



EYE BOLTS

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VANGUARD STEEL LTD.

EYE BOLTS



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FORGED EYE BOLT WARNING AND INFORMATION

It is very important to read and understand all information shown before using eye bolts



Regular Eye Bolt



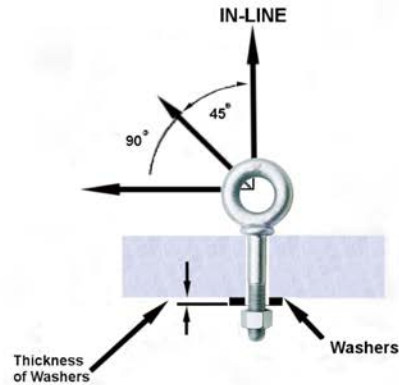
Shoulder Eye Bolt



Machine Eye Bolt

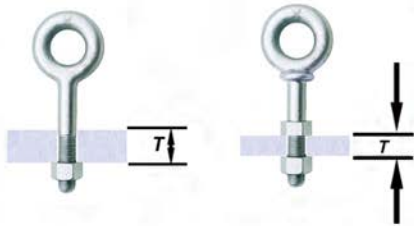
CAPACITY ADJUSTMENT FOR ANGULAR LOADING

Lift Angle In-Line Pull	Maximum Load
45°	30% of the working load limit (WLL)
90°	25% of the working load limit (WLL)



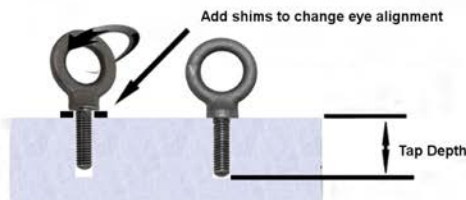
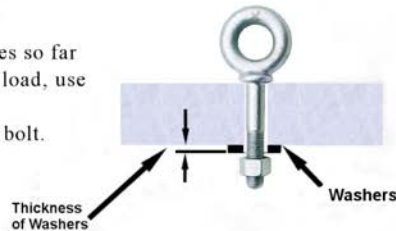
EYE BOLT INSTALLATION

Use one nut if the thickness is more than one eye bolt diameter ($T >$).
Use two nuts if the thickness is less than or equal to the eye bolt diameter ($T \leq$) as shown.



INSTALLATION FOR ANGULAR LOADING

Use shoulder nut eye bolts for angular loading. If the eye bolt protrudes so far through the load that the nut cannot be tightened securely against the load, use properly sized washers/spacer to take up the excess space between the bottom of the load and the last thread of the eye bolt.



INSTALLATION OF MACHINERY EYE BOLTS

These eye bolts are primarily intended to be installed in tapped holes. For installation, tap the load (tap depth) to a minimum depth of one-half the eye bolt size beyond the shank length of the machinery eye bolt.

If the plane of the machinery eye bolt is not aligned with the sling line, add shims (washers/spacers) of proper thickness to adjust the angle of the plane of the eye to match the sling line (as shown)

FORGED EYE BOLT WARNINGS AND INFORMATION

It is very important to read and understand all information shown before using eye bolts



Shoulder Nut Eye Bolt



Regular Nut Eye Bolt



Machinery Eye Bolt

Shoulder nut and/or machinery eye bolts are recommended for rigging hardware, except when prohibited by the configuration of the item that the eye bolts are attached to.

Where non-shoulder eye bolts are required, they should only be used for vertical pulls or in rigging systems designed, analyzed and approved by a properly qualified/competent person.

For vertical loading eye bolts without shoulders have the same load-carrying capacity/ability as shoulder eye bolts

Warning:

FAILURE TO OBSERVE THESE WARNINGS MAY RESULT IN SERIOUS INJURY OR DEATH!

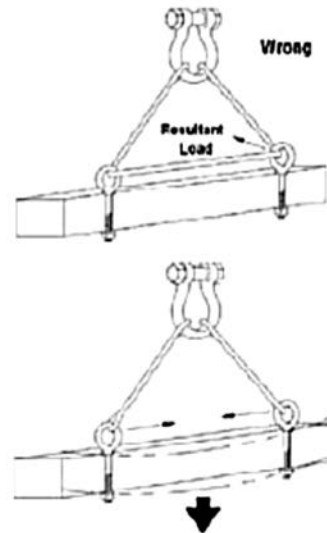
- **ALWAYS** inspect eye bolts before use, checking for wear, damage, bent or elongation of the eye and/or shank and damage to the threads. The inspection should be performed by a properly trained/competent person
- **ALWAYS** make sure that the threads on the shank and the receiving hole are clean before use
- **ALWAYS** apply load to the eye bolt in the plane of the eye not at an angle
- **ALWAYS** tighten nuts securely against the load
- **NEVER** lift or transport loads over or near people
- **NEVER** exceed the rate capacity (WLL) of any component
- **NEVER** insert the tip of a hook into an eye bolt, use a 'Golden Pin'® shackle to avoid loading the hook tip
- **NEVER** machine, cut, grind or in any way alter eye bolts
- **NEVER** use eye bolts which show signs of wear or deformation
- **NEVER** use regular nut eye bolts for angular lifts. Only shoulder nut or machinery eye bolts should be used and observe WLL capacity adjustment information

REEVING OF A SLING THROUGH AN EYE BOLT

Slings should never be reeved through an eye bolt or through a pair of eye bolts. Reeving will alter the angle of the loading on the eye bolts. Only one leg should be attached to each eye bolt.

After properly attaching the slings to the eye bolts, slowly lift the load. Watch the load carefully and be prepared to stop lifting the load if it starts to buckle.

Buckling can occur if the load is not stiff enough to resist the compressive forces which result from the angular loading.

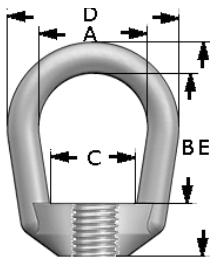




Forged Eye Nuts

Permanently embossed with VGD© and size for traceability to meet the requirements of ASME B30.26

Forged Carbon Steel
 Quenched & tempered
 UNC Threads



Size	Nominal	Tap Size	Dimensions (inches)					WLL (lbs)	Weight lbs/pc	Product Code
			A	B	C	D	E			
1	1/4	1/4	0.75	1.00	0.75	1.25	1.72	520	0.05	29740016
2	5/16	3/8	1.00	1.20	0.83	1.62	2.09	1,250	0.10	29740020
3	3/8	1/2	1.25	1.44	1.08	2.00	2.55	2,250	0.16	29740024
4	1/2	5/8	1.50	1.92	1.35	2.50	3.25	3,600	0.28	29740032
5	5/8	3/4	1.75	2.28	1.59	3.00	3.96	5,200	0.59	29740040
6	3/4	7/8	2.00	2.50	1.96	3.50	4.40	7,200	0.98	29740048
7	7/8	1	2.25	2.92	2.21	4.00	5.10	10,000	1.50	29740056
8	1	1-1/4	2.50	3.35	2.46	4.50	5.87	15,500	2.40	29740100
10	1-1/4	1-1/2	3.12	4.31	3.09	5.62	7.06	22,500	3.96	29740116
11	1-1/2	2	4.10	6.00	4.09	7.12	10.13	40,000	6.54	29740132

Finish: Hot dip galvanized

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
 WORKING LOAD LIMITS PERTAIN TO IN-LINE PULLS ONLY
 DO NOT USE EYE BOLTS WHICH SHOW SIGNS OF WEAR OR DEFORMATION!



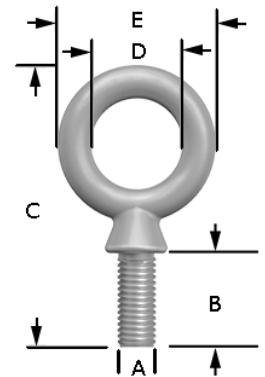
Machinery Eye Bolts

Permanently embossed with VGD© and size for traceability to meet the requirements of ASME B30.26

Forged Carbon Steel
 Quenched & tempered
 UNC Threads



Size (A x B)		Dimensions (inches)			WLL (lbs)	Weight lbs/pc	Product Code
Diameter	Shank	C	D	E			
1/4	1	2.34	0.74	1.17	650	0.05	29751010
5/16	1-1/8	2.74	0.92	1.44	1,200	0.10	29752011
3/8	1-1/4	3.06	1.00	1.66	1,550	0.16	29753012
1/2	1-1/2	3.66	1.17	1.96	2,600	0.28	29754015
5/8	1-3/4	4.41	1.35	2.40	5,200	0.59	29755017
3/4	2	5.00	1.45	2.75	7,200	0.98	29756020
7/8	2-1/4	5.79	1.75	3.22	10,600	1.50	29757022
1	2-1/2	6.50	1.92	3.77	13,300	2.40	29759025
1-1/4	3	7.50	2.29	4.42	21,000	3.96	29759030
1-1/2	3-1/2	9.25	2.99	5.59	24,000	6.54	29759035



Finish: Self colour

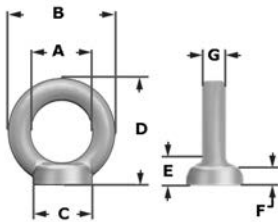
WARNING : NEVER EXCEED WORKING LOAD LIMITS !
 WORKING LOAD LIMITS PERTAIN TO IN-LINE PULLS ONLY
 DO NOT USE EYE BOLTS WHICH SHOW SIGNS OF WEAR OR DEFORMATION!

Pad Eyes

Forged Carbon Steel.

Quenched & tempered, self colour.

Forged from 1035 Carbon steel-allowing excellent welding qualities.



Size	Dimensions (inches)							Weight lbs/pc	Apprx. Capacity *	Product Code
	A	B	C	D	E	F	G			
0	0.25	0.63	0.62	0.75	0.30	0.09	0.19	0.028	650 lbs.	297400000
1	0.38	0.88	0.88	1.03	0.40	0.13	0.25	0.062	1200 lbs.	297400011
1-1/2	0.63	1.12	1.00	1.31	0.44	0.16	0.25	0.095	1200 lbs.	297400015
2	0.75	1.50	1.05	1.63	0.50	0.19	0.38	0.170	2600 lbs.	297400021
4	1.00	2.11	1.43	2.34	0.78	0.22	0.56	0.510	5200 lbs.	297400041
5	1.25	2.62	1.75	2.75	0.81	0.25	0.69	0.830	7200 lbs.	297400051

* Capacities are only approximations and should not be taken as guaranteed Work Load Limit
 Since we cannot control the method of attachment (weld quality) a Work Load Limit is not provided.

Finish: Self colour

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
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Regular Nut Eye Bolts

Permanently embossed with VGD© and size for traceability to meet the requirements of ASME B30.26

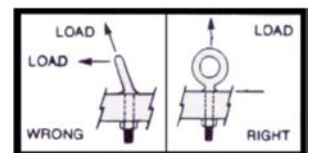
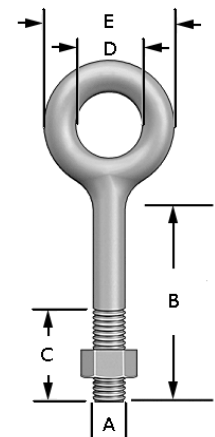
Forged Carbon Steel.

Quenched & tempered, hot dip galvanized with heavy hex nut.

UNC Threads.



Size (A x B)		Dimensions (inches)			WLL (lbs)	Weight lbs/pc	Product Code
Diameter	Shank	C	D	E			
A	B	C	D	E			
5/16	4-1/2	2.48	0.60	1.25	1,200	0.16	29702042
3/8	2-1/2	1.51	0.75	1.49	1,550	0.19	29703025
3/8	4-1/2	2.45	0.75	1.49	1,550	0.25	29703045
3/8	6	2.55	0.75	1.49	1,550	0.30	29703060
1/2	3-1/4	1.48	1.00	2.04	2,600	0.51	29704032
1/2	6	3.15	1.00	2.04	2,600	0.63	29704060
1/2	8	3.06	1.00	2.04	2,600	0.76	29704080
1/2	10	3.05	1.00	2.04	2,600	0.87	29704100
1/2	12	3.20	1.00	2.04	2,600	1.00	29704120
5/8	4	2.08	1.23	2.49	5,200	0.94	29705040
5/8	6	3.25	1.23	2.49	5,200	1.13	29705060
5/8	8	3.07	1.23	2.49	5,200	1.32	29705080
5/8	10	3.10	1.23	2.49	5,200	1.49	29705100
5/8	12	4.11	1.23	2.49	5,200	1.59	29705120
3/4	4-1/2	2.25	1.44	2.95	7,200	1.51	29706045
3/4	6	3.04	1.44	2.95	7,200	1.82	29706060
3/4	8	3.14	1.44	2.95	7,200	1.95	29706080
3/4	10	3.17	1.44	2.95	7,200	2.08	29706100
3/4	12	4.22	1.44	2.95	7,200	2.77	29706120
1	6	3.00	1.95	3.99	13,300	3.23	29707060
1	12	3.90	1.95	3.99	13,300	4.68	29707120



Lift Angle	Max. Load
45 °	30 % of WLL
90 °	25 % of WLL

Finish: Hot dip galvanized

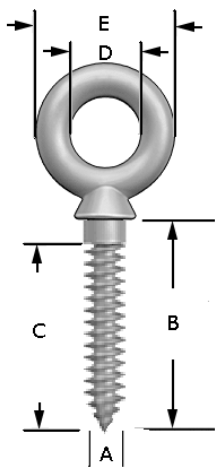
WARNING : NEVER EXCEED WORKING LOAD LIMITS !
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 ANGULAR LIFTS: Do not use Regular Nut Eye Bolts-use only Shoulder Nut or Machinery Eye bolts and observe the reduced Working Load Limits.



Screw Eye Bolts

Permanently embossed with VGD© and size for traceability to meet the requirements of ASME B30.26

Forged Carbon Steel
Quenched & tempered



Diameter Inches	Dimensions (inches)					Weight lbs/pc	Product Code
	A	B	C	D	E		
1/4	1.98	1.53	0.46	0.92	0.06	29731020	
5/16	2.39	1.88	0.62	1.15	0.09	29732025	
3/8	2.69	2.00	0.75	1.42	0.17	29733025	
1/2	3.34	2.54	0.94	1.74	0.34	29734032	
5/8	4.00	3.34	1.21	2.27	0.69	29735040	

Finish: Hot dip galvanized

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Shoulder Nut Eye Bolts

Permanently embossed with VGD© and size for traceability to meet the requirements of ASME B30.26

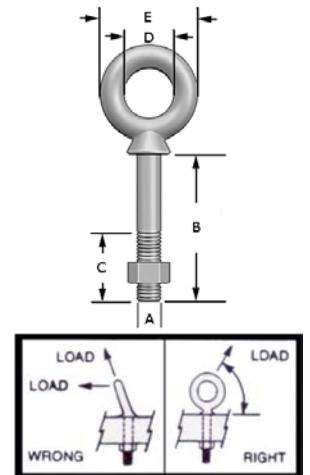
Forged Carbon Steel

Quenched & tempered, hot dip galvanized with heavy hex nut.

UNC Threads



Size (A x B)		Dimensions			WLL (lbs)	Weight lbs/pc	Product Code
Diameter	Shank	(inches)					
A	B	C	D	E			
1/4	2	1.61	0.47	0.90	650	0.06	29711020
1/4	4	2.40	0.47	0.90	650	0.08	29711040
5/16	2-1/4	1.50	0.62	1.15	1,200	0.11	29712022
5/16	4-1/4	2.35	0.57	1.15	1,200	0.16	29712042
3/8	2-1/2	1.52	0.73	1.40	1,550	0.17	29713025
3/8	4-1/2	2.61	0.73	1.40	1,550	0.25	29713045
1/2	3-1/4	1.53	1.00	1.83	2,600	0.40	29714032
1/2	6	3.00	1.00	1.83	2,600	0.53	29714060
5/8	4	2.12	1.23	2.27	5,200	0.78	29715040
5/8	6	3.13	1.23	2.27	5,200	0.81	29715060
3/4	4-1/2	2.13	1.45	2.70	7,200	1.41	29716045
3/4	6	3.11	1.45	2.70	7,200	1.51	29716060
1	6	3.08	1.95	3.00	13,300	3.20	29717060



Lift Angle	Max. Load
45 °	30 % of WLL
90 °	25 % of WLL

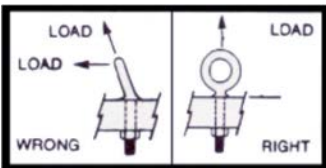
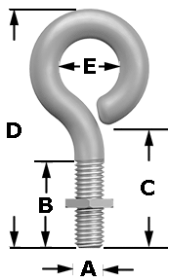
Finish: Hot dip galvanized

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
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 DO NOT USE EYE BOLTS WHICH SHOW SIGNS OF WEAR OR DEFORMATION!
 ANGULAR LIFTS: Do not use Regular Nut Eye Bolts-use only Shoulder Nut or Machinery Eye bolts and observe the reduced Working Load Limits.



Wire Formed Pressed Eyebolts

These bolts are made of low carbon cold drawn steel wire, with NC rolled machine threads. This product is simply formed wire, the eye is bent close to the shank but is not closed. Used for light duty applications, and should not be used for angular loads.



Size (A x D)		Dimensions (inches)			WLL (lbs)	Weight lbs/pc	Product Code
A	D	B	C	E			
3/16"	2"	1	1-3/8	3/8		0.020	41080122
3/16"	2-1/2"	1-5/8	1-3/4	3/8		0.020	410801225
1/4"	2"	7/8	1	9/16	74	0.045	41080162
1/4"	2-1/2"	1-3/8	1-1/2	9/16	74	0.050	410801625
1/4"	3"	1-3/4	2	9/16	74	0.050	41080163
1/4"	4"	2-3/4	3	9/16	74	0.060	41080164
1/4"	5"	3	4	9/16	74	0.083	41080165
1/4"	6"	3	5	9/16	74	0.100	41080166
5/16"	3-1/2"	1-3/4	2	3/4	96	0.095	410802035
5/16"	4"	2-1/4	2-1/2	3/4	96	0.095	41080204
5/16"	5"	3	3-1/2	3/4	96	0.120	41080205
5/16"	6"	3	4-1/2	3/4	96	0.170	41080206
3/8"	4"	2	2-1/4	1	144	0.150	41080244
3/8"	5"	3	3-1/4	1	144	0.180	41080245
3/8"	6"	3	4-1/4	1	144	0.200	41080246
3/8"	8"	3	6-1/4	1	144	0.250	41080248
1/2"	6"	3	3-3/4	1-1/4		0.430	41080326
1/2"	8"	3	5-3/4	1-1/4		0.510	41080328

Finish: Zinc Plated

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
 WORKING LOAD LIMITS PERTAIN TO IN-LINE PULLS ONLY
 DO NOT USE EYE BOLTS WHICH SHOW SIGNS OF WEAR OR DEFORMATION!
 ANGULAR LIFTS: Do not use Wire Formed Pressed Eyebolts for any angular lifts.
 For In-Line pulls only.



General Warnings

All Vanguard rigging products are sold with the express understanding that both the purchaser and the end user are thoroughly familiar with the safe, proper and acceptable applications of the products.

It is the responsibility of the end user to establish proper safety programs and to provide thorough training for all personnel prior to use. The training programs must meet any federal/provincial/state/local code requirements, existing plant/site safety rules and regulations, and all instructions provided in the applicable section of this catalogue.

Product failure can occur due to abuse, misapplication, lack of maintenance, use by unqualified personnel and improper inspection prior to use. **Any failure of rigging products may result in property damage, personal injury and even death!!!!**

Standards

There are numerous government and industrial standards that cover rigging products. This catalogue makes no attempt to reference all of them; it references to the standards that are most frequently asked about.

Working Load Limit (WLL) – Safe Working Load (SWL)

The Working Load Limits shown in this catalogue are applicable to products that are new or “in as new” condition. The Working Load Limits ratings refer to the maximum amount of force or load that the rigging product can carry under normal working/environmental conditions. The Working Load Limits and Design Factor can be affected by wear, misuse, overloading, shock loading, side loading, corrosion, deformation, product alteration and other use conditions. Inspection of rigging products prior to use is required to determine whether the product continues to meet the assigned WLL provided in this catalogue, should be used at a reduced rating or removed from service.

The WLL rating must never be exceeded!!!!



General information disclaimer

The contents contained in this publication are for general information only.

Although every effort has been made to assure the accuracy of the information at time of print, persons who use the Catalog should note that ratings, laws, rules, and policies change from time to time and that these changes may alter the information contained in this publication.

Vanguard Steel Ltd. assumes no liability for Catalog errors or omissions.

It is the responsibility of each person who uses this Catalog to ascertain current information that pertains to the individual lifting program, particularly with regard to satisfactory safety compliance requirements. Check your Provincial and Local safety standards before any operation or lift is attempted.

It is the responsibility of the person/operator to frequently search for updated reference information.

Do not use lesser than matching Grade components for any lifting application !

Do not use Slings, Chains or Accessories with signs of wear or deformation !

Inspections - Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by the employer. Additional inspections shall be performed during sling use where service conditions warrant. Damaged or defective slings shall be immediately removed from service.