

## SECTION 1

### Standard Malleable Pipe Fittings Class 150



#### Pressure / Temperature Ratings

Temp F°	PSI
-20 TO 150	300
200	265
250	225
300	185
350	150
366	150

**Ward Class 150 Malleable Iron Fittings** are made with the most sophisticated metallurgical and processing controls available. Iron samples are continuously analyzed using spectroscopy to conform the material quality. This sophisticated chemical analysis is complemented by rigorous quality control of incoming raw materials and iron processing. The final casting produced by this detailed attention to quality is a close-grained, high strength, non-porous iron.

Quality iron is the starting point for Ward fittings. From this iron, accurate threads are machined that comply with the precise standards developed by the American Society of Mechanical Engineers (ASME) and published as an American National Standard. The threads have an accurate form, thread length and straightness to allow them to easily engage threaded pipe. In addition, Ward fittings have a chamfered opening to allow faster and easier pipe engagement. This feature also protects the fitting threads from damage during handling.

All Ward black & galvanized Class 150 Malleable Iron Fittings having outlets ranging from 1/2" through 4" are air tested at 80 psig. This test is part of a constant program to maintain the highest quality fittings available.

#### General Dimensions / In Inches

These dimensions apply to all standard malleable banded fittings, both straight and reducing. Length of thread also applies to plain fittings. For center-to-face dimensions, see fittings tables.

NPS	O.D. of Band (min)	Thread Length (min)
1/8	0.69	0.25
1/4	0.84	0.32
3/8	1.01	0.36
1/2	1.20	0.43
3/4	1.46	0.50
1	1.77	0.58
1 1/4	2.15	0.67
1 1/2	2.43	0.70
2	2.96	0.75
2 1/2	3.59	0.92
3	4.28	0.98
3 1/2	4.84	1.03
4	5.40	1.08

<b>Material:</b>	ASTM A197
<b>Dimensions:</b>	ASME B16.3 ANSI/ASME B1.20.1
<b>Pressure Ratings:</b>	ASME B16.3
<b>Coatings:</b>	ASTM A153 ASTM B633
<b>Additional Specifications:</b>	UL, ULC, FM, NSF 61 and NSF 61 Annex G where applicable

# MALLEABLE IRON REDUCING TEES CLASS 150

NPS	Center to End X	Center to End Y	Center to End Z	Outside Dia. H (min)	Outside Dia. H2 (min)	Outside Dia. H3 (min)	Thread Length B (min)	Thread Length B2 (min)	Thread Length B3 (min)	Take Out	Take Out	Take Out
1/4 x 1/4 x 1/8	—	—	—	—	—	—	—	—	—	—	—	—
1/8 x 1/8 x 1/4	—	—	—	—	—	—	—	—	—	—	—	—
3/8 x 3/8 x 1/4	—	—	—	—	—	—	—	—	—	—	—	—
3/8 x 1/4 x 3/8	—	—	—	—	—	—	—	—	—	—	—	—
3/8 x 1/4 x 1/4	—	—	—	—	—	—	—	—	—	—	—	—
1/4 x 1/4 x 3/8	—	—	—	—	—	—	—	—	—	—	—	—
1/2 x 1/2 x 3/8	1.04	1.04	1.03	0.43	0.43	0.36	1.20	1.20	1.01	0.50	0.50	0.62
1/2 x 1/2 x 1/4	0.97	0.97	0.98	0.43	0.43	0.32	1.20	1.20	0.84	0.43	0.43	0.57
1/2 x 3/8 x 1/2	1.12	1.03	1.12	0.43	0.36	0.43	1.20	1.01	1.20	0.58	0.62	0.58
1/2 x 3/8 x 3/8	1.04	0.950	1.03	0.43	0.36	0.36	1.20	1.01	1.01	0.50	0.54	0.62
1/2 x 1/4 x 1/2	1.12	0.98	1.12	0.43	0.32	0.43	1.20	0.84	1.20	0.58	0.60	0.58
3/8 x 3/8 x 1/2	1.03	1.03	1.04	0.36	0.36	0.43	1.01	1.01	1.20	0.62	0.62	0.50
3/4 x 3/4 x 1/2	1.20	1.20	1.22	0.50	0.50	0.43	1.46	1.46	1.20	0.65	0.65	0.68
3/4 x 3/4 x 3/8	1.12	1.12	1.13	0.50	0.50	0.36	1.46	1.46	1.01	0.57	0.57	0.72
3/4 x 3/4 x 1/4	1.05	1.05	1.08	0.50	0.50	0.32	1.46	1.46	0.84	0.50	0.50	0.67
3/4 x 1/2 x 3/4	1.31	1.22	1.31	0.50	0.43	0.50	1.46	1.20	1.46	0.76	0.68	0.76
3/4 x 1/2 x 1/2	1.20	1.12	1.22	0.50	0.43	0.43	1.46	1.20	1.20	0.65	0.58	0.68
3/4 x 3/8 x 3/4	1.31	1.13	1.13	0.50	0.36	0.50	1.46	1.01	1.46	0.76	0.72	0.58
3/4 x 3/8 x 3/8	—	—	—	—	—	—	—	—	—	—	—	—
3/4 x 1/4 x 3/4	1.31	1.08	1.31	0.50	0.32	0.50	1.46	0.84	1.46	0.76	0.67	0.76
1/2 x 1/2 x 3/4	1.22	1.22	1.20	0.43	0.43	0.50	1.20	1.20	1.46	0.68	0.68	0.65
1 x 1 x 3/4	1.37	1.37	1.45	0.58	0.58	0.50	1.77	1.77	1.46	0.68	0.68	0.90
1 x 1 x 1/2	1.26	1.26	1.36	0.58	0.58	0.43	1.77	1.77	1.20	0.57	0.57	0.82
1 x 1 x 3/8	1.18	1.18	1.27	0.58	0.58	0.36	1.77	1.77	1.01	0.49	0.49	0.86
1 X 1 X 1/4	1.11	1.11	1.22	0.58	0.58	0.32	1.77	1.77	0.84	0.42	0.42	0.81
1 x 3/4 x 1	1.50	1.45	1.50	0.58	0.50	0.58	1.77	1.46	1.77	0.81	0.90	0.81
1 x 3/4 x 3/4	1.37	1.31	1.45	0.58	0.50	0.50	1.77	1.46	1.46	0.68	0.76	0.90
1 x 3/4 x 1/2	1.26	1.20	1.36	0.58	0.50	0.43	1.77	1.46	1.20	0.57	0.65	0.82
1 x 1/2 x 1	1.50	1.36	1.50	0.58	0.43	0.58	1.77	1.20	1.77	0.81	0.82	0.81
1 x 1/2 x 3/4	1.37	1.22	1.45	0.58	0.43	0.50	1.77	1.20	1.46	0.68	0.68	0.90
1 x 1/2 x 1/2	1.26	1.12	1.36	0.58	0.43	0.43	1.77	1.20	1.20	0.57	0.58	0.82
1 x 3/8 x 1	—	—	—	—	—	—	—	—	—	—	—	—
*1 x 1/4 x 1	1.50	1.20	1.50	0.58	0.32	0.58	1.77	0.84	1.77	0.81	0.79	0.81
1 x 1/8 x 1	—	—	—	—	—	—	—	—	—	—	—	—
3/4 x 3/4 x 1	1.45	1.45	1.37	0.50	0.50	0.58	1.46	1.46	1.77	0.90	0.90	0.68
1/2 x 1/2 x 1	—	—	—	—	—	—	—	—	—	—	—	—
1 1/4 x 1 1/4 x 1	1.58	1.58	1.67	0.67	0.67	0.58	2.15	2.15	1.77	0.87	0.87	0.98
1 1/4 x 1 1/4 x 3/4	1.45	1.45	1.62	0.67	0.67	0.50	2.15	2.15	1.46	0.74	0.74	1.07
1 1/4 x 1 1/4 x 1/2	1.34	1.34	1.53	0.67	0.67	0.43	2.15	2.15	1.20	0.63	0.63	0.99
1 1/4 x 1 1/4 x 3/8	—	—	—	—	—	—	—	—	—	—	—	—
1 1/4 x 1 x 1 1/4	1.75	1.67	1.75	0.67	0.58	0.67	2.15	1.77	2.15	1.04	0.98	1.04
1 1/4 x 1 x 1	1.58	1.50	1.67	0.67	0.58	0.58	2.15	1.77	1.77	0.87	0.81	0.98
1 1/4 x 1 x 3/4	1.45	1.37	1.62	0.67	0.58	0.50	2.15	1.77	1.46	0.74	0.68	1.07
1 1/4 x 1 x 1/2	1.34	1.26	1.53	0.67	0.58	0.43	2.15	1.77	1.20	0.63	0.57	0.99
1 1/4 x 3/4 x 1 1/4	1.75	1.62	1.75	0.67	0.50	0.67	2.15	1.46	2.15	1.04	1.07	1.04
1 1/4 x 3/4 x 1	1.58	1.45	1.67	0.67	0.50	0.58	2.15	1.46	1.77	0.87	0.90	0.98
1 1/4 x 3/4 x 3/4	1.45	1.31	1.62	0.67	0.50	0.50	2.15	1.46	1.46	0.74	0.76	1.07
1 1/4 x 1/2 x 1 1/4	1.75	1.53	1.75	0.67	0.43	0.67	2.15	1.20	2.15	1.04	0.99	1.04
1 1/4 x 1/2 x 1	—	—	—	—	—	—	—	—	—	—	—	—
1 x 1 x 1 1/4	1.67	1.67	1.58	0.58	0.58	0.67	1.77	1.77	2.15	0.98	0.96	0.87
3/4 x 3/4 x 1 1/4	—	—	—	—	—	—	—	—	—	—	—	—
1 1/2 x 1 1/2 x 1 1/4	1.82	1.82	1.88	0.70	0.70	0.67	2.43	2.43	2.15	1.09	1.09	1.17
1 1/2 x 1 1/2 x 1	1.65	1.65	1.80	0.70	0.70	0.58	2.43	2.43	1.77	0.92	0.92	1.11
1 1/2 x 1 1/2 x 3/4	1.52	1.52	1.75	0.70	0.70	0.50	2.43	2.43	1.46	0.79	0.79	1.20
1 1/2 x 1 1/2 x 1/2	1.41	1.41	1.66	0.70	0.70	0.43	2.43	2.43	1.20	0.68	0.68	1.12
1 1/2 x 1 1/4 x 1 1/2	1.94	1.88	1.94	0.70	0.67	0.70	2.43	2.15	2.43	1.21	1.17	1.21
1 1/2 x 1 1/4 x 1 1/4	1.82	1.75	1.88	0.70	0.67	0.67	2.43	2.15	2.15	1.09	1.04	1.17
1 1/2 x 1 1/4 x 1	1.65	1.58	1.80	0.70	0.67	0.58	2.43	2.15	1.77	0.92	0.87	1.11
1 1/2 x 1 1/4 x 3/4	1.52	1.45	1.75	0.70	0.67	0.50	2.43	2.15	1.46	0.79	0.74	1.20
1 1/2 x 1 1/4 x 1/2	1.41	1.34	1.66	0.70	0.67	0.43	2.43	2.15	1.20	0.68	0.63	1.12

\* Manufactured to WARD specifications

NPS	Center to End X	Center to End Y	Center to End Z	Outside Dia. H (min)	Outside Dia. H2 (min)	Outside Dia. H3 (min)	Thread Length B (min)	Thread Length B2 (min)	Thread Length B3 (min)	Take Out	Take Out	Take Out
1 1/2 x 1 x 1 1/2	1.94	1.80	1.94	0.70	0.58	0.70	2.43	1.77	2.43	1.21	1.11	1.21
1 1/2 x 1 x 1 1/4	—	—	—	—	—	—	—	—	—	—	—	—
1 1/2 x 1 x 1	1.65	1.50	1.80	0.70	0.58	0.58	2.43	1.77	1.77	0.92	0.81	1.11
1 1/2 x 3/4 x 1 1/2	1.94	1.75	1.94	0.70	0.50	0.70	2.43	1.46	2.43	1.21	1.20	1.21
*1 1/2 x 3/4 x 3/4	1.55	1.35	1.77	0.70	0.50	0.50	2.43	1.46	1.46	0.82	0.80	1.22
1 1/2 x 1/2 x 1 1/2	1.94	1.66	1.94	0.70	0.43	0.70	2.43	1.20	2.43	1.21	1.12	1.21
1 1/4 x 1 1/4 x 1 1/2	1.88	1.88	1.82	0.67	0.67	0.70	2.15	2.15	2.43	1.17	1.17	1.09
1 x 1 x 1 1/2	1.80	1.80	1.65	0.58	0.58	0.70	1.77	1.77	2.43	1.11	1.11	0.92
2 x 2 x 1 1/2	2.02	2.02	2.16	0.75	0.75	0.70	2.96	2.96	2.43	1.26	1.26	1.43
2 x 2 x 1 1/4	1.90	1.90	2.10	0.75	0.75	0.67	2.96	2.96	2.15	1.14	1.14	1.39
2 x 2 x 1	1.73	1.73	2.02	0.75	0.75	0.58	2.96	2.96	1.77	0.97	0.97	1.33
2 x 2 x 3/4	1.60	1.60	1.97	0.75	0.75	0.50	2.96	2.96	1.46	0.84	0.84	1.42
2 x 2 x 1/2	1.49	1.49	1.88	0.75	0.75	0.43	2.96	2.96	1.20	0.73	0.73	1.34
2 x 1 1/2 x 2	2.25	2.16	2.25	0.75	0.70	0.75	2.96	2.43	2.96	1.49	1.43	1.49
2 x 1 1/2 x 1 1/2	2.02	1.94	2.16	0.75	0.70	0.70	2.96	2.43	2.43	1.26	1.21	1.43
2 x 1 1/2 x 1 1/4	1.90	1.82	2.10	0.75	0.70	0.67	2.96	2.43	2.15	1.14	1.09	1.39
2 x 1 1/2 x 1	1.73	1.65	2.02	0.75	0.70	0.58	2.96	2.43	1.77	0.97	0.92	1.33
2 x 1 1/4 x 2	2.25	2.10	2.25	0.75	0.67	0.75	2.96	2.15	2.96	1.49	1.39	1.49
2 X 1 1/4 X 1 1/2	—	—	—	—	—	—	—	—	—	—	—	—
2 x 1 1/4 x 1 1/4	1.90	1.75	2.10	0.75	0.67	0.67	2.96	2.15	2.15	1.14	1.04	1.39
2 x 1 x 2	2.25	2.02	2.25	0.75	0.58	0.75	2.96	1.77	2.96	1.49	1.33	1.49
*2 x 1 x 1	1.78	1.68	2.08	0.75	0.58	0.58	2.96	1.77	1.77	1.02	0.99	1.39
2 x 3/4 x 2	2.25	1.97	2.25	0.75	0.50	0.75	2.96	1.46	2.96	1.49	1.42	1.49
2 x 1/2 x 2	2.25	1.88	2.25	0.75	0.43	0.75	2.96	1.20	2.96	1.49	1.34	1.49
1 1/2 x 1 1/2 x 2	—	—	—	—	—	—	—	—	—	—	—	—
1 1/4 x 1 1/4 x 2	—	—	—	—	—	—	—	—	—	—	—	—
1 x 1 x 2	—	—	—	—	—	—	—	—	—	—	—	—
2 1/2 x 2 1/2 x 2	2.39	2.39	2.60	0.92	0.92	0.75	3.59	3.59	2.96	1.25	1.25	1.84
2 1/2 x 2 1/2 x 1 1/2	2.16	2.16	2.51	0.92	0.92	0.70	3.59	3.59	2.43	1.02	1.02	1.78
2 1/2 x 2 1/2 x 1 1/4	2.04	2.04	2.45	0.92	0.92	0.67	3.59	3.59	2.15	0.90	0.90	1.74
2 1/2 x 2 1/2 x 1	1.87	1.87	2.37	0.92	0.92	0.58	3.59	3.59	1.77	0.73	0.73	1.68
2 1/2 x 2 1/2 x 3/4	1.74	1.74	2.32	0.92	0.92	0.50	3.59	3.59	1.46	0.60	0.60	1.77
2 1/2 x 2 x 2 1/2	—	—	—	—	—	—	—	—	—	—	—	—
2 1/2 x 2 x 2	—	—	—	—	—	—	—	—	—	—	—	—
2 1/2 x 1 1/2 x 2 1/2	—	—	—	—	—	—	—	—	—	—	—	—
2 1/2 x 1 1/2 x 2	—	—	—	—	—	—	—	—	—	—	—	—
2 x 2 x 2 1/2	—	—	—	—	—	—	—	—	—	—	—	—
3 x 3 x 2 1/2	2.83	2.83	2.99	0.98	0.98	0.92	4.28	4.28	3.59	1.63	1.63	1.85
3 x 3 x 2	2.52	2.52	2.89	0.98	0.98	0.75	4.28	4.28	2.96	1.32	1.32	2.13
3 x 3 x 1 1/2	2.29	2.29	2.80	0.98	0.98	0.70	4.28	4.28	2.43	1.09	1.09	2.07
3 x 3 x 1 1/4	2.17	2.17	2.74	0.98	0.98	0.67	4.28	4.28	2.15	0.97	0.97	2.03
3 x 3 x 1	2.00	2.00	2.66	0.98	0.98	0.58	4.28	4.28	1.77	0.80	0.80	1.97
3 x 3 x 3/4	1.87	1.87	2.61	0.98	0.98	0.50	4.28	4.28	1.46	0.67	0.67	2.06
3 x 2 1/2 x 2 1/2	—	—	—	—	—	—	—	—	—	—	—	—
3 x 2 1/2 x 2	—	—	—	—	—	—	—	—	—	—	—	—
3 x 2 x 3	—	—	—	—	—	—	—	—	—	—	—	—
3 x 2 x 2	2.52	2.25	2.89	0.98	0.75	0.75	4.28	2.96	2.96	1.32	1.49	2.13
2 1/2 x 2 1/2 x 3	—	—	—	—	—	—	—	—	—	—	—	—
4 x 4 x 3	—	—	—	—	—	—	—	—	—	—	—	—
4 x 4 x 2 1/2	—	—	—	—	—	—	—	—	—	—	—	—
4 x 4 x 2	2.74	2.74	3.41	1.08	1.08	0.75	5.40	5.40	2.96	1.44	1.44	2.65
4 x 4 x 1 1/2	—	—	—	—	—	—	—	—	—	—	—	—
4 x 3 x 4	—	—	—	—	—	—	—	—	—	—	—	—

\* Manufactured to WARD specifications

