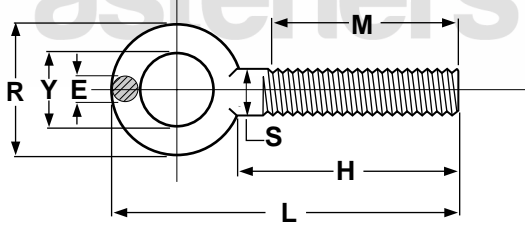
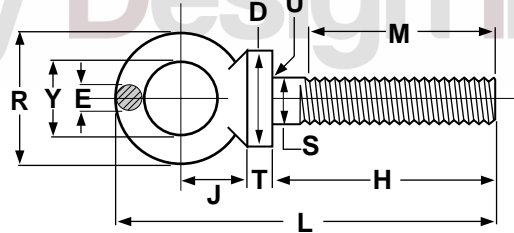


Fasteners By Design Inc.



PLAIN PATTERN



SHOULDER PATTERN

FORGED EYEBOLTS, PLAIN PATTERN												ANSI/ASME B18.15
Nominal Size		S Shank Dia.	H Shank Length		Y Eye ID	R Nominal Eye OD	E Eye Sect. Diameter	L Overall Length	M Min Length Full Thread		Thread Size UNC-2A	
			Long Length	Short Length					Long Length	Short Length		
1/4	0.25	0.25 0.28	1.00 1.06	1.00 1.06	0.69 0.81	1.19	0.19 0.25	2.06 2.38	0.75	0.75	1/4-20 or .250-20	
5/16	0.31	0.31 0.34	1.12 1.19	1.06 1.13	0.81 0.94	1.44	0.25 0.31	2.44 2.75	0.81	0.75	5/16-18 or .3125-18	
3/8	0.38	0.38 0.41	1.25 1.38	1.12 1.25	0.94 1.06	1.69	0.31 0.38	2.81 3.19	0.88	0.75	3/8-16 or .375-16	
7/16	0.44	0.44 0.47	1.38 1.50	1.13 1.25	1.00 1.12	1.81	0.34 0.41	3.06 3.44	1.00	0.75	7/16-14 or .4375-14	
1/2	0.50	0.50 0.53	1.50 1.62	1.13 1.25	1.12 1.25	2.12	0.44 0.50	3.50 3.88	1.12	0.75	1/2-13 or .500-13	
9/16	0.56	0.56 0.59	1.62 1.75	1.21 1.34	1.19 1.31	2.25	0.47 0.53	3.75 4.12	1.25	0.84	9/16-12 or .5625-12	
5/8	0.62	0.62 0.66	1.75 1.88	1.31 1.44	1.31 1.44	2.56	0.56 0.62	4.19 4.56	1.38	0.94	5/8-11 or .625-11	
3/4	0.75	0.75 0.78	2.00 2.12	1.50 1.62	1.44 1.56	2.81	0.62 0.69	4.69 5.06	1.62	1.13	3/4-10 or .750-10	
7/8	0.88	0.88 0.91	2.25 2.38	1.75 1.88	1.56 1.69	3.19	0.75 0.81	5.31 5.69	1.81	1.31	7/8-9 or .875-9	
1	1.00	1.00 1.06	2.50 2.62	1.94 2.06	1.69 1.81	3.56	0.88 0.94	5.94 6.31	2.06	1.50	1-8 or 1.000-8	
1-1/8	1.12	1.12 1.19	2.75 2.88	2.13 2.26	1.94 2.06	4.06	1.00 1.06	6.69 7.06	2.31	1.69	1-1/8-7 or 1.125-7	
1-1/4	1.25	1.25 1.34	3.00 3.12	2.38 2.50	2.12 2.25	4.44	1.09 1.16	7.31 7.69	2.50	1.88	1-1/4-7 or 1.250-7	
1-1/2	1.50	1.50 1.59	3.50 3.62	2.75 2.87	2.44 2.56	5.19	1.31 1.38	8.56 8.94	3.00	2.25	1-1/2-6 or 1.500-6	
1-3/4	1.75	1.75 1.84	3.75 3.88	3.18 3.31	2.75 3.00	6.00	1.50 1.62	9.50 10.12	3.19	2.62	1-3/4-5 or 1.750-5	
2	2.00	2.00 2.09	4.00 4.25	3.62 3.87	3.06 3.44	6.88	1.75 1.88	10.56 11.44	3.38	3.00	2-4-1/2 or 2.000-4.50	
2-1/2	2.50	2.50 2.62	5.00 5.25	4.50 4.75	3.81 4.19	8.50	2.19 2.31	13.19 14.06	4.25	3.75	2-1/2-4 or 2.500-4	

FORGED EYEBOLTS, SHOULDER PATTERN													ANSI/ASME B18.15			
Nominal Size	S	Shank Diam.	H		Y	R	E	L	M		Thread Size UNC-2A	J	D	T	U	
			Shank Length						Eye ID	Nomi- nal Eye OD						Eye Sect. Diam.
			Long Length	Short Length	Long Length	Short Length										
1/4	0.25	0.25	1.00	1.00	0.69	1.19	0.19	2.22	0.75	0.75	1/4-20 or	0.69	0.50	0.12	0.015	
		0.28	1.06	1.06	0.81	0.25	2.53	.250-20			0.81	0.56	0.19	0.025		
5/16	0.31	0.31	1.12	1.06	0.81	1.44	0.25	2.66	0.81	0.75	5/16-18 or	0.88	0.56	0.12	0.015	
		0.34	1.19	1.13	0.94	0.31	2.97	.3125-18			1.00	0.62	0.19	0.025		
3/8	0.38	0.38	1.25	1.12	0.94	1.69	0.31	3.09	0.88	0.75	3/8-16 or	1.06	0.62	0.12	0.015	
		0.41	1.38	1.25	1.06	0.38	3.47	.375-16			1.19	0.69	0.19	0.025		
7/16	0.44	0.44	1.38	1.13	1.00	1.81	0.34	3.41	1.00	0.75	7/16-14 or	1.19	0.75	0.19	0.015	
		0.47	1.50	1.25	1.12	0.41	3.78	.4375-14			1.31	0.81	0.25	0.025		
1/2	0.50	0.50	1.50	1.13	1.12	2.12	0.44	3.81	1.12	0.75	1/2-13 or	1.31	0.88	0.19	0.015	
		0.53	1.62	1.25	1.25	0.50	4.19	.500-13			1.44	0.94	0.25	0.025		
9/16	0.56	0.56	1.62	1.21	1.19	2.25	0.47	4.19	1.25	0.84	9/16-12 or	1.50	0.94	0.22	0.020	
		0.59	1.75	1.34	1.31	0.53	4.56	.5625-12			1.62	1.00	0.28	0.045		
5/8	0.62	0.62	1.75	1.31	1.31	2.56	0.56	4.56	1.38	0.94	5/8-11 or	1.59	1.00	0.25	0.020	
		0.66	1.88	1.44	1.44	0.62	4.94	.625-11			1.72	1.06	0.31	0.045		
3/4	0.75	0.75	2.00	1.50	1.44	2.81	0.62	5.06	1.62	1.12	3/4-10 or	1.72	1.12	0.25	0.020	
		0.78	2.12	1.62	1.56	0.69	5.50	.750-10			1.91	1.25	0.31	0.045		
7/8	0.88	0.88	2.25	1.75	1.56	3.19	0.75	5.75	1.81	1.31	7/8-9 or	2.03	1.31	0.31	0.040	
		0.91	2.38	1.88	1.69	0.81	6.19	.875-9			2.22	1.44	0.38	0.065		
1	1.00	1.00	2.50	1.94	1.69	3.56	0.88	6.44	2.06	1.50	1-8 or	2.22	1.50	0.38	0.060	
		1.06	2.62	2.06	1.81	0.94	6.88	1.000-8			2.41	1.62	0.44	0.095		
1-1/8	1.12	1.12	2.75	2.13	1.94	4.06	1.00	7.31	2.31	1.69	1-1/8-7 or	2.59	1.69	0.44	0.060	
		1.19	2.88	2.26	2.06	1.06	7.75	1.125-7			2.78	1.81	0.50	0.095		
1-1/4	1.25	1.25	3.00	2.38	2.12	4.44	1.09	8.00	2.50	1.88	1-1/4-7 or	2.84	1.88	0.50	0.060	
		1.34	3.12	2.50	2.25	1.16	8.44	1.250-7			3.03	2.00	0.56	0.095		
1-1/2	1.50	1.50	3.50	2.75	2.44	5.19	1.31	9.22	3.00	2.25	1-1/2-6 or	3.19	2.12	0.50	0.060	
		1.59	3.62	2.87	2.56	1.38	9.72	1.500-6			3.44	2.25	0.62	0.095		
1-3/4	1.75	1.75	3.75	3.18	2.75	6.00	1.50	10.50	3.19	2.62	1-3/4-5 or	3.88	2.50	0.50	0.060	
		1.84	3.88	3.31	3.00	1.62	11.12	1.750-5			4.12	2.62	0.62	0.095		
2	2.00	2.00	4.00	3.62	3.06	6.88	1.75	11.53	3.38	3.00	2-4-1/2 or	4.25	2.88	0.62	0.060	
		2.09	4.12	3.79	3.44	1.88	12.22	2.000-4.50			4.50	3.00	0.75	0.095		

Description	A forged bolt without welds, with a head in the form of an open or closed anchor ring. Bolt shall have a unified thread pitch. Shoulder pattern eyebolts shall have an unthreaded shoulder below the anchor ring which is greater in diameter than the threaded shank.
Applications/ Advantages	Used in applications where a forged shank is required, ie. in a rigging when mounted atop a uniformly distributed weight.
Material	Eyebolts shall be made from a carbon steel which conforms to the following chemical composition requirements-- <i>Carbon</i> : 0.48% maximum; <i>Manganese</i> : 1.00% maximum; <i>Phosphorus</i> : 0.040% maximum; <i>Sulfur</i> : 0.050 maximum; <i>Silicon</i> : 0.15-0.35%
Heat Treatment	Bolts shall be liquid quenched and tempered before machining the threaded end.
Grain Size	ASTM No. 5 or finer
Tensile Strength	65,000 - 85,000 psi.
Yield Strength	30,000 psi. minimum
Elongation in 2 in.	30% minimum
Reduction of Area	60% minimum
Plating	See Appendix-A for plating information.