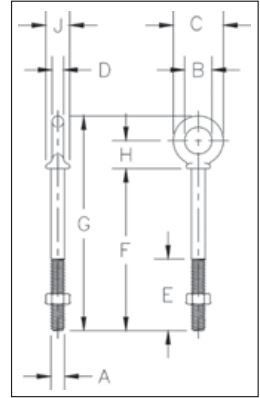




**G-277**  
Shoulder Nut  
Eye Bolts

- Forged Steel - Quenched and Tempered.
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.
- Working Load Limits shown are for in-line pull. For angle loading, see page 200.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these bolts meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.
- All Bolts Hot Dip galvanized after threading (UNC).
- Furnished with standard Hot Dip galvanized, heavy hex nuts.



**Fatigue Rated**



## G-277 Shoulder Nut Eye Bolts

Shank Diameter & Length (in)	G-277 Stock No.	Working Load Limit (lb)*	Weight Per 100 (lb)	Dimensions (in)								
				A	B	C	D	E	F	G	H	J
5/16 x 2-1/4	1045050	1200	12.50	.31	.62	1.12	.25	1.50	2.25	3.50	.69	.56
5/16 x 4-1/4	1045078	1200	18.80	.31	.62	1.12	.25	2.50	4.25	5.50	.69	.56
3/8 x 2-1/2	1045096	1550	21.40	.38	.75	1.38	.31	1.50	2.50	3.97	.78	.66
3/8 x 4-1/2	1045112	1550	25.30	.38	.75	1.38	.31	2.50	4.50	5.97	.78	.66
1/2 x 3-1/4	1045130	2600	42.60	.50	1.00	1.75	.38	1.50	3.25	5.12	1.00	.91
1/2 x 6	1045158	2600	56.80	.50	1.00	1.75	.38	3.00	6.00	7.88	1.00	.91
5/8 x 4	1045176	5200	68.60	.62	1.25	2.25	.50	2.00	4.00	6.44	1.31	1.12
5/8 x 6	1045194	5200	102.40	.62	1.25	2.25	.50	3.00	6.00	8.44	1.31	1.12
3/4 x 4-1/2	1045210	7200	144.50	.75	1.50	2.75	.62	2.00	4.50	7.44	1.56	1.38
3/4 x 6	1045238	7200	167.50	.75	1.50	2.75	.62	3.00	6.00	8.94	1.56	1.38
7/8 x 5	1045256	10600	225.00	.88	1.75	3.25	.75	2.50	5.00	8.46	1.84	1.56
1 x 6	1045292	13300	366.30	1.00	2.00	3.75	.88	3.00	6.00	9.97	2.09	1.81
1 x 9	1045318	13300	422.50	1.00	2.00	3.75	.88	4.00	9.00	12.97	2.09	1.81
1-1/4 x 8	1045336	21000	650.00	1.25	2.50	4.50	1.00	4.00	8.00	12.72	2.47	2.28
1-1/4 x 12	1045354	21000	795.00	1.25	2.50	4.50	1.00	4.00	12.00	16.72	2.47	2.28
1-1/2 x 15	1045372	24000	1425.00	1.50	3.00	5.50	1.25	6.00	15.00	20.75	3.00	2.75

\*Ultimate Load is 5 times the Working Load Limit. Maximum Proof Load is 2 times the Working Load Limit.



## FORGED EYE BOLT

### WARNINGS & APPLICATION INSTRUCTIONS



Regular Nut Eye Bolt G-291

Shoulder Nut Eye Bolt G-277

Machinery Eye Bolt S-279 / M-279

### Important Safety Information - Read & Follow

#### Inspection/Maintenance Safety:

- Always inspect eye bolt before use.
- Never use eye bolt that shows signs of wear or damage.
- Never use eye bolt if eye or shank is bent or elongated.
- Always be sure threads on shank and receiving holes are clean.
- Never machine, grind, or cut eye bolt.
- Do not leave threaded end of machinery eye bolt in aluminum loads for long periods of time as it may cause corrosion.

#### Assembly Safety:

- Never exceed load limits specified in Table 1 & Table 2.
- Never use regular nut eye bolts for angular lifts.
- Always use shoulder nut eye bolts (or machinery eye bolts) for angular lifts.
- For angular lifts, adjust working load as follows:

ANGLE FROM "IN-LINE"	ADJUSTED WORKING LOAD LIMIT
5 degrees	100% of rated working load
15 degrees	80% of rated working load
30 degrees	65% of rated working load
45 degrees	30% of rated working load
90 degrees	25% of rated working load

- Never undercut eye bolt to seat shoulder against the load.
- Always countersink receiving hole or use washers with sufficient I.D. to seat shoulder.
- Always screw eye bolt down completely for proper seating.
- Always tighten nuts securely against the load.

Size (in)	Working Load Limit (lb)
1/4	650
5/16	1,200
3/8	1,550
1/2	2,600
5/8	5,200
3/4	7,200
7/8	10,600
1	13,300
1-1/8	15,000
1-1/4	21,000
1-1/2	24,000
1-3/4	34,000
2	42,000
2-1/2	65,000

**⚠ WARNING**

- Load may slip or fall if proper eye bolt assembly and lifting procedures are not used.
- A falling load can seriously injure or kill.
- Read and understand these instructions, and follow all eye bolt safety information presented here.
- Read, understand, and follow information in diagrams and charts below before using eye bolt assemblies.

### Shoulder Nut Eye Bolt – Installation for Angular Loading

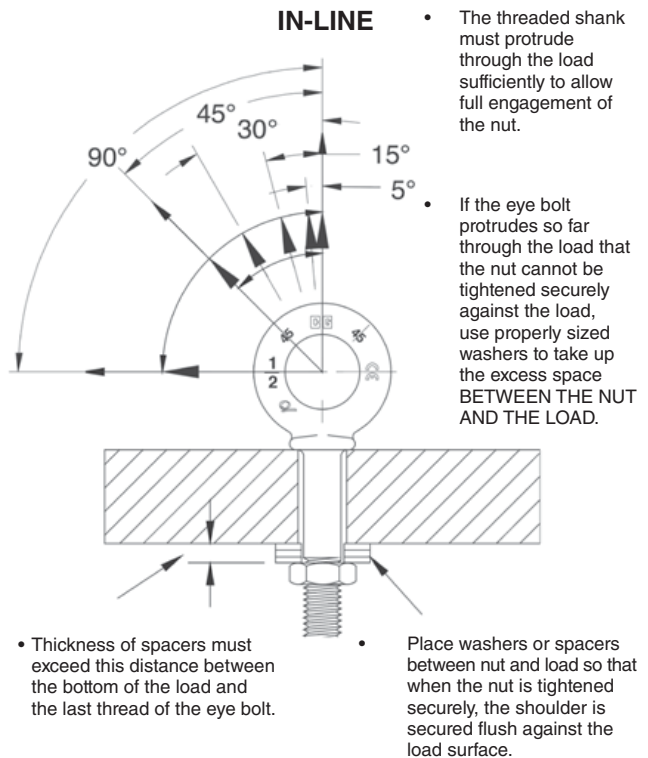
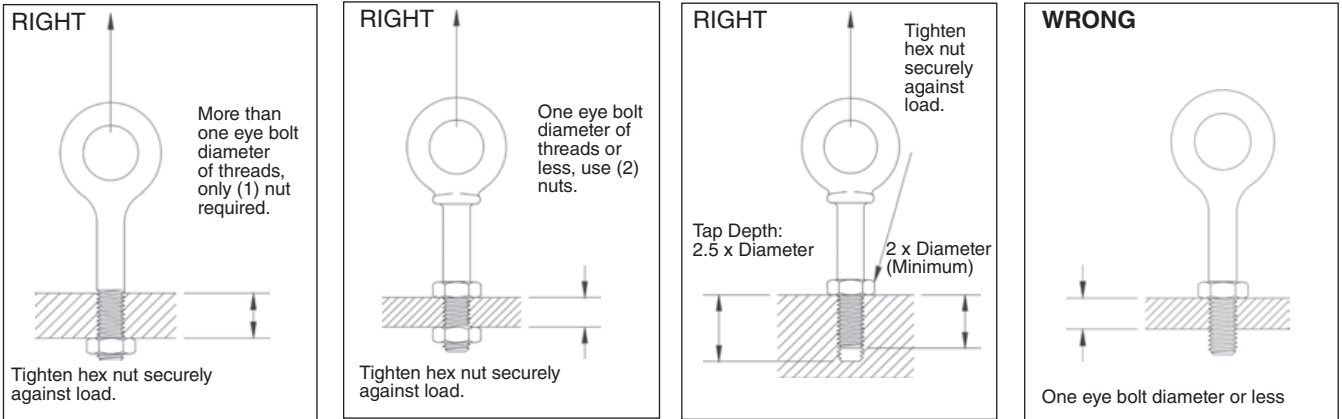


Figure 1

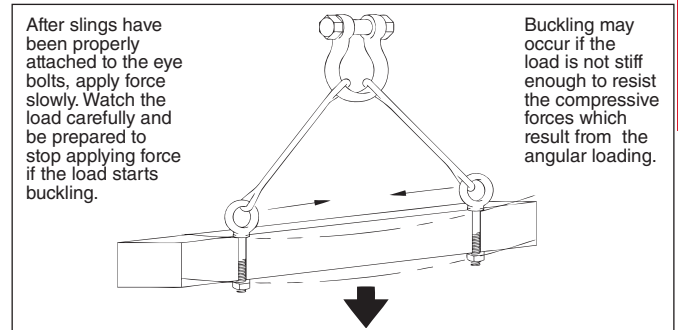
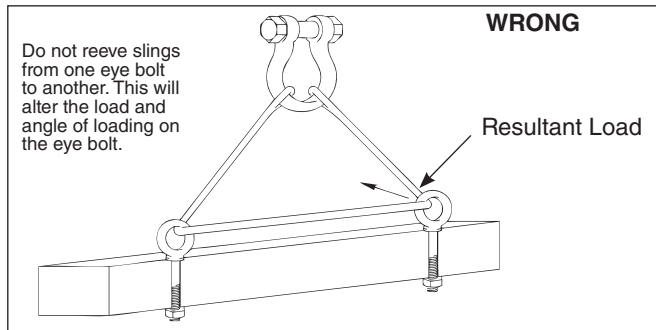
Metric Size	Working Load Limit - kg
m6	200
m8	400
m10	640
m12	1000
m16	1800
m20	2500
m24	4000
m27	5000
m30	6000
m36	8500
m42	14000
m48	17300
m64	29500

## Important – Read and understand these instructions before using eye bolts. Regular Nut & Shoulder Nut Eye Bolt – Installation for In-Line Loading



### Operating Safety

- Always stand clear of load.
- Always lift load with steady, even pull – do not jerk.
- Always apply load to eye bolt in the plane of the eye – not at an angle.
- Never exceed the capacity of the eye bolt—see Table 1 & 2.
- When using lifting slings of two or more legs, make sure the loads in the legs are calculated using the angle from the vertical sling angle to the leg and properly size the shoulder nut or machinery eye bolt for the angular load.



Rigging Accessories

## Machinery Eye Bolt - Installation for In-Line & Angular Loading

These eye bolts are primarily intended to be installed into tapped holes.

1. After the loads on the eye bolts have been calculated, select the proper size eye bolt for the job.

For angular lifts, adjust working load as follows:

Direction of Pull (from In-Line)	Adjusted Working Load
45 degrees	30% of rated working load
90 degrees	25% of rated working load

2. Drill and tap the load to the correct sizes to a minimum depth of one-half the eye bolt size beyond the shank length of the machinery eye bolt.
3. Thread the eye bolt into the load until the shoulder is flush and securely tightened against the load.
4. If the plane of the machinery eye bolt is not aligned with the sling line, estimate the amount of unthreading rotation necessary to align the plane of the eye properly.
5. Remove the machinery eye bolt from the load and add shims (washers) of proper thickness to adjust the angle of the plane of the eye to match the sling line. Use Table 3 to estimate the required shim thickness for the amount of unthreading rotation required.

Eye Bolt Size (in)	Shim Thickness Required to Change Rotation 90° (in)	Eye Bolt Size (mm)	Shim Thickness Required to change Rotation 90° (mm)
1/4	.0125	M6	.25
5/16	.0139	M8	.31
3/8	.0156	M10	.38
1/2	.0192	M12	.44
5/8	.0227	M16	.50
3/4	.0250	M20	.62
7/8	.0278	M24	.75
1	.0312	M27	.75
1-1/8	.0357	M30	.88
1-1/4	.0357	M36	1.00
1-1/2	.0417	M42	1.13
1-3/4	.0500	M48	1.25
2	.0556	M64	1.50
2-1/2	.0625	—	—

