

Malleable Iron Hex Bushing




FIGURE 383 Hex Bushing	Size				Unit Weight				
					Black		Galv.		
	NPS	DN	Hex Type	NPS	DN	lbs	kg	lbs	kg
Outside Hex – Type A 	3/4	10	A	1/8	6	0.12	0.05	0.12	0.05
			A	1/4	8	0.14	0.06	0.14	0.06
A			3/8	10	0.11	0.05	0.11	0.05	
A			1/2	15	0.09	0.04	0.09	0.04	
Inside Hex – Type B 	1	25	B	1/8	6	0.24	0.11	0.24	0.11
			B	1/4	8	0.18	0.08	0.18	0.08
			B	3/8	10	0.18	0.08	0.18	0.08
			A	1/2	15	0.20	0.09	0.20	0.09
			A	3/4	20	0.16	0.07	0.16	0.07
See Cast Iron section on next page for other available sizes.	1 1/4	32	B	1/4	8	0.33	0.15	0.33	0.15
			B	3/8	10	0.27	0.12	0.27	0.12
			B	1/2	15	0.34	0.15	0.34	0.15
			A	3/4	20	0.39	0.18	0.39	0.18
			A	1	25	0.30	0.14	0.30	0.14
1 1/2	40	A	1 1/4	32	0.30	0.14	0.30	0.14	
2	50	A	1 1/2	40	0.64	0.29	0.64	0.29	
2 1/2	65	A	2	50	1.02	0.46	1.02	0.46	

Note: Hexagon head or octagon head bushings 2 1/2 NPS (65 DN) and smaller reducing one size may be made of malleable iron, ductile iron or steel. Other sizes may be made of cast iron, ductile iron, malleable iron or steel. Face bushings 2 1/2 NPS (65 DN) and smaller may be made of malleable iron, ductile iron or steel. Face bushings 3NPS (80 DN) and larger reducing one size may be made of malleable iron, ductile iron or steel. Face bushings 3NPS (80 DN) and larger reducing two sizes or more may be made of cast or malleable iron, ductile iron, or steel. According to specifications, hex bushings and cored plugs should be used with 150# malleable iron and 125# cast iron. Solid plugs and face bushings are recommended for use with 250# and 300# fittings.

Cast Iron Hex Bushings on next page.

PROJECT INFORMATION		APPROVAL STAMP	
Project:		<input type="checkbox"/> Approved	
Address:		<input type="checkbox"/> Approved as noted	
Contractor:		<input type="checkbox"/> Not approved	
Engineer:		Remarks:	
Submittal Date:			
Notes 1:			
Notes 2:			

Cast Iron Hex Bushing



 FIGURE 383 Hex Bushing	Size						Unit Weight				
							Black		Galv.		
	NPS	DN	Hex Type	All Cast Iron	NPS	DN	lbs	kg	lbs	kg	
Outside Hex Type A  Inside Hex Type B 	1½	40	A	C	¼	8	0.47	0.21	0.47	0.21	
			B	C	⅜	10	0.47	0.21	0.47	0.21	
			B	C	½	15	0.42	0.19	0.42	0.19	
			B	C	¾	20	0.47	0.21	0.47	0.21	
			A	C	1	25	0.50	0.23	0.50	0.23	
	2	50	A	C	¼	8	0.75	0.34	0.75	0.34	
			A	C	⅜	10	0.75	0.34	0.75	0.34	
			B	C	½	15	0.70	0.32	0.70	0.32	
			B	C	¾	20	0.71	0.32	0.71	0.32	
			B	C	1	25	0.73	0.33	0.73	0.33	
	2½	65	A	C	1¼	32	0.81	0.37	0.81	0.37	
			B	C	½	15	1.28	0.58	1.28	0.58	
			B	C	¾	20	1.25	0.57	1.25	0.57	
			B	C	1	25	1.16	0.53	1.16	0.53	
			B	C	1¼	32	1.24	0.56	1.24	0.56	
	3	80	B	C	1½	40	1.29	0.59	1.29	0.59	
			B	C	½	15	1.93	0.88	1.93	0.88	
			B	C	¾	20	1.92	0.87	1.92	0.87	
			B	C	1	25	1.90	0.86	1.90	0.86	
			B	C	1¼	32	1.77	0.80	1.77	0.80	
B			C	1½	40	1.79	0.81	1.79	0.81		
A			C	2	50	1.90	0.86	1.90	0.86		
3½	80	A	C	2½	65	1.63	0.74	1.63	0.74		
		B	C	1	25	2.42	1.10	2.42	1.10		
		B	C	1¼	32	2.56	1.16	2.56	1.16		
		B	C	1½	40	2.65	1.20	2.65	1.20		
		B	C	2	50	2.54	1.15	2.54	1.15		
		A	C	2½	65	3.23	1.46	3.23	1.46		
				A	C	3	80	1.96	0.89	1.96	0.89

See Malleable Iron section on previous page for other available sizes.

According to specifications, hex bushings and cored plugs should be used with 150# malleable iron and 125# cast iron. Solid plugs and face bushings are recommended for use with 250# and 300# fittings.

Additional Cast Iron Hex Bushings on next page.

Cast Iron Hex Bushing

FIGURE 383 Hex Bushing	Size						Unit Weight			
							Black		Galv.	
	NPS	DN	Hex Type	All Cast Iron	NPS	DN	lbs	kg	lbs	kg
Outside Hex Type A  Inside Hex Type B 	4	100	B	C	1	25	3.59	1.63	3.59	1.63
			B	C	1¼	32	3.54	1.61	3.54	1.61
			B	C	1½	40	3.44	1.56	3.44	1.56
			B	C	2	50	3.11	1.41	3.11	1.41
			B	C	2½	65	3.29	1.49	3.29	1.49
			A	C	3	80	3.15	1.43	3.15	1.43
			A	C	3½	90	2.50	1.13	2.50	1.13
	5	125	B	C	2	50	5.12	2.32	5.12	2.32
			B	C	2½	65	4.87	2.21	4.87	2.21
			B	C	3	80	4.83	2.19	4.83	2.19
			A	C	3½	90	4.00	1.81	–	–
			A	C	4	100	3.94	1.79	3.94	1.79
	6	150	B	C	2	50	8.00	3.63	8.00	3.63
			B	C	2½	65	7.72	3.50	–	–
			B	C	3	80	7.75	3.51	7.75	3.51
			B	C	4	100	6.83	3.10	6.83	3.10
			A	C	5	125	5.24	2.38	5.24	2.38
	8	200	B	C	3	80	15.50	7.03	–	–
			B	C	4	100	13.93	6.32	–	–
			B	C	5	125	13.65	6.19	–	–
A			C	6	150	13.19	5.98	13.19	5.98	
10	250	B	C	6	150	24.50	11.11	–	–	
		A	C	8	200	22.00	9.98	–	–	

See Malleable Iron section on first page for other available sizes.

According to specifications, hex bushings and cored plugs should be used with 150# malleable iron and 125# cast iron. Solid plugs and face bushings are recommended for use with 250# and 300# fittings.



**Malleable Iron Threaded Pipe Unions
Pressure - Temperature Ratings**

Temperature		Pressure					
		Class 150		Class 250		Class 300	
(°F)	(°C)	psi	bar	psi	bar	psi	bar
-20° to 150°	-28.9° to 65.6°	300	20.7	500	34.5	600	41.4
200°	93.3°	265	18.3	455	31.4	550	37.9
250°	121.1°	225	15.5	405	27.9	505	34.8
300°	148.9°	185	12.8	360	24.8	460	31.7
350°	176.7°	150	10.3	315	21.7	415	28.6
400°	204.4°	110	7.6	270	18.6	370	25.5
450°	232.2°	75	5.2	225	15.5	325	22.4
500°	260.0°	-	-	180	12.4	280	19.3
550°	287.8°	-	-	130	9.0	230	15.9

Note: Unions with Copper or Copper Alloy seats are not intended for use where temperature exceeds 450°F



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**Malleable Iron Threaded Fittings
Pressure - Temperature Ratings**

Temperature		Pressure							
		Class 150		Class 300					
(°F)	(°C)	psi	bar	Sizes 1/4"-1" (6-25 mm)		Sizes 1 1/4"-2" (32-51 mm)		Sizes 2 1/2"-3" (64-76 mm)	
				psi	bar	psi	bar	psi	bar
-20° to 150°	-28.9° to 65.6°	300	20.7	2,000	137.9	1,500	103.4	1,000	68.9
200°	93.3	265	18.3	1,785	123.1	1,350	93.1	910	62.7
250°	121.1	225	15.5	1,575	108.6	1,200	82.7	825	56.9
300°	148.9	185	12.8	1,360	93.8	1,050	72.4	735	50.7
350°	176.7	150	10.3	1,150	79.3	900	62.1	650	44.8
400°	204.4	-	-	935	64.5	750	51.7	560	38.6
450°	232.2	-	-	725	50.0	600	41.4	475	32.8
500°	260.0	-	-	510	35.2	450	31.0	385	26.5
550°	287.8	-	-	300	20.7	300	20.7	300	20.7

Anvil Class 150/300 Malleable Iron Fittings conform to ASME B16.3 and Unions conform to ASME B16.39.

ALL ELBOWS & TEES 3/8" (10 DN) and LARGER ARE 100% GAS TESTED AT A MINIMUM OF 100 PSI. (6.9 bar)

Standards and Specifications

	Dimensions	Material	Galvanizing****	Thread	Pressure Rating	Federal/Other
MALLEABLE IRON FITTINGS						
Class 150/PN 20	ASME B16.3•	ASTM A-197	ASTM A-153	ASME B1 20.1+	ASME B16.3•	ASME B16.3**
Class 300/PN 50	ASME B16.3•	ASTM A-197	ASTM A-153	ASME B1 20.1+	ASME B16.3•	
MALLEABLE IRON UNIONS						
Class 150/PN 20	ASME B16.39•	ASTM A-197	ASTM A-153	ASME B1 20.1+	ASME B16.39•	ASME B16.39***
Class 250	ASME B16.39•	ASTM A-197	ASTM A-153	ASME B1 20.1+	ASME B16.39•	
Class 300/PN 50	ASME B16.39•	ASTM A-197	ASTM A-153	ASME B1 20.1+	ASME B16.39•	

• an American National standard (ANSI), + ASME B1.20.1 was ANSI B2.1, ** Formerly WW-P-521, *** Formerly WW-U-531

**** ASTM B 633. Type I, SC 4, may be supplied as alternate zinc coating per applicable ASME B16 product standard.



Anvil standard and extra heavy cast iron threaded fittings are manufactured in accordance with ASME-B16.4 (except plugs and bushings, ASME B16.14). Dimensions also conform to Federal Specifications, WW-P-501 (except plugs and bushings WW-P-471).



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Cast Iron Threaded Fittings Pressure - Temperature Ratings

Temperature		Pressure			
		Class 125		Class 250	
(°F)	(°C)	psi	bar	psi	bar
-20° to 150°	-28.9 to 65.6	175	12.1	400	27.6
200°	93.3	165	11.4	370	25.5
250°	121.1	150	10.3	340	23.4
300°	148.9	140	9.7	310	21.4
350°	176.7	125	8.6	300	20.7
400°	204.4	-	-	250	17.2

Standards and Specifications

	Dimensions	Material	Galvanizing****	Thread	Pressure Rating	Federal/Other
CAST IRON THREADED FITTINGS						
Class 125	ASME B16.4•	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1+	ASME B16.4•	ASME B16.4■
Class 250	ASME B16.4•	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1+	ASME B16.4•	ASME B16.4■
CAST IRON PLUGS AND BUSHINGS						
	ASME B16.14•	ASTM A- 126 (A)	ASTM A-153	ASME B1.20.1+	ASME B16.14•	WW-P-471

• an American National standard (ANSI), + ASME B1.20.1 was ANSI B2.1, ■ Formerly WW-P-501

**** ASTM B 633. Type I, SC 4, may be supplied as alternate zinc coating per applicable ASME B16 product standard.

General Assembly of Threaded Fittings

- 1) Inspect both male and female components prior to assembly.
 - Threads should be free from mechanical damage, dirt, chips and excess cutting oil.
 - Clean or replace components as necessary.
- 2) Application of thread sealant
 - Use a thread sealant that is fast drying, sets-up to a semi hard condition and is vibration resistant. Alternately, an anaerobic sealant may be utilized.
 - Thoroughly mix the thread sealant prior to application.
 - Apply a thick even coat to the male threads only. Best application is achieved with a brush stiff enough to force sealant down to the root of the threads.
- 3) Joint Makeup
 - For sizes up to and including 2" pipe, wrench tight makeup is considered three full turns past handtight. Handtight engagement for 1/2" through 2" thread varies from 4 1/2 turns to 5 turns.
 - For 2 1/2" through 4" sizes, wrench tight makeup is considered two full turns past handtight. Handtight engagement for 2 1/2" through 4" thread varies from 5 1/2 turns to 6 3/4 turns.