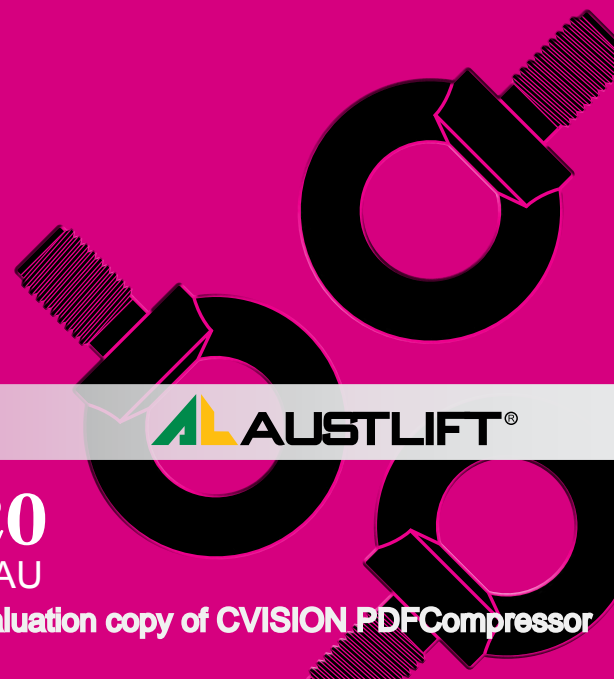


AUSTRALIAN LIFTING CENTRE PTY LTD

EYE BOLTS AND EYE NUTS

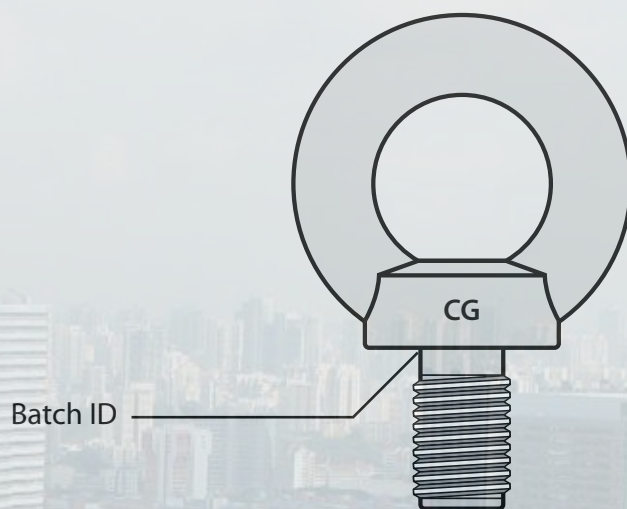
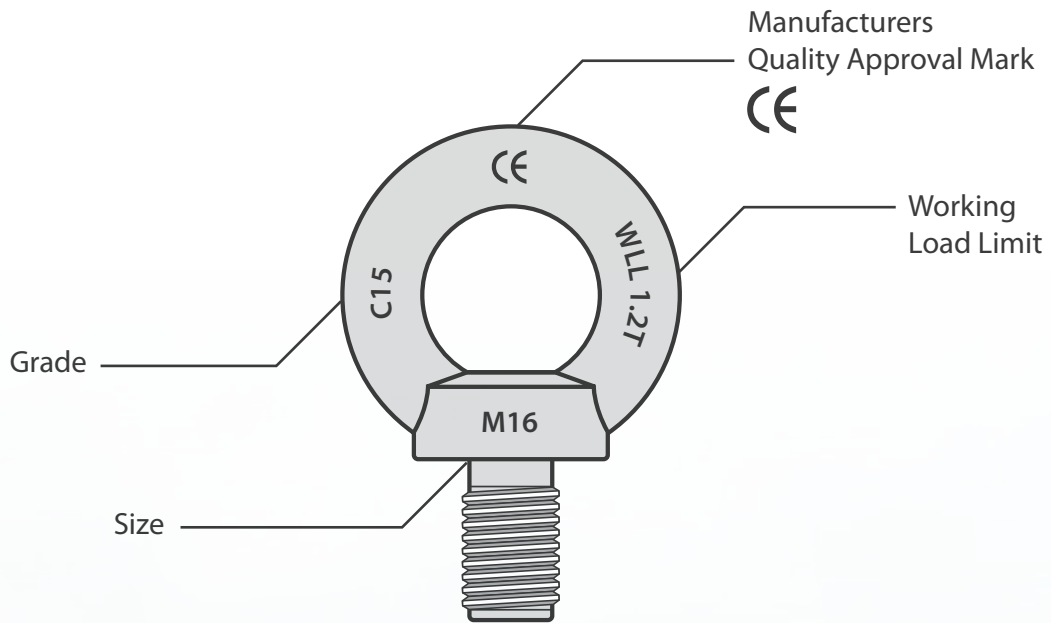


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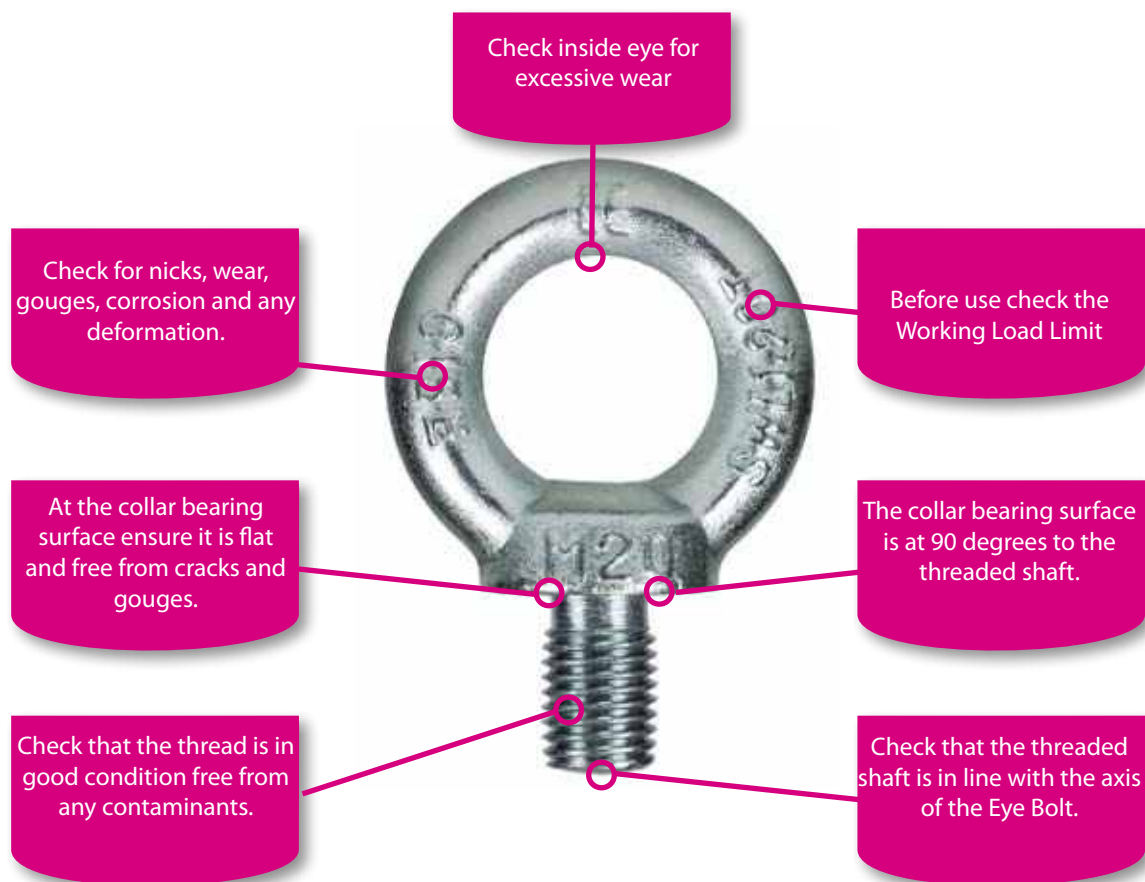
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INSPECTION BEFORE USE

The pre-use check for Eye Bolts should include the following:

1. Ensure the Working Load Limit is marked and clearly legible.
2. Check for any signs of deformation, cracking, nicks, gouges and excessive bruising, wear or corrosion.
3. Threads should be concentric and fit neatly into a standard threaded hole or rated nut.
4. Check that the centre line of the eye is aligned with the centre line of the thread.
5. Check the threaded hole to ensure it is clean and no other foreign matter that could restrict the Eye Bolts from seating correctly in the hole. Particular attention should be paid to the threaded hole to ensure it is in good condition.
6. Check that the hole thread and the Eye Bolt thread are compatible.
7. It is important to check the surface area around the threaded hole (which the Eye Bolt collar will sit on) to ensure it is clean, free from deformation, cracking or any other problem that may restrict the Eye Bolt seating correctly.
8. Eye Bolt under 12mm is not suggested to use for lifting purposes ,refer to relevant standards.



- Eye Bolts should always be used in accordance with Australian Standards or other relevant standards and the manufacturers recommendations.
- When Eye Bolts are used the load should always be tethered to prevent it from spinning during lifting operation.
- The Working Load Limit for Eye Bolts is in the direct vertical lifting plane.
- Eye Bolts used in multi leg assemblies must be de-rated.
- Where a single Eye Bolt is used, care should be taken to ensure that it remains screwed home throughout the lifting operation. If a single Eye Bolt is used for lifting and there is a possibility that the load will rotate or twist, a swivel should be used in the system to prevent the Eye Bolt unscrewing.
- Never lift with an Eye Bolt that is not correctly seated on its collar bearing surface. A dangerous situation is created when incorrectly seated Eye Bolts are loaded.
- Never use excessive leverage to tighten an Eye Bolt. Excessive tightening will cause stretching and deformation of the thread resulting in a dangerous situation.

Austlift collared Eye Bolts complies with DIN580, BS4278 and AS2317 and are manufactured to the highest quality. Eye Nuts are manufactured to DIN582. We also provide hanging loop type Eye Nuts.

Note: Care in Use information should be taken as a general guide, as collared Eye Bolts are suitable for a number of broad applications.

Small Eye Bolts

We suggest that Eye Bolts of sizes smaller than 12mm should not be used for general lifting, staying or tensioning purposes, as high torsional stresses are easily induced in these smaller sizes by being screwed up too tightly. However, where they are used, care should be taken to not cause excessive torsional stresses while they are being fitted to a threaded hole.

Matching of Threads

Extreme care should be taken to ensure that Eye Bolts are not screwed into threaded holes of a different size or type of thread. Accidents may be caused by Eye Bolts with metric threads being screwed inadvertently into tapped holes having a BSW or UNC thread and vice versa. Apart from force fits, the thread sizes listed in the table below may be wrongly matched with the risk that the Eye Bolt may pull out of the threaded hole below the design load.

The possibility of mixing threads has always existed, but it has been accentuated by the change to metric threads. Where an Eye Bolt is removed from a threaded hole, it is recommended that the surface adjacent to the threaded hole be marked with the thread type and size and a plug be inserted into the threaded hole, or that other equally effective action be taken to reduce the possibility of mismatching threads. Where an Eye Bolt cannot be screwed by hand, the cause of the tight fit may be mixed threads.

Threaded Attachment

Where an Eye Bolt is used in an untapped hole, the thread should engage a nut with a thread length of at least the full thickness of a standard sized nut.

Where an Eye Bolt is used with a tapped hole in a plate the length of thread engagement should be at least the nominal diameter of the thread. Where the undercut is not sufficient to allow for an adequate engagement of the collar, a parallel washer beneath the collar should be used so that an adequate engagement is achieved.

If the nut side of the Eye Bolt is on a tapered surface, such as the inside flange of an RSJ beam, then a tapered washer should be used.

Incorrect Matched Thread Sizes Are Particularly Troublesome

Metric Eye Bolt	BSW and UNC hole inches	Metric Eye Bolt	BSW and UNC hole inches
M6*	1/4"	M27	1-1/16"
M8*	5/16"	M30	1-1/4"
M10*	3/8"	M33	1-5/16"
M12	1/2"	M36	1-1/2"
M14	9/16"	M39	1-9/16"
M16	5/8"	M42	1-3/4"
M20	3/4"	M48	2"
M22	7/8"	M52	2-1/16"
M24	1"	M56	2-3/16"

Where an Eye Bolt cannot be screwed by hand, the cause of the tight fit may be mixed threads.

*Please refer to note's **Small Eye Bolts** above.

Tightening of Eye Bolts

Eye Bolts should be screwed fully down to the face of the lifted load; however, excessive tightening of the Eye Bolt should be avoided. It should not be possible to enter a 0.04 mm feeler gauge at any position between the collar of an Eye Bolt and its seating. Where this condition is not achieved, any non-axial loading may overstress the screw thread.

Alignment of Eye

Where correct alignment of the eye of an Eye Bolt is required but not accomplished at the first fitting, it should be achieved by the following methods:

- Fitting a shim washer of steel under the collar. A shim washer should not be less in diameter than the diameter of the collar, and the thickness should be between 50% and 100% of the pitch of the threaded shank.
- Machining the underside of the collar. The amount of material machined from the collar should not exceed 50% of the pitch of the thread on the shank of the Eye Bolt.

Continuous Slings

A continuous Sling should not be used with pairs of Eye Bolts (refer figure 3.5). Where a continuous Sling is used with a pair of Eye Bolts, the load applied to the Eye Bolts is considerably increased by the tension in the horizontal portion of the Sling and this may overstress the Eye Bolts. Whenever lifting with Eye Bolts in pairs supported by Slings, always use rigging assemblies with individual Sling lengths.

Loading Not Aligned with Threaded End

Where the centre-line of loading is not in line with the axis of the threaded end of the Eye Bolt, including where a two-leg Sling is connected to a pair of Eye Bolts to support a load, the following apply:

- (a) The diameter of the boss of the tapped hole, into which the Eye Bolt is screwed, should be no less than the diameter of the collar of the Eye Bolt.
- (b) The angle between the centre-line of the loading on the eye of the Eye Bolt and the plane containing the eye of the Eye Bolt should not exceed 5°, unless an adequate reduction is made to the WLL.

Where the perpendicular loading is applied (sometimes called ‘trunnion lifting’), the eye of the Eye Bolt should be aligned in the vertical plane.

Where two pairs of Eye Bolts are fitted to a single item, lifting should be effected by means of two two-leg Slings and a spreader bar to ensure the load is distributed evenly across the Eye Bolts. This arrangement also allows the load to be readily applied to each Eye Bolt in the plane of the eye.

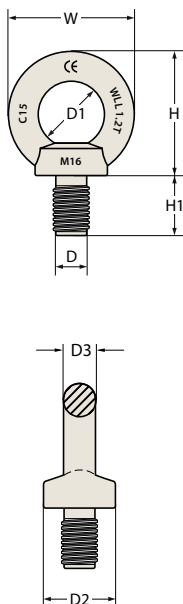
Eye Bolt

Din Standard 580



Eye Bolts DIN580 and Eye Nut DIN 582 are generally used as a removable lifting point where a rated female thread or nut can be utilized also can be used as a termination for Chain, Wire Rope and other assemblies where required.

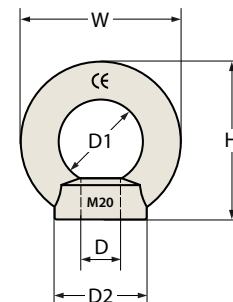
- Made from C15 carbon steel with zinc plated finish, manufactured with a standard larger eye. Only available in metric thread sizes.
- Conforms to DIN580 and DIN 582 marked with working load limit in tonne, nominal size in millimetre, quality grade, batch numbered and supplier identification. Proof tested to 2 x Working load limit and Minimum breaking force of 6 x Work load limit. Test Certificate are upon request.



CODE	SIZE	PITCH	WLL	Wt.	DIMENSIONS						
					D	D1	D2	D3	H	H1	W
	mm	mm	T	kg/pc	mm	mm	mm	mm	mm	mm	mm
601006	M6	1.00	0.07	0.055	6	14	19	6.5	27.5	12	27
601008	M8	1.25	0.14	0.06	8	20	20	8	36	13	36
601010	M10	1.50	0.23	0.1	10	25	25	10	45	17	45
601012	M12	1.75	0.34	0.19	12	30	30	12	53	20	54
601016	M16	2.00	0.70	0.31	16	35	35	14	62	27	63
601020	M20	2.50	1.20	0.45	20	40	40	16	71	30	72
601022	M22	2.50	1.50	0.68	22	45	45	18	80.5	35	81
601024	M24	3.00	1.80	0.72	24	50	50	20	90	36	90
601027	M27	3.00	2.50	1.16	27	50	50	20	97	36	90
601030	M30	3.50	3.60	1.6	30	65	65	24	109	45	108
601036	M36	4.00	5.10	2.8	36	75	75	28	128	54	126
601042	M42	4.50	7.00	4.2	42	85	85	32	147	63	144
601048	M48	5.00	8.60	6.5	48	100	100	38	168	68	168
601056	M56	5.50	11.5	8.9	56	100	110	42	187	78	184

Din Standard 582

CODE	SIZE	PITCH	WLL	WEIGHT	DIMENSIONS				
					D	D1	D2	H	W
	mm	mm	T	kg/pc	mm	mm	mm	mm	mm
602006	M6	1.00	0.07	0.055	6	17	20	36	28
602008	M8	1.25	0.14	0.06	8	20	20	36	36
602010	M10	1.50	0.23	0.1	10	25	25	45	45
602012	M12	1.75	0.34	0.19	12	30	30	53	54
602016	M16	2.00	0.70	0.31	16	35	35	62	63
602020	M20	2.50	1.20	0.45	20	40	40	71	72
602022	M22	2.50	1.50	0.68	22	45	45	80.5	81
602024	M24	3.00	1.80	0.72	24	50	50	90	90
602027	M27	3.00	2.50	1.16	27	50	50	97	90
602030	M30	3.50	3.60	1.6	30	65	65	109	108
602036	M36	4.00	5.10	2.8	36	75	75	128	126
602042	M42	4.50	7.00	4.2	42	85	85	147	144
602048	M48	5.00	8.60	6.5	48	100	100	168	168



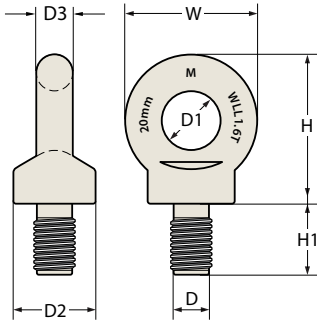
Eye Bolt size	Single Eye Bolt		Pair of Eye Bolts			
	Axial	Side 90°	Vertical Pair	30° Angle	60° Angle	90° Angle
M6	0.07	0.018	0.035	0.088	0.056	0.035
M8	0.14	0.035	0.07	0.176	0.112	0.07
M10	0.23	0.058	0.115	0.29	0.184	0.115
M12	0.34	0.085	0.17	0.428	0.272	0.17
M16	0.70	0.175	0.35	0.882	0.56	0.35
M20	1.20	0.3	0.6	1.512	0.96	0.6
M22	1.50	0.375	0.75	1.89	1.2	0.75
M24	1.80	0.45	0.9	2.268	1.44	0.9
M27	2.50	0.625	1.25	3.15	2.0	1.25
M30	3.60	0.9	1.8	4.536	2.88	1.8
M36	5.10	1.275	2.55	6.426	4.08	2.55
M42	7.00	1.75	3.5	8.82	5.6	3.5
M48	8.60	2.15	4.3	10.836	6.88	4.3
M56	11.50	2.875	5.75	14.49	9.2	5.75

Eye bolt - BS4278 with Metric Sizing



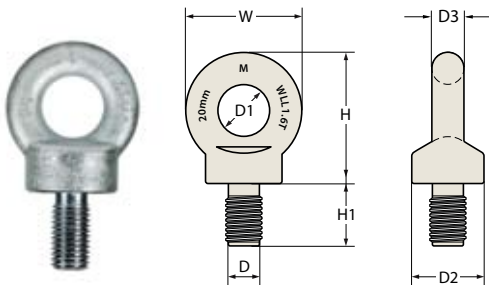
BS4278 Eye Bolts are generally used as a removable lifting point where a rated female thread or nut can be utilized also can be used as a termination for Chain, Wire Rope and other assemblies where required.

- Made from carbon steel following steel specifications of BS 970 with zinc plated finish, manufactured with a smaller eye than DIN type.
- Conforms to AS2317, marked with working load limit in tonne, nominal size, quality grade, batch numbered and supplier identification. Proof tested to 2 x Working load limit and Minimum breaking force of 6 x Work load limit.
- Test Certificate are supplied upon request.



CODE	SIZE	PITCH	WLL	WEIGHT	DIMENSIONS						
					D	D1	D2	D3	H	H1	W
	mm	mm	T	kg/pc	mm	mm	mm	mm	mm	mm	mm
603010	M10	1.50	0.25	0.07	10	15	22	9	35	18	32
603012	M12	1.75	0.40	0.07	12	15	22	9	40	18	33
603016	M16	2.00	0.80	0.16	16	20	29	12	52	23	44
603020	M20	2.50	1.60	0.44	20	27	40	16	72	32	59
603024	M24	3.00	2.50	0.86	24	35	52	21	92	40	77
603030	M30	3.50	4.00	1.66	30	44	65	26	116	51	96

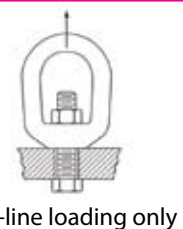
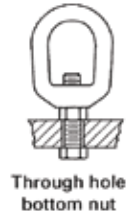
Eye bolt - BS529 with Whitworth Sizing



BS529 Eye Bolts are generally used as a removable lifting point where a rated female thread or nut can be utilized, also can be used as a termination for Chain, Wire Rope and other assemblies where required.

- Made from carbon steel following steel specifications of BS 970 with zinc plated finish, manufactured with a smaller eye than DIN type.
- Conforms to AS2317, marked with working load limit in tonne, nominal size, quality grade, batch numbered and supplier identification. Proof tested to 2 x Working load limit and Minimum breaking force of 6 x Work load limit.
- Test Certificate are supplied upon request.

CODE	SIZE	PITCH	WLL	WEIGHT	DIMENSIONS						
					D	D1	D2	D3	H	H1	W
	inches	inches	T	kg/pc	in	in	in	in	in	in	in
604005	3/8	0.0625	0.25	0.06	10	9/16	27/32	11/32	35	21/32	32
604010	1/2	0.0833	0.5	0.14	12	3/4	1 1/8	7/16	40	7/8	33
604015	5/8	0.0909	1.0	0.3	16	15/16	1 13/32	9/16	52	1 3/32	44
604020	3/4	0.1	1.5	0.5	20	1 1/8	1 11/16	21/32	72	1 5/16	59
604025	7/8	0.125	2.0	0.6	22	1 5/16	1 31/32	25/32	82	1 17/32	73
604030	1	0.1429	2.5	1.1	24	1 1/2	2 1/4	7/8	92	1 3/4	77
604035	1 1/4	0.1429	4	2.1	32	1 7/8	2 13/16	1 3/32	130	2 3/16	123



WORKING LOAD LIMITED FOR BS EYE BOLTS

Metric	Imperial	Vertical		Horizontal		30°	60°	90°
		WLL	Weight	WLL	Weight	WLL	WLL	WLL
M10	3/8"	0.25	0.06	0.12	0.12	0.31	0.2	0.12
M12	1/2"	0.4	0.1	0.2	0.2	0.5	0.32	0.2
M16	5/8"	0.8	0.2	0.4	0.4	1.0	0.64	0.4
M20	3/4"	1.6	0.4	0.8	0.8	2.0	1.28	0.8
M22	7/8"	2.0	0.5	1.0	1.0	2.5	1.6	1.0
M24	1"	2.5	0.62	1.25	1.25	3.1	2.0	1.25
M30	1.1/8"	4.0	1.0	2.0	2.0	5.0	3.2	2.0
M33	1.1/4"	5.0	1.25	2.5	2.5	6.3	4.0	2.5
M36	1.1/2"	6.3	1.57	3.1	3.1	7.9	5.0	3.1
M39	1.9/16"	7.0	1.75	3.5	3.5	8.8	5.6	3.5
M42	1.5/8"	8.0	2.0	4.0	4.0	10.0	6.4	4.0
M48	2"	10.0	2.5	5.0	5.0	12.6	8.0	5.0
M56	2.1/4"	15.0	3.7	7.5	7.5	18.9	12.0	7.5

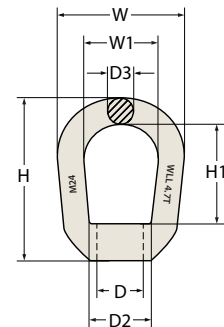
Eye Bow Nut

Bow Nut in accordance with requirements of ASME B30.26, used as a removable hanging Eye Nut where a rated male thread or bolt can be utilized commonly used in the Mining Industry.

- Made from G-400 forged steel quenched and tempered with zinc plated finish, manufactured with a bow shape, available in metric thread sizes only.
- Marked with working load limit in tonne, nominal size in millimetre, batch numbered and supplier identification. Proof tested to 2 x Working load limit and Minimum breaking force of 5 x Work load limit.
- Test Certificate are available upon request.

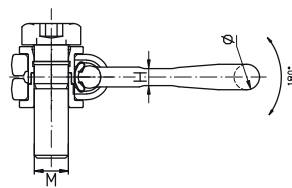
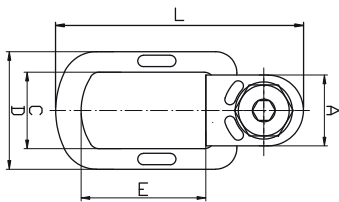


M24



CODE	SIZE	WLL	WEIGHT	DIMENSIONS						
				D	D2	D3	H	H1	W	W1
	mm	T	kg/pc	mm	mm	mm	mm	mm	mm	mm
602035	M24	4.7	1	24	46	21	125	75	98	53

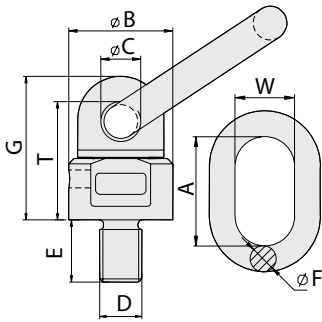
Swivel Large Eye Bolt



CODE	SIZE	WLL	WEIGHT	DIMENSIONS								
				Ø	A	C	D	E	H	M	L	
	mm	T	kg/pc	BL/T	mm	mm	mm	mm	mm	mm	mm	mm
605220	M20	2.5	1.21	10	16	50	54	83	74	12	20	159
605224	M24	4	1.37	16	18	50	54	83	88	12	24	175



Swivel Eye Bolt



Swivel Ring Bolt accordingly to EN 818-4 for load ring and AS2318 for the swivel component. Used as a swiveling load ring capable of rotating under load due to ball bearings ideally suited for dynamic lifting in any position.

- Made from G80 alloy steel with yellow painted finish, manufactured with a oval link, and available in metric thread sizes from 8mm to 36mm.
- Marked with working load limit in tonne, nominal size in millimetre, quality mark and supplier identification. Proof tested to 1.25 x Working load limit.
- Test Certificate are available upon request.

CODE	SIZE	WLL(4:1)		WEIGHT	DIMENSIONS						
		90°	0°		A	B	C	E	F	G	W
	mm	T	T	kg	mm	mm	mm	mm	mm	mm	mm
605108	8	0.3	0.6	0.41	55	36	15	13	13	51	30
605110	10	0.45	0.9	0.43	55	36	15	18	13	51	30
605112	12	0.5	1	0.44	55	36	15	18	13	51	30
605116	16	1.12	2	0.46	55	36	15	20	13	52	30
605120	20	2	4	0.96	70	49.5	19	30	16	68	35
605124	24	3.15	6.3	1.45	85	57	22	30	18	78	40
605130	30	5.3	10.6	2.17	85	66	23.5	35	20	96.5	40
605136	36	8	11.8	3.6	115	80	27	50	22	109	50



- Swivel Ring Bolt should be tightened by hand with Spanner only.
- These Ring Bolts are not designed for permanent rotating continuously.
- Not suitable for turning under full load at 90° in side loading position.

Swivel Eye Bolt

Collar shall be seated against threaded surface

Eye Bolt size	Single Eye Bolt		Pair of Eye Bolts			
	Axial	Side 90°	Vertical Pair	30° Angle	60° Angle	90° Angle
M8	0.3	0.075	0.15	0.58	0.52	0.42
M10	0.45	0.112	0.22	0.86	0.78	0.63
M12	0.5	0.125	0.25	0.96	0.86	0.70
M16	0.12	0.28	0.56	2.16	1.9	1.58
M20	2.0	0.5	1.0	3.85	3.45	2.80
M24	3.15	0.78	1.56	6.0	5.45	4.45
M30	5.3	1.3	2.6	10.2	9.15	7.47
M36	8.0	2.0	4.0	15.5	13.8	11.25