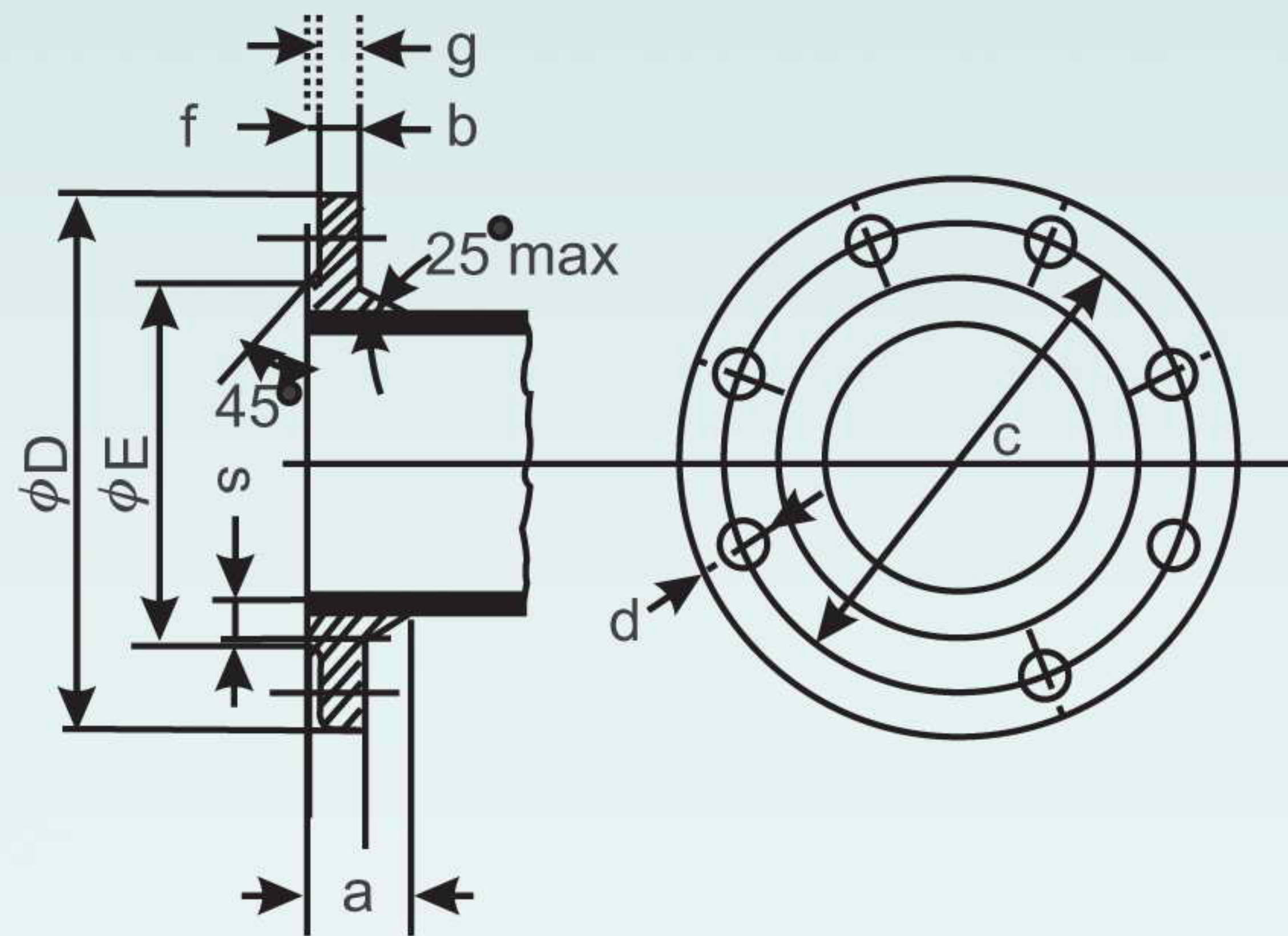




Dimensions of standard Flange Drilling for Screwed Flanges and welded Flange (PN 25)



PN-25

TABLE - 8

DN	Dimensions								Holes		Bolt Size Metric	Bolt Length mm
	D	E	C	b	f	g	a	S	Number	Dia(d)		
80	200	132	160	19	3	16	32	15	8	19	M16	100
100	235	156	190	19	3	16	33	15	8	23	M20	100
125	270	184	220	19	3	16	37	15	8	28	M24	100
150	300	211	250	20	3	17	40	16	8	28	M24	100
200	360	274	310	22	3	19	44	17.5	12	28	M24	110
250	425	330	370	24.5	3	21.5	49	19.5	12	31	M27	130
300	485	389	430	27.5	4	23.5	56	22	16	31	M27	130
350	555	448	490	30	4	26	57	24	16	34	M30	140
400	620	503	550	32	4	28	64	25.5	16	37	M33	150
450	670	548	600	34.5	4	30.5	69	27.5	20	37	M33	150
500	730	609	660	36.5	4	32.5	73	29	20	37	M33	160
600	845	720	770	42	5	37	83	33.5	20	40	M36	180
700	960	820	875	46.5	5	41.5	84	33.5	24	43	M39	200
750	1020	883	940	50	5	45	100	34	24	43	M39	200
800	1085	928	990	51	5	46	102	35.5	24	49	M45	220
900	1185	1028	1090	55.5	5	50.5	112	39	28	49	M45	220
1000	1320	1140	1210	60	5	55	118	42	28	56	M52	240
1100	1420	1240	1310	65.5	5	60.5	120	45	32	56	M52	260
1200	1530	1350	1420	69	5	64	138	48.5	32	56	M52	260

NOTE :

1. The method of screwing and the exact form of thread shall be left to the discretion of the manufacturer as the flanges are never removed after screwing on the barrels of the pipes.
2. If so required the screwed flanges may be spot welded on the back side after screwing.
3. Dimensions 'a' and 'S' are for guidance only.
4. Unless otherwise specified, flanges shall be of ductile iron.

T

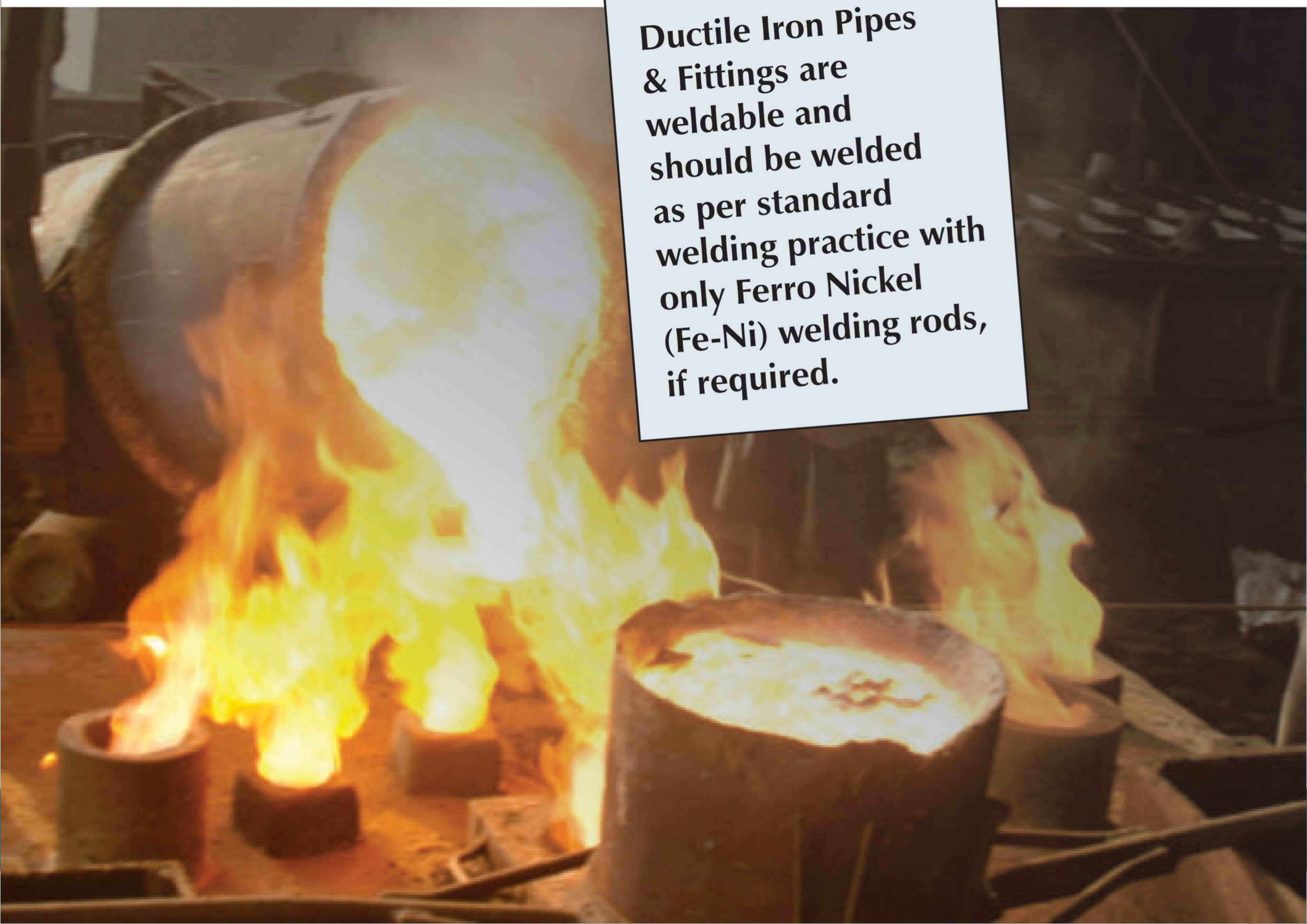
It is recommended that the Tyton Rubber Rings to be used with fittings, of **"T" Type** should be purchased from the manufacturer of fittings for best results.

We supply Tyton Rubber Rings in Natural Rubber (NR), Styrene Butadiene Rubber (SBR) and Ethylene Propylene Daimene Modified Rubber (EPDM), sourcing it from our approved vendors under our strict Quality Control Supervision.

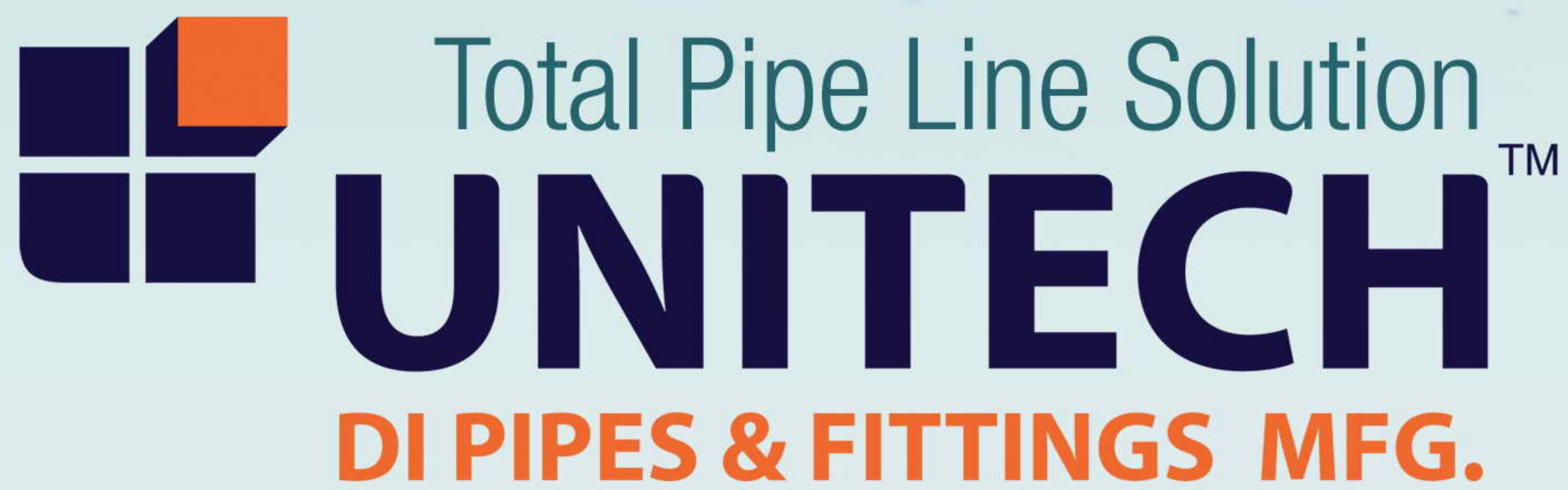
However for water works purposes SBR Rubber Rings are highly recommended considering compression, micro bio-degradation, resistance to heat, water and ageing.

K

Fittings of **"K" Type** are suitable for Mechanical Jointing and are supplied as complete set with Nut, Bolts & Rubber Rings. Natural Rubber Rings (NR), are generally supplied. Upon specific requirement SBR & EPDM Rubber Rings may also be supplied.

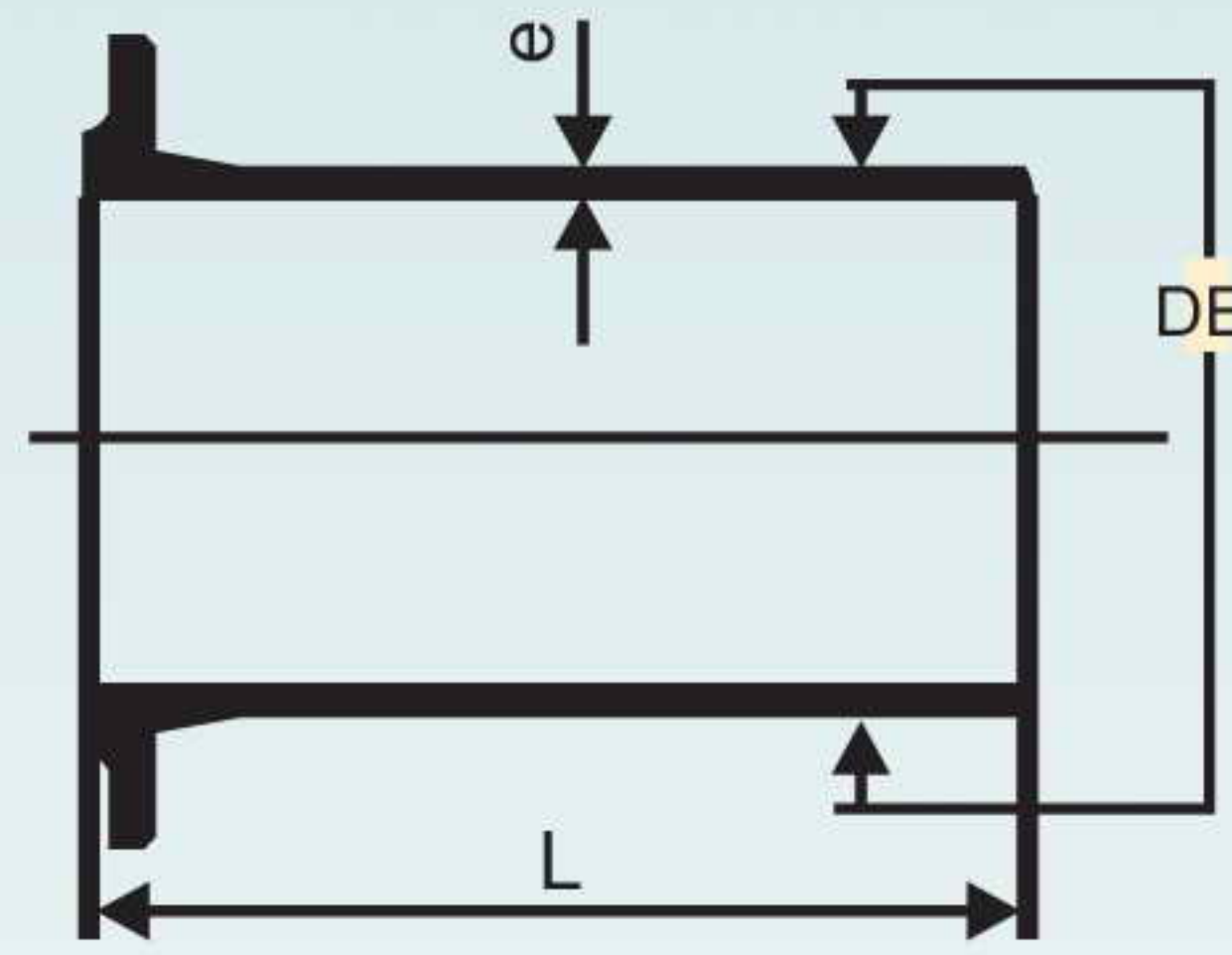


Ductile Iron Pipes & Fittings are weldable and should be welded as per standard welding practice with only Ferro Nickel (Fe-Ni) welding rods, if required.



Fittings

Ductile Iron pressure pipe fittings are suitable for use with Ductile Iron pressure pipes having Socket or Flanged ends.



- As per BS-EN-545 / ISO-2531, Tees are K-14 only.
- $e = K(0.5 + 0.001 \text{ DN})$

TABLE - 9

		Wall Thickness, e mm			
		K12	K14		
(1)	(2)	(3)	(4)	(5)	(6)
80	98	+1/-2.7	7.0	8.1	-2.38
100	118	+1/-2.8	7.2	8.4	-2.40
125	144	+1/-2.8	7.5	8.7	-2.42
150	170	+1/-2.9	7.8	9.1	-2.45
200	222	+1/-3.0	8.4	9.5	-2.50
250	274	+1/-3.1	9.0	10.5	-2.55
300	326	+1/-3.3	9.6	11.2	-2.60
350	378	+1/-3.4	10.2	11.9	-2.65
400	429	+1/-3.5	10.8	12.6	-2.70
450	480	+1/-3.6	11.4	13.3	-2.75
500	532	+1/-3.8	12.0	14.0	-2.80
600	635	+1/-4.0	13.2	15.4	-2.90
700	738	+1/-4.3	14.4	16.8	-3.0
750	790	+1/-4.4	15.0	17.5	-3.05
800	842	+1/-4.5	15.6	18.2	-3.10
900	945	+1/-4.8	16.8	19.6	-3.20
1000	1048	+1/-5.0	18.0	21.0	-3.30
1100	1152	+1/-5.4	19.2	21.4	-3.40
1200	1255	+1/-5.8	20.4	23.8	-3.50
1400	1462	+1/-6.6	22.8	26.6	-3.70
1500	1565	+1/-7.0	24.0	28.0	-3.80
1600	1668	+1/-7.4	25.2	29.0	-3.90
1800	1875	+1/-8.2	27.6	32.2	-4.10
2000	2082	+1/-9.0	30.0	35.0	-4.30
2200	2288	+1/-9.3	32.4	37.8	-4.50

All fittings are of **K-12** Class except Tees which are available in both **K-12 & K-14** Class

A. Zinc Coating :

Zinc Rich Paint or metallic zinc wire for metallising / spraying should have at least 99% zinc by mass & min. 85% zinc in dry film.

Zinc metallising = Average min. mass 130 gm/m² (local min. 110 gm/m²)

Zinc Rich Paint = Average min. mass 150 gm/m² (local min. 130 gm/m²)

Conversion

gm / m ²	Microns (Approx.)
110	15.4
130	18.2
150	21.0

B. Bitumin Coating :

Local thickness min. 50 μm & mean thickness 70 μm & to withstand 0°C to 65°C temperature.

C. Cement Mortar Lining (CML) :

Cement to Sand Ratio should be min. **1 : 3.5**

Size	CML Thickness (mm)	Tolerance
80 to 300	4 mm	-1.5
350 to 600	5 mm	-2.0
700 to 1200	6 mm	-2.5
1400 to 2000	9 mm	-3.0

D. Seal Coat :

A seal coat of Bitumen or any other epoxy paint may be given on CML to minimize lime leaching if required specifically.

TABLE - 10 Mechanical properties of Fittings (IS-1865)

All Size	Fittings	420	5 (min)	250
----------	----------	-----	---------	-----

TABLE - 11 Hydrostatic Test pressure for Fittings

Nominal Diameter DN (mm)	Work Test Pressure Kgf/cm ²
80 to 300	25
350 to 600	16
700 to 2200	10

The fittings are kept under pressure for 10 secs which it should withstand without showing any leakage and sweating.

TABLE - 12

Tolerances on the Flange External Diameter D and Raise face E

DN	80	100	125	150	200	250	300	350	400	450	500	600	
Tolerance on D	+ 4.5			+5.5-2.5				+6.5-3.5					
Tolerance on E	± 4.0			± 4.5				± 5.0					
DN	700	750	800	1000	1100	1200	1400	1600	1800	2000			
Tolerance on D	+7.5 - 4				+8.5 - 4		+10 - 5		+12 - 6				
Tolerance on E	+5.5				+ 5.5		+6.0		+ 6.0				

Tolerances on Thickness of Flange

Type of Flange	Tolerance
Intergrally Cast flanges	± (3+0.05b)
Welded and screwed on flanged	± (2+0.05b)

The tolerance on the wall thickness of fittings

Type of Casting	Wall Thickness (mm)	Tolerance (mm)
Fittings	-2.3
	(2.3+0.004•DN)

Deviation on Lengths of Fittings

Type of Fittings	Nominal Diameter DN (mm)	Deviation in L and H (mm)
Flanged sockets Flanged spigots Collars, Tapers	80 to 1200	± 25
	1400 to 2000	± 35
Tees	80 to 1200	+ 50/ - 25
	1400 to 2000	+ 75/ - 35
Bends 90° (1/4)	80 to 2000	± (15 + 0.030 DN)
Bends 45° (1/8)	80 to 2000	± (10 + 0.025 DN)
Bends 22°30' and 11°15' (1/16 & 1/32)	80 to 1200	± (10 + 0.020 DN)
	1400 to 2000	± (10 + 0.025 DN)

Tolerances on Raised Face Height (f)

Height of Raised	Tolerance
3	+1.5-2.0
4	+2.0-3.0
5	+2.5-4.0

(minimum 1 mm required)

Tolerances on Flange Drilling Dimension Bolt Hole Diameter

	Dia 19 to Dia 28	Dia 31 to Dia 56	Above Dia 62
Bolt hole diameter, d	+2 - 0	+3 - 0	+ 4 - 0
Pitch circle diameter, C			
Centre-to-centre of Adjacent bolt holes	± 2	± 2.8	± 4.8

COATING

Fittings and accessories are normally internally and externally coated. Normally Bituminous paint is applied. However following coating may also be done under agreement.

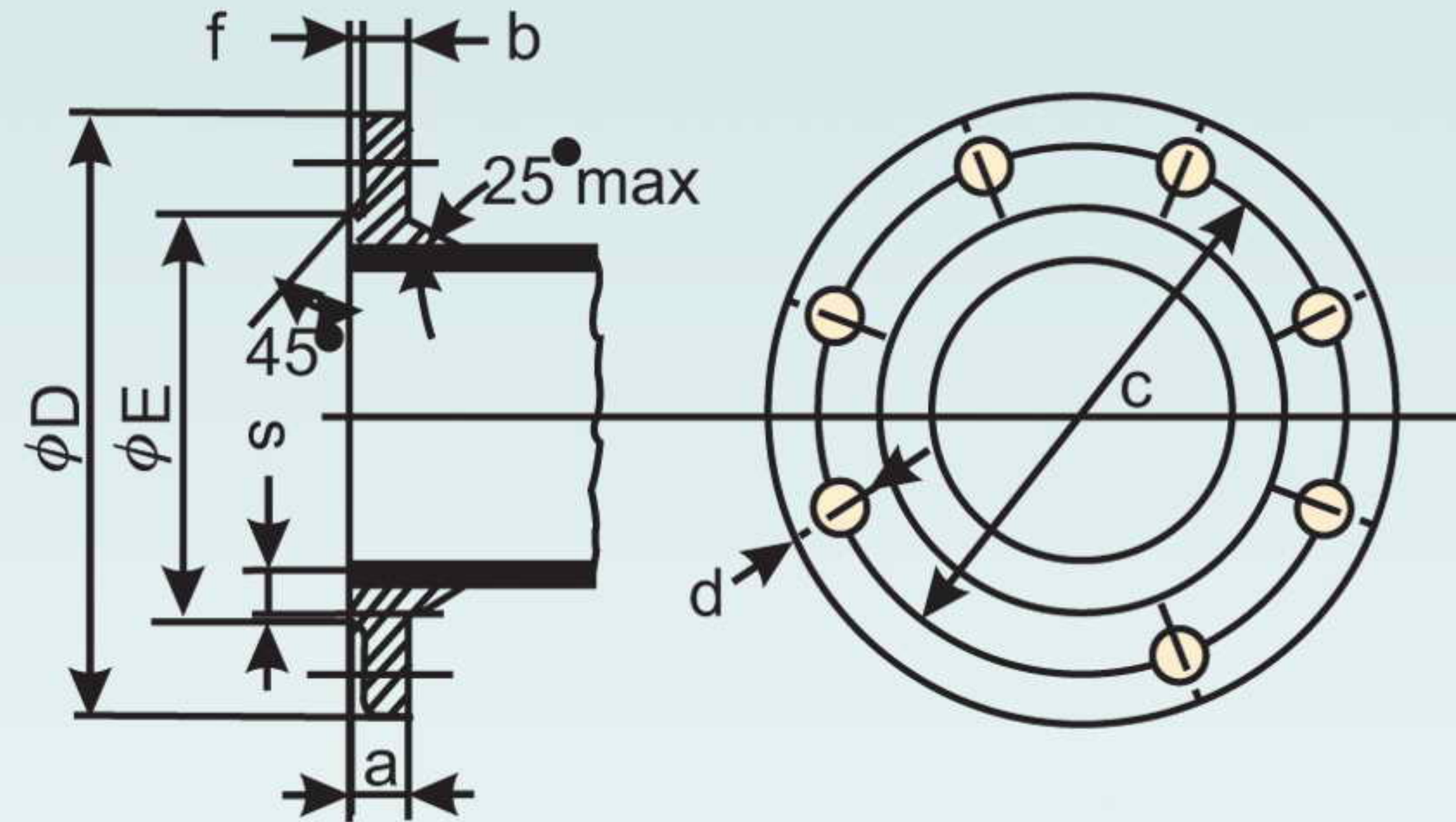
External Coating

1. Zinc rich paint/Zinc metallisation
2. Bituminous Paint
3. Epoxy Liquid Coating
4. Fusion Bonded Epoxy Powder coating (F.B.E.)
5. Poly Urethane Coating
6. Rilsan Coating

Internal Linings

The following lining may be applied depending on the internal conditions of use :

- (1) Portland cement mortar
- (2) Blast furnace slag cement mortar
- (3) High alumina (HAC) cement mortar
- (4) Sulphite Resistant Cement Mortar (SRC)
- (5) Bituminous paint
- (6) Poly Urethane Coating

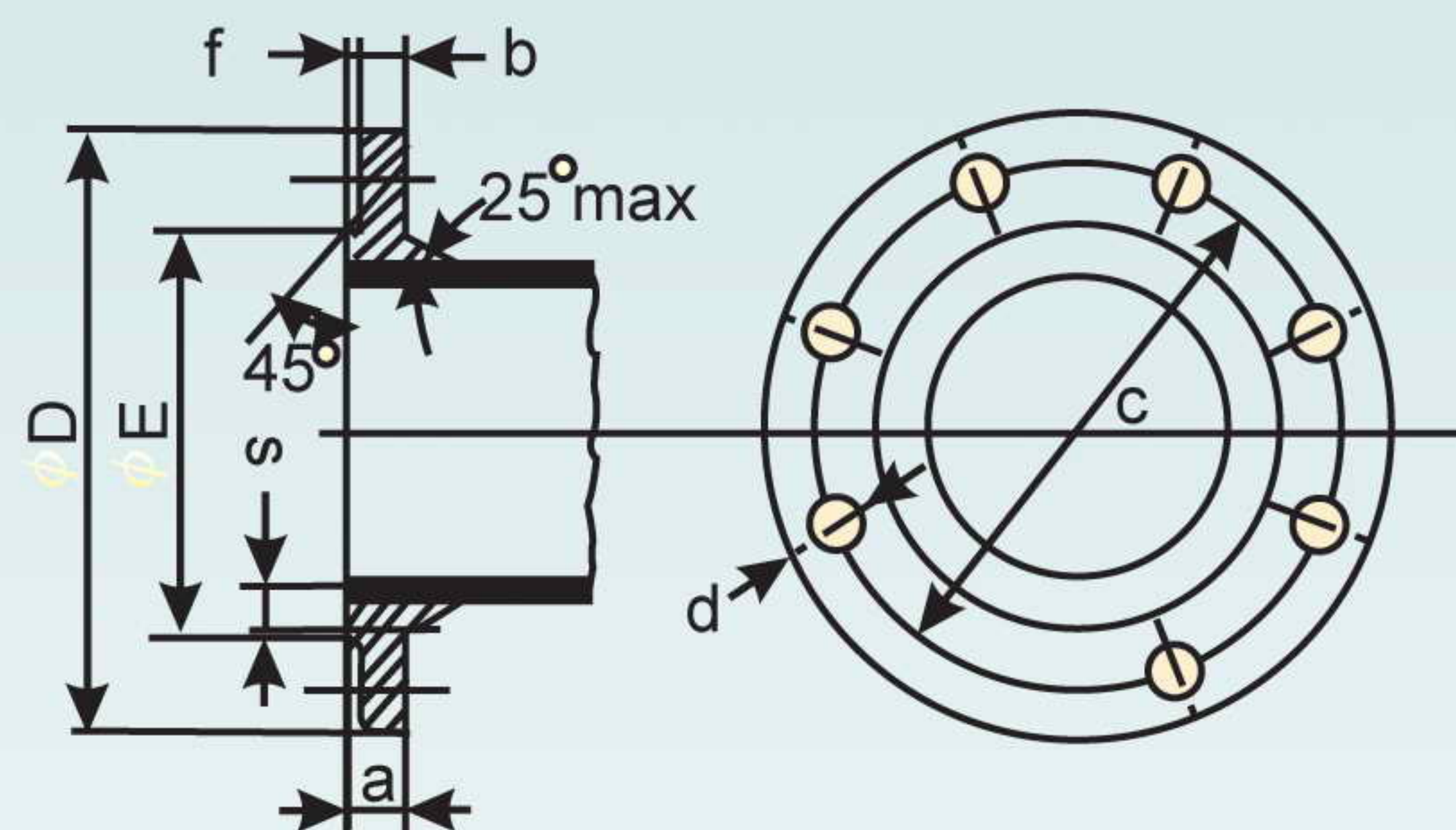

PN-10
TABLE - 13

Nominal Diameter	Dimensions							Holes		Bolt Size Metric	Bolt Length mm	App. Flange/Mass
								Nos.	Dia			
DN	D	E	C	b	f	a	S					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
80	200	132	160	16	3	19	15	4	19	M16	80	3
100	220	156	180	16	3	19	15	8	19	M16	80	3.3
125	250	184	210	16	3	19	15	8	19	M16	80	4
150	285	211	240	16	3	19	15	8	23	M20	80	5.1
200	340	266	295	17	3	20	15	8	23	M20	80	7.1
250	395	319	350	19	3	22	16	12	23	M20	90	10
300	445	370	400	20.5	4	24.5	17.5	12	23	M20	90	13
350	505	429	460	20.5	4	24.5	19.5	16	23	M20	90	14.7
400	565	480	515	20.5	4	24.5	19.5	16	28	M24	100	17.7
450	615	530	565	21	4	25.5	20	20	28	M24	100	20.2
500	670	582	620	22.5	4	26.5	21	20	28	M24	100	24.3
600	780	682	725	25	5	30	24	20	31	M27	110	34
700	895	794	840	27.5	5	32.5	24	24	31	M27	120	46
750	960	857	900	29	5	34	24	24	31	M27	120	55
800	1015	901	950	30	5	35	24.5	24	34	M30	130	62
900	1115	1001	1050	32.5	5	37.5	26.5	28	34	M30	130	73
1000	1230	1112	1160	35	5	40	28	32	37	M33	150	93
1100	1340	1231	1270	38	5	43	30	32	37	M33	150	113
1200	1455	1328	1380	40	5	45	31.5	32	40	M36	160	138
1400	1675	1530	1590	41	5	46	32	36	43	M39	180	175
1500	1785	1640	1700	42.5	5	46	32	36	43	M39	180	202
1600	1915	1750	1820	44	5	49	34.5	40	49	M45	190	242
1800	2115	1950	2020	47	5	52	36.5	44	49	M45	200	282
2000	2325	2150	2230	50	5	55	--	48	49	M45	200	337
2200	2550	2370	2440	53	6	59	--	52	56	M52	220	426

NOTE : Dimensions 'a' and 's' are for guidance only.

Fittings

UNITECH Standard Flange Drilling for
Flange Fittings (PN 16)

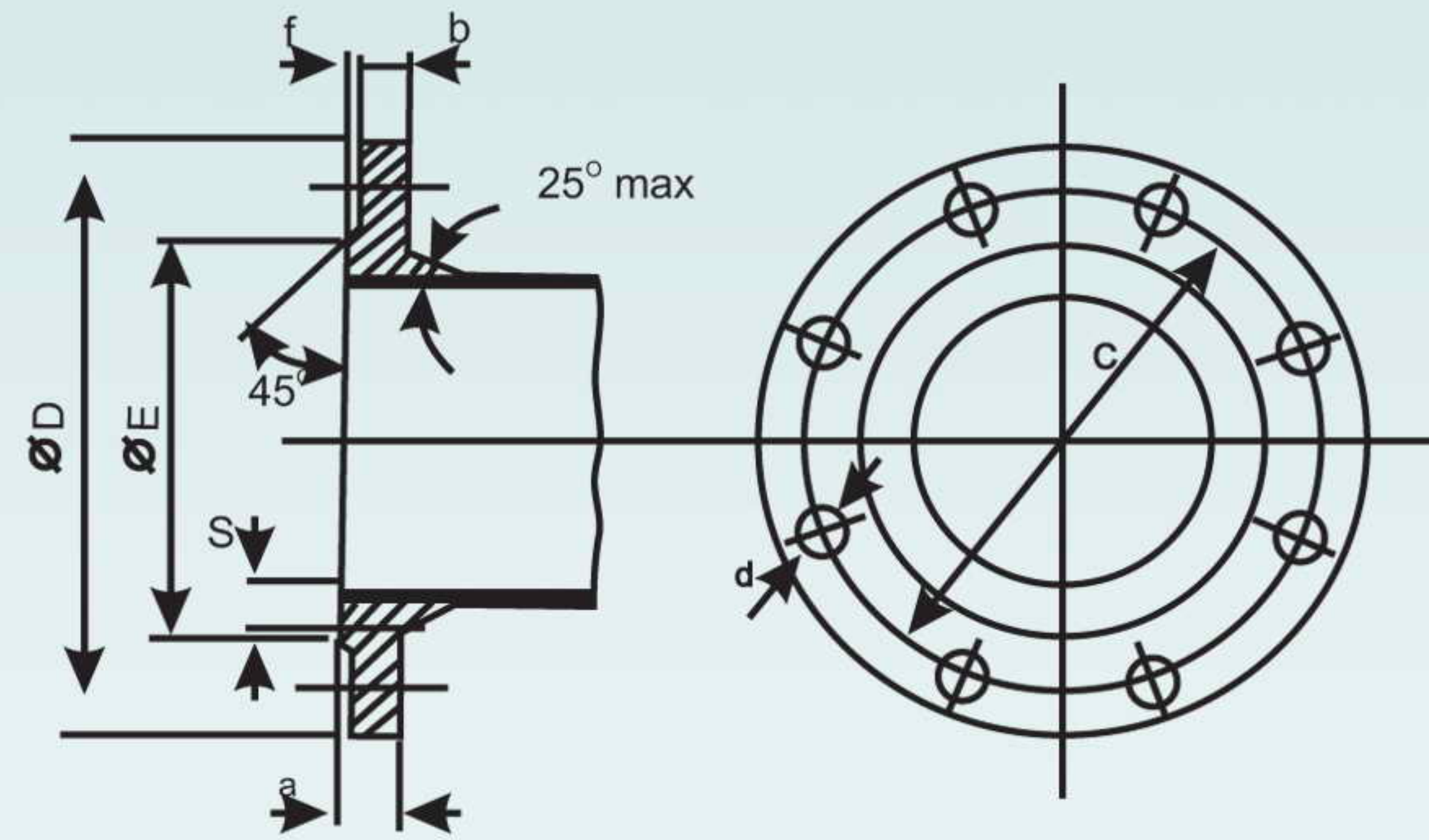


PN-16

TABLE - 14

Nominal Diameter	Dimensions							Holes		Bolt Size Metric	Bolt Length mm	App. Flange / Mass
	DN	D	E	C	b	f	a	S	Nos.			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
80	200	132	160	16	3	19	15	8	19	M16	80	3.0
100	220	156	180	16	3	19	15	8	19	M16	80	3.3
125	250	184	210	16	3	19	15	8	19	M16	80	4
150	285	211	240	16	3	19	15	8	23	M20	100	5.1
200	340	266	295	17	3	20	16	12	23	M20	100	7.1
250	400	319	355	19	3	22	17.5	12	28	M24	120	11
300	455	370	410	20.5	4	24.5	19.5	12	28	M24	120	14
350	520	429	470	22.5	4	26.5	21	16	28	M24	120	17.4
400	580	480	525	24	4	28	22.5	16	31	M27	140	22.2
450	640	548	585	26	4	30	24	20	31	M27	140	28
500	715	609	650	27.5	4	31.5	25	20	34	M30	160	38
600	840	720	770	31	5	36	27	20	37	M33	180	60
700	910	794	840	34.5	5	39.5	27.5	24	37	M33	180	62
750	970	857	900	36	5	41	28	24	37	M33	180	70
800	1025	901	950	38	5	43	30	24	40	M36	200	80
900	1125	1001	1050	41	5	46	32.5	28	40	M36	200	92
1000	1255	1112	1170	45	5	50	35	28	43	M39	200	128
1100	1355	1218	1270	48.5	5	53.5	37.5	32	43	M39	220	148
1200	1485	1328	1390	52	5	57	40	32	49	M45	240	193
1400	1685	1530	1590	55	5	60	42	36	49	M45	250	232
1500	1820	1640	1710	57.5	5	62.5	44	36	56	M52	250	290
1600	1930	1750	1820	60	5	65	45.5	40	56	M52	260	331
1800	2130	1950	2020	65	5	70	49	44	56	M52	270	394
2000	2345	2150	2230	70	5	75	--	48	62	M56	280	475
2200	2555	2370	2440	75	6	81	--	52	62	M56	300	600

NOTE : Dimensions 'a ' and 's' are for guidance only .

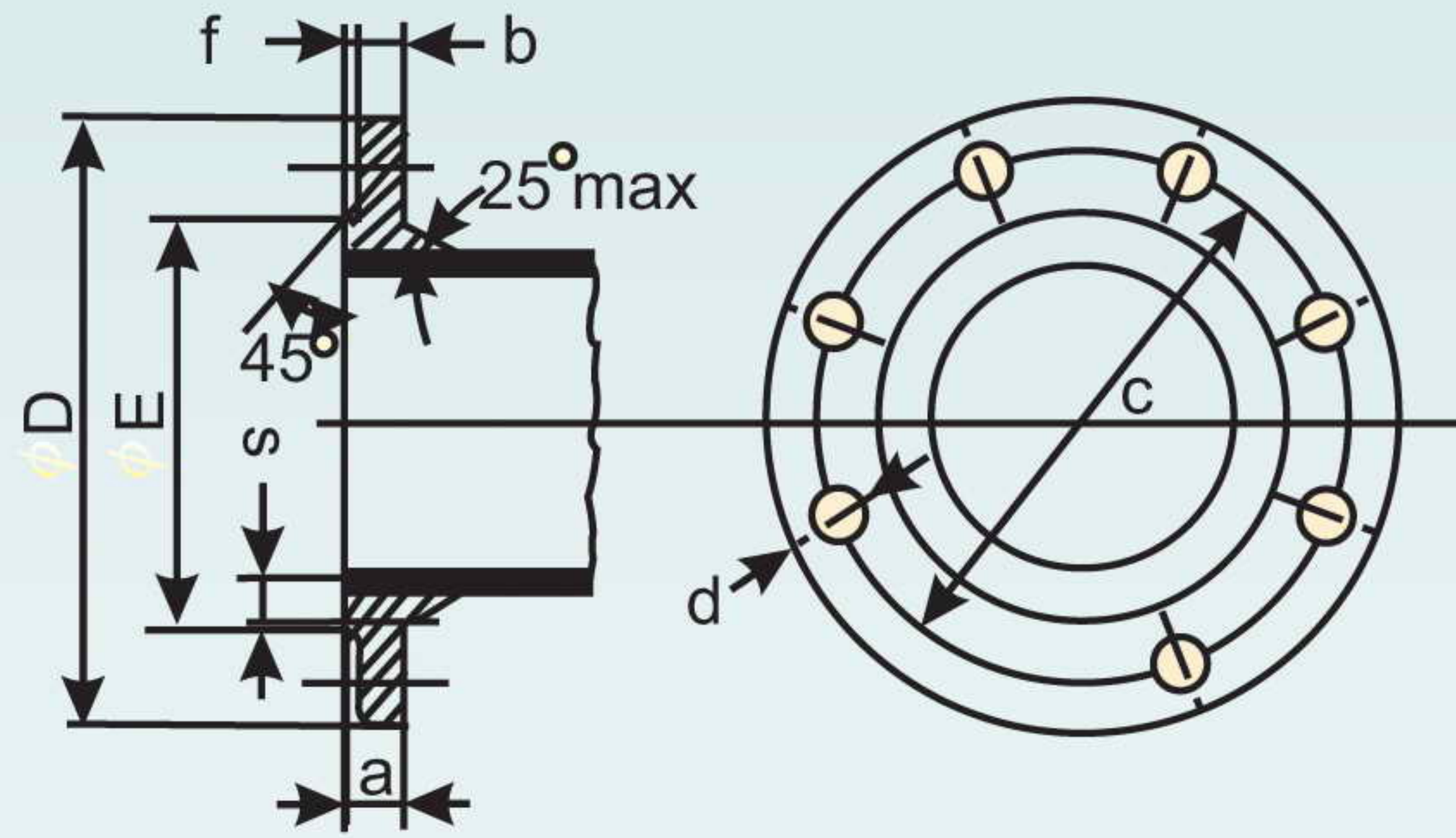

PN 25
TABLE - 15

Nominal Diameter	Dimensions							Holes		Bolt Size Metric	Bolt Length mm	App. Flange / Mass
								Nos.	Dia			
DN	D	E	C	b	f	a	S					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
80	200	132	160	16	3	19	15	8	19	M16	100	4.6
100	235	156	190	16	3	19	15	8	23	M20	100	6.1
125	270	184	220	16	3	19	15	8	28	M24	100	7.8
150	300	211	250	17	3	20	16	8	28	M24	100	9.7
200	360	274	310	19	3	22	17.5	12	28	M24	100	14.1
250	425	330	370	21.5	3	24.5	19.5	12	31	M27	120	20.7
300	485	389	430	23.5	4	27.5	22	16	31	M27	120	28.6
350	555	448	490	26	4	30	24	16	34	M30	120	39.8
400	620	503	550	28	4	32	25.5	16	37	M33	140	51.3
450	670	548	600	30.5	4	34.5	27.5	20	37	M33	140	60.8
500	730	609	660	32.5	4	36.5	29	20	37	M33	160	73.8
600	845	720	770	37	5	42	33.5	20	40	M36	180	106.3
700	960	820	875	41.5	5	36.5	33.5	24	43	M39	180	112.6
750	1020	883	940	45	5	50	34	24	43	M39	180	170.8
800	1085	928	990	46	5	51	35.5	24	49	M45	200	195.9
900	1185	1028	1090	50.5	5	55.5	39	28	49	M45	200	235.8
1000	1320	1140	1210	55	5	60	42	28	56	M52	200	318.5
1100	1420	1240	1310	60.5	5	65.5	45	32	56	M52	220	
1200	1530	1350	1420	64	5	69	48.5	32	56	M52	240	
1400	1755	1560	1640	69	5	74	52	36	62	M56	250	
1500	1975	1780	1860	76	5	81	56.5	40	62	M56	250	
1600	2195	1980	2070	83	5	88	61.5	44	70	M64	260	
1800	2425	2210	2300	90	5	95	66.5	48	70	M64	270	

NOTE : Dimensions 'a' and 's' are for guidance only.

Fittings

UNITECH Standard Flange Drilling for
Flange Fittings (PN 40)



PN-40

TABLE - 16

Nominal Diameter	Dimensions							Holes		Bolt Size Metric	Bolt Length mm	App. Flange / Mass
	DN	D	E	C	b	f	a	S	Nos.			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)		(13)
80	200	132	160	16	3	19	15	8	19	M16		4.6
100	235	166	190	16	3	19	15	8	23	M20		6.1
125	270	184	220	20.5	3	23.5	16.5	8	28	M24		9.6
150	300	211	250	23	3	26	18	8	28	M24		12.5
200	375	284	320	27	3	30	21	12	31	M27		21.6
250	450	345	385	31.5	3	34.5	24	12	34	M30		34.5
300	515	409	450	35.5	4	39.5	27.5	16	34	M30		49.5
350	580	465	510	40	4	44	31	16	37	M33		67.3
400	660	535	585	44	4	48	33.5	16	40	M36		94.6
450	685	560	610	46	4	50	35	20	40	M36		95.4
500	755	615	670	48	4	52	36.5	20	43	M39		119.0
600	890	735	795	53	5	58	40.5	20	49	M45		179.2

NOTE : Dimensions 'a' and 's' are for guidance only.

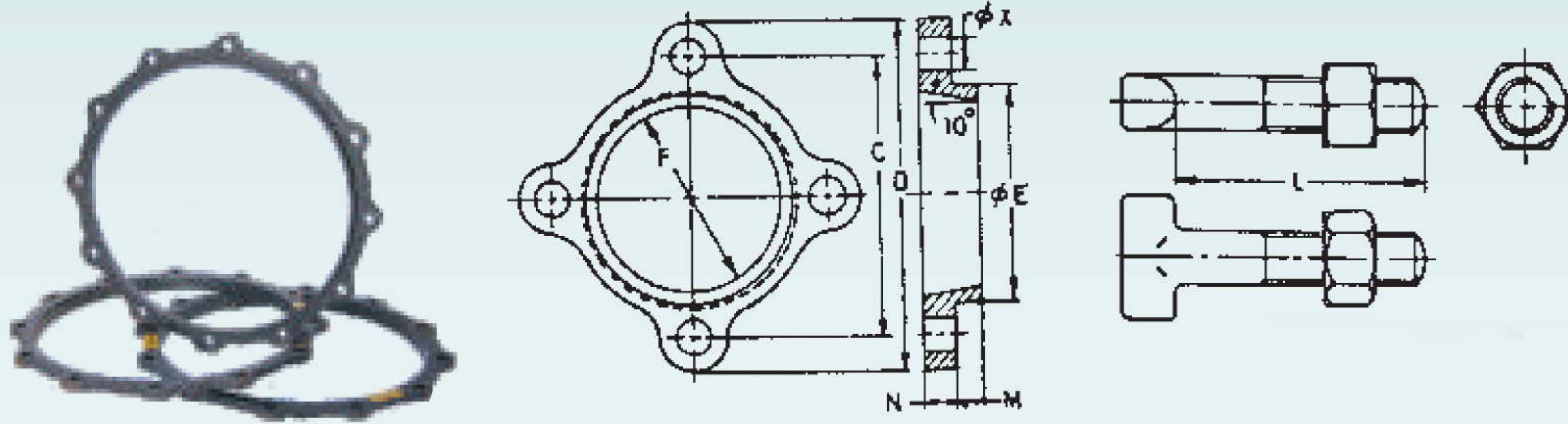
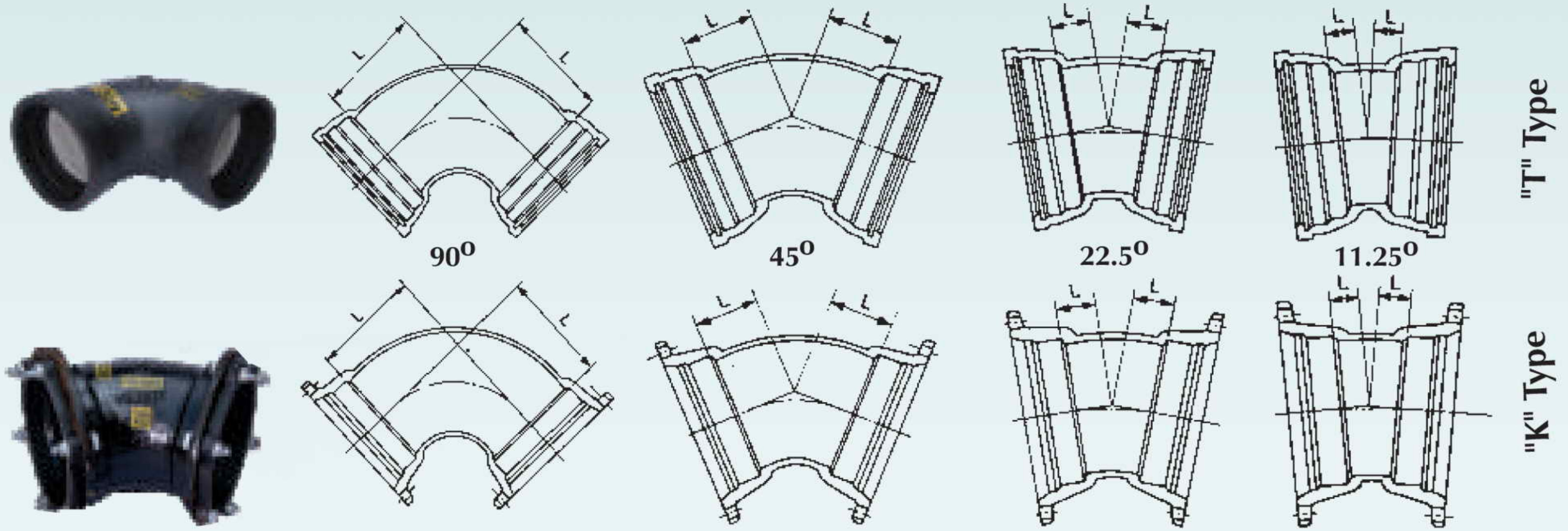


TABLE - 17

Nominal Diameter	Dimensions							Nominal Mass of each per kg.	BOLTS			App. Mass Total Nut Bolt per Flange (Kg)
	DN	D	C	E	F	x	N		M	Size	Length	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(11)	(11)	(12)	(Kg)
80	200	160	125	105	19	13	15	2.0	M16	85	4	0.90
100	220	180	145	125	19	13	15	2.5	M16	85	4	0.90
125	250	210	175	151	19	13	15	3.0	M16	85	4	0.90
150	285	240	197	177	23	13	15	4.0	M20	90	4	1.60
200	340	295	249	230	23	13	15	5.0	M20	90	4	1.60
250	395	350	302	282	23	17	15	6.0	M20	90	6	2.40
300	445	400	354	334	23	17	15	8.0	M20	100	6	2.70
350	505	460	411	386	23	17	20	11.0	M20	100	8	3.60
400	565	515	458	438	28	19	20	13.0	M24	110	8	5.20
450	620	565	513	489	28	19	20	15.0	M24	110	10	6.50
500	670	620	563	541	28	19	20	18.0	M24	110	10	6.50
600	780	725	668	645	31	20	20	20.0	M27	120	10	9.40
700	894	840	781	749	31	20	20	30.0	M27	120	12	11.28
750	944	900	833	800	31	20	20	35.0	M27	120	12	11.28
800	996	950	883	850	34	23	20	45.0	M30	120	12	13.68
900	1118	1050	983	955	34	23	20	55.0	M30	130	14	17.22
1000	1226	1160	1083	1060	37	23	20	70.0	M33	130	14	21.98
1050	1335	1258	1190	1135	37	26	25	80.0	M33	140	14	23.80
1100	1340	1270	1218	1163	37	26	25	100.0	M33	140	16	27.20
1200	1455	1380	1322	1267	40	26	25	130.0	M36	150	16	32.00
1500	1800	1710	1635	1580	43	26	25	170.0	M39	150	20	50.00

Fittings

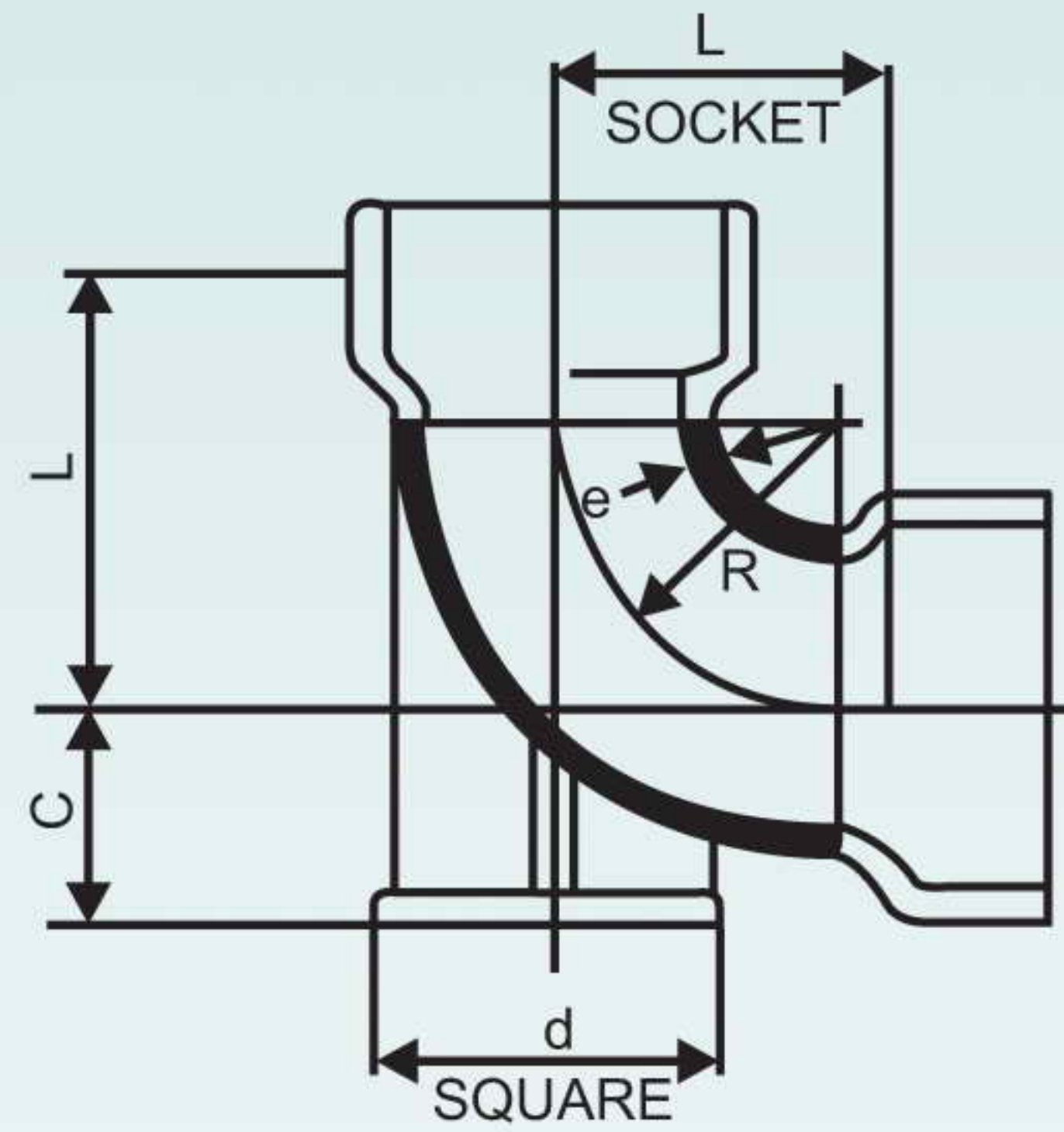
UNITECH Double Socket Bends



K - 12

TABLE - 18

Nominal Size	e	90°		45°		22.5°		11.25°	
		L	App Mass	L	App Mass	L	App Mass	L	App Mass
80	7	100	8	55	8	40	7	30	7
100	7.2	120	10	65	9	40	9	30	8
125	7.5	145	15	75	13	50	12	35	11
150	7.8	170	18	85	14	55	13	35	12
200	8.4	220	29	110	24	65	20	40	19
250	9	270	44	130	33	75	28	50	26
300	9.6	320	60	150	47	85	40	55	35
350	10.2	370	85	175	61	95	50	60	40
400	10.8	420	110	195	80	110	62	65	54
450	11.4	470	148	220	104	120	80	70	74
500	12	520	180	240	128	130	102	75	88
600	13.2	620	280	285	198	150	150	85	130
700	14.4	720	405	330	270	175	205	95	170
750	15	770	480	350	330	185	255	100	200
800	15.6	820	550	370	370	195	285	110	234
900	16.8	920	720	415	480	205	350	115	290
1000	18	1020	960	460	640	210	450	120	360
1100	19.2	1130	1350	505	920	220	600	120	530
1200	20.4	1230	1660	550	1120	240	760	130	600
1400	22.8	1430	2430	515	1450	260	1000	130	820
1500	24	1530	3000	540	1750	270	1350	135	1050
1600	25.2	1630	3380	565	1950	280	1600	140	1250
1800	27.6	1830	4400	610	2300	305	1900	155	1390
2000	30.0	--	5500	--	2760	--	2280	--	1600
2200	32.0	--	--	--	--	--	--	--	--



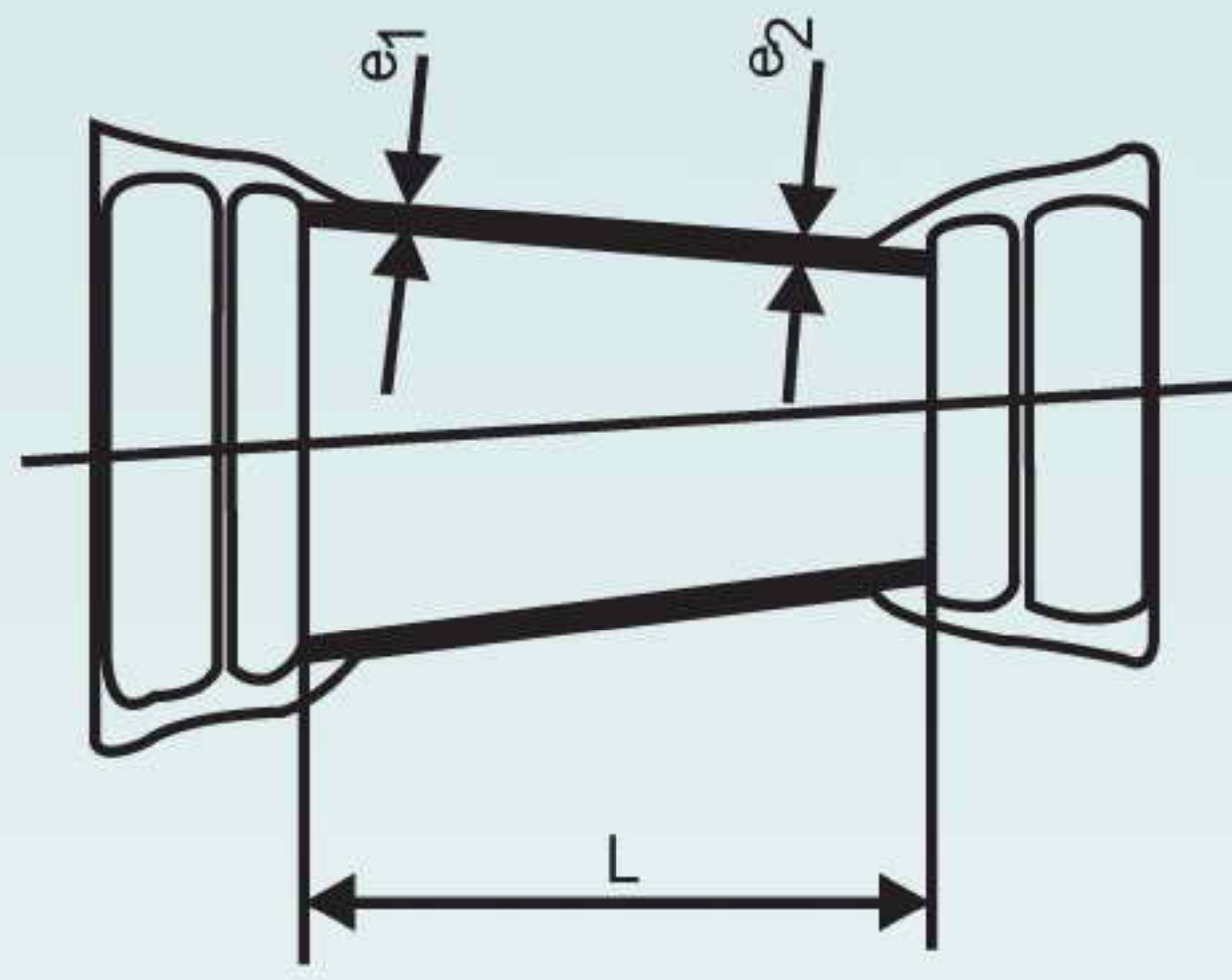
K - 12

TABLE - 19

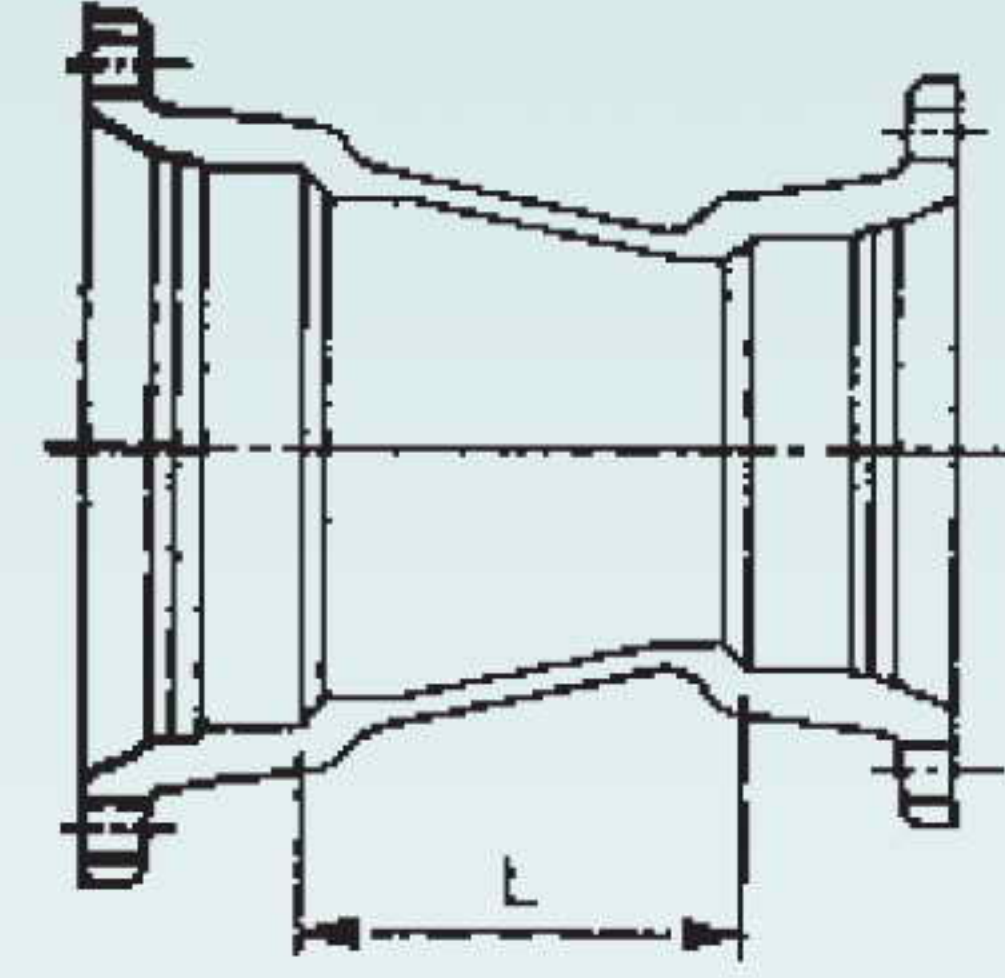
Nominal Size	e	L	c	d	App. Mass (kg)
80		110	110	180	13
100		130	125	200	16
125		155	140	225	22
150		180	160	250	29
200		230	190	300	47
250		280	225	350	70
300		325	255	400	100
350		380	290	450	135
400		430	320	500	180
450		480	355	550	230
500		530	385	600	290
600		630	450	700	440
700		735	515	800	620
750		790	545	850	730
800		830	580	900	840
900		930	645	1000	1110
1000		1035	710	1100	1460
1100		1130	775	1200	1880
1200		1230	840	1300	2300
1400		1430	970	1500	3590
1500		1530	1040	1600	4400
1600		1630	1100	1700	4900
1800		1830	1230	1900	6800

Fittings

UNITECH Double Socket Concentric Tapers



"T" TYPE



"K" TYPE

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TABLE - 20

Nominal Diameter		e ₁	e ₂	L	App. Mass (kg)
Larger End	Smaller End				
100	80	7.2	7.0	90	8
125	80	7.5	7.0	140	11
125	100	7.5	7.2	100	11
150	80	7.8	7.0	190	12
150	100	7.8	7.2	150	13
150	125	7.8	7.5	100	14
200	100	8.4	7.2	250	19
200	125	8.4	7.5	200	21
200	150	8.4	7.8	150	21
250	125	9.0	7.5	300	28
250	150	9.0	7.8	250	27
250	200	9.0	8.4	150	26
300	150	9.6	7.8	350	37
300	200	9.6	8.4	250	36
300	250	9.6	9.0	150	34
350	200	10.2	8.4	360	48
350	250	10.2	9.0	260	47
350	300	10.2	9.6	160	46
400	200	10.8	8.4	360	68
400	250	10.8	9.0	360	60
400	300	10.8	9.6	260	59
400	350	10.8	10.2	160	50
450	250	11.4	9.0	260	72
450	300	11.4	9.6	260	74
450	350	11.4	10.2	260	68
450	400	11.4	10.8	160	62

K - 12

TABLE - 20 Contd.

Nominal Diameter		e1	e2	L	App. Mass (kg)
Larger End	Smaller End				
500	300	12.0	9.6	360	94
500	350	12.0	10.2	360	90
500	400	12.0	10.8	260	88
500	450	12.0	11.4	160	85
600	350	13.2	10.2	460	138
600	400	13.2	10.8	460	135
600	450	13.2	11.4	360	136
600	500	13.2	12.0	260	124
700	400	14.4	10.8	480	184
700	450	14.4	11.4	480	188
700	500	14.4	12.0	480	192
700	600	14.4	13.2	280	172
750	450	15.0	11.4	480	210
750	500	15.0	12.0	480	215
750	600	15.0	13.2	280	200
750	700	15.0	14.4	180	185
800	450	15.6	11.4	480	246
800	500	15.6	12.0	480	248
800	600	15.6	13.2	480	245
800	700	15.6	14.4	280	224
900	500	16.8	12.0	480	312
900	600	16.8	13.2	480	315
900	700	16.8	14.4	480	316
900	800	16.8	15.6	280	288
1000	600	18.0	13.2	480	380
1000	700	18.0	14.4	480	385
1000	800	18.0	15.6	480	390
1000	900	18.0	16.8	280	360
1100	700	19.2	14.4	480	560
1100	800	19.2	15.6	480	570
1100	900	19.2	16.8	480	580
1100	1000	19.2	18.0	280	500

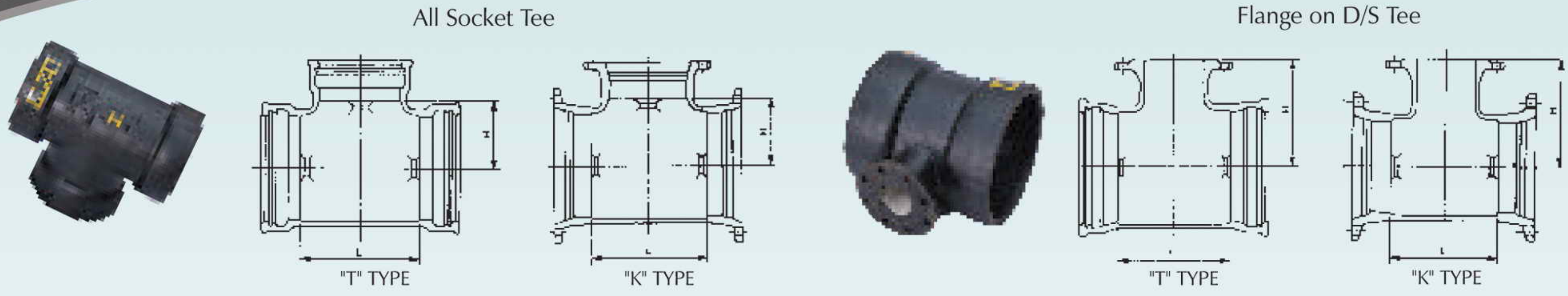
K - 12

TABLE - 20 Contd.

Nominal Diameter		e1	e2	L	App. Mass (kg)
Larger End	Smaller End				
1200	700	20.4	14.4	480	630
1200	800	20.4	15.6	480	640
1200	900	20.4	16.8	480	650
1200	1000	20.4	18.0	480	660
1200	1100	20.4	19.2	280	610
1400	800	22.8	15.6	360	780
1400	900	22.8	16.8	360	810
1400	1000	22.8	18.0	360	840
1400	1100	22.8	19.2	360	880
1400	1200	22.8	20.4	360	900
1500	900	24.0	16.8	360	990
1500	1000	24.0	18.0	360	1010
1500	1100	24.0	19.2	360	1030
1500	1200	24.0	20.4	260	1010
1500	1400	24.0	22.8	260	1040
1600	1000	25.2	18.0	360	1070
1600	1100	25.2	19.2	360	1100
1600	1200	25.2	20.4	360	1120
1600	1400	25.2	22.8	360	1140
1600	1500	25.2	24.0	260	1110
1800	1100	27.6	19.2	480	1520
1800	1200	27.6	20.4	480	1530
1800	1400	27.6	22.8	360	1440
1800	1500	27.6	24.0	360	1490
1800	1600	27.6	25.2	360	1550

NOTE

1. Size and Dimensions in **RED** are non standard as per IS-9523:2000
2. Tapers in combination of sizes other than above can also be manufactured against specific requirement.



K - 12

TABLE - 21

Nominal Diameter		e	e ₁	L	H		App. Mass (kg)		
DN Body	dn Branch				D/S B/F	All Socket	D/S B/F		All Socket
							PN 10	PN 16	
80	80	7.0	7.0	170	165	85	13	13	11
100	80	7.2	7.0	170	175	95	15	15	13
100	100	7.2	7.2	190	180	95	16	17	14
125	80	7.5	7.0	170	190	105	18	18	17
125	100	7.5	7.2	195	195	110	19	20	18
125	125	7.5	7.5	225	200	110	21	22	20
150	80	7.8	7.0	170	205	120	21	21	19
150	100	7.8	7.2	195	210	120	22	23	20
150	150	7.8	7.8	255	220	125	27	28	23
200	80	8.4	7.0	175	235	145	28	28	26
200	100	8.4	7.2	200	240	145	30	31	28
200	150	8.4	7.8	255	250	150	36	37	32
200	200	8.4	8.4	315	260	155	42	44	39
250	80	9.0	7.0	180	265	170	36	36	35
250	100	9.0	7.2	200	270	170	38	39	37
250	150	9.0	7.8	260	280	175	44	46	40
250	200	9.0	8.4	315	290	180	52	54	48
250	250	9.0	9.0	375	300	190	60	62	54
300	80	9.6	7.0	180	295	220	48	48	44
300	100	9.6	7.2	210	300	220	50	51	45
300	150	9.6	7.8	260	310	220	56	57	54
300	200	9.6	8.4	325	320	220	63	65	60
300	250	9.6	9.0	380	330	220	74	76	68
300	300	9.6	9.6	440	340	220	80	89	74
350	80	10.2	7.0	185	325	260	58	58	55
350	100	10.2	7.2	205	330	260	59	60	56
350	150	10.2	7.8	265	340	265	70	71	64
350	200	10.2	8.4	325	350	270	75	77	70
350	250	10.2	9.0	380	360	280	90	92	85
350	300	10.2	9.6	440	370	285	100	105	95
350	350	10.2	10.2	495	380	290	110	115	100
400	80	10.8	7.0	185	355	285	70	70	73
400	100	10.8	7.2	210	360	285	71	72	72
400	150	10.8	7.8	270	370	290	80	86	90
400	200	10.8	8.4	325	380	295	92	94	92
400	250	10.8	9.0	385	390	305	103	105	100
400	300	10.8	9.6	440	400	310	114	116	110
400	400	10.8	10.8	560	420	320	145	150	130

NOTE : Also available in K-14 as per ISO-2531/BS-EN-545

Fittings

UNITECH All Socket Tees, Flange on Double Socket Tees



UNITECHTM
DI PIPES & FITTINGS MFG.

K - 12

TABLE - 21 Contd.

Nominal Diameter		e	e ₁	L	H		App. Mass (kg)			
DN	dn				D/S	B/F	All Socket	D/S B/F		All Socket
Body	Branch							PN 10	PN 16	
450	80	11.4	7.0	190	385	310	86	86	89	
450	100	11.4	7.2	215	390	310	88	89	90	
450	150	11.4	7.8	270	400	315	95	96	105	
450	200	11.4	8.4	330	410	320	108	110	110	
450	250	11.4	9.0	390	420	330	120	122	112	
450	300	11.4	9.6	445	430	335	134	136	125	
450	400	11.4	10.8	560	450	345	159	164	155	
450	450	11.4	11.4	620	460	350	173	181	160	
500	80	12.0	7.0	195	415	335	102	102	104	
500	100	12.0	7.2	215	420	335	103	104	105	
500	150	12.0	7.8	275	430	340	123	124	127	
500	200	12.0	8.4	330	440	345	126	128	130	
500	250	12.0	9.0	390	450	355	150	152	155	
500	300	12.0	9.6	450	460	360	154	156	160	
500	350	12.0	10.2	505	470	365	172	175	170	
500	400	12.0	10.8	565	480	370	181	186	185	
500	500	12.0	12.0	680	500	380	213	227	205	
600	80	13.2	7.0	200	475	385	151	151	166	
600	100	13.2	7.2	220	480	385	155	156	168	
600	150	13.2	7.8	280	490	390	160	161	170	
600	200	13.2	8.4	340	500	395	171	173	172	
600	300	13.2	9.6	455	520	410	220	222	220	
600	400	13.2	10.8	570	540	420	240	245	240	
600	500	13.2	12.0	685	560	430	290	304	290	
600	600	13.2	13.2	800	580	440	320	335	300	
700	100	14.4	7.2	230	510	435	200	200	205	
700	150	14.4	7.8	285	520	440	210	211	215	
700	200	14.4	8.4	345	525	445	220	226	230	
700	300	14.4	9.6	460	540	460	270	272	270	
700	400	14.4	10.8	575	555	470	300	305	320	
700	500	14.4	12.0	690	570	480	370	384	420	
700	600	14.4	13.2	810	585	490	410	425	470	
700	700	14.4	14.4	925	600	500	440	455	500	
750	100	15.0	7.2	230	540	460	240	240	315	
750	150	15.0	7.8	290	550	465	255	256	330	
750	200	15.0	8.4	345	555	470	270	272	360	
750	300	15.0	9.6	465	570	485	305	307	390	
750	400	15.0	10.8	580	585	495	340	345	430	
750	500	15.0	12.0	695	600	505	382	396	480	
750	600	15.0	13.2	810	615	515	422	437	520	
750	700	15.0	14.4	925	630	525	465	477	570	
750	750	15.0	15.0	985	640	535	490	503	590	
800	100	15.6	7.2	235	570	485	260	265	260	
800	150	15.6	7.8	290	580	490	280	290	280	
800	200	15.6	8.4	350	585	495	300	305	300	
800	300	15.6	9.6	465	600	510	350	355	370	
800	400	15.6	10.8	580	615	520	380	385	420	
800	500	15.6	12.0	700	630	530	500	514	490	
800	600	15.6	13.2	815	645	540	525	560	530	
800	700	15.6	14.4	930	660	550	550	562	550	
800	800	15.6	15.6	1045	675	565	580	595	610	

TABLE - 21 Contd.

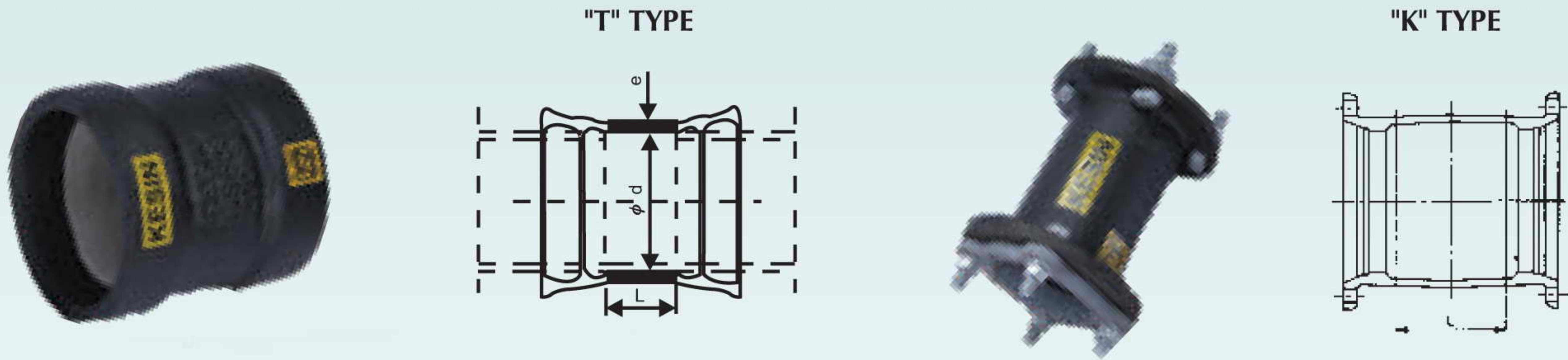
Nominal DN Body	Diameter dn Branch	e	e ₁	L	H		App. Mass (kg)		All Socket
					D/S	B/F	D/S B/F		
							PN 10	PN 16	
900	150	16.8	7.8	300	640	540	330	331	370
900	200	16.8	8.4	355	645	545	350	352	400
900	400	16.8	10.8	590	675	570	450	455	500
900	600	16.8	13.2	1170	705	590	720	746	680
900	800	16.8	15.6	1170	735	615	750	768	725
900	900	16.8	16.8	1170	750	625	760	780	750
1000	150	18.0	7.8	305	700	590	430	430	440
1000	200	18.0	8.4	360	705	595	450	452	460
1000	400	18.0	10.8	595	735	620	560	565	550
1000	600	18.0	13.2	1290	765	640	925	942	900
1000	800	18.0	15.6	1290	795	665	955	970	940
1000	1000	18.0	18.0	1290	825	685	985	1020	1000
1100	200	19.2	8.4	370	765	645	690	692	670
1100	400	19.2	10.8	600	795	670	785	790	780
1100	600	19.2	13.2	830	825	690	920	935	910
1100	800	19.2	15.6	1065	855	715	1100	1115	1190
1100	1000	19.2	18.0	1295	885	735	1300	1335	1360
1100	1100	19.2	19.2	1410	900	745	1415	1450	1460
1200	200	20.4	8.4	375	825	695	720	722	800
1200	400	20.4	10.8	605	855	720	895	900	930
1200	600	20.4	13.2	840	885	740	1070	1085	1060
1200	800	20.4	15.6	1070	915	765	1240	1255	1250
1200	1000	20.4	18.0	1300	945	785	1440	1475	1490
1200	1200	20.4	20.4	1535	975	805	1770	1825	1710
1400	400	22.8	10.8	800	950	820	1400	1405	1380
1400	600	22.8	13.2	1030	980	840	1565	1580	1550
1400	800	22.8	15.6	1260	1010	865	1770	1785	1750
1400	1000	22.8	18.0	1495	1040	885	1985	2020	1960
1400	1200	22.8	20.4	1725	1070	905	2320	2375	2200
1400	1400	22.8	22.8	1960	1100	930	2630	2690	2500
1500	400	24.0	10.8	805	1005	870	1510	1515	1400
1500	600	24.0	13.2	1035	1035	890	1780	1795	1600
1500	800	24.0	15.6	1270	1065	915	2070	2085	1850
1500	1000	24.0	18.0	1500	1095	935	2370	2405	2200
1500	1200	24.0	20.4	1730	1125	955	2700	2755	2400
1500	1400	24.0	22.8	1965	1155	980	3040	3100	2700
1500	1500	24.0	24.0	2080	1170	990	3230	3320	2900
1600	400	25.2	10.8	810	1060	920	1780	1785	1770
1600	600	25.2	13.2	1040	1090	940	1980	1995	1980
1600	800	25.2	15.6	1275	1120	965	2230	2245	2220
1600	1000	25.2	18.0	1505	1150	985	2480	2520	2460
1600	1200	25.2	20.4	1740	1180	1005	2790	2850	2800
1600	1400	25.2	22.8	1970	1210	1030	3250	3310	3000
1600	1600	25.2	25.2	2200	1240	1050	3800	3900	3400
1800	600	27.6	13.2	1055	1200	1040	2530	2550	2300
1800	800	27.6	15.6	1285	1230	1065	2900	2920	2600
1800	1000	27.6	18.0	1520	1260	1085	3300	3340	3000
1800	1200	27.6	20.4	1750	1290	1105	3700	3760	3300
1800	1400	27.6	22.8	1980	1320	1130	4100	4160	3700
1800	1600	27.6	25.2	2215	1350	1150	4600	4700	4100
1800	1800	27.6	27.6	2445	1380	1175	5100	5220	4600

NOTE : 1. Size & Dimensions in RED are non standard as per IS-9523:2000.

2. TEES in combination of sizes other than above can also be manufactured against specific requirements.

Fittings

UNITECH All Collars

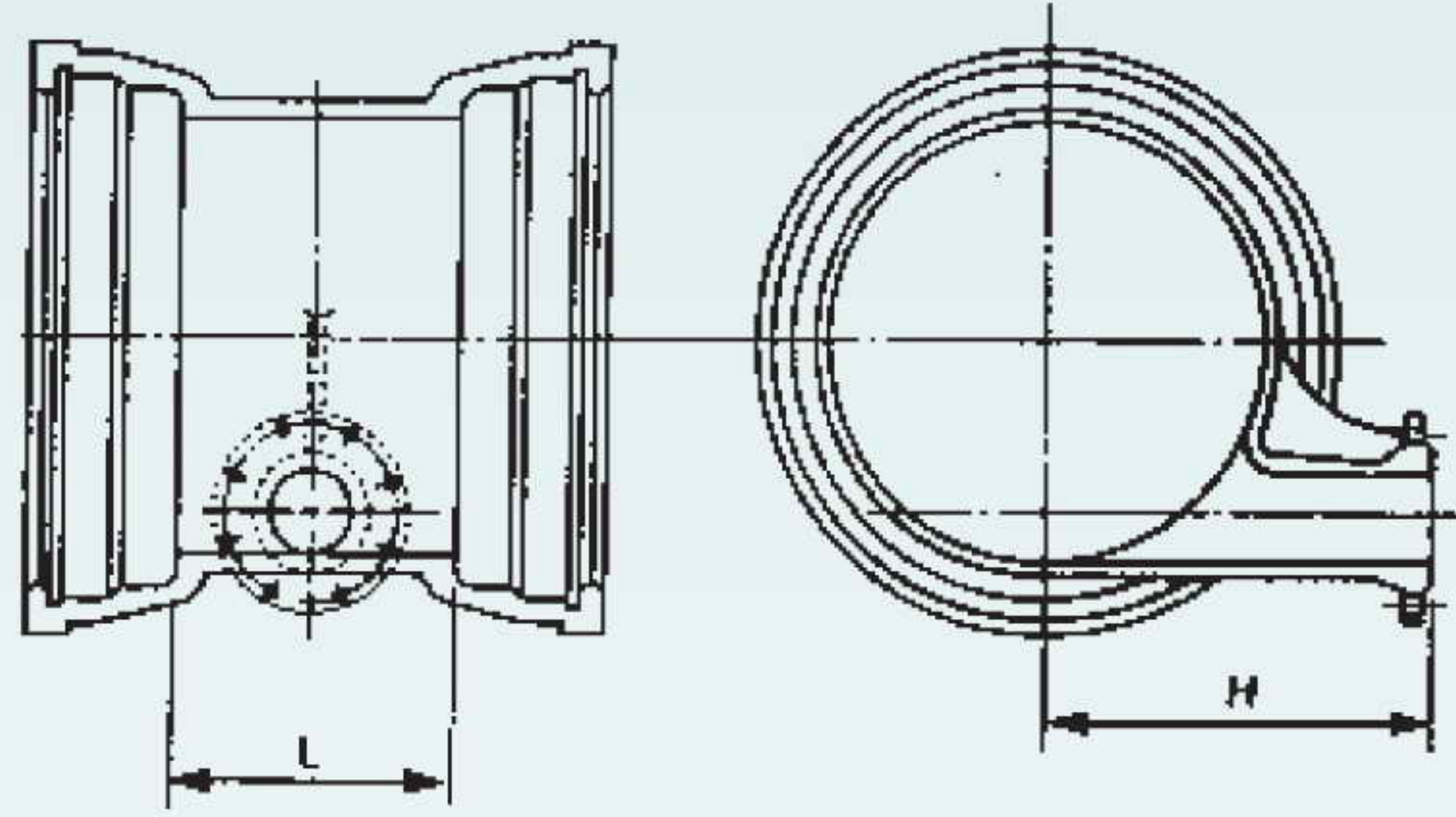


K - 12

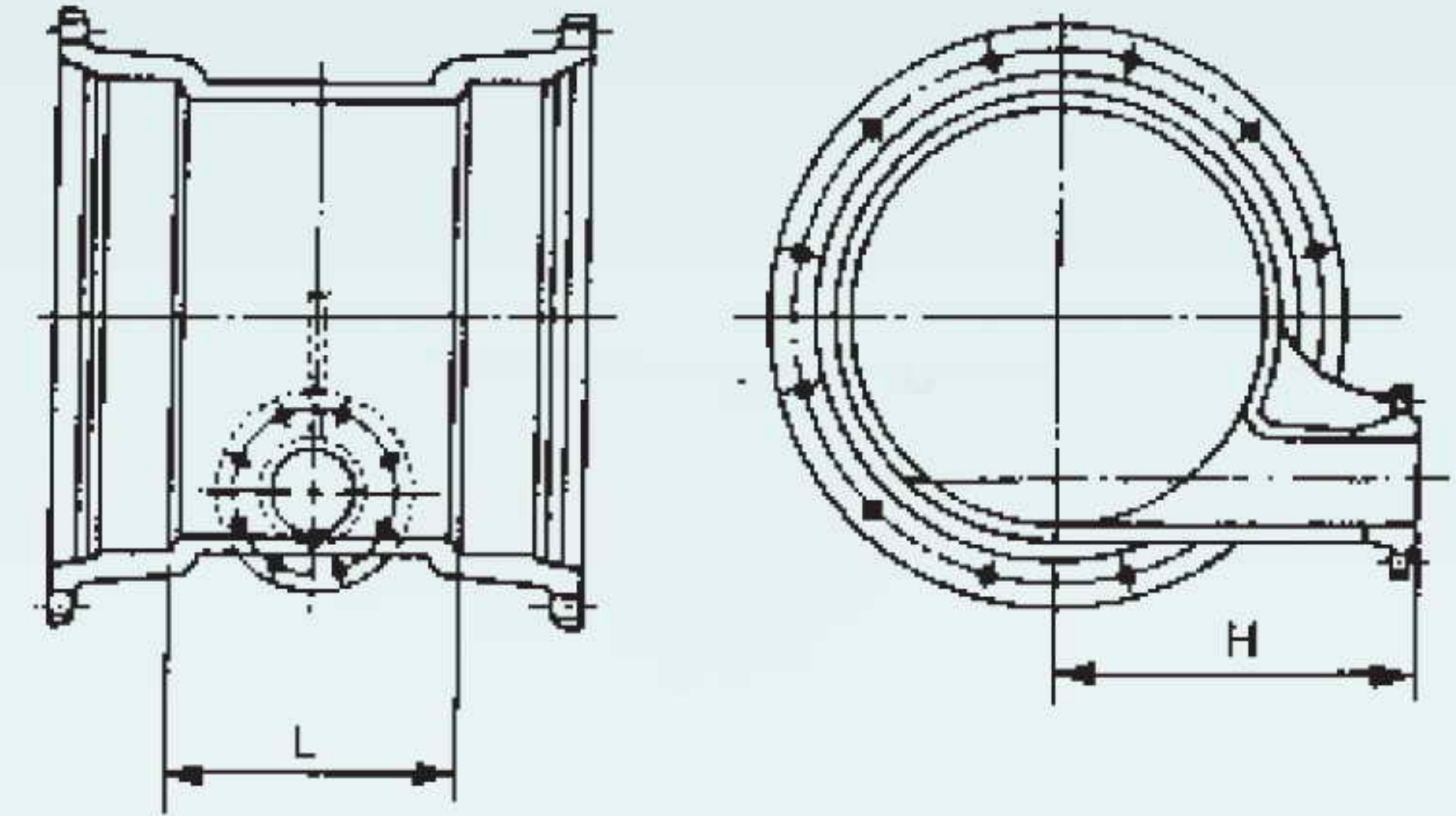
TABLE - 22

Nominal Dia (DN)	e	d	SHORT TYTON COLLAR (Non Standard) Mass	STD TYTON COLLAR		M/J COLLAR		
				L	App. Mass (kg)	L	App. Mass (kg)	
							Main Fitting	Complete Set Wt.
80	7	109	6	160	9	160	9	15
100	7.2	130	7	160	11	160	11	18
125	7.5	156	9	165	16	165	16	24
150	7.8	183	11	165	17	165	17	28
200	8.4	235	16	170	22	170	22	36
250	9	288	19	175	29	175	29	47
300	9.6	340	24	180	38	180	38	61
350	10.2	393	32	185	50	185	50	80
400	10.8	445	40	190	66	190	66	105
450	11.4	498	47	195	72	195	72	118
500	12	550	52	200	90	200	90	143
600	13.2	655	80	210	115	210	115	177
700	14.4	760	—	220	172	220	172	262
750	15	810	—	225	180	225	180	281
800	15.6	865	—	230	220	230	220	346
900	16.8	970	—	240	270	240	270	424
1000	18	1075	—	250	325	250	325	520
1100	19.2	1180	—	260	415	260	415	683
1200	20.4	1285	—	270	480	270	480	820
1400	22.8	1477	—			340	690	1116
1500	24	1580	—			350	770	1228
1600	25.2	1683	—			360	920	1430
1800	27.6	1892	—			380	1170	1770

NOTE : Size & Dimensions in RED are non standard as per IS-9523 : 2000.



"T" TYPE



"K" TYPE

K - 12

TABLE - 23

Nominal Diameter		e	L	e1	H	App. Mass (Kg)
DN	dn					
200	80	8.4	245	7	250	40
250	80	9.0	250	7	275	50
300	80	9.6	255	7	300	62
350	100	10.2	280	7.2	325	83
400	100	10.8	280	7.2	350	98
450	100	11.4	285	7.2	375	115
500	100	12.0	290	7.2	400	134
600	100	13.2	295	7.2	450	173
700	150	14.4	360	7.8	500	255
750	150	15.0	360	7.8	500	288
800	150	15.6	365	7.8	550	320
900	150	16.8	370	7.8	600	396
1000	200	18.0	435	8.4	650	514
1100	200	19.2	440	8.4	700	617
1200	200	20.4	445	8.4	750	744
1400	200	22.8	460	8.4	850	950
1500	200	24.0	465	8.4	900	1070
1600	400	25.2	700	10.8	950	1500
1800	400	27.6	715	10.8	1050	1900

NOTE : Size & Dimensions in **RED** are non standard as per IS-9523:2000.

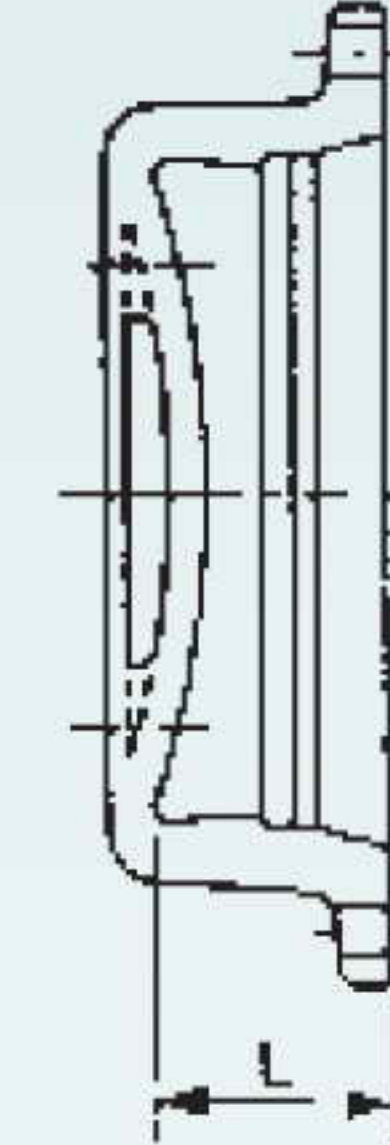
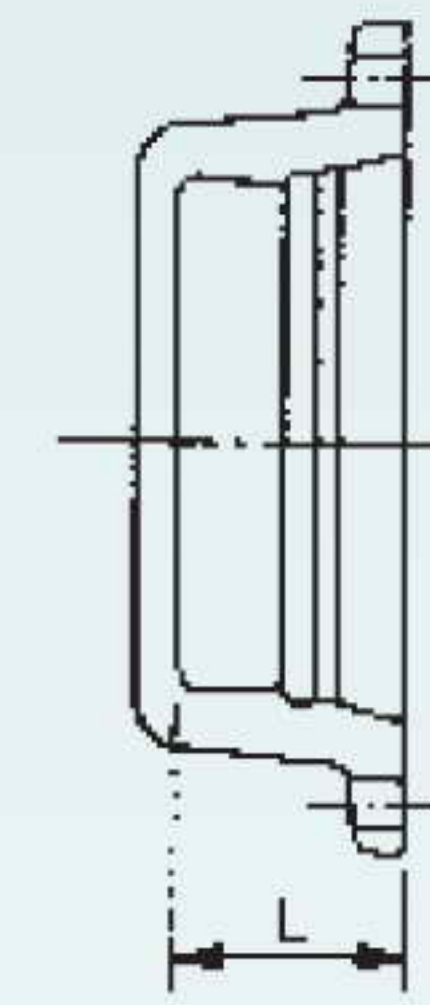
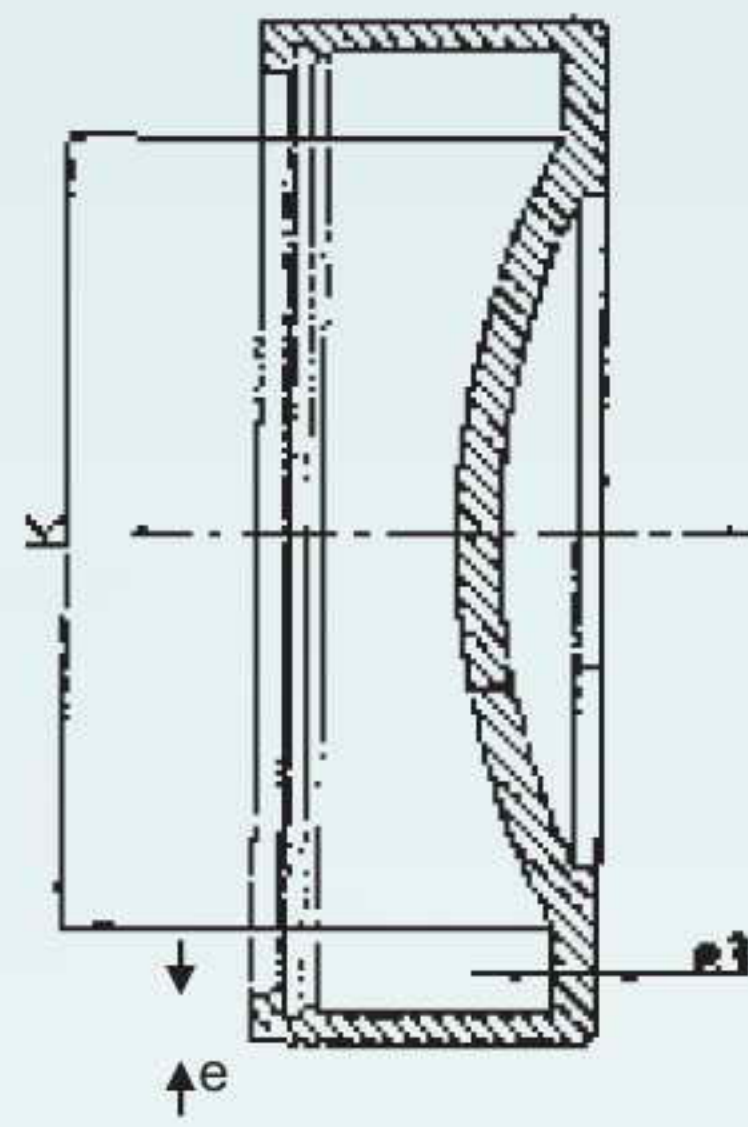
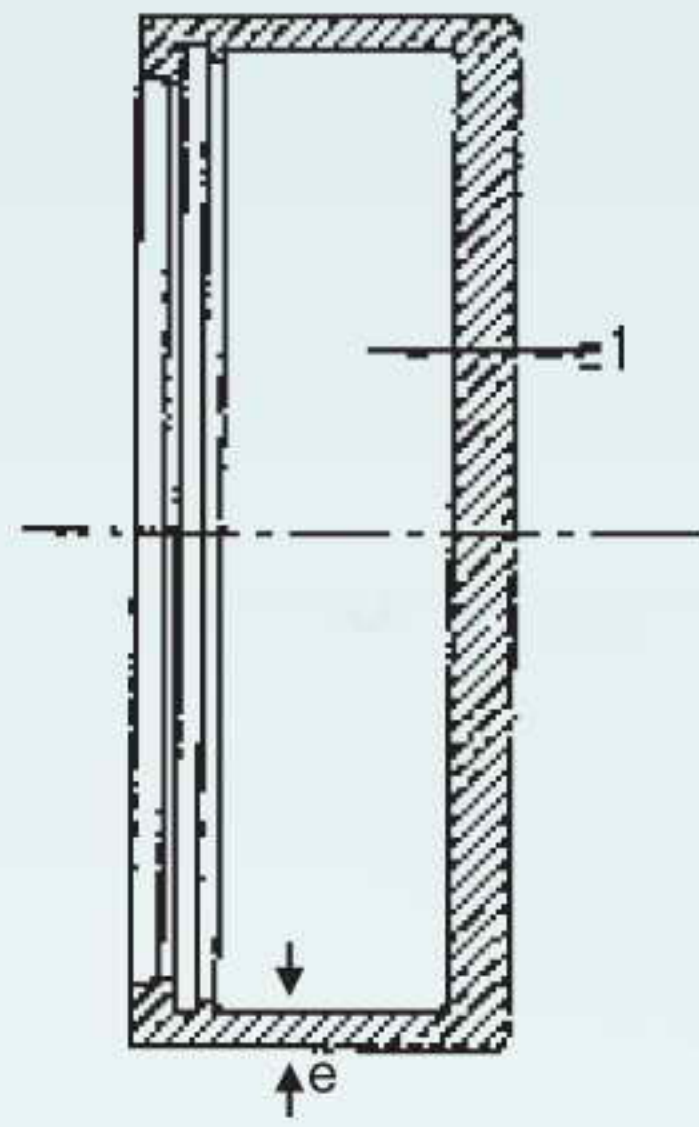


80 to 300 mm dia

350 to 1200 mm dia

80 to 300 mm dia

350 to 1200 mm dia



"T" TYPE

"K" TYPE

K - 12

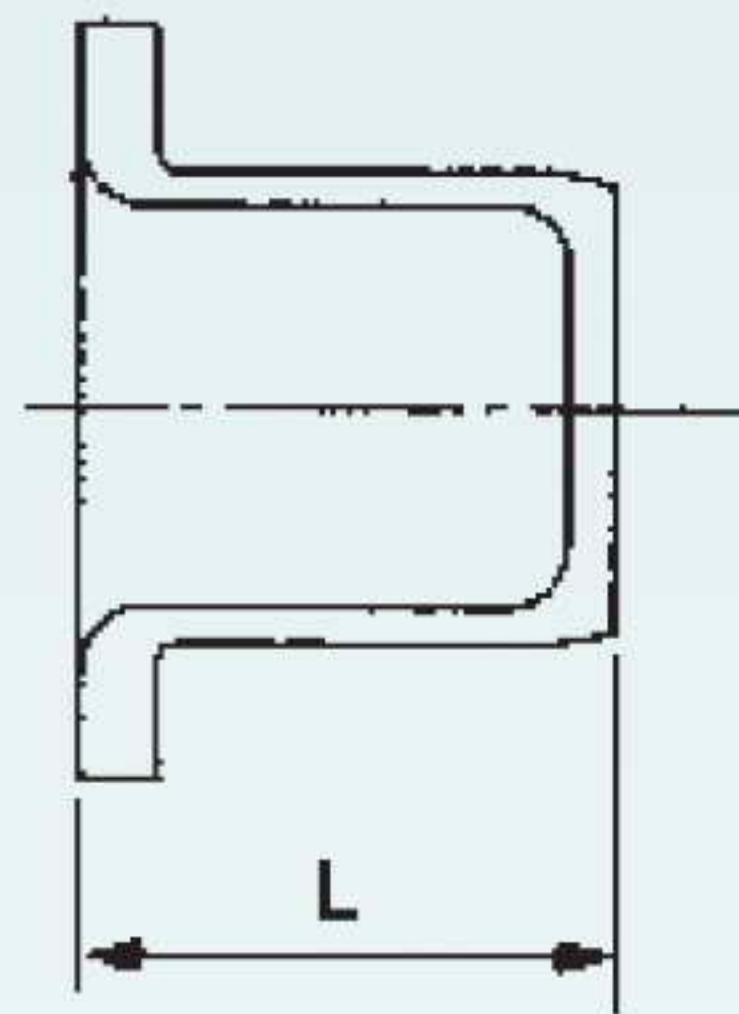
TABLE - 24

Nominal Diameter DN	e	e ₁	L	App. Mass (Kg)
80	7	9.5	80	4
100	7.2	10.5	80	5
150	7.8	12.5	90	9
200	8.4	13.5	90	16
250	9	14.5	90	19
300	9.6	15.5	110	30
350	10.2	16.5	110	46
400	10.8	17.5	110	60
450	11.4	19	110	76
500	12	20	110	91
600	13.2	21	110	127
700	14.4	23	120	175
750	15	24	120	202
800	15.6	25	120	227
900	16.8	27	120	295
1000	18	28	130	379
1100	19.2	30	130	466
1200	20.4	32	130	567

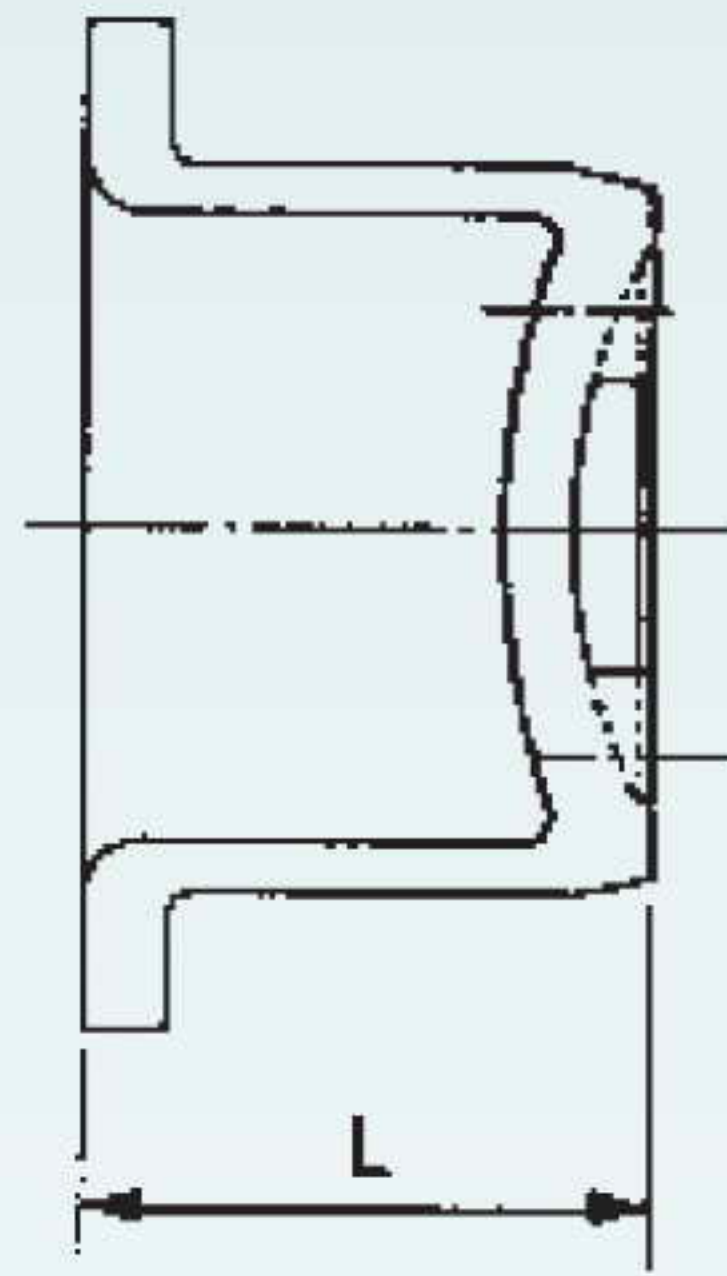
NOTE : Size & Dimensions in **RED** are non standard as per IS-9523 : 2000.

"T" TYPE

80 to 300 mm dia

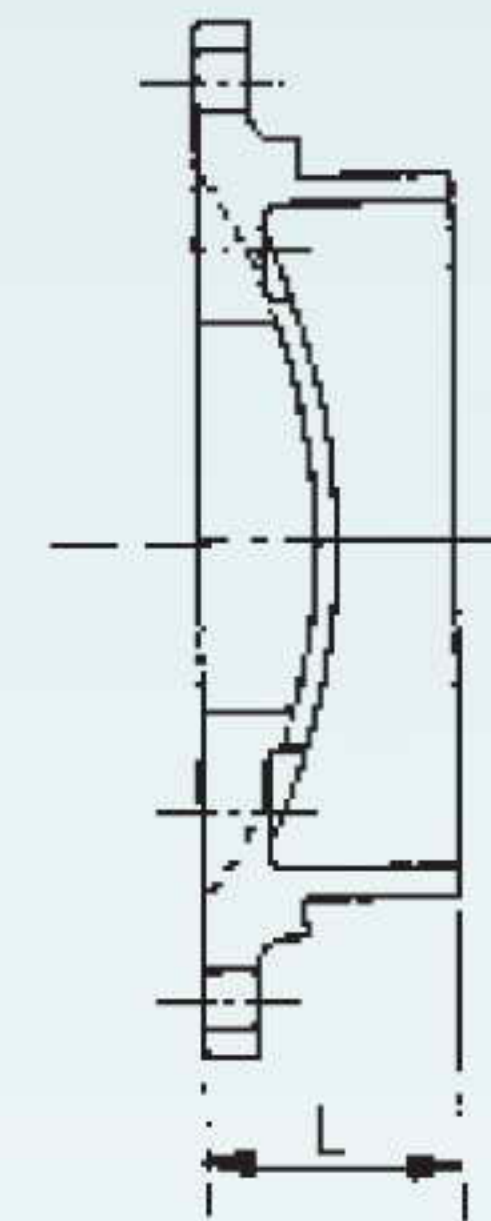


350 to 1200 mm dia

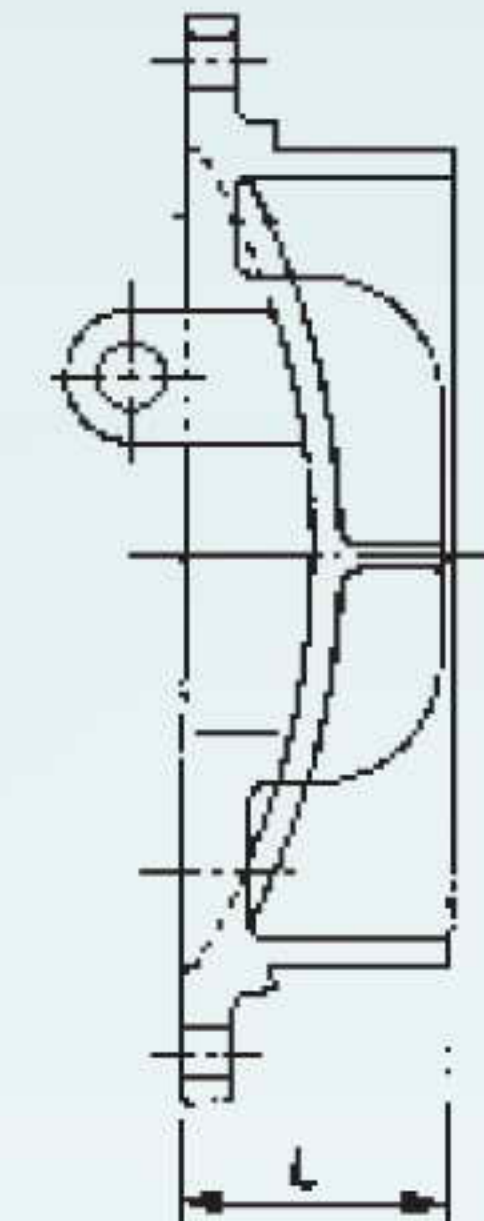


"K" TYPE

80 to 300 mm dia



350 to 1200 mm dia

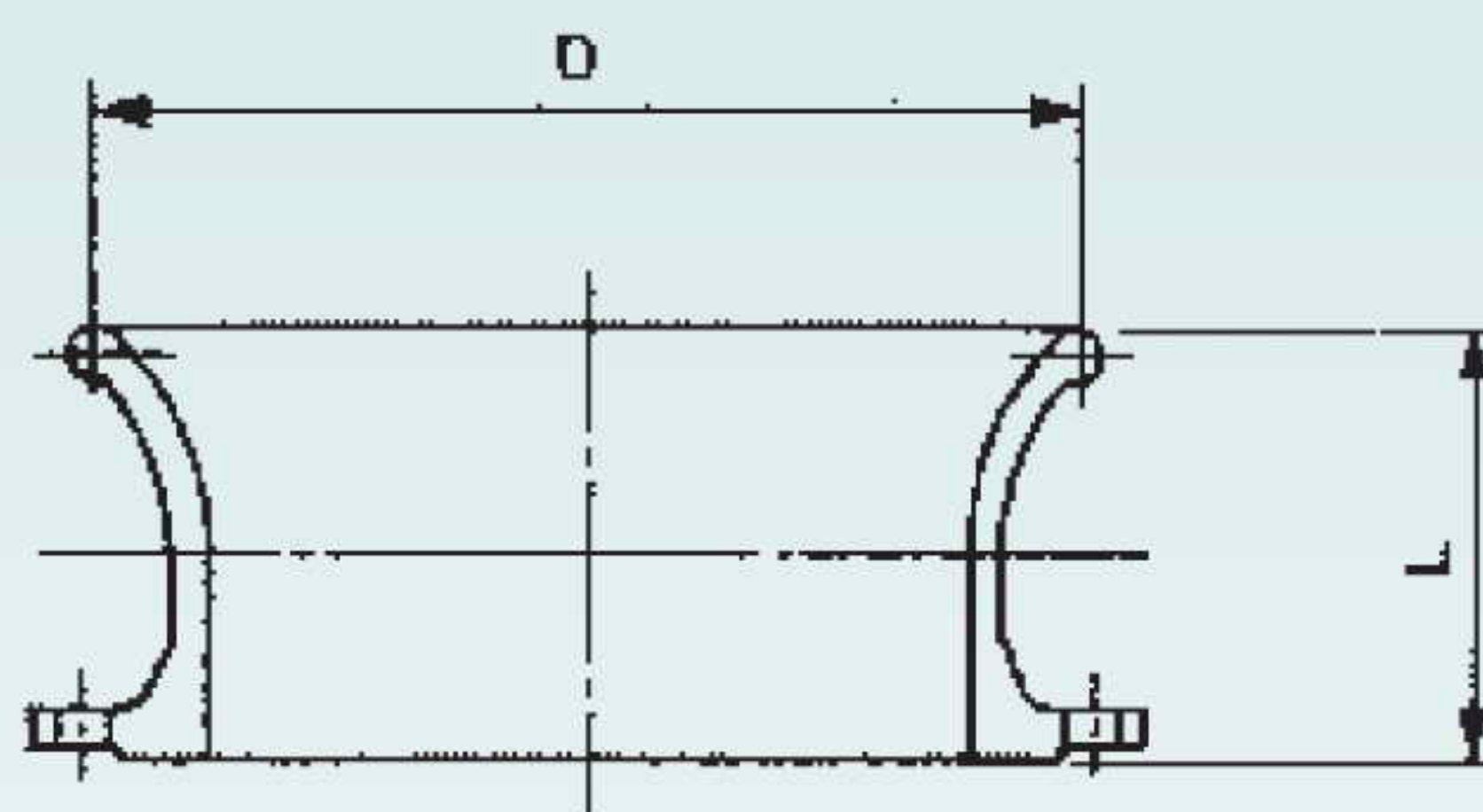


K - 12

TABLE - 25

Nominal Diameter DN	e	e ₁	"T" TYPE		"K" TYPE	
			L	App. Mass(kg)	L	App. Mass(kg)
80	7	9.5	113	3	92	6
100	7.2	10.5	120	5	93	7
150	7.8	12.5	130	9	104	11
200	8.4	13.5	146	14	105	16
250	9	14.5	152	19	106	28
300	9.6	15.5	159	30	127	31
350	10.2	16.5	176	44	128	41
400	10.8	17.5	178	52	129	53
450	11.4	19	180	66	130	63
500	12	20	187	82	131	76
600	13.2	21	194	120	132	116
700	14.4	23	200	180	143	166
750	15	24	225	220	144	210
800	15.6	25	250	240	144	250
900	16.8	27	300	310	145	333
1000	18	28	325	390	156	434
1100	19.2	30	350	500	158	538
1200	20.4	32	375	620	160	671

NOTE : Size & Dimensions in **RED** are non standard as per IS-9523 : 2000.

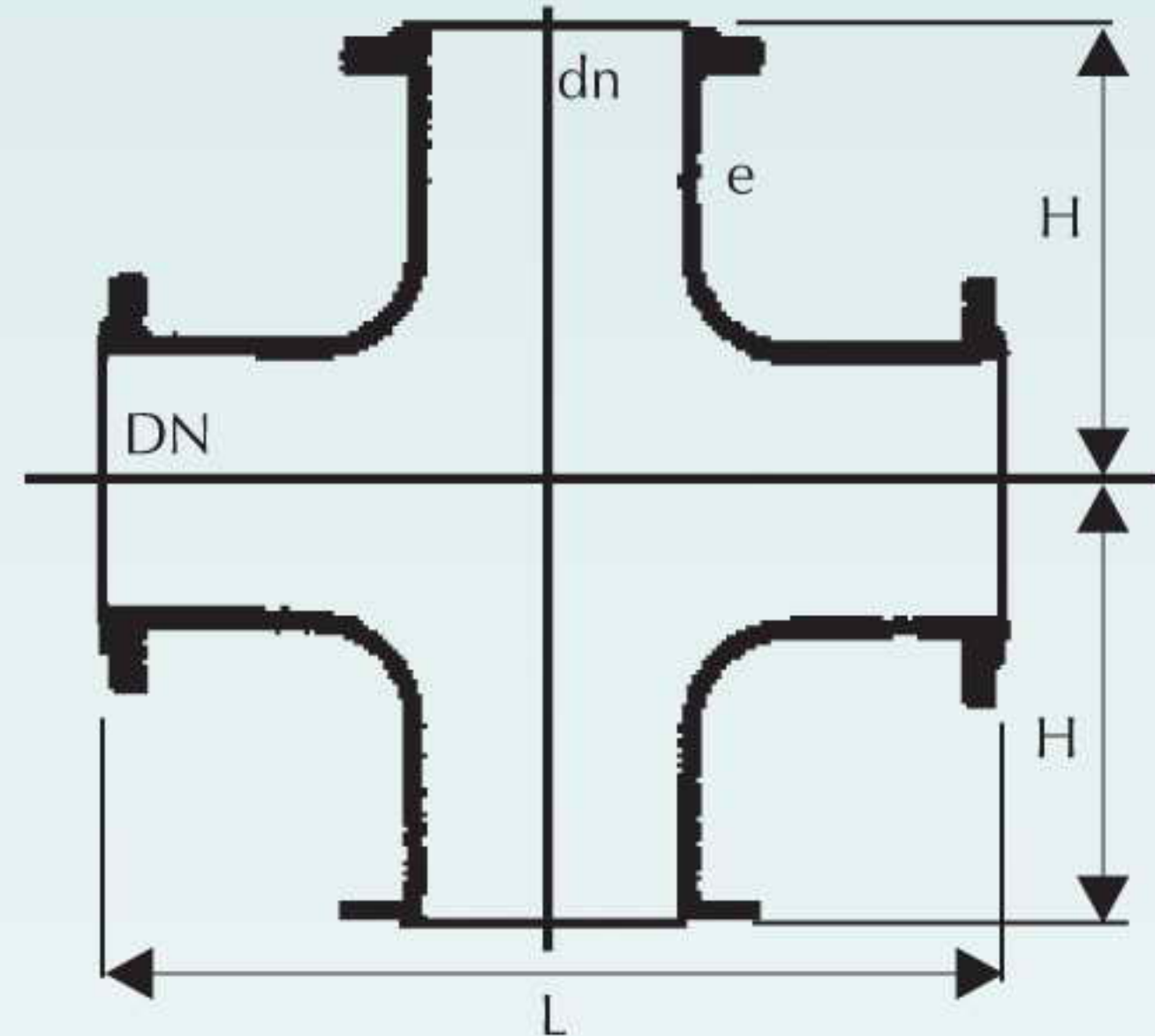


K - 12

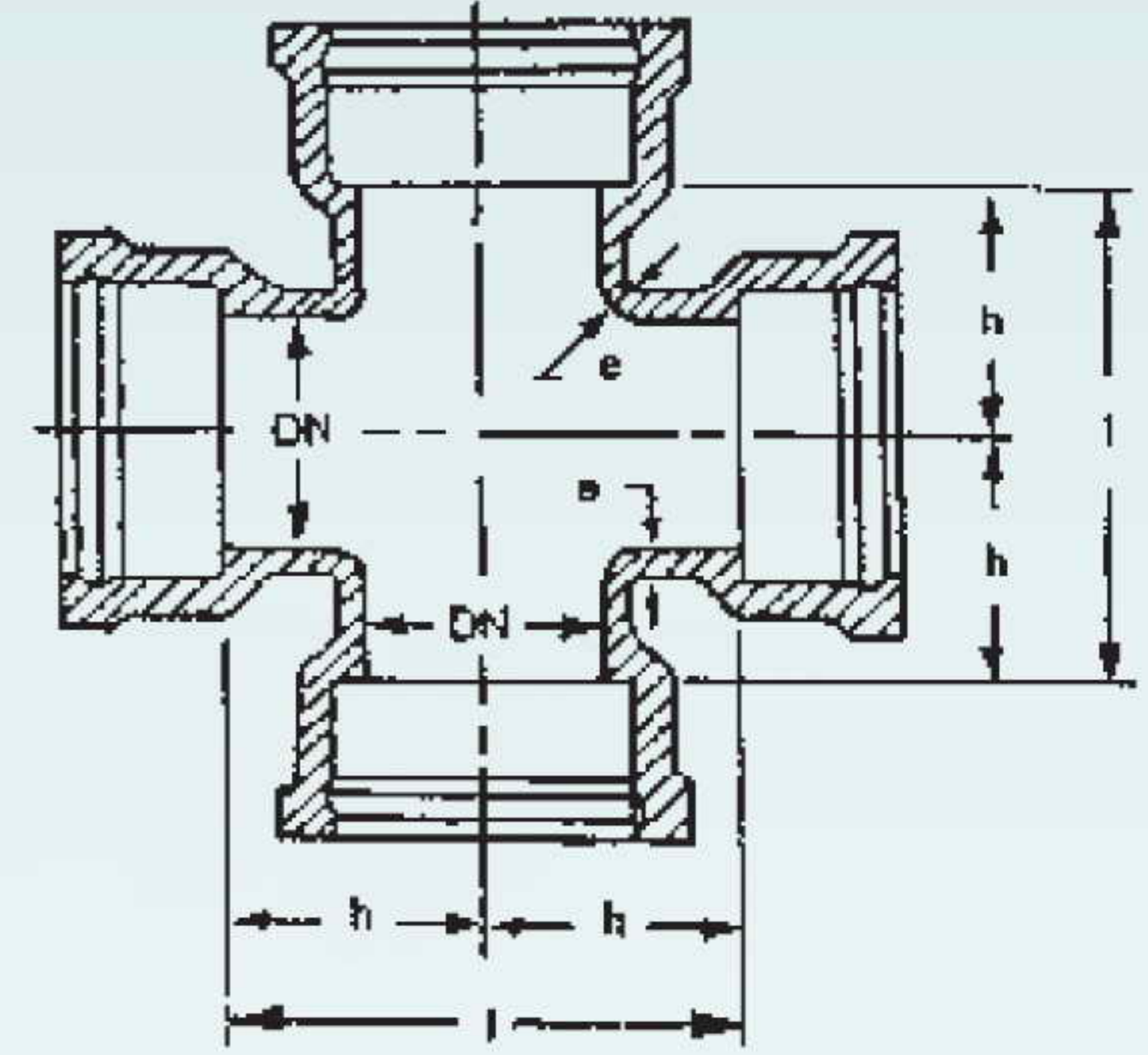
TABLE - 26

Nominal Diameter DN	D	L	App. Mass (kg)	
			PN 10	PN 16
80	150	130	6	6
100	175	135	7	7
150	230	150	10	11
200	290	170	15	15
250	345	185	22	23
300	405	205	30	31
350	460	220	40	43
400	520	240	52	57
450	575	255	65	75
500	635	275	80	95
600	750	310	110	125
700	865	345	145	160
750	925	360	165	180
800	980	380	190	210
900	1095	415	240	260
1000	1210	450	300	340
1100	1325	485	370	405
1200	1440	520	457	512
1400	1670	590	646	702
1500	1785	625	763	851
1600	1900	660	906	995
1800	2130	730	1185	1297

NOTE : Size & Dimensions in **RED** are non standard as per IS-9523 : 2000.



All Flanged Cross



All Socket Cross

K - 12

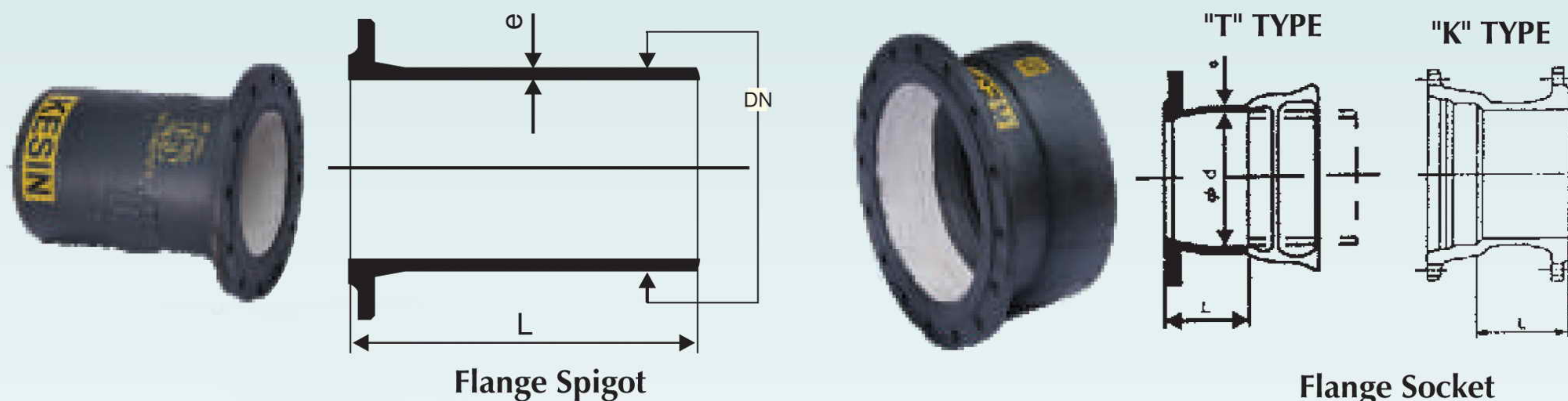
TABLE - 27

Nominal Diameter		e	All Flanged Cross				All Socket Cross		
DN	dn		App. Mass (kg)				L	H	App.Mass (kg)
		L	H	PN 10	PN 16				
80	80	7	330	165	22	22	170	85	16
100	100	7.2	360	180	26	26	190	95	20
150	150	7.8	440	220	42	42	255	125	34
200	200	8.4	520	260	66	66	315	155	52
250	250	9.0	700	350	98	108	375	190	76
300	300	9.6	800	400	143	150	440	220	104
350	350	10.2	850	425	189	200	500	250	136
400	400	10.8	900	450	236	247	560	280	172
450	450	11.4	950	475	286	307	620	310	224
500	500	12.0	1000	500	370	400	680	340	272
600	600	13.2	1100	550	542	585	800	400	400
700	700	14.4	1200	600	730	790	925	460	545
750	750	15.0	1275	640	760	830	985	490	650
800	800	15.6	1350	675	957	1015	1045	520	760
900	900	16.8	1500	750	1220	1305	1170	585	1000
1000	1000	18.0	1650	825	1600	1750	1290	645	1280

NOTE : Size & Dimensions in **RED** are non standard as per IS-9523 : 2000

Fittings

UNITECH Flange Spigot & Flange Socket

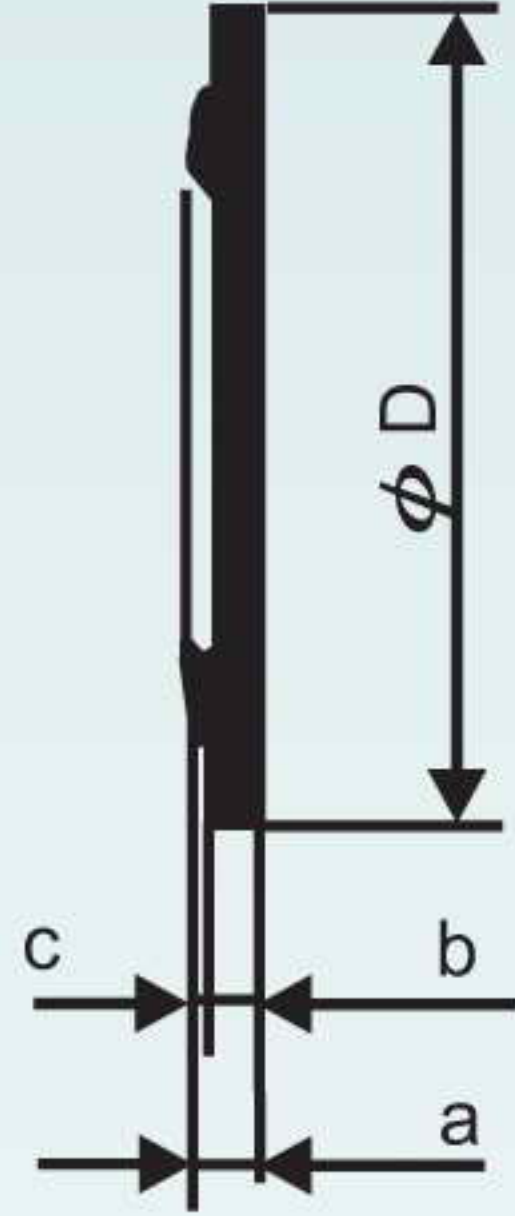


K - 12

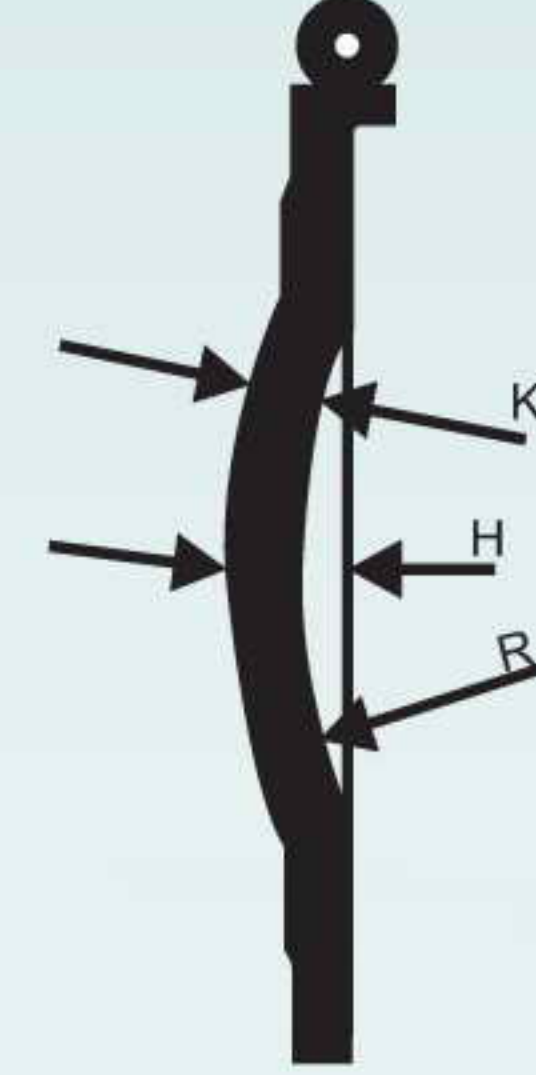
TABLE - 28

Nominal Dia (DN)	DN	e	Flange Spigot			Flange Socket		
			App. Mass (kg)			App. Mass (kg)		
			L	PN 10	PN 16	L	PN 10	PN 16
80	98	7	350	8	8	130	8	8
100	118	7.2	360	10	10	130	9	9
125	144	7.5	370	13	13	135	12	12
150	170	7.8	380	16	16	135	14	14
200	222	8.4	400	23	23	140	20	20
250	274	9	420	32	33	145	26	27
300	326	9.6	440	41	42	150	34	35
350	378	10.2	460	53	56	155	44	47
400	429	10.8	480	65	71	160	54	60
450	480	11.4	500	80	90	165	60	70
500	532	12	520	96	110	170	72	87
600	635	13.2	560	135	155	180	105	125
700	738	14.4	600	180	200	190	148	168
750	790	15	600	210	230	195	180	200
800	842	15.6	600	228	249	200	200	220
900	945	16.8	600	280	300	210	250	275
1000	1048	18	600	340	375	220	320	360
1100	1152	19.2	600	402	437	230	420	460
1200	1255	20.4	600	470	530	240	464	570
1400	1462	22.8	710	690	750	310	760	770
1500	1565	24.0	745	815	910	320	880	910
1600	1668	25.2	780	955	1045	330	1000	1040
1800	1875	27.6	850	1240	1350	350	1250	1220

80 to 300 mm dia



350 mm and above



K - 12

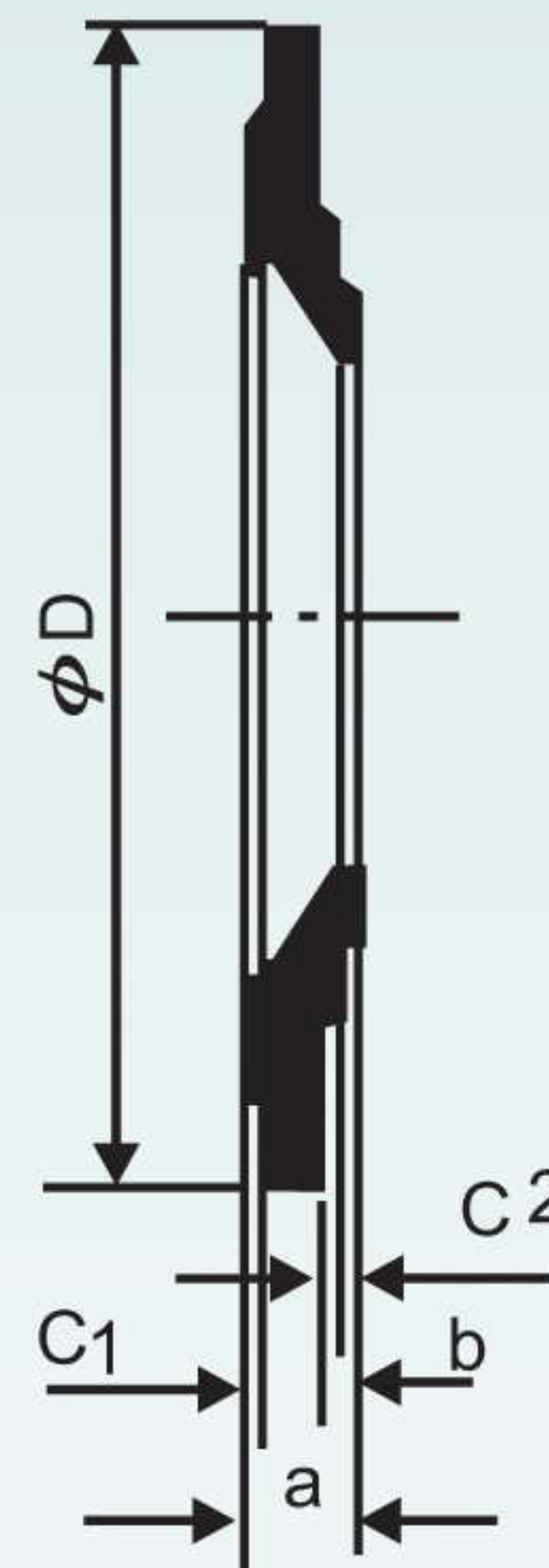
TABLE - 29

Nominal Dia (DN)	a		b		D		H	App. Mass (kg)	
	PN 10	PN 16	PN 10	PN 16	PN 10	PN 16		PN 10	PN 16
80	19	19	16	16	200	200	—	4	4
100	19	19	16	16	220	220	—	5	5
125	19	19	16	16	250	250	—	6	6
150	19	19	16	16	285	285	—	8	8
200	20	20	17	17	340	340	—	11	11
250	22	22	19	19	400	400	—	17	17
300	24.5	24.5	20.5	20.5	455	455	—	24	24
350	24.5	26.5	20.5	22.5	505	520	71	33	37
400	24.5	28.5	20.5	24	565	580	80	41	49
450	25.5	30	21.5	26	615	640	88	56	64
500	26.5	31.5	22.5	27.5	670	775	97	65	84
600	30	36	25	31	780	840	114	94	130
700	32.5	39.5	27.5	34.5	895	910	131	139	169
750	33	41	28	36	960	970	139	175	205
800	35	43	30	38	1015	1025	148	195	235
900	37.5	46.5	32.5	41.5	1115	1125	165	250	307
1000	40	50	35	45	1230	1255	182	330	415
1100	42.5	53.5	37.5	48.5	1340	1355	199	420	520
1200	45.0	57.0	40	52	1455	1455	216	520	660
1400	46.0	60.0	41	55	1675	1685	244	710	910
1500	47.5	62.0	42.5	57.5	1785	1820	276	830	1100
1600	49.0	65.0	44	60	1915	1930	—	990	1280
1800	52.0	70.0	47	65	2115	2130	—	1270	1690

NOTE : 1. PN-16 is the preferred flange in IS Standard.
2. Dimensions in **RED** are Non-Standard as per IS:9523 : 2000

Fittings

UNITECH Reducing Flange (PN 16)

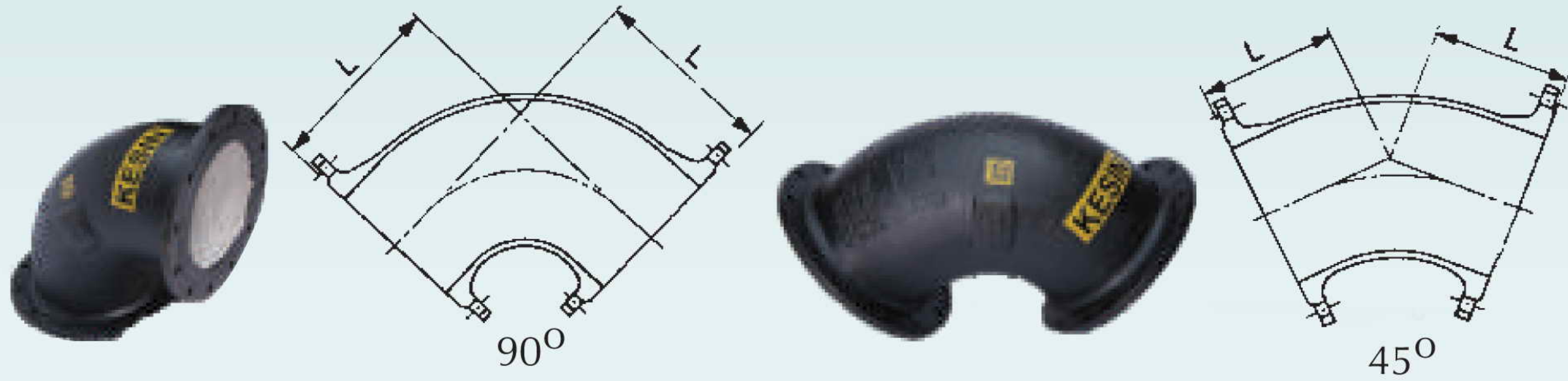


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TABLE - 30

Nominal Dia DN	Larger End			Smaller End			App. Mass (kg) PN 16
	D	b	C1	Nominal Dia dn	C2	a	
200	340	17	3	80	3	40	13
200	340	17	3	100	3	40	13
200	340	17	3	125	3	40	14
350	520	22.5	4	250	3	54	37
400	580	24	4	250	3	54	46
400	580	24	4	300	4	55	44.5
700	910	34.5	5	500	4	67	134
900	1125	41.5	5	700	5	73	200
1000	1255	45	5	700	5	73	285
1000	1255	45	5	800	5	77	260

NOTE : PN 10 drill may be done on request



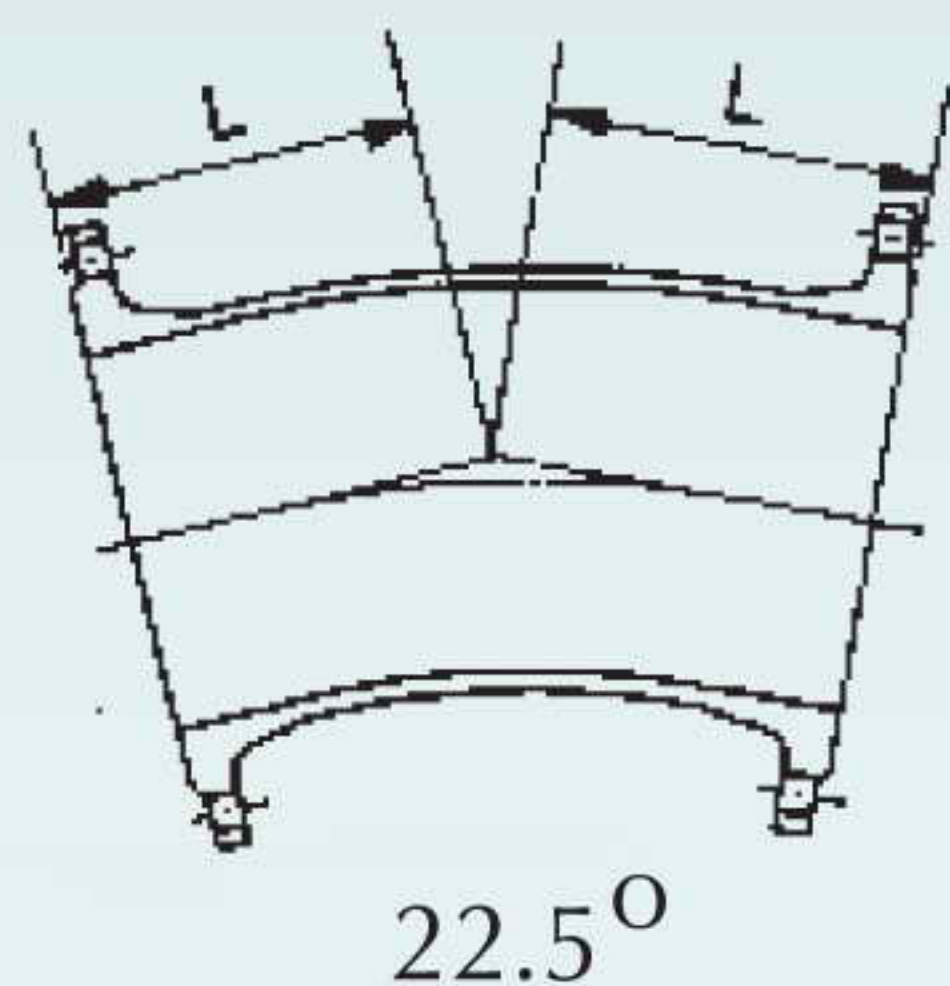
K - 12

TABLE - 31

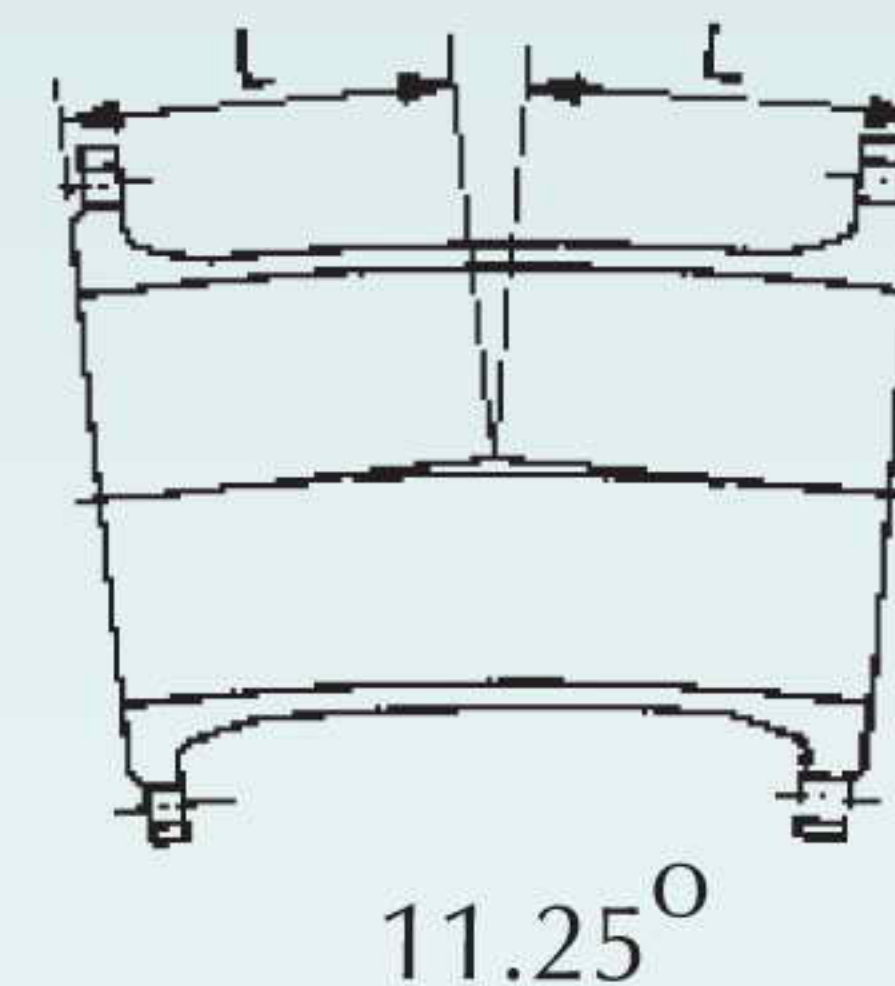
Nominal Size (DN)	e	90°			45°		
		L	App. Mass (kg)		L	App. Mass (kg)	
			PN 10	PN 16		PN 10	PN 16
80	7	165	10	10	130	10	10
100	7.2	180	12	12	140	12	12
125	7.5	200	16	16	150	15	15
150	7.8	220	22	22	160	19	19
200	8.4	260	32	32	180	28	28
250	9	350	50	52	350	58	60
300	9.6	400	68	70	400	76	78
350	10.2	450	92	98	298	80	86
400	10.8	500	130	140	324	98	108
450	11.4	550	160	175	350	120	140
500	12	600	210	240	375	148	176
600	13.2	700	290	325	426	220	260
700	14.4	800	410	440	478	310	340
750	15	850	490	530	504	360	390
800	15.6	900	590	630	529	415	445
900	16.8	1000	760	810	581	530	580
1000	18	1100	990	1070	632	685	760
1100	19.2	1235	1250	1300	694	860	935
1200	20.4	1340	1480	1600	750	1070	1185
1400	22.8	1550	2150	2280	775	1435	1550
1500	24	1660	2650	2800	810	1680	1860
1600	25.2	1765	3070	3270	845	1970	2150
1800	27.6	1970	4020	4300	910	2540	2770

Fittings

UNITECH Double Flanged Bend



22.5°



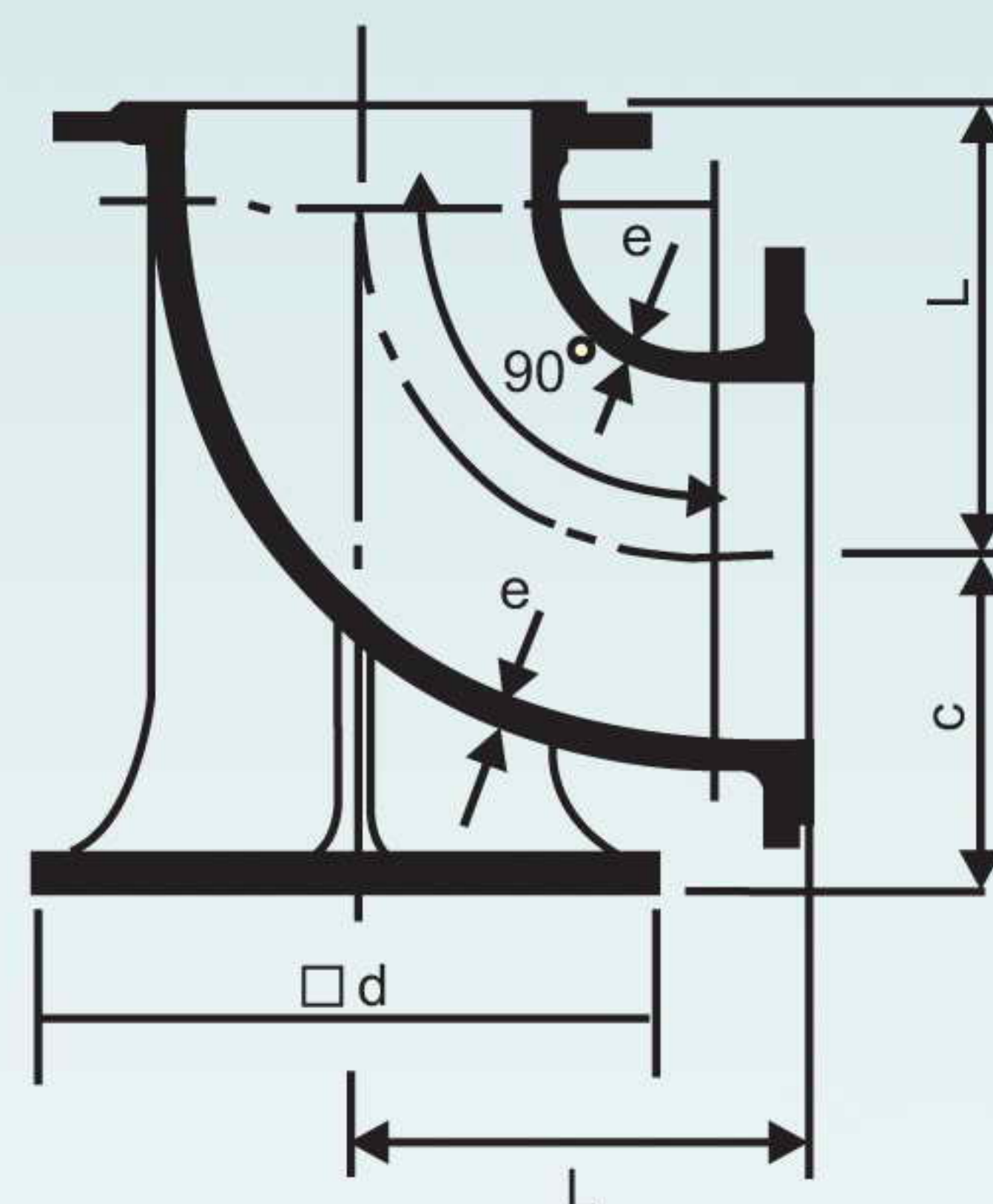
11.25°

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TABLE - 32

Nominal Size (DN)	e	22.5°			11.25°		
		L	App. Mass (kg)		L	App. Mass (kg)	
			PN 10	PN 16		PN 10	PN 16
80	7	85	9	9	75	8	8
100	7.2	90	10	10	80	10	10
125	7.5	95	13	13	85	12	12
150	7.8	105	18	18	90	17	17
200	8.4	120	25	25	100	23	23
250	9	135	41	43	110	38	40
300	9.6	150	51	53	120	45	47
350	10.2	165	67	73	130	61	67
400	10.8	175	80	90	140	70	80
450	11.4	190	92	107	145	85	100
500	12	205	104	131	155	100	127
600	13.2	235	160	190	175	140	170
700	14.4	265	230	260	195	200	230
750	15	280	280	310	210	250	280
800	15.6	295	289	319	215	260	290
900	16.8	320	363	401	235	307	345
1000	18	350	468	538	255	394	464
1100	19.2	380	583	655	265	481	551
1200	20.4	410	727	837	275	582	692
1400	22.8	465	1012	1126	295	775	889
1500	24	495	1199	1375	330	940	1116
1600	25.2	525	1429	1607	370	1158	1336

NOTE : The above bends are non standard as per IS 9523 : 2000



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TABLE - 33

Nominal Size (DN)	e	L	c	d	App. Mass (kg)	
					PN 10	PN 16
80	7	155	110	180	16	16
100	7.2	175	125	200	20	20
125	7.5	220	140	225	30	30
150	7.8	230	160	250	38	38
200	8.4	280	190	300	52	52
250	9	335	225	350	77	79
300	9.6	385	255	400	110	112
350	10.2	440	290	450	160	166
400	10.8	495	320	500	205	215
450	11.4	545	355	550	245	260
500	12	600	385	600	300	325
600	13.2	705	450	700	470	495
700	14.4	810	515	800	595	625
750	15	860	550	850	710	740
800	15.6	915	580	900	810	840
900	16.8	1020	645	1000	1110	1150
1000	18	1130	710	1100	1410	1480
1100	19.2	1235	775	1200	1800	1900
1200	20.4	1340	840	1300	2300	2400
1400	22.8	1550	970	1500	3300	3420
1500	24	1660	1035	1600	4100	4240
1600	25.2	1765	1100	1700	4700	4850
1800	27.6	1970	1240	1900	7100	7300

NOTE : Size & Dimensions in **RED** are non standard as per IS-9523 : 2000.