

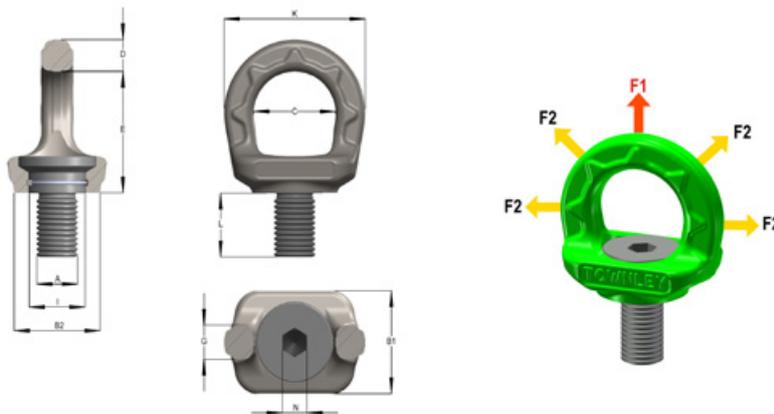
Grade-10 Swivel Eyebolts

User Guide

- Forged from high tensile alloy steel
- Tempered
- Electromagnetic crack detection to AS1171
- Hi-visibility powder coating to AS4506
- Manufactured exclusively from Australian Made Steel
- Long shanks and special thread forms made to order

Please ensure that all information contained in this user guide has been read and understood prior to the safe use of the Grade-10 Lifting Eyebolt. Failure to follow this guide may result in serious injury and/or property damage. Failure to follow this user guide voids the manufacturer's warranty.

This document may refer to the Eyebolt as the Lifting Point



Townley Drop Forge is both NATA Accredited (Test Lab No. 13554) and AS/NZS ISO9001 Certified (Certificate number FS 604897).

A Imperial	A Metric	WLL F1	WLL F2	B1	B2	C	D	E	G	I	K	L	N	Torque (Nm)	Weight (kg)
5/16"	M08	1t	0.3t	33	30	30	11	43	11	18	55	12	8	7	0.23
3/8"	M10	1t	0.4t	33	30	30	11	43	11	18	55	15	8	14	0.23
1/2"	M12	2t	0.75t	33	30	30	11	43	11	18	55	18	8	22	0.23
5/8"	M16	4t	1.5t	39	35	34	14	49	14	22	64	24	10	60	0.38
3/4"	M20	6t	2.3t	48	42	39	16	56	16	28	69	30	12	105	0.60
7/8"	M22	7t	2.3t	48	42	39	16	56	16	28	69	33	12	144	0.72
1"	M24	8t	3.2t	56	50	50	19	71	19	33	86	36	14	182	1.10
1.1/8"	M27	8t	3.2t	56	50	50	19	71	19	33	86	41	14	260	1.80
1.1/4"	M30	12t	4.5t	69	60	60	22	85	22	42	110	45	17	345	1.90
1.1/2"	M36	16t	7t	85	76	70	29	100	29	50	132	54	22	600	4.00
1.3/4"	M42	24t	9t	110	100	95	38	132	38	69	179	63	27	930	7.80
2"	M48	32t	12t	110	100	95	38	132	38	69	179	72	27	1380	8.20

WLL (WORKING LOAD LIMIT)

Each eyebolt is clearly stamped with the permitted F2 WLL.

F2 WLL - indicates safe use for non-axial lifts.

F1 WLL - indicates loads which are in line with the axis of the threaded end of the eyebolt. F1 WLL allows up to four (4) times higher lifting capacity whilst maintaining a 4:1 design factor of safety.

Subject to technical modifications

Grade-10 Swivel Eyebolts

Care & Use

1. Observe WLL (Working Load Limit) and ensure proper planning before lifting operation. Do not exceed the WLL
2. Before use, it is important that the user observes relevant standards and other statutory regulations. Inspections shall only be carried out by competent persons.
3. The material construction to which the Lifting Point will be attached shall be of adequate strength to withstand forces during lifting without deformation.

The following recommendations should be observed for minimum thread engagement of a tapped hole.

- 1.50 D in Steel (minimum AS3678 G250)
- 1.75 D in Cast Iron (minimum T250)
- 3.00 D in Aluminum alloys (only available in longer shank versions)

(D = Eyebolt thread diameter, eg. M20)

When lifting light metals, nonferrous heavy metals and grey cast iron, special consideration should be given to the choice of thread and respective Working Load Limit to ensure that the thread corresponds to the requirements of the respective base material.

4. Before installation and every use, visually inspect the Lifting Point and discard if there is evidence of corrosion, wear, weld cracks and deformation.

5. The Lifting Point must be positioned on the load in such a way that movement is avoided during lifting

- a) For single leg lifts the lifting point must be vertically above the centre of gravity of the load
- b) For two leg lifts, the lifting points must be equidistant to/above the centre of gravity of the load
- c) For three and four leg lifts, the lifting points must be arranged symmetrically around the centre of gravity and in the same plane.

6. For multi-leg sling assemblies, allowance should be made for the angle between the sling legs. Please refer to the Working Load Limit guidelines and other relevant standards e.g. AS3775 or AS3776 for requirements on reduction of Working Load Limit.

The lifting points should be mounted in a way that allows easy access for inspection and for ease of assembly / disassembly with a slinging arrangement.

The working load limit shall depend on the sling angles and should be calculated using the following formula:

$$WLL = \frac{W}{N \times \cos \beta}$$

W = Load weight in kg
 N = number of legs on lifting points
 β = angle of inclination of the leg to the vertical

7. Matching Of Threads: Extreme care should be taken to ensure that Eyebolts are not screwed into threaded holes of different size or thread type.

8. Where an Eyebolt 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 nut.

9. Where an Eyebolt is used in a tapped hole. Drill and tap the work piece so that the Eyebolt is installed perpendicular to the surface of the work piece. The work piece must be flat, providing complete contact for the under-surface collar of the Eyebolt.

10. The swivel lifting point is adjustable 360°. Adjust to the direction of pull before engaging in a lift. *Warning: Never rotate the Lifting Point whilst under a load.*

11. The lifting point should be fitted with the correct Hexagon socket tool.



12. Excessive tightening of the Eyebolt shall be avoided. Tighten to recommended torque and periodically check torque as bolts could loosen in extended service.

13. Where 90° perpendicular loading is applied, the eye of the lifting point must be aligned in the vertical plane.

14. Continuous slings must never be used with pairs of Eyebolts

15. Effects of Temperature: The strength of the Lifting Point is adversely affected by excessively elevated temperatures. Where the temperatures are likely to exceed 100°C, the WLL has to be reduced accordingly:

Temperature °C	Reduction of WLL, percent (%)
-10 to 100	No reduction
100 to 200	10
200 to 350	25
Above 350	Not permitted

16. Do not use under chemical influences such as acids, alkaline solutions and vapours. I.e. in or around pickling baths, hot dip galvanizing plants.

17. After fitting, a periodic inspection should be undertaken by a competent person to examine the continued suitability.

Inspection Criteria

- Ensure the Eyebolt thread and the tapped hole are compatible.
- Ensure the Lifting Point thread is tight, but not excessively tightened during fitting.
- Check that the under face of the collar of the Eyebolt and the contacting surface of the load are smooth, flat and at right angles to the axis of the tapped hole.
- The Working Load Limit and manufacturers markings must be clearly visible
- The thread of the Eyebolt has not been damaged in a manner likely to reduce the strength of the joint assembly.
- Deformation of any part of the component.
- Visible damage such as notches, particularly in high stress areas.
- Wear should be no more than 10% of cross sectional diameter.
- Evidence of any cracks.
- Evidence of any corrosion.
- Damage to the bolt and/or the thread.