



انابيب - قطع - صمامات - عدادات
PIPES - FITTINGS - VALVES - WATER METER



شركة العدادات الخليجية
GULF METERS FACTORY

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Company Profile

Gulf Meters Factory leading a large and professional Manufacturing Ductile fittings for water pipelines in GCC with high production lines and modern inspection equipments,

This manual has been prepared to assist qualified Engineers of Clients, Consultants, Contractors and Project Managers in the specification and use of the Company's product,

Ductile iron fittings are used for the transmission of water, wastewater, drainage effluents, slurries and various other fluids, It deals essentially with water industry applications. We manufacturing ductile fittings for treated, untreated, drinking and waste water.

In 1980 we started in the name of STF (Saudi Technology Factory) After a few years, We introduced our company by the name of Gulf Meters Factory (GMF). GMF owners partners in International Ductile Iron Pipe Company (INDIPCO) Jubail K.S.A.

Ductile Iron Pipes (K9) According to ISO 2531 (Dia, 80mm to 2200mm), Ductile fittings (K12, K14).

Also we have a full range of valves (Gate, Butterfly, Air Release, Swing Check Valve etc.). Flange Adaptor/Flexible Coupling & Dismantling Joints and Firehydrants.

Agent to Xinfeng, 3D, Factories in China

Agent for Tyco and ACI Factories before.

GMF Products have the approval of Saudi Ministry of Water (K.S.A. and NWC). and other government sections.

For any more detail please feel free and visit our website.

www.gmf.com.sa

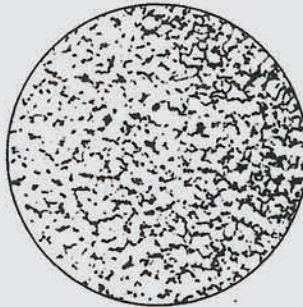


Superiorities of Ductile Cast Iron Pipes.

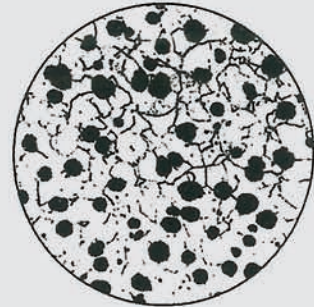
- 1) Ductile Cast Iron has excellent resistance to the impacts and shocks than Grey cast iron due to its spheroidal graphite microstructure.
- 2) Ductile Cast Iron possesses about two times greater tensile strength than Grey cast iron and also has considerable degree of ductility together since its metal matrix is ferrite as a result of heat treatment.
- 3) The chemical structure of Ductile Cast Iron are same as Grey cast iron, ductile cast iron has anti-corrosive properties of cast iron products and strength similar to carbon steel.



Grey Cast Iron



Steel



Ductile Iron

- 4) View of the microscopic photos as above (1) and (2) Magnification shows the differences in structure between Ductile Cast Iron and Grey Cast Iron.
- 5) Under the microscope, the structure is mainly composed of metal matrix and graphite.
- 6) In the Grey cast iron, the graphite is spread in flake shape, thus being liable to brittle.
- 7) In the Ductile Cast Iron, the graphite is spread in spherical shape, thus giving desirable strength.
- 8) The Ductile Cast Iron pipes have high bursting resistance against internal pressure and Ductile Iron Pipe has excellent resistance to water hammer.
- 9) The Ductile Cast Iron has high corrosion resistance properties and long service life than Grey cast iron.
- 10) When installing pipe, the machinability and workability are excellent to D.C.I. Pipe.

.... for Potable Water

ISO 2531	1991	Ductile Iron Pipes, Fittings and Accessories for Pressure Pipelines.
BSEN 545	1995	Ductile Iron Pipes, Fittings and Accessories and their joints for Water Pipelines, requirements and test methods.
ISO 4179	1985	Ductile Iron Pipes, for pressure and Non Pressure Pipelines, Centrifugal Cement Mortar Lining General Requirements.
BS 4027	1996	Specification for sulphate resisting Portland cement. Requirements for composition, strength, physical and chemical properties of three strength classes.
ISO 8179	1995	Ductile Iron Pipes, External Zinc Coating
BS 3416	1991	Specification for Bitumen based coatings for cold application, suitable for use in contact with potable water.
ISO 4633	1996	Rubber Seals joint Rings for water supply, Drainage and Sewerage Pipelines, Specs for material.
BS 2494	1990	Specification for elastomeric seals for joints in pipe work and pipelines.
ISO 8180	1985	Ductile Iron Pipes Polyethylene Sleeving.

.... for Sewage Application

ISO 7186	1996	Ductile Iron Product for Sewage application.
BSEN 598	1995	Ductile Iron Pipes, Fittings, accessories and their joints for sewerage Applications, Requirements and test methods.
ISO 4633	1996	Rubber Seals, Joint Rings for supply, Drainage and Sewerage Pipelines, Specs for materials.

* ANY TYPE OF COATING AVAILABLE ON REQUEST.

Pipes and Fittings Specification Comply and
Equivalent to Saudi Arabia Standards
Organization - SASO 1014 - SASO 1018 - SASO 1023

PIPES :

Ductile Iron (Socket & Spigot) pipes manufactured by centrifugal process to meet in every respect the requirements of International Standard ISO 2531, BSEN 545.

Normally pipes are of Class K9 Push on Joint Type. Class K10 will be supplied upon request.

The standard effective length of the pipe is 6.0. Meters. However, 10% of the pipes can be supplied shorter than 6 Meters as per ISO 2531.

INTERNAL COATING :

All pipes are lined internally with Portland cement (Sulphate resistant type V). Cement is applied by Centrifugal process in compliance with ISO 4179. Thickness of cement is according to ISO, standards.

Upon request Epoxy coating or Bitumen coating can be applied.

EXTERNAL COATING :

Pipes are coated externally by pure metallic Zinc around 200gm/m², which represents 50% more than requirement of ISO 8179. Zinc is then covered by 120 microns of bituminous paint.

MARKING :

The following marking is casted on each pipe (on the socket)

- A. The nominal diameter of the pipe (DN).
- B. The type of socket (STD) which means standard type.
- C. The manufacturer mark

JOINTS :

The rubber gasket for the pipes is standard type where as triduct gasket is offered for fittings which is similar to tyton joint. These gaskets are EPDM rubber according to ISO 4633.

P E SLEEVES :

Polyethylene sleeve 200 micron thickness is supplied in accordance with ISO 8180 and AWWA C-105.

TYPES OF JOINT

SOCKET JOINTS

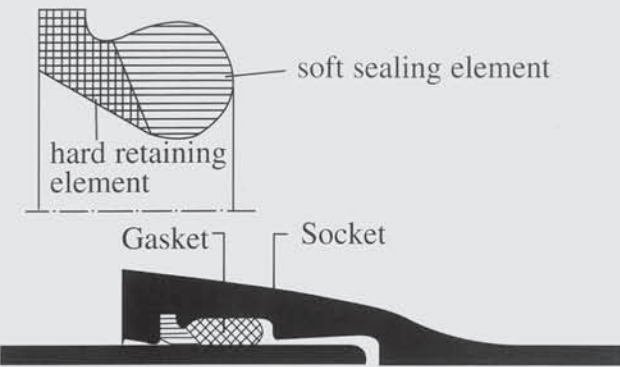
Socket joints are fitted with elastomer gaskets for flexibility.

They can be moved longitudinally and they can be deflected. This flexibility is advantageous for counteracting soil-related stresses caused by :

- Soil settling combined with inadequate compaction;
 - Building transitions on filled terrain;
 - Vibrations resulting from traffic liteloads;
 - Tectonic effects;
 - Settling induced by mining;
- Pipes laid in unstable environments like bogs and mud.

THE TYTON SOCKET JOINT

The TYTON socket is one of the most frequently used rubber sealed push-in sockets.



TYTON® - Joint
Figure 1

The sealing action results from pressure on the gasket when the spigot is inserted.

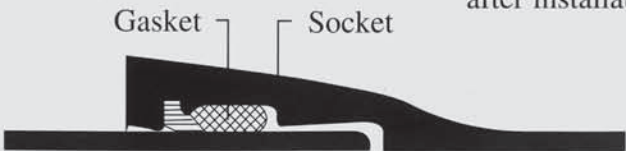
The harder section ensures that the gasket stays in place.

Thyssen Guss has developed a Long Socket version (see fig.2) where greater longitudinal flexibility is a requirement.

A specially profiled rubber gasket consisting of a soft sealing element and a harder retaining element, acts as a seal between the socket and the spigot (see. fig 1).

Ductile pipes between DN 100 and DN 1400 from Thyssen Guss are all fitted with Long Sockets. The same applies to fittings from DN 900 DN 1400. The Long Socket enables spigot displacement from 60 mm on DN 100 to 120 mm on DN 1400 pipes.

The socket joint is deflectable after installation.



The TYTON® - Long Socket Joint
Figure 2

Deflectability of the TYTON®-Joint

DN	Deflection	Longitudinal displacement (mm)
up to and incl. 300	5°	60 - 68
400	4°	74
450-1000	3°	76 - 100
1200	2°	108
1400	1°	116

Combined with the standard fittings angles, this allows any desired change of direction.

DIN 28603 lists the main dimensions of the TYTON Joint.

FITTINGS :

Ductile iron fittings are in accordance with the international standard ISO 2531 & BSEN 545. Fittings Socket is of a triduct push on joint. Flange joints are dimensioned and drilled according to ISO 2531, PN 10, 16 or 25. All fittings are class K12 except the Tees which are class K14.

INTERNAL COATING :

All fittings are lined internally with portland cement (sulphate resistance type V) as per ISO 4179.

EXTERNAL COATING :

All fittings are coated externally by pure metallic zinc with thickness of 100 microns. Zinc is then Covered by 120 microns of bituminous paint.

MARKING :

The marking of fittings is in accordance with the standard ISO 2531.

JOINTS :

The rubber gasket for the pipes is standard type where as triduct gasket is offered for fittings which is similar to tyton joint. These gaskets are EPDM rubber according to ISO 4633.

FLANGED PIPES :

Flanged pipes are class K9, centrifugally cast with welded flanges PN 10, 16 or 25 (PN 40 for diameter > or=300). The gasket for flanges are normally EPDM Elastomer rubber as per ISO 4633. The normal gasket can be improved by steel reinforced rubber gasket.

P E SLEEVES :

Polyethylene sleeve 200 micron thickness is supplied in accordance with ISO 8180 and AWWA C-105.

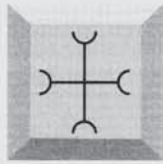
SPECIAL COATING :

Upon request Internal & External, Epoxy or Bitumen Coating shall be applied.

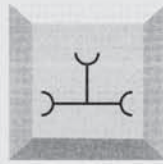
Standard Coating Materials.

BS 3416	Black bitumen coating solutions for cold application type II
BS 4147	Hot applied bitumen based coating type I
BS 4164	Coal tar based hot applied coating.

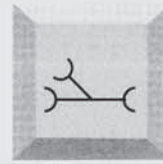
Based on ISO 2531 and BS 4772 but incorporating proposed amendments now being considered by the appropriate ISO and BSI technical committees.



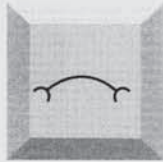
Socket Cross Tee



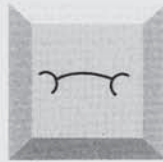
Socket Tee



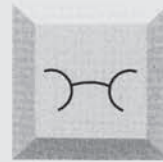
45° Deg. Socket Tee



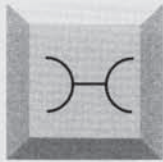
90° Deg. Socket Bend



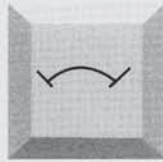
45° Deg. Socket Bend



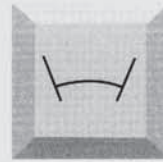
22.5° Deg. Socket Bend



11.25° Deg. Socket Bend



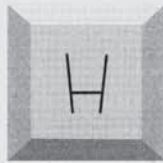
90° Deg. Flange Bend



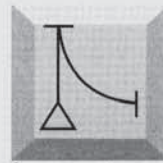
45° Deg. Flange Bend



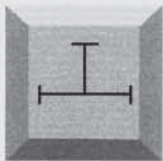
22.5° Deg. Flange Bend



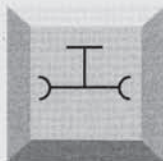
11.25° Deg. Flange Bend



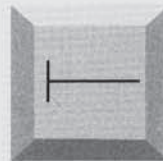
Flange Duckfoot Bend



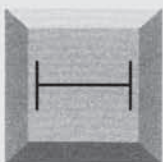
Flange Tee



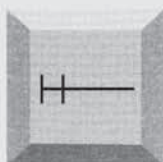
Socket Flange Tee



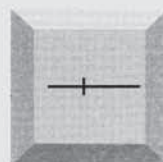
Flange Spigot Pipe



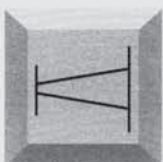
Double Flange Pipe



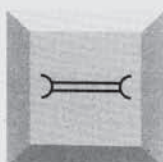
Flange Spigot Puddle Pipe



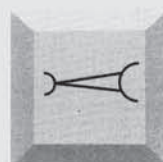
Double Spigot Puddle Pipe



Double Flange Reducer



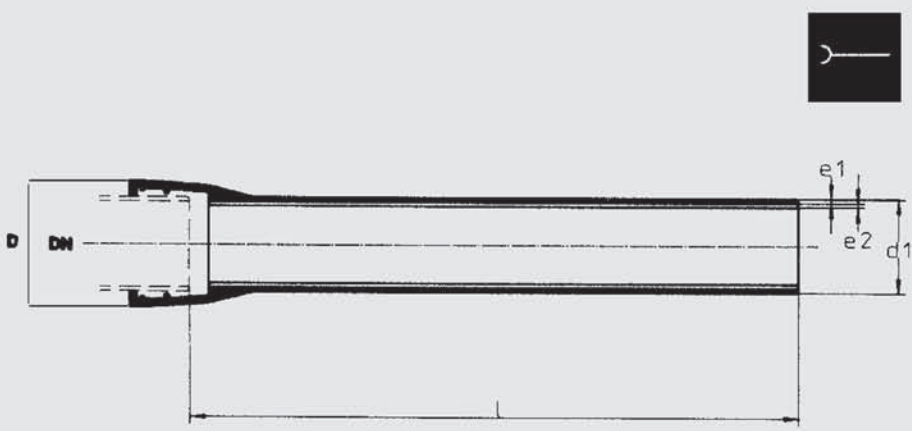
Double Socket Pipe



Double Socket Reducer

PIPES & ANCHOR FITTINGS

Socket and Spigot Pipes Class K9

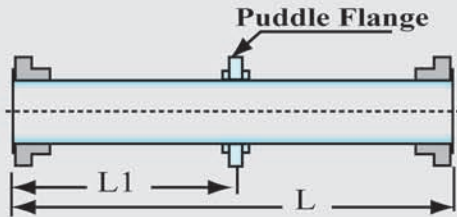


Nominal size DN	Dimensions mm				Nominal pressure PN bar	Mass (Kg)			
						Per meter		Per 6 meter	
	d	d1	e1	e2		iron only	with cement mortar	iron only	with cement mortar
80	142	98	6	3	40	12.8	14.5	76.5	87
100	163	118	6	3	40	15.6	17.7	94	106
125	-	144	6	3	40	19.3	22	115.5	135
150	217	170	6	3	40	23	26	138	167
200	278	222	6.3	3	40	32	37	191	235
250	336	274	6.8	3	32	42.5	48	255	287
300	393	326	7.2	3	32	54	60.5	323	361
(350)	448	378	7.7	5	32	67.5	79.5	403	477
400	500	429	8.1	5	25	80.5	94.5	482	566
450	-	480	8.5	5	25	96	112	576	672
500	604	532	9	5	25	112	129	669	774
600	713	635	9.9	5	25	147	168	882	1007
700	824	738	10.8	6	25	187	217	1123	1298
800	943	842	11.7	6	25	233	266	1394	1594
900	1052	945	12.6	6	20	282	320	1691	1917
1000	1158	1048	13.5	6	20	337	378	2017	2267
1100	-	1152	14.4	6	20	396	440	2376	2640
1200	1377	1255	15.3	6	20	460	510	2758	3058
1400	1632	1462	19	9	20	595	682	3563	4088
1500	-	1565	19	9	20	669	774	4015	4644
1600	1850	1668	19	9	20	753	868	4518	5208
1800	2049	1875	20.7	9	20	932	1088	5592	6528

FLANGED PIPES

BS 4772 ISO2531

FLANGED PIPES



Flanged pipe with welded-on flanges, K9
DN 80 mm to DN 2000 mm
L, L1 to be specified



Flanged pipe
DN 80 mm to DN 2000 mm

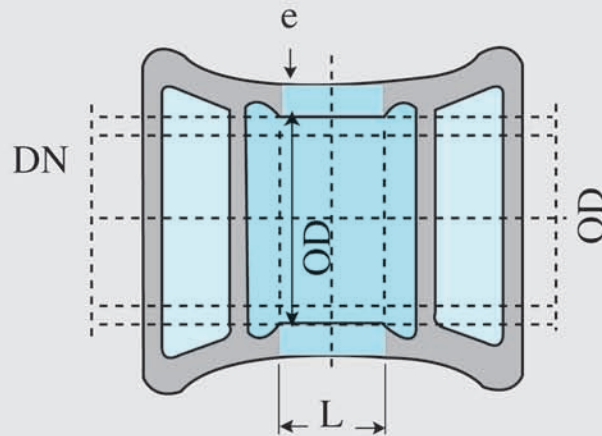
Nominal size DN	MASS				MASS				
	K 9		K 12		FLANGE EACH				PUDDLE
	e mm	Mass Kgs/m	e mm	Mass Kgs/m	PN 10 Kgs	PN 16 Kgs	PN 25 Kgs	PN 40 Kgs	FLANGE Kgs
80	6	12.2	7	14.1	3.5	3.5	3.5	3.5	1.9
100	6.1	15.1	7.2	17.7	4	4	4.5	4.5	2.1
150	6.3	22.8	7.8	28	6.1	6.1	7.1	9.2	2.8
200	6.3	30.6	8.4	39.7	8.5	8.3	10.4	15.7	4
250	6.8	40.2	9	52.8	11.8	11.4	15.3	25.4	5.7
300	7.2	50.8	9.6	67.3	15.6	15.2	20.8	36.3	6.3
350	7.7	63.2	10.2	83.1	17.6	20.7	29	--	8.1
400	8.1	75.5	10.8	100	20.5	26.1	37.4	--	10.7
500	9	104.3	12	138.2	27.6	42.8	54.5	--	13.9
600	9.9	137.1	13.2	181.8	38.4	64.9	79.1	--	18.2
700	10.8	173.9	14.4	230.8	50.2	65.3	--	--	26.2
800	11.7	215.2	15.6	285.5	66.7	85.9	--	--	34.7
900	12.6	260.2	16.8	345.4	78.7	102.6	--	--	41
1000	13.5	309.3	18	410.6	98.6	140.1	--	--	51.7
1200	15.3	420.1	20.4	557.8	144.2	208.5	--	--	77.1
1400	17.1	547.2	22.8	726.8	178.2	246.3	--	--	90
1600	18.9	690.3	25.2	916.9	244.7	346.7	--	--	110
1800	20.7	850.1	27.6	1129.3	283.5	409.4	--	--	125
2000	22.5	1026.3	30	1363.4	336.4	489.2	--	--	145

e. thickness of puddle piece.

COLLAR

SOCKET COLLAR

BS 4772 ISO 2531 CLASS K 12

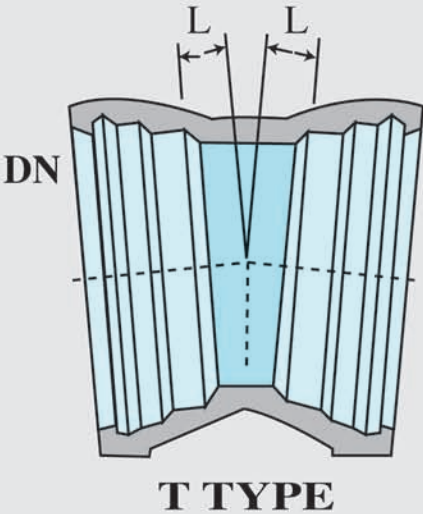


NOMINAL DIAMETER DN mm	e mm	OD mm	L mm	MASS Kgs
80	7	109	160	7.9
100	7.2	130	160	9.9
150	7.8	183	165	15.9
200	8.4	235	170	23
250	9	288	175	31.5
300	9.6	340	180	41
350	10.2	393	185	52
400	10.8	445	190	64
450	11.4	498	195	91
500	12	550	200	93
600	13.2	655	210	129
700	14.4	760	220	172
800	15.6	865	230	223
900	16.8	970	240	282
1000	18	1075	250	349
1200	20.4	1285	270	566
1400	22.8	1477	340	816
1600	25.2	1683	360	1094
1800	27.6	1889	380	1427
2000	30	2095	400	1818

BENDS

SOCKET BENDS 11.25 Degree

BS 4772 ISO 2531 CLASS K 12

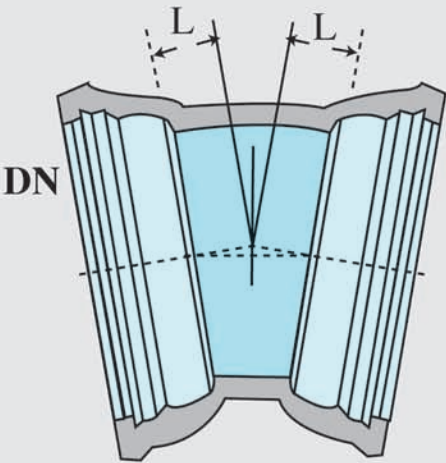


Nominal Diameter Dn Mm	L mm	MASS
		T Type Kgs
80	30	7.4
100	30	9.7
150	35	16.2
200	40	25.5
250	50	33.5
300	55	43
350	60	58
400	65	70
450	70	83.5
500	75	98.5
600	85	131
700	95	186
800	110	243
900	120	309
1000	130	386
1200	150	588
1400	130	747
1600	140	1007
1800	155	1331
2000	165	1702

BENDS

SOCKET BENDS 22.5 Degree

BS 4772 ISO 2531 CLASS K 12

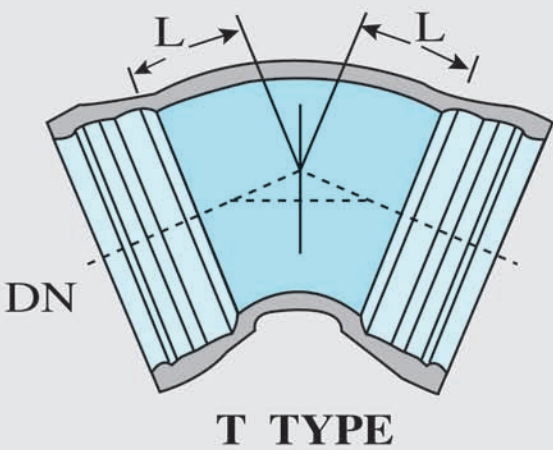


T TYPE

Nominal Diameter Dn Mm	L mm	MASS
		T Type Kgs
80	40	7.7
100	40	10
150	55	17.3
200	65	27.5
250	75	36
300	85	47
350	95	64
400	110	78.5
450	120	95
500	130	113
600	150	154
700	175	223
800	195	291
900	220	377
1000	240	474
1200	285	736
1400	260	933
1600	280	1259
1800	305	1663
2000	330	2144

SOCKET ENDS 45 Degree

BS 4772 ISO 2531 CLASS K 12

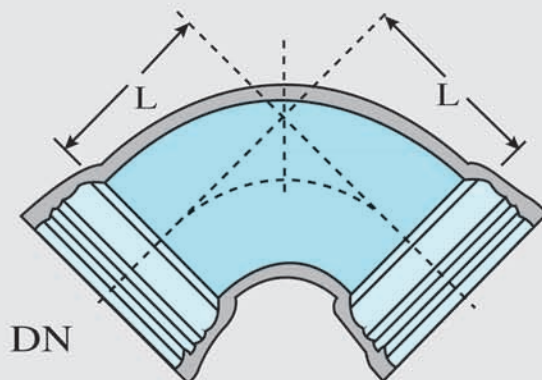


Nominal Diameter Dn Mm	L mm	MASS
		T Type Kgs
80	55	8.1
100	65	10.8
150	85	18.8
200	110	31
250	130	41.5
300	150	55
350	175	76
400	195	94
450	220	117
500	240	141
600	285	199
700	330	288
800	370	382
900	415	501
1000	460	641
1200	550	1007
1400	515	1273
1600	565	1740
1800	610	2296
2000	660	2970

BENDS

SOCKET ENDS 90 Degree

BS 4772 ISO 2531 CLASS K 12

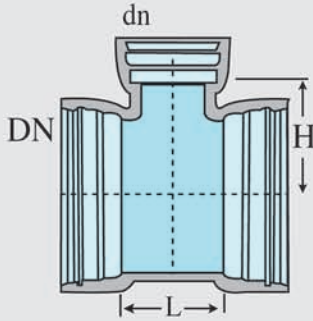


T TYPE

Nominal Diameter DN Mm	L mm	MASS
		T Type Kgs
80	100	9
100	120	12.1
150	170	22
200	220	36.5
250	270	51.5
300	320	70.5
350	370	97.5
400	420	124
450	470	156
500	520	193
600	620	280
700	720	408
800	820	554
900	920	733
1000	1020	947
1200	1220	1508
1400	1220	2419
1600	1290	3382
1800	1320	--
2000	1360	--

Tee Socket Ends

BS 4772 ISO 2531 CLASS K 14



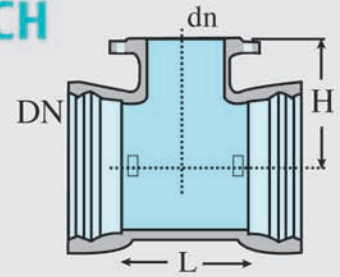
T TYPE

NOMINAL DIAMETER		L mm	H mm	MASS
DN mm	dn mm			T Type Kgs
80	80	170	85	13.8
100	80	170	95	16.7
100	100	190	95	18.2
150	80	170	120	24.5
150	100	195	120	26.5
150	150	255	125	31.5
200	80	175	145	35
200	100	200	145	37.5
200	150	255	150	43
200	200	315	155	50.5
250	100	200	210	48
250	150	315	220	59
250	200	315	220	63.5
250	250	375	230	71.5
300	100	205	235	54.5
300	150	320	245	68
300	200	320	245	72
300	300	435	260	90.5
350	100	205	260	70.5
350	150	325	270	86.5
350	200	325	270	90.5
350	300	440	285	111
350	350	495	290	124
400	100	210	285	83
400	150	325	295	101
400	200	325	295	105
400	300	440	310	127
400	400	560	320	155
450	150	330	320	117
450	200	330	320	121
450	300	445	335	146
450	400	560	345	175
450	450	620	350	190
500	150	330	345	135
500	250	330	345	139
500	300	450	360	167
500	400	565	370	198
500	500	680	380	231
600	150	340	395	175
600	200	340	395	178
600	300	455	410	211
600	400	570	420	248
600	600	800	440	325
700	200	345	445	248
700	300	460	460	286
700	400	575	470	328
700	600	810	490	416

NOMINAL DIAMETER		L mm	H mm	MASS
DN mm	dn mm			T Type Kgs
700	700	925	500	474
800	200	350	495	309
800	300	465	510	354
800	400	580	520	403
800	600	1045	540	580
800	800	1045	565	632
900	200	355	545	382
900	400	590	570	493
900	600	1170	590	747
900	800	1170	615	795
900	900	1170	625	826
1000	200	360	595	464
1000	400	595	620	592
1000	600	1290	640	943
1000	800	1290	665	988
1000	1000	1290	685	1051
1200	400	605	720	840
1200	600	840	740	1109
1200	800	1070	765	1198
1200	1000	1300	785	1401
1200	1200	1535	805	1644
1400	600	1030	840	1679
1400	800	1260	865	1910
1400	1000	1495	885	2441
1400	1200	1725	905	2795
1400	1400	1960	930	3124
1600	600	1040	940	2245
1600	800	1275	965	2546
1600	1000	1505	985	2851
1600	1200	1740	1010	3663
1600	1400	1970	1030	4066
1600	1600	2200	1050	4474
1800	600	1055	1040	--
1800	800	1285	1065	--
1800	1000	1520	1085	--
1800	1200	1750	1110	--
1800	1400	1980	1130	--
1800	1600	2215	1150	--
1800	1800	2445	1175	--
2000	600	1065	1140	--
2000	800	1300	1165	--
2000	1000	1530	1185	--
2000	1200	1760	1210	--
2000	1400	1995	1230	--
2000	1600	2225	1250	--
2000	1800	2460	1275	--
2000	2000	2690	1295	--
2200	C/F	C/F	C/F	--

DOUBLE SOCKET FLANGE BRANCH

BS 4772 ISO 2531 CLASS K 14

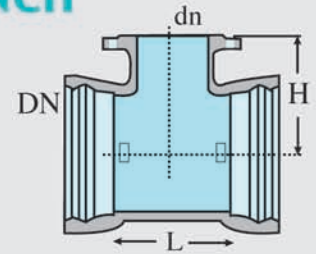


T TYPE

NOMINAL		L mm	H mm	MASS		
DN mm	dn mm			PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
80	80	170	165	14.7	14.7	14.7
100	80	170	175	17.5	17.5	17.5
100	100	190	180	18.9	18.9	19.4
150	80	170	205	25.5	25.5	25.5
150	100	195	210	27	27	27.5
150	150	255	220	32.5	32.5	33.5
200	80	175	235	36.5	36.5	36.5
200	100	200	240	38.5	38.5	39
200	150	255	250	44.5	44.5	45.5
200	200	315	260	51.5	51	53
250	80	200	270	47	47	47
250	100	200	270	47.5	47.5	48
250	150	315	290	59	59	60
250	200	315	290	62.5	62	64
250	250	375	300	71	71	74.5
300	80	205	300	54.5	54.5	54.5
300	100	205	235	55	55	55.5
300	150	320	320	68.5	68.5	69.5
300	200	320	320	72	71.5	73.5
300	300	435	340	62	91.5	97
350	80	205	330	70.5	70.5	70.5
350	100	205	330	71	71	71.5
350	150	325	350	87.5	87.5	88.5
350	200	325	350	90.5	90.5	92.5
350	300	440	370	113	113	118
350	350	495	380	123	126	134
400	80	210	360	83	83	83
400	100	210	360	84	84	84.5
400	150	325	380	102	102	103
400	200	325	380	105	105	107
400	300	440	400	129	129	134
400	400	560	420	155	160	171
450	80	215	395	97.5	97.5	97.5
450	100	215	395	98.5	98.5	99
450	150	330	410	119	119	120
450	200	330	410	122	122	124
450	300	445	430	149	149	154
450	400	560	450	177	181	192
450	450	620	460	192	200	211

DOUBLE SOCKET FLANGE BRANCH

BS 4772 ISO 2531 CLASS K 14

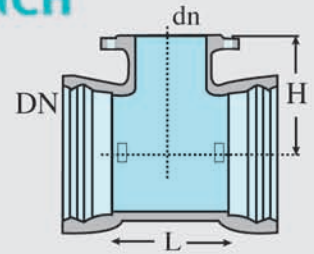


T TYPE

NOMINAL		L mm	H mm	MASS		
DN mm	dn mm			PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
500	80	215	420	113	113	113
500	100	215	420	114	114	114
500	150	330	440	137	137	138
500	200	330	440	140	140	142
500	300	450	460	171	171	176
500	400	565	480	201	206	217
500	500	680	500	236	249	260
600	80	220	480	145	145	145
600	100	220	480	146	146	147
600	150	340	500	177	177	178
600	200	340	500	180	180	182
600	300	455	520	216	216	221
600	400	570	540	252	257	268
600	600	800	580	338	362	374
700	100	345	525	242	242	243
700	150	345	525	246	246	247
700	200	345	525	249	249	251
700	400	575	555	329	333	334
700	600	810	585	421	445	456
700	700	925	600	476	487	--
800	100	350	585	304	304	305
800	150	350	585	308	308	309
800	200	350	585	311	311	313
800	400	580	615	405	410	421
800	600	1045	645	588	612	624
800	800	1045	675	640	655	--
900	150	355	645	381	381	382
900	200	350	645	385	384	386
900	400	590	675	497	502	513
900	600	1170	705	758	782	794
900	800	1170	735	808	823	--
900	900	1170	750	835	854	--
1000	150	360	705	464	464	465
1000	200	360	705	467	467	469
1000	400	595	735	598	603	614
1000	600	1290	765	958	982	994
1000	800	1290	795	1006	1021	--
1000	1000	1290	825	1072	1106	--

DOUBLE SOCKET FLANGE BRANCH

BS 4772 ISO 2531 CLASS K 14

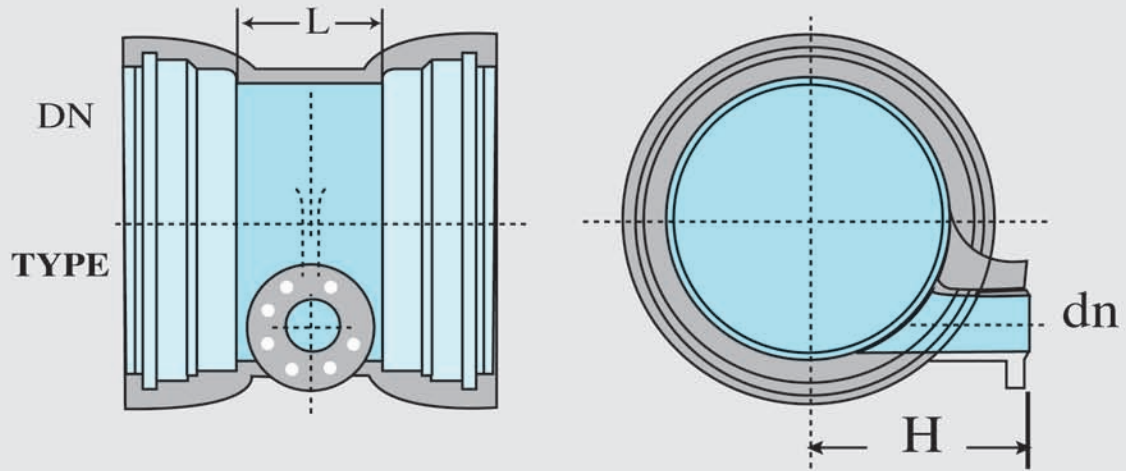


T TYPE

NOMINAL		L mm	H mm	MASS		
DN mm	dn mm			PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
1200	200	375	825	682	682	684
1200	400	605	855	852	856	867
1200	600	840	885	1031	1055	1067
1200	800	1070	915	1227	1242	--
1200	1000	1300	945	1436	1470	--
1200	1200	1535	975	1682	1736	--
1400	400	800	950	--	1368	--
1400	600	1030	980	1478	1505	--
1400	800	1260	1010	1709	1728	--
1400	1000	1495	1040	1955	1966	--
1400	1200	1725	1070	--	--	--
1400	1400	1960	1100	--	--	--
1600	400	810	1060	--	--	--
1600	600	1040	1090	1908	1934	--
1600	800	1275	1120	2192	2211	--
1600	1000	1505	1150	2480	2523	--
1600	1200	1740	1180	2799	2863	--
1600	1400	1970	1210	--	--	--
1600	1600	2200	1240	--	--	--
1800	600	1055	1200	2414	2440	--
1800	800	1285	1230	2748	2767	--
1800	1000	1520	1260	3095	3137	--
1800	1200	1750	1290	3460	3524	--
1800	1400	1980	1320	--	--	--
1800	1600	2215	1350	--	--	--
1800	1800	2445	1380	--	--	--
2000	600	1065	1310	2988	3015	--
2000	800	1300	1340	--	--	--
2000	1000	1530	1370	3790	3832	--
2000	1200	1760	1400	--	--	--
2000	1400	1965	1430	4645	4713	--
2000	1600	2251	1460	--	--	--
2000	1800	2460	1490	--	--	--
2000	2000	2690	1520	--	--	--

DOUBLE SOCKET FLANGE BRANCH

BS 4772 ISO 2531 CLASS K 14

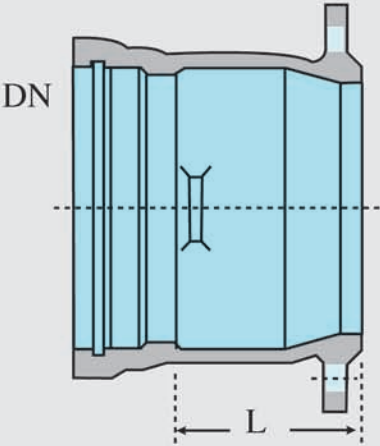


NOMINAL		L mm	H mm	MASS		
DN mm	dn mm			PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
200	80	245	250	39.5	39.5	39.5
250	80	250	275	49.5	49.5	49.5
300	80	255	300	62	62	62
350	100	280	325	83	83	83.5
400	100	280	350	97.5	97.5	98
450	100	285	375	115	115	116
500	100	290	400	134	134	134
600	100	295	450	173	173	173
700	150	360	500	255	255	256
800	150	365	550	--	--	--
900	150	370	600	382	382	384
1000	200	435	650	501	501	504
1200	200	445	750	679	679	682
1400	200	460	850	939	939	942
1600	400	700	950	1472	1476	1488
1800	400	715	1050	1872	1872	1884
2000	400	725	1150	2320	2325	2337

FLANGED SOCKET

BS 4772 ISO 2531 CLASS K 12

DN 80 to DN 2000 mm

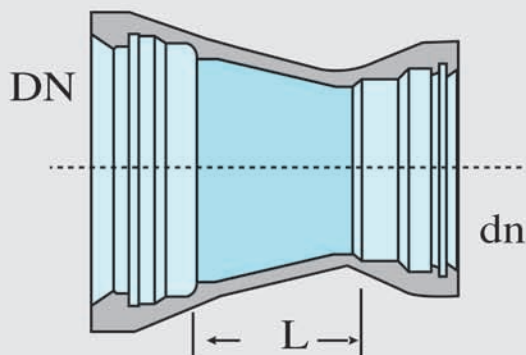


NOMINAL DIAMETER DN mm	L mm	MASS		
		T Type		
		PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
80	130	8.3	8.3	8.3
100	130	10.2	10.2	10.7
150	135	16.4	16.4	17.3
200	140	24.5	24.5	26
250	145	32	32	35.5
300	150	39	39	44
350	155	47	47	60
400	160	60	60	75
450	165	70.5	70.5	88
500	170	84	84.5	107
600	180	112	112	146
700	190	161	161	--
800	200	209	209	--
900	210	259	259	--
1000	220	323	323	--
1200	240	482	482	--
1400	310	654	654	--
1600	330	887	887	--
1800	350	1125	1125	--
2000	370	1414	1414	--

REDUCERS

SOCKET

BS 4772 ISO 2531 CLASS K 12



T TYPE

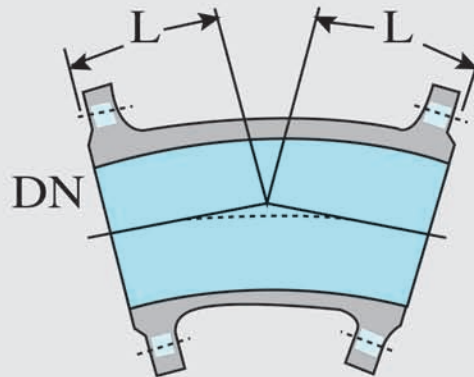
NOMINAL DIAMETER		L mm	MASS T Type Kgs
DN mm	dn mm		
100	80	90	9.2
150	80	190	14.9
150	100	150	15.3
200	100	250	23.5
200	150	150	24
250	150	250	32.5
250	200	150	33
300	150	350	43
300	200	250	43.5
300	250	150	41.5
350	200	360	59
350	250	260	57
350	300	160	52.5
400	200	460	73.5
400	250	360	72
400	300	260	67.5
400	350	160	66
450	250	460	89
450	300	360	84
450	350	260	83
450	400	160	77.5
500	300	460	104
500	350	360	103
500	400	260	97
500	450	160	90.5
600	350	560	149
600	400	460	143
600	450	360	137
600	500	260	129
700	400	680	210
700	450	580	205
700	500	480	198
700	600	280	179

NOMINAL DIAMETER		L mm	MASS T Type Kgs
DN mm	dn mm		
800	450	780	278
800	500	680	271
800	600	480	252
800	700	280	234
900	500	880	360
900	600	680	341
900	700	480	323
900	800	280	292
1000	600	880	446
1000	700	680	427
1000	800	480	397
1000	900	280	359
1200	700	1080	699
1200	800	880	668
1200	900	680	630
1200	1000	480	582
1400	800	760	--
1400	900	660	--
1400	1000	560	1015
1400	1200	360	973
1600	1000	760	1427
1600	1200	560	1355
1600	1400	360	1316
1800	1200	760	--
1800	1400	560	--
1800	1600	360	--
2000	1200	960	--
2000	1400	160	--
2000	1600	560	--
2000	1800	360	--

BENDS

FLANGE BENDS 11.25 Degree

BS 4772 ISO 2531 CLASS K 12

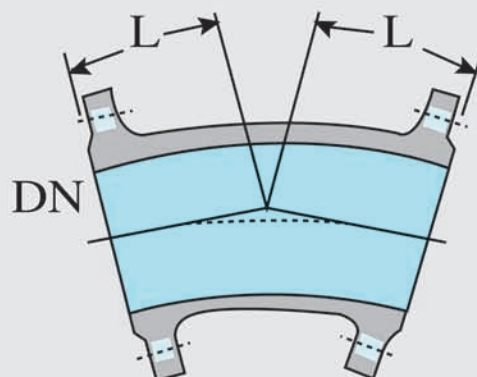


Nominal Diameter DN Mm	L mm	MASS		
		PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
80	130	9.5	9.5	9.5
100	140	11.5	11.5	12.5
150	160	19.1	19.1	21
200	180	28.5	28	32
250	350	56.5	56	63.5
300	400	79.5	79	89.5
350	298	79	84	100
400	324	100	109	131
450	349	123	139	160
500	375	152	179	200
600	426	222	269	294
700	478	313	336	--
800	529	426	455	--
900	581	546	584	--
1000	632	704	773	--
1200	735	1094	1204	--
1400	835	1560	1674	--
1600	940	2203	2382	--
1800	345	1342	1566	--
2000	375	1694	1970	--

BENDS

FLANGE BENDS 22.50 Degree

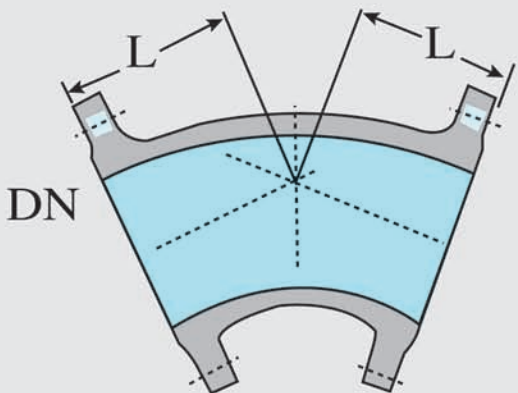
BS 4772 ISO 2531 CLASS K 12



Nominal Diameter DN Mm	L mm	MASS		
		PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
80	130	9.4	9.4	9.4
100	140	11.5	11.5	12.5
150	160	19.1	19.1	21
200	180	28.5	28	32
250	350	56.5	56	63
300	400	79	78.5	89
350	298	78.5	84	99.5
400	324	99.5	109	131
450	349	122	138	160
500	375	151	178	199
600	426	221	268	292
700	478	331	334	--
800	529	423	453	--
900	581	543	581	--
1000	632	700	769	--
1200	735	1088	1198	--
1400	835	1551	1664	--
1600	940	2190	2369	--
1800	480	1640	1864	--
2000	520	2081	2357	--

FLANGE BENDS 45 Degree

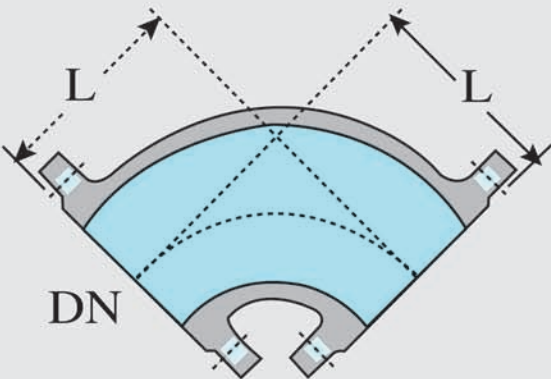
BS 4772 ISO 2531 CLASS K 12



Nominal Diameter DN Mm	L mm	MASS		
		PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
80	130	9.3	9.3	9.3
100	140	11.4	11.4	12.5
150	160	19.9	18.9	21
200	180	28	27.5	31.5
250	350	55.5	54.5	62
300	400	77.5	76.5	87.5
350	298	77	82.5	98
400	324	97.5	107	129
450	349	120	135	157
500	375	148	175	196
600	426	216	263	287
700	478	304	328	--
800	529	414	444	--
900	581	531	569	--
1000	632	684	753	--
1200	735	1062	1172	--
1400	775	1431	1544	--
1600	845	1972	2151	--
1800	910	2539	2763	--
2000	980	3243	3519	--

FLANGE BENDS 90 Degree

BS 4772 ISO 2531 CLASS K 12

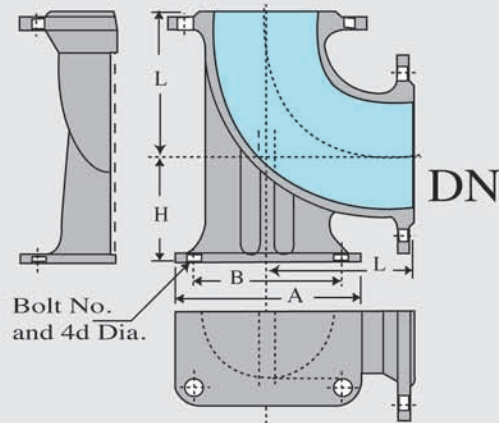


Nominal Diameter DN Mm	L mm	MASS		
		PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
80	165	9.6	9.6	9.6
100	180	12	12	13
150	220	20.5	20.5	22.5
200	260	31.5	31	35
250	350	50.5	49.5	57
300	400	70	69.5	80
350	450	90.5	96	112
400	500	117	126	148
450	550	147	163	184
500	600	184	211	232
600	700	216	263	287
700	800	277	324	348
800	900	543	573	--
900	1000	708	746	--
1000	1100	919	988	--
1200	1300	1452	1562	--
1400	1350	1948	2062	--
1600	1450	2663	2841	--
1800	1500	3348	3572	--

BENDS

FLANGE BENDS DUCKFOOT 90 Degree BEND

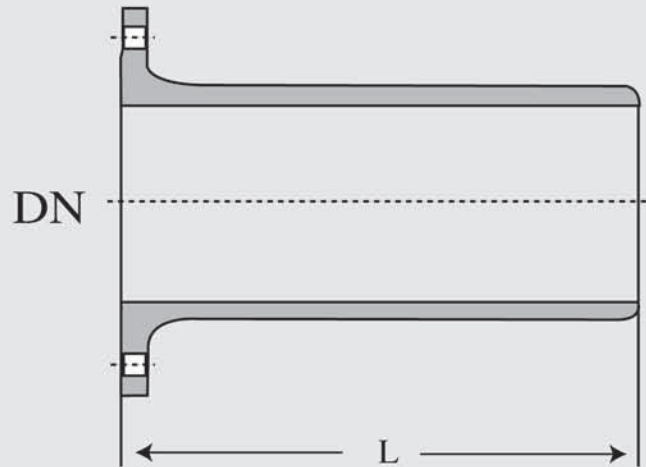
BS 4772 ISO 2531 CLASS K 12



NOMINAL DIAMETER DN mm	L mm	H mm	A mm	B mm	d	MASS		
						PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
80	165	110	180	120	19	14.8	14.8	14.8
100	180	125	200	130	23	18.2	18.2	19.2
150	220	160	250	165	28	31.5	31.5	33.5
200	260	190	300	215	28	49	48.5	52.5
250	350	225	350	250	31	78.5	77.5	85
300	400	255	400	300	31	111	111	121
350	450	290	450	350	34	147	153	168
400	500	320	500	390	37	192	201	223
450	550	350	550	440	37	245	261	283
500	600	385	600	490	37	309	336	357
600	700	450	700	580	40	475	522	546
700	800	515	800	680	43	684	708	--
800	900	580	900	770	49	944	974	--
900	1000	645	1000	870	49	1252	1290	--
1000	1100	710	1100	960	56	1629	1698	--
1200	1300	840	1300	1160	56	2599	2709	--

FLANGED SPIGOT

BS 4112 ISO 2531 Class K12

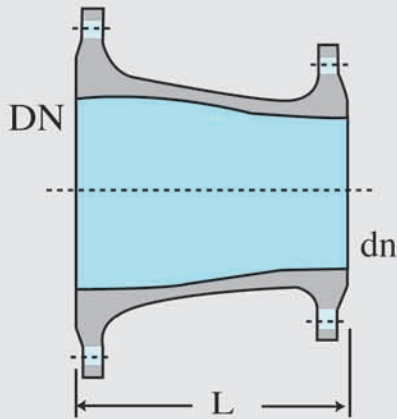


DN	L mm	MASS Kg				Extra for
		PN 10 Kgs	PN 16 Kgs	PN 25 Kgs	PN 40 Kgs	
80	350	7.8	7.8	7.8	7.8	0.6
100	360	9.4	9.5	10.2	10.2	0.8
125	370	12.4	12.4	13	14.3	1
150	380	15.6	15.6	16.6	18.7	1.2
200	400	23	22.5	22.5	30	1.5
250	420	32	31.5	35.5	45.5	2
300	440	43	42.5	47.5	63	3
350	460	52	55	64	85	5.5
400	480	64	70	81	117	6.5
450*	500	82	88	98	153	8
500	520	94	109	121	154	9
600	560	133	159	173	226	12
700	600	176	194	228	-	15
800	600	226	245	294	-	17
900	600	272	295	356	-	19
1000	600	324	369	447	-	21
1200	600	469	526	603	-	25
1400	710	674	726	-	-	42
1600	780	935	1019	-	-	52

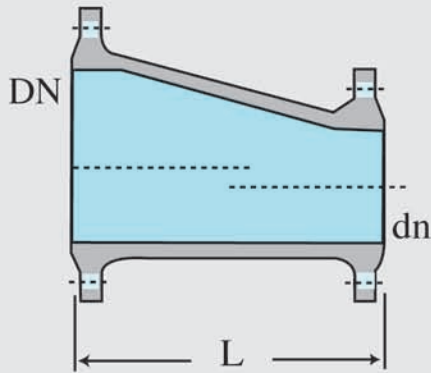
REDUCERS

FLANGE

BS 4772 ISO 2531 CLASS K 12



CONCENTRIC TYPE



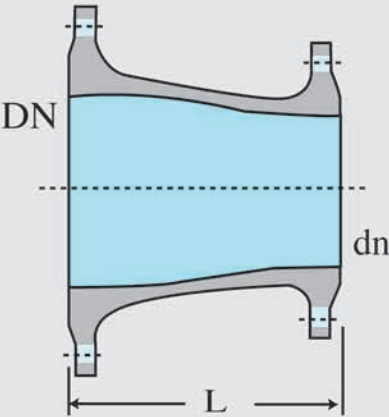
FLAT TYPE

NOMINAL		L mm	MASS		
DN mm	dn mm		PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
100	80	200	9.4	9.4	9.9
150	80	400	16.4	16.4	17.4
150	100	300	15.3	15.3	16.8
200	100	600	27.5	27.5	30
200	150	300	22.5	22	25
250	150	600	39	39	43.5
250	200	300	31	30.5	36
300	150	650	48.5	48.5	55
300	200	600	52	51.5	59
300	250	300	41	40	49
350	200	650	61.5	64	74
350	250	600	65.5	67.5	79
350	300	300	50	52.5	66
400	200	700	73.5	77.5	90.5
400	250	650	77	81.5	96
400	300	600	80.5	85	101
400	350	300	60	67	86
450	250	700	89.5	97	112
450	300	650	93.5	101	117
450	350	600	95.5	106	125
450	400	300	70.5	83	105
500	300	700	109	122	138
500	350	650	111	127	145
500	400	600	113	131	153
500	450	300	83	104	126

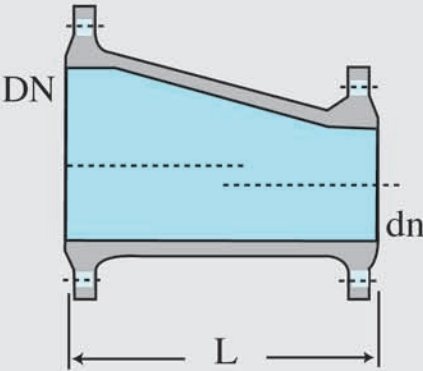
REDUCERS

FLANGE

BS 4772 ISO 2531 CLASS K 12



CONCENTRIC TYPE



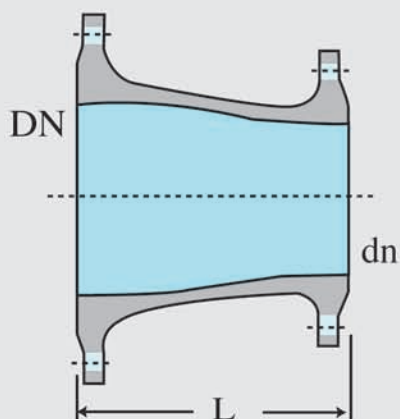
FLAT TYPE

NOMINAL		L mm	MASS		
DN mm	dn mm		PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
600	350	750	147	174	193
600	400	700	150	178	201
600	450	650	151	183	206
600	500	600	154	191	214
700	400	800	196	212	--
700	450	750	197	217	--
700	500	700	200	225	--
700	600	600	204	239	--
800	450	900	263	286	--
800	500	800	256	284	--
800	600	700	260	298	--
800	700	600	263	290	--
900	500	1000	338	370	--
900	600	800	318	360	--
900	700	700	321	352	--
900	800	600	325	358	--
1000	600	1000	422	480	--
1000	700	800	396	442	--
1000	800	700	399	448	--
1000	900	600	393	446	--
1200	700	1345	711	777	--
1200	800	1160	638	758	--
1200	900	975	652	726	--
1200	1000	790	614	703	--
1200	1100	605	566	655	--

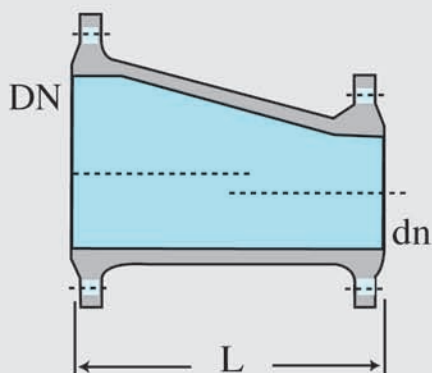
REDUCERS

FLANGE

BS 4772 ISO 2531 CLASS K 12



CONCENTRIC TYPE

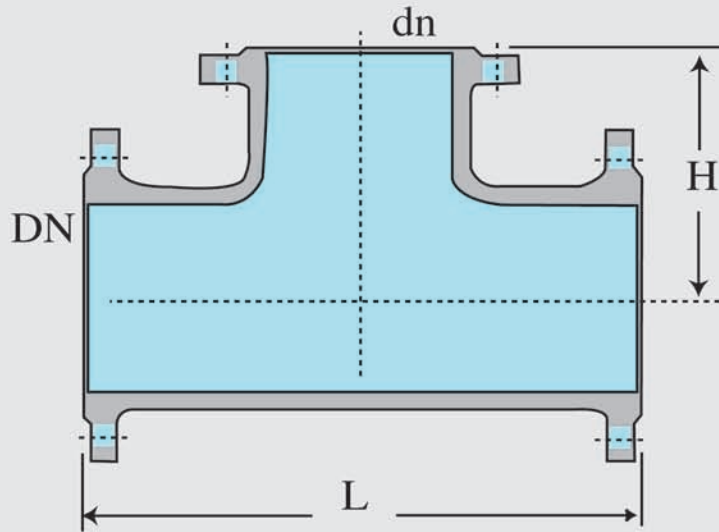


FLAT TYPE

NOMINAL		L mm	MASS		
DN mm	dn mm		PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
1400	800	1590	1034	1105	--
1400	900	1405	998	1074	--
1400	1000	1220	961	1052	--
1400	1100	1035	914	1005	--
1400	1200	850	859	971	--
1600	1000	1650	1424	1547	--
1600	1100	1465	1377	1502	--
1600	1200	1280	1324	1468	--
1600	1400	910	1165	1311	--
1600	1500	725	1073	1250	--
1800	1200	1895	1910	2057	--
1800	1200	1710	1858	2024	--
1800	1400	1340	1701	1870	--
1800	1500	1155	1610	1810	--
1800	1600	970	1517	1718	--
2000	1200	2140	2512	2705	--
2000	1400	1770	2358	2553	--
2000	1500	1585	2268	2492	--
2000	1600	1400	2176	2404	--
2000	1800	1030	1903	2153	--

ALL FLANGE TEE

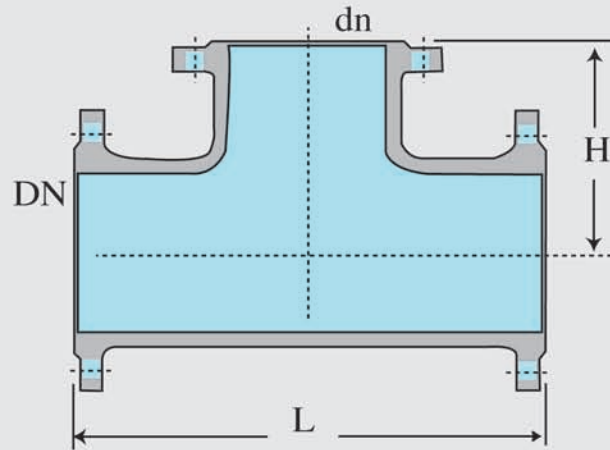
BS 4772 ISO 2531 CLASS K 14



NOMINAL		L mm	H mm	MASS		
DN mm	dn mm			PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
80	80	330	165	15.8	15.8	15.8
100	80	360	175	18.6	18.6	19.6
100	100	360	180	19.5	19.5	21
150	80	440	205	29	29	31
150	100	440	210	30	30	32.5
150	150	440	220	33.5	33.5	36.5
200	80	520	235	43	42.5	46.5
200	100	520	240	44	43.5	48
200	150	520	250	47	47	52
200	200	520	260	51	50.5	56.5
250	100	700	275	69.5	68	76
250	150	700	325	73.5	73	81
250	200	700	325	77.5	76.5	86
250	250	700	350	84	83	93.5
300	100	800	300	94.5	93.5	105
300	150	800	350	99	98.5	110
300	200	800	350	103	102	115
300	300	800	400	117	116	132
350	100	850	325	117	123	139
350	150	850	325	120	126	143
350	200	850	325	124	129	147
350	300	850	425	140	145	166
350	350	850	425	145	153	177

ALL FLANGE TEE

BS 4772 ISO 2531 CLASS K 14

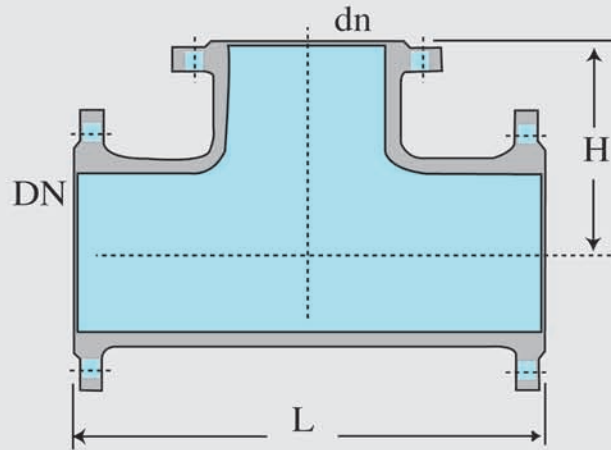


NOMINAL		L mm	H mm	MASS		
DN mm	dn mm			PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
400	100	900	350	146	155	178
400	150	900	350	149	158	181
400	200	900	350	152	161	185
400	300	900	450	168	177	204
400	400	900	450	178	193	226
450	100	950	375	177	193	215
450	150	950	375	180	196	219
450	200	950	375	183	199	222
450	300	950	475	199	215	242
450	400	950	475	210	230	263
450	450	950	475	216	240	272
500	100	1000	400	215	242	264
500	150	1000	400	218	245	267
500	200	1000	400	221	248	271
500	300	1000	500	237	264	291
500	400	1000	500	248	279	311
500	500	1000	500	261	301	333
600	150	1100	450	309	356	381
600	200	1100	450	312	359	385
600	300	1100	550	328	375	404
600	400	1100	550	338	390	424
600	600	1100	550	367	438	473
700	200	650	525	281	304	--
700	300	760	540	319	342	--
700	400	870	555	358	386	--
700	600	1200	585	476	523	--
700	700	1200	600	499	534	--

TEES

ALL FLANGE TEE

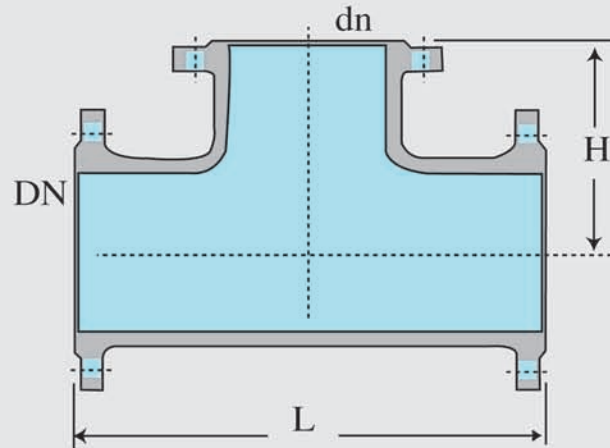
BS 4772 ISO 2531 CLASS K 14



NOMINAL		L mm	H mm	MASS		
DN mm	dn mm			PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
800	200	690	585	368	397	--
800	300	800	600	413	443	--
800	400	910	615	459	493	--
800	600	1350	645	633	687	--
800	800	1350	675	685	730	--
900	200	730	645	454	492	--
900	400	950	675	561	604	--
900	600	1500	705	810	872	--
900	800	1500	735	860	913	--
900	900	1500	750	887	944	--
1000	200	770	705	570	638	--
1000	400	990	735	694	767	--
1000	600	1650	765	1036	1129	--
1000	800	1650	795	1085	1168	--
1000	1000	1650	825	1150	1253	--
1200	400	1070	855	1008	1122	--
1200	600	1290	885	1176	1312	--
1200	800	1510	915	1367	1492	--
1200	1000	1730	945	1570	1714	--
1200	1200	1950	975	1806	1970	--
1400	600	1320	980	1527	1665	--
1400	800	1540	1010	1755	1884	--
1400	1000	1760	1040	1995	2143	--
1400	1200	1980	1070	2262	2431	--
1400	1400	2200	1100	2545	2715	--

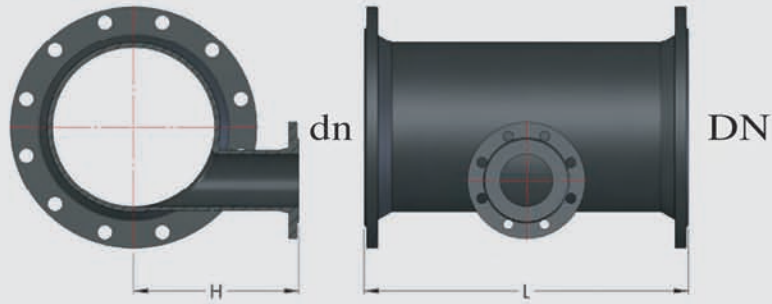
ALL FLANGE TEE

BS 4772 ISO 2531 CLASS K 14



NOMINAL		L mm	H mm	MASS		
DN mm	dn mm			PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
1600	600	1380	1090	2019	2221	--
1600	800	1600	1120	2294	2487	--
1600	1000	1820	1150	2578	2971	--
1600	1200	2040	1180	2888	3122	--
1600	1400	2260	1210	3208	3444	--
1600	1600	2480	1240	3586	3854	--
1800	600	1440	1200	2521	2768	--
1800	800	1880	1260	3184	3442	--
1800	1000	1880	1260	3184	3442	--
1800	1200	2100	1290	3543	3822	--
1800	1400	2320	1320	3910	4190	--
1800	1600	2540	1350	4328	4641	--
1800	1800	2760	1380	4750	5086	--
2000	600	1500	1310	3119	3419	--
2000	800	1720	1340	3505	3796	--
2000	1000	1940	1370	3898	4209	--
2000	1200	2160	1400	4314	4644	--
2000	1400	2380	1430	4733	5066	--
2000	1600	2600	1460	5202	5567	--
2000	1800	2820	1490	5668	6055	--
2000	2000	3040	1520	6185	6599	--

TEES

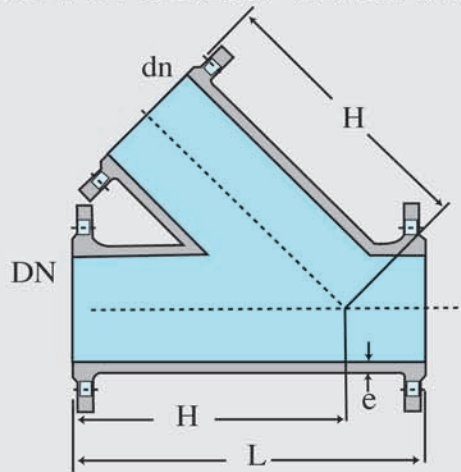


ALL FLANGE INVERT TEE

SPECIFICATION		DIMENSION (MM)		UNIT WEIGHT (KG)		
DN	dn	L	H	PN10	PN16	PN25
100	80	360	195	20.0	20.0	21.0
150	80	440	220	31.0	31.0	33.0
	100	440	220	32.0	32.0	35.0
200	80	520	250	45.0	44.0	49.0
	100	520	250	46.0	46.0	51.0
250	80	700	275	70.0	69.0	77.0
	100	700	275	71.0	71.0	79.0
300	80	800	305	96.0	95.0	107.0
	100	800	305	98.0	97.0	109.0
	150	800	305	103.0	102.0	115.0
350	80	850	350	119.0	125.0	142.0
	100	850	350	121.0	127.0	144.0
	150	850	350	127.0	133.0	151.0
400	80	900	365	146.0	158.0	180.0
	100	900	365	148.0	160.0	183.0
	150	900	365	154.0	166.0	189.0
	200	900	365	161.0	172.0	197.0
450	80	950	380	180.0	196.0	218.0
	100	950	380	182.0	198.0	221.0
	150	950	380	189.0	204.0	227.0
	200	950	380	196.0	211.0	235.0
500	80	1000	400	214.0	244.0	268.0
	100	1000	400	216.0	246.0	270.0
	150	1000	400	222.0	253.0	277.0
	200	1000	400	230.0	260.0	286.0
600	80	1100	435	304.0	357.0	386.0
	100	1100	435	307.0	360.0	389.0
	150	1100	450	314.0	367.0	396.0
	200	1100	450	322.0	375.0	405.0
700	150	600	500	264.0	294.0	364.0
	200	650	500	286.0	316.0	387.0
800	150	670	540	355.0	393.0	493.0
	200	690	540	371.0	409.0	510.0
900	150	720	580	442.0	490.0	612.0
	200	730	580	456.0	503.0	626.0
1000	150	770	630	556.0	639.0	796.0
	200	770	630	567.0	650.0	807.0
1100	150	800	660	701.0	771.0	
	200	850	660	740.0	809.0	
1200	150	800	700	789.0	918.0	
	200	850	700	833.0	961.0	

WYE FLANGED 45 DEGREE

BS 4772 ISO 2531 CLASS K 14

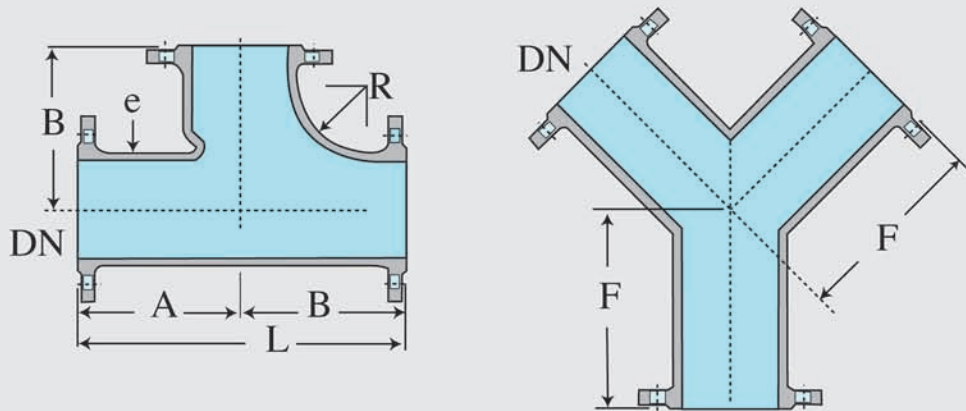


NOMINAL DIAMETER		e mm	L mm	H mm	MASS
DN mm	dn mm				PN 16 Kgs
80	80	8.1	500	375	21
100	80	8.4	540	405	25
100	100	8.4	540	405	27
150	100	9.1	640	480	44
150	150	9.1	640	480	47
200	100	9.8	735	560	63
200	150	9.8	735	560	67
200	200	9.8	735	560	71
250	100	10.5	830	640	90
250	150	10.5	830	640	95
250	200	10.5	830	640	99
250	250	10.5	830	640	105
300	100	11.2	930	715	127
300	150	11.2	930	715	132
300	200	11.2	930	715	138
300	250	11.2	930	715	142
300	300	11.2	930	715	147
350	150	11.9	880	790	152
350	200	11.9	880	790	156
350	250	11.9	880	790	161
350	300	11.9	880	790	164
350	350	11.9	880	790	168

NOMINAL DIAMETER		e mm	L mm	H mm	MASS
DN mm	dn mm				PN 16 Kgs
400	150	12.6	970	870	184
400	200	12.6	970	870	188
400	250	12.6	970	870	193
400	300	12.6	970	870	198
400	350	12.6	970	870	201
400	400	12.6	970	870	205
450	200	13.3	1060	960	251
450	250	13.3	1060	960	257
450	300	13.3	1060	960	261
450	350	13.3	1060	960	266
450	400	13.3	1060	960	271
450	450	13.3	1060	960	277
500	250	14	1140	1025	324
500	300	14	1140	1025	329
500	350	14	1140	1025	335
500	400	14	1140	1025	340
500	450	14	1140	1025	346
500	500	14	1140	1025	353
600	300	15.4	1310	1180	513
600	350	15.4	1310	1180	518
600	400	15.4	1310	1180	524
600	450	15.4	1310	1180	529
600	500	15.4	1310	1180	535
600	600	15.4	1310	1180	541

RADIAL TEE FLANGED TRUE WYE FLANGED

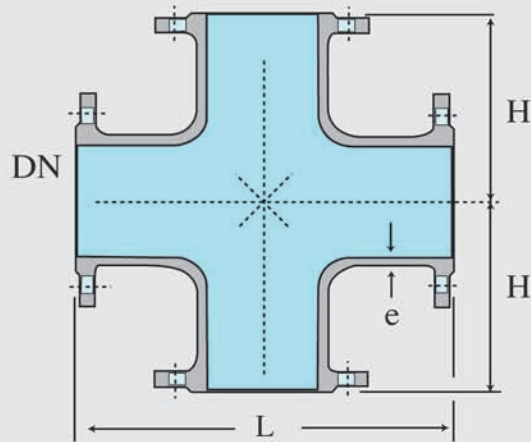
BS 4772 ISO 2531 CLASS K 14



NOMINAL DIAMETER	A mm	B mm	e mm	L mm	R mm	MASS	NOMINAL DIAMETER	F mm	MASS
DN mm						PN 16 Kgs	DN mm		PN 16 Kgs
80	165	380	8.1	545	330	23	80	165	18
100	180	400	8.4	580	340	29.5	100	180	21
150	220	450	9.1	670	385	48.5	150	220	35
200	260	500	9.8	760	430	72.5	200	260	52
250	360	550	10.5	900	475	106	250	360	86
300	400	600	11.2	1000	515	146	300	400	123
350	450	650	11.9	1100	560	204	350	450	180
400	500	700	12.6	1200	605	264	400	500	238
450	550	750	13.3	1300	650	332	450	550	303
500	600	800	14	1400	690	423	500	600	393
600	700	900	15.4	1600	780	633	600	700	601

CROSS FLANGED

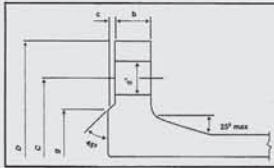
BS 4772 ISO 2531 CLASS K 14



NOMINAL DIAMETER DN mm	E mm	H mm	L mm	MASS	
				PN 10 Kgs	PN 16 Kgs
80	8.1	165	330	19	19
100	8.4	180	360	25	25
125	8.8	200	400	33	33
150	9.1	220	440	42	42
200	9.8	260	520	63	69
250	10.5	350	700	104	103
300	11.2	400	800	146	144
400	12.6	450	900	221	239
500	14	500	1000	315	371
600	15.4	550	1100	444	342
700	16.8	600	1200	--	--
800	18.2	675	1350	--	--
900	21	750	1500	--	--
1000	22.5	825	1650	--	--
1200	27.5	975	1950	--	--
1400	32.3	1125	2250	--	--
1600	37.8	1020	2330	--	--

DIMENSION OF FLANGES

BS 4772/ISO 2531



Dimension of Flanges

NOTE:
BOLT HOLES SHALL BE ARRANGED SYMMETRICALLY ABOUT THE VERTICAL CENTERLINE THROUGH THE FLANGE FACES. IN THE CASE OF TEES, THIS VERTICAL CENTERLINE IS DEFINED WITH THE FACE OF THE BRANCH FLANGE HELD PARALLEL TO THE VERTICAL PLANE

PN 10 FLANGE DIN 2632	NOMINAL DIAMETER DN	DIMENSIONS					BOLT			MASS (Kg)	NOMINAL DIAMETER DN
		g	D	b	c	C	SIZE	d	No		
	80	132	200	16.0	3	160	M16	19	8	2.9	80
	100	156	220	16.0	3	180	M16	19	8	3.3	100
	125	184	250	16.0	3	210	M16	19	8	4.0	125
	150	211	285	16.0	3	240	M20	23	8	4.9	150
	200	266	340	17.0	3	295	M20	23	8	6.8	200
	250	319	400	19.0	3	350	M20	23	12	9.6	250
	300	370	455	20.5	4	400	M20	23	12	12.8	300
	350	429	505	20.5	4	460	M20	23	16	14.1	350
	400	480	565	20.5	4	515	M24	28	16	16.3	400
	450	527	615	21.5	4	565	M24	28	20	20.2	450
	500	582	670	22.5	4	620	M24	28	20	21.8	500
	600	682	780	25.0	5	725	M27	31	20	30.8	600
	700	794	895	27.5	5	840	M27	31	24	40.5	700
	800	901	1015	30.0	5	950	M30	34	24	54.8	800
	900	1001	1115	32.5	5	1050	M30	34	28	64.3	900
	1000	1112	1230	35.0	5	1160	M33	37	28	81.4	1000
	1100	1215	1340	37.5	5	1270	M33	37	32	112.8	1100
	1200	1328	1455	40.0	5	1380	M36	40	32	120.9	1200
	1400	1530	1675	41.0	5	1590	M39	43	36	147.8	1400
	1500	1640	1785	42.5	5	1700	M39	43	36	201.4	1500
	1600	1750	1915	44.0	5	1820	M45	49	40	206.4	1600
	1800	1950	2115	47.0	5	2020	M45	49	44	236.3	1800
	2000	2150	2325	50.0	5	2230	M45	49	48	279.4	2000
	2100	2270	2430	51.5	5	2335	M45	49	52	395.4	2100
	2200	2370	2550	53.0	6	2440	M52	56	52	345.6	2200
	2400	2570	2760	56.0	6	2650	M52	56	56	398.8	2400
	2600	2780	2960	59.0	6	2850	M52	56	60	436.9	2600

Dimensions in millimeters

PN 16 FLANGE DIN 2633	NOMINAL DIAMETER DN	DIMENSIONS					BOLT			MASS (Kg)	NOMINAL DIAMETER DN
		g	D	b	c	C	SIZE	d	No		
	80	132	200	16.0	3	160	M16	19	8	2.9	80
	100	156	220	16.0	3	180	M16	19	8	3.3	100
	125	184	250	16.0	3	210	M16	19	8	4.0	125
	150	211	285	16.0	3	240	M20	23	8	4.9	150
	200	266	340	17.0	3	295	M20	23	12	6.6	200
	250	319	400	19.0	3	355	M24	28	12	9.2	250
	300	370	455	20.5	4	410	M24	28	12	12.4	300
	350	429	520	22.5	4	470	M24	28	16	17.2	350
	400	480	580	24.0	4	525	M27	31	16	21.9	400
	450	544	640	26.0	4	585	M27	31	20	28.1	450
	500	609	715	27.5	4	650	M30	34	20	37.0	500
	600	720	840	31.0	5	770	M33	37	20	57.3	600
	700	794	910	34.5	5	840	M33	37	24	55.6	700
	800	901	1025	38.0	5	950	M36	40	24	74.0	800
	900	1001	1125	41.5	5	1050	M36	40	28	88.2	900
	1000	1112	1255	45.0	5	1170	M39	43	28	122.9	1000
	1100	1215	1355	48.5	5	1270	M39	43	32	147.8	1100
	1200	1328	1485	52.0	5	1390	M45	49	32	185.2	1200
	1400	1530	1685	55.0	5	1590	M45	49	36	215.9	1400
	1500	1640	1820	57.5	5	1710	M52	56	36	289.3	1500
	1600	1750	1930	60.0	5	1820	M52	56	40	308.4	1600
	1800	1950	2130	65.0	5	2020	M52	56	44	362.2	1800
	2000	2150	2345	70.0	5	2230	M56	62	48	432.2	2000
	2100	2260	2450	72.5	5	2335	M56	62	52	559.6	2100
	2200	2370	2555	75.0	6	2440	M56	62	52	512.3	2200
	2400	2570	2765	80.0	6	2650	M56	62	56	601.0	2400
	2600	2780	2965	85.0	6	2850	M56	62	60	672.0	2600

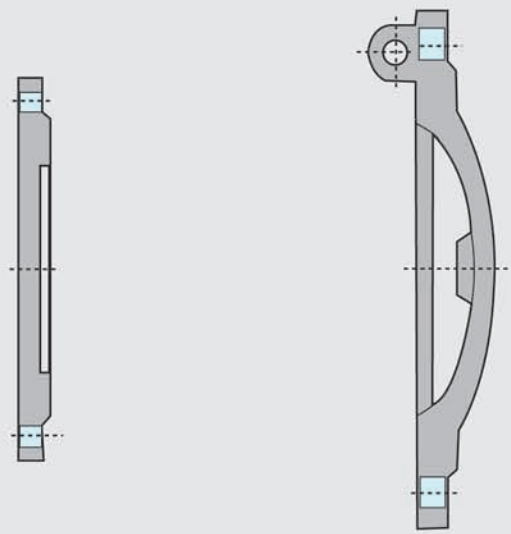
Dimensions in millimeters

PN 25 FLANGE DIN 2634	NOMINAL DIAMETER DN	DIMENSIONS					BOLT			MASS (Kg)	NOMINAL DIAMETER DN
		g	D	b	c	C	SIZE	d	No		
	80	132	200	16.0	3	160	M16	19	8	2.9	80
	100	156	235	16.0	3	190	M20	23	8	3.8	100
	125	184	270	16.0	3	220	M24	28	8	4.6	125
	150	211	300	17.0	3	250	M24	28	8	5.9	150
	200	274	360	19.0	3	310	M24	28	12	8.7	200
	250	330	425	21.5	3	370	M27	31	12	13.1	250
	300	389	485	23.5	4	430	M27	31	16	18.0	300
	350	448	555	26.0	4	490	M30	34	16	25.5	350
	400	503	620	28.0	4	550	M33	37	16	33.2	400
	450	553	670	30.5	4	600	M33	37	20	39.0	450
	500	609	730	32.5	4	660	M33	37	20	48.7	500
	600	720	845	37.0	5	770	M36	40	20	71.5	600
	700	820	960	41.5	5	875	M39	43	24	90.3	700
	800	928	1085	46.0	5	990	M45	49	24	123.2	800
	900	1028	1185	50.5	5	1090	M45	49	28	148.6	900
	1000	1140	1320	55.0	5	1210	M52	56	28	200.7	1000
	1200	1350	1530	64.0	5	1420	M52	56	32	284.7	1200
	1400	1560	1755	69.0	5	1640	M56	62	36	368.1	1400
	1600	1780	1975	76.0	5	1860	M56	62	40	485.5	1600
	1800	1985	2195	83.0	5	2070	M64	70	44	601.9	1800
	2000	2210	2425	90.0	5	2300	M64	70	48	784.9	2000

Dimensions in millimeters

BLANK FLANGE

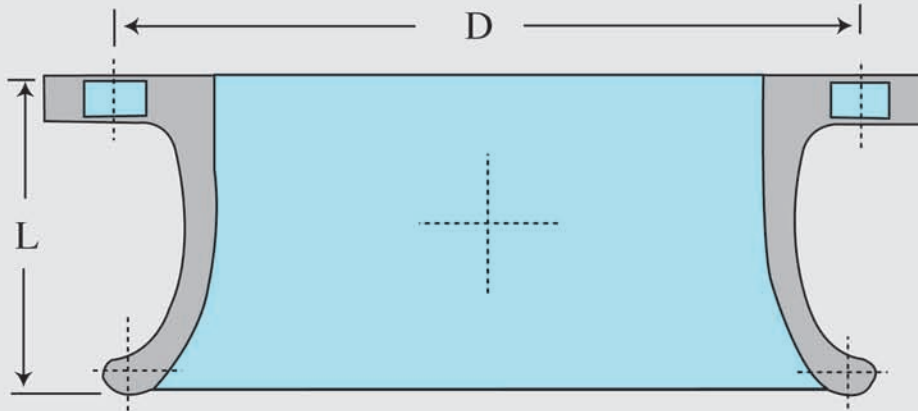
BS 4772 ISO 2531 CLASS K 12



NOMINAL DIAMETER DN mm	MASS		
	PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
80	3.5	3.5	3.5
100	4.3	4.3	4.8
150	7.2	7.2	8.3
200	11	10.8	13.3
250	16.9	16.6	21
300	24	23	30
350	32.5	37	46.5
400	40.5	48.5	62.5
450	50	63.5	79
500	62	83	100
600	94	130	154
700	136	169	--
800	189	235	--
900	244	307	--
1000	319	413	--
1200	504	659	--
1400	687	904	--
1600	955	1280	--
1800	1240	1687	--
2000	1630	2226	--

FLANGED BELLMOUTH

BS 4772 ISO 2531 CLASS K 12

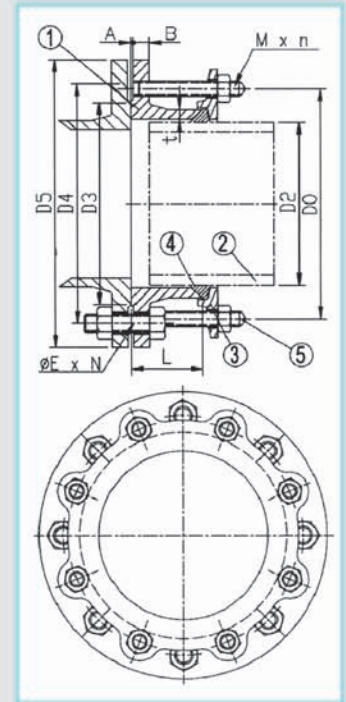


NOMINAL DIAMETER DN mm	D mm	L mm	MASS		
			PN 10 Kgs	PN 16 Kgs	PN 25 Kgs
80	150	130	5.2	5.2	5.2
100	175	135	6.2	6.2	6.7
150	230	150	10.1	10.1	11.1
200	290	170	15	14.8	16.8
250	345	185	21	20.5	24.5
300	405	205	28.5	28.5	33.5
350	460	220	35.5	38	46
400	520	240	45	49.5	60.5
500	575	255	54	62	73
600	750	310	96.5	120	132
700	865	345	135	146	--
800	980	380	182	187	--
900	1095	415	231	250	--
1000	1210	450	297	331	--
1200	1440	520	457	512	--
1400	1670	590	646	702	--
1600	1900	660	906	995	--
1800	2130	730	1185	1297	--
2000	2360	800	1530	1668	--

FLANGE ADAPTOR

ISO - 2531 / BS EN 545

PN-10-16-25-40



No	Part Name	Material
1	Body	Ductile Iron
2	Pipe	Ductile Iron
3	Retainer	Ductile Iron
4	Ring	Rubber
5	Stud	Electro Galvanised Steel
6	Coating	Rilsan Nylon 11 or FBE coating with 250 Micrometers

Ductile Iron Pipe Flange drilled to BS 4504:1989 PN 16

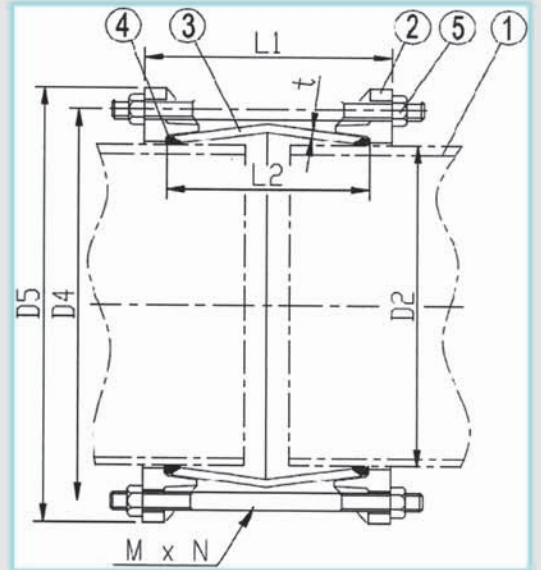
dimension in mm

DN	D2	D3	D4	D5	DO	L	t	A	B	E	N	M	n	W (Kg)
80	98	132	160	200	166	73	7.0	3	16.0	19	8	M16	4	7.6
100	118	156	180	220	187	76	7.5	3	16.0	19	8	M16	4	8.4
125	144	184	210	250	210	76	7.5	3	16.0	19	8	M16	4	11.2
150	170	211	240	285	240	76	8.0	3	16.0	23	8	M16	4	13.7
200	222	266	295	340	295	76	8.5	3	17.0	23	12	M16	6	18.6
250	274	319	355	400	355	90	9.0	3	19.0	28	12	M16	6	25.0
300	326	370	410	455	410	90	10.0	4	20.5	28	12	M20	6	29.9
350	378	429	470	520	470	108	10.0	4	22.5	28	16	M20	8	45.2
400	429	480	525	580	525	108	11.0	4	24.0	31	16	M20	8	55.6
450	480	544	585	640	585	108	11.5	4	26.0	31	20	M20	10	62.4
500	532	609	650	715	650	114	12.0	4	27.5	34	20	M20	10	75.4
600	635	720	770	840	770	114	13.5	5	31.0	37	20	M20	10	89.1
700	738	794	840	910	840	114	14.5	5	34.5	37	24	M20	12	99.5
800	842	901	950	1025	950	114	16.0	5	38.0	40	24	M20	12	111.8
900	945	1001	1050	1125	1050	114	17.0	5	41.5	40	28	M20	14	126.4
1000	1048	1112	1170	1255	1170	114	18.0	5	45.0	43	28	M20	14	149.8
1100	1152	1215	1270	1355	1270	127	19.5	5	48.5	43	32	M20	16	221.0
1200	1255	1328	1390	1485	1390	127	20.5	5	52.0	49	32	M20	16	262.6
1400	1462	1530	1590	1685	1590	127	23.0	5	55.0	49	36	M20	18	312.0
1500	1565	1640	1710	1820	1710	127	24.0	5	57.5	56	36	M20	18	524.0
1600	1668	1750	1820	1930	1820	190	25.5	5	60.0	56	40	M20	20	598.0
1800	1875	1950	2020	2130	2020	190	28.0	5	65.0	56	44	M20	22	663.0
2000	2082	2150	2230	2345	2230	190	30.0	5	70.0	62	48	M20	24	855.4

COUPLING

For Ductile Iron Pipe

PN-10-16-25-40

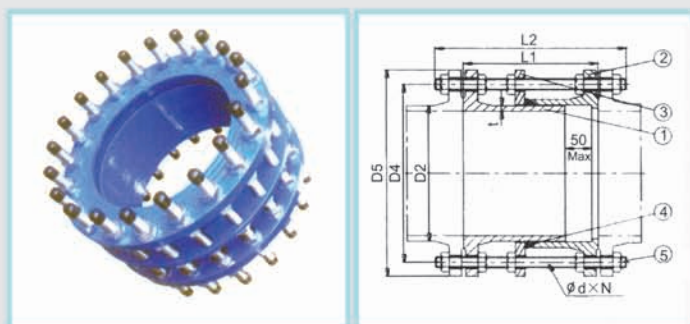


No	Part Name	Material
1	Body	Ductile Iron
2	Pipe	Ductile Iron
3	Retainer	Ductile Iron
4	Ring	Rubber
5	Stud	Electro Galvanised Steel
6	Coating	Rilsan Nylon 11 or FBE coating with 250 Micrometers

DN	D2	D4	D5	L1	L2	t	M	N	W (Kg)
80	98	169	198	178	102	7.0	16	4	6.5
100	118	189	218	178	102	7.5	16	4	6.8
125	144	215	244	178	102	7.5	16	6	8.3
150	170	241	270	178	102	8.0	16	6	11.5
200	222	293	322	178	102	8.5	16	8	14.8
250	274	345	374	178	102	9.0	16	8	20.6
300	326	397	426	178	102	10.0	16	8	24.9
350	378	458	491	262	152	10.0	16	10	36.6
400	429	509	542	262	152	11.0	16	12	45.6
450	480	556	589	262	152	11.5	20	12	54.8
500	532	608	641	262	152	12.0	20	12	62.0
600	635	711	744	262	152	13.5	20	14	78.4
700	738	814	847	262	152	14.5	20	16	106.0
800	842	918	951	262	152	16.0	20	20	129.2
900	945	1031	1064	278	178	17.0	22	20	178.3
1000	1048	1134	1167	278	178	18.0	22	24	209.3
1100	1152	1245	1278	290	178	19.5	24	28	254.0
1200	1255	1348	1381	290	178	20.5	24	32	272.0
1400	1462	1555	1588	290	178	23.0	27	36	356.6
1500	1565	1658	1691	290	178	24.0	27	42	389.0
1600	1668	1761	1794	290	178	25.5	27	42	423.0
1800	1875	1974	2007	437	254	28.0	30	44	590.0
2000	2082	2187	2220	437	254	30.0	33	48	721.0

DISMANTLING JOINT

No	Part Name	Material
1	Pipe	Ductile Iron GGG40
2	Body	Ductile Iron GGG40
3	Retainer	Ductile Iron GGG40
4	Ring	Rubber EPDM
5	Stud	Electro Galvanised Steel



Flange in accordance with ISO 2531

PN10/PN16/PN25/PN40

Coating: Rilsan or FBE with 250 micrometers up

steel stud bar are carbon steel grade 4.8 zinc plated, Hot dip galvanize and SS304 or 316 are also available upon request

PN10

DN	D2	D4	D5	L1	L2	d	N	T	Max.L
80	98	160	200	200	310	16	8	7.0	50
100	118	180	220	200	310	16	8	7.2	50
125	144	210	250	200	310	16	8	7.5	50
150	170	240	285	200	320	20	8	7.8	50
200	222	295	340	220	340	20	8	8.4	50
250	274	350	400	230	370	20	12	9.0	50
300	326	400	455	250	410	20	12	9.6	50
350	378	460	505	260	410	20	16	10.2	50
400	429	515	565	270	430	24	16	10.8	50
450	480	565	615	270	430	24	16	11.4	50
500	532	620	670	280	440	24	20	12.0	50
600	635	725	780	300	480	27	20	13.2	50
700	738	840	895	300	480	27	24	14.4	80
800	842	950	1015	320	520	30	24	15.6	80
900	945	1050	1115	320	520	30	25	18.0	80
1000	1048	1100	1230	340	560	33	25	18.0	80
1100	1152	1270	1340	340	560	33	32	19.2	80
1200	1255	1380	1455	360	600	36	32	20.4	100
1400	1462	1590	1675	380	630	39	36	22.8	100
1500	1565	1710	1785	400	665	39	36	23.0	100
1600	1668	1820	1915	400	700	45	40	25.2	100
1800	1875	2020	2115	420	730	45	44	27.6	150
2000	2082	2230	2325	440	730	45	48	30.0	150
2200	2288	2440	2550	450	750	52	52	32.4	150
2400	2495	2650	2760	460	770	52	56	34.8	150
2600	2702	2850	2960	500	800	52	60	37.2	150

PN25/PN40 can be supplied also.

PN16

DN	D2	D4	D5	L1	L2	d	N	T	Max.L
80	98	160	200	200	310	16	8	7.0	50
100	118	180	220	200	310	16	8	7.2	50
125	144	210	250	200	310	16	8	7.5	50
150	170	240	285	200	320	20	8	7.8	50
200	222	295	340	220	340	20	8	8.4	50
250	274	350	400	230	370	20	12	9.0	50
300	326	400	455	250	410	20	12	9.6	50
350	378	460	505	260	410	20	16	10.2	50
400	429	515	565	270	430	24	16	10.8	50
450	480	565	615	270	430	24	16	11.4	50
500	532	620	670	280	440	24	20	12.0	50
600	635	725	780	300	480	27	20	13.2	50
700	738	840	895	300	480	27	24	14.4	80
800	842	950	1015	320	520	30	24	15.6	80
900	945	1050	1115	320	520	30	25	18.0	80
1000	1048	1100	1230	340	560	33	25	18.0	80
1100	1152	1270	1340	340	560	33	32	19.2	80
1200	1255	1380	1455	360	600	36	32	20.4	100
1400	1462	1590	1675	380	630	39	36	22.8	100
1500	1565	1710	1785	400	665	39	36	23.0	100
1600	1668	1820	1915	400	700	45	40	25.2	100
1800	1875	2020	2115	420	730	45	44	27.6	150
2000	2082	2230	2325	440	730	45	48	30.0	150
2200	2288	2440	2550	450	750	52	52	32.4	150
2400	2495	2650	2760	460	770	52	56	34.8	150
2600	2702	2850	2960	500	800	52	60	37.2	150

Dimensions can be changed without notice



Float Valve
Basket ST.ST.304 - DN 50/600 PN 10/2.5



Vertical Check Valve
Spring Loaded - DN 40/250 PN 10/16



Float Valve
Float ST.ST.304 - DN 50/500 PN 10/16



"Y" Strainer
Screen ST.ST.304 - DN 15/400 PN 16



Flat Body Gate Valve
Wedge: EPDM COVERED
DN 40/600 PN 10/16



Oval Body Gate Valve
Wedge: EPDM COVERED
DN 50/600 PN 10/16



Flanged Butterfly Valve
NBR Seated - DN 150/2000 PN 10/16



Butterfly Check Valve
NBR Seated - DN 200/1000 PN 10/16



Air Valve
1 Ball: ABS - DN 50/200 PN 10/16



Double Air Valve
2 Ball: ABS - DN 50/200 PN 10/25



Air Valve Small Orefice
1 Ball: INOX / ABS
DN 25/100 PN 16



Pressure Relief Valve
GS-C25/F6 - DN 50/250 PN 16/64

WATER METER



MULTI JET DRY



**WATER CYLINDRICAL
PISTON METER**



**FM APPROVED UL LISTED
FIRE SERIES METER**



WOLTEX DN: 2"-20"



**WATER METER
INDUSTRIAL FLANGED TYPE**



**MULTI JET DRY
DN: 1/2" : DN: 2"**



WATER METER AMR



**ELECTROMAGNETIC
MEIMAG 5100W
FLOW METER
DN: 25" : DN: 1200
Temp. up to 70°**



GULF METERS FACTORY Water Meters Pipes Fittings Valves

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