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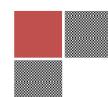
The Fitting of Ductile Iron Pipes

Edition 2009

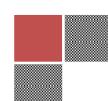
Xinxing Ductile Iron Pipes

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Why ductile iron fittings?

Easier Handling: The lower weight facilitates handling at all stages.

Superior Strength: The D.I. fittings have thickness of K12, which is more than the wall thickness of K9 pipes with which these fittings are used. A sound D.I. fitting will never burst and offers a high factor of safety.

Easier Jointing: With flexible Push-on-Joints or Mechanical Joints, installation is simpler and quicker. Flexible Joints allow variable degree of angular deflection.

Impact Resistance: Ductile Iron being impact resistant, D.I. fittings are unlikely to get damaged during transportation, installation and service.

Close Dimensional Tolerance: The vacuum lost foam process technique ensures proper dimension and proper thickness.

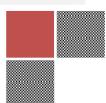
Longer Life: Corrosion resistance of ductile iron is similar to that of cast iron. Inside cement mortar lining and outside zinc coating enhances the life further.

Total Cost Economy: Due to lower weights and Jointing by rubber gaskets the total cost of installation of D.I. fittings is economical.

1 Straight Fitting

1.1 Flange Spigot Pipe (Figure 1 and Table 1)

Table 1 DN	unit: mm e	L
40	7	335
50	7	340
60	7	345
65	7	345
80	7	350
100	7.2	360
125	7.5	370
150	7.8	380
200	8.4	400
250	9	420
300	9.6	440
350	10.2	460
400	10.8	480
450	11.4	500
500	12	520



The Fittings of Ductile Iron Pipes

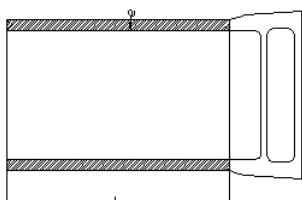
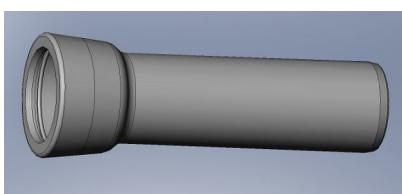
600	13.2	560
700	14.4	600
800	15.6	600
900	16.8	600
1000	18	600
1100	19.2	600
1200	20.4	600
1400	22.8	710
1500	24	750
1600	25.2	780
1800	27.6	850
2000	30	920
2200	32.4	990
2400	34.8	1060
2600	37.2	1130

1.2 Socket Spigot Pipe (Figure 2 and Table 2)

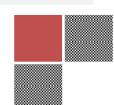
Table 2
DN

unit: mm

L



DN	e	L
40	7	250
50	7	250
60	7	250
65	7	250
80	8.1	270
100	8.4	270
125	7.5	270
150	9.1	285
200	9.8	300
250	10.5	315
300	11.2	330
350	11.9	350
400	12.6	370
450	13.3	380
500	14	400
600	15.4	440
700	14.4	480
800	15.6	520
900	16.8	560
1000	18	600
1100	19.2	600
1200	20.4	600
1400	22.8	600



1.3 Double Socket Pipe (Figure 3 and Table 3)

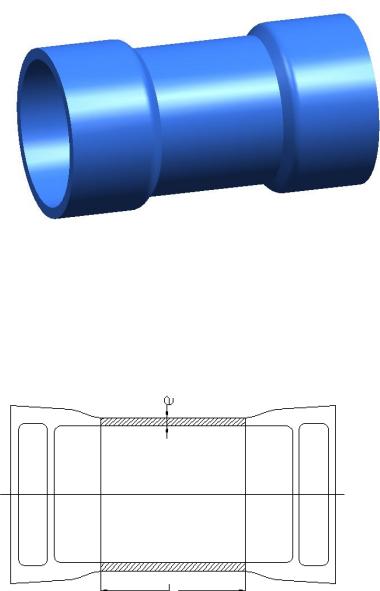


Table 3

DN

unit: mm

e

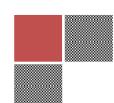
L

40	7	155
50	7	155
60	7	155
65	7	155
80	7	160
100	7.2	160
125	7.5	165
150	7.8	165
200	8.4	170
250	9	175
300	9.6	180
350	10.2	185
400	10.8	190
450	11.4	195
500	12	200
600	13.2	210
700	14.4	220
800	15.6	230
900	16.8	240
1000	18	250
1100	19.2	260
1200	20.4	270
1400	22.8	340
1500	24	350
1600	25.2	360
1800	27.6	380
2000	30	400
2200	32.4	420
2400	34.8	440
2600	37.2	460

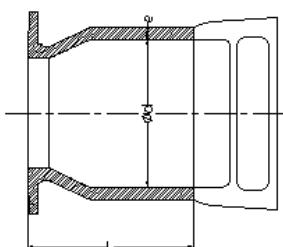
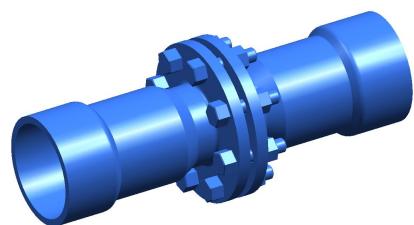
1.4 Socket Flange Pipe (Figure 4 and Table 4)

Table 4

unit: mm



The Fittings of Ductile Iron Pipes

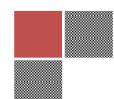


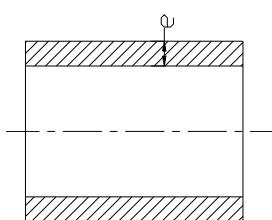
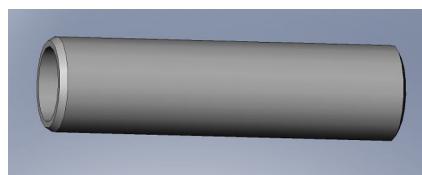
DN	e	d	L
40	7	67	125
50	7	78	125
60	7	88	125
65	7	93	125
80	7	109	130
100	7.2	130	130
125	7.5	156	135
150	7.8	183	135
200	8.4	235	140
250	9	288	145
300	9.6	340	150
350	10.2	393	155
400	10.8	445	160
450	11.4	498	165
500	12	550	170
600	13.2	655	180
700	14.4	760	190
800	15.6	865	200
900	16.8	970	210
1000	18	1075	220
1100	19.2	1180	230
1200	20.4	1285	240
1400	22.8	1477	310
1500	24	1580	330
1600	25.2	1683	330
1800	27.6	1889	350
2000	30	2095	370
2200	32.4	2301	390
2400	34.8	2507	410
2600	37.2	2713	480

1.5 Spigot (Figure 5 and Table 5)

Table 5 unit: mm

DN	DE	e	
		K=12	K=14
40	56	7	7.6
50	66	7	7.7
60	77	7	7.8
65	82	7	7.9





80	98	7	8.1
100	118	7.2	8.4
125	144	7.5	8.8
150	170	7.8	9.1
200	222	8.4	9.8
250	274	9	10.5
300	326	9.6	11.2
350	378	10.2	11.9
400	429	10.8	12.6
450	480	11.4	13.3
500	532	12	14
600	635	13.2	15.4
700	738	14.4	16.8
800	842	15.6	18.2
900	945	16.8	19.6
1000	1048	18	21
1100	1152	19.2	22.4
1200	1255	20.4	23.8
1400	1462	22.8	26.6
1500	1565	24	28
1600	1668	25.2	29.4
1800	1875	27.6	32.2
2000	2082	30	35
2200	2288	32.4	37.8
2400	2495	24.8	40.6
2600	2702	37.2	43.4

2 Bend

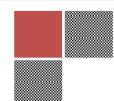
2.1 Double Socket 90°Bend (Figure 6 and Table 6)

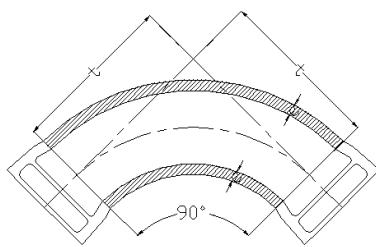


Table 6

unit: mm

DN	e	t
40	7	60
50	7	70
60	7	80
65	7	85
80	7	100
100	7.2	120





125	7.5	145
150	7.8	170
200	8.4	220
250	9	270
300	9.6	320
350	10.2	370
400	10.8	420
450	11.4	470
500	12	520
600	13.2	620
700	14.4	720
800	15.6	820
900	16.8	920
1000	18	1020
1100	19.2	1120
1200	20.4	1220
1400	22.8	1220
1500	24	1270
1600	25.2	1290
1800	27.6	1320
2000	30	1440
2200	32.4	1560
2400	34.8	1690
2600	37.2	1840

2.2 Double Socket 45°Bend(Figure 8 and Table 8)

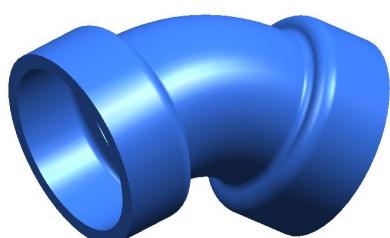
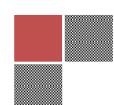
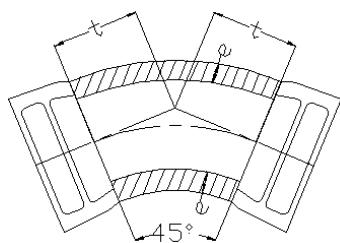


Table 8

unit: mm

DN	e	t
40	7	40
50	7	40
60	7	45
65	7	50
80	7	55
100	7.2	65
125	7.5	75
150	7.8	85
200	8.4	110
250	9	130
300	9.6	150
350	10.2	175
400	10.8	195





450	11.4	220
500	12	240
600	13.2	285
700	14.4	330
800	15.6	370
900	16.8	415
1000	18	460
1100	19.2	505
1200	20.4	550
1400	22.8	515
1500	24	540
1600	25.2	565
1800	27.6	610
2000	30	660
2200	32.4	710
2400	34.8	755
2600	37.2	805

2.3 Double Socket 22.5°Bend(Figure 9 and Table 9)

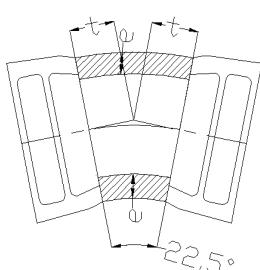
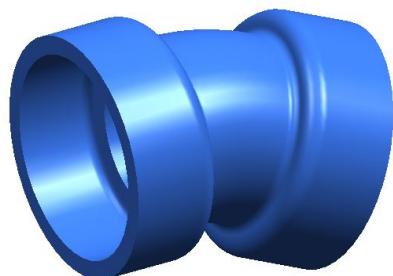
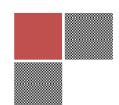


Table 9
DN

unit: mm

t

40	7	30
50	7	30
60	7	35
65	7	35
80	7	40
100	7.2	40
125	7.5	50
150	7.8	55
200	8.4	65
250	9	75
300	9.6	85
350	10.2	95
400	10.8	110
450	11.4	120
500	12	130
600	13.2	150
700	14.4	175
800	15.6	195
900	16.8	220



1000	18	240
1100	19.2	260
1200	20.4	285
1400	22.8	260
1500	24	270
1600	25.2	280
1800	27.6	305
2000	30	330
2200	32.4	355
2400	34.8	380
2600	37.2	400

2.4 Double Socket 11.25°Bend(Figure 10 and Table 10)

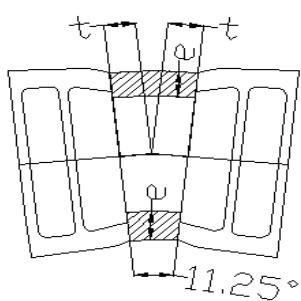
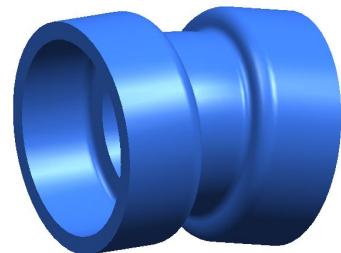
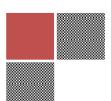


Table 10

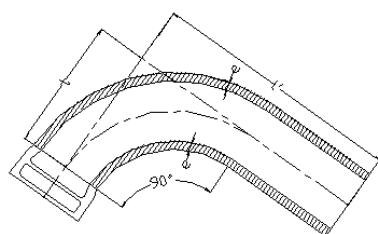
DN	e	t
40	7	25
50	7	25
60	7	25
65	7	25
80	7	30
100	7.2	30
125	7.5	35
150	7.8	35
200	8.4	40
250	9	50
300	9.6	55
350	10.2	60
400	10.8	65
450	11.4	70
500	12	75
600	13.2	85
700	14.4	95
800	15.6	110
900	16.8	120
1000	18	130
1100	19.2	140
1200	20.4	150
1400	22.8	130
1500	24	140
1600	25.2	140
1800	27.6	155



The Fittings of Ductile Iron Pipes

2000	30	165
2200	32.4	190
2400	34.8	205
2600	37.2	215

2.5 Socket Spigot 90°Bend(Figure 11 and Table 11)



DN	e	t	L'
40	7	60	240
50	7	70	250
60	7	80	260
65	7	85	265
80	7	100	280
100	7.2	120	300
125	7.5	145	325
150	7.8	170	350
200	8.4	220	400
250	9	270	450
300	9.6	320	500
350	10.2	370	550
400	10.8	420	600
450	11.4	470	670
500	12	520	720
600	13.2	620	820
700	14.4	720	900
800	15.6	820	1000
900	16.8	920	1100
1000	18	1020	1200
1100	19.2	1120	1300
1200	20.4	1220	1400
1400	22.8	1220	1600
1500	24	1270	1700
1600	25.2	1290	1800
1800	27.6	1320	2000
2000	30	1440	2200
2200	32.4	1560	2400
2400	34.8	1690	2600
2600	37.2	1840	2800

2.6 Socket Spigot 45°Bend (Figure 12 and Table 12)

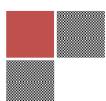


Table 12

unit: mm

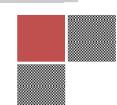
DN	e	t	L'
40	7	40	220
50	7	40	220
60	7	45	225
65	7	50	230
80	7	55	235
100	7.2	65	245
125	7.5	75	255
150	7.8	85	265
200	8.4	110	290
250	9	130	310
300	9.6	150	330
350	10.2	175	355
400	10.8	195	375
450	11.4	220	420
500	12	240	440
600	13.2	285	485
700	14.4	330	580
800	15.6	370	620
900	16.8	415	665
1000	18	460	760
1100	19.2	505	805
1200	20.4	550	850
1400	22.8	515	815
1500	24	540	840
1600	25.2	565	925
1800	27.6	610	970
2000	30	660	1060
2200	32.4	710	1110
2400	34.8	755	1155
2600	37.2	805	1205

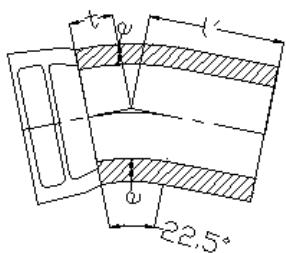
2.7 Socket Spigot 22.5°Bend (Figure 13 and Table 13)

Table 13

unit: mm

DN	e	t	L'
40	7	30	210
50	7	30	210





60	7	35	215
65	7	35	215
80	7	40	220
100	7.2	40	220
125	7.5	50	230
150	7.8	55	235
200	8.4	65	245
250	9	75	255
300	9.6	85	265
350	10.2	95	275
400	10.8	110	290
450	11.4	120	320
500	12	130	330
600	13.2	150	350
700	14.4	175	425
800	15.6	195	445
900	16.8	220	470
1000	18	240	540
1100	19.2	260	560
1200	20.4	285	585
1400	22.8	260	560
1500	24	270	570
1600	25.2	280	640
1800	27.6	305	665
2000	30	330	730
2200	32.4	355	755
2400	34.8	380	780
2600	37.2	400	800

2.8 Socket Spigot 11.25°Bend(figure 14 and Table 14)

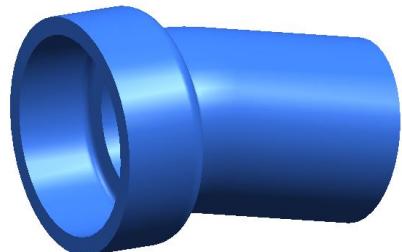
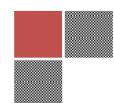


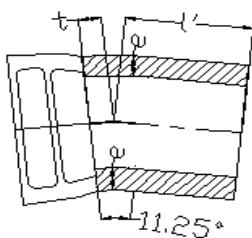
Table 14

unit: mm

DN	e	t	L'
40	7	25	205
50	7	25	205
60	7	25	205
65	7	25	205
80	7	30	210
100	7.2	30	210
125	7.5	35	215
150	7.8	35	215
200	8.4	40	220



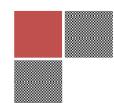
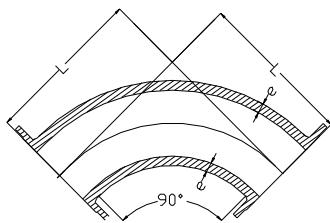
The Fittings of Ductile Iron Pipes



250	9	50	230
300	9.6	55	235
350	10.2	60	240
400	10.8	65	245
450	11.4	70	270
500	12	75	275
600	13.2	85	285
700	14.4	95	345
800	15.6	110	360
900	16.8	120	370
1000	18	130	430
1100	19.2	140	440
1200	20.4	150	450
1400	22.8	130	430
1500	24	140	440
1600	25.2	140	500
1800	27.6	155	515
2000	30	165	565
2200	32.4	190	590
2400	34.8	205	605
2600	37.2	215	615

2.9 Double Flange 90°Bend(figure 15 and Table 15)

DN	e	unit: mm	L
40	7		140
50	7		150
60	7		160
65	7		165
80	7		165
100	7.2		180
125	7.5		200
150	7.8		220
200	8.4		260
250	9		350
300	9.6		400
350	10.2		450
400	10.8		500
450	11.4		550
500	12		600
600	13.2		700

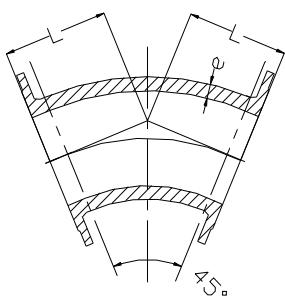


700	14.4	800
800	15.6	900
900	16.8	1000
1000	18	1100

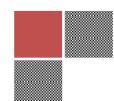
2.10 Double Flange 45°Bend(figure 16 and Table 16)

Table 16 unit: mm

DN	e	L
40	7	140
50	7	150
60	7	160
65	7	165
80	7	130
100	7.2	140
125	7.5	150
150	7.8	160
200	8.4	180
250	9	350
300	9.6	400
350	10.2	300
400	10.8	325
450	11.4	350
500	12	375
600	13.2	425
700	14.4	480
800	15.6	530
900	16.8	580
1000	18	630
1100	19.2	695
1200	20.4	750
1400	22.8	775
1500	24	810
1600	25.2	845
1800	27.6	910
2000	30	980
2200	32.4	880
2400	34.8	945
2600	37.2	1005



2.11 Double Flange 22.5°Bend



The Fittings of Ductile Iron Pipes

2.11.1 Long Series (Figure 17 and Table 17)

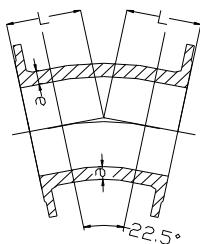
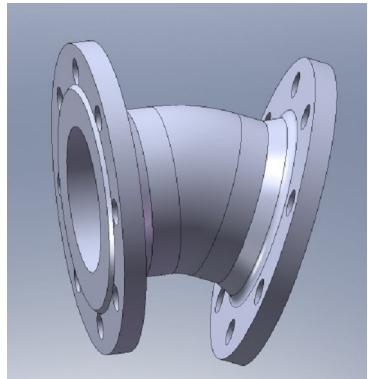


Table 17

unit: mm

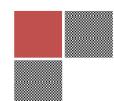
DN	e	L
40	7	140
50	7	150
60	7	160
65	7	165
80	7	130
100	7.2	140
125	7.5	150
150	7.8	160
200	8.4	180
250	9	125
300	9.6	140
350	10.2	155
400	10.8	165
450	11.4	180
500	12	190
600	13.2	220
700	14.4	300
800	15.6	330
900	16.8	360
1000	18	390
1100	19.2	420
1200	20.4	450
1400	22.8	480

2.11.2 Short Series (Figure 17 and Table 18)

Table 18

unit: mm

DN	e	L
80	7	85
100	7.2	90
150	7.8	105
200	8.4	120
250	9	135
300	9.6	150
350	10.2	165
400	10.8	175
450	11.4	190



DN	e	L
500	12	205
600	13.2	235

2.12 Double Flange 11.25°Bend

2.12.1 Long Series (Figure 18 and Table 19)

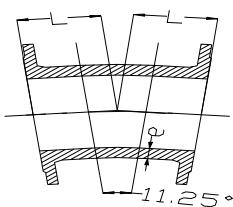
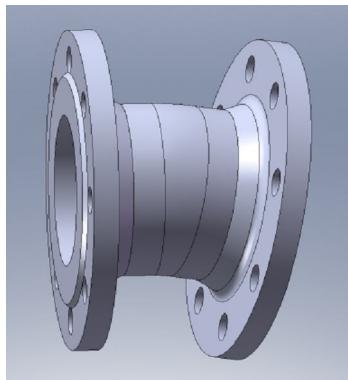
Table 19

DN

unit: mm

L

40	7	65
50	7	65
60	7	70
65	7	70
80	7	125
100	7.2	135
125	7.5	80
150	7.8	155
200	8.4	170
250	9	235
300	9.6	265
350	10.2	290
400	10.8	310
450	11.4	335
500	12	360
600	13.2	405
700	14.4	205
800	15.6	230
900	16.8	245
1000	18	265
1100	19.2	320
1200	20.4	360
1400	22.8	400



2.12.2 Short Series (Figure 18 and Table 20)

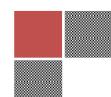
Table 26

DN

unit: mm

L

80	7	75
100	7.2	80
150	7.8	90
200	8.4	100



The Fittings of Ductile Iron Pipes

250	9	110
300	9.6	120
350	10.2	130
400	10.8	140
450	11.4	145
500	12	155
600	13.2	175

2.13 Double Flange 90°Duck Foot Bend(Figure 19 and Table 21)

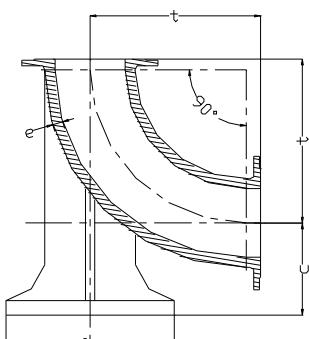


Table 21

unit: mm

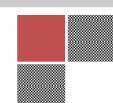
DN	e	t	c	d
40	7	140	95	150
50	7	150	95	150
60	7	160	100	160
65	7	165	100	165
80	7	165	110	180
100	7.2	180	125	200
125	7.5	200	140	225
150	7.8	220	160	250
200	7.2	260	190	300
250	9	350	225	350
300	9.6	400	255	400
350	10.2	450	290	450
400	10.8	500	320	500
450	11.4	550	355	550
500	12	600	385	600
600	13.2	700	450	700
700	14.4	800	515	800
800	15.6	900	580	900
900	16.8	1000	645	1000
1000	18	1100	710	1100
1100	19.2	1200	775	1200
1200	20.4	1280	840	1300
1400	22.8	1500	970	1500

2.14 Double Socket 90°Duck Foot Bend(Figure 20 and Table 22)

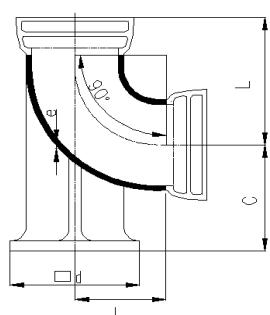
Table 22

unit: mm

DN	e	L	C	d
80	7	165	110	180
100	7.2	180	125	200



The Fittings of Ductile Iron Pipes



	150	7.8	220	160	250
200	8.4	260	190	300	
250	9	350	225	350	
300	9.6	400	255	400	
400	10.8	500	320	500	
500	12	600	385	600	
600	13.2	700	450	700	
700	14.4	800	515	800	
800	15.6	900	580	900	
900	16.8	1000	645	1000	
1000	18	1100	710	1100	

2.15 Double Socket Offset (Figure 21 and Table 23)

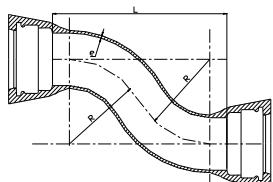
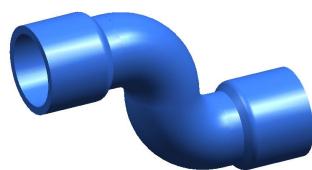
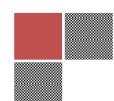


Table 23

unit: mm

DN	e	L	R
100	7.2	310	150
150	7.8	310	150
200	7.2	400	200
250	9	530	250
300	9.6	630	300
350	10.2	680	350
400	10.8	820	400
450	11.4	930	450
500	12	1000	500
600	13.2	1170	600
700	14.4	1335	700

2.16 Socket Spigot Offset (Figure 22 and Table 24)



The Fittings of Ductile Iron Pipes

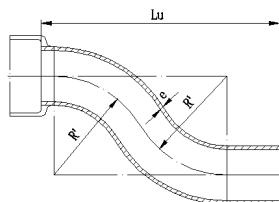


Table 24

unit: mm

DN	e	Lu	R
100	7.2	470	150
150	7.8	475	150
200	7.2	600	200
250	9	700	250
300	9.6	800	300
350	10.2	860	350
400	10.8	1000	400
500	12	1200	500
600	13.2	1370	600
700	14.4	1590	700

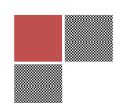
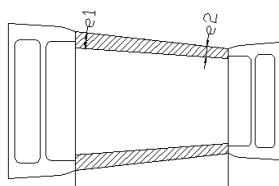
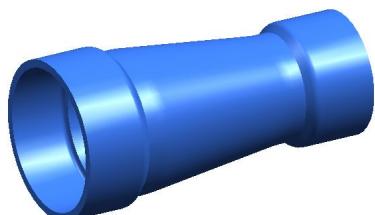
3 Taper

3.1 Double Socket Taper (Figure 23 and Table 25)

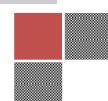
Table 25

unit: mm

DN	e ₁	Dn	e ₂	L
50	7	40	7	70
60	7	40	7	90
	7	50	7	70
65	7	40	7	100
	7	50	7	80
	7	60	7	60
80	7	40	7	130
	7	50	7	110
	7	60	7	90
	7	65	7	80
100	7.2	40	7	170
	7.2	50	7	150
	7.2	60	7	130
	7.2	65	7	120
	7.2	80	7	90
125	7.5	40	7	210
	7.5	50	7	190
	7.5	60	7	170
	7.5	65	7	160
	7.5	80	7	140

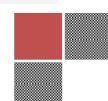


	7.5	100	7.2	100
150	7.8	40	7	270
	7.8	50	7	250
	7.8	60	7	230
	7.8	65	7	220
	7.8	80	7	190
	7.8	100	7.2	150
	7.8	125	7.5	100
200	8.4	40	7	370
	8.4	50	7	350
	8.4	60	7	330
	8.4	65	7	320
	8.4	80	7	290
	8.4	100	7.2	250
	8.4	125	7.5	200
	8.4	150	7.8	150
250	9	40	7	470
	9	50	7	450
	9	60	7	430
	9	65	7	420
	9	80	7	390
	9	100	7.2	350
	9	125	7.5	300
	9	150	7.8	250
	9	200	8.4	150
300	9.6	40	7	570
	9.6	50	7	550
	9.6	60	7	530
	9.6	65	7	520
	9.6	80	7	490
	9.6	100	7.2	450
	9.6	125	7.5	400
	9.6	150	7.8	350
	9.6	200	8.4	250
	9.6	250	9	150
450	11.4	40	7	880
	11.4	50	7	860
	11.4	60	7	840
	11.4	65	7	830
	11.4	80	7	820
	11.4	100	7.2	760
	11.4	125	7.5	710
	11.4	150	7.8	660
	11.4	200	8.4	560
	11.4	250	9	460



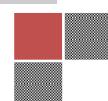
The Fittings of Ductile Iron Pipes

	11.4	300	9.6	360
	11.4	350	10.2	260
	11.4	400	10.8	160
500	12	40	7	980
	12	50	7	960
	12	60	7	940
	12	65	7	930
	12	80	7	900
	12	100	7.2	860
	12	125	7.5	810
	12	150	7.8	760
	12	200	8.4	660
	12	250	9	560
	12	300	9.6	460
	12	350	10.2	360
	12	400	10.8	260
	12	450	11.4	160
600	13.2	40	7	1180
	13.2	50	7	1160
	13.2	60	7	1140
	13.2	65	7	1130
	13.2	80	7	1100
	13.2	100	7.2	1060
	13.2	125	7.5	1010
	13.2	150	7.8	960
	13.2	200	8.4	860
	13.2	250	9	760
	13.2	300	9.6	660
	13.2	350	10.2	560
	13.2	400	10.8	460
	13.2	450	11.4	360
	13.2	500	12	260
700	14.4	40	7	1400
	14.4	50	7	1380
	14.4	60	7	1360
	14.4	65	7	1350
	14.4	80	7	1320
	14.4	100	7.2	1280
	14.4	125	7.5	1230
	14.4	150	7.8	1180
	14.4	200	8.4	1080
	14.4	250	9	980
	14.4	300	9.6	880
	14.4	350	10.2	780
	14.4	400	10.8	680

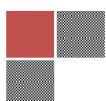


The Fittings of Ductile Iron Pipes

	14.4	450	11.4	580
	14.4	500	12	480
	14.4	600	13.2	280
800	15.6	40	7	1600
	15.6	50	7	1580
	15.6	60	7	1560
	15.6	65	7	1550
	15.6	80	7	1520
	15.6	100	7.2	1480
	15.6	125	7.5	1430
	15.6	150	7.8	1380
	15.6	200	8.4	1280
	15.6	250	9	1180
	15.6	300	9.6	1080
	15.6	350	10.2	980
	15.6	400	10.8	880
	15.6	450	11.4	780
900	15.6	500	12	680
	15.6	600	13.2	480
	15.6	700	14.4	280
	16.8	40	7	1800
	16.8	50	7	1780
	16.8	60	7	1760
	16.8	65	7	1750
	16.8	80	7	1720
	16.8	100	7.2	1680
	16.8	125	7.5	1630
	16.8	150	7.8	1580
	16.8	200	8.4	1480
	16.8	250	9	1380
	16.8	300	9.6	1280
1000	16.8	350	10.2	1180
	16.8	400	10.8	1080
	16.8	450	11.4	980
	16.8	500	12	880
	16.8	600	13.2	680
	16.8	700	14.4	480
	16.8	800	15.6	280



	18	150	7.8	1780
	18	200	8.4	1680
	18	250	9	1580
	18	300	9.6	1480
	18	350	10.2	1380
	18	400	10.8	1280
	18	450	11.4	1180
	18	500	12	1080
	18	600	13.2	880
	18	700	14.4	680
	18	800	15.6	480
	18	900	16.8	280
1100	19.2	40	7	2200
	19.2	50	7	2180
	19.2	60	7	2160
	19.2	65	7	2150
	19.2	80	7	2120
	19.2	100	7.2	2080
	19.2	125	7.5	2030
	19.2	150	7.8	1980
	19.2	200	8.4	1880
	19.2	250	9	1780
	19.2	300	9.6	1680
	19.2	350	10.2	1580
	19.2	400	10.8	1480
	19.2	450	11.4	1380
	19.2	500	12	1280
	19.2	600	13.2	1080
	19.2	700	14.4	880
	19.2	800	15.6	680
	19.2	900	16.8	480
	19.2	1000	18	280
1200	20.4	40	7	2400
	20.4	50	7	2380
	20.4	60	7	2360
	20.4	65	7	2350
	20.4	80	7	2320
	20.4	100	7.2	2280
	20.4	125	7.5	2230
	20.4	150	7.8	2180
	20.4	200	8.4	2080
	20.4	250	9	1980
	20.4	300	9.6	1880



	20.4	350	10.2	1780
	20.4	400	10.8	1680
	20.4	450	11.4	1580
	20.4	500	12	1480
	20.4	600	13.2	1280
	20.4	700	14.4	1080
	20.4	800	15.6	880
	20.4	900	16.8	680
	20.4	1000	18	480
	20.4	1100	19.2	280
1400	22.8	80	7	1180
	22.8	100	7.2	1180
	22.8	125	7.5	1180
	22.8	150	7.8	1180
	22.8	200	8.4	1180
	22.8	250	9	1120
	22.8	300	9.6	1120
	22.8	350	10.2	1120
	22.8	400	10.8	1120
	22.8	450	11.4	1090
	22.8	500	12	1040
	22.8	600	13.2	940
	22.8	700	14.4	840
	22.8	800	15.6	740
	22.8	900	16.8	640
	22.8	1000	18	540
	22.8	1100	19.2	440
	22.8	1200	20.4	360
1500	24	1400	22.8	260
1600	25.2	1400	22.8	360
1800	27.6	1600	25.2	360
2000	30	1800	27.6	360
2200	32.4	2000	30	360
2400	34.8	2200	32.4	360
2600	37.2	2400	34.8	360

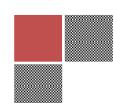
3.2 Double Flange Taper

3.2.1 Long Series (Figure 24 and Table 26)

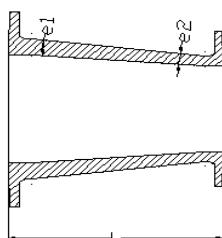
Table 26

unit: mm

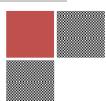
DN	e_1	dn	e_2	L



The Fittings of Ductile Iron Pipes

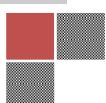


	50	7	40	7	150
	60	7	40	7	200
		7	50	7	160
	65	7	40	7	200
		7	50	7	200
		7	60	7	150
	80	7	40	7	300
		7	50	7	300
		7	60	7	200
		7	65	7	200
	100	7.2	40	7	300
		7.2	50	7	300
		7.2	60	7	300
		7.2	65	7	300
		7.2	80	7	200
	125	7.5	40	7	600
		7.5	50	7	300
		7.5	60	7	300
		7.5	65	7	300
		7.5	80	7	300
		7.5	100	7.2	200
	150	7.8	40	7	600
		7.8	50	7	600
		7.8	60	7	600
		7.8	65	7	600
		7.8	80	7	300
		7.8	100	7.2	300
		7.8	125	7.5	200
	200	8.4	40	7	650
		8.4	50	7	650
		8.4	60	7	650
		8.4	65	7	600
		8.4	80	7	600
		8.4	100	7.2	600
		8.4	125	7.5	300
		8.4	150	7.8	300
	250	9	40	7	700
		9	50	7	700
		9	60	7	700
		9	65	7	700
		9	80	7	650
		9	100	7.2	650
		9	125	7.5	600
		9	150	7.8	600
		9	200	8.4	300



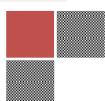
The Fittings of Ductile Iron Pipes

300	9.6	40	7	750
	9.6	50	7	750
	9.6	60	7	750
	9.6	65	7	700
	9.6	80	7	700
	9.6	100	7.2	700
	9.6	125	7.5	650
	9.6	150	7.8	650
	9.6	200	8.4	600
	9.6	250	9	300
	10.2	40	7	800
	10.2	50	7	800
350	10.2	60	7	800
	10.2	65	7	800
	10.2	80	7	750
	10.2	100	7.2	750
	10.2	125	7.5	700
	10.2	150	7.8	700
	10.2	200	8.4	650
	10.2	250	9.0	600
	10.2	300	9.6	300
	10.8	40	7	900
	10.8	50	7	900
400	10.8	60	7	900
	10.8	65	7	800
	10.8	80	7	800
	10.8	100	7.2	800
	10.8	125	7.5	750
	10.8	150	7.8	750
	10.8	200	8.1	700
	10.8	250	9.0	650
	10.8	300	9.6	600
	10.8	350	10.2	300
	11.4	40	7	950
450	11.4	50	7	950
	11.4	60	7	950
	11.4	80	7	900
	11.4	100	7.2	900
	11.4	125	7.5	800
	11.4	150	7.8	800
	11.4	200	8.4	750
	11.4	250	9.0	700
	11.4	300	9.6	650
	11.4	350	10.2	600
	11.4	400	10.8	300

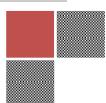


The Fittings of Ductile Iron Pipes

	500	12	40	7	1000
		12	50	7	1000
		12	60	7	1000
		12	65	7	950
		12	80	7	950
		12	100	7.2	950
		12	125	7.5	900
		12	150	7.8	900
		12	200	8.4	800
		12	250	9.0	750
		12	300	9.6	700
		12	350	10.2	650
		12	400	10.8	600
		12	450	11.4	300
	600	13.2	40	7	1100
		13.2	50	7	1100
		13.2	60	7	1100
		13.2	65	7	1050
		13.2	80	7	1050
		13.2	100	7.2	1050
		13.2	125	7.5	1000
		13.2	150	7.8	1000
		13.2	200	8.4	950
		13.2	250	9.0	900
		13.2	300	9.6	800
		13.2	350	10.2	750
		13.2	400	10.8	700
		13.2	450	11.4	650
		13.2	500	12	600
	700	14.4	40	7	1200
		14.4	50	7	1200
		14.4	60	7	1200
		14.4	65	7	1150
		14.4	80	7	1150
		14.4	100	7.2	1150
		14.4	125	7.5	1100
		14.4	150	7.8	1100
		14.4	200	8.4	1050
		14.4	250	9.0	1000
		14.4	300	9.6	950
		14.4	350	10.2	900
		14.4	400	10.8	800
		14.4	450	11.4	750
		14.4	500	12	700
		14.4	600	13.2	600

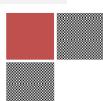


800	15.6	40	7	1300
	15.6	50	7	1300
	15.6	60	7	1300
	15.6	65	7	1250
	15.6	80	7	1250
	15.6	100	7.2	1250
	15.6	125	7.5	1200
	15.6	150	7.8	1200
	15.6	200	8.4	1150
	15.6	250	9.0	1100
	15.6	300	9.6	1050
	15.6	350	10.2	1000
	15.6	400	10.8	950
	15.6	450	11.4	900
	15.6	500	12.0	800
900	15.6	600	13.2	700
	15.6	700	14.4	600
	16.8	40	7	1400
	16.8	50	7	1400
	16.8	60	7	1400
	16.8	65	7	1350
	16.8	80	7	1350
	16.8	100	7.2	1350
	16.8	125	7.5	1300
	16.8	150	7.8	1300
	16.8	200	8.4	1250
	16.8	250	9.0	1200
	16.8	300	9.6	1150
	16.8	350	10.2	1100
	16.8	400	10.8	1000
1000	16.8	450	11.4	950
	16.8	500	12	900
	16.8	600	13.2	800
	16.8	700	14.4	700
	16.8	800	15.6	600
	18	40	7	1500
	18	50	7	1500
	18	60	7	1500
	18	65	7	1450
	18	80	7	1450



The Fittings of Ductile Iron Pipes

	18	300	9.6	1250
	18	350	10.2	1200
	18	400	10.8	1150
	18	450	11.4	1100
	18	500	12	1050
	18	600	13.2	950
	18	700	14.4	800
	18	800	15.6	700
	18	900	16.8	600
1100	19.2	40	7	1600
	19.2	50	7	1600
	19.2	60	7	1600
	19.2	65	7	1550
	19.2	80	7	1550
	19.2	100	7.2	1550
	19.2	125	7.5	1500
	19.2	150	7.8	1500
	19.2	200	8.4	1450
	19.2	250	9	1400
	19.2	300	9.6	1350
	19.2	350	10.2	1300
	19.2	400	10.8	1250
	19.2	450	11.4	1200
	19.2	500	12	1150
	19.2	600	13.2	1050
	19.2	700	14.4	950
	19.2	800	15.6	800
	19.2	900	16.8	700
	19.2	1000	18	600
1200	20.4	40	7	1650
	20.4	50	7	1650
	20.4	60	7	1650
	20.4	65	7	1600
	20.4	80	7	1600
	20.4	100	7.2	1600
	20.4	125	7.5	1550
	20.4	150	7.8	1550
	20.4	200	8.4	1500
	20.4	250	9	1450
	20.4	300	9.6	1400
	20.4	350	10.2	1350
	20.4	400	10.8	1300
	20.4	450	11.4	1250
	20.4	500	12	1200
	20.4	600	13.2	1150

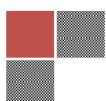


	20.4	700	14.4	1050
	20.4	800	15.6	950
	20.4	900	16.8	800
	20.4	1000	18	790
	20.4	1100	19.2	600
1400	22.8	80	7	1200
	22.8	100	7.2	1200
	22.8	125	7.5	1200
	22.8	150	7.8	1200
	22.8	200	8.4	1150
	22.8	250	9	1150
	22.8	300	9.6	1150
	22.8	350	10.2	1150
	22.8	400	10.8	1150
	22.8	450	11.4	1150
	22.8	500	12	1150
	22.8	600	13.2	1150
	22.8	700	14.4	1050
	22.8	800	15.6	950
	22.8	900	16.8	900
	22.8	1000	18	850
	22.8	1100	19.2	820
	22.8	1200	20.4	850
1500	24	1400	22.8	695
1600	25.2	1400	22.8	910
1800	27.6	1600	25.2	970
2000	30	1800	27.6	1030
2200	32.4	2000	30	1090
2400	34.8	2200	32.4	1150
2600	37.2	2400	34.8	1210

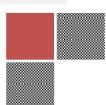
3.2.2 Short Series (Figure 24 and Table 27)

Table 27

DN	e ₁	dn	e ₂	L
50	7	40	7	125
60	7	40	7	125
	7	50	7	125
65	7	40	7	125
	7	50	7	125
	7	60	7	125
80	7	40	7	175
	7	50	7	175

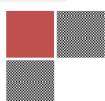


		7	60	7	125
		7	65	7	125
100	7.2	40	7	230	
	7.2	50	7	230	
	7.2	60	7	150	
	7.2	65	7	150	
	7.2	80	7	125	
125	7.5	40	7	260	
	7.5	50	7	260	
	7.5	60	7	175	
	7.5	65	7	175	
	7.5	80	7	175	
	7.5	100	7.2	125	
150	7.8	40	7	280	
	7.8	50	7	260	
	7.8	60	7	260	
	7.8	65	7	260	
	7.8	80	7	215	
	7.8	100	7.2	175	
	7.8	125	7.5	135	
200	8.4	40	7	350	
	8.4	50	7	350	
	8.4	60	7	330	
	8.4	65	7	330	
	8.4	100	7.2	265	
	8.4	125	7.5	220	
	8.4	150	7.8	180	
	9	40	7	430	
250	9	50	7	430	
	9	60	7	410	
	9	65	7	410	
	9	100	7.2	345	
	9	125	7.5	300	
	9	150	7.8	260	
	9	200	8.4	190	
	9.6	40	7	520	
300	9.6	50	7	520	
	9.6	60	7	500	
	9.6	65	7	500	
	9.6	100	7.2	450	
	9.6	125	7.5	410	
	9.6	150	7.8	365	
	9.6	200	8.4	290	
	9.6	250	9	190	
350	10.2	100	7.2	525	

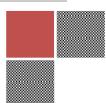


The Fittings of Ductile Iron Pipes

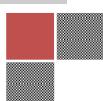
	10.2	125	7.5	480
	10.2	150	7.8	440
	10.2	200	8.4	365
	10.2	250	9	265
	10.2	300	9.6	190
400	10.8	100	7.2	615
	10.8	125	7.5	575
	10.8	150	7.8	535
	10.8	200	8.4	460
	10.8	250	9	360
	10.8	300	9.6	280
	10.8	350	10.2	185
450	11.4	100	7.2	705
	11.4	125	7.5	665
	11.4	150	7.8	620
	11.4	200	8.4	550
	11.4	250	9	450
	11.4	300	9.6	370
	11.4	350	10.2	270
	11.4	400	10.8	195
500	12	100	7.2	790
	12	125	7.5	750
	12	150	7.8	705
	12	200	8.4	630
	12	250	9	535
	12	300	9.6	455
	12	350	10.2	355
	12	400	10.8	275
	12	450	11.4	195
600	13.2	100	7.2	960
	13.2	125	7.5	920
	13.2	150	7.8	875
	13.2	200	8.4	800
	13.2	250	9	700
	13.2	300	9.6	620
	13.2	350	10.2	525
	13.2	400	10.8	445
	13.2	450	11.4	360
	13.2	500	12	270
700	14.4	80	7	980
	14.4	100	7.2	980
	14.4	125	7.5	980
	14.4	150	7.8	980
	14.4	200	8.4	930
	14.4	250	9	930



	14.4	300	9.6	930
	14.4	350	10.2	880
	14.4	400	10.8	780
	14.4	450	11.4	730
	14.4	500	12	680
	14.4	600	13.2	580
800	15.6	80	7	1030
	15.6	100	7.2	1030
	15.6	125	7.5	1030
	15.6	150	7.8	1030
	15.6	200	8.4	980
	15.6	250	9	980
	15.6	300	9.6	980
	15.6	350	10.2	980
	15.6	400	10.8	930
	15.6	450	11.4	880
	15.6	500	12	780
	15.6	600	13.2	680
	15.6	700	14.4	580
900	16.8	80	7	1080
	16.8	100	7.2	1080
	16.8	125	7.5	1080
	16.8	150	7.8	1080
	16.8	200	8.4	1030
	16.8	250	9	1030
	16.8	300	9.6	1030
	16.8	350	10.2	1030
	16.8	400	10.8	980
	16.8	450	11.4	930
	16.8	500	12	880
	16.8	600	13.2	780
	16.8	700	14.4	680
	16.8	800	15.6	580
1000	18	80	7	1130
	18	100	7.2	1130
	18	125	7.5	1130
	18	150	7.8	1130
	18	200	8.4	1080
	18	250	9	1080
	18	300	9.6	1080
	18	350	10.2	1080
	18	400	10.8	1080
	18	450	11.4	1080
	18	500	12	1030
	18	600	13.2	930



	18	700	14.4	780
	18	800	15.6	680
	18	900	16.8	580
1100	19.2	80	7	1155
	19.2	100	7.2	1155
	19.2	125	7.5	1155
	19.2	150	7.8	1155
	19.2	200	8.4	1105
	19.2	250	9	1105
	19.2	300	9.6	1105
	19.2	350	10.2	1105
	19.2	400	10.8	1105
	19.2	450	11.4	1105
	19.2	500	12	1080
	19.2	600	13.2	1030
	19.2	700	14.4	905
1200	19.2	800	15.6	805
	19.2	900	16.8	680
	19.2	1000	18	580
	20.4	80	7	1180
	20.4	100	7.2	1180
	20.4	125	7.5	1180
	20.4	150	7.8	1180
	20.4	200	8.4	1130
	20.4	250	9	1130
	20.4	300	9.6	1130
	20.4	350	10.2	1130
	20.4	400	10.8	1130
	20.4	450	11.4	1130
1400	20.4	500	12	1130
	20.4	600	13.2	1130
	20.4	700	14.4	1030
	20.4	800	15.6	930
	20.4	900	16.8	780
	20.4	1000	18	680
	22.8	80	7	1200
	22.8	100	7.2	1200
	22.8	125	7.5	1200
	22.8	150	7.8	1200
	22.8	200	8.4	1150
	22.8	250	9	1150
	22.8	300	9.6	1150



The Fittings of Ductile Iron Pipes

	22.8	500	12	1150
	22.8	600	13.2	1150
	22.8	700	14.4	1050
	22.8	800	15.6	950
	22.8	900	16.8	900
	22.8	1000	18	850
	22.8	1100	19.2	820
	22.8	1200	20.4	820

3.3 Eccentric Taper (Figure 25 and Table 28)

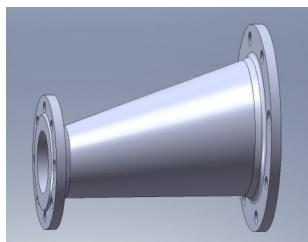
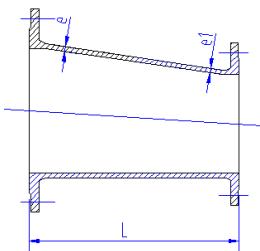


Table 28

unit: mm

DN	L	e	E1
600*500	600	13.2	12
700*600	600	14.4	13.2



4 Tee

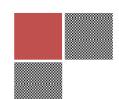
4.1 Double Socket Single Flange Tee (Figure 26 and Table 29)

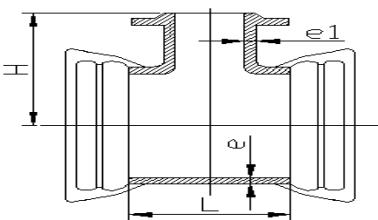


Table 29

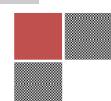
unit: mm

DN	e	L	dn	e ₁	H
40	7	120	40	7	130
50	7	120	40	7	120
	7	130	50	7	140
60	7	120	40	7	125
	7	130	50	7	125
	7	145	60	7	150
65	7	120	40	7	125
	7	130	50	7	130
	7	140	60	7	130
	7	150	65	7	150
80	7	120	40	7	140
	7	130	50	7	140

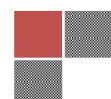




		7	140	60	7	145
		7	150	65	7	145
		7	170	80	7	165
100	7.2	120	40	7	150	
	7.2	130	50	7	155	
	7.2	140	60	7	155	
	7.2	150	65	7	155	
	7.2	170	80	7	175	
	7.2	190	100	7.2	180	
125	7.5	120	40	7	170	
	7.5	130	50	7	170	
	7.5	150	60	7	175	
	7.5	150	65	7	175	
	7.5	170	80	7	190	
	7.5	195	100	7.2	195	
	7.5	225	125	7.5	200	
150	7.8	130	40	7	180	
	7.8	130	50	7	185	
	7.8	150	60	7	185	
	7.8	150	65	7	185	
	7.8	170	80	7	205	
	7.8	195	100	7.2	210	
	7.8	230	125	7.5	215	
	7.8	255	150	7.8	220	
200	8.4	130	40	7	210	
	8.4	130	50	7	215	
	8.4	150	60	7	215	
	8.4	150	65	7	215	
	8.4	175	80	7	235	
	8.4	200	100	7.2	240	
	8.4	235	125	7.5	240	
	8.4	255	150	7.8	250	
	8.4	315	200	8.4	260	
250	9	130	40	7	245	
	9	130	50	7	245	
	9	150	60	7	245	
	9	150	65	7	245	
	9	180	80	7	265	
	9	200	100	7.2	270	
	9	230	125	7.5	275	
	9	260	150	7.8	280	
	9	315	200	8.4	290	
	9	375	250	9	300	
300	9.6	130	40	7	270	
	9.6	140	50	7	275	

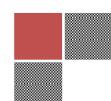


		9.6	150	60	7	280
		9.6	160	65	7	280
		9.6	205	100	7.2	300
		9.6	230	125	7.5	305
		9.6	260	150	7.8	310
		9.6	320	200	8.4	320
		9.6	360	250	9	310
		9.6	435	300	9.6	340
350		10.2	205	100	7.2	330
		10.2	230	125	7.5	335
		10.2	270	150	7.8	340
		10.2	325	200	8.4	350
		10.2	385	250	9	360
		10.2	420	300	9.6	370
		10.2	495	350	10.2	380
400		10.8	210	100	7.2	360
		10.8	230	125	7.5	345
		10.8	270	150	7.8	370
		10.8	325	200	8.4	380
		10.8	385	250	9	390
		10.8	440	300	9.6	400
		10.8	480	350	10.2	410
		10.8	560	400	10.8	420
450		11.4	215	100	7.2	390
		11.4	230	125	7.5	395
		11.4	270	150	7.8	400
		11.4	330	200	8.4	410
		11.4	390	250	9	420
		11.4	445	300	9.6	430
		11.4	480	350	10.2	440
		11.4	560	400	10.8	450
		11.4	620	450	11.4	460
500		12	215	100	7.2	420
		12	240	125	7.5	425
		12	280	150	7.8	430
		12	330	200	8.4	440
		12	380	250	9	450
		12	440	300	9.6	460
		12	490	350	10.2	470
		12	565	400	10.8	480
		12	600	450	11.4	490
		12	680	500	12	500



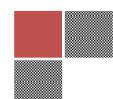
The Fittings of Ductile Iron Pipes

600	13.2	200	100	7.2	460
	13.2	240	125	7.5	465
	13.2	260	150	7.8	470
	13.2	340	200	8.4	500
	13.2	380	250	9	510
	13.2	430	300	9.6	520
	13.2	490	350	10.2	530
	13.2	570	400	10.8	540
	13.2	610	450	11.4	550
	13.2	670	500	12	560
	13.2	800	600	13.2	580
	14.4	210	80	7	490
700	14.4	230	100	7.2	490
	14.4	250	125	7.5	495
	14.4	280	150	7.8	500
	14.4	345	200	8.4	525
	14.4	390	250	9	535
	14.4	440	300	9.6	540
	14.4	500	350	10.2	550
	14.4	575	400	10.8	555
	14.4	610	450	11.4	565
	14.4	680	500	12	570
	14.4	770	600	13.2	585
	14.4	925	700	14.4	600
800	15.6	240	80	7	550
	15.6	260	100	7.2	550
	15.6	290	125	7.5	555
	15.6	310	150	7.8	560
	15.6	350	200	8.4	585
	15.6	420	250	9	590
	15.6	480	300	9.6	595
	15.6	530	350	10.2	600
	15.6	580	400	11.4	615
	15.6	640	450	11.4	625
	15.6	690	500	12	630
	15.6	1045	600	13.2	645
	15.6	1045	700	14.4	660



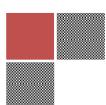
The Fittings of Ductile Iron Pipes

	15.6	1045	800	15.6	675
900	16.8	240	80	7	605
	16.8	260	100	7.2	610
	16.8	290	125	7.5	615
	16.8	310	150	7.8	620
	16.8	355	200	8.4	645
	16.8	420	250	9	650
	16.8	480	300	9.6	655
	16.8	530	350	10.2	665
	16.8	590	400	10.8	675
	16.8	640	450	11.4	685
	16.8	690	500	12	695
	16.8	1170	600	13.2	705
	16.8	1170	700	14.4	720
1000	16.8	1170	800	15.6	735
	16.8	1170	900	16.8	750
	18	240	80	7	670
	18	260	100	7.2	670
	18	290	125	7.5	675
	18	310	150	7.8	680
	18	360	200	8.4	705
	18	420	250	9	715
	18	480	300	9.6	720
	18	530	350	10.2	730
	18	595	400	10.8	735
	18	640	450	11.4	745
	18	690	500	12	750
1100	18	1290	600	13.2	765
	18	1290	700	14.4	780
	18	1290	800	15.6	795
	18	1290	900	16.8	810
	18	1290	1000	18	825
1100	19.2	240	80	7	730
	19.2	260	100	7.2	730
	19.2	290	125	7.5	735
	19.2	310	150	7.8	740
	19.2	360	200	8.4	745



The Fittings of Ductile Iron Pipes

	19.2	420	250	9	755
	19.2	480	300	9.6	760
	19.2	530	350	10.2	770
	19.2	600	400	10.8	795
	19.2	650	450	11.4	805
	19.2	700	500	12	810
	19.2	830	600	13.2	825
	19.2	940	700	14.4	830
	19.2	1050	800	15.6	835
	19.2	1170	900	16.8	850
	19.2	1280	1000	18	870
	19.2	1390	1100	19.2	880
1200	20.4	240	80	7	790
	20.4	260	100	7.2	790
	20.4	290	125	7.5	795
	20.4	310	150	7.8	800
	20.4	360	200	8.4	805
	20.4	420	250	9	815
	20.4	480	300	9.6	820
	20.4	530	350	10.2	830
	20.4	590	400	10.8	835
	20.4	650	450	11.4	845
	20.4	710	500	12	850
	20.4	840	600	13.2	885
	20.4	940	700	14.4	900
	20.4	1070	800	15.6	915
	20.4	1170	900	16.8	930
1400	20.4	1300	1000	18	945
	20.4	1520	1200	20.4	955
	22.8	340	80	7	870
	22.8	420	100	7.2	875
	22.8	450	125	7.5	880
	22.8	480	150	7.8	880
	22.8	540	200	8.4	890

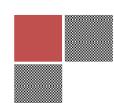


The Fittings of Ductile Iron Pipes

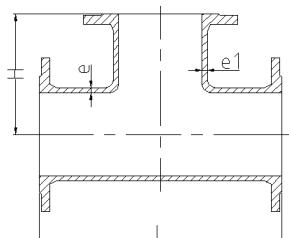
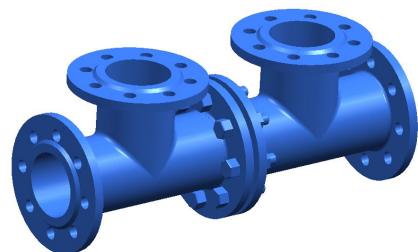
	22.8	770	400	10.8	920
	22.8	830	450	11.4	925
	22.8	880	500	12	935
	22.8	1030	600	13.2	980
	22.8	1120	700	14.4	985
	22.8	1260	800	15.6	1010
	22.8	1350	900	16.8	1015
	22.8	1495	1000	18	1040
	22.8	1580	1100	19.2	1045
	22.8	1700	1200	20.4	1060
	22.8	1930	1400	22.8	1070
1500	24	1035	600	13.2	1035
	24	1500	1000	18	1095
1600	25.2	1040	600	13.2	1090
	25.2	1275	800	15.6	1120
	25.2	1505	1000	18	1150
	25.2	1740	1200	20.4	1180
1800	27.6	1055	600	13.2	1200
	27.6	1285	800	15.6	1230
	27.6	1520	1000	18	1260
	27.6	1750	1200	20.4	1290
2000	30	1065	600	13.2	1310
	30	1530	1000	18	1370
	30	1995	1400	22.8	1430
2200	32.4	1080	600	13.2	1420
	32.4	1775	1200	20.4	1510
	32.4	2470	1800	27.6	1600
2400	34.8	1090	600	13.2	1530
	34.8	1785	1200	20.4	1620
	34.8	2480	1800	27.6	1710
2600	37.2	1100	600	13.2	1640
	37.2	2030	1400	22.8	1750
	37.2	2725	2000	30	1850

4.2 All Flange Tee (Figure 27 and Table 30)

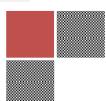
Table 30		unit: mm			
DN	e	L	dn	e ₁	H



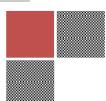
The Fittings of Ductile Iron Pipes



40	7	280	40	7	140
50	7	280	40	7	125
	7	300	50	7	150
	7	300	40	7	130
60	7	300	50	7	135
	7	320	60	7	160
	7	310	40	7	135
65	7	310	50	7	140
	7	310	60	7	145
	7	330	65	7	165
	7	310	40	7	140
80	7	310	50	7	140
	7	310	60	7	140
	7	310	65	7	140
	7	330	80	7	165
	7.2	340	40	7	140
100	7.2	340	50	7	155
	7.2	340	60	7	155
	7.2	340	65	7	155
	7.2	360	80	7	175
	7.2	360	100	7.2	180
	7.5	400	40	7	170
125	7.5	400	50	7	170
	7.5	400	60	7	175
	7.5	400	65	7	180
	7.5	400	80	7	190
	7.5	400	100	7.2	195
	7.5	400	125	7.5	200
	7.8	420	40	7	185
150	7.8	420	50	7	185
	7.8	420	60	7	185
	7.8	420	65	7	185
	7.8	440	80	7	205
	7.8	440	100	7.2	210
	7.8	440	125	7.5	215
	7.8	440	150	7.8	220
	8.4	500	40	7	210
200	8.4	500	50	7	210
	8.4	500	60	7	215
	8.4	500	65	7	215
	8.4	520	80	7	235
	8.4	520	100	7.2	240
	8.4	520	125	7.5	245
	8.4	520	150	7.8	250
	8.4	520	200	8.4	260

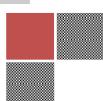


250	9	340	40	7	240
	9	350	50	7	245
	9	360	60	7	245
	9	370	65	7	245
	9	380	80	7	245
	9	700	100	7.2	275
	9	455	125	7.5	280
	9	485	150	7.8	280
	9	700	200	8.4	325
	9	700	250	9	350
300	9.6	360	40	7	270
	9.6	370	50	7	270
	9.6	390	60	7	280
	9.6	390	65	7	280
	9.6	800	100	7.2	300
	9.6	800	125	7.5	310
	9.6	505	150	7.8	310
	9.6	800	200	8.4	350
	9.6	620	250	9	330
	9.6	800	300	9.6	400
350	10.2	850	100	7.2	325
	10.2	495	125	7.5	335
	10.2	530	150	7.8	340
	10.2	850	200	8.4	325
	10.2	645	250	9	360
	10.2	680	300	9.6	370
	10.2	850	350	10.2	425
400	10.8	900	100	7.2	350
	10.8	500	125	7.5	345
	10.8	550	150	7.8	370
	10.8	900	200	8.4	350
	10.8	665	250	9	390
	10.8	725	300	9.6	400
	10.8	780	350	10.2	410
	10.8	900	400	10.8	450
450	11.4	950	100	7.2	375
	11.4	530	125	7.5	375
	11.4	570	150	7.8	400
	11.4	950	200	8.4	375
	11.4	690	250	9	420
	11.4	745	300	9.6	430
	11.4	810	350	10.2	440
	11.4	860	400	10.8	450
	11.4	950	450	11.4	475
500	12	1000	100	7.2	400



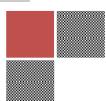
The Fittings of Ductile Iron Pipes

	12	550	125	7.5	405
	12	580	150	7.8	410
	12	1000	200	8.4	400
	12	690	250	9	430
	12	750	300	9.6	440
	12	810	350	10.2	450
	12	1000	400	10.8	500
	12	920	450	11.4	470
	12	1000	500	12	500
600	13.2	560	100	7.2	460
	13.2	590	125	7.5	465
	13.2	620	150	7.8	470
	13.2	1100	200	8.4	450
	13.2	740	250	9	490
	13.2	790	300	9.6	500
	13.2	850	350	10.2	510
	13.2	1100	400	10.8	550
	13.2	970	450	11.4	530
	13.2	1030	500	12	540
700	14.4	500	80	7	500
	14.4	520	100	7.2	500
	14.4	550	125	7.5	505
	14.4	570	150	7.8	510
	14.4	650	200	8.4	525
	14.4	680	250	9	525
	14.4	740	300	9.6	530
	14.4	790	350	10.2	540
	14.4	870	400	10.8	555
	14.4	900	450	11.4	555
	14.4	960	500	12	560
	14.4	1180	600	13.2	575
800	14.4	1200	700	14.4	600
	15.6	540	80	7	560
	15.6	560	100	7.2	560
	15.6	590	125	7.5	565
	15.6	610	150	7.8	570
	15.6	690	200	8.4	585
	15.6	720	250	9	585
	15.6	760	300	9.6	590
	15.6	830	350	10.2	600
	15.6	910	400	10.8	615



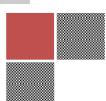
The Fittings of Ductile Iron Pipes

		15.6	1350	700	14.4	665
		15.6	1350	800	15.6	675
900	16.8	580	80	7	620	
	16.8	600	100	7.2	620	
	16.8	630	125	7.5	625	
	16.8	650	150	7.8	630	
	16.8	730	200	8.4	645	
	16.8	760	250	9	645	
	16.8	800	300	9.6	650	
	16.8	870	350	10.2	660	
	16.8	950	400	10.8	675	
	16.8	980	450	11.4	675	
	16.8	1040	500	12	680	
	16.8	1500	600	13.2	705	
	16.8	1500	700	14.4	710	
	16.8	1500	800	15.6	725	
1000	16.8	1500	900	16.8	750	
	18	620	80	7	680	
	18	640	100	7.2	680	
	18	670	125	7.5	685	
	18	690	150	7.8	690	
	18	770	200	8.4	705	
	18	800	250	9	705	
	18	840	300	9.6	710	
	18	910	350	10.2	720	
	18	990	400	10.8	735	
	18	1020	450	11.4	735	
	18	1080	500	12	740	
	18	1650	600	13.2	765	
	18	1650	700	14.4	770	
1100	18	1650	800	15.6	785	
	18	1650	900	16.8	800	
	18	1650	1000	18	825	
	19.2	610	80	7	740	
	19.2	640	100	7.2	740	
	19.2	670	125	7.5	745	
	19.2	700	150	7.8	750	
	19.2	750	200	8.4	755	
	19.2	810	250	9	765	
	19.2	860	300	9.6	770	
	19.2	920	350	10.2	780	
	19.2	980	400	10.8	795	
	19.2	1030	450	11.4	795	
	19.2	1090	500	12	800	
	19.2	1210	600	13.2	825	



The Fittings of Ductile Iron Pipes

	19.2	1480	700	14.4	830
	19.2	1540	800	15.6	845
	19.2	1600	900	16.8	860
	19.2	1660	1000	18	875
	19.2	1780	1100	19.2	890
1200	20.4	610	80	7	795
	20.4	640	100	7.2	800
	20.4	670	125	7.5	805
	20.4	700	150	7.8	810
	20.4	750	200	8.4	815
	20.4	810	250	9	825
	20.4	870	300	9.6	830
	20.4	930	350	10.2	840
	20.4	990	400	10.8	845
	20.4	1040	450	11.4	855
	20.4	1100	500	12	860
	20.4	1240	600	13.2	885
	20.4	1330	700	14.4	890
	20.4	1470	800	15.6	915
	20.4	1570	900	16.8	920
1400	20.4	1700	1000	18	945
	20.4	1910	1200	20.4	955
	22.8	920	80	7	870
	22.8	940	100	7.2	875
	22.8	970	125	7.5	880
	22.8	1000	150	7.8	885
	22.8	1060	200	8.4	890
	22.8	1120	250	9	900
	22.8	1170	300	9.6	905
	22.8	1230	350	10.2	915
	22.8	1290	400	10.8	920
	22.8	1350	450	11.4	930
	22.8	1400	500	12	935
	22.8	1550	600	13.2	980
	22.8	1640	700	14.4	985
1500	22.8	1760	800	15.6	1010
	22.8	1870	900	16.8	1015
	22.8	2015	1000	18	1040
	22.8	2100	1100	19.2	1045
	22.8	2220	1200	20.4	1060
	22.8	2450	1400	22.8	1225
1600	24	1575	600	13.2	1035
	24	2040	1000	18	1095
1600	25.2	1600	600	13.2	1090
	25.2	1835	800	15.6	1120



	25.2	2065	1000	18	1150
	25.2	2300	1200	20.4	1180
1800	27.6	1655	600	13.2	1200
	27.6	1885	800	15.6	1230
	27.6	2120	1000	18	1260
	27.6	2350	1200	20.4	1290
2000	30	1705	600	13.2	1310
	30	2170	1000	18	1370
	30	2635	1400	22.8	1430
2200	32.4	1560	600	13.2	1420
	32.4	2220	1200	20.4	1510
	32.4	2880	1800	27.6	1600
2400	34.8	1620	600	13.2	1530
	34.8	2280	1200	20.4	1620
	34.8	2940	1800	27.6	1710
2600	37.2	1680	600	13.2	1640
	37.2	2560	1400	22.8	1760
	37.2	3220	2000	30	1850

4.3 All Socket Tee(Figure 28 and Table 31)

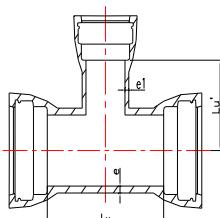
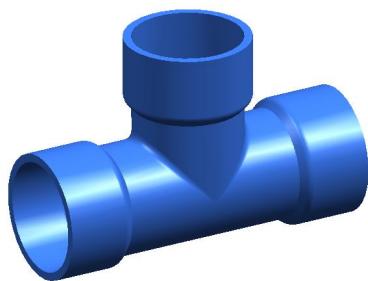
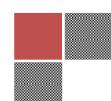


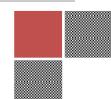
Table 31

unit: mm

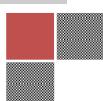
DN	e	Lu	dn	e ₁	Lu'
40	7	120	40	7	60
50	7	120	40	7	65
	7	130	50	7	65
60	7	120	40	7	70
	7	130	50	7	70
	7	145	60	7	70
65	7	120	40	7	75
	7	130	50	7	75
	7	140	60	7	75
	7	150	65	7	75
80	7	120	40	7	80
	7	130	50	7	80
	7	140	60	7	80
	7	150	65	7	85
	7	170	80	7	85
100	7.2	120	40	7	90
	7.2	130	50	7	90
	7.2	145	60	7	90
	7.2	150	65	7	95
	7.2	170	80	7	95
	7.2	190	100	7.2	95
125	7.5	125	40	7	100



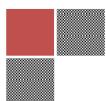
	7.5	130	50	7	100
	7.5	140	60	7	100
	7.5	150	65	7	105
	7.5	170	80	7	105
	7.5	195	100	7.2	110
	7.5	225	125	7.5	110
150	7.8	125	40	7	115
	7.8	130	50	7	115
	7.8	140	60	7	115
	7.8	150	65	7	120
	7.8	170	80	7	120
	7.8	195	100	7.2	120
	7.8	230	125	7.5	125
	7.8	255	150	7.8	125
200	8.4	130	40	7	140
	8.4	130	50	7	140
	8.4	150	60	7	140
	8.4	160	65	7	145
	8.4	175	80	7	145
	8.4	200	100	7.2	145
	8.4	230	125	7.5	145
	8.4	255	150	7.8	150
	8.4	315	200	8.4	155
250	9	120	40	7	165
	9	130	50	7	165
	9	140	60	7	165
	9	150	65	7	170
	9	180	80	7	170
	9	200	100	7.2	170
	9	230	125	7.5	175
	9	260	150	7.8	175
	9	315	200	8.4	180
	9	375	250	9	190
300	9.6	130	40	7	190
	9.6	140	50	7	190
	9.6	150	60	7	190
	9.6	160	65	7	195
	9.6	190	80	7	195
	9.6	205	100	7.2	195
	9.6	240	125	7.5	200
	9.6	260	150	7.8	200
	9.6	320	200	8.4	205
	9.6	375	250	9	210
350	9.6	435	300	9.6	220
	10.2	180	80	7	220



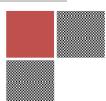
	10.2	210	100	7.2	225
	10.2	240	125	7.5	225
	10.2	260	150	7.8	230
	10.2	320	200	8.4	235
	10.2	380	250	9	240
	10.2	420	300	9.6	245
	10.2	495	350	10.2	250
400	10.8	170	80	7	245
	10.8	210	100	7.2	245
	10.8	240	125	7.5	250
	10.8	270	150	7.8	250
	10.8	310	200	8.4	255
	10.8	360	250	9	260
	10.8	420	300	9.6	265
	10.8	480	350	10.2	275
	10.8	540	400	10.8	280
450	11.4	180	80	7	270
	11.4	215	100	7.2	270
	11.4	250	125	7.5	275
	11.4	270	150	7.8	275
	11.4	330	200	8.4	285
	11.4	390	250	9	290
	11.4	445	300	9.6	295
	11.4	480	350	10.2	300
	11.4	560	400	10.8	305
500	11.4	620	450	11.4	310
	12	200	80	7	295
	12	215	100	7.2	295
	12	250	125	7.5	300
	12	280	150	7.8	300
	12	330	200	8.4	310
	12	380	250	9	310
	12	440	300	9.6	320
	12	490	350	10.2	325
600	12	565	400	10.8	330
	12	600	450	11.4	335
	12	680	500	12	340
	13.2	180	80	7	345
	13.2	200	100	7.2	345
	13.2	250	125	7.5	350
	13.2	260	150	7.8	350
	13.2	340	200	8.4	360
	13.2	380	250	9	360
	13.2	430	300	9.6	370
	13.2	490	350	10.2	375



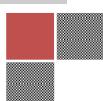
		13.2	570	400	10.8	380
		13.2	610	450	11.4	385
		13.2	670	500	12	390
		13.2	800	600	13.2	400
700		14.4	210	80	7	395
		14.4	230	100	7.2	405
		14.4	250	125	7.5	405
		14.4	280	150	7.8	405
		14.4	345	200	8.4	405
		14.4	390	250	9	415
		14.4	440	300	9.6	415
		14.4	500	350	10.2	420
		14.4	575	400	10.8	430
		14.4	610	450	11.4	430
		14.4	680	500	12	430
		14.4	770	600	13.2	430
		14.4	925	700	14.4	460
800		15.6	240	80	7	445
		15.6	260	100	7.2	455
		15.6	290	125	7.5	455
		15.6	310	150	7.8	455
		15.6	350	200	8.4	455
		15.6	420	250	9	465
		15.6	480	300	9.6	470
		15.6	530	350	10.2	475
		15.6	580	400	10.8	480
		15.6	640	450	11.4	485
		15.6	690	500	12	485
		15.6	815	600	13.2	500
900		15.6	920	700	14.4	515
		15.6	1045	800	15.6	525
		16.8	240	80	7	495
		16.8	260	100	7.2	505
		16.8	290	125	7.5	505
		16.8	310	150	7.8	505
		16.8	355	200	8.4	505
		16.8	420	250	9	520
		16.8	480	300	9.6	525
		16.8	530	350	10.2	525
		16.8	590	400	10.8	530
		16.8	640	450	11.4	535



	16.8	1170	900	16.8	585
1000	18	240	80	7	550
	18	260	100	7.2	555
	18	290	125	7.5	555
	18	310	150	7.8	555
	18	360	200	8.4	555
	18	420	250	9	570
	18	480	300	9.6	575
	18	530	350	10.2	575
	18	595	400	10.8	580
	18	640	450	11.4	585
	18	690	500	12	585
	18	825	600	13.2	600
	18	930	700	14.4	585
	18	1040	800	15.6	605
1100	19.2	240	80	7	600
	19.2	260	100	7.2	600
	19.2	290	125	7.5	600
	19.2	310	150	7.8	600
	19.2	370	200	8.4	605
	19.2	430	250	9	605
	19.2	490	300	9.6	605
	19.2	540	350	10.2	610
	19.2	600	400	10.8	630
	19.2	640	450	11.4	630
	19.2	690	500	12	635
	19.2	830	600	13.2	650
	19.2	930	700	14.4	650
	19.2	1040	800	15.6	660
1200	19.2	1160	900	16.8	665
	19.2	1270	1000	18	670
	19.2	1380	1100	19.2	680
	20.4	240	80	7	655
	20.4	260	100	7.2	665
	20.4	290	125	7.5	665
	20.4	310	150	7.8	675
	20.4	360	200	8.4	675
	20.4	420	250	9	675
	20.4	480	300	9.6	680



	20.4	840	600	13.2	700
	20.4	940	700	14.4	715
	20.4	1070	800	15.6	725
	20.4	1170	900	16.8	730
	20.4	1300	1000	18	745
	20.4	1420	1100	19.2	760
	20.4	1520	1200	20.4	760
1400	22.8	250	80	7	755
	22.8	270	100	7.2	755
	22.8	300	125	7.5	760
	22.8	330	150	7.8	765
	22.8	390	200	8.4	765
	22.8	440	250	9	765
	22.8	480	300	9.6	770
	22.8	530	350	10.2	770
	22.8	590	400	10.8	770
	22.8	650	450	11.4	770
	22.8	710	500	12	770
	22.8	850	600	13.2	800
	22.8	940	700	14.4	805
	22.8	1080	800	15.6	825
	22.8	1170	900	16.8	835
	22.8	1315	1000	18	845
	22.8	1400	1100	19.2	845
	22.8	1520	1200	20.4	855
	22.8	1740	1400	22.8	875
1500	24	855	600	13.2	850
	24	1320	1000	18	895
1600	25.2	860	600	13.2	900
	25.2	1095	800	15.6	925
	25.2	1325	1000	18	945
	25.2	1560	1200	20.4	965
1800	27.6	875	600	13.2	1000
	27.6	1105	800	15.6	1025
	27.6	1340	1000	18	1045
	27.6	1570	1200	20.4	1065
2000	30	885	600	13.2	1100
	30	1350	1000	18	1145
	30	1815	1400	22.8	1190
2200	32.4	900	600	13.2	1200
	32.4	1595	1200	20.4	1265
	32.4	2290	1800	27.6	1335
2400	34.8	910	600	13.2	1300
	34.8	1605	1200	20.4	1365
	34.8	2300	1800	27.6	1435



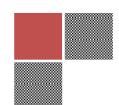
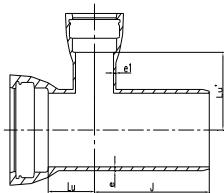
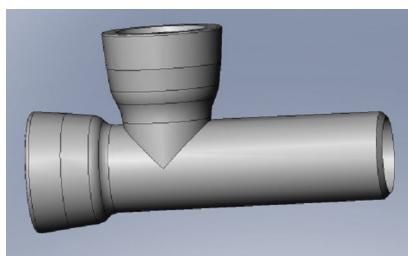
2600	37.2	920	600	13.2	1400
	37.2	1850	1400	22.8	1490
	37.2	2545	2000	30	1555

4.4 Socket-spigot with single branch socket (Figure 29 Table 32)

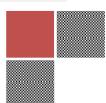
Table 32

unit: mm

DN	e	Lu	J	dn	e ₁	Lu'
40	7	60	170	40	7	60
50	7	60	170	40	7	65
	7	65	175	50	7	65
60	7	60	170	40	7	70
	7	65	175	50	7	70
	7	70	180	60	7	70
65	7	60	170	40	7	75
	7	65	175	50	7	75
	7	70	170	60	7	75
	7	75	185	65	7	75
80	7	60	185	40	7	80
	7	65	190	50	7	80
	7	70	195	60	7	80
	7	75	200	65	7	85
	7	75	275	80	7	75
100	7.2	60	190	40	7	90
	7.2	65	195	50	7	90
	7.2	70	200	60	7	90
	7.2	75	205	65	7	90
	7.2	75	275	80	7	95
	7.2	95	275	100	7.2	95
125	7.5	60	195	40	7	100
	7.5	65	200	50	7	100
	7.5	70	205	60	7	100
	7.5	75	205	65	7	105
	7.5	85	280	80	7	100
	7.5	95	290	100	7.2	110
	7.5	110	295	125	7.5	110
150	7.8	60	205	40	7	115
	7.8	65	210	50	7	115
	7.8	70	215	60	7	115
	7.8	75	220	65	7	120
	7.8	75	275	80	7	120
	7.8	100	280	100	7.2	120
	7.8	115	305	125	7.5	125
	7.8	130	310	150	7.8	125

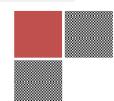


200	8.4	60	210	40	7	140
	8.4	65	215	50	7	140
	8.4	75	220	60	7	140
	8.4	80	225	65	7	145
	8.4	80	275	80	7	145
	8.4	100	280	100	7.2	145
	8.4	115	305	125	7.5	145
	8.4	130	310	150	7.8	150
	8.4	160	340	200	8.4	155
250	9	60	235	40	7	165
	9	65	240	50	7	165
	9	70	245	60	7	165
	9	75	250	65	7	170
	9	90	300	80	7	170
	9	100	280	100	7.2	175
	9	115	315	125	7.5	175
	9	130	310	150	7.8	175
	9	160	340	200	8.4	180
300	9.6	65	240	40	7	185
	9.6	70	245	50	7	190
	9.6	75	250	60	7	190
	9.6	80	255	65	7	195
	9.6	95	300	80	7	195
	9.6	105	285	100	7.2	195
	9.6	120	320	125	7.5	205
	9.6	130	310	150	7.8	200
	9.6	160	340	200	8.4	205
350	9.6	190	370	250	9	210
	9.6	220	400	300	9.6	220
	10.2	90	300	80	7	215
	10.2	100	310	100	7.2	215
	10.2	120	325	125	7.5	225
	10.2	125	340	150	7.8	225
	10.2	160	340	200	8.4	235
400	10.2	190	370	250	9	240
	10.2	220	400	300	9.6	245
	10.2	250	430	350	10.2	250
	10.8	85	300	80	7	240
	10.8	95	310	100	7.2	240
	10.8	120	330	125	7.5	250
	10.8	125	340	150	7.8	250



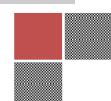
The Fittings of Ductile Iron Pipes

	10.8	250	430	350	10.2	275
	10.8	280	460	400	10.8	280
450	11.4	90	320	80	7	265
	11.4	100	330	100	7.2	265
	11.4	125	345	125	7.5	275
	11.4	130	360	150	7.8	265
	11.4	155	390	200	8.4	270
	11.4	185	415	250	9	285
	11.4	215	445	300	9.6	290
	11.4	240	460	350	10.2	290
	11.4	270	500	400	10.8	290
	11.4	300	525	450	11.4	290
500	12	100	320	80	7	295
	12	115	330	100	7.2	295
	12	125	345	125	7.5	300
	12	140	360	150	7.8	300
	12	165	390	200	8.4	300
	12	195	395	250	9	315
	12	225	425	300	9.6	320
	12	255	455	350	10.2	325
	12	285	485	400	10.8	330
	12	300	525	450	11.4	335
600	12	340	540	500	12	340
	13.2	90	325	80	7	345
	13.2	100	330	100	7.2	345
	13.2	125	345	125	7.5	350
	13.2	130	360	150	7.8	350
	13.2	160	390	200	8.4	350
	13.2	190	415	250	9	360
	13.2	230	430	300	9.6	370
	13.2	255	455	350	10.2	375
	13.2	285	485	400	10.8	380
700	13.2	305	525	450	11.4	385
	13.2	345	545	500	12	390
	13.2	400	600	600	13.2	400
	14.4	105	345	80	7	395
	14.4	115	345	100	7.2	405
	14.4	125	360	125	7.5	405
	14.4	140	370	150	7.8	405
	14.4	165	400	200	8.4	415
	14.4	195	430	250	9	415
	14.4	230	480	300	9.6	420



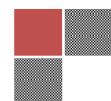
The Fittings of Ductile Iron Pipes

	14.4	345	595	500	12	440
	14.4	405	655	600	13.2	450
	14.4	465	715	700	14.4	460
800	15.6	120	355	80	7	445
	15.6	130	355	100	7.2	455
	15.6	145	370	125	7.5	455
	15.6	155	380	150	7.8	460
	15.6	180	410	200	8.4	465
	15.6	210	440	250	9	465
	15.6	240	450	300	9.6	470
	15.6	265	485	350	10.2	475
	15.6	290	540	400	10.8	480
	15.6	320	535	450	11.4	485
	15.6	350	600	500	12	490
	15.6	410	660	600	13.2	500
	15.6	460	690	700	14.4	515
	15.6	525	775	800	15.6	525
900	16.8	120	410	80	7	495
	16.8	130	425	100	7.2	505
	16.8	145	435	125	7.5	505
	16.8	155	455	150	7.8	515
	16.8	180	485	200	8.4	520
	16.8	210	515	250	9	520
	16.8	240	535	300	9.6	525
	16.8	265	565	350	10.2	525
	16.8	295	590	400	10.8	530
	16.8	320	610	450	11.4	535
	16.8	350	600	500	12	535
	16.8	410	660	600	13.2	535
	16.8	470	720	700	14.4	535
	16.8	520	815	800	15.6	550
	16.8	585	835	900	16.8	575
1000	18	120	420	80	7	550
	18	130	435	100	7.2	560
	18	145	445	125	7.5	560
	18	155	465	150	7.8	570
	18	180	495	200	8.4	570
	18	210	525	250	9	570
	18	240	545	300	9.6	575
	18	265	575	350	10.2	575
	18	295	600	400	10.8	580
	18	320	620	450	11.4	585
	18	345	650	500	12	585
	18	415	715	600	13.2	600
	18	470	770	700	14.4	610



The Fittings of Ductile Iron Pipes

	18	530	830	800	15.6	625
	18	580	880	900	16.8	625
	18	645	945	1000	18	645
1100	19.2	120	435	80	7	600
	19.2	130	450	100	7.2	600
	19.2	145	460	125	7.5	600
	19.2	155	480	150	7.8	600
	19.2	185	510	200	8.4	605
	19.2	215	540	250	9	605
	19.2	245	560	300	9.6	605
	19.2	270	590	350	10.2	610
	19.2	300	615	400	10.8	610
	19.2	320	635	450	11.4	610
	19.2	345	665	500	12	615
	19.2	405	725	600	13.2	620
	19.2	415	715	700	14.4	660
	19.2	535	835	800	15.6	675
	19.2	590	890	900	16.8	685
1200	19.2	635	1060	1000	18	690
	19.2	705	1005	1100	19.2	705
	20.4	120	475	80	7	655
	20.4	130	490	100	7.2	665
	20.4	145	500	125	7.5	665
	20.4	155	515	150	7.8	675
	20.4	180	545	200	8.4	675
	20.4	210	575	250	9	675
	20.4	240	605	300	9.6	680
	20.4	265	630	350	10.2	685
	20.4	295	655	400	10.8	685
	20.4	325	675	450	11.4	695
	20.4	355	710	500	12	695
	20.4	385	675	600	13.2	695
	20.4	470	820	700	14.4	695
1400	20.4	535	835	800	15.6	725
	20.4	595	895	900	16.8	735
	20.4	650	950	1000	18	745
	20.4	770	1070	1200	20.4	770
	22.8	125	500	80	7	755
	22.8	135	515	100	7.2	755
	22.8	150	525	125	7.5	760
	22.8	165	540	150	7.8	765



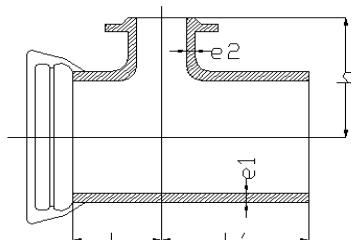
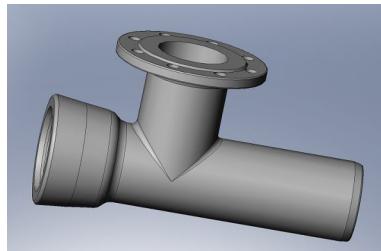
	22.8	295	680	400	10.8	770
	22.8	325	700	450	11.4	770
	22.8	355	735	500	12	770
	22.8	410	790	600	13.2	775
	22.8	470	845	700	14.4	785
	22.8	525	905	800	15.6	815
	22.8	600	900	900	16.8	835
	22.8	660	960	1000	18	845
	22.8	700	1065	1100	19.2	855
	22.8	775	1075	1200	20.4	865
	22.8	890	1190	1400	22.8	890

4.5 Socket Spigot with single branch flange (Figure 30 and Table 33)

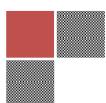
Table 33 unit: mm

Main Pipe

Branch Pipe

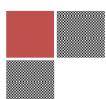


DN	e ₁	L	L'	dn	e ₂	h
40	7	60	205	40	7	120
50	7	60	205	40	7	120
	7	65	215	50	7	120
60	7	60	205	40	7	125
	7	65	215	50	7	125
	7	65	220	60	7	125
65	7	60	205	40	7	125
	7	65	215	50	7	125
	7	70	220	60	7	130
	7	75	225	65	7	135
80	7	60	215	40	7	140
	7	65	225	50	7	140
	7	70	230	60	7	145
	7	75	235	65	7	145
	7	75	275	80	7	140
100	7.2	60	225	40	7	150
	7.2	65	230	50	7	155
	7.2	70	235	60	7	155
	7.2	75	240	65	7	155
	7.2	75	275	80	7	155
	7.2	85	285	100	7.2	160

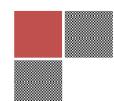


The Fittings of Ductile Iron Pipes

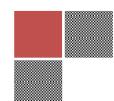
125	7.5	60	225	40	7	170
	7.5	65	230	50	7	170
	7.5	70	235	60	7	175
	7.5	75	240	65	7	175
	7.5	80	275	80	7	175
	7.5	95	285	100	7.2	175
	7.5	105	275	125	7.5	180
150	7.8	65	230	40	7	180
	7.8	65	235	50	7	185
	7.8	65	240	60	7	185
	7.8	65	245	65	7	185
	7.8	75	275	80	7	185
	7.8	90	285	100	7.2	190
	7.8	105	285	125	7.5	195
	7.8	120	310	150	7.8	200
200	8.4	65	235	40	7	210
	8.4	65	240	50	7	215
	8.4	75	245	60	7	215
	8.4	75	250	65	7	215
	8.4	80	275	80	7	215
	8.4	90	280	100	7.2	220
	8.4	105	285	125	7.5	225
	8.4	120	310	150	7.8	230
	8.4	150	340	200	8.4	240
250	9	65	255	40	7	245
	9	65	260	50	7	245
	9	75	265	60	7	245
	9	75	270	65	7	245
	9	90	315	80	7	245
	9	100	325	100	7.2	250
	9	115	325	125	7.5	255
	9	130	360	150	7.8	260
	9	150	385	200	8.4	270
	9	180	415	250	9	280
300	9.6	65	260	40	7	270
	9.6	70	270	50	7	275
	9.6	75	275	60	7	280



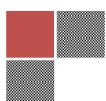
		9.6	80	285	65	7	280
		9.6	105	355	100	7.2	280
		9.6	115	360	125	7.5	285
		9.6	130	390	150	7.8	290
		9.6	150	415	200	8.4	300
		9.6	180	445	250	9	310
		9.6	210	475	300	9.6	320
	350	10.2	100	355	100	7.2	310
		10.2	115	360	125	7.5	315
		10.2	125	390	150	7.8	320
		10.2	150	415	200	8.4	330
		10.2	180	445	250	9	340
		10.2	210	475	300	9.6	350
		10.2	240	500	350	10.2	360
	400	10.8	95	355	100	7.2	340
		10.8	115	360	125	7.5	345
		10.8	125	390	150	7.8	350
		10.8	155	415	200	8.4	360
		10.8	180	445	250	9	370
		10.8	210	475	300	9.6	380
		10.8	240	500	350	10.2	390
		10.8	270	530	400	10.8	400
	450	11.4	100	355	100	7.2	370
		11.4	115	360	125	7.5	405
		11.4	130	390	150	7.8	380
		11.4	155	415	200	8.4	390
		11.4	185	445	250	9	400
		11.4	215	475	300	9.6	410
		11.4	240	500	350	10.2	420
		11.4	270	530	400	10.8	430
		11.4	300	555	450	11.4	440
	500	12	115	355	100	7.2	400
		12	120	360	125	7.5	405
		12	140	390	150	7.8	410
		12	165	415	200	8.4	420
		12	190	445	250	9	430
		12	220	475	300	9.6	440



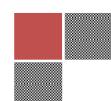
		12	245	500	350	10.2	450
		12	270	530	400	10.8	460
		12	300	555	450	11.4	470
		12	330	580	500	12	480
600	13.2	100	355	100	7.2	460	
	13.2	120	360	125	7.5	465	
	13.2	130	390	150	7.8	470	
	13.2	160	415	200	8.4	480	
	13.2	190	445	250	9	490	
	13.2	215	475	300	9.6	500	
	13.2	245	500	350	10.2	510	
	13.2	275	530	400	10.8	520	
	13.2	305	555	450	11.4	530	
	13.2	335	580	500	12	540	
	13.2	390	635	600	13.2	560	
700	14.4	105	345	80	7	490	
	14.4	115	345	100	7.2	490	
	14.4	125	361	125	7.5	495	
	14.4	140	370	150	7.8	500	
	14.4	165	385	200	8.4	505	
	14.4	195	430	250	9	515	
	14.4	220	440	300	9.6	520	
	14.4	250	475	350	10.2	530	
	14.4	280	495	400	10.8	535	
	14.4	305	525	450	11.4	545	
	14.4	340	560	500	12	550	
	14.4	385	595	600	13.2	565	
	14.4	455	690	700	14.4	580	
800	15.6	120	355	80	7	550	
	15.6	130	355	100	7.2	550	
	15.6	145	371	125	7.5	555	
	15.6	155	381	150	7.8	560	
	15.6	180	395	200	8.4	565	
	15.6	210	441	250	9	575	
	15.6	240	451	300	9.6	580	
	15.6	265	485	350	10.2	590	
	15.6	295	505	400	10.8	595	



	15.6	320	535	450	11.4	605
	15.6	345	571	500	12	610
	15.6	400	605	600	13.2	625
	15.6	460	700	700	14.4	640
	15.6	515	760	800	15.6	655
900	16.8	120	440	80	7	605
	16.8	130	450	100	7.2	610
	16.8	145	465	125	7.5	615
	16.8	155	485	150	7.8	620
	16.8	180	515	200	8.4	625
	16.8	210	545	250	9	635
	16.8	240	565	300	9.6	640
	16.8	265	600	350	10.2	650
	16.8	295	630	400	10.8	655
	16.8	320	660	450	11.4	665
	16.8	345	700	500	12	670
	16.8	400	760	600	13.2	685
	16.8	460	795	700	14.4	700
	16.8	520	855	800	15.6	715
	16.8	575	905	900	16.8	730
1000	18	120	450	80	7	670
	18	130	460	100	7.2	670
	18	145	475	125	7.5	675
	18	155	495	150	7.8	680
	18	180	525	200	8.4	685
	18	210	555	250	9	695
	18	240	575	300	9.6	700
	18	265	610	350	10.2	710
	18	295	640	400	10.8	715
	18	320	670	450	11.4	725
	18	345	710	500	12	730
	18	405	770	600	13.2	745
	18	465	805	700	14.4	760
	18	520	865	800	15.6	775
1100	18	580	915	900	16.8	790
	18	635	980	1000	18	815
	19.2	120	465	80	7	730
	19.2	130	475	100	7.2	730
	19.2	145	490	125	7.5	735



	19.2	155	510	150	7.8	740
	19.2	180	540	200	8.4	745
	19.2	210	570	250	9	755
	19.2	240	590	300	9.6	760
	19.2	265	625	350	10.2	770
	19.2	295	655	400	10.8	775
	19.2	325	685	450	11.4	785
	19.2	350	725	500	12	790
	19.2	410	785	600	13.2	805
	19.2	470	820	700	14.4	820
	19.2	525	880	800	15.6	835
	19.2	585	930	900	16.8	850
	19.2	640	995	1000	18	870
	19.2	695	1045	1100	19.2	880
1200	20.4	120	500	80	7	790
1200	20.4	130	510	100	7.2	790
1200	20.4	145	525	125	7.5	795
1200	20.4	155	545	150	7.8	800
1200	20.4	180	570	200	8.4	805
1200	20.4	210	600	250	9	815
1200	20.4	240	630	300	9.6	820
1200	20.4	265	660	350	10.2	830
1200	20.4	295	690	400	10.8	835
1200	20.4	325	720	450	11.4	845
1200	20.4	355	760	500	12	850
1200	20.4	410	820	600	13.2	865
1200	20.4	470	855	700	14.4	880
1200	20.4	525	915	800	15.6	895
1200	20.4	585	965	900	16.8	910
1200	20.4	645	1030	1000	18	925
1200	20.4	760	1145	1200	20.4	955
1400	22.8	170	525	80	7	870
1400	22.8	210	535	100	7.2	875
1400	22.8	225	550	125	7.5	880
1400	22.8	240	570	150	7.8	880
1400	22.8	270	595	200	8.4	890
1400	22.8	280	625	250	9	895

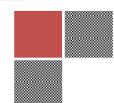


	22.8	325	655	300	9.6	905
	22.8	355	685	350	10.2	910
	22.8	385	715	400	10.8	920
	22.8	415	745	450	11.4	925
	22.8	440	785	500	12	935
	22.8	500	845	600	13.2	950
	22.8	560	880	700	14.4	965
	22.8	615	940	800	15.6	980
	22.8	675	990	900	16.8	995
	22.8	730	1055	1000	18	1010
	22.8	790	1105	1100	19.2	1025
	22.8	850	1170	1200	20.4	1040
	22.8	965	1270	1400	22.8	1070

4.6 Double Socket With Level Invert Flange (Figure 31 Table 34)

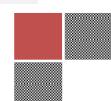
Table 34 unit: mm

DN	e ₁	Lu	dn	e ₁	h
200	8.4	200	100	7.2	240
	8.4	250	150	7.8	250
250	9	200	100	7.2	270
	9	255	150	7.8	280
	9	315	200	8.4	290
300	9.6	205	100	7.2	300
	9.6	230	125	7.5	305
	9.6	260	150	7.8	310
	9.6	320	200	8.4	320
350	10.2	200	100	7.2	330
	10.2	230	125	7.5	335
	10.2	260	150	7.8	340
	10.2	320	200	8.4	350
400	10.8	210	100	7.2	360
	10.8	239	125	7.5	365
	10.8	265	150	7.8	370
	10.8	325	200	8.4	380
	10.8	380	250	9	390
450	11.4	210	100	7.2	390
	11.4	240	125	7.5	395
	11.4	270	150	7.8	400
	11.4	320	200	8.4	410
	11.4	380	250	9	420



The Fittings of Ductile Iron Pipes

		11.4	440	300	9.6	430
500	12	215	100	7.2	420	
	12	240	125	7.5	425	
	12	274	150	7.8	430	
	12	330	200	8.4	440	
	12	390	250	9	450	
	12	445	300	9.6	460	
	12	500	350	10.2	470	
600	13.2	220	100	7.2	480	
	13.2	250	125	7.5	485	
	13.2	280	150	7.8	490	
	13.2	340	200	8.4	500	
	13.2	395	250	9	510	
	13.2	450	300	9.6	520	
	13.2	510	350	10.2	530	
	13.2	570	400	10.8	540	
700	14.4	210	80	7	520	
	14.4	230	100	7.2	540	
	14.4	250	125	7.5	540	
	14.4	290	150	7.8	550	
	14.4	350	200	8.4	560	
	14.4	400	250	9	570	
	14.4	460	300	9.6	580	
	14.4	490	400	10.8	590	
800	15.6	210	80	7	580	
	15.6	240	100	7.2	600	
	15.6	290	125	7.5	585	
	15.6	300	150	7.8	610	
	15.6	360	200	8.4	620	
	15.6	410	250	9	630	
	15.6	460	300	9.6	640	
	15.6	500	400	10.8	650	
900	16.8	240	80	7	640	
	16.8	260	100	7.2	640	
	16.8	290	125	7.5	645	
	16.8	310	150	7.8	650	
	16.8	360	200	8.4	660	
	16.8	420	250	9	670	
	16.8	480	300	9.6	680	
1000	18	240	80	7	700	
	18	260	100	7.2	700	
	18	290	125	7.5	705	
	18	310	150	7.8	710	
	18	360	200	8.4	720	
	18	420	250	9	730	



		18	480	300	9.6	740
		18	530	350	10.2	750
		18	590	400	10.8	760
1100	19.2	240	80	7	750	
	19.2	260	100	7.2	750	
	19.2	290	125	7.5	755	
	19.2	310	150	7.8	760	
	19.2	360	200	8.4	765	
	19.2	420	250	9	775	
	19.2	480	300	9.6	780	
	19.2	530	350	10.2	790	
	19.2	590	400	10.8	795	
1200	20.4	240	80	7	820	
	20.4	260	100	7.2	820	
	20.4	290	125	7.5	825	
	20.4	310	150	7.8	830	
	20.4	360	200	8.4	840	
	20.4	420	250	9	850	
	20.4	480	300	9.6	860	
	20.4	530	350	10.2	870	
	20.4	590	400	10.8	880	
1400	22.8	340	80	7	905	
	22.8	420	100	7.2	905	
	22.8	450	125	7.5	910	
	22.8	480	150	7.8	910	
	22.8	540	200	8.4	920	
	22.8	560	250	9	925	
	22.8	650	300	9.6	935	
	22.8	710	350	10.2	940	
	22.8	770	400	10.8	945	
22.8	830	450	11.4	955		
	880	500	12	965		

4.7 All Socket Level Invert Tee (Figure 32 and Table 35)

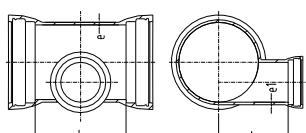
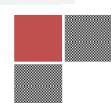
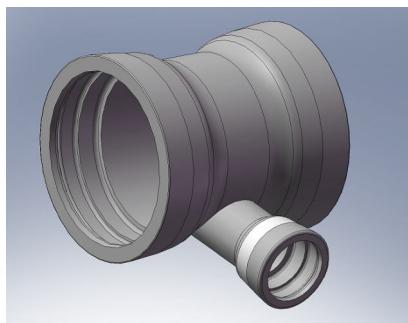


Table 35

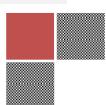
unit: mm

DN	e	L	dn	e ₁	h
100	7.2	120	40	7	100
125	7.5	120	40	7	110
	7.5	120	50	7	110
150	7.8	120	40	7	115
	7.8	130	50	7	115
	7.8	140	60	7	115
	7.8	150	65	7	120

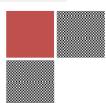




200	8.4	120	40	7	140
	8.4	130	50	7	140
	8.4	140	60	7	140
	8.4	150	65	7	145
	8.4	180	100	7.2	125
	8.4	240	150	7.8	130
250	9	120	40	7	165
	9	130	50	7	165
	9	140	60	7	165
	9	150	65	7	170
	9	200	100	7.2	150
	9	260	150	7.8	155
	9	300	200	8.4	160
300	9.6	130	40	7	190
	9.6	140	50	7	190
	9.6	150	60	7	190
	9.6	160	65	7	195
	9.6	210	100	7.2	175
	9.6	215	125	7.5	200
	9.6	260	150	7.8	180
	9.6	300	200	8.4	185
350	10.2	200	100	7.2	200
	10.2	250	150	7.8	205
	10.2	215	125	7.5	225
	10.2	300	200	8.4	210
400	10.8	190	100	7.2	225
	10.8	220	125	7.5	250
	10.8	250	150	7.8	230
	10.8	310	200	8.4	235
	10.8	360	250	9	245
450	11.4	200	100	7.2	250
	11.4	225	125	7.5	255
	11.4	260	150	7.8	255
	11.4	310	200	8.4	260
	11.4	370	250	9	270
	11.4	430	300	9.6	275
500	12	230	100	7.2	275
	12	225	125	7.5	275
	12	280	150	7.8	280
	12	330	200	8.4	285
	12	380	250	9	295
	12	440	300	9.6	300
	12	490	350	10.2	305
600	13.2	200	100	7.2	325
	13.2	230	125	7.5	325

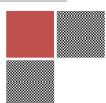


	13.2	260	150	7.8	330
	13.2	320	200	8.4	335
	13.2	380	250	9	345
	13.2	430	300	9.6	350
	13.2	490	350	10.2	355
	13.2	550	400	10.8	360
700	14.4	210	80	7	385
	14.4	230	100	7.2	390
	14.4	250	125	7.5	390
	14.4	280	150	7.8	395
	14.4	330	200	8.4	400
	14.4	390	250	9	405
	14.4	440	300	9.6	410
	14.4	500	350	10.2	415
	14.4	560	400	10.8	420
	14.4	610	450	11.4	425
	14.4	680	500	12	430
	14.4	770	600	13.2	445
	14.4	910	700	14.4	455
800	15.6	240	80	7	435
	15.6	260	100	7.2	440
	15.6	290	125	7.5	440
	15.6	310	150	7.8	445
	15.6	360	200	8.4	450
	15.6	420	250	9	455
	15.6	480	300	9.6	460
	15.6	530	350	10.2	465
	15.6	590	400	10.8	470
	15.6	640	450	11.4	475
	15.6	690	500	12	480
	15.6	800	600	13.2	495
	15.6	920	700	14.4	505
	15.6	1030	800	15.6	515
900	16.8	240	80	7	485
	16.8	260	100	7.2	490
	16.8	290	125	7.5	490
	16.8	310	150	7.8	495
	16.8	360	200	8.4	500
	16.8	420	250	9	505
	16.8	480	300	9.6	510
	16.8	530	350	10.2	515
	16.8	590	400	10.8	520
	16.8	640	450	11.4	525
	16.8	690	500	12	530
	16.8	800	600	13.2	545



The Fittings of Ductile Iron Pipes

	16.8	920	700	14.4	555
	16.8	1040	800	15.6	565
	16.8	1150	900	16.8	575
1000	18	240	80	7	535
	18	260	100	7.2	540
	18	290	125	7.5	540
	18	310	150	7.8	545
	18	360	200	8.4	550
	18	420	250	9	555
	18	480	300	9.6	560
	18	530	350	10.2	565
	18	590	400	10.8	570
	18	640	450	11.4	575
	18	690	500	12	580
	18	810	600	13.2	595
	18	930	700	14.4	605
	18	1040	800	15.6	615
	18	1160	900	16.8	625
	18	1270	1000	18	635
1100	19.2	230	80	7	595
	19.2	260	100	7.2	600
	19.2	280	125	7.5	605
	19.2	310	150	7.8	610
	19.2	370	200	8.4	610
	19.2	430	250	9	615
	19.2	490	300	9.6	620
	19.2	540	350	10.2	625
	19.2	600	400	10.8	630
1200	20.4	240	80	7	635
	20.4	260	100	7.2	640
	20.4	290	125	7.5	640
	20.4	310	150	7.8	645
	20.4	360	200	8.4	650
	20.4	420	250	9	655
	20.4	480	300	9.6	660
	20.4	530	350	10.2	665
	20.4	590	400	10.8	670
	20.4	650	450	11.4	675
	20.4	710	500	12	680
	20.4	820	600	13.2	695
	20.4	940	700	14.4	705
	20.4	1050	800	15.6	715
	20.4	1170	900	16.8	725
	20.4	1290	1000	18	735
	20.4	1520	1200	20.4	760

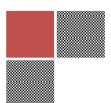
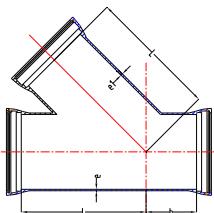
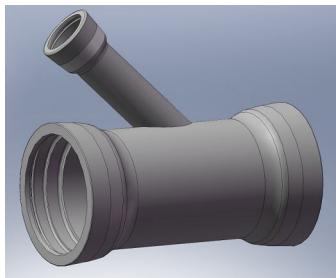


1400	22.8	250	80	7	745
	22.8	270	100	7.2	745
	22.8	300	125	7.5	755
	22.8	330	150	7.8	755
	22.8	390	200	8.4	760
	22.8	440	250	9	765
	22.8	490	300	9.6	770
	22.8	530	350	10.2	775
	22.8	590	400	10.8	780
	22.8	650	450	11.4	785
	22.8	700	500	12	790
	22.8	820	600	13.2	800

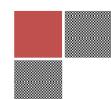
4.8 Double socket with 45 angles socket branch tee (Figure 33 and Table 36)

Table 36 unit: mm

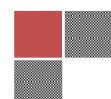
DN	e	dn	e ₁	L	h
40	7	40	7	190	60
50	7	40	7	200	60
	7	50	7	200	65
60	7	40	7	215	60
	7	50	7	215	65
	7	60	7	215	75
65	7	40	7	220	60
	7	50	7	220	70
	7	60	7	220	75
	7	65	7	225	75
80	7	40	7	240	70
	7	50	7	240	70
	7	60	7	245	75
	7	65	7	245	75
	7	80	7	240	85
100	7.2	40	7	265	70
	7.2	50	7	265	70
	7.2	60	7	270	75
	7.2	65	7	270	75
	7.2	80	7	265	85
	7.2	100	7.2	265	95
125	7.5	40	7	295	70
	7.5	50	7	295	70



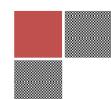
		7.5	60	7	300	75
		7.5	65	7	300	75
		7.5	80	7	295	85
		7.5	100	7.2	300	100
		7.5	125	7.5	300	115
150		7.8	40	7	325	70
		7.8	50	7	325	75
		7.8	60	7	325	80
		7.8	65	7	325	85
		7.8	80	7	325	85
		7.8	100	7.2	330	100
		7.8	125	7.5	330	115
		7.8	150	7.8	335	125
		8.4	40	7	385	70
200		8.4	50	7	385	75
		8.4	60	7	385	80
		8.4	65	7	385	85
		8.4	80	7	385	90
		8.4	100	7.2	390	100
		8.4	125	7.5	390	115
		8.4	150	7.8	395	130
		8.4	200	8.4	400	160
		9	40	7	445	70
250		9	50	7	445	75
		9	60	7	445	85
		9	65	7	445	85
		9	80	7	445	90
		9	100	7.2	450	100
		9	125	7.5	450	115
		9	150	7.8	455	130
		9	200	8.4	460	160
		9	250	9	465	190
300		9.6	40	7	505	75
		9.6	50	7	505	75
		9.6	60	7	505	80
		9.6	65	7	505	85
		9.6	80	7	505	90
		9.6	100	7.2	510	100
		9.6	125	7.5	510	115
		9.6	150	7.8	515	130



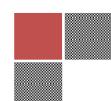
		9.6	200	8.4	520	160
		9.6	250	9	525	190
		9.6	300	9.6	530	220
350	10.2	100	7.2	570	105	
	10.2	125	7.5	570	120	
	10.2	150	7.8	575	135	
	10.2	200	8.4	580	160	
	10.2	250	9	585	190	
	10.2	300	9.6	590	220	
	10.2	350	10.2	595	250	
	10.8	100	7.2	630	105	
400	10.8	125	7.5	630	120	
	10.8	150	7.8	635	135	
	10.8	200	8.4	640	165	
	10.8	250	9	645	190	
	10.8	300	9.6	650	220	
	10.8	350	10.2	660	250	
	10.8	400	10.8	665	280	
	11.4	100	7.2	690	105	
450	11.4	123	7.5	690	120	
	11.4	150	7.8	695	135	
	11.4	200	8.4	700	165	
	11.4	250	9	705	195	
	11.4	350	10.2	720	250	
	11.4	400	10.8	725	280	
	11.4	450	11.4	730	310	
	12	100	7.2	750	110	
500	12	125	7.5	750	125	
	12	150	7.8	755	140	
	12	200	8.4	760	145	
	12	250	9	770	195	
	12	300	9.6	775	225	
	12	350	10.2	780	255	
	12	400	10.8	785	280	
	12	450	11.4	790	310	
	12	500	12	795	340	
	13.2	100	7.2	870	110	
600	13.2	125	7.5	875	125	
	13.2	150	7.8	880	140	
	13.2	200	8.4	885	170	
	13.2	250	9	890	200	
	13.2	300	9.6	895	225	
	13.2	350	10.2	900	255	
	13.2	400	10.8	905	285	



	13.2	450	11.4	910	315
	13.2	500	12	915	345
	13.2	600	13.2	930	400
700	14.4	80	7	710	-190
	14.4	100	7.2	740	-165
	14.4	125	7.5	780	-145
	14.4	150	7.8	820	-125
	14.4	200	8.4	860	-105
	14.4	250	9	890	-70
	14.4	300	9.6	930	-30
	14.4	350	10.2	960	10
	14.4	400	10.8	1010	45
	14.4	450	11.4	1060	75
	14.4	500	12	1110	110
	14.4	600	13.2	1190	170
800	14.4	700	14.4	1265	230
	15.6	80	7	875	-240
	15.6	100	7.2	910	-210
	15.6	125	7.5	945	-190
	15.6	150	7.8	980	-180
	15.6	200	8.4	1010	-170
	15.6	250	9	1040	-120
	15.6	300	9.6	1080	-80
	15.6	350	10.2	1120	-50
	15.6	400	10.8	1160	-5
	15.6	450	11.4	1210	40
	15.6	500	12	1260	90
900	15.6	600	13.2	1310	155
	15.6	700	14.4	1390	205
	15.6	800	15.6	1460	280
	16.8	80	7	945	-290
	16.8	100	7.2	1000	-270
	16.8	125	7.5	1040	-250
	16.8	150	7.8	1060	-220
	16.8	200	8.4	1090	-200



	16.8	450	11.4	1290	-5
	16.8	500	12	1340	45
	16.8	600	13.2	1400	95
	16.8	700	14.4	1470	170
	16.8	800	15.6	1540	240
	16.8	900	16.8	1620	310
1000	18	80	7	1000	-335
	18	100	7.2	1060	-320
	18	125	7.5	1100	-300
	18	150	7.8	1120	-270
	18	200	8.4	1150	-250
	18	250	9	1190	-220
	18	300	9.6	1245	-200
	18	350	10.2	1270	-150
	18	400	10.8	1330	-135
	18	450	11.4	1370	-100
	18	500	12	1400	-30
	18	600	13.2	1470	40
	18	700	14.4	1510	110
	18	800	15.6	1590	185
	18	900	16.8	1670	260
	18	1000	18	1750	330
1100	19.2	80	7	1070	-390
	19.2	100	7.2	1120	-370
	19.2	125	7.5	1160	-350
	19.2	150	7.8	1185	-325
	19.2	200	8.4	1220	-300
	19.2	250	9	1250	-265
	19.2	300	9.6	1300	-235
	19.2	350	10.2	1330	-200
	19.2	400	10.8	1350	-175
	19.2	450	11.4	1420	-135
	19.2	500	12	1455	-75
	19.2	600	13.2	1580	0
	19.2	700	14.4	1600	65
	19.2	800	15.6	1700	135
	19.2	900	16.8	1775	215
	19.2	1000	18	1850	285
	19.2	1100	19.2	1875	355



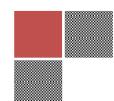
1200	20.4	80	7	1140	-440
	20.4	100	7.2	1180	-420
	20.4	125	7.5	1220	-400
	20.4	150	7.8	1250	-380
	20.4	200	9	1290	-355
	20.4	250	9.6	1310	-315
	20.4	300	10.2	1350	-275
	20.4	350	10.8	1390	-255
	20.4	400	11.4	1435	-210
	20.4	450	11.8	1470	-170
	20.4	500	12	1510	-115
	20.4	600	13.2	1590	-50
	20.4	700	14.4	1690	20
	20.4	800	15.6	1805	85
	20.4	900	16.8	1880	170
1400	20.4	1000	18	1950	240
	20.4	1200	20.4	2100	385
	22.8	80	7	1280	-545
	22.8	100	7.2	1300	-520
	22.8	125	7.5	1340	-500
	22.8	150	7.8	1380	-490
	22.8	200	8.4	1430	-460
	22.8	250	9	1430	-410
	22.8	300	9.6	1455	-350
	22.8	350	10.2	1510	-360
	22.8	400	10.8	1540	-285
	22.8	450	11.4	1570	-205
	22.8	500	12	1620	-195
	22.8	600	13.2	1660	-95
	22.8	700	14.4	1870	-70
	22.8	800	15.6	2020	-15
	22.8	900	16.8	2090	80
	22.8	1000	18	2180	150
	22.8	1100	19.2	2220	220
	22.8	1200	20.4	2290	300
	22.8	1400	22.8	2430	450

4.9 Double flange with 45 angles flange branch tee (Figure 34 and Table 37)

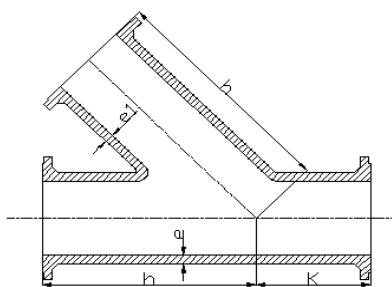
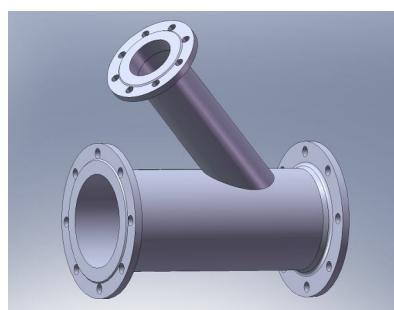
Table 37

unit: mm

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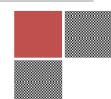
The Fittings of Ductile Iron Pipes



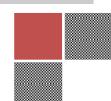
DN	e	dn	e ₁	h	k
40	7	40	7	340	60
50	7	40	7	350	60
	7	50	7	350	65
60	7	40	7	360	60
	7	50	7	360	65
	7	60	7	365	70
	7	40	7	365	60
65	7	50	7	370	65
	7	60	7	370	70
	7	65	7	370	75
	7	40	7	390	65
80	7	50	7	390	65
	7	60	7	390	70
	7	65	7	390	70
	7	80	7	390	85
	7.2	40	7	410	70
100	7.2	50	7	410	70
	7.2	60	7	415	75
	7.2	65	7	415	80
	7.2	80	7	415	85
	7.2	100	7.2	415	95
	7.5	40	7	440	70
125	7.5	50	7	440	70
	7.5	60	7	445	75
	7.5	65	7	445	80
	7.5	80	7	445	85
	7.5	100	7.2	445	95
	7.5	125	7.5	450	110
	7.8	40	7	475	70
150	7.8	50	7	475	70
	7.8	60	7	475	75
	7.8	65	7	475	80
	7.8	80	7	475	85
	7.8	100	7.2	480	100
	7.8	125	7.5	480	115
	7.8	150	7.8	485	125
	8.4	40	7	535	70
200	8.4	50	7	535	75
	8.4	60	7	535	80
	8.4	65	7	535	85
	8.4	80	7	535	90
	8.4	100	7.2	540	100
	8.4	125	7.5	540	115
	8.4	150	7.8	545	130



		8.4	200	8.4	550	160
250	9	40	7	595	70	
	9	50	7	595	75	
	9	60	7	595	80	
	9	65	7	595	85	
	9	80	7	595	90	
	9	100	7.2	600	100	
	9	125	7.5	600	115	
	9	150	7.8	605	130	
	9	200	8.4	610	160	
	9	250	9	615	190	
300	9.6	40	7	655	75	
	9.6	50	7	655	80	
	9.6	60	7	655	85	
	9.6	65	7	655	90	
	9.6	80	7	655	90	
	9.6	100	7.2	660	100	
	9.6	125	7.5	660	115	
	9.6	150	7.8	665	130	
	9.6	200	8.4	670	160	
	9.6	250	9	675	190	
350	9.6	300	9.6	680	220	
	10.2	100	7.2	720	105	
	10.2	125	7.5	720	120	
	10.2	150	7.8	725	135	
	10.2	200	8.4	730	160	
	10.2	250	9	735	190	
	10.2	300	9.6	740	220	
	10.2	350	10.2	745	250	
400	10.8	100	7.2	780	105	
	10.8	125	7.5	780	120	
	10.8	150	7.8	785	135	
	10.8	200	8.4	790	165	
	10.8	250	9	795	190	
	10.8	300	9.6	800	220	
	10.8	350	10.2	810	250	
	10.8	400	10.8	815	280	
450	11.4	100	7.2	840	105	
	11.4	125	7.5	840	125	
	11.4	150	7.8	845	135	
	11.4	200	8.4	850	165	
	11.4	250	9	855	195	
	11.4	300	9.6	865	225	
	11.4	350	10.2	870	250	
	11.4	400	10.8	875	280	

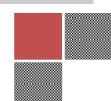


		11.4	450	11.4	880	310
500	14	100	7.2	780	105	
	14	125	7.5	780	120	
	14	150	7.8	785	135	
	14	200	8.4	790	165	
	14	250	9	795	190	
	14	300	9.6	800	220	
	14	350	10.2	810	250	
	14	400	10.8	815	280	
	14	450	11.4	840	105	
	14	500	14	840	125	
600	13.2	100	7.2	845	135	
	13.2	125	7.5	850	165	
	13.2	150	7.8	855	195	
	13.2	200	8.4	865	225	
	13.2	250	9	870	250	
	13.2	300	9.6	875	280	
	13.2	350	10.2	880	310	
	13.2	400	10.8	780	105	
	13.2	450	11.4	780	120	
	13.2	500	14	785	135	
700	14.4	80	7	910	-100	
	14.4	100	7.2	915	-75	
	14.4	125	7.5	965	-50	
	14.4	150	7.8	970	-25	
	14.4	200	8.4	975	0	
	14.4	250	9	1010	40	
	14.4	300	9.6	1040	50	
	14.4	350	10.2	1175	80	
	14.4	400	10.8	1200	100	
	14.4	450	11.4	1225	160	
800	14.4	500	12	1250	210	
	14.4	600	13.2	1300	270	
	14.4	700	14.4	1350	320	
	15.6	80	7	980	-150	
	15.6	100	7.2	985	-130	
	15.6	125	7.5	1030	-110	
	15.6	150	7.8	1050	-90	
	15.6	200	8.4	1060	-65	
	15.6	250	9	1085	-35	
	15.6	300	9.6	1090	0	

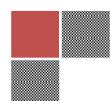


The Fittings of Ductile Iron Pipes

	15.6	500	12	1420	160
	15.6	600	13.2	1470	230
	15.6	700	14.4	1520	290
	15.6	800	15.6	1570	340
900	16.8	80	7	985	-150
	16.8	100	7.2	990	-130
	16.8	125	7.5	1035	-110
	16.8	150	7.8	1055	-90
	16.8	200	8.4	1065	-65
	16.8	250	9	1100	-30
	16.8	300	9.6	1150	0
	16.8	350	10.2	1330	60
	16.8	400	10.8	1360	90
	16.8	450	11.4	1390	140
	16.8	500	12	1410	190
	16.8	600	13.2	1460	240
	16.8	700	14.4	1510	270
	16.8	800	15.6	1560	320
1000	16.8	900	16.8	1610	380
	18	80	7	1040	-200
	18	100	7.2	1060	-170
	18	125	7.5	1100	-150
	18	150	7.8	1140	-130
	18	200	8.4	1180	-160
	18	250	9	1380	-120
	18	300	9.6	1430	-80
	18	350	10.2	1480	-40
	18	400	10.8	1530	0
	18	450	11.4	1560	75
	18	500	12	1610	100
	18	600	13.2	1660	125
	18	700	14.4	1680	230
1100	18	800	15.6	1740	280
	18	900	16.8	1800	350
	18	1000	18	1860	420
	19.2	80	7	1135	-270
	19.2	100	7.2	1165	-250
	19.2	125	7.5	1195	-220
	19.2	150	7.8	1225	-200
	19.2	200	8.4	1255	-200
	19.2	250	9	1380	-165
	19.2	300	9.6	1430	-130



		19.2	500	12	1635	25
		19.2	600	13.2	1685	75
		19.2	700	14.4	1680	170
		19.2	800	15.6	1790	225
		19.2	900	16.8	1890	300
		19.2	1000	18	1990	370
		19.2	1100	19.2	2100	420
	1200	20.4	80	7	1230	-340
		20.4	100	7.2	1270	-330
		20.4	125	7.5	1290	-290
		20.4	150	7.8	1310	-250
		20.4	200	8.4	1330	-240
		20.4	250	9	1370	-210
		20.4	300	9.6	1420	-180
		20.4	350	10.2	1470	-150
		20.4	400	10.8	1510	-100
		20.4	450	11.4	1520	-75
		20.4	500	12	1560	-50
		20.4	600	13.2	1610	25
		20.4	700	14.4	1660	110
		20.4	800	15.6	1840	170
		20.4	900	16.8	1980	250
		20.4	1000	18	2120	320
		20.4	1200	20.4	2200	520
	1400	22.8	80	7	1420	-480
		22.8	100	7.2	1470	-470
		22.8	125	7.5	1480	-430
		22.8	150	7.8	1490	-370
		22.8	200	8.4	1500	-320
		22.8	250	9	1550	-300
		22.8	300	9.6	1570	-230
		22.8	350	10.2	1630	-205
		22.8	400	10.8	1680	-200
		22.8	450	11.4	1730	-150
		22.8	500	12	1780	-125
		22.8	600	13.2	1880	-25
		22.8	700	14.4	1980	50
		22.8	800	15.6	2030	115
		22.8	900	16.8	2130	200
		22.8	1000	18	2330	270
		22.8	1100	19.2	2430	340
		22.8	1200	20.4	2530	410
		22.8	1400	22.8	2630	480



5 Cross

5.1 All socket cross (Figure 35 and Table 38)

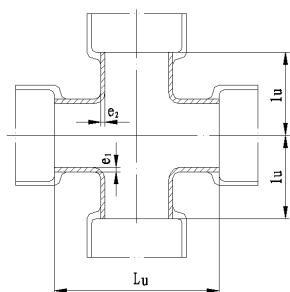
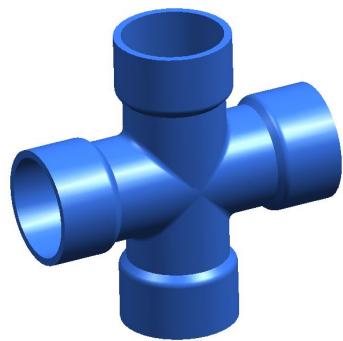
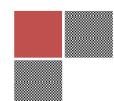
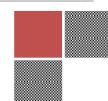


Table 38

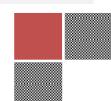
DN	e₁	Lu	dn	e₂	lu
40	7	120	40	7	60
50	7	120	40	7	65
	7	130	50	7	65
60	7	120	40	7	70
	7	130	50	7	70
	7	140	60	7	70
65	7	120	40	7	75
	7	130	50	7	75
	7	140	60	7	75
	7	150	65	7	75
80	7	120	40	7	80
	7	130	50	7	80
	7	140	60	7	80
	7	150	65	7	85
	7	150	80	7	75
100	7.2	120	40	7	90
	7.2	130	50	7	90
	7.2	140	60	7	90
	7.2	150	65	7	95
	7.2	150	80	7	95
	7.2	190	100	7.2	95
125	7.5	120	40	7	100
	7.5	130	50	7	100
	7.5	140	60	7	100
	7.5	150	65	7	105
	7.5	170	80	7	105
	7.5	190	100	7.2	110
	7.5	220	125	7.5	110
	7.8	120	40	7	115
150	7.8	130	50	7	115
	7.8	140	60	7	115
	7.8	150	65	7	120
	7.8	150	80	7	120
	7.8	195	100	7.2	120
	7.8	230	125	7.5	120
	7.8	255	150	7.8	125
	8.4	120	40	7	140
200	8.4	130	50	7	140
	8.4	150	60	7	140



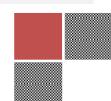
	8.4	160	65	7	145
	8.4	160	80	7	145
	8.4	200	100	7.2	145
	8.4	230	125	7.5	145
	8.4	255	150	7.8	150
	8.4	315	200	8.4	155
250	9	120	40	7	165
	9	130	50	7	165
	9	140	60	7	165
	9	150	65	7	170
	9	180	80	7	170
	9	200	100	7.2	170
	9	230	125	7.5	170
	9	260	150	7.8	175
	9	315	200	8.4	180
	9	375	250	9	190
300	9.6	130	40	7	190
	9.6	140	50	7	190
	9.6	150	60	7	190
	9.6	160	65	7	190
	9.6	190	80	7	190
	9.6	205	100	7.2	195
	9.6	240	125	7.5	195
	9.6	260	150	7.8	200
	9.6	320	200	8.4	205
	9.6	375	250	9	210
350	9.6	435	300	9.6	220
	10.2	180	80	7	215
	10.2	200	100	7.2	215
	10.2	250	150	7.8	215
	10.2	320	200	8.4	235
	10.2	380	250	9	240
	10.2	440	300	9.6	245
400	10.2	495	350	10.2	250
	10.8	170	80	7	240
	10.8	190	100	7.2	240
	10.8	240	125	7.5	250
	10.8	250	150	7.8	250
	10.8	325	200	8.4	255
	10.8	385	250	9	265
	10.8	440	300	9.6	270
450	10.8	500	350	10.2	275
	10.8	560	400	10.8	280
	11.4	180	80	7	265
	11.4	200	100	7.2	265



	11.4	250	125	7.5	265
	11.4	260	150	7.8	265
	11.4	310	200	8.4	270
	11.4	370	250	9	285
	11.4	430	300	9.6	290
	11.4	480	350	10.2	290
	11.4	540	400	10.8	290
	11.4	600	450	11.4	300
500	12	200	80	7	295
	12	230	100	7.2	295
	12	250	125	7.5	295
	12	280	150	7.8	295
	12	330	200	8.4	300
	12	390	250	9	315
	12	450	300	9.6	320
	12	505	350	10.2	325
	12	565	400	10.8	330
	12	600	450	11.4	335
600	13.2	180	80	7	345
	13.2	200	100	7.2	345
	13.2	250	125	7.5	345
	13.2	260	150	7.8	345
	13.2	320	200	8.4	350
	13.2	380	250	9	360
	13.2	455	300	9.6	370
	13.2	510	350	10.2	375
	13.2	570	400	10.8	380
	13.2	610	450	11.4	385
700	13.2	685	500	14	390
	13.2	800	600	13.2	400
	14.4	210	80	7	395
	14.4	230	100	7.2	405
	14.4	250	125	7.5	405
	140	280	150	7.8	405
	14.4	330	200	8.4	415
	14.4	390	250	9	415
	14.4	440	300	9.6	415
	14.4	520	350	10.2	425
800	14.4	575	400	10.8	430
	14.4	610	450	11.4	430
	14.4	690	500	12	440
	14.4	810	600	13.2	450
	14.4	925	700	14.4	460
	15.6	240	80	7	445

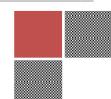


	15.6	260	100	7.2	455
	15.6	290	125	7.5	455
	15.6	310	150	7.8	460
	15.6	360	200	8.4	465
	15.6	420	250	9	465
	15.6	480	300	9.6	470
	15.6	530	350	10.2	475
	15.6	580	400	10.8	480
	15.6	640	450	11.4	485
	15.6	700	500	12	490
	15.6	815	600	13.2	500
	15.6	930	700	14.4	510
	15.6	1045	800	15.6	525
900	16.8	240	80	7	495
	16.8	260	100	7.2	505
	16.8	290	125	7.5	505
	16.8	310	150	7.8	515
	16.8	360	200	8.4	520
	16.8	420	250	9	520
	16.8	480	300	9.6	525
	16.8	530	350	10.2	525
	16.8	590	400	10.8	530
	16.8	640	450	11.4	535
	16.8	705	500	12	540
	16.8	820	600	13.2	550
	16.8	935	700	14.4	560
	16.8	1050	800	15.6	575
	16.8	1170	900	16.8	585
1000	18	240	80	7	550
	18	260	100	7.2	560
	18	290	125	7.5	560
	18	310	150	7.8	570
	18	360	200	8.4	570
	18	420	250	9	570
	18	480	300	9.6	575
	18	530	350	10.2	575
	18	590	400	10.8	580
	18	640	450	11.4	585
	18	690	500	12	585
	18	825	600	13.2	600
	18	940	700	14.4	610
	18	1060	800	15.6	625
	18	1175	900	16.8	635
	18	1290	1000	18	645
1100	19.2	240	80	7	600



The Fittings of Ductile Iron Pipes

	19.2	260	100	7.2	600
	19.2	290	125	7.5	600
	19.2	310	150	7.8	600
	19.2	370	200	8.4	605
	19.2	430	250	9	605
	19.2	490	300	9.6	605
	19.2	540	350	10.2	610
	19.2	600	400	10.8	610
	19.2	640	450	11.4	610
	19.2	690	500	12	615
	19.2	810	600	13.2	620
	19.2	950	700	14.4	660
	19.2	1065	800	15.6	675
	19.2	1180	900	16.8	685
	19.2	1295	1000	18	695
	19.2	1410	1100	19.2	705
1200	20.4	240	80	7	655
	20.4	260	100	7.2	665
	20.4	290	125	7.5	665
	20.4	310	150	7.8	675
	20.4	360	200	8.4	675
	20.4	420	250	9	675
	20.4	480	300	9.6	680
	20.4	530	350	10.2	685
	20.4	590	400	10.8	685
	20.4	650	450	11.4	695
	20.4	710	500	12	695
	20.4	820	600	13.2	695
	20.4	940	700	14.4	695
	20.4	1070	800	15.6	725
	20.4	1185	900	16.8	735
	20.4	1300	1000	18	745
	20.4	1535	1200	20.4	765
1400	22.8	250	80	7	755
	22.8	270	100	7.2	755
	22.8	300	125	7.5	760
	22.8	330	150	7.8	765
	22.8	390	200	8.4	765
	22.8	440	250	9	765
	22.8	480	300	9.6	770
	22.8	530	350	10.2	770
	22.8	590	400	10.8	770
	22.8	650	450	11.4	770
	22.8	710	500	12	770
	22.8	820	600	13.2	775

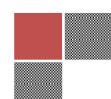
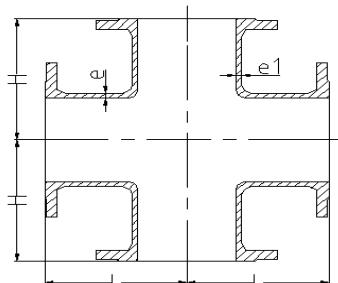
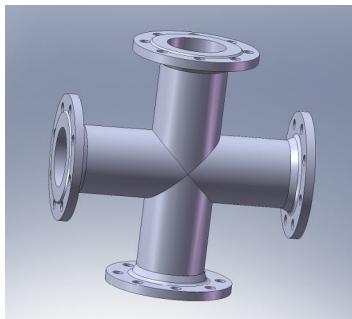


	22.8	940	700	14.4	785
	22.8	1050	800	15.6	815
	22.8	1200	900	16.8	835
	22.8	1315	1000	18	845
	22.8	1430	1100	19.2	855
	22.8	1545	1200	20.4	865
	22.8	1780	1400	22.8	890

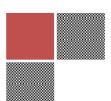
5.2 All flange cross (Figure 36 and Table 39)

Table 39 unit: mm

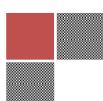
DN	e	L	dn	e ₁	H
40	7	130	40	7	130
50	7	140	40	7	125
	7	140	50	7	140
60	7	150	40	7	130
	7	150	50	7	135
	7	150	60	7	150
65	7	155	40	7	135
	7	155	50	7	140
	7	155	60	7	145
	7	155	65	7	155
80	7	155	40	7	140
	7	155	50	7	140
	7	155	60	7	140
	7	155	65	7	145
	7	155	80	7	155
100	7.2	170	40	7	150
	7.2	170	50	7	155
	7.2	170	60	7	155
	7.2	170	65	7	155
	7.2	170	80	7	155
	7.2	170	100	7.2	170
125	7.5	200	40	7	170
	7.5	200	50	7	170
	7.5	200	60	7	175
	7.5	200	65	7	180
	7.5	200	80	7	185
	7.5	200	100	7.2	195
	7.5	200	125	7.5	200
150	7.8	210	40	7	185
	7.8	210	50	7	185
	7.8	210	60	7	185
	7.8	210	65	7	185



		7.8	210	80	7	185
		7.8	210	100	7.2	190
		7.8	210	125	7.5	200
		7.8	210	150	7.8	210
200		8.4	250	40	7	210
		8.4	250	50	7	210
		8.4	250	60	7	215
		8.4	250	65	7	215
		8.4	250	80	7	215
		8.4	250	100	7.2	220
		8.4	250	125	7.5	225
		8.4	250	150	7.8	230
		8.4	250	200	8.4	250
250		9	170	40	7	240
		9	175	50	7	245
		9	180	60	7	245
		9	185	65	7	245
		9	190	80	7	245
		9	205	100	7.2	255
		9	220	125	7.5	265
		9	235	150	7.8	260
		9	260	200	8.4	260
		9	290	250	9	290
300		9.6	180	40	7	270
		9.6	185	50	7	270
		9.6	195	60	7	280
		9.6	195	65	7	280
		9.6	215	100	7.2	280
		9.6	230	125	7.5	290
		9.6	245	150	7.8	290
		9.6	275	200	8.4	300
		9.6	300	250	9	310
		9.6	330	300	9.6	330
350		10.2	225	100	7.2	305
		10.2	240	125	7.5	315
		10.2	255	150	7.8	320
		10.2	285	200	8.4	330
		10.2	315	250	9	340
		10.2	340	300	9.6	350
		10.2	370	350	10.2	370
400		10.8	235	100	7.2	340
		10.8	250	125	7.5	345
		10.8	265	150	7.8	350
		10.8	295	200	8.4	360
		10.8	325	250	9	370

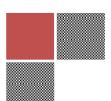


		10.8	355	300	9.6	380
		10.8	380	350	10.2	390
		10.8	410	400	10.8	410
450	11.4	250	100	7.2	370	
	11.4	265	125	7.5	375	
	11.4	275	150	7.8	380	
	11.4	305	200	8.4	390	
	11.4	335	250	9	400	
	11.4	365	300	9.6	410	
	11.4	395	350	10.2	420	
	11.4	420	400	10.8	430	
	11.4	450	450	11.4	450	
500	12	260	100	7.2	400	
	12	275	125	7.5	405	
	12	290	150	7.8	410	
	12	315	200	8.4	420	
	12	345	250	9	430	
	12	375	300	9.6	440	
	12	405	350	10.2	450	
	12	435	400	10.8	460	
	12	460	450	11.4	470	
	12	490	500	14	490	
600	13.2	280	100	7.2	460	
	13.2	295	125	7.5	465	
	13.2	310	150	7.8	470	
	13.2	340	200	8.4	480	
	13.2	370	250	9	490	
	13.2	395	300	9.6	500	
	13.2	425	350	10.2	510	
	13.2	455	400	10.8	520	
	13.2	485	450	11.4	530	
	13.2	515	500	14	540	
	13.2	570	600	13.2	570	
700	14.4	250	80	7	500	
	14.4	260	100	7.2	500	
	14.4	275	125	7.5	505	
	14.4	285	150	7.8	510	
	14.4	315	200	8.4	515	
	14.4	340	250	9	525	
	14.4	370	300	9.6	530	
	14.4	395	350	10.2	540	
	14.4	425	400	10.8	545	
	14.4	450	450	11.4	555	
	14.4	480	500	12	560	
	14.4	590	600	13.2	565	

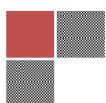


The Fittings of Ductile Iron Pipes

	14.4	590	700	14.4	590
800	15.6	270	80	7	560
	15.6	280	100	7.2	560
	15.6	295	125	7.5	565
	15.6	305	150	7.8	570
	15.6	335	200	8.4	575
	15.6	360	250	9	585
	15.6	380	300	9.6	590
	15.6	415	350	10.2	600
	15.6	445	400	10.8	605
	15.6	470	450	11.4	615
	15.6	500	500	12	620
	15.6	665	600	13.2	635
	15.6	665	700	14.4	665
	15.6	665	800	15.6	665
900	16.8	290	80	7	620
	16.8	300	100	7.2	620
	16.8	315	125	7.5	625
	16.8	325	150	7.8	630
	16.8	355	200	8.4	635
	16.8	380	250	9	645
	16.8	400	300	9.6	650
	16.8	435	350	10.2	660
	16.8	465	400	10.8	665
	16.8	490	450	11.4	675
	16.8	520	500	12	680
	16.8	740	600	13.2	695
	16.8	740	700	14.4	710
1000	16.8	740	800	15.6	725
	16.8	740	900	16.8	740
	18	310	80	7	680
	18	320	100	7.2	680
	18	335	125	7.5	685
	18	345	150	7.8	690
	18	375	200	8.4	695
	18	400	250	9	705
	18	420	300	9.6	710
	18	455	350	10.2	720
	18	485	400	10.8	725
	18	510	450	11.4	735
	18	540	500	12	740



	18	815	1000	18	815
1100	19.2	305	80	7	740
	19.2	320	100	7.2	740
	19.2	335	125	7.5	745
	19.2	350	150	7.8	750
	19.2	375	200	8.4	755
	19.2	405	250	9	765
	19.2	430	300	9.6	770
	19.2	460	350	10.2	780
	19.2	490	400	10.8	785
	19.2	515	450	11.4	795
	19.2	545	500	12	800
	19.2	715	600	13.2	815
	19.2	740	700	14.4	830
	19.2	770	800	15.6	860
1200	19.2	800	900	16.8	860
	19.2	830	1000	18	875
	19.2	890	1100	19.2	1100
	20.4	305	80	7	795
	20.4	320	100	7.2	800
	20.4	335	125	7.5	805
	20.4	350	150	7.8	810
	20.4	375	200	8.4	815
	20.4	405	250	9	825
	20.4	435	300	9.6	830
	20.4	465	350	10.2	840
	20.4	495	400	10.8	845
	20.4	520	450	11.4	855
	20.4	550	500	12	860
1400	20.4	610	600	13.2	875
	20.4	665	700	14.4	890
	20.4	725	800	15.6	905
	20.4	785	900	16.8	920
	20.4	840	1000	18	935
	20.4	955	1200	20.4	955
	22.8	460	80	7	870
	22.8	470	100	7.2	875
	22.8	485	125	7.5	880
	22.8	500	150	7.8	885
	22.8	530	200	8.4	890
	22.8	560	250	9	900
	22.8	585	300	9.6	905
	22.8	615	350	10.2	915
	22.8	645	400	10.8	920
	22.8	675	450	11.4	930



	22.8	700	500	12	935
	22.8	760	600	13.2	950
	22.8	820	700	14.4	965
	22.8	875	800	15.6	980
	22.8	935	900	16.8	995
	22.8	995	1000	18	1010
	22.8	1050	1100	19.2	1025
	22.8	1110	1200	20.4	1040
	22.8	1225	1400	22.8	1225

5.3 Socket spigot with double branch socket (Figure 37 and Table 40)

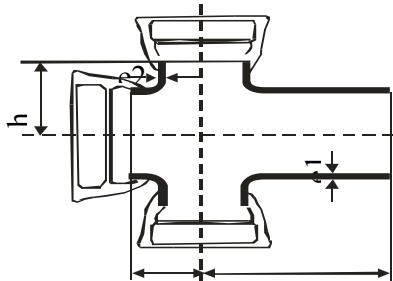
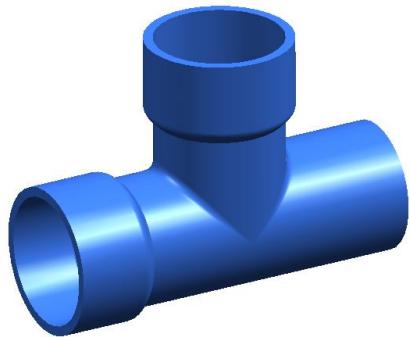
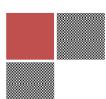


Table 40

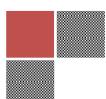
unit: mm

DN	e ₁	L	L'	dn	e ₂	h
80	7	85	260	80	7	85
100	7.2	95	270	80	7	95
	7.2	95	275	100	7.2	95
150	7.8	85	280	80	7	120
	7.8	100	280	100	7.2	120
	7.8	130	310	150	7.8	125
200	8.4	90	280	80	7	145
	8.4	100	280	100	7.2	145
	8.4	130	310	150	7.8	150
	8.4	160	340	200	8.4	155
250	9	90	280	80	9	170
	9	100	280	100	7.2	175
	9	130	310	150	7.8	175
	9	160	340	200	8.4	180
	9	190	370	250	9	190
300	9.6	105	285	100	7.2	195
	9.6	130	310	150	7.8	200
	9.6	160	340	200	8.4	205
	9.6	190	370	250	9	210
	9.6	220	400	300	9.6	220
400	10.8	110	290	100	7.2	245
	10.8	135	315	150	7.8	250
	10.8	165	345	200	8.4	255
	10.8	195	375	250	9	260
	10.8	220	400	300	9.6	270



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		10.8	280	460	400	10.8	280
500	12	110	310	100	7.2	290	
	12	135	335	150	7.8	295	
	12	165	365	200	8.4	300	
	12	195	395	250	9	315	
	12	225	425	300	9.6	320	
	12	285	485	400	10.8	330	
	12	340	540	500	12	340	
600	13.2	110	315	100	7.2	350	
	13.2	135	340	150	7.8	355	
	13.2	165	370	200	8.4	360	
	13.2	195	400	250	9	365	
	13.2	230	430	300	9.6	370	
	13.2	285	485	400	10.8	380	
	13.2	345	545	500	12	390	
	13.2	400	600	600	13.2	400	
700	14.4	115	365	100	7.2	400	
	14.4	140	390	150	7.8	405	
	14.4	170	420	200	8.4	410	
	14.4	200	450	250	9	415	
	14.4	230	480	300	9.6	420	
	14.4	290	540	400	10.8	430	
	14.4	345	595	500	12	440	
	14.4	405	655	600	13.2	450	
	14.4	465	715	700	14.4	460	
800	15.6	115	365	100	7.2	450	
	15.6	140	390	150	7.8	455	
	15.6	170	420	200	8.4	460	
	15.6	200	450	250	9	465	
	15.6	230	480	300	9.6	470	
	15.6	290	540	400	10.8	480	
	15.6	350	600	500	12	490	
	15.6	410	660	600	13.2	500	
	15.6	465	715	700	14.4	510	
900	16.8	170	420	200	8.4	510	
	16.8	200	450	250	9	515	



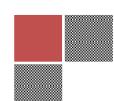
		16.8	230	480	300	9.6	520
		16.8	290	540	400	10.8	530
		16.8	350	600	500	12	540
		16.8	410	660	600	13.2	550
		16.8	470	720	700	14.4	560
		16.8	530	780	800	15.6	575
		16.8	585	835	900	16.8	585
	1000	18	235	545	300	9.6	570
		18	295	605	400	10.8	580
		18	355	655	500	12	590
		18	415	715	600	13.2	600
		18	470	770	700	14.4	610
		18	530	830	800	15.6	625
		18	590	890	900	16.8	635
		18	645	945	1000	18	645
	1100	19.2	295	605	400	10.8	630
		19.2	355	655	500	12	640
		19.2	415	715	600	13.2	650
		19.2	475	775	700	14.4	660
		19.2	535	835	800	15.6	675
		19.2	590	890	900	16.8	685
		19.2	645	945	1000	18	695
		19.2	705	1005	1100	19.2	705
	1200	20.4	355	655	500	12	695
		20.4	415	715	600	13.2	705
		20.4	475	775	700	14.4	715
		20.4	535	835	800	15.6	725
		20.4	595	895	900	16.8	735
		20.4	650	950	1000	18	745
		20.4	710	1010	1100	19.2	755
		20.4	770	1070	1200	20.4	770

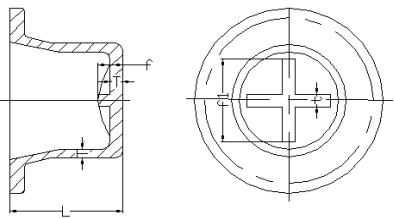
6 Cap

6.1 Spigot cap

6.1.1 N1、S、K type spigot cap (Figure 38 and Table 41)

Figure38					
Table 41 unit: mm					
DN	T	L	f1	f	t





80	10	70	—	—	—
100	10	70	—	—	—
125	10	70	—	—	—
150	10	70	—	—	—
200	12	70	—	—	—
250	12	70	—	—	—
300	12	100	—	—	—
350	12	100	345	-	30
400	12	100	390	20	30
450	12	100	445	20	30
500	15	100	500	20	30
600	15	100	596	20	30
700	18	110	688	20	30
800	18	110	790	20	30
900	18	120	890	20	30
1000	22	120	990	25	35
1100	22	120	1090	25	35
1200	22	120	1194	25	35
1400	25	120	1455	30	35

6.1.2 T type spigot cap (Figure 39 and Table 42)

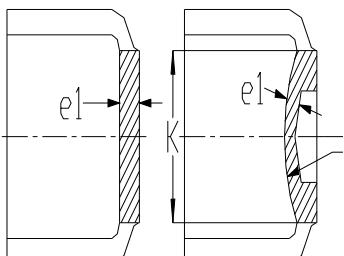
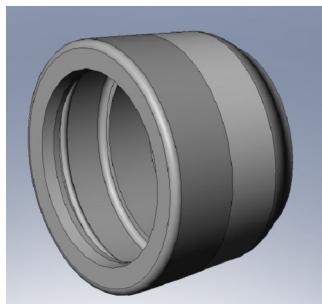
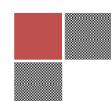


Table 42

DN	e1	K、R
40	16	—
50	16	—
60	16	—
65	16	—
80	18	—
100	18	—
125	18	—
150	18	—
200	18	—
250	19.5	—
300	23	—
350	24	315
400	25	370
450	26	420
500	27	460
600	29.5	565
700	31	665
800	33	760
900	35	860
1000	37	960
1100	39	1060



1200	41	1160
1400	43	1260

6.2 Socket cap

6.2.1 K、S、N1 type socket cap (Figure 40 and Table 43)

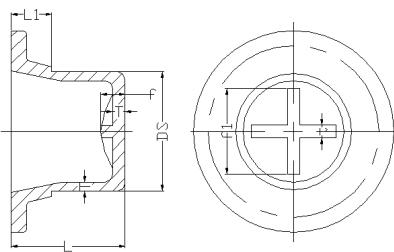


Table 43

unit: mm

DN	T	DS		L	L1	f	f1	t
		K	S、N1					
100	10	118	118	95	35	—	—	—
125	10	114	—	96	36	—	—	—
150	10	170	169	96	36	—	—	—
200	12	222	220	97	37	—	—	—
250	12	274	271.6	98	38	—	—	—
300	12	326	322.8	129	39	—	—	—
350	12	378	374	130	39	20	345	30
400	12	429	425.6	130	40	20	390	30
450	12	480	—	130	45	20	445	30
500	15	532	528	130	45	20	500	30
600	15	635	630.8	130	45	20	596	30
700	18	738	—	140	50	20	688	30
800	18	842	—	140	50	20	790	30
900	18	945	—	140	50	20	890	30
1000	22	1048	—	150	55	25	990	35
1100	22	1152	—	150	55	25	1090	35
1200	22	1255	—	150	55	25	1194	35

6.2.2 T type socket cap (Figure 41 and Table 44)

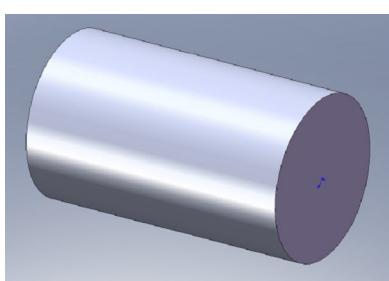
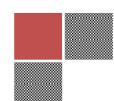
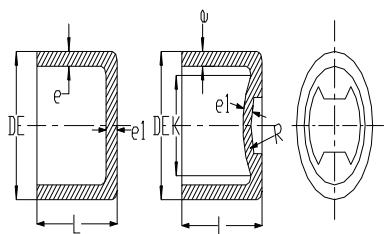


Table 44

unit: mm

DN	DE	e ₁	e	K、R	L
40	56	16	7	—	190
50	66	16	7	—	190
60	77	16	7	—	190
65	82	16	7	—	190
80	98	16	7	—	190
100	118	18	7.2	—	200
125	144	18	7.5	—	212
150	170	18	7.8	—	225
200	222	18	7.2	—	250
250	274	19.5	9.0	—	250
300	326	23	9.6	—	275





350	378	24	10.2	315	275
400	429	25	10.8	370	275
450	480	26	11.4	420	275
500	532	27	12	460	275
600	635	29.5	13.2	565	300
700	738	31	14.4	665	350
800	842	33	15.6	760	380
900	945	35	16.8	860	400
1000	1048	37	18	960	435
1100	1152	39	19.2	1060	450
1200	1255	41	20.4	1160	465
1400	1462	43	22.4	1260	500

7 Other fittings

7.1 Bellmouth (Figure 42 and Table 45)

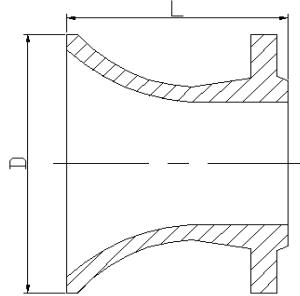
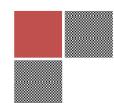


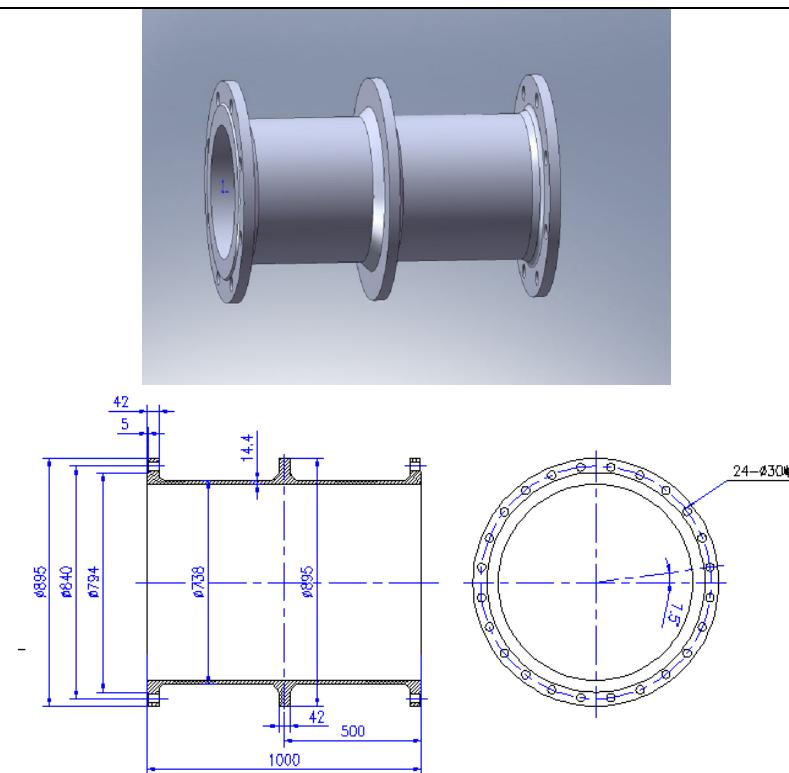
Table 45
DN

unit: mm

DN	D	L
80	170	120
100	190	130
150	260	150
200	300	180
250	350	200
300	420	250
350	550	250
400	550	250
450	620	260
500	680	300
600	780	300
700	865	345
800	980	380
900	1095	415
1000	1210	450
1200	1440	520
1400	1670	590

7.2 Puddle flange pipe (Figure 43)





8 Joint

8.1 Flexible joint (Figure 44 and Table 46)

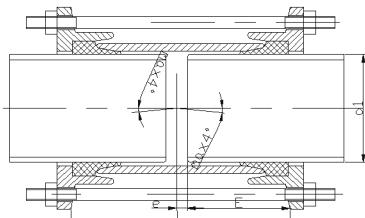
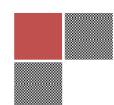


Table 46

DN	size				bolt	
	d ₁	L	E	e	n	DIA
80	98	96	40	15	4	M16
100	118	96	40	15	4	M16
150	170	96	40	15	4	M20
200	222	96	46	15	6	M20
250	274	116	50	15	6	M24
300	326	116	50	15	6	M24
350	378	134	50	20	8	M24
400	429	134	50	20	8	M27
450	480	134	50	20	10	M27
500	532	154	55	25	10	M30
600	635	174	60	25	10	M33
700	738	184	70	30	12	M33
800	842	184	70	30	12	M36
900	945	214	85	30	14	M36
1000	1048	244	92	30	14	M39
1200	1255	274	107	30	16	M45



1400	1462	360	96	15	18	M24
1500	1565	470	118	25	18	M52
1600	1668	485	120	30	20	M45

8.2 Flange joint (Figure 45 and Table 47)

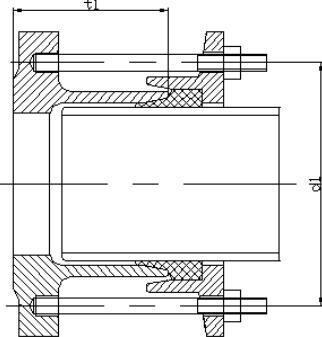


Table 47

unit: mm

DN	t ₁	d ₁			Bolt quantity/n			Bolt size/ DIA		
		PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25
80	70	160	160	160	4	4	4	M16	M16	M16
100	70	180	180	190	4	4	4	M16	M16	M20
150	75	240	240	250	4	4	4	M20	M20	M24
200	75	295	295	310	4	6	6	M20	M20	M24
250	90	350	355	370	6	6	6	M20	M24	M27
300	90	400	410	430	6	6	8	M20	M24	M27
350	100	460	470	490	8	8	8	M20	M24	M30
400	100	515	525	550	8	8	8	M24	M27	M33
450	100	565	585	600	10	10	10	M24	M27	M33
500	114	620	650	660	10	10	10	M24	M30	M33
600	114	725	770	770	10	10	10	M27	M33	M36
700	130	840	840	875	12	12	12	M27	M33	M39
800	130	950	950	990	12	12	12	M30	M36	M45
900	130	1050	1050	1050	14	14	14	M30	M36	M45
1000	130	1160	1170	1160	14	14	14	M33	M39	M52
1200	130	1380	1390	1380	16	16	16	M36	M45	M52
1400	150	1590	1590	1640	18	18	18	M39	M45	M56

8.3 Dismantling joint (Figure 46 and Table 48)

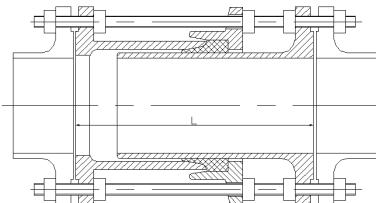
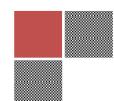


Table 48

unit: mm

DN	L			
	PN10	PN16	PN25	PN40
80	200	200	210	210
100	200	200	220	220
150	200	200	230	230
200	220	220	230	240
250	220	230	250	260
300	220	250	250	280
350	230	260	270	290
400	230	270	280	340
450	250	270	280	340
500	260	280	300	380
600	260	300	320	390
700	335	335	335	—



800	335	335	335	—
900	355	355	355	—
1000	355	355	355	—
1200	375	375	375	—
1400	—	380	—	—
1500	—	450	—	—
1600	—	450	—	—

9 Accessories

9.1 Flange

9.1.1 PN10 (Figure 47 and Table 49)

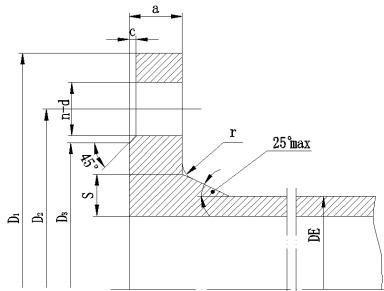


Table 49

DN	D ₁	D ₂	D ₃	D _E	a	c
80	200	160	132	98	19	3
100	220	180	156	118	19	3
150	285	240	211	170	19	3
200	340	295	266	222	20	3
250	400	350	319	274	22	3
300	455	400	370	326	24.5	4
350	505	460	429	378	24.5	4
400	565	515	480	429	24.5	4
450	615	565	530	480	24.5	4
500	670	620	582	532	26.5	4
600	780	725	682	635	30	5
700	895	840	794	738	32.5	5
800	1015	950	901	842	35	5
900	1115	1050	1001	945	37.5	5
1000	1230	1160	1112	1048	40	5
1100	1340	1270	1218	1152	42.5	5
1200	1455	1380	1328	1255	45	5
1400	1675	1590	1530	1462	46	5
1600	1915	1820	1750	1668	49	5

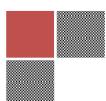


Table 49 (continued)

unit: mm

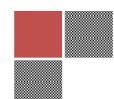
DN	S	r	Bolt Hole		
			d	Specification	n/piece
80	15	6	19	M16	8
100	15	6	19	M16	8
150	15	8	23	M20	8
200	16	8	23	M20	8
250	17.5	10	23	M20	12
300	19.5	10	23	M20	12
350	19.5	10	23	M20	16
400	19.5	10	28	M24	16
450	20.5	12	28	M24	20
500	21	12	28	M24	20
600	24	12	31	M27	20
700	23	16	31	M27	24
800	24.5	16	34	M30	24
900	26.5	16	34	M30	28
1000	28	16	37	M33	28
1100	30	20	37	M33	32
1200	31.5	20	40	M36	32
1400	32	20	43	M39	36
1600	34.5	20	49	M45	40

9.1.2 PN16 (Table 50)

Table 50

unit: mm

DN	D ₁	D ₂	D ₃	DE	a	c
80	200	160	132	98	19	3
100	220	180	156	118	19	3
150	285	240	211	170	19	3
200	340	295	266	222	20	3
250	400	355	319	274	22	3
300	455	410	370	326	24.5	4
350	520	470	429	378	26.5	4
400	580	525	480	429	28	4
450	640	585	548	480	30	4
500	715	650	609	532	31.5	4
600	840	770	720	635	36	5
700	910	840	794	738	39.5	5
800	1025	950	901	842	43	5



900	1125	1050	1001	945	46.5	5
1000	1255	1170	1112	1048	50	5
1100	1355	1270	1218	1152	53.5	5
1200	1485	1390	1328	1255	57	5
1400	1685	1590	1530	1462	60	5
1600	1930	1820	1750	1668	65	5

Table 50 (continued) unit: mm

DN	S	r	Bolt Hole		
			d	Specification	n/piece
80	15	6	19	M16	8
100	15	6	19	M16	8
150	15	8	23	M20	8
200	16	8	23	M20	12
250	17.5	10	28	M24	12
300	19.5	10	28	M24	12
350	21	10	28	M24	16
400	22.5	10	31	M27	16
450	24	12	31	M27	20
500	25	12	34	M30	20
600	29	12	37	M33	20
700	27.5	16	37	M33	24
800	30	16	40	M36	24
900	32.5	16	40	M36	28
1000	35	16	43	M39	28
1100	37.5	20	43	M39	32
1200	40	20	49	M45	32
1400	42	20	49	M45	36
1600	45.5	20	56	M52	40

9.1.3 PN25 (Table 51)

Table 51 unit: mm

DN	D ₁	D ₂	D ₃	DE	a	c
80	200	160	132	98	19	3
100	235	190	156	118	19	3
150	300	250	211	170	20	3
200	360	310	274	222	22	3
250	425	370	330	274	24.5	3
300	485	430	389	326	27.5	4



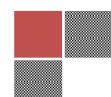
350	555	490	448	378	30	4
400	620	550	503	429	32	4
450	670	600	548	480	34.5	4
500	730	660	609	532	36.5	4
600	845	770	720	635	42	5
700	960	875	820	738	46.5	5
800	1085	990	928	842	51	5
900	1185	1090	1028	945	55.5	5
1000	1320	1210	1140	1048	60	5
1100	1420	1310	1240	1152	64.5	5
1200	1530	1420	1350	1255	69	5
1400	1755	1640	1560	1462	74	5
1600	1975	1860	1780	1668	81	5

Table 51 (continued) unit: mm

DN	S	r	Bolt Hole		
			d	Specification	n/piece
80	15	6	19	M16	8
100	15	6	23	M20	8
150	16	8	28	M24	8
200	17.5	8	28	M24	12
250	19.5	10	31	M27	12
300	22	10	31	M27	16
350	24	10	34	M30	16
400	25.5	10	37	M33	16
450	27.5	12	37	M33	20
500	29	12	37	M33	20
600	33.5	12	40	M36	20
700	32.5	16	43	M39	24
800	35.5	16	49	M45	24
900	39	16	49	M45	28
1000	42	16	56	M52	28
1100	45	20	56	M52	32
1200	48.5	20	56	M52	32
1400	52	20	62	M56	36
1600	56.5	20	62	M56	40

9.1.4 PN40 (Table 52)

DN	D ₁	D ₂	D ₃	unit: mm		
				DE	a	c



80	200	160	132	98	19	3	
100	235	190	156	118	19	3	
150	300	250	211	170	26	3	
200	375	320	284	222	30	3	
250	450	385	345	274	34.5	3	
300	515	450	409	326	39.5	4	
350	580	510	465	378	44	4	
400	660	585	535	429	48	4	
450	685	610	560	480	50	4	
500	755	670	615	532	52	4	
600	890	795	735	635	58	5	

Table 52

unit: mm

DN	S	r	Bolt Hole		
			d	Specification	n/piece
80	15	6	19	M16	8
100	15	6	23	M20	8
150	18	8	28	M24	8
200	21	8	31	M27	12
250	24	10	34	M30	12
300	27.5	10	34	M30	16
350	31	10	37	M33	16
400	33.5	10	40	M36	16
450	35	12	40	M36	20
500	36.5	12	43	M39	20
600	40.5	12	49	M45	20

9.2 Blank flange

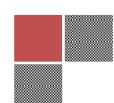
9.2.1 PN10 (Figure 48 and Table 53)

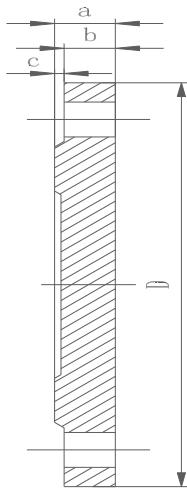


Table 53

unit: mm

DN	D	a	b	c
40	150	19	16	3
50	165	19	16	3
60	175	19	16	3
65	185	19	16	3
80	200	19	16	3





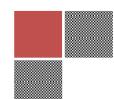
100	220	19	16	3
125	250	19	16	3
150	285	19	16	3
200	340	20	17	3
250	400	22	19	3
300	455	24.5	20.5	4
350	505	24.5	20.5	4
400	565	24.5	20.5	4
450	615	25.5	21.5	4
500	670	26.5	22.5	4
600	780	30	25	5
700	895	32.5	27.5	5
800	1015	35	30	5
900	1115	37.5	32.5	5
1000	1230	40	35	5
1100	1340	42.5	37.5	5
1200	1455	45	40	5
1400	1675	46	41	5
1500	1785	47.5	42.5	5
1600	1915	49	44	5
1800	2115	52	47	5
2000	2325	55	50	5

9.2.2 PN16 (Table 54)

Table 54

unit: mm

DN	D	a	b	c
40	150	19	16	3
50	165	19	16	3
60	175	19	16	3
65	185	19	16	3
80	200	19	16	3
100	220	19	16	3
125	250	19	16	3
150	285	19	16	3
200	340	20	17	3
250	400	22	19	3
300	455	24.5	20.5	4
350	520	26.5	22.5	4

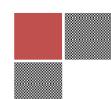


400	580	28	24	4
450	640	30	26	4
500	715	31.5	27.5	4
600	840	36	31	5
700	910	39.5	34.5	5
800	1025	43	38	5
900	1125	46.5	41.5	5
1000	1255	50	45	5
1100	1355	53.5	48.5	5
1200	1485	57	52	5
1400	1685	60	55	5
1500	1820	62.5	57.5	5
1600	1930	65	60	5
1800	2130	70	65	5
2000	2345	75	70	5

9.2.3 PN25 (Table 55)

Table 55

DN	D	a	b	c
40	150	19	16	3
50	165	19	16	3
60	175	19	16	3
65	185	19	16	3
80	200	19	16	3
100	235	19	16	3
125	270	19	16	3
150	300	20	17	3
200	360	22	19	3
250	425	24.5	21.5	3
300	485	27.5	23.5	4
350	555	30	26	4
400	620	32	28	4
450	670	34.5	30.5	4
500	730	36.5	32.5	4
600	845	42	37	5



9.2.4 PN40 (Table 56)

Table 56		unit: mm		
DN	D	a	b	c
40	150	19	16	3
50	165	19	16	3
60	175	19	16	3
65	185	19	16	3
80	200	19	16	3
100	235	19	16	3
125	270	23.5	20.5	3
150	300	26	23	3
200	375	30	27	3
250	450	34.5	31.5	3
300	515	39.5	35.5	4
350	580	44	40	4
400	660	48	44	4
450	685	50	46	4
500	755	52	48	4
600	890	58	53	5

9.3 Gland

9.3.1 K type gland's model and size

Figure 49 Table 57

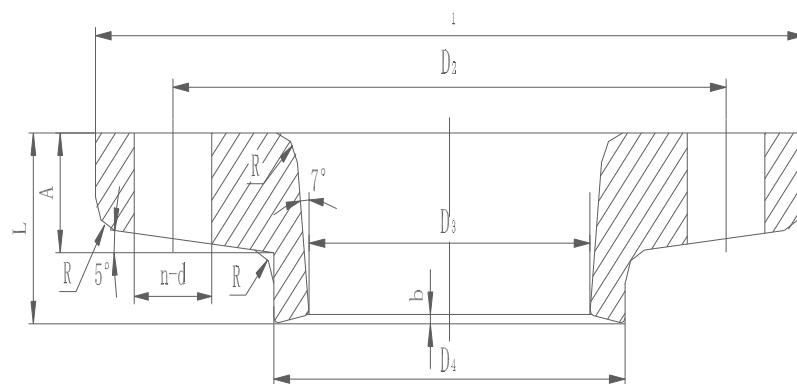
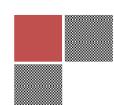


Figure 49 K type gland

Table 57 K type gland size

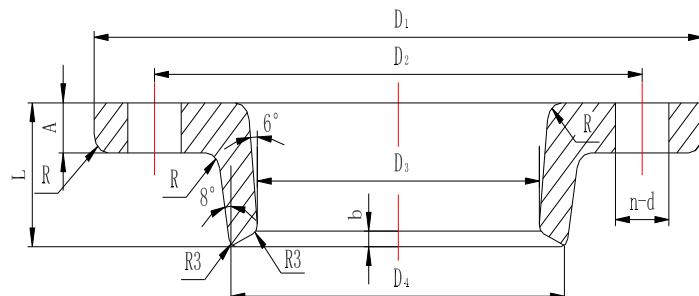
DN	D_1	D_2	D_3	D_4	A	L	R	b	$n-d$	weight/kg
100	234	188	122	146	16	35	5	2	4-23	4.1
150	288	242	174	198	17	36	5	2	6-23	5.7



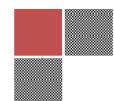
200	341	295	226	250	18	37	5	2	6-23	7.5
250	395	349	278	302	19	38	5	2	8-23	9.5
300	455	409	330	354	20	39	5	2	8-23	12.2
350	508	462	382	406	21	40	5	2	10-23	14.6
400	561	515	433	457	22	41	7	2	12-23	17.2
500	667	621	536	560	24	43	7	2	14-23	22.9
600	773	727	639	663	25	44	7	2	14-23	28.5
700	892	838	743	773	26	45	7	2.5	16-27	38.6
800	999	945	847	877	28	47	9	2.5	20-27	47.4
900	1123	1057	950	980	29	48	9	2.5	20-33	61.9
1000	1231	1165	1054	1083	30	49	9	2.5	20-33	63.8
1100	1338	1272	1158	1187	31	50	9	2.5	24-33	68.5
1200	1444	1378	1262	1290	32	51	9	2.5	28-33	82.5
1400	1657	1591	1469	1497	34	53	9	3	28-33	104
1500	1766	1700	1573	1601	35	54	9	3	28-33	119
1600	1874	1808	1676	1711	36	55	9	3	30-33	123
1800	2089	2023	1883	1918	38	57	11	3	34-33	162
2000	2305	2239	2090	2125	40	59	11	3	36-33	196
2200	2519	2453	2296	2331	43	62	11	3	40-33	238
2400	2734	2668	2503	2538	46	65	11	3	44-33	318
2600	2949	2883	2710	2745	49	68	11	3	48-33	378

9.3.2 N_{II} type gland's model and size

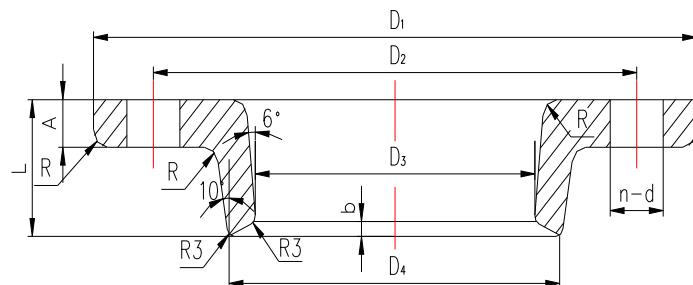
Figure 50 Table 58

Figure 50 N_{II} type gland's model and sizeTable 58 N_{II} type gland's size

DN	D ₁	D ₂	D ₃	D ₄	A	L	R	b	d	n/piece	unit: mm weight/kg
80	240	188	102	123	16	55	6	5	23	4	5.0
100	262	210	122	143							6.0
150	313	262	174	195						6	7.8
200	366	312	226	247							9.8
250	418	366	279	301	18						11.8
300	471	420	331	353						8	15.7



350	524	474	383	405						10	17.6
400	578	526	435	458							20.7
500	686	632	539	562	20				24	14	26.5
600	794	740	642	665						16	32.5
700	898	844	745	770						16	41

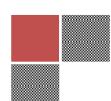
9.3.3 S_{II} type gland's model and size Figure 51 Table 59Figure 51 S_{II} type glandTable 59 S_{II} type gland's size

DN	D ₁	D ₂	D ₃	D ₄	A	L	R	b	d	N/piece	weight/Kg
100	262	210	121	145	16	46	6	5	23	4	5.7
150	313	254	173	197						6	7.3
200	366	320	225	249							9.0
250	418	366	277	303	18	48					11.4
300	471	416	329	355						8	13.2
350	524	475	381	407							15.7
400	578	530	432	460						12	19.7
500	686	630	536	564	20	50					24.5
600	794	740	639	667					24	14	29.3
700	898	854	742	770						16	34.5

9.4 Bolts and nuts

9.4.1 K、N II and S II type bolts

Figure 52 Table 60



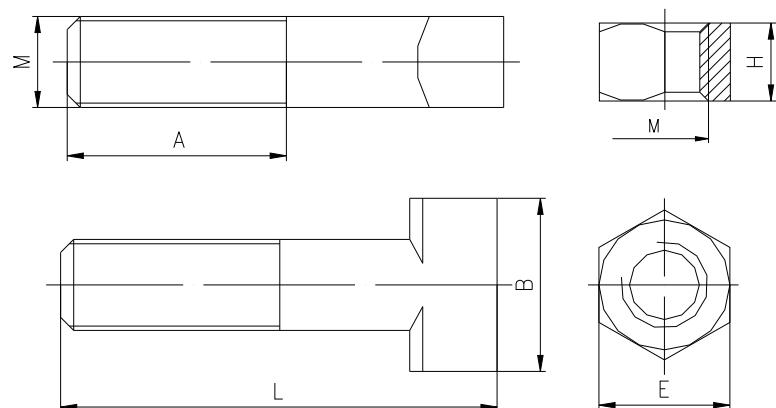


Figure52 K, N II and S II type bolts

Table 60 K, N II and S II type bolts size

DN	N II and S II		K		unit: mm
	size	weight/kg	size	weight/kg	
100~500	M20/120	0.4	M20/120	0.4	
600	M20/140	0.45	M20/140	0.45	
700			M24/140	0.6	
800	—	—			
900~1600			M30/170	1.45	
1800~2600			M30/190	1.5	

9.4.2 Bolts for connecting flange

Figure 53 and Table 61

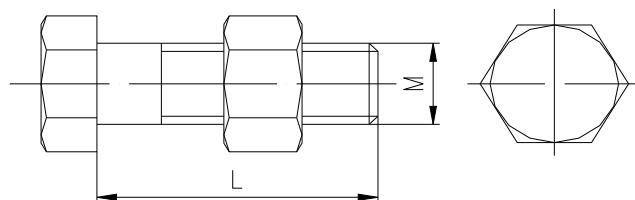
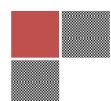


Figure53 Bolts for connecting flange

Table 61 Bolts size for connecting flange

DN	PN10		PN16		PN25		PN40		unit: mm
	Quantity, piece	M×L							
80	8	M16×65	8	M16×65	8	M16×65	8	M16×65	
100	8	M16×65	8	M16×65	8	M20×70	8	M20×70	
125	8	M16×65	8	M16×65	8	M24×80	8	M24×80	

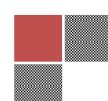


150	8	M20×70	8	M20×70	8	M24×80	8	M24×90
200	8	M20×70	12	M20×70	12	M24×80	12	M27×100
250	12	M20×80	12	M24×90	12	M27×90	12	M30×110
300	12	M20×80	12	M24×90	16	M27×90	16	M30×120
350	16	M20×80	16	M24×90	16	M30×110	16	M33×130
400	16	M24×90	16	M27×100	16	M33×120	16	M36×140
450	20	M24×90	20	M27×100	20	M33×120	20	M36×150
500	20	M24×90	20	M30×110	20	M33×120	20	M39×150
600	20	M27×100	20	M33×120	20	M36×140	20	M45×170
700	24	M27×100	24	M33×120	24	M39×140		
800	24	M30×110	24	M36×140	24	M45×160		
900	28	M30×120	28	M36×140	28	M45×170		
1000	28	M33×130	28	M39×150	28	M52×180		
1100	32	M33×130	32	M39×160	32	M52×180		
1200	32	M36×140	32	M45×170	32	M52×200		
1400	36	M39×150	36	M45×180	36	M56×220		
1500	36	M39×150	36	M52×190	36	M56×230		
1600	40	M45×160	40	M52×190	40	M56×230		
1800	44	M45×160	44	M52×200	44	M64×260		
2000	48	M45×170	48	M56×220	48	M64×270		
2200	52	M52×190	52	M56×230				
2400	56	M52×200	56	M56×240				
2600	60	M52×200	60	M56×250				

9.5 Sealing parts

9.5.1 T type rubber gasket size

Figure 54、55 and Table 62



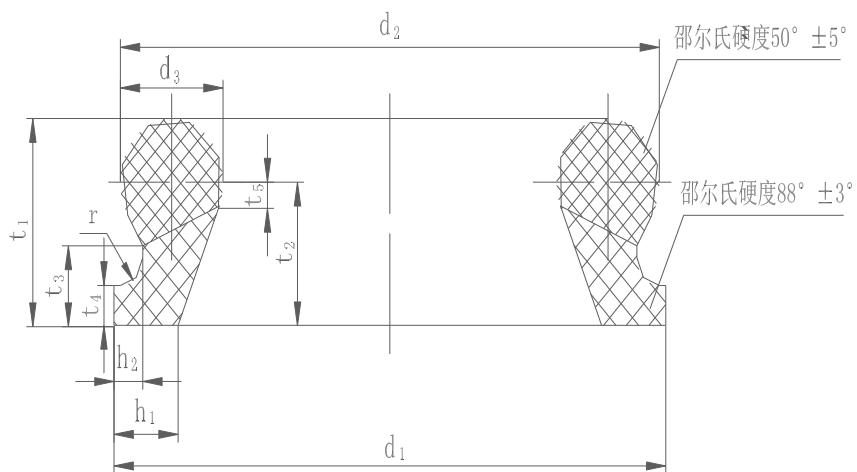


Figure54 DN40~1200T type rubber gasket

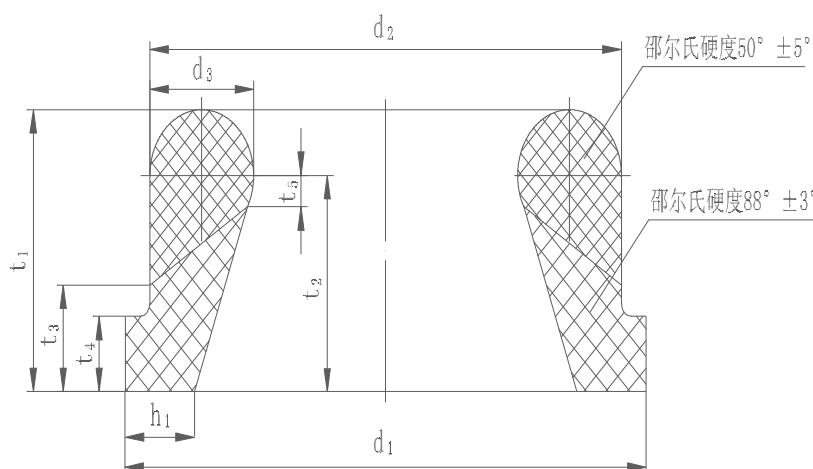


Figure55 DN1400~DN1600T type rubber gasket

Table 62 T type rubber gasket size

DN	d ₁	d ₂	d ₃	h ₁	h ₂	t ₁	t ₂	t ₃	t ₄	t ₅	r	unit: mm	
												Compression rate/%	
												Max.	Min.
40	85	83	16	10	4.5	24	16	10	5	3	3	42.4	1.56
50	95	93	16	10	4.5	24	16	10	5	3	3	42.4	1.56
60	105	103	16	10	4.5	26	18	10	5	3	3	42.4	4.68
65	110	108	16	10	4.5	26	18	10	5	3	3	42.4	4.68
80	126	123	16	10	4.5	26	18	10	5	3	3	42.4	2.5
100	146	144	16	10	4.5	26	18	10	5	3	3.5	42.7	3.1
125	172	170	16	10	4.5	26	18	10	5	3	3.5	41.7	3.4



150	200	198	16	10	4.5	26	18	10	5	3	3.5	43.7	3.4
200	256	254	18	11	5	30	21	12	6	4	4	42.7	3.6
250	310	308	18	11	5	32	23	12	6	4	4	43.5	3.9
300	366	364	20	12	5.5	34	24	14	7	4	4.5	42.2	4.0
350	420	418	20	12	5.5	34	24	14	7	4	4.5	42.9	4.3
400	475	473	22	13	6	38	27	16	8	5	5	41.8	4.8
450	528	526	23	13	6	38	27	16	8	5	5	42.5	7.4
500	583	581	24	14	6.5	42	30	18	9	6	5.5	41.6	5.2
600	692	690	26	15	7	46	33	20	10	7	6	41.5	6
700	809	803	33.5	20	10	55	39	24	16	8	7	42.2	11.3
800	919	913	35.5	21	11	60	43	26	16	9	8	41.8	11.3
900	1026	1020	37.5	22	12	65	47	28	18	10	9	41.7	11.2
1000	1133	1127	39.5	23	12	70	51	30	18	10	9	41.1	10.9
1100	1242	1235	40.0	25	13.5	74	54	32	19	10	10	40.1	8.4
1200	1352	1345	43.5	27	13.5	78	57	34	20	11	10	42.0	11.5
1400	1569	1549	41.5	27	—	80	58	28	23	22	—	42.0	15.8
1500	1685	1665	43	30	—	70	48.5	30	20	13.5	—	44.8	10.5
1600	1799	1779	43	32.5	—	70	48.5	30	20	13.5	—	46	10.5

9.5.2 K type rubber gasket according to Figure55 and Table 63

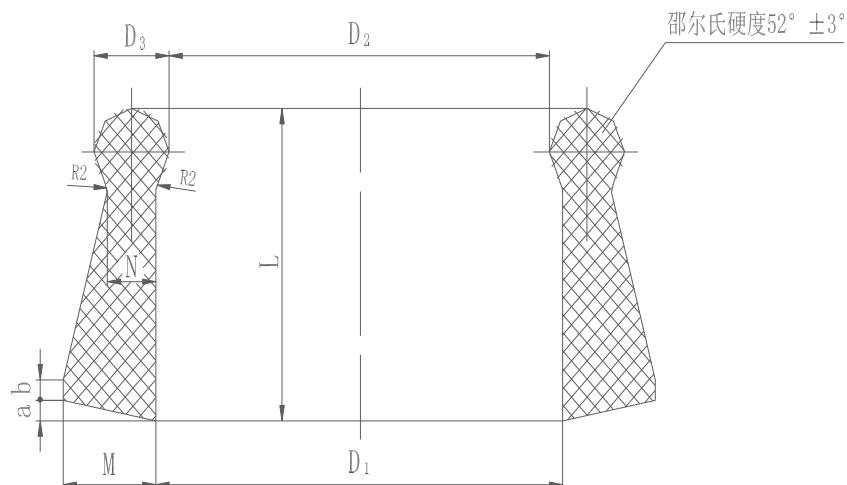
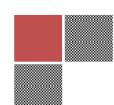


Figure55 K type rubber gasket

Table 63 K type rubber gasket

unit: mm

DN	D ₁	D ₂	D ₃	L	M	N	a	b
100	116	112	11	45	15	6	4	4



150	167	163	11	45	15	6	4	4
200	218	214	11	45	15	6	4	4
250	269	265	11	45	15	6	4	4
300	319	313	15	49	18	8	4	4
350	370	364	15	49	18	8	4	4
400	420	414	15	49	18	8	4	4
450	471	465	15	49	18	8	4	4
500	521	515	15	49	18	8	4	4
600	622	616	15	49	18	8	4	4
700	723	717	17	61	21	11	4	4
800	825	819	17	61	21	11	4	4
900	926	920	17	61	21	11	4	4
1000	1027	1020	18	62	21	11	4	5
1100	1130	1123	18	62	21	11	4	5
1200	1230	1223	18	62	21	11	4	5
1400	1430	1423	20	62	21.5	13	4	5
1500	1532	1525	20	62	21.5	13	4	5
1600	1635	1628	20	80	25	13	4	5
1800	1833	1825	23	80	27	15	4	5
2000	2035	2027	23	80	27	15	4	5
2200	2235	2227	23	80	27	15	4	5
2400	2440	2432	23	80	27	15	4	5
2600	2645	2637	23	80	27	15	4	5

9.5.3 N II type rubber gasket according to Figure56、Figure57 and Table 63、Table 64

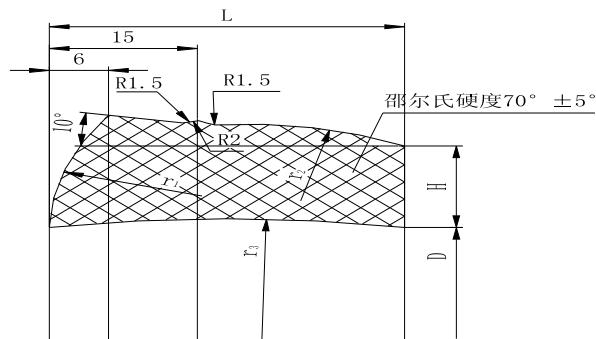
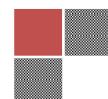


Figure56 N II type rubber gasket

Table 63 N II type rubber gasket size

unit: mm

DN	L	r ₁	r ₂	r ₃	H	D
80	32	32		110	14	94
100			23			113
150						162
200						213
250	34	34	28.5	125	15	264



300						314
350						362
400						413
500	36	36	35	300	16	512
600						611
700						710

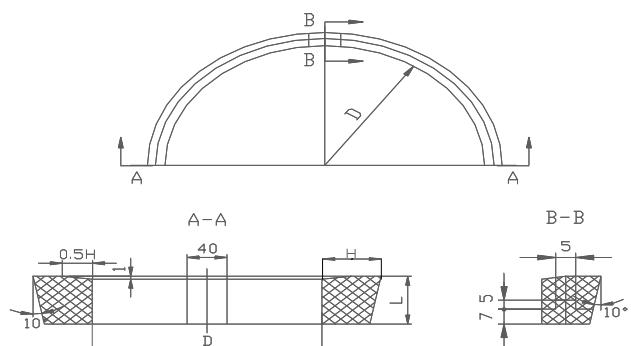
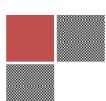


Figure57 supporting cirle

Table 64 supporting circle size

DN	H	L	unit: mm	D
80	13	12		95
100				115
150				167
200				219
250	14	12		271
300				323
350				375
400				426
500	15	12		529
600				632
700				735





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