



Tee Design Information and Branch Outlet End Options

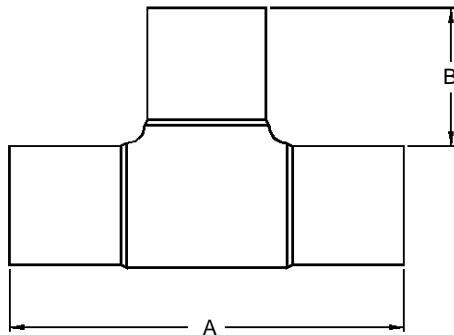
The linetee is a pipe component (fitting) that has a single branch outlet pipe equal in diameter to that of the main. The reducing-tee's branch outlet is of a diameter less than that of the main. Each tee side-outlet branch is at right angles (90 degrees) to the main.

Molded tees are fully pressure rated. Unreinforced fabricated tees have a reduced WPR, based solely on geometry. Three-piece mitered tees are usually “externally” reinforced to recapture some of the derating due to the hole in the main; this is accomplished by using the next lower DR (heavier wall) pipe. Reducing-tees are reinforced using massive branch saddles, such that the branch reinforcement surrounding the hole offsets the loss of “hoop” due to the hole. Reducing-tees made with the massive branch-saddle are fully pressure rated. The branch saddle reinforcement mass and its placement are calculated per ASME B31.3, Appendix H, Paragraph #304.3.3.

Tee Outlet End Options are: butt-end, flanged and MJ-anchor. Tees larger than 18 “ diameter should (strongly recommended) be shipped with flanged or MJ-anchor ends to facilitate mechanical assembly in the field without imposing undue lifting stress or strain on the fitting as it is positioned in the trench and connected to the pipe-run. Long runs of pipe (fused to the Tee) lifted / lowered into the trench can place undue stress/strain on the tee fitting

For a tee to achieve full pressure rating it must pass a quick burst test equal to that of the pipe. (attach a length of pipe equal to approx. 6 pipe diameters and then perform an ASTM D1599 quick-burst test) when the fitting survives and the attached pipe bursts, the fitting is as strong or stronger than the pipe. Tees with insufficient reinforcement will rupture before the attached pipe. Tees that survive the quick burst test have a safety factor and stress longevity equal to that of the pipe.

Derating or rerating of a tee WPR is a function of geometry and stress intensification factors at the hole in the main. Please refer to the engineering information presented earlier in the catalog section on Branch-Saddles.



IPS & DIPS Molded Line Tee

Fully Pressure Rated for DR Ordered
(Dimensions in Inches)

IPS Molded Line Tee

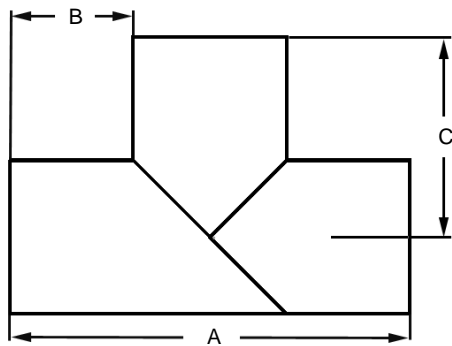
IPS Size	A	B	SDR	Weight (lbs)
3/4"	6.12	2.54	11	0.5
1"	6.38	2.54	11	0.5
1-1/4"	6.76	2.55	11	1
1-1/2"	8.50	3.30	11	1
2"	9.00	3.31	9-11	2
3"	10.26	3.38	9-17	3
4"	11.20	3.35	9-17	4
6"	18.00	5.69	9-17	15
8"	24.00	7.69	11-17	30

DIPS Molded Line Tee

DIPS Size	A	B	SDR	Weight (lbs)
4"	15.63	5.42	11	6
6"	19.34	6.22	11	16
8"	23.15	7.06	11	30

Other sizes and DR's not listed are available - Call For Quick Quote

Molded fittings meet AWWA C901/C906 fitting requirements.



IPS Fabricated Line Tee

(Dimensions in Inches)

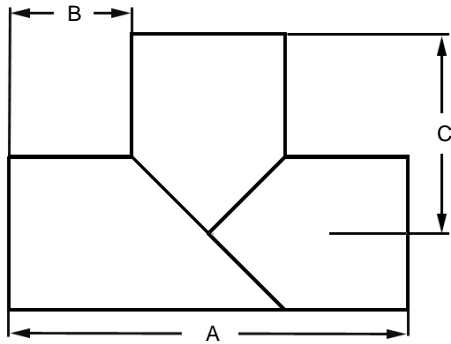
IPS Size	A	B	C	SDR	WPR	Weight (lbs)
4"	16.5	6.0	8.3	7	200	8
				9	160	7
				11	128	6
6"	18.6	6.0	9.3	7	200	19
				9	160	15
				11	128	13
8"	24.6	8.0	12.3	7	200	42
				9	160	34
				11	128	28
				17	80	20
10"	26.8	8.0	13.4	7	200	70
				9	160	57
				11	128	46
				17	80	32
12"	28.8	8.0	14.4	7	200	105
				9	160	85
				11	128	72
				17	80	48
14"	32.0	9.0	16.0	7	200	140
				9	160	112
				11	128	93
				17	80	63
16"	34.0	9.0	17.0	7	200	204
				9	160	166
				11	128	137
				17	80	92
18"	38.0	10.0	19.0	7	200	283
				9	160	231
				11	128	194
				17	80	131

• IPS Line Tee's Continued Next Page •

Other sizes and DR's not listed are available - Call For Quick Quote

Sizes 24" and smaller meet AWWA C906 fitting requirements, sizes 26" and larger are quoted per fitting.

WPR represents the long term hydrostatic pressure capacity of the fabricated tee with a 1.5:1 safety factor. To achieve a 2:1 safety factor like that of the straight pipe the WPR will be reduced.



IPS Fabricated Line Tee (continued) (Dimensions in Inches)

IPS Size	A	B	C	SDR	WPR	Weight (lbs)
20"	40.0	10.0	20.0	7	200	368
				9	160	297
				11	128	247
				17	80	167
22"	46.0	12.0	23.0	7	200	506
				9	160	409
				11	128	343
				17	80	231
24"	48.0	12.0	24.0	7	200	983
				9	160	507
				11	128	422
				17	80	286
26"	54.0	14.0	27.0	9	160	686
				11	128	577
				17	80	390
28"	56.0	14.0	28.0	9	160	821
				11	128	689
				17	80	457
30"	58.0	14.0	29.0	11	128	816
				17	80	552
32"	60.0	14.0	30.0	11	128	957
				17	80	643
34"	74.0	20.0	50.0	11	128	1454
				17	80	977
36"	76.0	20.0	51.0	11	128	1676
				17	80	1128
42"	82.0	20.0	54.0	17	80	1633
				21	65	1331
48"	88.0	20.0	57.0	21	65	1736
				26	50	1413
54"	94.0	20.0	60.0	26	50	2026
				32.5	40	1628

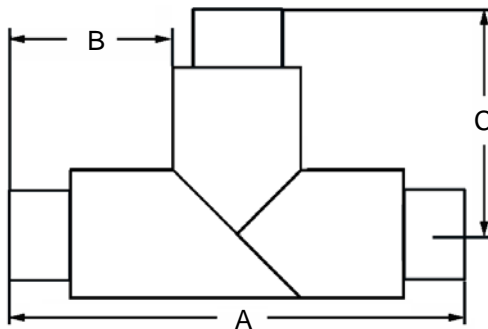
Other sizes and DR's not listed are available - Call For Quick Quote

Sizes 24" and smaller meet AWWA C906 fitting requirements, sizes 26" and larger are quoted per fitting.

WPR represents the long term hydrostatic pressure capacity of the fabricated tee with a 1.5:1 safety factor. To achieve a 2:1 safety factor like that of the straight pipe the WPR will be reduced.



IPS HDPE PE Reinforced Line Tee Fully Pressure Rated With Full Flow ID (Dimensions in Inches)

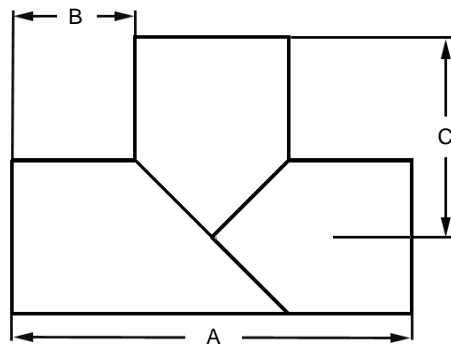


These fittings offer a full pressure rating without restricting the ID flow or lowering the fitting WPR design factor!

IPS Nominal Size	Feedstock OD	A	B	C	SDR	WPR (psi)
4"	6.625	30.6	10.0	15.3	9	200
					11	160
					17	100
6"	8.625	36.6	14.0	18.3	9	200
					11	160
					17	100
8"	10.750	39.8	14.5	19.9	9	200
					11	160
					17	100
10"	12.750	41.8	14.5	20.9	9	200
					11	160
					17	100
12"	14.000	48.0	17.0	24.0	9	200
					11	160
					17	100
14"	16.000	50.0	17.0	25.0	9	200
					11	160
					17	100
16"	18.000	54.0	18.0	27.0	9	200
					11	160
					17	100
18"	20.000	56.0	18.0	28.0	9	200
					11	160
					17	100
20"	22.000	62.0	20.0	31.0	9	200
					11	160
					17	100
22"	24.000	64.0	20.0	32.0	9	200
					11	160
					17	100
24"	26.000	70.0	22.0	35.0	9	200
					11	160
					17	100

WPR represents the long term hydrostatic pressure capacity of the Reinforced Fabricated Line Tee with a 2:1 design factor.

IPPI's HDPE Design-Flow® Pipe Fittings are designed to meet AWWA C901/C906 fitting requirements and are manufactured from PPI and NSF listed resins in accordance with the material specifications listed in ASTM D3350 with a cell classification of 345464C or better. Suitable for butt welding to pipe manufactured to ASTM D2513, D3035, F714 with similar resins.



DIPS Fabricated Line Tee

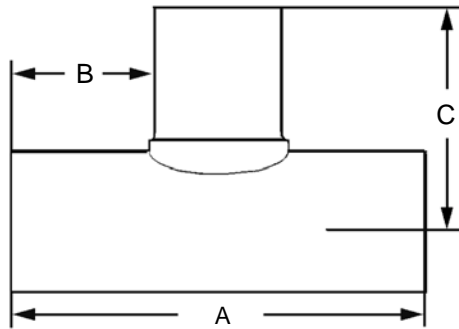
(Dimensions in Inches)

DIPS Size	A	B	C	SDR	WPR	Weight (lbs)
4"	16.8	6.0	8.4	9	160	9
				11	128	7
				17	80	5
6"	18.9	6.0	9.5	9	160	18
				11	128	15
				17	80	10
8"	25.0	8.0	12.5	9	160	37
				11	128	34
				17	80	23
10"	27.1	8.0	13.6	9	160	62
				11	128	51
				17	80	37
12"	29.2	8.0	14.6	9	160	93
				11	128	78
				17	80	54
14"	33.3	9.0	16.7	9	160	150
				11	128	124
				17	80	84
16"	35.4	9.0	17.7	9	160	205
				11	128	175
				17	80	115
18"	39.5	10.0	19.8	9	160	286
				11	128	236
				17	80	159
20"	41.6	10.0	20.8	9	160	359
				11	128	302
				17	80	206
24"	49.8	12.0	24.9	9	160	612
				11	128	516
				17	80	348
30"	60.0	14.0	30.0	11	128	963
				17	80	647

Other sizes and DR's not listed are available - Call For Quick Quote

Sizes 24" and smaller meet AWWA C906 fitting requirements, sizes 26" and larger are quoted per fitting.

WPR represents the long term hydrostatic pressure capacity of the fabricated tee with a 1.5:1 safety factor. To achieve a 2:1 safety factor like that of the straight pipe the WPR will be reduced.



IPS Branch Saddle Reducing Tee Full Pressure Rated

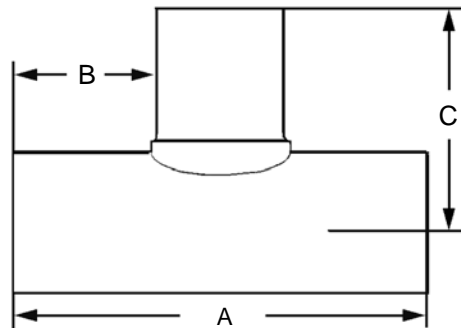
(Dimensions in Inches)

IPS Nominal Size	A	B	C	SDR	IPS Nominal Size	A	B	C	SDR
4" x 2"	18.0	7.2	11.3	9-11	16" x 8"	32.0	10.6	27.8	9-21
4" x 3"	18.0	6.7	12.3	9-11	16" x 10"	34.0	10.6	28.0	9-21
6" x 2"	18.0	7.2	13.3	9-11	16" x 12"	36.0	10.5	30.0	9-21
6" x 3"	18.0	6.7	13.3	9-11	18" x 2"	24.0	10.2	18.5	9-21
6" x 4"	19.0	6.7	13.3	9-11	18" x 3"	24.0	9.7	19.3	9-21
8" x 2"	18.0	7.2	13.8	9-11	18" x 4"	27.0	10.2	19.0	9-21
8" x 3"	18.0	6.7	14.6	9-11	18" x 6"	29.0	10.2	18.6	9-21
8" x 4"	19.0	6.2	14.3	9-11	18" x 8"	32.0	10.6	28.6	9-21
8" x 6"	21.0	6.2	14.3	9-11	18" x 10"	34.0	10.6	29.0	9-21
10" x 2"	18.0	7.2	14.4	9-11	18" x 12"	36.0	10.5	31.0	9-21
10" x 3"	18.0	6.7	15.9	9-11	20" x 2"	28.0	12.2	19.5	9-21
10" x 4"	19.0	6.2	15.4	9-11	20" x 3"	29.0	12.2	20.3	9-21
10" x 6"	21.0	6.2	15.4	9-11	20" x 4"	31.0	7.2	20.0	9-21
10" x 8"	24.0	6.6	24.4	9-11	20" x 6"	33.0	12.2	19.6	9-21
12" x 2"	20.0	8.2	15.4	9-11	20" x 8"	36.0	12.6	29.6	9-21
12" x 3"	21.0	8.2	16.4	9-11	20" x 10"	38.0	12.6	30.0	9-21
12" x 4"	23.0	8.2	16.4	9-11	20" x 12"	40.0	12.5	32.0	9-21
12" x 6"	24.0	7.7	16.4	9-11	22" x 2"	28.0	12.2	20.5	9-21
12" x 8"	28.0	8.6	25.4	9-11	22" x 3"	29.0	12.2	21.3	9-21
12" x 10"	30.0	8.6	26.4	9-11	22" x 4"	31.0	7.2	21.0	9-21
14" x 2"	20.0	8.2	16.7	9-17	22" x 6"	33.0	12.2	20.6	9-21
14" x 3"	21.0	8.2	17.5	9-17	22" x 8"	36.0	12.6	30.6	9-21
14" x 4"	23.0	8.2	17.2	9-17	22" x 10"	38.0	12.6	31.2	9-21
14" x 6"	24.0	7.7	17.0	9-17	22" x 12"	40.0	12.5	33.0	9-21
14" x 8"	28.0	8.6	26.8	9-17	24" x 2"	28.0	12.2	21.5	9-21
14" x 10"	30.0	8.6	27.0	9-17	24" x 3"	29.0	12.2	22.3	9-21
14" x 12"	32.0	8.5	29.0	9-17	24" x 4"	31.0	7.2	22.0	9-21
16" x 2"	24.0	10.2	17.7	9-17	24" x 6"	33.0	12.2	21.6	9-21
16" x 3"	24.0	9.7	18.5	9-17	24" x 8"	36.0	12.6	31.6	9-21
16" x 4"	27.0	10.2	18.2	9-21	24" x 10"	38.0	12.6	32.20	9-21
16" x 6"	29.0	10.2	18.0	9-21	24" x 12"	40.0	12.5	34.0	9-21

Fully pressure rated reducing tees are available with outlet sizes 3/4" to 24" IPS.

Other sizes and DR's not listed are available - Call For Quick Quote

Sizes 24" and smaller meet AWWA C906 fitting requirements, sizes 26" and larger are quoted per fitting.
1-800-499-6927



DIPS Branch Saddle Reducing Tee Full Pressure Rated (Dimensions in Inches)

DIPS Nominal Size	A	B	C	SDR	DIPS Nominal Size	A	B	C	SDR
6" x 4"	19.0	6.2	13.3	9-11	16" x 10"	34.0	10.1	28.0	9-21
8" x 4"	19.0	6.2	14.3	9-11	16" x 12"	36.0	10.4	30.0	9-21
8" x 6"	21.0	6.2	14.3	9-11	18" x 4"	27.0	10.2	19.7	9-21
10" x 4"	19.0	6.2	15.4	9-11	18" x 6"	29.0	10.2	20.2	9-21
10" x 6"	21.0	6.2	15.4	9-11	18" x 8"	32.0	10.2	29.2	9-21
10" x 8"	24.0	6.2	24.4	9-11	18" x 10"	34.0	10.1	29.7	9-21
12" x 4"	23.0	8.2	16.6	9-11	18" x 12"	36.0	10.4	31.7	9-21
12" x 6"	24.0	7.7	16.4	9-11	20" x 4"	31.0	12.2	20.8	9-21
12" x 8"	28.0	8.2	25.4	9-11	20" x 6"	33.0	12.2	21.3	9-21
12" x 10"	30.0	8.6	26.4	9-11	20" x 8"	36.0	12.2	30.3	9-21
14" x 4"	23.0	8.2	17.6	9-17	20" x 10"	38.0	12.1	30.8	9-21
14" x 6"	24.0	7.7	17.0	9-17	20" x 12"	40.0	12.4	32.8	9-21
14" x 8"	28.0	8.2	27.1	9-17	24" x 4"	31.0	12.2	22.9	9-21
14" x 10"	30.0	8.1	27.0	9-17	24" x 6"	33.0	12.2	23.4	9-21
14" x 12"	32.0	8.4	29.0	9-17	24" x 8"	36.0	12.2	32.4	9-21
16" x 4"	28.0	10.2	18.7	9-21	24" x 10"	38.0	12.1	32.9	9-21
16" x 6"	29.0	10.2	18.0	9-21	24" x 12"	40.0	12.4	34.9	9-21
16" x 8"	32.0	10.2	28.2	9-21					

Fully pressure rated reducing tees are available with outlet sizes 4" to 20" DIPS.

Other sizes and DR's not listed are available - Call For Quick Quote

Sizes 24" and smaller meet AWWA C906 fitting requirements, sizes 26" and larger are quoted per fitting.

1-800-499-6927

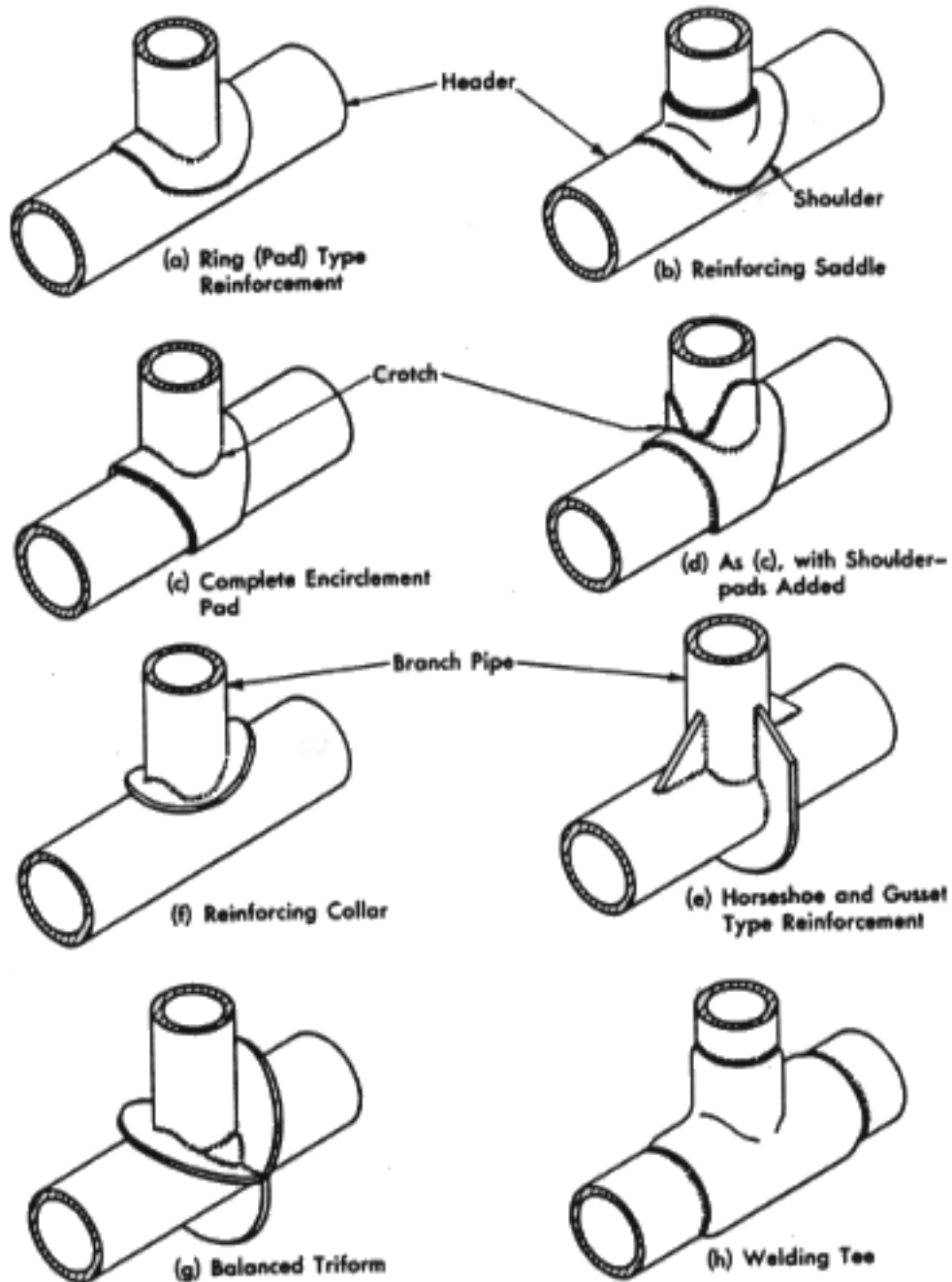
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Full Pressure, Branch Outlet Reinforcement Designs

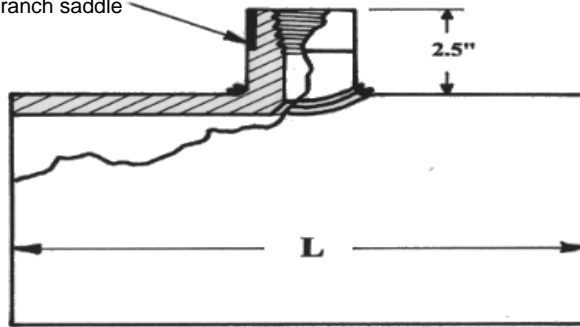
(Reference: “Design of Piping Systems” by the W. M. Kellogg Company)





Tapped Tees IPS & DIPS Main Size (Dimensions in Inches)

Stainless steel reinforcing collar on OD
Threads cut in ID of PE branch saddle



The industry often needs a threaded hole to mount a pressure gage or air release valve or flow-monitor or temperature sensor, etc. This fitting is offered in 2" NPT (which may be bushed down to 1" NPT and smaller) on all pipe sizes (IPS & DIPS). This fitting is fully pressure rated to the pipe main DR and its WPR.

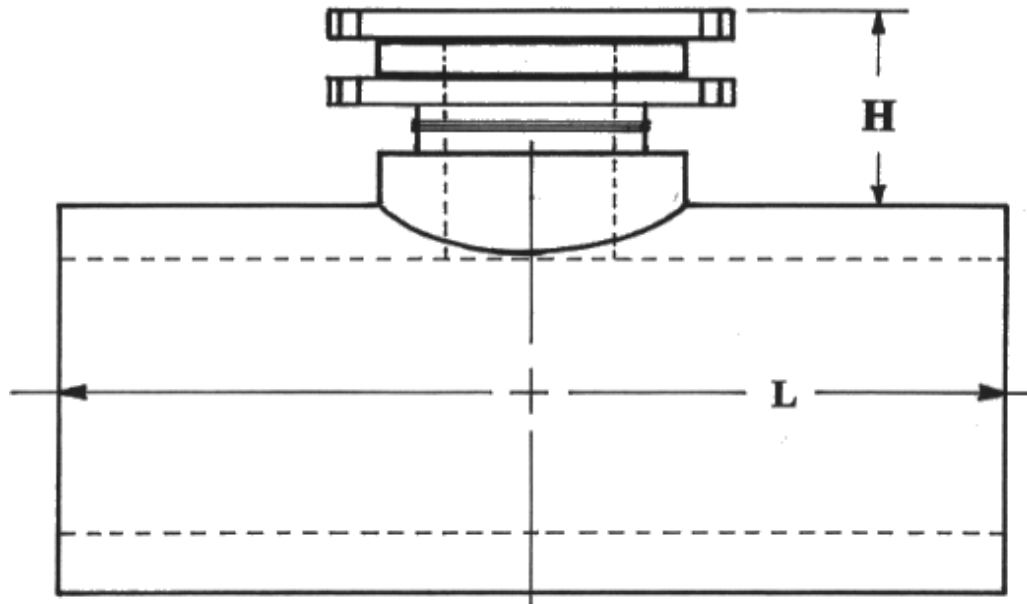
Nominal Size IPS & DIPS	L	DR	WPR (psi)	Weight (lbs)
4"	12	11	160	5
6"	12	11	160	11
8"	12	11	160	15
10"	15	11	160	22
12"	15	11	160	29
14"	18	11	160	44
16"	20	11	160	63
18"	24	11	160	91
20"	24	11	160	111
24"	24	11	160	157
28" IPS	30	11	160	227
30"	30	11	160	294
36" IPS	36	17	100	302

For larger diameter pipe mains or other pipe main DR's, call for a Quick Quote on price and delivery.



Inspection Tee Kit

(Dimensions in Inches)



The inspection tee is used on many transmission and distribution pipelines. It offers the owner an opening to the interior of the pipeline for the purpose of inspection or simple access for mechanical equipment or people when the pipeline is large in diameter. The KIT includes the native branch saddle, the low height flange adapter fused to the branch-saddle with the metal back up ring (captured in-between) and blind flange. The bolts are not included in the kit. The assembly is saddle-fused to a sufficient long section of pipe main to provide for field fusion. The following inspection tee kits are engineered. Call for a Quick Quote on the particular main size and inspection tee outlet combination needed for the project.

- 4" Inspection Tee Kit x 6" to 54" main
- 6" Inspection Tee Kit x 8" to 54" main
- 8" Inspection Tee Kit x 10" to 54" main
- 10" Inspection Tee Kit x 12" to 54" main
- 12" Inspection Tee Kit x 14" to 54" main
- 18" Inspection Tee Kit x 20" to 54" main
- 24" Inspection Tee Kit x 28" to 54" main