



Fittings,  
Flanged pipes and  
Valves  
made of Ductile Cast Iron ( GGG )

**Index:** (click with mouse)

Düker in general

Preamble

The complete product range  
→ Index

Location plan

Flag / Addresses

We designed the electronic version of our product catalogue user-friendly.

In addition to useful information you will find the complete product range of Düker "fittings and valves".

To see each detailed information, please click within the index on the desired category.

To get back to the Index please click on the blue area (chapter) at the top margin.

<http://www.dueker.de>

# Düker

Member of  
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## Düker GmbH & Co. KGaA

In 1469, official documents mentioned a mine which was the origin of Düker.

The foundry, enamelling works and mechanical construction are comprising a production area exceeding 80.000 sq. metres with approx. 700 employees.

At **Laufach/Spessart** and **Karlstadt/Main** we are manufacturing products, used in:

### Drainage technology

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

### Underground construction

- pressure pipes
- fittings and
- valves

### Chemical industry

Acid proof glass lined ...

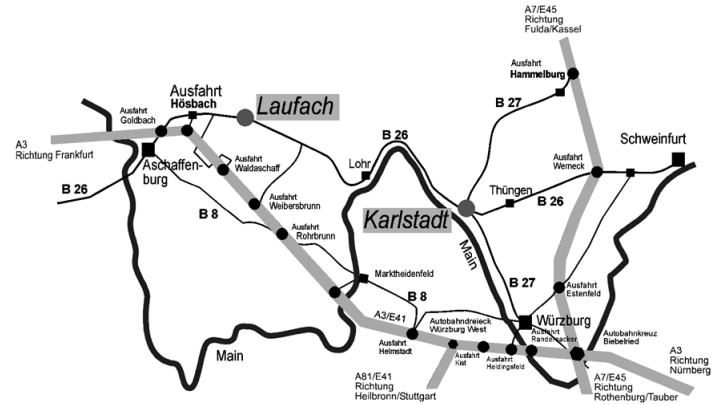
- pipes
- valves
- special valves and
- column

### Foundry engineering

- centrifugal casting machines for all kinds of pipes and bushes
- cokeless cupola furnaces and
- complete foundry equipment

### Jobbing foundry

- serial parts as well as individual castings in various cast iron qualities (GG + GGG), raw cast, machined or as finished product.



## We keep on moving ...

Dear customer,  
dear business friends,  
we are glad to present you the new edition of our product catalogue for fittings,  
flanged pipes and valves made of ductile cast iron for underground construction.  
In addition to quality and reliability as well as to the extension and specifying  
of our product range we always assist you with planning, service and individual  
customer care.

You can always depend on Düker consultants, technicians and designing engineers  
regarding questions, particular tasks and demands. Of course we also appreciate  
your incitations and criticism.

Demand us – give us a call !

Sales manager

To page down within the categories please use the navigation bar of the acrobat-reader as well.



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# 1

## Ductile cast iron (GGG) flanged pipes and fittings

- ISO 2531 and DIN EN 545
- Manufacturer's standard



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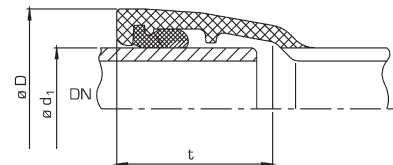
## 1.1

Socket joints  
for pipes and fittings  
made of ductile cast iron (GGG)



# TYTON®-socket joints (TYT) acc. to DIN 28 603

25



Socket for fittings



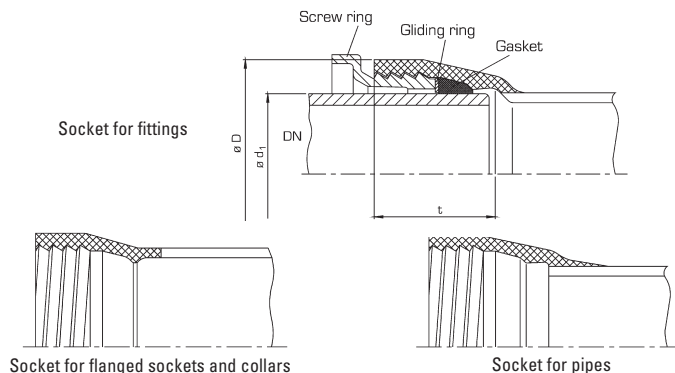
## Dimensions and weights

DN	Dimensions in mm			Weight in kg = socket			
	$\varnothing d_1$	$\varnothing D$	t	Pipes	Fittings	Flanged sockets	Gasket
80	98	141	84	3,4	2,8	2,4	0,13
100	118	161	88	4,3	3,3	3,1	0,16
125	144	188	91	5,7	4,5	4,0	0,19
150	170	215	94	7,1	5,6	4,9	0,22
200	222	271	100	10,3	8,0	7,1	0,37
250	274	324	105	14,2	11,1	9,7	0,48
300	326	381	110	18,6	14,3	12,5	0,67
350	378	434	110	23,7	17,1	15,2	0,77
400	429	489	110	29,3	20,8	18,6	1,09
450*	480	541,5	120	37,8	27,6	24,3	1,40
500	532	598	120	42,8	31,7	27,6	1,60
600	635	707	120	59,3	42,3	36,2	2,29
700	738	825	150	79,1	71,2	59,1	4,00
800	842	935	160	102,6	95,4	79,8	5,20
900	945	1042	175	129,9	150,3	122,7	6,50
1000	1048	1150	185	161,3	186,9	152,1	8,00
1200	1255	1368	215	—	250,0	193,0	9,50

\* acc. to manufacturer's standard

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

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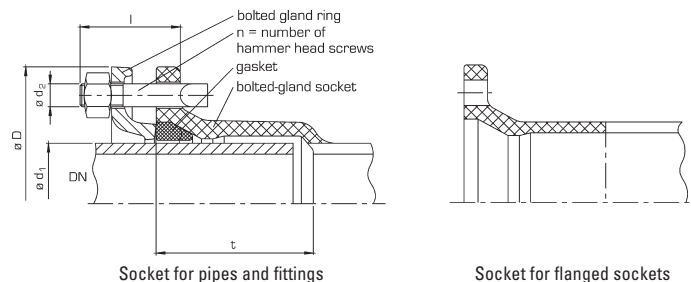


Dimensions and weights									
DN	Dimensions in mm			Weight in kg = socket					
	$\varnothing d_1$	$\varnothing D$	t	Pipes	Fittings	Flanged sockets	Screw ring	Gliding ring	Gasket
40	56	101	74	—	1,4	1,3	0,84	0,05	0,06
50	66	113	77	—	1,8	1,6	0,90	0,06	0,08
65	82	129	80	—	2,2	1,9	1,30	0,06	0,10
80	98	146	84	3,4	2,8	2,4	1,40	0,07	0,12
100	118	166	88	4,3	3,3	3,1	1,90	0,08	0,15
125	144	197	91	5,7	4,5	4,0	3,00	0,10	0,19
150	170	224	94	7,1	5,6	4,9	3,20	0,11	0,23
200	222	280	100	10,3	8,0	7,1	4,50	0,17	0,36
250	274	336	106	14,2	11,1	9,7	6,30	0,21	0,50
300	326	391	110	18,6	14,3	12,5	8,10	0,30	0,66
350	378	450	113	23,7	18,6	16,2	10,50	0,35	0,84
400	429	503	116	29,3	22,2	19,5	13,50	0,40	1,05
450*	480	572	164	—	—	—	25,00	0,60	1,50
500*	532	626	174	—	—	28,5	31,50	0,87	1,85

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

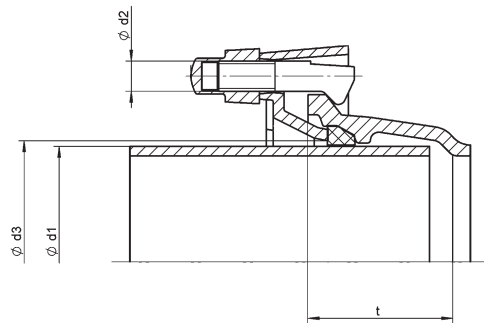
# Bolted-gland socket joints (STB) PN 16<sup>1)</sup> acc. to DIN 28602

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Dimensions and weights												
DN	Dimensions in mm						Weight in kg = socket					
	ød <sub>1</sub>	øD	t	ød <sub>2</sub>	l	n	Pipes	Fittings	Flanged sockets collars	Bolted-gland ring	Gasket	Hammer head screws
100*	118	235	116	M20	80	4	—	—	—	2,7	0,10	0,24
150*	170	290	118	M20	80	8	—	—	—	4,0	0,20	0,24
200*	222	345	121	M20	80	8	—	—	—	5,0	0,27	0,24
250*	274	400	124	M20	80	8	—	—	—	6,0	0,50	0,24
300*	326	460	127	M20	90	8	—	—	18,7	7,1	0,60	0,27
350*	378	515	129	M20	90	12	—	26,6	22,9	9,6	0,70	5,5
400*	429	570	132	M20	90	12	29,3	32,2	27,6	10,6	0,80	5,5
450*	480	625	135	M20	100	12	42,8	45,3	38,7	13,0	1,00	6,0
500	532	680	138	M20	100	16	42,8	45,3	38,7	15,0	1,00	7,7
600	635	790	143	M20	100	16	59,3	61,2	52,2	20,9	1,50	7,7
700	738	900	149	M20	110	20	79,1	80,0	67,9	27,2	1,90	10,0
800	842	1010	154	M20	110	24	102,6	101,0	85,4	34,1	2,30	12,0
900	945	1125	160	M20	120	24	129,9	128,0	108,4	44,0	2,80	12,0
1000	1048	1250	165	M24	120	24	161,3	162,9	138,7	57,0	3,30	13,0
1200	1255	1450	176	M24	130	28	237,9	232,4	196,5	75,0	3,80	18,0

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

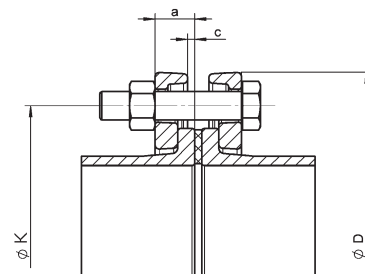


Dimensions and weights

DN	$\varnothing d1$ mm	$\varnothing d2$ mm	$\varnothing d3$ mm	t mm	Weight gland kg
80	98	22	101	90	2,7
100	118	22	121	92	3,4
125*	144	22	147	95	3,6
150	170	22	173	98	5,0
200	222	22	225	104	6,0
250	274	22	277	104	6,9
300	326	22	329	105	8,7
350*	378	22	381	108	11,3
400*	429	22	432	110	12,0
450*	480	27	483	113	16,5
500*	532	27	535	115	19,5
600*	635	27	638	120	26,0

All dimensions are in mm

\* in preparation



Dimensions and weights

DN	PN	$\varnothing D$ mm	a mm	c mm	$\varnothing K$ mm	Weight flange kg
80	10/16	200	23	3	160	2,0
100	10/16	220	23	3	180	2,2
125*	10/16	250	24,5	3	210	3,0
150	10/16	285	26	3	240	4,2
200	10	340	29	3	295	6,2
	16	340	29	3	295	6,2
250	10	395	32	3	350	8,4
	16	400	32	3	355	7,6
300	10	455	36	4	400	10,8
	16	455	36	4	410	11,0
350*	10	505	39	4	460	14,6
	16	520	39	4	470	14,2
400*	10	565	42	4	515	16,8
	16	580	42	4	525	18,2
450*	10	615	45	4	565	15,2
	16	640	45	4	585	18,2
500*	10	670	48	4	620	18,2
	16	715	48	4	650	29,0
600*	10	780	55	5	725	
	16	840	55	5	770	

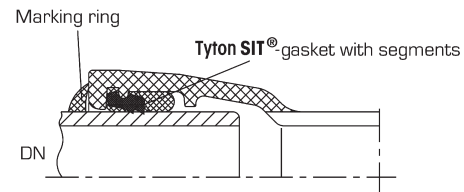
All dimensions are in mm

\* in preparation

## 1.2

Restrained socket joints  
made of ductile cast iron

# TYTON®-socket joints with Tyton SIT®

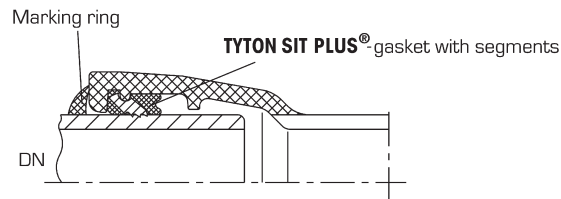


Dimensions and weights

DN	Number of retaining segments	allowable operating pressure PFA	Deflection max.	Weight in kg ≈ Tyton SIT® gasket
80	4	16	3°	0,17
100	5	16	3°	0,19
125	5	16	3°	0,23
150	7	16	3°	0,27
200	10	16	3°	0,45
250	15	10	3°	0,60
300	20	10	3°	0,92
400	30	10	3°	1,58

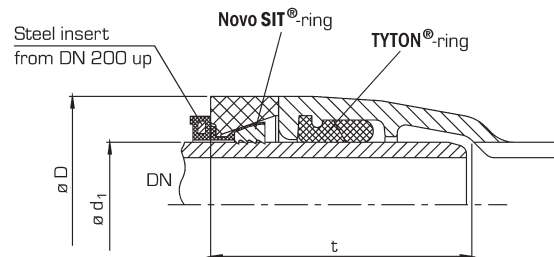
Assembling acc. laying instruction for thrust-resisting joint Tyton SIT®, page 232 – 235





Dimensions and weights				
DN	Number of retaining segments	allowable operating pressure PFA	Deflection max.	Weight in kg ≈ TYTON SIT PLUS®-gasket
80	4	32	3°	0,14
100	5	32	3°	0,16
125	5	25	3°	0,20
150	7	25	3°	0,23
200	10	25	3°	0,45
250	15	25	3°	0,60
300	20	25	3°	0,95
350	25	25	3°	1,25
400	28	16	2°	1,50
500	35	16	2°	2,30
600	42	10	2°	3,00

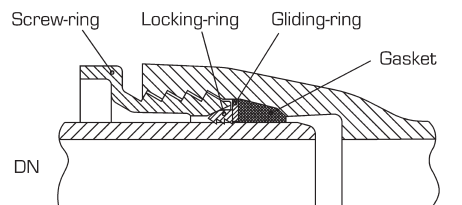
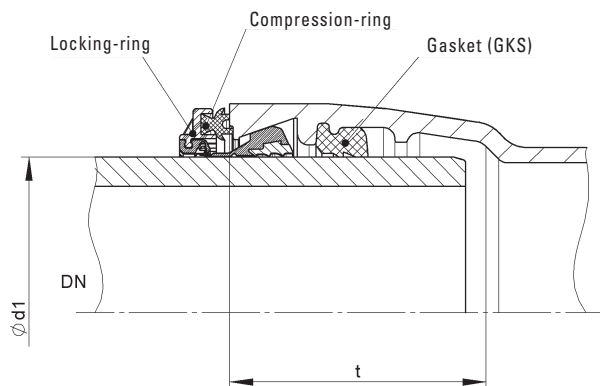
Assembling acc. laying instruction for thrust-resisting joint TYTON SIT PLUS®, page 236 – 241



Dimensions and weights							
DN	Dimensions in mm			allowable operating pressure PFA	Weight in kg ≈		
	d <sub>1</sub>	D	t		Deflection max.	Novo Pre-chamber	Novo SIT® ring
80	98	141	119	25 <sup>1)</sup>	3°	1,2	0,15
100	118	161	123	25 <sup>1)</sup>	3°	1,4	0,20
125	140	188	126	25 <sup>1)</sup>	3°	1,8	0,25
150	170	215	129	25 <sup>1)</sup>	3°	2,1	0,35
200	222	271	138	25 <sup>1)</sup>	3°	3,1	0,65
250	274	324	143	25 <sup>1)</sup>	3°	4,8	0,80
300	326	381	152	25 <sup>1)</sup>	3°	5,7	1,00
350	378	434	154	16 <sup>2)</sup>	3°	6,4	1,30
400	429	505	154	16 <sup>2)</sup>	3°	8,3	1,50
450	480	572	164	16 <sup>2)</sup>	3°	9,5	2,00
500	532	598	168	16 <sup>2)</sup>	2°	12,0	2,50
600	635	707	168	16 <sup>2)</sup>	2°	16,6	3,00
700	738	824	205	10 <sup>3)</sup>	2°	29,5	3,50
800	842	934	217	10 <sup>3)</sup>	1°	36,6	3,60

Assembling acc. laying instruction for thrust-resisting joint Novo SIT®, page 228 – 231

<sup>1)</sup> up to PN 40 on request <sup>2)</sup> up to PN 25 on request <sup>3)</sup> up to PN 16 on request



Dimensions and weights

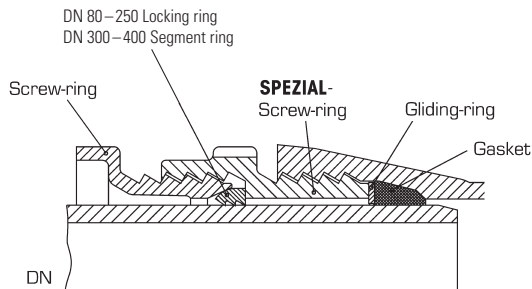
DN	Dimensions in mm		allowable operating pressure PFA
	$\varnothing d_1$	t	
80	90	119	10 / 16
100	110	123	10 / 16
125	140	126	10 / 16
150	160	129	10 / 16
200	225	138	10 / 16

Assembling acc. laying instruction for thrust-resisting joint Novo GRIP® III, page 250 – 253

Dimensions and weights

DN	allowable operating pressure PFA	Deflection max.	Weight in kg ≈ locking ring
40*	16	3°	0,075
50*	16	3°	0,100
65*	16	3°	0,140

Assembling acc. laying instruction for thrust-resisting joint SMU, page 242 – 245



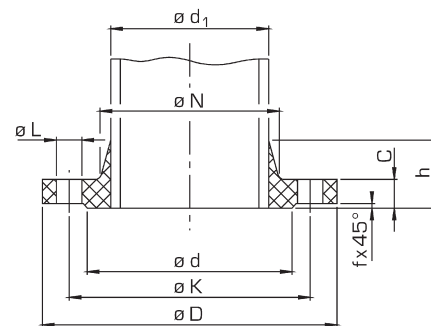
Dimensions and weights

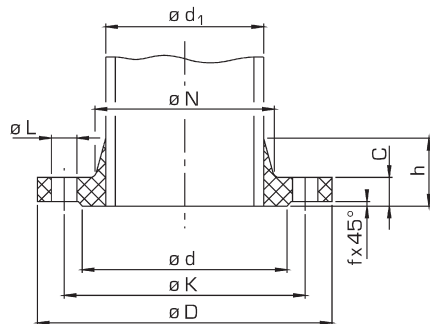
DN	allowable operating pressure PFA	Deflection max.	Weight in kg ≈ SPEZIAL-screw ring and	
			Locking ring	Segment ring
80	16	3°	0,22	—
100	16	3°	0,26	—
125	16	3°	0,31	—
150	16	3°	0,37	—
200	16	3°	0,52	—
250	16	2°	0,67	—
300	16	2°	—	10,35
400	16	2°	—	16,00

Assembling acc. laying instruction for thrust-resisting joint **Düker SPEZIAL**, page 246 – 249

## 1.3

Flanged joints  
acc. to DIN EN 1092-2  
resp. ISO 7005-2

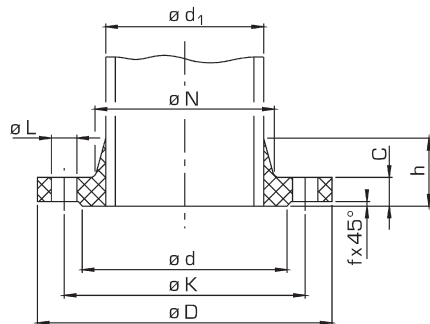




## Dimensions and weights PN 10

DN	Dimensions in mm										Weight in kg ≈
	Pipe $\varnothing d_1$	$\varnothing D$	C	Flange $\varnothing K$	$n^*$	$\varnothing L$	Neck $\varnothing N$	$h$	Raised face $\varnothing d$	$f$	
40	56	150	19,0	110	4	19	70	39,0	84	3	1,7
50	66	165	19,0	125	4	19	84	40,0	99	3	2,1
65	82	185	19,0	145	4	19	104	41,5	118	3	2,6
80	98	200	19,0	160	8	19	120	43,0	132	3	2,8
100	118	220	19,0	180	8	19	140	45,0	156	3	3,3
125	144	250	19,0	210	8	19	170	47,5	184	3	4,0
150	170	285	19,0	240	8	23	190	50,0	211	3	5,0
200	222	340	20,0	295	8	23	246	55,0	266	3	6,9
250	274	400	22,0	350	12	23	298	60,0	319	3	9,8
300	326	455	24,5	400	12	23	348	65,0	370	4	13,0
350	378	505	24,5	460	16	23	408	70,0	429	4	14,7
400	429	565	24,5	515	16	28	456	75,0	480	4	17,2
450	480	615	25,5	565	20	28	502	80,0	530	4	20,0
500	532	670	26,5	620	20	28	559	85,0	582	4	23,2
600	635	780	30,0	725	20	31	658	95,0	682	5	32,8
700	738	895	32,5	840	24	31	772	105,0	794	5	44,3
800	842	1015	35,0	950	24	34	876	115,0	901	5	58,8
900	945	1115	37,5	1050	28	34	976	125,0	1001	5	69,6
1000	1048	1230	40,0	1160	28	37	1080	135,0	1112	5	87,6
1200	1255	1455	45,0	1380	32	41	1292	155,0	1328	5	121,0

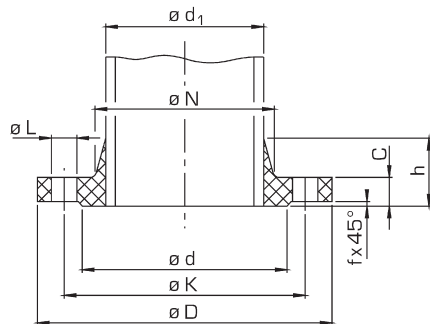
\*  $n$  = number of bolt holes



Dimensions and weights PN 16

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

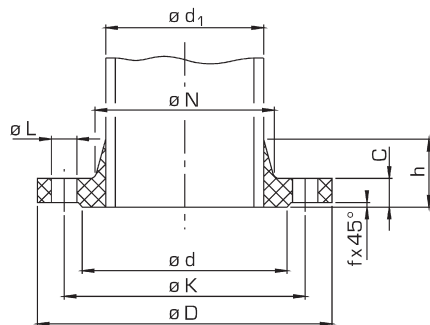
\* n = number of bolt holes



Dimensions and weights PN 25

DN	Dimensions in mm										Weight in kg ≈
	Pipe $\varnothing d_1$	$\varnothing D$	C	Flange $\varnothing K$	$n^*$	$\varnothing L$	Neck $\varnothing N$	h	Raised face $\varnothing d$	f	
40	56	150	19,0	110	4	19	70	39	84	3	1,7
50	66	165	19,0	125	4	19	84	40	99	3	2,1
65	82	185	19,0	145	8	19	104	41,5	118	3	2,4
80	98	200	19,0	160	8	19	120	43	132	3	2,8
100	118	235	19,0	190	8	23	142	45	156	3	3,8
125	144	270	19,0	220	8	28	162	47,5	184	3	4,7
150	170	300	20,0	250	8	28	192	50	211	3	6,0
200	222	360	22,0	310	12	28	252	55	274	3	8,7
250	274	425	24,5	370	12	31	304	60	330	3	13,0
300	326	485	27,5	430	16	31	364	65	389	4	17,7
350	378	555	30,0	490	16	34	418	70	448	4	25,4
400	429	620	32,0	550	16	37	472	75	503	4	33,2
450	480	670	34,5	600	20	37	520	80	548	4	40,2
500	532	730	36,5	660	20	37	580	85	609	4	47,2
600	635	845	42,0	770	20	41	684	95	720	5	71,5
700	738	960	46,5	875	24	44	780	105	820	5	90,0
800	842	1085	51,0	990	24	50	882	115	928	5	123,0
900	945	1185	55,5	1090	28	50	982	125	1028	5	149,0
1000	1048	1320	60,0	1210	28	57	1086	135	1140	5	201,0
1200	1255	1530	69,0	1420	32	57	1296	155	1350	5	285,0

\*  $n$  = number of bolt holes



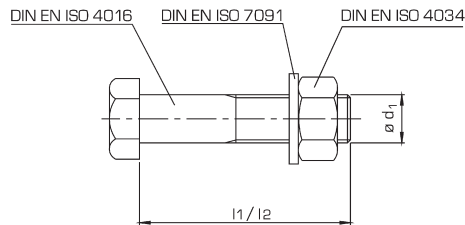
Dimensions and weights PN 40

DN	Dimensions in mm										Weight in kg ≈
	Pipe $\varnothing d_1$	$\varnothing D$	C	Flange $\varnothing K$	$n^*$	$\varnothing L$	Neck $\varnothing N$	h	Raised face $\varnothing d$	f	
40	56	150	19,0	110	4	19	70	39,0	84	3	1,7
50	66	165	19,0	125	4	19	84	40,0	99	3	2,1
65	82	185	19,0	145	8	19	104	41,5	118	3	2,4
80	98	200	19,0	160	8	19	120	43,0	132	3	2,8
100	118	235	19,0	190	8	23	142	45,0	156	3	3,8
125	144	270	23,5	220	8	28	162	47,5	184	3	5,9
150	170	300	26,0	250	8	28	192	50,0	211	3	8,0
200	222	375	30,0	320	12	31	254	55,0	284	3	14,0
250	274	450	34,5	385	12	34	312	60,0	345	3	23,5
300	326	515	39,5	450	16	34	378	65,0	409	4	33,5
350	378	580	44,0	510	16	37	432	70,0	465	4	43,0
400	429	660	48,0	585	16	41	498	75,0	535	4	62,0
450	480	685	49,0	610	20	41	522	80,0	560	4	57,0
500	532	755	52,0	670	20	44	576	85,0	615	4	82,0
600	635	890	58,0	795	20	50	686	95,0	735	5	124,0

\*  $n$  = number of bolt holes



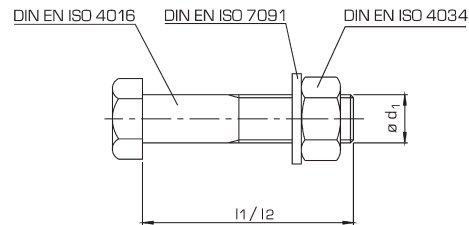
# Hexagonal screws for flanges PN 10 and PN 16 acc. to DIN EN 1092-2



DN	PN 10				PN 16			
	Dimensions in mm				Dimensions in mm			
	ø d <sub>1</sub>	l1*	l2**	number	ø d <sub>1</sub>	l1*	l2**	number
40	M 16	80	80	4	M 16	80	80	4
50	M 16	80	80	4	M 16	80	80	4
65	M 16	80	80	4	M 16	80	80	4
80	M 16	80	80	8	M 16	80	80	8
100	M 16	80	80	8	M 16	80	80	8
125	M 16	80	80	8	M 16	80	80	8
150	M 20	80	90	8	M 20	80	90	8
200	M 20	80	90	8	M 20	80	90	12
250	M 20	90	90	12	M 24	90	100	12
300	M 20	90	90	12	M 24	100	100	12
350	M 20	90	90	16	M 24	100	110	16
400	M 24	100	100	16	M 27	110	110	16
450	M 24	100	110	20	M 27	110	120	20
500	M 24	100	110	20	M 30	120	120	20
600	M 27	110	120	20	M 33	130	140	20
700	M 27	120	120	24	M 33	140	150	24
800	M 30	130	130	24	M 36	150	160	24
900	M 30	130	140	28	M 36	160	160	28
1000	M 33	140	150	28	M 39	170	180	28
1200	M 36	160	160	32	M 45	190	200	32

l1\* = Screw length for connection with one washer l2\*\* = Screw length for connection with two washers

# Hexagonal screws for flanges PN 25 and PN 40 acc. to DIN EN 1092-2



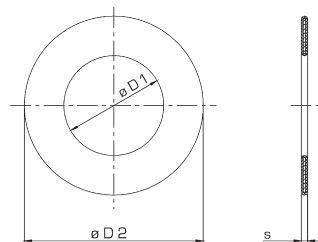
DN	PN 25				PN 40			
	Maße in mm				Maße in mm			
	ø d <sub>1</sub>	l1*	l2**	Anzahl je Verbindung	ø d <sub>1</sub>	l1*	l2**	Anzahl je Verbindung
40	M 16	80	80	4	M 16	80	80	4
50	M 16	80	80	4	M 16	80	80	4
65	M 16	80	80	8	M 16	80	80	8
80	M 16	80	80	8	M 16	80	80	8
100	M 20	80	90	8	M 20	80	90	8
125	M 24	90	90	8	M 24	100	100	8
150	M 24	90	90	8	M 24	100	110	8
200	M 24	90	100	12	M 27	110	120	12
250	M 27	100	110	12	M 30	120	130	12
300	M 27	110	110	16	M 30	140	140	16
350	M 30	120	120	16	M 33	150	150	16
400	M 33	130	130	16	M 36	160	170	16
450	M 33	130	130	20	M 36	160	170	20
500	M 33	140	140	20	M 39	170	180	20
600	M 36	150	150	20	M 45	190	200	20
700	M 39	170	170	24	Not specified in EN 1092-2			
800	M 45	180	190	24				
900	M 45	190	200	28				
1000	M 52	210	210	28				
1200	M 52	230	230	32				

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;

l1\* = Screw length for connection with one washer l2\*\* = Screw length for connection with two washers

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

52



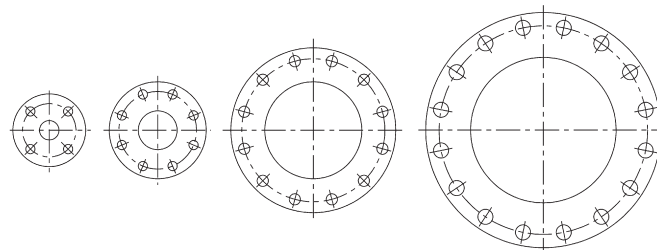
Dimensions and weights

DN	ø D 1	ø D 2 PN 10      PN 16	s
40	49	92	4
50	61	107	4
65	77	127	4
80	90	142	4
100	115	162	5
125	141	192	5
150	169	218	5
200	220	273	6
250	274	328      330	6
300	325	378	6
350	368	438	7
400	420	490	7
500	520	595	7
600	620	695	7
700	720	810	8
800	820	915	8
900	920	1015	8
1000	1020	1120	8
1200	1220	1340	8

Dimensions for gaskets with steel inlay.

## Arrangement of bolt holes

53



Number of bolts

DN	DIN EN 1092-2 PN 10	DIN EN 1092-2 PN 16	DIN EN 1092-2 PN 25	DIN 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	24	—
1000	28	28	28	—
1200	32	32	32	—

Each flange has got a number of bolt holes divisible by 4.

The bolt holes at the flanges are arranged in symmetrical manner to the two main axes so that no hole is positioned on the axes.

## 1.4

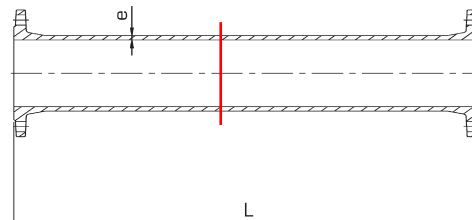
Ductile cast iron ( GGG )  
flanged pressure pipes

## 1.4.1

Pressure pipes with  
cast-on flanges

# Pressure pipes with cast-on flanges FFG-pipes

59



## Dimensions and weights

DN	Dimensions in mm		1 m pipe without flange	Weight in kg = one flange		
	e	L max.		PN 10	PN 16	PN 25
40	7,0	1000	6,9	1,7	1,7	1,7
50	7,0	1000	10,7	2,1	2,1	2,1
65	7,0	1000	11,0	2,6	2,6	2,6
80	7,0	2000	16,1	2,8	2,8	2,8
100	7,2	2000	20,4	3,3	3,3	3,8
125	7,5	2000	26,4	4,0	4,0	4,7
150	7,8	2000	32,4	5,0	5,0	6,0
200	8,4	2000	46,1	6,9	6,7	8,7
250	9,0	2000	61,3	9,8	9,4	13,0
300	9,6	2000	78,1	13,0	12,6	17,7
350	10,2	2000	96,5	14,7	17,5	25,4
400	10,8	<del>2000</del>	113,1	16,5	19,5	27,2
450	11,4	2000	131,1	18,5	21,5	29,2
500	12,0	2000	149,1	20,5	23,5	31,2
600	13,2	2000	211,3	32,8	57,6	68,0
700	14,4	2000	268,5	44,3	57,4	90,0
800	15,6	2000	332,1	58,5	76,8	123,0
900	16,8	2000	401,7	69,6	91,4	149,0
1000	18,0	2000	477,7	87,6	127,0	201,0
1200	20,4	1000	565,2	121,0	185,0	285,0

L=1000 med  
murkrage

## 1.4.2

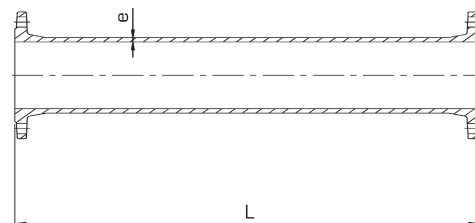
Weight of pressure pipes  
with cast-on flanges

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

1

62

63



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

Further lengths are available on request.

# 1.5

Ductile cast iron ( GGG )  
fittings

acc. to ISO 2531  
and DIN EN 545

Further fittings acc. to  
DIN 28 650 resp.  
manufacturer's standard



## Information about ductile cast iron fittings

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 working pressures as given in EN 545 Annex A.3 and EN 545 Table A.1 for wallthickness class K9.

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

Ductile cast iron fittings with one flange or more, **for the use in potable water pipelines** are designed for working pressures as given in EN 545 Annex A.3 and EN 545 Table A.2.

The working pressure has to be mentioned in orders, because the flange dimensions of these fittings are varying depending of the nominal pressures rates.

Ductile cast iron fittings for the **use in sewerage pipelines** are designed for working pressures **up to 6 bar**, as given in EN 598 Clause 1 (Scope). Higher pressures on request.

Ductile cast iron fittings for the **use in gas pipelines** are designed for working pressures **up to 16 bar**, as given in EN 969 Clause 1 (Scope).

> **All indicated weights are valid for fittings with cement-mortar linings <**

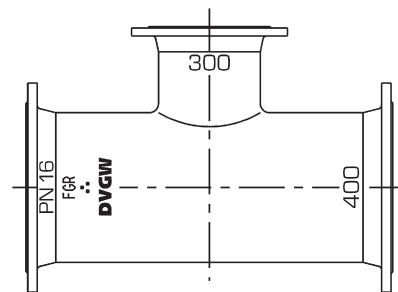
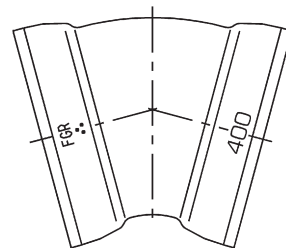
**Coating:** see chapter 3 "Inside- and outside protection".

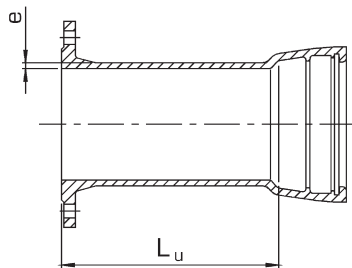


The German manufacturers, joining the "Fachgemeinschaft Gusseiserne Rohre" (FGR) mark all ductile cast iron products manufactured by them with the label "FGR", which is equivalent to a quality mark. In addition, fittings are marked with the DVGW-sign, nominal diameter, the casting day and bends with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

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

In special cases, further indications may be provided.

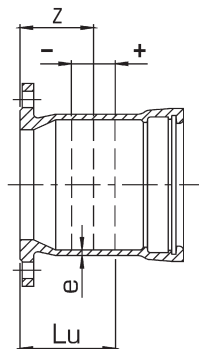




Dimensions and weights

DN	L <sub>u</sub>	e	Weight in kg ≈ with TYTON®-socket	
			PN 10	PN 16
40*	100	7,0	5,9	5,9
	150	7,0	6,0	6,0
	600	7,0	11,0	11,0
50*	150	7,0	8,0	8,0
65*	150	7,0	10,5	10,5
	600	7,0	17,0	17,0
80	600	7,0	17,5	17,5
	1000	7,0	25,5	25,5
100	130	7,2	10,3	10,3
	250	7,2	14,0	14,0
	600	7,2	17,0	17,0
125	135	7,5	14,6	14,6
	600	7,5	26,0	26,0
150	135	7,8	16,7	16,7
	600	7,8	28,5	28,5
200	140	8,4	23,0	23,0
	600	8,4	40,0	40,0
250	145	9,0	33,5	33,5
	600	9,0	61,5	61,5
300	150	9,6	40,0	40,0
	600	9,6	96,0	96,0
	800	9,6	100,0	100,0
350	600	10,2	128,0	130,0
400	600	10,8	135,0	140,0
450	600	11,4	194,0	203,0
500	600	12,0	163,0	176,0
600	600	13,2	270,0	295,0
700	600	14,4	453,0	466,0
800	1000	15,6	603,0	621,0

\* acc. to manufacturer's standard



Dimensions and weights

DN	Dimensions in mm				Weight in kg <sup>1)</sup>					
	Length of balance				with screw-gland socket		with TYTON <sup>®</sup> -socket		with bolted-gland socket	
	Lu	z <sup>2)</sup>	Tol.	e	PN 10	PN 16	PN 10	PN 16	PN 10	PN 16
40*	76	50	±30	7,0	4,3	4,3	—	—	—	—
50*	78	50	±30	7,0	5,4	5,4	—	—	—	—
65*	80	50	±30	7,0	6,0	6,0	—	—	—	—
80	130	86	±40	7,0	8,4	8,4	8,6	8,6	—	—
100	130	87	±40	7,2	10,5	10,5	10,5	10,5	—	—
125	135	91	±40	7,5	13,2	13,2	14,5	14,5	—	—
150	135	92	±40	7,8	16,0	16,0	16,0	16,0	—	—
200	140	97	±40	8,4	21,6	21,6	24,0	24,0	—	—
250	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 dismantling pieces, the moving-tolerance has to be fixed on 10 mm.

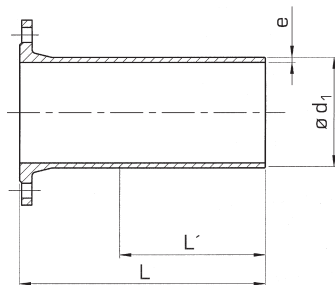
Mechanical joint types on request.

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

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

<sup>2)</sup> Nominal dimension for laying. If flanged sockets are applied as dismantling pieces, the moving-tolerance has to be fixed on 10 mm.

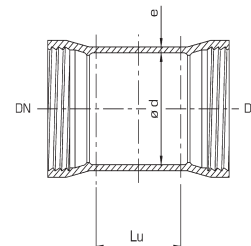
Mechanical joint types on request.



Dimensions and weights

DN	Dimensions in mm				Weight in kg ≈			
	ø d₁	L	L'	e	PN 10	PN 16	PN 25	PN 40
40*	56	300	200	7,0	5,5	5,5	—	—
50*	66	300	200	7,0	6,2	6,2	—	—
65*	82	400	200	7,0	9,5	9,5	—	—
80	98	350	215	7,0	8,5	8,5	8,5	8,5
100	118	360	215	7,2	10,5	10,5	13,5	15,0
125	144	370	220	7,5	14,0	14,0	17,5	18,0
150	170	380	225	7,8	17,5	17,5	18,5	26,5
200	222	400	230	8,4	25,5	25,5	35,1	40,0
250	274	420	240	9,0	39,5	39,5	49,0	59,5
300	326	440	250	9,6	47,6	47,6	58,0	73,4
350	378	460	260	10,2	62,1	65,9	70,0	92,5
400	429	480	270	10,8	80,5	88,6	106,4	131,8
450	480	500	280	11,4	132,0	149,0	150,0	—
500	532	520	290	12,0	121,0	140,4	146,3	169,0
600	635	560	310	13,2	193,3	208,9	228,0	—
700	738	600	330	14,4	229,5	227,0	—	—
800	842	600	330	15,6	314,3	320,0	395,3	—
900	945	600	330	16,8	357,0	384,0	—	—
1000	1048	600	330	18,0	380,0	—	—	—
1200	1255	600	330	20,4	462,0	526,0	—	—

\* acc. to manufacturer's standard

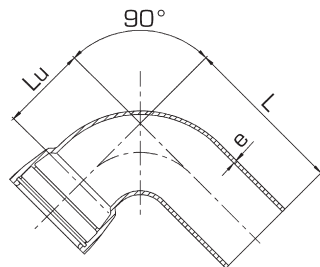


Dimensions and weights

DN	Dimensions in mm			Weight in kg ≈ <sup>1)</sup>	
	ø d	Lu	e	DIN 28601 with screw-gland sockets	DIN 28602 with bolted-gland sockets
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

Operating pressures see page 67 <sup>1)</sup> without screw- or bolted-gland rings Mechanical joint types on request.

## Single socket bends 90° – MQ acc. to manufacturer's standard

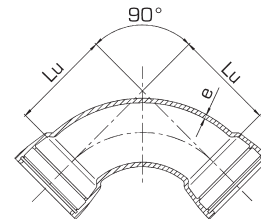


Dimensions and weights

DN	Dimensions in mm			Weight in kg <sup>1)</sup>		
	L	Lu	e	with screw-gland socket	with TYTON <sup>®</sup> -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 67 <sup>1)</sup> without screw- or bolted-gland ring

## Double socket bends 90° – MMQ

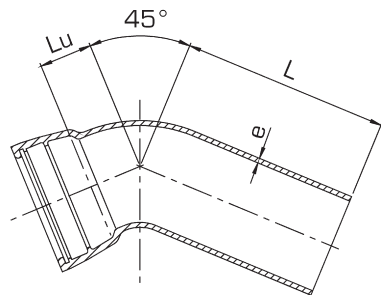


Dimensions and weights

DN	Dimensions in mm		Weight in kg <sup>1)</sup>		
	Lu	e	with screw-gland sockets	with TYTON <sup>®</sup> -sockets	with bolted-gland sockets
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*	800,0	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	—

Operating pressures see page 67 <sup>1)</sup> without screw- or bolted-gland rings \* acc. to manufacturer's standard  
Mechanical joint types on request.

## Single socket bends 45° – MK 45 acc. to manufacturer's standard

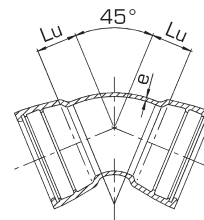


Dimensions and weights

DN	Dimensions in mm			Weight in kg <sup>1)</sup>		
	L	Lu	e	with screw-gland socket	with TYTON <sup>®</sup> -socket	with bolted-gland socket
40	210	135	7,0	7,5	—	—
50	252	174	7,0	10,0	—	—
65	303	223	7,0	14,5	—	—
80	265	55	7,0	7,0	8,4	—
100	274	65	7,2	9,8	10,8	—
125	301	76	7,5	14,9	16,2	—
150	331	87	7,8	19,4	20,5	—
200	374	109	8,4	31,3	33,5	—
250	300	130	9,0	42,0	44,3	—
300	315	155	9,6	56,2	59,4	—
350	345	175	10,2	68,0	68,0	79,0
400	368	200	10,8	93,0	91,0	105,0
450	420	220	11,4	106,0	106,0	—
500	405	240	12,0	—	187,0	143,0
600	529	285	13,2	—	250,5	265,0
700	610	380	14,4	—	441,0	—
800	625	375	15,6	—	—	—

Operating pressures see page 67 <sup>1)</sup> without screw- or bolted-gland ring

## Double socket bends 45° – MMK 45



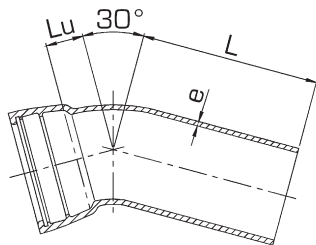
Dimensions and weights

DN	Dimensions in mm		Weight in kg <sup>1)</sup>		
	Lu	e	with screw-gland sockets	with TYTON <sup>®</sup> -sockets	with bolted-gland sockets
40*	138,0	7,0	8,0	—	—
50*	145,0	7,0	8,5	—	—
65*	50,0	7,0	5,6	—	—
80	55,0	7,0	7,1	8,3	—
100	65,0	7,2	9,2	10,3	—
125	75,0	7,5	12,3	14,5	—
150	85,0	7,8	16,3	18,9	—
200	110,0	8,4	24,5	25,9	—
250	130,0	9,0	34,5	38,9	—
300	155,0	9,6	48,5	55,1	—
350	175,0	10,2	70,2	81,0	81,0*
400	200,0	10,8	93,9	91,3	106,0*
450	220,0	11,4	—	139,9	—
500	240,0	12,0	—	145,8	180,4
600*	370,0	13,2	—	196,6	300,2
700*	380,0	14,4	—	312,1	—
800*	370,0	15,6	—	496,8	—
900	415,0	16,8	—	578,0	—
1000	460,0	18,0	—	768,0	—
1200	550,0	20,4	—	1100,0	—

Operating pressures see page 67 <sup>1)</sup> without screw- or bolted-gland rings \* acc. to manufacturer's standard

Mechanical joint types on request.

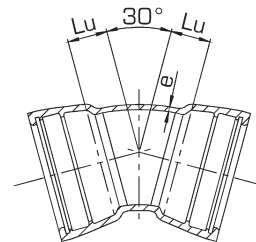
## Single socket bends 30° – MK 30 acc. to manufacturer's standard



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

Operating pressures see page 67 <sup>1)</sup> without screw- or bolted-gland ring

## Double socket bends 30° – MMK 30 acc. to DIN 28650

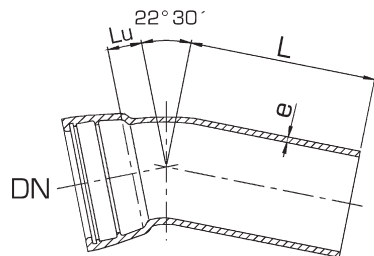


Dimensions and weights					
DN	Dimensions in mm		Weight in kg <sup>1)</sup>		
	Lu	e	with screw-gland sockets	with TYTON®-sockets	with bolted-gland sockets
40*	103	7,0	8,0	—	—
50*	107	7,0	10,0	—	—
65*	113	7,0	13,0	—	—
80	45	7,0	6,8	7,8	—
100	50	7,2	9,7	9,9	—
125	55	7,5	11,6	14,3	—
150	65	7,8	15,7	18,4	—
200	80	8,4	23,8	23,8	—
250	95	9,0	31,3	34,6	—
300	110	9,6	45,9	52,4	—
350	125	10,2	63,7	74,5	74,0*
400	140	10,8	84,8	89,1	94,0*
450	255	11,4	—	145,0	—
500	170	12,0	—	123,7	145,5
600	200	13,2	—	166,9	193,0
700*	250	14,4	—	286,2	—
800	260	15,6	—	370,0	—
900	290	16,8	—	496,0	—
1000	320	18,0	—	652,0	—
1200	380	20,4	—	1020,0	—

Operating pressures see page 67 <sup>1)</sup> without screw- or bolted-gland rings \* acc. to manufacturer's standard



## Single socket bends 22 1/2° – MK 22 acc. to manufacturer's standard

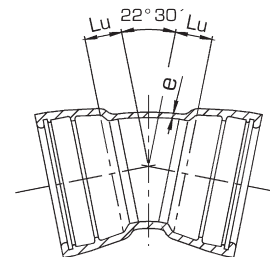


Dimensions and weights

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

Operating pressures see page 67 <sup>1)</sup> without screw- or bolted-gland rings

## Double socket bends 22 1/2° – MMK 22

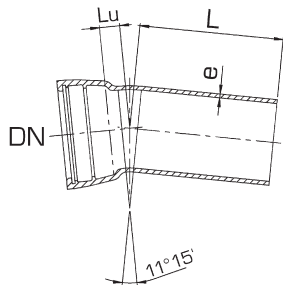


Dimensions and weights

DN	Dimensions in mm		Weight in kg <sup>1)</sup>		
	Lu	e	with screw-gland sockets	with TYTON <sup>®</sup> -sockets	with bolted-gland sockets
40*	87,0	7,0	7,5	—	—
50*	90,0	7,0	9,5	—	—
65*	35,0	7,0	12,5	—	—
80	40,0	7,0	4,9	7,8	—
100	45,0	7,2	8,6	9,6	—
125	50,0	7,5	11,5	13,5	—
150	55,0	7,8	14,6	17,8	—
200	65,0	8,4	21,0	22,7	—
250	75,0	9,0	30,5	33,5	—
300	90,0	9,6	42,1	50,8	—
350	100,0	10,2	62,1	67,0	70,0*
400	110,0	10,8	74,5	83,2	88,0*
500	135,0	12,0	—	112,9	127,0
600	155,0	13,2	—	154,4	179,0
700*	190,0	14,4	—	194,4	—
800*	195,0	15,6	—	311,0	—
900	220,0	16,8	—	422,0	—
1000	240,0	18,0	—	593,0	—
1200	285,0	20,4	—	820,0	—

Operating pressures see page 67 <sup>1)</sup> without screw- or bolted-gland rings \* acc. to manufacturer's standard

## Single socket bends 11 1/4° – MK 11 acc. to manufacturer's standard

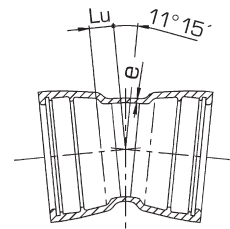


Dimensions and weights

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

Operating pressures see page 67 <sup>1)</sup> without screw- or bolted-gland ring

## Double socket bends 11 1/4° – MMK 11



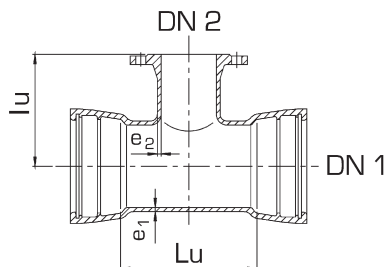
Dimensions and weights

DN	Dimensions in mm		Weight in kg <sup>1)</sup>		
	Lu	e	with screw-gland sockets	with TYTON®-sockets	with bolted-gland sockets
40*	63,0	7,0	7,0	—	—
50*	65,0	7,0	9,0	—	—
65*	68,0	7,0	11,5	—	—
80	30,0	7,0	6,5	7,6	—
100	35,0	7,2	8,1	8,6	—
125	35,0	7,5	10,6	13,0	—
150	40,0	7,8	13,4	16,7	—
200	45,0	8,4	20,5	21,1	—
250	50,0	9,0	28,1	30,2	—
300	60,0	9,6	38,3	45,4	—
350	65,0	10,2	49,7	62,1	64,0*
400	70,0	10,8	67,5	73,4	79,0*
450	70,0	11,4	—	92,5	—
500	85,0	12,0	—	86,4	120,5
600	95,0	13,2	—	125,3	158,0
700*	110,0	14,4	—	196,0	164,0
800	125,0	15,6	—	294,3	283,0
900	120,0	16,8	—	350,0	—
1000	130,0	18,0	—	506,0	—
1200	150,0	20,4	—	650,0	—

Operating pressures see page 67 <sup>1)</sup> without screw- or bolted-gland rings \* acc. to manufacturer's standard

## Double socket tees with flanged branch – MMA

86



Dimensions and weights								
DN 1	DN 2	Dimensions in mm				Weight in kg <sup>1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	with bolted-gland sockets	with TYTON <sup>®</sup> -sockets
40*	40	155	140	7,0	7,0	10,5	—	—
	50	170	150	7,0	7,0	12,5	—	—
50*	40	170	150	7,0	7,0	13,5	—	—
	50	190	165	7,0	7,0	16,0	—	—
	65	190	165	7,0	7,0	18,0	—	—

Operating pressures see page 67 <sup>1)</sup> without screw- or bolted-gland ring \* acc. manufacturer's standard  
Mechanical joint types on request.

## Double socket tees with flanged branch – MMA

87

DN 1	DN 2	Dimensions in mm				Weight in kg <sup>1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	with bolted-gland sockets	with TYTON <sup>®</sup> -sockets
80	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
100	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
125	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
150	125	225	200		7,5	22,1	—	24,3
	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

Operating pressures see page 67 <sup>1)</sup> without screw rings \* acc. manufacturer's standard  
Mechanical joint types on request.

## Double socket tees with flanged branch – MMA

88

DN 1	DN 2	Dimensions in mm				Weight in kg <sup>1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	with bolted-gland sockets	with TYTON <sup>®</sup> -sockets
200	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
250	200	315	260		8,4	46,4	—	49,7
	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	315	290		8,4	53,5	—	60,5
300	250	375	300		9,0	62,5	—	75,6
	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	320	320		8,4	72,4	—	70,0
	250*	430	330		9,0	89,0	—	91,8
350	300	435	340		9,6	90,7	—	95,6
	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	325	350		8,4	89,5	—	97,2
	250*	495	360		9,0	101,0	—	98,0
	300*	495	370		9,6	114,0	—	114,0
	350	495	380		10,2	119,0 / 122,0	—	119,0 / 125,0

Operating pressures see page 67 <sup>1)</sup> without screw rings \* acc. to manufacturer's standard  
 Mechanical joint types on request.

## Double socket tees with flanged branch – MMA

89

DN 1	DN 2	Dimensions in mm				Weight in kg <sup>1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	with bolted-gland sockets	with TYTON <sup>®</sup> -sockets
400	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	325	380		8,4	109,0	—	113,9
	250*	440	390		9,0	118,5	—	115,0
	300	440	400		9,6	125,5	—	132,3
400*	350*	560	415		10,2	147,0 / 150,0	—	147,0 / 150,0
	400	560	420		10,8	158,0 / 172,0	—	177,0 / 170,0
	80	210	355	10,8	7,0	—	94,0	—
	100	210	360		7,2	—	95,0	—
	150	270	370		7,8	—	104,0	—
	200	325	380		8,4	—	114,0	—
450*	300	440	400		9,6	—	139,0	—
	400	560	420		10,8	—	164,0 / 169,0	—
	80	215	390	11,4	7,0	—	—	110,0
	100	215	390		7,2	—	—	110,0
	150	270	400		7,8	—	—	128,0
	200	300	410		8,4	—	—	132,0
	250	450	420		9,0	—	—	145,5
	300	450	430		9,6	—	—	161,5
	350	560	450		10,2	—	—	220,0 / 226,0
	400	560	450		10,8	—	—	230,0 / 236,0
	450	620	460		11,4	—	—	260,0 / 267,0

Operating pressures see page 67 <sup>1)</sup> without screw rings \* acc. to manufacturer's standard  
 Mechanical joint types on request.

## Double socket tees with flanged branch – MMA

90

DN 1	DN 2	Dimensions in mm				Weight in kg <sup>1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	with bolted-gland sockets	with TYTON <sup>®</sup> -sockets
500	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	330	440		8,4	—	140,4	140,0
	300*	450	460		9,6	—	174,4	156,0
	400	565	480		10,8	—	215,0 / 220,0	188,0 / 193,0
	500	680	500		12,0	—	244,0	222,0 / 236,0
600	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	340	500		8,4	—	187,6	178,0
	300*	460	520		9,6	—	233,8	210,0
	400	570	540		10,8	—	286,0 / 256,5	240,0 / 245,0
	500*	800	550		12,0	—	340,0 / 336,4	315,0 / 330,0
700	600	800	580		13,2	—	361,0 / 386,0	323,0 / 339,0
	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	345	525		8,4	—	262,0	266,0
	250*	575	535		9,0	—	287,0	269,0
	300*	575	540		9,6	—	381,0	340,0
	350*	575	555		10,2	—	276,0 / 279,0	258,0 / 261,0
	400	575	555		10,8	—	381,0 / 392,0	363,0 / 374,0
	500*	925	570		12,0	—	468,0 / 482,0	450,0 / 464,0
	600*	925	585		13,2	—	599,0 / 523,0	481,0 / 505,0
	700	925	600		14,4	—	550,0 / 563,0	532,0 / 545,0

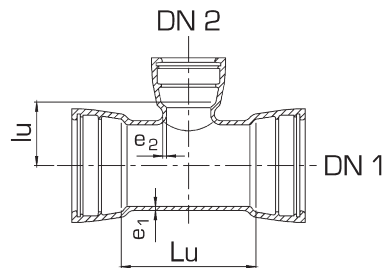
Operating pressures see page 67 <sup>1)</sup> without screw-rings \* acc. to manufacturer's standard  
 Mechanical joint types on request.

## Double socket tees with flanged branch – MMA

91

DN 1	DN 2	Dimensions in mm				Weight in kg <sup>1)</sup>		
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	with bolted-gland sockets	with TYTON <sup>®</sup> -sockets
800	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	350	585		8,4	—	298,0	342,0
	250*	580	590		9,0	—	433,0	415,0
	300*	580	600		9,6	—	408,2	431,0
	350*	580	615		10,2	—	432,0 / 435,0	420,0 / 423,0
	400	580	615		10,8	—	/ 429,8	398,0 / 437,0
	500*	1045	630		12,0	—	/ 685,8	614,0 / 628,0
	600	1045	645		13,2	—	/ 685,8	630,0 / 640,0
	800	1045	675		15,6	—	755,0 / 755,0	716,0 / 743,0
900	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	—	—	475,0 /
	300*	590	660		9,6	—	—	/ 561,0
	400		675		10,8	—	—	567,0 / 572,0
	600	1170	705		13,2	—	—	810,0 / 820,0
	700*		720		14,4	—	—	/ 868,0
	900		750		16,8	—	—	930,0 / 898,0
1000	150*	360	700	18,0	7,8	—	—	/ 650,0
	200	360	705		8,4	—	—	561,0 /
	250*	380	710		9,0	—	—	691,0 /
	400	595	735	18,0	10,8	—	—	639,0 / 644,0
	600	1290	765	18,0	13,2	—	—	1162,0 /
	1000	1290	825	18,0	18,0	—	—	1205,0 / 1248,0
	1200					—	—	
	600	840	885	20,4	13,2	—	—	/ 1688,0
	800	1070	915	20,4	15,6	—	—	
	1000	1300	945	20,4	18,0	—	—	/ 1428,0

Operating pressures see page 67 <sup>1)</sup> without screw-rings \* acc. manufacturer's standard  
 Mechanical joint types on request.



Dimensions and weights

DN 1	DN 2	Dimensions in mm				Weight in kg <sup>1)</sup>	
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	TYTON <sup>®</sup> -sockets
40*	40	156	78	7,0	7,0	11,0	—
	50*	170	83	7,0	7,0	12,5	—
	50*	170	85		7,0	13,5	—
65*	40	190	90	7,0	7,0	16,0	—
	50	190	92		7,0	17,0	—
	65*	190	95		7,0	18,0	—
80	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
100	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

Operating pressures see page 67 <sup>1)</sup> without screw-rings \* acc. to manufacturer's standard  
Mechanical joint types on request.

DN 1	DN 2	Dimensions in mm				Weight in kg <sup>1)</sup>	
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	TYTON <sup>®</sup> -sockets
125	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
150	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
200	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
250*	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

Operating pressures see page 67 <sup>1)</sup> without screw-rings \* acc. to manufacturer's standard  
Mechanical joint types on request.

## All socket tees – MMB

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DN 1	DN 2	Dimensions in mm				Weight in kg <sup>1)</sup>	
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	with TYTON <sup>®</sup> -sockets
300*	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
350*	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
400*	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

Operating pressures see page 67 <sup>1)</sup> without screw-rings \* acc. to manufacturer's standard  
 Mechanical joint types on request.

## All socket tees – MMB

95

DN 1	DN 2	Dimensions in mm				Weight in kg <sup>1)</sup>	
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	with TYTON <sup>®</sup> -sockets
450*	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
500*	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
600*	500	680	350	13,2	12,0	—	233,3
	125	340	345		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*	600	800	400		13,2	—	340,0

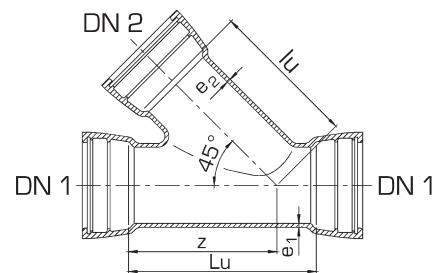
Operating pressures see page 67 <sup>1)</sup> without screw-rings \* acc. to manufacturer's standard  
 Mechanical joint types on request.

DN 1	DN 2	Dimensions in mm				Weight in kg <sup>1)</sup>	
		Lu	lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	with TYTON <sup>®</sup> -sockets
700*	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 <sup>2)</sup>	925	430		13,2	—	545,0
	700	925	455		14,4	—	497,0
800*	125	350	475	15,6	7,5	—	408,0
	300	580	470		9,6	—	490,0
	400	580	480		10,8	—	520,0
	600	1045	490		13,2	—	760,0
	700	1045	500		14,4	—	805,0
	800	1045	520		15,6	—	820,0
900*	500	1170	535	16,8	12,0	—	500,0
	600	1170	540		13,2	—	525,0
	900	1170	610		16,8	—	850,0
1000*	600	1290	640	18,0	13,2	—	1028,0
	800	1290	660		15,6	—	1102,0
	900	1290	680		16,8	—	1115,0
1200*	900	1300	760	20,4	16,8	—	1285,0
	1200	1525	760		20,4	—	1589,0

Operating pressures see page 67 <sup>1)</sup> without screw-rings \* acc. to manufacturer's standard

Mechanical joint types on request.

## Double socket pieces with 45° socket branch – MMC acc. to manufacturer's standard



Dimensions and weights							
DN 1	DN 2	Dimensions in mm					Weight in kg <sup>≈</sup> with TYTON <sup>®</sup> -sockets
		Lu	lu	z	e <sub>1</sub>	e <sub>2</sub>	
80	80	270	200	200	7,0	7,0	22,0
	100	300	250	250	7,2	7,0	25,0
100	100	300	250	250	7,2	7,2	30,0
	125	350	250	250	7,5	7,2	40,0
125	125	350	250	250	7,5	7,5	41,0
	150	380	300	300	7,8	7,0	33,0
	100	380	300	300	7,2	7,2	36,0
150	150	380	300	300	7,8	7,8	39,0
	200	500	360	360	8,4	7,2	56,2
	150	500	380	380	7,8	7,8	62,0
200	200	500	380	380	8,4	8,4	65,0
	250	600	395	395	9,0	7,2	67,0
	150	500	400	395	7,8	7,8	71,0
250	200	500	400	430	8,4	8,4	101,0
	250	600	460	460	9,0	9,0	120,0
300	100	700	430	430	9,6	7,2	89,6
	150	450	470	430	7,8	7,8	93,4
	200	450	470	500	8,4	8,4	95,0
	250	700	500	500	9,0	9,0	128,0
	300	700	525	525	9,6	9,6	142,6

Operating pressures see page 67



## Double socket pieces with 45° socket branch – MMC acc. to manufacturer's standard

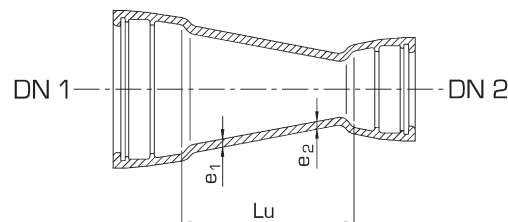
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DN 1	DN 2	Dimensions in mm					Weight in kg ≈ with TYTON®-sockets
		Lu	lu	z	e <sub>1</sub>	e <sub>2</sub>	
350	150	700	470	470	10,2	7,8	153,0
	200	700	510	510		8,4	160,0
	250	700	530	530		9,0	172,0
	300	700	570	610		9,6	177,0
	350	880	690	760		10,2	195,0
400	100	440	480	440	10,8	7,2	131,0
	125	440	490	450		7,5	138,0
	150	440	490	450		7,8	141,0
	200	640	570	580		8,4	159,0
	300	850	650	700		9,6	181,0
	400	850	650	650		10,8	209,0
500	100	450	590	515	12,0	7,2	167,0
	150	450	590	515		7,8	177,0
	200	740	620	550		8,4	220,0
	250	740	640	620		9,0	231,0
	300	740	720	680		9,6	237,0
	400	850	720	750		10,8	266,0
	500	1040	845	845		12,0	385,0
600	150	750	750	620	13,2	7,8	240,0
	200	750	750	620		8,4	245,0
	250	750	775	680		9,0	250,0
	300	750	800	740		9,6	260,0
	400	1150	800	765		10,8	400,0
	500	1210	920	915		12,0	482,0
700	600	1210	985	975		13,2	506,0
	200	575	825	675	14,4	8,4	298,0
	300	925	885	810		9,6	433,0
	400	925	940	890		10,8	445,0
	500	1080	1020	990		12,0	635,0
	600	1380	1070	1055		13,2	693,0
	700	1380	1140	1140		14,4	750,0
800	600	1250	1150	1110	15,6	13,2	745,0
	800	1550	1275	1275		15,6	1013,0

Operating pressures see page 67

## Double socket tapers – MMR

99



Dimensions and weights

DN 1	DN 2	Dimensions in mm			Weight in kg ≈ <sup>1)</sup>	
		Lu	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	with TYTON®-sockets
50*	40	200	7,0	7,0	7,8	—
65*	40	200	7,0	7,0	7,8	—
	50	200	7,0	7,0	10,5	—
80	40*	200	7,0	7,0	13,5	—
	50	110		7,0	5,4	—
	65*	200		7,0	15,2	—
100	40*	150	7,2	7,0	14,0	—
	50*	150		7,0	7,6	—
	65*	120		7,0	7,0	—
	80	90		7,0	8,1	9,2

Operating pressures see page 67 <sup>1)</sup> without screw-rings \* acc. to manufacturer's standard  
Mechanical joint types on request.

## Double socket tapers – MMR

100

DN 1	DN 2	Dimensions in mm			Weight in kg = <sup>1)</sup>	
		L <sub>u</sub>	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	TYTON <sup>®</sup> -sockets
125	65*	170	7,5	7,0	9,6	—
	80	140		7,0	9,9	11,3
	100	100		7,2	9,8	11,8
150	65	180	7,8	7,0	14,0	13,0
	80	190		7,0	12,3	15,1
	100	150		7,2	13,4	15,7
	125	100		7,5	12,6	15,7
175	150	200	8,1	7,8	36,5	—
200	80	280	8,4	7,0	25,9	22,7
	100	250		7,2	18,3	20,5
	125	200		7,5	17,5	22,7
	150	150		7,8	17,8	22,1
	175	200		8,1	30,0	—
250	80	300	9,0	7,0	33,0	33,0
	100	300		7,2	29,0	29,0
	125	300		7,5	26,5	31,3
	150	250		7,8	28,0	34,6
	200	150		8,4	30,2	34,6
300	80	300	9,6	7,0	29,5	29,5
	100	300		7,2	55,1	36,2
	150	350		7,8	41,0	50,2
	200	250		8,4	37,8	43,2
	250	150		9,0	36,7	43,7

Operating pressures see page 67 <sup>1)</sup> without screw-rings \* acc. to manufacturer's standard  
 Mechanical joint types on request.

## Double socket tapers – MMR

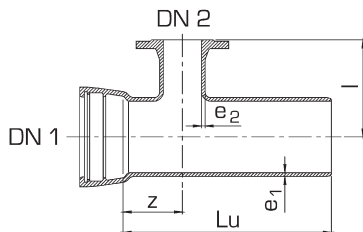
101

DN 1	DN 2	Dimensions in mm			Weight in kg = <sup>1)</sup>	
		L <sub>u</sub>	e <sub>1</sub>	e <sub>2</sub>	with screw-gland sockets	TYTON <sup>®</sup> -sockets
350	150	500	10,2	7,8	78,0	78,0
	200	360		8,4	48,0	48,0
	250	260		9,0	47,0	47,0
	300	160		9,6	45,0	45,0
400	200	400	10,8	8,4	79,9	65,0
	250	360		9,0	73,5	73,5
	300	260		9,6	68,0	68,0
	350	160		10,2	70,0	70,0
450	300	500	11,4	9,6	139,3	120,0
	350*	500		10,2	129,0	129,0
	400	160		10,8	156,6	75,0
500	250	500	12,0	9,0	101,0	127,4
	300	500		9,6	133,0	134,0
	350*	500		10,2	150,0	143,6
	400*	500		10,8	139,5	150,7
	450	500		12,0	267,0	155,0
600	300	500	13,2	9,6	—	157,0
	350	600		10,2	—	184,0
	400*	500		10,8	—	185,8
	500*	500		12,0	—	186,8
700	400	500	14,4	10,8	—	296,0
	500*	500		12,0	—	341,5
	600*	500		13,2	—	252,5
800	500	500	15,6	12,0	—	275,0
	600	480		13,2	—	288,0
	700	280		14,4	—	296,0
900	700	480	16,8	14,4	—	382,0
	800	280	16,8	15,6	—	347,0
1000	800	480	18,0	15,6	—	476,0
	900	280	18,0	16,8	—	—
1200	1000	480	20,4	18,0	—	652,0

Operating pressures see page 67 <sup>1)</sup> without screw-rings \* acc. to manufacturer's standard  
 Mechanical joint types on request.

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

102



Dimensions and weights								
DN 1	DN 2	Dimensions in mm					Weight in kg <sup>1)</sup>	
		Lu	l	z	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	TYTON <sup>®</sup> -socket
40	40	400	150	78	7,0	7,0	10,0	—
	50	400	150	85	7,0	7,0	10,5	—
50	40	400	150	85			12,0	—
	50	400	180	106	7,0	7,0	12,3	12,3
	80	400	180	106			13,0	13,0
80	40	400	180	106			15,1	15,7
	50	400	200	120	7,2	7,0	15,7	16,2
	80	400	200	120		7,0	15,5	15,5
100	40	400	200	120		7,0	16,0	16,0
	50	400	200	120		7,0	17,8	18,4
	80	400	200	120		7,2	18,7	18,8
	100	400	200	120				

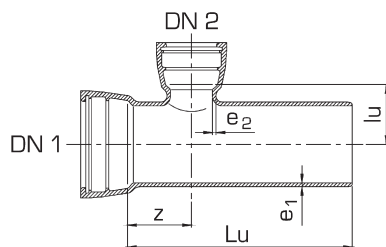
Operating pressures see page 67 <sup>1)</sup> without screw-ring

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

103

DN 1	DN 2	Dimensions in mm					Weight in kg <sup>1)</sup>	
		Lu	l	z	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket	TYTON <sup>®</sup> -socket
125	40	425	190	112	7,5	7,0	17,5	17,5
	50	425	190	112		7,0	18,0	18,0
	80	425	190	112		7,0	20,0	22,5
	100	425	195	112		7,2	21,6	23,5
	125	425	200	112		7,5	26,0	26,0
150	40	450	205	128	7,8	7,0	24,8	23,0
	50	450	205	128		7,0	24,0	24,0
	80	450	205	128		7,0	26,4	28,0
	100	450	210	128		7,2	25,0	29,2
	125	450	210	128		7,5	28,5	28,5
	150	450	210	128		7,8	30,4	30,4
200	50	600	240	190	8,4	7,0	46,0	46,0
	80	600	240	190		7,0	50,0	55,0
	100	600	250	190		7,2	55,0	51,0
	150	600	275	240		7,8	58,0	58,0
	200	600	300	240		8,4	64,8	60,0
300	80	800	300	260	9,6	7,0	119,5	119,5
	100	800	300	260		7,2	121,0	121,0
	150	800	300	260		7,8	126,5	126,5
400	400	1000	450	330	10,8	10,8	186,0	186,0
1000	600	1770	825	645	18,0	12,0	—	1160,0

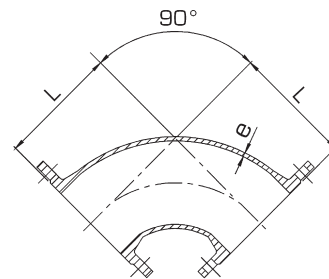
Operating pressures see page 67 <sup>1)</sup> without screw-ring



### Dimensions and weights

DN 1	DN 2	Dimensions in mm					Weight in kg <sup>1)</sup>
		Lu	lu	z	e <sub>1</sub>	e <sub>2</sub>	
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	7,2	16,0
150	80	450	120	128	7,8	7,0	25,0
	100	450	120	128	7,2	7,2	45,0
	125	450	125	128	7,5	7,5	28,0

Operating pressures see page 67 <sup>1)</sup> without screw-rings



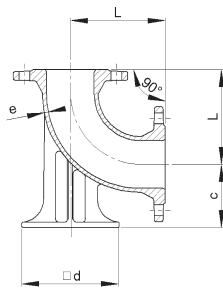
### Dimensions and weights

DN	Dimensions in mm		Weight in kg <sup>≈</sup>			
	L	e	PN 10	PN 16	PN 25	PN 40
40*	140	7,0	5,5	5,5	5,5	5,5
50*	150	7,0	7,5	7,5	7,5	7,5
65*	165	7,0	10,2	10,2	10,2	10,2
80	165	7,0	10,2	10,2	11,0	11,0
100	180	7,2	12,9	12,9	12,9	12,9
125	200	7,5	18,9	22,0	22,0	23,2
150	220	7,8	29,3	29,2	33,5	33,5
200	260	8,4	36,2	36,2	45,9	53,0
250	350	9,0	58,3	58,3	81,0	101,0
300	400	9,6	82,1	82,1	116,6	144,2
350	450	10,2	102,1	111,2	155,0	199,0
400	500	10,8	144,7	157,7	217,0	284,0
450	550	11,4	234,0	234,0	241,0	308,0
500	600	12,0	266,0	277,5	305,0	375,0
600	700	13,2	370,0	404,0	346,0	458,0
700	800	14,4	539,0	420,0	575,0	—
800	900	15,6	774,0	720,0	672,0	—
900	1000	16,8	745,0	836,0	—	—
1000	1100	18,0	1010,0	1099,0	—	—
1200	1300	20,4	—	1463,0	—	—

\* acc. to manufacturer's standard

## Double flanged duckfoot bends 90° – N

106



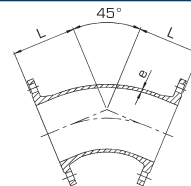
Dimensions and weights

DN	Dimensions in mm				Weight in kg ≈			
	L	c	□d	e	PN 10	PN 16	PN 25	PN 40
40*	—	—	—	—	10,5	10,5	10,5	10,5
50*	150	90	150	7,0	10,5	10,5	10,5	10,5
65*	165	99	165	7,0	16,0	16,0	16,0	16,0
80	165	110	180	7,0	15,7	15,7	15,7	15,7
100	180	125	200	7,2	18,9	18,9	25,4	25,4
125	200	140	225	7,5	27,0	27,0	22,7	23,9
150	220	160	250	7,8	34,6	38,9	31,0	35,5
200	260	190	300	8,4	55,6	55,6	48,5	60,0
250	350	225	350	9,0	84,0	84,0	80,5	101,0
300	400	255	400	9,6	117,7	117,7	114,0	145,0
350	450	290	450	10,2	137,0	142,0	154,8	201,0
400	500	320	500	10,8	263,5	248,0	209,0	277,0
450	550	355	550	11,4	—	295,0	309,0	395,0
500	600	385	600	12,0	374,8	311,0	335,0	402,0
600	700	450	700	13,2	538,9	482,0	506,0	612,0
700*	800	480	800	16,0	752,0	705,0	769,0	—
800*	900	540	900	19,0	926,0	970,0	1086,0	—
900	1000	645	1000	16,8	—	—	—	—
1000	1100	710	1000	18,0	—	1626,0	—	—
1200	1300	845	1300	20,4	2311,0	—	—	—

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

## Double flanged bends 45° – FFK 45

107



Dimensions and weights

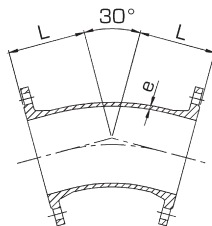
DN	Dimensions in mm		Weight in kg ≈			
	L	e	PN 10	PN 16	PN 25	PN 40
40*	140	7,0	7,0	7,0	7,0	7,0
50*	150	7,0	9,0	9,0	9,0	9,0
65*	165	7,0	12,0	12,0	12,0	12,0
80	130	7,0	10,3	10,3	10,3	10,3
100	140	7,2	12,6	12,6	—	—
	200	7,2	—	—	20,0	20,0
125	150	7,5	17,5	17,5	17,5	18,3
150	160	7,8	21,6	21,6	33,0	24,5
200	180	8,4	32,4	32,4	34,0	41,5
250	350	9,0	60,9	60,9	101,0	83,0
300	400	9,6	90,2	90,2	87,5	118,0
350	298	10,2	96,1	102,6	111,0	141,0
400	324	10,8	117,2	129,1	191,3	196,0
450	350	11,4	150,0	150,0	180,0	248,0
500	375	12,0	185,8	235,4	259,2	264,0
600	426	13,2	288,0	347,0	292,0	397,0
700	478	14,4	489,0	481,0	392,0	—
800	529	15,6	403,0	442,0	535,0	—
900	581	16,8	—	480,0	—	—
1000	632	18,0	727,9	685,0	1099,0	—
1200	750	20,4	—	—	—	—

Short length acc. to manufacturer's standard

350*	215	10,5	64,0	69,0	85,5	115,5
400*	243	11,0	85,0	94,5	114,5	184,5
500*	290	12,0	129,0	157	178,0	246,0

\* acc. to manufacturer's standard

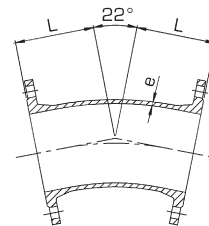
## Double flanged bends 30° – FFK 30 acc. to manufacturer's standard



Dimensions and weights

DN	Dimensions in mm		Weight in kg ≈			
	L	e	PN 10	PN 16	PN 25	PN 40
40	140	7,0	7,0	7,0	7,0	7,0
50	150	7,0	9,0	9,0	9,0	9,0
65	165	7,0	12,0	12,0	12,0	12,0
80	130	7,0	10,0	10,0	10,0	10,0
100	140	7,2	13,7	13,7	—	—
	200	7,2	—	—	18,0	18,0
125	150	7,5	15,7	15,7	18,0	21,0
150	160	7,8	22,7	22,7	—	25,0
200	180	8,4	35,1	35,1	33,0	42,0
250	210	9,0	47,5	44,0	90,0	65,0
300	255	9,5	68,0	68,0	73,0	100,0
350	165	10,2	70,2	71,0	88,0	142,0
400	183	10,8	85,9	82,5	104,5	172,5
450	255	11,4	143,0	153,0	183,0	251,0
500	220	12,0	129,5	157,5	205,0	275,0
600	309	13,2	230,0	289,0	289,0	298,0
700	346	14,4	360,0	386,0	416,0	—
800	383	15,6	439,6	529,0	623,0	—
900	420	16,8	—	—	—	—
1000	455	18,0	—	—	1018,0	—
1200	530	20,4	—	—	—	—

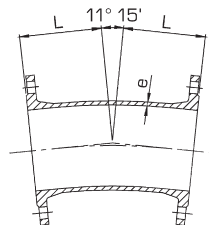
## Double flanged bends 22 1/2° – FFK 22 acc. to manufacturer's standard



Dimensions and weights

DN	Dimensions in mm		Weight in kg ≈			
	L	e	PN 10	PN 16	PN 25	PN 40
40	140	7,0	7,0	7,0	7,0	7,0
50	150	7,0	9,0	9,0	9,0	9,0
65	165	7,0	12,0	12,0	12,0	12,0
80	130	7,0	10,7	10,7	10,7	10,7
100	140	7,2	13,6	13,6	—	—
	200	7,2	—	—	18,0	18,0
125	150	7,5	17,2	17,2	29,0	21,0
150	160	7,8	22,1	22,1	22,0	25,0
200	180	8,4	34,6	34,6	33,5	42,5
250	210	9,0	48,6	48,6	48,5	65,5
300	255	9,6	68,6	68,6	72,0	99,0
350	140	10,2	63,7	64,8	78,0	132,0
400	153	10,8	80,5	95,6	97,5	165,5
450	209	11,4	135,0	145,0	183,0	251,0
500	185	12,0	125,8	137,0	175,0	345,0
600	254	13,2	203,0	245,0	247,0	268,0
700	284	14,4	327,0	360,0	369,0	—
800	314	15,6	418,0	448,0	558,0	—
900	375	16,8	—	—	—	—
1000	410	18,0	—	—	—	—
1200	467	20,4	—	—	—	—

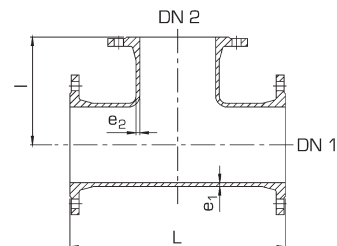
# Double flanged bends 11 1/4° – FFK 11 acc. to manufacturer's standard



Dimensions and weights

DN	Dimensions in mm		Weight in kg ≈			
	L	e	PN 10	PN 16	PN 25	PN 40
40	140	7,0	7,0	7,0	7,0	7,0
50	150	7,0	9,0	9,0	9,0	9,0
65	165	7,0	12,0	12,0	12,0	12,0
80	130	7,0	10,6	10,6	10,6	10,6
100	140	7,2	13,7	13,7	—	—
	200	7,2	—	—	12,9	12,9
125	150	7,5	17,2	17,2	18,0	21,0
150	160	7,8	23,2	23,2	22,0	25,0
200	180	8,4	34,6	34,6	54,5	39,0
250	210	9,0	47,0	47,0	48,0	65,0
300	255	9,6	69,1	69,1	69,5	96,5
350	105	10,2	57,2	53,0	70,0	138,5
400	113	10,8	71,8	72,5	89,5	168,5
450	144	11,4	108,0	118,0	145,0	213,5
500	135	12,0	106,9	140,8	137,0	237,5
600	174	13,2	170,0	222,5	229,0	260,5
700	194	14,4	265,0	292,0	370,0	—
800	213	15,6	321,8	396,0	490,0	—
900	280	16,8	—	397,5	—	—
1000	310	18,0	—	—	—	—
1200	346	20,4	—	—	—	—

# All flanged tees – T



Dimensions and weights

DN 1	DN 2	Dimensions in mm				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	40	300	145	7,0	7,0	12,0	—	—	—
	50		150		7,0	12,5	—	—	—
65	40	330	153	7,0	7,0	15,0	—	—	—
	50		158		7,0	15,5	—	—	—
	65		165		7,0	16,5	—	—	—
80	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
	65		160		7,0	16,4	16,4	16,4	16,4
	80		165		7,0	17,0	17,0	17,0	17,0
100	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
	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
125	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
	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

## All flanged tees – T

112

DN 1	DN 2	Dimensions in mm				Weight in kg ≈			
		L	I	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
150	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
175	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	—	—
200	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
250	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
300	40	800	275	9,6	7,0	95,5	95,5	105,5	139,5
	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

## All flanged tees – T

113

DN 1	DN 2	Dimensions in mm				Weight in kg ≈			
		L	I	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
350	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
400	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
450	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		375		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



## All flanged tees – T

114

DN 1	DN 2	Dimensions in mm				Weight in kg ≈			
		L	I	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
500	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
600	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
700	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*		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	—

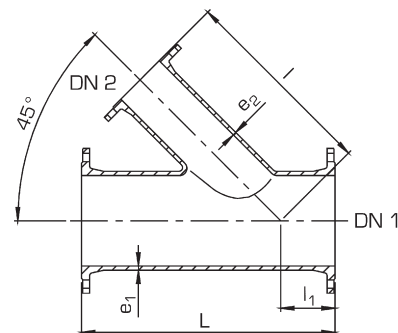
\* acc. to manufacturer's standard

## All flanged tees – T

115

DN 1	DN 2	Dimensions in mm				Weight in kg ≈			
		L	I	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
800	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	910	585		8,4	468,7	475,0	570,0	
	250*		585		9,0	443,0	481,0	578,0	
	300*		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	
	900		730	16,8	7,2	702,0	472,0	588,0	
	200		645		8,4	455,0	477,0	593,0	
	300*		950		9,6	544,0	566,0	685,0	
	400		675		10,8	552,0	574,0	596,0	
1000	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*		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		825		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	Dimensions in mm				Weight in kg ≈			
		L	l	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
1200	150*	1240	840	20,4	7,8		1240		
	200*		840		8,4				
	250*		840		9,0				
	300*		840		9,6				
	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				

\* acc. to manufacturer's standard

Dimensions and weights							
DN 1	DN 2	Dimensions in mm					Weight in kg ≈
		L*	l <sub>1</sub> *	I*	e <sub>1</sub>	e <sub>2</sub>	
50	50	300	70	230	7,0	7,0	16,0
65	65	330	70	260	7,0	7,0	19,0
80	65	360	90	270	7,0	7,0	20,0
	80		80	280	7,0	7,0	23,0
100	50	400	100	300	7,2	7,0	26,0
	80		100	300	7,0	7,0	28,0
	100		90	310	7,2	7,2	30,0
125	80	450	120	330	7,5	7,0	35,0
	100		100	350	7,2	7,2	37,0
	125		100	350	7,5	7,5	40,0
150	80	500	140	360	7,8	7,0	39,5
	100		125	375	7,2	7,2	42,0
	150		110	390	7,8	7,8	56,5

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

## Double flanged piece with 45° flanged branch — FFC acc. to manufacturer's standard

118

DN 1	DN 2	Dimensions in mm					Weight in kg ≈
L*	I <sub>1</sub> *	I*	e <sub>1</sub>	e <sub>2</sub>			
200	100	600	170	430	8,4	7,2	68,0
	125		180	420		7,5	70,0
	150		170	430		7,8	73,0
	200		130	470		8,4	82,5
250	100	700	250	450	9,0	7,2	90,0
	125		225	475		7,5	95,0
	150		200	500		7,8	102,0
	200		175	525		8,4	106,5
300	250		150	550		9,0	126,5
	80	800	320	480	9,6	7,0	140,0
	100		320	480		7,2	141,0
	125		320	480		7,5	150,0
350	150		300	500		7,8	145,0
	200		250	550		8,4	153,0
	250		180	620		9,0	178,0
	300		130	670		9,6	183,0
350	100	900	350	550	10,2	7,2	180,0
	125		360	540		7,5	183,0
	150		340	560		7,8	186,0
	200		300	600		8,4	190,0
400	250		240	660		9,0	200,0
	300		230	670		9,6	220,0
	350		200	700		10,2	225,0
400	100	1000	420	580	10,8	7,2	228,0
	150		420	580		7,8	230,0
	200		350	650		8,4	235,0
	250		300	700		9,0	255,0
400	300		250	750		9,6	275,0
	350		280	720		10,2	290,0
	400		200	800		10,8	300,0



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

## Double flanged piece with 45° flanged branch — FFC acc. to manufacturer's standard

119

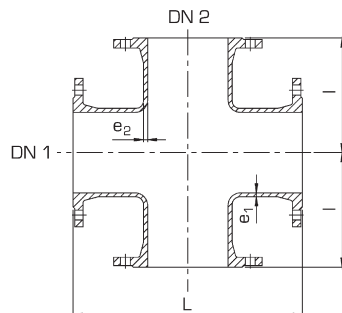
DN 1	DN 2	Dimensions in mm					Weight in kg ≈
L*	I <sub>1</sub> *	I*	e <sub>1</sub>	e <sub>2</sub>			
450	250	1000	250	750	11,4	9,0	320,0
	300		200	800		9,6	335,0
	350		200	800		10,2	345,0
	400		150	850		10,8	370,0
500	450		150	850		11,4	380,0
	200	1000	250	750	12,0	8,4	350,0
	250		230	770		9,0	360,0
	300		180	820		9,6	380,0
600	350		200	800		10,2	400,0
	400		120	880		10,8	420,0
	450		130	870		11,4	440,0
	500	1200	350	850		12,0	480,0
600	200	1100	300	800	13,2	8,4	430,0
	250		250	850		9,0	445,0
	300		200	900		9,6	460,0
	350		250	850		10,2	485,0
700	400		100	1000		10,8	520,0
	450		100	1000		11,4	545,0
	500		130	970		12,0	560,0
	600	1300	200	1100		13,2	650,0
700	300	1000	50	950	14,4	9,6	580,0
	350	1000	30	970		10,2	600,0
	500	1400	350	1050		12,0	680,0
	700	1500	350	1150		14,4	750,0
800	400	1470	380	1090	15,6	10,8	835,0
	500	1100	50	1050		12,0	750,0
	600	1270	100	1170		13,2	836,0
	800	1600	300	1300		15,6	945,0
900	900	2000	500	1500	16,8	16,8	1350,0
1000	1000	2200	550	1650	18,0	18,0	1820,0



\* 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

120



Dimensions and weights

DN 1	DN 2	Dimensions in mm				Weight in kg ≈	
		L	l	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16
40	40	280	140	7,0	7,0	11,0	11,0
50	50	300	150	7,0	7,0	15,0	15,0
65	65	330	165	7,0	7,0	24,0	24,0
80	80	330	165	7,0	7,0	24,0	24,0
100	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
125	100	400	195	7,5	7,2	35,5	35,5
	125		200		7,5	36,7	36,7
150	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
	125		215		7,5	43,0	43,0
	150		220		7,8	48,6	48,6

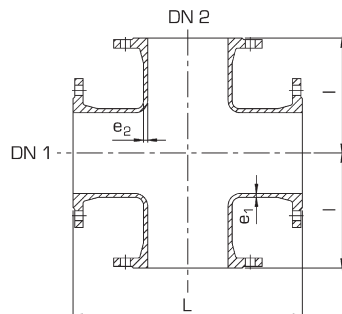


## All flanged cross tees – TT acc. to manufacturer's standard

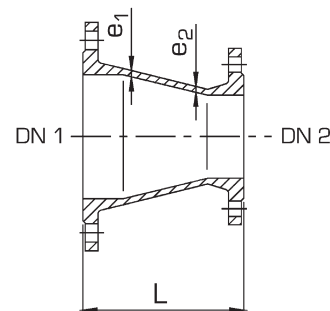
121

DN 1	DN 2	Dimensions in mm				Weight in kg ≈	
		L	l	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16
200	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
250	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
300	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
350	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
400	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
450	150	950	375	11,4	7,8	306,0	324,0
	450		375		11,4	314,0	341,0





DN 1	DN 2	Dimensions in mm				Weight in kg ≈	
		L	l	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16
500	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
600	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
700	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



### Dimensions and weights

DN 1	DN2	Dimensions in mm			Weight in kg ≈			
		L	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
50*	40	200	7,0	7,0	7,2	7,2	7,2	7,2
	40	200	7,0	7,0	8,0	8,0	8,0	8,0
65*	50	200		7,0	9,7	9,7	9,7	9,7
	40*	200	7,0	7,0	8,1	8,1	8,1	8,1
80	50*	200		7,0	8,6	8,6	8,6	8,6
	65	200		7,0	9,5	9,5	10,3	11,0
100	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
125	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	—
150	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

Further lengths are available on request.

\* acc. to manufacturer's standard

## Double flanged tapers, concentric – FFR

124

DN 1	DN 2	Dimensions in mm			Weight in kg ≈			
		L	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
200	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
250	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
300	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
350	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
400	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
450	400	300	11,4	10,8	96,7	99,0	—	—



## Double flanged tapers, concentric – FFR

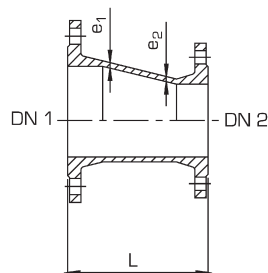
125

DN 1	DN 2	Dimensions in mm			Weight in kg ≈			
		L	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
500	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
600	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
700	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	—
800	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	—
900	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	—
1000	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	—	—
1200	1000	790	20,4	18,0	—	824,0	—	—



## Double flanged tapers, excentric – FFRé acc. to manufacturer's standard

126



Dimensions and weights

DN 1	DN 2	Dimensions in mm			Weight in kg ≈			
		L	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
50	40	200	7,0	7,0	—	—	—	7,0
	40	200	7,0	7,0	—	—	—	8,5
65	40	200	7,0	7,0	—	—	—	9,0
	50	200	7,0	7,0	—	—	—	9,5
80	40	200	7,0	7,0	—	—	—	10,0
	50	200	7,0	7,0	—	—	—	11,0
100	40	200	7,2	7,0	11,5	11,5	12,0	12,0
	50	200	7,2	7,0	13,0	13,0	12,5	12,5
125	40	200	7,5	7,0	14,0	14,0	14,6	16,5
	50	200	7,5	7,0	15,0	15,0	15,5	16,8
150	40	200	7,8	7,0	16,0	16,0	16,6	17,9
	50	200	7,8	7,0	17,0	17,0	17,6	18,9
200	40	200	8,4	7,0	21,0	21,0	22,0	24,0
	50	200	8,4	7,0	20,0	20,0	24,0	26,0
250	40	200	9,0	7,2	21,5	21,5	23,0	25,0
	50	200	9,0	7,2	18,4	18,4	25,5	27,5
300	40	200	9,6	7,2	26,5	26,5	26,5	30,0
	50	200	9,6	7,2	26,5	26,5	26,5	30,0



## Double flanged tapers, excentric – FFRé acc. to manufacturer's standard

127

DN 1	DN 2	Dimensions in mm			Weight in kg ≈			
		L	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
200	80	300	8,4	7,0	26,0	26,0	28,0	34,5
	100	300	8,4	7,2	27,0	27,0	29,5	35,5
	125	300	8,4	7,5	32,4	28,5	30,5	36,5
	150	300	8,4	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	9,0	7,5	42,0	38,0	41,5	52,5
	150	300	9,0	7,8	42,0	39,5	44,5	53,5
	200	300	9,0	8,4	45,9	44,0	50,0	66,0
300	100	300	9,6	7,2	42,5	42,5	47,0	62,0
	150	300	9,6	7,8	45,0	48,6	61,5	84,5
	200	300	9,6	8,4	58,0	58,0	61,5	—
	250	300	9,6	9,0	55,6	55,6	69,5	97,0
350	200	500	10,2	8,4	88,0	91,0	105,0	128,0
	250	500	10,2	9,0	90,0	92,5	108,0	135,0
	250	600	10,2	9,0	98,0	103,0	114,0	141,0
	300	300	9,6	9,6	102,0	97,0	108,0	135,0
400	300	500	10,8	9,6	108,0	114,0	125,0	162,0
	150	500	10,8	7,8	88,0	97,0	109,0	145,0
	200	600	10,8	8,4	98,0	98,0	117,5	157,5
	250	500	10,8	9,0	92,0	109,0	130,0	170,0
450	300	500	10,8	9,6	113,0	112,0	132,0	191,0
	300	600	10,8	9,6	115,0	129,0	141,0	200,0
	350	500	10,2	10,2	125,0	134,0	153,0	208,0
500	250	600	11,4	9,0	113,0	125,0	135,0	182,0
	250	500	12,0	9,0	124,0	136,0	149,5	195,0
	300	500	12,0	9,6	123,5	144,0	162,0	213,0
	350	500	10,2	10,2	130,5	151,0	168,0	217,0
500	400	500	10,8	10,8	172,0	172,0	204,0	272,0
	450	500	11,4	11,4	166,0	188,0	—	—



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

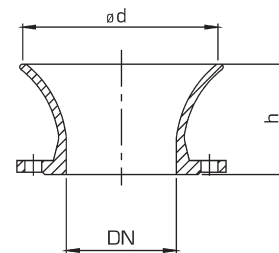
## Double flanged tapers, excentric – FFRe acc. to manufacturer's standard

128

DN 1	DN 2	Dimensions in mm			Weight in kg ≈			
		L	e <sub>1</sub>	e <sub>2</sub>	PN 10	PN 16	PN 25	PN 40
600	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
700	400	600	14,4	10,8	292,0	—	—	—
	500	600		12,0	320,0	356,0	—	—
	600	600		13,2	343,0	—	—	—
800	500	600	15,6	12,0	—	270,0	—	—
	600	600		13,2	275,0	—	—	—
	700	600		14,4	297,0	372,0	477,0	—
900	800	600	16,8	15,6	—	462,0	—	—
1000	800	600	18,0	15,6	429,0	—	—	—

## Single flange bell acc. to manufacturer's standard

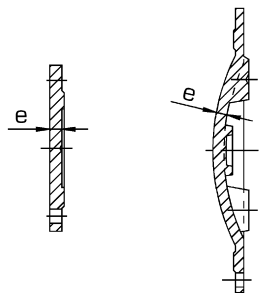
129



Dimensions and weights

DN	Dimensions in mm		Weight in kg ≈
	ø d	h	PN 10
40	140	100	4,0
50	140	110	5,0
65	155	115	7,0
80	170	120	9,0
100	190	130	11,0
125	210	145	14,0
150	260	150	17,0
200	300	180	25,9
250	350	200	32,0
300	420	250	44,0
350	550	250	63,0
400	550	250	74,0
450	650	280	115,0
500	680	300	130,0
600	780	300	175,0
700	895	300	195,0
800	1015	320	250,0
900	1100	390	270,0
1000	1200	390	355,0
1200	1440	520	465,0
1600	1880	550	780,0





DN 25–250

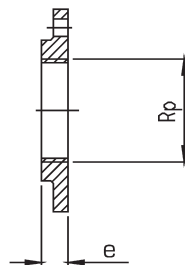
DN 300–1000

Flangeconnection dimension  
acc. to DIN EN 1092-2

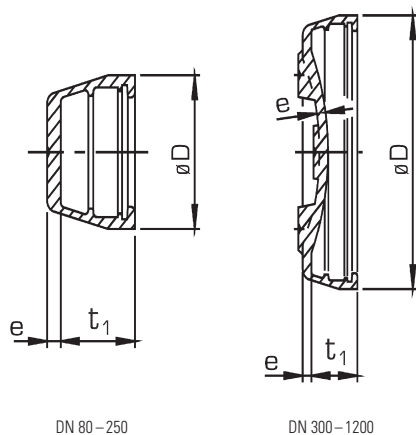
Dimensions and weights

DN	Dimensions in mm				Weight in kg ≈			
	e				PN 10	PN 16	PN 25	PN 40
25*	16,0	16,0	16,0	16,0	1,0			
32*	16,0	16,0	16,0	16,0	1,8			
40*	16,0	16,0	16,0	16,0	2,1			
50*	16,0	16,0	16,0	16,0	2,5			
65*	16,0	16,0	16,0	16,0	3,0			
80	16,0	16,0	16,0	16,0	4,0	4,0	5,0	5,0
100	16,0	16,0	16,0	16,0	4,6	4,6	5,1	5,1
125	16,0	16,0	16,0	20,5	6,0	6,0	6,6	8,2
150	16,0	16,0	17,0	23,0	7,6	7,6	8,6	11,4
175	16,0	16,0	—	—	9,2	9,2	—	—
200	17,0	17,0	19,0	27,0	11,4	11,4	13,6	20,0
250	19,0	19,0	21,5	31,5	17,2	16,8	21,0	33,0
300	20,5	20,5	23,5	35,5	25,0	24,5	31,0	51,0
350	20,5	22,5	26,0	—	30,5	34,5	43,5	—
400	20,5	24,0	28,0	—	38,0	46,0	59,5	—
450	21,5	—	—	—	67,0	91,5	—	—
500	22,5	27,5	32,5	—	56,0	79,0	96,0	—
600	25,0	31,0	37,0	—	86,0	123,0	147,0	—
700	27,5	34,5	—	—	127,0	174,0	—	—
800	30,0	38,0	—	—	176,0	244,0	—	—
900	32,5	41,5	—	—	230,0	323,0	—	—
1000	35,0	45,0	—	—	334,0	480,0	—	—
1200	45,0	57,0	—	—	582,0	737,0	—	—

\* acc. to manufacturer's standard

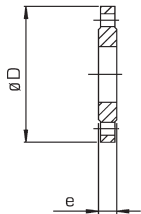


Dimensions and weights						
DN	PN	R <sub>p</sub> (DIN 2999)	Dimensions in mm			
			e			
			PN 10	PN 16	PN 25	PN 40
40	10–40	$\frac{3}{8} - 1\frac{1}{2}$ 2	22,0 27,0			
50	10–40	$\frac{3}{8} - 1\frac{1}{2}$ 2–2 $\frac{1}{2}$	22,0 27,0			
65	10–40	$\frac{3}{8} - 1\frac{1}{2}$ 2–2 $\frac{1}{2}$	22,0 27,0			
80	10–40	$\frac{3}{8} - 1\frac{1}{2}$ 2–3	16,0 30,0			
100	10–40	$\frac{3}{8} - 1\frac{1}{2}$ 2–4	16,0 36,0			
125	10–40	$\frac{3}{8} - 1\frac{1}{2}$ 2–4	16,0 36,0	16,0 36,0	16,0 36,0	20,5 36,0
150	10–40	$\frac{3}{8} - 1\frac{1}{2}$ 2–4	16,0 36,0	16,0 36,0	17,0 36,0	23,0 36,0
175	10–40	$\frac{3}{8} - 1\frac{1}{2}$ 2–4	16,0 36,0	16,0 36,0	— —	— —
200	10–40	$\frac{3}{8} - 1\frac{1}{2}$ 2–4	17,0 36,0	17,0 36,0	19,0 36,0	27,0 36,0
250	10–40	$\frac{3}{8} - 1\frac{1}{2}$ 2–4	19,0 36,0	19,0 36,0	21,5 36,0	31,5 36,0
300	10–40	$\frac{3}{8} - 3$	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			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	—	—



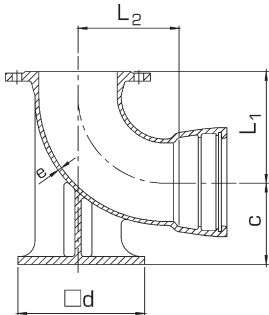
Dimensions and weights

DN	Dimensions in mm		e		Weight in kg ≈	
	ø D	t <sub>1</sub>	PN 16	PN 25	PN 16	PN 25
80	146,0	84		16,0		4,5
100	166,0	88		16,0		4,8
125	197,0	91		16,0		6,0
150	224,0	94		17,0		8,0
200	280,0	100		19,0		12,0
250	336,0	105		21,5		19,0
300	391,0	110		23,5		27,0
350	450,0	110		26,0		34,0
400	503,0	110		28,0		45,0
450	541,5	120		30,0		—
500	598,0	120		32,5		73,0
600	707,0	120		37,0		110,0
700	824,0	150	34,4		160	
800	935,0	160	38,0		220	
900	1042,0	175	41,5		345	



Dimensions and weights

DN	PN	Dimensions in mm		Weight in kg $\approx$
		$\varnothing D$	$e$	
80	10/40	200	27	3,9

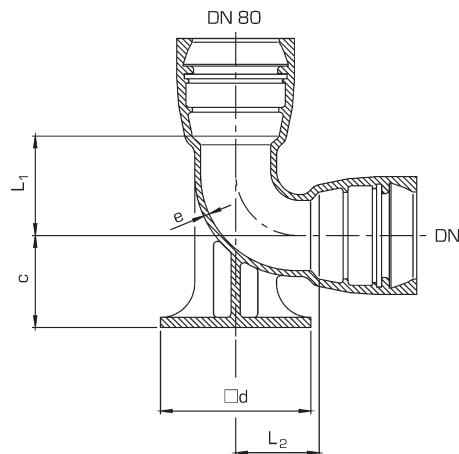


Dimensions and weights

DN	Dimensions in mm					Weight in kg $\approx$ <sup>1)</sup>	
	$L_1$	$L_2$	$c$	$\square d$	$e$	with screw-gland socket PN 10/PN 16	TYTON <sup>®</sup> -socket PN 10/PN 16
80	165	145	110	180	7,0	14,6	15,7
100	180	158	125	200	7,2	18,4	19,0
150	220	265	160	250	7,8		36,5

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

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

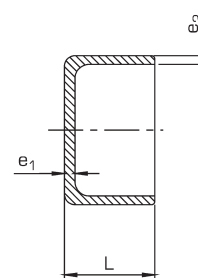


Dimensions and weights

DN	Dimensions in mm					Weight in kg ≈ PN 10
	L <sub>1</sub>	L <sub>2</sub>	c	d	e	
80	119	100	110	180	7,0	13,6
100	128	125	125	200	7,2	17,8
150	157	150	160	250	7,8	19,2
200	181	225	190	300	8,4	30,5

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

# Plugs for screw-gland and TYTON®-sockets – P acc. to manufacturer's standard

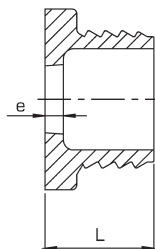


Dimensions and weights

DN	Dimensions in mm			Weight in kg ≈	
	L	e <sub>1</sub>	e <sub>2</sub>	with screw-gland socket PN 10/PN 16	with TYTON®-socket PN 10/PN 16
40	82	20	8,0	1,0	—
80	90	22	9,0	3,0	3,0
100	98	23	9,5	4,0	4,0
125	103	23	9,5	—	6,0
150	103	23	10,0	7,5	7,5
200	108	23	11,0	12,0	12,0
250	120	23	12,0	18,0	18,0
300	125	25	13,0	25,5	25,5
350	125	25	14,0	37,5	37,5
400	125	25	14,5	46,5	46,5
500	173	25	19,8	80,0	80,0

## Screw rings for plugs acc. to manufacturer's standard

140

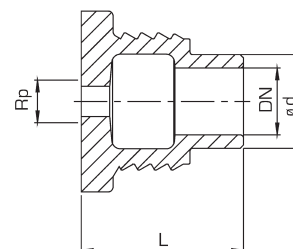


Dimensions and weights			
DN	Dimensions in mm		Weight in kg ≈
	e	L	PN 10/PN 16
40	11	65	1,6
50	11	67	1,8
80	12	72	2,9
100	14	75	3,4
125	14	78	4,4
150	17	81	5,5
200	20	86	9,0
250	22	92	13,0
300	23	94	17,5

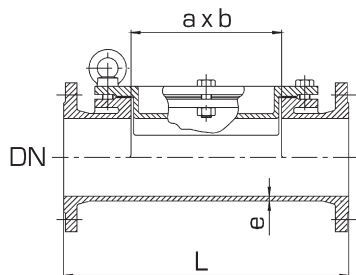
Screw-rings are needed in conjunction with plugs (plugs for screw-gland sockets) to close the pipeline.

## Screw plugs for screw-gland sockets – PX acc. to manufacturer's standard

141



Dimensions and weights				
DN	Dimensions in mm			Weight in kg ≈
	L	ø d	Rp (DIN 2999)	PN 10 / PN 16
40	97	56	$\frac{3}{4} - 2$	2,0



Dimensions and weights

DN	Dimensions in mm			Weight in kg ≈
	L	a x b	e	PN10
80	500	250 / 80	9,5	40
100	500	250 / 100	10,0	50
125	550	300 / 125	10,5	70
150	550	300 / 150	11,0	90
200	650	300 / 200	12,0	150
250	700	350 / 250	10,5	200
300	750	400 / 300	11,2	290
350	800	500 / 350	11,9	380
400	900	550 / 400	12,6	450
500	900	550 / 500	14,0	530

## 1.6

## Ductile cast iron (GGG) special fittings

## Ductile cast iron (GGG) special fittings

- **Single socket pieces with angled branch 45° – C**  
with screw-gland socket – acc. to manufacturer's standard
- **Socket spigot tapers – R**  
with screw-gland socket – acc. to manufacturer's standard
- **Flanged socket bends 90° – EQ**  
with screw-gland socket – acc. to manufacturer's standard

For further information please give us a call or contact your specialist dealer.  
We look forward to your questions.

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## 2

Ductile cast iron (GGG) fittings  
for plastic pipelines

acc. to DIN EN 12842 and  
DIN 16451

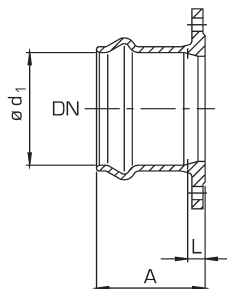
## Remarks for ductile cast iron fittings for plastic pipelines

149

These fittings for plastic pipelines are made of ductile cast iron (GGG) and they are manufactured acc. to DIN EN 12 842.

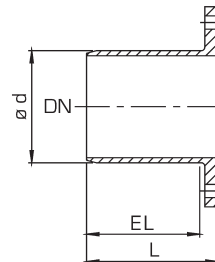
The flanges of the KS-pieces are acc. to DIN EN 1092-2.  
All KS-fittings are delivered with gaskets.

**Coatings:** see chapter 3.



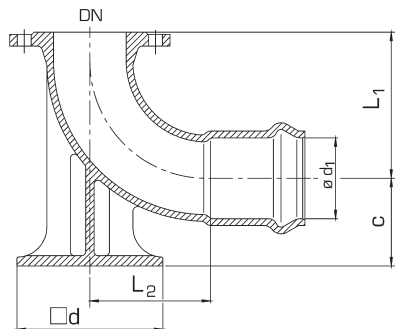
Dimensions and weights

DN	Dimensions in mm			Weight in kg ≈
	A	L min	ø d <sub>1</sub>	PN 10
50	100	20	63	3,0
65	110	14	75	3,8
80	120	13	90	5,5
100	125	11	110	6,0
125	155	18	140	9,0
150	150	8	160	10,0
200	180	29	225	18,0
250	220	36	280	28,0
300	235	6	315	37,5
400	310	36	450	72,5



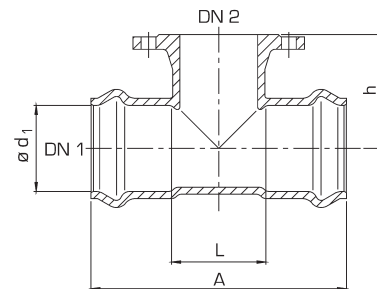
Dimensions and weights

DN	Dimensions in mm			Weight in kg ≈
	L	EL	ø d	PN 10
50	128	100	63	3,2
65	130	105	75	4,5
80	135	105	90	5,0
100	150	120	110	6,5
125	165	130	140	9,6
150	170	140	160	11,0
200	190	162	225	16,0
250	248	219	280	27,7
300	264	232	315	37,2
400	294	261	450	55,8



Dimensions and weights

DN	Dimensions in mm					Weight in kg ≈ PN 10
	L <sub>1</sub>	L <sub>2</sub>	c	ø d <sub>1</sub>	d	
80	165	140	110	90	180	15,6
100	180	150	125	110	200	20,5
150	220	145	160	160	250	36,2



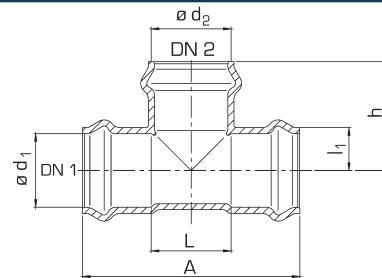
Dimensions and weights

DN 1	DN 2	Dimensions in mm				Weight in kg ≈ PN 10
		A	L	ø d <sub>1</sub>	h	
50	50	250	63	63	140	6,8
65	50	265	66	75	150	7,8
	65	280	81	75	150	9,4
80	50	285	69	90	160	9,2
	65	300	84	90	160	10,4
	80	315	99	90	165	11,4
100	50	310	74	110	170	10,9
	65	325	89	110	175	11,9
	80	340	104	110	175	15,0
	100*	360	124	110	180	15,8
125	50*	335	80	140	185	15,9
	65*	350	95	140	185	17,2
	80	365	110	140	190	18,5
	100	385	130	140	195	19,5
	125	410	135	140	200	23,1

\* acc. to manufacturer's standard

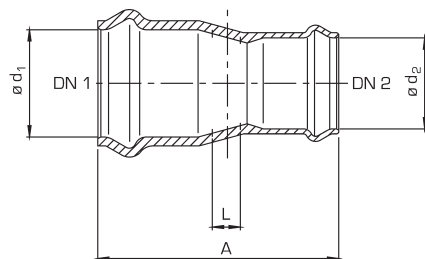
DN 1	DN 2	A	Dimensions in mm			Weight in kg ≈ PN 10
			L	ø d <sub>1</sub>	h	
150	50	360	98	160	205	19,2
	65	375	98	160	210	21,0
	80	390	116	160	205	20,8
	100	410	136	160	210	24,2
	125	435	161	160	215	26,5
	150	460	186	160	220	29,7
200	80*	455	128	225	235	34,9
	100*	475	148	225	240	37,6
	125	500	173	225	245	39,8
	150	525	198	225	250	44,7
	200*	575	248	225	260	51,4
250	80	515	140	280	265	48,0
	100	535	160	280	270	52,0
	150	585	210	280	280	57,6
	200	635	260	280	290	65,6
	250	685	310	280	300	73,6
300	80	550	152	315	295	58,9
	100	570	172	315	300	61,6
	150	620	222	315	310	71,1
	200*	670	272	315	320	79,4
	250*	720	322	315	330	89,2
	300*	770	372	315	340	93,0
400	80*	660	200	450	355	124,7
	100	680	220	450	360	130,5
	200*	780	320	450	380	168,1
	400*	980	520	450	420	219,0

\* acc. to manufacturer's standard



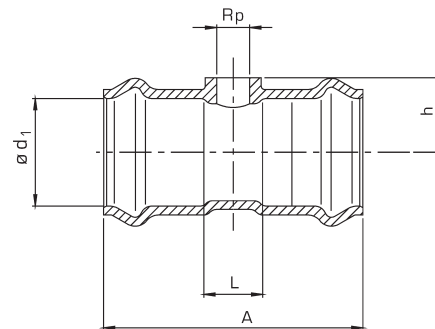
Dimensions and weights								
DN 1	DN 2	A	L	Dimensions in mm		h	ø d <sub>2</sub>	Weight in kg ≈ PN 10
				ø d <sub>1</sub>	l <sub>1</sub>			
50	50	257	70	63	35	128,5	63	4,1
65	50	272	73	75	35	134,0	63	5,0
	65	283	84	75	45	141,5	75	5,4
80	50	292	76	90	50	140,5	63	6,5
	65	303	87	90	50	148,0	75	7,0
	80	216	101	90	55	158,0	90	7,3
100	50	317	81	110	60	150,0	63	8,7
	65	328	92	110	60	157,5	75	9,1
	80*	341	106	110	60	167,7	90	10,5
	100	360	124	110	65	180,0	110	12,5
125	80	366	112	140	75	181,5	90	12,8
	100*	385	130	140	80	193,5	110	14,3
	125	412	157	140	80	206,0	140	16,0
150	80	391	118	160	82	190,0	90	15,3
	100	410	136	160	85	202,5	110	18,5
	125*	437	163	160	90	115,0	140	20,4
	150	455	181	160	95	227,5	160	22,7
200	80	456	130	225	115	219,0	90	28,7
	100	475	148	225	115	231,5	110	30,7
	125	502	175	225	120	244,0	140	32,4
	150	520	193	225	120	256,5	160	39,8
	200	578	252	225	130	289,0	225	42,7

\* acc. to manufacturer's standard



Dimensions and weights

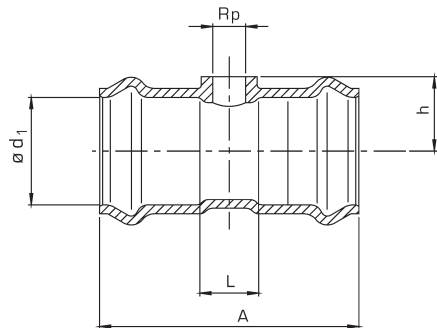
DN 1	DN 2	A	Dimensions in mm			Weight in kg $\approx$ PN 10
			L	$\varnothing d_1$	$\varnothing d_2$	
65	50	213,0	20	75	63	3,6
80	50	229,5	28	90	63	4,8
	65	231,5	24	90	75	5,5
100	65	253,5	36	110	75	6,8
	80	257,0	31	110	90	7,2
125	80	283,0	48	140	90	8,3
	100	286,0	41	140	110	9,2
150	100	307,5	53	160	110	11,0
	125	306,5	42	160	140	12,1
200	125	368,0	77	225	140	20,2
	150	371,5	71	225	160	21,8
250	150	426,5	102	280	160	28,8
	200	430,0	79	280	225	32,6



Dimensions and weights

DN	Rp*	Dimensions in mm				Weight in kg $\approx$ PN 10
		A	L	$\varnothing d_1$	h	
50	1	255	68	63	60	3,6
	1 1/4	255		63		4,3
	1 1/2	255		63		4,3
	2	255		63		4,5
		255		63		
65	1	270	71	75	65	5,0
	1 1/4	270		75		5,6
	1 1/2	270		75		5,6
	2	270		75		5,8
		270		75		
80	1	290	74	90	85	6,6
	1 1/4	290		90		7,2
	1 1/2	290		90		7,2
	2	290		90		7,4
		290		90		
100	1	315	79	110	90	8,4
	1 1/4	315		110		9,0
	1 1/2	315		110		9,0
	2	315		110		9,2
		315		110		

\* Rp acc. to DIN 2999



DN	Dimensions in mm					Weight in kg ≈
	Rp	A	L	ø d <sub>1</sub>	h	PN 10
125	1	340	85	140	105	10,9
	1 1/4	340		140		12,5
	1 1/2	340		140		12,5
	2	340		140		12,7
150	1	365	91	160	115	15,1
	1 1/4	365		160		15,7
	1 1/2	365		160		15,7
	2	365		160		15,9
200	1	430	103	225	155	27,0
	1 1/4	430		225		27,6
	1 1/2	430		225		27,6
	2	430		225		27,8
250	2	490	115	280	180	41,4
300	2	523	127	315	195	51,2

\* Rp acc. to DIN 2999

## 3

## Inside and outside protection

3

## Inside and outside protection

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

### 1. Cement mortar lining

The cement mortar lining is acc. to DVGW-data sheet W 347 and W 270 resp. DIN EN 545 or DIN EN 598

- to avoid corrosion
- to avoid sediments and to advantage the continuous hydraulic features.

### 2. Enamelled (glass-lined) – lining and coating

Enamel is an effective protection against corrosion, abrasion and incrustation. A nondetachable, chemical bounding to the cast iron avoids corrosion by undercutting. The layer thickness after application (temperature  $\approx 800^{\circ}$ ) is between  $200\mu$  and  $500\mu$ .

### 3. Epoxy resin – lining and coating

The coating is acc. to RAL-GZ 662 with hot melted epoxy powder. The demands of DIN EN 14901 (pressure pipes and fittings) as well as of DIN 30677 T.2 (heavy corrosion protection for valves) are fulfilled.

### 4. Special coatings (outside)

Different coatings on request.



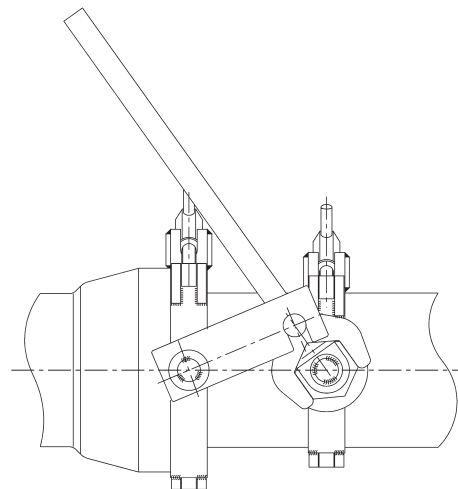
## 4

## Accessories



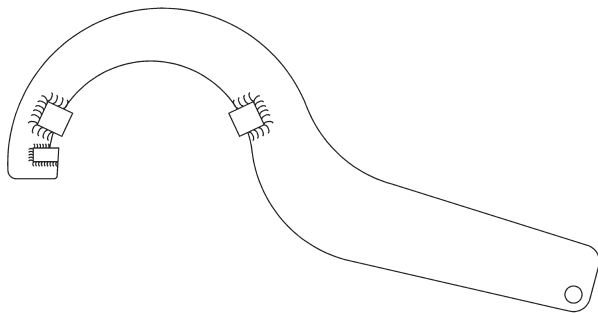
## Laying tool V 300 D

for pressure pipes, fittings and gate valves with TYTON®-sockets



Dimensions and weights

DN	Lever length mm	Weight in kg ≈
80	1050	16,5
100	1050	17,0
125	1050	17,5
150	1050	18,5
200	1050	21,0
250	1050	23,5
300	1050	24,5
400	1050	26,0



Dimensions and weights

DN	Weight in kg ≈
40	2,0
50	2,1
65	2,4
80	2,8
100	3,2
125	3,5
150	3,9
200	6,8
250	7,7
300	9,8
350	—
400	13,8
500	—

## 5

## Valves

## 5

## Gate valves

- resilient seated for water and gas
- resilient seated for water
- resilient seated for gas

## Butterfly valves

## Underground hydrants

## Pillar hydrants

## Tapping sleeves

# Gate valves type 4004 with flanges PN 10/16 resilient-seated for water and gas

**Design features:** Gate valve with a smooth straight-way and non rising stem. Internal corrosion protection: enamel.

Resilient wedge is vulcanised with elastomer on all sides.

Countersunk and sealed screws between body and bonnet.

**Option for Gate valve 4004:**

- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336
- with electrical actuator

**Material:** Ductile cast iron acc. to DIN EN 1563; stem: stainless steel;

Stem nut: special brass; rubber parts: elastomer in high quality.

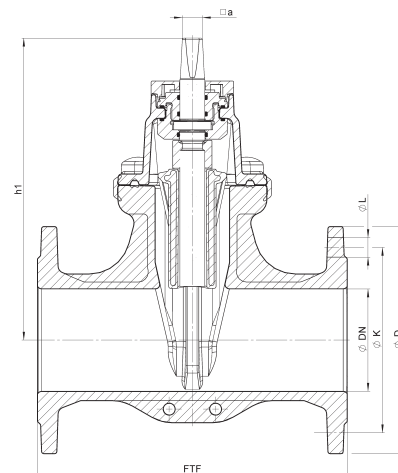
Resilient wedge for water: EPDM

Resilient wedge for gas: NBR

**Dimensions for flange connection:** acc. to DIN EN 1092-2

**Face-to-face dimension:** acc. to DIN EN 558-1, series 15

**DIN DVGW**  
registered!



Field of application (water up to 60°C; gas acc. to G 260/1)**			
DN	PN	Valves for water test-medium water	Valves for gas test-medium water test-medium air or nitrogen
	bar	bar	
40— 300	10/16	body 24	seat 21
			body 24
			acc. to DIN 2470 (DIN 3230, part 5 PG 1-3)

\* special medium on request \*\* all temperature indications on the following pages are in °C

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

DN	PN	FTF	h <sub>1</sub>	ø D	ø K	Number of screws	ø L	ø a	Weight in kg ≈
40	16	240	207	150	110	4	19	14	12,5
50	16	250	233	165	125	4	19	14	14,7
65	16	265	270	185	145	4	19	17	18,8
80	16	280	270	200	160	8	19	17	17,5
100	16	300	295	220	180	8	19	19	24,6
125	16	325	330	250	210	8	19	19	31,0
150	16	350	373	285	240	8	23	19	40,6
200	10	400	462	340	295	8	23	24	61,5
200	16	400	462	340	295	12	23	24	61,0
250	10	450	648	400	350	12	23	27	113,6
250	16	450	648	400	355	12	28	27	113,0
300	10	500	723	455	400	12	23	27	161,0
300	16	500	723	455	410	12	28	27	160,0

# Gate valves type 2004 with flanges PN 10/16 resilient-seated for water and gas

**Design features:** Gate valve in short face-to-face dimension with a smooth straight-way, internal stem-thread and non rising stem. Internal corrosion protection: enamel.

**Option for Gate valve 2004:**

- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336
- with electrical actuator

**Material:** Ductile cast iron acc. to DIN EN 1563; stem: stainless steel;  
Stem nut: special brass; rubber parts: elastomer in high quality.

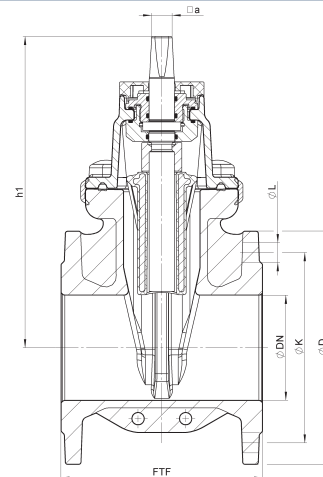
Resilient wedge for water: EPDM

Resilient wedge for gas: NBR

**Dimensions for flange connection:** acc. to DIN EN 1092-2

**Face-to-face dimension:** acc. to DIN EN 558-1, series 14

**DIN DVGW**  
registered!



## Field of application (water up to 60°; gas acc. to G 260/1)

DN	PN	Valves for water		Valves for gas	
		test-medium water		test-medium water	test-medium air or nitrogen
	bar	bar		bar	
40— 300	10/16	body 24	seat 21	body 24	acc. to DIN 2470 (DIN 3230, part 5 PG 1–3)

\* special medium on request

## Dimensions and weights (Dimensions in mm)

DN	PN	FTF	h <sub>1</sub>	ø D	ø K	Number of screws	ø L	□ a	Weight in kg ≈
40	16	140	207	150	110	4	19	14	11,2
50	16	150	233	165	125	4	19	14	13,3
65	16	170	270	185	145	4	19	17	17,0
80	16	180	270	200	160	8	19	17	17,8
100	16	190	295	220	180	8	19	19	22,5
125	16	200	330	250	210	8	19	19	27,8
150	16	210	373	285	240	8	23	19	36,0
200	10	230	462	340	295	8	23	24	54,8
200	16	230	462	340	295	12	23	24	54,4
250	10	250	648	400	350	12	23	27	104,4
250	16	250	648	400	355	12	28	27	104,0
300	10	270	723	455	400	12	23	27	146,7
300	16	270	723	455	410	12	28	27	146,0

# Gate valves type 4004 with Novo-socket resilient-seated for water and gas

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**Design features:** Gate valve with a smooth straight-way, internal stem-thread and non rising stem. Internal corrosion protection: enamel.

Resilient wedge is vulcanised with elastomer on all sides.

Countersunk and sealed screws between body and bonnet.

**Option for Gate valve 4004:**

- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336

**Material:** Ductile cast iron acc. to DIN EN 1563; stem: stainless steel;

Stem nut: special brass; rubber parts: elastomer in high quality.

Resilient wedge for water: EPDM

Resilient wedge for gas: NBR

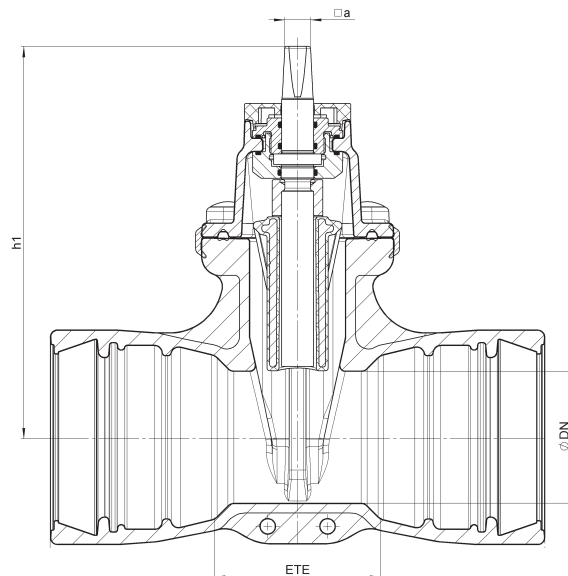
**Push-in socket:**

acc. to DIN 28 603 with **Novo** pre-chamber  
(manufacturer's standard)

**Spigot:** acc. to DIN EN 545

**Face-to-face dimension:** acc. to DIN EN 558-1, series 13

**DIN DVGW**  
registered!



Field of application (water up to 60°; gas acc. to G 260/1)				
DN	PN	Valves for water test-medium water		Valves for gas test-medium water test-medium air or nitrogen
	bar	bar		
80 — 300	10/16	body 24	seat 21	body 24 acc. to DIN 2470 (DIN 3230, part 5 PG 1)

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Dimensions and weights (Dimensions in mm)					
DN	PN	h <sub>1</sub>	ETE	a	Weight in kg =
80	16	270	114	17	19
100	16	295	127	19	24
125	16	330	140	19	30
150	16	373	140	19	37,5
200	16	462	152	24	57
250	16	648	165	27	107
300	16	723	178	27	151

# Gate valves type 4004 with screw-gland sockets PN 10/16 resilient seated for water and gas

**Design features:** Gate valve with a smooth straight-way, internal stem-thread and non rising stem. Internal corrosion protection: enamel.

Resilient wedge is vulcanised with elastomer on all sides.

Countersunk and sealed screws between body and bonnet.

**Option for Gate valve 4004:**

- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336

**Material:** Ductile cast iron acc. to DIN EN 1563; stem: stainless steel;

Stem nut: special brass; rubber parts: elastomer in high quality.

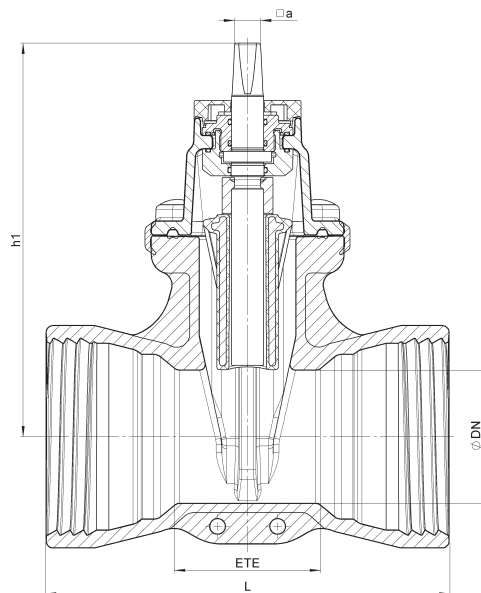
Resilient wedge for water: EPDM

Resilient wedge for gas: NBR

**Screw-gland socket:** acc. to DIN 28 601

**Face-to-face dimension:** acc. to DIN EN 558-1, series 13

**DIN DVGW**  
registered!



Field of application (water up to 60°; gas acc. to G 260/1)				
DN	PN	Valves for water test-medium water		Valves for gas test-medium water      test-medium air or nitrogen
	bar	bar	bar	
40 — 200	10/16	body 24	seat 21	body 24      acc. to DIN 2470 (DIN 3230, part 5 PG 1)

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

DN	PN	ø D	h <sub>1</sub>	ETE	L	a	Weight in kg <sup>1)</sup>
40	16	150	207	106	240	14	10,0
50	16	165	233	108	250	14	11,8
80	16	200	270	114	282	17	18,0
100	16	220	295	127	303	19	22,0
125	16	250	330	140	322	19	28,0
150	16	285	373	140	328	19	36,0
200	16	340	462	152	352	24	53,6

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



# Gate valves type 4004 with Novo-socket and spigot resilient-seated for water and gas

**Design features:** Gate valve with a smooth straight-way, internal stem-thread and non rising stem. Internal corrosion protection: enamel.

Resilient wedge is vulcanised with elastomer on all sides.

Countersunk and sealed screws between body and bonnet.

**Option** for Gate valve 4004:

- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336

**Material:** Ductile cast iron acc. to DIN EN 1563; stem: stainless steel;  
Stem nut: special brass; rubber parts: elastomer in high quality.

Resilient wedge for water: EPDM

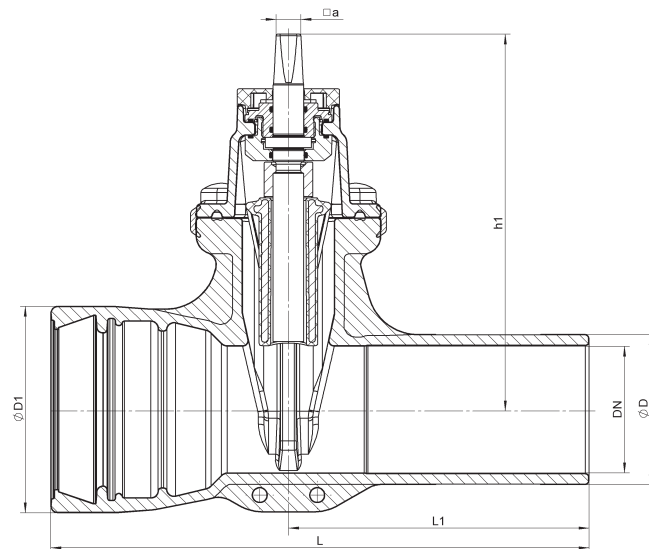
Resilient wedge for gas: NBR

**Push-in socket:** acc. to DIN 28603 with **Novo** pre-chamber  
(manufacturer's standard)

**Spigot:** acc. to DIN EN 545

**Face-to-face dimension:** acc. to DIN EN 558-1, series 13

**DIN DVGW**  
registered!



## Field of application (water up to 60°C; gas acc. to G 260/1)

DN	PN	Valves for water test-medium water		Valves for gas test-medium water      test-medium air or nitrogen	
		bar	bar	bar	
80 — 300	10/16	body 24	seat 21	body 24	acc. to DIN 2470 (DIN 3230, part 5 PG 1)

## Dimensions and weights (Dimensions in mm)

DN	PN	ø D <sub>1</sub>	h <sub>1</sub>	ø D	L <sub>1</sub>	L	□ a	Weight in kg ≈
80	16	141	270	97	235	410	17	18,2
100	16	161	295	117	235	422	19	22,5
125	16	188	330	143	290	485	19	29,3
150	16	215	373	169	290	490	19	36,6
200	16	271	462	221	310	525	24	56,0
250	16	324	648	274	310	535	27	109,0
300	16	381	723	326	310	550	27	120,0

# Gate valves type 2004 with flange / socket PN 10/ 16 resilient-seated for water and gas

**Design features:** Gate valve in short face-to-face dimension with a smooth straight-way, internal stem-thread and non rising stem. Internal corrosion protection: enamel.

Resilient wedge is vulcanised with elastomer on all sides.

Countersunk and sealed screws between body and bonnet.

**Option** for Gate valve 2004:

- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336

**Material:** Ductile cast iron acc. to DIN EN 1563; stem: stainless steel;  
Stem nut: special brass; rubber parts: elastomer in high quality.

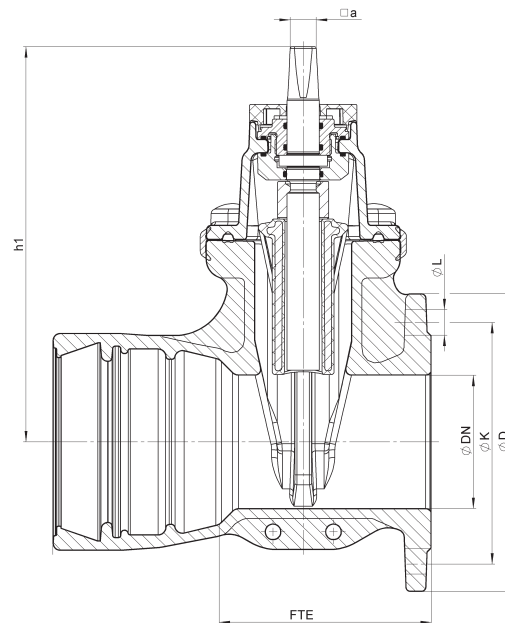
Resilient wedge for water: EPDM

Resilient wedge for gas: NBR

**Flange connection:** acc. to DIN EN 1092–2

**Dimensions for socket connection:** acc. to DIN 28 601 (SMU) or  
DIN 28 603 (TYTON®/Novo)

**Face-to-face dimension:** acc. to DIN EN 558–1, series 14/13



Field of application (water up to 60°; gas acc. to G 260/1)				
DN	PN	Valves for water test-medium water		Valves for gas test-medium water test-medium air or nitrogen
	bar	bar	bar	
80—		body	seat	body
200	10/16	24	15/21	24
				acc. to DIN 2470 (DIN 3230, part 5 PG 1)

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

DN	PN	FTE	h <sub>1</sub>	ø D	ø K	Number of screws	ø L	□ a	Weight in kg ≈
80	16	150	270	200	160	8	19	17	17,8
100	16	160	295	220	180	8	19	19	23,3
125	16	210	330	250	210	8	19	19	29,0
150	16	240	373	285	240	8	23	19	36,5
200	10	295	462	340	295	8	23	24	56,0
200	16	295	462	340	295	12	23	24	55,7

# Gate valves type 4004 with PE-HD-connection PN 10/16 resilient-seated for water and gas

182

**Design features:** Gate valve with a smooth straight-way, internal stem-thread and non rising stem. Internal corrosion protection: enamel.

Resilient wedge is vulcanised with elastomer on all sides.

Countersunk and sealed screws between body and bonnet.

**Option** for Gate valve 4004:

- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336

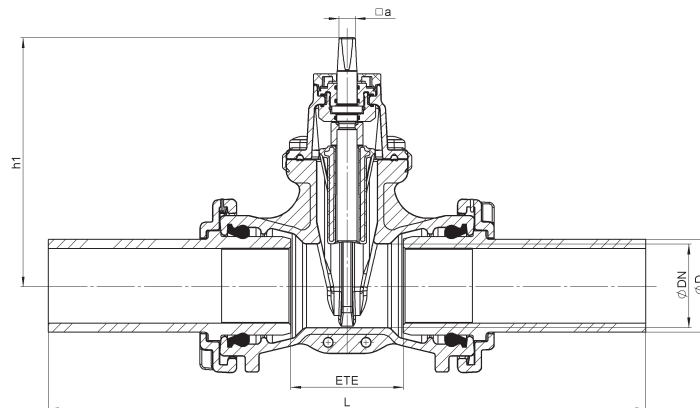
**Material:** Ductile cast iron acc. to DIN EN 1563; stem: stainless steel;  
Stem nut: special brass; rubber parts: elastomer in high quality.

Resilient wedge for water: EPDM

Resilient wedge for gas: NBR

**Connection:** Factory assembled manifolds acc. to DVGW VP 600 with dimensions acc. to DIN 8074/75. Suitable for welding electrically as well as for butt-welding.

**DIN DVGW**  
registered!



183

Field of application (water up to 60°; gas acc. to G 260/1)				
DN	PN	Valves for water test-medium water		Valves for gas test-medium water test-medium air or nitrogen
	bar	bar		
80 — 200	10/16	body 24	seat 10/16	body 24 acc. to DIN 2470 (DIN 3230, part 5 PG 1)

Dimensions and weights (Dimensions in mm)							
DN	PN	ød1	L	h <sub>1</sub>	ETE	a	Weight in kg ≈
80	16	90	650	268	114	17	22,7
100	16	110	710	294	127	19	30,5
100	16	125	760	294	127	19	31,0
125	16	140	790	330	140	19	40,5
150	16	160	840	372	140	19	55,5
150	16	180	890	372	140	19	54,8
200	16	200	970	460	152	24	86,7
200	16	225	960	460	152	24	85,5

# Gate valves type 4004 with rotatable flanges PN 10/16 resilient-seated for water

**Design features:** Gate valve with a smooth straight-way and non rising stem.  
Corrosion protection: enamel. Resilient wedge is vulcanised with elastomer on all sides.  
Countersunk and sealed screws between body and bonnet.

## Option for Gate valve 4004:

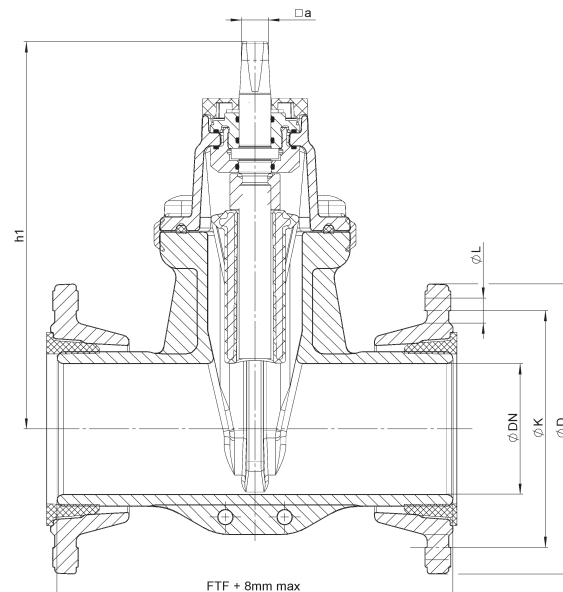
- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336
- with electrical actuator

**Material:** Ductile cast iron acc. to DIN EN 1563; stem: stainless steel; Stem nut: special brass; rubber parts: elastomer in high quality.

Resilient wedge for water: EPDM

**Dimensions for flange connection:** acc. to DIN EN 1092-2

**Face-to-face dimension:** acc. to DIN EN 558-1, series 15



Field of application (water up to 60°)**		
DN	PN	Valves for water test-medium water
	bar	bar
80— 200	10/16	body      seat 24        21

\* special medium on request    \*\* all temperature indications on the following pages are in °C

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

DN	PN	FTF	h <sub>1</sub>	ø D	ø K	Number of screws	ø L	a	Weight in kg ≈
80	16	280	270	200	160	8	19	17	20,5
100	16	300	295	220	180	8	19	19	26,0
125	16	325	330	250	210	8	19	19	33,5
150	16	350	373	285	240	8	23	19	44,0
200	10	400	462	340	295	8	23	24	66,0
200	16	400	462	340	295	12	23	24	65,5

# Gate valves type 1004 with PE-HD-connection resilient-seated for water and gas

**Design features:** Gate valve with a smooth straight-way, internal stem-thread and non rising stem. Internal corrosion protection: enamel.

Resilient wedge is vulcanised with elastomer on all sides.

Stem-square 12 mm.

**Option** for Gate valve 1004:

- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336

**Material:** Ductile cast iron acc. to DIN EN 1563; stem: stainless steel;

Stem nut: special brass; rubber parts: elastomer in high quality.

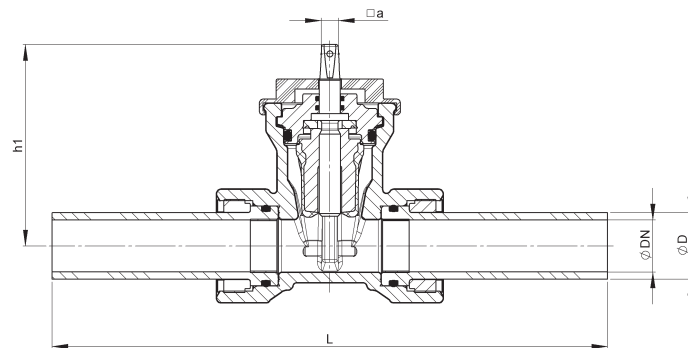
Resilient wedge for water: EPDM

Resilient wedge for gas: NBR

**Connection:** Factory assembled manifolds acc. to DVGW VP 600 with dimensions measurements acc. to DIN 8074/75.

Suitable for welding electrically as well as for butt-welding.

**DIN DVGW  
registered!**



## Field of application (water up to 60°C; gas acc. to G 260/1)

DN	PN	Valves for water test-medium water		Valves for gas test-medium water      test-medium air or nitrogen	
		bar	bar	bar	bar
25— 50	10/16	body 24	seat 21	body 24	acc. to DIN 2470 (DIN 3230, part 5 PG 1–3)

## Dimensions and weights (Dimensions in mm)

DN	L	h <sub>1</sub>	øD	a	Weight in kg ≈
25	345	132,5	32	13	3,3
32	371	151,5	40	13	6,0
40	418	151,5	50	13	6,2
50	421	178,5	63	13	8,3

# Gate valves type 1004

## PN 10/16

### resilient-seated for water and gas

**Design features:** Gate valve with a smooth straight-way, internal stem-thread and non rising stem. Internal corrosion protection: enamel.

Resilient wedge is vulcanised with elastomer on all sides.

Stem-square 12 mm.

**Option** for Gate valve 1004:

- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336

**Material:** Ductile cast iron acc. to DIN EN 1563; stem: stainless steel;

Stem nut: special brass; rubber parts: elastomer in high quality.

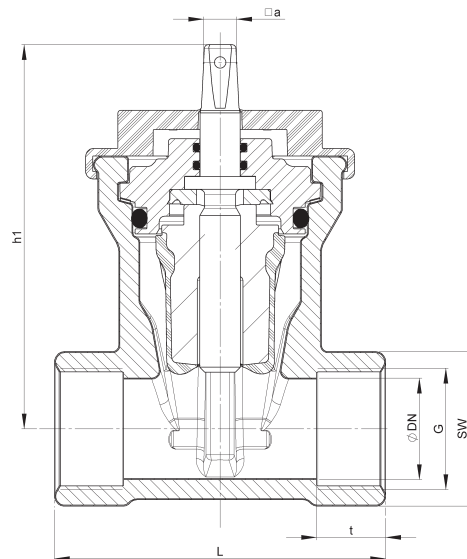
Resilient wedge for water: EPDM

Resilient wedge for gas: NBR

**Dimensions for connection:** acc. to DIN 2999-1

**Face-to-face dimension:** acc. to DIN 3202 part 4, series M4

**DIN DVGW**  
registered!



#### Field of application (water up to 60°C; gas acc. to G 260/l)

DN	PN	Valves for water		Valves for gas	
		test-medium water	bar	test-medium water	test-medium air or nitrogen
25—50	10/16	body 24	seat 21	body 24	acc. to DIN 2470 (DIN 3230, part 5 PG 1-3)

#### Dimensions and weights (Dimensions in mm)

DN	L	h <sub>1</sub>	SW	G	T	a	Weight in kg =
25	105	115,5	46	R 1	20	13	2,6
32	120	131,5	55	R 1 ¼	24	13	3,8
40	130	126,5	60	R 1 ½	27	13	4,5
50	150	147,0	70	R 2	32	13	6,0

# Gate valves type 1004 with flange/PE-HD connection resilient-seated for water and gas

**Design features:** Gate valve with a smooth straight-way, internal stem-thread and non rising stem. Corrosion protection: enamel or epoxy. Resilient wedge is vulcanised with elastomer on all sides.

Stem-square 12mm.

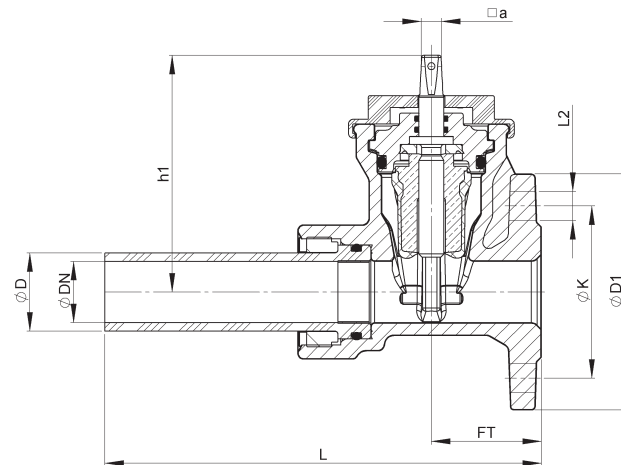
## Option for gate valve 1004:

- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336

**Material:** Ductile cast iron acc. to DIN EN 1563; stem: stainless steel; Stem nut: special brass; rubber parts: elastomer in high quality.

Resilient wedge for water: EPDM

Resilient wedge for gas: NBR



## Field of application (water up to 60°; gas acc. to G 260/I)

DN	PN	Valves for water test-medium water		Valves for gas test-medium water test-medium air or nitrogen	
		bar		bar	
25— 50	10/16	body 24	seat 21	body 24	acc. to DIN 2470 (DIN 3230, part 5 PG 1–3)

## Dimensions and weights (Dimensions in mm)

DN	L	h <sub>1</sub>	FT	øD <sub>1</sub>	K	L <sub>2</sub>	øD	Number of screws	□a	Weight in kg ≈
40	280	151,5	70,4	150	110	19	50	4	13	7,3
50	286	178,5	75,4	165	125	19	63	4	13	9,5

## Gate valves type 1004 with internal thread / PE-HD connection resilient-seated for water and gas

192

**Design features:** Gate valve with a smooth straight-way, internal stem-thread and non rising stem. Corrosion protection: enamel or epoxy. Resilient wedge is vulcanised with elastomer on all sides.

Stem-square 12mm.

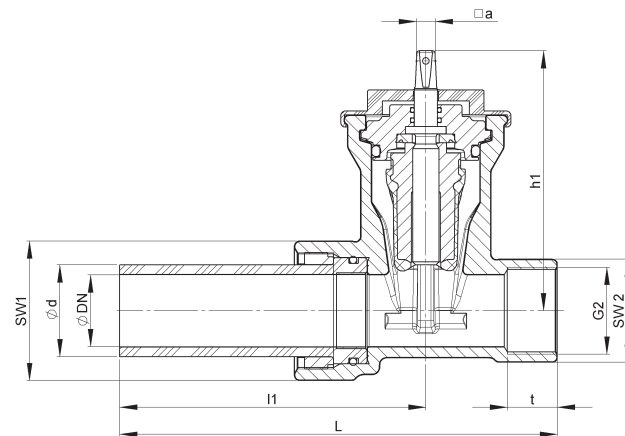
### Option for gate valve 1004:

- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336

**Material:** Ductile cast iron acc. to DIN EN 1563; stem: stainless steel; Stem nut: special brass; rubber parts: elastomer in high quality.

Resilient wedge for water: EPDM

Resilient wedge for gas: NBR



193

### Field of application (water up to 60°; gas acc. to G 260/1)

DN	PN	Valves for water test-medium water		Valves for gas test-medium water test-medium air or nitrogen	
		bar		bar	
25— 50	10/16	body 24	seat 21	body 24	acc. to DIN 2470 (DIN 3230, part 5 PG 1–3)

### Dimensions and weights (Dimensions in mm)

DN	L	SW <sub>1</sub>	SW <sub>2</sub>	h <sub>1</sub>	a	l <sub>1</sub>	øD	t	G <sub>2</sub>	Weight in kg ≈
40 50	300	95	70	178,5	13	210	63	32	2"	7,4



# Gate valves type 3004 with weld-on ends PN 10/16 resilient-seated for gas

**Design features:** Gate valve with a smooth straight-way, internal stem-thread and non rising stem. Internal corrosion protection: enamel.

Resilient wedge is vulcanised with elastomer on all sides.

Countersunk and sealed screws between body and bonnet.

**Option for Gate valve 3004:**

- with hand-wheel
- with stem extension for underground installation – connection acc. to GW 336

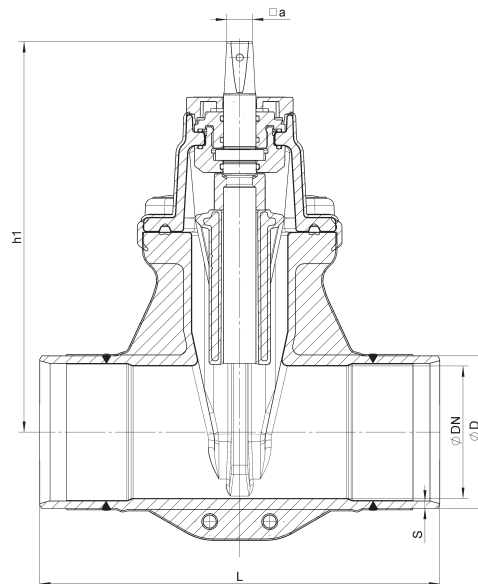
**Material:** Ductile cast iron acc. to DIN EN 1563 with weld-on pipe piece made of ST 35.8; bonnet: ductile cast iron acc. to DIN EN 1563; ; stem: stainless steel; stem nut: special brass; rubber parts: elastomer in high quality, coating: polyurethane 15 KW checked or alternative: epoxy resin.

Resilient wedge: NBR

**Dimensions for connection:** weld-on ends acc. to DIN EN 12627  
on both sides

**Face-to-face dimension:** acc. to DIN 3202 S8

**DIN DVGW**  
registered!



Field of application (gas acc. to G 260/1)			
DN	PN	Valves for gas	
		test-medium water bar	test-medium air or nitrogen bar
80 — 300	10/16	body 24	acc. to DIN 2470 (DIN 3230, part 5 PG 1–3)

Dimensions and weights (Dimensions in mm)							Weight in kg ≈
DN	PN	øD	h <sub>1</sub>	L	S	øa	
40	16	48,3	206,6	386	4,0	14	8,4
50	16	60,3	233,6	420	4,5	14	10,5
80	16	88,9	268,0	280	5,6	17	11,8
100	16	114,3	294,0	300	5,6	19	16,5
150	16	168,3	372,0	350	6,5	19	27,1
200	16	219,1	458,5	400	7,1	24	43,5
250	16	273,1	648,0	450	6,3	24	86,5
300	16	323,9	725,0	500	7,1	27	130,0

# Butterfly valves type 451 with flanges PN 10/16/25 resilient seated for water and gas

**Construction:** Leak tight, flow optimised disc with double excentric journal. Easy replaceable main-gasket in one-piece design, adjustable retaining ring.  
Shaft bearings maintenance free. Radial sealing of shafts by O-rings.  
Open—Close indication on gear box body ( not for buried installation ).

## Driving modes:

- with gear box and hand wheel
- with gear box and stem extension for buried installation
- with gear box and electrical actuator
- with part-turn actuator (integrated gear box)
- with pneumatic actuator

**Materials:** Body and disc: ductile cast iron acc. to DIN EN 1563. Body inside persistent enamelled, including seat. Disc complete enamelled. Profiled main gasket and shaft sealings high quality elastomer. Retaining ring up to DN 600: EN-GJS-400-15 ( GGG 40 ), enamelled. Retaining ring DN 700 and over: steel, hot melted epoxy coated or stainless steel. Internal fastenings: stainless steel. Shafts made of stainless steel with polished surface. Maintenance free bushings made of gunmetal, alternative stainless steel with PTFE fabric liner.

Main gasket for water: EPDM

Main gasket for gas: NBR

**Flanges:** acc. to DIN EN 1092-2

**Face to face dimension:** acc. to DIN EN 558-1, series 14

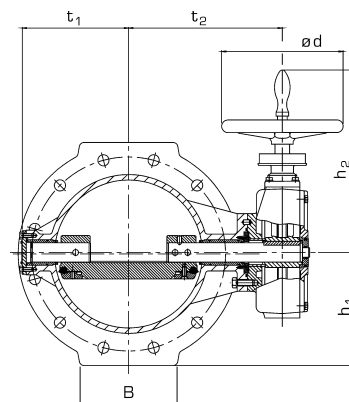
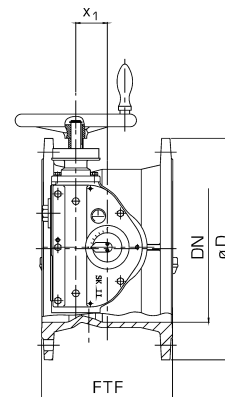
**On request:** Face-to-face dimension acc. to DIN EN 558-1, series 15 with or without bypass.  
Special materials and design features on customers preference.

**DIN DVGW  
registered!**

**Field of application** ( water up to 60°C; gas acc. to G 260/1 )

DN	PN	Valves for water test-medium water		Valves for gas test-medium water air or nitrogen	
		bar	bar	bar	bar
		body	seat	body	body and seat
100	10	15	10	15	acc. to DIN 2470
—	16	24	16	24	(acc. to DIN 3230, part 5 PG 1-3)
1200 <sup>1)</sup>	25	40	25	—	—

<sup>1)</sup> DN 800 – 1200, PN 25 only for operating pressure 20 bar



Dimensions and weights (Dimensions in mm)												
DN	PN bar	FTF	ø D	B	h <sub>1</sub>	h <sub>2</sub>	t <sub>1</sub>	t <sub>2</sub>	x <sub>1</sub>	gear box type	ø d	Weight in kg ≈
100	10+16	190	220	120	110	300	108	188	60	I	200	30
100	25	190	235	120	110	300	108	188	60	I	200	31
150	10+16	210	285	150	147	300	177	231	60	I	200	57
150	25	210	300	150	155	300	177	231	60	I A	200	58
200	10+16	230	340	160	175	300	202	256	60	I A	200	72
200	25	230	360	160	185	380	202	256	65	II A	250	74
250	10	250	395	180	205	300	248	300	60	I A	200	90
250	16	250	395	180	205	380	248	300	65	II A	250	90
250	25	250	425	180	210	380	248	302	65	II A	250	100
300	10	270	455	200	230	380	263	317	65	II A	250	120
300	16	270	465	200	230	380	263	317	65	II A	250	120
300	25	270	485	200	245	380	263	317	65	II A	250	125
350	10	290	505	225	265	380	308	390	65	II A	250	151
350	16	290	520	225	265	380	308	390	65	II A	250	151
350	25	290	555	225	280	400	308	390	100	III	315	160
400	10	310	565	250	285	380	328	382	65	II A	250	185
400	16	310	580	300	295	400	328	410	100	III	315	203
400	25	310	620	300	315	400	328	435	100	III	315	210
500	10	350	670	300	340	400	370	465	100	III	350	320
500	16	350	715	300	360	400	370	465	100	III	350	320
500	25	350	730	350	370	570	433	555	150	IV	500	350
600	10	390	780	400	395	400	445	535	100	III	350	420
600	16	390	840	400	425	570	445	575	150	IV	500	463
600	25	390	845	400	425	745	509	625	150	IV GZ	400	500
700	10	430	895	400	450	570	549	665	150	IV	500	650
700	16	430	910	400	460	745	549	665	150	IV GZ	400	665
700	25	430	960	450	485	745	549	665	150	IV GZ	400	750



DN	PN bar	FTF	ø D	B	h <sub>1</sub>	h <sub>2</sub>	t <sub>1</sub>	t <sub>2</sub>	x <sub>1</sub>	gear box type	ø d	Weight in kg ≈
800	10	470	1015	450	510	745	594	710	150	IV GZ	400	902
800	16	470	1025	450	515	745	594	710	150	IV GZ	400	917
900	10	510	1115	550	560	745	634	750	150	IV GZ	400	1200
900	16	510	1125	550	568	675	634	740	200	GS 200 GZ		1263
1000	10	550	1230	600	620	745	699	815	150	IV GZ	400	1490
1000	16	550	1255	600	630	715	699	805	255	GS 250 GZ	640	1660
1200	10	630	1455	700	730	715	828	903	255	GS 250 GZ	640	2070
1200	16	630	1485	700	750	715	828	903	255	GS 250 GZ	640	2140



# Butterfly valves type 451 with Novo-sockets for PN 10/16/25 resilient seated for water

200

**Construction:** Leak tight, flow optimised disc with double excentric journal. Easy replaceable main-gasket in one-piece design, adjustable retaining ring. Shaft bearings maintenance free. Radial sealing of shafts by O-rings.

Open – Close indication on gear box body (not for buried installation).

## Driving modes:

- with gear box and hand wheel
- with gear box and stem extension for buried installation

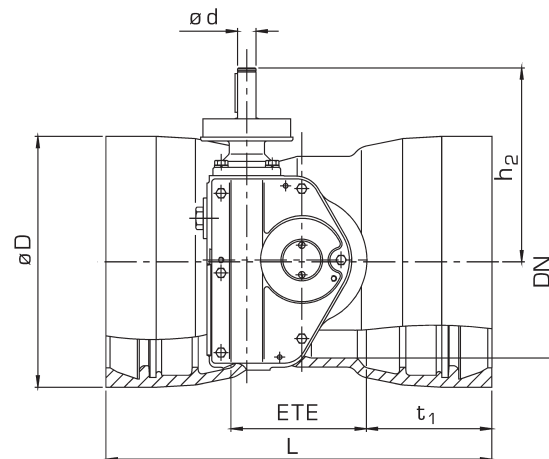
**Materials:** Body and disc: ductile cast iron acc. to DIN EN 1563. Body inside persistent enamelled, including seat. Disc complete enamelled. Profiled main gasket and shaft sealings high quality elastomer. Retaining ring up to DN 500: EN-GJS-400-15 (GGG 40), enamelled. Internal fastenings: stainless steel. Shafts made of stainless steel with polished surface. Maintenance free bushings made of gunmetal, alternative stainless steel with PTFE fabric liner.

**Main gasket:** EPDM

**Sockets:** Push-in socket with **Novo** pre-chamber acc. to DIN 28 603

**Face to face dimension:** acc. to DIN EN 558-1, series 13

**DIN DVGW**  
registered!



201

Field of application (water up to 60°; gas acc. to G 260/1)					
DN	PN	Valves for water test-medium water		Valves for gas test-medium water      test-medium air or nitrogen	
	bar	bar		bar	
150 — 500	10/16/25	body 24	seat 10/16/25	body 24	acc. to DIN 2470 (DIN 3230, part 5 PG 1–3)

Dimensions and weights (Dimensions in mm)									
DN	PN bar	L	ØD	ETE	t <sub>1</sub>	h <sub>2</sub>	ød	Gearbox type	Weight in kg ≈
150	10/16	400	216	140	129	300	20	I	41,5
	25	400	216	140	129	300	20	IA	41,5
200	10/16	430	271	152	148	300	20	IA	53,0
	25	430	271	152	138	300	20	IIA	63,0
250	10/16	450	324	165	143	300	20	IA	83,0
	25	450	324	165	143	300	20	IIA	93,0
300	10/16	480	381	178	152	380	20	IIA	97,0
	25	480	381	178	152	380	20	IIA	97,0
400	10/16	480	489	172*	154	380	20	IIA	161,0
	25	480	489	172*	154	380	20	III	195,0
500	10/16	540	540	205*	168	400	30	III	259,0
	25	540	540	205*	168	400	30	IV	335,0

\* acc. to manufacturer's standard

# Underground fire hydrants PN 16, types 304/305 with flange DN 80, acc. to DIN 3221/DIN EN 1074-6

202

**Construction:** The underground fire hydrants type 304/305 fulfill in all details the test procedures and requirements of DIN 3221, DIN 3230 and the DVGW Working-Sheet W 331. The complete enamelled body is designed as one-piece.

**Technical features:** The flow-optimised obturator is completely covered by a vulcanised, high quality elastomer. The design guarantees the function of the automatic drainage system and the protection against backflow and pressurised water. Operation stem bearing is maintenance free and equipped with two O-Rings and one additional wiper ring. A rolled thread provides a high wear resistance. Safety at replacement of the obturator linkage is warranted by a linkage locking device.

The pipe covering is marked with notches on top of the body.

**Materials:** Body, bonnet, outlet coupling and outlet cover: ductile cast iron acc. to DIN EN 1563. Stem, linkage and all screws: Stainless steel.

Stem nut and bonnet nut: brass. Obturator made of GGG and all gaskets made of high quality elastomer.

Coating obturator: PU-Elastomer

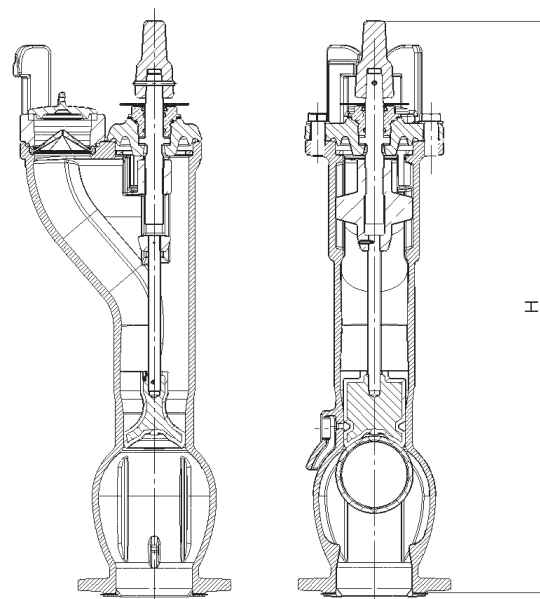
Coating ball: EPDM

**Application field:** Type 304 (Design A) single obturator  
Type 305 (Design AD) with additional valve

**Flange:** DN 80 acc. DIN EN 1092-2

**DIN DVGW**  
registered!

In case of reparings please note our operating instructions!



203

Field of application (water up to 60 °C)		
Water – test-pressure bar		Max. operating pressure bar
body	seat	
24	21	16

Dimensions and weights (Dimensions in mm)				
DN	Pipe covering mm	H mm	Weight in kg ≈	
			Type 304	Type 305
80	800	575	24,5	25,0
	1000	750	27,5	28,0
	1250	1000	31,5	32,0
	1500	1250	36,5	37,0

# Underground fire hydrant PN 16 type 393 S with spigot DN 80, acc. to DIN 3221

204

**Construction:** The underground fire hydrant type 393 S fulfills in all details the requirements and test procedures of the DIN 3221, DIN 3230 and the DVGW worksheet W 331.

Materials, corrosion protection and technical features correspond with the flanged types.

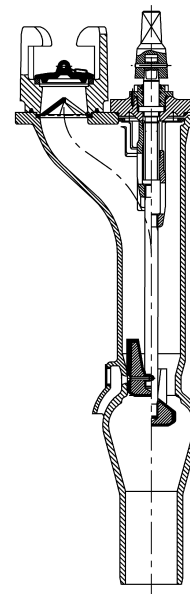
The spigot can be installed in every **TYTON®/Novo** socket DN 80.

**Application field:** single obturator

**Spigot:** DN 80 acc. to DIN EN 545

In case of reparings please note our operating instructions !

**DIN DVGW**  
registered!



Field of application (water up to 60°C)		
Water – test-pressure bar		Max. operating pressure bar
body	seat	
24	21	16

## Dimensions and weights (Dimensions in mm)

DN	Pipe covering mm	H mm	Weight in kg ≈
80	750	670	29
	1000	890	33
	1250	1140	38
	1500	1390	43

205

# Pillar fire hydrants type 494 design AUD, PN 16 DN 80 and DN 100, acc. to DIN 3222

**Construction:** The pillar fire hydrant type 494, design AUD with additional check valve fulfills in all details the requirements and test procedures of the DIN 3222, DIN 3230 and the DVGW worksheet W 331.

Flange acc. to DIN EN 1092-2

**Technical features:** Automatic draining and protection against backflow and pressurised water, linkage locking device, maintenance free sealing of stem extension.

**Materials:** Bottom, lower and upper part of pillar and bonnet nut made of ductile cast iron acc. to DIN EN 1563. Operating cap, outlets and outlet covers: aluminium. Stem, linkage, drainage plate, all bolts and nuts made of stainless steel. Stem nut, stem bearing support, lower and upper part of breaking and locking ring made of brass. Seat ring: brass, gummed. Obturator made of ductile cast iron, gummed and all O-rings made of high quality elastomer.

All rubber parts: EPDM

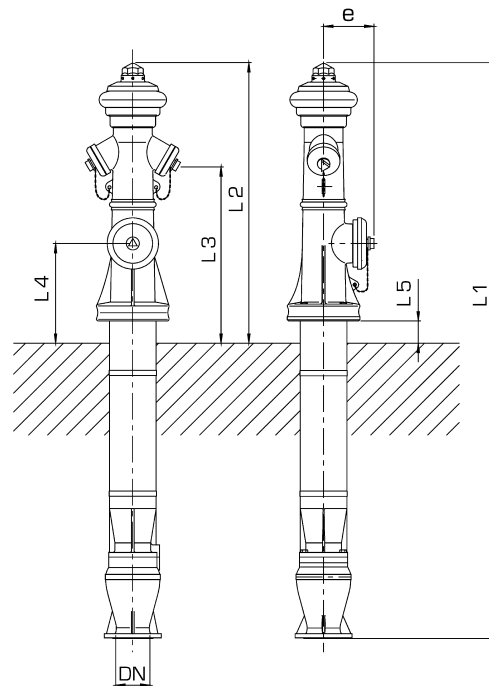
## Corrosion protection:

<b>Inside:</b>	Bottom, upper and lower part of pillar with blue enamel
<b>Outside:</b>	Bottom and lower part of pillar: Base enamel plus epoxy resin coating RAL 3001
	Upper part of pillar: base enamel plus polyurethane spray coating RAL 3001
	Colouring RAL 3001 = signal-red

In case of reparings please note our operating instructions!

**DIN DVGW**  
registered!

Field of application (water up to 60 °C)		
Water – test-pressure bar		Max. operating pressure bar
body	seat	
24	21	16



Dimensions and weights (Dimensions in mm)								
DN	Pipe covering mm	L1	L2	L3	L4	L5	e	Weight in kg ≈
80	1250	2190	1050	680	—	55	—	136
80	1500	2440	1050	680	—	55	—	147
100	1250	2190	1050	680	355	55	200	140
100	1500	2440	1050	680	355	55	200	151

# Pillar fire hydrants type 495 design AFUD, PN 16 DN 100, acc. to DIN 3222

**Construction:** The pillar fire hydrant type 495, design AFUD with additional check valve fulfills in all details the requirements and test procedures of the DIN 3222, DIN 3230 and the DVGW worksheet W 331.

Flange acc. to DIN EN 1092-2.

**Technical features:** Automatic draining and protection against backflow and pressurised water, linkage locking device, maintenance free sealing of stem extension.

**Materials:** Bottom, lower and upper part of pillar, valve head and handwheel made of ductile cast iron acc. to DIN EN 1563. Outlets and outlet covers: aluminium. Shell of valve head, stem, linkage, bolts and draining plate made of stainless steel. Stem nut, stem bearing support, upper and lower part of breaking coupling, sidevalve bonnets and locking ring: brass. Seat ring and sidevalves: brass, gummed.

Obturator made of ductile cast iron, gummed and all O-rings made of high quality elastomer.

Rubber for obturator, side valves and seat ring: EPDM

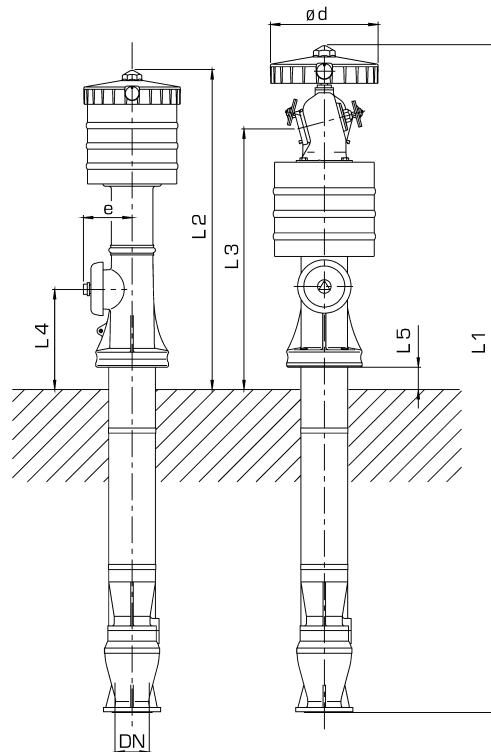
## Corrosion protection:

**Inside:** Bottom, lower and upper part of pillar with blue enamel

**Outside:** Bottom and lower part of pillar: Base enamel plus epoxy resin coating RAL 3001  
Upper part of pillar: Base enamel plus polyurethane spray coating RAL 3001  
Colouring RAL 3001 = signal-red

In case of reparings please note our operating instructions !

**DIN DVGW**  
registered!



## Field of application (water up to 60 °C)

Water – test-pressure bar		Max. operating pressure bar
body	seat	
24	21	16

## Dimensions and weights (Dimensions in mm)

DN	Pipe covering mm	L1	L2	L3	L4	L5	ød	e	Weight in kg ≈
100	1250	2390	1250	950	355	55	400	200	185
100	1500	2640	1250	950	355	55	400	200	185



# Pillar fire hydrants type 501, design AUD, PN 16 DN 100, acc. to DIN 3222 adjustable from 1,10 to 1,60 m soil cover

210

**Construction:** The pillar fire hydrant type 501, design AUD with additional check valve fulfills in all details the requirements and test procedures of the DIN 3222, DIN 3230 and the DVGW worksheet W 331.

Flange acc. to DIN EN 1092-2.

**Technical features:** Automatic draining and protection against backflow and pressurised water, linkage locking device, maintenance free sealing of stem extension.

With breaking device and continuously turnable top.

**Check valve:** The replacement of the patented check valve obturator can be done easily by adequate tool.

**Materials:** Bottom, lower and upper part of pillar and bonnet nut made of ductile cast iron acc. to DIN EN 1563. Operating cap, outlets and outlet covers: aluminium. Stem, linkage, all bolts and nuts made of stainless steel. Stem nut, stem bearing support, breaking coupling made of brass.

Obturator made of brass, gummed and all gaskets made of high quality elastomer.

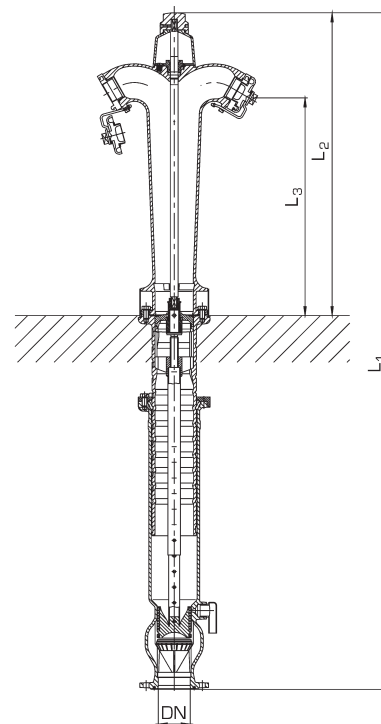
All rubber parts: EPDM

**Corrosion protection:** Top inside and outside enamelled blue, optional red, pillar pipe inside and outside enamelled.

Pillar pipe shell: inside and outside enamelled.

In case of repairs please note our operating instructions !

211



## Field of application (water up to 60 °C)

Water – test-pressure bar		Max. operating pressure bar
body	seat	
24	21	16

## Dimensions and weights (Dimensions in mm)

DN	Soil covering* mm	L <sub>1</sub> min. — max.	L <sub>2</sub>	L <sub>3</sub>
100	1100 — 1600	1970 — 2470	980	700

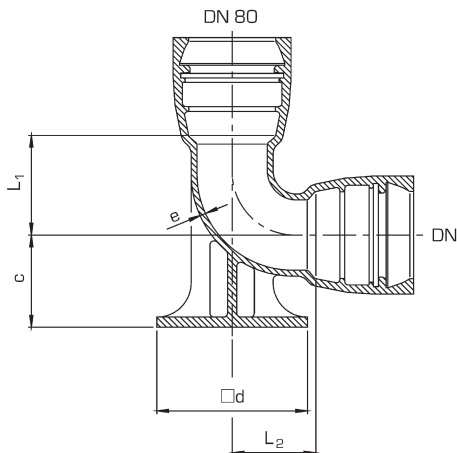
\* Adjustable every 50 mm

## Duckfoot bends 90° with Novo-sockets (MMN/MMNR) acc. to manufacturer's standard

212

**Material:** Ductile cast iron acc. to DIN EN 545

**Design features:** inside enamelled



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

DN	L <sub>1</sub>	L <sub>2</sub>	c	e	□d	Weight in kg ≈
80	119	100	110	180	7,0	13,6
100	128	125	125	200	7,2	17,8
150	157	150	160	250	7,8	19,2
200	181	225	190	300	8,4	30,5

With 1, 2 or 3 draining bores with thread measured in inches available, too.

With collar for PE-HD-pipes, too.

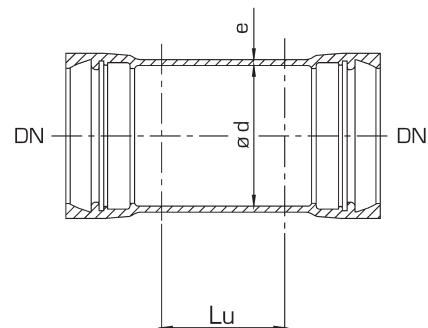
## Collars with Novo-sockets

213

**Material:** ductile cast iron acc. to DIN EN 545

**Design features:** inside enamelled

**Special features:** one side with screw-gland socket acc. to DIN 28 601  
other side with **Novo**-socket acc. to DIN 28 603

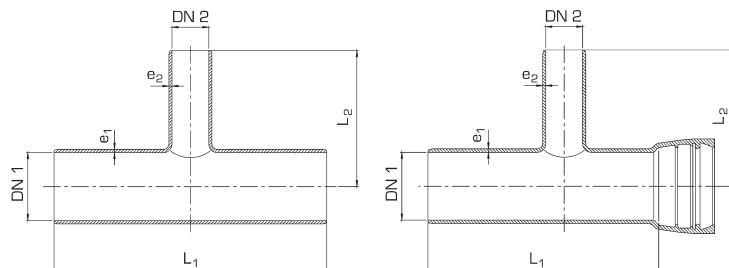


**Dimensions and weights** (Dimensions in mm)

DN	ø d	Lu	e	Weight in kg ≈
80	109	160	7,0	10,0
100	130	160	7,2	13,5
125	156	165	7,5	15,5
150	183	165	7,8	22,5

# All spigot end tee (IT) and single socket tee (MI) for gate valves with socket connection

acc. to DIN 28 603 (TYTON®) and Novo (acc. to manufacturer's standard)



**Material:** Ductile cast iron acc. to DIN EN 545

**Design features:** Inside enamelled

**Novo socket** acc. to manufacturer's standard

Dimensions and weights							Single socket tee						
All spigot end tee													
DN 1	DN 2	Dimensions in mm				Weight in kg ≈	DN 1	DN 2	Dimensions in mm				Weight in kg ≈
		L <sub>1</sub>	L <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>				L <sub>1</sub>	L <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>	
80	40	540	270	7,0	7,0	12,0	80	80	455	270	7,0	7,0	14,0
	50				7,0	12,5							
	80				7,0	13,0							
	100				7,0	13,0							
100	40	550	275	7,2	7,0	12,0	100	80	460	275	7,2	7,0	16,8
	50				7,0	13,0		100				7,2	17,0
	80				7,0	14,5							
	100				7,2	15,0							
125	40	600	300	7,5	7,0	17,0	125	80	510	300	7,5	7,0	22,5
	50				7,0	19,0		100				7,2	23,5
	80				7,0	20,0		125				7,5	26,5
	100				7,2	21,0							
	125				7,5	24,0							



Dimensions and weights							Single socket tee						
All spigot end tee													
DN 1	DN 2	Dimensions in mm				Weight in kg ≈	DN 1	DN 2	Dimensions in mm				Weight in kg ≈
		L <sub>1</sub>	L <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>				L <sub>1</sub>	L <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>	
150	40	620	310	7,8	7,0	21,5	150	80	525	310	7,8	7,0	27,0
	50				7,0	22,5		100				7,2	28,0
	80				7,0	23,0		125				7,5	29,0
	100				7,2	24,5		150				7,8	30,0
	125				7,5	25,0							
	150				7,8	26,7							
200	80	650	325	8,4	7,0	34,0	200	80	550	325	8,4	7,0	37,0
	100				7,2	35,0		100				7,2	38,0
	125				7,8	36,0		125				7,5	39,0
	150				8,4	36,5		150				7,8	40,0
	200				9,0	38,5		200				8,4	43,0
250*	80	870	435	9,0	7,0	45,0	250	100	705	405	9,0	7,2	60,0
	100				7,2	47,0		150				7,8	62,0
	150				7,8	48,5		200				8,4	65,5
	200				8,4	51,5		250				9,0	66,0
	250				9,0	55,0							
300*	80	870	435	9,6	7,0	64,5	300	80	760	435	9,6	7,0	77,0
	100				7,2	68,0		100				7,2	82,0
	150				7,8	70,0		150				7,8	86,0
	200				8,4	72,0		200				8,4	84,0
	300				9,6	77,0		300				9,6	103,0

\* acc. to manufacturer's standard

# Tapping valves "TOP" (vertical drilling) and "TOPsi" (horizontal drilling) for water PN 16

216

**Construction:** Tapping valve for mounting on pipes with diameters from DN 80 up to DN 300. Suitable for tapping under pressure and useable for cast iron- as well as for steel- and asbestos cement pipes.

The clamping bands (Stainless steel, plastic coated) are packed as a unit together with all necessary accessories and are allocated to the types and diameters of the pipes.

**Technic:** For tapping under pressure no auxiliary valve is necessary. The resilient flap of type "TOP" closes automatically after pulling back the drilling bar.

Maximum drilling diameter: 38 mm

Stem squares: 12 mm

Body inside and outside enamelled or epoxy coated.

**Material:** Body and plug made of ductile cast iron acc. to DIN EN 1563. Bonnet nut made of brass. Stem made of stainless steel. Washer made of brass.

Obturator made of brass, gummed; flap made of steel, gummed. All gaskets made of high quality elastomer.

Rubbering of wedge and flap: EPDM

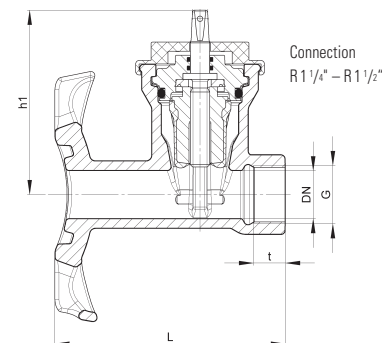
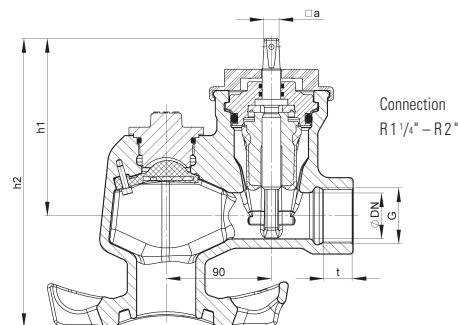
**Outlets:** Internal pipe thread acc. to DIN 2999:  
Rp 1, Rp 1/4, Rp 1/2, R 2

**Types of clamping bands:** see page 221

**DIN DVGW**  
registered!

Field of application (water up to 60 °C)		
Water – test-pressure bar		Max. operating pressure bar
body	seat	in case of operating temperature up to 70 °C
21	16	16

217



Dimensions and weights (Dimensions in mm)									
DN	L1 TOP	L TOPsi	G	h <sub>1</sub>	h <sub>2</sub>	t TOP	t TOPsi	□a	Weight in kg = TOP TOPsi
80 – 300	70,5	190	1 1/4"	151,5	247	21	26	13	9,0 6,4
	73,7	190	1 1/2"	151,5	247	25	26	13	8,6 6,3
	75,5		2"	151,5	247	26		13	9,5

Clamping bands and gasket are identical for TOP and TOPsi.

# Tapping valves "TOP" with PE-HD connection for water, PN 16

218

**Construction:** Tapping valve for mounting on pipes with diameters from DN 80 up to DN 300. Suitable for tapping under pressure and useable for cast iron- as well as for steel and asbestos cement pipes.

The clamping bands (stainless steel, plastic coated) are packed as a unit together with all necessary accessories and are allocated to the types and diameters of the pipes.

**Technic:** For tapping under pressure no auxiliary valve is necessary. The resilient flap of type "TOP" closes automatically after pulling back the drilling bar.

Maximum drilling diameter: 38 mm

Stem squares: 12 mm

Body inside and outside enamelled or epoxy coated.

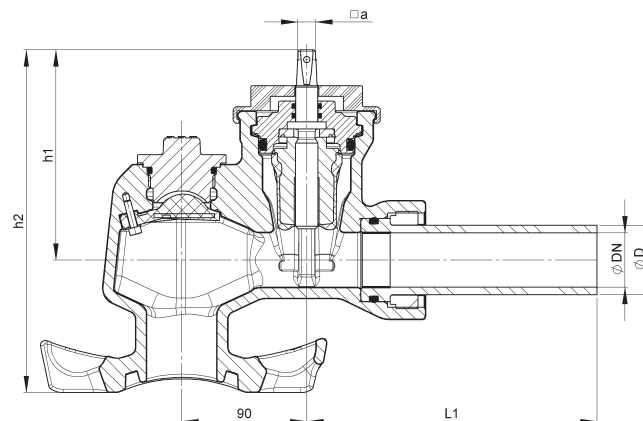
**Material:** Body and plug made of ductile cast iron acc. to DIN EN 1563. Bonnet not made of brass. Stem made of stainless steel. Washer made of brass. Obturator made of brass, gummed; flap made of steel, gummed. All gaskets made of high quality elastomer.

Rubbering of wedge and flap: EPDM

**Outlets:** Factory assembled PE-HD manifolds acc. to DVGW VP:  
Diameters 32, 40, 50, 63

Field of application (water up to 60 °C)		
Water – test-pressure bar		Max. operating pressure bar
body	seat	in case of operating temperature up to 70 °C
21	16	16

219



Dimensions and weights (Dimensions in mm)						
DN	ø D	L <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	a	Weight in kg ≈
25	32	173	151,5	247	13	8,8
32	40	186	151,5	247	13	9,2
40	50	210	151,5	247	13	9,6
50	63	211	151,5	247	13	11,5

## Tapping clamp type 88 and 89 for water PN 16

220

**Construction:** **Type 88**, Tapping clamp with internal pipe thread acc. to DIN 2999.  
**Type 89**, Tapping clamp with flange outlet DN 40 or DN 50.

Both types are suitable for mounting on pipes with diameters from DN 80 up to DN 300 and useable for cast iron – as well as for steel – and asbestos cement pipes.

The clamping bands (Stainless steel, plastic coated) are packed as a unit together with all necessary accessories and are allocated to the types and diameters of the pipes.

**Materials:** Tapping clamp made of ductile cast iron acc. to DIN EN 1563. Coating: inside and outside hot melt epoxy powder coating, optional inside enamelled.

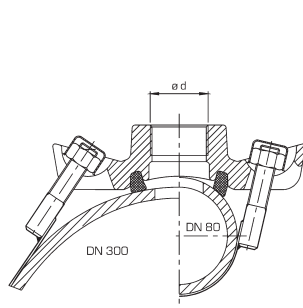


Fig. 88

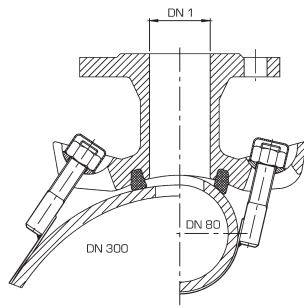


Fig. 89

### Field of application (water up to 40°C; gas acc. to G 260/1)

Water – test-pressure bar	Max. operating pressure bar in case of operating temperature up to 40°C
21	16

### Dimensions and weights

DN	Fig. 88 Weight in kg ≈ output ø d 1" / 1 1/4" 1 1/2" / 2"	Fig. 89 Weight in kg ≈ output DN 1 DN 40 DN 50
80—300	3 3	6,3 7,0

Available as blank clamp, too.

## Clamping bands for tapping clamps type 88 and 89 and for tapping valves "TOP" and "TOPsi"

221

**Construction:** Flat clamping band for the dimensions DN 80–300 and useable for cast iron-, cast iron cement coated as well as for steel- or asbestos cement pipes PN 12,5.

The clamping bands (stainless steel, plastics coated) are packed as a unit together with all necessary accessories and are allocated to the types and diameters of the pipes.

**Material:** Flat band with welded on threaded bolts made of stainless steel 1.4301, passivated and powder coated. Washers made of stainless steel 1.4104. Nuts made of stainless steel 1.4571 with slide coating. Thread protectors made of plastics. Saddle gaskets made of high quality elastomer.

a = Clamping band for cast iron pipes (bitumen/PE coated)

b = Clamping band for cast iron pipes (cement coated)

c = Clamping band for steel pipes acc. to DIN 2448, series 1

d = Clamping band for steel pipes acc. to DIN 2448, series 3

e = Clamping band for ac pipes PN 12,5 acc. to DIN 19 800



### Dimensions (Dimensions in mm)

DN	a pipe- outside-ø	b pipe- outside-ø	c pipe- outside-ø	d pipe- outside-ø	e pipe- outside-ø
80	98	106	88,9	—	row a
100	118	126	114,3	108	row a
125	144	154	139,7	—	row b
150	170	180	168,3	159	row b
200	222	232	219,1	—	row b
250	274	286	273,0	—	row b
300	326	338	323,9	—	352

**Design features:** Fig. 125 with flange connection PN 10/16, acc. to DIN EN 1092-2

**Material:** Body and flap: ductile cast iron acc. to DIN EN 1563, inside and outside epoxy-resin coated;  
flap shaft: brass; flap sealing: elastomer.

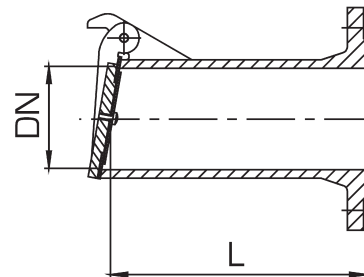


Fig. 125 with flange connection PN 10/16

#### Dimensions and weights

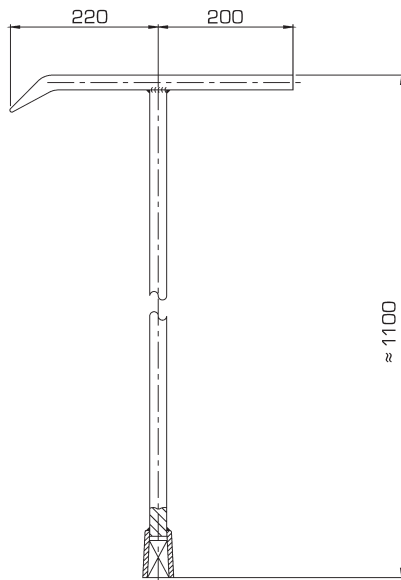
DN	Face-to-face dimension L ≈	Weight in kg ≈
50	210	5,5
65	210	7,6
80	210	9,4
100	250	13,0
125	250	16,0
150	280	22,0
200	300	35,0
250	350	60,0
300	360	70,0
350	390	92,0
400	390	117,0

## Operating T-key for valves

Acc. to DIN 3223

224

- Design features:**
- 1. Fig. 101 for hydrants and gate valves up to DN 300 with square schooner 32 mm
  - 1. Fig. 102 for tapping clamp, tapping gate valve
- Material:** St 33-1 epoxy-resin coated



### Dimensions and weights

Design features	Total length H mm	Weight in kg ≈
Fig. 101	1100	6,0
Fig. 102	750	1,7

## 6

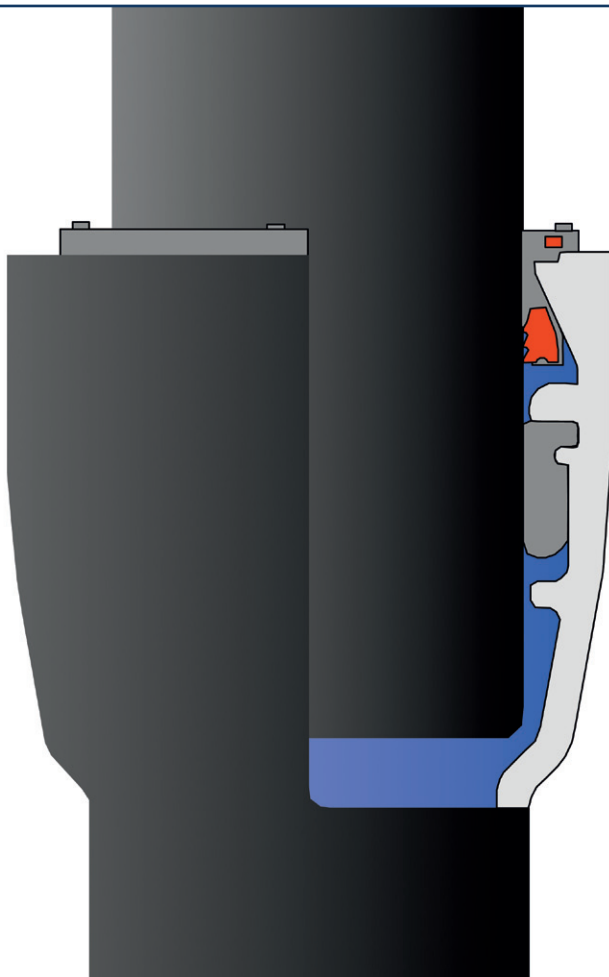
Laying instructions  
for thrust-resisting joints

Mounting instructions  
for flanges



## 6.1

### Laying instructions for thrust-resisting joints



## General instructions

For laying pressure pipes, fittings and valves with thrust resisting joint **Novo SIT®** "laying instructions for ductile cast iron pressure pipes and fittings with **TYTON®**-joint" should be observed.

## Application field

**Novo SIT®**-locking rings are available for dimensions DN 80 up to DN 1000 and for nominal pressures up to

DN 80 — 300 25 bar (on request up to 40 bar)

DN 350 — 600 16 bar (on request up to 25 bar)

DN 700 — 800 10 bar (on request up to 16 bar)

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.

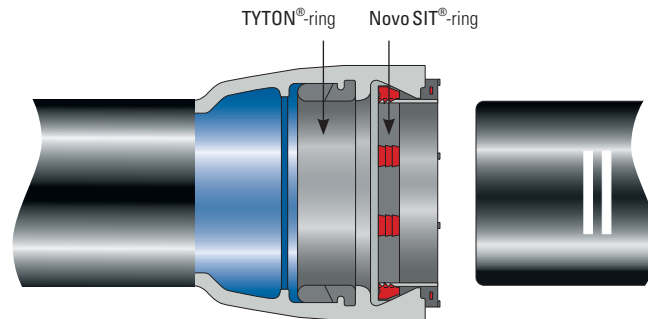
Before installation in lines for bridges, ducts or river-crossings, please contact our service team.

## Figure:

**Novo SIT®**-ring with vulcanised segments made of chromium steel.



## Assembling steps



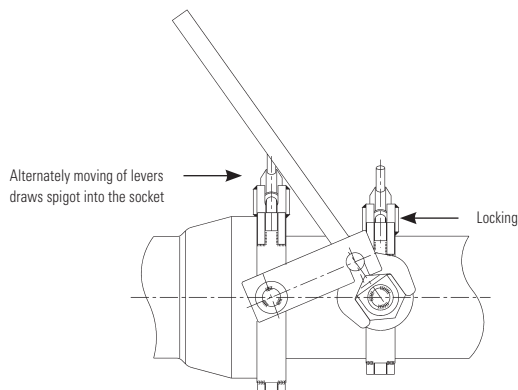
1. Cleaning inside the socket, particularly the TYTON®-groove.
2. Insert gasket (TYTON®-ring) by deflecting and squeezing, so that the gasket is firmly bedded in its seating. The inner part of the inserted TYTON®-ring should be slightly lubricated.
3. Insert Novo SIT®-ring into the pre-chamber.
4. Cleaning of spigot-end, slightly lubricate and insert concentrically into the socket until it touches the TYTON®-ring.
5. Suitable tackles to push the spigot evenly into the socket have to be employed, f. e. laying tool V 300 D acc. to the illustration.

Deviation should be avoided.

## Important:

Changes of circumferential directions have to be arranged before connecting (f. e. installation of outlets, tees a.s.o.).

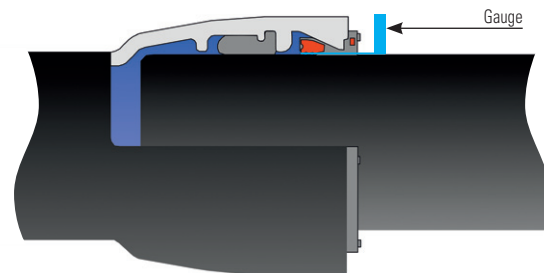
## Laying device V 300 D



## 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 suitable gauge between the segments on the whole circumference.



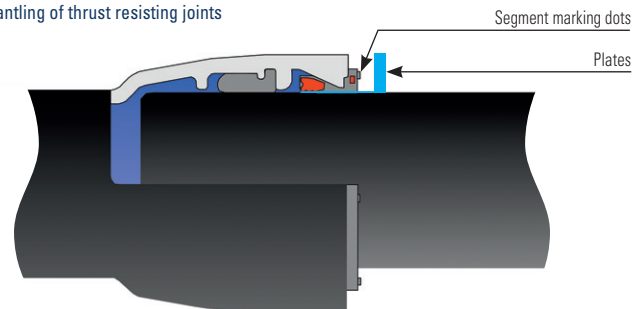
## Note:

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°

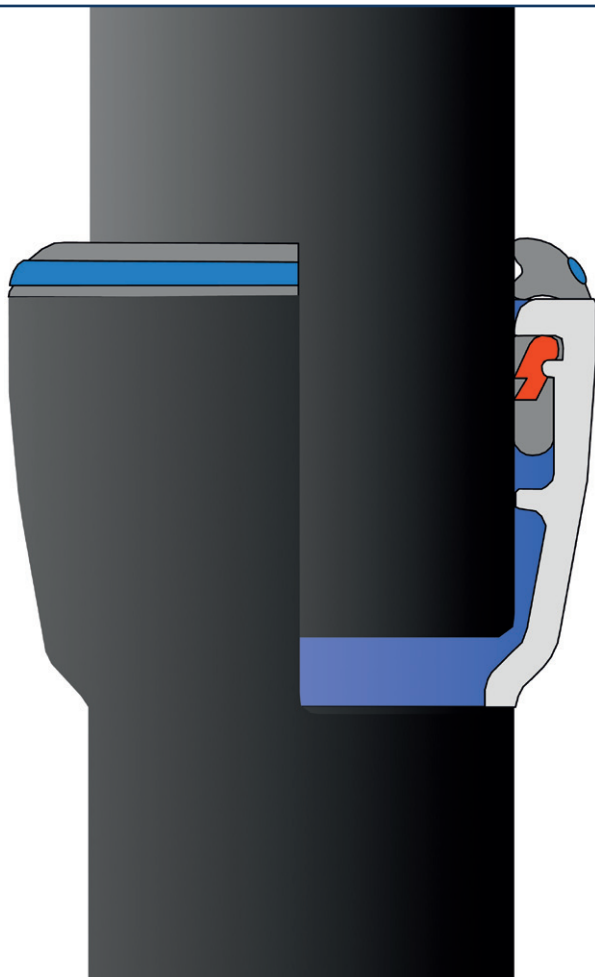
A pipe with 6 m length and 1° deflection deviates approx. 10 cm off the neutral pipe axis.

## Dismantling of thrust resisting joints



Push the spigot completely into the socket. Adjust dismantling blade to the outside diameter of the spigot, insert the blade into the hammering device, lubricate the blade slightly on both sides and drive the blades on all segments marking dots into the socket.

Use pipe laying tool or dismantling collar to remove the sections from each other.

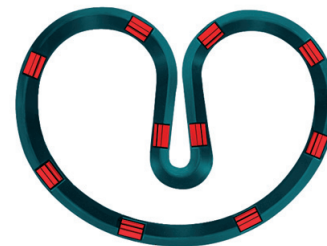


## General instructions

For laying pressure pipes, fittings and valves with thrust resisting joint **Tyton SIT®** "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 an inserted into the socket.



### Application field:

**Tyton SIT®**-locking rings are available for dimensions DN 80 up to DN 400 Ductile cast iron pipes with wall thickness k 10 and more.

DN 80 — 200 16 bar

DN 250 — 400 10 bar

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.**

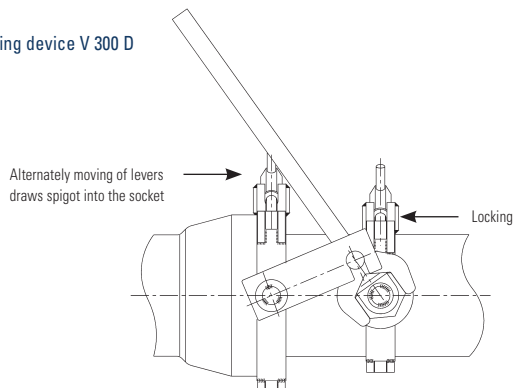
### Assembling steps

1. Cleaning inside the socket, particularly the **TYTON®**-groove.
2. **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. Cleaning of spigot-end, slightly lubricate and insert concentrically into the socket until it touches the **Tyton SIT®**-ring.
4. Laying tool V 300 D has to be mounted acc. to the illustration, so that both parts can be pushed together (see page 230).

Deviation should be avoided!

**Important:** Changes of circumferential directions have to be arranged before connecting (f.e. installation of outlets, tees a.s.o.).

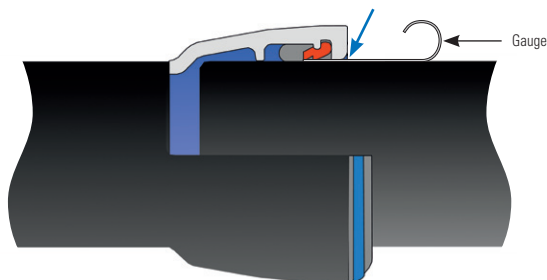
Laying device V 300 D



## 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 SIT®-ring has to be tested with suitable gauge between segments on the whole circumference.

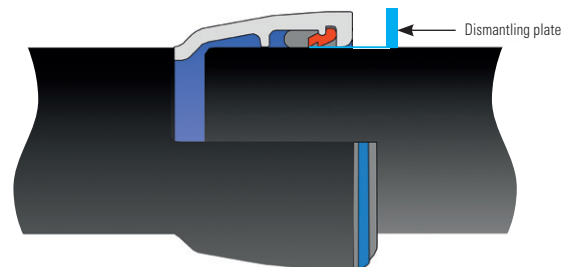


## Note:

Deviation of the installed thrust resisting joint is possible up to 3°.

A pipe with 6 m length and 1° deflection deviates approx. 10 cm off the neutral pipe axis.

## Dismantling of thrust-resisting joints



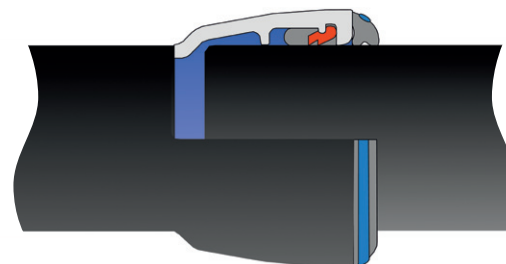
Push the spigot completely into the socket.

Adjust dismantling blade to the outside diameter of the spigot, insert the blade into the hammering device, lubricate the blade slightly on both sides and drive the blades around the whole circumference into the socket.

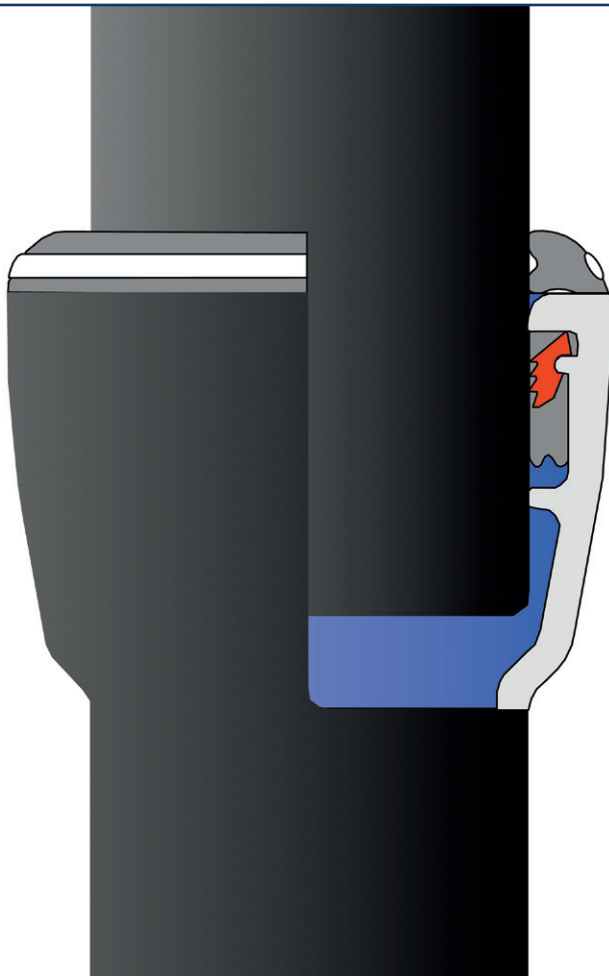
Use pipe laying tool of dismantling collar to remove the sections from each other.

In case the blades can not be inserted properly on whole circumference the line has to be cut.

## Marking of the installed thrust-resisting joint



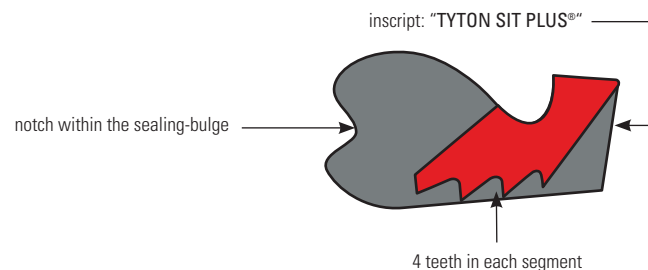
We supply profiled rubber-rings with blue stripes. Fixing of this marking rings should be in accordance with the illustration.



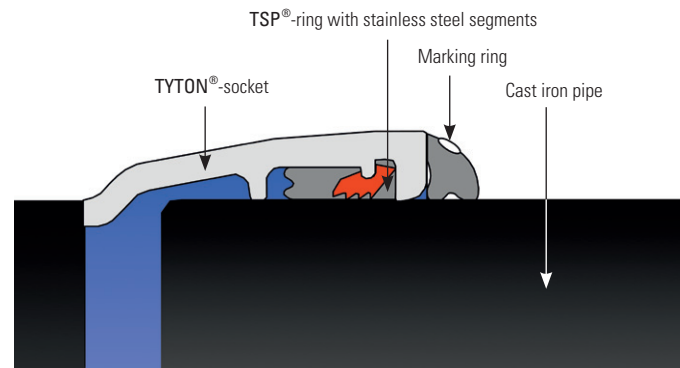
## General instructions

For laying pressure pipes, fittings and valves with thrust-resisting joint **TYTON SIT PLUS® (TSP®)** "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 are 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®

## Application field:

DN 80 — 100	32 bar
DN 125 — 350	25 bar
DN 400 — 500	16 bar
DN 600	10 bar

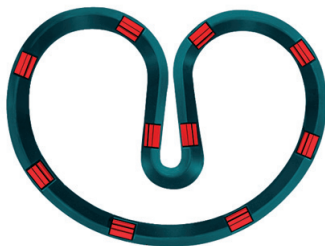
This self-anchoring, thrust-resisting socket joint substitutes concrete anchoring blocks.

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. Cleaning inside the socket, particularly the **TYTON®**-groove.
2. **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. Cleaning of spigot-end, slightly lubricate and insert concentrically into the socket until it touches the **TSP®**-ring.
5. Laying tool V 300 D has to be mounted acc. to the illustration, so that both parts can be pushed together.

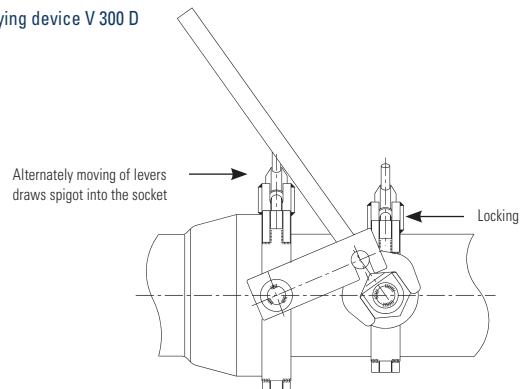


Deviation should be avoided!

## Important:

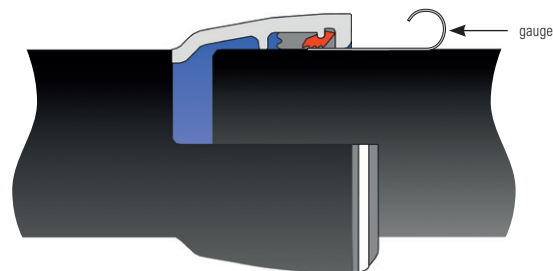
Changes of circumferential directions have to be arranged before connecting (f.e. installation of outlets, tees a. s. o.).

## 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 SIT PLUS®**-ring has to be checked with suitable gauge between segments on the whole circumference.



## Note:

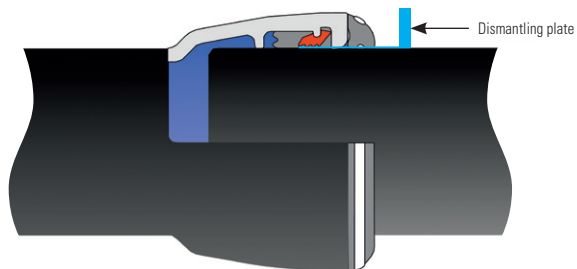
Deviation of the installed thrust-resisting joint is possible up to 3°.

A pipe with 6 m length and 1° deflection deviates approx. 10 cm off the neutral pipe axis.

## Marking of the installed thrust-resisting joint

We supply profiled rubber-rings with white stripes. Fixing of this marking rings should be in accordance to the illustration.

## Dismantling of thrust-resisting joints



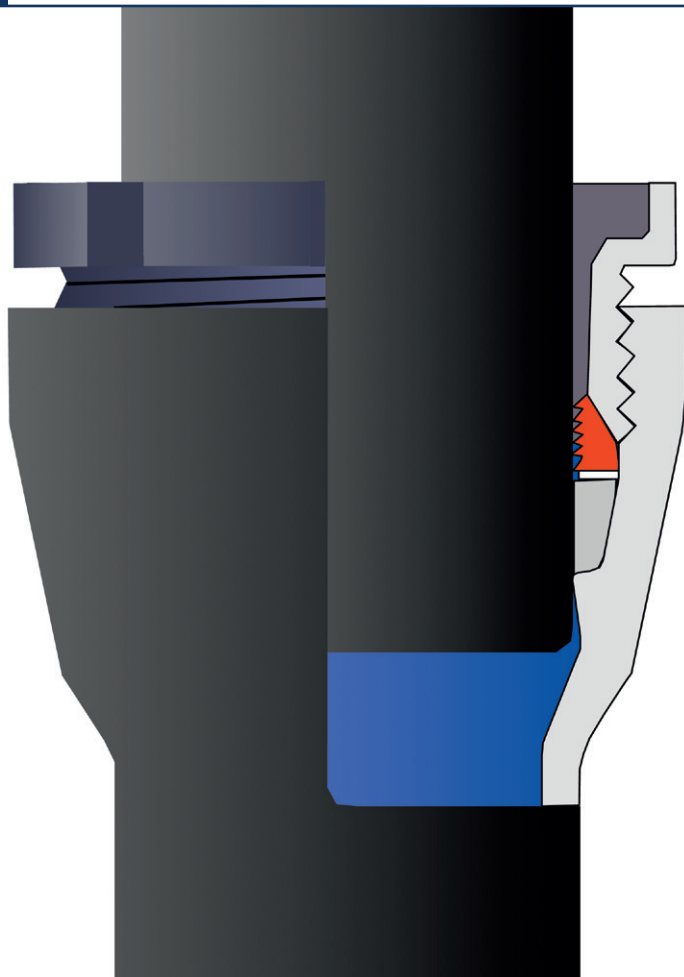
Push the spigot completely into the socket.

Adjust dismantling blade to the outside diameter of the spigot, insert the blade into the hammering device, lubricate the blade slightly on both sides and drive the blades around the whole circumference into the socket. Use pipe laying tool or dismantling collar to remove the sections from each other.

In case the blades can not be inserted properly on whole circumference the line has to be cut.







## General instructions:

For laying pressure pipes and fittings with thrust resisting joint Düker **SMU** "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 inserted into the socket by tightening the screw-ring. Only by this way a secure pressing of the gasket is guaranteed.

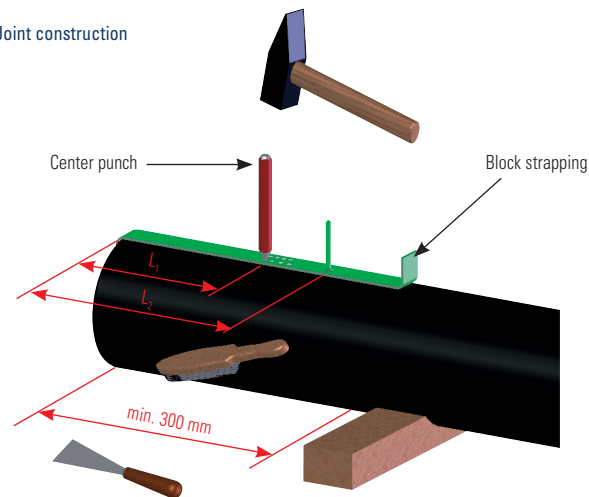
## Application field:

The thrust-resisting joint Düker **SMU** is available for dimensions DN 40 up to DN 65 and for nominal pressures up to 16 bar.

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 have to be observed.

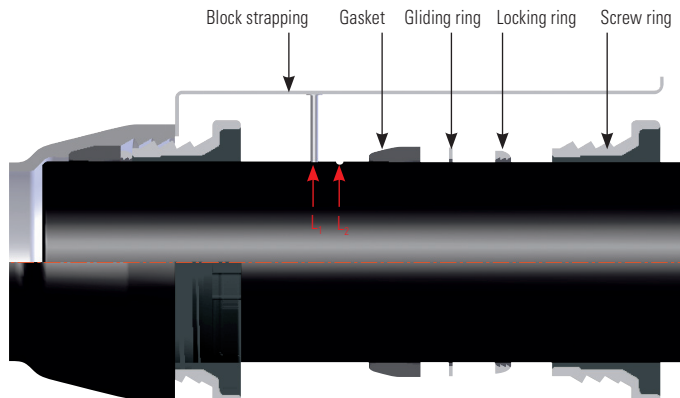
Before installation in lines for bridges, ducts or river-crossings, **please contact our service team.**

## Joint construction

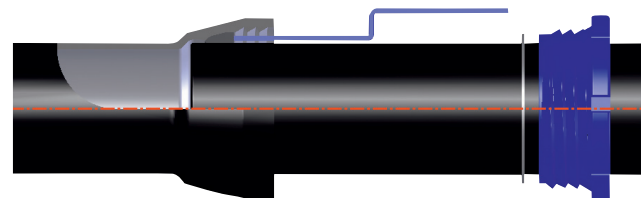


Cleaning inside the socket, particularly the **SMU**-groove for at least 300 mm length. Drive in the clearance markings  $L_1$  and  $L_2$  with the center punch.

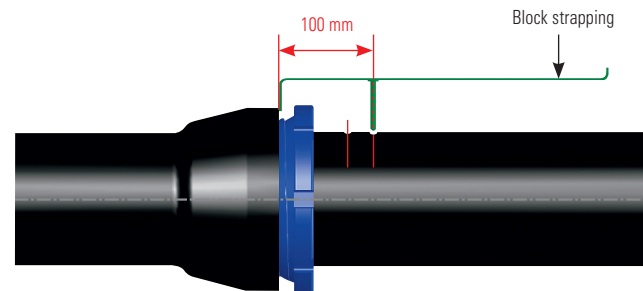
Dimensions $L_1$ and $L_2$ in mm						
DN	40		50		65	
	$L_1$	$L_2$	$L_1$	$L_2$	$L_1$	$L_2$
Standard socket	161	169	164	172	170	178
Long socket	200	208	203	211	209	217



Insert 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 pipe end into the socket, centre it and check the installation depth  $L_1$ . Do not remove lifting gear yet.



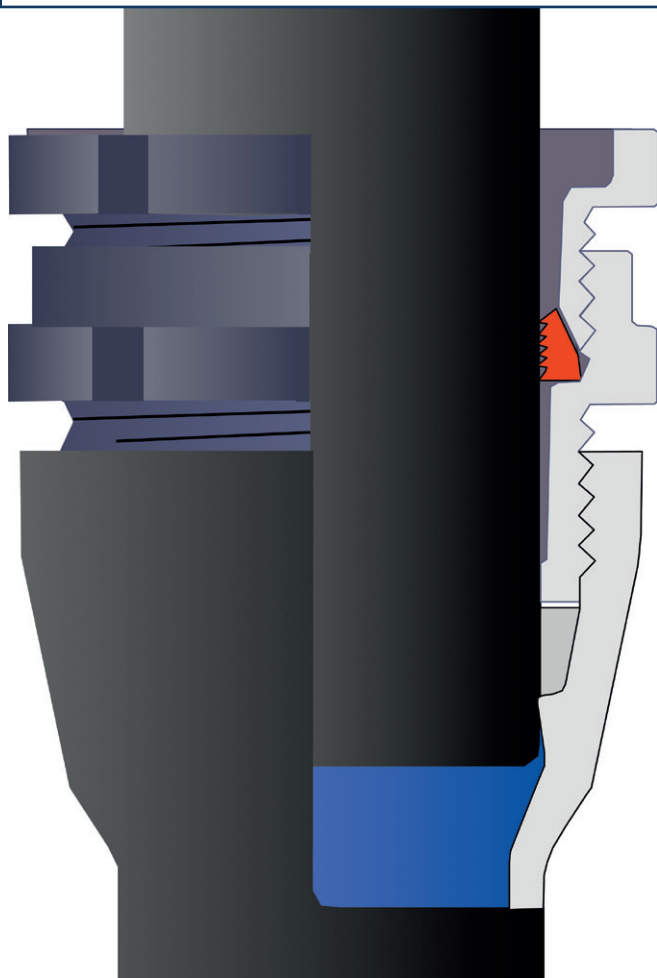
Impress gasket with inserting device evenly into the socket (centering). Push gliding ring and locking ring until the gliding ring touches the gasket. Screw down screw ring with a hammer or ram as tight as there is no turning of the screw ring possible anymore.



Check the correct installation depth:  
Block strapping must be within  $L_2 \pm 3$  mm.

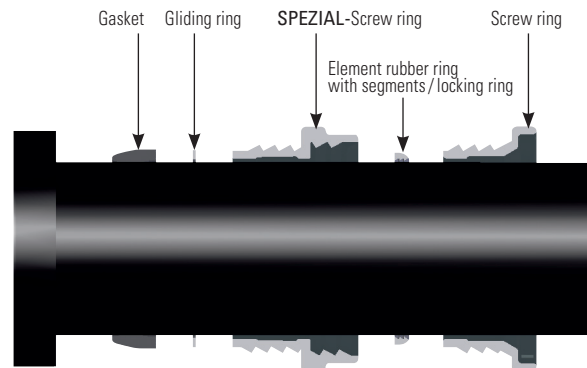
After installation of the connection in central position, pipes can be deviated

DN 80 – 200 up to 3° and  
DN 250 – 400 up to 2°



#### General instructions:

For laying pressure pipes and fittings with thrust resisting joint Düker **SPEZIAL** "laying instructions for ductile cast iron pressure pipes and fittings with screw-gland joint" should be observed.



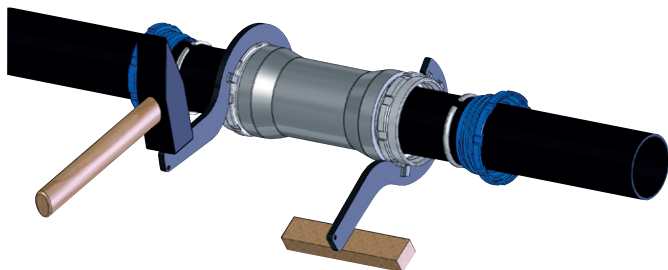
Enables mounting without block strapping and the thrust-resisted connection with flanged sockets and collars. Screw ring and **SPEZIAL**-Screw ring are delivered in blue-grey colour.

Application field:

DN 80 – 400, PN 16

## 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,  $t = 3 \text{ mm}$ ) 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 lubricate sealing chambers and thread of screw, too 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 central.
- Impress gasket equable into the sealing chambers. Push gliding ring until it touches the gasket. Screw down screw ring by hand as far as possible and tighten it with the help of a hammer or ram. Here, avoid the turning of the socket.  
In case of installation 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 post hammering after 5-10 Minutes is recommended.

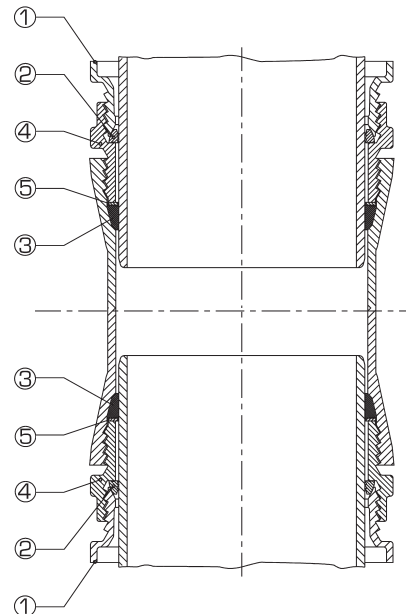


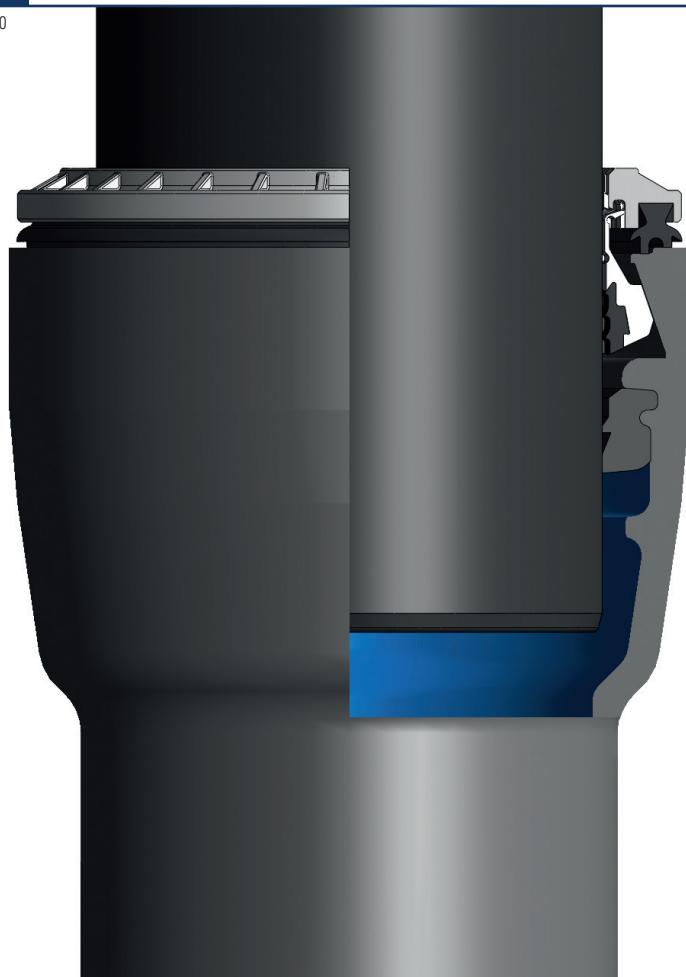
- Turn in the locking rings (element rubber rings) until it touches the SPEZIAL screw ring. Insert the screw rings by hand and tighten them with hammer blows.
- Deflection: After finishing the connection in central position, pipes can be deflected up to  $3^\circ$ .

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





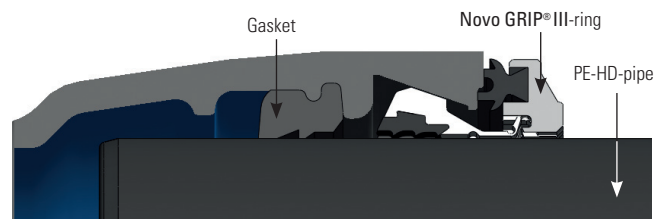
## Application field:

**Novo GRIP® III**-locking rings are available for dimensions DN 90/110/140/160/225 and for nominal pressures up to 16 bar.

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 have to be observed.

Before installation in lines for bridges, ducts or river-crossings, **please contact our service team.**



## Assembling steps

1. Cleaning of socket and spigot.
2. Insert gasket into TYTON®-chamber.
3. Insert **Novo GRIP® III**-ring into pre-chamber.
4. Spigot of pipe has to be rounded and smoothened.
5. Insert stabilising bush completely.
6. Throb spreading wedge into stabilising bush until stretching. Backlog of spreading wedge has to be cut to justify 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.

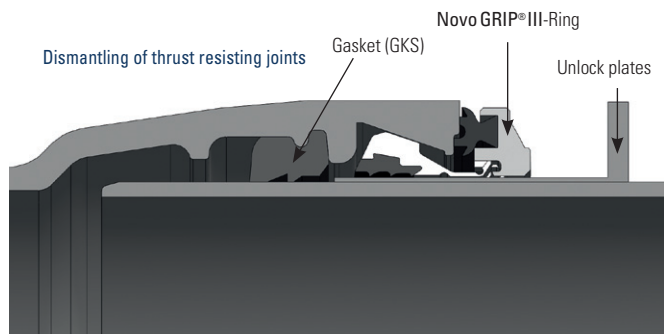
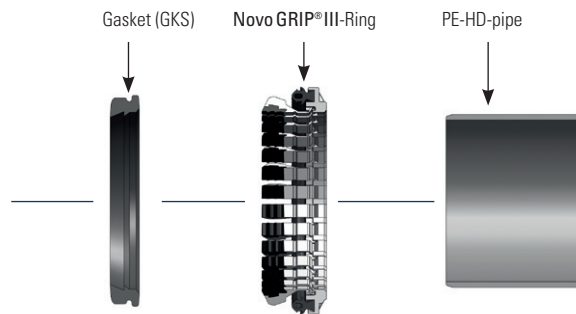
**Please avoid deviation during drawing the spigot into the socket!**

## Important:

Changes of circumferential directions have to be arranged before connecting.  
(f. e. installation of outlets, tees a. s. o.)

## Note:

Fittings and valves with a nominal dimension of DN 200 for pipeline diameters of 225 mm haven't got 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.

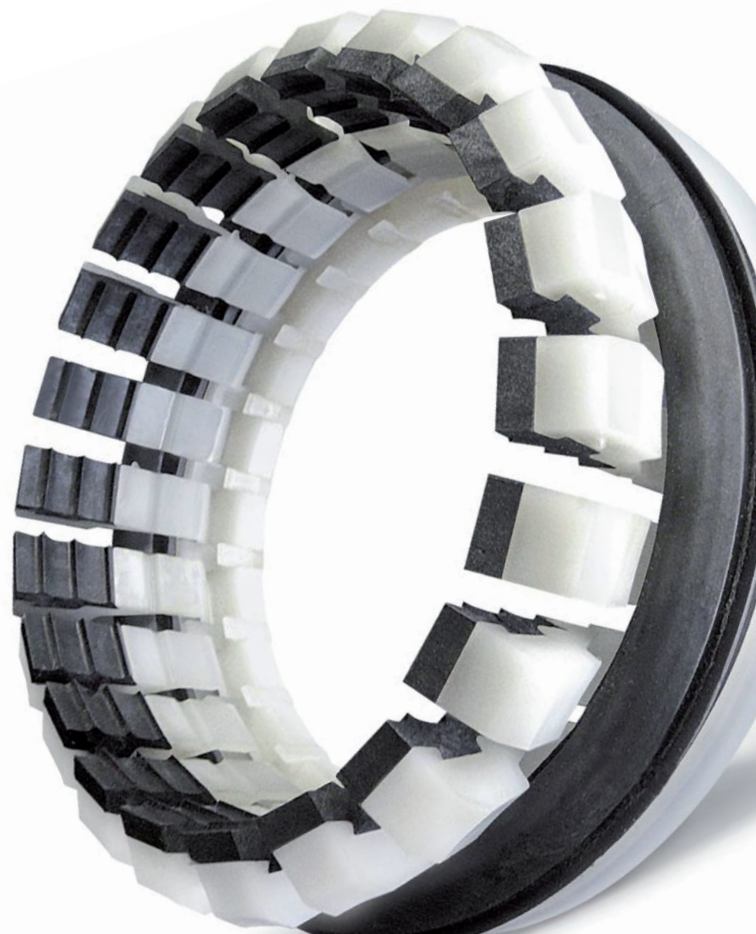


1. Draw spigot back until contact at the end of the socket to unlock teeth.
2. Lubricate unlock plates and throb them into the socket with a punching tool.
3. Dismantle by using laying tool or suitable tackle.

## Attention:

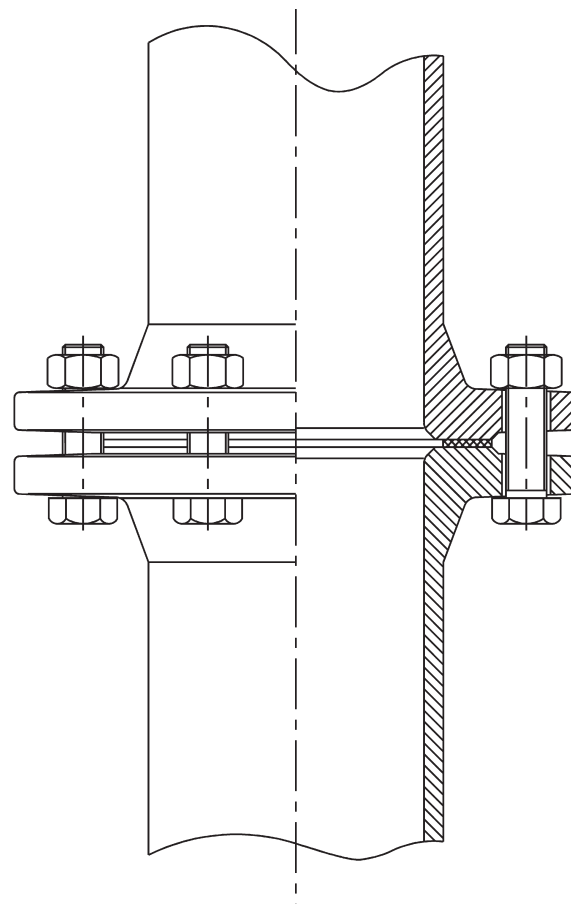
Take care of length-differences because of variation in temperature when laying plastic pipes.

E.g. PE-HD pipe length 10 m,  $\Delta t = 10^\circ$ ;  $\Delta l$  approx. 20 mm.



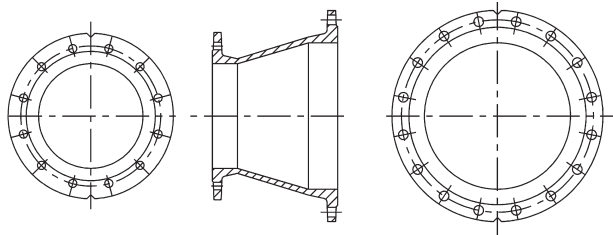
## 6.2

### Assembly instructions for pressure pipes and fittings with flanges



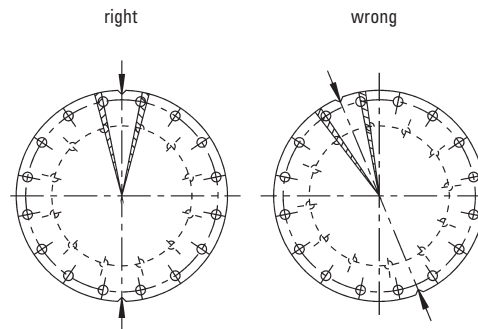


1. Cleaning of flange, raised face and gasket. Check all parts for proper conditions. Do not use damaged parts.
2. In case of installation with unprotected screws, especially in soils with corrosion risk, the screw connections must be protected (f. e. with bitumous tapes).
3. Pipes and fittings must 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 flanges fittings ( in particular double flanged tapers /FFR )::



To avoid installation failures, special installation marks (notches) are cast on at the flanges in opposite positions. It is necessary to pay attention that these marks are arranged for installation in vertical or horizontal direction.

Example: Double flanged taper (FFR) 350/250, PN 10



In case of wrong installation and in consequence to the different numbers of boltholes at double flanged tapers, the connected valves or fittings are bevelled to the vertical axis. Possible deviations are up to 22,5°, depending on the dimensions.

## Attention:

On big dimensions, a deviation is hardly to detect!

## Remarks:

Please note, that DVGW-worksheet GW 368 should be observed.

A vertical bar on the left side of the slide, composed of five colored segments: light blue, dark grey, orange, yellow, and green.

FITTINGS AND VALVES

DRAINAGE TECHNOLOGY

ENGINEERING

GLASS LINING TECHNOLOGIES

JOBGING FOUNDRY

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