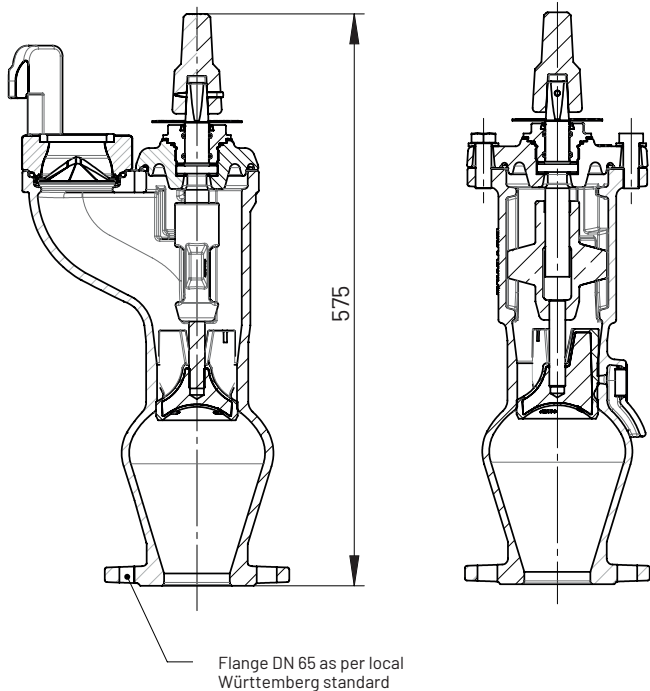
### Surface protection:

inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III

**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Body	Seat
potable water	65	16	24	17,6



**Dimensions and weights** (Dimensions in mm)

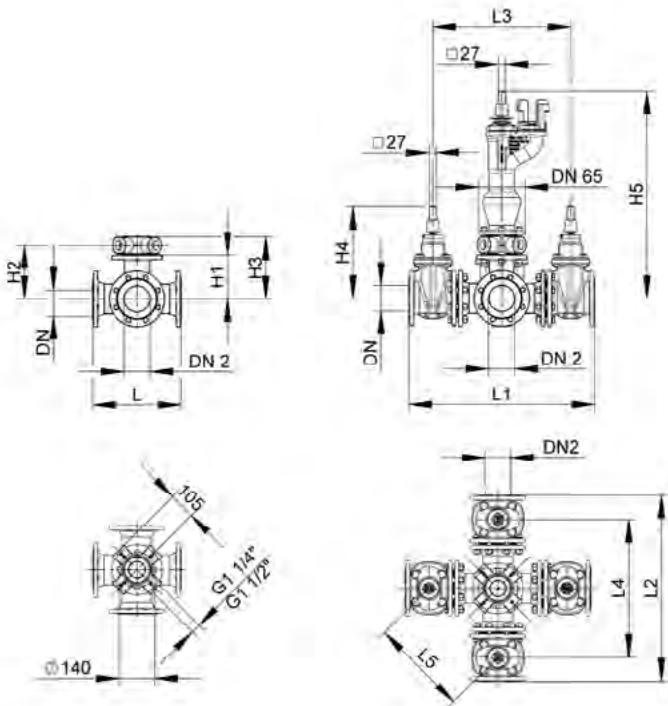
DN	Pipe covering	H	Weight in kg ≈	Item no. standard closing anti-clockwise	Item no. closing clockwise
80	800	575	24	307267	325300

# Underground Hydrant type 306 for Chamber Installation

## DN 65 PN 16, as per EN 1074-6

### 122 Chamber installation example

Hydrant type 306 combined with connection drum DN (see page 313),  
TT ball fitting (see page 312) and four gate valves in short face-to-face length  
(see page 68 - 70)




**Dimensions (in mm)**

DN	DN2	H1	H2	H3	H4	H5
<b>gate valve type 2004</b>	<b>TT ball fitting</b>					
<b>100</b>	<b>100</b>	175	212	245	365	820
<b>150</b>	<b>100</b>	200	237	270	440	825
<b>150</b>	<b>150</b>	200	237	270	440	825
<b>200</b>	<b>100</b>	250	287	320	530	895
<b>200</b>	<b>150</b>	250	287	320	530	895
<b>200</b>	<b>200</b>	250	287	320	530	895

**Dimensions (in mm)**

DN	DN2	L	L1	L2	L3	L4	L5
<b>gate valve type 2004</b>	<b>TT ball fitting</b>						
<b>100</b>	<b>100</b>	350	740	740	545	545	385
<b>150</b>	<b>100</b>	400	830	790	620	595	430
<b>150</b>	<b>150</b>	400	830	830	620	620	440
<b>200</b>	<b>100</b>	500	970	890	740	700	510
<b>200</b>	<b>150</b>	500	970	930	740	720	516
<b>200</b>	<b>200</b>	500	970	970	740	740	523

# Pillar hydrants type 494, design AUD, PN 16, adjustable height based on EN 1074-6

## 124 Design features:

Connection flange according to EN 1092-2, automatic drainage and protection against backflow and pressurised water, security lock of the internal mountings, traffic-area version with installation-friendly pre-determined breaking point, 2 B outlets, DN 100, optionally with or without A outlet, including drain set made of foam polystyrol, all elastomers and plastic parts according to DVGW W 270, DVGW tested and registered, CE marking according to EN 14384.

### Technical features:

maintenance-free bearing of the stem extension

### Materials:

bottom, upper and lower part of the pillar, and bonnet nut: ductile cast iron  
EN-GJS-500-7 as per EN 1563

operating cap, outlets and outlet covers: aluminium

stem: chromium steel X20Cr13

linkage, pin, drainage plate, bolts: stainless steel

stem nut, stem bearing, predetermined breaking coupling and bonnet nut: special brass

seat ring: rubberized brass

O-rings made of high-quality elastomer

obturator: entirely vulcanized with high-quality elastomer (EPDM)

### Surface protection:

- inside and outside Düker enamel
- on request: upper part of the pillar inside Düker etec enamel blue, outside Düker enamel in the shades:



red



blue



yellow



lemon green



light grey

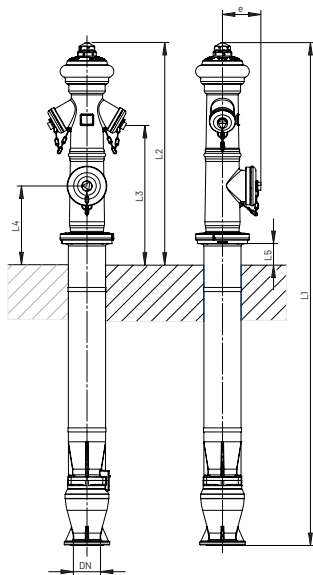


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**DIN DVGW**  
registered!

### Field of application: Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar		Maximum allowable operating pressure bar
			Body	Seat	
potable water	80 – 100	16	24	17,6	16


**Dimensions and weights** (Dimensions in mm)

DN	Pipe covering	L1	L2	L3	L4	L5	e	Weight in kg ≈	Item no. 2 upper B outlets	Item no. 2 upper B outlets, 1 lower A outlet
80	1000	1940	1050	680	—	55	—	125	327300	—
80	1250	2190	1050	680	—	55	—	136	316485	—
80	1500	2440	1050	680	—	55	—	147	316488	—
100	1000	1940	1050	680	355	55	200	129	327301	327302
100	1250	2190	1050	680	355	55	200	140	316327	316328
100	1500	2440	1050	680	355	55	200	151	315062	316326

# Pillar hydrants type 495, design AFUD, PN 16, adjustable height based on EN 1074-6

## 126 Design features:

Connection flange according to EN 1092-2, automatic drainage and protection against backflow and pressurised water, security lock of the internal mountings, traffic-area version with installation-friendly pre-determined breaking point, 2 upper valve outlets B under the protective cover, 1 bottom outlet A including drain set made of foam polystyrol, all elastomers and plastic parts according to W 270 material approval, DVGW tested and registered, CE marking according to EN 14384.

## Technical features:

maintenance-free bearing of the stem extension

## Materials:

bottom, upper and lower part of the pillar, valve head and hand wheel: ductile cast iron EN-GJS-500-7 as per EN 1563

outlets and outlet covers: aluminium

protective cover: steel X5CrNi18-10

stem: chromium steel X20Cr13

linkage, pin, drainage plate, bolts: stainless steel

stem nut, stem bearing, predetermined breaking coupling and bonnet nut: special brass  
seat ring: rubberized brass

O-rings made of high-quality elastomer

obturator: entirely vulcanized with high-quality elastomer (EPDM)

## Surface protection:

- inside and outside Düker enamel
- on request: upper part of the pillar inside Düker etec enamel blue, outside Düker enamel in the shades:



red



blue



yellow



lemon green



light grey

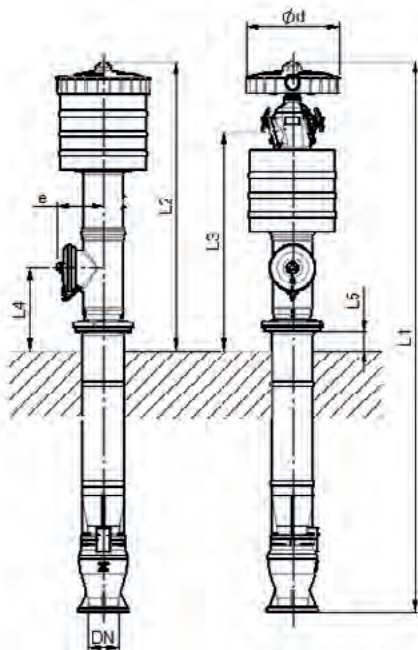


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**DIN DVGW**  
registered!

## Field of application: Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar		Maximum allowable operating pressure bar
			Body	Seat	
potable water	100	16	24	17,6	16


**Dimensions and weights** (Dimensions in mm)

DN	Pipe covering	L1	L2	L3	L4	L5	$\phi d$	e	Weight in kg $\approx$	Item no.
100	1000	2140	1250	950	355	55	400	200	167	327297
100	1250	2390	1250	950	355	55	400	200	185	327298
100	1500	2640	1250	950	355	55	400	200	185	327299

# Düker butterfly valves

## Seamlessly enamelled all round with Düker etec enamel – the brand for special surface protection

These fulfil to the greatest extent possible the specific requirements of today's water management processes in terms of economic efficiency, sustainability and long-term reliability. Düker butterfly valves are soft-seated with a double eccentrically mounted valve disc and are tight in both flow directions. The gear configuration can be changed depending on the installation situation.

### Valve disc

⇒ Flow-optimised with computer-aided flow simulation (CFD). The new design of the disc body ensures maximum stability, minimum pressure loss and outstanding protection against cavitation.

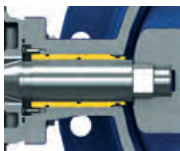
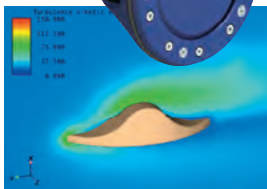
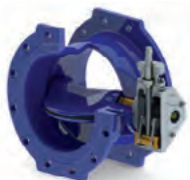
The valve disc is fully enamelled and self-centring. The main seal – an endless sealing ring with a pronounced O-ring profile – is secured with a one-piece retaining ring to the valve disc by means of screws and fixed with threaded pins. Thanks to the fixing screws, the main seal is easy to adjust and, if necessary, replace. This system allows for controlled and appropriate pre-stressing of the seal. Even at high gap velocities, there is no risk that the seal will be pulled out.

### Coupling between the valve disc and shaft

⇒ A square plug-in coupling ensures a clearance-free connection and optimal torque transmission. This design means that the eyes on the valve disc stay closed with a blind hole. An additional axial sealing element – an O-ring package between the bearing eye on the valve disc and the front side of the bearing bush as well as an additional O-ring positioned radially on the exterior diameter of the bearing bush – ensures that the bearing is completely isolated from the medium. This eliminates the risk of corrosion at coupling points.

### Bearings

⇒ Bearing bushes made from special bronze ensure outstanding emergency running characteristics. They are highly wear-resistant and exhibit outstanding behaviour in relation to surface pressure and friction coefficients. The drive shaft and bearing journals made from stainless steel are chambered (media-free) by means of O-rings between the bearing eye on the disc and the bearing bush. The bearing bushes, drive shaft and bearing journals are secured to the body such that they are protected against blow-out.





### Slider crank mechanism gear

⇒ The self-locking slider crank mechanism gear developed by Düker has been standard equipment since the beginning of valve manufacture. Robust, powerful and reliable for easy and safe operation against a differential pressure up to the nominal pressure. The Düker slider crank mechanism gear is optimised in line with the torque requirements of the Düker butterfly valve. The torque curve is not linear and climbs extremely rapidly as the closing point is approached. The curve quickly passes through the hydraulically ineffective open position range of the valve disc. In the hydraulically effective closing end phase, the closing speed falls dramatically. This kinematic behaviour allows the valve disc to close extremely softly. The risk of pressure surges is minimised significantly. Details: IP Code IP 68; maintenance-free, adjustable end stops; mechanical position indicator under acrylic glass; lock pins on the body-gear coupling flange as anti-twist protection. Universal mounting flange (F10) for hand wheels to e-drives. Stem extension set with flanged bell and O-ring for tight sealing.



### UVV butterfly valve with 3-point locking

For inspection work in walk-in pipe systems  
⇒ Two fixed stops, one moving stop The moving stop is fitted with a bolt that moves into the body when the hand wheel is operated and blocks the closed valve disc. The two fixed stops are secured inside the body.  
Optional: additional mechanical locking of the bolt and limit switch for position monitoring.



### Butterfly valves with locking flange on the blind side

⇒ The locking flange ensures that the valve disc is reliably secured in the OPEN or CLOSED position. This means that the gear can be replaced during operation.

### Our range

In addition to the standard R 14 version, we offer a range of designs for specialist applications.

### Butterfly valve, long design (R 15) with bypass

⇒ For pressure-surge-free filling and emptying of pipes via the gate valve installed in the bypass; no more costly installation work in pipe trenches  
⇒ Without bypass as a replacement for gate valves from DN 300 through to 1200  
⇒ With block flanges for installing ventilation upstream and downstream of the body seat. Example: hydrants or gate valves with aeration and ventilation valves.



Locking flange locks in 'disc open' position



Locking flange locks in 'disc closed' position

From production through to operation.  
Düker - 'Made in Germany'

## Butterfly valves type 451 and 4510 with flanges PN 10/16/25

### 130 Design features:

Resilient-seated butterfly valve with slidercrank gear box  
flow-optimised, completely enamelled valve disc with double eccentric journal  
square plug connection between valve disc and shaft  
easily replaceable profile sealing  
mechanical position indication open/closed on the gear box cover  
driving shaft and bearing journal chambered medium-free  
flange connection dimensions: as per EN 1092-2  
face-to-face length: as per EN 558, basic series 14  
for potable water

### Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1
- with electrical actuator
- with pivot drive
- with pneumatic drive
- with hydraulic drive
- with end switch unit

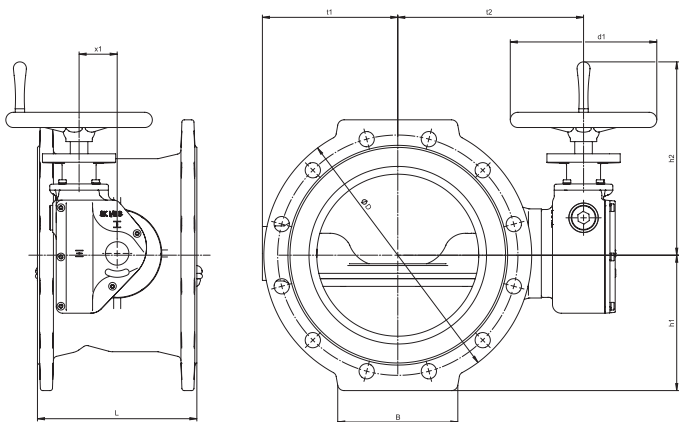


### Materials:

body, valve disc: ductile cast iron EN-GJS-400-15 as per EN 1563  
retaining ring: EN-GJS-500-7; from DN 700 up stainless steel 1.4301  
profile sealing for water: EPDM  
driving shaft: chromium steel X20Cr13  
bearing bushes: red bronze CC483 K

### Surface protection:

- DN 100 up to 800 inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III
- from DN 900 up inside Düker enamel, outside 2-components epoxy resin blue RAL 5005



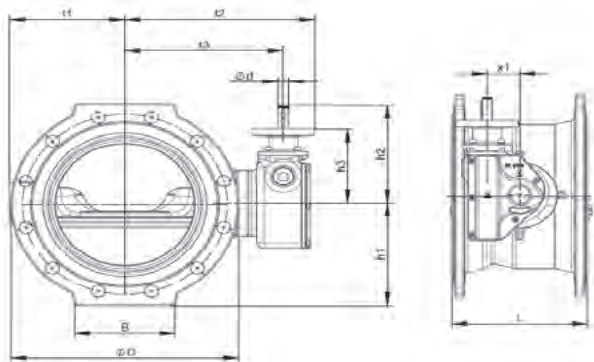
**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar		Allowable operating pressure bar
			Body	Seat	
potable water	100 - 1200	10	15	11	10
potable water	100 - 1200	16	24	17,6	16
potable water	100 - 1200	25	37,5	27,5	25

DN 800 up to 1200 in PN 25 only for operating pressure up to 20 bar

## Butterfly valves type 451 and 4510 with flanges PN 10/16/25

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Dimensions and weights (Dimensions in mm)

Type	DN	PN	L	Ø D	B	h1	h2*	h3*
<b>4510</b>	<b>100</b>	10/16	190	220	120	116	223	170
<b>4510</b>	<b>100</b>	25	190	235	120	121	223	170
<b>4510</b>	<b>125</b>	10/16	200	250	130	131	223	170
<b>4510</b>	<b>125</b>	25	200	270	130	141	223	170
<b>4510</b>	<b>150</b>	10/16	210	285	150	149	223	170
<b>4510</b>	<b>150</b>	25	210	300	150	157	223	170
<b>4510</b>	<b>200</b>	10/16	230	340	160	177	223	170
<b>4510</b>	<b>200</b>	25	230	360	160	187	223	170
<b>4510</b>	<b>250</b>	10/16	250	400	180	208	223	170
<b>4510</b>	<b>250</b>	25	250	425	180	220	223	170
<b>4510</b>	<b>300</b>	10/16	270	455	200	233	223	170
<b>4510</b>	<b>300</b>	25	270	485	200	248	223	170
<b>4510</b>	<b>350</b>	10	290	505	225	259	223	170
<b>4510</b>	<b>350</b>	16	290	520	225	269	223	170
<b>4510</b>	<b>350</b>	25	290	555	225	287	278	228

\* Dimensions h2, h3 for SK IVB/F30 with GP 14.1 to spindle end/flange primary reduction gearing


**Dimensions and weights** (Dimensions in mm)

t1	t2	t3	x1	Gear box SK	Primary reduction gearing	d	Rotations/ stroke
115	267	204	65	SK IB/F10	—	20	27
115	267	204	65	SK IB/F10	—	20	27
127	279	216	65	SK IB/F10	—	20	27
127	279	216	65	SK IB/F10	—	20	27
143	295	232	65	SK IB/F10	—	20	27
143	295	232	65	SK IB/F10	—	20	27
180	320	257	65	SK IIB/F12	—	20	27
180	320	257	65	SK IIB/F12	—	20	27
217	357	294	65	SK IIB/F12	—	20	27
222	357	294	65	SK IIB/F12	—	20	27
231	380	317	65	SK IIB/F12	—	20	27
231	380	317	65	SK IIB/F12	—	20	27
297	435	372	65	SK IIB/F12	—	20	27
297	435	372	65	SK IIB/F12	—	20	27
297	486	400	100	SK IIIB/F16	—	20	31



## Butterfly valves type 451 and 4510 with flanges PN 10/16/25

**Dimensions and weights** (Dimensions in mm)

Type	DN	PN	L	Ø D	B	h1	h2*	h3*
<b>4510</b>	<b>400</b>	10	310	565	300	294	223	170
<b>4510</b>	<b>400</b>	16	310	580	300	294	278	228
<b>4510</b>	<b>400</b>	25	310	620	300	319	278	228
<b>4510</b>	<b>500</b>	10	350	670	350	350	278	228
<b>4510</b>	<b>500</b>	16	350	715	350	372	278	228
<b>4510</b>	<b>500</b>	25	350	730	350	375	403	337
<b>4510</b>	<b>600</b>	10	390	780	320	401	278	228
<b>4510</b>	<b>600</b>	16	390	840	330	431	403	337
<b>4510</b>	<b>600</b>	25	390	845	330	431	597	557
<b>451</b>	<b>700</b>	10	430	895	400	457	403	337
<b>451</b>	<b>700</b>	16	430	910	400	467	597	557
<b>451</b>	<b>800</b>	10	470	1015	450	518	597	557
<b>451</b>	<b>800</b>	16	470	1025	450	523	597	557
<b>451</b>	<b>900</b>	10	510	1115	550	569	597	557
<b>451</b>	<b>900</b>	16	510	1125	550	574	510	470
<b>451</b>	<b>1000</b>	10	550	1230	600	630	597	557
<b>451</b>	<b>1000</b>	16	550	1255	600	640	565	525
<b>451</b>	<b>1200</b>	10	630	1455	720	757	565	525
<b>451</b>	<b>1200</b>	16	630	1485	720	757	565	525

\* Dimensions h2, h3 for SK IVB/F30 with GP 14.1 to spindle end/flange primary reduction gearing


**Dimensions and weights** (Dimensions in mm)

t1	t2	t3	x1	Gear box SK	Primary reduction gearing	d	Rotations/ stroke
317	455	392	65	SK IIB/F12	—	20	27
317	506	420	100	SK IIIB/F16	—	20	31
317	506	420	100	SK IIIB/F16	—	20	31
385	556	470	100	SK IIIB/F16	—	20	31
385	556	470	100	SK IIIB/F16	—	20	31
385	668	529	160	SK IVB/F30	—	30	43
450	646	560	100	SK IIIB/F16	—	20	31
450	758	619	160	SK IVB/F30	—	30	43
450	778	639	160	SK IVB/F30	GP 14.1(4:1)	20	172
546	833	694	160	SK IVB/F30	—	30	43
546	833	694	160	SK IVB/F30	GP 14.1(4:1)	20	172
601	868	729	160	SK IVB/F30	GP 14.1(4:1)	20	172
601	868	729	160	SK IVB/F30	GP 14.1(4:1)	20	172
631	911	772	160	SK IVB/F30	GP 14.1(4:1)	20	172
631	799	703	200	GS 200.3/F30	(16:1)	20	216
715	1003	864	160	SK IVB/F30	GP 14.1(4:1)	20	172
715	959	840	250	GS 250.3/F35	(16:1)	20	212
833	1078	959	250	GS 250.3/F35	(16:1)	20	212
833	1078	959	250	GS 250.3/F35	(16:1)	20	212



## Butterfly valves type 451 and 4510 with flanges PN 10/16/25

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Item numbers			
DN	PN	Item no. Butterfly valve	Item no. Hand wheel set
100	16	781487	327454
125	16	781488	327454
150	16	781489	327454
200	10	781413	327454
200	16	781499	327454
250	10	781490	327454
250	16	781498	327455
300	10	773902	327455
300	16	773903	327455
350	10	781513	327455
350	16	781514	327455
400	10	781522	327455
400	16	780681	327456
500	10	781533	327456
500	16	781534	327456
600	10	781557	327456
600	16	781558	327457
700	10	325807	327519
700	16	327508	327523
800	10	327509	327524
800	16	327510	327525
900	10	572019	573161
900	16	573153	573162
1000	10	561871	561379
1000	16	568678	573163
1200	10	573157	569451
1200	16	573159	573164

Other media, pressure ratings and coatings on request





# Butterfly valves type 451 and 4510 with flanges PN 10/16; long face-to-face length, with or without bypass

## 138 Design features:

Resilient-seated butterfly valve with slidercrank gear box  
flow-optimised, completely enamelled valve disc with double eccentric journal  
square plug connection between valve disc and shaft  
easily replaceable profile sealing  
mechanical position indication open/closed on the gear box cover  
driving shaft and bearing journal chambered medium-free  
flange connection dimensions: as per EN 1092-2  
face-to-face length: as per EN 558, basic series 15  
with bypass (without bypass on request)  
bypass approx. 1/10 of the main diameter  
for potable water

## Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1
- with electrical actuator
- with pivot drive
- with pneumatic drive
- with hydraulic drive
- with end switch unit

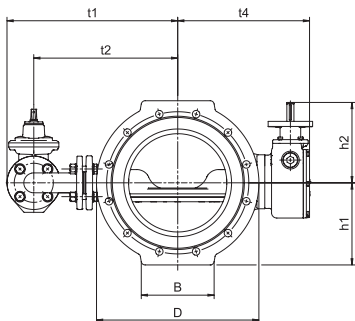
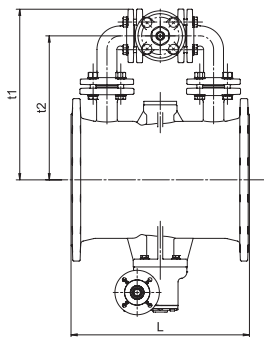


## Materials:

body, valve disc: ductile cast iron EN-GJS-400-15 as per EN 1563  
retaining ring: EN-GJS-500-7; from DN 700 up stainless steel 1.4301  
profile sealing for water: EPDM  
driving shaft: chromium steel X20Cr13  
bearing bushes: red bronze CC483 K

## Surface protection:

- DN 100 up to 600 inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline for soil class III (for water)
- from DN 700 up inside Düker enamel, outside 2-components epoxy resin blue RAL 5005 (for water)

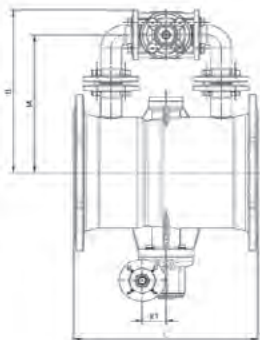
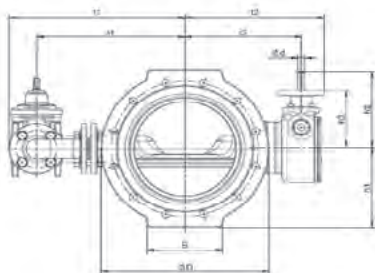


**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar		Allowable operating pressure bar
			Body	Seat	
potable water	100 - 1000	10	15	11	10
potable water	100 - 1000	16	24	17,6	16

## Butterfly valves type 451 and 4510 with flanges PN 10/16; long face-to-face length, with or without bypass

140



Dimensions and weights (Dimensions in mm)

Type	DN	PN	L	Ø D	B	h1	h2	h3	t1
4510	300	10	500	455	200	233	223	170	478
4510	300	16	500	455	200	233	223	170	478
4510	400	10	600	565	300	294	223	170	558
4510	400	16	600	580	300	294	278	228	558
4510	500	10	700	670	350	350	278	228	586
4510	500	16	700	715	350	372	278	228	586
4510	600	10	800	780	330	401	278	228	636
4510	600	16	800	840	330	431	403	337	636
451	700	10	900	895	400	457	403	337	768
451	700	16	900	910	400	467	597	337	768
451	800	10	1000	1015	450	518	597	337	833
451	800	16	1000	1025	450	518	597	337	833
451	900	10	1100	1115	550	569	597	337	896
451	1000	10	1200	1230	600	630	597	337	954
451	1000	16	1200	1255	600	640	565	525	954


**Dimensions and weights** (Dimensions in mm)

t4	t2	t3	x1	Gear box SK	Primary reduction gearing	d	Rotations/ stroke	Bypass DN
403	380	317	65	SK IIB/F12	-	20	27	40
403	380	317	65	SK IIB/F12	-	20	27	40
483	455	392	65	SK IIB/F12	-	20	27	40
483	506	420	100	SK IIIB/F16	-	20	31	40
503	556	470	100	SK IIIB/F16	-	20	31	50
503	556	470	100	SK IIIB/F16	-	20	31	50
553	646	560	100	SK IIIB/F16	-	20	31	50
553	758	619	160	SK IVB/F30	-	30	43	50
668	833	694	160	SK IVB/F30	-	30	43	80
668	833	694	160	SK IVB/F30	GP 14.1(4:1)	20	172	80
733	868	729	160	SK IVB/F30	GP 14.1(4:1)	20	172	80
733	868	729	160	SK IVB/F30	GP 14.1(4:1)	20	172	80
786	911	772	160	SK IVB/F30	GP 14.1(4:1)	20	172	100
844	1003	864	160	SK IVB/F30	GP 14.1(4:1)	20	172	100
844	959	840	250	GS 250.3	(16:1)	20	212	100

## Butterfly valves type 451 and 4510 with flanges PN 10/16; long face-to-face length, with or without bypass



142

Item numbers			
DN	PN	Item no.	Dimension of the bypass gate-valve
<b>300</b>	10	785226	40
<b>300</b>	16	789126	40
<b>400</b>	10	785225	40
<b>400</b>	16	772490	40
<b>500</b>	10	783437	50
<b>500</b>	16	772998	50
<b>600</b>	10	783423	50
<b>600</b>	16	780854	50
<b>700</b>	10	571503	80
<b>700</b>	16	571624	80
<b>800</b>	10	572494	80
<b>800</b>	16	570645	80
<b>900</b>	10	312176	100
<b>900</b>	16	312177	100
<b>1000</b>	10	573093	100
<b>1000</b>	16	782542	100

Other versions on request



# Butterfly valves type 4510 with Novo sockets PN 10/16/25

## 144 Design features:

Resilient-seated butterfly valve with slidercrank gear box  
flow-optimised, completely enamelled valve disc with double eccentric journal  
square plug connection between valve disc and shaft  
easily replaceable profile sealing  
mechanical position indication open/closed on the gear box cover  
driving shaft and bearing journal chambered medium-free  
connection: plug-in sockets as per DIN 28603 **TYTON**® with pre-chamber  
face-to-face length: as per EN 558, basic series 14  
for potable water

### Operation:

- with hand wheel
- with stem extension (for underground installation) – connection as per GW 336-1
- with electrical actuator
- with pivot drive
- with pneumatic drive
- with hydraulic drive
- with end switch unit

### Materials:

body, valve disc: ductile cast iron EN-GJS-400-15 as per EN 1563  
retaining ring: EN-GJS-500-7  
driving shaft: chromium steel X20Cr13  
bearing bushes: red bronze CC483 K

### Surface protection:

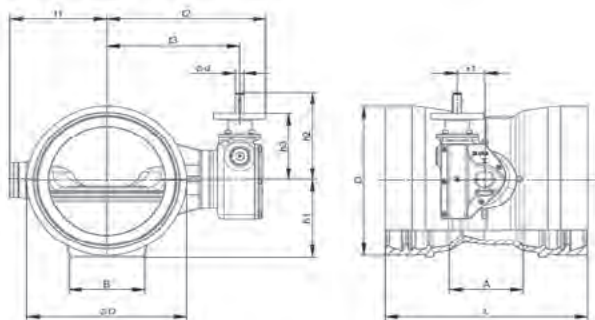
- inside and outside Düker etec enamel as per EN ISO 11177,  
DEV guideline for soil class III (for water)

**DIN DVGW**  
registered!

**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar		Allowable operating pressure bar
			Body	Seat	
potable water	150 – 500	10	15	11	10
potable water	150 – 500	16	24	17,6	16
potable water	150 – 500	25	37,5	27,5	25




**Dimensions and weights** (Dimensions in mm)

Type	DN	PN	Ø D	L	A	B	h1	h2	h3
4510	150	10-25	216	398	140	110	113	223	170
4510	200	10-25	271	428	152	120	141	223	170
4510	250	10-25	324	451	165	140	168	223	170
4510	300	10-25	381	482	176	180	198	223	170
4510	400	10	489	478	172	220	263	278	170
4510	400	16-25	489	478	172	220	263	278	228
4510	500	10-16	598	541	205	240	309	278	228
4510	500	25	598	541	205	240	309	403	337

Type	DN	t1	t2	t3	x1	Gear box SK	d	Rotations/ stroke
4510	150	143	295	232	65	SK IB/F10	20	27
4510	200	180	320	257	65	SK IIB/F12	20	27
4510	250	222	357	294	65	SK IIB/F12	20	27
4510	300	231	380	317	65	SK IIB/F12	20	27
4510	400	307	455	392	65	SK IIB/F12	20	27
4510	400	307	506	420	100	SK IIIB/F16	20	31
4510	500	385	556	470	100	SK IIIB/F16	20	31
4510	500	385	668	529	160	SK IVB/F30	30	43

# Non-slam check valve type 8015

## PN 10/16/25/40

### 146 Design features:

Hydraulically optimised backflow preventer for industrial water applications, water collection, pumping stations etc.

nominal diameters DN 80 up to DN 300

flange connection dimensions as per EN 1092-2

nominal pressure PN 10 up to PN 40

face-to-face length as per EN 558, basic series 14

### Design:

for flow direction

- H+V horizontal and vertical upwards
- $\square$  V vertical downwards

### Materials:

body and body insert: ductile cast iron EN-GJS-500-14

valve disc: ductile cast iron, completely rubberized with elastomer as per elastomer guidelines and DVGW worksheet W270

guide rod: stainless steel 1.4057

threaded bush: stainless steel 1.4057

spring: stainless steel 1.4310

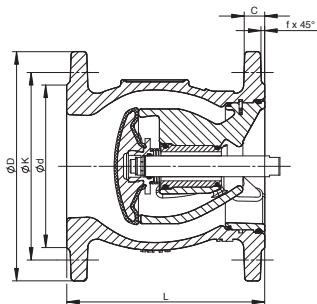
guidance bush: polymer as per plastics guidelines and DVGW worksheet W270

### Surface protection:

- inside and outside Düker etec enamel as per EN ISO 11177

### Field of application: water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar			Allowable operating pressure bar
			Body	Seat		
				flow direction	back flow direction	
Water	80 - 300	10	15	11	0,5	10
Water	80 - 300	16	24	17,6	0,5	16
Water	80 - 300	25	37,5	27,5	0,5	25
Water	80 - 300	40	60	44	0,5	40


**Dimensions (in mm)**

DN	PN	L	$\varnothing D$	$\varnothing K$	$\varnothing d$	f	C	Number of bolts	Item no. design H/V	Item no. design V
<b>80</b>	10/16	180	200	160	132	3	19	8	303290	303542
<b>80</b>	25/40	180	200	160	132	3	19	8	314479	314480
<b>100</b>	10/16	190	220	180	156	3	19	8	301764	303529
<b>100</b>	25/40	190	235	190	156	3	19	8	303459	303540
<b>125</b>	10/16	200	250	210	184	3	19	8	301916	303533
<b>125</b>	25/40	200	270	220	184	3	19	8	303463	303545
<b>150</b>	10/16	210	285	240	211	3	19	8	302877	303530
<b>150</b>	25/40	210	300	250	211	3	19	8	303460	303541
<b>200</b>	10	230	340	295	266	3	20	8	797489	303525
<b>200</b>	16	230	340	295	266	3	20	12	303141	303528
<b>200</b>	25	230	360	310	274	3	22	12	303142	303534
<b>200</b>	40	230	375	320	284	3	30	12	303143	303539
<b>250</b>	10	250	400	350	319	3	22	12	303453	—
<b>250</b>	16	250	400	355	318	3	22	12	303442	—
<b>250</b>	25	250	425	370	330	3	24,5	12	—	—
<b>250</b>	40	250	450	385	345	3	24,5	12	—	—
<b>300</b>	10	270	455	400	370	4	24,5	12	303454	—
<b>300</b>	16	270	455	410	370	4	24,5	12	303444	—

## DAWNING OF A NEW ERA

# The Düker Plunger Valve Type RKV 7015

- ⇒ the flow passage is ring-shaped in any position
- ⇒ the movable obturator is shaped like a piston
- ⇒ the movement of the obturator is parallel to the axis of the pipeline

Plunger valves are mainly used for applications where pressure rates, flow rates and water levels in vessels must be controlled exactly and reliably; any cavitation is to be directed in a way that no damage can occur on the valve or the following pipeline. With multiple functions such as shut-off valve, check valve, non-return valve, safety and measuring valve, the plunger valve has a key function in plants and transport pipelines:

- to shut off a pipeline
- to adjust flow rates and pressures
- to start up and close down pipelines behind pumps
- to start up turbines in a bypass
- to drain water reservoirs through bottom outlets

This results in an extremely high strain during operation. Therefore a plunger valve must be designed to be robust, yet sensitive.

The **NEW Düker RKV type 7015** fulfils these superior and demanding requirements in total. With the support of CFD flow simulation as well as the finite elements method, the new valve has reached perfection in shape and function. Sophisticated technology, high-quality materials, low noise level, careful and precise manufacture and superior hygiene.

### These are the highlights:

Guiding rails in the body – **for a superior life expectancy**

- min. 8 guiding rails in 2 groups of 4 pieces each
- offset by 45°
- made of high-quality stainless steel with superior hardness, therefore resistant to wear
- fixed securely and tension-free in the body – without bolting or welding
- without material mixing zones

Main sealing – **for excellent operational safety**

- robust large profile sealing ring
- mounted onto the piston
- protected from the flow
- positioned outside of the cavitation zone
- positioned outside of the abrasion zone

Without any dead space – **for optimal hygiene**

- water flow all around the piston
- sealed shaft bearing



Maintenance friendliness – **significant reduction of time and cost expenditures**

- piston made of high-quality stainless steel
- piston with inferior hardness compared to the guiding rails
- any wear occurs on the piston, not on the guiding rails
- piston continuously turnable
- piston easily replaceable

The optimal adjustment range – even in case of low quantities without critical ring gap – is supported excellently by the robust, self-impeding and maintenance-free Düker slidercrank mechanism. The slidercrank gear adapts exactly to the torque progress of the valve. In the hydraulically effective closing end phase, the closing speed is reduced. This kinematic behaviour makes for an extremely soft closing. The danger of pressure surges is brought to a minimum.

The new Düker plunger valve type 7015 is synonymous with perfection and quality „**Made in Germany**“: durable – safe – reliable – economic. Available in the nominal dimensions DN 100, 200 and 300, pressure rating PN 10 up to PN 40.

We will be glad to support you with our technical service for all questions and requests about the **Düker plunger valve type RKV 7015**.

# Plunger Valve RKV Type 7015

## PN 10/16/25/40

### 150 Design features:

Shut-off and control valve for pressure adjustment and flow quantity limiting, one-part body with eye bolts, ring-shaped passage, sealing both ways, leak tightness as per EN 1266-1 leak rate A, optimised flow channelling, guide rails for the piston in the body made of stainless steel of superior hardness, fixed firmly in the body – without bolting or welding, sturdy low-wear profile sealing ring on the piston, piston rotatable in case of wear

control insert seat ring

optional:

control insert slotted cylinder

control insert special version

flanges as per EN 1092-2, type 21, shape B

face-to-face length as per EN 558 basic series 15  
for water

### Gear box:

sturdy, self-impeding maintenance-free slidercrank gearbox with adjustable end stop, connection flange to the body secured against rotating with a pin, adjusted torque curve due to toggle lever hinge,

IP Code 68, mechanical position indicator

standard position: right-hand in flow direction as per drawing 321385 pos. 1

other gearbox positions as an option

### Operation:

- gear box with hand wheel
- gear box with electric actuator
- further versions on request

### Materials:

body: EN-GJS-500-14

guiding rails: stainless steel of superior hardness, highly corrosion-resistant

piston /slotted cylinder: 1.4301

seat ring: 1.4301

shaft, thrust rod, gear crank: 1.4057 high-strength stainless steel

bearing bushes: bronze CC483K

clamp ring: 1.4301

**Surface protection:**

inside and outside epoxy finish blue RAL 5005 as per GSK guidelines

**Data for individual design:**

upstream pressure: \_\_\_\_\_ bar

downstream pressure: \_\_\_\_\_ bar

flow rate min.: \_\_\_\_\_ l/s

flow rate max.: \_\_\_\_\_ l/s

A detailed questionnaire can be found at:

[www.dueker-germany.com](http://www.dueker-germany.com) » Flow Control » downloads

**Functioning of the Düker plunger valve:**

An animation regarding the functioning and specialities can be found at:

[www.dueker-germany.com/film](http://www.dueker-germany.com/film)

to the questionnaire



to the film



**Field of application:** Potable water, raw water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN	Test pressure in bar	
			Body	Seat
Water	150 - 300	10	15	11
Water	150 - 300	16	24	17,6
Water	150 - 300	25	37,5	27,5
Water	150 - 300	40	60	44

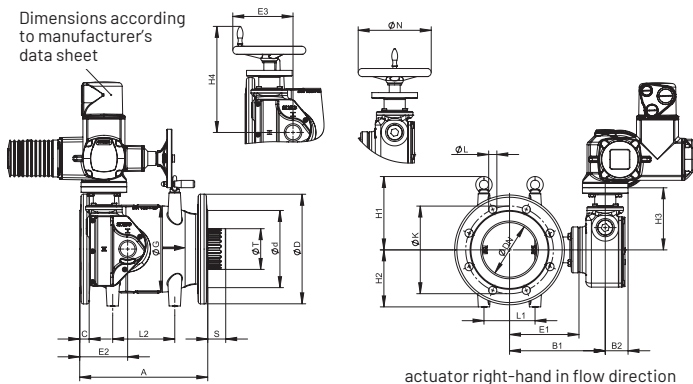
# Plunger Valve RKV Type 7015

## PN 10/16/25/40

152

Design with hand wheel

Dimensions according to manufacturer's data sheet



actuator right-hand in flow direction

### Dimensions (in mm)

DN	PN	ø D	ø d	ø K	ø L	n	C	f	A	B1	B2	E1	E2
150	10	300	211	240	23	8	26	3	350	262	62,5	190	131,3
150	16	300	211	240	23	8	26	3	350	262	62,5	190	131,3
150	25	300	211	250	28	8	26	3	350	262	62,5	190	131,3
150	40	300	211	250	28	8	26	3	350	262	62,5	190	131,3
200	10	340	266	295	23	8	20	3	400	292	62,5	220	140
200	16	340	266	295	23	12	20	3	400	292	62,5	220	140
200	25	360	274	310	28	12	22	3	400	292	62,5	220	140
200	40	375	284	320	31	12	33	3	400	292	62,5	220	140
300	10	455	370	400	23	12	24,5	4	500	421	85	321	150
300	16	455	370	410	28	12	24,5	4	500	421	85	321	150
300	25	485	389	430	31	16	27,5	4	500	421	85	321	150
300	40	515	409	450	34	16	39,5	4	500	421	85	321	150

DN 250, 350 and 400 in preparation

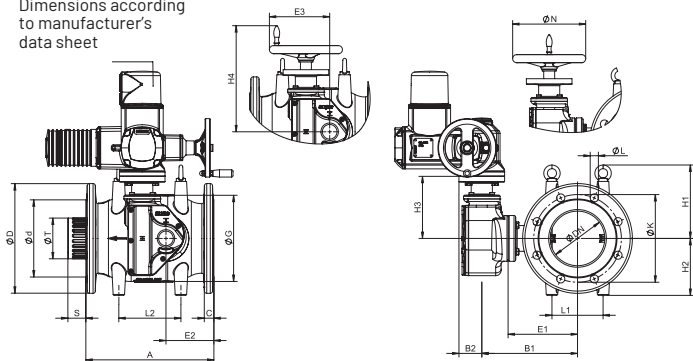
\* Version with slotted cylinder in closed position





## Design with hand wheel

Dimensions according to manufacturer's data sheet



actuator left-hand in flow direction

B

7

## Dimensions (in mm)

Ø G	H1	H2	H3	L1	L2	H4	E3	Ø N	S*	Ø T*	Item no.
236	201	156	170	140	170	291	165	200	50	112	on request
236	201	156	170	140	170	291	165	200	50	112	on request
236	201	156	170	140	170	291	165	200	50	112	on request
236	201	156	170	140	170	291	165	200	50	112	on request
309	242	197	170	140	170	291	165	200	65	149	on request
309	242	197	170	140	170	291	165	200	65	149	on request
309	242	197	170	140	170	291	165	200	65	149	on request
309	242	197	170	140	170	291	165	200	65	149	on request
453	313	268	228	180	200	379	257	300	91	223	on request
453	313	268	228	180	200	379	257	300	91	223	on request
453	313	268	228	180	200	379	257	300	91	223	on request
453	313	268	228	180	200	379	257	300	91	223	on request

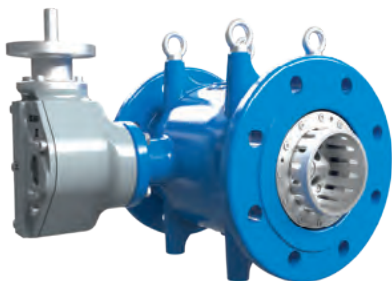
# Plunger Valve RKV Type 7015

## PN 10/16/25/40

### 154 Versions



with seat ring



with slotted cylinder



special version:  
with perforated cylinder



## Versions

155



with electric actuator

B

7



with hand wheel



## Novo plug-in system

On the following pages you will find items which are particularly suited for use in the **Novo** plug-in system.

157

Further items can be found here:

Gate valves type 4004  
with Novo sockets

page 72–73



Gate valves type 4004 with  
Novo socket and spigot end

page 74–75



Butterfly valves type 4510  
with Novo sockets

page 144–145



Underground hydrant type 304 S  
design A

page 118–119



Flanged socket duckfoot  
bends 90° with Novo sockets  
MMN/MMNR

page 306



Single socket tees with spigot  
and socket branch  
B

page 256



B

8

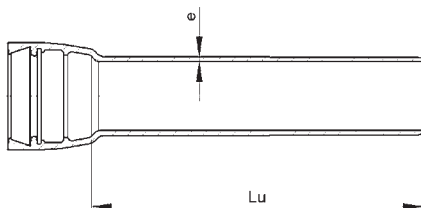
## Pipe sections with Novo socket – M acc. to manufacturer's standard



158 Suitable as hydrant extension

### Surface protection:

- inside Düker enamel as per EN ISO 11177



Dimensions and weights (Dimensions in mm)

DN	Lu	e	Weight in kg $\approx$	Item no.
<b>80</b>	150	7,0	5,0	308588
<b>80</b>	200	7,0	7,0	308589
<b>80</b>	300	7,0	8,0	308590
<b>100</b>	400	7,2	10,5	308579
<b>150</b>	400	8,4	29,5	308585
<b>200</b>	400	8,4	29,5	308587

# Smooth pipe sections with spigot ends – S as per EN 545

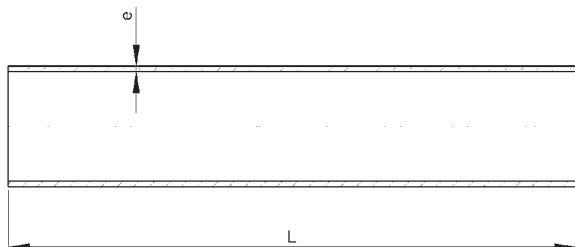


for gate valves with socket connection

159

## Surface protection:

- inside Düker enamel as per EN ISO 11177



B

8

## Dimensions and weights (Dimensions in mm)

DN	$\varnothing d$	L	e	Weight in kg $\approx$	Item no.
80	98	800	7,0	12,0	308631
100	118	800	7,2	15,0	777035
150	170	800	7,5	20,0	777036
200	222	800	7,8	30,0	777037

# Double-socket acc. Factory-Standard Collar-Piece

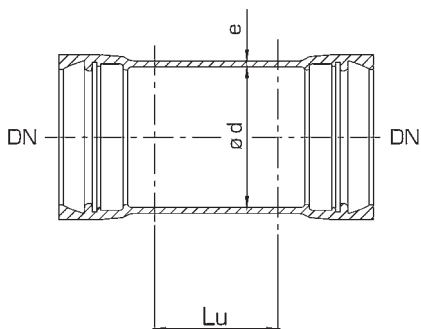
with 2 Chambers



160

## Surface protection:

- inside Düker enamel as per EN ISO 11177



## Dimensions and weights (Dimensions in mm)

DN	ø d	Lu	e	Weight in kg ≈	Item no.
80	109	160	7,0	7,0	567381
100	130	160	7,2	7,2	567095
150	156	165	7,5	7,5	864025
200	183	165	7,8	7,8	864194



# Double-socket acc. Factory-Standard Collar-Piece

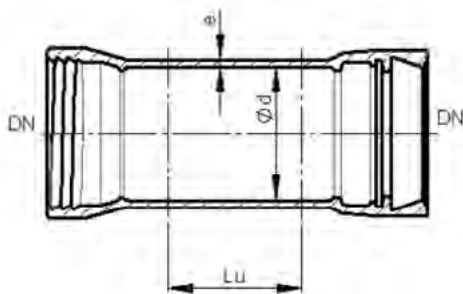
with 1 screwed-socket



161

## Surface protection:

- inside Düker enamel as per EN ISO 11177



B

8

## Dimensions and weights (Dimensions in mm)

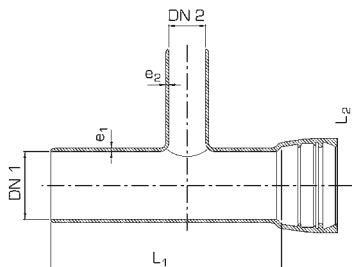
DN	ø d	Lu	e	Weight in kg ≈ PN 16	Item no.
80	109	160	7,0	10,0	567443
100	130	160	7,2	13,5	567094
150	183	165	7,8	22,5	567351
200	235	170	8,4	27,0	570514
300	340	180	9,6	36,0	on request

# All spigot tees acc. to manufacturer's standard with one socket – MI

- 162 for gate valves with socket connection  
MI with **Novo** or **TYTON®** socket

## Surface protection:

- inside and outside Düker enamel as per EN ISO 11177



Dimensions and weights (Dimensions in mm)

DN 1	DN 2	L <sub>1</sub>	L <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>	Weight in kg ≈	Item no.
80	80	455	270	7,0	7,0	14,0	567376
	80				7,0		
100	80	460	275	7,2	7,0	16,8	567377
	100				7,2		
125	50	510	300	7,5	7,0	16,0	328947
	80				7,0		
	100				7,2		
	125				7,5		
150	50	525	310	7,8	7,0	24,0	328948
	80				7,0		
	100				7,2		
	125				7,5		
	150				7,8		





DN 1	DN 2	L <sub>1</sub>	L <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>	Weight in kg ≈	Item no.
<b>200</b>	80	550	325	8,4	7,0	37,0	570914
	100				7,2	38,0	862644
	125				7,5	39,0	779971
	150				7,8	40,0	862854
	200				8,4	43,0	567393
<b>250</b>	80	705	405	9,0	7,0	55,5	308604
	100				7,2	60,0	308600
	150				7,8	62,0	308601
	200				8,4	65,5	308603
	250				9,0	66,0	305120
<b>300</b>	80	760	435	9,6	7,0	77,0	308608
	100				7,2	82,0	777539
	150				7,8	86,0	308605
	200				8,4	84,0	308606
	300				9,6	103,0	308607

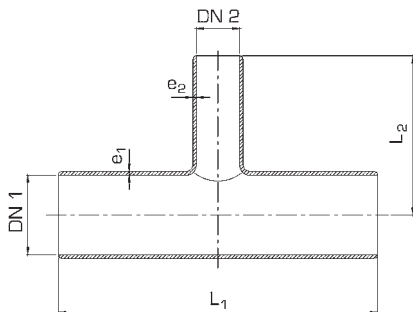
Material: ductile iron EN-GJS-500-7, inside enamel,  
socket **NOVO-SIT**® acc. to manufacturer's standard

# All spigot tees acc. to manufacturer's standard with spigots - IT

164 for gate valves with socket connection

## Surface protection:

- inside and outside Düker enamel as per EN ISO 11177



Dimensions and weights (Dimensions in mm)

DN 1	DN 2	L <sub>1</sub>	L <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>	Weight in kg ≈	Item no.
80	80	540	270	7,0	7,0	13,0	567732
100	80	550	275	7,2	7,0	14,5	569109
	100				7,2	15,0	567091
125	80	600	300	7,5	7,0	20,0	308610
	100				7,2	21,0	308611
	125				7,5	24,0	863833
150	80	620	310	7,8	7,0	23,0	863221
	100				7,2	24,5	863218
	125				7,5	25,0	308612
	150				7,8	26,7	567810





DN 1	DN 2	L <sub>1</sub>	L <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>	Weight in kg ≈	Item no.
<b>200</b>	80	650	325	8,4	7,0	34,0	864475
	100				7,2	35,0	864699
	125				7,8	36,0	789977
	150				8,4	36,5	865731
	200				9,0	38,5	864474
<b>250*</b>	80	810	405	9,0	7,0	45,0	308618
	100				7,2	47,0	308614
	125				7,5	48,0	308615
	150				7,8	48,5	308616
	200				8,4	51,5	308617
	250				9,0	55,0	317992
<b>300*</b>	80	870	435	9,6	7,0	64,5	on request
	100				7,2	68,0	on request
	150				7,8	70,0	308622
	200				8,4	72,0	308623
	300				9,6	77,0	308626

\* acc. to manufacturer's standard

Material: ductile iron EN-GJS-500-7, inside enamel

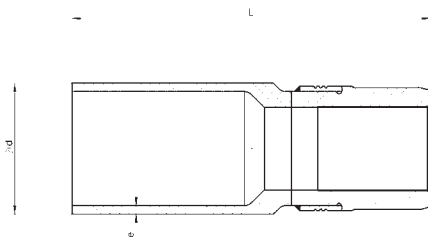
# PE adapter pieces for Novo sockets acc. to manufacturer's standard PN 10/16



- 166** Thrust resisting adapter piece for fittings, gate valves and butterfly valves for plug-in sockets **NOVO-SIT®**  
PE adapter piece with pre-installed support sleeve and circumferential retaining ring for retaining the locking segments; PE spigot end for all usual welding procedures, SDR 11  
for water, transition from ductile cast iron to PE

### Materials:

- fitting: PE 100 black
- support sleeve and retaining ring: stainless steel



**Dimensions and weights** (Dimensions in mm)

DN	ø d	L	e	Weight in kg ≈	Item no.
<b>80</b>	90	290	8,2	1,3	557807
<b>100</b>	110	315	10,0	2,25	557808
<b>100</b>	125	340	11,2	2,6	557809
<b>125</b>	140	355	12,8	3,3	557810
<b>150</b>	160	360	14,6	4,0	557811
<b>150</b>	180	380	16,4	5,5	557859
<b>200</b>	200	410	18,2	7,0	557860
<b>200</b>	225	426	20,5	7,8	557861
<b>200</b>	250	450	22,7	9,4	556550
<b>250</b>	250	465	22,7	9,3	571168
<b>250</b>	280	465	25,4	12,5	561239
<b>300</b>	315	485	28,6	17,3	561240
<b>300</b>	355	510	32,2	21,2	561241



# Flap valves figure 125

## PN 10/16

### 168 Design features:

Flange connection dimensions: as per EN 1092-2  
for potable water

### Materials:

body and bonnet: ductile cast iron EN-GJS-500-7 as per EN 1563

flap shaft: brass

flap sealing: elastomer

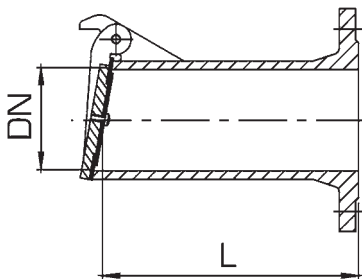
### Surface protection:

- inside and outside epoxy resin black RAL 9005 as per GSK guidelines (for water)

**Field of application:** Potable water up to 60 °C

Field of application	Nominal diameter DN	Nominal pressure PN
potable water	200 - 400	10
potable water	50 - 400	16




**Dimensions and weights** (Dimensions in mm)

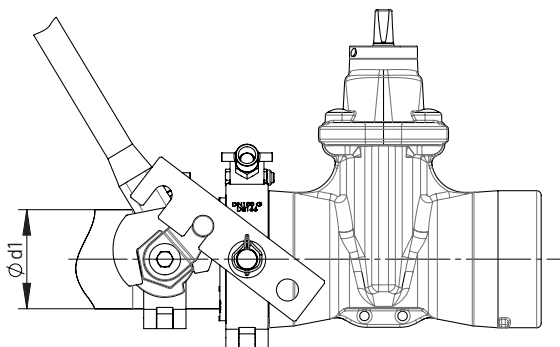
DN	PN	Face-to-face dimension L ≈	Weight in kg ≈	Item no.
<b>50</b>	16	210	5,5	579504
<b>65</b>	16	210	7,6	579508
<b>80</b>	16	210	9,4	579512
<b>100</b>	16	250	13,0	579516
<b>125</b>	16	250	16,0	579520
<b>150</b>	16	280	22,0	579524
<b>200</b>	10	300	35,0	579528
<b>200</b>	16	300	35,0	579529
<b>250</b>	10	350	60,0	579532
<b>250</b>	16	350	60,0	571057
<b>300</b>	10	360	70,0	579536
<b>300</b>	16	360	70,0	572324
<b>350</b>	10	390	92,0	579537
<b>350</b>	16	390	92,0	781753
<b>400</b>	10	390	117,0	579538
<b>400</b>	16	390	117,0	571162

# Laying tool V 300 D, including 2 lever rods

for pressure pipes, fittings and gate valves



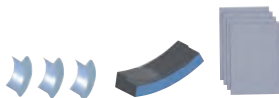
170



## Dimensions and weights (Dimensions in mm)

DN	d1	Weight in kg ≈	Item no.
80	98	11,7	327009
100	118	12	327010
125	144	12,4	327014
150	170	12,8	327015
200	222	13,7	327016
250	274	14,5	327017
300	326	15,3	327019

# Demontagezubehör für Steckmuffen



wiederverwendbare Entriegelungsbleche für die Demontage von **NOVO-SIT®**,  
**NOVO-Grip®**, **TYTON-SIT®** und **TYTON-SIT-PLUS®** Verbindungen

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Anzahl notwendiger Entriegelungsbleche

DN	Stück pro Satz	Item no.
80	4	570235
100	4	
125	5	
150	6	
200	8	
250	10	
300	12	
400	16	
500	19	
600	23	

B

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Schlagteile – wiederverwendbar – zur Aufnahme der Entriegelungsbleche

DN	Item no.
80 – 100	570232
125 – 150	570233
200 – 600	570234

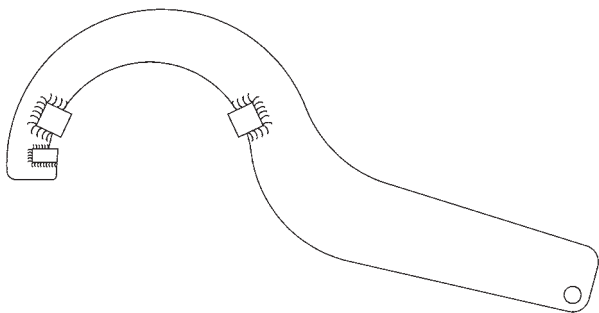
Demontagebleche für Steckhydranten DN 80  
(es werden beim Demontieren 3 Stück benötigt!)

Item no.
561419

# Hook wrench for laying pressure pipes and fittings with screw-gland joint (SMU)



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## Dimensions and weights (Dimensions in mm)

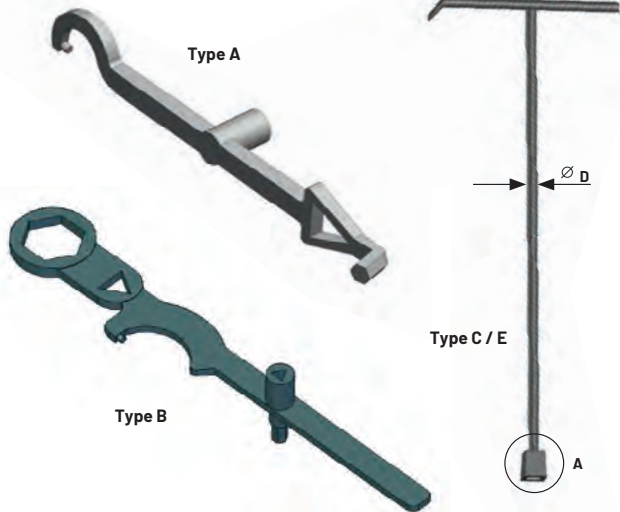
DN	Weight in kg ≈	Item no.
40	2,0	574560
50	2,1	574561
65	2,4	574562
80	2,8	574563
100	3,2	574564
125	3,5	574565
150	3,9	574566
175	5,4	574567
200	6,8	574568
250	7,7	574569
300	9,8	574570
350	14,6	574571
400	13,8	574572
450	31,0	574573
500	43,0	574574

# Operating keys for valves

as per DIN 3223 A, B, C, E



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B

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## Application, dimensions and weights (Dimensions in mm)

DIN 3223	Material	Application	Length	Width	Weight in kg ≈	Item no.
Type A	Ductile cast iron, galvanised	Hydrants	small	small	1,3	769159
Type B	Ductile cast iron, galvanised	Pillar hydrants	large	large	2,2	769161
Type C	Steel galvanised	Underground hydrants and gate valves	1100	420	5,7	769162
Type E	Steel galvanised	Tapping valves	750	320	1,5	769165
Type E	Steel galvanised	Tapping valves	1000	320	2,0	769166
Type E	Steel galvanised	Tapping valves triangular	750	320	1,5	316605

# Düker telescopic stem extension set T3 with and without position indicator for butterfly valves

## 174 Design features:

Telescopic stem extension set with an additional protection tube for better telescoping function, higher stability and stronger compaction. High stability to withstand strong wall stress during the filling of the pipe trench. Welded flange bell. Optimal installation on all butterfly valves with F10 operating flange. Butterfly valve coupling matching the gear shaft. Stem extension set also available with additional position indicator (with protective cover as an option).

## Technical details:

The stem extension set is screwed in between the flange bell and the operating flange of the butterfly valve. Continuously telescopic stem extension set. PE protection tube with welded centring cap and bell. Additional third protection tube, welded with the bell, completely dirt and water repellent. Self-locking in any pull-out position due to a sealing gasket on the square pipe.

Pull-out securing of the rods: min. 150 N

Torques: up to 140 Nm

## Materials:

square cap and coupling: EN-GJS-400-15, galvanised (as per ISO 2081 and DIN 50961)

rods: S235JR, hot-dip galvanised (as per EN 10240)

centring cap: PA, red

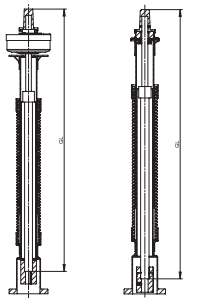
pipe sleeve: PE - HD

flange bell similar F10: PE, black

sealing gasket: PE

connection pins: 1.4301

position indicator: aluminium, epoxy powder coating blue





Valve	Pipe covering	Type	Item no.
PN 10: DN 100 – 600 PN 16: DN 100 – 500 PN 25: DN 100 – 450	0,80 – 1,30 m	without position indicator 20 mm shaft	309291
	1,00 – 1,50 m		304429
	1,20 – 1,80 m		304430
	1,70 – 2,70 m		304431
	2,50 – 3,20 m		305111
	0,80 – 1,30 m	with position indicator up to 47 turns 20 mm shaft	309292
	1,00 – 1,50 m		304419
	1,20 – 1,80 m		304420
	1,70 – 2,70 m		304421
	2,50 – 3,20 m		305116
PN 10: DN 800 – 1200 PN 16: DN 700 – 1000 PN 25: DN 600 – 800, 1000	0,80 – 1,30 m	without position indicator 20 mm shaft	309291
	1,00 – 1,50 m		304429
	1,20 – 1,80 m		304430
	1,70 – 2,70 m		304431
	2,50 – 3,20 m		305111
	1,00 – 1,50 m	with position indicator up to 47 turns 20 mm shaft	304425
	1,20 – 1,80 m		304427
	1,70 – 2,70 m		304428
	2,50 – 3,20 m		305119
	PN 10: DN 700 PN 16: DN 600 PN 25: DN 500		1,00 – 1,50 m
1,20 – 1,80 m		304436	
1,70 – 2,70 m		304439	
2,50 – 3,20 m		305112	
1,00 – 1,50 m		with position indicator up to 47 turns 30 mm shaft	304423
1,20 – 1,80 m			304422
1,70 – 2,70 m			304424
2,50 – 3,20 m			305118

Rod length GL ≈ pipe covering Rd

Protecting cover for position indicator	304138
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# Düker telescopic stem extension set T3 GW 336-1 for gate valves, service connection valves and tapping valves

## 176 Design features:

Telescopic stem extension set with an additional protection tube for better telescoping function, higher stability and stronger compaction. High stability to withstand strong wall stress during the filling of the pipe trench. Welded flange bell as per DVGW GW 336-1 with additional drilling. Optimal installation on all gate valves, service connection valves and tapping valves. Centring disc in the tube sleeve bell up to DN 150. With clip pin for a fast installation without any tools. Adapter GW 336-1 for installation on gate valves DN 40 – 65 or TOP type 1004 as an option.

## Technical features:

The stem extension set is plugged onto the valve with the tube sleeve bell. Continuously telescopic stem extension set. PE protection tube with welded centring cap and bell. Additional third protection tube, welded with the bell, completely dirt and water repellent. Self-locking in any pull-out position due to a sealing gasket on the square pipe. Pull-out securing of the rods: min. 150 N

## Torques:

Valve	DN	max. torque in Nm
tapping valve		140
service connection valve	25 – 50	140
gate valve	40 – 150	250
	200 – 300	440

## Materials:

square cap and coupling: : EN-GJS-400-15, galvanised (as per ISO 2081 and DIN 50961)  
rods: S235JR, hot-dip galvanised (as per EN 10240)

centring cap: PA, red

pipe sleeve: PE – HD

pipe sleeve bell with additional drilling: PE, black

sealing gasket: PE

clip pins: 1.4301

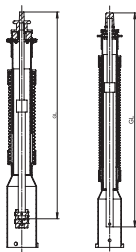
## Coupling sets:

Application	DN	S	Weight in kg ≈	Item no.
tapping valve and service connection valve	25 – 50	12	0,3	769671
	40 – 50	14	0,6	769287
gate valve	65 – 80	17	0,6	769288
	100 – 150	19	0,7	769289
	200	24	0,9	769290
	250 – 300	27	1,3	769291

DN 350 – DN 600 on request

**DIN DVGW**  
registered!





Valve	Operating square	Connection coupling	Rod length GL* in m	Weight in kg ≈	Remark	Item no.
tapping valve and service connection valve e.g. TOP, TOP 1004 and type 1004	DIN 3223 E	square end 20 x 20 mm bell Ø 80 mm	0,40 - 0,65	2,6	delivery incl. coupling	305097
			0,65 - 1,15	2,8		304401
			0,80 - 1,45	3,2		304402
			0,90 - 1,55	3,9		304403
			1,37 - 2,45	4,6		304405
gate valve DN 40 - 150 e.g. type 2004, 3004 and 4004	DIN 3223 C	square end 25 x 25 mm bell Ø 80 mm	0,36 - 0,56	2,7	delivery without coupling	304406
			0,60 - 1,01	3,1		304407
			0,76 - 1,36	3,9		304408
			0,91 - 1,60	4,5		304409
			1,26 - 2,36	5,9		304410
gate valve DN 200 - 300 e.g. type 2004, 3004 and 4004	DIN 3223 C	square end 30 x 30 mm bell Ø 100 mm	0,33 - 0,40	2,9	delivery without coupling	304411
			0,49 - 0,76	4,0		304412
			0,74 - 1,22	5,5		304413
			0,82 - 1,42	6,2		304414
			1,17 - 2,12	9,4		304415

**\* Definitions pipe covering:**

GL = rod length; RD = pipe covering; GA = rod contact point

With this formula and the GA value, the GL for the required RD can be calculated:

$$GL = RD - 170 \text{ mm} - GA$$

By changing the formula it is also possible to calculate the RD:

$$RD = GL + 170 \text{ mm} + GA$$

# Surface boxes continuously height-adjustable

## Type KSGX

### 178 Design features:

with patented cover ring between the upper and the lower part  
 with conical cover seat  
 temperature-resistant up to 240 °C  
 pressure resistance 250 KN

### Materials:

upper part: grey cast iron EN-GJL-200

lower part: plastic PA 6.6 GF 30 (Polyamide glass-fibre reinforced)

cover: grey cast iron EN-GJL-200

safety bolt: 1.4301

### Dimensions and weights (Dimensions in mm)

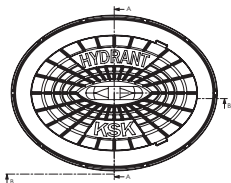
Type	Cover marking	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
<b>Module 4055</b>	Hydrant	423	351	303	318	381	438	315	243	193	210
<b>Module 4055 size 2</b>	Hydrant	480	406	356	364	440	500	376	302	192	260
<b>Module 4056</b>	„W“	232	157	200	275	134	141				
<b>Module 4057</b>	„W“	192	127,5	182	243	104	106				
<b>Module 4059</b>	GAS	177	117	182	243	93	106				
<b>Module 3581</b>	GAS	227	159,5	200	275	134	141				
<b>Module 3582</b>	GAS/FERNGAS	327	266	216	216						

Type	Cover marking	D11	D12	H	X	Weight in kg ≈	Item no.
<b>Module 4055</b>	Hydrant	274	331	414 – 484	80 – 150	32,5	779316
<b>Module 4055 size 2</b>	Hydrant	336	396	430 – 500	80 – 150	49	779317
<b>Module 4056</b>	„W“			372 – 472	80 – 180	11,8	779318
<b>Module 4057</b>	„W“			376 – 476	80 – 180	9,5	779319
<b>Module 4059</b>	GAS			376 – 476	80 – 180	9,5	779320
<b>Module 3581</b>	GAS			376 – 476	80 – 180	14	779321
<b>Module 3582</b>	GAS/FERNGAS	276	360	355 – 435	120 – 200	34,5	on request
<b>bearing plate 4055, PE</b>						2,2	779400
<b>small bearing plate, PE</b>						1,2	779401
<b>Testing rod for surface box KSGX</b>						4,6	322076

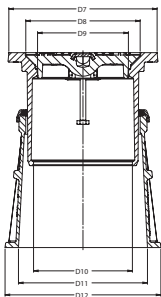
Drawings see following pages



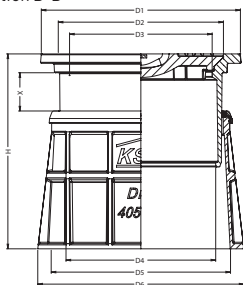
## Module 4055



Section A-A

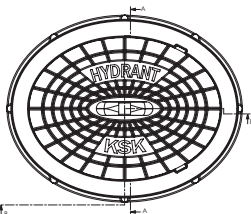


Section B-B

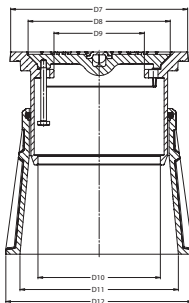


## Module 4055 size 2

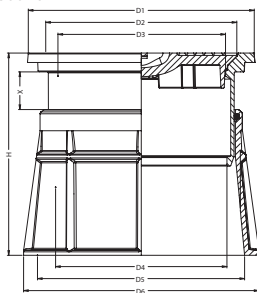
179



Section A-A



Section B-B



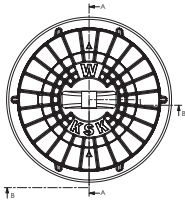
B

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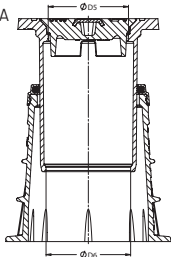
# Surface boxes continuously height-adjustable Type KSGX



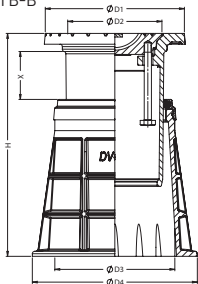
180 Module 4056



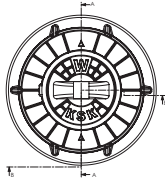
Section A-A



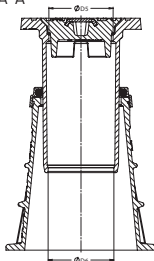
Section B-B



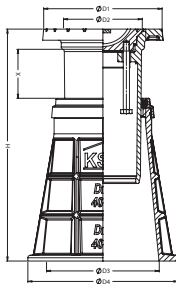
Module 4057



Section A-A



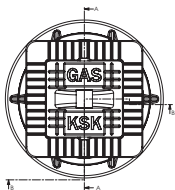
Section B-B



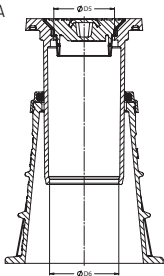
Dimensions see page 178



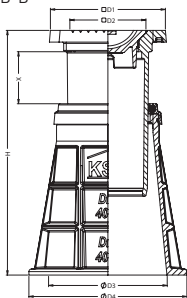
## Module 4059



Section A-A



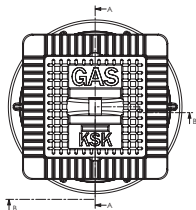
Section B-B



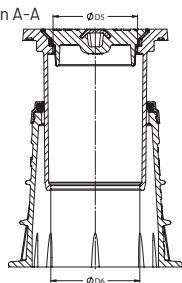
Dimensions see page 178

## Module 3581

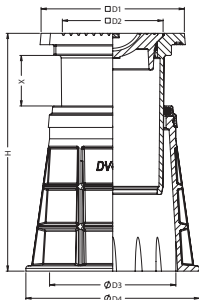
181



Section A-A



Section B-B



B

9



**C**

**Ductile cast  
iron fittings  
and flanged  
pressure pipes**

**C**





## Inside and outside protection

Flanged pipes and fittings can be supplied with the following coatings and linings:

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### 1. Enamelling (glass lining) – inside and outside

Enamel is an effective protection against corrosion, abrasion and incrustation. A nondetachable, chemical bonding to the cast iron avoids corrosion by undercutting. The layer thickness after application (temperature = 800 °C) is between 200 µ and 500 µ.

### 2. Epoxy resin – lining and coating

The coating is acc. to RAL-GZ 662 with hot melted epoxy powder. The requirements of EN 14901 (pressure pipes and fittings) as well as of DIN 3074 (heavy corrosion protection for valves) are fulfilled.

### 3. Special coatings (inside and outside)

Various coatings on request.

## Pressure pipes with cast-on flanges FFG-pipes

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Dimensions (in mm)					
DN	Length	Item no. Epoxy blue PN 10	Item no. Epoxy blue PN 40	Item no. etec enamel PN 10	Item no. etec enamel PN 40
40	100	—	870978	—	787499
	150	—	856691	—	307609
	200	—	856700	—	789757
	300	—	856721	—	307611
	400	—	856732	—	307613
	500	—	856753	—	307614
	600	—	856763	—	307615
	800	—	856774	—	307617
	1000	—	856784	—	307608
50	100	—	856791	—	307628
	150	—	856797	—	307629
	200	—	856803	—	784018
	250	—	856810	—	770659
	300	—	856825	—	750478
	400	—	856837	—	307631
	500	—	856841	—	784019
	600	—	856848	—	784021
	700	—	856853	—	307632
	800	—	856862	—	784022
	1000	—	856874	—	784023
DN	Length	Item no. Epoxy blue PN 10/16	Item no. Epoxy blue PN 25/40	Item no. etec enamel PN 10/16	Item no. etec enamel PN 25/40
65	100	864783	on request	307655	on request
	150	864857	on request	on request	on request
	200	864869	on request	307657	on request
	300	864899	on request	753153	on request
	400	864921	on request	307659	on request
	500	864940	on request	307660	on request
	600	864972	on request	753150	on request
	800	864983	on request	307662	on request
	1000	864992	on request	753151	on request

Other versions, coatings and sizes on request


**Dimensions (in mm)**

DN	Length	Item no. Epoxy blue PN 10	Item no. Epoxy blue PN 40	Item no. etec enamel PN 10	Item no. etec enamel PN 40
<b>80</b>	100	—	856886	—	753857
	150	—	856896	—	753858
	200	—	857154	—	735257
	250	—	857165	—	754035
	300	—	857174	—	740674
	350	—	857182	—	776122
	400	—	873613	—	754036
	500	—	857201	—	754038
	600	—	857356	—	740663
	700	—	872593	—	306455
	800	—	857370	—	791131
	900	—	857375	—	307674
1000	—	857379	—	758340	
<b>80</b>	100 4/8-hole	—	705316	—	—

DN	Length	Item no. Epoxy blue PN 10	Item no. Epoxy blue PN 16	Item no. etec enamel PN 10	Item no. etec enamel PN 16
<b>100</b>	100	—	857395	—	754219
	150	—	857400	—	873068
	200	—	857407	—	720362
	250	—	857415	—	750166
	300	—	857424	—	753881
	350	—	857431	—	762144
	400	—	857436	—	750170
	500	—	857448	—	707045
	600	—	857460	—	707049
	700	—	857469	—	797382
	800	—	857681	—	858437
	900	—	873623	—	725348
1000	—	857687	—	858438	

C

10a



## Pressure pipes with cast-on flanges FFG-pipes

Dimensions (in mm)					
DN	Length	Item no. Epoxy blue PN 10	Item no. Epoxy blue PN 16	Item no. etec enamel PN 10	Item no. etec enamel PN 16
125	100	—	858449	—	700640
	150	—	858453	—	758341
	200	—	858458	—	758184
	250	—	858462	—	758385
	300	—	876049	—	719442
	350	—	704457	—	307566
	400	—	858467	—	708801
	500	—	858474	—	750472
	600	—	858479	—	708802
	700	—	858483	—	on request
	800	—	704525	—	750473
900	—	711336	—	on request	
1000	—	858494	—	719440	
150	100	—	875916	—	758342
	150	—	858507	—	758343
	200	—	858513	—	725637
	250	—	858520	—	740030
	300	—	858523	—	728545
	350	—	704520	—	778876
	400	—	859084	—	859079
	500	—	859113	—	876401
	600	—	859135	—	872763
	700	—	703969	—	700007
	800	—	859265	—	725639
	900	—	859286	—	on request
	1000	—	875308	—	873067

Other versions, coatings and sizes on request


**Dimensions (in mm)**

DN	Length	Item no. Epoxy blue PN 10	Item no. Epoxy blue PN 16	Item no. etec enamel PN 10	Item no. etec enamel PN 16
<b>200</b>	100	873709	723725	758350	307567
	150	873710	722114	774239	307569
	200	865350	705274	758351	790092
	250	873713	876740	776120	307570
	300	865382	708101	721283	307571
	350	704456	708782	307572	307573
	400	865409	708783	758352	792781
	500	875311	700037	721282	784020
	600	865466	700135	722897	307574
	700	873717	715377	307575	794199
	800	872708	876822	728544	307576
900	711338	722113	759066	on request	
1000	875600	876743	728543	307568	
<b>250</b>	100	704698	719620	307577	on request
	150	876276	731510	750899	on request
	200	865816	874350	776119	790089
	250	701384	700137	781586	307578
	300	865852	711163	764993	307579
	350	710199	710412	307580	on request
	400	865882	700112	307581	307582
	500	865910	703204	776124	301087
	600	877291	729007	307583	307584
	700	711341	865974	760931	307585
	800	703919	734968	797363	307586
	900	712157	703206	739972	301551
	1000	873723	874719	726929	on request



## Pressure pipes with cast-on flanges FFG-pipes

Dimensions (in mm)					
DN	Length	Item no. Epoxy blue PN 10	Item no. Epoxy blue PN 16	Item no. etec enamel PN 10	Item no. etec enamel PN 16
<b>300</b>	100	866013	714593	776117	795414
	150	715819	736604	776118	307588
	200	866191	300032	730387	793550
	250	866225	707591	776121	317074
	300	866250	873725	730388	793106
	350	700441	731911	307589	on request
	400	876277	733163	790715	797376
	500	866292	866310	764987	307590
	600	876026	709767	764989	307591
	700	866335	715378	776126	777003
	800	866354	708562	771813	793107
900	707840	783734	307592	307593	
1000	866373	873093	767032	307587	
<b>350</b>	200	732454	745171	307596	on request
	250	737273	775064	307598	on request
	300	719987	710414	307599	on request
	350	714809	799457	307600	on request
	400	705195	700118	307601	on request
	500	702259	735412	307603	on request
	600	725207	778090	307604	on request
	700	716717	774745	307605	on request
	800	703922	309992	307606	on request
	900	731813	on request	307607	on request
	1000	859433	700050	307594	on request

Other versions, coatings and sizes on request


**Dimensions (in mm)**

DN	Length	Item no. Epoxy blue PN 10	Item no. Epoxy blue PN 16	Item no. etec enamel PN 10	Item no. etec enamel PN 16
<b>400</b>	200	873800	711600	793623	743770
	250	742076	327246	on request	on request
	300	873803	714734	749582	307621
	350	740227	719350	307622	on request
	400	859663	708793	307623	796054
	500	859668	873088	301673	307624
	600	712904	709852	793627	on request
	700	723111	700015	307625	328560
	800	703923	719349	307626	328561
	900	708827	700113	307627	330204
	1000	859677	711599	772792	307619
<b>500</b>	200	709486	724783	302185	on request
	250	733791	876294	307635	on request
	300	708229	787677	307636	on request
	350	709195	768768	307637	on request
	400	876914	710394	307638	on request
	500	873811	712343	759469	307639
	600	713574	752362	307641	307640
	700	712258	729734	307643	307642
	800	703924	756417	798726	on request
	900	727385	707616	303998	on request
	1000	706739	876822	759471	307634
<b>600</b>	200	715720	750131	307644	307645
	250	727212	328990	307646	on request
	300	736837	711625	307647	on request
	350	742077	on request	307648	on request
	400	712285	714733	307649	on request
	500	859698	732119	307650	on request
	600	859711	760554	307651	on request
	700	722839	715380	307652	on request
	800	704785	305876	307653	on request
	900	754670	725297	307654	on request
	1000	704419	715381	759473	on request



## Pressure pipes with cast-on flanges FFG-pipes

Dimensions (in mm)					
DN	Length	Item no. Epoxy blue PN 10	Item no. Epoxy blue PN 16	Item no. etec enamel PN 10	Item no. etec enamel PN 16
<b>700</b>	300	727228	on request	307665	on request
	350	742078	on request	307666	on request
	400	741903	on request	307667	on request
	500	875866	750829	307668	on request
	600	733936	on request	307669	on request
	700	741905	on request	307670	on request
	800	741907	on request	307671	on request
	900	725548	on request	307672	on request
	1000	724500	710419	307664	on request
<b>800</b>	300	722841	on request	307676	on request
	350	741908	on request	307677	on request
	400	711137	331709	307678	on request
	500	722484	727603	307679	on request
	600	711957	760597	307680	on request
	700	741910	on request	307681	on request
	800	721604	331956	307682	on request
	900	741912	on request	307683	on request
	1000	711958	728317	307675	on request

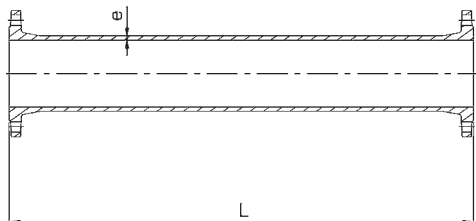
Other versions, coatings and sizes on request



# Weight of pressure pipes with cast-on flanges PN 10 FFG-pipes



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Length L in mm

DN	100	200	300	400	500	600	700	800	900	1000
	Weight in kg =									
<b>80</b>	7,6	9,2	10,8	12,4	14,1	15,7	17,3	18,9	20,5	22,0
<b>100</b>	8,6	10,7	12,7	14,8	16,8	18,8	21,0	23,0	25,0	27,0
<b>125</b>	10,6	13,3	15,9	18,6	21,0	24,0	26,5	29,0	32,0	34,5
<b>150</b>	13,2	16,5	19,7	23,0	26,0	29,5	32,5	36,0	39,0	42,5
<b>200</b>	18,4	23,0	27,5	32,0	37,0	41,5	46,0	50,5	55,5	60,0
<b>250</b>	25,5	32,0	38,0	44,0	50,5	56,5	62,5	68,5	75,0	81,0
<b>300</b>	34,0	41,5	49,5	57,0	65,0	73,0	80,5	88,5	96,5	104,0
<b>350</b>	–	48,5	58,5	68,0	77,5	87,5	97,0	107,0	116,0	126,0
<b>400</b>	–	57,5	69,5	81,0	92,5	104,0	116,0	127,0	139,0	151,0
<b>500</b>	–	78,5	94,5	111,0	127,0	143,0	159,0	175,0	191,0	207,0
<b>600</b>	–	108,0	129,0	150,0	171,0	192,0	214,0	235,0	256,0	277,0
<b>700</b>	–	–	169,0	196,0	223,0	250,0	276,0	303,0	330,0	357,0
<b>800</b>	–	–	–	250,0	284,0	317,0	350,0	383,0	416,0	450,0
<b>900</b>	–	–	–	300,0	340,0	380,0	420,0	461,0	501,0	541,0
<b>1000</b>	–	–	–	366,0	414,0	462,0	510,0	557,0	605,0	653,0
<b>1200</b>	–	–	–	468,0	525,0	581,0	638,0	694,0	751,0	807,0
<b>1400</b>	–	–	–	738,0	812,0	886,0	960,0	1034,0	1108,0	1182,0
<b>1600</b>	–	–	–	1018,0	1111,0	1204,0	1297,0	1390,0	1483,0	1576,0

Further lengths are available on request.

C

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## Information about ductile cast iron fittings

194 Ductile cast iron fittings will be delivered as follows:

with **TYTON**® socket

with **TYTON**® socket and pre-chamber for thrust resisting joint **NOVO-SIT**®

with screw-gland socket joint

with bolted-gland socket joint

with flanges

Ductile cast iron socket fittings with **TYTON**® sockets ( flangeless ) **for use in potable water pipelines** are designed for operating pressures as given in EN 545.

Ductile cast iron fittings with screw-gland or bolted-gland sockets **for use in potable water pipelines** are designed for operating pressures **up to 16 bar**. Higher pressures on request.

Ductile cast iron fittings with one flange or more, **for use in potable water pipelines** are designed for operating pressures as given in EN 545.

The operating pressure has to be mentioned in orders, because the flange dimensions of these fittings vary depending on the nominal pressures rates.

Ductile cast iron fittings **for use in sewerage pipelines** as per EN 598 are designed for operating pressures **up to 16 bar**. Higher pressures on request.

Ductile cast iron fittings **for use in gas pipelines** as per EN 969 are available for operating pressures **up to 16 bar** on request.

**Coating:** see page 185

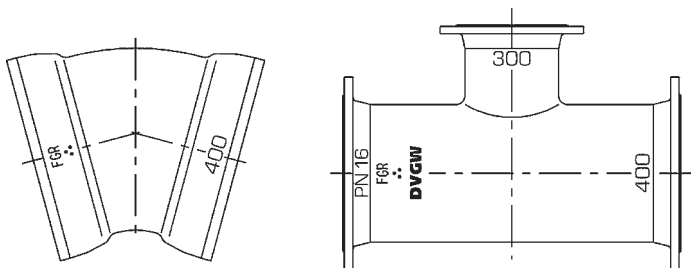
## Marking for ductile cast iron fittings



All German manufacturers member of the "Fachgemeinschaft Guss-Rohrsysteme" (FGR-EADIPS) association mark all ductile cast iron products manufactured by them with the label "FGR", which is equivalent to a quality mark. In addition, fittings are marked with the DVGW sign, nominal diameter, the casting day and bends with the respective angles in degrees.

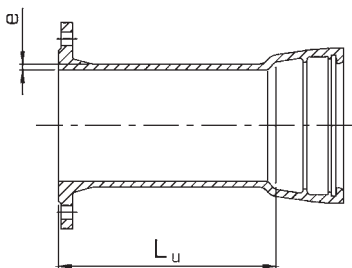
Flanged fittings bear a cast-on or stamped indication of the nominal pressure ranges PN 10 up to PN 40. Socket fittings are not marked with the nominal pressure range. The material "ductile cast iron" is identified by 3 dots (♣) arranged in a triangle symbol, positioned on the exterior surface of the fittings.

In special cases, further indications may be provided.



## Flanged sockets – E with screw-gland or TYTON® socket

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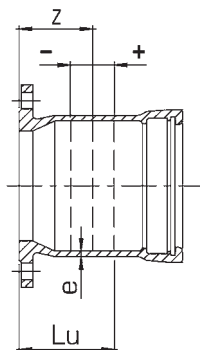

**Dimensions and weights** (Dimensions in mm)

DN	Lu   e		Weight in kg ≈ with TYTON® socket		Item no. Epoxy	Item no. Epoxy	Item no. etec	Item no. etec
			PN 10	PN 16	PN 10	PN 16	PN 10	PN 16
<b>40*</b>	100	7,0	5,9	5,9	743210	743210	307488	307488
	150	7,0	6,0	6,0	—	—	—	—
	600	7,0	11,0	11,0	—	—	—	—
<b>50*</b>	150	7,0	8,0	8,0	—	—	—	—
<b>65*</b>	150	7,0	10,5	10,5	—	—	—	—
	600	7,0	17,0	17,0	743212	743212	on request	on request
<b>80</b>	600	7,0	17,5	17,5	738088	738088	on request	on request
	1000	7,0	25,5	25,5	780097	780097	on request	on request
<b>100</b>	130	7,2	10,3	10,3	324588	324588	—	—
	250	7,2	14,0	14,0	—	—	—	—
	600	7,2	17,0	17,0	876047	876047	on request	on request
<b>125</b>	135	7,5	14,6	14,6	—	—	—	—
	600	7,5	26,0	26,0	725556	725556	on request	on request
<b>150</b>	135	7,8	16,7	16,7	—	—	—	—
	600	7,8	28,5	28,5	877730	877730	on request	on request
<b>200</b>	140	8,4	23,0	23,0	—	—	—	—
	600	8,4	40,0	40,0	712692	733385	on request	on request
<b>250</b>	145	9,0	33,5	33,5	—	—	—	—
	600	9,0	61,5	61,5	876048	702764	—	—
<b>300</b>	150	9,6	40,0	40,0	—	—	—	—
	600	9,6	96,0	96,0	724605	738858	on request	on request
	800	9,6	100,0	100,0	—	—	—	—
<b>350</b>	600	10,2	128,0	130,0	on request	on request	on request	on request
<b>400</b>	600	10,8	135,0	140,0	760382	720187	on request	on request
<b>450</b>	600	11,4	194,0	203,0	on request	on request	on request	on request
<b>500</b>	600	12,0	163,0	176,0	762248	727885	on request	on request
<b>600</b>	600	13,2	270,0	295,0	on request	on request	on request	on request
<b>700</b>	600	14,4	453,0	466,0	on request	on request	on request	on request
<b>800</b>	1000	15,6	603,0	621,0	on request	on request	on request	on request

\* acc. to manufacturer's standard; on request also with Standard socket and Universal pre-chamber

## Flanged sockets – EU

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Dimensions and weights (Dimensions in mm)

DN	Compensation length				Weight in kg <sup>≈ 1)</sup>					
	Lu	z <sup>2)</sup>	Tol.	e	with screw-gland socket		with TYTON® socket		with bolted-gland socket	
					PN 10	PN 16	PN 10	PN 16	PN 10	PN 16
<b>40*</b>	76	50	±30	7,0	4,3	4,3	–	–	–	–
<b>50*</b>	78	50	±30	7,0	5,4	5,4	–	–	–	–
<b>65*</b>	80	50	±30	7,0	6,0	6,0	–	–	–	–
<b>80</b>	130	86	±40	7,0	8,4	8,4	8,6	8,6	–	–
<b>100</b>	130	87	±40	7,2	10,5	10,5	10,5	10,5	–	–
<b>125</b>	135	91	±40	7,5	13,2	13,2	14,5	14,5	–	–
<b>150</b>	135	92	±40	7,8	16,0	16,0	16,0	16,0	–	–
<b>200</b>	140	97	±40	8,4	21,6	21,6	24,0	24,0	–	–
<b>250</b>	145	102	±40	9,0	31,5	31,5	32,5	32,5	–	–

\* acc. to manufacturer's standard

<sup>1)</sup> without screw- or bolted-gland rings

<sup>2)</sup> Nominal dimension for laying. If flanged sockets are applied as gate valve dismantling joints, the moving tolerance has to be limited to 10 mm.

on request also with Standard socket and Universal pre-chamber



DN	Compensation length				Weight in kg <sup>1)</sup>					
	Lu	z <sup>2)</sup>	Tol.	e	with screw-gland socket		with TYTON <sup>®</sup> socket		with bolted-gland socket	
					PN 10	PN 16	PN 10	PN 16	PN 10	PN 16
<b>300</b>	150	107	±40	9,6	41,0	41,0	45,0	45,0	—	—
<b>350</b>	155	112	±40	10,2	50,0	51,0	54,0	58,0	—	—
<b>400</b>	160	117	±40	10,8	56,5	62,0	66,0	70,0	70,5	74,0
<b>450</b>	165	122	±40	11,4	91,0	92,0	77,0	91,0	88,0	95,0
<b>500</b>	170	127	±40	12,0	—	—	95,5	109,0	103,0	119,0
<b>600</b>	180	137	±40	13,2	—	—	122,5	145,5	142,0	163,5
<b>700</b>	190	147	±40	14,4	—	—	176,6	160,0	194,0	207,0
<b>800</b>	200	157	±40	15,6	—	—	242,0	262,0	189,0	208,0
<b>900</b>	210	167	±40	16,8	—	—	281,0	278,0	242,0	263,0
<b>1000</b>	220	177	±40	18,0	—	—	340,0	355,0	320,0	370,0
<b>1200</b>	240	197	±40	20,4	—	—	536,0	600,0	—	—
<b>1400</b>	310	250	±50	22,8	—	—	—	900,0	—	—
<b>1600</b>	330	265	±60	25,2	—	—	—	1200,0	—	—


<sup>1)</sup> without screw- or bolted-gland rings

<sup>2)</sup> Nominal dimension for laying. If flanged sockets are applied as gate valve dismantling joints, the moving tolerance has to be limited to 10 mm.

on request also with Standard socket and Universal pre-chamber

## Flanged sockets – EU

200

Item numbers							
DN	Item no. with NOVO socket Epoxy blue PN 10	Item no. with NOVO socket Epoxy blue PN 16	Item no. with NOVO socket etec enamel PN 10	Item no. with NOVO socket etec enamel PN 16	Item no. with screw- gland socket Epoxy blue PN 10	Item no. with screw- gland socket Epoxy blue PN 16	Item no. with screw- gland socket etec enamel PN 10
	without connection				incl. screw-gland ring		
40	–	–	–	–	–	743266	–
50	–	–	–	–	–	743270	–
65	–	–	–	–	–	743273	–
80	–	856704	–	726327	–	743278	–
100	–	856736	–	876409	–	743284	–
125	–	856781	–	705065	–	743293	–
150	–	856816	–	705067	–	743301	–
200	857482	875556	720407	781001	743314	743324	307503
250	879048	704611	722067	307505	743335	743340	307506
300	866736	866743	769804	792490	743351	743357	307508
350	–	–	–	–	743366	743370	307510
400	873591	708780	777772	771729	743377	742408	307515
450	–	–	–	–	–	–	–
500	857823	707602	777622	307522	–	–	–
600	857907	857921	761347	307526	–	–	–
700	704398	331470	307531	–	–	–	–
800	709352	773316	307535	–	–	–	–
900	–	–	–	–	–	–	–
1000	–	–	–	–	–	–	–
1200	–	–	–	–	–	–	–
1400	on request	on request	on request	on request	on request	on request	on request
1600	on request	on request	on request	on request	on request	on request	on request 



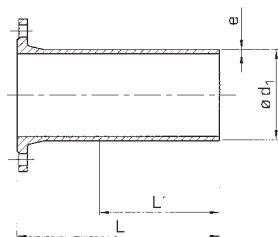


## Item numbers

DN	Item no. with screw- gland socket etc enamel PN 16	Item no. with TYTON® socket Epoxy blue PN 10	Item no. with TYTON® socket Epoxy blue PN 16	Item no. with TYTON® socket etc enamel PN 10	Item no. with TYTON® socket etc enamel PN 16	Item no. with bolted- gland socket Epoxy blue PN 10	Item no. with bolted- gland socket etc enamel PN 10
	incl. screw- gland ring	without connection				incl. connection	
40	307514	—	—	—	—	—	—
50	307521	—	—	—	—	—	—
65	307530	—	—	—	—	—	—
80	309552	—	877729	—	758290	—	—
100	307500	—	856767	—	754052	—	—
125	307501	—	856805	—	769019	—	—
150	307502	—	857475	—	711038	—	—
200	307504	857507	857521	754284	774308	—	—
250	307507	870061	873575	775913	304975	—	—
300	307509	866772	866796	754288	764387	—	—
350	307511	857553	712229	307512	307513	—	—
400	307516	857741	873578	774303	307519	754105	309554
450	—	—	—	—	—	—	—
500	—	857871	857880	307524	307525	754106	309555
600	—	857937	702851	307528	307529	754107	309556
700	—	725570	715382	307534	—	754108	309557
800	—	709853	715353	307538	—	754109	309558
900	—	—	—	—	—	—	—
1000	—	737437	729759	309553	—	—	—
1200	—	759114	733744	—	—	—	—
1400	on request	on request	on request	on request	on request	on request	on request
1600	on request	on request	on request	on request	on request	on request	on request

## Flanged spigots – F

202



Dimensions and weights (Dimensions in mm)

DN	ød <sub>1</sub>	L	L'	e	Weight in kg ≈			
					PN 10	PN 16	PN 25	PN 40
<b>40*</b>	56	300	200	7,0	5,5	5,5	–	–
<b>50*</b>	66	300	200	7,0	6,2	6,2	–	–
<b>65*</b>	82	400	200	7,0	9,5	9,5	–	–
<b>80</b>	98	350	215	7,0	8,5	8,5	8,5	8,5
<b>100</b>	118	360	215	7,2	10,5	10,5	13,5	15,0
<b>125</b>	144	370	220	7,5	14,0	14,0	17,5	18,0
<b>150</b>	170	380	225	7,8	17,5	17,5	18,5	26,5
<b>200</b>	222	400	230	8,4	25,5	25,5	35,1	40,0
<b>250</b>	274	420	240	9,0	39,5	39,5	49,0	59,5
<b>300</b>	326	440	250	9,6	47,6	47,6	58,0	73,4
<b>350</b>	378	460	260	10,2	62,1	65,9	70,0	92,5
<b>400</b>	429	480	270	10,8	80,5	88,6	106,4	131,8
<b>450</b>	480	500	280	11,4	132,0	149,0	150,0	–
<b>500</b>	532	520	290	12,0	121,0	140,4	146,3	169,0
<b>600</b>	635	560	310	13,2	193,3	208,9	228,0	–
<b>700</b>	738	600	330	14,4	229,5	227,0	–	–
<b>800</b>	842	600	330	15,6	314,3	320,0	395,3	–
<b>900</b>	945	600	330	16,8	357,0	384,0	–	–
<b>1000</b>	1048	600	330	18,0	380,0	–	–	–
<b>1200</b>	1255	600	330	20,4	462,0	526,0	–	–
<b>1400</b>	1462	710	390	22,8	–	840,0	–	–
<b>1600</b>	1668	780	430	25,2	–	1260,0	–	–

\* acc. to manufacturer's standard

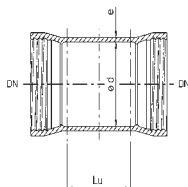


## Item numbers

DN	Item no. Epoxy blue PN 10	Item no. Epoxy blue PN 16	Item no. etec enamel PN 10	Item no. etec enamel PN 16
40*	—	870067	—	307552
50*	—	857639	—	307555
65*	—	870069	—	307560
80	—	858405	—	758298
100	—	856716	—	707068
125	—	856849	—	707069
150	—	875257	—	707070
200	857499	877013	724718	774283
250	866505	703207	724719	307547
300	875258	706520	742396	792491
350	857544	712155	307550	307551
400	857573	875259	774235	772520
450	—	—	—	—
500	857607	707606	777623	307557
600	857616	712236	873319	307559
700	708825	712336	307561	—
800	704145	712342	307563	—
900	729507	773678	307564	—
1000	737436	—	307541	—
1200	—	—	—	—
1400	on request	on request	on request	on request
1600	on request	on request	on request	on request

## Collars - U

204



Dimensions and weights (Dimensions in mm)

DN	ød	Lu	e	Weight in kg <sup>1)</sup>	
				DIN 28 601 with screw-gland socket	DIN 28 602 with bolted-gland socket
40	67	155	7,0	7,0	—
50	78	155	7,0	8,5	—
65	93	155	7,0	11,0	—
80	109	160	7,0	8,1	—
100	130	160	7,2	9,7	14,5
125	156	165	7,5	12,5	—
150	183	165	7,8	15,2	24,8
200	235	170	8,4	23,2	30,0
250	288	175	9,0	31,3	37,5
300	340	180	9,6	38,5	51,0
350	393	185	10,2	49,5	65,0
400	445	190	10,8	63,2	73,5
450	498	195	11,4	87,0	97,0
500	550	200	12,0	123,1	122,1
600	655	210	13,2	—	167,4
700	760	220	14,4	—	216,0
800	865	230	15,6	—	256,7
900	970	240	16,8	—	313,0
1000	1075	250	18,0	—	421,2
1200	1285	270	20,4	—	558,0
1400	1488	340	22,8	—	840,0
1600	1694	360	25,2	—	1087,0

Operating pressures see page 194 <sup>1)</sup> without screw- or bolted-gland rings

**Novo** socket types see page 157

on request also with Standard socket and Universal pre-chamber



## Item numbers

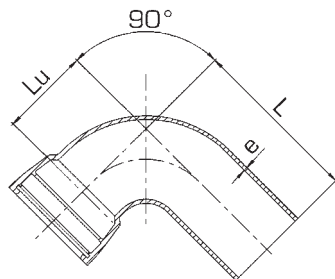
DN	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with screw- gland socket Epoxy blue	Item no. with screw- gland socket etec enamel	Item no. with bolted- gland socket Epoxy blue	Item no. with bolted- gland socket etec enamel
	without connection		incl. screw-gland ring		incl. connection	
40	—	—	744260	308516	—	—
50	—	—	744263	308520	—	—
65	—	—	744265	308522	—	—
80	791942	567381	744269	308526	—	—
100	326052	567095	744278	308507	—	—
125	—	—	744287	308508	—	—
150	306465	864025	744294	308509	—	—
200	—	864194	744309	308511	—	—
250	—	—	744319	308513	—	—
300	—	—	744332	308514	—	—
350	—	—	744340	308515	—	—
400	—	—	744346	308517	754324	309591
450	—	—	—	—	—	—
500	—	—	744358	308521	754325	309592
600	—	—	—	—	754326	309593
700	—	—	—	—	754327	309594
800	—	—	—	—	754328	309595
900	on request	on request	on request	on request	on request	on request
1000	on request	on request	on request	on request	on request	on request
1200	on request	on request	on request	on request	on request	on request
1400	on request	on request	on request	on request	on request	on request
1600	on request	on request	on request	on request	on request	on request

# Single socket bends

## 90° – MQ

acc. to manufacturer's standard

206



Dimensions and weights (Dimensions in mm)

DN	L	Lu	e	Weight in kg <sup>≈ 1)</sup>		
				with screw-gland socket	with TYTON® socket	with bolted-gland socket
40	200	60,0	7,0	9,5	–	–
50	300	150,0	7,0	11,0	–	–
65	370	215,0	7,0	15,0	–	–
80	312	102,4	7,0	8,0	9,0	–
100	333	123,0	7,2	10,8	11,2	–
125	374	148,8	7,5	16,1	18,4	–
150	419	174,5	7,8	23,8	25,4	–
200	491	226,0	8,4	43,2	43,8	–
250	583	280,0	9,0	70,0	76,1	–
300	660	330,0	9,6	96,0	83,2	–
350	580	410,0	10,2	–	139,0	150,0
400	625	430,0	10,8	–	186,3	156,0
500	715	550,0	12,0	–	235,4	225,0
600	805	645,0	13,2	–	314,0	325,0
700	900	720,0	14,4	–	473,0	482,0
800	1080	800,0	15,6	–	644,5	651,0

Operating pressures see page 194 <sup>1)</sup> without screw- or bolted-gland ring  
on request also with Standard socket and Universal pre-chamber

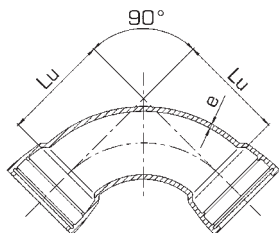


## Item numbers

DN	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
40	–	–	–	–
50	–	–	–	–
65	–	–	–	–
80	705124	308388	875325	308390
100	705125	707059	875326	308371
125	705126	707060	705553	308374
150	705127	724708	875327	308377
200	705128	724712	874479	308380
250	705129	308381	739401	308383
300	705130	783075	723244	308386
350	–	–	–	–
400	–	–	–	–
500	–	–	–	–
600	–	–	–	–
700	–	–	–	–
800	–	–	–	–

## Double socket bends 90° – MMQ

208



Dimensions and weights (Dimensions in mm)

DN	Lu	e	Weight in kg <sup>1)</sup>		
			with screw-gland socket	with TYTON® socket	with bolted-gland socket
40*	60,0	7,0	8,0	–	–
50*	150,0	7,0	10,5	–	–
65*	85,0	7,0	14,0	–	–
80	100,0	7,0	8,6	8,5	–
100	125,0	7,2	10,5	11,0	–
125	150,0	7,5	15,1	16,2	–
150	175,0	7,8	19,2	20,5	–
200	225,0	8,4	31,3	32,4	–
250	280,0	9,0	54,0	52,9	–
300	330,0	9,6	69,8	72,4	–
350*	410,0	10,2	–	104,8	–
400*	430,0	10,8	–	128,0	–
450*	457,0	11,4	–	208,0	187,0
500*	550,0	12,0	–	214,4	262,0
600*	645,0	13,2	–	314,3	357,0
700*	720,0	14,4	–	480,0	198,0
800*	820,0	15,6	–	650,0	662,0
900*	950,0	16,8	–	869,0	–
1000*	1050,0	18,0	–	1060,0	–
1200*	1205,0	20,4	–	1600,0	–

<sup>1)</sup> without screw- or bolted-gland rings \* acc. to manufacturer's standard

Operating pressures see page 194; on request also with Standard socket and Universal pre-chamber





## Item numbers

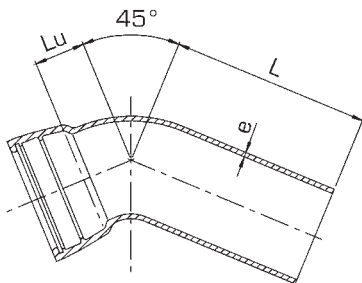
DN	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
40	—	—	—	—
50	—	—	—	—
65	—	—	—	—
80	865324	308306	875320	758285
100	863545	701698	863555	758286
125	863564	701699	863762	758287
150	863771	874557	863785	758288
200	863802	719642	864717	758289
250	707189	724715	870487	308290
300	864788	778595	864809	308292
350	—	—	714188	308293
400	864846	786080	864861	308295
450	—	—	—	—
500	864896	308297	876708	308299
600	864922	308300	712291	308302
700	710096	308304	719182	308305
800	724135	308308	712916	308309
900	—	—	—	—
1000	—	—	—	—
1200	—	—	—	—

# Single socket bends

## 45° - MK 45

### acc. to manufacturer's standard

210



Dimensions and weights (Dimensions in mm)

DN	L	Lu	e	Weight in kg <sup>1)</sup>		
				with screw-gland socket	with <b>TYTON</b> ® socket	with bolted-gland socket
<b>40</b>	210	135	7,0	7,5	–	–
<b>50</b>	252	174	7,0	10,0	–	–
<b>65</b>	303	223	7,0	14,5	–	–
<b>80</b>	285	55	7,0	7,0	8,4	–
<b>100</b>	274	65	7,2	9,8	10,8	–
<b>125</b>	301	76	7,5	14,9	16,2	–
<b>150</b>	331	87	7,8	19,4	20,5	–
<b>200</b>	374	109	8,4	31,3	33,5	–
<b>250</b>	300	130	9,0	42,0	44,3	–
<b>300</b>	315	155	9,6	56,2	59,4	–
<b>350</b>	345	175	10,2	68,0	68,0	79,0
<b>400</b>	368	200	10,8	93,0	91,0	105,0
<b>450</b>	420	220	11,4	106,0	106,0	–
<b>500</b>	405	240	12,0	–	187,0	143,0
<b>600</b>	529	285	13,2	–	250,5	265,0
<b>700</b>	610	380	14,4	–	441,0	–
<b>800</b>	625	370	15,6	–	–	–

Operating pressures see page 194 <sup>1)</sup> without screw- or bolted-gland ring  
on request also with Standard socket and Universal pre-chamber

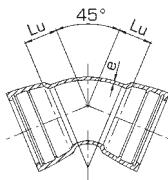


## Item numbers

DN	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
40	—	—	—	—
50	—	—	—	—
65	—	—	—	—
80	873482	307892	875350	307894
100	863149	723213	863177	301165
125	703302	707062	863683	307819
150	862929	707063	862943	754221
200	863071	723553	863091	307843
250	862270	719293	878349	307855
300	705131	764461	714610	799772
350	—	—	—	—
400	715857	777625	—	—
450	—	—	—	—
500	—	—	—	—
600	—	—	—	—
700	—	—	—	—
800	—	—	—	—

## Double socket bends 45° – MMK 45

212



Dimensions and weights (Dimensions in mm)

DN					Weight in kg <sup>1)</sup>			
	Lu TYTON® screw- gland socket	Lu bolted gland socket	Lu Standard socket	e	with screw- gland socket	with TYTON® socket	with bolted gland socket	with Standard socket
<b>40*</b>	138,0	138,0	–	7,0	8,0	–	–	–
<b>50*</b>	145,0	145,0	–	7,0	8,5	–	–	–
<b>65</b>	50,0	50,0	–	7,0	5,6	–	–	–
<b>80</b>	55,0	55,0	–	7,0	7,1	8,3	–	–
<b>100</b>	65,0	65,0	–	7,2	9,2	10,3	–	–
<b>125</b>	75,0	75,0	–	7,5	12,3	14,5	–	–
<b>150</b>	85,0	85,0	–	7,8	16,3	18,9	–	–
<b>200</b>	110,0	110,0	–	8,4	24,5	25,9	–	–
<b>250</b>	130,0	130,0	–	9,0	34,5	38,9	–	–
<b>300</b>	150,0	150,0	–	9,6	48,5	55,1	–	–
<b>350</b>	175,0	175,0	–	10,2	70,2	81,0	81,0*	81,0*
<b>400</b>	200,0	200,0	–	10,8	93,9	91,3	106,0*	106,0*
<b>450</b>	220,0	220,0	–	11,4	–	139,9	–	–
<b>500</b>	240,0	240,0	–	12,0	–	145,8	180,4	180,4
<b>600</b>	285,0	370,0	–	13,2	–	196,6	300,2	300,2
<b>700</b>	330,0	380,0	–	14,4	–	312,1	–	–
<b>800</b>	370,0	440,0	–	15,6	–	496,8	–	–
<b>900</b>	415,0	415,0	–	16,8	–	578,0	–	–
<b>1000</b>	460,0	460,0	–	18,0	–	768,0	–	–
<b>1200</b>	550,0	550,0	–	20,4	–	1100,0	–	–
<b>1400</b>	515,0	515,0	–	22,8	–	1572,0	–	–
<b>1600</b>	–	–	565,0	25,2	–	–	–	2096,0

Operating pressures see page 194

<sup>1)</sup> without screw- or bolted-gland rings \* acc. to manufacturer's standard



## Item numbers

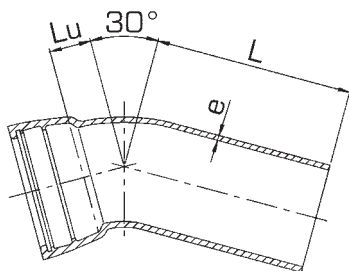
DN	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
40	—	—	—	—
50	—	—	—	—
65	—	—	—	—
80	862145	304727	875330	754081
100	862410	873904	862424	727229
125	862921	873909	862931	758283
150	863140	863137	863195	753884
200	863734	863732	863756	758284
250	864559	717360	864568	309579
300	864618	754037	873990	754283
350	—	—	706870	308231
400	873931	771728	864827	787265
450	—	—	712233	—
500	864965	777616	864979	308249
600	865036	308257	865042	308259
700	704395	308270	724988	308271
800	713461	308283	715214	308284
900	—	—	733686	—
1000	—	—	712237	—
1200	—	—	—	—
1400	—	—	—	—
1600	—	—	—	—

# Single socket bends

## 30° – MK 30

### acc. to manufacturer's standard

214



Dimensions and weights (Dimensions in mm)

DN	L	Lu	e	Weight in kg <sup>1)</sup>		
				with screw-gland socket	with <b>TYTON</b> <sup>®</sup> socket	with bolted-gland socket
<b>40</b>	201	126	7,0	7,5	–	–
<b>50</b>	243	165	7,0	10,0	–	–
<b>65</b>	298	218	7,0	14,5	–	–
<b>80</b>	253	44	7,0	7,4	7,4	–
<b>100</b>	260	50	7,2	10,1	10,8	–
<b>125</b>	283	57	7,5	14,0	15,1	–
<b>150</b>	309	65	7,8	18,6	20,0	–
<b>200</b>	345	80	8,4	29,2	30,8	–
<b>250</b>	270	95	9,0	36,7	38,9	–
<b>300</b>	280	110	9,6	48,0	52,9	–
<b>350</b>	295	125	10,2	57,0	56,0	64,0
<b>400</b>	308	140	10,8	71,0	76,5	80,0
<b>500</b>	335	170	12,0	–	107,0	120,0
<b>600</b>	412	200	13,2	–	178,0	185,0
<b>700</b>	480	250	14,4	–	286,0	–
<b>800</b>	510	260	15,6	–	350,0	–

Operating pressures see page 194 <sup>1)</sup> without screw- or bolted-gland ring  
on request also with Standard socket and Universal pre-chamber



## Item numbers

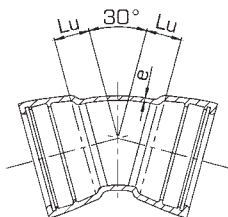
DN	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
40	–	–	–	–
50	–	–	–	–
65	–	–	–	–
80	862895	307889	875348	307891
100	863101	707064	863127	301163
125	705132	707065	863661	307816
150	862882	707066	875352	780642
200	863052	724711	875360	307840
250	863197	724714	863211	307852
300	705133	764462	703989	307864
350	–	–	–	–
400	–	–	–	–
500	–	–	–	–
600	–	–	–	–
700	–	–	–	–
800	–	–	–	–

# Double socket bends

## 30° – MMK 30

### acc. to DIN 28 650

216



Dimensions and weights (Dimensions in mm)

DN				Weight in kg <sup>1)</sup>		
	Lu TYTON® screw- gland socket	Lu bolted-gland socket	e	with screw-gland socket	with TYTON® socket	with bolted-gland socket
40*	103	103	7,0	8,0	–	–
50*	107	107	7,0	10,0	–	–
65*	113	113	7,0	13,0	–	–
80	45	45	7,0	6,8	7,8	–
100	50	50	7,2	9,7	9,9	–
125	55	55	7,5	11,6	14,3	–
150	65	65	7,8	15,7	18,4	–
200	80	80	8,4	23,8	23,8	–
250	95	95	9,0	31,3	34,6	–
300	110	110	9,6	45,9	52,4	–
350	125	125	10,2	63,7	74,5	74,0*
400	140	140	10,8	84,8	89,1	94,0*
450*	255	255	11,4	–	145,0	–
500	170	170	12,0	–	123,7	145,5
600	200	200	13,2	–	166,9	193,0
700	230	250	14,4	–	279,0	–
800	260	260	15,6	–	370,0	–
900	290	290	16,8	–	496,0	–
1000	320	320	18,0	–	652,0	–
1200	380	380	20,4	–	1020,0	–

<sup>1)</sup> without screw- or bolted-gland rings \* acc. to manufacturer's standard

Operating pressures see page 194; on request also with Standard socket and Universal pre-chamber





## Item numbers

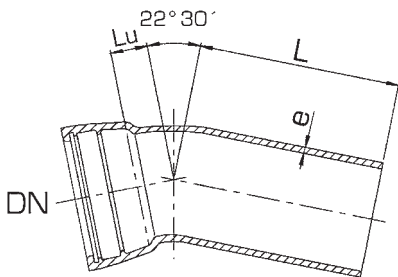
DN	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
40	—	—	—	—
50	—	—	—	—
65	—	—	—	—
80	861830	304726	875329	758280
100	862370	875341	862395	754053
125	862891	701697	862902	758281
150	863033	873916	863041	754286
200	863677	873928	863705	758282
250	864536	720810	864551	308217
300	864604	764458	870497	764390
350	—	—	864651	308229
400	709241	778755	864762	787264
450	—	—	—	—
500	864945	777617	864955	308247
600	709603	780704	865032	308256
700	710095	308268	740538	308269
800	713459	308281	727604	308282
900	—	—	—	—
1000	—	—	—	—
1200	—	—	—	—

# Single socket bends

## 22½° – MK 22

### acc. to manufacturer's standard

218



Dimensions and weights (Dimensions in mm)

DN	L	Lu	e	Weight in kg <sup>1)</sup>		
				with screw-gland socket	with <b>TYTON®</b> socket	with bolted-gland socket
<b>40</b>	179	142	7,0	7,5	–	–
<b>50</b>	240	162	7,0	10,0	–	–
<b>65</b>	232	152	7,0	12,0	–	–
<b>80</b>	248	38	7,0	7,0	8,1	–
<b>100</b>	253	43	7,2	9,2	9,7	–
<b>125</b>	274	49	7,5	13,5	15,1	–
<b>150</b>	299	55	7,8	17,3	18,4	–
<b>200</b>	331	66	8,4	27,0	29,2	–
<b>250</b>	260	75	9,0	36,0	37,8	–
<b>300</b>	265	90	9,6	47,5	50,2	–
<b>350</b>	270	100	10,2	53,0	52,0	60,0
<b>400</b>	278	110	10,8	65,0	76,7	74,0
<b>500</b>	300	135	12,0	–	97,0	110,0
<b>600</b>	357	155	13,2	–	163,0	185,0
<b>700</b>	420	190	14,4	–	336,0	–
<b>800</b>	455	205	15,6	–	460,0	–

Operating pressures see page 194 <sup>1)</sup> without screw- or bolted-gland rings  
on request also with Standard socket and Universal pre-chamber

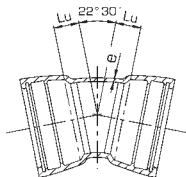


## Item numbers

DN	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
40	–	–	–	–
50	–	–	–	–
65	–	–	–	–
80	862876	307886	875347	307888
100	863012	707072	863023	301162
125	705109	707076	863630	307813
150	863750	707077	862862	307825
200	863024	724710	875358	307837
250	863165	720809	863184	307849
300	705110	764463	862333	307861
350	–	–	–	–
400	–	–	–	–
500	–	–	–	–
600	–	–	–	–
700	–	–	–	–
800	–	–	–	–

## Double socket bends 22½° - MMK 22

220



Dimensions and weights (Dimensions in mm)

DN					Weight in kg <sup>1)</sup>			
	Lu TYTON®- screw- gland socket	Lu bolted- gland socket	Lu Standard socket	e	with screw- gland socket	with TYTON® socket	with bolted- gland socket	with Standard socket
<b>40*</b>	87,0	87,0	–	7,0	7,5	–	–	–
<b>50*</b>	90,0	90,0	–	7,0	9,5	–	–	–
<b>65</b>	35,0	35,0	–	7,0	12,5	–	–	–
<b>80</b>	40,0	40,0	–	7,0	4,9	7,8	–	–
<b>100</b>	45,0	45,0	–	7,2	8,6	9,6	–	–
<b>125</b>	50,0	50,0	–	7,5	11,5	13,5	–	–
<b>150</b>	55,0	55,0	–	7,8	14,6	17,8	–	–
<b>200</b>	65,0	65,0	–	8,4	21,0	22,7	–	–
<b>250</b>	75,0	75,0	–	9,0	30,5	33,5	–	–
<b>300</b>	90,0	90,0	–	9,6	42,1	50,8	–	–
<b>350</b>	100,0	100,0	–	10,2	62,1	67,0	70,0*	–
<b>400</b>	110,0	110,0	–	10,8	74,5	83,2	88,0*	–
<b>450</b>	120,0	120,0	–	11,4	–	128,0	–	–
<b>500</b>	135,0	135,0	–	12,0	–	112,9	127,0	–
<b>600</b>	155,0	155,0	–	13,2	–	154,4	179,0	–
<b>700</b>	175,0	190,0	–	14,4	–	242,0	–	–
<b>800</b>	195,0	195,0	–	15,6	–	311,0	–	–
<b>900</b>	220,0	220,0	–	16,8	–	422,0	–	–
<b>1000</b>	240,0	240,0	–	18,0	–	593,0	–	–
<b>1200</b>	285,0	285,0	–	20,4	–	820,0	–	–
<b>1400</b>	260,0	–	–	22,8	–	1224,0	–	–
<b>1600</b>	–	–	280,0	25,2	–	–	–	1607,0

Operating pressures see page 194 <sup>1)</sup> without screw- or bolted-gland rings

\* acc. to manufacturer's standard



## Item numbers

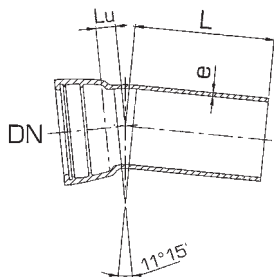
DN	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
40*	—	—	—	—
50*	—	—	—	—
65	—	—	—	—
80	861790	308273	861817	758271
100	862251	700739	862355	754285
125	862459	873908	862873	758272
150	862996	873913	863016	758273
200	863625	873924	863654	758274
250	864521	717361	873986	308215
300	878381	764459	875335	764389
350	—	—	864645	308227
400	873930	778753	875337	787263
450	—	—	—	—
500	864914	777618	864925	308245
600	865014	780705	865025	308254
700	717614	308266	724987	308267
800	709575	308279	715349	308280
900	—	—	—	—
1000	—	—	—	—
1200	—	—	—	—
1400	—	—	—	—
1600	—	—	—	—

# Single socket bends

## 11¼° – MK 11

### acc. to manufacturer's standard

222



Dimensions and weights (Dimensions in mm)

DN	L	Lu	e	Weight in kg <sup>1)</sup>		
				with screw-gland socket	with <b>TYTON</b> ® socket	with bolted-gland socket
<b>40</b>	175	83	7,0	6,5	–	–
<b>50</b>	171	131	7,0	8,5	–	–
<b>65</b>	187	67	7,0	11,5	–	–
<b>80</b>	240	30	7,0	7,1	7,6	–
<b>100</b>	243	33	7,2	9,2	9,8	–
<b>125</b>	261	36	7,5	12,4	14,0	–
<b>150</b>	284	40	7,8	16,7	18,0	–
<b>200</b>	311	46	8,4	24,8	27,0	–
<b>250</b>	255	50	9,0	33,5	37,8	–
<b>300</b>	260	60	9,6	44,0	47,0	–
<b>350</b>	235	65	10,2	47,0	46,0	54,0
<b>400</b>	238	70	10,8	56,0	66,9	65,0
<b>500</b>	250	85	12,0	–	83,2	95,0
<b>600</b>	287	95	13,2	–	163,0	185,0
<b>700</b>	340	110	14,4	–	249,0	258,0
<b>800</b>	375	125	15,6	–	286,0	292,0

Operating pressures see page 194 <sup>1)</sup> without screw- or bolted-gland ring  
on request also with Standard socket and Universal pre-chamber

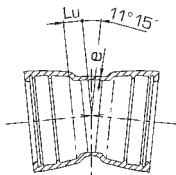


## Item numbers

DN	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
40	–	–	–	–
50	–	–	–	–
65	–	–	–	–
80	862363	722066	875345	304202
100	862975	707078	862985	304203
125	705111	707081	863598	307810
150	863717	707082	863736	304204
200	862979	874007	875356	307834
250	863122	724713	702881	307846
300	705112	764464	862317	307858
350	–	–	–	–
400	–	–	–	–
500	–	–	–	–
600	–	–	–	–
700	–	–	–	–
800	–	–	–	–

# Double socket bends $11\frac{1}{4}^\circ$ – MMK 11

224



Dimensions and weights (Dimensions in mm)

DN					Weight in kg <sup>1)</sup>			
	Lu TYTON® screw- gland socket	Lu bolted- gland socket	Lu Standard socket	e	with screw- gland socket	with TYTON® socket	with bolted- gland socket	with Standard socket
<b>40*</b>	63,0	63,0	–	7,0	7,0			
<b>50*</b>	65,0	65,0	–	7,0	9,0			
<b>65</b>	25,0	25,0	–	7,0	11,5			
<b>80</b>	30,0	30,0	–	7,0	6,5	7,6	–	–
<b>100</b>	35,0	35,0	–	7,2	8,1	8,6	–	–
<b>125</b>	35,0	35,0	–	7,5	10,6	13,0	–	–
<b>150</b>	40,0	40,0	–	7,8	13,4	16,7	–	–
<b>200</b>	45,0	45,0	–	8,4	20,5	21,1	–	–
<b>250</b>	50,0	50,0	–	9,0	28,1	30,2	–	–
<b>300</b>	60,0	60,0	–	9,6	38,3	45,4	–	–
<b>350</b>	65,0	65,0	–	10,2	49,7	62,1	64,0*	–
<b>400</b>	70,0	70,0	–	10,8	67,5	73,4	79,0*	–
<b>450</b>	70,0	70,0	–	11,4	–	92,5	–	–
<b>500</b>	85,0	85,0	–	12,0	–	86,4	120,5	–
<b>600</b>	95,0	95,0	–	13,2	–	125,3	158,0	–
<b>700</b>	95,0	110,0	–	14,4	–	201,0	164,0	–
<b>800</b>	110,0	110,0	–	15,6	–	294,3	283,0	–
<b>900</b>	120,0	120,0	–	16,8	–	350,0	–	–
<b>1000</b>	130,0	130,0	–	18,0	–	506,0	–	–
<b>1200</b>	150,0	150,0	–	20,4	–	650,0	–	–
<b>1400</b>	160,0	–	–	22,8	–	1078,0	–	–
<b>1600</b>	–	–	175,0	25,2	–	–	–	1416,0

Operating pressures see page 194 <sup>1)</sup> without screw- or bolted-gland rings

\* acc. to manufacturer's standard



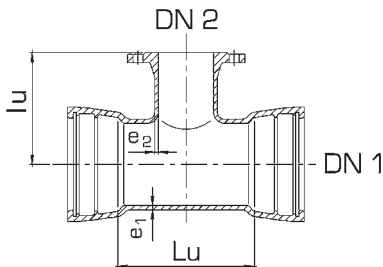


## Item numbers

DN	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
40	—	—	—	—
50	—	—	—	—
65	—	—	—	—
80	861744	304725	861776	758267
100	862191	875339	862223	754083
125	862441	875344	873859	758268
150	862962	862959	862974	754223
200	863582	717359	863607	758270
250	863783	717362	875332	308213
300	878390	764460	873989	764388
350	—	—	710164	308225
400	709242	778756	864669	787262
450	—	—	—	—
500	878948	777619	864890	308243
600	864997	308250	865005	308252
700	710093	308264	724986	308265
800	709354	308277	715348	308278
900	—	—	—	—
1000	—	—	—	—
1200	—	—	—	—
1400	—	—	—	—
1600	—	—	—	—

## Double socket tees with flanged branch – MMA

226



Dimensions and weights (Dimensions in mm)

DN 1	DN 2	Lu	lu	e <sub>1</sub>	e <sub>2</sub>	Weight in kg <sup>1)</sup>		
						with screw-gland socket	with bolted-gland socket	with TYTON® socket
<b>40*</b>	40	155	140	7,0	7,0	10,5	–	–
<b>50*</b>	50	170	150	7,0	7,0	13,5	–	–
<b>65*</b>	40	190	165	7,0	7,0	16,0	–	–
<b>80</b>	40*	170	155	7,0	7,0	11,8	–	13,0
	50*	170	160		7,0	13,0	–	13,0
	65*	170	160		7,0	12,5	–	13,5
	80	170	165		7,0	15,1	–	14,0
<b>100</b>	40*	190	170	7,2	7,0	13,0	–	14,9
	50*	190	170		7,0	14,0	–	15,7
	65*	190	175		7,0	15,0	–	16,9
	80*	190	175		7,0	16,2	–	17,5
	100	190	180		7,2	17,4	–	18,6
<b>125</b>	40*	195	185	7,5	7,0	17,3	–	19,4
	50*	195	185		7,0	17,5	–	20,0
	80*	195	190		7,0	18,9	–	21,6
	100	195	195		7,2	20,5	–	22,7
		225	200		7,5	22,1	–	24,3

<sup>1)</sup> without screw- or bolted-gland ring \* acc. to manufacturer's standard

Operating pressures see page 194; on request also with Standard socket and Universal pre-chamber



## Item numbers

DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etc enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etc enamel
<b>40*</b>	40	743532	307971	—	—
<b>50*</b>	50	743536	307990	—	—
<b>65*</b>	65	743539	308038	—	—
<b>80</b>	40*	753654	309347	701383	308055
	50*	721264	309348	720059	308057
	65*				
	80	704091	726324	876315	761503
<b>100</b>	40*	704405	741250	876025	790023
	50*	721265	307897	860149	307899
	65*	—	—	711084	307902
	80*	860171	727038	860204	754287
	100	860220	709681	860257	758259
<b>125</b>	40*	721267	705047	877495	307910
	50*	721311	705049	876140	307912
	80*	860295	798333	860305	307914
	100	704092	705046	875677	307905
	125	704093	307906	701682	307908



## Double socket tees with flanged branch – MMA

228

DN 1	DN 2					Weight in kg <sup>≈ 1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	with bolted-gland socket	with TYTON® socket
<b>150</b>	40*	195	195	7,8	7,0	21,6	–	23,8
	50*	195	200		7,0	22,7	–	24,3
	80*	195	205		7,0	23,8	–	25,9
	100	195	210		7,2	24,8	–	27,0
	125*	255	220		7,5	28,0	–	31,3
	150	255	220		7,8	30,8	–	32,9
<b>200</b>	40*	200	230	8,4	7,0	27,8	–	30,8
	50*	200	230		7,0	30,0	–	31,3
	80*	200	235		7,0	31,3	–	32,9
	100	200	240		7,2	32,4	–	34,0
	125*	255	250		7,5	37,0	–	41,0
	150	255	250		7,8	38,9	–	43,2
	200/10	315	260		8,4	46,4	–	49,7
	200/16	315	260		8,4	46,4	–	49,7
<b>250</b>	40*	200	265	9,0	7,0	36,0	–	45,4
	80*	200	265		7,0	40,0	–	48,0
	100	200	270		7,2	42,0	–	48,1
	150	260	280		7,8	52,4	–	56,2
	200/10	315	290		8,4	53,5	–	60,5
	200/16	315	290		8,4	53,5	–	60,5
	250/10	375	300		9,0	62,5	–	75,6
	250/16	375	300		9,0	62,5	–	75,6
<b>300</b>	80*	205	295	9,6	7,0	51,8	–	58,9
	100	205	300		7,2	52,9	–	60,5
	150	260	310		7,8	65,9	–	70,7
	200/10	320	320		8,4	72,4	–	70,0
	200/16	320	320		8,4	72,4	–	70,0
	250/10	430	330		9,0	89,0	–	91,8
	250/16	430	330		9,0	89,0	–	91,8
	300/10	435	340		9,6	90,7	–	95,6
	300/16	435	340		9,6	90,7	–	95,6

<sup>1)</sup> without screw- or bolted-gland ring \* acc. to manufacturer's standard  
Operating pressures see page 194; on request also with Standard socket and Universal pre-chamber



DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etc enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etc enamel
<b>150</b>	40*	721312	705052	877728	790021
	50*	721313	876410	860450	307923
	80*	860464	703022	860477	758262
	100	860485	705050	860498	758263
	125*	721314	307916	731867	307918
	150	705736	307919	860532	739328
<b>200</b>	40*	717055	741251	870501	790022
	50*	742342	781000	721068	307935
	80*	860571	727037	860585	758264
	100	860592	738573	860607	758265
	125*	326917	on request	—	—
	150	861007	307928	878651	758266
	200/10	705737	783729	701394	307931
	200/16	706877	790417	712228	307932
<b>250</b>	40*	—	—	—	—
	80*	861059	307952	874016	304977
	100	879607	307937	861087	307939
	150	861096	307942	875380	307944
	200/10	866195	307945	701695	307947
	200/16	749663	on request	701684	on request
	250/10	742343	792729	703139	307949
	250/16	737140	on request	720173	on request
<b>300</b>	80*	878389	784510	874018	778393
	100	861150	777537	861168	781151
	150	861174	769806	875383	307957
	200/10	866304	792731	876278	799064
	200/16	702691	307958	874019	on request
	250/10	742344	307960	722444	307961
	250/16	716515	786574	720851	on request
	300/10	742345	307962	879021	307964
	300/16	702692	on request	875384	307965



## Double socket tees with flanged branch – MMA

230

DN 1	DN 2					Weight in kg <sup>1)</sup>				
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	with bolted-gland socket	with <b>TYTON</b> <sup>®</sup> socket		
<b>350</b>	80*	205	325	10,2	7,0	63,0	–	73,4		
	100	205	330		7,2	62,0	–	73,4		
	150*	325	340		7,8	82,0	–	89,1		
	200/10	325	350		8,4	89,5	–	97,2		
	200/16	325	350		8,4	89,5	–	97,2		
	250/10	495	360		9,0	101,0	–	98,0		
	250/16	495	360		9,0	101,0	–	98,0		
	300/10	495	370		9,6	114,0	–	114,0		
	300/16	495	370		9,6	114,0	–	114,0		
	350/10	495	380		10,2	122,0	–	125,0		
	350/16	495	380		10,2	122,0	–	125,0		
	<b>400</b>	80*	210		355	10,8	7,0	79,9	–	92,9
		100	210		360		7,2	81,0	–	94,0
150		270	370	7,8	93,4		–	105,8		
200/10		325	380	8,4	109,0		–	113,9		
200/16		325	380	8,4	109,0		–	113,9		
250/10		440	390	9,0	118,5		–	115,0		
250/16		440	390	9,0	118,5		–	115,0		
300/10		440	400	9,6	125,5		–	132,3		
300/16		440	400	9,6	125,5		–	132,3		
350/10		560	415	10,2	150,0		–	150,0		
350/16		560	415	10,2	150,0		–	150,0		
400/10		560	420	10,8	172,0		–	177,0		
400/16		560	420	10,8	172,0		–	177,0		

<sup>1)</sup> without screw- or bolted-gland ring \* acc. to manufacturer's standard  
Operating pressures see page 194; on request also with Standard socket and Universal pre-chamber



DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
350	80*	—	—	711067	on request
	100	—	—	712545	307968
	150*	—	—	733721	on request
	200/10	—	—	709986	307969
	200/16	—	—	778361	on request
	250/10	—	—	—	—
	250/16	—	—	—	—
	300/10	—	—	—	—
	300/16	—	—	—	—
	350/10	—	—	741993	307970
	350/16	—	—	733715	on request
400	80*	709765	784509	709764	307988
	100	709240	307972	878360	307974
	150	740032	790399	878361	307976
	200/10	744392	790400	877615	307980
	200/16	709763	307977	709762	on request
	250/10	—	—	736133	on request
	250/16	—	—	—	—
	300/10	742346	307982	728482	307983
	300/16	725723	on request	733711	on request
	350/10	—	—	—	—
	350/16	—	—	—	—
	400/10	708231	307984	711040	307986
	400/16	725726	307985	725984	on request

## Double socket tees with flanged branch – MMA

232

DN 1	DN 2					Weight in kg $\approx$ <sup>1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	with bolted-gland socket	with <b>TYTON</b> <sup>®</sup> socket
<b>450*</b>	80	215	390	11,4	7,0	–	–	110,0
	100	215	390		7,2	–	–	110,0
	150	270	400		7,8	–	–	128,0
	200/10	300	410		8,4	–	–	132,0
	200/16	300	410		8,4	–	–	132,0
	250/10	450	420		9,0	–	–	145,5
	250/16	450	420		9,0	–	–	145,5
	300/10	450	430		9,6	–	–	161,5
	300/16	450	430		9,6	–	–	161,5
	350/10	560	450		10,2	–	–	226,0
	350/16	560	450		10,2	–	–	226,0
	400/10	560	450		10,8	–	–	236,0
	400/16	560	450		10,8	–	–	236,0
	450/10	620	460		11,4	–	–	267,0
	450/16	620	460		11,4	–	–	267,0
<b>500</b>	80*	215	415	12,0	7,0	–	110,7	103,0
	100	215	420		7,2	–	110,7	104,0
	150	330	430		7,8	–	130,0	138,0
	200/10	330	440		8,4	–	140,4	140,0
	200/16	330	440		8,4	–	140,4	140,0
	300/10	450	460		9,6	–	174,4	156,0
	300/16	450	460		9,6	–	174,4	156,0
	400/10	565	480		10,8	–	220,0	193,0
	400/16	565	480		10,8	–	220,0	193,0
	500/10	680	500		12,0	–	244,0	236,0
	500/16	680	500		12,0	–	244,0	236,0

<sup>1)</sup> without screw- or bolted-gland ring \* acc. to manufacturer's standard

Operating pressures see page 194; on request also with Standard socket and Universal pre-chamber





DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
450*	80	—	—	—	—
	100	—	—	—	—
	150	—	—	—	—
	200/10	—	—	—	—
	200/16	—	—	—	—
	250/10	—	—	—	—
	250/16	—	—	—	—
	300/10	—	—	—	—
	300/16	—	—	—	—
	350/10	—	—	—	—
	350/16	—	—	—	—
	400/10	—	—	—	—
	400/16	—	—	—	—
	450/10	—	—	—	—
450/16	—	—	—	—	
500	80*	878957	308009	726835	308011
	100	878958	778757	703728	307992
	150	707614	307993	709868	307995
	200/10	710120	307996	712965	307999
	200/16	707619	307997	708320	on request
	300/10	732984	777621	705335	308001
	300/16	742349	on request	720526	on request
	400/10	742347	308002	714933	308004
	400/16	742350	on request	726008	on request
	500/10	742348	303996	704924	308007
	500/16	742351	308005	726005	308008



## Double socket tees with flanged branch – MMA

234

DN 1	DN 2					Weight in kg $\approx$ <sup>1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	with bolted-gland socket	with <b>TYTON®</b> socket
<b>600</b>	80*	340	475	13,2	7,0	—	182,5	169,0
	100*	340	470		7,2	—	183,6	170,0
	150*	340	480		7,8	—	189,0	174,0
	200/10	340	500		8,4	—	187,6	178,0
	200/16	340	500		8,4	—	187,6	178,0
	300/10	460	520		9,6	—	233,8	210,0
	300/16	460	520		9,6	—	233,8	210,0
	400/10	570	540		10,8	—	257,0	245,0
	400/16	570	540		10,8	—	257,0	245,0
	500/10	800	550		12,0	—	336,0	330,0
	500/16	800	550		12,0	—	336,0	330,0
	600/10	800	580		13,2	—	386,0	339,0
600/16	800	580	13,2	—	386,0	339,0		
<b>700</b>	80*	345	510	14,4	7,0	—	266,0	248,0
	100*	345	510		7,2	—	278,0	260,0
	150*	345	520		7,8	—	263,0	263,0
	200/10	345	525		8,4	—	262,0	266,0
	200/16	345	525		8,4	—	262,0	266,0
	250/10	575	535		9,0	—	287,0	269,0
	250/16	575	535		9,0	—	287,0	269,0
	300/10	575	540		9,6	—	381,0	340,0
	300/16	575	540		9,6	—	381,0	340,0
	350/10	575	555		10,2	—	279,0	261,0
	350/16	575	555		10,2	—	279,0	261,0
	400/10	575	555		10,8	—	392,0	374,0
	400/16	575	555		10,8	—	392,0	374,0
	500/10	925	570		12,0	—	482,0	464,0
	500/16	925	570		12,0	—	482,0	464,0
	600/10	925	585		13,2	—	523,0	505,0
	600/16	925	585		13,2	—	523,0	505,0
	700/10	925	600		14,4	—	563,0	545,0
700/16	925	600	14,4	—	563,0	545,0		

<sup>1)</sup> without screw- or bolted-gland ring \* acc. to manufacturer's standard

Operating pressures see page 194; on request also with Standard socket and Universal pre-chamber



235

DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
600	80*	on request	on request	on request	on request
	100*	721017	308012	712234	308014
	150*	718284	308015	728932	308017
	200/10	710236	308018	705809	308021
	200/16	742352	on request	715394	on request
	300/10	742359	308025	720935	308027
	300/16	742354	on request	733703	on request
	400/10	742360	308028	741994	308029
	400/16	742355	on request	715072	on request
	500/10	742361	308030	741995	308031
	500/16	742356	on request	on request	on request
	600/10	710887	308032	741998	308034
	600/16	742357	on request	715395	on request
	700	80*	—	—	—
100*		—	—	—	—
150*		724639	308039	712333	308040
200/10		744408	308041	729642	308042
200/16		on request	—	717690	on request
250/10		—	—	—	—
250/16		—	—	—	—
300/10		—	—	741999	308044
300/16		—	—	733699	on request
350/10		—	—	—	—
350/16		—	—	—	—
400/10		744409	308045	731443	308046
400/16		—	—	789869	on request
500/10		744410	308047	742000	308048
500/16		—	—	—	—
600/10		744411	308049	742001	308050
600/16		—	—	751933	on request
700/10		704397	308051	742002	308052
700/16		—	—	—	—

C

10b



## Double socket tees with flanged branch – MMA

236

DN 1	DN 2					Weight in kg $\approx$ <sup>1)</sup>			
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	with bolted-gland socket	with <b>TYTON</b> <sup>®</sup> socket	
<b>800</b>	80*	350	570	15,6	7,0	–	319,0	307,0	
	100*	350	570		7,2	–	339,9	324,0	
	150*	350	580		7,8	–	322,9	332,0	
	200/10	350	585		8,4	–	298,0	342,0	
	200/16	350	585		8,4	–	298,0	342,0	
	250/10	580	590		9,0	–	433,0	415,0	
	250/16	580	590		9,0	–	433,0	415,0	
	300/10	580	600		9,6	–	408,2	431,0	
	300/16	580	600		9,6	–	408,2	431,0	
	350/10	580	615		10,2	–	435,0	423,0	
	350/16	580	615		10,2	–	435,0	423,0	
	400/10	580	615		10,8	–	430,0	437,0	
	400/16	580	615		10,8	–	430,0	437,0	
	500/10	1045	630		12,0	–	686,0	628,0	
	500/16	1045	630		12,0	–	686,0	628,0	
	600/10	1045	645		13,2	–	686,0	640,0	
	600/16	1045	645		13,2	–	686,0	640,0	
800/10	1045	675	15,6	–	755,0	743,0			
800/16	1045	675	15,6	–	755,0	743,0			
<b>900</b>	80*	355	630	16,8	7,0	–	–	400,0	
	100*		635		7,2	–	–	470,0	
	150*		640		7,8	–	–	472,0	
	200		645		8,4	–	–	540,0	
	250*		645		9,0	–	–	–	
	300*	590	660		9,6	–	–	561,0	
	400		675		10,8	–	–	572,0	
	600		1170		705	13,2	–	–	820,0
	700*				720	14,4	–	–	868,0
	900				750	16,8	–	–	898,0

<sup>1)</sup> without screw- or bolted-gland ring \* acc. to manufacturer's standard

Operating pressures see page 194; on request also with Standard socket and Universal pre-chamber



DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etc enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etc enamel
800	80*	—	—	—	—
	100*	—	—	—	—
	150*	—	—	on request	—
	200/10	709932	on request	709929	308059
	200/16	on request	—	715396	on request
	250/10	—	—	—	—
	250/16	—	—	—	—
	300/10	771667	on request	742003	308060
	300/16	on request	—	739888	on request
	350/10	—	—	—	—
	350/16	—	—	—	—
	400/10	326299	on request	742004	308061
	400/16	—	—	715397	on request
	500/10	—	—	742005	308062
	500/16	—	—	733757	on request
	600/10	—	—	742006	308063
	600/16	—	—	740466	on request
800/10	—	—	742008	308065	
800/16	—	—	715398	on request	
900	80*	on request	on request	on request	on request
	100*	on request	on request	on request	on request
	150*	on request	on request	on request	on request
	200	on request	on request	on request	on request
	250*	on request	on request	on request	on request
	300*	on request	on request	on request	on request
	400	on request	on request	on request	on request
	600	on request	on request	on request	on request
	700*	on request	on request	on request	on request
	900	on request	on request	on request	on request

## Double socket tees with flanged branch – MMA

DN 1	DN 2					Weight in kg <sup>≈ 1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	with bolted-gland socket	with TYTON® socket
<b>1000</b>	150*	360	700	18,0	7,8	–	–	650,0
	200	360	705		8,4	–	–	561,0
	250*	380	710		9,0	–	–	691,0
	300*	595	720		9,6	–	–	625,0
	400	595	735		10,8	–	–	644,0
	600	1290	765		13,2	–	–	1162,0
	800*	1290	825		15,6	–	–	1018,0
	1000	1290	825		18,0	–	–	1248,0
<b>1200</b>	200*	840	835	20,4	8,4	–	–	949,0
	400*	840	835		10,8	–	–	960,0
	500*	840	850		12,0	–	–	969,0
	600	840	885		13,2	–	–	985,0
	700*	1070	900		14,4	–	–	1135,0
	800	1070	915		15,6	–	–	1160,0
	900*	1300	930		16,8	–	–	1296,0
	1000	1300	945		18,0	–	–	1428,0
<b>1400</b>	600	1030	980	22,8	13,2	–	–	1655,0
	800	1260	1010		15,6	–	–	1850,0
	1000	1495	1040		18,0	–	–	2100,0
<b>1600</b>	600	1040	1090	25,2	13,2	2130,0	–	–
	800	1275	1120		15,6	2359,0	–	–
	1000	1505	1150		18,0	2643,0	–	–
	1200	1740	1180		20,4	2938,0	–	–

<sup>1)</sup> without screw- or bolted-gland ring \* acc. to manufacturer's standard

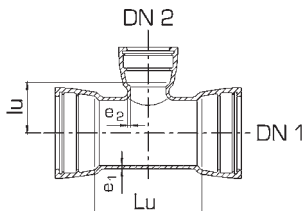
Operating pressures see page 194; on request also with Standard socket and Universal pre-chamber



DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
<b>1000</b>	150*	on request	on request	on request	on request
	200	on request	on request	on request	on request
	250*	on request	on request	on request	on request
	300*	on request	on request	on request	on request
	400	on request	on request	on request	on request
	600	on request	on request	on request	on request
	800*	on request	on request	on request	on request
1000	on request	on request	on request	on request	on request
<b>1200</b>	200*	on request	on request	on request	on request
	400*	on request	on request	on request	on request
	500*	on request	on request	on request	on request
	600	on request	on request	on request	on request
	700*	on request	on request	on request	on request
	800	on request	on request	on request	on request
	900*	on request	on request	on request	on request
1000	on request	on request	on request	on request	on request
<b>1400</b>	600	on request	on request	on request	on request
	800	on request	on request	on request	on request
	1000	on request	on request	on request	on request
<b>1600</b>	600	on request	on request	on request	on request
	800	on request	on request	on request	on request
	1000	on request	on request	on request	on request
	1200	on request	on request	on request	on request

## All socket tees – MMB

240



Dimensions and weights (Dimensions in mm)

DN 1	DN 2					Weight in kg <sup>≈ 1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	with TYTON® socket	with Standard socket
<b>40*</b>	40	156	78	7,0	7,0	11,0	—	—
<b>50*</b>	40	170	83	7,0	7,0	12,5	—	—
	50*	170	85		7,0	13,5	—	—
<b>65*</b>	40	190	90	7,0	7,0	16,0	—	—
	50	190	92		7,0	17,0	—	—
	65*	190	95		7,0	18,0	—	—
<b>80</b>	40*	170	80	7,0	7,0	10,1	10,8	—
	50*	170	80			10,5	11,9	—
	65*	170	80			11,0	—	—
	80	170	85	7,0	7,0	13,0	14,0	—
<b>100</b>	40*	190	90	7,2	7,0	11,7	14,0	—
	50*	190	90		7,0	12,5	15,1	—
	65*	190	90		7,0	13,0	13,0	—
	80*	190	95		7,0	14,6	15,1	—
	100	190	95		7,2	14,9	17,0	—
<b>125</b>	40*	195	100	7,5	7,0	16,2	18,4	—
	50*	195	105		7,0	16,5	18,5	—
	80*	195	105		7,0	16,6	20,5	—
	100	195	110		7,2	18,1	21,6	—
	125	225	110		7,5	19,4	23,2	—

Operating pressures see page 194 <sup>1)</sup> without screw rings \* acc. to manufacturer's standard on request also with Standard socket and Universal pre-chamber





## Item numbers

DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
40*	40	—	—	—	—
50*	40	—	—	—	—
	50*	—	—	—	—
65*	40	—	—	—	—
	50	—	—	—	—
	65*	—	—	—	—
80	40*	—	—	741763	308188
	50*	—	—	—	—
	65*	—	—	—	—
	80	861128	726326	701674	308191
100	40*	—	—	722872	306068
	50*	—	—	741764	308070
	65*	—	—	—	—
	80*	861154	714766	875388	754057
	100	861175	722569	861248	785384
125	40*	—	—	741765	308077
	50*	on request	788918	741766	308079
	80*	704094	308080	701675	308082
	100	704095	707116	701676	308073
	125	703303	705054	701677	308075



## All socket tees – MMB

242

DN 1	DN 2					Weight in kg $\approx$ <sup>1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	with TYTON® socket	with Standard socket
<b>150</b>	40*	195	115	7,8	7,0	19,4	22,7	–
	50*	195	115		7,0	20,0	22,5	–
	80*	195	120		7,0	22,7	24,8	–
	100	195	120		7,2	22,7	25,4	–
	125*	255	125		7,5	25,0	30,2	–
	150	255	125		7,8	27,0	30,8	–
<b>200</b>	40*	200	140	8,4	7,0	25,5	30,2	–
	50*	200	140		7,0	26,5	31,3	–
	65	200	140		7,0	28,0	28,0	–
	80	200	145		8,1	30,8	38,4	–
	100	200	145		8,4	31,9	31,9	–
	125*	255	145		8,8	35,0	37,8	–
	150	255	150		9,1	37,8	42,1	–
	200	315	155		9,8	40,0	45,9	–
<b>250*</b>	80	200	170	9,0	7,0	38,0	45,4	–
	100	200	175		7,2	38,9	46,4	–
	125	200	175		7,5	43,0	46,4	–
	150	260	180		7,8	44,5	51,8	–
	200	315	185		8,4	51,5	56,2	–
	250	375	190		9,0	61,0	65,9	–
<b>300*</b>	50	205	195	9,6	7,0	44,0	44,0	–
	65	205	195		7,0	44,5	44,5	–
	80	205	195		7,0	50,0	56,7	–
	100	205	200		7,2	47,0	58,3	–
	125	205	200		7,5	55,0	58,4	–
	150	320	200		7,8	59,4	62,4	–
	200	320	205		8,4	61,0	66,4	–
	250	430	210		9,0	74,0	82,1	–
	300	430	215		9,6	81,0	92,1	–

Operating pressures see page 194 <sup>1)</sup> without screw rings \* acc. to manufacturer's standard on request also with Standard socket and Universal pre-chamber



DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etc enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etc enamel
<b>150</b>	40*	—	—	722874	308090
	50*	—	—	—	—
	80*	—	—	701678	308094
	100	—	—	861347	308084
	125*	—	—	875390	308086
	150	—	—	875328	308088
<b>200</b>	40*	—	—	—	—
	50*	—	—	741768	308106
	65	—	—	—	—
	80	742233	861468	701679	308108
	100	861476	873763	875340	308096
	125*	704386	705058	701680	308098
	150	711115	719634	875346	308100
	200	707192	719347	875160	308102
<b>250*</b>	80	742232	308120	701681	308122
	100	742362	308109	875349	308111
	125	712852	719294	877743	on request
	150	742231	722162	875354	308115
	200	742230	305113	875357	308117
	250	711111	720808	876985	308119
	<b>300*</b>	50	—	—	—
65		—	—	—	—
80		719239	767010	719673	308138
100		742363	776875	875363	308124
125		on request	769204	874564	on request
150		719241	776876	875366	308128
200		717703	767011	875368	308130
250		742364	308131	879651	308133
300		719242	308134	875369	308136



## All socket tees – MMB

244

DN 1	DN 2					Weight in kg $\approx$ <sup>1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	with TYTON® socket	with Standard socket
<b>350*</b>	80	205	220	10,2	7,0	74,0	74,0	–
	100	205	220		7,2	79,0	79,0	–
	200	325	240		8,4	91,0	88,0	–
	250	495	245		10,5	103,0	118,8	–
	300	495	250		9,6	115,0	126,4	–
	350	495	260		10,2	128,0	125,0	–
<b>400*</b>	80	210	245	10,8	7,0	83,5	95,5	–
	100	210	245		7,2	86,5	93,4	–
	150	270	250		7,8	94,0	94,0	–
	200	440	260		8,4	100,0	111,8	–
	250	440	265		9,0	108,0	118,8	–
	300	440	270		9,6	122,0	123,7	–
	400	560	285		10,8	145,0	175,5	–
<b>450*</b>	80	215	270	11,4	7,0	–	110,0	–
	100	215	270		7,2	–	110,0	–
	150	330	280		7,8	–	128,0	–
	200	330	280		8,4	–	146,5	–
	250	450	290		9,0	–	155,0	–
	300	450	290		9,6	–	162,5	–
	350	560	305		10,2	–	174,0	–
	400	560	320		10,8	–	180,0	–
	450	620	380		11,4	–	185,0	–
<b>500*</b>	80	215	295	12,0	7,0	–	128,0	–
	100	215	295		7,2	–	131,0	–
	125	215	295		7,5	–	134,0	–
	150	330	305		7,8	–	136,0	–
	200	330	305		8,4	–	145,0	–
	250	450	315		9,0	–	155,0	–
	300	450	320		9,6	–	170,0	–
	350	565	330		10,2	–	183,0	–
	400	565	335		10,8	–	195,0	–
	500	680	350		12,0	–	233,3	–

Operating pressures see page 194 <sup>1)</sup> without screw rings \* acc. to manufacturer's standard on request also with Standard socket and Universal pre-chamber



245

DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
<b>350*</b>	80	—	—	757960	on request
	100	—	—	741769	308139
	200	—	—	741778	308142
	250	—	—	741779	308143
	300	—	—	741780	308145
	350	—	—	741781	308146
<b>400*</b>	80	763683	—	774369	—
	100	738039	308148	712978	308149
	150	720866	771732	741782	308150
	200	738114	308151	712349	308153
	250	737496	308154	741783	308155
	300	742365	308156	710900	308157
	400	720867	308158	710899	308159
<b>450*</b>	80	—	—	—	—
	100	—	—	—	—
	150	—	—	—	—
	200	—	—	—	—
	250	—	—	—	—
	300	—	—	—	—
	350	—	—	—	—
	400	—	—	—	—
	450	—	—	—	—
<b>500*</b>	80	318776	on request	757248	—
	100	742366	308162	733059	308163
	125	—	—	—	—
	150	792697	308164	755690	—
	200	701271	308165	741784	308166
	250	on request	on request	764609	—
	300	719685	308167	721210	308168
	350	on request	on request	764609	on request
	400	742367	308169	741785	308170
	500	701272	308171	729900	308172

C

10b



## All socket tees – MMB

246

DN 1	DN 2					Weight in kg <sup>≈ 1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	with TYTON® socket	with Standard socket
<b>600*</b>	125	340	345	13,2	7,5	–	189,0	–
	150	340	345		7,8	–	197,0	–
	200	340	365		8,4	–	205,0	–
	250	460	365		9,0	–	222,0	–
	300	460	365		9,6	–	231,0	–
	350	570	375		10,2	–	236,0	–
	400	570	380		10,8	–	245,0	–
	500	800	390		12,0	–	325,0	–
600	800	400		13,2	–	340,0	–	
<b>700*</b>	150	345	395	14,4	7,8	–	253,0	–
	200	345	400		8,4	–	264,0	–
	250	575	410		9,0	–	275,0	–
	300	575	415		9,6	–	370,0	–
	400	575	425		10,8	–	355,0	–
	500	925	435		12,0	–	445,0	–
	600	925	430		13,2	–	545,0	–
	700	925	455		14,4	–	497,0	–
<b>800*</b>	125	350	475	15,6	7,5	–	408,0	–
	300	580	470		9,6	–	490,0	–
	400	580	480		10,8	–	520,0	–
	500	1045	490		12,0	–	528,0	–
	600	1045	500		13,2	–	760,0	–
	700	1045	510		14,4	–	805,0	–
	800	1045	510		15,6	–	820,0	–
<b>900*</b>	500	1170	535	16,8	12,0	–	500,0	–
	600	1170	540		13,2	–	525,0	–
	900	1170	610		16,8	–	850,0	–

Operating pressures see page 194 <sup>1)</sup> without screw rings \* acc. to manufacturer's standard on request also with Standard socket and Universal pre-chamber



DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
<b>600*</b>	125	—	—	—	—
	150	on request	on request	751620	on request
	200	on request	on request	757586	on request
	250	on request	on request	305788	on request
	300	on request	on request	774614	on request
	350	—	—	—	—
	400	—	—	—	—
	500	on request	on request	787863	on request
600	715732	308175	741786	308176	
<b>700*</b>	150	on request	308177	—	—
	200	on request	308178	—	—
	250	744412	308179	741787	308180
	300	744413	308181	741788	308182
	400	744414	308183	741789	308184
	500	—	—	—	—
	600	—	—	—	—
	700	744415	308185	705563	308186
<b>800*</b>	125	on request	on request	—	—
	300	on request	on request	741791	308192
	400	on request	on request	741792	309193
	500	on request	on request	—	—
	600	on request	on request	—	—
	700	on request	on request	741793	308194
	800	on request	on request	741796	308195
<b>900*</b>	500	—	—	on request	on request
	600	—	—	on request	on request
	900	—	—	on request	on request

## All socket tees – MMB

248

DN 1	DN 2					Weight in kg $\approx$ <sup>1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	with TYTON® socket	with Standard socket
<b>1000*</b>	150	360	570	18,0	7,8	–	507,0	–
	200	360	580		8,4	–	508,0	–
	250	595	590		9,0	–	597,0	–
	300	595	600		9,6	–	613,0	–
	400	595	600		10,8	–	619,0	–
	600	1290	640		13,2	–	1028,0	–
	800	1290	660		15,6	–	1102,0	–
	900	1290	680		16,8	–	1108,0	–
1000	1290	680	18,0	–	1115,0	–		
<b>1200*</b>	300	840	730	20,4	9,6	–	940,0	–
	600	840	750		13,2	–	980,0	–
	700	1070	750		14,4	–	1140,0	–
	800	1070	760		15,6	–	1150,0	–
	900	1300	760		16,8	–	1285,0	–
	1200	1525	760		20,4	–	1536,0	–
<b>1400*</b>	600	1030	840	22,8	13,2	–	1770,0	–
	800	1260	865		15,6	–	1990,0	–
	900	1495	875		16,8	–	2120,0	–
	1000	1975	885		18,0	–	2140,0	–
	1200	1725	905		20,4	–	2360,0	–
	1400	1960	930		22,8	–	3000,0	–
<b>1600*</b>	600	1040	940	25,2	13,2	–	–	2150,0
	800	1275	965		15,6	–	–	2450,0
	900	1260	975		16,8	–	–	2520,0
	1000	1505	985		18,0	–	–	2650,0
	1200	1740	1010		20,4	–	–	2950,0
	1400	1970	1030		22,8	–	–	3400,0
	1600	2200	1050		25,2	–	–	3900,0

Operating pressures see page 194 <sup>1)</sup> without screw rings \* acc. to manufacturer's standard on request also with Standard socket and Universal pre-chamber

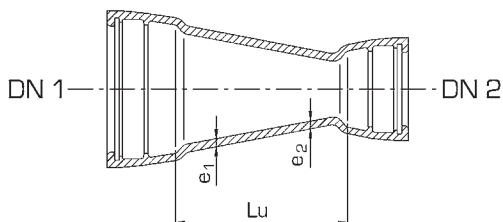




DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etec enamel
1000*	150	on request	on request	on request	on request
	200	on request	on request	on request	on request
	250	on request	on request	on request	on request
	300	on request	on request	on request	on request
	400	on request	on request	on request	on request
	600	on request	on request	on request	on request
	800	on request	on request	on request	on request
	900	on request	on request	on request	on request
1000	on request	on request	on request	on request	
1200*	300	on request	on request	on request	on request
	600	on request	on request	on request	on request
	700	on request	on request	on request	on request
	800	on request	on request	on request	on request
	900	on request	on request	on request	on request
	1200	on request	on request	on request	on request
1400*	600	on request	on request	on request	on request
	800	on request	on request	on request	on request
	900	on request	on request	on request	on request
	1000	on request	on request	on request	on request
	1200	on request	on request	on request	on request
	1400	on request	on request	on request	on request
1600*	600	on request	on request	on request	on request
	800	on request	on request	on request	on request
	900	on request	on request	on request	on request
	1000	on request	on request	on request	on request
	1200	on request	on request	on request	on request
	1400	on request	on request	on request	on request
	1600	on request	on request	on request	on request

## Double socket tapers – MMR

250



**Dimensions and weights** (Dimensions in mm)

DN 1	DN 2	Lu	e <sub>1</sub>	e <sub>2</sub>	Weight in kg <sup>1)</sup>	
					with <b>NOVO</b> socket	with screw-gland socket
<b>50*</b>	40	200	7,0	7,0	–	7,8
<b>80</b>	40*	200	7,0	7,0	–	13,5
	50	110		7,0	–	5,4
	65*	200		7,0	–	15,2
<b>100</b>	40*	150	7,2	7,0	–	14,0
	50*	150		7,0	–	7,6
	65*	120		7,0	–	7,0
	80	90		7,0	9,2	8,1

Operating pressures see page 194 <sup>1)</sup> without screw rings \* acc. to manufacturer's standard on request also with Standard socket and Universal pre-chamber



## Item numbers

DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with screw-gland socket Epoxy blue <sup>2)</sup>	Item no. with screw-gland socket etec enamel <sup>2)</sup>
<b>50*</b>	40	—	—	744071	308355
<b>80</b>	40*	—	—	744074	308365
	50	—	—	744078	308366
	65*	—	—	744082	308367
<b>100</b>	40*	—	—	—	—
	50*	—	—	744088	308311
	65*	—	—	744093	308312
	80	704096	777167	744097	308313



<sup>2)</sup> all mentioned item numbers incl. screw rings;  
other versions, coatings and sizes on request

## Double socket tapers – MMR

252

DN 1	DN 2				Weight in kg <sup>1)</sup>	
		Lu	e <sub>1</sub>	e <sub>2</sub>	with <b>NOVO</b> socket	with screw-gland socket
<b>125</b>	80	140	7,5	7,0	13,5	9,9
	100	100		7,2	16,0	9,8
<b>150</b>	80	190	7,8	7,0	17,0	12,3
	100	150		7,2	18,5	13,4
	125	100		7,5	19,0	12,6
<b>200</b>	100	250	8,4	7,2	26,5	18,3
	125	200		7,5	30,5	17,5
	150	150		7,8	28,5	17,8
<b>250</b>	80	300	9,0	7,0	–	33,0
	100	300		7,2	36,0	29,0
	125	300		7,5	38,4	26,5
	150	250		7,8	37,0	28,0
	200	150		8,4	41,0	30,2
<b>300</b>	100	275	9,6	7,2	33,5	55,1
	150	350		7,8	55,5	41,0
	200	250		8,4	49,0	37,8
	250	150		9,0	52,0	36,7
<b>350</b>	150	500	10,2	7,8	–	78,0
	200	360		8,4	–	48,0
	250	260		9,0	–	47,0
	300	160		9,6	–	45,0
<b>400</b>	150	560	10,8	7,8	–	–
	200	400		8,4	–	79,9
	250	360		9,0	–	73,5
	300	260		9,6	–	68,0
	350	160		10,2	–	70,0

Operating pressures see page 194 <sup>1)</sup> without screw rings \* acc. to manufacturer's standard  
on request also with Standard socket and Universal pre-chamber

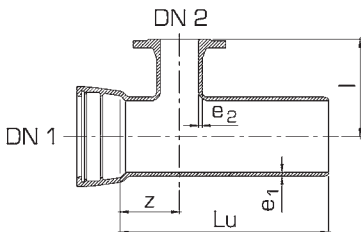


DN 1	DN 2	Item no. with NOVO socket Epoxy blue	Item no. with NOVO socket etec enamel	Item no. with screw-gland socket Epoxy blue <sup>2)</sup>	Item no. with screw-gland socket etec enamel <sup>2)</sup>
<b>125</b>	80	on request	308316	705944	308318
	100	704098	707129	863634	308315
<b>150</b>	80	724695	304733	875361	780689
	100	863684	703021	875362	774307
	125	704099	719897	863728	780690
<b>200</b>	100	701335	724716	875364	308323
	125	707193	719650	725227	308325
	150	707195	717366	875365	308327
<b>250</b>	80	–	–	on request	on request
	100	on request	on request	on request	on request
	125	742381	724717	–	–
	150	877247	719649	875367	308332
	200	707194	717364	875370	308334
<b>300</b>	100	on request	on request	on request	on request
	150	742382	724578	703577	308336
	200	742383	874013	875371	308338
	250	876364	717365	875377	308340
<b>350</b>	150	–	–	on request	on request
	200	–	–	712230	308341
	250	–	–	725206	308343
	300	–	–	710897	308345
<b>400</b>	150	on request	on request	on request	on request
	200	on request	on request	on request	on request
	250	on request	on request	on request	on request
	300	on request	on request	on request	on request
	350	on request	on request	on request	on request

<sup>2)</sup> all mentioned item numbers incl. screw rings;  
other versions, coatings and sizes on request

# Single socket tees with flanged branch – A acc. to manufacturer's standard

254



Dimensions and weights (Dimensions in mm)

DN 1	DN 2						Weight in kg <sup>1)</sup>		Item no. Epoxy P4 blue with screw- gland socket PN 16	Item no. Epoxy P4 blue with TYTON® socket PN 16
		Lu	l	z	e <sub>1</sub>	e <sub>2</sub>	with screw- gland socket	with TYTON® socket		
40	40	400	150	78	7,0	7,0	10,0	–	743112	–
	50	400	150	85	7,0	7,0	10,5	–	on request	–
80	50	400	150	85			12,0	–	on request	–
	40	400	180	106	7,0	7,0	12,3	12,3	743117	742073
	50	400	180	106			13,0	13,0	–	790976
100	80	400	180	106			15,1	15,7	743122	706769
	40	400	200	120	7,2	7,0	15,7	16,2	743126	–
	50	400	200	120			15,5	15,5	743129	313756
	65	400	200	120			16,0	16,0	–	–
	80	400	200	120			17,8	18,4	743134	703995
	100	400	200	120			18,7	18,8	743138	740037

Operating pressures see page 194 <sup>1)</sup> without screw rings  
on request also with Standard socket and Universal pre-chamber





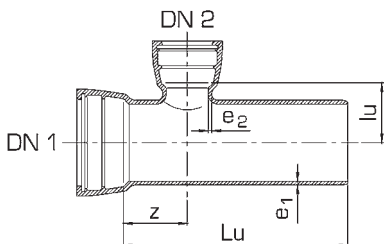
DN 1	DN 2						Weight in kg <sup>1)</sup>		Item no. Epoxy P4 blue with screw- gland socket <b>PN 16</b>	Item no. Epoxy P4 blue with TYTON® socket <b>PN 16</b>
		Lu	l	z	e <sub>1</sub>	e <sub>2</sub>	with screw- gland socket	with <b>TYTON®</b> socket		
<b>125</b>	40	425	190	112	7,5	7,0	17,5	17,5	743141	—
	50	425	190	112		7,0	18,0	18,0	743144	—
	80	425	190	112		7,0	20,0	22,5	743147	734301
	100	425	195	112		7,2	21,6	23,5	743151	875677
	125	425	200	112		7,5	26,0	26,0	on request	—
<b>150</b>	40	450	205	128	7,8	7,0	24,8	23,0	on request	—
	50	450	205	128		7,0	24,0	24,0	—	742074
	80	450	205	128		7,0	26,4	28,0	743160	703996
	100	450	210	128		7,2	25,0	29,2	743164	703997
	125	450	210	128		7,5	28,5	28,5	on request	—
	150	450	210	128		7,8	30,4	30,4	743169	742074
<b>200</b>	50	600	240	190	8,4	7,0	46,0	46,0	on request	on request
	80	600	240	190		7,0	50,0	55,0	on request	on request
	100	600	250	190		7,2	55,0	51,0	on request	on request
	150	600	275	240		7,8	58,0	58,0	on request	on request
	200	600	300	240		8,4	64,8	60,0	on request	on request
<b>300</b>	80	800	300	260	9,6	7,0	119,5	119,5	on request	on request
	100	800	300	260		7,2	121,0	121,0	on request	on request
	150	800	300	260		7,8	126,5	126,5	on request	on request
<b>400</b>	400	1000	450	330	10,8	10,8	186,0	186,0	on request	on request
<b>1000</b>	600	1770	825	645	18,0	12,0	—	1160,0	on request	on request

Operating pressures see page 194 <sup>1)</sup> without screw rings  
on request also with Standard socket and Universal pre-chamber

# Single socket tees with socket branch – B acc. to manufacturer's standard



256



Dimensions and weights – B (Dimensions in mm)

DN 1	DN 2	Lu	lu	z	e <sub>1</sub>	e <sub>2</sub>	Weight in kg <sup>≈ 1)</sup>	Item no. <b>Epoxy P4 blue</b>
40	40	400	105	132	7,0	7,0	8,5	–
80	80	400	86	106	7,0	7,0	14,0	–
100	80	400	95	120	7,2	7,0	15,0	–
	100	400	95	120		7,2	16,0	754104
150	80	450	120	128	7,8	7,0	25,0	on request
	100	450	120	128		7,2	45,0	on request
	125	450	125	128		7,5	28,0	on request
	150	450	120	128		7,8	34,5	on request

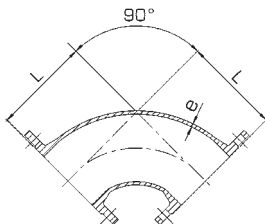
Dimensions and weights – B long version (Dimensions in mm)

DN 1	DN 2	Lu	lu	z	e <sub>1</sub>	e <sub>2</sub>	Weight in kg <sup>≈</sup> with <b>Novo</b> sockets	Item no. <b>Epoxy P4 blue</b>
100	80	910	95	410	7,2	7,0	27,0	308594
150	80	905	120	405	7,8	7,0	40,0	308595
200	80	900	145	400	8,4	7,0	55,0	308596

Operating pressures see page 194 <sup>1)</sup> without screw rings  
on request also with Standard socket and Universal pre-chamber



# Double flanged bends 90° - Q



257

## Dimensions and weights (Dimensions in mm)

DN	L	e	Weight in kg ≈				Item no. Epoxy P4 blue		Item no. etec enamel	
			PN 10	PN 16	PN 25	PN 40	PN 10	PN 16	PN 10	PN 16
40*	140	7,0	5,5	5,5	5,5	5,5	—	867679	—	308422
50*	150	7,0	7,5	7,5	7,5	7,5	—	867822	—	867824
65*	165	7,0	10,2	10,2	10,2	10,2	—	867847	—	753145
80	165	7,0	10,2	10,2	11,0	11,0	—	867896	—	725627
100	180	7,2	12,9	12,9	12,9	12,9	—	867924	—	867915
125	200	7,5	18,9	22,0	22,0	23,2	—	867941	—	872780
150	220	7,8	29,3	29,2	33,5	33,5	—	867961	—	872779
200	260	8,4	36,2	36,2	45,9	53,0	867993	874749	721281	756439
250	350	9,0	58,3	58,3	81,0	101,0	868042	703201	722886	308418
300	400	9,6	82,1	82,1	116,6	144,2	868069	868077	764988	308419
350	450	10,2	102,1	111,2	155,0	199,0	704035	700043	308420	308421
400	500	10,8	144,7	157,7	217,0	284,0	868093	700011	749580	743774
450	550	11,4	234,0	234,0	241,0	308,0	on request	on request	on request	on request
500	600	12,0	266,0	277,5	305,0	375,0	868278	710604	759475	308423
600	700	13,2	370,0	404,0	346,0	458,0	705976	715369	759477	on request
700	800	14,4	539,0	420,0	575,0	—	715799	710443	308425	on request
800	900	15,6	774,0	720,0	672,0	—	733938	715370	308426	on request
900	1000	16,8	745,0	836,0	—	—	on request	on request	on request	on request
1000	1100	18,0	1010,0	1099,0	—	—	on request	on request	on request	on request
1200	1300	20,4	—	1463,0	—	—	on request	on request	on request	on request
1400	1350	22,8	—	2150,0	—	—	on request	on request	on request	on request
1600	1450	25,2	—	2970,0	—	—	on request	on request	on request	on request

\* acc. to manufacturer's standard

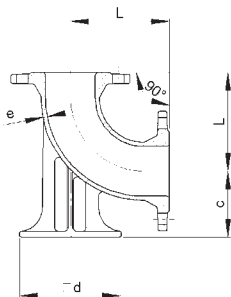
C

10b

## Double flanged duckfoot bends 90° - N



258



Dimensions and weights (Dimensions in mm)

DN	L	c	□d	e	Weight in kg ≈				Item no. Epoxy P4 blue		Item no. etec enamel	
					PN 10	PN 16	PN 25	PN 40	PN 10	PN 16	PN 10	PN 16
<b>50*</b>	150	90	150	7,0	10,5	10,5	10,5	10,5	—	862905	—	308397
<b>65*</b>	165	99	165	7,0	16,0	16,0	16,0	16,0	—	870073	—	308400
<b>80</b>	165	110	170	7,0	15,7	15,7	15,7	15,7	—	750046	—	756556
<b>100</b>	180	125	200	7,2	18,9	18,9	25,4	25,4	—	862998	—	704333
<b>125</b>	200	140	225	7,5	27,0	27,0	22,7	23,9	—	873659	—	308391
<b>150</b>	220	160	250	7,8	34,6	38,9	31,0	35,5	—	877562	—	774236
<b>200</b>	260	190	300	8,4	55,6	55,6	48,5	60,0	878947	877014	784504	308392
<b>250</b>	350	225	350	9,0	84,0	84,0	80,5	101,0	866078	703202	308393	308394
<b>300</b>	400	255	400	9,6	117,7	117,7	114,0	145,0	874511	710573	784506	on request
<b>350</b>	450	290	450	10,2	137,0	142,0	154,8	201,0	709229	700049	308395	on request
<b>400</b>	500	320	500	10,8	263,5	248,0	209,0	277,0	706994	700121	308396	787290
<b>450</b>	550	355	550	11,4	—	295,0	309,0	395,0	—	—	—	—
<b>500</b>	600	385	600	12,0	374,8	311,0	335,0	402,0	711278	760502	308398	on request
<b>600</b>	700	450	700	13,2	538,9	482,0	506,0	612,0	715789	715730	308399	on request
<b>700*</b>	800	480	800	16,0	752,0	705,0	769,0	—	715800	on request	308401	on request
<b>800*</b>	900	540	900	19,0	926,0	970,0	1086,0	—	718922	717479	308402	on request
<b>900</b>	1000	645	1000	16,8	—	—	—	—	on request	on request	on request	on request
<b>1000</b>	1100	710	1000	18,0	—	1626,0	—	—	on request	on request	on request	on request
<b>1200</b>	1300	845	1300	20,4	2311,0	—	—	—	on request	on request	on request	on request

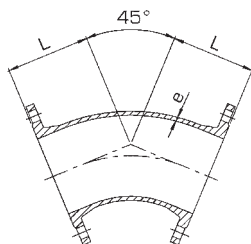
Base borehole on request. \* acc. to manufacturer's standard

# Double flanged bends

## 45° - FFK 45



259



Dimensions and weights (Dimensions in mm)

DN			Weight in kg ≈				Item no. Epoxy P4 blue		Item no. etec enamel	
	L	e	PN 10	PN 16	PN 25	PN 40	PN 10	PN 16	PN 10	PN 16
40*	40	7,0	7,0	7,0	7,0	7,0	—	870077	—	307701
50*	150	7,0	9,0	9,0	9,0	9,0	—	857782	—	307711
65*	165	7,0	12,0	12,0	12,0	12,0	—	870078	—	307724
80	130	7,0	10,3	10,3	10,3	10,3	—	857838	—	758337
100	140	7,2	12,6	12,6	—	—	—	857951	—	707055
125	150	7,5	17,5	17,5	17,5	18,3	—	857996	—	758338
150	160	7,8	21,6	21,6	33,0	24,5	—	858029	—	728506
200	180	8,4	32,4	32,4	34,0	41,5	865870	700449	758339	770703
250	350	9,0	60,9	60,9	101,0	83,0	865963	700445	307689	770573
300	400	9,6	90,2	90,2	87,5	118,0	866101	700017	764594	784912
350	298	10,2	96,1	102,6	111,0	141,0	877997	700045	307696	307697
400	324	10,8	117,2	129,1	191,3	196,0	858368	700016	790710	307706
450	350	11,4	150,0	150,0	180,0	248,0	—	on request	—	—
500	375	12,0	185,8	235,4	259,2	264,0	858401	710441	307715	307716
600	426	13,2	288,0	347,0	292,0	397,0	706005	702848	792761	307720
700	478	14,4	489,0	481,0	392,0	—	873794	710442	307728	on request
800	529	15,6	403,0	442,0	535,0	—	878088	712338	307732	on request
900	581	16,8	—	480,0	—	—	on request	on request	on request	on request
1000	632	18,0	727,9	685,0	1099,0	—	on request	on request	on request	on request
1200	750	20,4	—	1251,0	—	—	on request	on request	on request	on request
1400	775	22,8	—	1626,0	—	—	on request	on request	on request	on request

\* acc. to manufacturer's standard

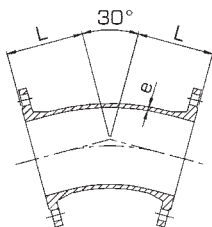
C

10b

# Double flanged bends 30° – FFK 30 acc. to manufacturer's standard



260



Dimensions and weights (Dimensions in mm)

DN			Weight in kg ≈				Item no. Epoxy P4 blue		Item no. etec enamel	
	L	e	PN 10	PN 16	PN 25	PN 40	PN 10	PN 16	PN 10	PN 16
<b>40</b>	140	7,0	7,0	7,0	7,0	7,0	–	870991	–	307700
<b>50</b>	150	7,0	9,0	9,0	9,0	9,0	–	870992	–	307710
<b>65</b>	165	7,0	12,0	12,0	12,0	12,0	–	870993	–	307723
<b>80</b>	130	7,0	10,0	10,0	10,0	10,0	–	857822	–	758301
<b>100</b>	140	7,2	13,7	13,7	–	–	–	857927	–	707056
<b>125</b>	150	7,5	15,7	15,7	18,0	21,0	–	857991	–	758327
<b>150</b>	160	7,8	22,7	22,7	22,0	25,0	–	858020	–	758332
<b>200</b>	180	8,4	35,1	35,1	33,0	42,0	865849	701607	758336	799982
<b>250</b>	210	9,0	47,5	44,0	90,0	65,0	703959	720169	789384	729362
<b>300</b>	255	9,5	68,0	68,0	73,0	100,0	866087	711056	771814	307691
<b>350</b>	165	10,2	70,2	71,0	88,0	142,0	866130	775919	307694	307695
<b>400</b>	183	10,8	85,9	82,5	104,5	172,5	858052	714735	790709	307705
<b>450</b>	255	11,4	143,0	153,0	183,0	251,0	–	–	–	–
<b>500</b>	220	12,0	129,5	157,5	205,0	275,0	858393	708319	307714	on request
<b>600</b>	309	13,2	230,0	289,0	289,0	298,0	712279	752008	792759	on request
<b>700</b>	346	14,4	360,0	386,0	416,0	–	716620	745706	307727	on request
<b>800</b>	383	15,6	439,6	529,0	623,0	–	738465	772905	307731	on request
<b>900</b>	420	16,8	–	–	–	–	on request	on request	on request	on request
<b>1000</b>	455	18,0	–	–	1018,0	–	on request	on request	on request	on request
<b>1200</b>	530	20,4	–	–	–	–	on request	on request	on request	on request
<b>1400</b>	N/A	N/A	N/A	N/A	N/A	N/A	on request	on request	on request	on request

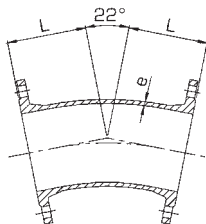
# Double flanged bends

## 22 1/2° - FFK 22

acc. to manufacturer's standard



261



Dimensions and weights (Dimensions in mm)

DN	Weight in kg ≈						Item no. Epoxy P4 blue		Item no. etec enamel	
	L	e	PN 10	PN 16	PN 25	PN 40	PN 10	PN 16	PN 10	PN 16
40	140	7,0	7,0	7,0	7,0	7,0	—	860251	—	307699
50	150	7,0	9,0	9,0	9,0	9,0	—	870988	—	307709
65	165	7,0	12,0	12,0	12,0	12,0	—	870990	—	307722
80	130	7,0	10,7	10,7	10,7	10,7	—	857809	—	758300
100	140	7,2	13,6	13,6	—	—	—	857896	—	758324
125	150	7,5	17,2	17,2	29,0	21,0	—	879211	—	758326
150	160	7,8	22,1	22,1	22,0	25,0	—	858010	—	758331
200	180	8,4	34,6	34,6	33,5	42,5	865465	877603	758335	306425
250	210	9,0	48,6	48,6	48,5	65,5	876790	876329	758888	307687
300	255	9,6	68,6	68,6	72,0	99,0	866006	874165	774304	784030
350	140	10,2	63,7	64,8	78,0	132,0	727239	700117	307693	on request
400	153	10,8	80,5	95,6	97,5	165,5	858044	703010	307704	on request
450	209	11,4	135,0	145,0	183,0	251,0	—	—	—	—
500	185	12,0	125,8	137,0	175,0	345,0	877175	712242	307713	on request
600	254	13,2	203,0	245,0	247,0	268,0	860246	714737	307718	on request
700	284	14,4	327,0	360,0	369,0	—	874257	712334	307726	on request
800	314	15,6	418,0	448,0	558,0	—	741914	712339	307730	on request
900	375	16,8	—	—	—	—	on request	on request	on request	on request
1000	410	18,0	575,0	655,0	—	—	on request	on request	on request	on request
1200	467	20,4	—	850,0	—	—	on request	on request	on request	on request
1400	520	22,8	—	1278,0	—	—	on request	on request	on request	on request

C

10b

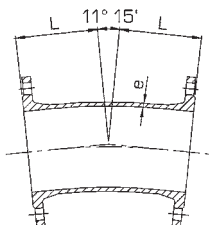
# Double flanged bends

## 11¼° – FFK 11

acc. to manufacturer's standard



262



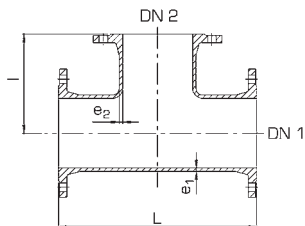
Dimensions and weights (Dimensions in mm)

DN			Weight in kg ≈				Item no. Epoxy P4 blue		Item no. etec enamel	
	L	e	PN 10	PN 16	PN 25	PN 40	PN 10	PN 16	PN 10	PN 16
<b>40</b>	140	7,0	7,0	7,0	7,0	7,0	–	860247	–	307698
<b>50</b>	150	7,0	9,0	9,0	9,0	9,0	–	870984	–	307708
<b>65</b>	165	7,0	12,0	12,0	12,0	12,0	–	870985	–	307721
<b>80</b>	130	7,0	10,6	10,6	10,6	10,6	–	857795	–	758299
<b>100</b>	140	7,2	13,7	13,7	–	–	–	857870	–	702870
<b>125</b>	150	7,5	17,2	17,2	18,0	21,0	–	879210	–	758325
<b>150</b>	160	7,8	23,2	23,2	22,0	25,0	–	858002	–	758330
<b>200</b>	180	8,4	34,6	34,6	54,5	39,0	876791	874750	758333	306424
<b>250</b>	210	9,0	47,0	47,0	48,0	65,0	706111	708007	776116	307686
<b>300</b>	255	9,6	69,1	69,1	69,5	96,5	703503	709768	764595	307690
<b>350</b>	105	10,2	57,2	53,0	70,0	138,5	739416	737346	307692	–
<b>400</b>	113	10,8	71,8	72,5	89,5	168,5	858036	703009	307702	307703
<b>450</b>	144	11,4	108,0	118,0	145,0	213,5	–	–	–	–
<b>500</b>	135	12,0	106,9	140,8	137,0	237,5	858384	712244	307712	on request
<b>600</b>	174	13,2	170,0	222,5	229,0	260,5	858421	702847	307717	on request
<b>700</b>	194	14,4	265,0	292,0	370,0	–	875864	702846	307725	on request
<b>800</b>	213	15,6	321,8	396,0	490,0	–	709353	712341	307729	on request
<b>900</b>	280	16,8	–	397,5	–	–	on request	on request	on request	on request
<b>1000</b>	310	18,0	588,0	656,0	722,0	–	328047	328335	on request	on request
<b>1200</b>	346	20,4	–	870,0	–	–	331838	on request	on request	on request
<b>1400</b>	405	22,8	–	1111,0	–	–	on request	on request	on request	on request



## All flanged tees - T

264



Dimensions and weights (Dimensions in mm)

DN 1	DN 2					Weight in kg ≈			
		L	l	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
40	40	280	140	7,0	7,0	10,5	—	—	—
	50	300	145	7,0	7,0	12,0	—	—	—
65	50		150		7,0	12,5	—	—	—
	40	330	153	7,0	7,0	15,0	—	—	—
	50		158		7,0	15,5	—	—	—
80	65		165		7,0	16,5	—	—	—
	40*	330	155	7,0	7,0	14,7	14,7	14,7	14,7
	50		160		7,0	15,7	15,7	15,7	15,7
100	65		160		7,0	16,4	16,4	16,4	16,4
	80		165		7,0	17,0	17,0	17,0	17,0
	40*	360	170	7,2	7,0	17,8	17,8	17,2	17,2
	50		170		7,0	18,7	18,7	22,7	22,7
125	65		170		7,0	19,4	19,4	20,4	18,6
	80		175		7,0	20,2	20,2	24,5	24,5
	100		180		7,2	21,3	21,3	22,0	22,0
	40*	400	185	7,5	7,0	23,8	23,8	22,5	24,0
	50*		185		7,0	24,3	24,3	23,0	24,5
	65		185		7,0	24,8	24,8	24,0	25,5
150	80		190		7,0	25,4	25,4	30,0	26,0
	100		195		7,2	27,0	27,0	26,0	28,5
	125		200		7,5	28,1	28,1	32,5	31,0

\* acc. to manufacturer's standard





## Item numbers

DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
40	40	—	867060	—	308448
	50	—	867097	—	308456
65	40	—	867121	—	750479
	50	—	870555	—	308473
	65	—	870556	—	308474
80	40*	—	867152	—	753147
	50	—	701268	—	308482
	65	—	867172	—	772560
	80	—	702710	—	308483
100	40*	—	867202	—	725628
	50	—	875447	—	707057
	65	—	867245	—	867241
	80	—	874191	—	753144
	100	—	867271	—	867268
125	40*	—	867290	—	872778
	50*	—	867310	—	308427
	65	—	867318	—	728938
	80	—	on request	—	on request
	100	—	867333	—	758297
	125	—	867710	—	872777
			867717	—	703122



## All flanged tees – T

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DN 1	DN 2					Weight in kg ≈			
		L	l	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
<b>150</b>	40	440	195	7,8	7,0	29,7	29,7	29,0	33,0
	50*		200		7,0	30,8	30,8	35,5	40,0
	65		200		7,0	31,3	31,3	30,5	34,5
	80		205		7,0	31,9	31,9	41,6	45,9
	100		210		7,2	32,4	32,4	42,1	35,5
	125		215		7,5	34,6	34,6	33,5	38,0
	150		220		7,8	32,2	36,2	49,1	58,3
<b>175</b>	80	550	215	8,1	7,0	58,0	58,0	–	–
	100		220		7,2	60,0	60,0	–	–
	150		230		7,8	64,0	64,0	–	–
<b>200</b>	40	520	220	8,4	7,0	45,4	45,4	56,5	68,5
	50		225		7,0	45,4	45,4	61,5	73,5
	65		230		7,0	45,4	45,4	64,0	74,0
	80		235		7,0	47,4	47,4	57,5	68,5
	100		240		7,2	47,5	47,5	58,5	75,1
	125		245		7,5	50,0	50,0	61,0	73,0
	150		250		7,8	51,3	51,3	54,0	80,0
	200		260		8,4	51,8	51,8	77,5	94,0
<b>250</b>	50	700	255	9,0	7,0	68,0	68,0	97,0	97,0
	65		260		7,0	64,0	64,0	69,0	89,0
	80*		265		7,0	74,0	74,0	78,0	114,0
	100		275		7,2	75,0	75,0	103,0	123,1
	125		280		7,5	75,0	75,0	75,5	95,5
	150*		300		7,8	78,3	78,3	110,7	128,5
	200		325		8,4	88,7	88,7	94,0	119,0
	250		350		9,0	91,8	91,8	121,0	130,0
	<b>300</b>		40		800	275	9,6	7,0	95,5
50		280	7,0	96,0		96,0		106,0	140,0
65		285	7,0	97,0		97,0		107,0	141,0
80*		290	7,0	120,6		120,6		108,0	142,0
100		300	7,2	104,2		104,2		158,0	143,0
125		305	7,5	113,0		103,0		111,0	145,0
150*		325	7,8	108,0		108,0		116,0	179,5
200		350	8,4	114,0		114,0		130,0	164,0
250*		375	9,0	121,0		121,0		129,0	174,0
300		400	9,6	131,0		131,0		194,0	188,0

\* acc. to manufacturer's standard



DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
150	40	—	874196	—	—
	50*	—	870486	—	724694
	65	—	867748	—	308430
	80	—	867758	—	704334
	100	—	867775	—	867767
	125	—	875289	—	703124
	150	—	867802	—	872776
175	80	—	—	—	—
	100	—	—	—	—
	150	—	—	—	—
200	40	—	—	—	—
	50	705268	715350	308432	784031
	65	702921	—	on request	—
	80	867836	700039	722888	735256
	100	867859	875256	722891	781300
	125	867883	724028	757060	308431
	150	868102	706280	722892	735255
	200	868117	868130	703125	774393
250	50	on request	on request	on request	on request
	65	—	—	—	—
	80*	876792	711134	722887	301086
	100	868159	705635	726930	729363
	125	868175	739459	719263	308433
	150*	868193	705636	722890	301553
	200	875291	712674	722889	308434
	250	868262	868294	739974	750661
	300	40	—	—	—
50		327409	790314	on request	on request
65		—	—	—	—
80*		874212	706955	733303	774394
100		874376	705738	771811	308435
125		on request	on request	on request	on request
150*		868498	708317	774306	764391
200		875292	705973	763881	784032
250*		876793	868528	308436	308437
300		868533	705492	774238	784760



## All flanged tees – T

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DN 1	DN 2					Weight in kg ≈			
		L	l	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
<b>350</b>	65	850	315	10,2	7,0	124,0	120,0	136,0	180,0
	80		320		7,0	131,2	128,0	167,4	181,0
	100		325		7,2	130,1	140,4	173,0	183,0
	125		325		7,5	131,8	129,0	145,0	189,0
	150		325		7,8	135,0	150,1	147,0	202,0
	200		325		8,4	137,7	149,0	160,0	210,0
	250		325		9,0	137,7	145,0	162,0	216,0
	300		425		9,6	154,4	151,5	172,0	222,0
	350		425		10,2	150,6	151,0	192,0	249,0
<b>400</b>	80*	900	350	10,8	7,0	167,4	180,4	186,0	253,0
	100		350		7,2	170,6	185,8	187,0	254,0
	125		350		7,5	171,2	170,5	192,0	258,0
	150*		350		7,8	157,0	169,0	192,0	262,0
	200		350		8,4	192,2	192,2	213,8	277,0
	250*		350		9,0	185,8	185,8	207,0	283,0
	300*		450		9,6	196,0	200,3	228,0	308,0
	350		450		10,2	198,2	223,6	240,0	330,0
	400		450		10,8	198,5	225,0	254,0	356,0
<b>450</b>	80	950	375	11,4	7,0	230,0	243,0	–	–
	100		375		7,2	249,5	244,0	–	–
	150		375		7,8	232,0	265,0	–	–
	200		375		8,4	242,0	258,0	–	–
	250		375		9,0	248,0	269,0	–	–
	300		475		9,6	282,0	282,0	–	–
	350		475		10,2	290,0	309,0	–	–
	400		475		10,8	292,0	312,0	–	–
	450		475		11,4	313,0	347,0	–	–

\* acc. to manufacturer's standard



DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
350	65	—	—	—	—
	80	868546	712363	308446	308447
	100	703961	724704	308438	on request
	125	—	—	—	—
	150	725304	700047	308439	on request
	200	703963	725255	308440	308441
	250	738253	725256	308442	on request
	300	868572	724705	308443	308444
	350	703965	700044	308445	on request
400	80*	705787	706723	787180	772493
	100	868588	712366	777773	308449
	125	on request	—	on request	—
	150*	703990	700446	788493	308450
	200	868612	710335	783793	308451
	250*	712331	712364	787267	308452
	300*	701360	712365	751915	308453
	350	712374	330377	on request	on request
	400	868639	700447	785762	308455
450	80	on request	on request	on request	on request
	100	—	on request	—	on request
	150	—	on request	—	on request
	200	—	on request	—	on request
	250	—	on request	—	on request
	300	—	—	—	—
	350	—	—	—	—
	400	—	on request	—	on request
	450	750019	712240	on request	on request



## All flanged tees – T

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DN 1	DN 2					Weight in kg ≈			
		L	I	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
<b>500</b>	80	1000	400	12,0	7,0	233,5	234,0	281,0	348,0
	100		400		7,2	236,5	265,0	305,6	349,0
	125		400		7,5	250,6	260,0	285,0	353,0
	150		400		7,8	243,5	273,5	288,0	362,0
	200		400		8,4	260,3	291,6	292,0	362,0
	250*		400		9,0	271,1	278,0	298,0	370,0
	300*		500		9,6	277,0	285,0	305,0	391,0
	350		500		10,2	295,4	303,0	325,0	408,0
	400		500		10,8	286,2	346,7	356,4	447,0
	450		500		11,4	282,0	319,0	354,0	458,0
	500		500		12,0	311,0	317,5	356,6	469,0
<b>600</b>	80	1100	450	13,2	7,0	358,0	389,0	374,0	468,0
	100		450		7,2	373,7	408,5	375,0	469,0
	125		450		7,5	307,0	356,0	378,0	473,0
	150*		450		7,8	386,6	388,0	380,0	476,0
	200		450		8,4	319,4	417,9	410,0	502,0
	250		450		9,0	395,8	386,0	416,0	508,0
	300		550		9,6	392,0	440,6	444,0	530,0
	350		550		10,2	374,0	427,0	460,0	574,0
	400		550		10,8	380,0	434,0	507,1	594,0
	450		550		11,4	385,0	443,0	476,0	609,0
	500*		550		12,0	395,0	460,0	493,0	623,0
600	550	13,2	413,0	513,0	480,0	659,0			
<b>700</b>	100*	650	525	14,4	7,2	325,0	351,0	473,0	–
	150*		525		7,8	326,0	352,0	474,0	–
	200		525		8,4	355,3	393,1	486,0	–
	250*	870	555		9,0	401,0	429,0	519,0	–
	300*		555		9,6	404,0	432,0	524,0	–
	350*		555		10,2	411,0	441,0	537,0	–
	400		555		10,8	490,9	467,0	566,0	–
	500*	1200	600		12,0	570,8	563,0	675,0	–
	600*		600		13,2	572,4	658,8	704,0	–
	700		600		14,4	635,0	622,0	726,0	–

\* acc. to manufacturer's standard



DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
500	80	721897	712245	on request	on request
	100	868657	710529	772791	308457
	125	—	—	—	—
	150	868661	707422	765408	on request
	200	868667	707615	772790	308458
	250*	877176	710532	308459	on request
	300*	868679	700009	778775	308460
	350	723202	775050	308461	on request
	400	709782	736905	777669	308462
	450	—	—	—	—
500	868695	707421	772789	308463	
600	80	724994	700106	on request	on request
	100	705297	708922	751725	308465
	125	—	—	—	—
	150*	868711	700104	722661	on request
	200	868715	873650	308466	308467
	250	741825	715222	308468	on request
	300	868719	729760	308469	on request
	350	736574	715220	308470	on request
	400	868725	715351	743972	on request
	450	868732	710533	759465	on request
	500*	868732	710533	759465	on request
	600	700649	873663	308471	308472
700	100*	729447	710535	308476	on request
	150*	875862	710536	on request	on request
	200	873798	739300	308477	on request
	250*	—	—	—	—
	300*	877065	749135	on request	on request
	350*	—	—	—	—
	400	709485	761306	308478	on request
	500*	868754	724989	308479	on request
	600*	711225	724990	308480	on request
	700	702849	710540	308481	on request



## All flanged tees – T

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DN 1	DN 2					Weight in kg ≈			
		L	l	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
<b>800</b>	80*	690	570	15,6	7,0	426,5	464,5	556,5	–
	100*		570		7,2	417,5	471,0	558,0	–
	150*		580		7,8	457,2	428,0	562,0	–
	200		585		8,4	468,7	475,0	570,0	–
	250*		585		9,0	443,0	481,0	578,0	–
	300*	910	600	9,6	574,6	545,0	640,0	–	
	350*		615	10,2	514,0	556,0	653,0	–	
	400	615	10,8	583,2	580,0	682,0	–		
	500*	1350	630	12,0	737,6	738,0	841,0	–	
	600		645	13,2	694,4	769,0	872,0	–	
	700*		650	14,4	719,0	771,0	896,0	–	
800	675		15,6	756,0	760,0	967,0	–		
<b>900</b>	100*	730	640	16,8	7,2	702,0	472,0	588,0	–
	200		645		8,4	455,0	477,0	593,0	–
	300*	950	660		9,6	544,0	566,0	685,0	–
	400		675		10,8	552,0	574,0	596,0	–
<b>1000</b>	100*	770	700	18,0	7,2	–	635,0	–	–
	150*		705		7,8	588,0	667,0	817,0	–
	200		705		8,4	591,0	670,0	820,0	–
	300*	990	735		9,6	681,0	760,0	915,0	–
	400		735		10,8	693,0	774,0	935,0	–
	500*		1650		825	12,0	1010,0	1114,0	1284,0
	600	765			13,2	1025,0	1141,0	1302,0	–
	700*	825			14,4	1048,0	1161,0	1351,0	–
	800*	825			15,6	1075,0	1182,0	1398,0	–
	900*	825			16,8	1095,0	1207,0	1415,0	–
	1000	825			18,0	1125,0	1245,0	1472,0	–

\* acc. to manufacturer's standard





DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
800	80*	on request	on request	on request	on request
	100*	711961	727961	308484	on request
	150*	761425	332158	on request	on request
	200	877991	715359	308485	on request
	250*	—	—	—	—
	300*	711960	715257	308486	on request
	350*	—	—	—	—
	400	705183	715218	308487	on request
	500*	729287	723482	308488	on request
	600	711959	715217	308489	on request
	700*	726906	327063	308490	on request
800	877990	724991	308491	on request	
900	100*	314394	—	on request	—
	200	—	742906	—	on request
	300*	778841	on request	on request	on request
	400	—	327919	—	on request
1000	100*	—	—	—	—
	150*	762817	745428	on request	on request
	200	740586	on request	on request	on request
	300*	877065	749135	on request	on request
	400	320250	on request	on request	on request
	500*	on request	on request	on request	on request
	600	740588	765626	on request	on request
	700*	on request	on request	on request	on request
	800*	on request	on request	on request	on request
	900*	on request	on request	on request	on request
	1000	773377	760558	on request	on request



## All flanged tees – T

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DN 1	DN 2					Weight in kg ≈				
		L	I	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40	
<b>1200</b>	150*	1240	840	20,4	7,8	–	–	–	–	
	200*		840		8,4	–	–	–	–	
	250*		840		9,0	–	–	–	–	
	300*		840		9,6	–	1240	–	–	
	400*		855		10,8	–	–	–	–	
	500*		870		12,0	–	–	–	–	
	600		885		13,2	–	1292	–	–	
	700*		1470		900	14,4	–	–	–	–
	800				915	15,6	–	–	–	–
	900*		1700		930	16,8	–	–	–	–
	1000		945	18,0	–	–	–	–		
1200*	1900	950	20,4	–	–	–	–			
<b>1400</b>	600	1550	980	22,8	13,2	–	1900	–	–	
	800	1760	1010		15,6	–	2050	–	–	
	1000	2015	1040		18,0	–	2250	–	–	
	1200*	2250	1070		20,4	–	2600	–	–	
	1400*	2470	1100		22,8	–	3000	–	–	
<b>1600</b>	600	1600	1090	25,2	13,2	–	2400	–	–	
	800	1835	1120		15,6	–	2650	–	–	
	1000	2065	1150		18,0	–	2900	–	–	
	1200	2300	1180		20,4	–	3200	–	–	
	1400*	2300	1210		22,8	–	3400	–	–	
	1600*	2730	1240		25,2	–	3900	–	–	

\* acc. to manufacturer's standard



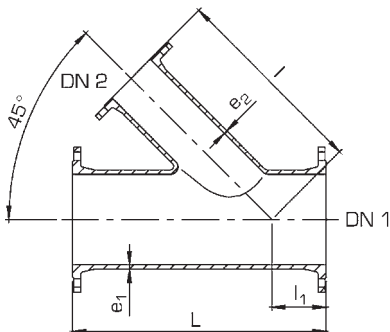
DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
1200	150*	on request	on request	on request	on request
	200*	on request	on request	on request	on request
	250*	on request	on request	on request	on request
	300*	on request	on request	on request	on request
	400*	on request	on request	on request	on request
	500*	on request	on request	on request	on request
	600	on request	on request	on request	on request
	700*	on request	on request	on request	on request
	800	on request	on request	on request	on request
	900*	on request	on request	on request	on request
	1000	on request	on request	on request	on request
1200*	on request	on request	on request	on request	
1400	600	on request	on request	on request	on request
	800	on request	on request	on request	on request
	1000	on request	on request	on request	on request
	1200*	on request	on request	on request	on request
	1400*	on request	on request	on request	on request
1600	600	on request	on request	on request	on request
	800	on request	on request	on request	on request
	1000	on request	on request	on request	on request
	1200	on request	on request	on request	on request
	1400*	on request	on request	on request	on request
	1600*	on request	on request	on request	on request



# Double flanged pieces with 45° flanged branch - FFC acc. to manufacturer's standard



277



**Dimensions and weights** (Dimensions in mm)

DN1	DN 2	L*	l <sub>1</sub> *	l*	e <sub>1</sub>	e <sub>2</sub>	Weight in kg ≈	Item no. Epoxy P4 blue	
								PN 10	PN 16
<b>50</b>	50	300	70	230	7,0	7,0	16,0	—	861403
<b>65</b>	65	330	70	260	7,0	7,0	19,0	—	708753
<b>80</b>	80	360	80	280	7,0	7,0	23,0	—	711334
<b>100</b>	50	400	100	300	7,2	7,0	26,0	—	on request
	80		100	300		7,0	28,0	—	—
	100		90	310		7,2	30,0	—	711192
<b>125</b>	80	450	120	330	7,5	7,0	35,0	—	—
	100		100	350		7,2	37,0	—	—
	125		100	350		7,5	40,0	—	707041
<b>150</b>	80	500	140	360	7,8	7,0	39,5	—	740189
	100		125	375		7,2	42,0	—	702446
	150		110	390		7,8	56,5	—	709346



\* Depending on the pattern equipment, differences in face-to-face dimensions are possible.  
Please request.

## Double flanged pieces with 45° flanged branch – FFC acc. to manufacturer's standard

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DN 1	DN 2	L*	l <sub>1</sub> *	l*	e <sub>1</sub>	e <sub>2</sub>	Weight in kg ≈	Item no. Epoxy P4 blue	
								PN 10	PN 16
200	100	600	170	430	8,4	7,2	68,0	712728	329028
	150		170	430		7,8	73,0	879595	331195
	200		130	470		8,4	82,5	704605	734359
250	100	700	250	450	9,0	7,2	90,0	329806	329641
	150		200	500		7,8	102,0	702445	765052
	200		175	525		8,4	106,5	717236	on request
	250		150	550		9,0	126,5	734273	329655
300	80	800	320	480	9,6	7,0	140,0	782096	on request
	100		320	480		7,2	141,0	765789	315990
	150		300	500		7,8	145,0	716621	711157
	200		250	550		8,4	153,0	718115	713081
	300		130	670		9,6	183,0	704814	320490
350	100	900	350	550	10,2	7,2	180,0	on request	on request
	125		360	540		7,5	183,0	on request	on request
	150		340	560		7,8	186,0	on request	on request
	200		300	600		8,4	190,0	on request	on request
	250		240	660		9,0	200,0	on request	on request
	300		230	670		9,6	220,0	on request	on request
	350		200	700		10,2	225,0	on request	on request
400	100	1000	420	580	10,8	7,2	228,0	on request	on request
	150		420	580		7,8	230,0	on request	on request
	200		350	650		8,4	235,0	on request	on request
	250		300	700		9,0	255,0	on request	on request
	300		250	750		9,6	275,0	on request	on request
	350		280	720		10,2	290,0	on request	on request
	400		200	800		10,8	300,0	on request	on request

\* Depending on the pattern equipment, differences in face-to-face dimensions are possible.  
Please request.

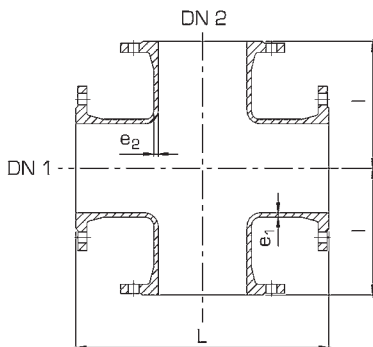


DN1	DN 2	L*	l <sub>1</sub> *	l*	e <sub>1</sub>	e <sub>2</sub>	Weight in kg ≈	Item no. Epoxy P4 blue	
								PN 10	PN 16
<b>450</b>	250	1000	250	750	11,4	9,0	320,0	on request	on request
	300		200	800		9,6	335,0	on request	on request
	350		200	800		10,2	345,0	on request	on request
	400		150	850		10,8	370,0	on request	on request
	450		150	850		11,4	380,0	on request	on request
<b>500</b>	200	1000	250	750	12,0	8,4	350,0	on request	on request
	250		230	770		9,0	360,0	on request	on request
	300		180	820		9,6	380,0	on request	on request
	350		200	800		10,2	400,0	on request	on request
	400		120	880		10,8	420,0	on request	on request
	450		130	870		11,4	440,0	on request	on request
	500	1200	350	1000	12,0	480,0	on request	on request	
<b>600</b>	200	1100	300	800	13,2	8,4	430,0	on request	on request
	250		250	850		9,0	445,0	on request	on request
	300		200	900		9,6	460,0	on request	on request
	350		250	850		10,2	485,0	on request	on request
	400		100	1000		10,8	520,0	on request	on request
	450		100	1000		11,4	545,0	on request	on request
	500		130	970		12,0	560,0	on request	on request
	600	1300	200	1100	13,2	650,0	on request	on request	
<b>700</b>	300	1000	50	950	14,4	9,6	580,0	on request	on request
	350	1000	30	970		10,2	600,0	on request	on request
	500	1400	350	1050		12,0	680,0	on request	on request
	700	1500	350	1150		14,4	750,0	on request	on request
<b>800</b>	400	1470	380	1090	15,6	10,8	835,0	on request	on request
	500	1100	50	1050		12,0	750,0	on request	on request
	600	1270	100	1170		13,2	836,0	on request	on request

\* Depending on the pattern equipment, differences in face-to-face dimensions are possible. Please request.

## All flanged cross tees – TT acc. to manufacturer's standard

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Dimensions and weights (Dimensions in mm)

DN 1	DN 2					Weight in kg ≈	
		L	l	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16
<b>40</b>	40	280	140	7,0	7,0	11,0	11,0
<b>50</b>	50	300	150	7,0	7,0	15,0	15,0
<b>65</b>	65	330	165	7,0	7,0	24,0	24,0
<b>80</b>	80	330	165	7,0	7,0	24,0	24,0
<b>100</b>	50	360	175	7,2	7,0	25,0	25,0
	80		175		7,0	24,8	24,8
	100		180		7,2	28,6	28,6
<b>125</b>	100	400	195	7,5	7,2	35,5	35,5
	125		200		7,5	36,7	36,7
<b>150</b>	50	440	200	7,8	7,0	37,0	37,0
	80		205		7,0	45,4	45,4
	100		210		7,2	40,5	40,5
	150		220		7,8	48,6	48,6





## Item numbers

DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
<b>40</b>	40	—	—	—	—
<b>50</b>	50	—	874903	—	308505
<b>65</b>	65	—	—	—	—
<b>80</b>	80	—	868246	—	309590
<b>100</b>	50	—	on request	—	—
	80	—	700894	—	308492
	100	—	868282	—	749493
<b>125</b>	100	—	327775	—	on request
	125	—	702729	—	308493
<b>150</b>	50	—	750611	—	—
	80	—	721204	—	—
	100	—	868332	—	776259
	150	—	868345	—	784945



## All flanged cross tees – TT acc. to manufacturer's standard

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DN1	DN 2					Weight in kg ≈	
		L	l	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16
<b>200</b>	50	520	230	8,4	7,0	42,0	42,0
	80		235		7,0	48,0	48,0
	100		240		7,2	54,0	54,0
	150		250		7,8	62,1	62,1
	200		260		8,4	71,3	71,3
<b>250</b>	80	700	270	9,0	7,0	102,0	102,0
	100		275		7,2	104,0	104,0
	125		275		7,5	107,0	107,0
	150		300		7,8	111,0	111,0
	200		325		8,4	124,5	124,5
	250		350		9,0	119,3	119,3
<b>300</b>	80	800	295	9,6	7,0	135,0	135,0
	100		300		7,2	148,0	148,0
	150		325		7,8	152,0	152,0
	200		350		8,4	177,0	164,0
	250		375		9,0	174,0	174,0
	300		400		9,6	203,0	203,0
<b>350</b>	100	850	325	10,2	7,2	136,5	142,5
	300		425		9,6	184,0	190,0
	350		425		10,2	209,0	203,0
<b>400</b>	80	900	345	10,8	7,0	164,0	174,0
	100		350		7,2	168,0	178,0
	150		350		7,8	173,0	183,0
	200		350		8,4	177,5	188,0
	250		350		9,0	197,5	193,0
	300		450		9,6	212,0	225,0
	350		450		10,2	234,0	247,0
	400		450		10,8	268,0	273,0



DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
200	50	328662	745708	–	–
	80	732215	745711	–	–
	100	874378	739432	749494	308494
	150	868368	728571	308495	308496
	200	874379	868390	771444	304738
250	80	783732	on request	on request	on request
	100	876456	779741	on request	on request
	125	–	–	–	–
	150	707933	on request	on request	on request
	200	on request	on request	on request	on request
	250	868425	713298	308497	308498
300	80	on request	on request	on request	on request
	100	on request	315990	on request	on request
	150	703992	711157	on request	on request
	200	706668	713081	on request	on request
	250	–	–	–	–
	300	700654	717804	308499	308500
350	100	on request	on request	on request	on request
	300	on request	on request	on request	on request
	350	on request	on request	on request	on request
400	80	on request	on request	on request	on request
	100	on request	on request	on request	on request
	150	on request	on request	on request	on request
	200	on request	on request	on request	on request
	250	on request	on request	on request	on request
	300	on request	on request	on request	on request
	350	on request	on request	on request	on request
	400	on request	on request	on request	on request

## All flanged cross tees – TT acc. to manufacturer's standard

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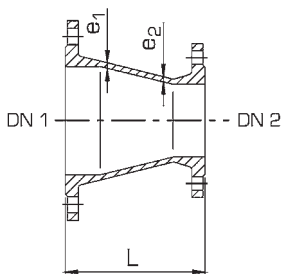
DN 1	DN 2					Weight in kg ≈		
		L	I	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	
<b>450</b>	150	950	375	11,4	7,8	306,0	324,0	
	450		375			314,0	341,0	
<b>500</b>	80	1000	400	12,0	7,0	232,0	260,0	
	150		400			7,8	355,0	383,0
	200		400			8,4	358,0	386,0
	250		400			9,0	362,0	390,0
	300		500			9,6	392,0	420,0
	400		500			10,8	397,0	430,0
	500		500			12,0	365,0	450,0
<b>600</b>	150	1100	450	13,2	7,8	389,0	381,0	
	200		450			8,4	334,0	384,0
	250		450			9,0	339,0	389,0
	300		550			9,6	397,0	447,0
	350		550			10,2	401,0	453,0
	400		550			10,8	406,0	469,0
	500		550			12,0	440,0	503,0
	600		550			13,2	555,0	572,0
<b>700</b>	150	650	315	14,4	7,8	–	333,0	
	200	650	325			8,4	–	458,0
	250	870	435			9,0	–	465,0
	400	870	555			10,8	479,0	515,0
	500	1200	600			12,0	–	655,0
	700	1200	600			14,4	691,0	729,0



DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
450	150	on request	on request	on request	on request
	450	on request	on request	on request	on request
500	80	on request	on request	on request	on request
	150	on request	on request	on request	on request
	200	on request	on request	on request	on request
	250	on request	on request	on request	on request
	300	on request	on request	on request	on request
	400	on request	on request	on request	on request
	500	on request	on request	on request	on request
600	150	on request	on request	on request	on request
	200	on request	on request	on request	on request
	250	on request	on request	on request	on request
	300	on request	on request	on request	on request
	350	on request	on request	on request	on request
	400	on request	on request	on request	on request
	500	on request	on request	on request	on request
	600	on request	on request	on request	on request
700	150	on request	on request	on request	on request
	200	on request	on request	on request	on request
	250	on request	on request	on request	on request
	400	on request	on request	on request	on request
	500	on request	on request	on request	on request
	700	on request	on request	on request	on request

## Double flanged tapers, concentric – FFR

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Dimensions and weights (Dimensions in mm)

DN 1	DN 2	L	e <sub>1</sub>	e <sub>2</sub>	Weight in kg ≈			
					PN 10	PN 16	PN 25	PN 40
<b>50*</b>	40	200	7,0	7,0	7,2	7,2	7,2	7,2
<b>65*</b>	40	200	7,0	7,0	8,0	8,0	8,0	8,0
	50	200		7,0	9,7	9,7	9,7	9,7
<b>80</b>	40*	200	7,0	7,0	8,1	8,1	8,1	8,1
	50*	200		7,0	8,6	8,6	8,6	8,6
	65	200		7,0	9,5	9,5	10,3	11,0
<b>100</b>	40*	200	7,2	7,0	9,1	9,1	9,1	9,1
	50*	200		7,0	9,7	9,7	9,7	12,9
	65*	200		7,0	–	10,8	–	14,0
	80	200		7,0	11,5	11,5	13,5	14,0
<b>125</b>	50*	200	7,5	7,0	–	15,0	–	–
	65*	200		7,0	–	13,5	–	–
	80*	200		7,0	–	12,9	19,4	19,4
	100	200		7,2	13,6	13,6	18,5	–
<b>150</b>	50	300	7,5	7,0	–	15,0	17,5	–
	65	300		7,0	–	15,5	18,0	–
	80*	200	7,8	7,0	–	15,4	16,2	19,5
	100*	200		7,2	–	16,4	16,4	23,8
	125	200		7,5	17,0	–	19,0	23,0



## Item numbers

DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
50*	40	—	859261	—	307749
65*	40	—	870752	—	797380
	50	—	870080	—	307759
80	40*	—	876030	—	777165
	50*	—	859325	—	751988
	65	—	859352	—	797381
100	40*	—	859370	—	778907
	50*	—	859381	—	750476
	65*	—	859427	—	750901
	80	—	859455	—	710225
125	50*	—	728963	—	-
	65*	—	702728	—	307735
	80*	—	859757	—	758292
	100	—	859764	—	705061
150	50	—	704407	—	786778
	65	—	733264	—	331506
	80*	—	859782	—	750902
	100*	—	859794	—	705062
	125	—	859803	—	705064



## Double flanged tapers, concentric – FFR

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DN 1	DN 2				Weight in kg ≈			
		L	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
<b>200</b>	50*	300	8,4	7,0	25,9	25,9	–	–
	65*	300		7,0	–	28,0	–	–
	80*	300		7,0	21,0	21,0	29,1	36,1
	100*	300		7,2	23,7	23,7	27,0	33,0
	125*	300		7,5	24,8	24,8	–	–
	150	300		7,8	26,5	26,5	36,2	40,5
<b>250</b>	80*	300	9,0	7,0	27,0	27,0	–	–
	100*	300		7,2	30,0	30,0	48,0	–
	125*	300		7,5	33,5	33,5	–	–
	150*	300		7,8	35,6	35,6	41,0	50,2
	200	300		8,4	34,0	34,0	44,0	58,0
<b>300</b>	80*	300	9,6	7,0	32,0	32,0	–	–
	100*	300		7,2	37,3	37,3	53,0	–
	125*	300		7,5	34,6	34,6	–	–
	150*	300		7,8	36,7	36,7	–	–
	200*	300		8,4	40,0	40,0	47,5	84,8
	250	300		9,0	46,0	46,0	88,0	110,0
<b>350</b>	150*	300	10,2	7,8	47,0	–	–	–
	200*	300		8,4	51,0	69,0	–	–
	250*	300		9,0	55,6	51,6	77,0	100,0
	300	300		9,6	56,0	63,2	72,0	108,0
<b>400</b>	200*	300	10,8	8,4	54,5	65,0	–	–
	250*	300		9,0	62,0	75,0	86,4	136,0
	300*	300		9,6	62,6	64,8	86,0	130,0
	350*	300		10,2	74,0	75,6	106,5	146,0
<b>450</b>	400	300	11,4	10,8	96,7	99,0	–	–





DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
200	50*	739915	759651	on request	on request
	65*	on request	on request	on request	on request
	80*	874377	875255	758293	793512
	100*	866246	711066	758294	787373
	125*	877334	874210	758295	789912
	150	866324	700448	877354	758185
250	80*	703137	705639	785069	on request
	100*	866399	711598	762203	307736
	125*	701380	703203	307737	307738
	150*	870477	705637	874200	749914
	200	866489	877590	727144	711829
300	80*	703138	713432	on request	on request
	100*	866527	716798	776128	307739
	125*	732218	792063	on request	on request
	150*	866536	709769	742395	307740
	200*	872598	877672	771816	307741
	250	866564	866593	769749	794193
350	150*	on request	on request	on request	on request
	200*	874178	712362	307742	on request
	250*	701235	738581	307743	on request
	300	859934	702147	307744	784913
400	200*	860157	708781	790708	307745
	250*	860190	876263	750023	307746
	300*	860230	860258	767033	780773
	350*	860282	700120	785763	307747
450	400	715962	310038	on request	on request



## Double flanged tapers, concentric – FFR

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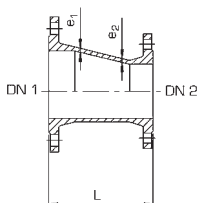
DN 1	DN 2				Weight in kg ≈			
		L	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
<b>500</b>	250*	600	12,0	9,0	120,0	138,3	–	–
	300*	600		9,6	135,0	159,3	–	–
	350*	600		10,2	149,6	176,0	–	–
	400	600		10,8	143,0	173,0	185,0	220,0
<b>600</b>	300*	600	13,2	9,6	175,0	221,0	–	–
	350*	600		10,2	162,0	227,0	–	–
	400*	600		10,8	204,7	233,0	–	–
	500	600		12,0	197,0	238,0	249,0	321,0
<b>700</b>	350*	600	14,4	10,2	251,6	–	–	–
	400*	600		10,8	263,0	–	–	–
	500*	600		12,0	285,0	308,0	–	–
	600	600		13,2	315,0	346,0	399,0	–
<b>800</b>	400*	600	15,6	10,8	264,5	–	–	–
	500*	600		12,0	356,4	389,0	–	–
	600*	600		13,2	361,3	416,0	475,0	–
	700	600		14,4	413,0	447,0	500,0	–
<b>900</b>	500*	600	16,8	12,0	320,0	398,0	–	–
	600*	600		13,2	357,0	410,0	–	–
	700*	600		14,4	374,0	390,0	–	–
	800	600		15,6	392,0	432,0	536,0	–
<b>1000</b>	600*	600	18,0	13,2	372,0	–	–	–
	700*	600		14,4	375,0	427,0	540,0	–
	800*	600		15,6	545,0	583,0	704,0	–
	900	600		16,8	550,0	612,0	–	–
<b>1200</b>	1000	790	20,4	18,0	–	824,0	–	–



DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
500	250*	708034	860442	307750	on request
	300*	701362	707394	765409	307752
	350*	711279	715360	307753	on request
	400	860529	877127	730389	307754
600	300*	on request	on request	on request	on request
	350*	on request	on request	on request	on request
	400*	on request	on request	on request	on request
	500	on request	on request	on request	on request
700	350*	on request	on request	on request	on request
	400*	on request	on request	on request	on request
	500*	on request	on request	on request	on request
	600	on request	on request	on request	on request
800	400*	on request	on request	on request	on request
	500*	on request	on request	on request	on request
	600*	on request	on request	on request	on request
	700	on request	on request	on request	on request
900	500*	on request	on request	on request	on request
	600*	on request	on request	on request	on request
	700*	on request	on request	on request	on request
	800	on request	on request	on request	on request
1000	600*	on request	on request	on request	on request
	700*	on request	on request	on request	on request
	800*	on request	on request	on request	on request
	900	on request	on request	on request	on request
1200	1000	on request	on request	on request	on request

# Double flanged tapers, eccentric – FFRe acc. to manufacturer's standard

292



Dimensions and weights (Dimensions in mm)

DN 1	DN 2	Weight in kg ≈						
		L	$e_1$	$e_2$	PN 10	PN 16	PN 25	PN 40
80	40	200	7,0	7,0	–	–	–	9,5
	50	200		7,0	–	–	–	10,0
	65	200		7,0	–	–	–	11,0
100	50	200	7,2	7,0	13,0	13,0	12,5	12,5
	65	200		7,0	12,5	12,5	13,0	13,0
	80	200		7,0	13,5	13,5	13,5	13,5
125	65	200	7,5	7,0	15,0	15,0	15,5	16,8
	80	200		7,0	16,0	16,0	16,6	17,9
	100	300		7,2	17,0	17,0	17,6	18,9
150	50	300	7,8	7,0	21,0	21,0	22,0	24,0
	80	300		7,0	20,0	20,0	24,0	26,0
	100	200		7,2	21,5	21,5	23,0	25,0
	100	300		7,2	18,4	18,4	25,5	27,5
	125	300		7,5	26,5	26,5	26,5	30,0
200	80	300	8,4	7,0	26,0	26,0	28,0	34,5
	100	300		7,2	27,0	27,0	29,5	35,5
	125	300		7,5	32,4	28,5	30,5	36,5
	150	300		7,8	25,4	29,5	31,5	38,5
250	100	300	9,0	7,2	37,0	37,0	40,5	50,5
	125	300		7,5	42,0	38,0	41,5	52,5
	150	300		7,8	42,0	39,5	44,5	53,5
	200	300		8,4	45,9	44,0	50,0	66,0



## Item numbers

DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
80	40	—	732240	—	307790
	50	—	714972	—	307791
	65	—	722038	—	309562
100	50	—	861708	—	307766
	65	—	712741	—	307767
	80	—	861714	—	743239
125	65	—	on request	—	307769
	80	—	713109	—	307770
	100	—	873902	—	307768
150	50	—	720648	—	307773
	80	—	on request	—	on request
	100	—	861759	—	307774
	100	—	875940	—	307771
	125	—	725391	—	307772
200	80	on request	on request	on request	on request
	100	720930	710446	776260	311112
	125	745455	873922	307775	on request
	150	866735	873926	307776	770629
250	100	735249	710450	331608	on request
	125	741975	—	307777	—
	150	713189	710452	307778	on request
	200	711272	712465	307779	on request



## Double flanged tapers, eccentric – FFRe acc. to manufacturer's standard

294

DN 1	DN 2	Weight in kg ≈						
		L	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
<b>300</b>	100	300	9,6	7,2	42,5	42,5	47,0	62,0
	150	300		7,8	45,0	48,6	61,5	84,5
	200	300		8,4	58,0	58,0	61,5	–
	250	300		9,0	55,6	55,6	69,5	97,0
<b>350</b>	200	500	10,2	8,4	88,0	91,0	105,0	128,0
	250	500		9,0	90,0	92,5	108,0	135,0
	250	600		9,0	98,0	103,0	114,0	141,0
	300	300		9,6	102,0	97,0	108,0	135,0
	300	500		9,6	108,0	114,0	125,0	162,0
<b>400</b>	150	500	10,8	7,8	88,0	97,0	109,0	145,0
	200	600		8,4	98,0	98,0	117,5	157,5
	250	500		9,0	92,0	109,0	130,0	170,0
	300	500		9,6	113,0	112,0	132,0	191,0
	300	600		9,6	115,0	129,0	141,0	200,0
	350	500		10,2	125,0	134,0	153,0	208,0
<b>450</b>	250	600	11,4	9,0	113,0	125,0	135,0	182,0
<b>500</b>	250	500	12,0	9,0	124,0	136,0	149,5	195,0
	300	500		9,6	123,5	144,0	162,0	213,0
	350	500		10,2	130,5	151,0	168,0	217,0
	400	500		10,8	172,0	172,0	204,0	172,0
	450	500		11,4	166,0	188,0	–	–
<b>600</b>	300	500	13,2	19,6	192,0	203,0	222,0	298,0
	400	500		10,8	207,0	252,0	263,0	356,0
	500	500		12,0	248,4	264,0	274,0	369,0
<b>700</b>	400	600	14,4	10,8	292,0	–	–	–
	500	600		12,0	320,0	356,0	–	–
	600	600		13,2	343,0	–	–	–
<b>800</b>	500	600	15,6	12,0	–	270,0	–	–
	600	600		13,2	275,0	327,0	–	–
	700	600		14,4	297,0	372,0	477,0	–
<b>900</b>	800	600	16,8	15,6	–	462,0	–	–
<b>1000</b>	800	600	18,0	15,6	429,0	–	–	–

Manufacturing of other dimensions and face-to-face lengths possible.



DN 1	DN 2	Item no. Epoxy P4 blue		Item no. etec enamel	
		PN 10	PN 16	PN 10	PN 16
<b>300</b>	100	733672	710455	on request	on request
	150	714208	753178	307780	770588
	200	715103	710457	307781	on request
	250	711335	710458	307782	on request
<b>350</b>	200	742818	772787	309561	on request
	250	735281	780931	307783	on request
	250	on request	on request	on request	on request
	300	741977	302964	307784	on request
	300	on request	on request	on request	on request
<b>400</b>	150	on request	on request	on request	on request
	200	on request	on request	on request	on request
	250	733789	710459	304201	on request
	300	866878	710460	307785	on request
	300	on request	on request	on request	on request
	350	740537	on request	307786	on request
<b>450</b>	250	on request	on request	on request	on request
<b>500</b>	250	774620	774704	—	—
	300	866895	on request	—	—
	350	741978	756903	307787	on request
	400	726607	710463	772793	307754
	450	on request	on request	on request	on request
<b>600</b>	300	on request	on request	on request	on request
	400	on request	on request	on request	on request
	500	on request	on request	on request	on request
<b>700</b>	400	on request	on request	on request	on request
	500	on request	on request	on request	on request
	600	on request	on request	on request	on request
<b>800</b>	500	on request	on request	on request	on request
	600	on request	on request	on request	on request
	700	on request	on request	on request	on request
<b>900</b>	800	on request	on request	on request	on request
<b>1000</b>	800	on request	on request	on request	on request

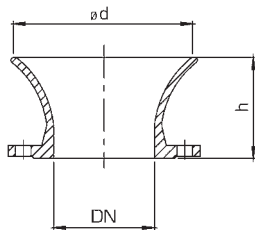




# Single flange bells acc. to manufacturer's standard



297



## Dimensions and weights (in mm)

DN	ø d	h	Weight in kg ≈ PN 10	Item no. Epoxy blue PN 10	Item no. Epoxy blue PN 16
<b>40</b>	140	100	4,0	—	—
<b>50</b>	140	110	5,0	—	705090 (PN 40)
<b>65</b>	155	115	7,0	—	877089
<b>80</b>	170	120	9,0	—	703106 (PN 40)
<b>100</b>	190	130	11,0	—	700094
<b>125</b>	210	145	14,0	—	729430
<b>150</b>	260	150	17,0	—	700052
<b>200</b>	300	180	25,9	875566	700041
<b>250</b>	350	200	32,0	709230	700136
<b>300</b>	420	250	44,0	714207	710572
<b>350</b>	550	250	63,0	741826	700042
<b>400</b>	550	250	74,0	869487	700010
<b>450</b>	650	280	115,0	on request	729929
<b>500</b>	680	300	130,0	712255	715384
<b>600</b>	780	300	175,0	736819	715385
<b>700</b>	895	300	195,0	on request	on request
<b>800</b>	1015	320	250,0	on request	on request
<b>900</b>	1100	390	270,0	on request	on request
<b>1000</b>	1200	390	355,0	on request	on request
<b>1200</b>	1440	520	465,0	on request	on request
<b>1600</b>	1880	550	780,0	on request	on request

C

10b

## Blank flanges – X

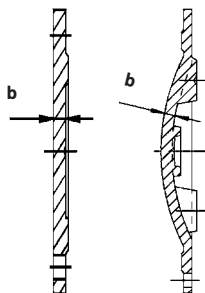
298

Dimensions and weights (Dimensions in mm)								
DN	b				Weight in kg ≈			
	PN 10	PN 16	PN 25	PN 40	PN 10	PN 16	PN 25	PN 40
<b>25</b>	16,0	16,0	16,0	16,0	1,0	1,0	1,0	1,0
<b>32</b>	16,0	16,0	16,0	16,0	1,8	1,8	1,8	1,8
<b>40</b>	22,0	22,0	22,0	22,0	2,1	2,1	2,1	2,1
<b>50</b>	22,0	22,0	22,0	22,0	2,5	2,5	2,5	2,5
<b>65</b>	22,0	22,0	–	–	3,1	3,1	3,1	3,1
<b>80</b>	16,0	16,0	16,0	16,0	4,0	4,0	5,0	5,0
<b>100</b>	16,0	16,0	16,0	16,0	4,6	4,6	5,1	5,1
<b>125</b>	16,0	16,0	16,0	20,5	6,0	6,0	6,6	8,2
<b>150</b>	16,0	16,0	17,0	23,0	7,6	7,6	8,6	11,4
<b>200</b>	17,0	17,0	19,0	27,0	11,4	11,4	13,6	20,0
<b>250</b>	19,0	19,0	21,5	31,5	17,2	16,8	21,0	33,0
<b>300</b>	20,5	20,5	23,5	35,5	25,0	24,5	31,0	51,0
<b>350</b>	20,5	22,5	26,0	–	30,5	34,5	43,5	–
<b>400</b>	20,5	24,0	28,0	–	38,0	46,0	59,5	–
<b>450</b>	21,5	26,0	30,5	45,0	67,0	91,5	98,0	107,0
<b>500</b>	22,5	27,5	32,5	48,0	56,0	79,0	106,0	165,0
<b>600</b>	25,0	31,0	37,0	–	86,0	123,0	147,0	–
<b>700</b>	27,5	34,5	–	–	127,0	174,0	–	–
<b>800</b>	30,0	38,0	–	–	176,0	244,0	–	–
<b>900</b>	32,5	41,5	–	–	230,0	323,0	–	–
<b>1000</b>	35,0	45,0	–	–	334,0	480,0	–	–
<b>1200</b>	40,0	52,0	–	–	582,0	737,0	–	–
<b>1400</b>	41,0	55,0	–	–	–	895,0	–	–



## Item numbers

Item no. Epoxy	Item no. Epoxy	Item no. etec enamel	Item no. etec enamel
—	870019	—	785068
—	766517	—	754212
—	757740	—	785068
—	757744	—	754212
—	757753	—	784769
—	869808	—	753883
—	869819	—	753859
—	869832	—	760514
—	869839	—	723376
869855	869864	754082	711968
869877	869884	739975	308529
869899	869923	774268	784914
703743	704130	308530	308531
869962	714960	785757	772521
869977	712367	on request	on request
869992	874678	760946	308532
871251	873588	308533	308534
870010	738701	308535	on request
709855	715226	308536	on request
874684	773944	on request	on request
869828	729733	on request	on request
on request	on request	on request	on request
on request	on request	on request	on request



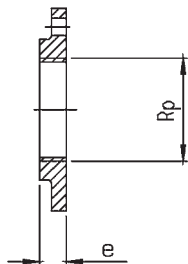
DN 400 PN 16  
 DN 450 PN 16 and PN 40  
 DN 500 PN 16 and PN 40

Flange connection dimension  
 acc. to EN 1092-2

## Blank flanges with threaded bore – XG acc. to manufacturer's standard

300

Dimensions (in mm)						
DN	PN	Rp (DIN EN 10226-1)	e			
			PN 10	PN 16	PN 25	PN 40
40	10-40	3/8 - 1 1/2 2	22,0	22,0	22,0	22,0
			27,0	27,0	27,0	27,0
50	10-40	3/8 - 1 1/2 2 - 2 1/2	22,0	22,0	22,0	22,0
			27,0	27,0	27,0	27,0
65	10-40	3/8 - 1 1/2 2 - 2 1/2	22,0	22,0	22,0	22,0
			27,0	27,0	27,0	27,0
80	10-40	3/8 - 1 1/2 2 - 3	16,0	16,0	16,0	16,0
			30,0	30,0	30,0	30,0
100	10-40	3/8 - 1 1/2 2 - 4	16,0	16,0	16,0	16,0
			36,0	36,0	36,0	36,0
125	10-40	3/8 - 1 1/2 2 - 4	16,0	16,0	16,0	20,5
			36,0	36,0	36,0	36,0
150	10-40	3/8 - 1 1/2 2 - 4	16,0	16,0	17,0	23,0
			36,0	36,0	36,0	36,0
175	10-40	3/8 - 1 1/2 2 - 4	16,0	16,0	–	–
			36,0	36,0	–	–
200	10-40	3/8 - 1 1/2 2 - 4	17,0	17,0	19,0	27,0
			36,0	36,0	36,0	36,0
250	10-40	3/8 - 1 1/2 2 - 4	19,0	19,0	21,5	31,5
			36,0	36,0	36,0	36,0
300			20,5	20,5	23,5	35,5
350			20,5	22,5	26,0	–
400			20,5	22,5	26,0	–
450			20,5	–	–	–
500	10-40	3/8 - 3	22,5	27,5	32,5	–
600			25,0	31,0	37,0	–
700			27,5	34,5	–	–
800			30,0	38,0	–	–
900			32,5	41,5	–	–
1000			35,0	45,0	–	–
1200			40,0	52,0	–	–





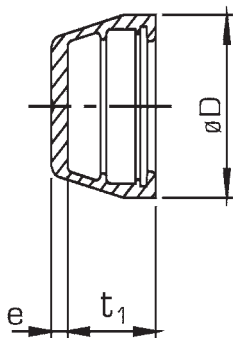
F

**Item numbers**

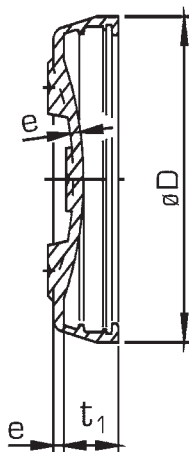
DN	PN	Item no. Epoxy blue Thread Rp 1"	Item no. Epoxy blue Thread Rp 1¼"	Item no. Epoxy blue Thread Rp 1½"	Item no. Epoxy blue Thread Rp 2"
40	40	757715	757716	757717	757718
50	40	757719	757720	757723	757724
65	16	757725	757726	757727	757728
80	40	703998	703993	703588	762324
100	16	704535	871037	870818	761998
125	16	702734	878925	876052	763632
150	16	876821	719721	871054	762325
200	10	702878	733212	705314	762809
200	16	713331	765732	730664	762836
250	10	701393	790490	871079	762326
250	16	795023	798332	729540	762865
300	10	—	—	877726	765486
300	16	—	—	716750	765497
350	10	—	—	752142	771385
350	16	—	—	779970	785376
400	10	—	—	704394	871103
400	16	—	—	707033	780725
450	10	—	—	—	—
450	16	—	—	—	—
500	10	—	—	729495	718272
500	16	—	—	722825	874680
600	10	—	—	—	871116
600	16	—	—	—	752388
700	10	—	—	—	739930
700	16	—	—	—	776840
800	10	—	—	—	754871
800	16	—	—	—	783959

# Pipe caps with TYTON® or screw-gland socket – 0 acc. to manufacturer's standard

302



DN 80 - 250



DN 300 - 1200

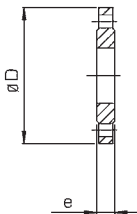
**Dimensions and weights** (Dimensions in mm)

DN	øD	t <sub>1</sub>	e		Weight in kg ≈		Item no. Epoxy blue
			PN 16	PN 25	PN 16	PN 25	
<b>80</b>	146,0	84		16,0		4,5	on request
<b>100</b>	166,0	88		16,0		4,8	on request
<b>125</b>	197,0	91		16,0		6,0	on request
<b>150</b>	224,0	94		17,0		8,0	on request
<b>200</b>	280,0	100		19,0		12,0	on request
<b>250</b>	336,0	105		21,5		19,0	on request
<b>300</b>	391,0	110		23,5		27,0	on request
<b>350</b>	450,0	110		26,0		34,0	on request
<b>400</b>	503,0	110		28,0		45,0	on request
<b>450</b>	541,5	120		30,0		—	on request
<b>500</b>	598,0	120		32,5		73,0	on request
<b>600</b>	707,0	120		37,0		110,0	on request
<b>700</b>	824,0	150	34,4		160		on request
<b>800</b>	935,0	160	38,0		220		on request
<b>900</b>	1042,0	175	41,5		345		on request

Conversion flanges DN 80  
4 / 8 holes  
acc. to manufacturer's standard



304



**Dimensions and weights** (Dimensions in mm)

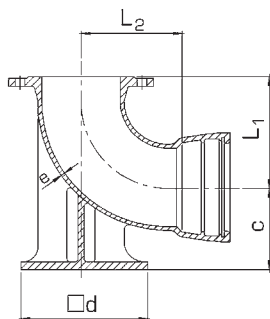
DN	PN	$\varnothing D$	e	Weight in kg $\approx$	Item no. Epoxy blue
80	10/40	200	27	3,9	869414



# Flanged socket duckfoot bends 90° – EN acc. to DIN 28650



305



C

10b

**Dimensions and weights** (Dimensions in mm)

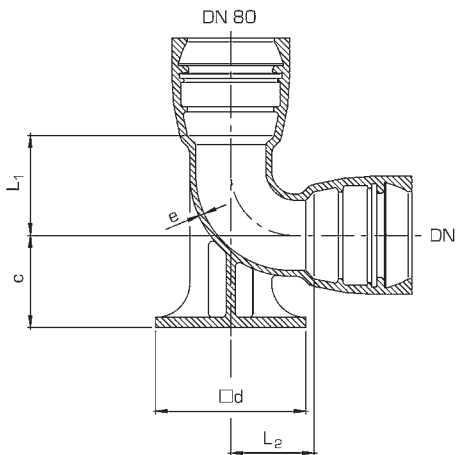
DN	L <sub>1</sub>	L <sub>2</sub>	c	□d	e	Weight in kg ≈ <sup>1)</sup>		Item no. with screw- gland socket Epoxy blue	Item no. with screw- gland socket etc enamel	Item no. with TYTON® socket Epoxy blue	Item no. with TYTON® socket etc enamel
						with screw- gland socket PN 10 / PN 16	with TYTON® socket PN 10 / PN 16				
80	165	145	110	180	7,0	14,6	15,7	743248	307495	876739	703233
100	180	158	125	200	7,2	18,4	19,0	743256	307493	874763	780329
150	220	265	160	250	7,8		36,5	–	–	712227	307494

<sup>1)</sup> without screw ring

# Double socket duckfoot bends 90° with Novo sockets – MMN / MMNR acc. to manufacturer's standard



306



**Dimensions and weights** (Dimensions in mm)

DN	L <sub>1</sub>	L <sub>2</sub>	c	□ d	e	Weight in kg ≈ PN 10	Item no. etec enamel
<b>80</b>	119	100	110	180	7,0	13,6	308645
<b>100</b>	128	125	125	200	7,2	17,8	774436
<b>150</b>	157	150	160	250	7,8	19,2	864468
<b>200</b>	181	225	190	300	8,4	30,5	308592

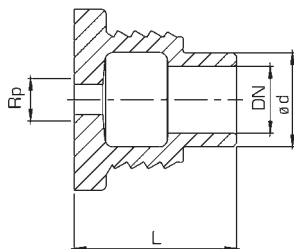
Also with 1, 2 or 3 draining bores with thread measured in inches available.  
Also with PE connection.

# Screw plugs for screw-gland sockets – PX

acc. to manufacturer's standard



307



C

10b

**Dimensions and weights** (Dimensions in mm)

DN	L	ød	Rp (EN 10226-1)	Weight in kg ≈ PN 10 / PN 16	Item no. Epoxy blue
40	97	56	1"	2,0	750529
40	97	56	1¼"	2,0	750530
40	97	56	1½"	2,0	750531
40	97	56	2"	2,0	750533



## Ductile cast iron special fittings

Further to the special fittings shown on the following pages, the following items are also available on request:

309

- **Single socket pieces with angled branch 45° – C**  
with screw-gland socket – acc. to manufacturer's standard

For further information please give us a call or contact your specialist dealer.

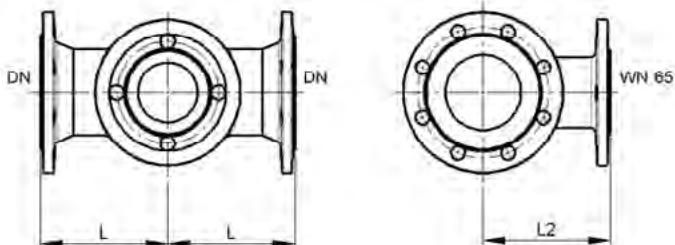
C

10c

# Double-flanged ball fitting with upper flange DN 80 with special flange drilling as per WN 65



310

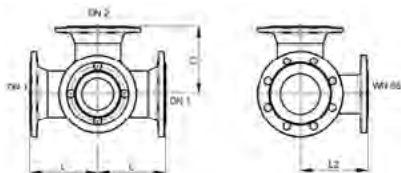


**Dimensions and weights** (Dimensions in mm)

DN	PN	L	L2	Weight in kg ≈	Item no. Epoxy blue WN 65	Item no. Epoxy blue DN 80/8-hole	Item no. etec enamel WN 65	Item no. etec enamel DN 80/8-hole
<b>80</b>		200	200	23,0	724171	724172	311413	on request
<b>100</b>		175	175	21,0	874707	750130	311408	on request
<b>125</b>		225	225	39,0	874710	856700	311409	on request
<b>150</b>		200	200	32,0	874715	750135	311410	on request
<b>200</b>	10	250	250	51,0	724173	724175	311411	on request
<b>200</b>	16	250	250	51,0	322006	320459	on request	on request
<b>250</b>	10	325	325	118,0	712967	750138	on request	on request
<b>250</b>	16	325	325	118,0	332064	302002	on request	on request
<b>300</b>	10	375	375	175,0	761370	750141	on request	on request
<b>300</b>	16	375	375	175,0	784430	on request	779179	on request
<b>400</b>	10	450	450	290,0	—	—	—	—
<b>400</b>	16	450	450	290,0	—	—	—	—

also available with standard DN 80 upper flange

# Flanged tee ball fitting with upper flange DN 80 with special flange drilling as per WN 65



311

## Dimensions and weights (Dimensions in mm)

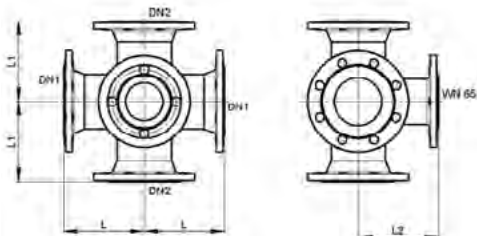
DN 1	DN 2	Pressure class	L, L1, L2	Weight in kg ≈	Item no. Epoxy blue WN 65	Item no. Epoxy blue DN 80/8-Loch	Item no. etec enamel WN 65	Item no. etec enamel DN 80/8-hole
80	80	40	200	25,0	761372	869576	328646	326997
	100	80	16	175	24,0	724168	724169	799378
100	100	16	175	25,0	869585	869591	301955	743817
	125	100	16	225	36,0	874691	869601	311415
125	125	16	225	45,0	874692	869607	311416	on request
	150	80	16	200	33,0	762427	316318	on request
150	100	16	200	34,0	874693	872697	784926	on request
	125	16	200	35,0	on request	on request	—	—
	150	16	200	37,0	877731	869633	780463	322511
	200	80	10	250	50,0	—	—	—
200	80	16	250	50,0	—	—	—	—
	100	10	250	52,0	761374	710671	311417	—
	100	16	250	52,0	762433	—	790024	—
	125	10	250	53,0	—	—	—	—
	125	16	250	53,0	—	—	—	—
	150	10	250	54,0	874694	876033	790020	—
	150	16	250	54,0	304601	740467	790094	—
	200	10	250	56,0	728067	876826	311418	—
	200	16	250	56,0	311890	724229	—	—
	250	80	10	325	96,0	—	—	—
80		16	325	96,0	—	—	—	—
100		10	325	98,0	762429	—	331791	—
100		16	325	98,0	—	—	—	—
125		10	325	99,0	—	—	—	—
125		16	325	99,0	—	—	—	—
150		10	325	100,0	762428	878509	—	—
150		16	325	100,0	787162	—	—	—
200		10	325	103,0	728316	322796	331792	—
200		16	325	103,0	—	329237	—	—
250		10	325	105,0	712968	877445	790019	—
250		16	325	105,0	760063	708831	790091	—

Other dimensions on request

C

10c

# All flanged cross tee ball fitting with upper flange DN 80 with special flange drilling as per WN 65



312

Dimensions and weights (Dimensions in mm)

DN 1	DN 2	L, L1, L2	Weight in kg ≈	Item no. Epoxy PN 10	Item no. Epoxy PN 16	Item no. etec PN 10	Item no. etec PN 16
80	80	200	28,0	762436	762436	—	—
100	80	175	27,0	on request	on request	on request	on request
	100	175	28,5	874690	874690	311419	311419
125	80	225	39,0	—	—	—	—
	100	225	55,0	761379	761379	on request	on request
	125	225	57,0	874689	874689	on request	on request
150	80	200	36,0	on request	on request	—	—
	100	200	38,0	735047	735047	311420	311420
	125	200	40,0	on request	on request	—	—
	150	200	42,5	874688	874688	302128	302128
200	80	250	55,0	—	—	—	—
	100	250	56,0	761378	331587	on request	on request
	150	250	61,0	727692	on request	on request	on request
	200	250	66,0	761375	311892	311421	on request
250	100	325	102,0	712973	328404	on request	on request
	125	325	104,0	—	—	—	—
	150	325	111,0	on request	on request	on request	on request
	200	325	113,0	—	—	—	—
	250	325	117,0	761376	on request	on request	on request
300	100	375	152,0	on request	on request	on request	on request
	150	375	155,0	on request	on request	on request	on request
	200	375	159,0	—	—	—	—
	300	375	168,0	761377	on request	on request	on request
400	400	450	280,0	on request	—	on request	—

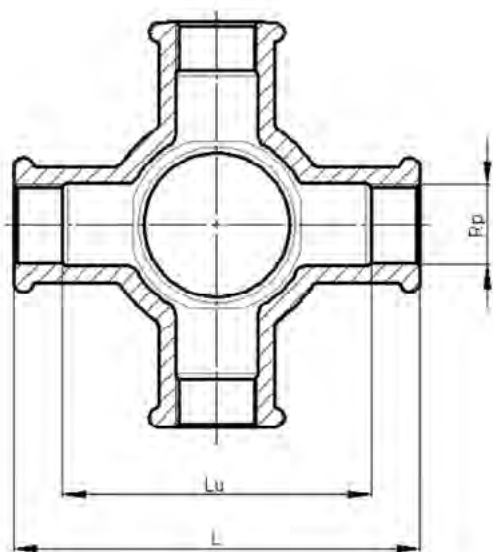
also available with standard DN 80 upper flange



## Connection drum



313



C

10c

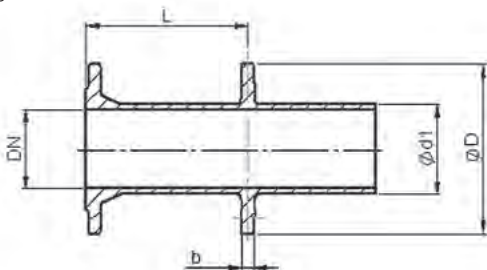
### Dimensions and weights (Dimensions in mm)

DN	Thread Rp	Lu	L	Weight in kg ≈	Item no. Epoxy blue	Item no. etec enamel
65	1¼"	160	210	4,1	762193	305802
65	1½"	160	210	3,8	762194	311422

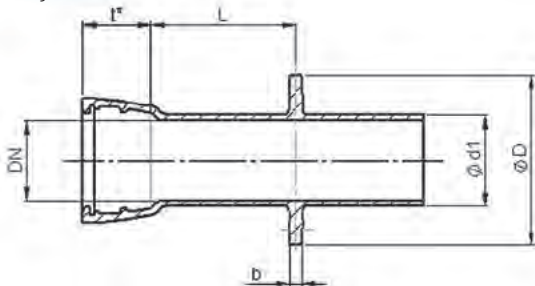
# Fittings with Puddle Flanges

314

Flanged fittings:



Socket fittings:



\*  $t$  = Socket length

**Dimensions (in mm)**

<b>DN</b>	<b>d1</b>	<b>D</b>	<b>b</b>	<b>Item no.</b>
<b>40</b>	56	150	16	on request
<b>50</b>	66	165	16	on request
<b>65</b>	82	185	16	on request
<b>80</b>	98	200	16	on request
<b>100</b>	118	220	16	on request
<b>125</b>	144	250	16	on request
<b>150</b>	170	285	16	on request
<b>200</b>	222	340	17	on request
<b>250</b>	274	400	19	on request
<b>300</b>	326	455	20	on request
<b>350</b>	378	505	20	on request
<b>400</b>	429	565	20	on request
<b>450</b>	480	615	21	on request
<b>500</b>	532	670	22	on request
<b>600</b>	635	780	25	on request
<b>700</b>	738	895	27	on request
<b>800</b>	842	1015	30	on request
<b>900</b>	945	1115	32	on request
<b>1000</b>	1048	1230	35	on request
<b>1200</b>	1255	1455	40	on request
<b>1400</b>	1462	1675	41	on request
<b>1600</b>	1668	1915	44	on request

The dimension L is subject to customer specification and is to be measured from the flange sealing seat or from the bottom of the socket up to the centre of the puddle flange.



## Remarks for ductile cast iron fittings for plastic pipelines

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These fittings for plastic pipelines are made of ductile cast iron and they are manufactured acc. to EN 12 842.

The flanges of the KS fittings are acc. to EN 1092-2.

All KS fittings are delivered with gaskets.

**Coatings:** see page 185

317

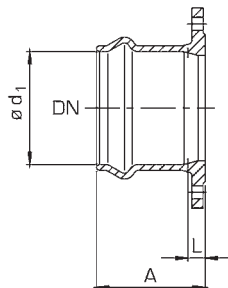
C

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# Flanged sockets E-KS



318



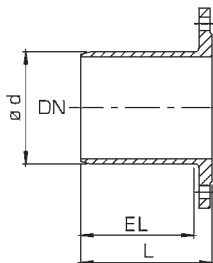
**Dimensions and weights** (Dimensions in mm)

DN 1	A	L min.	$\varnothing d_1$	Weight in kg $\approx$ PN 10	Item no. Epoxy P7 sky blue RAL 5015		Item no. etec enamel	
					PN 10	PN 16	PN 10	PN 16
<b>50</b>	100	20	63	3,0	—	750632	—	309357
<b>65</b>	110	14	75	3,8	—	750635	—	309359
<b>80</b>	120	13	90	5,5	—	750637	—	309360
<b>100</b>	125	11	110	6,0	—	750639	—	309349
<b>125</b>	155	18	140	9,0	—	750641	—	309350
<b>150</b>	150	25	160	10,0	—	750643	—	309351
<b>200</b>	180	29	225	18,0	750645	750647	309352	322247
<b>250</b>	220	36	280	28,0	750649	750650	309353	—
<b>300</b>	235	27	315	37,5	750652	750653	309354	—
<b>400</b>	310	36	450	72,5	750654	—	309355	—

# Flanged spigots F-KS



319



Dimensions and weights (Dimensions in mm)

DN 1	L	EL	ø d	Weight in kg ≈ PN 10	Item no. Epoxy P7 sky blue RAL 5015	
					PN 10	PN 16
<b>50</b>	128	100	63	3,2	—	868900
<b>65</b>	130	105	75	4,5	—	868953
<b>80</b>	135	105	90	5,0	—	868956
<b>100</b>	150	120	110	6,5	—	868966
<b>125</b>	165	130	140	9,6	—	868968
<b>150</b>	170	140	160	11,0	—	868970
<b>200</b>	190	162	225	16,0	869574	869653
<b>250</b>	248	219	280	27,7	869656	757604
<b>300</b>	264	232	315	37,2	869658	877896
<b>400</b>	294	261	450	55,8	726079	877897

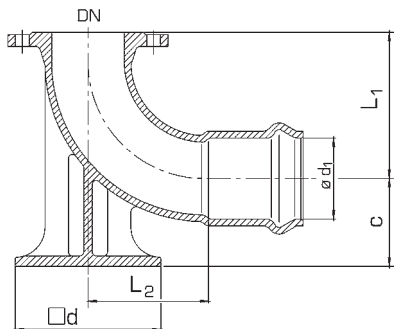
C

11

**Flanged socket duckfoot  
bends 90° – EN-KS**  
acc. to manufacturer's standard



320



**Dimensions and weights** (Dimensions in mm)

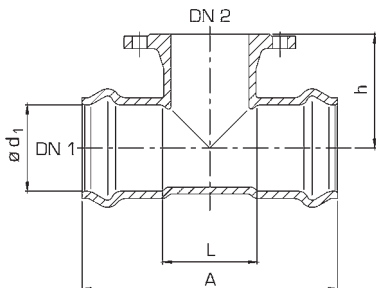
DN	L <sub>1</sub>	L <sub>2</sub>	c	ø d <sub>1</sub>	□ d	Weight in kg ≈ PN 10	Item no. Epoxy P7 sky blue RAL 5015	Item no. etec enamel
<b>80</b>	165	140	110	90	180	15,6	750656	309367
<b>100</b>	180	150	125	110	200	20,5	750658	309363
<b>150</b>	220	145	160	160	250	36,2	750659	309365



# Double socket tees with flanged branch MMA-KS



321



Dimensions and weights (Dimensions in mm)

DN 1	DN 2	A	L	$\varnothing d_1$	h	Weight in kg $\approx$ PN 10	Item no. Epoxy P7 sky blue RAL 5015
<b>50</b>	50	250	63	63	140	6,8	750680
<b>65</b>	50	265	66	75	150	7,8	750681
	65	280	81	75	150	9,4	750682
<b>80</b>	50	285	69	90	160	9,2	750683
	65	300	84	90	160	10,4	750684
	80	315	99	90	165	11,4	750686
<b>100</b>	50	310	74	110	170	10,9	750692
	65	325	89	110	175	11,9	750687
	80	340	104	110	175	15,0	750688
	100*	360	124	110	180	15,8	750690
<b>125</b>	50*	335	80	140	185	15,9	754522
	65*	350	95	140	185	17,2	750693
	80	365	110	140	190	18,5	750695
	100	385	130	140	195	19,5	750697
	125	410	135	140	200	23,1	750699

C

11



\* acc. to manufacturer's standard

# Double socket tees with flanged branch MMA-KS



322

DN 1	DN 2	A	L	ø d <sub>1</sub>	h	Weight in kg ≈ PN 10	Item no. Epoxy P7 sky blue RAL 5015	
							PN 10	PN 16
<b>150</b>	50	360	98	160	205	19,2	–	750701
	65	375	98	160	210	21,0	–	750702
	80	390	116	160	205	20,8	–	750704
	100	410	136	160	210	24,2	–	750706
	125	435	161	160	215	26,5	–	750707
	150	460	186	160	220	29,7	–	750709
<b>200</b>	80*	455	128	225	235	34,9	–	750711
	100*	475	148	225	240	37,6	–	750713
	125	500	173	225	245	39,8	–	–
	150	525	198	225	250	44,7	–	750714
	200*	575	248	225	260	51,4	750715	750716
<b>250</b>	80	515	140	280	265	48,0	–	750718
	100	535	160	280	270	52,0	–	750720
	150	585	210	280	280	57,6	–	750721
	200	635	260	280	290	65,6	750722	–
	250	673	310	280	300	73,6	750723	–
<b>300</b>	80	550	152	315	295	58,9	–	750725
	100	570	172	315	300	61,6	–	750726
	150	620	222	315	310	71,1	–	750727
	200*	670	272	315	320	79,4	754542	–
	250*	720	322	315	330	89,2	750729	–
	300*	770	372	315	340	93,0	750730	–
<b>400</b>	80*	660	200	450	355	124,7	on request	on request
	100	680	220	450	360	130,5	on request	on request
	200*	780	320	450	380	168,1	on request	on request
	400*	980	520	450	420	219,0	on request	on request

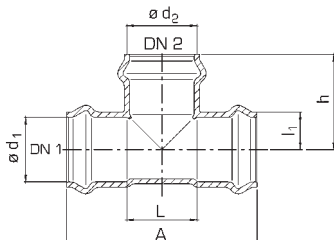
\* acc. to manufacturer's standard

# All socket tees

## MMB-KS



323



Dimensions and weights (Dimensions in mm)

DN 1	DN 2	A	L	ø d <sub>1</sub>	l <sub>1</sub>	h	ø d <sub>2</sub>	Weight in kg ≈ PN 10	Item no. Epoxy P7 sky blue RAL 5015
<b>50</b>	50	257	70	63	35	129	63	4,1	750736
<b>65</b>	50	272	73	75	35	134	63	5,0	750737
	65	283	84	75	45	142	75	5,4	750738
<b>80</b>	50	292	76	90	50	141	63	6,5	750739
	65	303	87	90	50	148	75	7,0	750740
	80	216	101	90	55	158	90	7,3	750742
<b>100</b>	50	317	81	110	60	150	63	8,7	750743
	65	328	92	110	60	158	75	9,1	750744
	80*	341	106	110	60	168	90	10,5	750746
	100	360	124	110	65	180	110	12,5	750748
<b>125</b>	80	366	112	140	75	182	90	12,8	750751
	100*	385	130	140	80	194	110	14,3	750753
	125	412	157	140	80	206	140	16,0	750754
<b>150</b>	80	391	118	160	82	190	90	15,3	750757
	100	410	136	160	85	203	110	18,5	750759
	125*	437	163	160	90	215	140	20,4	750760
	150	455	181	160	95	228	160	22,7	750762
<b>200</b>	80	456	130	225	115	219	90	28,7	750763
	100	475	148	225	115	232	110	30,7	750765
	125	502	175	225	120	244	140	32,4	750766
	150	520	193	225	120	257	160	39,8	750767
	200	578	252	225	130	289	225	42,7	750768

\* acc. to manufacturer's standard

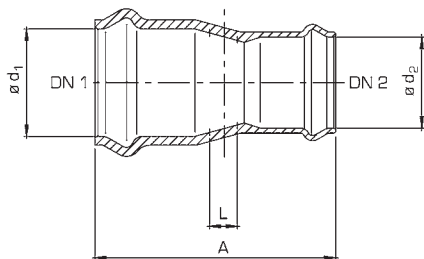
C

11

## Double socket tapers MMR-KS



324



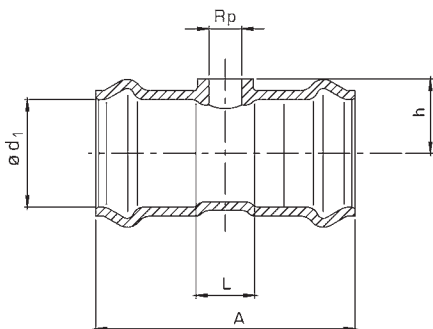
Dimensions and weights (Dimensions in mm)

DN 1	DN 2	A	L	ø d <sub>1</sub>	ø d <sub>2</sub>	Weight in kg ≈ PN 10	Item no. Epoxy P7 sky blue RAL 5015
<b>65</b>	50	213	20	75	63	3,6	750801
<b>80</b>	50	230	28	90	63	4,8	750803
	65	232	24	90	75	5,5	750804
<b>100</b>	50	238	35	110	63	5,6	750805
	65	254	36	110	75	6,8	750806
	80	257	31	110	90	7,2	750808
<b>125</b>	80	283	48	140	90	8,3	750809
	100	286	41	140	110	9,2	750811
<b>150</b>	80	305	44	160	90	10,8	750813
	100	308	53	160	110	11,0	750815
	125	307	42	160	140	12,1	750817
<b>200</b>	100	370	84	225	110	16,4	750819
	125	368	77	225	140	20,2	750821
	150	372	71	225	160	21,8	750823
<b>250</b>	100	420	114	280	110	29,1	750824
	150	427	102	280	160	28,8	750825
	200	430	79	280	225	32,6	750827

# Double sockets with 2" internal thread branch MMI-KS



325



C

11

**Dimensions and weights** (Dimensions in mm)

DN1	Rp	A	L	$\varnothing d_1$	h	Weight in kg $\approx$ PN 10	Item no. Epoxy P7 sky blue RAL 5015
<b>50</b>	2"	255	68	63	60	4,5	754544
<b>65</b>	2"	270	71	75	65	5,8	750775
<b>80</b>	2"	290	74	90	85	7,4	750779
<b>100</b>	2"	315	79	110	90	9,2	750784
<b>125</b>	2"	340	85	140	105	12,7	750788
<b>150</b>	2"	365	91	160	115	15,9	750793
<b>200</b>	2"	430	103	225	155	27,8	750797
<b>250</b>	2"	490	115	280	180	41,4	750798
<b>300</b>	2"	523	127	315	195	51,2	750799



# Remarks for Ductile Iron Fittings for Sewage Pipelines

Fittings as per EN 598.

327

## Coatings:

inside and outside powder epoxy coating red / brown-red colour.  
Blue colour on request.

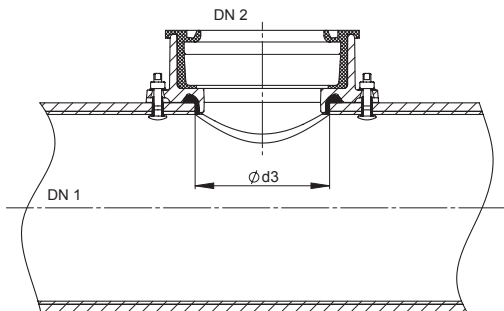
Further information see page 185 and 194.

# Drilling saddle piece 90°

90° branch with clay pipe socket  
and NBR sealing SM 90



- 328 for cast iron, steel or fibre cement pipes  
as per EN 598



## Dimensions and weights (Dimensions in mm)

DN 1	DN 2	suitable for clay pipe spigot end	$\varnothing d3$ drilling	Weight in kg $\approx$	Item no. Epoxy P7 brown-red RAL 3011
250 – 300	150	186	172	10,3	758433
350	150	186	172	9,8	758434
400 – 600	150	186	172	9,3	758435
700 – 1200	150	186	172	8,5	758436



# Drilling saddle piece 45°

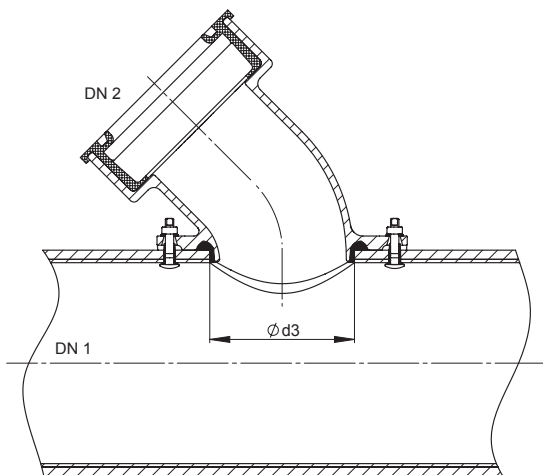
45° branch with clay pipe socket

and NBR sealing SM 45



for cast iron, steel or fibre cement pipes  
as per EN 598

329



C

12

## Dimensions and weights (Dimensions in mm)

DN 1	DN 2	suitable for clay pipe spigot end	$\varnothing d3$ drilling	Weight in kg $\approx$	Item no. Epoxy P7 brown-red RAL 3011
250 – 300	150	186	172	11,0	760498
350 – 400	150	186	172	11,0	760499

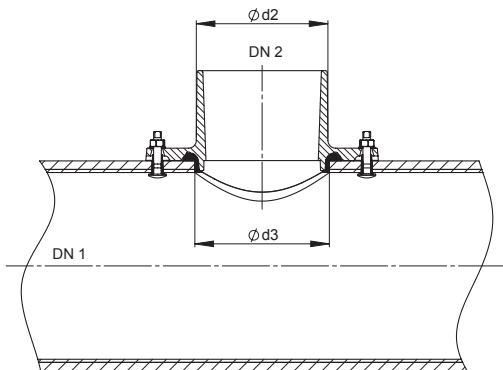
# Drilling saddle piece 90°

90° branch with spigot for ductile iron pipe

SI 90



- 330 for cast iron, steel or fibre cement pipes  
as per EN 598



Dimensions and weights (Dimensions in mm)

DN 1	DN 2	$\varnothing d2$ ductile iron	$\varnothing d2$ clay pipe	$\varnothing d3$ drilling	Weight in kg $\approx$	Item no. Epoxy P7 brown-red RAL 3011
250 - 300	150	170	186	172	9,1	758445
300	200	222	242	232	15,3	758441
350	200	222	242	232	16,0	758453
400	200	222	242	232	14,1	758454
400 - 600	150	170	186	172	7,2	758447
500 - 600	200	222	242	232	13,2	758452
700 - 800	200	222	242	232	12,6	758443
700 - 1200	150	170	186	172	6,6	758446
900 - 1200	200	222	242	232	13,0	758444

# Drilling saddle piece 90°

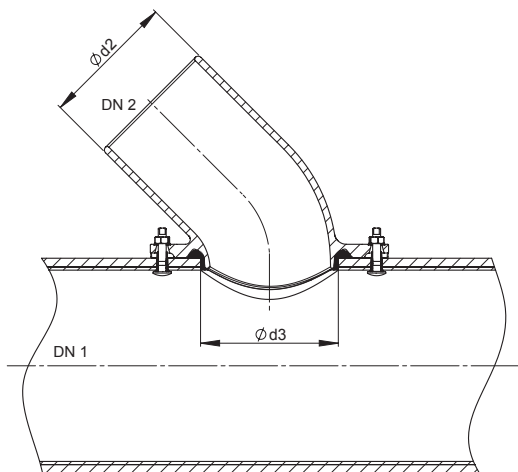
45° branch with spigot for ductile iron pipe

SI 45



for cast iron, steel or fibre cement pipes  
as per EN 598

331



C

12

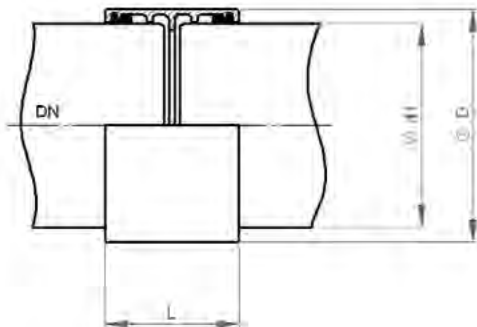
## Dimensions and weights (Dimensions in mm)

DN 1	DN 2	$\phi d2$ ductile iron	$\phi d3$ drilling	Weight in kg $\approx$	Item no. Epoxy P7 brown-red RAL 3011
250 - 300	150	170	172	9,1	760500

# TYTON®-couplings with TYTON® NBR seals MM



332 as per EN 598



**Dimensions and weights** (Dimensions in mm)

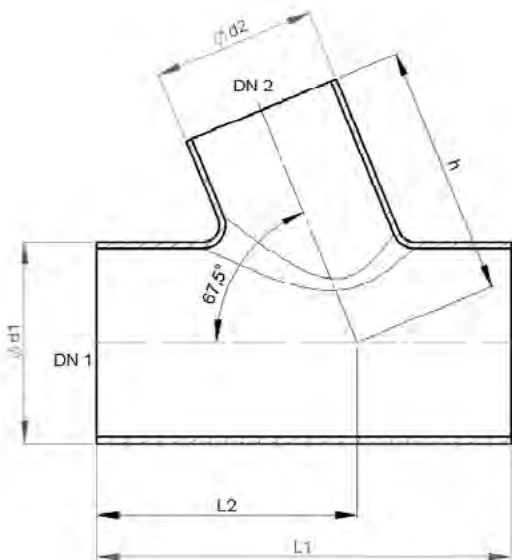
DN	ød1	øD	L	Deviation per socket	Weight in kg ≈	Item no. Epoxy P7 brown-red RAL 3011
150	170	210	160	5°	8,0	788333
200	222	262	165	5°	11,5	788332
250	274	315	180	5°	14,7	788335
300	326	370	200	5°	21,0	788336
350	378	425	215	4°	29,0	788337
400	429	480	210	4°	36,0	788340
500	532	590	225	3°	58,0	788341
600	635	695	250	3°	79,0	788342
700	738	810	305	3°	125,0	788343
800	842	920	325	3°	126,0	788344

# Spigot end branch 67° ICI 67



suitable for ductile iron sewage pipes  
as per EN 598

333



C

12

## Dimensions and weights (Dimensions in mm)

DN 1	DN 2	ø d1	ø d2	L1	L2	h	Weight in kg ≈	Item no. Epoxy P7 brown-red RAL 3011
200	150	222	170	568	326	310	26,0	757124

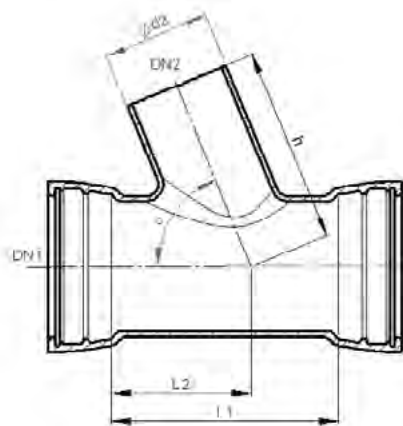
## Double socket branch with TYTON® sockets

45° branch with spigot for clay pipe MMI 45 or

67° branch with spigot for ductile iron pipe MMI 67



334 as per EN 598



Dimensions and weights (Dimensions in mm)

DN1	DN 2	ød2	L1	L2	h	α	Deviation per socket	Weight in kg ≈	Item no. Epoxy P7 brown-red RAL 3011
200	150 STZ	186	370	310	400	45°	5°	34,5	710644
200	150 GGG	170	360	222	310	67°	5°	31,0	757126

# Double socket branch with TYTON® sockets

45° branch with clay pipe socket

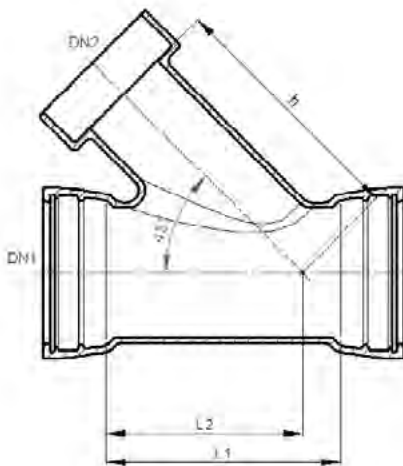
MMM



with NBR sealing

as per EN 598

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C

12

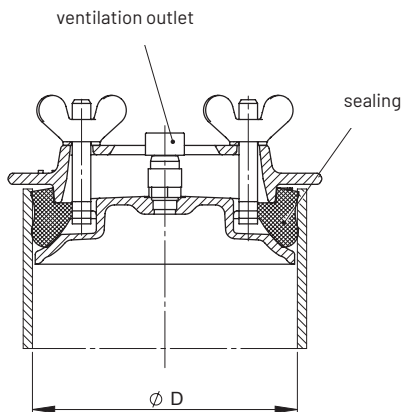
## Dimensions and weights (Dimensions in mm)

DN 1	DN 2	ød2	L1	L2	h	Deviation per socket	Weight in kg ≈	Item no. Epoxy P7 brown-red RAL 3011
200	150 STZ	186	370	310	400	5°	38,0	788347

# Pipe sealing cap RVD



336 with ventilation outlet



## Dimensions and weights (Dimensions in mm)

DN	$\varnothing D$	Weight in kg $\approx$	Item no. Epoxy P7 brown-red RAL 3011
150	143	2,0	590029

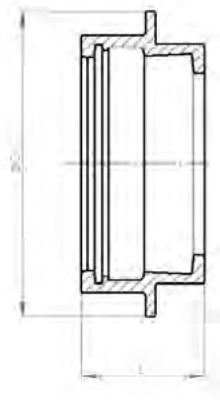


# Manhole connection piece with TYTON® socket SA



as per EN 598

337



**Dimensions and weights** (Dimensions in mm)

DN	øD	L	Deviation	Weight in kg ≈	Item no. Epoxy P7 brown-red RAL 3011
150	260	100	5°	6,0	750534
200	310	100	5°	7,5	750535
250	360	110	5°	9,5	750536
300	415	110	5°	12,0	750537
400	520	110	4°	16,0	750538
500	635	110	3°	19,5	750539
600	730	120	3°	28,0	750540
700	845	160	3°	54,0	788348
800	950	160	3°	57,0	788349
900	1050	175	3°	76,0	788350
1000	1160	185	3°	82,0	788351

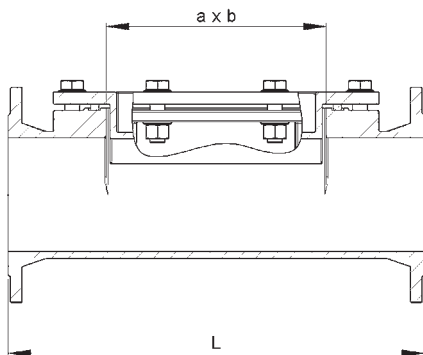
C

12

## Double flanged hatchboxes acc. to manufacturer's standard



338



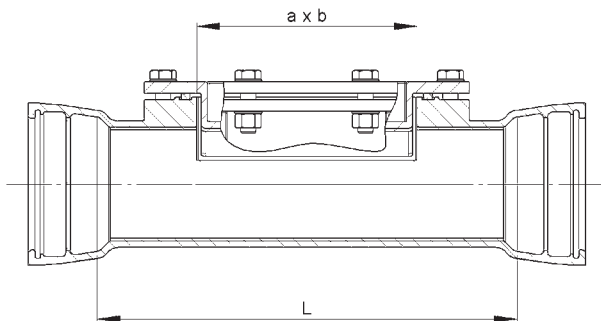
**Dimensions and weights** (Dimensions in mm)

DN	L	a x b	Weight in kg ≈ PN 10	Item no. Epoxy P7 brown-red RAL 3011	Item no. Epoxy P4 blue RAL 5005
<b>80</b>	500	250 / 80	33	767317	767318
<b>100</b>	500	250 / 100	41	767321	767320
<b>125</b>	550	300 / 125	56	767409	776882
<b>150</b>	550	290 / 150	59	767416	767412
<b>200/10</b>	650	330 / 200	90	767431	767430
<b>250/10</b>	700	360 / 250	124	767438	778432
<b>300/10</b>	750	400 / 300	163	767456	767455
<b>350/10</b>	800	500 / 350	232	767472	754674
<b>400/10</b>	900	480 / 400	268	767475	767474
<b>500/10</b>	900	550 / 500	414	767479	789669

# Double socket hatchboxes acc. to manufacturer's standard



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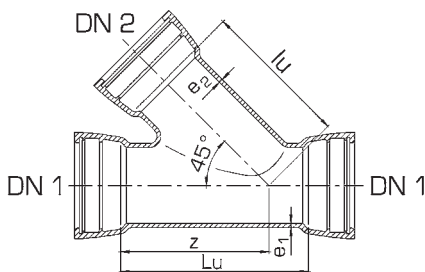
12

**Dimensions and weights** (Dimensions in mm)

DN	L	a x b	Weight in kg ≈ PN 10	Item no. Epoxy P7 brown-red RAL 3011
<b>100</b>	450	250 / 100	40	767404
<b>150</b>	550	290 / 150	68	767426
<b>200</b>	600	330 / 200	88	305108
<b>250</b>	650	360 / 250	120	767445
<b>300</b>	700	400 / 300	159	767462
<b>350</b>	750	500 / 350	227	767473
<b>400</b>	850	480 / 400	265	767805
<b>500</b>	850	550 / 500	385	on request

## Double socket pieces with 45° socket branch – MMC acc. to manufacturer's standard

340



Dimensions and weights (Dimensions in mm)

DN 1	DN 2	Lu	lu	z	e <sub>1</sub>	e <sub>2</sub>	Weight in kg ≈ with TYTON® sockets	Item no.
80	80	270	200	200	7,0	7,0	22,0	on request
	100	300	250	250	7,2	7,0	25,0	on request
100	100	300	250	250		7,2	30,0	on request
	125	350	250	250	7,5	7,2	40,0	on request
125	125	350	250	250		7,5	41,0	on request
	150	380	300	300	7,8	7,0	33,0	on request
150	100	380	300	300		7,2	36,0	on request
	150	380	300	300		7,8	39,0	on request
200	100	500	360	360	8,4	7,2	56,2	on request
	150	500	380	380		7,8	62,0	on request
	200	500	380	380		8,4	65,0	on request
250	100	600	395	395	9,0	7,2	67,0	on request
	150	500	400	395		7,8	71,0	on request
	200	500	400	430		8,4	101,0	on request
	250	600	460	460		9,0	120,0	on request
300	100	450	370	370	9,6	7,2	89,6	on request
	150	450	370	370		7,8	93,4	on request
	200	450	470	420		8,4	95,0	on request
	250	700	500	500		9,0	128,0	on request
	300	700	525	525		9,6	142,6	on request





DN 1	DN 2	Lu	lu	z	e <sub>1</sub>	e <sub>2</sub>	Weight in kg ≈ with TYTON® sockets	Item no.
<b>350</b>	150	700	470	470	10,2	7,8	153,0	on request
	200	700	510	510		8,4	160,0	on request
	250	700	530	530		9,0	172,0	on request
	300	700	570	610		9,6	177,0	on request
	350	880	690	760		10,2	195,0	on request
<b>400</b>	100	440	480	440	10,8	7,2	131,0	on request
	125	440	490	450		7,5	138,0	on request
	150	440	490	450		7,8	141,0	on request
	200	640	570	580		8,4	159,0	on request
	300	850	650	700		9,6	181,0	on request
	400	850	650	650		10,8	209,0	on request
<b>500</b>	100	450	590	515	12,0	7,2	167,0	on request
	150	450	590	515		7,8	177,0	on request
	200	740	620	550		8,4	220,0	on request
	250	740	640	620		9,0	231,0	on request
	300	740	720	680		9,6	237,0	on request
	400	850	720	750		10,8	266,0	on request
	500	1040	845	845		12,0	385,0	on request
<b>600</b>	150	750	750	620	13,2	7,8	240,0	on request
	200	750	750	620		8,4	245,0	on request
	250	750	775	680		9,0	250,0	on request
	300	750	800	740		9,6	260,0	on request
	400	1150	800	765		10,8	400,0	on request
	500	1210	920	915		12,0	482,0	on request
	600	1210	985	975		13,2	506,0	on request
<b>700</b>	200	575	825	675	14,4	8,4	298,0	on request
	300	925	885	810		9,6	433,0	on request
	400	925	940	890		10,8	445,0	on request
	500	1080	1020	990		12,0	635,0	on request
	600	1380	1070	1055		13,2	693,0	on request
	700	1380	1140	1140		14,4	750,0	on request
<b>800</b>	600	1250	1150	1110	15,6	13,2	745,0	on request
	800	1550	1275	1275		15,6	1013,0	on request



**D**

**Laying and assembly  
instructions**







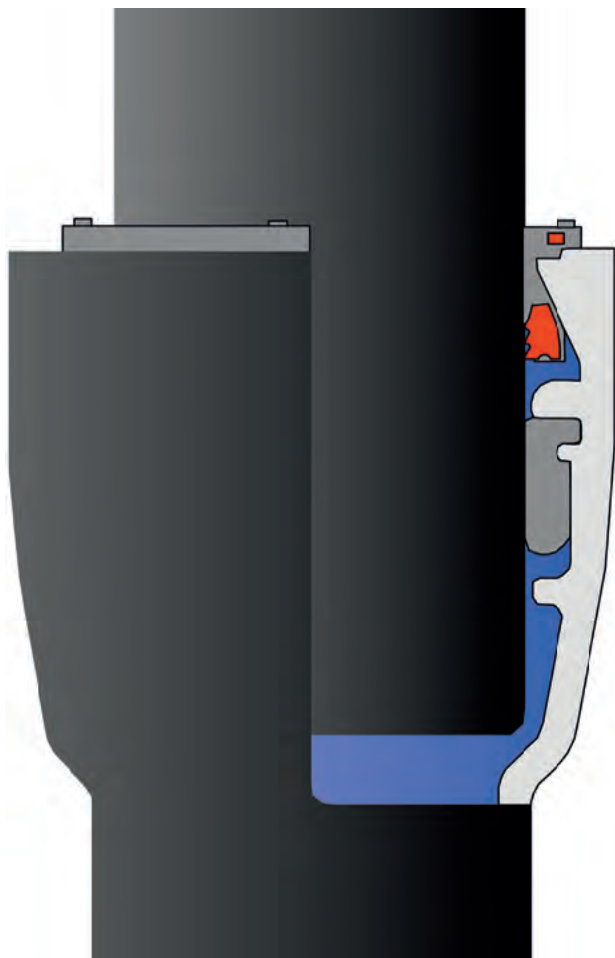
The DVGW standard GW 368 "Thrust-resistant socket joints for pipes, fittings and valves made of ductile cast iron or steel" is presently being modified.

For up-to-date information please refer to the FGR/EADIPS website at:

[www.eadips.org](http://www.eadips.org)

# Laying instructions for ductile cast iron pressure pipes, fittings and valves, equipped with thrust resisting joint NOVO-SIT®

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### General instructions

For laying pressure pipes, fittings and valves with thrust resisting joint **NOVO-SIT**<sup>®</sup>, the "laying instructions for ductile cast iron pressure pipes and fittings with **TYTON**<sup>®</sup> joint" should be observed.

### Application field

**NOVO-SIT**<sup>®</sup> locking rings are available for the nominal diameters DN 80 up to 800. For the allowable operating pressures, please refer to page 44.

This self-anchoring, thrust resisting socket joint substitutes concrete anchoring blocks.

The suitable number of thrust resisting connections has been laid down in DVGW standard GW 368 and has to be observed.

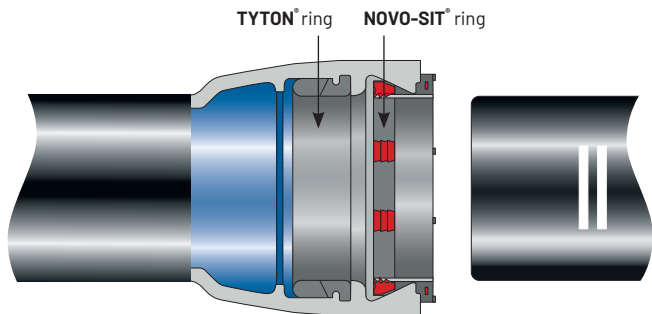
Before installation in lines for bridges, ducts or river-crossings, please contact our service team.

Figure:

**NOVO-SIT**<sup>®</sup> ring with vulcanised segments made of chromium steel



### Assembling steps



# Laying instructions for ductile cast iron pressure pipes, fittings and valves, equipped with thrust resisting joint NOVO-SIT®

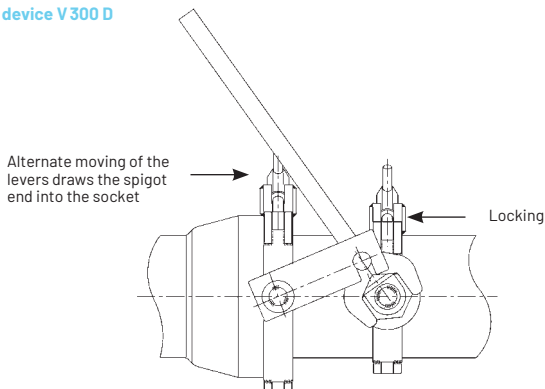
- 348
1. Clean the inside of the socket, particularly the **TYTON®** groove.
  2. Insert gasket (**TYTON®** ring) by deflecting and squeezing, so that the gasket is firmly bedded in its seating. The inner part of the inserted **TYTON®** ring should be slightly lubricated.
  3. Insert **NOVO-SIT®** ring into the pre-chamber.
  4. Clean the spigot end and slightly lubricate it, particularly at the rounded end; then insert through the **NOVO-SIT®** ring until it touches the **TYTON®** ring concentrically. From DN 300 up, this already requires a laying tool.
  5. Further assembly can be made, depending on the nominal dimension, with a lever or a laying tool.

**Deviation should be avoided.**

## Important:

Changes of circumferential directions have to be arranged before connecting (e.g. installation of outlets, tees a.s.o.).

## Laying device V 300 D



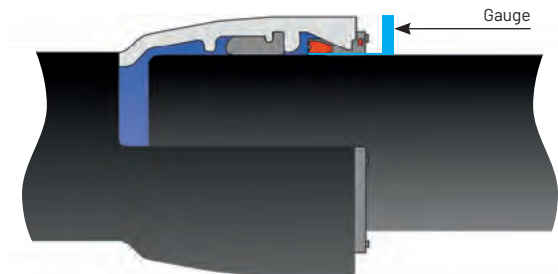
## Attention:

After connecting both parts, the locking of the segments has to be accomplished by moving the levers in the opposite direction.



The exact position of the **TYTON**® ring has to be tested with a suitable gauge between the segments on the whole circumference.

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**Note:**

Deviation of the installed thrust resisting joint is possible as follows:

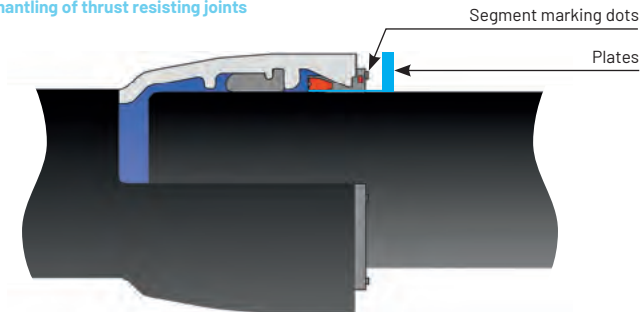
up to DN 400 - 3°

up to DN 700 - 2°

up to DN 800 - 1°

A pipe with 6 m length and 1° deflection deviates approx. 10 cm off the neutral pipe axis.

**Dismantling of thrust resisting joints**



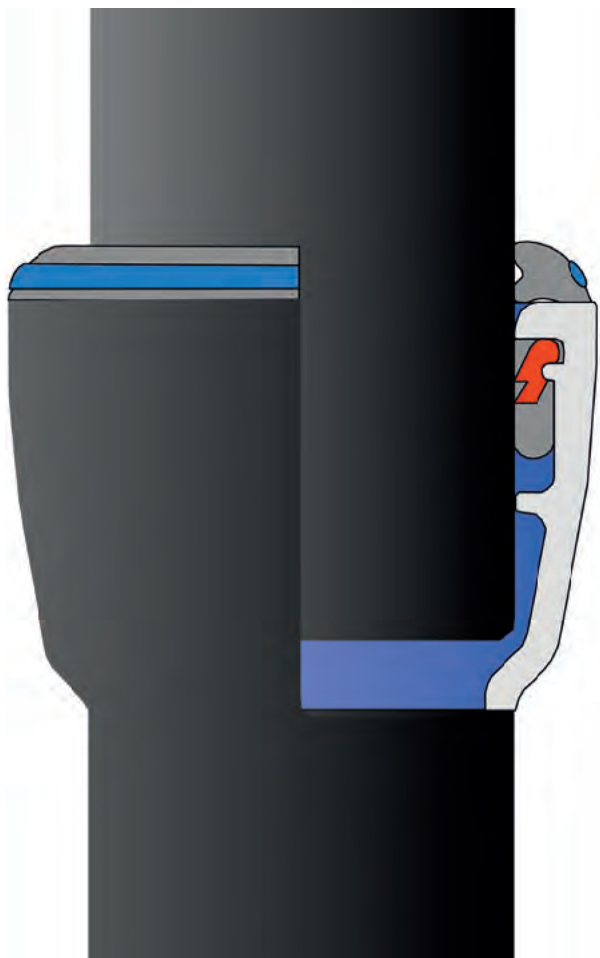
Push the spigot completely into the socket. Lubricate the dismantling blades on both sides and drive them into the socket gap at the segment marking dots, with the help of the hammering device. Use the pipe laying tool or dismantling collar to draw the spigot out of the socket.

D

a

# Laying instructions for ductile cast iron pressure pipes, fittings and valves, equipped with thrust resisting joint TYTON® SIT®

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## General instructions:



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For laying pressure pipes, fittings and valves with thrust resisting joint **TYTON®SIT®** the "laying instructions for ductile cast iron pressure pipes and fittings with **TYTON®** joint" should be observed.

Figure:

After cleaning, the **TYTON®SIT®** thrust resisting ring (with segments) has to be deformed acc. to the illustration and inserted into the socket.



### Application field:

**TYTON®SIT®** locking rings are available for the nominal diameters DN 80 up to DN 400.

For the allowable operating pressures and pressure classes please refer to page 42.

This self-anchoring, thrust resisting socket joint substitutes concrete anchoring blocks. The suitable number of thrust resisting connections has been laid down in DVGW-standard GW 368 and has to be observed.

Before installation in lines for bridges, ducts or river crossings, please contact our service team.

### Assembling steps

1. Clean the inside of the socket, particularly the **TYTON®** groove.
2. The **TYTON®SIT®** ring has to be cleaned, deformed acc. to the illustration and inserted into the socket. Ensure that the S-bend is located between two segments during deformation. The inner part of the inserted **TYTON®SIT®** ring should be slightly lubricated.
3. Clean the spigot end, slightly lubricate and insert concentrically into the socket until it touches the **TYTON®SIT®** ring.
4. Mount the laying tool as per the illustration and draw the spigot end into the socket (see page 346).

**Deviation should be avoided!**

D

a

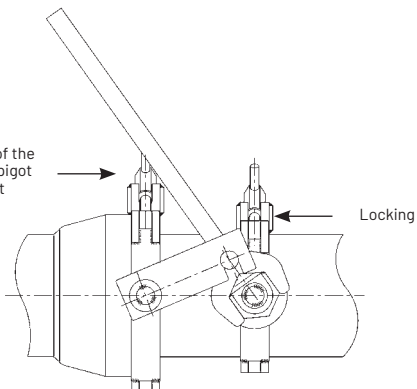
# Laying instructions for ductile cast iron pressure pipes, fittings and valves, equipped with thrust resisting joint TYTON® SIT®

## 352 Important:

Changes of circumferential directions have to be arranged before connecting (e.g. installation of outlets, tees a.s.o.).

### Laying device V 300 D

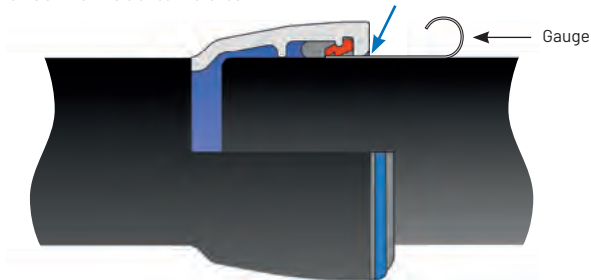
Alternate moving of the levers draws the spigot end into the socket



### Attention:

After connecting both parts, the locking of the segments has to be accomplished by moving the levers in the opposite direction.

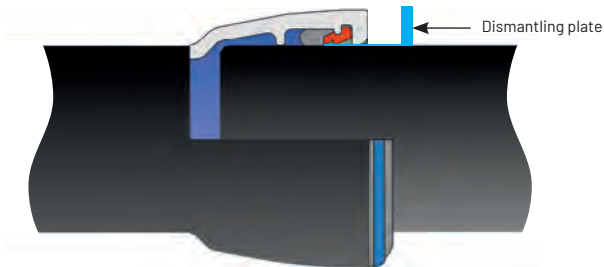
**The exact position of the TYTON® SIT® ring has to be tested with a suitable gauge between segments on the whole circumference.**



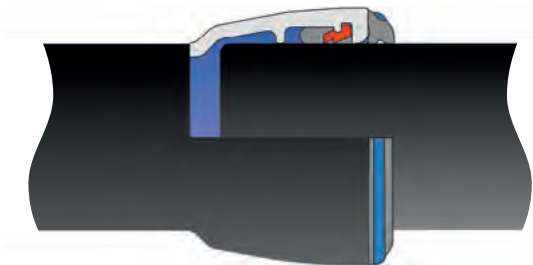


**Note:**

Deviation of the installed thrust resisting joint is possible up to  $3^\circ$ . A pipe with 6 m length and  $1^\circ$  deflection deviates approx. 10 cm off the neutral pipe axis.

**Dismantling of thrust resisting joints**

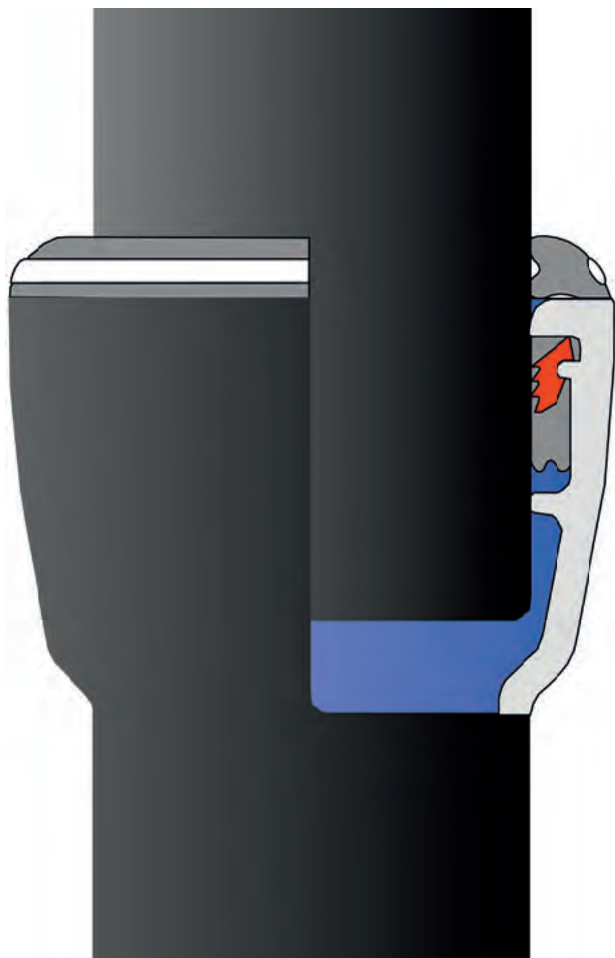
Push the spigot completely into the socket with the laying tool so the segments are no longer under pressure. Lubricate the dismantling blades on both sides and drive them into the socket gap around the complete circumference, with the help of the hammering device. Use the pipe laying tool or dismantling collar to draw the spigot out of the socket. If it should not be possible to insert the blades around the whole circumference, the pipeline has to be cut.

**Marking of the installed thrust resisting joint**

For a durable marking, we supply a profiled rubber ring with a blue-coloured strip. This marking ring should be applied as shown in the illustration.

# Laying instructions for ductile cast iron pressure pipes, fittings and valves, equipped with thrust resisting joint TYTON SIT PLUS® (TSP®)

354

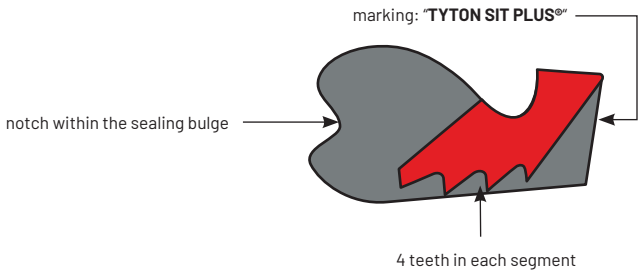




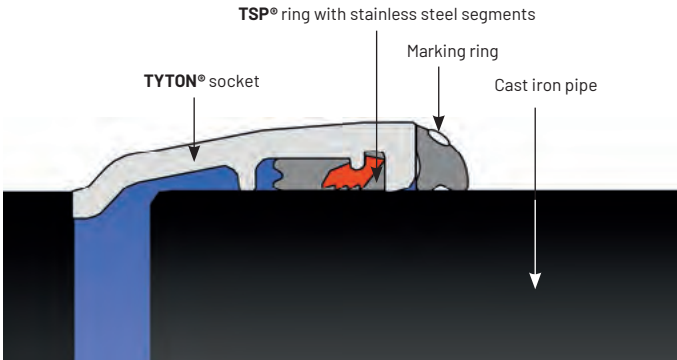
For laying pressure pipes, fittings and valves with thrust resisting joint **TYTON SIT PLUS® (TSP®)**, the "laying instructions for ductile cast iron pressure pipes and fittings with Tyton® joint" as well as special installation instructions of the pressure pipe manufacturer should be observed.

The **TYTON SIT PLUS®** sealing and locking ring is available for dimensions DN 80 up to DN 600.

Three basic attributes of the **TYTON SIT PLUS®** ring are:



### Joint construction



# Laying instructions for ductile cast iron pressure pipes, fittings and valves, equipped with thrust resisting joint TYTON SIT PLUS® (TSP®)

356 For allowable operating pressures and pressure classes please refer to page 43.

This self-anchoring, thrust resisting socket joint substitutes concrete anchoring blocks. The suitable number of thrust resisting connections has been laid down in DVGW standard GW 368 and has to be observed.

Before installation in lines for bridges, ducts or river-crossings, please contact our service team.

## Assembling steps

1. Clean the inside of the socket, particularly the **TYTON®** groove.
2. The **TYTON SIT PLUS®** ring has to be cleaned, deformed acc. to the illustration and inserted into the socket. Ensure that the S-bend is located between two segments during deformation. The inner part of the inserted **TYTON SIT PLUS®** ring should be slightly lubricated.
3. Push the marking ring, labeled with a white stripe, onto the cast iron pipe.
4. Clean the spigot end, slightly lubricate and insert concentrically into the socket until it touches the **TSP®** ring.
5. Mount the laying tool as per the illustration and draw the spigot end into the socket.

**Deviation should be avoided!**



## Important:

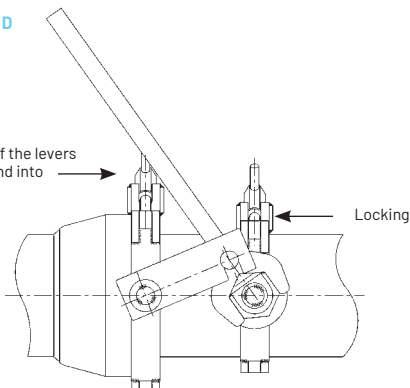
Changes of circumferential directions have to be arranged before connecting (e.g. installation of outlets, tees a.s.o.).



## Laying device V 300 D

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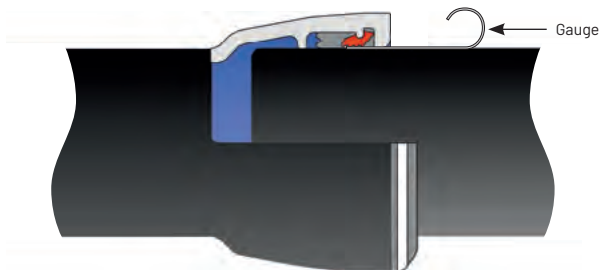
Alternate moving of the levers  
draws the spigot end into  
the socket



### Attention:

After connecting both parts, the locking of the segments has to be accomplished by moving the levers in the opposite direction.

The exact position of the **TYTON SIT PLUS**® ring has to be checked with a suitable gauge between segments on the whole circumference.



### Note:

Deviation of the installed thrust resisting joint is possible up to  $3^\circ$ . A pipe with 6 m length and  $1^\circ$  deflection deviates approx. 10 cm off the neutral pipe axis.

D

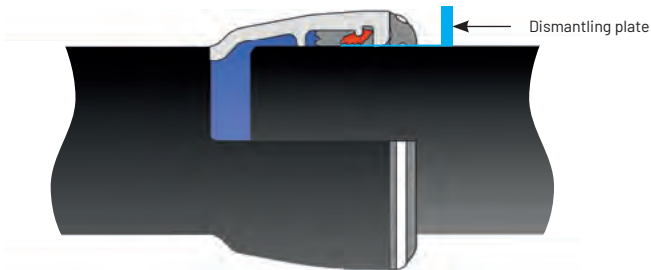
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# Laying instructions for ductile cast iron pressure pipes, fittings and valves, equipped with thrust resisting joint TYTON SIT PLUS® (TSP®)

## 358 Marking of the installed thrust resisting joint

We supply profiled rubber-rings with white stripes. These marking rings should be applied as shown in the illustration.

## Dismantling of thrust resisting joints



Push the spigot completely into the socket with the laying tool so the segments are no longer under pressure.

Lubricate the dismantling blades on both sides and drive them into the socket gap around the complete circumference, with the help of the hammering device.

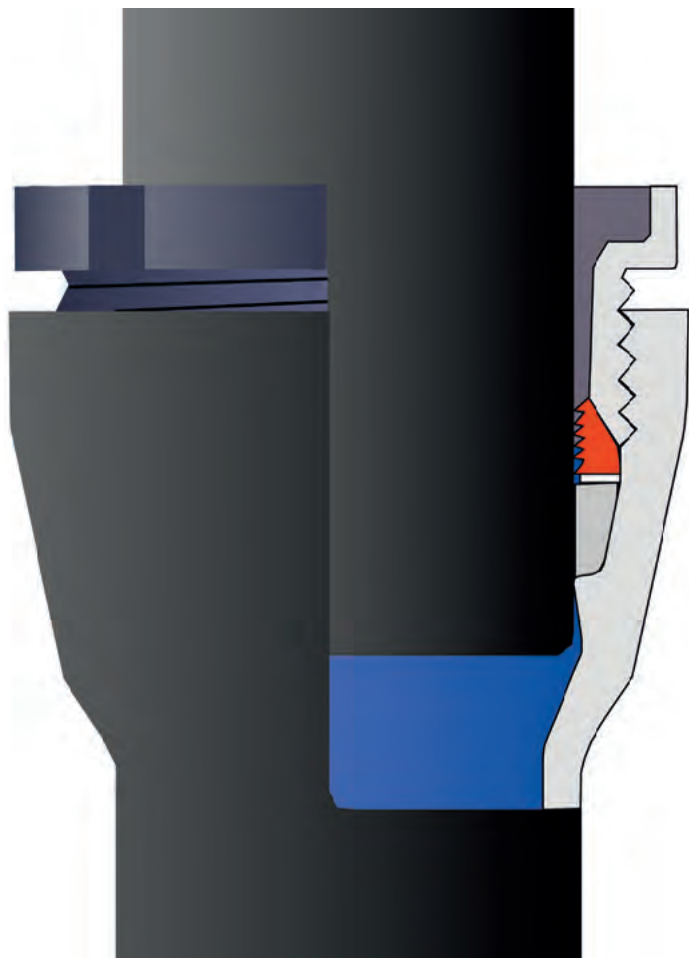
Use the pipe laying tool or dismantling collar to draw the spigot out of the socket.

If it should not be possible to insert the blades around the whole circumference, the pipeline must be separated.



## Laying instructions for ductile cast iron pressure pipes and fittings, equipped with thrust resisting joint Düker SMU

360







### General instructions:

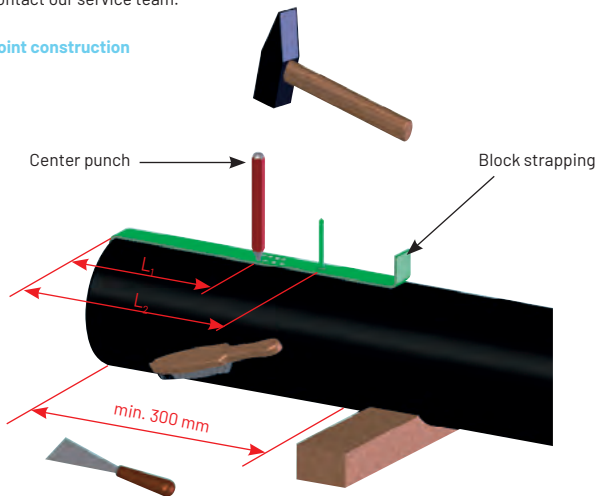
For laying pressure pipes and fittings with thrust resisting joint Düker **SMU**, the "laying instructions for ductile cast iron pressure pipes and fittings with screw-gland joint" should be observed.

The screw-gland joint Düker **SMU** only works as thrust resisting joint and gasket, if there is enough space between socket and spigot. The spigot should be drawn into the socket by tightening the screw ring. Only by this way a secure pressing of the gasket is guaranteed.

### Application field:

The thrust resisting joint Düker **SMU** is available for dimensions DN 40 up to DN 65 and for nominal pressures up to 16 bar (pressure class C50). This self-anchoring, thrust resisting socket joint substitutes concrete anchoring blocks. The suitable number of thrust resisting connections has been laid down in DVGW-standard GW 368 and has to be observed. Before installation in lines for bridges, ducts or river-crossings, please contact our service team.

### Joint construction



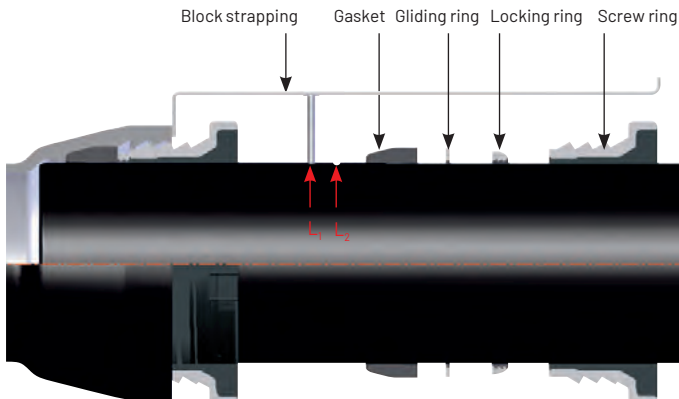
Clean the inside of the socket and the spigot and on a length of at least 300 mm. Drive in the clearance markings  $L_1$  and  $L_2$  with the center punch.

## Laying instructions for ductile cast iron pressure pipes and fittings, equipped with thrust resisting joint Düker SMU

362

Dimensions  $L_1$  and  $L_2$  in mm

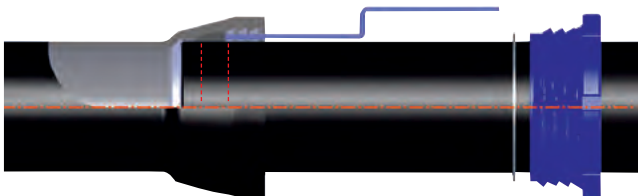
DN	40		50		65	
	$L_1$	$L_2$	$L_1$	$L_2$	$L_1$	$L_2$
Standard socket	161	161	164	172	170	178
Long socket	200	200	203	211	209	217



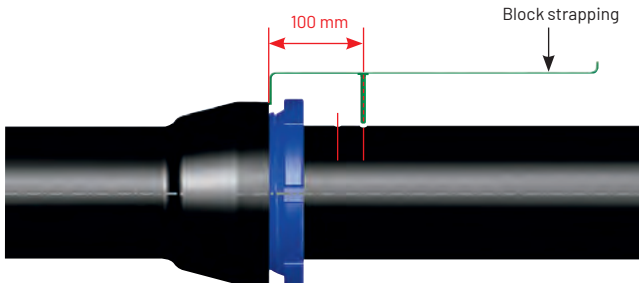
Insert the screw ring, locking ring, gliding ring and gasket in this sequence behind the centre punch marking  $L_2$ . Lubricate the pipe end, face of gasket, gliding ring and locking ring as well as the face and the screw thread of the screw ring with the lubricant supplied by the pipe manufacturer.

Insert the pipe end into the socket, centre it and check the installation depth  $L_1$ .

Do not remove lifting gear yet.



Press the gasket evenly into the socket (centering) with the help of the inserting device. Push in the gliding ring and locking ring until the gliding ring touches the gasket. Tighten the screw ring with a hammer or a ram until it cannot be turned any more.



Check the correct installation depth:  
Block strapping must be within  $L_2 \pm 3$  mm.

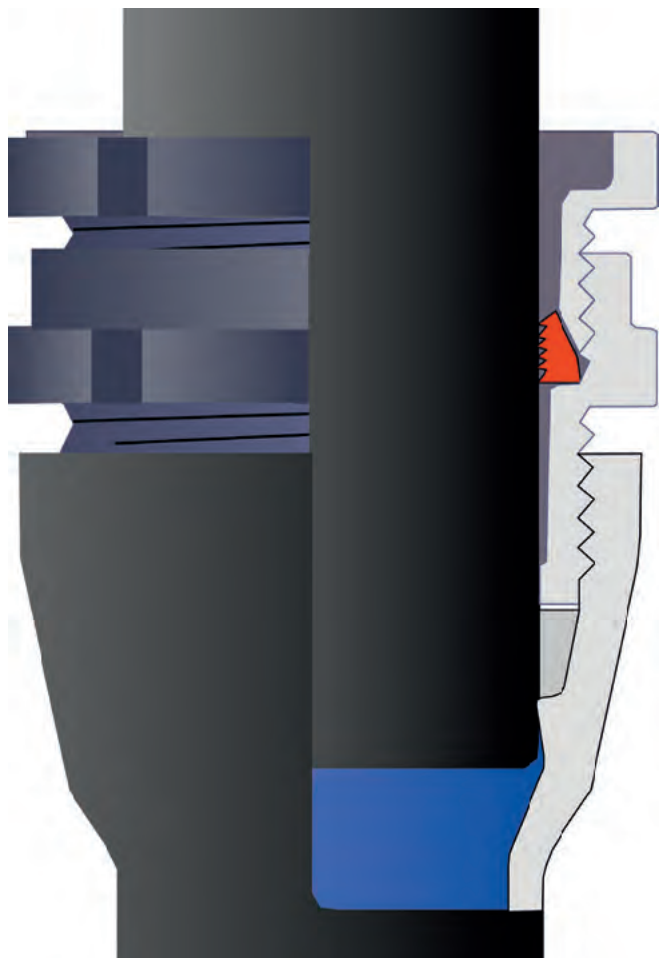
After installation of the connection in central position, pipes can be deviated

DN 80 - 200 up to  $3^\circ$  and

DN 250 - 400 up to  $2^\circ$

# Laying instructions for ductile cast iron pressure pipes and fittings, equipped with thrust resisting joint DÜKER SPEZIAL particularly for flanged sockets and collars

364

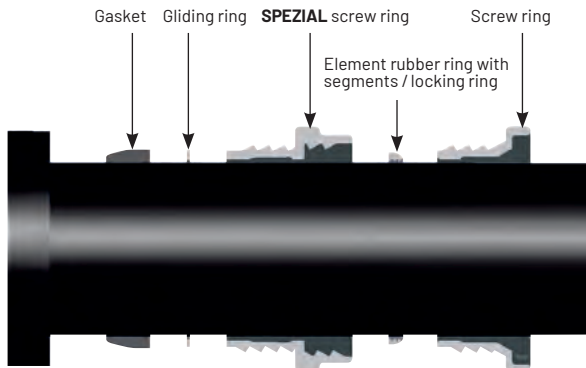




### General instructions:

365

For laying pressure pipes and fittings with thrust resisting joint **Düker SPEZIAL**, the "laying instructions for ductile cast iron pressure pipes and fittings with screw-gland joint" should be observed.



Enables mounting without block strapping as well as the thrust-resisting end connection of flanged sockets and collars. Screw ring and **SPEZIAL**-Screw ring are delivered in blue-grey colour.

### Application field:

DN 80 – 400, PN 16

For allowable operating pressures and pressures classes please refer to page 47.

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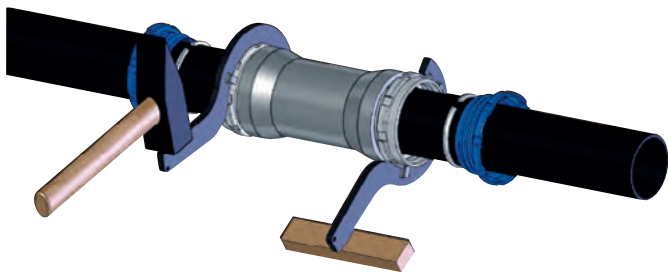
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# Laying instructions for ductile cast iron pressure pipes and fittings, equipped with thrust resisting joint **Düker SPEZIAL** particularly for flanged sockets and collars

## 366 Assembling steps

- Clean spigot/s in the area of sealing moves and mark the installation depth.
- Insert screw ring, locking ring/s (DN 80 – 250) or element rubber ring/s (DN 300 + 400), **SPEZIAL** screw ring/s, gliding ring/s (DN 80 – 400,  $t = 3$  mm) and gasket/s (lubricate inside) in this sequence onto the spigot and pay attention to the correct position (see mounting drawing).
- Lubricate spigot/s, thrust-face/s and outside surface/s of gasket/s, gliding ring/s and locking ring/s (element rubber ring/s), the thrust-face/s and thread of screw rings as well as sealing chambers and the thread of the sockets with lubricant.
- Insert spigot into the socket and check the installation depth. In case of installing a collar also lubricate sealing chambers and thread of screw and insert them onto a spigot. After the axial positioning of spigots to each other (avoid deflection and observe installation depth), put the collar in centre to the spigots and adjust centrally.
- Press the gasket evenly into the sealing chamber, push the gliding ring up to the gasket, screw in the **SPEZIAL** screw ring by hand as far as possible and tighten it firmly with the help of a hammer or a ram. Avoid the turning of the socket itself.

In case of installing a collar tighten both sides alternately. The turning of the socket can be avoided by using a second hook wrench (see illustration). Because of the setting behaviour of the gasket, a subsequent tightening after 5 to 10 minutes is recommended.



- Push in the locking rings (element rubber rings) until it touches the **SPEZIAL** screw ring. Insert the screw rings by hand and tighten them with hammer blows.
- Deflection: After finishing the connection in central position, pipes can be deflected up to  $3^\circ$ .



For mounting the connection, the following parts are necessary:

Pos. 1: Screw ring made of ductile cast iron, inside chamfered

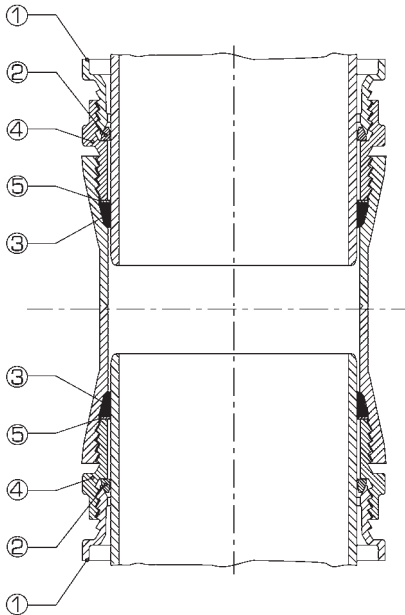
Pos. 2: Element rubber-ring with segments made of steel

Pos. 3: gasket

Pos. 4: Special screw ring made of ductile cast iron, with internal and external screw thread

Pos. 5: Simple gliding ring made of steel

### Mounting drawing for collars with thrust resisting joint Düker SPEZIAL



## Laying instructions for ductile cast iron pressure pipes, fittings and valves, equipped with thrust resisting joint NOVO-Grip® III

368

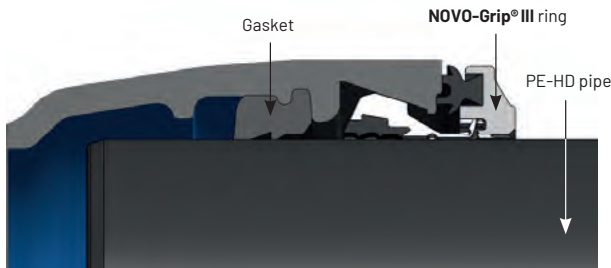






### Application field:

**NOVO-Grip® III** locking rings are available for dimensions DN 90 / 110 / 140 / 160 / 225 and for operating pressures PN 10/16. This self-anchoring, thrust resisting socket joint substitutes concrete anchoring blocks. The suitable number of thrust resisting connections has been laid down in DVGW-standard GW 368 and has to be observed. Before installation in lines for bridges, ducts or river-crossings, please contact our service team.



### Assembling steps

1. Clean the inside of the socket and the spigot end.
2. Insert gasket into **TYTON®** chamber.
3. Insert **NOVO-Grip® III** ring into pre-chamber.
4. Spigot of pipe has to be rounded and smoothed.
5. Insert stabilising bush completely.
6. Drive the spreading wedge into the stabilising bush until stretching. Any protruding end of the spreading wedge has to be cut off so it is flush with the bush.
7. Insert pipe into the socket through **NOVO-Grip® III** ring until touching the gasket.
8. Connect the joint by employing commercial pipe-laying tools.

**Please avoid deviation while drawing the spigot into the socket!**

### Important:

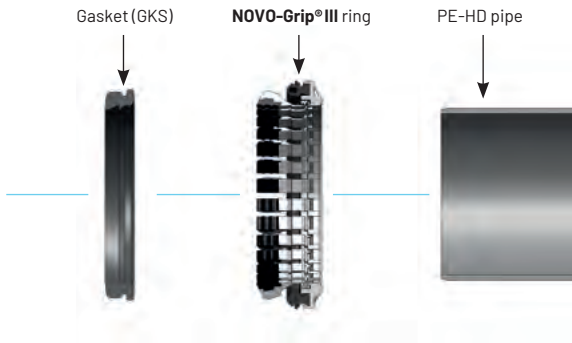
Changes of circumferential directions have to be arranged before connecting. (e.g. installation of outlets, tees a.s.o.).

### Note:

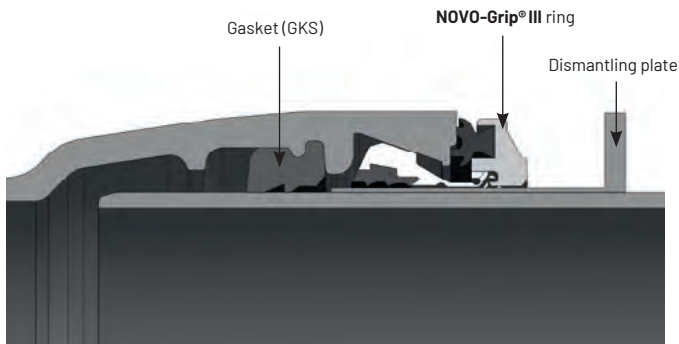
Fittings and valves with a nominal dimension of DN 200 for pipeline diameters of 225 mm do not have a standard **Novo** socket! These parts are equipped with an adapted geometry and are marked with the sign „for PE-HD Pipes“. Please consider this when you order your pipeline components. These instructions are also applicable for the thrust resisting joint **NOVO-Grip® PVC** combined with PVC pipes.

# Laying instructions for ductile cast iron pressure pipes, fittings and valves, equipped with thrust resisting joint NOVO-Grip® III

370



## Dismantling of thrust resisting joints



1. Push in the spigot until it touches the ground of the socket.
2. Lubricate the dismantling plates and drive them in on the whole circumference with the help of the hammering device.
3. Dismantle by using the laying tool.



## Laying Instructions for Bolted-Gland Socket Joints

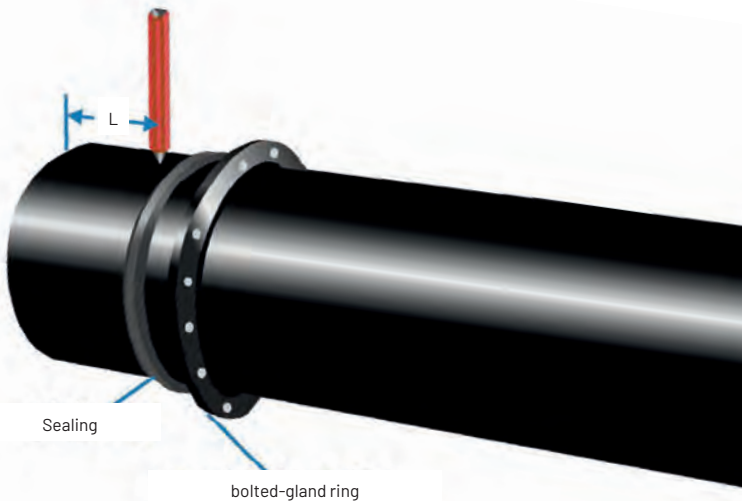
### 372 Installation:

- Clean the socket (particularly the sealing seat), the spigot to be inserted, the sealing and the bolted-gland ring
- Mark the distance measure:

Length of measure L in mm									
DN	100	125	150	200	250	300	350	400	450
L	160	160	160	162	162	165	165	170	172
DN	500	600	700	800	900	1000	1200*	1400*	1600*
L	172	180	182	190	197	200	215	275	275

\*DN 1200 - 1600: please observe page 375!

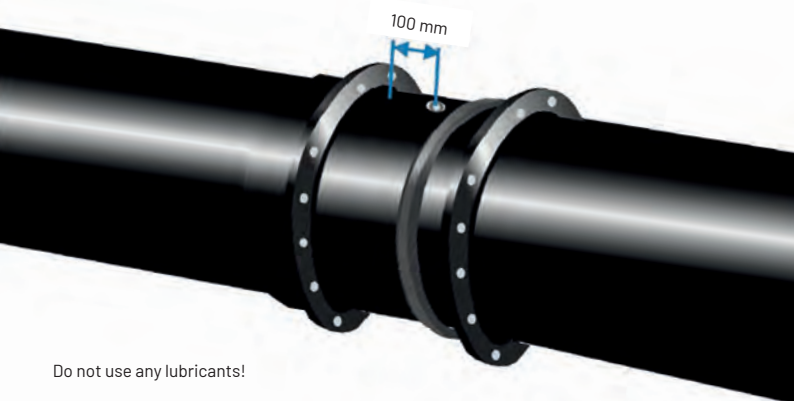
- Push the bolted-gland ring and sealing ring behind the marking





- Insert the spigot into the socket so a distance of 100 mm is kept between the mark and the flange

373



Do not use any lubricants!

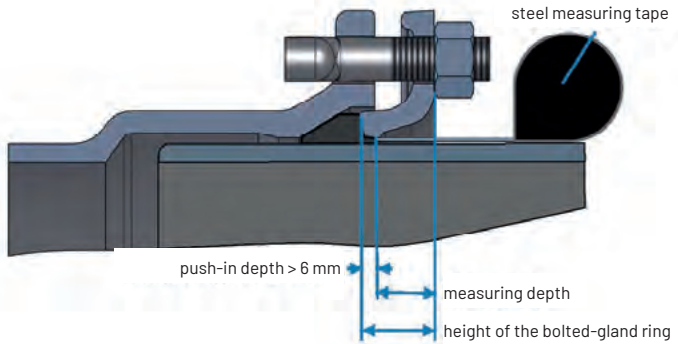
- Push the sealing into the sealing seat
- Push the bolted-gland ring onto the sealing and align it using hardwood wedges
- Insert hammer head bolts into the bolted-gland flange and the bolted-gland ring
- Screw on the nuts by hand as tightly as possible
- Tighten the nuts with ring spanners one by one (always two nuts facing each other) by a half or one turn each time

D

b

## Laying Instructions for Bolted-Gland Socket Joints

- 374 The tightening is correct when the bolted-gland ring has pushed itself at least 6 mm into the sealing. The depth can be determined by measuring the height of the bolted-gland ring, and the depth from the edge of the bolted-gland ring up to the sealing ring before and after tightening the bolts. The depth on one bolted-gland socket joint should be as uniform as possible..



Control the correct depth once more.

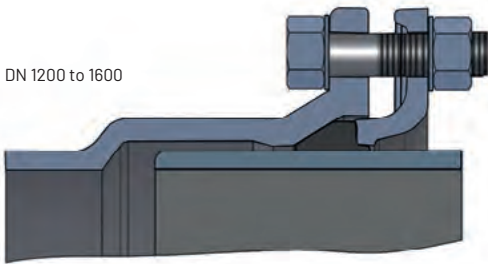
### Deflection:

After tightening the joint in a centred and aligned position, the pipes can be put in an angle of up to  $3^\circ$ .

An angle of  $1^\circ$  results in a deviation of a 6 m pipe from the axis of the connected pipe or fitting by approx. 10 cm; for  $3^\circ$  it is approx. 30 cm.



DN 1200 to 1600



Hexagonal head bolts and washers instead of hammer head bolts

Fittings with bolted-gland socket joints in DN 1200 to 1600 are supplied with specific installation instructions which must be observed in detail.

The marking of the distance measure and the insertion of the bolted-gland ring and the sealing correspond to page 372.

Then assemble the bolts with the washers and insert them. Lubricate the bolt threads and screw on the nuts and washers by hand while aligning the sealing.

Then tighten the nuts one by one, always two nuts facing each other. The socket flange and the bolted-gland ring must remain parallel and never differ by more than 15 mm. The required torque is  $150 \pm 20$  Nm.

Before the pressure test, control the torque once more.

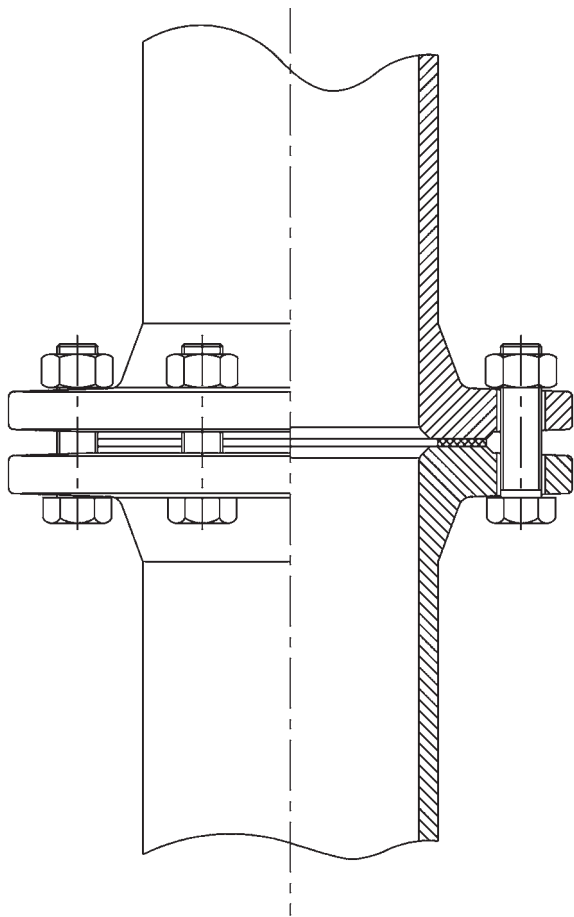
#### Deflection:

After mounting the joint in a centred and aligned position, the pipes can be deflected by up to  $2^\circ$ .

Attention: in this case tighten the bolts at first with a torque of only  $60 \pm 10$  Nm, and after deflection tighten with  $150 \pm 20$  Nm.

## Assembly instructions for pressure pipes and fittings with flanges

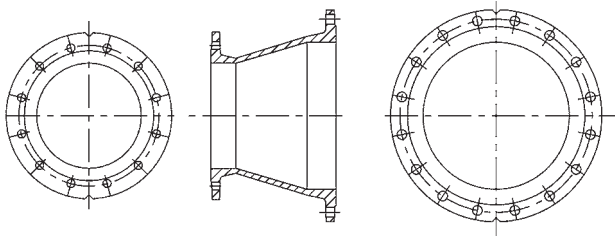
376







1. Clean the flange, raised face and gasket. Check all parts for proper conditions. Do not use damaged parts.
2. In case of installation with unprotected screws, especially in soils with corrosion risk, the screw connections must be protected (f. e. with bituminous tapes).
3. Pipes and fittings must be bedded carefully and the filling and compacting of the pipe ditch must be done carefully as well. Pipes and fittings should never be supported with stones or similar hard material and must be laid on stonefree base. Rocky base must be covered with min. 15 cm layer of sand, gravel or split.
4. For flanged pipes and fittings the general rule for the arrangements of the boltholes is that no bolthole is located in the flange axis, which is upright to the pipeline level.
5. Notes for the installation of flanged fittings (in particular double flanged tapers / FFR).

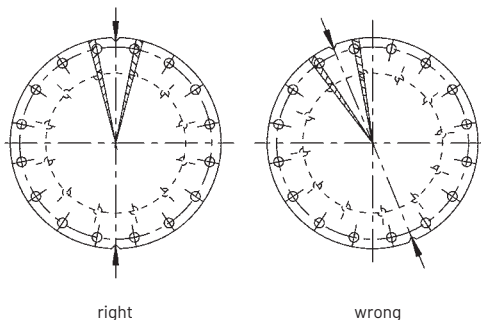


To avoid installation errors, special installation marks (notches) are cast on at the flanges in opposite positions. It is necessary to ensure that these marks are arranged for installation in vertical or horizontal direction.

## Assembly instructions for pressure pipes and fittings with flanges



378 Example: Double flanged taper (FFR) 350 / 250 PN 10



In case of wrong installation and due to the unequal number of boltholes on double-flanged tapers, the connecting valves or fittings will be slanting from the vertical axis. Possible deviations are up to  $22.5^\circ$ , depending on the diameter.

### Attention:

**On large diameters, a deviation is hardly detectable!**

# Assembly instructions for drilling saddle pieces



379

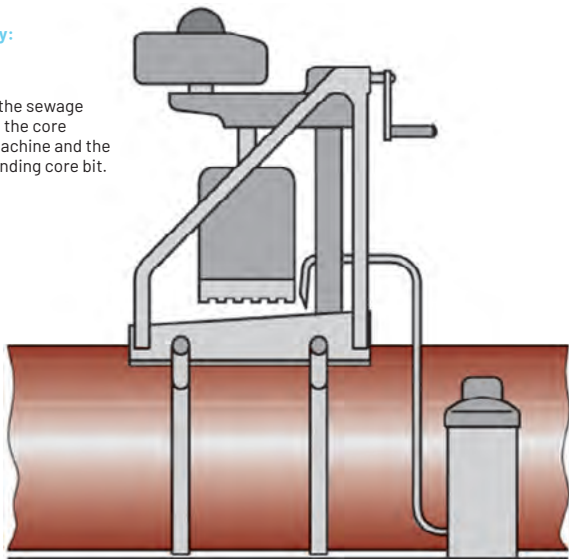
## Required tools:

- core drilling machine
- core bit  $\varnothing 172 +1,5/-0$  mm for DN 150
- core bit  $\varnothing 232 +1,5/-0$  mm for DN 200
- drilling machine or cordless electric drill
- hammer
- punch
- carbide drill  $\varnothing 13$  mm (e.g. DIN 8037)
- file
- brush
- lubricant (included in the delivery)
- protective paint

## Assembly:

### Step 1:

Drill into the sewage pipe with the core drilling machine and the corresponding core bit.



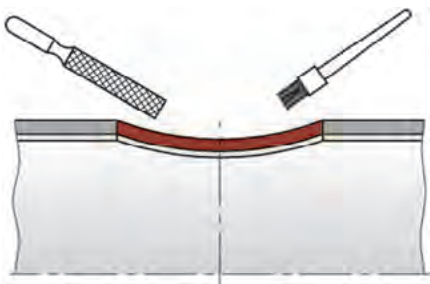
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## Assembly instructions for drilling saddle pieces

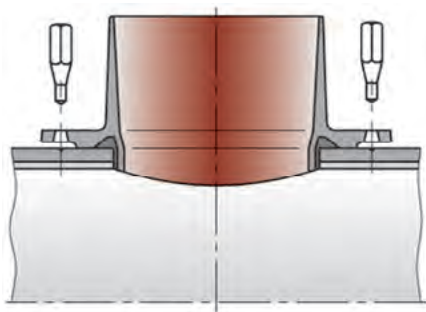
### 380 Step 2:

Deburr, clean, dry and repaint the drilling edges with a fast-drying epoxy resin paint. On sewage pipes with external cement mortar coating, this coating is to be removed in the contact area of the spot-drilling saddle piece.



### Step 3:

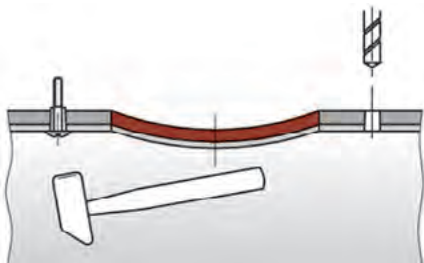
Insert the saddle sealing into the drill hole. Fit on the saddle piece and mark the position of the screw holes on the pipe by punching through the screw holes of the saddle piece. Then remove the saddle piece and the sealing.





#### Step 4:

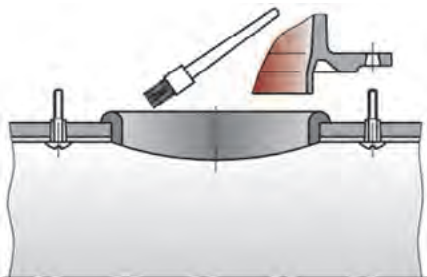
Drill two holes on the punch marks with the 13 mm carbide drill. Then insert the screws and sealing sleeves contained in the delivery into the drill holes from the inside and drive them cautiously through with a hammer.



381

#### Step 5:

Re-insert the saddle sealing into the drill hole. Watch out for exact positioning. Apply lubricant to the sealing and put on the saddle piece.



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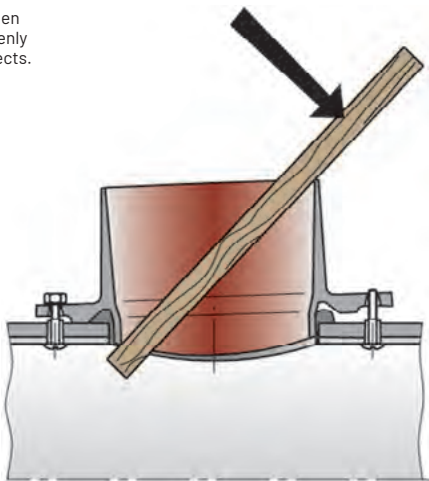
d

## Assembly instructions for drilling saddle pieces



### 382 Step 6:

Screw on the nuts lightly, then tighten alternatively and evenly until the saddle piece connects. Do not use any lever that might damage the coating (use e.g. a square timber).







Düker Group

Laufach:

Phone +49 6093 87-555

Fax +49 6093 87-246

Karlstadt:

Phone +49 9353 791-550

Fax +49 9353 791-8560

Internet: [www.dueker.de](http://www.dueker.de)

E-Mail: [sales.flowcontrol@dueker.de](mailto:sales.flowcontrol@dueker.de)