



# Grade 4 Eyebolts & Eyenuts

AS2317.1:2018 USER GUIDE

**TOWNLEY**  
FORGING AUSTRALIAN QUALITY

1 Nominal thread size (see Notes 2 and 3)	2 Single eyebolt or eyenut		3 Pair of eyebolts or eyenuts (see Notes 1 and 4)			
	Transverse	Axial	Transverse	Maximum Included angle 30°	Maximum Included angle 60°	Maximum Included angle 90°
	t	t	t	t	t	t
<b>Loading factor</b>	<b>0.25</b>	<b>1</b>	<b>0.5</b>	<b>1.25</b>	<b>0.80</b>	<b>0.5</b>
M10	0.06	0.25	0.12	0.31	0.20	0.12
M12	0.10	0.40	0.20	0.50	0.32	0.20
M16	0.20	0.80	0.40	1.00	0.64	0.40
M20	0.40	1.60	0.80	2.0	1.28	0.80
M22	0.50	2.0	1.00	2.5	1.60	1.00
M24	0.62	2.5	1.25	3.1	2.0	1.25
M30	1.00	4.0	2.0	5.0	3.2	2.0
M33	1.25	5.0	2.5	6.3	4.0	2.5
M36	1.57	6.3	3.1	7.9	5.0	3.1
M39	1.75	7.0	3.5	8.8	5.6	3.5
M42	2.0	8.0	4.0	10.0	6.4	4.0
M48	2.5	10.0	5.0	12.6	8.0	5.0
M56	3.7	15.0	7.5	18.9	12.0	7.5
M64	5.0	20.0	10.0	25	16.0	10.0
M72	6.2	25.0	12.5	31	20	12.5
M76	7.5	30.0	15.0	37	24	15.0

**NOTES:**

- The included angle, between the legs of every two-leg sling connected to a load by a pair of eyebolts or eyenuts, should not exceed 90°.
- Where multiple eyebolts are used (2, 3, 4, or more), without a load sharing device no more than two eyebolts shall be calculated to take the load.
- The WLL applicable to each configuration is the axial WLL multiplied by the loading factor.
- The lifting capacity of the eyebolts shall be determined by a competent person. Lifting capacity may be affected by aspects including: asymmetry, load share and load equalisation.

**INSPECTION CRITERIA:**

- General** - Eyebolts and eyenuts shall be inspected prior to use.
- Cleaning** - Eyebolts and eyenuts shall be suitably cleaned prior to inspection. There shall be no debris or contaminants present in the thread or underside of collar.
- Before Use** - Prior to each use, eyebolts and eyenuts shall be visually inspected to ensure that the devices are free of any significant damage or wear and that the size and rated capacity is clearly identified. If any defects are detected, the eyebolt or eyenut shall immediately be withdrawn from service.
- Periodic** - Eyebolts and eyenuts shall be subject to periodic inspection by a competent person at suitable intervals.

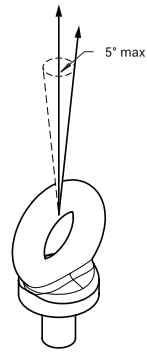
**INFORMATION THAT SHOULD BE SUPPLIED WITH ENQUIRIES AND ORDERS:**

The following information should be supplied with enquiries and with orders for eyebolts or eyenuts:

- Nominal size.
- Description of eyebolt or eyenut.
- Grade of material.
- Thread type.
- Thread length, if not standard.
- Surface finish, unless self-coloured.
- Lifting capacity as –
  - Axial WLL;
  - Transverse WLL; or
  - WLL for particular conditions of use.
- Whether proof testing is required.
- Whether a copy of the test certificate is to be supplied.
- Whether additional testing such as analysis of material or non-destructive testing is required.

## General Loading

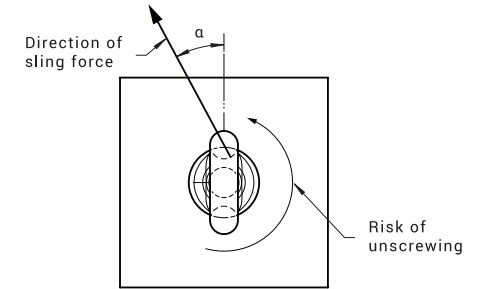
Where the centre-line of loading is not in line with the axis of the threaded end of the eyebolt or eyenut, including where a two-leg sling is connected to a pair of eyebolts or eyenuts to support a load, the angle between the centre-line of the loading on the eye of the eyebolt or eyenut and the plane containing the eye of the eyebolt or eyenut shall not exceed 5°. See Figure 1 & 2



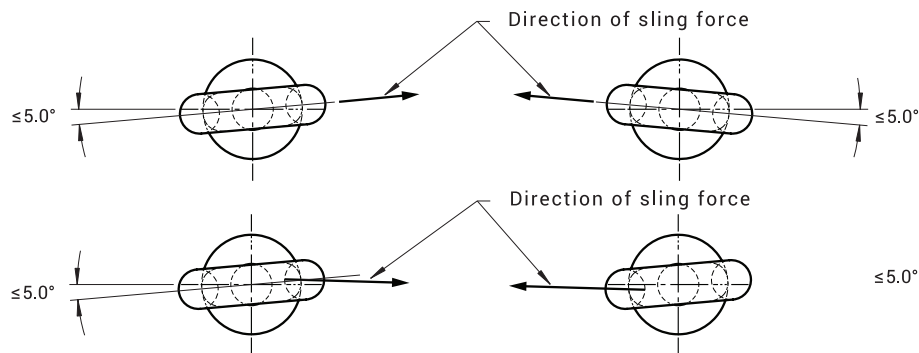
**Figure 1**  
Alignment of loading with axis of threaded end for axial loading.

## Transverse Loading

Where transverse loading is applied the plane of the eye of the eyebolt or eyenut shall be aligned with sling forces and shall not be laterally loaded. See Figure 3



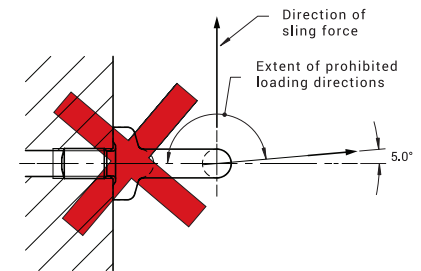
**Figure 3** Misalignment of eye in transverse configuration.



**Figure 2** Alignment of eyes when using 2 leg slings.

## Lateral Loading

Loads shall not be applied outside tolerances shown. See Figure 4



**Figure 4** Angular limits of lateral loading perpendicular to the plane. of the eye.