

::E-CO

DUCTILE IRON PIPE & FITTINGS



Distributor



中華五金有限公司
CHUNG WAH METAL CO., LTD.

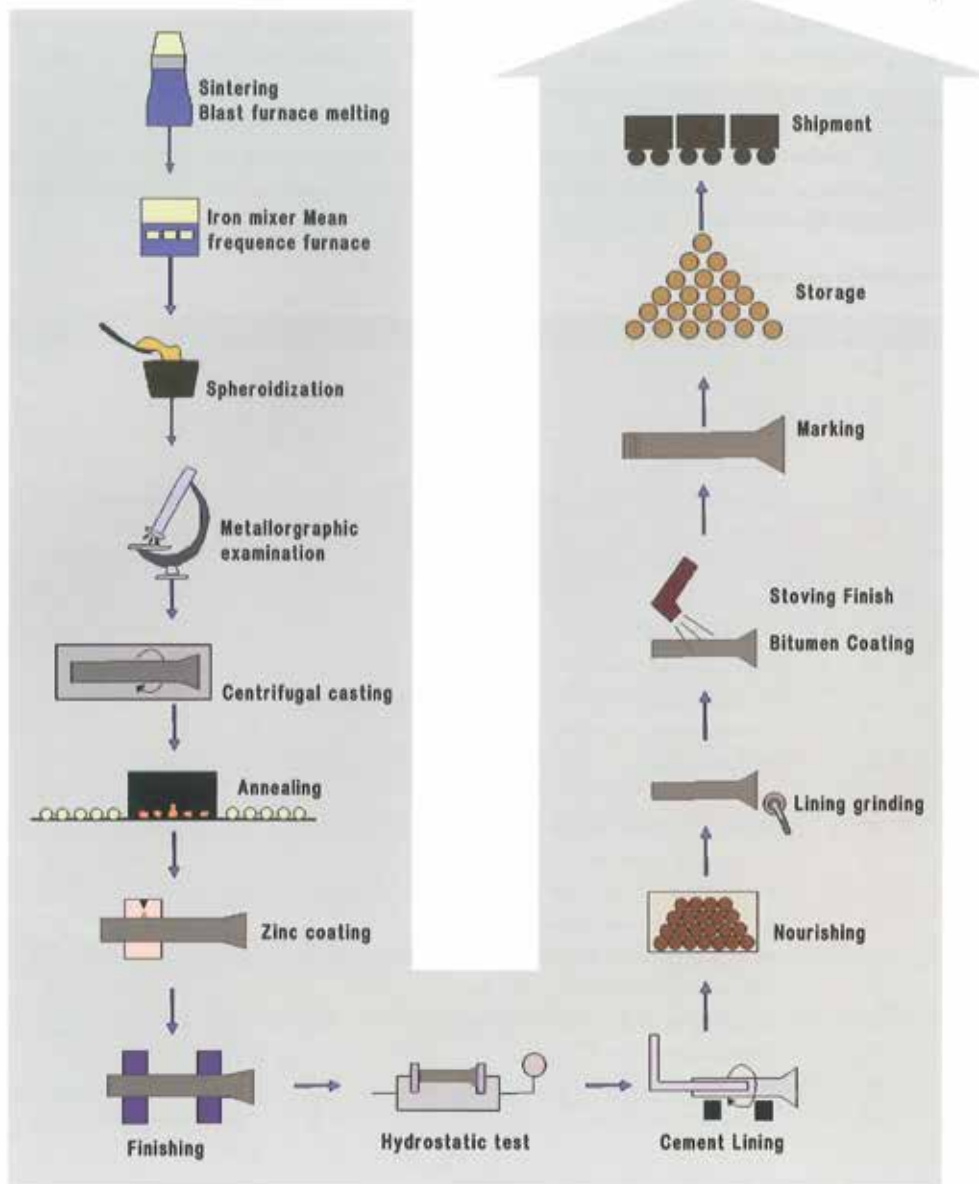






:: our expertise
:: our approach
:: our solution

The production of ductile iron



Introduction of Products

Ductile Iron Fittings

We can produce ductile iron fittings sized DN80 to DN2600, the production capacity is ten thousand tons yearly. The production of fittings is strictly according to ISO2531, BSEN545/598 and GB/T 13295-2008. The company has the ability to produce non-standard fittings for special contracts. Ductile iron fittings have the advantages of corrosion resistance, wear resistance, easy install and high performance price ratio, it is a desired replacement for the gray iron and steel fittings. Xinxing fittings are widely used for the transportation of water, oil, gas and other fluid materials. More than eighty percent of Xinxing fittings are exported to Algeria, Kuwait, Vietnam, Syrian, Nigeria etc...

Description and Symbols

Item No.	Description	Symbol
1.	Flanged Spigot	
2.	Collar	
3.	Flanged Socket	
4.	Flanged Socket	
5.	Socket Spigot	
6.	Blank Flange	
7.	Double Socket Bend	
8.	Socket Spigot Bend	
9.	Double Flanged Bend	
10.	Double Socket Taper	
11.	Double Flanged Taper	
12.	Double Socket Tees With Flanged	
13.	All Flanged Tee	
14.	All Socket Tee	
15.	Socket And Spigot Tees With Socket Branch	
16.	Socket And Spigot Tees With Flanged Branch	
17.	Double Socket Level Invert Tees With Flanged Branch	
18.	Double Socket Level Invert Tee	
19.	All Socket Tee With 45° Angle Branch	
20.	All Flanged Tee With 45° Angle Branch	
21.	Double Flanged 90° Duckfoot Bend	
22.	Double Socket Off Set	
23.	All Flanged Cross	
24.	All Socket Cross	

Joint mode include T type (for water) K type (for water)

Introduction

Ductile iron, also called spherical graphite iron, is characterized by the presence of graphite in the resultant castings. It differs from flake graphite in that, it has a higher tensile strength, a proof stress and elongation. These characteristics ensure the suitability of ductile iron pipes and fittings for a majority of pipeline applications.

Chemical Composition for Steel Pipes

Chemical components	Ductile iron pipe	Steel pipe	Grey cast iron pipe
Carbon	3.5-4.0	0.1-0.2	3.2-3.8
Silicon	1.9-2.6	0.15-0.4	1.4-2.2
Manganese	0.15-0.45	0.3-0.6	0.4-0.6
Phosphorus	≤ 0.06	0.02-0.03	≤ 0.3
Sulfur	≤ 0.02	0.02-0.03	≤ 0.1
Magnesium	0.03-0.06	-	-

Mechanical Properties for Steel Pipes

	Ductile Iron pipe		Grey cast iron pipe	Steel pipe
Tensile strength(N/mm ²)	>=420		150-260	>=400
Elogation (%)	DN60-1000>=10		Neglect	>=18
	DN1100-2600>=7			
Hardness {HB}	<=230		<=210	Approx. 140
Hydraulic test (MPa)	<=DN300	5.0		2.5-3.0
	DN350-600	4.0		
	DN700-1000	3.2		
	DN1100-2000	2.5		
	DN2100-2200	1.8		
Air test (MPa)	>=0.3			

Normative references

The following standards contain provisions which, through references in this text, constitute provisions of this catalogue.

BSEN 545:	Ductile iron pipes, fittings, accessories and their joints for water pipelines.
BSEN 598:	Ductile iron pipes, fittings, accessories and their joints for sewerage applications.
BSEN 681 – 1:	Elastomeric seals. Material requirements for pipe joint seals used in water and drainage applications.
ISO 6506 – 1:	Metallic materials, Hardness testing, Brinell test, Part1: Test method.
ISO 6708:	Pipe works components – Definition and selection of DN (nominal size).
BSEN 1092 – 2:	Circular flanges for pipes, valves, fitting and accessories, PN designated – part2: cast iron flanges.
ENV 197 – 1:	Cement.
BS 3416:	Specification for bitumen-based coatings for cold application, suitable for use in contact with potable water.
ISO 7268:	Pipe components – Definition of nominal pressure.
ISO 8179 – 2:	Ductile iron pipes – External Zinc coating part2 (Zinc rich paint with finishing layer).
ISO 4633:	Rubber seals joint rings for water supply, drainage and sewerage pipelines (specification for materials).

Wall Thickness

The nominal iron wall thickness of pipes and fittings are calculated as a function of the nominal size, DN, by the following formula, with a minimum of 5 mm for centrifugally cast pipe and 7 mm for pipes not centrifugally cast and fittings:

$$e = K (0.5 + 0.001 \text{ DN})$$

where e is the nominal wall thickness, in millimeters:

DN is the nominal size:

K is a coefficient used for thickness class designation. It is selected from a series of whole numbers:

7, 8, 9, 10, 11, 12.....

Operating Pressure

Nominal Size DN	Mean External Diameter	Nominal Wall Thickness		Allowable Operating Pressure*		Allowable Maximum Operating Pressure**		Allowable Site Test Pressure***	
		mm		bar		bar		bar	
	mm	K9	K12	K9	K12	K9	K12	K9	K12
80	98	6.0	7.0	64	64	77	77	96	96
100	118	6.1	7.2	64	64	77	77	96	96
150	170	6.3	7.8	64	64	77	77	96	96
200	222	6.4	8.4	62	64	74	77	79	96
250	274	6.8	9.0	54	64	65	77	70	96
300	326	7.2	9.6	49	64	59	77	64	96
350	378	7.7	10.2	45	64	54	77	59	96
400	429	8.1	10.8	42	61	51	73	56	78
450	480	8.6	11.4	40	57	48	68	53	73
500	532	9.0	12.0	38	55	46	66	51	71
600	635	9.9	13.2	36	51	43	61	48	66
700	738	10.8	14.4	34	48	41	58	46	63
800	842	11.7	15.6	32	46	38	55	43	60
900	945	12.6	16.8	31	45	37	52	42	57
1000	1048	13.5	18.0	30	44	36	49	41	54
1100	1144	14.4	19.2	29	43	35	47	40	51
1200	1255	15.3	20.4	28	42	34	44	39	48

* Allowable Operating Pressure (PFA) – Internal pressure, excluding surge, which the pipeline can safely withstand in permanent service.

** Allowable Maximum Operating Pressure (PMA) – Maximum internal pressure including surge, which the pipeline can safely withstand in service.

*** Allowable Site Test Pressure (PEA) – Maximum hydrostatic pressure applied on site to a newly installed pipeline, for a relatively short duration.

Operation Temperature

It is suitable for fluid temperatures between 0°C and 50°C, excluding frost.

Straightness of Pipes

Pipes have a maximum deviation of 0.125% of the pipe length.

Angular Deflection for Flexible Joints (Tyton joint, Push-On joint)

The allowable angular deflection is listed below

- 3° 30' for DN80 to DN300
- 2° 30' for DN350 to DN600
- 1° 30' for DN700 to DN1600

Coating

The following coatings may be supplied or by agreed between manufacturer and purchaser. Upon special request, other types of coating and lining also may be applied.

a) External Coatings:

- zinc rich paint coating with finishing layer (bituminous);
- epoxy paint / fusion bond epoxy;
- thicker metallic zinc coating with finishing layer;
- polyethylene sleeving (as a supplement to the zinc coating with finishing layer);
- zinc-aluminium coating with finishing layer
- extruded polypropylene coating;
- polyurethane coating;
- fibre reinforced cement mortar coating;
- adhesive tapes.

b) Internal Coatings (Lining):

- cement mortar lining;
- high alumina cement mortar lining;
- epoxy paint / fusion bond epoxy;
- bituminous paint lining;
- cement mortar lining with seal coat;
- polyurethane lining.

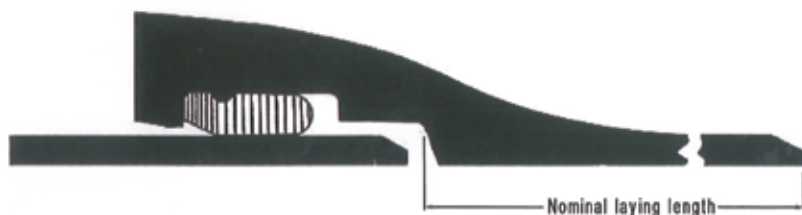
c) Coating of joint area:

- epoxy;
- bituminous paint.

Joining

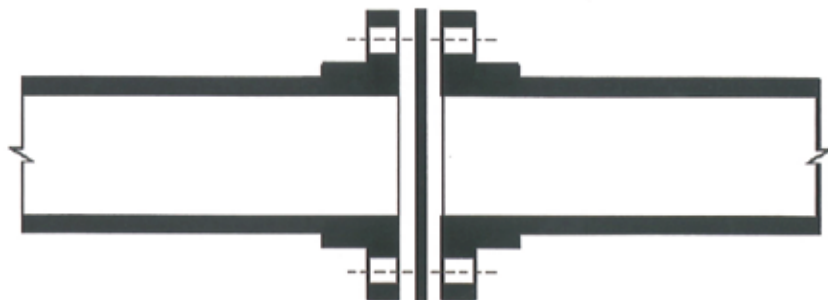
a) Push-On Joints

The most popular, quickest, and easiest-to-assemble joint for Ductile Iron pipe and fittings in underground applications is the push-on joint. This joint consists of a single rubber gasket placed in a groove inside the socket at the bell end of the pipe. After lubricating the joint in accordance with the manufacturer's instructions, the beveled end of the pipe is pushed past the gasket, compressing it and forming a pressure-tight and dependable seal.



b) Flange Joint

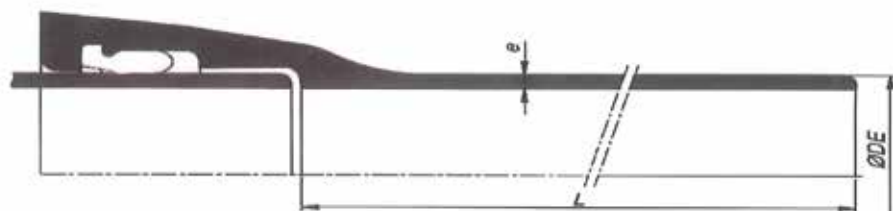
Flanged pipe is generally specified for above ground service for air, water, sewerage, oil and other liquids where rigid, restrained joints are needed. It is widely used in industrial piping systems, water treatment plants and sewerage treatment plants, and for other interior piping. The flanges have a machined raised face and drilled holes. They can be attached by screw-on, cast-on or welding.



Pipes and fittings conform to the requirements of International Standard ISO 2531, British European Standard BSEN545, and their extensions.

Dimensions and masses of pipes and fittings are approximate and are for references only; accurate dimensions and masses should be confirmed with us at the time of placing order. Flanged joint pipes and fittings are generally available with PN16, and PN25. Socketed joint pipes and fittings generally available with T type and K type joints.

Pipes With Tyton Socket Joints – K9, K12

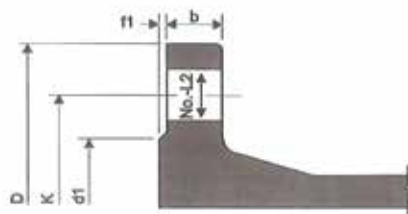


DN	DE	e (mm)		Approx. mass of pipe barrel (kg/m)		Approx. mass of 6M length, including mass of socket (kg)	
		K9	K12	K9	K12	K9	K12
80	98	6.0	7.0	12.2	14.1	76.5	88
100	118	6.1	7.2	15.1	17.7	95	111
150	170	6.3	7.8	22.8	28.0	144	175
200	222	6.4	8.4	30.6	39.7	194	149
250	274	6.8	9.0	40.2	52.8	255	332
300	326	7.2	9.6	50.8	67.3	323	422
350	378	7.7	10.2	63.2	83.1	403	522
400	429	8.1	10.8	75.5	100.0	482	629
450	480	8.6	11.4	89.9	118.3	575	748
500	532	9.0	12.0	104.3	138.2	669	872
600	635	9.9	13.2	137.1	181.8	882	1151
700	738	10.8	14.4	173.9	231.0	1123	1465
800	842	11.7	15.6	215.2	186.0	1394	1819
900	945	12.6	16.8	260.2	345.0	1691	2202
1000	1048	13.5	18.0	309.3	411.0	2017	2627
1100	1152	14.4	19.2	362.8	558.0	2386	3586
1200	1255	15.3	20.4	420.1	-	2758	-
1400	1462	17.1	22.8	547.2	-	3563	-
1600	1668	18.9	25.2	690.6	-	4517	-
1800	1875	20.7	27.6	850.1	-	5591	-

Remark: Size DN80 is specified for BS EN 545 only.

The mass only indicated for the ductile iron layer of pipe.

Bolted Gland Joints (Mechanical) & Flanged Joints are available upon request.



NOTE:

Both holes shall be arranged symmetrically about the horizontal centerline through the flange surface. In the case of tees, this horizontal centerline is defined with the surface of the branch flange held parallel to the vertical plane.

PN16 Flange

Dimensions in mm

NOMINAL DIAMETER DN	d ₁	D	b	f ₁	K	L ₁	BOLT	
							SIZE	No.
80	132	200	16.0	3	160	19	M16	8
100	156	220	16.0	3	180	19	M16	8
150	211	285	16.0	3	240	23	M20	8
200	266	340	17.0	3	295	23	M20	12
250	319	400	19.0	3	355	28	M24	12
300	370	455	20.5	4	410	28	M24	12
350	429	520	22.5	4	470	28	M24	16
400	480	580	24.0	4	525	31	M27	16
450	548	640	26.0	4	585	31	M27	20
500	609	715	27.5	4	650	34	M30	20
600	720	840	31.0	5	770	37	M33	20
700	794	910	34.5	5	840	37	M33	24
800	901	1025	38.0	5	950	40	M36	24
900	1001	1125	41.5	5	1050	40	M36	28
1000	1112	1255	45.0	5	1170	43	M39	28
1100	1218	1355	48.5	5	1270	43	M39	32
1200	1328	1485	52.0	5	1390	49	M45	32
1400	1530	1685	55.0	5	1590	49	M45	36
1600	1750	1930	60.0	5	1820	56	M52	40
1800	1950	2130	65.0	5	2020	56	M52	44

PN25 Flange

Dimension in mm

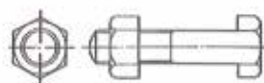
NOMINAL DIAMETER DN	d ₁	D	b	f ₁	K	L ₁	BOLT	
							SIZE	No.
80	132	200	16.0	3	160	19	M16	8
100	156	235	16.0	3	190	23	M20	8
150	211	300	17.0	3	250	28	M24	8
200	274	360	19.0	3	310	28	M24	12
250	330	425	21.5	3	370	31	M27	12
300	389	485	23.5	4	430	31	M27	16
350	448	555	26	4	490	34	M30	16
400	503	620	28	4	550	37	M33	16
450	548	670	30.5	4	600	37	M33	20
500	609	730	32.5	4	660	37	M33	20
600	720	845	37	5	770	40	M36	20

Bolts and Nuts

Dimensions in mm

DOMINAL DIAMETER DN	PN16 FLANGE		PN25 FLANGE	
	SIZE AND LENGTH	No. of BOLTS	SIZE AND LENGTH	No. of BOLTS
80	M16x75	8	M16x75	8
100	M16x75	8	M20x75	8
150	M20x80	8	M24x80	8
200	M20x90	12	M24x90	12
250	M24x100	12	M27x100	12
300	M24x100	12	M27x100	16
350	M24x110	16	M30x110	16
400	M27x115	16	M33x115	16
450	M27x120	20	M33x120	20
500	M30x130	20	M33x130	20
600	M33x140	20	M36x140	20
700	M33x140	24		
800	M36x150	24		
900	M36x160	28		
1000	M39x170	28		
1100	M39x170	32		
1200	M45x180	32		
1400	M45x180	36		
1600	M52x190	40		
1800	M52x200	44		

Bolts and Nuts



Rubber Gasket for Raised Faced Flange



Blank Flange

DOMINAL DIAMETER DN	MASS (Kg)	
	PN16	PN25
50	2.4	
80	3.5	
100	4.3	4.8
150	7.2	8.3
200	10.8	13.3
250	16.6	21.0
300	23.5	30.0
350	33.5	43.5
400	44.5	58
450	60	79.0
500	77	94
600	121	144
700	156	
800	218	
900	286	
1000	387	
1100	509	
1200	662	
1400	994	
1600	1409	
1800	1858	

DN 80 to DN 300



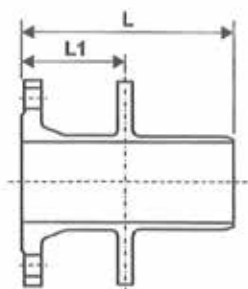
DN 300 to DN 1200



Flanged Spigot With Puddle Flange

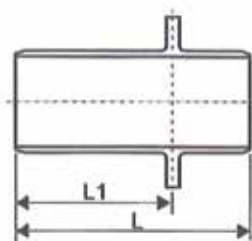
Dimensions in mm

NOMINAL DIAMETER DN	L1	L
80	600	1200
100	600	1200
150	600	1200
200	600	1200
250	600	1200
300	600	1200
300	650	1100
400	650	1100
400	650	1200
450	600	1200
500	650	1100
600	650	1100



Double Spigot With Puddle Flange

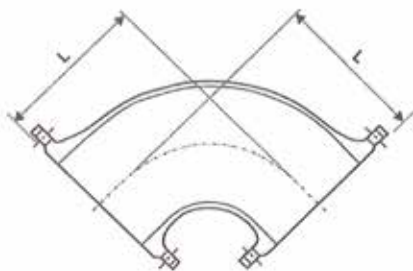
NOMINAL DIAMETER DN	L1	L
300	1350	1800
400	1310	1760
500	1270	1720
600	1230	1680



Double Flanged 90° Bend

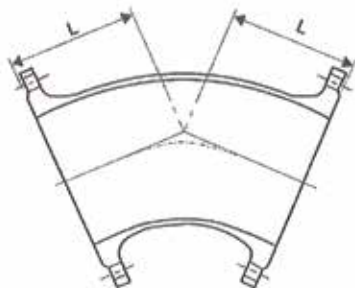
Dimensions in mm

NOMINAL DIAMETER DN	L
80	165
100	180
150	220
200	260
250	350
300	400
350	450
400	500
450	550
500	600
600	700
700	800
800	900
900	1000
1000	1100
1100	1200
1200	1300
1400	1350
1600	1450
1800	1500



Double Flanged 45° Bend

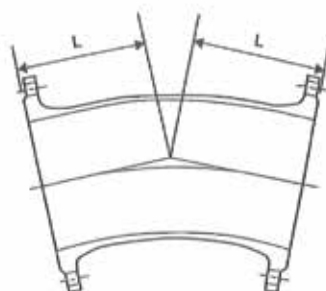
NOMINAL DIAMETER DN	L
80	130
100	140
150	160
200	180
250	350
300	400
350	298
400	324
450	349
500	375
600	426
700	478
800	529
900	581
1000	632
1100	694
1200	750
1400	775
1600	845
1800	910



Double Flanged $22\frac{1}{2}^{\circ}$ Bend

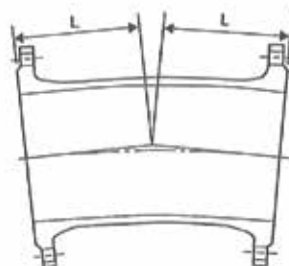
Dimensions in mm

NOMINAL DIAMETER DN	L
80	130
100	140
150	160
200	180
250	350
300	400
350	298
400	324
450	349
500	375
600	426
700	478
800	529
900	581
1000	632
1100	694
1200	750
1400	835
1600	940
1800	480



Double Flanged $11\frac{1}{4}^{\circ}$ Bend

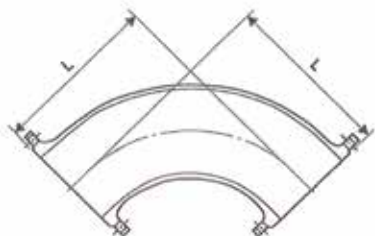
NOMINAL DIAMETER DN	L
80	130
100	140
150	160
200	180
250	350
300	400
350	298
400	324
450	349
500	375
600	426
700	478
800	529
900	581
1000	632
1100	683
1200	735
1400	835
1600	940
1800	345



Double Flanged 90° Long Radius Bend

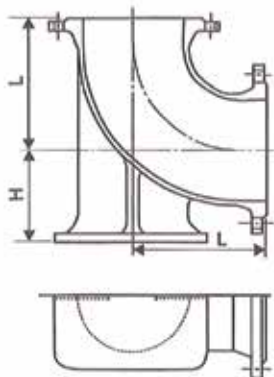
Dimensions in mm

NOMINAL DIAMETER DN	L
80	380
100	400
150	450
200	500
250	550
300	600
350	650
400	700
450	750
500	800
600	900
700	1000
800	1100
900	1200
1000	1300
1100	1400
1200	1500



Double Flanged 90° Duckfoot Bend

NOMINAL DIAMETER DN	L	H
80	165	110
100	180	125
150	220	160
200	260	190
250	350	225
300	400	255
350	450	290
400	500	320
450	550	350
500	600	385
600	700	450
700	800	515
800	900	580
900	1000	645
1000	1100	710
1100	1200	775
1200	1300	840
1400	1500	970

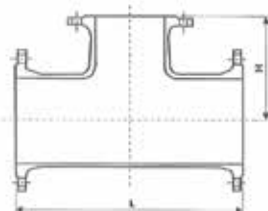


All Flanged Tee

Dimension in mm

NOMINAL DIAMETER		L	H
DN	dn		
50	50	300	150
80	50	330	165
100	80	330	165
150	50	360	175
100	80	360	175
100	100	360	180
150	80	440	205
150	100	440	210
200	150	440	220
200	80	520	235
200	100	520	240
250	150	520	250
250	200	520	260
250	80	700	265
250	100	700	275
250	150	700	300
300	200	700	325
300	250	700	350
300	80	800	290
300	100	800	300
300	150	800	325
300	200	800	350
300	250	800	375
300	300	800	400
350	80	850	325
350	100	850	325
350	150	850	325
350	200	850	325
350	250	850	325
350	300	850	425
350	350	850	425
400	80	900	350
400	100	900	350
400	150	900	350
400	200	900	350
400	250	900	350
400	300	900	450
400	350	900	450
400	400	900	450
450	80	950	375
450	100	950	375
450	150	950	375
450	200	950	375
450	250	950	375
450	300	950	475
450	350	950	475
450	400	950	475
450	450	950	475
500	80	1000	400
500	100	1000	400
500	150	1000	400
500	200	1000	400
500	250	1000	400
500	300	1000	500
500	350	1000	500
500	400	1000	500
500	450	1000	500
600	80	1100	450
600	100	1100	450
600	150	1100	450
600	200	1100	450
600	250	1100	450
600	300	1100	550
600	350	1100	550
600	400	1100	550
600	450	1100	550
600	500	1100	550
600	600	1100	550
700	80	1200	500
700	100	1200	500
700	150	1200	500
700	200	1200	500
700	250	1200	500
700	300	1200	550
700	350	1200	550
700	400	1200	550
700	450	1200	550
700	500	1200	550
700	600	1200	550
700	700	1200	550
800	80	1300	600
800	100	1300	600
800	150	1300	600
800	200	1300	600
800	250	1300	600
800	300	1300	600
800	350	1300	600
800	400	1300	600
800	450	1300	600
800	500	1300	600
800	600	1300	600
800	700	1300	600
800	800	1300	600

NOMINAL DIAMETER		L	H
DN	dn		
800	150	670	445
800	200	690	585
800	250	770	585
800	300	800	600
800	350	880	600
800	400	950	600
800	450	980	600
800	500	1050	600
800	600	1350	645
800	700	1350	645
800	800	1350	675
900	80	720	490
900	100	720	495
900	150	720	495
900	200	720	495
900	250	720	495
900	300	880	650
900	350	930	655
900	400	950	675
900	450	1050	680
900	500	1080	680
900	600	1300	705
900	700	1300	705
900	800	1300	735
900	900	1500	750
1000	80	770	545
1000	100	770	550
1000	150	770	550
1000	200	770	705
1000	250	880	710
1000	300	930	710
1000	350	980	725
1000	400	990	735
1000	450	1080	745
1000	500	1180	755
1000	600	1450	765
1000	700	1450	765
1000	800	1450	795
1000	900	1450	800
1000	1000	1450	825
1200	80	800	595
1200	100	800	600
1200	150	800	600
1200	200	850	600
1200	250	900	760
1200	300	950	760
1200	350	1000	760
1200	400	1050	770
1200	450	1100	780
1200	500	1150	790
1200	600	1250	800
1200	700	1350	800
1200	800	1450	820
1200	900	1550	840
1200	1000	1650	875
1200	1100	1780	880
1200	80	800	645
1200	150	800	650
1200	200	850	650
1200	250	900	825
1200	300	950	825
1200	350	1000	825
1200	400	1070	825
1200	450	1100	855
1200	500	1150	860
1200	600	1240	885
1200	700	1350	885
1200	800	1470	915
1200	900	1550	930
1200	1000	1700	945
1200	1100	1780	945
1200	1200	1950	975
1400	600	1550	980
1400	800	1700	1010
1400	1000	2015	1040
1600	600	1600	1070
1600	800	1825	1120
1600	1000	2085	1150
1600	1200	2300	1180
1800	600	1655	1200
1800	800	1885	1220
1800	1000	2120	1260
1800	1200	2350	1290

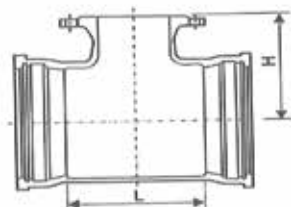


Double Socket Tee with Flanged Branch

Dimensions in mm

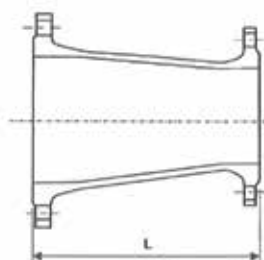
NOMINAL DIAMETER		L	H
DN	dn		
80	80	170	165
100	80	170	175
100	100	190	180
150	80	170	205
150	100	195	210
150	150	255	220
200	80	175	235
200	100	200	240
200	150	255	250
200	200	315	260
250	80	180	265
250	100	200	270
250	150	260	280
250	200	315	290
250	250	375	300
300	80	180	300
300	100	205	300
300	150	260	310
300	200	320	320
300	250	375	330
300	300	435	340
350	80	205	330
350	100	205	330
350	150	325	350
350	200	325	350
350	300	440	370
350	350	495	380
400	80	185	355
400	100	210	360
400	150	270	370
400	200	325	380
400	250	380	390
400	300	440	400
400	350	500	410
400	400	560	420
450	80	215	390
450	100	215	390
450	150	270	400
450	200	330	410
450	300	445	430
450	400	560	450
450	450	620	460
500	80	215	420
500	100	215	420
500	150	330	430
500	200	330	440
500	300	445	460
500	400	565	480
500	500	680	500
600	80	220	480
600	100	220	480
600	150	340	500

NOMINAL DIAMETER		L	H
DN	dn		
600	200	340	500
600	250	395	510
600	300	455	520
600	400	570	540
600	500	720	560
600	600	800	580
700	100	345	345
700	150	345	525
700	200	345	525
700	400	575	555
700	600	810	585
700	700	925	600
800	100	350	585
800	150	350	585
800	200	350	585
800	400	380	615
800	600	1045	645
800	800	1045	675
900	150	355	645
900	200	355	645
900	400	390	675
900	600	1170	705
900	800	1170	735
900	900	1170	750
1000	150	360	705
1000	200	360	705
1000	400	595	735
1000	600	1290	765
1000	1000	1290	825
1100	200	370	765
1100	400	600	795
1100	600	830	825
1100	800	1065	855
1100	1000	1295	885
1100	1100	1410	900
1200	200	375	825
1200	400	605	855
1200	600	840	885
1200	800	1070	915
1200	1000	1300	945
1200	1200	1535	975
1400	600	1030	980
1400	800	1260	1010
1400	1000	1495	1040
1600	600	1040	1090
1600	800	1275	1120
1600	1000	1505	1150
1600	1200	1740	1180
1800	600	1055	1200
1800	800	1285	1230
1800	1000	1520	1260
1800	1200	1750	1290



Double Flanged Taper

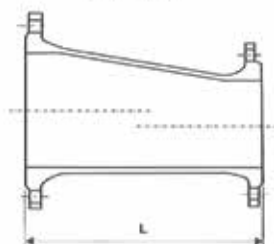
Concentric Type



Dimensions in mm

NOMINAL DIAMETER		L
DN	DN	
50	40	130
80	50	130
80	50	200
80	65	130
100	50	150
100	50	300
100	65	150
100	80	200
150	65	150
150	80	150
150	80	400
150	100	150
150	100	300
200	100	200
200	100	600
200	150	300
250	150	600
250	200	300
300	150	600
300	200	600
300	250	300
350	200	700
350	250	600
350	300	300
400	200	700
400	250	650
400	300	600
400	350	300
450	250	700
450	300	650
450	350	600
450	400	300
500	300	700
500	350	650

Flat Type

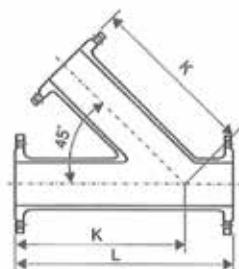


NOMINAL DIAMETER		L
DN	DN	
500	400	600
500	450	300
600	350	750
600	400	700
600	450	650
600	500	600
700	400	800
700	450	750
700	500	700
700	600	600
800	450	1000
800	500	800
800	600	700
800	700	600
900	500	1000
900	600	800
900	700	700
900	800	600
1000	600	1000
1000	700	800
1000	800	700
1000	900	600
1100	700	1000
1100	800	800
1100	900	700
1100	1000	600
1200	700	1345
1200	800	1160
1200	900	975
1200	1000	790
1200	1100	605
1400	1200	850
1600	1400	910
1800	1600	970

All Flanged 45° Branch

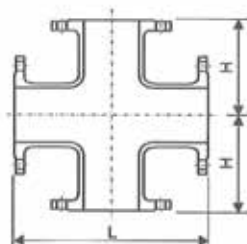
Dimensions in mm

NOMINAL DIAMETER		K	L
DN	dn		
80	80	375	500
100	100	405	540
150	150	480	640
200	200	560	735
250	250	640	830
300	300	715	930
350	350	790	880
400	400	870	970
450	450	950	1060
500	500	1025	1140
600	600	1180	1310



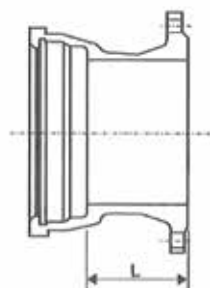
All Flanged Crosses

NOMINAL DIAMETER		H	L
DN	dn		
80	80	165	330
100	100	180	360
150	150	220	440
200	200	260	520
250	250	350	700
300	300	400	800
350	350	425	850
400	400	450	900
450	450	470	950
500	500	500	1000
600	600	550	1100



Flanged Socket

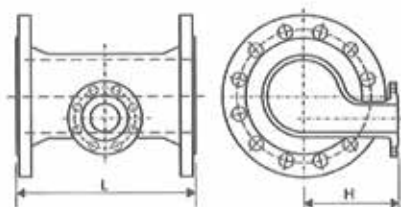
NOMINAL DIAMETER DN	L
80	130
100	130
150	135
200	140
250	145
300	150
350	155
400	160
450	165
500	170
600	180
700	190
800	200
900	210
1000	220
1100	230
1200	240
1400	310
1600	330
1800	350



All Flanged Level Invert Tees

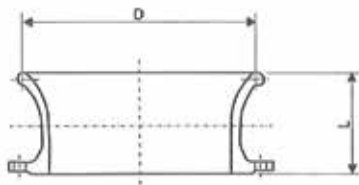
Dimensions in mm

NOMINAL DIAMETER		H	L
DN	dn		
100	80	360	195
150	80	440	220
200	80	520	250
200	100	520	250
250	80	700	275
250	100	700	275
300	80	800	305
300	100	800	305
300	150	800	305
350	80	850	340
350	100	850	340
350	150	850	340
400	80	900	365
400	100	900	365
400	150	900	365
400	200	900	365
450	80	950	380
450	100	950	380
450	150	950	380
450	200	950	380
500	80	1000	400
500	100	1000	400
500	150	1000	400
500	200	1000	400
600	80	1100	435
600	100	1100	435
600	150	1100	450
600	200	1100	450
700	150	600	500
700	200	650	500
800	150	670	540
800	200	690	540
900	150	720	580
900	200	730	580
1000	150	770	630
1000	200	770	630
1100	150	800	660
1100	200	850	660
1200	150	800	700
1200	200	850	700



Flanged Bellmouth

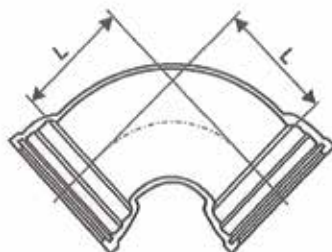
NOMINAL DIAMETER DN	D	L
80	150	130
100	175	135
150	230	150
200	290	170
250	345	185
300	405	205
350	460	220
400	520	240
450	575	255
500	635	275
600	750	310
700	865	345
800	980	380
900	1095	415
1000	1210	450
1100	1325	485
1200	1440	520
1400	1670	590
1600	1900	660
1800	2130	730



All Socket 90° Bend

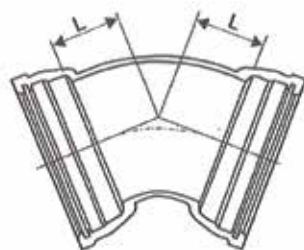
Dimensions in mm

NOMINAL DIAMETER DN	L
80	100
100	120
150	170
200	220
250	270
300	320
350	370
400	420
450	470
500	520
600	620
700	720
800	820
900	920
1000	1020
1100	1120
1200	1220
1400	1220
1600	1290
1800	1320



All Socket 45° Bend

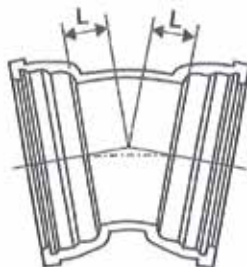
NOMINAL DIAMETER DN	L
80	55
100	65
150	85
200	110
250	130
300	150
350	175
400	195
450	220
500	240
600	285
700	330
800	370
900	415
1000	460
1100	505
1200	550
1400	515
1600	565
1800	610



Double Socket 22¹/₂° Bend

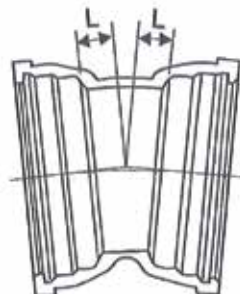
Dimensions in mm

NOMINAL DIAMETER DN	L
80	40
100	40
150	55
200	65
250	75
300	85
350	95
400	110
450	120
500	130
600	150
700	175
800	195
900	220
1000	240
1100	260
1200	285
1400	260
1600	280
1800	305



Double Socket 11¹/₄° Bend

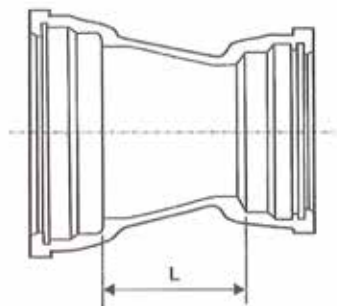
NOMINAL DIAMETER DN	L
80	30
100	30
150	35
200	40
250	50
300	55
350	60
400	65
450	70
500	75
600	85
700	95
800	110
900	120
1000	130
1100	140
1200	150
1400	130
1600	140
1800	155



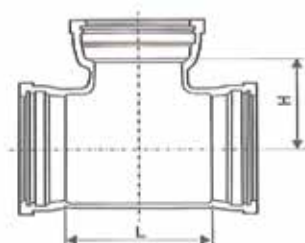
Double Socket Taper

Dimensions in mm

NOMINAL DIAMETER DN		L
DN	DN	
100	80	90
150	80	190
150	100	150
200	100	250
200	150	150
250	150	250
250	200	150
300	150	350
300	200	250
300	250	150
350	200	360
350	250	260
350	300	160
400	200	460
400	250	360
400	300	260
400	350	160
450	250	460
450	300	360
450	350	260
500	300	460
500	350	360
500	400	260
500	450	160
600	350	560
600	400	460
600	450	360
600	500	260
700	400	680
700	450	580
700	500	480
700	600	280
800	450	780
800	500	680
800	600	480
800	700	280
900	500	880
900	600	680
900	700	480
900	800	280
1000	600	880
1000	700	680
1000	800	480
1000	900	280
1100	700	880
1100	800	680
1100	900	480
1100	1000	280
1200	700	1080
1200	800	880
1200	900	680
1200	1000	480
1200	1100	280
1400	1200	360
1600	1400	360
1800	1600	360



All Socket Tee



Dimensions in mm

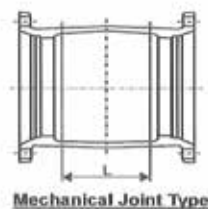
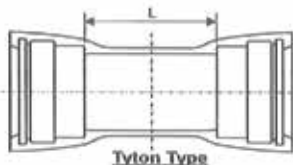
NOMINAL DIAMETER		L	H
DN	dn		
80	80	170	85
100	80	170	95
100	100	190	95
150	80	170	120
150	100	195	210
150	150	255	125
200	80	175	145
200	100	200	145
200	150	255	150
200	200	315	155
250	80	180	185
250	100	200	205
250	150	260	265
250	200	315	320
250	250	375	380
300	80	180	195
300	100	205	195
300	150	260	200
300	200	320	205
300	250	375	210
300	300	435	220
350	100	205	260
350	150	325	270
350	200	325	270
350	300	440	285
350	350	495	290
400	80	185	285
400	100	210	285
400	150	325	295
400	200	325	295
400	250	380	300
400	300	440	310
400	350	500	315
400	400	560	320
450	150	330	320
450	200	300	320
450	300	445	335
450	400	560	345
450	450	620	350
500	150	330	345
500	200	330	345
500	300	450	360
500	400	565	370
500	500	680	380
600	100	340	395
600	150	340	395
600	200	340	395
600	300	455	410
600	400	570	420

NOMINAL DIAMETER		L	H
DN	dn		
600	500	720	430
600	600	800	440
700	200	345	445
700	300	460	460
700	400	575	470
700	600	810	490
700	700	925	500
800	200	350	495
800	300	465	510
800	400	580	520
800	600	1045	540
800	800	1045	565
900	200	355	545
900	400	590	570
900	600	1170	590
900	800	1170	615
900	900	1170	625
1000	200	360	595
1000	400	595	620
1000	600	1290	640
1000	800	1290	645
1000	1000	1290	685
1100	400	600	670
1100	600	830	690
1100	800	1065	715
1100	1000	1295	735
1100	1100	1410	745
1200	400	605	720
1200	600	840	740
1200	800	1070	765
1200	1000	1300	785
1200	1200	1535	805
1400	600	1030	840
1400	800	1260	865
1400	1000	1495	885
1400	1200	1725	905
1400	1400	1960	930
1600	600	1040	940
1600	800	1275	965
1600	1000	1505	985
1600	1200	1740	1010
1600	1400	1970	1030
1600	1600	2200	1050
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

Collar

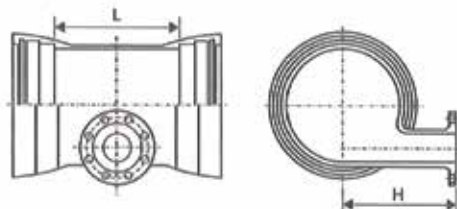
Dimensions in mm

NOMINAL DIAMETER DN	L
80	160
100	160
150	165
200	170
250	175
300	180
350	185
400	190
450	195
500	200
600	210
700	220
800	230
1000	250
1100	260
1200	270
1400	340
1600	360
1800	380



Double Socket Level Invert Tee with Flanged Branch

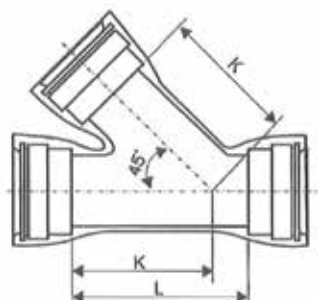
NOMINAL DIAMETER		L	H
DN	DN		
100	80	185	195
150	80	190	220
200	80	190	250
200	100	215	250
250	80	220	275
250	100	220	275
300	80	220	305
300	100	220	305
300	150	335	305
350	80	225	340
350	100	225	340
350	150	340	340
400	80	225	365
400	100	225	365
400	150	340	365
400	200	340	365
450	80	230	380
450	100	230	380
450	150	345	380
450	200	345	380
500	80	230	400
500	100	230	400
500	150	350	400
500	200	350	400
600	80	355	435
600	100	355	435
600	150	355	450
600	200	355	450
700	150	360	500
700	200	360	500
800	150	360	540
800	200	360	540
900	150	370	580
900	200	370	580
1000	150	370	630
1000	200	370	630
1100	150	375	660
1100	200	375	660
1200	150	375	700
1200	200	375	700
1400	200	460	850
1600	400	700	950
1800	400	715	1050



All Socket 45° Branch

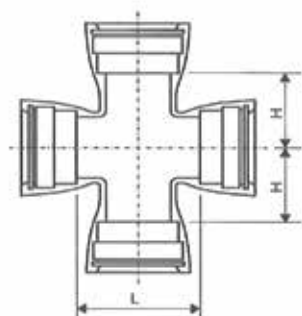
Dimensions in mm

DN	dn	K	L
80	80	375	500
100	100	405	540
150	100	480	640
150	150	480	640
200	200	560	735
250	250	640	830
300	300	715	930
350	350	790	880
400	300	790	950
500	300	870	1035
600	500	1005	1225

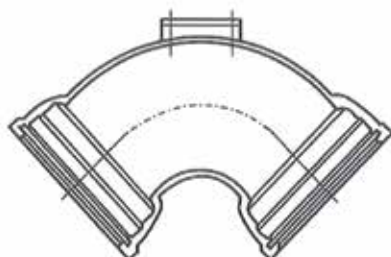


All Socket Crosses

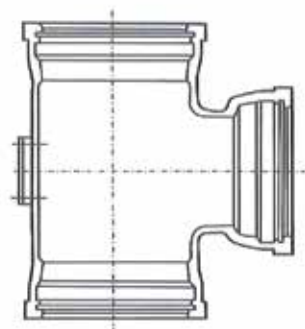
DN	dn	L	H
80	80	185	110
100	100	210	125
150	150	270	150
200	200	330	180
250	150	390	210
250	250	390	210
300	300	450	240
350	350	515	255



Fittings with Access Door (For BS EN 598)



Size Range : DN100 – DN1,200

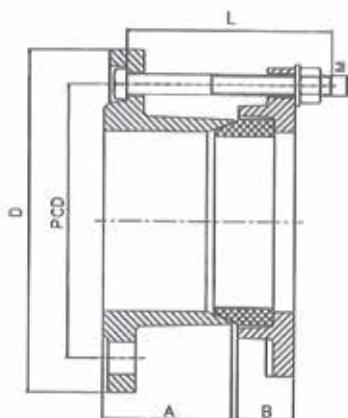


Size Range : DN100 – DN1,200

Remark: Non-standard length & size may be supplied by the manufacturer.
All dimensions subject to manufacturer final mill production.

Others Accessories

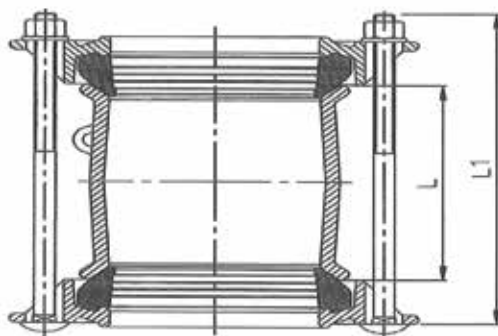
Universal Flange Adaptor

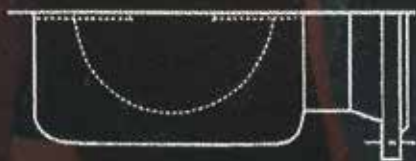
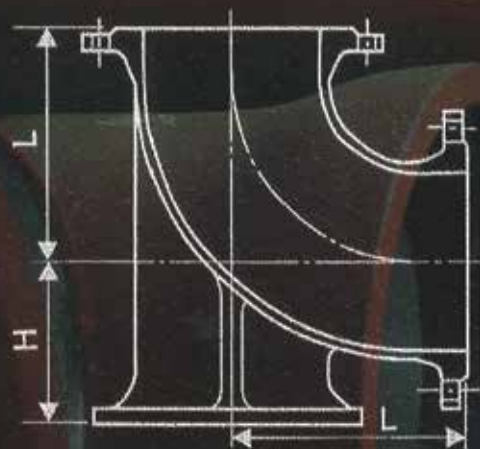
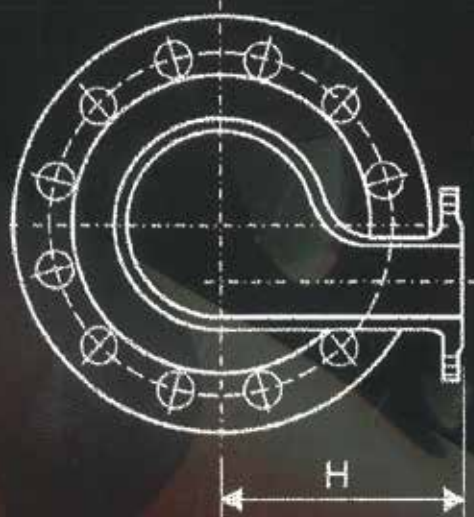
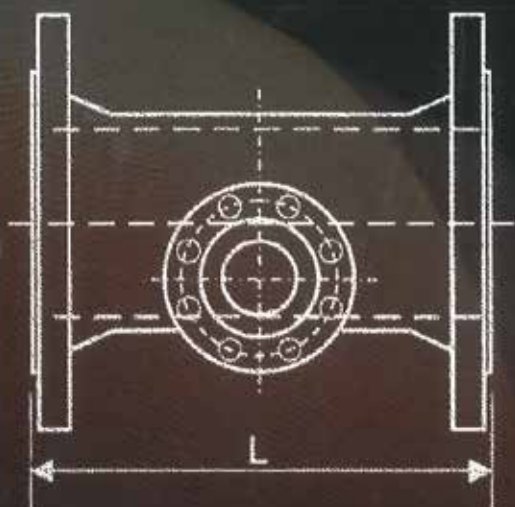


DN	A	B	D	PCD	Bolts & Nuts			Weight
mm	mm	mm	mm	mm	No.	Size	L	Kg
80	33	75	200	160	4	M12	130	5.4
100	33	75	220	180	4	M12	130	7.0
150	33	75	285	240	4	M12	130	10.7
200	33	75	340	295	6	M12	130	14.1
250	33	90	400	355	6	M12	140	20.5
300	35	90	455	410	6	M12	140	27.5
350	37	97	520	470	8	M12	145	36.2
400	37	97	580	525	8	M12	145	43.3
450	37	97	640	585	10	M12	145	50.3
500	37	97	715	650	10	M12	145	68.0
600	37	97	840	770	10	M12	145	85.6

Universal Coupling

DN	Pipe Range	L	Weight	Bolts & Nuts		
mm	mm	mm	kg	No.	Size	L1
80	84-106	140	7.2	4	M12	230
100	109-133	140	8.1	4	M12	230
150	157-183	155	12.5	4	M12	250
200	218-242	180	15.3	4	M12	270
250	266-292	200	21.1	6	M12	280
300	324-350	200	26.9	6	M12	280





the perfect
solution
to your problems

Distributor



中華五金有限公司
CHUNG WAH METAL CO., LTD.