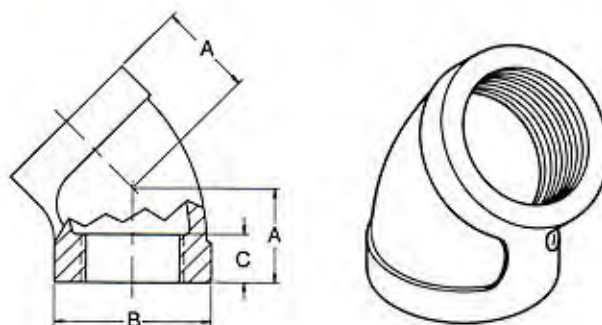


CAST IRON 45° ELLS

FIGURE 23

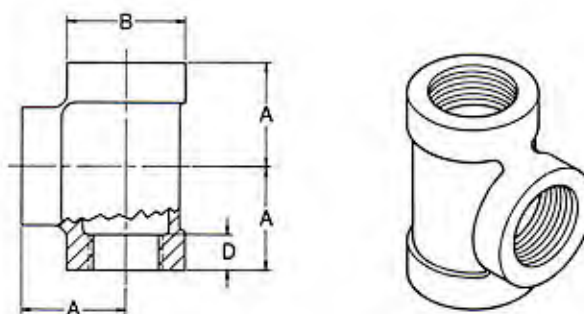
NPS	Center to End A	Outside Dia. of Band B (min)	Length of Thread C (min)	Take Out
1/2"	0.880	1.340	0.430	0.380
3/4"	0.980	1.630	0.500	0.418
1"	1.120	1.950	0.580	0.433
1 1/4"	1.290	2.390	0.670	0.603
1 1/2"	1.430	2.680	0.700	0.743
2"	1.680	3.280	0.750	0.930
2 1/2"	1.950	3.860	0.920	1.013
3"	2.170	4.620	0.980	1.170
3 1/2"	2.390	5.200	1.030	1.328
4"	2.610	5.790	1.080	1.485



CAST IRON STRAIGHT TEES

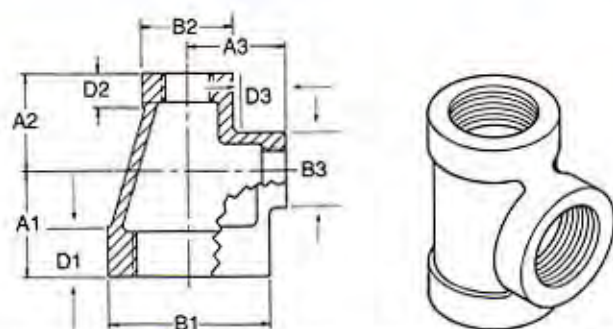
FIGURE 24

NPS	Center to End A	Outside Dia. of Band B (min)	Thread Length D (min)	Take Out Dim.
3/8"	0.950	1.120	0.360	0.575
1/2"	1.120	1.340	0.430	0.620
3/4"	1.310	1.630	0.500	0.748
1"	1.500	1.950	0.580	0.813
1 1/4"	1.750	2.390	0.670	1.063
1 1/2"	1.940	2.680	0.700	1.253
2"	2.250	3.280	0.750	1.500
2 1/2"	2.700	3.860	0.920	1.763
3"	3.080	4.620	0.980	2.080
3 1/2"	3.420	5.200	1.030	2.358
4"	3.790	5.790	1.080	2.665



CAST IRON REDUCING TEES

FIGURE 25



NPS H denotes Heel Ell	Center To End A1	Center To End A2	Center To End A3	Outside Dia. of Band B1(min)	Outside Dia. of Band B2(min)	Outside Dia. of Band B3(min)	Thread Length D1(min)	Thread Length D2(min)	Thread Length D3(min)	Take Out	Take Out	Take Out
1/2 x 1/2 x 3/8	1.120	1.120	1.120	1.340	1.340	1.340	0.430	0.430	0.360	0.620	0.620	0.745
1/2 x 3/8 x 1/2	1.120	1.120	1.120	1.340	1.340	1.340	0.430	0.360	0.430	0.620	0.745	0.620
1/2 x 3/8 x 3/8	1.120	1.120	1.120	1.340	1.340	1.340	0.430	0.360	0.360	0.620	0.745	0.745
3/8 x 3/8 x 1/2	1.120	1.120	1.120	1.340	1.340	1.340	0.360	0.360	0.430	0.745	0.745	0.620
3/4 x 3/4 x 1/2	1.200	1.200	1.220	1.630	1.630	1.340	0.500	0.500	0.430	0.638	0.638	0.720
3/4 x 3/4 x 3/8	1.200	1.200	1.220	1.630	1.630	1.340	0.500	0.500	0.360	0.638	0.638	0.845
3/4 x 1/2 x 3/4	1.310	1.310	1.310	1.630	1.630	1.630	0.500	0.430	0.500	0.748	0.810	0.748
3/4 x 1/2 x 1/2	1.200	1.120	1.220	1.630	1.340	1.340	0.500	0.430	0.430	0.638	0.620	0.720
1/2 x 1/2 x 3/4	1.310	1.310	1.310	1.630	1.630	1.630	0.430	0.430	0.500	0.810	0.810	0.748
1 x 1 x 3/4	1.370	1.370	1.450	1.950	1.950	1.630	0.580	0.580	0.500	0.683	0.763	0.888
1 x 1 x 1/2	1.260	1.260	1.360	1.950	1.950	1.340	0.580	0.580	0.430	0.573	0.673	0.860
1 x 1 x 3/8	1.260	1.260	1.360	1.950	1.950	1.340	0.580	0.580	0.360	0.573	0.673	0.985
1 x 3/8 x 1	1.500	1.360	1.500	1.950	1.340	1.950	0.580	0.360	0.580	0.813	0.985	0.813
1 x 3/4 x 1	1.500	1.450	1.500	1.950	1.630	1.950	0.580	0.500	0.580	0.813	0.888	0.813
1 x 3/4 x 3/4	1.370	1.310	1.450	1.950	1.630	1.630	0.580	0.500	0.500	0.683	0.748	0.888
1 x 3/4 x 1/2	1.260	1.260	1.360	1.950	1.950	1.340	0.580	0.500	0.430	0.573	0.698	0.860
1 x 1/2 x 1	1.500	1.360	1.500	1.950	1.340	1.950	0.580	0.430	0.580	0.813	0.860	0.813
1 x 1/2 x 3/4	1.370	1.310	1.450	1.950	1.630	1.630	0.580	0.430	0.500	0.683	0.810	0.888
1 x 1/2 x 1/2	1.260	1.120	1.360	1.950	1.340	1.340	0.580	0.430	0.430	0.573	0.620	0.860
1 x 1/4 x 1	1.500	1.200	1.500	1.950	0.930	1.950	0.580	0.320	0.580	0.813	0.825	0.813
3/4 x 3/4 x 1	1.500	1.450	1.500	1.950	1.630	1.950	0.500	0.500	0.580	0.938	0.888	0.813
3/4 x 1/2 x 1	1.500	1.360	1.500	1.950	1.340	1.950	0.500	0.500	0.580	0.938	0.860	0.813
1 1/4 x 1 1/4 x 1	1.580	1.580	1.670	2.390	2.390	1.950	0.670	0.670	0.580	0.863	0.893	0.983
1 1/4 x 1 1/4 x 3/4	1.450	1.450	1.620	2.390	2.390	1.630	0.670	0.670	0.500	0.763	0.763	1.058
1 1/4 x 1 1/4 x 1/2	1.340	1.340	1.530	2.390	2.390	1.340	0.670	0.670	0.430	0.653	0.653	1.030
1 1/4 x 1 1/4 x 1/4	1.750	1.670	1.750	2.390	1.950	2.390	0.670	0.580	0.670	1.063	0.983	1.063
1 1/4 x 1 x 1	1.580	1.500	1.670	2.390	1.950	1.950	0.670	0.580	0.580	0.893	0.813	0.983
1 1/4 x 1 x 3/4	1.450	1.370	1.620	2.390	1.950	1.630	0.670	0.580	0.500	0.763	0.683	1.058
1 1/4 x 1 x 1/2	1.340	1.260	1.530	2.390	1.950	1.340	0.670	0.580	0.430	1.653	0.573	1.030
1 1/4 x 3/4 x 1 1/4	1.750	1.620	1.750	2.390	1.630	2.390	0.670	0.500	0.670	1.063	1.058	1.063
1 1/4 x 3/4 x 1	1.580	1.450	1.670	2.390	1.630	1.950	0.670	0.500	0.580	0.893	0.888	0.983
1 1/4 x 3/4 x 3/4	1.450	1.310	1.620	2.390	1.630	1.630	0.670	0.500	0.500	0.763	0.748	1.058
1 1/4 x 3/4 x 1/2	1.450	1.310	1.620	2.390	1.630	1.630	0.670	0.500	0.430	0.763	0.748	1.120
1 1/4 x 1/2 x 1 1/4	1.750	1.530	1.750	2.390	1.340	2.390	0.670	0.430	0.670	1.063	1.030	1.063
1 1/4 x 1/2 x 1	1.750	1.530	1.750	2.390	1.340	2.390	0.670	0.430	0.580	1.063	1.030	1.063
1 1/4 x 1/2 x 3/8	1.580	1.450	1.450	2.390	1.340	1.120	0.670	0.430	0.360	0.893	0.950	1.075
1 1/4 x 1/2 x 1/2	1.340	1.120	1.530	2.390	1.340	1.340	0.670	0.430	0.430	0.653	0.620	1.030
1 1/4 x 1/2 x 3/4	1.450	1.310	1.620	2.390	1.630	1.630	0.670	0.430	0.500	0.763	0.810	1.058
1 1/4 x 1/4 x 1 1/4	H 1.750	1.530	1.750	2.390	0.930	2.390	0.670	0.320	0.670	1.063	1.155	1.063
1 1/4 x 1/8 x 1 1/4	H 1.750	1.530	1.750	2.390	0.810	2.390	0.670	0.320	0.670	1.063	1.280	1.063
1 x 1 x 1 1/4	1.750	1.620	1.750	2.390	1.630	2.390	0.580	0.580	0.670	1.063	0.983	1.063
1 x 3/4 x 1 1/4	1.750	1.620	1.750	2.390	1.630	2.390	0.580	0.500	0.670	1.063	1.058	1.063
1 x 1/2 x 1 1/4	1.750	1.530	1.750	2.390	1.340	2.390	0.580	0.430	0.670	1.063	1.030	1.063
1 1/2 x 1 1/2 x 1 1/4	1.820	1.820	1.880	2.680	2.680	2.390	0.700	0.700	0.670	1.133	1.133	1.193
1 1/2 x 1 1/2 x 1	1.650	1.650	1.800	2.680	2.680	1.950	0.700	0.700	0.580	0.963	0.963	1.113
1 1/2 x 1 1/2 x 3/4	1.520	1.520	1.750	2.680	2.680	1.630	0.700	0.700	0.500	0.833	0.833	1.188
1 1/2 x 1 1/2 x 1/2	1.410	1.410	1.660	2.680	2.680	1.340	0.700	0.700	0.430	0.723	0.723	1.160
1 1/2 x 1 1/2 x 3/8	1.410	1.410	1.660	2.680	2.680	1.340	0.700	0.700	0.360	0.723	0.723	1.285
1 1/2 x 1 1/4 x 1/2	1.940	1.880	1.940	2.680	2.390	2.680	0.700	0.670	0.670	1.253	1.193	1.253
1 1/2 x 1 1/4 x 1 1/4	1.820	1.750	1.880	2.680	2.390	2.390	0.700	0.670	0.670	1.133	1.063	1.193

CAST IRON REDUCING TEES

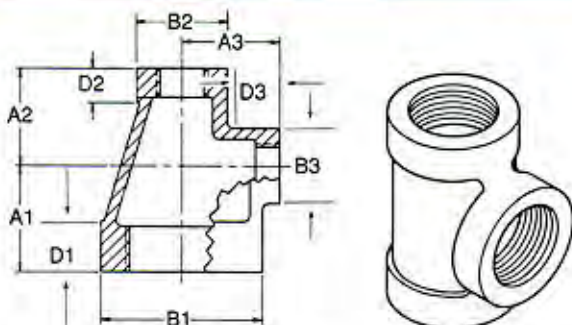
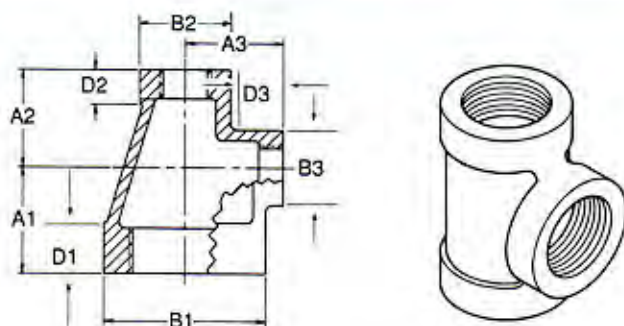


FIGURE 25

NPS H denotes Heel Ell	Center To End A1	Center To End A2	Center To End A3	Outside Dia. of Band B 1(min)	Outside Dia. of Band B 2(min)	Outside Dia. of Band B 3(min)	Thread Length D1(min)	Thread Length D 2(min)	Thread Length D 3(min)	Take Out	Take Out	Take Out
1 1/2 x 1 1/4 x 1	1.650	1.580	1.800	2.680	2.390	1.950	0.700	0.670	0.580	0.963	0.893	1.113
1 1/2 x 1 1/4 x 3/4	1.520	1.450	1.750	2.680	2.390	1.630	0.700	0.670	0.500	0.833	0.763	1.188
1 1/2 x 1 1/4 x 1/2	1.410	1.340	1.660	2.680	2.390	1.340	0.700	0.670	0.430	0.723	0.653	1.160
1 1/2 x 1 x 1 1/2	1.940	1.880	1.940	2.680	1.950	2.680	0.700	0.580	0.700	1.253	1.113	1.253
1 1/2 x 1 x 1 1/4	1.940	1.800	1.940	2.680	1.950	2.680	0.700	0.580	0.670	1.253	1.113	1.253
1 1/2 x 1 x 1	1.650	1.500	1.800	2.680	1.950	1.950	0.700	0.580	0.580	0.963	0.813	1.113
1 1/2 x 1 x 3/4	1.650	1.500	1.800	2.680	1.950	1.950	0.700	0.580	0.500	0.963	0.813	1.238
1 1/2 x 1 x 1/2	1.410	1.340	1.660	2.680	2.390	1.340	0.700	0.580	0.430	0.723	0.653	1.160
1 1/2 x 3/4 x 1 1/2	1.940	1.750	1.940	2.680	1.630	2.680	0.700	0.500	0.700	1.253	1.188	1.253
1 1/2 x 3/4 x 1 1/4	1.940	1.750	1.940	2.680	1.630	2.680	0.700	0.500	0.670	1.253	1.188	1.253
1 1/2 x 3/4 x 1	1.650	1.500	1.800	2.680	1.950	1.950	0.700	0.500	0.580	0.963	0.938	1.113
1 1/2 x 3/4 x 3/4	1.650	1.500	1.800	2.680	1.630	1.630	0.700	0.500	0.500	0.963	0.938	1.238
1 1/2 x 3/4 x 1/2	1.525	1.375	1.800	2.680	1.630	1.630	0.700	0.500	0.430	0.838	0.813	1.300
1 1/2 x 1/2 x 1 1/2	1.940	1.660	1.940	2.680	1.340	2.680	0.700	0.430	0.700	1.253	1.160	1.253
1 1/2 x 1/2 x 1 1/4	1.940	1.660	1.940	2.680	1.340	2.680	0.700	0.430	0.670	1.253	1.160	1.253
1 1/2 x 1/2 x 3/4	1.525	1.375	1.800	2.680	1.630	1.630	0.700	0.430	0.500	0.838	0.875	1.238
1 1/2 x 1/2 x 1/2	1.525	1.375	1.800	2.680	1.630	1.630	0.700	0.430	0.430	0.838	0.875	1.300
1 1/4 x 1 1/4 x 1 1/2	1.940	1.880	1.940	2.680	2.390	2.680	0.670	0.670	0.700	1.253	1.193	1.253
1 1/4 x 1 x 1 1/2	1.940	1.800	1.940	2.680	1.950	2.680	0.670	0.580	0.700	1.253	1.113	1.253
1 1/4 x 3/4 x 1 1/2	1.940	1.750	1.940	2.680	1.630	2.680	0.670	0.500	0.700	1.253	1.188	1.253
1 1/4 x 1/2 x 1 1/2	1.940	1.660	1.940	2.680	1.340	2.680	0.670	0.430	0.700	1.253	0.973	1.253
2 x 2 x 1 1/2	2.020	2.020	2.160	3.280	3.280	2.680	0.750	0.750	0.700	1.270	1.270	1.473
2 x 2 x 1 1/4	1.900	1.900	2.100	3.280	3.280	2.390	0.750	0.750	0.670	1.150	1.150	1.413
2 x 2 x 1	1.730	1.730	2.020	3.280	3.280	1.950	0.750	0.750	0.580	0.980	0.980	1.333
2 x 2 x 3/4	1.600	1.600	1.970	3.280	3.280	1.630	0.750	0.750	0.500	0.850	0.850	1.408
2 x 2 x 1/2	1.490	1.490	1.880	3.280	3.280	1.340	0.750	0.750	0.430	0.740	0.740	1.380
2 x 1 1/2 x 2	2.250	2.160	2.250	3.280	2.680	3.280	0.750	0.700	0.750	1.500	1.473	1.500
2 x 1 1/2 x 1 1/2	2.020	1.940	2.160	3.280	2.680	2.680	0.750	0.700	0.700	1.270	1.253	1.473
2 x 1 1/2 x 1 1/4	2.020	1.940	2.160	3.280	2.680	2.680	0.750	0.700	0.670	1.270	1.253	1.473
2 x 1 1/2 x 1	1.730	1.650	2.020	3.280	2.680	1.950	0.750	0.700	0.670	0.980	0.963	1.333
2 x 1 1/2 x 3/4	1.600	1.520	1.970	3.280	2.680	1.630	0.750	0.700	0.500	0.850	0.833	1.408
2 x 1 1/2 x 1/2	1.490	1.410	1.880	3.280	2.680	1.340	0.750	0.700	0.430	0.740	0.723	1.380
2 x 1 1/4 x 2	2.250	2.100	2.250	3.280	2.390	3.280	0.750	0.670	0.750	1.500	1.413	1.500
2 x 1 1/4 x 1 1/2	2.020	1.940	2.160	3.280	2.680	2.680	0.750	0.670	0.700	1.270	1.253	1.473
2 x 1 1/4 x 1 1/4	1.900	1.750	2.100	3.280	2.390	2.390	0.750	0.670	0.670	1.150	1.063	1.413
2 x 1 1/4 x 1	1.900	1.750	2.100	3.280	2.390	2.390	0.750	0.670	0.580	1.150	1.063	1.413
2 x 1 1/4 x 1/2	1.490	1.410	1.880	3.280	2.680	1.340	0.750	0.670	0.430	0.740	0.723	1.380
2 x 1 x 2	2.250	2.020	2.250	3.280	1.950	3.280	0.750	0.580	0.750	1.500	1.333	1.500
2 x 1 x 1 1/2	2.250	2.020	2.250	3.280	1.950	3.280	0.750	0.580	0.700	1.500	1.333	1.563
2 x 1 x 1 1/4	1.900	1.750	2.100	3.280	2.390	2.390	0.750	0.580	0.670	1.150	1.063	1.413
2 x 1 x 1	1.730	1.940	2.020	3.280	1.950	1.950	0.750	0.580	0.580	0.980	1.253	1.333
2 x 1 x 3/4	1.730	1.940	2.020	3.280	1.950	1.950	0.750	0.580	0.500	0.980	1.253	1.458
2 x 3/4 x 2	2.250	1.970	2.250	3.280	1.630	3.280	0.750	0.500	0.750	1.500	1.408	1.500
2 x 3/4 x 1 1/2	H 2.250	1.970	2.250	3.280	1.630	3.280	0.750	0.500	0.700	1.500	1.408	1.563
2 x 3/4 x 1 1/4	2.250	1.970	2.250	3.280	1.630	3.280	0.750	0.500	0.670	1.500	1.408	1.563
2 x 3/4 x 1	1.730	1.940	2.020	3.280	1.950	1.950	0.750	0.500	0.580	0.980	1.378	1.333
2 x 3/4 x 3/4	1.600	1.600	1.970	3.280	1.630	1.630	0.750	0.500	0.500	0.850	1.038	1.408
2 x 3/4 x 1/2	1.600	1.600	1.970	3.280	1.630	1.630	0.750	0.500	0.500	0.850	1.038	1.470
2 x 1/2 x 2	2.250	1.880	2.250	3.280	1.340	3.280	0.750	0.430	0.750	1.500	1.380	1.500
2 x 1/2 x 1 1/2	2.020	1.660	2.160	3.280	1.340	2.680	0.750	0.430	0.700	1.270	1.160	1.473

CAST IRON REDUCING TEES

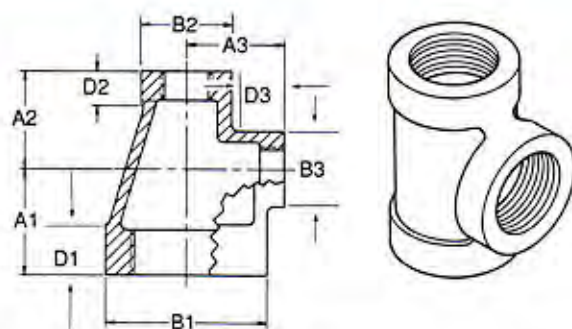
FIGURE 25



NPS H denotes Heel Ell	Center To End A1	Center To End A2	Center To End A3	Outside Dia. of Band B1(min)	Outside Dia. of Band B2(min)	Outside Dia. of Band B3(min)	Thread Length D1(min)	Thread Length D2(min)	Thread Length D3(min)	Take Out	Take Out	Take Out
2 x 1/2 x 1 1/4	1.730	1.730	2.020	3.280	1.340	2.680	0.750	0.430	0.670	1.270	1.160	1.473
2 x 1/2 x 3/4	1.600	1.600	1.970	3.280	1.630	1.630	0.750	0.430	0.500	0.850	1.100	1.408
2 x 1/2 x 1/2	1.600	1.600	1.970	3.280	1.630	1.630	0.750	0.430	0.430	0.850	1.100	1.470
1 1/2 x 1 1/2 x 2	2.160	2.160	2.020	2.680	2.680	3.280	0.700	0.700	0.750	1.473	1.473	1.270
1 1/2 x 1 1/4 x 2	2.250	2.100	2.250	3.280	2.390	3.280	0.700	0.670	0.750	1.563	1.413	1.500
1 1/2 x 1 x 2	2.250	2.020	2.250	3.280	1.950	3.280	0.700	0.580	0.750	1.563	1.333	1.500
2 1/2 x 2 1/2 x 2	2.390	2.390	2.600	3.860	3.860	3.280	0.920	0.920	0.750	1.453	1.453	1.850
2 1/2 x 2 1/2 x 1 1/2	2.160	2.160	2.510	3.860	3.860	2.680	0.920	0.920	0.700	1.223	1.223	1.823
2 1/2 x 2 1/2 x 1 1/4	2.040	2.040	2.450	3.860	3.860	2.390	0.920	0.920	0.670	1.103	1.103	1.763
2 1/2 x 2 1/2 x 1	1.870	1.870	2.370	3.860	3.860	1.950	0.920	0.920	0.580	0.933	0.933	1.683
2 1/2 x 2 1/2 x 3/4	1.870	1.870	2.370	3.860	3.860	1.950	0.920	0.920	0.500	0.933	0.933	1.808
2 1/2 x 2 1/2 x 1/2	1.870	1.870	2.370	3.860	3.860	1.950	0.920	0.920	0.430	0.933	0.933	1.870
2 1/2 x 2 x 2 1/2	2.700	2.600	2.700	3.860	3.280	3.860	0.920	0.750	0.920	1.763	1.850	1.763
2 1/2 x 2 x 2	2.390	2.250	2.600	3.860	3.280	3.280	0.920	0.750	0.750	1.453	1.500	1.850
2 1/2 x 2 x 1 1/2	2.390	2.250	2.600	3.860	3.280	3.280	0.920	0.750	0.700	1.453	1.500	1.913
2 1/2 x 2 x 1 1/4	2.040	1.900	2.450	3.860	3.280	2.390	0.920	0.750	0.670	1.103	1.150	1.763
2 1/2 x 2 x 1	2.040	1.900	2.450	3.860	3.280	2.390	0.920	0.750	0.580	1.103	1.150	1.763
2 1/2 x 2 x 3/4	1.870	1.870	2.370	3.860	3.860	1.950	0.920	0.750	0.580	0.933	1.120	1.808
2 1/2 x 2 x 1/2	1.630	1.490	2.230	3.860	3.280	1.340	0.920	0.750	0.430	0.693	0.740	1.730
2 1/2 x 1 1/2 x 2 1/2	2.700	2.510	2.700	3.860	2.680	3.860	0.920	0.700	0.920	1.763	1.823	1.763
2 1/2 x 1 1/2 x 2	2.390	2.250	2.600	3.860	3.280	3.280	0.920	0.750	0.750	1.453	1.563	1.850
2 1/2 x 1 1/2 x 1 1/2	2.160	1.940	2.510	3.860	2.680	2.680	0.920	0.700	0.700	1.223	1.253	1.823
2 1/2 x 1 1/2 x 1 1/4	2.040	1.900	2.450	3.860	3.280	2.390	0.920	0.700	0.670	1.103	1.213	1.763
2 1/2 x 1 1/2 x 1	1.630	1.490	2.230	3.860	3.280	1.340	0.920	0.700	0.430	0.693	0.803	1.730
2 1/2 x 1 1/4 x 2 1/2	2.700	2.450	2.700	3.860	2.390	3.860	0.920	0.670	0.920	1.763	1.763	1.763
2 1/2 x 1 1/4 x 2	2.700	2.450	2.700	3.860	2.390	3.860	0.920	0.670	0.750	1.763	1.763	1.950
2 1/2 x 1 1/4 x 1 1/2	2.160	1.940	2.510	3.860	2.680	2.680	0.920	0.670	0.700	1.223	1.253	1.823
2 1/2 x 1 1/4 x 1 1/4	2.040	1.900	2.450	3.860	2.390	2.390	0.920	0.670	0.670	1.103	1.213	1.763
2 1/2 x 1 1/4 x 1	2.140	2.120	2.510	3.860	2.390	2.390	0.920	0.670	0.580	1.203	1.433	1.823
2 1/2 x 1 x 2 1/2	2.700	2.450	2.700	3.860	2.390	3.860	0.920	0.580	0.920	1.763	1.763	1.763
2 1/2 x 1 x 2	2.700	2.450	2.700	3.860	2.390	3.860	0.920	0.580	0.700	1.763	1.763	1.950
2 1/2 x 1 x 1 1/4	2.140	2.120	2.510	3.860	2.390	2.390	0.920	0.580	0.670	1.203	1.433	1.823
2 1/2 x 1 x 1	1.940	1.750	2.370	3.860	1.950	1.950	0.920	0.580	0.580	1.003	1.063	1.683
2 1/2 x 1 x 3/4	1.940	1.750	2.370	3.860	1.950	1.950	0.920	0.580	0.500	1.003	1.063	1.808
2 1/2 x 3/4 x 2 1/2	2.700	2.320	2.700	3.860	1.630	3.860	0.920	0.500	0.920	1.763	1.758	1.763
2 1/2 x 3/4 x 2	H 2.700	2.320	2.700	3.860	1.630	3.860	0.920	0.500	0.750	1.763	1.758	1.950
2 1/2 x 3/4 x 1	1.940	1.750	2.370	3.860	1.950	1.950	0.920	0.500	0.580	1.003	1.188	1.683
2 1/2 x 3/4 x 3/4	1.940	1.750	2.370	3.860	1.950	1.950	0.920	0.500	0.500	1.003	1.188	1.808
2 1/2 x 1/2 x 2 1/2	H 2.700	2.230	2.700	3.860	1.340	3.860	0.920	0.430	0.920	1.763	1.730	1.763
2 1/2 x 1/2 x 2	H 2.700	2.600	2.700	3.860	1.340	3.860	0.920	0.430	0.750	1.763	2.100	1.950
2 x 2 x 2 1/2	2.600	2.600	2.390	3.280	3.280	3.860	0.750	0.750	0.920	1.850	1.850	1.453
2 x 1 1/2 x 2 1/2	2.600	2.600	2.390	3.280	3.280	3.860	0.750	0.700	0.920	1.850	1.913	1.453
2 x 1 1/4 x 2 1/2	2.700	2.450	2.700	3.860	2.390	3.860	0.750	0.670	0.920	1.950	1.763	1.763
2 x 1 x 2 1/2	2.700	2.450	2.700	3.860	2.390	3.860	0.750	0.580	0.920	1.950	1.763	1.763
2 x 3/4 x 2 1/2	H 2.700	2.320	2.700	3.860	1.630	3.860	0.750	0.500	0.920	1.950	1.758	1.763
1 1/2 x 1 1/2 x 2 1/2	2.510	2.510	2.160	2.680	2.680	3.860	0.700	0.700	0.920	1.823	1.823	1.223
3 x 3 x 2 1/2	2.830	2.830	2.990	4.620	4.620	3.860	0.980	0.980	0.920	1.830	1.830	2.053
3 x 3 x 2	2.520	2.520	2.890	4.620	4.620	3.280	0.980	0.980	0.750	1.520	1.520	2.140
3 x 3 x 1 1/2	2.520	2.520	2.890	4.620	4.620	3.280	0.980	0.980	0.700	1.520	1.520	2.203
3 x 3 x 1 1/4	2.170	2.170	2.740	4.620	4.620	2.390	0.980	0.980	0.670	1.170	1.170	2.053

CAST IRON REDUCING TEES

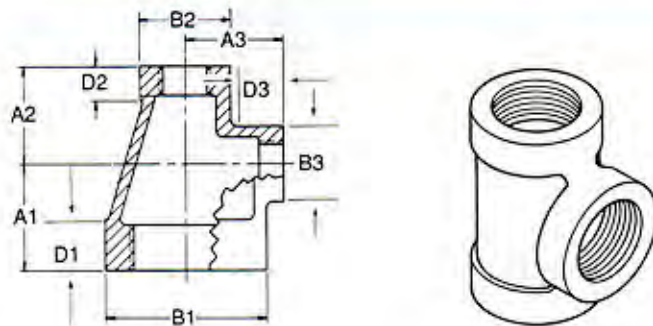
FIGURE 25



NPS H denotes Heel Ell	Center To End A1	Center To End A2	Center To End A3	Outside Dia. of Band B1(min)	Outside Dia. of Band B2(min)	Outside Dia. of Band B3(min)	Thread Length D1(min)	Thread Length D2(min)	Thread Length D3(min)	Take Out	Take Out	Take Out
3 x 3 x 1	2.000	2.000	2.660	4.620	4.620	1.950	0.980	0.980	0.580	1.000	1.000	1.973
3 x 2 1/2 x 3	3.080	2.990	3.080	4.620	3.860	4.620	0.980	0.920	0.980	2.080	2.053	2.080
3 x 2 1/2 x 2 1/2	2.830	2.700	2.990	4.620	3.860	3.860	0.980	0.920	0.920	1.830	1.763	2.053
3 x 2 1/2 x 2	2.830	2.700	2.990	4.620	3.860	3.860	0.980	0.920	0.750	1.830	1.763	2.240
3 x 2 1/2 x 1 1/4	2.170	2.170	2.740	4.620	4.620	2.390	0.980	0.920	0.670	1.170	1.233	2.053
3 x 2 x 3	3.080	2.890	3.080	4.620	3.280	4.620	0.980	0.750	0.980	2.080	2.140	2.080
3 x 2 x 2 1/2	3.080	2.890	3.080	4.620	3.280	4.620	0.980	0.750	0.920	2.080	2.140	2.143
3 x 2 x 2	2.520	2.250	2.890	4.620	3.280	3.280	0.980	0.750	0.750	1.520	1.500	2.140
3 x 2 x 1 1/2	2.520	2.250	2.890	4.620	3.280	3.280	0.980	0.750	0.700	1.520	1.500	2.203
3 x 1 1/2 x 3	3.080	2.890	3.080	4.620	3.280	4.620	0.980	0.700	0.980	2.080	2.203	2.080
3 x 1 1/2 x 2	2.520	2.250	2.890	4.620	3.280	3.280	0.980	0.700	0.750	1.520	1.563	2.140
3 x 1 1/2 x 1 1/2	2.520	2.250	2.890	4.620	3.280	3.280	0.980	0.700	0.700	1.520	1.563	2.203
3 x 1 1/4 x 3	H 3.080	2.740	3.080	4.620	2.390	4.620	0.980	0.670	0.980	2.080	2.053	2.080
3 x 1 1/4 x 2	H 2.520	2.700	2.890	4.620	2.390	3.280	0.980	0.670	0.750	1.520	2.013	2.140
3 x 1 x 3	H 3.080	2.740	3.080	4.620	1.950	4.620	0.980	0.580	0.980	2.080	2.053	2.080
3 x 1 x 2	H 2.520	2.630	2.890	4.620	1.950	3.280	0.980	0.580	0.750	1.520	1.943	2.140
3 x 3/4 x 3	H 3.080	2.610	3.080	4.620	1.630	4.620	0.980	0.500	0.980	2.080	2.048	2.080
1 1/2 x 1 1/2 x 3	2.830	2.830	2.275	2.680	2.680	4.620	0.700	0.700	0.980	2.143	2.143	1.275
2 x 2 x 3	3.080	2.890	3.080	4.620	3.280	4.620	0.750	0.750	0.980	2.330	2.140	2.080
2 1/2 x 2 1/2 x 3	3.080	2.990	3.080	4.620	3.860	4.620	0.920	0.920	0.980	2.143	2.053	2.080
2 1/2 x 2 x 3	3.080	2.890	3.080	4.620	3.280	4.620	0.920	0.750	0.980	2.143	2.140	2.080
3 1/2 x 3 1/2 x 4	3.790	3.790	3.790	5.790	5.790	5.790	1.030	1.030	1.080	2.728	2.728	2.665
3 1/2 x 3 1/2 x 3	3.420	3.420	3.420	5.200	5.200	5.200	1.030	1.030	0.980	2.358	2.358	2.420
3 1/2 x 3 1/2 x 2 1/2	2.930	2.930	3.240	5.200	5.200	3.860	1.030	1.030	0.920	1.868	1.868	2.303
3 1/2 x 3 1/2 x 2	2.620	2.620	3.140	5.200	5.200	3.280	1.030	1.030	0.750	1.558	1.558	2.390
3 1/2 x 3 1/2 x 1 1/2	2.390	2.390	3.050	5.200	5.200	2.680	1.030	1.030	0.700	1.703	1.328	2.363
3 1/2 x 3 1/2 x 1 1/4	2.270	2.270	2.990	5.200	5.200	2.390	1.030	1.030	0.670	1.208	1.208	2.303
3 1/2 x 3 1/2 x 1	2.100	2.100	2.910	5.200	5.200	1.950	1.030	1.030	0.580	1.038	1.038	2.223
3 1/2 x 3 x 3 1/2	3.420	3.420	3.420	5.200	5.200	5.200	1.030	0.980	1.030	2.358	2.420	2.358
3 1/2 x 3 x 3	3.420	3.420	3.420	5.200	5.200	5.200	1.030	0.980	0.980	2.358	2.420	2.420
3 1/2 x 3 x 2 1/2	2.930	2.830	3.240	5.200	4.620	3.860	1.030	0.980	0.920	1.868	1.830	2.303
3 1/2 x 3 x 2	2.620	2.520	3.140	5.200	4.620	3.280	1.030	0.980	0.750	1.558	1.520	2.390
3 1/2 x 3 x 1 1/2	2.390	2.290	3.050	5.200	4.620	3.860	1.030	0.980	0.750	1.328	1.290	2.363
3 1/2 x 3 x 1 1/4	2.390	2.290	3.050	5.200	4.620	2.390	1.030	0.980	0.670	1.328	1.290	2.363
3 1/2 x 1 1/4 x 3 1/2	H 3.420	2.990	3.420	5.200	2.390	5.200	1.030	0.670	1.030	2.358	2.303	2.733
3 1/2 x 1 x 3 1/2	H 3.420	2.910	3.420	5.200	1.950	5.200	1.030	0.580	1.030	2.358	2.223	2.358
3 x 3 x 3 1/2	3.420	3.420	3.420	5.200	5.200	5.200	0.980	0.980	1.030	2.420	2.420	2.358
4 x 4 x 3 1/2	3.790	3.790	3.790	5.790	5.790	5.790	1.080	1.080	1.030	2.665	2.665	2.728
4 x 4 x 3	3.300	3.300	3.600	5.790	5.790	5.200	1.080	1.080	0.980	2.175	2.175	2.600
4 x 4 x 2 1/2	3.050	3.050	3.510	5.790	5.790	3.860	1.080	1.080	0.920	1.925	1.925	2.760
4 x 4 x 2	2.740	2.740	3.410	5.790	5.790	3.280	1.080	1.080	0.750	1.615	1.615	2.660
4 x 4 x 1 1/2	2.740	2.740	3.410	5.790	5.790	3.280	1.080	1.080	0.700	1.615	1.615	2.723
4 x 3 1/2 x 4	3.790	3.790	3.790	5.790	5.790	5.790	1.080	1.030	1.080	2.665	2.728	2.665
4 x 3 x 4	3.790	3.600	3.790	5.790	4.620	5.790	1.080	0.980	1.080	2.665	2.600	2.665
4 x 2 1/2 x 4	3.790	3.510	3.790	5.790	3.860	5.790	1.080	0.920	1.080	2.665	2.573	2.665
4 x 2 x 4	3.790	3.410	3.790	5.790	3.280	5.790	1.080	0.750	1.080	2.665	2.660	2.665
4 x 1 1/2 x 4	3.790	3.410	3.790	5.790	3.280	5.790	1.080	0.700	1.080	2.665	2.723	2.665
4 x 1 1/4 x 4	H 3.790	3.260	3.790	5.790	2.390	5.790	1.080	0.670	1.080	2.665	2.573	2.665
4 x 1 x 4	H 3.790	3.180	3.790	5.790	1.950	5.790	1.080	0.580	1.080	2.665	2.493	2.665
4 x 3 1/2 x 3 1/2	3.790	3.790	3.790	5.790	5.790	5.790	1.080	1.030	1.030	2.665	2.728	2.728

CAST IRON REDUCING TEES

FIGURE 25



NPS H denotes Heel Ell	Center To End A1	Center To End A 2	Center To End A 3	Outside Dia. of Band B1(min)	Outside Dia. of Band B 2(min)	Outside Dia. of Band B 3(min)	Thread Length D1(min)	Thread Length D2(min)	Thread Length D3(min)	Take Out	Take Out	Take Out
4 x 3 1/2 x 3	3.300	3.300	3.600	5.790	5.200	4.620	1.080	1.030	0.980	2.175	2.238	2.600
4 x 3 1/2 x 2 1/2	3.050	3.050	3.510	5.790	5.790	3.860	1.080	1.030	0.920	1.925	1.988	2.573
4 x 3 1/2 x 2	2.740	2.620	3.410	5.790	5.200	3.280	1.080	1.030	0.750	1.615	1.558	2.660
4 x 3 1/2 x 1 1/2	2.510	2.390	3.320	5.790	5.200	2.680	1.080	1.030	0.700	1.385	1.328	2.663
4 x 3 x 3 1/2	3.790	3.690	3.790	5.790	3.860	5.790	1.080	0.980	1.030	2.665	2.690	2.728
4 x 3 x 3	3.540	3.420	3.690	5.790	4.620	4.620	1.080	0.980	0.980	2.415	2.420	2.690
4 x 3 x 2 1/2	3.300	3.080	3.600	5.790	4.620	3.860	1.080	0.980	0.920	2.175	2.080	2.663
4 x 3 x 2	2.740	2.620	3.410	5.790	5.200	3.280	1.080	0.980	0.750	1.615	1.620	2.660
4 x 3 x 1 1/2	2.510	2.390	3.320	5.790	5.200	2.680	1.080	0.980	0.700	1.385	1.390	2.633
4 x 2 1/2 x 3	3.300	3.080	3.600	5.790	3.860	3.860	1.080	0.920	0.980	2.175	2.143	2.600
4 x 2 1/2 x 2 1/2	3.050	2.700	3.510	5.790	3.280	3.280	1.080	0.920	0.920	1.925	1.763	2.573
4 x 2 1/2 x 2	3.050	2.700	3.510	5.790	3.860	3.860	1.080	0.920	0.750	1.925	1.763	2.760
4 x 2 x 2	2.740	2.250	3.410	5.790	3.280	3.280	1.080	0.750	0.750	1.615	1.500	2.660
4 x 2 x 1 1/2	2.740	2.250	3.410	5.790	3.280	3.280	1.080	0.750	0.700	1.615	1.500	2.723
4 x 1 1/2 x 2	2.740	2.250	3.410	5.790	3.280	3.280	1.080	0.700	0.750	1.615	1.563	2.660
4 x 1 1/2 x 1 1/2	2.740	2.250	3.410	5.790	1.950	5.790	1.080	0.700	0.700	1.615	1.563	2.723

CAST IRON REDUCING COUPLINGS

FIGURE 29

NPS **Hex Head	Outside Dia. of Band A1 (min)	Outside Dia. of Band A2 (min)	Take Out	Take Out	Length of Fitting D*
1 x 3/4***	1.990	1.625	0.270	0.350	1.700
1 x 1/2***	1.990	1.313	0.270	0.420	1.700
1 1/4 x 1"	2.390	1.950	0.395	0.485	2.130
1 1/4 x 3/4"	2.390	1.950	0.395	0.565	2.130
1 1/2 x 1 1/4"	2.680	2.390	0.425	0.455	2.250
1 1/2 x 1"	2.680	2.390	0.425	0.545	2.250
2 x 1 1/2"	3.280	2.680	0.410	0.460	2.320
2 x 1 1/4"	3.280	2.390	0.445	0.525	2.390
2 x 1"	3.280	1.950	0.410	0.580	2.320
2 x 3/4"	3.280	1.630	0.410	0.660	2.320
2 x 1/2"	3.280	1.630	0.410	0.730	2.320
2 1/2 x 2"	3.860	3.280	0.395	0.565	2.630
2 1/2 x 1 1/2"	3.860	3.280	0.395	0.615	2.630
3 x 2"	4.620	3.280	0.460	0.690	2.880
3 x 1 1/2"	4.620	3.280	0.460	0.740	2.880

