































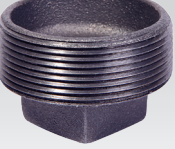

# MALLEABLE IRON PIPE FITTING

American Standard



# Malleable Iron Pipe Fittings

## American Standard Class 150

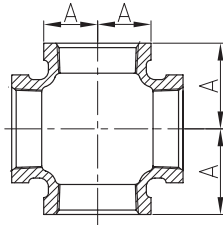
 90 90° Elbow	 90R 90° Reducing Elbow	 90U 180° Return Elbow	 92 90° Street Elbow	 92R 90° Reducing Street Elbow	 96A Union Elbow
 120 45° Elbow	 121 45° Street Elbow	 130 Tee	 130R Bull Head Tee	 130R Reducing Tee	 130R Reducing Tee
 130R Reducing Tee	 130R Reducing Tee	 134 Service Tee	 165 45° Lateral Y Branch	 180 Cross	 180R Reducing Cross
 220 Coupling	 220S L&R Coupling	 240 Reducing Coupling	 240T Tapped Reducing Coupling	 241 Outside Hex Bushing	 241N Inside Hex Bushing
 245 Reducing Hexagon Nipple	 280 Hexagon Nipple	 246 Reducing Extension Piece	 529A Extension Piece	 291 Cored Plug	 291S Solid Plug

Material: ASTM A197/A197M  
 Dimensions: ASME B16.3, B16.14  
 Union Dimensions: B16.39  
 Threads: ASME B1.20.1  
 Size Available: 1/8" - 8"



## 180

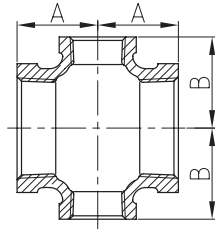
### Cross



Size	Inch	1/8	1/4	3/8	1/2	3/4	1
	mm	6	8	10	15	20	25
Dim. (mm)	A	17.5	20.6	24.1	28.5	33.3	38.1
	Size	Inch	11/4	11/2	2	21/2	3
Dim. (mm)	mm	32	40	50	65	80	100
	A	44.5	49.3	57.2	68.6	78.2	96.3

## 180R

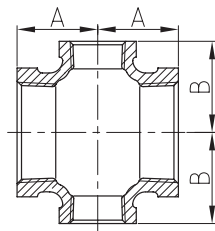
### Reducing Cross



Size	Inch	4X1	4X11/4	4X11/2	4X2	4X21/2	4X3
	mm	100X25	100X32	100X40	100X50	100X65	100X80
Dim. (mm)	A	56	60	62	70	84	82
	B	82	85	85	86	92	90
Size	Inch	3/4X1/2	1X1/2	1X3/4	11/4X1/2	11/4X3/4	11/4X1
	mm	20X15	25X15	25X20	32X15	32X20	32X25
Dim. (mm)	A	30.5	32	34.8	33	36.8	40.1
	B	31.0	35.5	36.8	37.5	41.2	42.4

## 180R

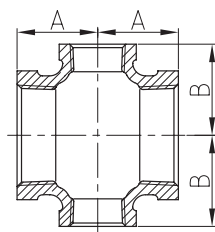
### Reducing Cross



Size	Inch	11/2X1/2	11/2X3/4	11/2X1	11/2X11/4	2X3/4
	mm	40X15	40X20	40X25	40X32	50X20
Dim. (mm)	A	34.5	38.6	41.9	46.2	40.6
	B	41	44.5	45.7	47.8	50
Size	Inch	2X1	2X11/4	2X11/2	21/2X3/4	21/2X1
	mm	50X25	50X32	50X40	65X20	65X25
Dim. (mm)	A	43.9	48.3	51.3	43	47
	B	51.3	53.3	54.9	57	60

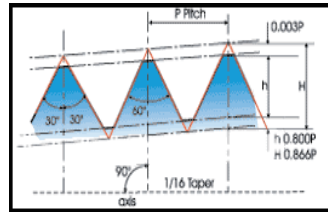
## 180R

### Reducing Cross

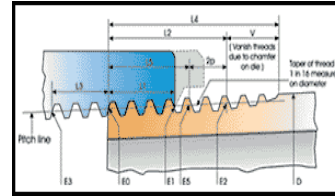


Size	Inch	21/2X11/4	21/2X11/2	21/2X2	3X3/4	3X1
	mm	65X32	65X40	65X50	80X20	80X25
Dim. (mm)	A	52	55	60.7	45	49
	B	62	63	66.0	65	66
Size	Inch	3X11/4	3X11/2	3X2	3X21/2	
	mm	80X32	80X40	80X50	80X65	
Dim. (mm)	A	53	56.5	64	72	
	B	68	69.5	73.4	76	

## Basic Dimension for American Standard Pipe Threads



Taper thread  
 $H = 0.866025 \quad p = 0.866025/n$   
 $h = 0.800 \quad p = 0.800/n$



Taper thread  
 $L2 = (0.8D + 6.8) \quad L1 = (0.80D + 6.8)p$

Nominal Pipe Size (inches)	O.D. of Pipe (D)	Threads /in (N)	Pitch of Thread (P)	Pitch Dia. at Beginning of External Thread (E0)	Handtight Engagement			Effective Thread, External			Depth of Thread h
					Length <sup>2</sup> (L1)		Diam. <sup>3</sup> (E1)	Length <sup>4</sup> (L2)		Diam. (E2)	
					Inch	Thread		Inch	Thread		
1/8	0.405	27.0	0.03704	0.36351	0.1615	4.36	0.37360	0.2639	7.12	0.38000	0.029
1/4	0.540	18.0	0.05556	0.47739	0.2278	4.10	0.49163	0.4018	7.23	0.50250	0.044
3/8	0.675	18.0	0.05556	0.61201	0.2400	4.32	0.62701	0.4078	7.34	0.63750	0.044
1/2	0.840	14.0	0.07143	0.75843	0.3200	4.48	0.77843	0.5337	7.47	0.79179	0.057
3/4	1.050	14.0	0.07143	0.96768	0.3390	4.75	0.98887	0.5457	7.64	1.00179	0.057
1	1.315	11.5	0.08696	1.21363	0.4000	4.60	1.23863	0.6826	7.85	1.25630	0.069
1 1/4	1.660	11.5	0.08696	1.55713	0.4200	4.83	1.58338	0.7068	8.13	1.60130	0.069
1 1/2	1.900	11.5	0.08696	1.79609	0.4200	4.83	1.82234	0.7235	8.32	1.84130	0.069
2	2.375	11.5	0.08696	2.26902	0.4360	5.01	2.29627	0.7565	8.70	2.31630	0.069
2 1/2	2.875	8.0	0.12500	2.71953	0.6820	5.46	2.76216	1.31375	9.10	2.79062	0.100
3	3.500	8.0	0.12500	3.34062	0.7660	6.13	3.38850	1.2000	9.60	3.41562	0.100
3 1/2	4.000	8.0	0.12500	3.83750	0.8210	6.57	3.88881	1.2500	10.00	3.91562	0.100
4	4.500	8.0	0.12500	4.33438	0.8440	6.75	4.38712	1.3000	10.40	4.41562	0.100
5	5.563	8.0	0.12500	5.39073	0.9370	7.50	5.44929	1.4063	11.25	5.47862	0.100
6	6.625	8.0	0.12500	6.44609	0.9580	7.66	6.50597	1.5125	12.10	6.54062	0.100

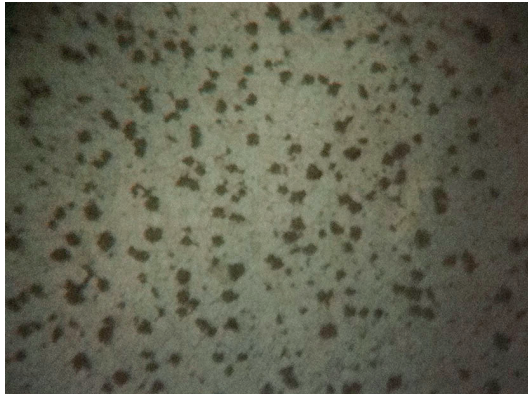
Nominal Pipe Size (inches)	Length, L1 Plane to L2 Plane External Thread (L2-L1)		Wrench Makeup Length for Internal Thread <sup>7</sup>			Vanish Thread (V)		Overall <sup>8</sup> Length External Thread (L4)	Nominal Complete External Thread <sup>5</sup>		Height of Thread (h)	Increase in Diam./ Thread (0.0625/n)	Basic <sup>6</sup> Minor Diam. At Small End of Pipe (K0)
	Inch	Thread	Length (L3)		Diam. (E3)	Inch	Thread		Length. (L5)	Diam. (E5)			
			Inch	Thread									
1/8	0.1024	2.76	0.1111	3	0.35656	0.1285	3.47	0.3924	0.1898	0.37537	0.02963	0.00231	0.3339
1/4	0.1740	3.13	0.1667	3	0.46697	0.1928	3.47	0.5946	0.2907	0.49556	0.04444	0.00347	0.4329
3/8	0.1678	3.02	0.1667	3	0.60160	0.1928	3.47	0.6006	0.2967	0.63056	0.04444	0.00347	0.5676
1/2	0.2137	2.99	0.2143	3	0.74504	0.2478	3.47	0.7815	0.3909	0.78286	0.05714	0.00446	0.7013
3/4	0.2067	2.89	0.2143	3	0.95429	0.2478	3.47	0.7935	0.4029	0.99286	0.05714	0.00446	0.9105
1	0.2828	3.25	0.2609	3	1.19733	0.3017	3.47	0.9845	0.5089	1.24543	0.06957	0.00543	1.1441
1 1/4	0.2868	3.30	0.2609	3	1.54083	0.3017	3.47	1.0085	0.5329	1.59043	0.06957	0.00543	1.4876
1 1/2	0.3035	3.49	0.2609	3	1.77978	0.3017	3.47	1.0252	0.5496	1.83043	0.06957	0.00543	1.7265
2	0.3205	3.69	0.2609	3	2.25272	0.3017	3.47	1.0582	0.5826	2.30543	0.06957	0.00543	2.1995
2 1/2	0.4555	3.64	0.2500	2	2.70391	0.4337	3.47	1.5712	0.8875	2.77500	0.10000	0.00781	2.6195
3	0.4340	3.47	0.2500	2	3.32500	0.4337	3.47	1.6337	0.9500	3.40000	0.10000	0.00781	3.2406
3 1/2	0.4290	3.43	0.2500	2	3.82188	0.4337	3.47	1.6837	1.0000	3.90000	0.10000	0.00781	3.7375
4	0.4560	3.65	0.2500	2	4.31875	0.4337	3.47	1.7337	1.0500	4.40000	0.10000	0.00781	4.2344
5	0.4693	3.75	0.2500	2	5.37511	0.4337	3.47	1.8400	1.1563	5.46300	0.10000	0.00781	5.2907
6	0.5545	4.44	0.2500	2	6.43047	0.4337	3.47	1.9462	1.2625	6.52500	0.10000	0.00781	6.3461

Note: This information is selected from the International Standard for Pipe Threads, ASME B1.20.1.

# Technical Information

## 1) Material

MECH Brands pipe fittings are made of back herart malleable cast iron.



Microstructure of the MECH Brands Black Heart Malleable Iron after annealing

## 2) Threads

a. MECH Brand class 150 pipe fittings: ANSI B1 . 20 . 1 . ISO 7/1

b. MECH Brand extra heavy class 300 pipe fittings: ANSI B1 . 20 . 1 . ISO 7/1

## 3) Pressure - Temperature Ratings

Pressure - Temperature Ratings are shown in the following table.

		Class 300, psig		
		Size	Size	Size
Temperature, ° F	Class 150, psig	1/4 - 1	1 1/4 - 2	2 1/2 - 3
20 to 150	300	2000	1500	1000
200	265	1785	1350	910
250	225	1575	1200	825
300	185	1360	1050	735
350	150 Note (1)	1150	900	650
400	20 to 150	935	750	580
450	20 to 150	725	600	475
500	20 to 150	510	450	385
550	20 to 150	300	300	300

NOTE:

(1) Permissible for service temperature up to 366 ° F. reflection the temperature of saturated steam at 150psig.



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