MECH

MEIDE CASTING

MALLEABLE IRON PIPE FITTING

American Standard

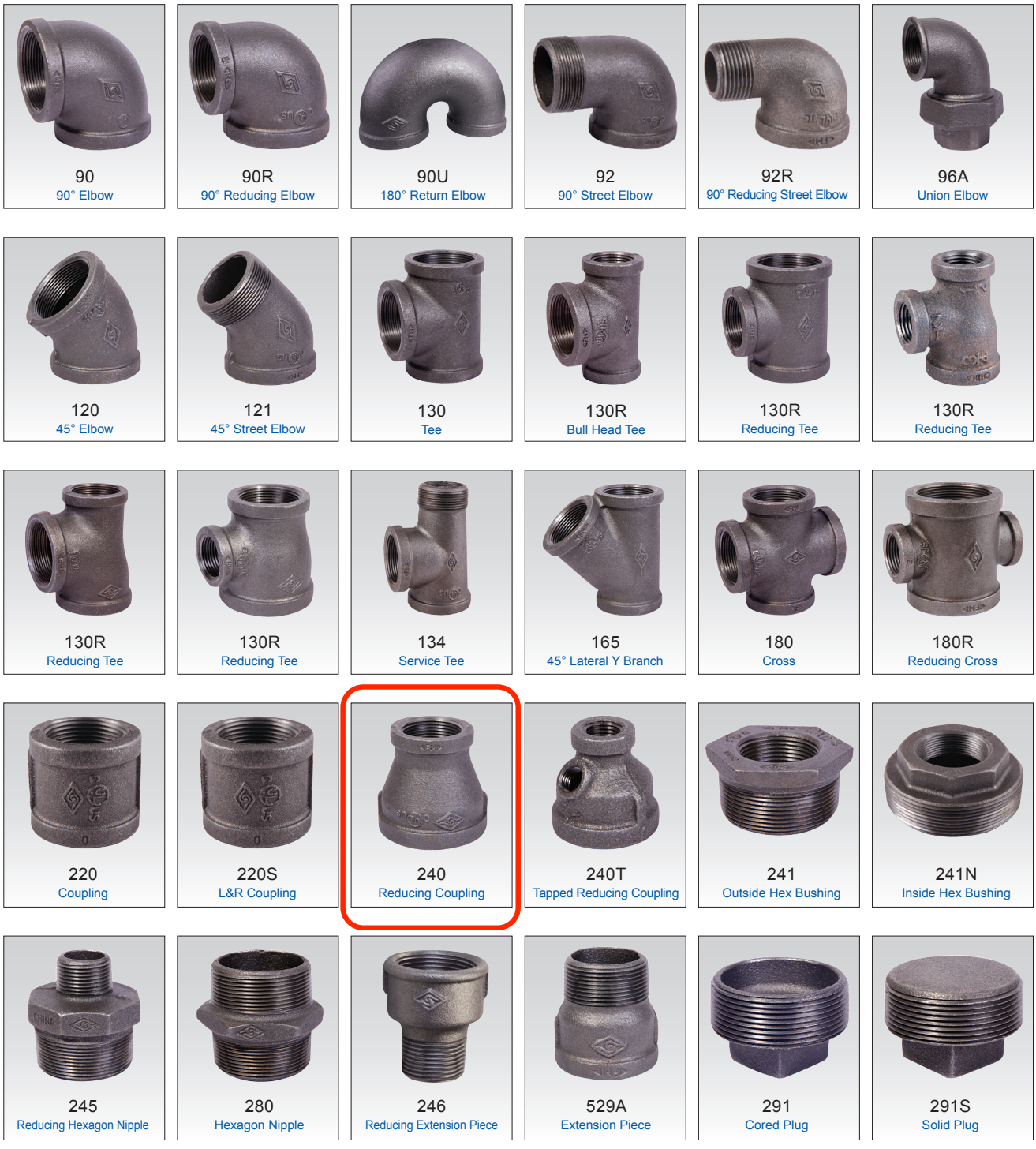
c UL us LISTED

FM APPROVED

02-2018

Malleable Iron Pipe Fittings

American Standard Class 150



NSF/ANSI 61 NSF/ANSI 372 ACS

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

291N
Countersunk Plug

291-4
Bar Head Plug

300
Cap

310
Locknut

320
Wastenut

321
Floor Flange

321W
Floor Flange without Hole

342
Union with Brass Seat

1221
Side Outlet Elbow

1223
Side Outlet Tee

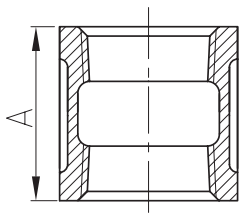
1224
Side Outlet Cross

LCC
Long Compression Coupling

WJFL
Tee Flange

220

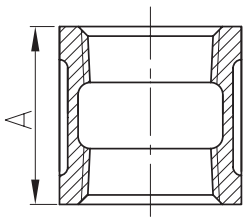
Coupling



Size	Inch	1/8	1/4	3/8	1/2	3/4	1	11/4
	mm	6	8	10	15	20	25	32
Dim. (mm)	A	24.2	26.9	29.5	34.0	38.6	42.4	49
Size	Inch	11/2	2	21/2	3	4	5	6
	mm	40	50	65	80	100	125	150
Dim. (mm)	A	54.6	64.3	73.2	80.8	93.7	95	105

220S

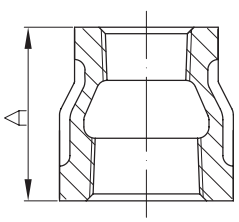
Left & Right Coupling



Size	Inch	1/2	3/4	1	11/4	11/2	2
	mm	15	20	25	32	40	50
Dim. (mm)	A	34.0	38.6	42.4	49	54.6	64.3
Size	Inch						
	mm						
Dim. (mm)	A						

240

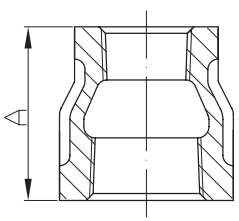
Reducing Coupling



Size	Inch	4X1	4X11/4	4X11/2	4X2	4X21/2
	mm	100X25	100X32	100X40	100X50	100X65
Dim. (mm)	A	111.3	111.3	111.3	111.3	111.3
Size	Inch	4X3	3/8X1/8	3/8X1/4	5X4	6X4
	mm	100X80	10X6	10X8	125X100	150X100
Dim. (mm)	A	111.3	28.7	28.7	122	105

240

Reducing Coupling



Size	Inch	6X2	6X3	1/2X1/8	1/2X1/4	1/2X3/8	3/4X1/8
	mm	150X50	150X80	15X6	15X8	15X10	20X6
Dim. (mm)	A	105	105	31.8	31.8	31.8	36.6
Size	Inch	3/4X1/4	3/4X3/8	3/4X1/2	1X1/4	1X3/8	1X1/2
	mm	20X8	20X10	20X15	25X8	25X10	25X15
Dim. (mm)	A	36.6	36.6	36.6	42.9	42.9	42.9

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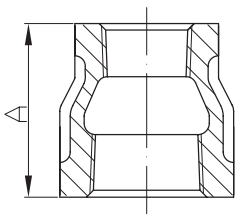
240

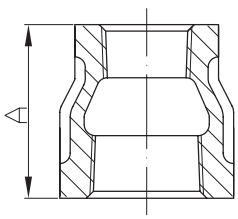
Reducing Coupling



Size	Inch	1X3/4	11/4X1/4	11/4X3/8	11/4X1/2	11/4X3/4	11/4X1
	mm	25X20	32X8	32X10	32X15	32X20	32X25
Dim. (mm)	A	42.9	52.3	52.3	52.3	52.3	52.3
Size	Inch	11/2X1/4	11/2X3/8	11/2X1/2	11/2X3/4	11/2X1	2X1/2
	mm	40X8	40X10	40X15	40X20	40X25	50X15
Dim. (mm)	A	58.7	58.7	58.7	58.7	58.7	71.4

240

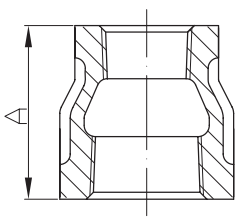
Reducing Coupling



Size	Inch	11/2X11/4	2X3/4	2X1	2X11/4	2X11/2
	mm	40X32	50X20	50X25	50X32	50X40
Dim. (mm)	A	58.7	71.4	71.4	71.4	71.4
Size	Inch	21/2X1/2	21/2X3/4	21/2X1	21/2X11/4	21/2X11/2
	mm	65X15	65X20	65X25	65X32	65X40
Dim. (mm)	A	82.6	82.6	82.6	82.6	82.6

240

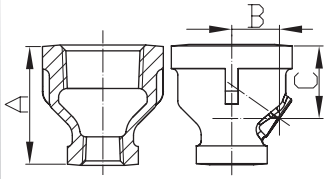
Reducing Coupling



Size	Inch	21/2X2	3X1/2	3X3/4	3X1	3X11/4
	mm	65X50	80X15	80X20	80X25	80X32
Dim. (mm)	A	82.6	93.7	93.7	93.7	93.7
Size	Inch	3X11/2	3X2	3X21/2	1/4X1/8	8X6
	mm	80X40	80X50	80X65	8X6	200X150
Dim. (mm)	A	93.7	93.7	93.7	25.4	131

240T

Tapped Reducing Coupling



Size	Inch	3/4X1/4X1/8				
	mm	20X8X6				
Dim. (mm)	A	36.5				
	B	14.8				
	C	22.5				
Size	Inch					
	mm					
Dim. (mm)	A					
	B					
	C					

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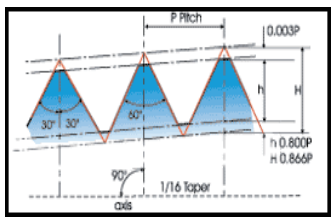
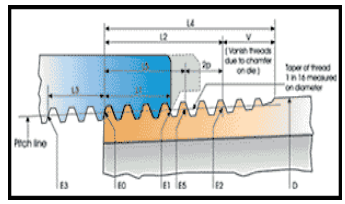
Basic Dimension for American Standard Pipe Threads



Taper thread

H= 0.866025 p=0.866025/n

h= 0.800 p=0.800/n



Taper thread

L2=(0.8D+6.8) 1/n=(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.Extenal			Depth of Thread h
					Length[2] (L1)		Diam[3]. (E1)	Length[4] (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
11/4	1.660	11.5	0.08696	1.55713	0.4200	4.83	1.58338	0.7068	8.13	1.60130	0.069
11/2	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
21/2	2.875	8.0	0.12500	2.71953	0.6820	5.46	2.76216	131375	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
31/2	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

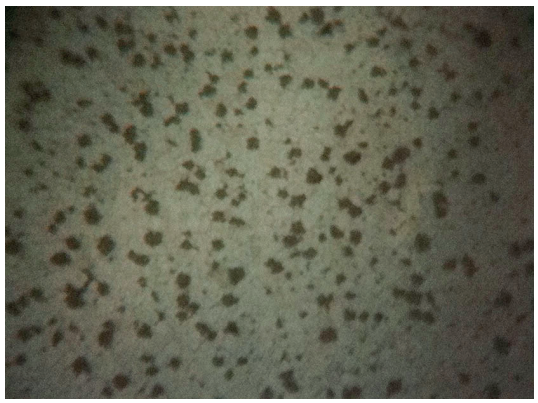
Nominal Pipe Size (inchs)	Length,L1 Plane to L2 Plane External Thread (L2-L1)		Wrench Makeup Length for Internal Thread[7]			Vanish Thread (V)		Overall8 Length External Thread (L4)	Nominal Complete External Thread5		Height of Thread(h)	Increase in Diam./ Thread (0.0625/n)	Basic[6] Minor Diam.At Small End of Pipe(K0)
			Length(L3)		Diam. (E3)				Length. (L5)	Diam. (E5)			
	Inch	Thread	Inch	Thread		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
11/4	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
11/2	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
21/2	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
31/2	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 Malleablle 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
Tempreature, ° F	Class 150, psig	1/4 - 1	11/4 - 2	21/2 - 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	585
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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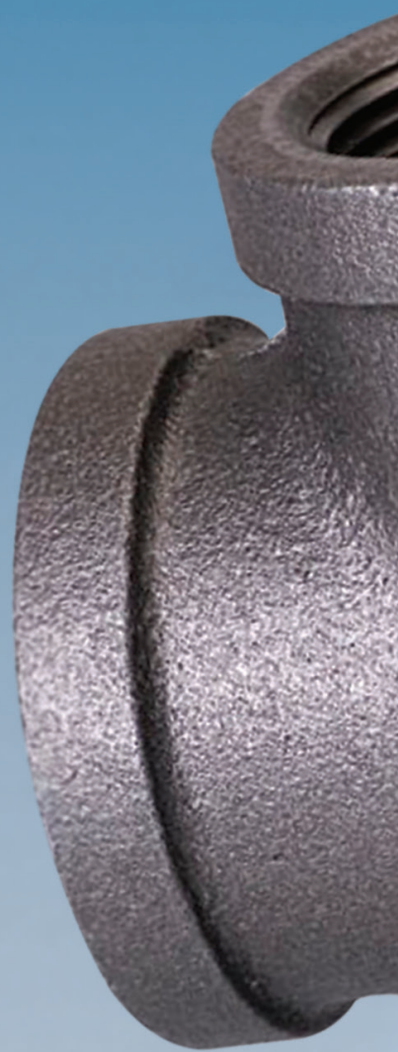

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