



VGD BOOKLETS



Blocks



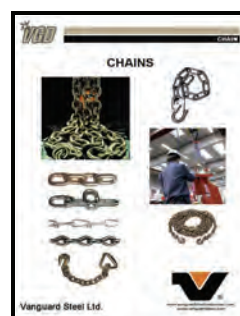
Cable



Cable Accessories



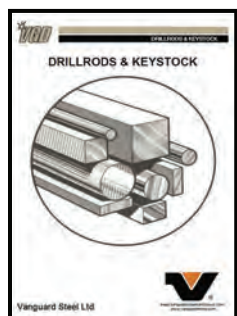
Cargo Control



Chain



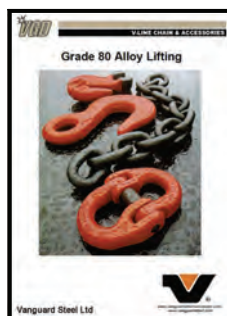
Clips



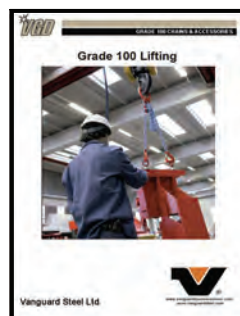
Drillrods & Keystock



Eye Bolts



Grade 80



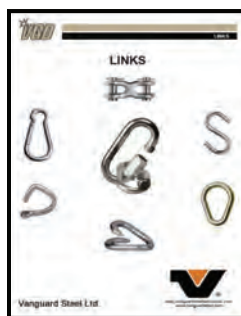
Grade 100



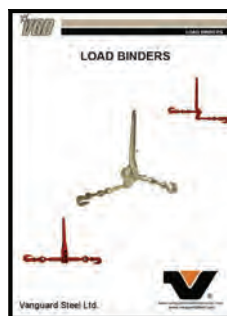
Hooks



Knives



Links



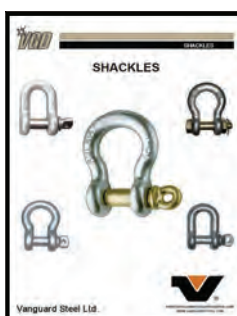
Load Binders



Logging Supplies



Material Handling



Shackles



Slings



Swaging Sleeves



Swivels



Thimbles



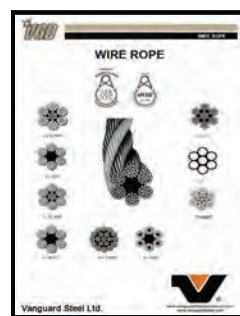
Tie Wire



Tools



Turnbuckles



Wire Rope



BLOCKS

BLOCKS



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BLOCKS

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Snatch Blocks - Bronze Bushed



MAINTENANCE:

To ensure peak efficiency and extended service life, it is necessary that blocks be inspected and maintained at frequent intervals:

Inspect products for any signs of wear or damage, such as:

- Worn or damaged sheaves, bushings, side plates, pins, hooks or shackles. Replace any part showing signs of wear or damage!
- Hook latch for proper fit and operation. Replace deformed latches!

These particular blocks feature bronze bushings, which are not self-lubricating. They are designed for infrequent or intermittent use with low line speeds. Observe the following lubrication schedule:

- Moderate use: Every 8 hours
- Intermittent operation: Once weekly

LOADS:

Throughout this catalogue, the term Working Load Limit (abbreviated: WLL) is being used. It refers to the maximum load or force which a product is designed to support under normal operating and environmental conditions and the product being in an 'as new' condition.

IMPORTANT:

The total load on a snatch block, and therefore also on any fitting which is attached to the block, is usually considerably greater than the actual load lifted or pulled. The deciding factor in determining the total load on a single line block is the angle between the lead line and the load line:

Total load on block = Actual Load Lifted x Multiplication Factor (single line systems only):

Lead/Load Line Angle	Factor	Lead/Load Line Angle	Factor	Lead/Load Line Angle	Factor
0°	2.00	60°	1.73	130°	0.84
10°	1.99	70°	1.84	135°	0.78
20°	1.97	80°	1.53	140°	0.68
30°	1.93	90°	1.41	150°	0.52
40°	1.87	100°	1.29	160°	0.35
45°	1.84	110°	1.15	170°	0.17
50°	1.81	120°	1.00	180°	0.00

Warning:

NEVER EXCEED WORKING LOAD LIMITS!
ALWAYS REFER TO LOAD CALCULATION TABLE BASED ON LINE ANGLE!



V-1800 Snatch Blocks with Hook

Bronze Bushed-Supplied with latch kit
Designed for intermittent use with low line speed.
Ultimate load is 4 x Working Load Limit (WLL)



V-1800				Weight lbs/pc	Product Code
WLL Tons	Sheave Dia.	Rope Dia.			
2	3"	3/8"		3	29362030
4	4-1/2"	1/2"		12	29362045
8	6"	3/4"		27	29362060
8	8"	3/4"		35	29362080
15	8"	1-1/8"		58	29362081
20	8"	1-1/8"		103	29362082
8	10"	3/4"		50	29362100



Total Load on block= Actual Load Lifted x Multiplication Factor (single line systems only)

Lead/Load Line Angle	Factor	Lead/Load Line Angle	Factor	Lead/Load Line Angle	Factor
0°	2.00	60°	1.83	130°	0.84
10°	1.99	70°	1.64	135°	0.76
20°	1.97	80°	1.53	140°	0.67
30°	1.93	90°	1.41	150°	0.52
40°	1.87	100°	1.29	160°	0.35
45°	1.84	110°	1.15	170°	0.17
50°	1.81	120°	1.00	180°	0.00

WARNING Never Exceed working load limits !
Always refer to load calculations based on line angle!

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V-1900 Snatch Blocks with Swivel Shackle

Bronze Bushed

Designed for intermittent use with low line speed.

Ultimate load is 4 x Working Load Limit (WLL)



V-1900				Weight lbs/pc	Product Code
WLL Tons	Sheave Dia.	Rope Dia.			
2	3"	3/8"		3	29353030
4	4-1/2"	1/2"		13	29353045
8	6"	3/4"		29	29353060
8	8"	3/4"		36	29353080
15	8"	1-1/8"		65	29353081
20	8"	1-1/8"		117	29353082
8	10"	3/4"		53	29353100
15	10"	7/8-1"		82	29353101
8	14"	5/8"		81	29353140



Total Load on block= Actual Load Lifted x Multiplication Factor (single line systems only)

Lead/Load Line Angle	Factor	Lead/Load Line Angle	Factor	Lead/Load Line Angle	Factor
0°	2.00	60°	1.83	130°	0.84
10°	1.99	70°	1.64	135°	0.76
20°	1.97	80°	1.53	140°	0.67
30°	1.93	90°	1.41	150°	0.52
40°	1.87	100°	1.29	160°	0.35
45°	1.84	110°	1.15	170°	0.17
50°	1.81	120°	1.00	180°	0.00

WARNING

Never Exceed working load limits !

Always refer to load calculations based on line angle!

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V-4000 Tail Boards

Designed for intermittent use with low line speed.
Ultimate load is 4 x Working Load Limit (WLL)



V-1800				Weight lbs/pc	Product Code
WLL Tons	Sheave Dia.	Rope Dia.			
2	3"	3/8"		3	29351030
4	4-1/2"	1/2"		8	29351045
8	6"	3/4"		15	29351060
8	8"	3/4"		25	29351080
15	8"	1-1/8"		35	29351081
20	8"	1-1/8"		70	29351083



Total Load on block= Actual Load Lifted x Multiplication Factor (single line systems only)

Lead/Load Line Angle	Factor	Lead/Load Line Angle	Factor	Lead/Load Line Angle	Factor
0°	2.00	60°	1.83	130°	0.84
10°	1.99	70°	1.64	135°	0.76
20°	1.97	80°	1.53	140°	0.67
30°	1.93	90°	1.41	150°	0.52
40°	1.87	100°	1.29	160°	0.35
45°	1.84	110°	1.15	170°	0.17
50°	1.81	120°	1.00	180°	0.00

WARNING

Never Exceed working load limits !
Always refer to load calculations based on line angle!

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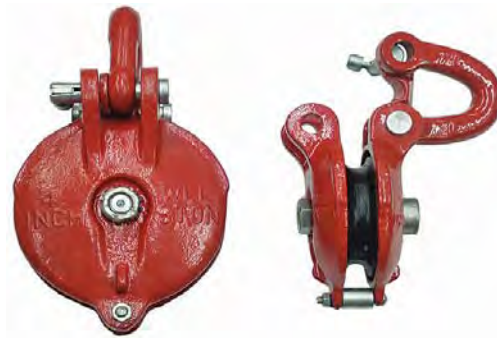
Yarding Blocks

Fast and strong for light duty and high speed applications

Smooth roller bearing action with grease nipple

Pull pin to use as snatch block

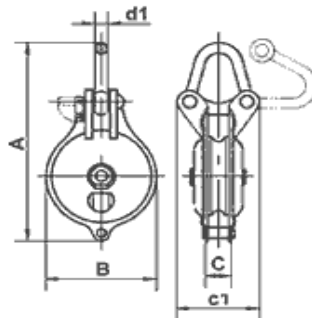
Painted or H.D. Galvanized



Yarding Blocks		Measurements in inches					Weight lbs/pc	Product Code	
WLL Tons	Sheave Dia.	A	B	C	C-1	D-1		Painted	H.D. Galv
1.5	3"	6.93	3.35	1.02	3.15	0.47	3	29360300	293603001
3	4"	9.25	4.76	1.34	3.39	0.63	5	29360400	293604001
4.5	5"	12.01	5.71	1.50	4.06	0.71	9	29360500	263605001
6	6"	13.78	7.09	1.61	4.33	0.87	17	29360600	263606001
8	8"	16.73	8.86	1.81	6.50	1.10	35	29360800	263608001

Ultimate load 3 x the Working Load Limit (WLL)

WARNING : **Do not exceed the listed load limits**





FX Yarding Blocks

Fast and strong for light duty and high speed applications

Smooth roller bearing action with grease nipple

Pull pin to use as snatch block

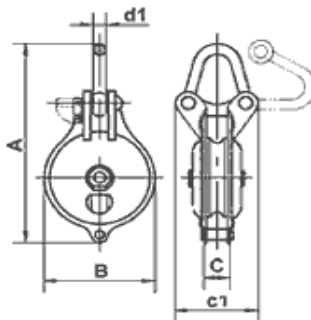
All Black to help block blend into its surroundings.



Yarding Blocks		Measurements in inches					Weight lbs/pc	Product Code
WLL Tons	Sheave Dia.	A	B	C	c-1	d-1		
1.5	3"	6.93	3.35	1.02	3.15	0.47	3	29360030
3	4"	9.25	4.76	1.34	3.39	0.63	5	29360040

Ultimate load 3 x the Working Load Limit (WLL)

WARNING : Do not exceed the listed load limits



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SK 05 Korean Type Block

Used for lashing equipment on lumber vessels and log carriers



SK 05 Block									
Sheave				Rope Size (in.)		WLL Tons	Weight lbs/pc		Product Code
Dia. (in.)									
6				3/4-15/16"		5	35.3		29356060

Ultimate load is 2 x the Working Load Limit (WLL)

WARNING Never Exceed working load limits !

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Gin Block

Gin Block Rope Pulley used with manila rope or synthetic 3 strand rope used by Roofers, Painters and Contractors for light hoisting and lifting.

Supplied with Drop Forged Swivel Hook and Latch.



Gin Blocks		Sheave Size			Rope Size (in.)	WLL (lbs)	Weight lbs/pc		Product Code
Sheave Dia. (in.)	Outside Diameter	Rim Thickness	Bearing Diameter						
12"	12"	1.38"	.88"		1	1,000	13		29354012

Ultimate load is 3 x Working Load Limit (WLL)

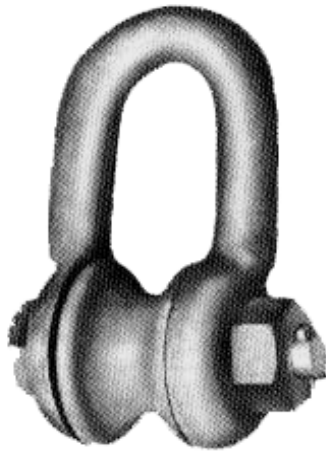
Finish: Painted

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Roller Shackles

Used for lashing equipment on lumber vessels and log carriers



Roller Shackle									
Sheave Dia (in.)	Roller Thickness	Roller Diameter			Rope Size (in.)	WLL Tons	Weight lbs/pc		Product Code
1-1/8	2"	2-7/8"			4	4	8.2		29466028

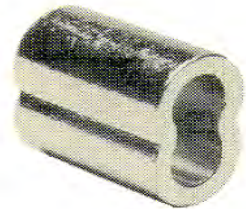
Finish Hot Dip Galvanized

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CABLE ACCESSORIES

CABLE ACCESSORIES



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Aluminum Hourglass Oval Sleeves

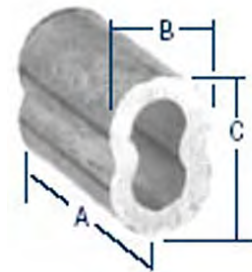
Aluminum Swage sleeves are an economical fasteners for loops or lap splices. An Ideal fastener for Galvanized Steel Cable.

Not recommended for stainless cable due to electrolysis

Hourglass shaped sleeves allow for the smoothest swage (crimp)



Aluminum Oval				Weight (lbs/100)	Product Code
Cable Size	Dimensions in inches				
	A	B	C		
3/64"	0.375	0.133	0.198	0.06	29500003
1/16"	0.375	0.172	0.250	0.08	29500004
3/32"	0.500	0.281	0.406	0.25	29500006
1/8"	0.625	0.344	0.500	0.58	29500008
5/32"	0.688	0.375	0.562	0.70	29500010
3/16"	0.688	0.375	0.562	1.45	29500012
1/4"	1.125	0.536	0.812	2.80	29500016
5/16"	1.250	0.687	1.032	4.10	29500020
3/8"	1.438	0.750	1.156	5.70	29500024
1/2"	2.000	1.060	1.625	17.20	29500032



WARNING :

Properly swaged, oval sleeves are capable of maintaining over 90% of the breaking strength of the cable.

To determine the exact holding strength, a pull test must be performed prior to use.

Safety margins MUST be maintained in line with the respective applications.

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Aluminum Stop (button) Sleeves

Aluminum stop sleeves are designed to terminate cable to prevent dangerous fraying
preferred for use with galvanized cable
Stops prevent cable from pulling through a guide.



Aluminum Stop				Weight (lbs/100)	Product Code
Cable Size	Dimensions in inches				
A		B			
1/16"	0.156	0.250		0.04	29510004
3/32"	0.313	0.344		0.25	29510006
1/8"	0.313	0.344		0.23	29510008
5/32"	0.344	0.438		0.40	29510010
3/16"	0.344	0.438		0.35	29510012
1/4"	0.688	0.688		2.10	29510016



WARNING : The maximum holding strength of stop sleeves is approximately 1/3 of the strength of the cable.
To determine the exact holding strength, a pull test must be performed prior to use.
Not designed for load carrying purposes.
Not to be used in overhead lifting or hoisting applications.

Safety margins **MUST** be maintained in line with the respective applications.

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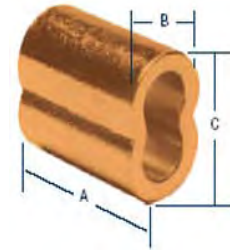
Copper Oval Sleeves

Copper Swage sleeves are an economical fastener for loops or lap splices. An ideal fastener for Stainless Steel Cable.

Meets MS-51844



Copper Oval				Weight (lbs/100)	Product Code
Cable Size	Dimensions in inches				
	A	B	C		
3/64"	0.375	0.134	0.20	0.17	29520003
1/16"	0.375	0.170	0.25	0.26	29520004
3/32"	0.425	0.224	0.37	0.53	29520006
1/8"	0.550	0.324	0.39	1.57	29520008
5/32"	0.625	0.365	0.59	2.24	29520010
3/16"	1.000	0.449	0.67	5.00	29520012
1/4"	1.138	0.515	0.81	7.60	29520016
5/16"	1.125	0.665	1.01	11.50	29520020
3/8"	1.250	0.727	1.11	15.00	29520024
7/16"	1.750	0.850	1.30	28.00	29520028
1/2"	1.900	0.965	1.48	38.00	29520032



WARNING : Properly swaged, oval sleeves are capable of maintaining over 90% of the breaking strength of the cable. To determine the exact holding strength, a pull test must be performed prior to use.

Safety margins MUST be maintained in line with the respective applications.

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Copper Oval Zinc Plated Sleeves

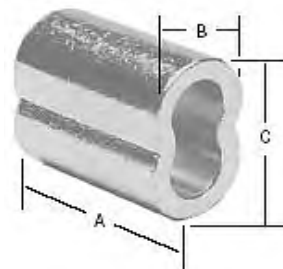
Copper Swage sleeves are an economical fasteners for loops or lap splices. An Ideal fastener for Stainless Steel Cable.

Zinc plating of sleeves provides corrosion protection and an attractive finish.

Meets MS-51844



Copper Oval Z.P.				Weight (lbs/100)	Product Code
Cable Size	Dimensions in inches				
	A	B	C		
3/64"	0.375	0.134	0.20	0.17	29540003
1/16"	0.375	0.170	0.25	0.26	29540004
3/32"	0.425	0.224	0.37	0.53	29540006
1/8"	0.550	0.324	0.39	1.57	29540008
5/32"	0.625	0.365	0.59	2.24	29540010
3/16"	1.000	0.449	0.67	5.00	29540012
1/4"	1.138	0.515	0.81	7.60	29540016
5/16"	1.125	0.665	1.01	11.50	29540020
3/8"	1.250	0.727	1.11	15.00	29540024
7/16"	1.750	0.850	1.30	28.00	29540028
1/2"	1.900	0.965	1.48	38.00	29540032



WARNING :

Properly swaged, oval sleeves are capable of maintaining over 90% of the breaking strength of the cable.
To determine the exact holding strength, a pull test must be performed prior to use.

Safety margins MUST be maintained in line with the respective applications.

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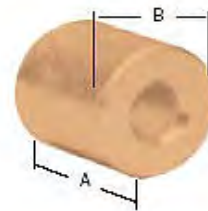


Copper Stop (button) Sleeves

Copper stop sleeves are designs to terminate cable to prevent dangerous fraying
 preferred for use with stainless steel cable
 Stops prevent cable from pulling through a guide.



Copper Stop				Weight (lbs/100)	Product Code
Cable Size	Dimensions in inches				
	A	B			
3/64"	0.225	0.170		0.14	29530003
1/16"	0.218	0.203		0.19	29530004
3/32"	0.328	0.328		0.79	29530006
1/8"	0.328	0.328		0.70	29530008
5/32"	0.329	0.422		1.18	29530010
3/16"	0.328	0.422		1.06	29530012
1/4"	0.703	0.656		6.20	29530016
5/16"	0.703	0.656		5.25	29530020



WARNING : The maximum holding strength of stop sleeves is approximately 1/3 of the strength of the cable.
 To determine the exact holding strength, a pull test must be performed prior to use.
 Not designed for load carrying purposes.
 Not to be used in overhead lifting or hoisting applications.

Safety margins MUST be maintained in line with the respective applications.

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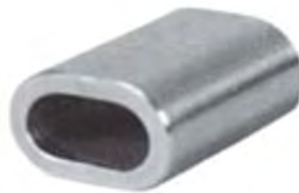


Stainless Steel Oval Sleeves

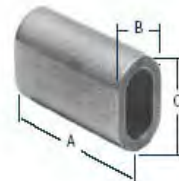
Stainless steel swaged sleeves can be used with galvanized or stainless steel wire. Made from T-304 rods, these swage sleeves withstand the most challenging conditions providing the maximum in corrosion resistance.

These sleeves require special stainless steel swaging tools.

Meets MS-51844



Stainless Steel Oval				Weight (lbs/100)	Product Code
Cable Size	Dimensions in inches				
	A	B	C		
3/64"	0.375	0.133	0.201	0.16	29550003
1/16"	0.375	0.137	0.229	0.15	29550004
3/32"	0.375	0.184	0.298	0.27	29550006
1/8"	0.375	0.233	0.380	0.43	29550008
5/32"	0.720	0.322	0.500	1.41	29550010
3/16"	0.875	0.352	0.564	2.33	29550012
1/4"	1.130	0.454	0.716	4.76	29550016



WARNING : Properly swaged, oval sleeves are capable of maintaining over 90% of the breaking strength of the cable. To determine the exact holding strength, a pull test must be performed prior to use.

Safety margins **MUST** be maintained in line with the respective applications.

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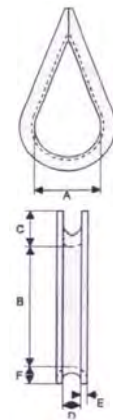


Stainless AN Thimbles

For applications using small diameter galvanized or stainless cable
Made from AISI 316 stainless rod.



Size	Item No.	Dimension Inches						Weight (lbs/100)	Product Code
		A	B	C	D	E	F		
3/64-1/16-5/64"	C-3	0.350	0.671	0.157	0.093	0.032	0.078	0.15	29600004
3/32-1/8-7/64"	C-4	0.350	0.671	0.218	0.140	0.032	0.078	0.43	29600006
5/32"	C-5	0.400	0.796	0.218	0.171	0.032	0.109	0.60	29600010
3/16"	C-6	0.500	1.000	0.312	0.203	0.032	0.171	0.98	29600012
1/4"	C-8	0.700	1.406	0.406	0.265	0.032	0.171	1.50	29600016
5/16"	C-10	0.900	1.796	0.437	0.328	0.040	0.218	3.50	29600020
3/8"	C-12	1.000	2.000	0.625	0.390	0.060	0.265	8.50	29600024



WARNING

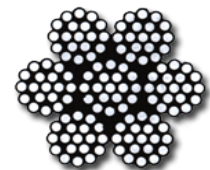
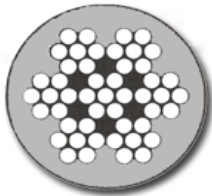
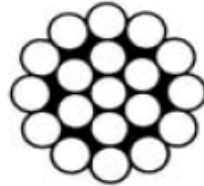
Wire rope thimbles do not have an established load rating and are meant to serve as rope protection only.

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WIRE ROPES & CABLES

CONTROL CABLE



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Galvanized Steel Cable - 7 X 7

All Cable Manufactured to the latest US Mil. Specs.
Designed for industrial and marine applications.



Preformed Galvanized Cables are recommended whenever flexibility, high strength and fatigue resistance are required.

Diameter		Nominal B/S (lbs)		Weight (lbs/1000 ft)		Product Code
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5000 ft master reels

1/16"		480		7.50		27010004
3/32"		920		16.00		27010006
1/8"		1,700		28.50		27010008
5/32"		2,600		43.00		27010010

1000 ft reels

1/16"		480		7.50		27010004-1000
3/32"		920		16.00		27010006-1000
1/8"		1,700		28.50		27010008-1000
5/32"		2,600		43.00		27010010-1000

500 ft reels

1/16"		480		7.50		27010004-0500
3/32"		920		16.00		27010006-0500
1/8"		1,700		28.50		27010008-0500
5/32"		2,600		43.00		27010010-0500

250 ft reels

1/16"		480		7.50		27010004-0250
3/32"		920		16.00		27010006-0250
1/8"		1,700		28.50		27010008-0250
5/32"		2,600		43.00		27010010-0250

WARNING:

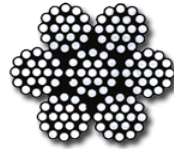
Working load limits will depend on actual usage (NBS/Safety Margin)

Vanguard Steel Ltd.



Galvanized Steel Cable 7 X 19

All Cable Manufactured to the latest US Mil. Specs.
Designed for industrial and marine applications.



Preformed Galvanized Cables are recommended whenever flexibility, high strength and fatigue resistance are required.

Diameter		Nominal B/S (lbs)		Weight (lbs/1000 ft)		Product Code
----------	--	----------------------	--	-------------------------	--	-----------------

5000 ft master reels

3/32"		1,000		16.00		27030006
1/8"		2,000		29.00		27030008
5/32"		2,800		45.00		27030010
3/16"		4,200		65.00		27030012
1/4"		7,000		110.00		27030016
5/16"		9,800		173.00		27030020
3/8"		14,400		243.00		27030024

1000 ft reels

3/32"		1,000		16.00		27030006-1000
1/8"		2,000		29.00		27030008-1000
5/32"		2,800		45.00		27030010-1000
3/16"		4,200		65.00		27030012-1000
1/4"		7,000		110.00		27030016-1000
5/16"		9,800		173.00		27030020-1000
3/8"		14,400		243.00		27030024-1000

500 ft reels

3/32"		1,000		16.00		27030006-0500
1/8"		2,000		29.00		27030008-0500
5/32"		2,800		45.00		27030010-0500
3/16"		4,200		65.00		27030012-0500
1/4"		7,000		110.00		27030016-0500
5/16"		9,800		173.00		27030020-0500
3/8"		14,400		243.00		27030024-0500

250 ft reels

3/32"		1,000		16.00		27030006-0250
1/8"		2,000		29.00		27030008-0250
5/32"		2,800		45.00		27030010-0250
3/16"		4,200		65.00		27030012-0250
1/4"		7,000		110.00		27030016-0250
5/16"		9,800		173.00		27030020-0250
3/8"		14,400		243.00		27030024-0250

WARNING: Working load limits will depend on actual usage (NBS/Safety Margin)

Vanguard Steel Ltd.



Plastic Vinyl Coated Galvanized Steel Cable

All Cable Manufactured to the latest US Mil. Specs.
Designed for industrial and marine applications.

Diameter	Nominal B/S (lbs)	Weight (lbs/1000 ft)	PVC Colour	Product Code
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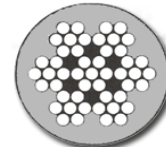
7 X 7

3/32 - 3/16"	920	27	Clear	27100012
3/32 - 3/16"	920	27	Yellow	27150012
3/32 - 3/16"	920	27	Orange	27170012

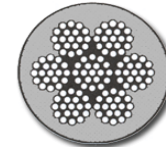
7 X 19

1/8 - 3/16"	2,000	39	Clear	27300012
1/8 - 1/4"	2,000	51	Clear	27110016
3/16 - 1/4"	4,200	78	Clear	27300016
1/8 - 3/16"	2,000	39	Black	27250012
1/8 - 1/4"	2,000	51	Black	27250016
3/16 - 1/4"	4,200	78	Black	27251016
1/4 - 5/16"	7,000	125	Red	27350020

7 x 7



7 x 19



Supplied with UV Inhibitors

When using wire rope clips or compression sleeves with plastic coated cable, match fitting size to **uncoated** cable diameter.

Strip coating off cable where fittings will be positioned for full holding power.

WARNING: Working load limits will depend on actual usage (NBS/Safety Margin)

Vanguard Steel Ltd.



T-304 Stainless Steel Cable

All Cable Manufactured all the latest US Mil. Specs.
Designed for industrial and marine applications.

Diameter	Nominal B/S (lbs)	Weight (lbs/1000 ft)		Product Code
1/16"	500	8.50		28020004
3/32"	1,200	20.00		28020006
1/8"	2,100	35.00		28020008
5/32"	3,300	55.00		28020010
3/16"	4,700	77.00		28020012
7/32"	6,300	102.00		28020014
1/4"	8,200	135.00		28020016
9/32"	10,300	170.00		28020018
5/16"	12,500	210.00		28020020
3/8"	17,100	317.00		28020024

1 x 19



Designed primarily for standing rigging on boats, bracing and other applications where the stiffness of a strand is preferable to the flexibility of a cable.

Diameter	Nominal B/S (lbs)	Weight (lbs/1000 ft)		Product Code
3/64"	270	4.20		28010003
1/16"	480	7.50		28010004
3/32"	920	16.00		28010006
1/8"	1,700	28.50		28010008

7 x 7



Generally used for small diameters. Less flexible than 7 x 19, but better abrasion resistance.

Diameter	Nominal B/S (lbs)	Weight (lbs/1000 ft)		Product Code
3/32"	1,050	16.00		28030006
1/8"	1,760	29.00		28030008
5/32"	2,400	45.00		28030010
3/16"	3,700	65.00		28030012
1/4"	6,400	110.00		28030016
5/16"	9,000	173.00		28030020
3/8"	12,000	243.00		28030024
1/2" *	22,800	460.00		28200032

7 x 19



Most flexible and widely used construction, for a multitude of applications.

* supplied as 6 x 19 IWRC

Stainless Steel Cables offer an excellent combination of corrosion and fatigue resistance and high strength.

Also available in T-316-superior corrosion resistance

WARNING: Working load limits will depend on actual usage (NBS/Safety Margin)

Vanguard Steel Ltd.



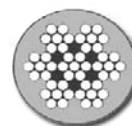
Plastic Vinyl Coated Stainless Steel Cable T-304

All Cable Manufactured all the latest US Mil. Specs.
Designed for industrial and marine applications.

Diameter	Nominal B/S (lbs)	Weight (lbs/1000 ft)	PVC Colour	Product Code
----------	----------------------	-------------------------	---------------	-----------------

1/16 - 3/32"	480	13.00	White	28110006
3/32 - 1/8"	920	25.00	White	28110008
1/8 - 1/4"	1,700	50.00	White	28110016
3/16 - 5/16"	3,700	91.00	White	28110020

7 x 7



Supplied with UV Inhibitors

When using wire rope clips or compression sleeves with plastic coated cable, match fitting size to **uncoated** cable diameter.

Strip coating off cable where fittings will be positioned for full holding power.

WARNING: Working load limits will depend on actual usage (NBS/Safety Margin)

Vanguard Steel Ltd. _____



CARGO CONTROL

Cargo Control



Vanguard Steel Ltd.



www.vanguardsteelvancouver.com
www.vanguardsteel.com



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Grade 70 Tie Down Assemblies

Grade 70 transport chain is designed for use in cargo securement, towing and logging.
Supplied with Alloy Grab hooks on each end.
Manufactured in accordance to Department of Transport regulations.



Cain Size	Length (ft)	Weight (lbs)	WLL (lbs)	Product Code
5/16"	16	16.00	4,700	38072016
5/16"	20	20.00	4,700	38072020
5/16"	25	25.00	4,700	38072025
3/8"	10	17.00	6,600	38072410
3/8"	12	19.00	6,600	38072412
3/8"	14	22.00	6,600	38072414
3/8"	16	25.00	6,600	38072416
3/8"	20	31.00	6,600	38072420
3/8"	25	38.00	6,600	38072424

Material Grade 70 Chain, Alloy Hooks
Finish Yellow Chromated
Design Factor 4 : 1
Chain can be supplied in bulk or as tie down assemblies.

WARNING: Never exceed working load limits
Do not use grade 70 chains for lifting applications

Vanguard Steel Ltd. _____



18" Chain Tails - Grade 70



Chain Size	Model	Web Width	WLL (lbs)	Product Code
5/16"	S-925	2"	3,335	37054010
5/16"	S-328	3"	5,500	37055000
3/8"	S-926	3"	6,000	37054011
3/8"	S-927	4"	6,600	37054012

Material Grade 70 Chain, Alloy Hooks, Forged Alloy Delta Ring
Finish Yellow Chromated
Design Factor 3 : 1

WARNING: Never exceed working load limits
Do not use grade 70 chains for lifting applications

Vanguard Steel Ltd. _____



Trailer Safety Chains

Safety Chains are defined as an assembly which provides a secondary means of connection between the rear of the towing vehicle and the front of the trailer (or towed vehicle); it includes link chain and all attaching means, or an alternative system. The purpose of Safety Chains is to retain connection between the towing vehicle and trailer in the event of separation of the trailer coupling from the ball or the ball from the hitch, long enough to bring the vehicle to a stop. It should not be construed that safety chains can ensure that vehicle control or connection will be maintained in the event of vehicle incidents such as loss of control, rollover, jackknife, collision, etc.



Chain Class	Chain Size	Length (ft)	Weight (lbs)	GVW (lbs)	Product Code
3	1/4"	3	2.58	5,000	
3	1/4"	4	3.33	5,000	38061016
3	1/4"	5	3.92	5,000	
3	1/4"	6	4.73	5,000	



Other lengths and Classes of chain available upon request

Material	Class III 1/4" Proof Coil Chain
Finish	Zinc Plated
" S " Hook	7/16" Patented Latch kit

Chain can be supplied in bulk or as assemblies.

WARNING:	Never exceed working load limits Do not use for lifting applications
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Vanguard Steel Ltd.



2" Lashing Winches

Sturdy construction winches provide a method for securing cargo on flatbed trailers, rail cars and other vehicles.

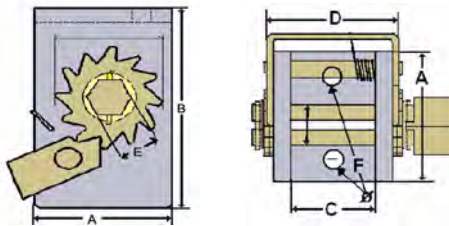
Lashing winches, for use with 2" webbing can be welded or bolted onto a trailer.

Winch design offers similar features of a ratchet buckle with its quick release

Hex drive style requires a 1-1/8" hex head wrench or socket.



Type	WLL (lbs)	Nominal Dimension Inches							Product Code
		A	B	C	D	E	F	Weight (lbs)	
Hex Key	3,660	3.000	4.00	2.187	3.250	1.062	0.500	3.55	37051000



WARNING:

Make sure that webbing is inserted min 4" into slot on mandrel and wrapped 2 - 3 times around mandrel before tightening.
Do not use extensions with winch bars
Do not release winch bars without prior checking that ratchet pawls are properly engaged.
Hold winch bars tightly to avoid bars from slipping out of your hands
Excessive webbing on winches reduces working load limits

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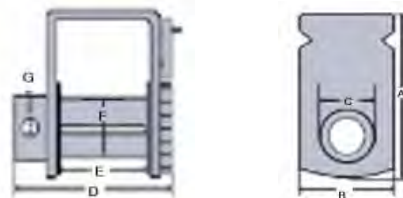
Standard Sliding Winches

Sturdy construction winches provide a method for securing cargo on flatbed trailers, rail cars and other vehicles

All sliding winches can also be welded in place for fixed application.



Type	WLL (lbs)	Nominal Dimension Inches							Product Code
		A	B	C	D	E	F	G	
Standard with flange	5,400	6.750	4.00	2.500	8.250	4.500	1.750	1.000	37051020
Standard without flange	5,400	6.750	4.00	2.500	8.250	4.500	1.750	1.000	37051021
Standard with flange and handle	5,400	6.750	4.00	2.500	8.250	4.500	1.750	1.000	37051063
Standard with handle no flange	5,400	6.750	4.00	2.500	8.250	4.500	1.750	1.000	37051065



WARNING: Make sure that webbing is inserted min 12" into slot on mandrel and wrapped 2 - 3 times around mandrel before tightening.
Do not use extensions with winch bars
Do not release winch bars without prior checking that ratchet pawls are properly engaged.
Hold winch bars tightly to avoid bars from slipping out of your hands
Excessive webbing on winches reduces working load limits



Winch Bars

Winch bars are used to tighten and secure winch straps in winches. Non-slip handle and tapered tip for better grip. Combination winch bars have a boxed end for tightening winch straps and lever style chain binders.



Type		Nominal Dimension Inches							Product Code
		A	B	C	D	E	F	Weight (lbs)	
Standard Black		29.00	1.30	3.70	0.98	3.94		5.30	37030060
Standard Chrome		29.00	1.30	3.70	0.98	3.94		5.95	37030061
Combination Bar		37.00	1.30	3.70	0.98	11.00	5.00	5.95	37030062



WARNING:

Always hold winch bars firmly when tightening or loosening straps
 Before removing winch bars ensure that the ratchet pawl is fully engaged
 Do not use extensions with winch bars
 When tightening or loosening straps make sure that the nose of winch bar is fully inserted into holes of winch drums.
 Keep bystanders in safe distance when tightening or loosening straps.



Corner Protectors

Protects cargo when using chain or webbing to secure your load.



Chain
Metal protector

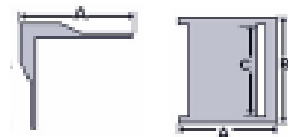


Web
Metal protector



Web
Plastic protector

Type	Size	Nominal Dimension Inches			Product Code
		A	B	C	
Plastic Corner Protector	2-4"	4.3	5.3	4.1	37030048
Chain Corner Protector	2"	4.7	5.9		37030040
Steel Webbing Protector	3"	4.3	6.5		37030043
Steel Webbing Protector	4"	4.3	7.5		37030045



WARNING: Do not use plastic corners for chains
Make sure that webbing or chains slide properly over corner protectors



Tarp Straps with Galvanized S-Hooks

Tarp straps, also known as "tarp tie-downs", are an important tool in helping to keep cargo and tarps in place. They are ideal for use on the tarps used to cover vehicles, machinery, boats, and truck loads



Type	Nominal Dimension Inches		Product Code
	Length	Max. Stretch	
100 % Natural Rubber			
Black	4	6	37080004
Black	9	14	37080009
Black	15	23	37080015
Black	21	32	37080021
Black	31	47	37080031
Black	41	62	37080041
EDPM			
Arctic Blue	9	14	37081009
Arctic Blue	15	23	37081015
Arctic Blue	21	32	37081021
Arctic Blue	31	47	37081031



Material	Branded  straps available in either 100 % natural rubber or synthetic EDPM Supplied with S hooks attached.
Design	UV and Ozone inhibitors for better resistance to cracking For conditions with extreme atmospheric Ozone levels (high pollution in temperatures between -2 to +3 we recommend EDPM straps with increased resistance against corrosion.
Stretch	150 % of nominal length

WARNING: Tying tarp straps over sharp edges shortens the service life
Do not tie knots in tarp straps
Do not extend over safe stretch (150 %)
Inspect straps frequently, replace cracked straps



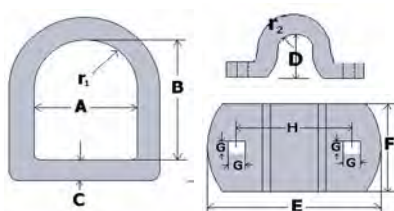
D-Rings with Bolt-on Hinges

The Bolt on D-Ring is perfect when a welded (permanent) lashing point is undesirable, D-Rings as well as weld rings and rope rings make for an excellent anchor for mounting to the bed of your work truck or sides of your truck for assisting with cargo control and cargo tie-downs

Great for recovery points on a custom bumper or securing loads on a trailer



Size	Nominal Dimension Inches										WLL (lbs)	Product Code
Inches	A	B	C	D	E	F	G	H	R ¹	R ²		
2.25 x 2.5 x 0.5	2.250	2.500	0.500	0.625	3.125	2.000	0.375	2.000	1.500	0.250	4,000	37051010



Material

Drop forged carbon steel, quenched and tempered

Finish

Strong bolt on hinges, yellow chromated

Design Factor

3 : 1

WARNING:

Use bolts of adequate size and strength only

Secure bolts with washers and lock washers

Torque-tighten bolts

WORKING LOAD LIMITS ARE FOR STRAIGHT IN-LINE PULLS ONLY

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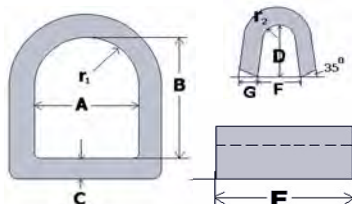


D-Rings with Weld-on Hinges

These D-Rings make an excellent anchor for winching, tie downs and blocking. They are drop forged and come with a U-shaped mounting bracket which must be welded in place. Great for recovery points on a custom bumper or securing loads on a trailer.



Size	Nominal Dimension Inches									WLL (lbs)	Product Code
Inches	A	B	C	D	E	F	G	R ¹	R ²		
3 x 3 x 5/8	3.000	3.000	0.625	0.875	2.500	1.000	0.375	1.500	0.375	6,000	37050015
3 x 4 x 1	3.000	4.000	1.000	1.325	2.562	1.312	0.500	1.500	0.562	12,000	37050014



Material	Drop forged carbon steel, quenched and tempered
Finish	Self colored, ready to be welded on truck body
	Hinges are beveled 35 ° for proper weld penetration
Design Factor	3 : 1
Welding	For best welding results use BONARC E 7018 coated electrodes or BONARC ER 70 S 6 welding Wire

WARNING: Weld fillet on hinges must be over the entire length of the hinge (dim. "E") with a minimum penetration on the truck frame of 1/8". Before welding, make sure that all contaminants like rust, oil, paint, galvanization are removed from welding area. WORKING LOAD LIMITS ARE FOR STRAIGHT IN-LINE PULLS ONLY

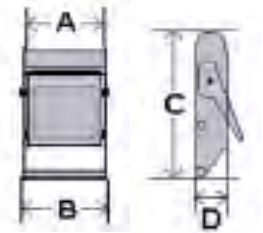


Cam Buckles

For easy and quick tying down of loads



Cam Buckle			Nominal Dimension Inches				Product Code
WLL (lbs)			A	B	C	D	
230			1.00	1.28	1.95	0.60	37015000
660			2.13	2.40	3.07	0.94	37015001
200			1.00	1.18	1.73	0.47	37015002



Sturdy Construction for additional tension on straps

Die-cast, solid construction

Large model with steel base

For 1" and 2" wide straps

Design Factor 3 : 1

WARNING: Do not use straps that are cut, frayed or otherwise damaged
Protect straps from sharp corners or edges with corner protectors
The total mass/weight of the load shall not exceed the aggregate working load limit of all tie-downs
Keep cam buckles clean and lubricated

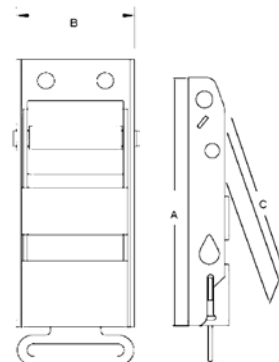


Overcentre Buckles

For tightening and tensioning straps



Overcenter Buckle Type	WLL (lbs)	Nominal Dimension Inches			Product Code
		A	B	C	
GOLD DYE-CHROMATED	1,860	6.75	2.5	4.12	37014020
STAINLESS STEEL	1,100	6.14	2.36	3.62	37014050



Sturdy Construction for additional tension on straps
 Gold Dye-chromated finish or chrome-nickel stainless steel
 Low wear to straps
 Positive locking features
 Design Factor 3 : 1

WARNING: Do not use straps that are cut, frayed or otherwise damaged
 Protect straps from sharp corners or edges with corner protectors
 Keep overcentre buckles clean and lubricated

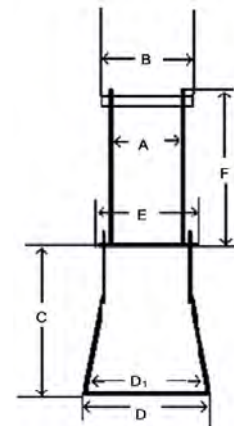


Ratchet Buckles

For tightening and tensioning straps



R. Buckle	Nominal Dimension							Product Code
WLL (lbs)	Inches							
	A	B	C	D	D 1	E	F	
1,000	1.18	1.85	3.66	2.36	2.20	2.24	3.27	37011003
3,660	2.05	2.95	5.51	3.03	2.68	3.66	4.56	37012004
3,660	2.05	2.95	6.69	4.02	3.66	3.66	4.53	37012006
3,660	2.05	2.95	7.68	4.02	3.66	3.66	4.53	37012011
7,300	3.03	4.88	11.42	4.57	4.13	5.47	7.09	37013001



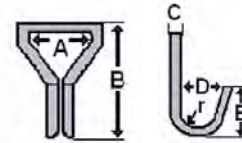
Sturdy Construction
Different handle widths and lengths
Gold Dye-chromated finish
Design Factor 3 : 1

WARNING: Make sure that webbing is wrapped 2-3 times around reel before tightening
Do not use handle extensions or extension bars
Do not use straps that are cut, frayed or otherwise damaged
Protect straps from sharp corners or edges with corner protectors
The total mass/weight of the load shall not exceed the aggregate working load limit of all tie-downs
Keep ratchet buckles clean and lubricated

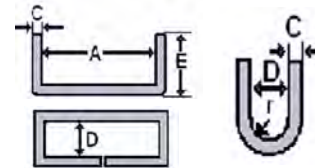


Strap Hooks

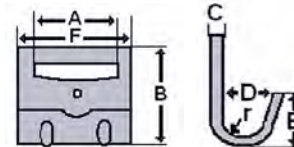
A variety of yellow chromated hooks for webbing



Type	Size	WLL (lbs)	Nominal Dimension Inches						Product Code
			A	B	C	D	E	F	
Narrow Wire Hook	1	800	1.062	2.375	0.250	1.000	1.250		37030006
Narrow Wire Hook	2	1,660	2.000	3.250	0.312	1.062	1.312		37030009
Narrow Wire Hook	2	3,350	2.000	3.250	0.500	1.187	1.312		37030008



Closed Hook	2	2250	1.000	0.375	0.940				37030203
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Flat Hook	2	3,335	1.75	3.50	0.187	0.450	0.875	2.250	37030015
Flat Hook	3	5,000	2.75	3.88	0.187	0.780	1.750	3.625	37030005

WARNING:

Do not use straps that are cut, frayed or otherwise damaged
 Protect straps from sharp corners or edges with corner protectors
 The total mass/weight of the load shall not exceed the aggregate
 working load limit of all tie-downs
WORKING LOAD LIMITS ARE FOR STRAIGHT LINE PULLS ONLY

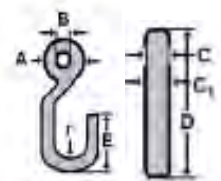


Vinyl Covered Hooks

Strong S-Hooks, covered with black vinyl, for use where hooks are touching delicate surfaces



Type	WLL (lbs)	Nominal Dimension Inches					Product Code
		A	B	C	D	E	
1" S-Hook	800	1.062	2.375	0.250	1.000	1.250	37030019
2" S-Hook	1,800	2.000	3.250	0.312	1.062	1.312	37030017



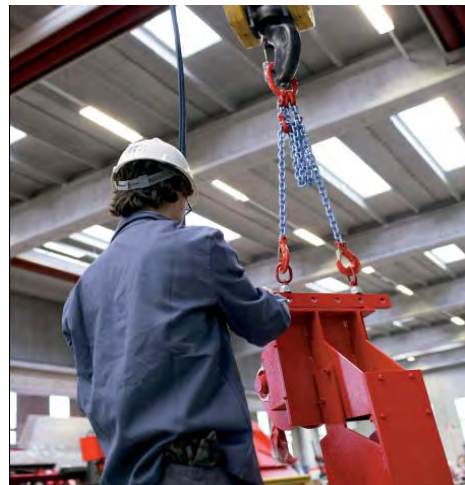
WARNING: Do not use straps that are cut, frayed or otherwise damaged
Protect straps from sharp corners or edges with corner protectors
The total mass/weight of the load shall not exceed the aggregate
working load limit of all tie-downs
WORKING LOAD LIMITS ARE FOR STRAIGHT IN-LINE PULLS ONLY

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CHAIN

CHAINS



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For grade 80/100 lifting components see separate listings



Chain Dimensions

Grade 30 Specifications

Size Inches	Wire Diameter		Inside Dimensions		Working Load Limit Lbs	Wt. Per 100 ft. Lbs.
	mm	Inches	Length Inches	Width Inches		

Exact

3/16"	4.8	0.192	1.035	0.340	600	27.00
1/4"	6.3	0.250	1.070	0.440	1,050	53.00
5/16"	8.0	0.312	1.198	0.550	1,700	86.00
3/8"	9.5	0.375	1.519	0.649	2,400	121.00
1/2"	12.5	0.500	1.990	0.837	4,150	206.00
5/8"	16.0	0.630	2.530	0.920	6,800	330.00

Trade

1/8"	4.0	0.162	0.900	0.290	355	20.39
3/16"	5.0	0.218	0.960	0.400	800	40.00
1/4"	7.0	0.276	1.190	0.500	1,300	63.60
5/16"	8.0	0.329	1.240	0.460	1,900	94.80
3/8"	10.0	0.385	1.330	0.570	2,650	133.00
1/2"	13.0	0.519	1.720	0.750	4,500	258.00
5/8"	16.0	0.656	1.900	0.820	6,900	382.00

NACM

1/8"	4.0	0.156	0.940	0.250	375	19.00
3/16"	5.5	0.217	0.980	0.300	800	38.00
1/4"	7.0	0.276	1.240	0.380	1,300	66.00
5/16"	8.0	0.315	1.290	0.440	1,900	98.00
3/8"	10.0	0.394	1.380	0.550	2,650	144.00
1/2"	13.0	0.512	1.790	0.720	4,500	278.00
5/8"	16.0	0.630	2.200	0.790	6,900	422.00

Use as guide lines only.

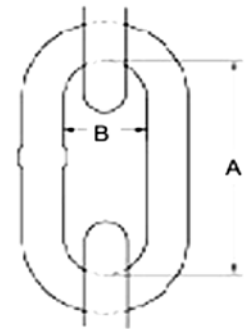


Grade 30 Bright and Polished Exact Chain

A low carbon general purpose utility chain used in applications where high tensile strength is not required.



G 30 Chain Bright	Nominal Dimension Inches		WLL (lbs)	Footage	Weight 100 ft	Product Code
Size	A	B				
Full Drums						
1/8"	0.94	0.25	375	1,000	19	38022008
3/16"	0.95	0.35	590	750	29	38022012
1/4"	1.30	0.43	1,040	700	50	38022016
5/16"	1.38	0.47	1,650	500	73	38022020
3/8"	1.42	0.56	2,340	400	123	38022024
1/2"	1.79	0.72	4,180	200	215	38022032
5/8"	2.76	0.88	6,750	150	321	38022040
Half Drum						
1/8"	0.94	0.25	375	500	19	380220081
3/16"	0.95	0.35	590	300	29	380220121
1/4"	1.30	0.43	1,040	350	50	380220161
5/16"	1.38	0.47	1,650	275	73	380220201
3/8"	1.42	0.56	2,340	200	123	380220241
1/2"	1.79	0.72	4,180	100	215	380220321
Pail Pack						
3/16"	0.95	0.35	590	150	29	380220122
1/4"	1.30	0.43	1,040	115	50	380220162
5/16"	1.38	0.47	1,650	83	73	380220202
3/8"	1.42	0.56	2,340	66	123	380220242
1/2"	1.79	0.72	4,180	50	215	380220322



Material Low Carbon Steel
 Finish Bright and Polished
 Design Factor 3:1

WARNING : NEVER EXCEED WORKING LOAD LIMITS!
 Do not use Grade 30 or 40 chains for overhead lifting applications.

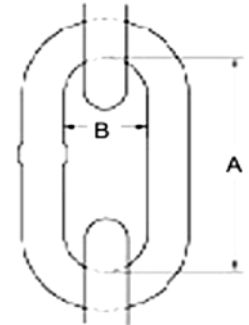


Grade 30 Hot Dip Galvanized Exact Chain

A low carbon general purpose utility chain that has been hot dipped galvanized for extra corrosion resistance, used in applications where high tensile strength is not required.



G 30 Chain Galvanized	Nominal Dimension Inches		WLL (lbs)	Footage	Weight 100 ft	Product Code
Size	A	B				
Full Drums						
1/8"	0.94	0.25	375	1,000	19	38032008
3/16"	0.95	0.35	590	750	29	38032012
1/4"	1.30	0.43	1,040	700	50	38032016
5/16"	1.38	0.47	1,650	500	73	38032020
3/8"	1.42	0.56	2,340	400	123	38032024
1/2"	1.79	0.72	4,180	200	215	38032032
5/8"	2.76	0.88	6,750	150	321	38032040
Half Drum						
1/8"	0.94	0.25	375	500	19	380320081
3/16"	0.95	0.35	590	300	29	380320121
1/4"	1.30	0.43	1,040	350	50	380320161
5/16"	1.38	0.47	1,650	275	73	380320201
3/8"	1.42	0.56	2,340	200	123	380320241
1/2"	1.79	0.72	4,180	100	215	380320321
Pail Pack						
3/16"	0.95	0.35	590	150	29	380320122
1/4"	1.30	0.43	1,040	115	50	380320162
5/16"	1.38	0.47	1,650	83	73	380320202
3/8"	1.42	0.56	2,340	66	123	380320242
1/2"	1.79	0.72	4,180	50	215	380320322



Material Low Carbon Steel
 Finish Hot Dip Galvanized
 Design Factor 3 : 1

WARNING : NEVER EXCEED WORKING LOAD LIMITS!
 Do not use Grade 30 or 40 chains for overhead lifting applications.

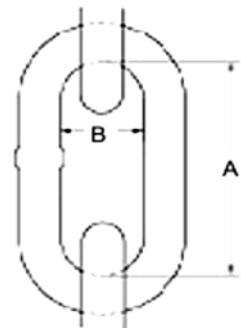


Grade 30 Electro Galvanized Exact Chain

A low carbon general purpose utility chain with a zinc finish used in applications where high tensile strength is not required.



G 30 Chain E. Galv.	Nominal Dimension Inches		WLL (lbs)	Footage	Weight 100 ft	Product Code
Size	A	B				
Full Drums						
1/8"	0.94	0.25	375	1,000	19	38040008
3/16"	0.95	0.35	590	750	29	38040012
1/4"	1.30	0.43	1,040	700	50	38040016
5/16"	1.38	0.47	1,650	500	73	38040020
3/8"	1.42	0.56	2,340	400	123	38040024
1/2"	1.79	0.72	4,180	200	215	38040032
Half Drum						
1/8"	0.94	0.25	375	500	19	380400081
3/16"	0.95	0.35	590	300	29	380400121
1/4"	1.30	0.43	1,040	350	50	380400161
5/16"	1.38	0.47	1,650	275	73	380400201
3/8"	1.42	0.56	2,340	200	123	380400241
1/2"	1.79	0.72	4,180	100	215	380400321
Pail Pack						
3/16"	0.95	0.35	590	150	29	380400122
1/4"	1.30	0.43	1,040	115	50	380400162
5/16"	1.38	0.47	1,650	83	73	380400202
3/8"	1.42	0.56	2,340	66	123	380400242
1/2"	1.79	0.72	4,180	50	215	380400322



Material Low Carbon Steel
 Finish Electro Galvanized
 Design Factor 3:1

WARNING : **NEVER EXCEED WORKING LOAD LIMITS!**
 Do not use Grade 30 or 40 chains for overhead lifting applications.

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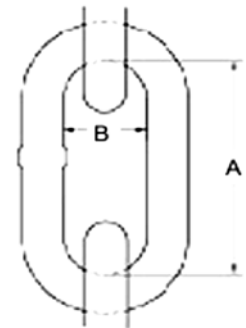


Grade 70 Transport Chain

Boron Manganese heat treated steel provides exceptional hardness and toughness. Commonly used as a binder tie down chain, meeting the stringent Department of Transport requirements.



G 70 Chain Size	Nominal Dimension Inches		WLL (lbs)	Footage	Weight 100 ft	Product Code
	A	B				
Full Drums						
1/4" SL *	0.88	0.43	3,150	800	75	380700163
1/4" RL *	1.24	0.46	3,150	800	73	38070016
5/16"	1.29	0.44	4,700	550	93	38070020
3/8"	1.38	0.55	6,600	400	143	38070024
7/16"	1.64	0.65	9,000	300	207	38070028
1/2"	1.79	0.72	11,300	200	240	38070032
Half Drum						
1/4" SL *	0.88	0.43	3,150	400	75	380700164
1/4" RL *	1.24	0.46	3,150	400	73	380700161
5/16"	1.29	0.44	4,700	275	93	380700201
3/8"	1.38	0.55	6,600	200	143	380700241
7/16"	1.64	0.65	9,000	150	207	380700281
1/2"	1.79	0.72	11,300	100	240	380700321
Pail Pack						
1/4" RL	1.24	0.46	3,150	114	73	380700162
5/16"	1.29	0.44	4,700	92	93	380700202
3/8"	1.38	0.55	6,600	66	143	380700242
1/2"	1.79	0.72	11,300	50	240	380700322



Material Boron Manganese Steel.
 Finish Yellow Chromated
 Elongation Min 15 %
 Design Factor 4 : 1 In accordance with NACM Specifications

* SL Short Link * RL Regular Link

WARNING : **NEVER EXCEED WORKING LOAD LIMITS!**
 Do not use Grade 70 chain for overhead lifting applications.

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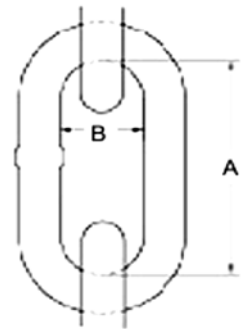


Grade 80 Alloy Lifting Chain

Produced to exceed the rigorous requirements of overhead lifting
This grade of lifting chain has good strength-to-weight ratio and excellent durability.
Meets or exceeds all NACM & ASTM Standards



G 80 Chain Size	Nominal Dimension Inches		WLL (lbs)	Footage	Weight 100 ft	Product Code
	A	B				
Full Drums						
9/32"	0.88	0.41	3,500	800	72	38080016
5/16"	1.02	0.48	4,500	500	106	38080020
3/8"	1.22	0.57	7,100	400	150	38080024
1/2"	1.56	0.75	12,000	200	261	38080032
5/8"	1.93	0.92	18,100	150	361	38080040
3/4"	2.36	1.02	28,300	196	610	38080048
7/8"	2.60	1.13	34,200	164	720	38080056
1"	3.07	1.33	47,700	98	1025	38080100



Material	High grade Ni-Cr-Mo Alloy Chain	
Finish	Special Black Epoxy.	
Elongation	Min 20 %	
Design Factor	4 : 1	In accordance with NACM Specifications

WARNING: NEVER EXCEED WORKING LOAD LIMITS!
LOAD RATINGS ARE FOR CHAINS IN 'NEW CONDITION'!
INSPECT LIFTING CHAINS REGULARLY AND
REPLACE ALL COMPONENTS SHOWING SIGNS OF WEAR!

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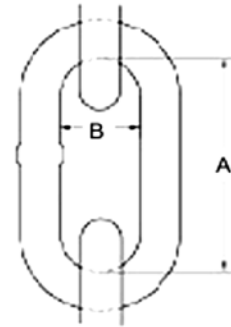


Grade 100 Alloy Lifting Chain

Produced to exceed the rigorous requirements of overhead lifting
Manufactured from a super high quality alloy steel that allows for 25 % higher working load limit (WLL) than comparable Grade 80 Alloy Chain.



G 100 Chain Size	Nominal Dimension Inches		WLL (lbs)	Footage	Weight 100 ft	Product Code
	A	B				
Full Drums						
9/32"	0.88	0.41	4,300	800	72	38150018
5/16"	1.02	0.48	5,700	500	106	38150020
3/8"	1.22	0.57	8,800	400	150	38150024
1/2"	1.56	0.75	15,000	200	261	38150032
5/8"	1.93	0.92	22,600	150	361	38150040



Material	High grade Ni-Cr-Mo Alloy Chain	
Finish	Gray Armour	
Elongation	Min 20 %	
Design Factor	4 : 1	In accordance with NACM Specifications

WARNING: NEVER EXCEED WORKING LOAD LIMITS!
LOAD RATINGS ARE FOR CHAINS IN 'NEW CONDITION'!
INSPECT LIFTING CHAINS REGULARLY AND
REPLACE ALL COMPONENTS SHOWING SIGNS OF WEAR!

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Single Jack Chain

A light duty unique chain, in that each link features two eyes 90 ° out of plane to each other. Some uses for this chain are hanging fixtures, children's toys and general utility applications where high strength is not required



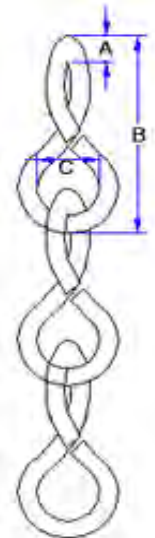
Single Jack Chain	Nominal Dimension Inches			WLL (lbs)	Footage	Weight 100 ft	Product Code
Size	A	B	C				

Cartons

# 16	0.063	0.626	0.177	10	100	3	
# 14	0.079	0.787	0.189	16	100	5	
# 12	0.106	0.965	0.217	29	100	9	38305112
# 10	0.134	1.201	0.315	47	100	15	383040101
# 10 T	0.134	1.339	0.315	43	50	13	383050101
# 8	0.157	1.598	0.374	60	100	21	383051081

Reels

# 16	0.063	0.626	0.177	10	250	3	
# 14	0.079	0.787	0.189	16	200	5	
# 12	0.106	0.965	0.217	29	100	9	38305112
# 10	0.134	1.201	0.315	47	250	15	
# 8	0.157	1.598	0.374	60	1000	21	38305108
# 10 T	0.134	1.339	0.315	43	250	13	383050102



Material: Low Carbon Steel, Not Heat Treated

Finish: Zinc Plated, White polymer, other finishes available on request

**WARNING: DO NOT USE FOR OVERHEAD LIFTING!
DO NOT EXCEED WORK LOAD LIMIT!**

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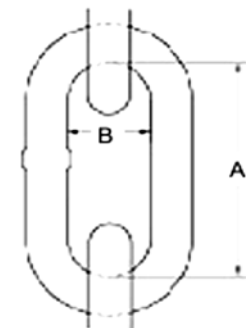
Grade 30 Long Link Mooring Chain

Mooring chain is a low carbon general purpose chain with a long link design, allowing the hook up of shackles anywhere on the chain, not just the end links.

The long link makes it more flexible and ideally suited for mooring applications.



Mooring Chain	Nominal Dimension Inches		B/S (lbs)	Footage	Weight 100 ft	Product Code
Size	A	B				
Full Drums						
1/2"	3.00	7/8	15,000	100	230	38990032
3/4"	4.15	1-3/16	39,500	100	480	38990048
1"	4.15	2	55,000	100	860	38990100
1-1/8"	4.50	1-3/4	77,000	100	1080	38990108
1-1/4"	5.00	2	91,000	100	1350	38990116



Material	Low Carbon Steel
Finish	Bright or Hot Dip Galvanized
Packing	100 ft. shots 500 ft per pallet

Sold in 100 ft quantities only !

WARNING : **NEVER EXCEED WORKING LOAD LIMITS!**
Do not use Grade 30 or 40 chains for overhead lifting applications.

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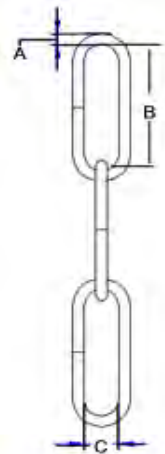


Passing Link Chain

Links of chain designed so the chain will not kink or knot.
Used generally for tie out purposes on livestock



Passing Chain Size	Nominal Dimension Inches			WLL (lbs)	Footage	Weight 100 ft	Product Code
	A	B	C				
2/0	0.189	0.875	0.470	450	100	32	38250020
4/0	0.210	0.875	0.500	600	100	41	38250040



Material: Low Carbon Steel, Not Heat Treated
Finish: Zinc Plated.
Packing: 100 ft cartons

WARNING: DO NOT USE FOR OVERHEAD LIFTING!
DO NOT EXCEED WORK LOAD LIMIT!

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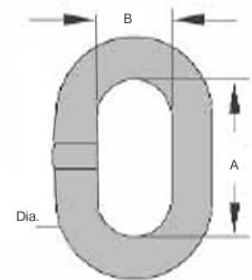
"No-Crack" Security Chain

This chain is manufactured to provide the highest possible security.

Triple heat treated chain, made from square bar stock, with short pitch and inverted "V" welds to resist bolt cutters.



Security Chain	Nominal Dimension Inches		WLL (lbs)	Footage	Weight 100 ft	Product Code
Dia	A	B				
3/8"	1.500	0.620	3,150	400	170	38400024



Hardness: Surface hardness exceeds Rockwell Hardness 65

Finish: Electro Galvanized

WARNING: DO NOT USE FOR OVERHEAD LIFTING!

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T-316 Stainless Steel Chain

A most economic and commonly used chain for industrial and marine application where corrosion is a concern.

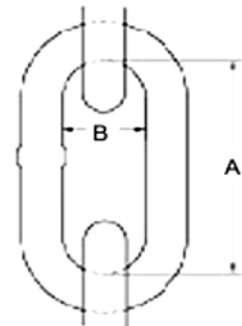
Due to particular metallurgical structure of base material it also resists high temperature.



T-316 S.S. Chain	Nominal Dimension Inches		WLL (lbs)	Footage	Weight 100 ft	Product Code
Size	A	B				

Full Drums

1/8"	0.93	0.28	375	1,000	18	38160008
3/16"	0.94	0.38	800	500	37	38160012
1/4"	1.24	0.47	1,300	400	63	38160016
5/16"	1.26	0.50	1,900	200	93	38160020
3/8"	1.38	0.57	2,650	150	142	38160024
1/2"	1.79	0.72	4,600	100	240	38160032
5/8"	2.20	0.79	5,800	100	358	38160040
3/4"	2.76	0.98	9,000	100	551	38160048



Material T-316 Stainless Steel
Finish Polished

WARNING: NEVER EXCEED WORKING LOAD LIMITS!
DO NOT USE STAINLESS STEEL CHAIN FOR
OVERHEAD LIFTING AND WHERE FAILURE
MAY CAUSE DAMAGE TO LIFE OR PROPERTY!



Double Loop (Tenso, Lion) Chain

A weldless chain that combines strength, flexibility, light weight and neat appearance. A general utility chain for hardware and manufacturing applications such as playground, gym equipment hanging fixtures, tie out chains, etc.



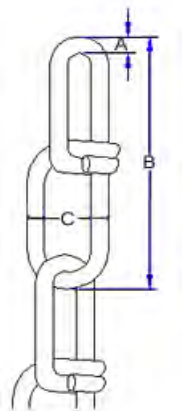
Tenso Chain Size	Nominal Dimension Inches			WLL (lbs)	Footage	Weight 100 ft	Product Code
	A	B	C				

Carton

# 4	0.071	1.142	0.197	70	100	6	383000041
# 3	0.079	1.280	0.236	90	100	6	383000031
# 2	0.091	1.969	0.276	115	100	9	383000002
# 1	0.106	1.811	0.295	155	100	10	383000001
1/0	0.118	2.126	0.315	200	100	13	383001001
2/0	0.134	2.480	0.345	255	100	17	383002001
3/0	0.150	2.677	0.433	305	100	20	383003001

Reel

# 4	0.071	1.142	0.197	70	250	6	383000004
# 3	0.079	1.280	0.236	90	200	6	383000003
# 2	0.091	1.969	0.276	115	200	9	383000002
# 1	0.106	1.811	0.295	155	100	10	383000001
1/0	0.118	2.126	0.315	200	200	13	383001000
2/0	0.134	2.480	0.345	255	175	17	383002000
3/0	0.150	2.677	0.433	305	150	20	383003000
4/0	0.161	2.835	0.512	365	70	25	383004000



Material: Low Carbon Steel, Not Heat Treated

Finish: Zinc Plated, White or Black polymer, other finishes available on request

**WARNING: DO NOT USE FOR OVERHEAD LIFTING!
DO NOT EXCEED WORK LOAD LIMIT!**

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18" Chain Tails - Grade 70



Chain Size	Model	Web Width	WLL (lbs)	Product Code
5/16"	S-925	2"	3,335	37054010
5/16"	S-928	3"	5,500	37055000
3/8"	S-926	3"	6,000	37054011
3/8"	S-927	4"	6,600	37054012

Material Grade 70 Chain, Alloy Hooks, Forged Alloy Delta Ring
Finish Yellow Chromated
Design Factor 3 : 1

WARNING: Never exceed working load limits
Do not use grade 70 chains for lifting applications

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Trailer Safety Chain Assembly

Safety Chain is defined as an assembly which provides a secondary means of connection between the rear of the towing vehicle and the front of the trailer (or towed vehicle); it includes link chain and all attaching means, or an alternative system. The purpose of Safety Chain is to retain connection between the towing vehicle and trailer in the event of separation of the trailer coupling from the ball or the ball from the hitch, long enough to bring the vehicles to a stop. It should not be construed that safety chains can ensure that vehicle control or connection will be maintained in the event of vehicle incidents such as loss of control, rollover, jackknife, collision, etc.



Chain Class	Chain Size	Length (ft)	Weight (lbs)	GVW (lbs)	Product Code
3	1/4"	3	2.58	5,000	
3	1/4"	4	3.33	5,000	38061016
3	1/4"	5	3.92	5,000	
3	1/4"	6	4.73	5,000	



Other lengths and Classes of chain available upon request

Material	Class III 1/4" Proof Coil Chain
Finish	Zinc Plated
" S " Hook	7/16" Patented Latch kit

Chain can be supplied in bulk or as assemblies.

WARNING:	Never exceed working load limits Do not use for lifting applications
-----------------	---

Vanguard Steel Ltd. _____



Grade 70 Tie Down Assemblies

Grade 70 transport chain is designed for use in cargo securement, towing and logging.
Supplied with Alloy Grab hooks on each end.

Manufactured in accordance to Department of Transport regulations.



Cain Size	Length (ft)	Weight (lbs)	WLL (lbs)	Product Code
5/16"	16	16.00	4,700	38072016
5/16"	20	20.00	4,700	38072020
5/16"	25	25.00	4,700	38072025
3/8"	10	16.00	6,600	38072410
3/8"	12	19.00	6,600	38072412
3/8"	14	22.00	6,600	38072414
3/8"	16	25.00	6,600	38072416
3/8"	20	31.00	6,600	38072420
3/8"	25	38.00	6,600	38072424

Material Grade 70 Chain, Alloy Hooks

Finish Yellow Chromated

Design Factor 4 : 1 In accordance with NACM Specifications

Chain can be supplied in bulk or as tie down assemblies.

WARNING: Never exceed working load limits
Do not use grade 70 chains for lifting applications

Vanguard Steel Ltd._____



WIRE ROPE HARDWARE

WIRE ROPE CLIPS



Vanguard Steel Ltd.



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WIRE ROPE HARDWARE

"Golden U-Bolt" Forged Wire Rope Clips

Fed. Specs. FF-C-450, Type 1, Class 1

Forged saddles, H.D. galvanized.

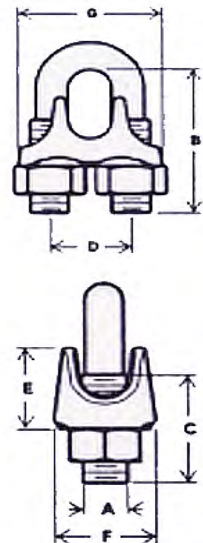
Gold chromated U-Bolts and Nuts identify 'Vanguard' product

Torque tested threads

Eye terminations reaching 80% of the rope strength when properly installed.



Forged Clips				Dimensions (inches)							Weight lbs/pc	Product Code
	Rope Diameter	Min No. of Clips	Rope turn-back	Torque (ft-lbs)	A	B	C	D	E	F	G	
1/8"	2	3-1/4"	4.5	0.20	0.75	0.54	0.41	0.48	0.80	0.90	0.06	29070008
3/16"	2	3-3/4"	7.5	0.24	0.98	0.65	0.56	0.55	0.95	1.16	0.10	29070012
1/4"	2	4-3/4"	15.0	0.30	1.06	0.67	0.78	0.67	1.18	1.54	0.19	29070016
5/16"	2	5-1/2"	30.0	0.37	1.35	0.80	0.84	0.77	1.33	1.65	0.29	29070020
3/8"	2	6-1/2"	45.0	0.42	1.50	0.81	0.96	0.98	1.55	1.92	0.44	29070024
1/2"	3	11-1/2"	65.0	0.48	1.83	1.10	1.12	1.19	1.91	2.29	0.73	29070032
5/8"	3	12"	95.0	0.54	2.40	1.22	1.38	1.33	2.05	2.50	1.02	29070040
3/4"	4	18"	130.0	0.61	2.84	1.51	1.51	1.40	2.25	2.82	1.42	29070048
7/8"	4	19"	225.0	0.73	3.10	1.79	1.73	1.60	2.41	3.16	2.12	29070056
1"	5	26"	225.0	0.73	3.58	1.80	1.85	1.77	2.64	3.44	2.55	29070100
1-1/8"	6	34"	225.0	0.73	3.90	2.09	1.95	1.95	2.74	3.52	2.80	29070108
1-1/4"	7	37"	360.0	0.86	4.26	2.13	2.37	2.31	3.15	4.11	4.37	29070116
1-1/2"	7	48"	360.0	0.86	4.78	2.42	3.53	2.51	3.35	4.41	5.31	29070132
1-3/4"	7	53"	590.0	1.09	5.64	2.85	3.10	2.94	3.82	5.28	9.80	29070148
2"	8	71"	750.0	1.20	6.75	3.11	3.31	3.31	4.41	5.86	13.75	29070200



Installation

Step 1:

APPLY 1st clip one base width from dead end of the rope-U-bolt over dead end - live end rests in clip saddle. Tighten nuts evenly to recommended torque.



Step 2:

APPLY 2nd clip as close to loop as possible - U - bolt over dead end turn nuts firmly but do not tighten !



Step 3:

ALL OTHER CLIPS - Space evenly between first two.



Step 4:

APPLY TENSION and tighten all nuts to recommended torque.

RE - CHECK nut torque after rope has been in operation.

WARNING DO NOT:

Stagger Clips

Mount U-Bolt over live end of rope

Join Ropes without the use of a thimble !

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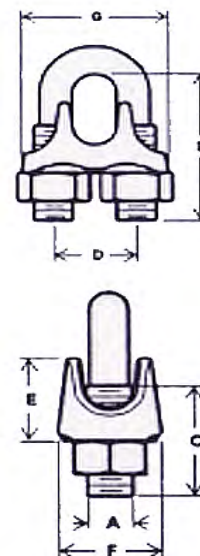
WIRE ROPE HARDWARE

Malleable Wire Rope Clips

To be used for light duty, non critical applications only
 Typical uses include Guard Lines and Fencing
 Fed. Specs. FF-C-450D, Type 1, Class 2 (except 1/8" size)



Malleable Clips Rope Diameter	Dimensions (inches)							Weight lbs/pc	Product Code
	A	B	C	D	E	F	G		
1/16"	0.15	0.62	0.42	0.35	0.35	0.44	0.65	0.03	29010004
1/8"	0.18	0.72	0.56	0.43	0.43	0.55	0.85	0.04	29010008
3/16"	0.23	0.92	0.63	0.54	0.52	0.61	1.05	0.06	29010012
1/4"	0.30	0.13	0.83	0.67	0.60	0.76	1.23	0.11	29010016
5/16"	0.30	1.23	0.86	0.69	0.64	0.82	1.34	0.12	29010020
3/8"	0.36	1.50	1.06	0.88	0.90	0.92	1.58	0.22	29010024
7/16"	0.36	1.54	1.07	0.94	0.87	0.93	1.64	0.22	29010028
1/2"	0.42	1.96	1.28	1.04	0.94	1.07	1.91	0.34	29010032
5/8"	0.48	2.14	1.39	1.30	1.10	1.16	2.23	0.52	29010040
3/4"	0.54	2.54	1.46	1.33	1.35	1.30	2.40	0.75	29010048
7/8"	0.61	2.90	1.77	1.55	1.53	1.46	2.77	1.16	29010056
1"	0.61	3.23	2.15	1.81	1.73	1.74	3.02	1.48	29010100
1-1/8"	0.72	4.44	2.70	1.84	1.97	1.77	3.24	2.06	29010108



FOR LIGHT DUTY INSTALLATIONS.
 DO NOT USE CLIPS OF THIS CLASSIFICATION FOR CRITICAL
 APPLICATIONS LIKE OVERHEAD LIFTING; IN SUCH CASES INSTALL
 VANGUARD "GOLDEN U BOLT" DROP FORGED CLIPS

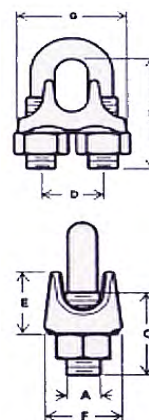


T 316 Stainless Steel Wire Rope Clips

To be used for light duty, non critical applications only
Typical uses include Guard Lines and Fencing



Stainless Clips Rope Diameter	Dimensions (inches)							Weight lbs/pc	Product Code
	A	B	C	D	E	F	G		
1/8"	0.19	0.81	0.55	0.40	0.40	0.51	0.82	0.04	29150008
5/32"	0.17	0.93	0.63	0.52	0.46	0.55	0.92	0.05	29150010
3/16"	0.23	0.97	0.60	0.56	0.50	0.55	1.00	0.06	29150012
1/4"	0.30	1.24	0.85	0.71	0.59	0.71	1.24	0.13	29150016
5/16"	0.30	1.40	0.90	0.80	0.60	0.77	1.38	0.15	29150020
3/8"	0.37	1.81	1.15	0.90	0.88	0.82	1.58	0.28	29150024
1/2"	0.44	2.14	1.34	1.20	0.90	1.00	1.93	0.42	29150032



Other Sizes available on request

FOR LIGHT DUTY INSTALLATIONS.
DO NOT USE CLIPS OF THIS CLASSIFICATION FOR CRITICAL
APPLICATIONS LIKE OVERHEAD LIFTING; IN SUCH CASES INSTALL
VANGUARD "GOLDEN U BOLT" DROP FORGED CLIPS

Vanguard Steel Ltd. _____



WIRE ROPE CLIPS

INSTALLATION

There's only one right way to install cable clips when you want to get the maximum efficiency, up to 85 %, out of a loop or thimble-eye termination. Otherwise the capacity of the termination can be severely reduced, risking the lives of workers and others nearby.

Here is how to install cable clips correctly.

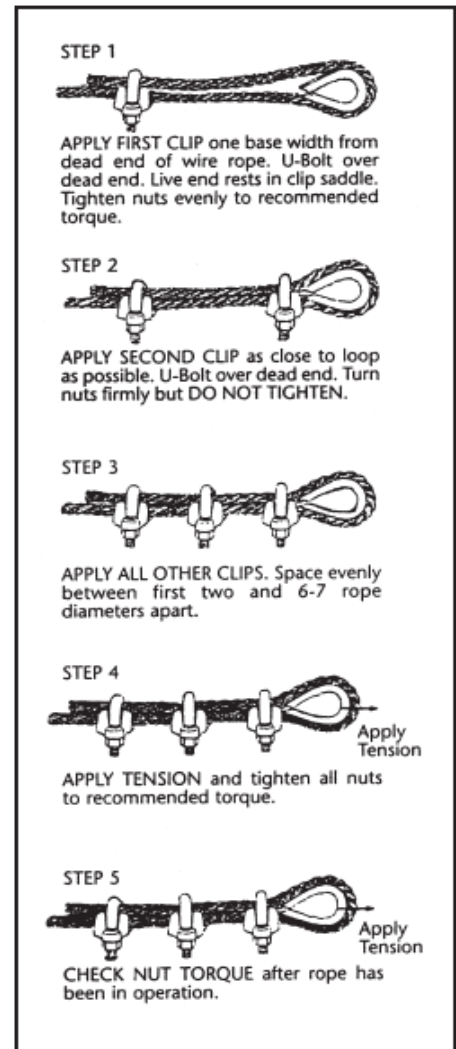
- * Most cable clips have two sections. There is the saddle part and a U-shaped part.
- * You need the right size clip for the wire rope diameter.
- * You need to know the number of clips required, the amount of rope turn back from the thimble, and the torque needed to tighten the nuts. There are tables that spell out this information. (See sample below)
- * At least three clips should be used when making any prepared loop or thimble-eye termination for wire rope, especially for hoisting.
- * All three clips must be installed with the saddle part on the live end of the rope. This lets the live end rest in the saddle so it is not crushed by the U part of the clip. Here is a way to remember this:

"Never saddle a dead horse."

- * The U goes on the dead end of the rope where crushing will not affect the breaking strength of the hoist line

Clip size Inches	Minimum No. of Clips	Amount of rope to turn back in inches	Torque Ft. lbs.
1/8"	2	3-1/4	4.5
3/16"	2	3-3/4	7.5
1/4"	2	4-3/4	15
5/16"	2	5-1/4	30
3/8"	2	6-1/2	45
7/16"	2	7	65
1/2"	3	11-1/2	65
9/16"	3	12	95
5/8"	3	12	95
3/4"	4	18	130
7/8"	4	19	225
1"	5	26	225
1-1/8"	6	34	225
1-1/4"	7	44	360
1-3/8"	7	44	360
1-1/2"	8	54	360

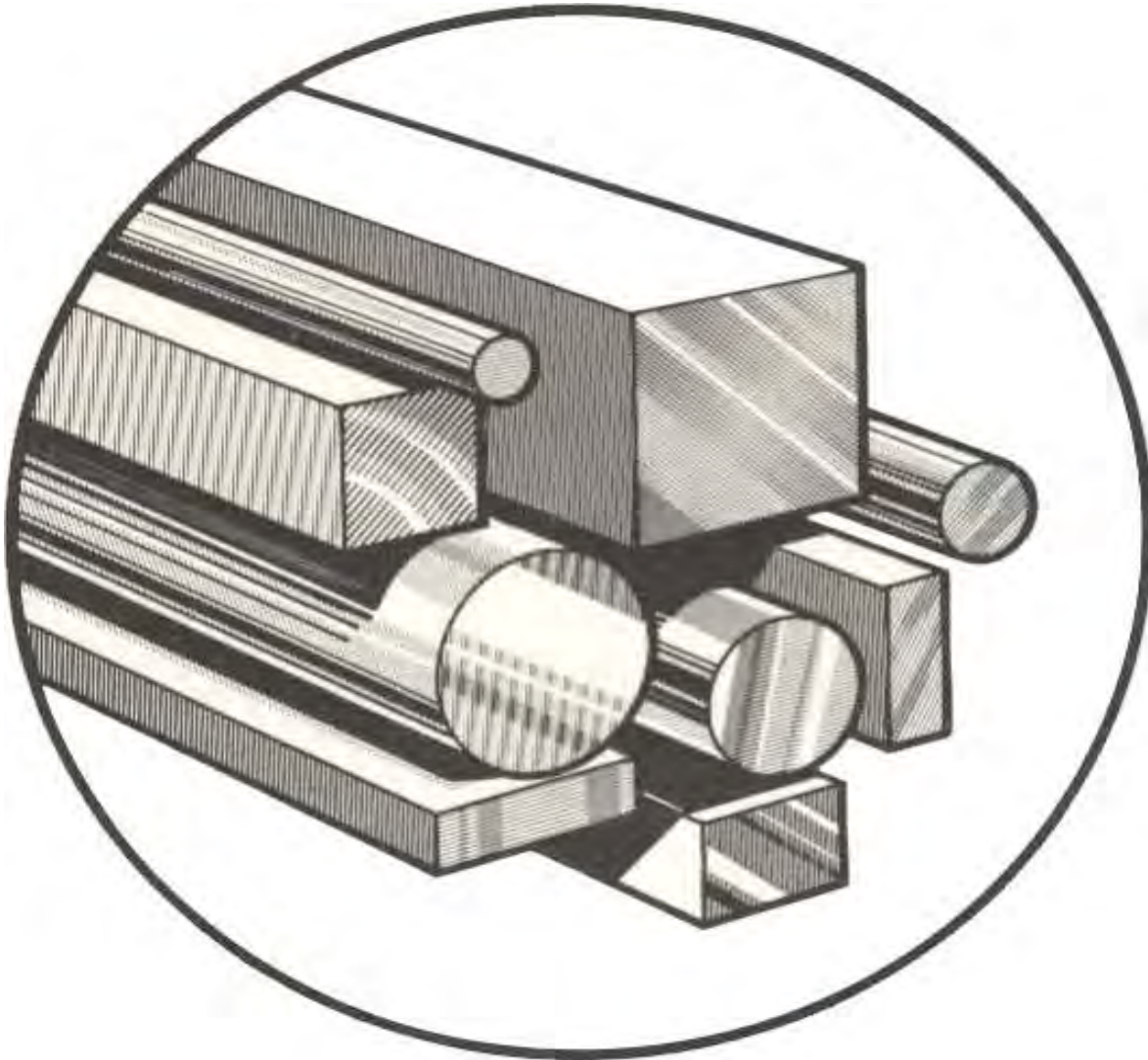
If a greater number of clips are used than shown in the table, the amount of rope turnback should be increased proportionately.





DRILLRODS & KEYSTOCK

DRILLRODS & KEYSTOCK



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DRILLRODS

Supplied in 1/64 th " increments from 1/64-2"

Standard length 36". Longer lengths supplied on request.

AISI W-1 DRILL RODS

WATER HARDENING is the most popular, versatile, and least expensive grade of drill rod. The through-hardening quality of W-1 Drill rod affords optimum response in service. Its high carbon content allows it to be used often without heat treatment for maintenance applications. It is a fine grained electric furnace melted commercial grade tool steel which is supplied in the fully spheroidized decarb free condition.

ANALYSIS C .90-1.05, Mn .30-.50, Si .10-.25

HEAT TREATMENT Heat thoroughly at 1425°-1500°F. Hold one-half hour per inch of section, quench in water (brine). Sizes below 9/32-inch round may be quenched in oil.

AISI O-1 DRILL RODS

OIL HARDENING DRILL ROD is an electric furnace melt oil-hardening tool steel supplied with a fully shperoidized structure. A non-shrinking general-purpose tool steel, it has excellent abrasion resistance, toughness, and machinability characteristics.

ANALYSIS C .85-1.00, Mn 1.00-1.40, Si .50 Max, Cr .40-.60, W .40-.60, V .30 Max.

HEAT TREATMENT Sections smaller than 1/4" heat to 1450°-1475°F and hold until heated through.

For larger sections, preheat to 1200°F, the raise to 1450°-1500°F to hardening temperature, hold one-half hour per inch of cross section. Quench in oil at 125°-150°F and TEMPER IMMEDIATELY.

Exceptional Surface Finish and Surface Quality

The very high polish on Drill Rod allows it to be utilized without the need for further expensive grinding or polishing. Because Ground and Polished Drill Rod is guaranteed to be 100% free of decarburization, seams, laps, pits, and other surface imperfections, heat treatment can confidently be undertaken without further metal removal.

Size	Surface Finish	Surface Quality (Max. Allowable depth of defect)
.125" and smaller	10 RMS Max	.000
.125 to .500" dia	15 RMS Max	.000
.500 to .875" dia	20 RMS Max	.000
.875 to 2.00" dia.	30 RMS Max	.000

Vanguard Steel Ltd



DRILLRODS

Sizes:		Weight		Product Code	
Inch	Metric	Per 3 feet		AISI W-1	AISI O-1
5/64"	0.0781	0.051		0401 1005	0402 1005
7/64"	0.1093	0.093		0401 1007	0402 1007
9/64"	0.1406	0.156		0401 1009	0402 1009
11/64"	0.1718	0.234		0401 1011	0402 1011
13/64"	0.2031	0.327		0401 1013	0402 1013
15/64"	0.2343	0.441		0401 1015	0402 1015
17/64"	0.2656	0.561		0401 1017	0402 1017
19/64"	0.2968	0.702		0401 1019	0402 1019
21/64"	0.3281	0.861		0401 1021	0402 1021
23/64"	0.3593	1.032		0401 1023	0402 1023
25/64"	0.3906	1.221		0401 1025	0402 1025
27/64"	0.4218	1.416		0401 1027	0402 1027
29/64"	0.4531	1.626		0401 1029	0402 1029
31/64"	0.4843	1.875		0401 1031	0402 1031
33/64"	0.5156	2.127		0401 1033	0402 1033
35/64"	0.5468	2.391		0401 1035	0402 1035
37/64"	0.5781	2.673		0401 1037	0402 1037
39/64"	0.6093	3.000		0401 1039	0402 1039
41/64"	0.6406	3.312		0401 1041	0402 1041
43/64"	0.6718	3.603		0401 1043	0402 1043
47/64"	0.7343	4.314		0401 1047	0402 1047
49/64"	0.7656	4.686		0401 1049	0402 1049
51/64"	0.7968	5.073		0401 1051	0402 1051
53/64"	0.8281	5.484		0401 1053	0402 1053
57/64"	0.8906	6.354		0401 1057	0402 1057
63/64"	0.9843	7.749		0401 1063	0402 1063

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DRILLRODS

Sizes:		Weight		Product Code	
Inch	Metric	Per 3 feet		AISI W-1	AISI O-1
3/32"	0.0937	0.069		0401 1006	0402 1006
5/32"	0.1563	0.198		0401 1010	0402 1010
7/32"	0.2188	0.387		0401 1014	0402 1014
9/32"	0.2813	0.639		0401 1018	0402 1018
11/32"	0.3438	0.939		0401 1022	0402 1022
13/32"	0.4062	1.311		0401 1026	0402 1026
15/32"	0.4687	1.749		0401 1030	0402 1030
17/32"	0.5312	2.250		0401 1034	0402 1034
19/32"	0.5937	2.823		0401 1038	0402 1038
21/32"	0.6562	3.435		0401 1042	0402 1042
23/32"	0.7187	4.125		0401 1046	0402 1046
25/32"	0.7812	4.887		0401 1050	0402 1050
27/32"	0.8437	5.700		0401 1054	0402 1054
29/32"	0.9062	6.576		0401 1058	0402 1058
31/32"	0.9687	7.593		0401 1062	0402 1062
1/16"	0.0625	0.030		0401 1004	0402 1004
3/16"	0.1875	0.282		0401 1012	0402 1012
5/16"	0.3125	0.780		0401 1020	0402 1020
7/16"	0.4375	1.530		0401 1028	0402 1028
9/16"	0.5625	2.532		0401 1036	0402 1036
11/16"	0.6875	3.750		0401 1044	0402 1044
13/16"	0.8125	5.250		0401 1052	0402 1052
15/16"	0.9375	6.999		0401 1060	0402 1060
1-1/16"	1.0625	9.030		0401 1104	0402 1104
1-3/16"	1.1875	16.560		0401 1112	0402 1112
1-5/16"	1.3125	13.800		0401 1120	0402 1120
1-7/16"	1.4375	15.560		0401 1128	0402 1128

Vanguard Steel Ltd



DRILLRODS

Sizes:		Weight		Product Code	
Inch	Metric	Per 3 feet		AISI W-1	AISI O-1
1/8"	0.1250	0.126		0401 1008	0402 1008
3/8"	0.3750	1.125		0401 1024	0402 1024
5/8"	0.6250	3.126		0401 1040	0402 1040
7/8"	0.8750	6.126		0401 1056	0402 1056
1-1/8"	1.1250	10.125		0401 1108	0402 1108
1-3/8"	1.3750	15.147		0401 1124	0402 1124
1-5/8"	1.6250	21.150		0401 1140	0402 1140
1/4"	0.2500	0.501		0401 1016	0402 1016
1/2"	0.5000	2.001		0401 1032	0402 1032
3/4"	0.7500	4.503		0401 1048	0402 1048
1"	1.0000	8.000		0401 1100	0402 1100
1-1/4"	1.2500	12.501		0401 1116	0402 1116
1-1/2"	1.5000	18.102		0401 1132	0402 1132
1-3/4"	1.7500	24.510		0401 1148	0402 1148
2"	2.0000	32.040		0401 1200	0402 1200

STANDARD MANUFACTURING TOLERANCES FOR DRILLRODS

INCH	TOLERANCES
UP TO .124"	+/- .0003"
.125 " TO 1.499"	+/- .0005"
1.500" TO 2.000"	+/- .00075"

Vanguard Steel Ltd



DRILLRODS

AISI O-1

Sizes:		Weight	Product Code
Inch	Metric	Per 3 feet	AISI O-1

0.0787	2 mm	0.0496	0404 2020
0.1181	3 mm	0.1117	0404 2030
0.1575	4 mm	0.1987	0404 2040
0.1969	5 mm	0.3105	0404 2050
0.2362	6 mm	0.4469	0404 2060
0.2756	7 mm	0.6084	0404 2070
0.3150	8 mm	0.7948	0404 2080
0.3543	9 mm	1.0050	0404 2090
0.3937	10 mm	1.2420	0404 2100
0.4331	11 mm	1.5020	0404 2110
0.4727	12 mm	1.7880	0404 2120
0.5118	13 mm	2.0980	0404 2130
0.5512	14 mm	2.4340	0404 2140
0.5906	15 mm	2.7940	0404 2150
0.6299	16 mm	3.1780	0404 2160
0.6693	17 mm	3.9286	0404 2170
0.7087	18 mm	4.4016	0404 2180
0.7874	20 mm	5.4365	0404 2200
0.8661	22 mm	6.5710	0404 2220
0.9449	24 mm	7.1410	0404 2240
0.9843	25 mm	8.4943	0404 2250

STANDARD MANUFACTURING TOLERANCES FOR DRILLRODS

METRIC	TOLERANCES	
	PLUS	MINUS
1.00 - 1.50 mm	0	.012 mm
2.00 - 3.00 mm	0	.014 mm
3.50 - 6.00 mm	0	.018 mm
6.50 - 10.00 mm	0	.022 mm
10.50 - 18.00 mm	0	.027 mm
19.00 - 30.00 mm	0	.033 mm

Vanguard Steel Ltd



KEYSTOCK

STEEL KEYSTOCK

Keystock is used to provide driving torque between shafts and pulleys, gears, sprockets, etc.

Stocked in square and rectangular

Square keystock range from 1/8" to 2"

Standard lengths are 144" or cut to 12" increments

Rectangular keystock range from 1/8"x3/16" to 3/4"x1" sold in full length only.

Most material is high quality cold drawn low carbon C1018 steel

Meets ASTM A-108



SQUARE KEY STOCK

Size	Product Code	Weight Per ft.
1/8"	1204 0008	0.053
3/16"	1204 0012	0.120
1/4"	1204 0016	0.213
5/16"	1204 0020	0.332
3/8"	1204 0024	0.487
7/16"	1204 0028	0.651
1/2"	1204 0032	0.850
9/16"	1204 0036	1.080
5/8"	1204 0040	1.330
3/4"	1204 0048	1.910
7/8"	1204 0056	2.600
1"	1204 0100	3.400
1-1/8"	1204 0108	4.300
1-1/4"	1204 0116	5.310
1-1/2"	1204 0132	7.650
1-3/4"	1204 0148	10.410
2"	1204 0200	13.600

**AVAILABLE IN ANY ONE FOOT MULTIPLES!
OTHER SIZES AVAILABLE ON REQUEST**

Vanguard Steel Ltd

EYE BOLTS



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!

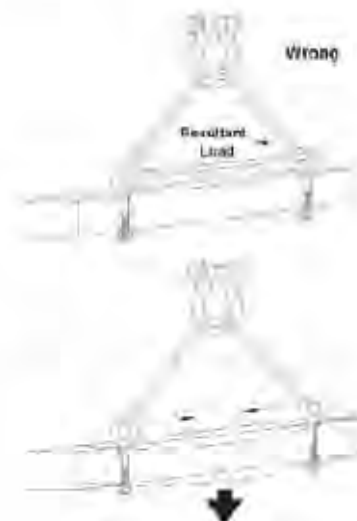
- **ALWAYS** inspect eye bolts before use, checking for wear, damage, bent or elongation of the eye and/or shank and damage to the threads. The inspection should be performed by a properly trained/competent person
- **ALWAYS** make sure that the threads on the shank and the receiving hole are clean before 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.

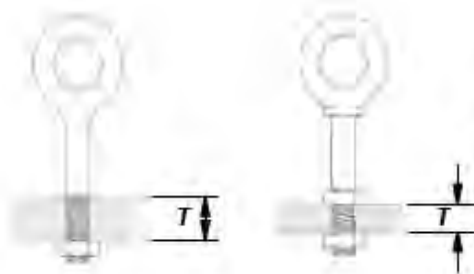
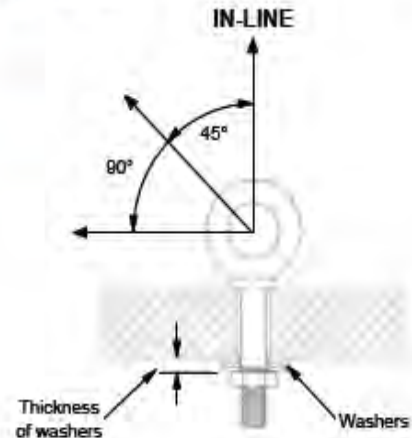


FORGED EYE BOLT WARNINGS AND INFORMATION

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

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)



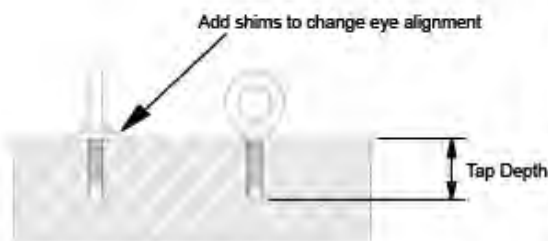
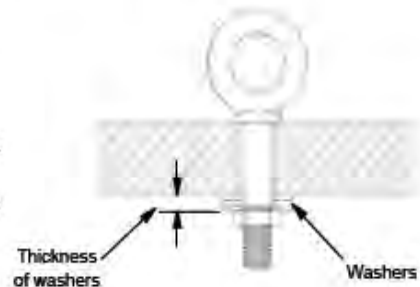
EYE BOLT INSTALLATION

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.

Always tighten nut securely against the load.

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 nut and the load (as shown). The thickness of the washers/spacer must exceed the distance 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).



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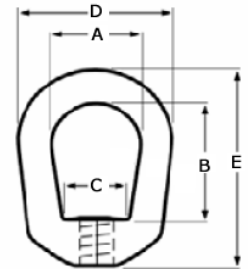


Forged Eye Nuts

Forged Carbon Steel
Quenched & tempered
UNC Threads



Size	Nominal	Tap Size	Dimensions (inches)					WLL (lbs)	Weight lbs/pc	Product Code
	Inch		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	29750048
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!

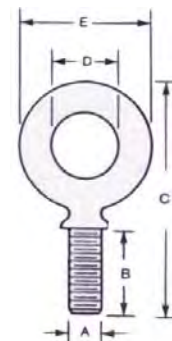


Machinery Eye Bolts

Forged Carbon Steel
Quenched & tempered.
UNC Threads



Size (A x B)		Dimensions (inches)			WLL (lbs)	Weight lbs/pc	Product Code
Diameter	Shank						
A	B	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!

Vanguard Steel Ltd. _____



Pad Eyes

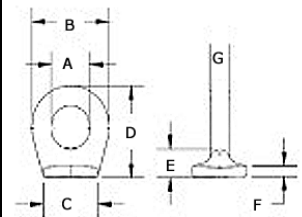
Forged Carbon Steel

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 !
WORKING LOAD LIMITS PERTAIN TO IN-LINE PULLS ONLY
DO NOT USE EYE BOLTS WHICH SHOW SIGNS OF WEAR OR DEFORMATION!

Vanguard Steel Ltd.



Regular Nut Eye Bolts

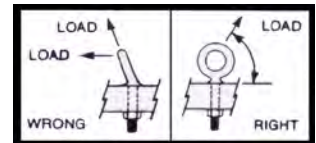
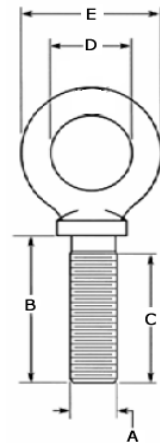
Forged Carbon Steel

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						
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 !

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 Regular Nut Eye Bolts-use only Shoulder Nut or Machinery Eye bolts and observe the reduced Working Load Limits.

Vanguard Steel Ltd.



Screw Eye Bolts

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

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!

Vanguard Steel Ltd. _____



Shoulder Nut Eye Bolts

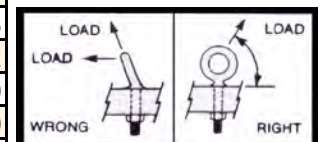
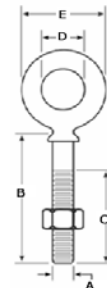
Forged Carbon Steel

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						
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 !
 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 Regular Nut Eye Bolts-use only Shoulder Nut or Machinery Eye bolts and observe the reduced Working Load Limits.

Vanguard Steel Ltd. _____

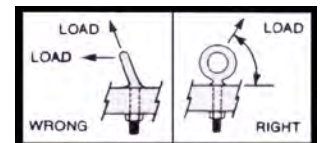
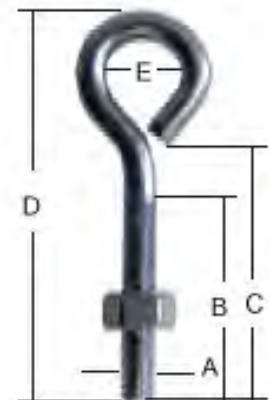


Wire Formed Pressed Eyebolts

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

Vanguard Steel Ltd. _____



V-LINE CHAIN & ACCESSORIES

Grade 80 Alloy Lifting



Vanguard Steel Ltd



www.vanguardsteelvancouver.com
www.vanguardsteel.com



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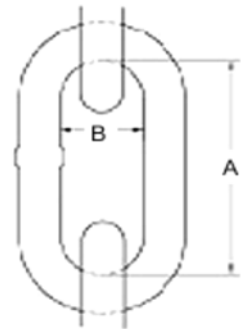


Grade 80 Alloy Lifting Chain

Produced to exceed the rigorous requirements of overhead lifting
This grade of lifting chain has good strength-to-weight ratio and excellent durability.
Meets or exceeds all NACM & ASTM Standards



G 80 Chain	Nominal Dimension		WLL (lbs)	Footage	Weight 100 ft	Product Code
	Inches					
Size	A	B	Full Drums			
9/32"	0.88	0.41	3,500	800	72	38080016
5/16"	1.02	0.48	4,500	500	106	38080020
3/8"	1.22	0.57	7,100	400	150	38080024
1/2"	1.56	0.75	12,000	200	261	38080032
5/8"	1.93	0.92	18,100	150	361	38080040
3/4"	2.36	1.02	28,300	196	610	38080048
7/8"	2.60	1.13	34,200	164	720	38080056
1"	3.07	1.33	47,700	98	1025	38080100



Material	High grade Ni-Cr-Mo Alloy Chain	
Finish	Special Black Epoxy.	
Elongation	Min 20 %	
Design Factor	4:1	In accordance with NACM Specifications

WARNING: NEVER EXCEED WORKING LOAD LIMITS!
LOAD RATINGS ARE FOR CHAINS IN 'NEW CONDITION'!
INSPECT LIFTING CHAINS REGULARLY AND
REPLACE ALL COMPONENTS SHOWING SIGNS OF WEAR!



VGD Grade 80 Connecting Links

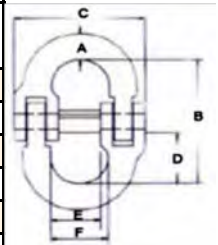
Fast, easy assembly without the need for special tools or skills.

Designed for attaching hooks, master links and other end fittings to Grade 80 alloy chain

Approved for overhead lifting, when all components are grade 80.



Con. Links		Dimensions								
Grade 80		Inches								
Code	Chain Size	A	B	C	D	E	F	WLL lbs.	Lbs. Pc	Product Code
V-60	9/32"	0.46	2.17	2.12	0.97	0.75	0.87	4,500	0.44	395600161
V-61	3/8"	0.50	2.68	2.64	1.18	0.98	1.10	7,100	0.70	395600241
V-62	1/2"	0.65	3.34	3.07	1.48	1.04	1.28	12,000	1.50	395600321
V-63	5/8"	0.82	4.17	4.09	1.85	1.38	1.65	18,100	2.43	395600401
V-64	3/4"	0.90	4.57	4.25	1.90	1.73	1.85	28,300	3.80	395600481
V-65	7/8"	1.02	5.24	5.28	2.01	1.93	2.17	33,000	4.85	395600561
V-66	1"	1.20	6.45	6.25	2.68	2.40	2.60	46,700	11.00	395601001



Design Factor: 4 : 1

Con. Links		Collars
Grade 80		
Code	Hook Size	Product Code
V-60	9/32"	395610161
V-61	3/8"	395610241
V-62	1/2"	395610321
V-63	5/8"	395610401
V-64	3/4"	395610481
V-65	7/8"	395010561
V-66	1"	395611001



Load Pins	
Hook Size	Product Code
9/32"	39504016
3/8"	39564024
1/2"	39564032
5/8"	39564040
3/4"	39564048
7/8"	39504056
1"	39564100



WARNING: NEVER EXCEED WORKING LOAD LIMITS !

Do not use lesser than Grade80 components for any lifting application !

Do not use chains or accessories with signs of wear or deformation !

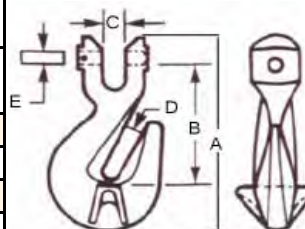


VGD Grade 80 Clevis Grab Hooks

Easily attaches to Grade 80 chain with pin and cotter
Approved for overhead lifting, when all components are grade 80.



Grab Hooks		Dimensions							
Grade 80		Inches							
Code	Chain Size	A	B	C	D	E	WLL lbs.	Lbs. Pc	Product Code
V-90	9/32-5/16"	3.62	1.97	0.41	0.41	0.39	4,500	0.73	395000161
V-91	3/8"	5.00	2.83	0.57	0.49	0.49	7,100	1.82	395000241
V-92	1/2"	5.98	3.54	0.67	0.65	0.63	12,000	3.52	395000321
V-93	5/8"	7.03	4.29	0.69	0.86	0.81	18,100	5.63	395000401
V-94	3/4"	8.25	5.04	0.94	0.98	0.98	28,300	8.58	395000481



Design Factor: 4 : 1

Spare Parts		Load Pin	Product Code
Grab & Slip Hooks			
Code			
V-90		9/32"	395010161
V-91		3/8"	395010241
V-92		1/2"	395010321
V-93		5/8"	395010401
V-94		3/4"	395010481



Cotter Pin	Product Code
9/32"	395020161
3/8"	395020241
1/2"	395020321
5/8"	395020401
3/4"	395020481



WARNING: NEVER EXCEED WORKING LOAD LIMITS !
Do not use lesser than Grade 80 components for any lifting application !
Do not use chains or accessories with signs of wear or deformation !



VGD Grade 80 Clevis Slip Hooks & Latch Kit

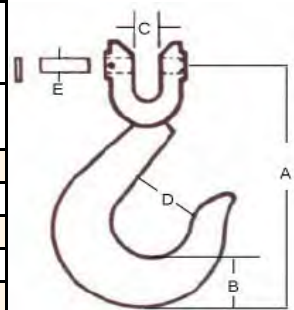
Easily attaches to Grade 80 chain with pin and cotter

Approved for overhead lifting, when all components are grade 80.

All Hooks provided with latch kit assembled on the hook



Slip Hooks		Dimensions							
Grade 80		Inches							
Code	Chain Size	A	B	C	D	E	WLL lbs.	Lbs. Pc	Product Code
V-80SU	9/32-5/16"	3.54	1.26	0.35	1.02	0.39	4,500	1.34	395110161
V-81SU	3/8"	4.44	1.40	0.47	1.22	0.49	7,100	2.24	395110241
V-82SU	1/2"	5.37	1.57	0.67	1.65	0.63	12,000	3.92	395110321
V-83SU	5/8"	6.79	1.98	0.75	2.05	0.81	18,100	9.72	395110401
V-84SU	3/4"	8.66	2.62	1.06	2.48	0.98	28,300	19.58	395110481



Design Factor: 4 : 1

Replacement Cast Latch				
Grade 80				
Code	Chain Size		Weight lbs.	Product Code
V-80LKU	9/32-5/16"		0.08	396110161
V-81LKU	3/8"		0.10	396110241
V-82LKU	1/2"		0.12	396110321
V-83LKU	5/8"		0.35	396110401
V-84LKU	3/4"		0.40	396110481



WARNING: NEVER EXCEED WORKING LOAD LIMITS !
Do not use lesser than Grade 80 components for any lifting application !
Do not use chains or accessories with signs of wear or deformation !

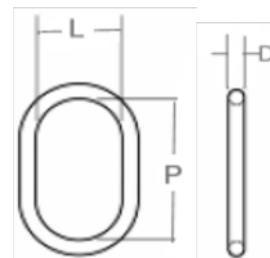
Vanguard Steel Ltd. _____



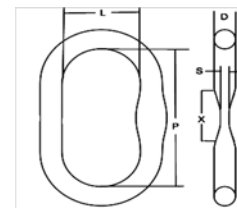
VGD Grade 80 Master Links

Design Factor 4 : 1

Approved for overhead lifting, when all components are grade 80.



Master Link		Nominal Dimensions									
No Flat Spot											
Code	Size	Chain Sling & Type				D	L	P	WLL lbs.	Weight lbs.	Product Code
		Single	Double	Triple	Quad						
V-87-8	1/2"	9/32-5/16"	9/32"			1/2	2.75	4.72	6,100	0.80	395300322
V-108-8	5/8"	3/8"	5/16"			5/8	3.15	5.50	7,750	1.55	395300402
V-1310-8	3/4"	1/2"	3/8"	9/32-5/16"	9/32-5/16"	3/4	3.75	6.30	12,300	2.70	395300482
V-1613-8	1"	5/8"	1/2"	3/8"	3/8"	1	4.33	7.50	20,800	5.30	395301002
V-2016-8	1-1/4"	3/4"	5/8"	1/2"	1/2"	1-1/4	5.10	9.00	31,300	9.75	395301162
V-2220-8	1-1/2"	7/8"	3/4"	5/8"	5/8"	1-1/2	5.90	10.80	49,000	18.00	395301322
V-2622-8	1-3/4"	1"	7/8"	3/4"	3/4"	1-3/4	7.10	13.40	73,500	29.00	395301482
V-3226-8	2"	1-1/4"	1"	7/8"	7/8"	2	7.50	13.75	88,900	38.00	395302002



Master Link		Dimensions										
With Flat Spot		Inches										
Code	Size	Chain Sling & Type				D	L	P	S x X mm	WLL lbs.	Lbs. Pc	Product Code
		Single	Double	Triple	Quad							
VF-87-8	1/2"	9/32-5/16"	9/32"			1/2	2.75	4.72	8.0 x 25	6,100	0.80	39530032
VF-108-8	5/8"	3/8"	5/16"			5/8	3.15	5.50	8.0 x 25	7,750	1.55	39530040
VF-1310-8	3/4"	1/2"	3/8"	9/32-5/16"	9/32-5/16"	3/4	3.75	6.30	11.5 x 35	12,300	2.70	39530048
VF-1613-8	1"	5/8"	1/2"	3/8"	3/8"	1	4.33	7.50	14.5 x 45	20,800	5.30	39530100
VF-2016-8	1-1/4"	3/4"	5/8"	1/2"	1/2"	1-1/4	5.10	9.00	18.0 x 45	31,300	9.75	39530116

MASTER LINKS AND SUB-ASSEMBLIES (incl. sub links) INDIVIDUALLY PROOF TESTED PER ASTM 906/952 PRESCRIBED LOADS.

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
Do not use lesser than Grade 80 components for any lifting application !
Do not use chains or accessories with signs of wear or deformation !

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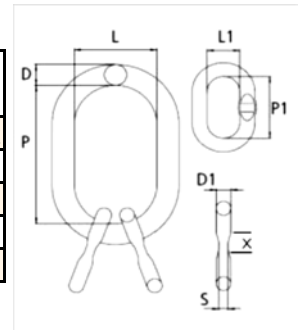
VGD Grade 80 Master Link Sub-Assemblies

For Triple and Quad branch slings

Approved for overhead lifting, when all components are grade 80.



Master Link		Dimensions Inches						WLL (lbs @ 60°)	Lbs. Pc	Product Code
Sub Assembly										
Code	Chain									
	Size	D	L	P	D-1	L-1	P-1			
V-7-8	9/32"	0.75	3.75	6.30	0.50	2.36	4.33	12,300	4.25	395400482
V10-8	3/8"	1.00	4.33	7.50	0.75	3.75	6.30	20,800	12.75	395401002
V13-8	1/2"	1.25	5.10	9.00	1.00	4.33	7.50	31,300	22.00	395401162
V16-8	5/8"	1.50	5.90	10.80	1.13	5.10	9.05	49,000	33.00	395401322
V20-8	3/4"	1.75	7.10	13.40	1.25	5.10	9.05	73,500	48.00	395401482



Design Factor 4 : 1

MASTER LINKS AND SUB-ASSEMBLIES (incl. sub links) INDIVIDUALLY PROOF TESTED PER ASTM 906/952 PRESCRIBED LOADS.

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
Do not use lesser than Grade 80 components for any lifting application !
Do not use chains or accessories with signs of wear or deformation !

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VGD Grade 80 Self Locking SC Hooks

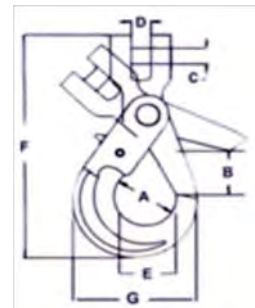
Easily attaches to Grade 80 chain with pin and cotter

The latch on this hook automatically closes when pulling force is applied

Approved for overhead lifting, when all components are grade 80.



SL Clevis		Dimensions									
Grade 80		Inches									
Code	Chain Size	A	B	C	D	E	F	G	WLL lbs.	Lbs. Pc	Product Code
VSC-7/8	9/32-5/16"	1.69	1.30	0.39	0.39	1.69	6.50	3.46	4,500	1.94	396200161
VSC-10	3/8"	2.20	1.89	0.49	0.47	2.20	8.15	4.33	7,100	3.69	396200241
VSC-13	1/2"	2.76	2.05	0.63	0.63	2.76	10.04	5.43	12,000	7.15	396200321
VSC-16	5/8"	3.23	2.68	0.79	0.73	3.23	11.81	6.93	18,100	13.20	396200401



Design Factor: 4 : 1



Trigger Kit		Product Code
SL Hook		

VSLG-7/8		396910161
VSLG-10		396910241
VSLG-13		396910321
VSLG-16		396910401

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
 Do not use lesser than Grade 80 components for any lifting application !
 Do not use chains or accessories with signs of wear or deformation !

Vanguard Steel Ltd. _____

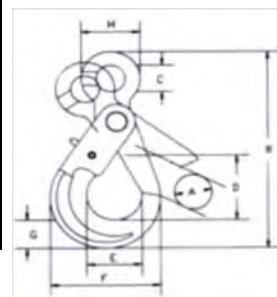


VGD Grade 80 Self Locking SL Hooks

Easily attaches to Grade 80 chain with shackle or connecting link
 The latch on this hook automatically closes when pulling force is applied
 Approved for overhead lifting, when all components are grade 80.



SL Eye		Dimensions										
Grade 80		Inches										
Code	Chain									WLL	Lbs.	Product
	Size	A	B	C	D	E	F	G	H	lbs.	Pc	Code
VSC-7/8	9/32-5/16"	1.50	6.65	0.98	2.52	1.73	3.39	1.02	1.83	4,500	1.85	395800161
VSC-10	3/8"	2.05	8.62	1.24	3.03	2.28	4.33	1.42	2.46	7,100	3.47	395800241
VSC-13	1/2"	2.44	10.59	1.56	3.86	2.64	5.41	1.61	3.17	12,000	6.86	395800321
VSC-16	5/8"	2.95	12.60	1.97	4.53	3.39	6.89	2.17	3.82	18,100	13.00	395800401



Trigger Kit		Product
SL Hook		Code

VSLG-7/8		396910161
VSLG-10		396910241
VSLG-13		396910321
VSLG-16		396910401

Design Factor: 4 : 1

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
 Do not use lesser than Grade 80 components for any lifting application !
 Do not use chains or accessories with signs of wear or deformation !

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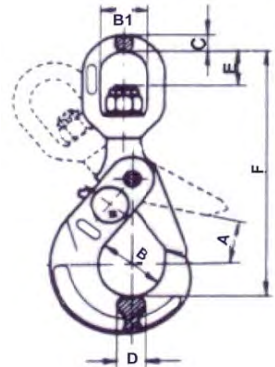


VGD Grade 80 Self Locking Swivel Hooks

Easily attaches to Grade 80 chain with Shackle or Connecting link
 The latch on this hook automatically closes when pulling force is applied
 Approved for overhead lifting, when all components are grade 80.



SL Eye		Dimensions Inches									
Grade 80											
Code	Chain								WLL	Lbs.	Product
	Size	A	B	B-1	C	D	E	F	lbs.	Pc	Code
VSC-7/8	9/32-5/16"	1.42	1.73	1.42	0.55	0.83	1.26	7.32	4,500	2.64	396900161
VSC-10	3/8"	1.65	2.20	1.65	0.65	1.10	1.63	8.90	7,100	4.95	396900241
VSC-13	1/2"	2.05	2.76	2.09	0.79	1.34	2.07	11.30	12,000	9.09	396900321
VSC-16	5/8"	2.60	3.23	2.40	0.91	1.61	1.97	13.23	18,100	16.83	396900401



Trigger Kit		Product Code
SL Hook		

VSLG-7/8		396910161
VSLG-10		396910241
VSLG-13		396910321
VSLG-16		396910401

Design Factor: 4 : 1

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
 Do not use lesser than Grade 80 components for any lifting application !
 Do not use chains or accessories with signs of wear or deformation !

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Grade 80 Chain Working Load Limit



Chain Size	Single 90°	Double			Triple/Quad		
		60°	45°	30°	60°	45°	30°
9/32"	3,500	6,100	4,900	3,500	9,100	7,400	5,200
3/8"	7,100	12,300	10,000	7,100	18,400	15,100	10,600
1/2"	12,000	20,800	17,000	12,000	31,200	25,500	18,000
5/8"	18,100	31,300	25,600	18,100	47,000	38,400	27,100
3/4"	28,300	49,000	40,000	28,300	73,500	60,000	42,400
7/8"	34,200	59,200	48,400	34,200	88,900	72,500	51,300
1"	47,700	82,600	67,400	47,700	123,800	101,000	71,500

Grade 80 Component Selection Guide

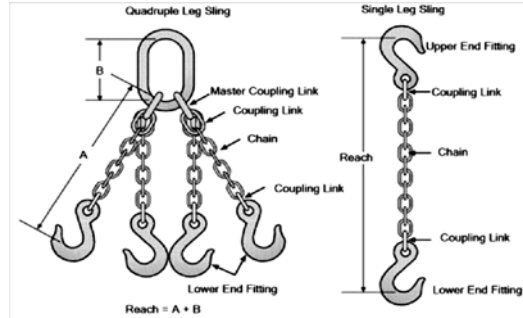
Sling Type	Chain Size	Master Link		Coupling Link	Hooks			
		Oblong	Sub Ass		Grab	Slip	Eye Grab	Eye Sling
Single	9/32"	1/2"		9/32"	9/32"	9/32"	9/32"	9/32"
Double		1/2"						
Triple/Quad			3/4"					
Single	3/8"	3/4"		3/8"	3/8"	3/8"	3/8"	3/8"
Double		3/4"						
Triple/Quad			1"					
Single	1/2"	1"		1/2"	1/2"	1/2"	1/2"	1/2"
Double		1"						
Triple/Quad			1-1/4"					
Single	5/8"	1"		5/8"	5/8"	5/8"	5/8"	5/8"
Double		1-1/4"						
Triple/Quad			1-1/2"					
Single	3/4"	1-1/4"		3/4"	3/4"	3/4"	3/4"	3/4"
Double		1-1/2"						
Triple/Quad			1-3/4"					
Single	7/8"	1-1/2"		7/8"	7/8"		7/8"	7/8"
Double		1-3/4"						
Triple/Quad			2"					
Single	1"	1-3/4"		1"			1"	1"
Double		2"						
Triple/Quad			2-1/4"					

Working Load Limit - 4 to 1 design factor

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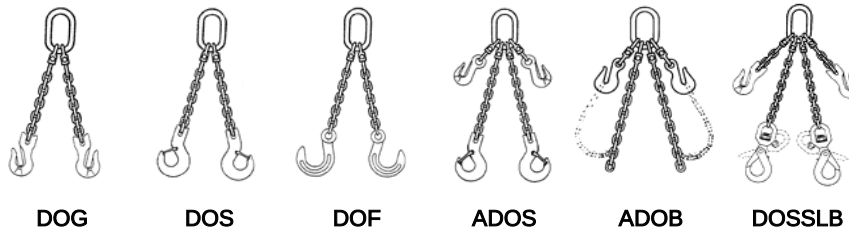
Various Styles of Chain Slings



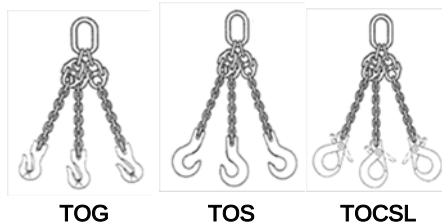
Single Leg Type Slings



Double Leg Type Slings



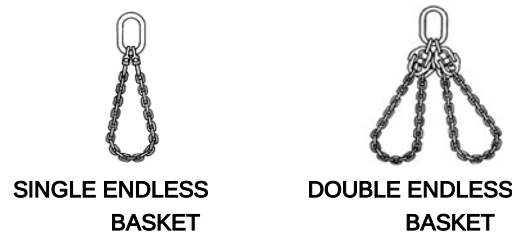
Triple Leg Type Slings



Quadruple Type Leg Slings



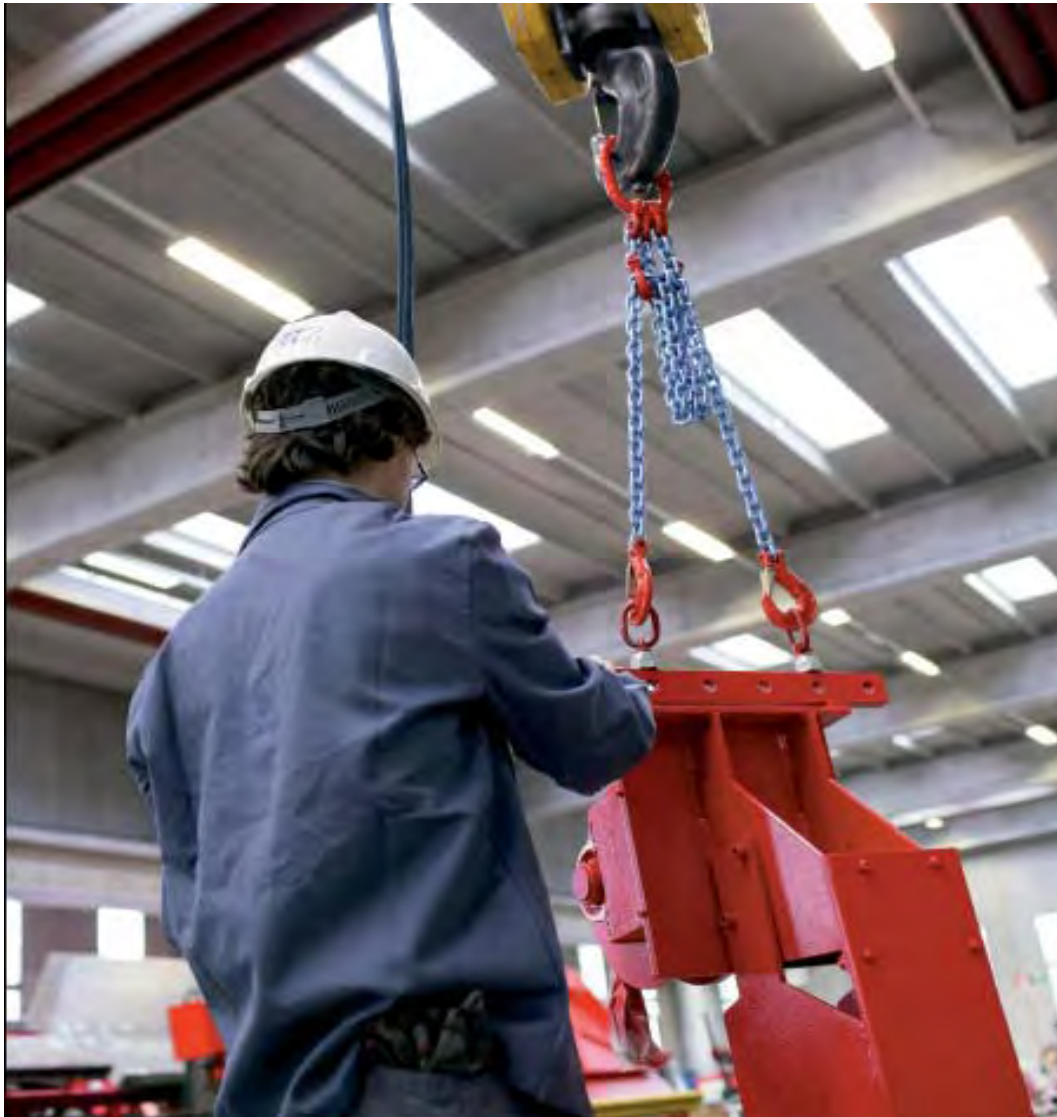
Basket Type





GRADE 100 CHAINS & ACCESSORIES

Grade 100 Lifting



Vanguard Steel Ltd



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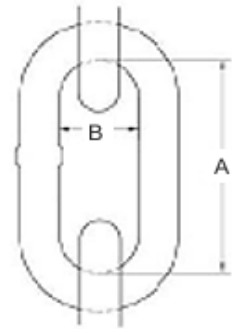
Grade 100 Alloy Lifting Chain

Produced to exceed the rigorous requirements of overhead lifting

Manufactured from a super high quality alloy steel that allows for 25 % higher working load limit (WLL) than comparable Grade 80 Alloy Chain.



G 100 Chain	Nominal Dimension		WLL	Footage	Weight	Product
	Inches		(lbs)	Drum	100 ft	Code
Size	A	B				
Full Drums						
9/32"	0.88	0.41	4,300	800	72	38150018
5/16"	1.02	0.48	5,700	500	106	38150020
3/8"	1.22	0.57	8,800	400	150	38150024
1/2"	1.56	0.75	15,000	200	261	38150032
5/8"	1.93	0.92	22,600	150	361	38150040



Material	High grade Ni-Cr-Mo Alloy Chain	
Finish	Gray Armour	
Elongation	Min 20 %	
Design Factor	4 : 1	In accordance with NACM Specifications

WARNING: NEVER EXCEED WORKING LOAD LIMITS!
LOAD RATINGS ARE FOR CHAINS IN 'NEW CONDITION'!
INSPECT LIFTING CHAINS REGULARLY AND
REPLACE ALL COMPONENTS SHOWING SIGNS OF WEAR!

Vanguard Steel Ltd. _____



Grade 100 Connecting Links

Fast, easy assembly without the need for special tools or skills.

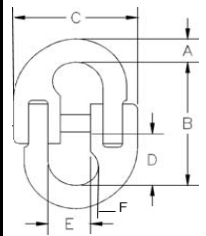
Designed for attaching hooks, master links and other end fittings to Grade 100 alloy chain

Suitable for overhead lifting, when all components are grade 100.

25 % higher WLL than grade 80.



Con. Links Grade 80		Chain Size	Dimensions Inches						WLL lbs.	Lbs. Pc	Product Code
Codes			A	B	C	D	E	F			
V-160	CLX-07	9/32"	0.39	2.01	1.83	0.79	0.63	0.75	4,300	0.26	395600163
	CLX-08	5/16"	0.45	2.44	2.09	0.98	0.71	0.91	5,700	0.40	395600203
V-161	CLX-10	3/8"	0.50	2.83	2.50	1.18	0.91	1.06	8,800	0.73	395600243
V-162	CLX-13	1/2"	0.75	3.46	3.11	1.42	1.06	1.34	15,000	1.54	395600323
V-163	CLX-16	5/8"	0.83	4.06	4.17	1.57	1.30	1.54	22,600	2.51	395600403
V-164	CLX-20	3/4"	1.14	4.45	4.82	1.81	1.64	1.85	35,300	4.52	395600483
V-165	CLX-22	7/8"	1.18	5.24	5.28	2.17	1.90	2.17	42,700	6.83	395600563



Design Factor: 4 : 1

Con. Links Grade 80		Collars	
Code	Hook Size	Product Code	
V-160	CLX-07	9/32"	39500516
	CLX-08	5/16"	39500520
V-161	CLX-10	3/8"	39500524
V-162	CLX-13	1/2"	39500532
V-163	CLX-16	5/8"	39500540
V-164	CLX-20	3/4"	39500548
V-165	CLX-22	7/8"	39500556



Load Pins	
Hook Size	Product Code
9/32"	39505016
5/16"	39505020
3/8"	39505024
1/2"	39505032
5/8"	39505040
3/4"	39505048
7/8"	39505056



WARNING: NEVER EXCEED WORKING LOAD LIMITS !
Do not use lesser than Grade 100 components for any lifting application !
Do not use chains or accessories with signs of wear or deformation !

Vanguard Steel Ltd.



Grade 100 Clevis Grab Hooks

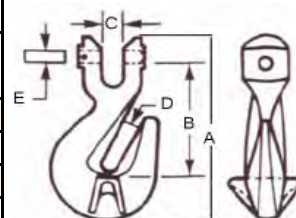
Easily attaches to Grade 100 chain with pin and cotter

Approved for overhead lifting, when all components are grade 100.

25 % higher WLL than grade 80



Grab Hooks Grade 100		Chain Size	Nominal Diameter Inches					WLL lbs.	Lbs. Pc	Product Code
Code			A	B	C	D	E			
V-190	CFX-07	9/32"	3.88	2.57	0.39	0.39	0.35	4,300	0.97	395000163
	CFX-08	5/16"	3.88	2.56	0.35	0.39	0.39	5,700	0.97	395000203
V-191	CFX-10	3/8"	4.69	3.15	0.47	0.51	0.51	8,800	2.12	395000243
V-192	CFX-13	1/2"	5.88	4.15	0.59	0.67	0.63	15,000	4.63	395000323
V-193	CFX-16	5/8"	7.03	4.40	0.71	0.75	0.82	22,600	7.50	395000403



Design Factor: 4 : 1

Spare Parts Grab & Slip Hooks		Load Pin	Product Code
Code			
V-90	CFX-07	9/32"	39506016
	CFX-08	5/16"	39506020
V-91	CFX-10	3/8"	39506024
V-92	CFX-13	1/2"	39506032
V-93	CFX-16	5/8"	39506040



Cotter Pin	Product Code
9/32"	39506016
5/16"	39506020
3/8"	39506024
1/2"	39506032
5/8"	39506040

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
Do not use lesser than Grade 100 components for any lifting application !
Do not use chains or accessories with signs of wear or deformation !

Vanguard Steel Ltd.



Grade 100 Clevis Slip Hooks & Latch Kit

Easily attaches to Grade 100 chain with pin and cotter

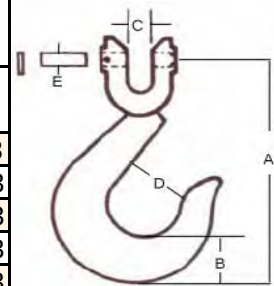
Approved for overhead lifting, when all components are grade 100.

All Hooks provided with latch kit assembled on the hook

25 % higher WLL than grade 80



Slip Hooks Grade 100			Dimensions Inches							
Codes	Chain Size		A	B	C	D	E	WLL lbs.	Lbs. Pc.	Product Code
V-190	CBX-07	9/32"	5.51	1.10	0.37	1.02	0.35	4,300	1.21	395100163
	CBX-08	5/16"	5.51	1.10	0.37	1.02	0.39	5,700	1.21	395100203
V-191	CBX-10	3/8"	6.50	1.30	0.47	1.22	0.39	8,800	2.20	395100243
V-192	CBX-13	1/2"	8.03	1.57	0.59	1.57	0.49	15,000	3.75	395100323
V-193	CBX-16	5/8"	9.33	1.89	0.71	1.77	0.78	22,600	7.05	395100403



Design Factor: 4 : 1

Replacement Cast Latch Grade 100

Code	Chain Size		Weight lbs.	Product Code
V-190	CKSX-07	9/32"	0.08	396100162
	CKSX-08	5/16"	0.08	396100202
V-191	CKSX-10	3/8"	0.10	396100242
V-192	CKSX-13	1/2"	0.12	396100322
V-193	CKSX-16	5/8"	0.35	396100402



WARNING:

NEVER EXCEED WORKING LOAD LIMITS !

Do not use lesser than Grade 100 components for any lifting application !

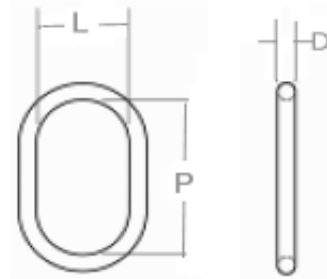
Do not use chains or accessories with signs of wear or deformation !

Vanguard Steel Ltd.



Grade 100 Master Links

Approved for overhead lifting, when all components are grade 100.
25 % higher WLL than grade 80



Master Link Grade 100 No F.S.			Dimensions Inches							
Code		Size	Chain Sling & Type		D	L	P	WLL lbs.	Weight lbs.	Product Code
			Single	Double						
VML-132	AX-13	1/2"	9/32	7/32	1/2	2.36	4.33	4,700	0.80	395300323
VML-140	AX-16	5/8"	5/16	9/32	5/8	2.36	4.33	8,600	1.55	395300403
VML-148	AX-18	3/4"	3/8	5/16	3/4	2.95	5.31	12,900	2.70	395300483
VML-156	AX-22	7/8"	1/2	3/8	7/8	3.62	6.50	17,600	3.31	395300563
VML-1100	AX-26	1"	5/8	1/2	1	3.94	7.09	30,000	5.30	395301003
VML-1116	AX-32	1-1/4"	3/4	5/8"	1-1/4	4.33	7.87	38,200	9.75	395301163
VML-1132	AX-36	1-1/2"	7/8	5/8"	1-1/2	5.51	10.24	50,200	18.00	395301323

Design Factor 4 : 1

MASTER LINKS AND SUB-ASSEMBLIES (incl. sub links) INDIVIDUALLY PROOF TESTED PER ASTM 906/952 PRESCRIBED LOADS.

WARNING: **NEVER EXCEED WORKING LOAD LIMITS !**
Do not use lesser than Grade 100 components for any lifting application !
Do not use chains or accessories with signs of wear or deformation !

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Grade 100 Master Link Sub-Assemblies

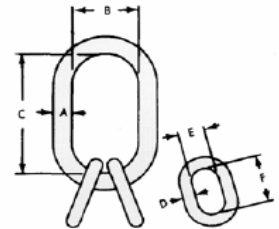
For Triple and Quad branch slings

Approved for overhead lifting, when all components are grade 100.

25 % higher WLL than grade 80



Master Link Sub Assembly		Nominal Diameter Inches						WLL (lbs. @ 60°)	Lbs. Pc.	Product Code
Code	Chain	Master Link			Coupling Link					
	Size	A	B	C	D	E	F			
VSA-107	9/32"	3/4"	3.540	5.91	0.51	0.98	2.13	11,200	2.65	395400483
VSA-108	9/32+5/16"	7/8"	3.540	6.30	0.63	1.34	2.76	15,200	4.88	395400563
VSA-108	3/8"	1"	3.940	7.09	0.71	1.57	3.35	26,000	5.07	395401003
VSA-110	1/2"	1-1/4"	4.330	7.87	0.87	1.97	4.53	39,000	7.85	395401163
VSA-113	5/8"	1-1/2"	5.510	10.24	1.02	2.56	5.51	58,700	22.05	395401323



Design Factor 4 : 1

MASTER LINKS AND SUB-ASSEMBLIES (incl. sub links) INDIVIDUALLY PROOF TESTED PER ASTM 906/952 PRESCRIBED LOADS.

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
Do not use lesser than Grade 100 components for any lifting application !
Do not use chains or accessories with signs of wear or deformation !

Vanguard Steel Ltd.



Grade 100 Self Locking Clevis Hooks

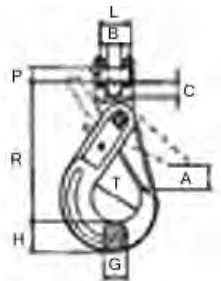
Easily attaches to Grade 100 chain with pin and cotter

Approved for overhead lifting, when all components are grade 100.

25 % higher WLL than grade 80



SL Eye Grade 100		Dimensions Inches										
Code	Chain Size	A	B	C	G	H	R	T	WLL lbs.	Lbs. Pc	Product Code	
VSC-107/8	CRFX-07 9/32"	1.34	0.35	0.39	0.79	1.02	4.84	1.69	4,300	2.09	396200163	
	CRFX-08 5/16"	1.77	0.35	0.39	0.79	1.02	4.84	1.69	5,700	2.09	396200203	
VSC-110	CRFX-10 3/8"	1.77	0.47	0.55	0.98	1.18	5.63	2.20	8,800	3.53	396200243	
VSC-113	CRFX-13 1/2"	2.01	0.59	0.67	1.38	1.57	7.09	2.72	15,000	7.05	396200323	
VSC-116	CRFX-16 5/8"	2.36	0.75	0.75	1.42	1.97	8.46	3.15	22,600	13.23	396200403	



Design Factor 4 : 1

Trigger Kit SL Hook		Product Code
VTK-107/8	CKSLX-08	39693016
VTK-110	CKSLX-10	39693024
VTK-113	CKSLX-13	39693032
VTK-116	CKSLX-16	39693040



WARNING: **NEVER EXCEED WORKING LOAD LIMITS !**
Do not use lesser than Grade 100 components for any lifting application !
Do not use chains or accessories with signs of wear or deformation !

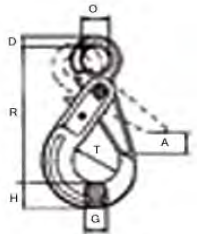


Grade 100 Self Locking Eye Hooks

Easily attaches to Grade 100 chain with Shackle or connecting link
 Approved for overhead lifting, when all components are grade 100.
 25 % higher WLL than grade 80



SL Eye Grade 100		Dimensions Inches										
Code	Chain Size	A	D	G	H	O	R	T	WLL lbs.	Lbs. Pc	Product Code	
VSL-107/8	CROX-08 9/32"	1.34	0.47	0.79	1.02	0.98	5.31	1.69	5,700	2.12	396400163	
VSL-110	CROX-10 3/8"	1.77	0.63	0.98	1.18	1.30	6.61	2.20	8,800	3.64	396400243	
VSL-113	CROX-13 1/2"	2.01	0.79	1.38	1.57	1.57	8.07	2.72	15,000	7.16	396400323	
VSL-116	CROX-16 5/8"	2.36	1.06	1.42	1.97	1.97	9.88	3.15	22,600	13.45	396400403	



Design Factor 4 : 1

Trigger Kit SL Hook		Product Code	
VTK-107/8	CKSLX-08		39693016
VTK-110	CKSLX-10		39693024
VTK-113	CKSLX-13		39693032
VTK-116	CKSLX-16		39693040



WARNING: **NEVER EXCEED WORKING LOAD LIMITS !**
 Do not use lesser than Grade 100 components for any lifting application !
 Do not use chains or accessories with signs of wear or deformation !



Grade 100 Self Locking Swivel Hooks

Easily attaches to Grade 100 chain with Shackle or Connecting link

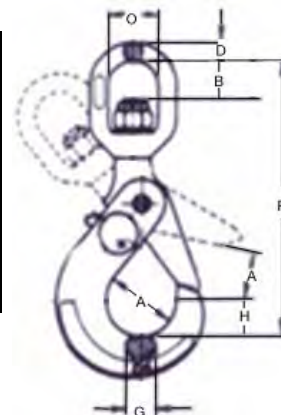
Approved for overhead lifting, when all components are grade 100

25 % higher WLL than grade 80



SL Eye Grade 100		Dimensions Inches									
Code	Chain Size	R	A	B	O	D	G	H	WLL lbs.	Lbs. Pc	Product Code
VSC-7/8	9/32-5/16"	7.17	1.34	1.06	1.42	0.51	0.73	1.02	5,700	2.42	39660016
VSC-10	3/8"	8.54	1.77	1.38	1.65	0.63	0.98	1.18	8,800	4.40	39660024
VSC-13	1/2"	10.67	2.13	1.69	1.97	0.83	1.38	1.57	15,000	8.80	39660032
VSC-16	5/8"	12.60	2.44	2.28	2.44	0.94	1.50	1.97	22,600	14.96	39660040

Design Factor: 4 : 1

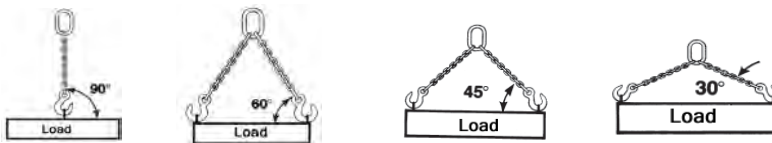


Trigger Kit SL Hook		Product Code
VTK-107/8	CKSLX-08	39693016
VTK-110	CKSLX-10	39693024
VTK-113	CKSLX-13	39693032
VTK-116	CKSLX-16	39693040

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
 Do not use lesser than Grade 100 components for any lifting application !
 Do not use chains or accessories with signs of wear or deformation !



Grade 100 Chain Working Load Limit



Chain Size	Single 90°	Double			Triple/Quad		
		60°	45°	30°	60°	45°	30°
9/32"	4,300	7,400	6,100	4,300	11,200	9,100	6,400
5/16"	5,700	9,900	8,100	5,700	14,800	12,100	8,500
3/8"	8,800	15,200	12,400	8,800	22,900	18,700	13,200
1/2"	15,000	26,000	21,200	15,000	39,000	31,800	22,500
5/8"	22,600	39,100	32,000	22,600	58,700	47,900	33,900

Grade 100 Component Selection Guide

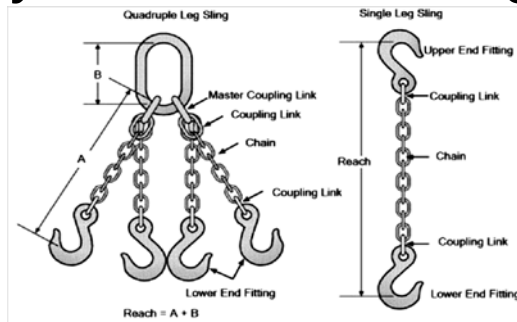
Sling Type	Chain Size	Master Link		Coupling Link	Hooks			
		Oblong	Sub Ass		Grab	Slip	Eye Grab	Eye Sling
Single	9/32"	1/2"		9/32"	9/32"	9/32"	9/32"	9/32"
Double		5/8"						
Triple/Quad			3/4"					
Single	5/16"	5/8"		5/16"	5/16"	5/16"	5/16"	5/16"
Double		3/4"						
Triple/Quad			7/8"					
Single	3/8"	3/4"		3/8"	3/8"	3/8"	3/8"	3/8"
Double		7/8"						
Triple/Quad			1"					
Single	1/2"	7/8"		1/2"	1/2"	1/2"	1/2"	1/2"
Double		1"						
Triple/Quad			1-1/2"					
Single	5/8"	1"		5/8"	5/8"	5/8"	5/8"	5/8"
Double		1-1/2"						
Triple/Quad								

Working Load Limit - 4 to 1 design factor

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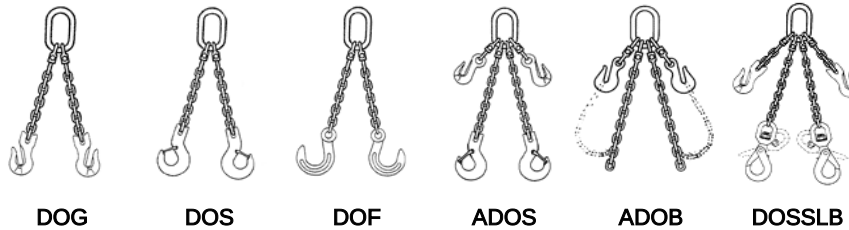
Styles of Chain Slings



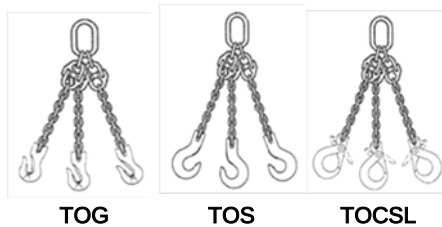
Single Leg Type Slings



Double Leg Type Slings



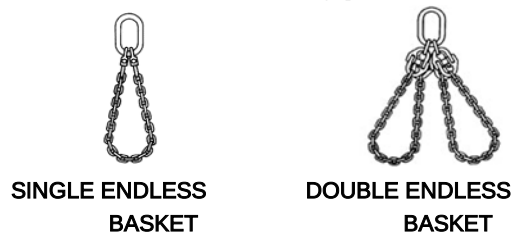
Triple Leg Type Slings



Quadruple Type Leg Slings



Basket Type





HOOKS

HOOKS



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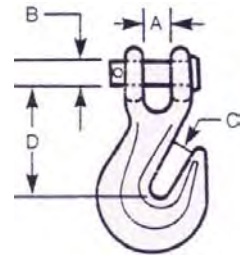


'Black Pin'-Alloy Clevis Grab Hooks

For use with Grade 70 or lower grade chains only
Gold chromated body with 'black pin'



Size	WLL (lbs)	Dimension Inches				Weight (lbs pc)	Product Code
		A	B	C	D		
1/4"	3,150	0.36	0.38	0.39	1.97	0.46	39310016
5/16"	4,700	0.38	0.44	0.43	2.28	0.75	39310020
3/8"	6,600	0.47	0.47	0.50	2.61	1.10	39310024
7/16"	8,800	0.67	0.55	0.58	2.79	1.53	39310028
1/2"	11,300	0.76	0.62	0.67	3.13	2.34	39310032



NOTE : Forged Alloy Steel, heat treated
Design Factor 4 : 1

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
DO NOT USE GRADE 40 OR 70 FOR OVERHEAD LIFTING APPLICATIONS !
Inspect hooks and latches frequently-Measure opening (C) and compare
with dimensions shown
Increased opening indicates overloading !
Disgard hooks which show signs of deformation or excessive wear !

Vanguard Steel Ltd. _____

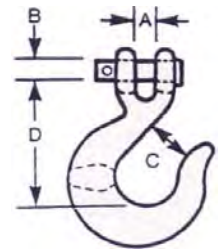


'Black Pin'-Alloy Clevis Slip Hooks

For use with Grade 70 or lower grade chains only
Gold chromated body with 'black pin'



Size	WLL (lbs)	Dimension Inches				Weight (lbs pc)	Product Code
		A	B	C	D		
1/4"	2,750	0.43	0.38	0.98	2.52	0.65	39031016
5/16"	4,300	0.51	0.43	1.10	2.82	0.92	39031020
3/8"	5,250	0.58	0.47	1.33	3.22	1.32	39031024
7/16"	7,000	0.67	0.54	1.61	3.69	2.07	39031028
1/2"	9,000	0.76	0.62	1.74	3.99	2.90	39031032



NOTE : Forged Alloy Steel, heat treated
Design Factor 4 : 1

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
DO NOT USE GRADE 40 OR 70 FOR OVERHEAD LIFTING APPLICATIONS !
Inspect hooks and latches frequently-Measure opening (C) and compare
with dimensions shown
Increased opening indicates overloading !
Disgard hooks which show signs of deformation or excessive wear !

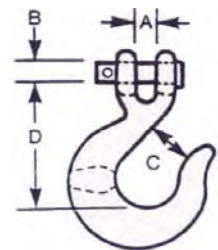


'Black Pin'-Alloy Clevis Slip Hooks with Latch

For use with Grade 70 or lower grade chains only
Gold chromated body with 'black pin'



Size	WLL (lbs)	Dimension Inches				Weight (lbs pc)	Product Code
		A	B	C	D		
1/4"	2,750	0.43	0.38	0.98	2.52	0.65	390310161
5/16"	4,300	0.51	0.43	1.10	2.82	0.92	390310201
3/8"	5,250	0.58	0.47	1.33	3.22	1.32	390310241
7/16"	7,000	0.67	0.54	1.61	3.69	2.07	390310281
1/2"	9,000	0.76	0.62	1.74	3.99	2.90	390310321



NOTE : Forged Alloy Steel, heat treated
Design Factor 4 : 1

STAINLESS STEEL - LATCH KITS

1/4"						0.02	29190010
5/16"						0.02	29190011
3/8"						0.03	29190022
7/16"						0.03	29190030
1/2"						0.06	29190030



WARNING : NEVER EXCEED WORKING LOAD LIMITS !
DO NOT USE GRADE 40 OR 70 FOR OVERHEAD LIFTING APPLICATIONS !
Inspect hooks and latches frequently-Measure opening (C) and compare
with dimensions shown
Increased opening indicates overloading !
Disgard hooks which show signs of deformation or excessive wear !



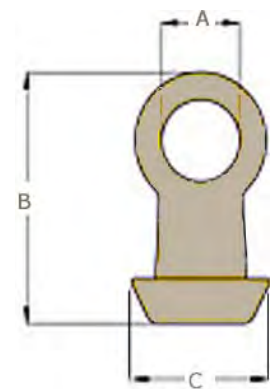
Barrel Hooks

Forged Carbon Steel, quenched and tempered

Meets the performance requirements of Federal Specifications RR-C-271D, Type V, Class 6,
Except for those provisions required by the contractor



Size Tons	WLL Tons		Dimension			Weight (lbs pc)	Product Code
	Tip	Bottom	Inches				
			A	B	C		
1	2	7.5	1-1/2	4-1/2	2-3/8	6.25	37030050



NOTE : Forged Carbon Steel, heat treated
Design Factor 4 : 1

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
Use only Alloy Chain and attachment for overhead lifting

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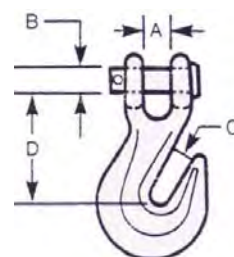


'Golden Pin'-Carbon Clevis Grab Hooks

For use with Grade 40 or lower chains only
Self coloured body with 'golden pin'



Size	WLL (lbs)	Dimension Inches				Weight (lbs pc)	Product Code
		A	B	C	D		
1/4"	2,600	0.35	0.38	0.39	1.97	0.45	39300016
5/16"	3,900	0.41	0.43	0.44	2.27	0.74	39300020
3/8"	5,400	0.47	0.47	0.51	2.63	1.14	39300024
7/16"	7,200	0.67	0.55	0.58	2.79	1.45	39300028
1/2"	9,200	0.73	0.62	0.69	3.13	2.30	39300032



NOTE : Forged Carbon Steel, heat treated
Design Factor 4 : 1

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
DO NOT USE GRADE 40 OR 70 FOR OVERHEAD LIFTING APPLICATIONS !
Inspect hooks and latches frequently-Measure opening (C) and compare with dimensions shown
Increased opening indicates overloading !
Discard hooks which show signs of deformation or excessive wear !

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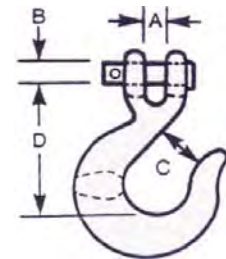


'Golden Pin'-Carbon Clevis Slip Hooks

For use with Grade 40 or lower chains only
Self coloured body with 'golden pin'



Size	WLL (lbs)	Dimension Inches				Weight (lbs pc)	Product Code
		A	B	C	D		
1/4"	1,950	0.43	0.37	0.98	2.61	0.65	39030016
5/16"	2,875	0.50	0.43	1.08	2.81	0.91	39030020
3/8"	4,000	0.58	0.48	1.37	3.24	1.30	39030024
7/16"	5,000	0.67	0.55	1.59	3.70	2.18	39030028
1/2"	6,500	0.75	0.64	1.73	3.95	3.00	39030032



NOTE : Forged Carbon Steel, heat treated
Design Factor 4 : 1

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
DO NOT USE GRADE 40 OR 70 FOR OVERHEAD LIFTING APPLICATIONS !
Inspect hooks and latches frequently-Measure opening (C) and compare
with dimensions shown
Increased opening indicates overloading !
Discard hooks which show signs of deformation or excessive wear !

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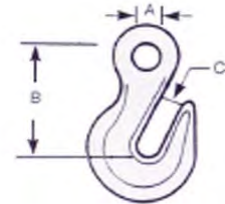


Eye Grab Hooks

For use with Grade 40 or lower chains only



Size	WLL (lbs)	Dimension Inches			Weight (lbs pc)	Product Code
		A	B	C		
1/4"	2,600	0.53	1.92	0.34	0.30	39335016
5/16"	3,900	0.61	2.29	0.43	0.51	39335020
3/8"	5,400	0.80	2.65	0.49	0.88	39335024
1/2"	9,200	0.89	3.21	0.65	1.79	39335032



NOTE : Forged Carbon Steel, heat treated
Design Factor 4 : 1

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
DO NOT USE GRADE 40 OR 70 FOR OVERHEAD LIFTING APPLICATIONS !
Inspect hooks and latches frequently-Measure opening (C) and compare with dimensions shown
Increased opening indicates overloading !
Disgard hooks which show signs of deformation or excessive wear !

Vanguard Steel Ltd. _____

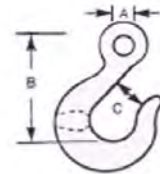


Eye Slip Hooks

For use with Grade 40 or lower chains only



Size	WLL (lbs)	Dimension Inches			Weight (lbs pc)	Product Code
		A	B	C		
1/4"	1,950	0.50	2.54	0.94	0.49	39085016
5/16"	2,875	0.62	2.92	1.07	0.62	39085020
3/8"	4,000	0.73	3.34	1.33	0.98	39085024
1/2"	6,500	0.94	4.04	1.66	2.52	39085032



NOTE : Forged Carbon Steel, heat treated
Design Factor 4 : 1

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
DO NOT USE GRADE 40 OR 70 FOR OVERHEAD LIFTING APPLICATIONS !
Inspect hooks and latches frequently-Measure opening (C) and compare
with dimensions shown
Increased opening indicates overloading !
Disgard hooks which show signs of deformation or excessive wear !

Vanguard Steel Ltd. _____

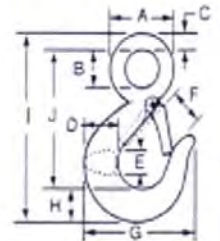


Alloy Steel Hoist Hooks

Alloy Steel, quenched and tempered
 Embossed Working Load Limit (WLL) with 5 : 1 safety factor
 Colour coding prevents mix-ups. Alloy Steel-Black Eye, Gold body.



WLL (Tons)	Dimension Inches										Weight (lbs)	Product Code
	A	B	C	D	E	F	G	H	I	J		
1	1.50	0.75	0.38	0.88	0.63	0.94	2.88	0.75	4.38	3.25	0.50	29101010
1-1/2	1.75	0.88	0.44	1.00	0.69	1.06	3.13	0.81	4.88	3.63	0.80	29101015
2	2.00	1.13	0.50	1.19	0.81	1.12	3.50	1.00	5.50	4.13	1.10	29101020
3	2.38	1.25	0.59	1.38	0.94	1.22	3.94	1.19	6.31	4.56	1.70	29101030
4-1/2	3.00	1.56	0.69	1.63	1.19	1.50	5.00	1.50	7.94	5.75	3.60	29101045
7	3.81	2.00	0.88	2.06	1.50	1.88	6.25	1.75	10.00	7.38	7.00	29101070
11	4.70	2.43	1.19	2.53	1.68	2.23	7.25	2.37	12.25	9.00	13.27	29101110



NOTE : Alloy Steel, heat treated
 Recommended maximum proof load 2 x WLL

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
 Inspect hooks and latches frequently-Measure opening (F) and compare
 with dimensions shown
 Increased opening indicates overloading !
 Discard hooks which show signs of deformation or excessive wear !
 Latches are not designed to support loads-replace bent latches
 Always use thimbles to install hooks onto a rope



Alloy Steel Swivel Hooks

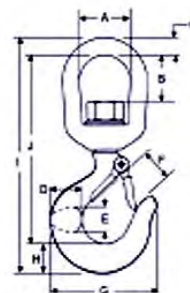
Forged Alloy Steel, quenched and tempered

Embossed Working Load Limit (WLL) with 4.5 : 1 safety factor

Colour coding prevents mix-ups. Alloy Steel-Black Eye Swivel, Gold body.



WLL (Tons)	Dimension Inches										Weight (lbs)	Product Code
	A	B	C	D	E	F	G	H	I	J		
1	1.23	0.92	0.40	0.83	0.60	0.98	2.95	0.86	5.50	4.35	0.81	29281010
1-1/2	1.50	1.35	0.52	0.94	0.66	1.07	3.33	0.86	6.50	5.23	1.41	29281015
2	1.73	1.70	0.64	1.13	0.75	1.10	3.75	1.04	7.50	6.00	2.24	29281020
3	1.70	1.60	0.64	1.36	0.87	1.21	4.25	1.20	8.00	6.25	2.74	29281030
4-1/2	1.95	1.84	0.78	1.66	1.11	1.52	5.00	1.55	9.50	7.50	4.71	29281045
7	2.42	2.42	1.02	2.10	1.35	2.04	7.00	1.99	11.75	9.75	10.30	29281070
11	2.70	2.51	1.10	2.65	1.75	2.40	8.00	2.45	14.50	11.12	16.15	29281110
15	4.10	3.76	1.50	3.50	2.69	3.41	10.34	3.00	21.34	16.71	46.50	29281150
22	4.10	3.76	1.50	4.63	3.00	4.00	13.62	3.61	23.25	18.01	70.00	29281220



NOTE : Alloy Steel, heat treated
Recommended maximum proof load 2 x WLL

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
Inspect hooks and latches frequently-Measure opening (F) and compare with dimensions shown
Increased opening indicates overloading !
Discard hooks which show signs of deformation or excessive wear !
Latches are not designed to support loads-replace bent latches
Always use thimbles to install hooks onto a rope

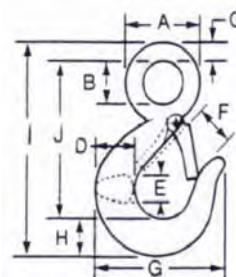


Carbon Steel Hoist Hooks

Forged Carbon Steel, quenched and tempered
 Embossed Working Load Limit (WLL) with 5 : 1 safety factor
 Colour coding prevents mix-ups. Carbon Steel-Black Eye, Red body.



WLL (Tons)	Dimension Inches										Weight (lbs)	Product Code
	A	B	C	D	E	F	G	H	I	J		
1/2	0.56	0.62	0.35	0.75	0.53	0.76	2.55	0.75	3.83	2.75	0.38	29100005
3/4	1.50	0.75	0.38	0.88	0.63	0.94	2.88	0.75	4.38	3.25	0.50	29100007
1	1.75	0.88	0.44	1.00	0.69	1.06	3.13	0.81	4.88	3.63	0.80	29100010
1-1/2	2.00	1.13	0.50	1.19	0.81	1.12	3.50	1.00	5.50	4.13	1.10	29100015
2	2.38	1.25	0.59	1.38	0.94	1.22	3.94	1.19	6.31	4.56	1.70	29100020
3	3.00	1.56	0.69	1.63	1.19	1.50	5.00	1.50	7.94	5.75	3.60	29100030
5	3.81	2.00	0.88	2.06	1.50	1.88	6.25	1.75	10.00	7.38	7.00	29100050
7-1/2	4.70	2.43	1.19	2.53	1.68	2.23	7.25	2.37	12.25	9.00	13.27	29100075



NOTE : Carbon Steel, heat treated
 Recommended maximum proof load 2 x WLL

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
 Inspect hooks and latches frequently-Measure opening (F) and compare
 with dimensions shown
 Increased opening indicates overloading !
 Discard hooks which show signs of deformation or excessive wear !
 Latches are not designed to support loads-replace bent latches
 Always use thimbles to install hooks onto a rope



Carbon Steel Swivel Hooks

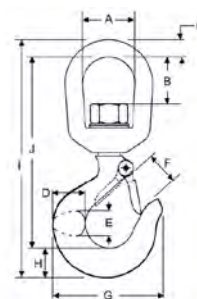
Forged Carbon Steel, quenched and tempered

Embossed Working Load Limit (WLL) with 5 : 1 safety factor

Colour coding prevents mix-ups. Carbon Steel-Black Eye Swivel, Red body.



WLL (Tons)	Dimension Inches										Weight (lbs)	Product Code
	A	B	C	D	E	F	G	H	I	J		
3/4	1.23	0.92	0.40	0.83	0.60	0.98	2.95	0.86	5.50	4.35	0.81	29280010
1	1.50	1.35	0.52	0.94	0.66	1.07	3.33	0.86	6.50	5.23	1.41	29280011
1-1/2	1.73	1.70	0.64	1.13	0.75	1.10	3.75	1.04	7.50	6.00	2.24	29280015
2	1.70	1.60	0.64	1.36	0.87	1.21	4.25	1.20	8.00	6.25	2.74	29280020
3	1.95	1.84	0.78	1.66	1.11	1.52	5.00	1.55	9.50	7.50	4.71	29280030
5	2.42	2.42	1.02	2.10	1.35	2.04	7.00	1.99	11.75	9.50	10.30	29280050
7-1/2	2.70	2.51	1.10	2.65	1.75	2.40	8.00	2.45	14.50	11.12	16.15	29280075



NOTE : Carbon Steel, heat treated
Recommended maximum proof load 2 x WLL

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
Inspect hooks and latches frequently-Measure opening (F) and compare with dimensions shown
Increased opening indicates overloading !
Discard hooks which show signs of deformation or excessive wear !
Latches are not designed to support loads-replace bent latches
Always use thimbles to install hooks onto a rope

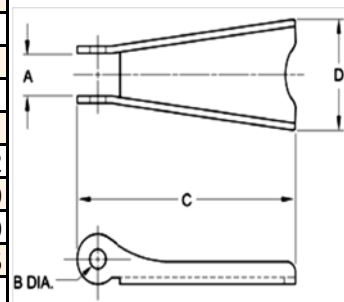


Stainless Steel Latch Kits

For Hoist Hooks



WLL Tons		Dimensions				Weight (lbs pc)	Product Code
Carbon	Alloy	inches					
		A	B	C	D		
3/4	1	0.44	0.16	1.44	0.59	0.02	29190010
1	1-1/2	0.44	0.16	1.70	0.59	0.02	29190011
1-1/2	2	0.45	0.17	1.84	0.77	0.03	29190021
2	3	0.47	0.17	2.00	0.82	0.03	29190022
3	4-1/2	0.56	0.19	2.41	1.00	0.06	29190030
5	7	0.58	0.20	2.97	1.21	0.11	29190050
7-1/2	11	0.59	0.27	3.66	1.50	0.17	29190075
10	15	0.66	0.27	3.69	1.52	0.25	29191509
15	22	0.78	0.27	3.86	1.59	0.75	29192209



WARNING : NEVER EXCEED WORKING LOAD LIMITS !
Latches are not designed to support loads - replace bent latches.



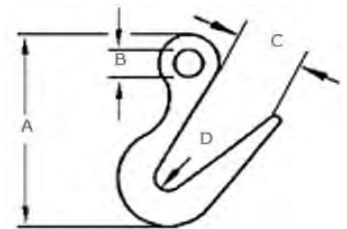
Sorting Hooks

Forged Alloy Steel, quenched and tempered

Deep straight throat permits efficient handling of flat plates or large cylindrical shapes.



Size Tons	WLL Tons		Dimension Inches				Weight (lbs pc)	Product Code
	Tip	Bottom	A	B	C	D		
7	2	7.5	9-11/16	1-3/8	2-13/16	5/8	6.25	29109120



NOTE : Forged Alloy Steel, heat treated
Design Factor 5 : 1

WARNING : NEVER EXCEED WORKING LOAD LIMITS !
Use only Alloy Chain and attachment for overhead lifting

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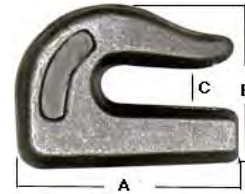


Weld on Hooks

Weld-On Grab Hook is a heavy-duty half grab hook that can be welded anywhere. Manufactured from high test steel, this half grab hook was designed to be welded anywhere you need a convenient chain attachment point. Originally used for automobile securement, this hook has become one of the most universally useful attachment points on the market.



Size	WLL (lbs)	Dimensions Inches			Weight (lbs pc)	Product Code
		A	B	C		
5/16"	3,900	2-1/2	2	3/8	0.42	39307020
3/8"	5,400	3	2-1/4	1/2	0.84	39307024
1/2"	9,200	4	3	5/8	1.90	39307032



WARNING : NEVER EXCEED WORKING LOAD LIMITS !
Inspect hooks frequently-Measure opening (C) and compare
with dimensions shown
Increased opening indicates overloading !
Disgard hooks which show signs of deformation or excessive wear !

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KNIVES & BLADES



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Utility Knives

A utility knife is a knife used for general or utility purposes.

Whether you're cutting boxes, slicing tape , a utility knife is a versatile tool that's up to the task.

No toolbox is complete without a utility knife. Whether it features a retractable, fixed or breakaway blade, a utility knife will undoubtedly prove to be one of your most indispensable tools. It can be used to trim wallpaper, cut carpeting and roofing materials, score wallboard or acoustic ceiling tiles and a host of other functions.

Breakaway Knives

VGD	13	13 point light duty	4806 8200
VGD	07 MS	7 point heavy duty	4806 8240
VGD	07 M/PS	7 point heavy duty-Metal	4806 8242
VGD	7 PT	With AUTO Lock	4806 0093



Front Loading Utility Knives

4808 0301





Utility Knife Blades

WBG 207-Heavy Duty

Used for cutting sheet materials of varying thicknesses
Used for general cutting tasks

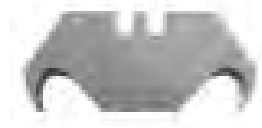
Product Code
4807 0050



WBG 208-Hooked

Used for cutting and trimming roofing, carpet and flooring materials as well as cartons
Will not cause damage below the cutting surface

Product Code
4807 0058



Single Edge Razor Blades

Steel-backed high carbon steel blade fits all standard razor blade tools

9 Carbon
12 Carbor

Product Code
4807 0028
4807 0030



Snap Blades

The breakaway is a very popular style of utility knife.

Scored sections of the blade allow the user to "breakaway" used portions of the blade and expose a new sharp cutting surface.

13 Point
7 Point

Product Code
4807 8210
4807 8220



Single Edge Injector Blades

Carbon Steel
Stainless Steel
Stainless Steel Coated

Product Code
4807 0055
4807 0083
4807 0087



Double Edge Round Corner

Carbon Steel
Stainless Steel
Stainless Steel Coated

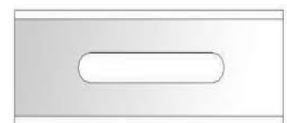
Product Code
4807 0055
4807 0083
4807 0087



Double Edge Square Corner

Carbon Steel
Stainless Steel
Stainless Steel Coated

Product Code
4807 0080
4807 0061
4807 0078





Safe-T-Cut

Eliminate accidents!!

Safe industrial cutting tools

Used by original material manufacturers, secondary operation manufacturers, shipping and receiving departments.



Plastic Knives

MODEL# 100 1/8" Opening

Product Codes

Designed to cut film, shrink overwrap, string and twine.
Quick easy blade change.

4806 1100

MODEL# 250 1/4" Opening

Designed to cut packaging foam and bubble wrap.
Quick easy blade change.

4806 7000

MODEL# 375 3/8" Opening

Designed to cut cardboard, vinyl, thick foam, soft tubing and bubble wrap
Quick easy blade change.

4806 1101

If your product cuts into our plastic knives, aluminum is the answer!

These are heavy duty knives.

Available on special orders !

Safe-T-Cut snaps open with twist of a screwdriver
for a quick blade change. Snaps shut.

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LINKS

LINKS



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LINKS

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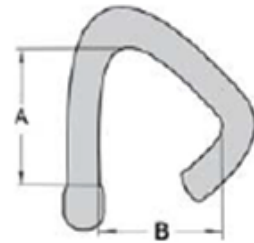
Cold Shuts

The most inexpensive method of repairing or connecting chain.

Mild Steel - Electro Galvanized



Cold Shuts		Dimension Inches		Weight lbs/pc	WLL (lbs)	Product Code
Size		A	B			
3/16"		0.890	0.830	0.03	450	29170012
1/4"		1.313	0.375	0.06	750	29170016
5/16"		1.430	0.410	0.10	1,250	29170020
3/8"		1.250	0.625	0.18	1,900	29170024
7/16"		1.375	1.250	0.26	2,650	29170028
1/2"		1.600	1.250	0.38	3,500	29170032



Design Factor: 4 : 1

- * When using cold shuts with chain, use one size larger than the chain size.
- * With a hammer, drive the open end through the cold shut eye and peen the extended end to prevent opening
- * cold shuts should not be reused after closure has been made.

WARNING : NEVER EXCEED WORKING LOAD LIMITS OF CHAIN OR COMPONENTS!
DO NOT USE for overhead lifting or hoisting
DO NOT USE if the chain or component are visibly distorted or worn.

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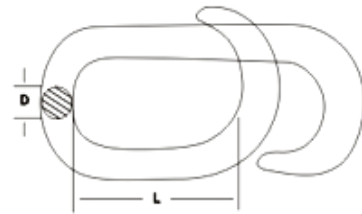
Lap links

For quick permanent repair of chain
Cold drawn Mild Steel - Electro Galvanized or Ungalvanized



Lap Links		WLL (lbs)	Weight lbs/pc	Product Code
D	L			
3/16"	1"	240	0.03	29161210
1/4"	2"	400	0.04	29161620
5/16"	2"	950	0.17	29162020
3/8"	2"	1,250	0.26	29162420
1/2"	2-1/2"	1,525	0.53	29163225
5/8" *	2-1/2"	1,000	0.81	29164025

* Side opening



Design Factor: 4 : 1

- * For use in connecting low carbon chain of equal or lower working limits.
- * Thread onto the link and the link is flattened
- * Link must be closed before using

WARNING : NEVER EXCEED WORKING LOAD LIMITS OF CHAIN OR COMPONENTS!
DO NOT USE for overhead lifting or hoisting
DO NOT USE if the chain or component are visibly distorted or worn.

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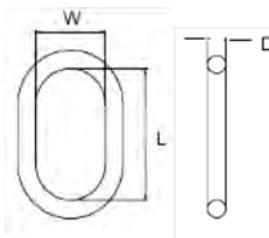


Weldless Alloy Master Links

Alloy Steel
Quenched and Tempered



Master Links		Inside		WLL (lbs)	Weight lbs/pc	Product Code
Size	W					
		L	D			
1/2	2-1/2"	5"	1/2"	4,100	0.89	39320032
5/8	3"	6"	5/8"	5,500	1.63	39320040
3/4	2-3/4"	5-1/2"	3/4"	8,600	2.25	39320048
1	3-1/2"	7"	1"	20,300	5.00	39320100
1-1/4	4-3/8"	8-3/4"	1-1/4"	29,300	9.75	39320116
1-1/2	5-1/4"	10-1/2"	1-1/2"	39,900	17.12	39320132
1-3/4	6"	12"	1-3/4"	52,100	26.12	39320148



Proof Load : 2 time Working Load limit
Ultimate Load: 6 times the Working Load Limit

WARNING : NEVER EXCEED WORKING LOAD LIMITS!

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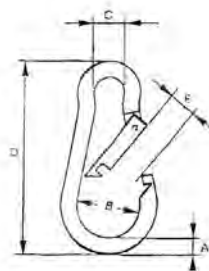
Pear Shaped Snap Hooks

All purpose hook

Cold drawn Mild Steel - Electro Galvanized



Snap Hooks		Dimension Inches					WLL (lbs)	Weight lbs/pc	Product Code
Size	A	B	C	D	E				
1/8"	0.154	0.437	0.230	1.602	0.489		200	0.02	29181008
3/16"	0.197	0.591	0.315	1.969	0.236		220	0.06	29181012
1/4"	0.225	0.673	0.365	2.380	0.229		260	0.08	29181016
5/16"	0.305	0.932	0.497	3.107	0.854		500	0.14	29181020
3/8"	0.381	1.198	0.625	3.939	0.536		770	0.29	29181024
1/2"	0.456	1.694	0.699	5.490	1.651		1,400	0.72	29181032



WLL Stamped on each hook

Breaking Strength: 2 times Working Load Limit

WARNING :

NEVER EXCEED WORKING LOAD LIMIT (WLL)

DO NOT USE for overhead lifting, to support human weight, for playground or athletic equipment, or as a safety device.

DO NOT USE if visibly distorted or worn.

Misuse can result in serious bodily injury or property damage.

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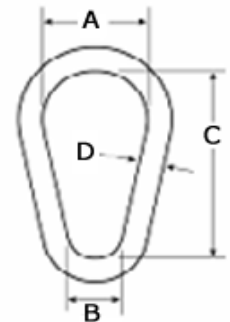


Weldless Pear Links

Alloy Steel
Quenched and Tempered
Hot Dip Galvanized



Pear Links					WLL (lbs)	Weight lbs/pc	Product Code
	Dimensions (inches)						
Size	A	B	C	D			
3/8"	1.50	0.75	2.25	3/8	1,800	0.23	39321024
1/2"	2.00	1.00	3.00	1/2	7,000	0.51	39321032
5/8"	2.50	1.25	3.75	5/8	9,000	1.10	39321040
3/4"	2.75	1.38	4.50	3/4	12,300	2.00	39321048
7/8"	3.50	1.75	5.25	7/8	14,000	2.70	39321056
1"	3.75	1.88	6.00	1	24,360	4.60	39321100



Proof Load : 2 time Working Load limit
Ultimate Load: 6 times the Working Load Limit

WARNING:

PROOF LOADING IS MANDATORY FOR THESE PEARLINKS
WHEN USED ON ANY OVERHEAD LIFTING APPARATUS!
NEVER EXCEED WORKING LOAD LIMITS!

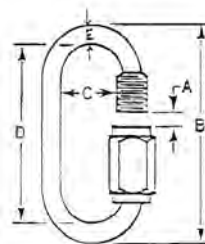


Quick Links

All purpose connector, attaching quickly without tools
Cold drawn Mild Steel - Electro Galvanized



Quick Links		Dimension Inches					WLL (lbs)	Weight lbs/pc	Product Code
Size	A	B	C	D	E				
1/8"	0.210	1.444	0.383	1.171	0.133		220	0.02	29180008
3/16"	0.256	1.929	0.512	1.535	0.197		660	0.05	29180012
1/4"	0.295	2.244	0.550	1.772	0.236		880	0.08	29180016
5/16"	0.426	2.951	0.635	2.353	0.300		1,760	0.18	29180020
3/8"	0.473	3.228	0.709	2.551	0.354		2,200	0.23	29180024
7/16"	0.520	3.642	0.787	2.882	0.395		2,600	0.32	29180028
1/2"	0.571	4.134	0.925	3.189	0.472		3,300	0.52	29180032



WLL Stamped on each hook

Breaking Strength: 2 times Working Load Limit

Make two into one with this easy connector, requiring no tools

Use with chains of equal or lower working load limit.

WARNING :

NEVER EXCEED WORKING LOAD LIMIT (WLL)

DO NOT USE for overhead lifting, to support human weight, for playground or athletic equipment, or as a safety device.

DO NOT USE if visibly distorted or worn.

Misuse can result in serious bodily injury or property damage.

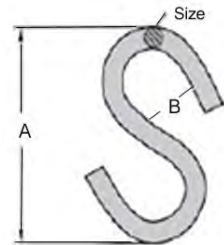


" S " HOOKS

For attaching accessories to chain.
Low Carbon steel - Electro Galvanized



S Hook		Over all			Weight lbs/pc	Product Code
		A	B			
Size (mm)		Length	Opening			
3 x 25		1"	1/8"		0.02	29300030
4 x 37		1-3/8"	5/32"		0.05	29300040
5 x 45		1-5/8"	3/16"		0.08	29300050
6 x 55		2-1/8"	1/4"		0.18	29300060
8 x 76		3-1/4"	5/16"		0.23	29300080
10 x 103		4"	3/8"		0.32	29300100



After engaging chain, close the "S' hook to prevent disengagement.

WARNING : NEVER EXCEED WORKING LOAD LIMITS OF CHAIN OR COMPONENTS!
DO NOT USE for overhead lifting or hoisting
DO NOT USE if the chain or component are visibly distorted or worn.



Twin Clevis Links

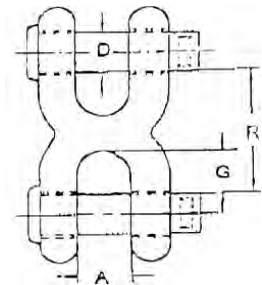
For use with Grade 70 or lower grade chains only

Body: Heat Treated Carbon Steel

Pins: Quenched and Tempered Alloy Steel



Twin Links	Dimensions Inches				Weight lbs/pc	WLL (lbs)	Product Code
	A	R	D	G			
1/4 - 5/16"	0.439	1.236	0.383	0.461	0.31	4,700	39365020
3/8"	0.516	1.379	0.467	0.502	0.54	6,600	39365024
1/2"	0.647	1.724	0.568	0.612	1.18	11,250	39365032



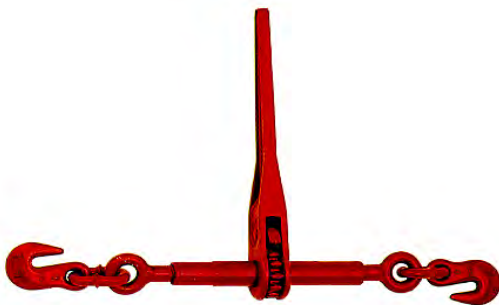
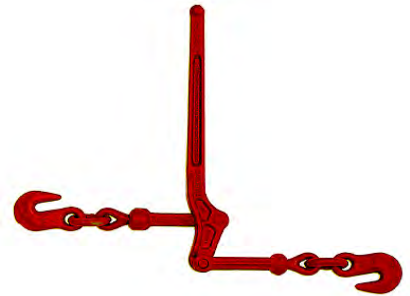
Ultimate load: 4 time Working Load Limit
Standard Finish Black body, yellow chromated pins

WARNING : NEVER EXCEED WORKING LOAD LIMITS OF CHAIN OR COMPONENTS!
DO NOT USE for overhead lifting or hoisting
DO NOT USE if the chain or component are visibly distorted or worn.

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LOAD BINDERS



Vanguard Steel Ltd.



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Lever Load Binders

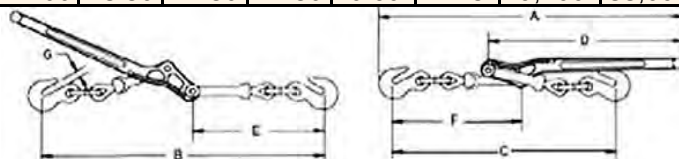
Forged Steel - quenched and tempered

Ball & Socket swivel joints at hook assembly permit a straight line pull

Painted Red with Black Hooks



Lever Load Binder								Take up	WLL (lbs)	NBS (lbs)	Weight (lbs)	Product Code
Min-Max	Dimensions in inches											
Chain Size												
	A	B	C	D	E	F	G					
1/4"	20.00	17.90	13.70	11.60	8.00	8.00	0.36	3.62	2,600	7,800	2.40	39045016
5/16-3/8"	24.10	22.10	17.90	16.00	10.40	10.40	0.50	4.25	5,400	19,000	7.00	39045024
5/16-3/8"	24.10	22.10	17.90	16.00	10.40	10.40	0.50	4.25	6,600	19,800	7.40	39041024
3/8 - 1/2"	27.00	25.50	22.00	18.50	12.50	12.50	0.60	4.25	9,200	33,000	10.50	39040032



**WARNING: NEVER EXCEED WORKING LOAD LIMITS !
IMPROPER OPERATION OF LOAD BINDER COULD RESULT
IN SERIOUS INJURY OR DEATH !**

Always inspect load binders prior to use and discard in case of signs of wear

- * **Do Not** operate load binders while you or anyone else is standing on the load !
- * **Do Not** use handle extensions (cheater bars) for tightening.
- * **Do Not** close your hand around handle
- * Load Binder must not bear against an object while under tension..
- * **Always** tighten handle in a downward manner, making sure to keep your body clear of moving handle, as it may whip.
- * **Always** secure position of binder by wrapping the loose end of the chain around handle.

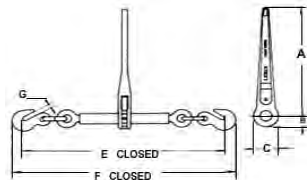


Ratchet Load Binders

Forged load bearing parts
Continuous take-up
Painted Red with Black Hooks



Ratchet Load Binder							Take up	WLL (lbs)	NBS (lbs)	Weight (lbs)	Product Code
Min-Max	Dimensions in inches										
Chain Size											
	A	B	C	E	F	G					
1/4"	6.80	0.88	1.57	16.00	17.80	0.32	5.00	2,600	7,800	4.00	39050016
5/16-3/8"	14.00	1.38	2.75	23.00	25.30	0.50	8.00	5,400	19,000	10.50	39050024
5/16-3/8"	14.00	1.38	2.75	23.00	25.30	0.50	8.00	6,600	26,000	10.50	39051024
3/8 - 1/2"	14.00	1.38	2.75	25.20	28.50	0.60	8.00	9,200	33,000	13.00	39050032
1/2 - 5/8"	14.30	1.40	2.50	26.00	29.00	0.70	9.00	13,000	46,000	15.00	39050040



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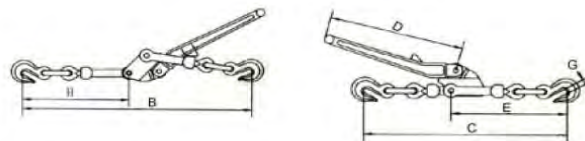


Recoilless Load Binders

Forged Steel - quenched and tempered
Continuous take-up
Reduces whip-back for safer operation



Recoilless Load Binder								Take up	WLL (lbs)	NBS (lbs)	Weight (lbs)	Product Code
Min-Max Chain Size	Dimensions in inches											
	A	B	C	D	E	F	G					
5/16-3/8"	24.10	23.70	19.70	13.20	11.02	11.02	0.51	4.50	5,400	19,000	9.25	39060024
3/8 -1/2"	27.00	25.50	22.00	18.50	12.50	12.50	0.60	4.50	9,200	33,000	15.00	39060032



**WARNING: NEVER EXCEED WORKING LOAD LIMITS !
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- * **Always** tighten handle in a downward manner, making sure to keep your body clear of moving handle, as it may whip.
- * **Always** secure position of binder by wrapping the loose end of the chain around handle.

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LOGGING ACCESSORIES

LOGGING SUPPLIES



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www.vanguardsteel.com



LOGGING SUPPLIES TABLE OF CONTENTS

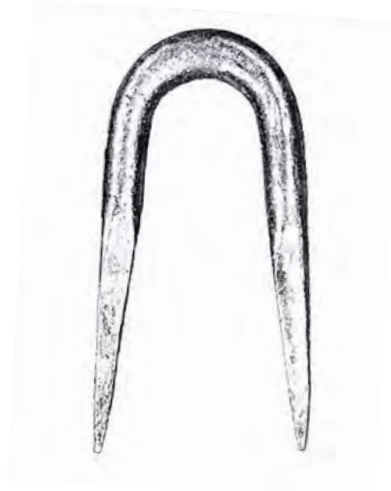
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Diamond Point Log Staples

Heavy duty staples are ideal for fastening fencing, wire, meshing and netting to wooden post logs, log barges, rails, etc.

Electro galvanized steel for longer life.



Log Staples		Inside			Weight			Product
Size (in.)		Length			lbs/pc			Code
3/8 X 4"		4"			0.25			29972440
3/8 X 4-1/2"		4-1/2"			0.28			29972445
3/8 X 5"		5"			0.31			29972450
1/2 X 4"		4"			0.56			29973240
1/2 X 4-1/2"		4-1/2"			0.63			29973245
1/2 X 5"		5"			0.70			29973250
1/2 X 6"		6"			0.84			29973260

Material Mild Steel

Finish: Electro Galvanized or Self Colour

Other sizes available upon request

Vanguard Steel Ltd. _____



Flat Head Rafting Dogs

Rafting dogs with flat hammering heads, drop forged, in various sizes are commonly used in the logging industry to keep logs together.

They are hammered into logs to provide a place for attaching wire rope, chain, etc.



Rafting Dogs Size (in.)		Length	Hole Dia.		Weight lbs/pc			Product Code
1/2"		6"	1-3/16"		0.63			29960032
5/8"		6-1/2"	1-7/16"		0.95			29960040

Material Mild Steel

Finish: Electro Galvanized or Self Colour

Other sizes available upon request

Vanguard Steel Ltd. _____



Timber Washers

Malleable round washers are used in various types of wood construction. These oversized washers have a large bearing surface designed to prevent heads and nuts from pulling into the wood.



Timber Washers		Hole Size	Outer Diameter	Thickness	Weight lbs/pc			Product Code
Size (in.)								
1/2"		1/2"	2-1/2"	1/4"	0.37			29720032
5/8"		5/8"	2-5/8"	1/4"	0.44			29720040
3/4"		3/4"	2-15/16"	3/8"	0.50			29720048
7/8"		7/8"	3-9/16"	1/2"	0.95			29720056
1"		1"	3-3/4"	1/2"	1.50			29720100

Material Malleable Steel
Finish: Hot Dip Galvanized

Other sizes available upon request

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MATERIAL HANDLING

MATERIAL HANDLING



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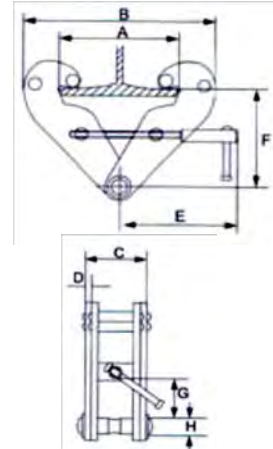


Beam Clamps



Beam Clamps Model #	Test Load (kN)	Capacity Tons	Weight (lbs/pc)	Product Code
VBC-1	14.71	1	9.9	38560001
VBC-2	29.42	2	11	38560002
VBC-3	44.13	3	23	38560003
VBC-5	61.92	5	24	38560005
VBC-10	125.00	10	35	38560010

Model		VBC 1	VBC 2	VBC 3	VBC 5	VBC 10
Flange width	mm	75-220	75-220	80-320	80-320	80-350
	A(max.)	260	260	354	354	400
	B(min.)	180	180	235	235	250
	B(max.)	360	360	490	490	520
	C	64	74	103	110	120
Dimensions	D	5	6	8	10	12
mm	E	215	215	260	260	280
	F(max.)	155	155	225	225	230
	F(min.)	102	102	140	140	160
	G(min.)	25	25	45	45	70
	H	22	22	24	28	44



Installation: The installation of beam clamps must be performed by qualified riggers.

To attach clamps to a beam, open the jaws, slide the clamp over the flange and tighten the locking bar.

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

These Beam clamps are designed as an Anchor Point for Straight Vertical Lifts only and **MUST NOT BE USED** in case of side pulls or where the angle of the vertical lift exceeds 3 degrees.

NEVER EXCEED WORKING LOAD LIMITS

NEVER LIFT LOADS OVER PEOPLE

DO NOT USE these beam clamps:

- * unless the beams have been tested and approved for attaching lifting devices
- * unless the size range of the clamp corresponds with the size of the beam flange
- * without making sure that they are fully tightened and properly engaged to support the load
- * without making sure that the beams' load rating exceeds the load rating of the beam clamp
- * without closely inspecting the signs of wear or damage prior to use
- * if the load swings during the lifting operation

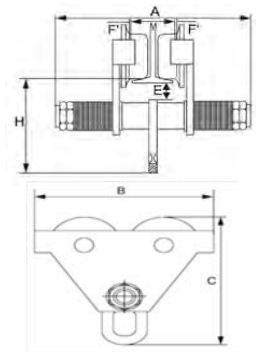
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Push Trolleys



Push Trolley									
Model #	I-Beam mm	Width inches	Dimensions				Capacity Tons	Weight (lbs/pc)	Product Code
			A	B	C	H			
VPT-F 12	58-220	1.96-8.66	11.22	7.800	6.22	2.54	1	11	38570005
VPT-F 1	58-220	1.96-8.66	11.22	9.370	7.20	2.60	1	19	38570010
VPT-F 2	66-220	2.60-8.66	11.81	10.900	8.19	2.95	2	31	38570020
VPT-F 3	74-220	2.91-8.66	12.64	12.750	9.80	3.35	3	52	38570030
VPT-F 5	90-220	3.54-8.66	13.64	14.685	11.67	3.94	5	88	38570050



NEVER EXCEED WORKING LOAD LIMITS

During use, the accidental impacts or snagging of the loads being handled with surrounding objects may overload the units.

ALWAYS REMAIN AWARE OF YOUR SURROUNDINGS.

NEVER modify the equipment

NEVER side pull the loads, and always ensure to center the equipment above the load before lifting it

DO NOT constantly use the end plates as a means of stopping

DO NOT USE these push trolleys:

- * Unless the beam has been tested and approved for attaching lifting devices.
- * Unless the size range of the push trolley corresponds with the size of the beam.
- * Without making sure that the beam capacity exceeds the load rating of the push trolley.
- * Without making sure that the push trolley is fully tightened and correctly engaged to the beam.

INSTALLATION:

Ensure that all safety regulations are complied with during installation (use of safety harnesses, evacuation of the areas, warning signs. . .etc.)

Measure the actual width of the beam.

When required, assemble the correct number of spacer washers equally on both sides, to the inside of the trolley side plates. Make sure that the swivel hanger pin trolley wheels are 6 mm greater than the runway beam width.

SLOWLY run the unit along the full length of the structure/runway beam. To ensure safe factory operations, make all necessary adjustments **BEFORE** applying any load.

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

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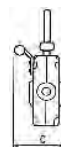
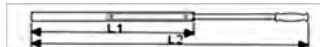
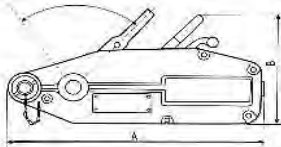
Cable Pullers

Multifunctional wire rope hoist system lifts and tows in different work areas.

Heavy-duty design with aluminum-alloy housing and auto-adjusting device allows for required rope length (up to 65 feet).



Cable Puller	Model	VH-008	VH-016	VH-032
	Product Code	38600008	38600016	38600032
Lifting Capacity (kg)		800	1600	3200
Rated Pulling Capacity (kg)		1250	2500	5000
Rope Advance per Full Stroke (mm)		60	60	40
Lever pull at WLL (kg)		25	30	50
Rope Diameter (mm)		8.3 mm	11 mm	16 mm
Standard Rope Length (ft) Supplied Extra		66	66	66
Net Weight Without Cable (lb)		15	31	51



Dimensions (cm)					
Model	A	B	C	L 1	L 2
VH-008	426	235	84		80
VH-016	545	280	97	80	120
VH-032	660	325	116	80	120

Galvanized Wire Rope for Cable Puller C/W Alloy Hook & Latch Kit

Model	Size	Length	Weight-lbs	Product Code
VH-008-66-20	8.3 mm	66 ft	16	38600108
VH-016-66-28	11 mm	66 ft	30	38600116
VH-032-66-40	16 mm	66 ft	46	38600132



Supplied with Aluminum Body, Steel body available on request

The hoist has low maintenance requirements and ease of service.

Overload protection endures high personal safety when in operation.

Specially built in shear pins can be replaced without removing the load.

All Hoists are supplied with an extendable operating lever

Vanguard Steel Ltd. _____



Gold Series Chain Hoists

Gold Series Hoists, designed for the most demanding construction and mining application.
The Choice of hoist for "PROFESSIONALS" Proof tested at 1.5 times the WLL



Chain Hoist							
Model #	Lift ft.	Rating Tons		Capacity (lbs)	Load Chain	Weight (lbs/pc)	Product Code
VCHP-12	10	1/2		1,000	5 x 15	14.45	38501005E
VCHP-1	10	1		2,000	6 x 18	21.35	38501010E
VCHP-112	10	1-1/2		3,000	7 x 21	37.50	38501015E
VCHP-2	10	2		4,000	8 x 24	46.70	38501020E
VCHP-3	10	3		6,000	10 x 30	70.50	38501030E
VCHP-5	10	5		10,000	10 x 30	90.55	38501050E

VCHP-12	20	1/2		1,000	5 x 15	17.75	38502005E
VCHP-1	20	1		2,000	6 x 18	26.60	38502010E
VCHP-112	20	1-1/2		3,000	7 x 21	44.45	38502015E
VCHP-2	20	2		4,000	8 x 24	53.60	38502020E
VCHP-3	20	3		6,000	10 x 30	84.70	38502030E
VCHP-5	20	5		10,000	10 x 30	118.95	38502050E



Parts for "Gold" Series Chain Hoists

		1/2 Ton	1 Ton	1-1/2 Ton	2 Ton	3 Ton	5 Ton
Load Chain	Dimension (mm)	5 x 15	6 x 18	7 x 21	8 x 24	10 x 30	10 x 30
	Part Number	38580515	38580618	38580721	38580824	38581030	38581030
	Weight (lbs/ft)	0.24	0.37	0.52	0.71	1.46	1.46
Bottom Hook Assembly *		38506005E	38506010E	38506015E	38506020E	38506030E	38506050E
Latch Kit		38505005E	38505010E	38505015E	38505020E	38505030E	38505050E
Friction Discs (asbestos Free)		38507005E	38507010E	38507015E	38507020E	38507030E	38507050E

* Top & Bottom Hook assemblies come C/W Cast Latch.

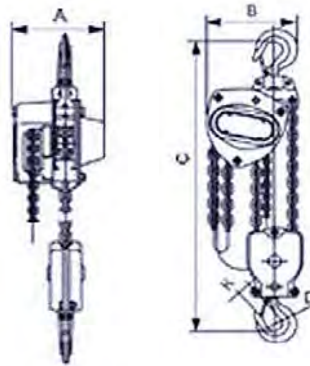
7-1/2, 10, 20 and 25 ton are also available as a special order from our factory.

WARNING: NEVER EXCEED WORKING LOAD LIMITS!

Vanguard Steel Ltd.



Gold Series Chain Hoists



Model		VCH-12	VCH-1	VCH-112	VCH-2	VCH-3	VCH-5
Capacity	Tons	0.50	1.00	1.50	2.00	3.00	5.00
Proof Load	kN	3.75	7.50	15.00	22.50	30.00	75
Effort (max. lift)	N	240	250	265	335	372	360
# of falls, load chain		1	1	1	1	1	2
Load Chain	mm	5 x 15	6 x 18	7 x 21	8 x 24	10 x 30	10 x 30
Dimensions	A	132	151	173	175	205	205
(mm)	B	148	172	196	210	255	255
	C	345	376	442	470	548	548
	D	35	40	45	50	55	55
	K	23	27	33	35	39	39

Special Features	- Compact design - Optional Gear Ratio - Sealed Bearings - Automatic brake engagement holding load at any desired height. - Double pawl for increased safety and easier adjustment - Extra thick heavy duty friction discs (free of asbestos) for increased service life and reliability - Extra thick heavy duty gears - Rubber hand grip for greater operator and comfort - Forged top and bottom hooks c/w latches, that rotate 360 ° - Hooks are designed to stretch when overloaded before chain failure Proof tested at 1.5 times the WLL	- Overload Protection - Alloy load chain - Articulating top hook
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WARNING: NEVER EXCEED WORKING LOAD LIMITS!

Vanguard Steel Ltd. _____



Gold Series Lever Hoists

Gold Series Hoists, designed for the most demanding construction and mining application.
The Choice of hoist for "PROFESSIONALS"
ASME B30.21



Lever Hoist								
Model #	Lift ft.	Rating Tons		Capacity (lbs)		Load Chain	Weight (lbs/pc)	Product Code
VLHP 14	5	1/4		500		5 x 15	4.60	38550502E
VLHP 12	5	1/2		1,000		6 x 18	11.70	38550505E
VLHP-34	5	3/4		1,500		6 x 18	14.40	38550507E
VLHP-112	5	1-1/2		3,000		7 x 21	22.50	38550515E
VLHP-3	5	3		6,000		10 x 30	48.50	38550530E
VLHP-6	5	6		12,000		10 x 30	74.90	38550560E
VLHP 14	10	1/4		500		5 x 15	8.00	38551002E
VLHP-12	10	1/2		1,000		5 x 15	13.50	38551005E
VLHP-34	10	3/4		1,500		6 x 18	17.00	38551007E
VLHP-112	10	1-1/2		3,000		7 x 21	26.00	38551015E
VLHP-2	10	2		4,000		8 x 24	55.80	38551020E
VLHP-3	10	3		6,000		10 x 30	84.70	38551030E
VLHP-5	10	5		10,000		10 x 30	118.95	38551050E

Parts for "Gold" Series Lever Hoists

		VLHP 14	VLHP 12	VLHP 34	VLHP 112	VLHP 3	VLHP 6
Load Chain	Dimension (mm)	4 x 12	5 x 15	6 x 18	7 x 21	10 x 30	10 x 30
	Part Number	38580412	38580515	38580618	38580724	38581030	38581030
	Weight (lbs/ft)	0.24	0.37	0.52	0.71	1.46	1.46
Bottom Hook Assembly *		38556002E	38556005E	38556007E	38556015E	38556030E	38556060E
Top Hook Assembly *		38555002E	38555005E	38555007E	38555015E	38555030E	38555060E
Latch Kit		385598002E	385598005E	385598007E	385598015E	385598030E	385598050E
Friction Discs (asbestos Free)			38557005E	38557007E	38557015E	38557030E	38557060E
Handle				38558007E	38558015E	38558030E	38558060E
Square Cast Ring		385593002E	385593002E	385593002E	385593015E	385593030E	385593030E

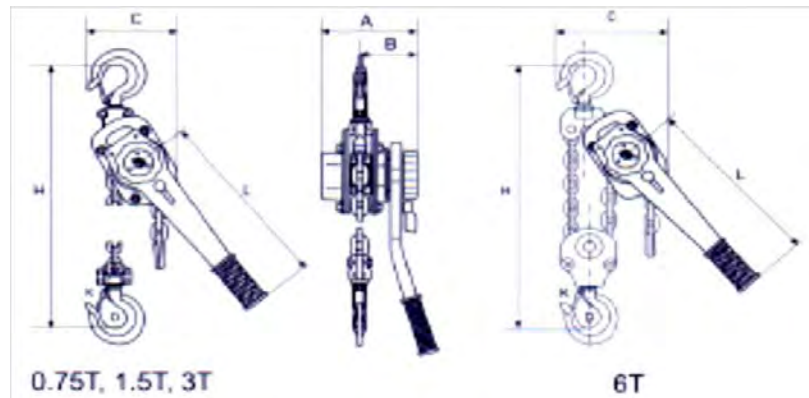
* Top and Bottom Hook Assemblies come complete with Cast Latches

WARNING: NEVER EXCEED WORKING LOAD LIMITS!

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Gold Series Lever Hoists



Model		VLPH						
		14	12	34	112	3	6	9 **
Capacity	Tons	0.25	0.50	0.75	1.50	3.00	6.00	9.00
Proof Load	kN	3.7	7.50	11.25	22.00	45.00	90	135.00
Effort (max. lift)	N	282	248	265	295	335	370	420
# of falls, load chain		1	1	1	1	1	2	3
Load Chain	mm	4 x 12	5 x 15	6 x 18	7 x 21	10 x 30	10 x 30	10 x 30
Dimensions (mm)	A	92	143	148	173	200	200	200
	B	71	86	87	99	112	112	112
	C	70	118	132	145	199	230	338
	D	31	31.5	35.5	42.5	50	53	67
	H	245	300	330	400	520	640	770
	L	168	253	278	378	388	388	489
	K	20	24	27	33.5	40	42.5	53

** 9T unit is not a standard stock item

Special Features	- Compact design - Optimal Gear Ratio - Sealed Bearings - Automatic brake engagement holding load at any desired height. - Double pawl for increased safety and easier adjustment - Extra thick heavy duty friction discs (free of asbestos) for increased service life and reliability - Extra thick heavy duty gears - Rubber hand grip for greater operator and comfort - Forged top and bottom hooks c/w latches, that rotate 360 ° - Hooks are designed to stretch when overloaded before chain failure - Proof tested at 1.5 times the WLL	- Overload Protection - Alloy load chain - Articulating top hook
------------------	--	--

WARNING: NEVER EXCEED WORKING LOAD LIMITS!

Vanguard Steel Ltd.



Cargo Trolley

A safe and economical means of moving/transporting heavy products
Available in 6, 8, 12 and 18 Metric Ton capacities



Cargo Trolley				
		Capacity		
Model		6 Ton	8 Ton	12 Ton
Product Code		38579006	38579008	38579012
Length	mm	298	398	498
	Inches	11.74	15.67	19.61
Width	mm	222	222	312
	Inches	8.74	8.74	12.28
Height	mm	110	110.00	110
	Inches	4.33	4.33	4.33
Weight	kgs	15.5	22.5	29.5
	pounds	34.14	49.56	64.98

6 T and 12 T units are not standard stock items

Handles for VCT-B Swivel Style Cargo Trolleys

Model Handles for	Product Code
6, 8 & 12 Ton Trolleys	3857 9108
18 Ton Trolleys	3857 9118



Polyurethane Wheels

Fits all capacity of VCT-B cargo trolleys

6t unit requires 4 PU wheels

8t unit requires 6 PU wheels

12t unit requires 8 PU wheels

18t unit requires 10 PU wheels

Description	Product Code
PU Wheels	3857 9101

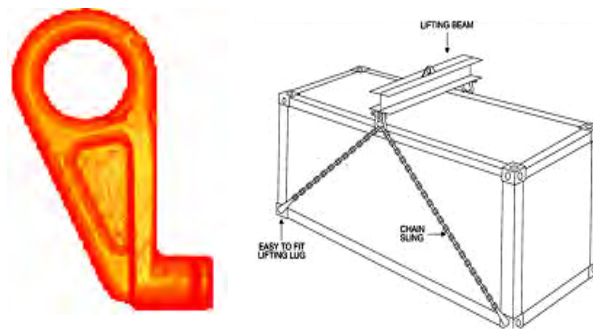


WARNING: NEVER EXCEED WORKING LOAD LIMITS!
INSPECT ALL COMPONENTS FREQUENTLY FOR SIGNS OF WEAR OR DAMAGE
CARGO TROLLEYS SHOULD ONLY BE USED/INSTALLED BY QUALIFIED PROPERLY TRAINED PERSONNEL.

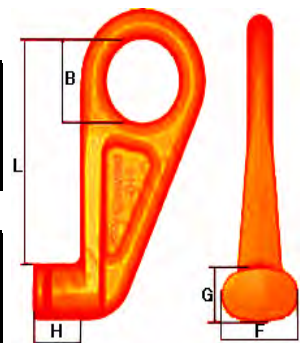
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Container Lifting Hooks

Container lifting hooks are a grade 80 fitting, designed especially for the lifting purposes of containers. Container lifting hooks are supplied in either an angled lug, with configurations for both left and right, or a straight point lug, for a complete vertical lift. The Container Lifting Lugs lock into the Corner Castings of shipping containers



Model		Dimensions (inches)					WLL lbs	Weight lbs/pc	Product Code
		L	B	H	F	G			
VL	Left Hand	7.60	2.80	1.00	3.00	8.80	27,500	8.8	39710001
VR	Right Hand	7.60	2.80	1.00	3.00	8.80	27,500	8.8	39710002
VS	Straight	7.60	2.80	1.00	3.00	8.80	27,500	8.8	39710003



Large eyes for easy connection to wire rope or chain legs.

Material: Grade 80

Design factor 4:1

Container Lifting Hooks are intended for use as part of a spreader

Vanguard Steel Ltd.



SHACKLES

SHACKLES



Vanguard Steel Ltd.



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SHACKLES

'Golden Pin'® Shackles

Over the past 30 years, Vanguard's 'Golden Pin'® Shackles have earned the reputation of 'top-of-the-line' shackles with indicated load carrying capacity, making them the preferred choice for all critical rigging applications. Design Factor 6:1.



Screw Pin Anchor Shackles



Bolt Type Anchor Shackles



Screw Pin Chain Shackles

Features:

Heat treated Carbon Steel bows with Alloy pins - quenched & tempered

- The metallic coating of 'Golden Pin' shackle pins allows for closer thread tolerances than is possible for shackles with an extra layer of paint
- To assure total traceability, 'Golden Pin' Shackles are embossed with:
 - Vanguard I.D.
 - Size
 - WLL (Working Load Limit)
 - Alloy Pin I.D.
- Working Load Limits (WLL) are based on shackles in new condition and are subject to downward adjustment in case of side loading:
 - 45° from vertical in-line: WLL reduced to 70%
 - 90° from vertical in-line: WLL reduced to 50%

Warning:

- DO NOT:**
- Exceed Working Load Limits
 - Exceed 120° Incline Angle
 - Re-Use Shackles or Pins Which are Visibly Deformed
 - Use Shackles Which are Worn in the Crown or Pin by More Than 10% of Original Diameter
 - Use Screw Pin Shackles if the Pin Can Roll Under Load
 - Proof Test Shackles Beyond 2x the Working Load Limit



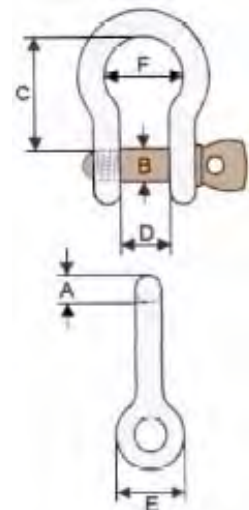
"Golden Pin" Anchor Shackles

Meeting the performance requirements of:

U.S. Fed. Specs RR-C-271D, Type IV A, grade A, Class 2.



Size	Pin Diameter	Dimension Inches				WLL (Tons)	Weight (lbs)	Product Code
A	B	C	D	E	F			
3/16"	1/4"	0.93	0.39	0.59	0.64	1/3	0.06	29020012
1/4"	5/16"	1.14	0.49	0.70	0.75	1/2	0.12	29020016
5/16"	3/8"	1.23	0.53	0.83	0.80	3/4	0.18	29020020
3/8"	7/16"	1.41	0.69	0.98	1.01	1	0.32	29020024
7/16"	1/2"	1.70	0.72	1.06	1.13	1-1/2	0.45	29020028
1/2"	5/8"	1.83	0.83	1.18	1.25	2	0.68	29020032
5/8"	3/4"	2.36	1.06	1.55	1.67	3-1/4	1.36	29020040
3/4"	7/8"	2.76	1.24	1.78	1.98	4-3/4	2.24	29020048
7/8"	1"	3.29	1.42	2.09	2.25	6-1/2	3.50	29020056
1"	1-1/8"	3.69	1.75	2.35	2.66	8-1/2	5.00	29020100
1-1/8"	1-1/4"	4.23	1.80	2.71	2.79	9-1/2	7.65	29020108
1-1/4"	1-3/8"	4.63	2.12	3.01	3.15	12	10.40	29020116
1-3/8"	1-1/2"	5.17	2.30	3.32	3.60	13-1/2	13.80	29020124
1-1/2"	1-5/8"	5.67	2.39	3.63	3.85	17	17.90	29020132
1-3/4"	2"	7.06	2.96	4.23	4.99	25	27.90	29020148
2"	2-1/4"	7.75	3.31	5.11	5.59	35	42.70	29020200
2-1/2"	2-3/4"	10.25	4.00	5.75	7.00	55	85.00	29020232



Safety Factor: 6

WARNING: If the pin, after a 1/4 turn, remains hard to remove, there is a good chance that the shackle has been overloaded beyond the designed working load limit (WLL) and it, therefore, must be discarded.

Vanguard Steel Ltd.



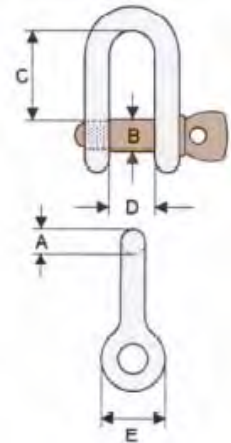
"Golden Pin" Chain Shackles

Meeting the performance requirements of:

U.S. Fed. Specs RR-C-271D, Type IV A, grade A, Class 2.



Size	Pin Diameter	Dimension Inches			WLL (Tons)	Weight (lbs)	Product Code
A	B	C	D	E			
1/4"	5/16"	0.83	0.47	0.71	1/2	0.11	39120016
5/16"	3/8"	0.98	0.47	0.75	3/4	0.17	39120020
3/8"	7/16"	1.22	0.63	0.96	1	0.24	39120024
7/16"	1/2"	1.50	0.75	1.06	1-1/2	0.40	39120028
1/2"	5/8"	1.61	0.83	1.22	2	0.59	39130032
5/8"	3/4"	2.01	1.10	1.57	3-1/4	1.20	39120040
3/4"	7/8"	2.41	1.25	1.81	4-3/4	2.20	39120048
7/8"	1"	2.80	1.42	2.13	6-1/2	3.20	39120056
1"	1-1/8"	3.15	1.77	2.36	8-1/2	4.80	39120100
1-1/8"	1-1/4"	3.50	1.85	2.69	9-1/2	6.80	39120108
1-1/4"	1-3/8"	3.97	2.05	3.00	12	9.00	39120116
1-3/8"	1-1/2"	4.43	2.25	3.31	13-1/2	13.00	39120124
1-1/2"	1-5/8"	4.80	2.39	3.68	17	16.00	39120132
1-3/4"	2"	5.78	2.88	4.19	25	29.00	39120148
2"	2-1/4"	6.75	3.25	5.00	35	43.00	39120200



Safety Factor: 6

WARNING: If the pin, after a 1/4 turn, remains hard to remove, there is a good chance that the shackle has been overloaded beyond the designed working load limit (WLL) and it, therefore, must be discarded.

Vanguard Steel Ltd. _____



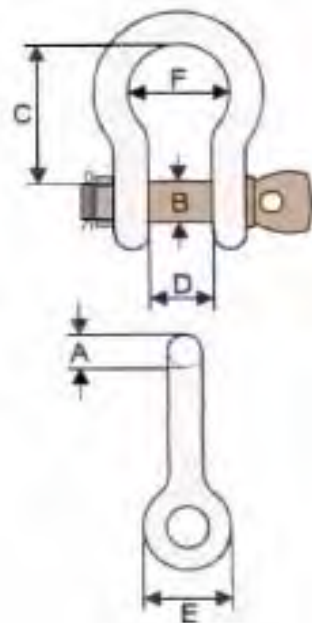
"Golden Pin" Bolt Type Anchor Shackles

Meeting the performance requirements of:

U.S. Fed. Specs RR-C-271D, Type IV A, grade A, Class 3.



Size	Pin Diameter	Dimension Inches				WLL (Tons)	Weight (lbs)	Product Code
A	B	C	D	E	F			
1/4"	5/16"	1.14	0.49	0.70	0.75	1/2	0.12	29140016
5/16"	3/8"	1.23	0.53	0.83	0.80	3/4	0.18	29140020
3/8"	7/16"	1.41	0.69	0.98	1.01	1	0.32	29140024
7/16"	1/2"	1.70	0.72	1.06	1.13	1-1/2	0.45	29140028
1/2"	5/8"	1.83	0.83	1.18	1.25	2	0.68	29140032
5/8"	3/4"	2.36	1.06	1.55	1.67	3-1/4	1.36	29140040
3/4"	7/8"	2.76	1.24	1.78	1.98	4-3/4	2.24	29140048
7/8"	1"	3.29	1.42	2.09	2.25	6-1/2	3.50	29140056
1"	1-1/8"	3.69	1.75	2.35	2.66	8-1/2	5.00	29140100
1-1/8"	1-1/4"	4.23	1.80	2.71	2.79	9-1/2	7.65	29140108
1-1/4"	1-3/8"	4.63	2.12	3.01	3.15	12	10.40	29140116
1-3/8"	1-1/2"	5.17	2.30	3.32	3.60	13-1/2	13.80	29140124
1-1/2"	1-5/8"	5.67	2.39	3.63	3.85	17	17.90	29140132
1-3/4"	2"	7.06	2.96	4.23	4.99	25	27.90	29140148
2"	2-1/4"	7.75	3.31	5.11	5.59	35	42.70	29140200
2-1/2"	2-3/4"	10.25	4.00	5.75	7.00	55	85.00	29140232
3"	3-1/4"	13.00	5.00	6.50	7.88	85	125.00	29140300



Safety Factor: 6

NOTE: Bolt-type shackles are recommended for long-term service installations as well as for applications where there is a possibility that the pin could rotate under load.

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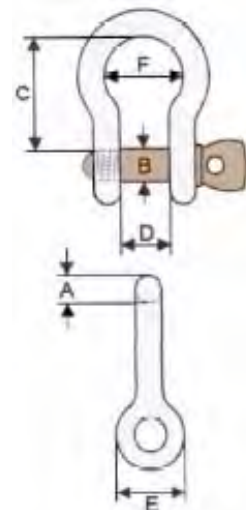
" Econo" Load Rated Anchor Shackles

Meeting the performance requirements of:

U.S. Fed. Specs RR-C-271D, Type IV A, grade A, Class 2.



Size	Pin Diameter	Dimension Inches				WLL (Tons)	Weight (lbs)	Product Code
A	B	C	D	E	F			
3/16"	1/4"	0.93	0.39	0.59	0.64	1/3	0.06	29025012
1/4"	5/16"	1.14	0.49	0.70	0.75	1/2	0.12	29025016
5/16"	3/8"	1.23	0.53	0.83	0.80	3/4	0.18	29025020
3/8"	7/16"	1.41	0.69	0.98	1.01	1	0.32	29025024
7/16"	1/2"	1.70	0.72	1.06	1.13	1-1/2	0.45	29025028
1/2"	5/8"	1.83	0.83	1.18	1.25	2	0.68	29025032
5/8"	3/4"	2.36	1.06	1.55	1.67	3-1/4	1.36	29025040
3/4"	7/8"	2.76	1.24	1.78	1.98	4-3/4	2.24	29025048
7/8"	1"	3.29	1.42	2.09	2.25	6-1/2	3.50	29025056
1"	1-1/8"	3.69	1.75	2.35	2.66	8-1/2	5.00	29025100
1-1/8"	1-1/4"	4.23	1.80	2.71	2.79	9-1/2	7.65	29025108
1-1/4"	1-3/8"	4.63	2.12	3.01	3.15	12	10.40	29025116
1-3/8"	1-1/2"	5.17	2.30	3.32	3.60	13-1/2	13.80	29025124
1-1/2"	1-5/8"	5.67	2.39	3.63	3.85	17	17.90	29025132
1-3/4"	2"	7.06	2.96	4.23	4.99	25	27.90	29025148
2"	2-1/4"	7.75	3.31	5.11	5.59	35	42.70	29025200
2-1/2"	2-3/4"	10.25	4.00	5.75	7.00	55	85.00	29025232



Safety Factor: 5

WARNING: If the pin, after a 1/4 turn, remains hard to remove, there is a good chance that the shackle has been overloaded beyond the designed working load limit (WLL) and it, therefore, must be discarded.

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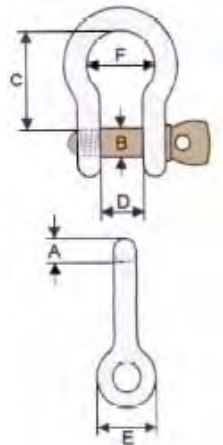


Stainless Steel Anchor Shackles

Made from AISI 316 stainless rod.
Bright polished



Size	Dimension Inches							WLL (Tons)	Weight (lbs)	Proof Load (lbs)	Product Code
	A	B	C	D	E	F	G				
3/16"	0.19	0.25	0.88	0.38	0.56	0.60	1.47	1/4	0.06	1,103	39130012
1/4"	0.25	0.31	1.13	0.47	0.61	0.78	1.84	1/4	0.12	1,103	39130016
5/16"	0.31	0.38	1.22	0.53	0.75	0.84	2.09	1/3	0.18	1,470	39130020
3/8"	0.38	0.44	1.44	0.66	0.91	1.03	2.49	1/2	0.32	2,205	39130024
7/16"	0.44	0.50	1.69	0.75	1.06	1.16	2.91	2/3	0.45	2,940	39130028
1/2"	0.50	0.63	1.88	0.81	1.19	1.31	3.28	1.00	0.68	4,410	39130032
5/8"	0.63	0.75	2.38	1.06	1.50	1.69	4.19	1-1/2	1.36	6,615	39130040
3/4"	0.75	0.88	2.81	1.25	1.81	2.00	4.97	2-1/4	2.24	11,025	39130048
7/8"	0.88	1.00	3.31	1.44	2.09	2.28	5.83	3.00	3.50	13,230	39130056
1"	1.00	1.13	3.75	1.69	2.38	2.69	6.56	4.00	5.00	17,640	39130100



WARNING: Never Exceed Working Load Limits

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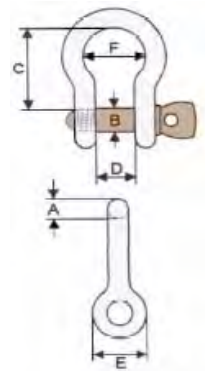
Non-Rated Anchor Shackles

An economical alternative for a wide range of uses

No WLL indicated, must never be used for lifting applications.



Size	Pin Diameter	Dimension Inches				Weight (lbs)	Product Code
A	B	C	D	E	F		
3/16"	1/4"	0.93	0.39	0.59	0.64	0.06	29465012
1/4"	5/16"	1.14	0.49	0.70	0.75	0.12	29465016
5/16"	3/8"	1.23	0.53	0.83	0.80	0.18	29465020
3/8"	7/16"	1.41	0.69	0.98	1.01	0.32	29465024
7/16"	1/2"	1.70	0.72	1.06	1.13	0.45	29465028
1/2"	5/8"	1.83	0.83	1.18	1.25	0.68	29465032
5/8"	3/4"	2.36	1.06	1.55	1.67	1.36	29465040
3/4"	7/8"	2.76	1.24	1.78	1.98	2.24	29465048
7/8"	1"	3.29	1.42	2.09	2.25	3.50	29465048
1"	1-1/8"	3.69	1.75	2.35	2.66	5.00	29465100



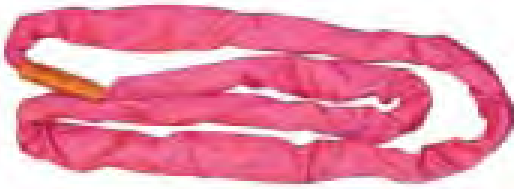
WARNING: Made entirely from C-1010 Carbon Steel, These shackles are NOT intended for use critical application and are not guaranteed in terms of any load bearing capacity.

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SYNTHETIC WEB SLINGS

Synthetic Web Slings



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Polyester Slings Product Codes

Flat Slings				
Single Ply				
	Vertical WLL			Product Codes
Type 3	1,600	1" width		340311xx
	3,200	2" width		340312xx
	4,700	3" width		340313xx
	6,200	4" width		340314xx
Double Ply				
Type 3	3,100	1" width		340301xx
	6,200	2" width		340302xx
	8,800	3" width		340303xx
	11,000	4" width		340304xx
	16,500	6" width		340306xx
Type 4	3,100	1" width		340401xx
	6,200	2" width		340402xx
	8,800	3" width		340403xx
	11,000	4" width		340404xx
	16,500	6" width		340406xx
Type 5	6,200	1" width		340501xx
	12,400	2" width		340502xx
	17,600	3" width		340503xx
	22,000	4" width		340504xx

Round Slings				
	Vertical WLL			Product Codes
Purple	2,600			340610xx
Green	5,300			340620xx
Yellow	8,400			340630xx
Tan	10,600			340640xx
Red	13,200			340650xx
White	17,000			340660xx
Blue	21,200			340670xx
Orange	25,000			340680xx
Gray	31,000			340690xx
Orange	40,000			340601xx
Brown	53,000			340611xx
Olive	66,000			340612xx
Black	90,000			340613xx
FX	5,300			340620xxx

x x = Length

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Double Ply Polyester Lifting Slings

Synthetic web slings offer a number of advantages for rigging purposes.

The web slings are a good choice where highly finished parts or delicate equipment must be protected from damage. The synthetic material has stretch and flexibility to help the slings mold to the shape of the load, gripping securely, while cushioning and absorbing shock more than that of a wire rope or chain. They are lightweight and very easy to handle.

Full Safety factor of 5 to 1

We offer these slings in various widths, lengths, and configurations

Type 3 Flat Eye and Eye c/w added eye protection to increase sling life

Type 4 Twisted Eye and Eye c/w added eye protection to increase sling life

Type 5 Endless



Rated Loads for Two-Ply Class 7 Synthetic Webbing Slings

Types I, II, III and IV								Type V
Single-Leg - Hitch Types				Two Leg - Horizontal Angles				Endless Vertical
Webbing Width (in.)	Vertical	Choker	Vertical Basket	Vertical Basket	60°	45°	30°	
1	3,100	2,480	6,200	6,200	5,400	4,400	3,100	
1 1/2	4,700	3,760	9,400	9,400	8,100	6,600	4,700	
1 3/4	5,400	4,320	10,800	10,800	9,400	7,600	5,400	
2	6,200	4,960	12,400	12,400	10,700	8,800	6,200	
3	8,800	7,040	17,600	17,600	15,200	12,400	8,800	
4	11,000	8,800	22,000	22,000	19,100	15,600	11,000	
5	13,700	10,960	27,400	27,400	23,700	19,400	13,700	
6	16,500	13,200	33,000	33,000	28,600	23,000	16,500	
8	22,750	18,200	42,350	45,400	36,700	29,900	22,750	
10	28,400	22,720	52,900	56,800	45,800	37,400	28,400	52,900
12	34,100	27,280	63,500	68,200	55,000	44,900	34,100	63,500
Rated Capacities in Pounds								

Our Polyester slings have been tested in accordance with the requirements of ASME / ANSI B 30.9 and are made of class 7 material with a minimum certified tensile strength of 9800 lbs per inch of width.

Vanguard Steel Ltd.



Single Ply Polyester Lifting Slings

Synthetic web slings offer a number of advantages for rigging purposes.

The web slings are a good choice where highly finished parts or delicate equipment must be protected from damage. The synthetic material has stretch and flexibility to help the slings mold to the shape of the load, gripping securely, while cushioning and absorbing shock more than that of a wire rope or chain. They are lightweight and very easy to handle.

Full Safety factor of 5 to 1

We offer these slings in various widths, lengths, and configurations

Type 3 Flat Eye and Eye c/w added eye protection to increase sling life

Type 4 Twisted Eye and Eye c/w added eye protection to increase sling life

Type 5 Endless



Rated Loads for Single Ply Class 7 Synthetic Webbing Slings

Types I, II, III and IV								Type V
Single-Leg - Hitch Types				Two Leg - Horizontal Angles				Endless Vertical
Webbing Width (in.)	Vertical	Choker	Vertical Basket	Vertical Basket	60°	45°	30°	
1	1,600	1,280	3,200	3,200	2,771	2,262	1,600	3,200
1 1/2	2,300	1,840	4,600	4,600	3,984	3,252	2,300	4,600
1 3/4	2,700	2,160	5,400	5,400	4,676	3,818	2,700	5,400
2	3,100	2,325	6,200	6,200	5,369	4,383	3,100	6,200
3	4,700	3,525	9,400	9,400	8,140	6,646	4,700	9,400
4	6,200	4,650	12,400	12,400	10,738	8,767	6,200	12,400
5	7,800	6,240	15,600	15,600	13,510	11,029	7,800	15,600
6	9,300	7,440	18,600	18,600	16,108	13,150	9,300	18,600
8	11,800	9,440	23,600	23,600	20,438	16,685	11,800	23,600
10	14,700	11,760	29,400	29,400	25,460	20,786	14,700	29,400
12	17,600	14,080	35,200	35,200	30,483	24,886	17,600	35,200
Rated Capacities in Pounds								

Our Polyester slings have been tested in accordance with the requirements of ASME / ANSI B 30.9 and are made of class 7 material with a minimum certified tensile strength of 9800 lbs per inch of width.

Vanguard Steel Ltd.



Polyester Endless Round Slings

The most basic round sling, yet they offer great versatility.

Made from a continuous loop of polyester fibers encased in a tough double wall tubular polyester cover, they are light in weight, but high in strength, conforming well to irregularly shaped loads. Endless round slings may be used in a vertical, choker or basket type hitch. Sling life extended through rotation of bearing points. Low stretch 3 %, at rated capacity Round Slings are colour-coded according to work load limit.



Rated Load for Single-Leg Polyester Round Slings

Item	Colour	Hitch Type			Horizontal Angle, deg.			Wt. (lbs.ft)
		Vertical	Choker	Vertical Basket	60°	45°	30°	
								
ENRS-1	Purple	2,600	2,080	5,200	4,500	3,700	2,600	0.20
ENRS-2	Green	5,300	4,200	10,600	9,200	7,500	5,300	0.30
ENRS-3	Yellow	8,400	6,700	16,800	14,500	11,900	8,400	0.40
ENRS-4	Tan	10,600	8,480	21,200	18,400	15,000	10,600	0.50
ENRS-5	Red	13,200	10,560	26,400	22,900	18,700	13,200	0.70
ENRS-6	White	17,000	13,400	33,600	29,100	23,800	16,800	0.80
ENRS-7	Blue	21,200	17,000	42,400	36,700	30,000	21,200	1.10
ENRS-8	Orange	25,000	20,000	50,000	43,300	35,400	25,000	1.30
ENRS-9	Gray	31,000	24,800	62,000	53,700	43,800	31,000	1.50
ENRS-10	Orange	40,000	32,000	80,000	69,300	56,000	40,000	2.00
ENRS-11	Brown	53,000	42,400	106,000	91,800	74,900	53,000	3.00
ENRS-12	Olive	66,000	52,800	132,000	114,300	93,300	66,000	3.25
ENRS-13	Black	90,000	72,000	180,000	155,900	127,300	90,000	3.75
Rated Capacities in Pounds								

Colour codes and rated capacities may vary among manufacturers

ALWAYS CHECK THE IDENTIFICATION TAG TO DETERMINE IF THE POLYESTER
ROUNDSLING RATED CAPACITY IS APPLICABLE FOR THE LIFT

Our Polyester slings have been tested in accordance with the requirements of
ASME / ANSI B 30.9 and are made of class 7 material with a minimum certified
tensile strength of 9800 lbs per inch of width.

Vanguard Steel Ltd.



FX-Polyester Endless Round Slings Stage Rigging

For stage rigging, the most basic round sling, yet they offer great versatility.

These lightweight conventional polyester core round slings are ideal for easy and inconspicuous suspension of stage sound and lighting equipment.

All Black to help sling blend into its surroundings.

Soft and pliable, conforms well to irregularly shaped loads and will not scratch load surface

Offers tighter choke with easier release



Rated Load for Single-Leg Polyester Round Slings

Item	Color	Hitch Type			Horizontal Angle, deg.			Wt. (lbs.ft)
		Vertical	Choker	Vertical Basket	60°	45°	30°	
								
FXRS-2	Black	5,300	4,200	10,600	9,200	7,500	5,300	0.30
Rated Capacities in Pounds								

Our Polyester slings have been tested in accordance with the requirements of ASME / ANSI B 30.9 and are made of class 7 material with a minimum certified tensile strength of 9800 lbs per inch of width.

Vanguard Steel Ltd. _____

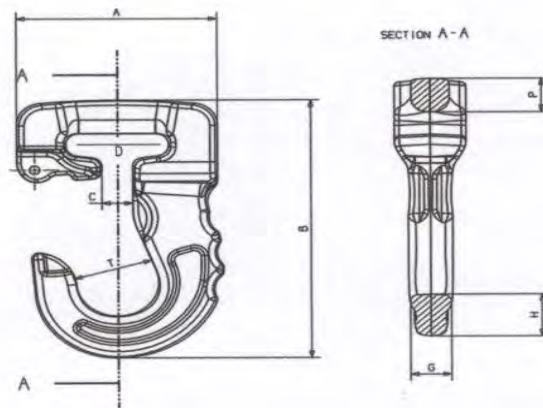


Round Sling Hooks

Synthetic Sling Hooks color coded matching Round Slings of same color, with 5:1 SF



Color	WLL lbs	Dimensions in Inches								Weight lbs	Product Code
		A	B	C	D	G	H	P	T		
Purple	2,600	3.07	4.84	0.47	1.61	0.67	0.79	0.63	1.22	1.54	34061000
Green	5,300	3.58	5.83	0.75	1.77	0.83	1.02	0.67	1.57	2.65	34062000
Yellow	8,400	4.45	6.89	0.83	2.17	0.98	1.26	0.98	1.97	4.85	34063000
Red	13,200	5.23	8.78	1.57	2.76	1.42	1.57	1.42	2.34	9.92	34065000



Our Polyester slings have been tested in accordance with the requirements of ASME / ANSI B 30.9 and are made of class 7 material with a minimum certified tensile strength of 9800 lbs per inch of width.

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SLEEVES

SWAGING SLEEVES



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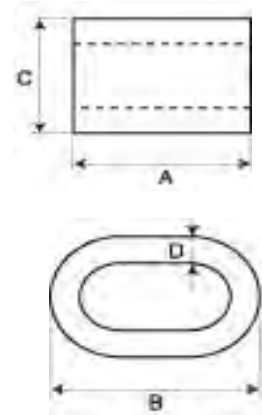


Duplex Eye Sleeves

Duplex Oval Steel Sleeves are recommended for use on 6 x 19 or 6 x 37 IPS or XIP, EIP, RRL, FC or IWRC wire rope.



Rope Size	Dimension Inches				Weight lbs/pc	Product Code
	A	B	C	D		
5/16"	1.250	1.080	0.810	0.190	0.17	29580020
3/8"	1.250	1.120	0.810	0.140	0.13	29580024
7/16"	1.630	1.410	1.020	0.190	0.31	29580028
1/2"	1.630	1.440	1.020	0.160	0.27	29580032
9/16"	2.250	1.720	1.230	0.230	0.63	29580036
5/8"	2.250	1.840	1.280	0.200	0.54	29580040
3/4"	2.630	2.160	1.520	0.230	0.90	29580048
7/8"	2.880	2.500	1.750	0.270	1.26	29580056
1"	3.060	3.840	2.000	0.330	1.87	29580100
1-1/4"	4.060	3.500	2.500	0.380	3.84	29580116



"Non-tapered" for turn-back loop

Specially processed low carbon steel

If using any other type of construction or grade of wire rope it is recommended to make a breaking load test of the swaged termination to prove the adequacy of the assembly to be manufactured.

Just one step will finish the swaging, turning the sleeves 90 ° and swaging again is not recommended.

**Inspect swaging dies frequently for nicks or scratches, which should be polished out!
Apply lubricants to the die blocks prior to swaging!**

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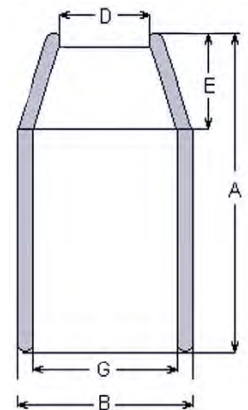


Flemish Eye Sleeves

Flemish Eye Carbon Steel Sleeves are recommended for use on 6 x 19 or 6 x 37 IPS or XIP, EIP, RRL, FC or IWRC wire rope.



Rope Size	Dimension before swaging Inches					Max. after swage		Weight lbs/pc	Product Code	
						Dim. Inches				
						Stages				
	A	B	D	E	G	1	2			
1/4"	1.00	0.66	0.31	0.28	0.47		0.57	2.27	29560016	
5/16"	1.50	0.91	0.38	0.44	0.62		0.75	6.36	29560020	
3/8"	1.50	0.91	0.47	0.39	0.66		0.75	6.36	29560024	
7/16"	2.00	1.22	0.53	0.65	0.85		1.01	14.89	29560028	
1/2"	2.00	1.22	0.63	0.56	0.91		1.01	13.17	29560032	
9/16"	2.75	1.47	0.70	0.63	1.03		1.24	29.06	29560036	
5/8"	2.75	1.47	0.75	0.63	1.09		1.24	25.42	29560040	
3/4"	3.19	1.72	0.91	0.84	1.28		1.46	38.85	29560048	
7/8"	3.56	2.03	1.03	1.00	1.53		1.68	59.47	26590056	
1"	4.00	2.28	1.19	1.13	1.72	2.00	1.93	88.53	29560100	
1-1/4"	4.81	2.50	1.28	1.25	1.94	2.25	2.13	117.04	29560108	
1-1/2"	5.19	2.78	1.44	1.41	2.16	2.50	2.32	161.17	29560116	
1-3/8"	5.81	3.00	1.56	1.56	2.36	2.75	2.52	192.04	29560124	
1-1/2"	6.25	3.25	1.69	1.69	2.63	2.87	2.71	226.55	29560132	
1-3/4"	7.25	3.84	1.94	1.97	3.13	3.84	3.10	365.50	29560148	
2"	8.50	4.38	2.25	2.25	3.63	3.81	3.56	514.00	29560200	



Note

The cold swaging of sleeves is a delicate process, requiring considerate movement of the steel in the fitting, as it is forced under great pressure to flow into the crevices between wires and strand, as well as elongating parallel to the wire rope. For this reason, swaging must be performed by way of multiple pressings. This will also prevent excessive 'flashing', a term used to describe the material which is squeezed out into the area between the die faces.

Excessive flashing can result in scoring and/or cracking of the sleeves!

Inspect swaging dies frequently for nicks or scratches, which should be polished out!

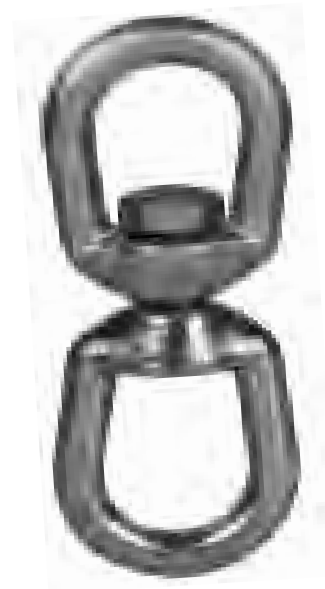
Apply lubricants to the die blocks prior to swaging!

After swaging, measure the OD of the sleeve and compare the results against the figures shown in the table to assure that the sleeve has been properly swaged.

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SWIVELS





SWIVELS

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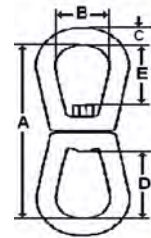


Eye and Eye Swivels

Manufactured to U.S. Federal Specs. RR-C-271D Type VII, Class 2
Forged Steel, hot dip galvanized



E & E Swivels		Dimension Inches					WLL (lbs)	Weight lbs/pc	Product Code
Size		A	B	C	D	E			
1/4"		2.940	0.750	0.250	1.050	0.690	850	0.21	29290016
5/16"		3.560	1.000	0.315	1.250	0.810	1,250	0.39	29290020
3/8"		4.310	1.250	0.375	1.500	0.940	2,250	0.69	29290024
1/2"		5.440	1.500	0.500	2.000	1.310	3,600	1.43	29290032
5/8"		6.560	1.750	0.625	2.380	1.560	5,200	2.50	29290040
3/4"		7.190	2.000	0.480	2.630	1.750	7,200	4.13	29290048
7/8"		8.380	2.250	0.956	3.060	2.060	10,000	6.25	29290056
1"		9.630	2.500	1.000	3.500	2.310	12,500	9.00	29290100
1-1/4"		11.440	3.130	1.250	3.690	2.690	18,000	16.76	29290116
1-1/2"		17.130	4.000	1.500	4.190	3.880	45,200	49.06	29290132



Proof Load 2 times Working Load Limit (WLL)
Ultimate Load 5 times Working Load Limit (WLL)

- * These swivels are only for positioning and are not intended to act as a swivel under load!
- * The Working Load Limit (WLL) apply to straight line pulls only!

WARNING: NEVER EXCEED WORKING LOAD LIMIT (WLL)
Never insert the point of a hook into a swivel eye

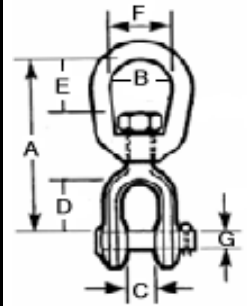


Jaw and Eye Swivels

Manufactured to U.S. Federal Specs. RR-C-271D Type VII, Class 2
Forged Steel, hot dip galvanized



J & E Swivel	Dimension Inches							WLL (lbs)	Weight lbs/pc	Product Code
Size	A	B	C	D	E	F	G			
1/4"	2.630	0.750	0.470	0.880	0.690	1.250	0.250	850	0.21	29291016
5/16"	2.940	1.000	0.500	0.880	0.810	1.630	0.310	1,250	0.39	29291020
3/8"	3.630	1.250	0.630	1.060	0.940	2.000	0.380	2,250	0.69	29291024
1/2"	4.500	1.500	0.750	1.310	1.310	2.500	0.500	3,600	1.43	29291032
5/8"	5.310	1.750	0.940	1.500	1.560	3.000	0.630	5,200	2.50	29291040
3/4"	6.060	2.000	1.130	1.750	1.750	3.500	0.750	7,200	4.13	29291048
7/8"	7.000	2.250	1.190	2.060	2.060	4.000	0.880	10,000	6.25	29291056
1"	8.560	2.500	1.750	2.810	2.310	4.500	1.130	12,500	9.00	29291100
1-1/4"	9.750	3.130	2.060	2.810	2.690	5.690	1.380	18,000	16.76	29291116



Proof Load 2 times Working Load Limit (WLL)
Ultimate Load 5 times Working Load Limit (WLL)

- * These swivels are only for positioning and are not intended to act as a swivel under load!
- * The Working Load Limit (WLL) apply to straight line pulls only!

WARNING: NEVER EXCEED WORKING LOAD LIMIT (WLL)
Never insert the point of a hook into a swivel eye

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THIMBLES

THIMBLES



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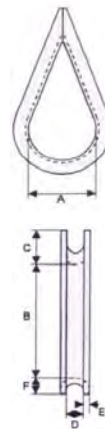


STAINLESS AN THIMBLES

For applications using small diameter galvanized or stainless cable
Made from AISI 316 stainless rod.



Size Inches	Item No.	Dimension Inches						Weight (lbs/100)	Product Code
		A	B	C	D	E	F		
3/64-1/16-5/64"	C-3	0.350	0.671	0.157	0.093	0.032	0.078	0.15	29600004
3/32-1/8-7/64"	C-4	0.350	0.671	0.218	0.140	0.032	0.078	0.43	29600006
5/32"	C-5	0.400	0.796	0.218	0.171	0.032	0.109	0.60	29600010
3/16"	C-6	0.500	1.000	0.312	0.203	0.032	0.171	0.98	29600012
1/4"	C-8	0.700	1.406	0.406	0.265	0.032	0.171	1.50	29600016
5/16"	C-10	0.900	1.796	0.437	0.328	0.040	0.218	3.50	29600020
3/8"	C-12	1.000	2.000	0.625	0.390	0.060	0.265	8.50	29600024



WARNING

Wire rope thimbles do not have an established load rating and are meant to serve as rope protection only.

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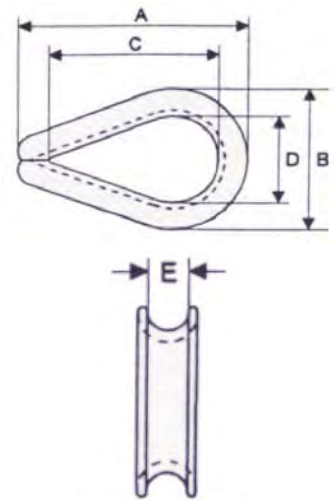


Heavy Duty Wire Rope Thimbles

Made from cold rolled steel, for protection of rope eyes in demanding applications.



Size Inches	Dimension Inches					Weight (lbs pc)	Product Code
	A	B	C	D	E		
1/4"	2.22	1.49	1.65	0.89	0.32	0.06	29060016
5/16"	2.53	1.82	1.88	1.08	0.40	0.11	29060020
3/8"	2.89	2.06	2.11	1.14	0.53	0.21	29060024
7/16"	3.25	2.32	2.39	1.24	0.55	0.27	29060028
1/2"	3.63	2.70	2.86	1.47	0.60	0.51	29060032
9/16"	3.53	2.77	2.66	1.53	0.56	0.51	29060036
5/8"	4.26	3.07	3.33	1.75	0.76	0.69	29060040
3/4"	5.09	3.73	3.68	2.04	0.95	1.53	29060048
7/8"	5.66	4.05	4.32	2.19	1.09	1.87	29060056
1"	6.56	4.50	4.80	2.32	1.25	2.48	29060100
1-1/8"	7.00	5.53	5.17	2.99	1.50	3.32	29060108
1-1/4"	9.00	6.50	7.50	3.20	1.64	8.16	29060116
1-3/8-1-1/4"	9.00	6.75	7.50	3.30	1.90	10.40	29060124
1-3/4"	12.00	8.11	8.64	4.10	1.50	15.10	29060148
2"	15.30	9.90	11.90	6.03	2.00	21.70	29060200



Meeting the performance requirements of:
U.S. Fed. Specs FF-T-276B, Type III

WARNING Wire rope thimbles do not have an established load rating and are meant to serve as rope protection only.

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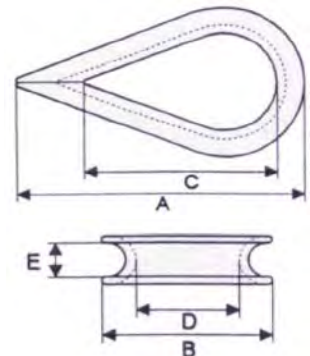


Standard Thimbles

For light duty applications with fibre or wire ropes to protect rope eyes against cuts and abrasions.



Size	Dimension Inches					Weight (lbs pc)	Product Code
	A	B	C	D	E		
1/8"	1.92	1.18	1.33	0.70	0.19	0.03	29050008
3/16"	1.92	1.13	1.38	0.72	0.24	0.03	29050012
1/4"	1.95	1.09	1.38	0.71	0.29	0.03	29050016
5/16"	2.11	1.22	1.52	0.81	0.36	0.04	29050020
3/8"	2.25	1.43	1.70	0.94	0.40	0.06	29050024
1/2"	2.70	1.78	1.85	1.18	0.61	0.10	29050032
5/8"	3.48	2.32	2.32	1.37	0.74	0.32	29050040
3/4"	3.72	2.70	2.58	1.61	0.81	0.48	29050048
7/8"	4.97	3.08	3.54	1.89	1.00	0.76	29050056
1"	5.57	3.72	4.13	2.52	1.07	0.92	29050100



Meeting the performance requirements of:
U.S. Fed. Specs FF-T-276B, Type II

Finish: Electroplated zinc coating.

WARNING Wire rope thimbles do not have an established load rating and are meant to serve as rope protection only.

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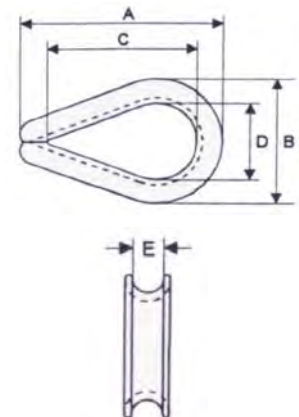
T 316 Heavy Duty Wire Rope Thimbles

Made from AISI 316 stainless rod.

Stainless Steel thimbles are used in corrosive environments on turnback eyes to extend sling life when used as rope protection.



Size Inches	Dimension Inches					Weight (lbs pc)	Product Code
	A	B	C	D	E		
3/16"	1.94	1.25	1.50	0.75	0.32	0.06	29610012
1/4"	2.22	1.49	1.65	0.89	0.32	0.06	29610016
5/16"	2.53	1.82	1.88	1.08	0.40	0.11	29610020
3/8"	2.89	2.06	2.11	1.14	0.53	0.21	29610024
7/16"	3.25	2.32	2.39	1.24	0.55	0.27	29610028
1/2"	3.63	2.70	2.86	1.47	0.60	0.51	29610032
9/16"	3.53	2.77	2.66	1.53	0.56	0.51	29610036
5/8"	4.26	3.07	3.33	1.75	0.76	0.69	29610040
3/4"	5.09	3.73	3.68	2.04	0.95	1.53	29610048
7/8"	5.66	4.05	4.32	2.19	1.09	1.87	29610056
1"	6.56	4.50	4.80	2.32	1.25	2.48	29610100



Meeting the performance requirements of:
U.S. Fed. Specs FF-T-276B, Type III

WARNING Wire rope thimbles do not have an established load rating and are meant to serve as rope protection only.

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BUILDERS HARDWARE

Tie Wire



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Black Annealed Tie Wire

Multiple uses from bundling, supporting and handling.

Popular applications are drop ceilings and reinforcement bar support for concrete.

Tying wire in gardens for plant support



Tie Wire								
Gauge	Length Ft.			Coils Carton		Weight lbs.		Product Code
16	340			16		3.125		41040016
16.5	400			16		3.125		410400165
9	170			10		10		41021009
12	336			10		10		41021012
14	580			10		10		41021014
16	949			10		10		41021016
9	850			5		50		41020009
12	1680			5		50		41020012
14	2900			5		50		41020014
16	4750			5		50		41020016

Packing: 3-1/8 lb coils-16 coils per carton, 48 cartons (768 coils) pallet
 10 lb. coils -10 coils banded
 50 lb coils-5 coils banded

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Galvanized Annealed Tie Wire

Multiple uses from bundling, supporting and handling.

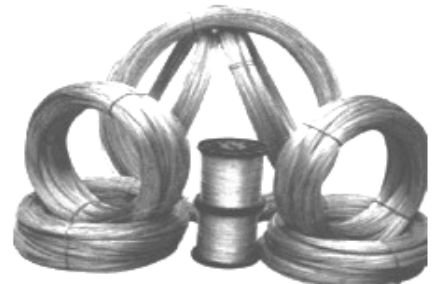
Popular applications are drop ceilings and reinforcement bar support for concrete.

Tying wire in gardens for plant support

Galvanized for added corrosion resistance.



Tie Wire					
Gauge	Length Ft.		Coils Banded	Weight lbs.	Product Code
9	170		10	10	41031009
12	336		10	10	41031012
14	580		10	10	41031014
16	949		10	10	41031016
9	850		5	50	41030009
12	1680		5	50	41030012
14	2900		5	50	41030014
16	4750		5	50	41030016



Packing: 10 lb. coils -10 coils banded
 50 lb coils-5 coils banded

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Green PVC Coated Annealed Tie Wire

Multiple uses from bundling, supporting and handling.

Popular applications are drop ceilings and reinforcement bar support for concrete.

Tying wire in gardens for plant support

PVC coated tie wire is used where good corrosion resistance is required.



Tie Wire							
Gauge	Length			Coils packet		Weight lbs.	Product Code
	Ft.						
16	170			12		2 1/2	41041016

Packing: 2-1/2 lb coils, 12 coils box.
48 boxes (576 coils) pallet

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Tie Wire Dispenser

Rugged, lightweight reel feeds pre-coiled wire smoothly, easily and quickly.

Front opening facilitates all types of spooled wire, use right or left handed

Saves time and reduces wasted wire.

Reel is smooth aluminum alloy. wear parts made of steel.

Has large, comfortable rewind knob, nylon bushing for smooth, trouble-free operation,

Easily removed cover plate permits quick, convenient reloading.



Dispenser			
	Pcs. Box	Weight lbs.	Product Code
	5	1.85	41049001





Tie Wire Twisting Tools

Tie Wire Twisting Tools

Spare your tools and fingers from the strain of wire-tying on rebar grids and ensuring your reinforcement stays in place during concrete pouring.

An invaluable fencing tool for tying back wire mesh to vertical and horizontal strands



Automatic Wire Twister

This tool is a must have accessory for wire ties.

Saves time and increases efficiency with this heavy-duty automatic wire twister. Galvanized steel construction makes this handy tool a necessity. Unique spring-return action requires little effort and eliminates tired wrists from manual twisting. To tie wires, simply insert hook of twister into both tie loops of wire, pull handle and tool automatically tightly twists wire. Rubber handle provides secure grip. Length is 12"



Twisting Tools

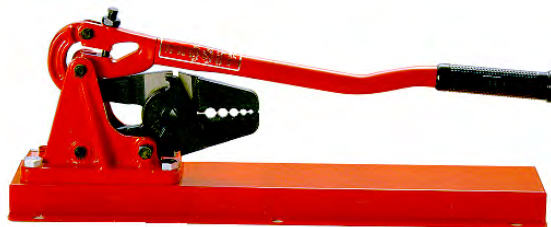
	Pcs.	Product Code
	Box	
Manual	50	41049000
Automatic	5	41049002

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TOOLS

TOOLS



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Bolt Cutter

Blade clearance adjustable with eccentric nut

Heavy duty blades with satin finish

Suitable for cutting mild steel only!



Bolt cutters		Length (inches)		Weight lbs/pc		Product Code
Capacity (inches)						
3/16		14.00		3.00		30040014
1/4		18.00		5.50		30040018
5/16		24.00		8.60		30040024
3/8		30.00		10.00		30040030
7/16		36.00		13.00		30040036
1/2		42.00		18.00		30040042

- * All purpose jaws, with center-cut blades.
- * High-carbon machined steel jaws, cuts rods, bolts, rivets, bars and chain.
- * Tubular steel handles with comfortable rubber handles for gripping firmly and safely.
- * Jaws are adjustable

**THESE TOOLS ARE SHARP AND SHOULD BE USED WITH CAUTION !
USING THEM BEYOND THE STATED CAPACITY OR ON OTHER PRODUCTS
WILL DAMAGE THE BLADES AND TOOL !**

Vanguard Steel Ltd._____



Tire Chain Pliers

Industrial grade chain pliers allow for easy replacement of cross chains.



Tire Chain Pliers		Length (inches)		Weight lbs/pc		Product Code
Model						
VGD-02		20-3/4		5.00		40040020
VGD-01		32-1/2		7.00		40040030

- * Heat Treated alloy steel jaws
- * Opens and closes tire chain cross links
- * Toggle joints turn 50 lb. hand pressure to 4000 lb. cutting pressure
- * Tubular steel handles with comfortable rubber handles for gripping firmly and safely.
- * Makes repairs quickly and easily

KEEP JAW BOLTS TIGHT AND JOINTS OILED AT ALL TIMES !

**THESE TOOLS ARE CAPABLE OF INFLICTING SERIOUS INJURY.
KEEP HANDS AND FEET AWAY FROM THE JAWS AND OTHER MOVING PARTS.**

Vanguard Steel Ltd._____



Chain Tensioner



Chain Tensioner Model		Weight lbs/pc	Product Code	
VSCT		12.00	38199001	

A Heavy Duty Tool with ratchet binder action for installation and tensioning of large tractor and skidder tire chains. Greatly simplifies and eases the proper installation and tensioning of snow chains.

**THESE TOOLS ARE CAPABLE OF INFLECTING SERIOUS INJURY.
KEEP HANDS AND FEET AWAY FROM THE JAWS AND OTHER MOVING PARTS.**

Vanguard Steel Ltd. _____



FELCO Cable Cutters

The tools for 'professionals'
cutting wire rope, steel rod or wire,
offering precision cutting capabilities



Cable Cutters					
Model	Application	Max. Diameter	Overall Length	Weight lbs/pc	Product Code
C-7 	Mild Steel Strand	1/4"	8	0.63	30010007
	High Tensile Steel Strand	3/16"			
	Hard Drawn Steel Spring Wire	3/32"			
	Mild Steel & Barbed Wire	3/16"			
C-9 	Wire Ropes & Strands	3/16"	13	1.63	30010009
	Mild Steel Strands	3/16"			
	High Tensile Strands, Steel Rods	11/32"			
C-12 	Wire Ropes & Strands	3/8"	19	3.00	30010012
	Steel Rods	5/16"			
	Tempered Spring Wire	5/32"			
C-16 * 	Wire Ropes & Strands	5/8"	23	5.00	30010016
	Steel Rods	7/16"			
	Tempered Spring Wire	3/16"			
C-108 	High Tensile Strands, Steel Rods	5/16"	22	4.50	30010108
	Tempered Spring Wire	1/4"			
C-112 	High Tensile Strands, Steel Rods	1/2"	28	8	30010112
	Tempered Spring Wire	5/16"			

C-108 & C-112 Cutters are featuring Felco's unique Reduction Gearing System, providing maximum force transmission by intensifying the users' energy.

- * Strong, lightweight aluminum handles and special alloy steel blades for outstanding performance.
- * Cutting capacity optimized by the shape of the handles.
- * Special rust protection for all parts of the cutters

**THESE TOOLS ARE SHARP AND SHOULD BE USED WITH CAUTION !
USING THEM BEYOND THE STATED CAPACITY OR ON OTHER PRODUCTS
WILL DAMAGE THE BLADES AND TOOL !**

Vanguard Steel Ltd.



Cable Cutter C-7

The tools for 'professionals'

Gives a clean cut without squashing thanks to the triangular cutting system / blades and centre
Blades and center bolt in high-quality hardened steel for exceptional performance.

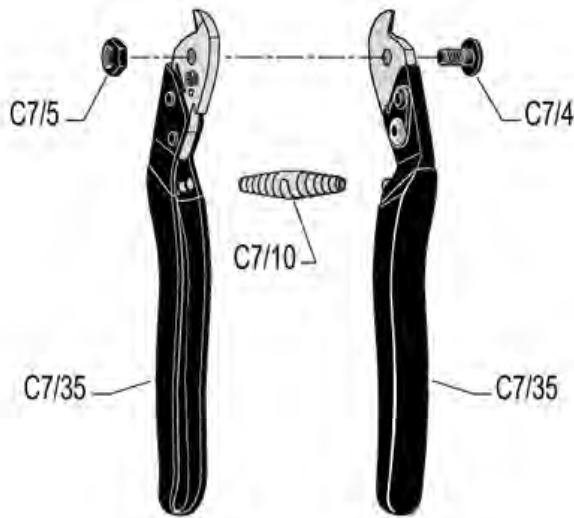
Thumb catch designed for one-handed operation

Pressed steel handles with non-slip grips



Model	Application	Max. Diameter	Overall Length	Weight lbs/pc	Product Code
	Mild Steel Strand	1/4"	8	0.63	30010007
	High Tensile Steel Strand	3/16"			
	Hard Drawn Steel Spring Wire	3/32"			
	Mild Steel & Barbed Wire	3/16"			

Spare Parts for Cable Cutters



C 7/4	Bolt	30020407
C 7/5	Counter Nut	30020907
C 7/10	Spring	30021907
C 7/35	Non Slip Handle	30020907

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USING THEM BEYOND THE STATED CAPACITY OR ON OTHER PRODUCTS
WILL DAMAGE THE BLADES AND TOOL !

Vanguard Steel Ltd. _____



Cable Cutter C-9

The tools for '**professionals**'

Gives a clean cut without squashing thanks to the triangular cutting system .

Strong, lightweight aluminum handles and special alloy steel blades for outstanding performance.

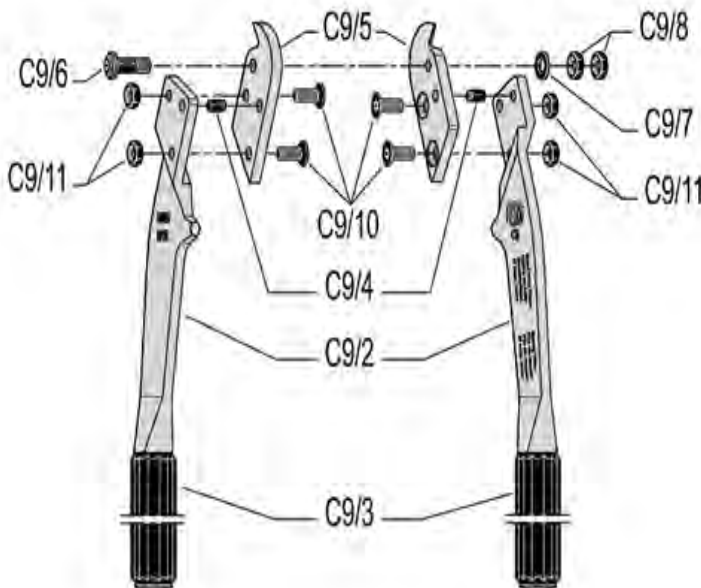
Cutting capacity optimized by the shape of the handles.

Special rust protection for all parts of the cutters



Model	Application	Max. Diameter	Overall Length	Weight lbs/pc		Product Code
 C-9	Wire Ropes & Strands	3/16"	13	1.63		30010009
	Mild Steel Strands	3/16"				
	High Tensile Strands, Steel Rods	11/32"				

Spare Parts for Cable Cutters



C9/2	Handle With Plastic & Pin	30020209
C9/3	Plastic for handle	30020309
C9/4	Pin	30020409
C9/5	Blade	30020509
C9/90	Center Bolt Repair Set	30023009
Cons. Of	C9/6; C9/7; C9/8	
C9/10	Hex Screw	30021009
C9/11	Counter Nut	30021109

**THESE TOOLS ARE SHARP AND SHOULD BE USED WITH CAUTION !
USING THEM BEYOND THE STATED CAPACITY OR ON OTHER PRODUCTS
WILL DAMAGE THE BLADES AND TOOL !**

Vanguard Steel Ltd.



Cable Cutter C-12

The tools for 'professionals'

Gives a clean cut without squashing thanks to the triangular cutting system .

Strong, lightweight aluminum handles and special alloy steel blades for outstanding performance.

Cutting capacity optimized by the shape of the handles.

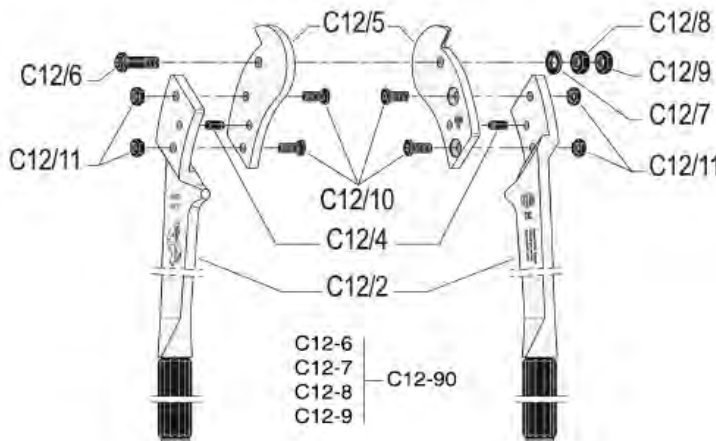
Special rust protection for all parts of the cutters



Model	Application	Max. Diameter	Overall Length	Weight lbs/pc		Product Code
 C-12	Wire Ropes & Strands	3/8"	19	3.00		30010012
	Steel Rods	5/16"				
	Tempered Spring Wire	5/32"				

Spare Parts for Cable Cutters

Felco C12



C12/2	Handle With Plastic & Pin	30020212
C12/3	Plastic for handle	30020312
C12/4	Pin	30020412
C12/5	Blade	30020512
C12/90	Center Bolt Repair Set	30023129
Cons. Of	C12/6; C12/7; C12/8; C12/9	
C12/10	Hex Screw	30021012
C12/11	Counter Nut	30021112

**THESE TOOLS ARE SHARP AND SHOULD BE USED WITH CAUTION !
USING THEM BEYOND THE STATED CAPACITY OR ON OTHER PRODUCTS
WILL DAMAGE THE BLADES AND TOOL !**

Vanguard Steel Ltd.



Cable Cutter C-16

The tools for 'professionals'

Gives a clean cut without squashing thanks to the triangular cutting system .

Strong, lightweight aluminum handles and special alloy steel blades for outstanding performance.

Cutting capacity optimized by the shape of the handles.

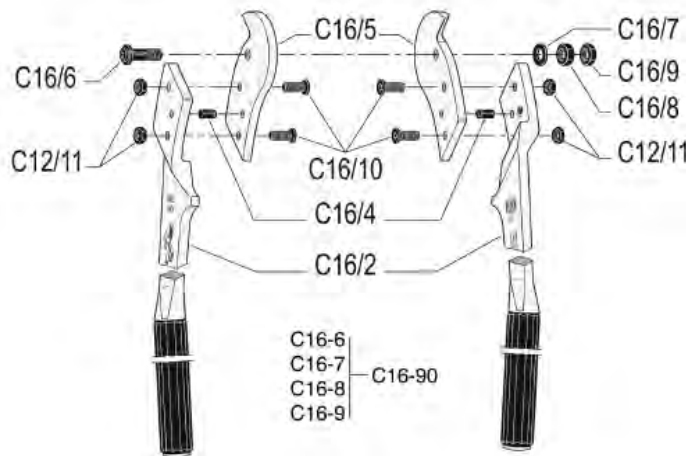
Special rust protection for all parts of the cutters



Model	Application	Max. Diameter	Overall Length	Weight lbs/pc		Product Code
 C-16 *	Wire Ropes & Strands	5/8"	23	5.00		30010016
	Steel Rods	7/16"				
	Tempered Spring Wire	3/16"				
	* Available for Electrical Cable C-16E					

Spare Parts for Cable Cutters

Felco C16



C16/2	Handle With Plastic & Pin	30020216
C16/3	Plastic for handle	30020316
C16/4	Pin	30020416
C16/5	Blade	30020516
C16/90	Center Bolt Repair Set	30023169
Cons. Of	C16/6; C16/7; C16/8; C16/9	
C16/10	Hex Screw	30021016
C12/11	Counter Nut	30021112

**THESE TOOLS ARE SHARP AND SHOULD BE USED WITH CAUTION !
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WILL DAMAGE THE BLADES AND TOOL !**

Vanguard Steel Ltd.



Cable Cutter C-108

The tools for 'professionals'

Gives a clean cut without squashing thanks to the triangular cutting system.

Strong, lightweight aluminum handles and special alloy steel blades for outstanding performance.

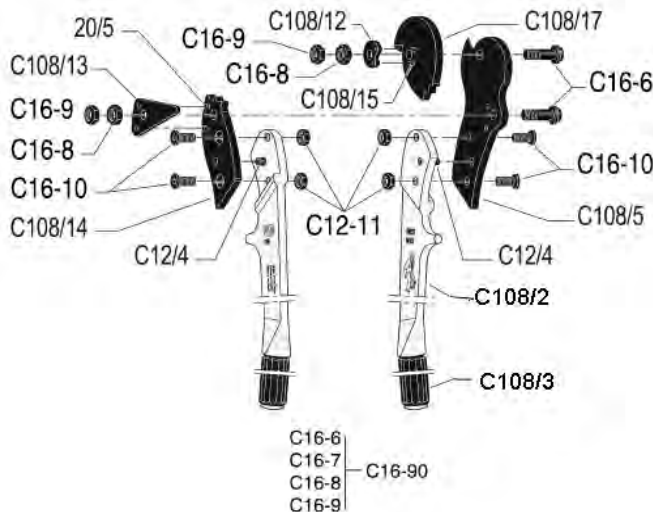
Cutting capacity optimized by the shape of the handles.

Special rust protection for all parts of the cutters



Model	Application	Max. Diameter	Overall Length	Weight lbs/pc	Product Code
 C-108	High Tensile Strands, Steel Rods	5/16"	22	4.50	30010108
	Tempered Spring Wire	1/4"			

Spare Parts for Cable Cutters



C108/2	Handle With Plastic & Pin	30020218
C108/3	Plastic for handle	30020318
C12/4	Pin	30020412
C108/5	Fixed Spare Blade	30020518
C16/90	Center Bolt Repair Set	30023169
Cons. Of	C16/6; C16/7; C16/8; C16/9	
C16/10	Hex Screw	30021016
C12/11	Counter nut	30021112
C108/12	Cam	30021218
C108/13	Finger	30021318
C108/14	Lever with 2 Pins	30021418
C108/15	Pin for Cam	30021518
C108/17	Mobile spare blade	30021718

**THESE TOOLS ARE SHARP AND SHOULD BE USED WITH CAUTION !
USING THEM BEYOND THE STATED CAPACITY OR ON OTHER PRODUCTS
WILL DAMAGE THE BLADES AND TOOL !**

Vanguard Steel Ltd.



Cable Cutter C-112

The tools for 'professionals'

Gives a clean cut without squashing thanks to the triangular cutting system .

Strong, lightweight aluminum handles and special alloy steel blades for outstanding performance.

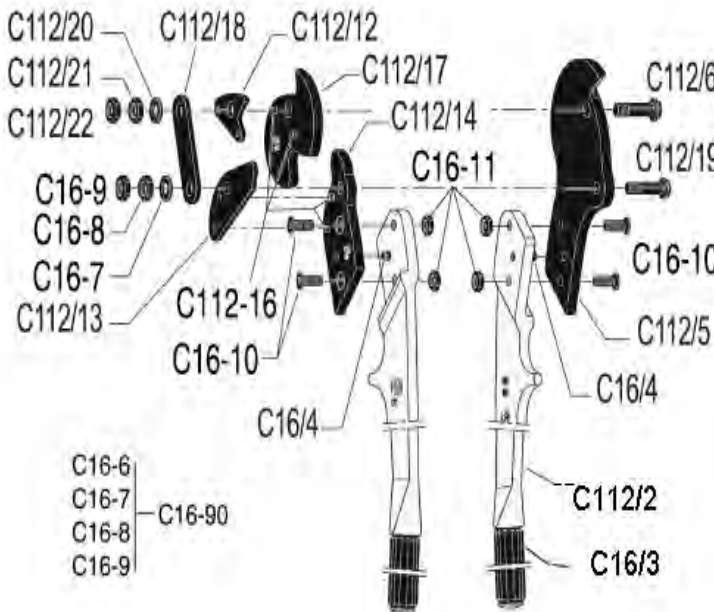
Cutting capacity optimized by the shape of the handles.

Special rust protection for all parts of the cutters



Model	Application	Max. Diameter	Overall Length	Weight lbs/pc		Product Code
 C-112	Hight Tensile Strands, Steel Rods	1/2"	28	8		30010112
	Tempered Spring Wire	5/16"				

Spare Parts for Cable Cutters



C112/2	Handle With Coating & Pin	30020220
C16/3	Plastic for handle	30020316
C16/4	Pin	30020416
C112/5	Fixed Spare Blade	30020520
C112/6	Center Bolt	30020620
C16/90	Center Bolt Repair Set	30023169
Cons. Of	C16/6; C16/7; C16/8; C16/9	
C16/10	Hexagon Screw	30021016
C112/12	Cam	30021220
C112/13	Finger	30021320
C112/14	Lever with 2 pins	30021420
C112/17	Mobile spare blade	30021720
C112/18	Connecting Rod	30021820
C112/19	Bolt for Lever	30021920
C112/20	Washer	30022020
C112/21	Nut	30022120
C112/22	Counter Nut	30022220

**THESE TOOLS ARE SHARP AND SHOULD BE USED WITH CAUTION !
USING THEM BEYOND THE STATED CAPACITY OR ON OTHER PRODUCTS
WILL DAMAGE THE BLADES AND TOOL !**

Vanguard Steel Ltd.



Spare Parts for Cable Cutters



Cable Cutters		Model	Product Code
		C-7	
	C 7/4	Bolt	30020407
	C 7/5	Counter Nut	30020907
	C 7/10	Spring	30021907
		C-9	
	C 9/2	Handle With Plastic & Pin	30020209
	C9/3	Plastic for handle	30020309
	C9/4	Pin	30020409
	C9/5	Blade	30020509
	C9/90	Center Bolt Repair Set	30023009
		C-12	
	C12/2	Handle With Plastic & Pin	30020212
	C12/3	Plastic for handle	30020312
	C12/4	Pin	30020412
	C12/5	Blade	30020512
	C12/90	Center Bolt Repair Set	30023129
		C-16	
	C16/2	Handle With Plastic & Pin	30020216
	C16/3	Plastic for handle	30020316
	C16/4	Pin	30020416
	C16/5	Blade	30020516
	C16/90	Center Bolt Repair Set	30023169



Spare Parts for Cable Cutters



Cable Cutters	Model	Product Code
---------------	-------	--------------

	C108		
	C108/2	Handle With Plastic & Pin	30020218
	C108/3	Plastic for handle	30020318
	C108/4	Pin	30020418
	C108/5	Fixed Spare Blade	30020518
	C108/6	Center Bolt	30020618
	C108/8	Nut	30020818
	C108/9	Counter nut	30020918
	C108/10	Hex Screw	30021018
	C108/11	Counter nut	30021118
	C108/12	Cam	30021218
	C108/13	Finger	30021318
	C108/14	Lever with 2 Pins	30021418
	C108/15	Pin for Cam	30021518
	C108/16	Pin for Finger	30021618
	C108/17	Mobile spare blade	30021718

	C-112		
	C112/2	Handle With Coating & Pin	30020220
	C112/4	Pin	30020420
	C112/5	Fixed Spare Blade	30020520
	C112/6	Center Bolt	30020620
	C112/7	Washer for Bolt	30020720
	C112/10	Hexagon Screw	30021020
	C112/12	Cam	30021220
	C112/13	Finger	30021320
	C112/14	Lever with 2 pins	30021420
	C112/16	Pin for finger and Cam	30021620
	C112/17	Mobile spare blade	30021720
	C112/18	Connecting Rod	30021820
	C112/19	Bolt for Lever	30021920
	C112/20	Washer	30022020
	C112/21	Nut	30022120
	C112/22	Counter Nut	30022220

Vanguard Steel Ltd. _____



Hand Swagers

Swagers are designed for crimping Copper and Aluminum Oval and Stop Sleeves



Swagers Model	Application	Overall Length	Weight lbs/pc	Product Code
HSC-350 Hand 	Non Adjustable Hand Swager with cable cutting feature. Capable of swaging 1/16, 3/32 and 1/8"	14"	3.00	30031006
HS-600 Hand 	Non Adjustable Hand Swager with cable cutting feature. Capable of swaging 1/16, 3/32, 1/8, 5/32 and 3/16"	25-1/2"	5.50	30031002
HS-600 Bench 	Non Adjustable Bench Swager with cable cutting feature. Capable of swaging 1/16, 3/32, 1/8, 5/32 and 3/16"	21-1/4"	11.00	30031001
HS-1000 	Non Adjustable Hand Swager Capable of swaging 1/4 and 5/16"	40"	17.00	30031010
1/16" Hand 	Non Adjustable Mini hand swager Capable of swaging 1/16"	22	4.50	30031004
0-Size Hand 	Non Adjustable Single hole swager Sizes available, 3/32, 1/8, 3/16, 1/4 and 5/16"			

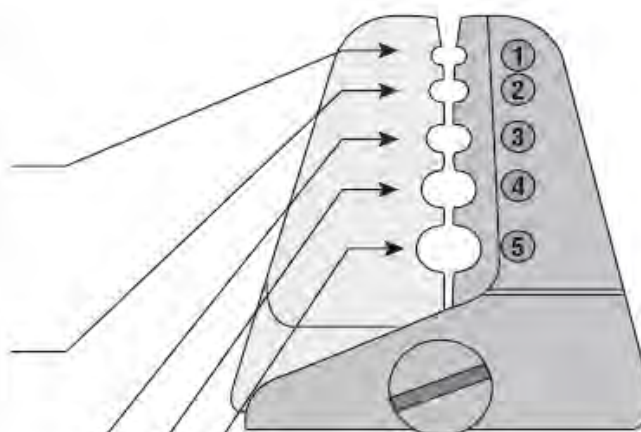
WARNING:

THE SWAGING OF COMPRESSION FITTINGS DIRECTLY OVER PLASTIC COVERED WIRE ROPE WILL RESULT IN SEVERELY REDUCED HOLDING POWER AND IS NOT RECOMMENDED PARTICULARLY IN APPLICATIONS WHERE HUMAN SAFETY, LIFTING OR FULL WIRE STRENGTH IS INVOLVED. WE RECOMMEND REMOVING SUFFICIENT PLASTIC JACKET AND SWAGING THE PROPER SIZE SLEEVES DIRECTLY ON THE BARE WIRE.

Vanguard Steel Ltd. _____

Swaging Instructions

Crimps	Cable Size	Position
1	$\frac{1}{16}$	1
1	$\frac{5}{64}$	
2	$\frac{3}{32}$	2
2	$\frac{7}{64}$	
3	$\frac{1}{8}$	3
3	$\frac{5}{32}$	4
3	$\frac{3}{16}$	5

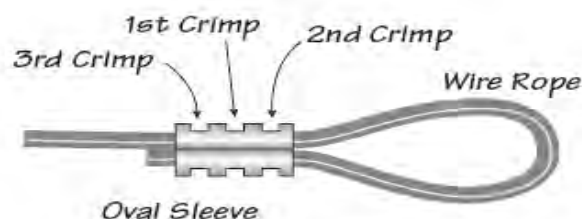
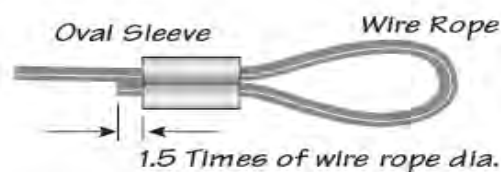


Correct



Incorrect

1. Cut cable to the required length and lace the cable through the sleeve so that the end will protrude after crimping.
2. Properly insert sleeve into the correct cavity and line up the sleeve between the swager jaws with the long axis crosswise to the jaws.
3. Swage each sleeve the correct number of times following the swage sequence shown. Close lever handles completely until the swager snaps shut indicating complete closure.
4. Lap splice can be made by 2 oval sleeves. Keep a short space between the sleeves.



Swaging is accomplished on bare wire rope. If plastic wire rope is used, remove plastic coating as required. Properly swaged oval sleeves will develop the published nominal breaking strength of the cable on 3 x 7; 7 x 7; and 7 x 19 constructions. Sleeves used on other constructions will **not** hold to the nominal published breaking strength.



TURNBUCKLES

TURNBUCKLES



Vanguard Steel Ltd



www.vanguardsteelvancouver.com
www.vanguardsteel.com



TURNBUCKLES

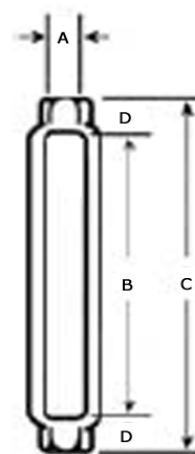
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Meets the requirements of
US Fed. Spec. FF-T-791B Type 1, Form 1
(open body)



Turnbuckle Bodies		Dimensions in inches		WLL	Weight lbs/pc	Product Code
Size						
A x B		C	D	Lbs		
3/8 x 6"		7.13	0.56	1,200	0.30	29271024
1/2 x 6"		7.50	0.75	2,200	0.60	29271032
5/8 x 6"		7.88	0.94	3,500	1.00	29271040
3/4 x 6"		8.25	1.13	5,200	1.20	29271048
7/8 x 6"		8.63	1.31	7,200	1.80	29271056
1 x 6"		9.00	1.50	10,000	2.50	29271100



Forged Carbon Steel
Self Coloured/Galvanized

Design Factor	Proof Load	2.5 : 1
	Ultimate Load	5 : 1

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
Turnbuckles are designed for straight (in-line) pulls only!
Do not re-use turnbuckles showing signs of deformation or damaged threads!

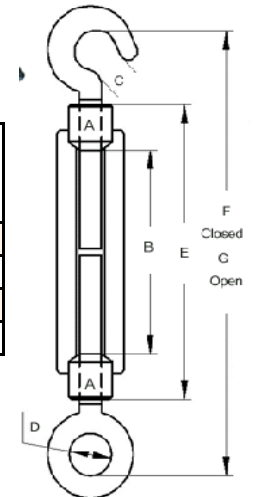


Commercial Grade Hook & Eye Turnbuckle

A robust and economical turnbuckle
for a variety of uses



Commercial Grade							WLL lbs.	Weight lbs/pc	Product Code
Size	Dimension inches								
A x B	C	D	E	F	G				
1/4 x 4	0.775	0.386	3.722	5.710	8.860	220	0.35	29985100	
5/16 x 5	0.995	0.431	4.557	7.280	11.020	441	0.53	29985125	
3/8 x 6	1.117	0.469	5.062	8.270	12.800	661	0.80	29985150	
1/2 x 7-7/8	1.437	0.552	7.500	10.830	16.930	1,102	1.41	29985200	



Forged Carbon Steel Body
Hot Dipped Galvanized
Thread M6-1

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
NEVER USE COMMERCIAL GRADE TURNBUCKLES FOR
OVERHEAD LIFTING!
Turnbuckles are designed for straight (in-line) pulls only!
Do not re-use turnbuckles showing signs of deformation or
damaged threads!

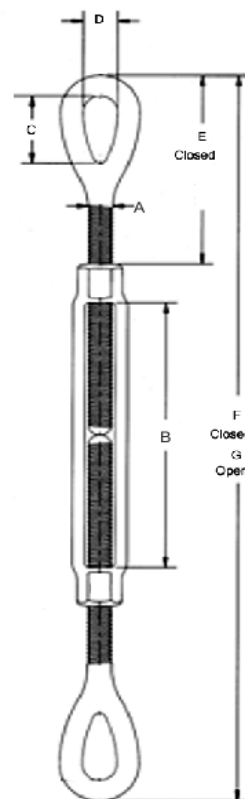
Vanguard Steel Ltd. _____



Meets the requirements of
US Fed. Spec. FF-T-791B Type 1, Form 1
(open body)



E & E Turnbuckles							WLL lbs.	Weight lbs/pc	Product Code
Size		Dimension inches							
A	x B	C	D	E	F	G			
3/8	x 6	1.12	0.53	2.52	11-7/8	18-1/8	1,200	0.75	292010241
1/2	x 6	1.44	0.72	3.23	13-5/16	20-15/16	2,200	1.50	292010321
1/2	x 9	1.44	0.72	3.23	16-5/16	26-15/16	2,200	1.75	292020321
1/2	x 12	1.44	0.72	3.23	19-5/16	32-15/16	2,200	2.18	292030321
5/8	x 6	1.75	0.88	3.90	15-1/2	22-15/16	3,500	2.63	292010401
5/8	x 9	1.75	0.88	3.90	18-1/2	28-15/16	3,500	3.00	292020401
5/8	x 12	1.75	0.88	3.90	21-1/2	34-15/16	3,500	3.25	292030401
3/4	x 6	2.09	1.00	4.69	17	25-1/8	5,200	3.75	292010481
3/4	x 9	2.09	1.00	4.69	20	30-1/8	5,200	4.50	292020481
3/4	x 12	2.09	1.00	4.69	23	37-1/8	5,200	5.75	292030481
3/4	x 18	2.09	1.00	4.69	29	49-1/8	5,200	7.00	292040481
7/8	x 12	2.38	1.25	5.10	24-5/8	38-9/16	7,200	8.30	292030561
7/8	x 18	2.38	1.25	5.10	30-5/8	50-9/16	7,200	10.25	292040561
1	x 12	3	1.44	6.36	26-5/8	41-15/16	10,000	11.25	292031001
1	x 18	3	1.44	6.36	32-5/8	53-3/4	10,000	14.00	292041001
1	x 24	3	1.44	6.36	38-5/8	65-3/4	10,000	17.00	292051001
1-1/4	x 12	3.56	1.81	7.72	29-7/8	45-1/16	15,200	19.00	292031161
1-1/4	x 18	3.56	1.81	7.72	35-7/8	57-1/16	15,200	24.10	292041161
1-1/2	x 12	4.06	2.12	8.62	32-3/8	48.00	21,400	27.00	292031321
1-1/2	x 18	4.06	2.12	8.62	38-3/8	60.00	21,400	31.20	292041321
1-1/2	x 24	4.06	2.12	8.62	44-3/8	72.00	21,400	37.50	292051321
2	x 24	5.75	2.52	13.09	51-3/4	79-3/16	37,000	85.25	292052001



Forged Carbon Steel
Hot Dipped Galvanized

Design Factor :	Proof Load	2.5 : 1
	Ultimate Load	5 : 1

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
Turnbuckles are designed for straight (in-line) pulls only!
Do not re-use turnbuckles showing signs of deformation or damaged threads!

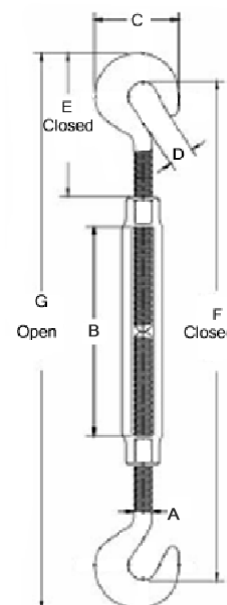
Turnbuckles 3



Meets the requirements of
US Fed. Spec. FF-T-791B Type 1, Form 1
(open body)



E & E Turnbuckles							WLL lbs.	Weight lbs/pc	Product Code
Size		Dimension inches							
A	x B	C	D	E	F	G			
3/8	x 6	1.77	0.56	2.28	10-1/2	17-3/4	1,000	0.75	292310241
1/2	x 6	2.28	0.66	2.84	11-13/16	20-3/8	1,500	1.50	292310321
1/2	x 9	2.28	0.66	2.84	14-13/16	26-3/8	1,500	1.75	292320321
1/2	x 12	2.28	0.66	2.84	17-13/16	32-3/8	1,500	2.18	292330321
5/8	x 6	2.81	0.84	3.53	13-1/4	22-1/2	2,250	2.63	292310401
5/8	x 9	2.81	0.84	3.53	15-1/4	28-1/2	2,250	3.00	292320401
5/8	x 12	2.81	0.84	3.53	19-1/4	34-1/2	2,250	3.25	292330401
3/4	x 6	3.33	0.97	4.31	14-7/8	24-7/8	3,000	3.75	292310481
3/4	x 9	3.33	0.97	4.31	17-7/8	29-7/8	3,000	4.50	292320481
3/4	x 12	3.33	0.97	4.31	20-7/8	36-7/8	3,000	5.75	292330481
3/4	x 18	3.33	0.97	4.31	26-7/8	48-7/8	3,000	7.00	292340481
7/8	x 12	3.78	1.13	5.00	22-1/4	38-3/4	4,000	8.30	292330561
7/8	x 18	3.78	1.13	5.00	28-1/4	50-3/4	4,000	10.25	292340561
1	x 12	4.25	1.25	5.69	23-5/8	40-5/8	5,000	11.25	292331001



Design Factor : Proof Load 2.5 : 1
 Ultimate Load 5 : 1

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
Turnbuckles are designed for straight (in-line) pulls only!
Do not re-use turnbuckles showing signs of deformation or damaged threads!

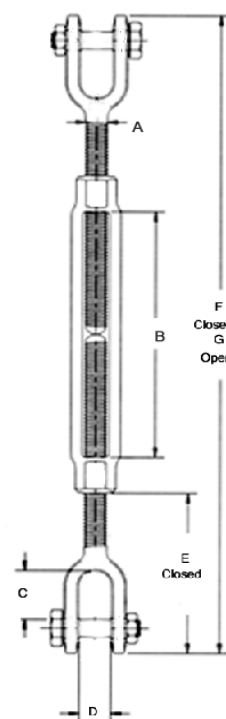
Vanguard Steel Ltd._____



Meets the requirements of
US Fed. Spec. FF-T-791B Type 1, Form 1
(open body)



J & J Turnbuckles							WLL lbs.	Weight lbs/pc	Product Code
Size		Dimension inches							
A	x B	C	D	E	F	G			
3/8	x 6	0.88	0.50	2.11	11-3/8	17-3/8	1,200	0.75	292510241
1/2	x 6	1.06	0.63	2.75	13	20	2,200	1.50	292510321
1/2	x 9	1.06	0.63	2.75	16	26	2,200	1.75	292520321
1/2	x 12	1.06	0.63	2.75	19	32	2,200	2.18	292530321
5/8	x 6	1.31	0.75	3.50	14-7/8	22-1/8	3,500	2.63	292510401
5/8	x 9	1.31	0.75	3.50	17-7/8	28-1/8	3,500	3.00	292520401
5/8	x 12	1.31	0.75	3.50	20-7/8	34-1/8	3,500	3.25	292530401
3/4	x 6	1.50	0.94	4.17	16-9/16	24-3/32	5,200	3.75	292510481
3/4	x 9	1.50	0.94	4.17	29-9/16	30-3/32	5,200	4.50	292520481
3/4	x 12	1.50	0.94	4.17	22-9/16	36-3/32	5,200	5.75	292530481
3/4	x 18	1.50	0.94	4.17	28-9/16	48-3/32	5,200	7.00	292540481
7/8	x 12	1.75	1.13	4.85	24-1/2	38-1/16	7,200	8.30	292530561
7/8	x 18	1.75	1.13	4.85	30-1/2	50-1/16	7,200	10.25	292540561
1	x 12	2.06	1.19	5.54	26-1/16	40-1/16	10,000	11.25	292531001
1	x 18	2.06	1.19	5.54	32-1/16	52-1/16	10,000	14.00	292541001
1	x 24	2.06	1.19	5.54	38-1/16	64-1/16	10,000	17.00	292551001
1-1/4	x 12	2.81	1.75	7.21	29-9/16	44-3/32	15,200	19.00	292531161
1-1/4	x 18	2.81	1.75	7.21	35-9/16	56-3/32	15,200	24.10	292541161
1-1/2	x 12	2.81	2.06	7.87	31-1/2	46-1/2	21,400	27.00	292531321
1-1/2	x 18	2.81	2.06	7.87	37-1/2	58-1/2	21,400	31.20	292541321
1-1/2	x 24	2.81	2.06	7.87	43-1/2	70-1/2	21,400	37.50	292551321
2	x 24	3.75	2.50	11.86	52-3/4	76-3/4	37,000	85.25	292552001



Forged Carbon Steel
Hot Dipped Galvanized

Design Factor :	Proof Load	2.5 : 1
	Ultimate Load	5 : 1

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
Turnbuckles are designed for straight (in-line) pulls only!
Do not re-use turnbuckles showing signs of deformation or damaged threads!

Turnbuckles 5

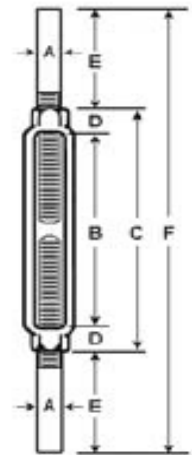


Forged Stub End Turnbuckles

Meets the requirements of
US Fed. Spec. FF-T-791B Type 1, Form 1
(open body)



Turnbuckle Bodies						WLL Lbs	Weight lbs/pc	Product Code
Size	Dimensions in inches							
A x B	C	D	E	F				
3/8 x 6"	7.13	0.56	4.44	16.00	1,200	0.70	29261024	
1/2 x 6"	7.50	0.75	4.25	16.00	2,200	1.40	29261032	
5/8 x 6"	7.88	0.94	4.06	16.00	3,500	2.00	29261040	
3/4 x 6"	8.25	1.13	4.38	17.00	5,200	3.25	29261048	
7/8 x 6"	8.63	1.31	4.69	18.00	7,200	4.50	29261056	
1 x 6"	9.00	1.50	5.00	19.00	10,000	6.30	29261100	



Forged Carbon Steel
Self Coloured/Galvanized
Design Factor : Proof Load 2.5 : 1
Ultimate Load 5 : 1

WARNING: NEVER EXCEED WORKING LOAD LIMITS !
Turnbuckles are designed for straight (in-line) pulls only!
Do not re-use turnbuckles showing signs of deformation or
damaged threads!

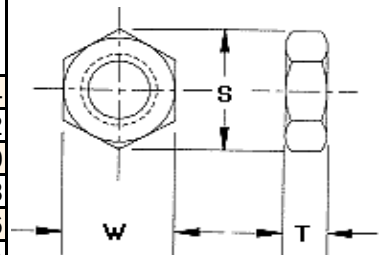


Lock Nuts

Lock nuts, also referred to as jam nuts, are typically $\frac{2}{3}$ of the thickness of its respective hex nut series counterpart. Locknuts are tightened against the turnbuckle body to ensure that the turnbuckle does not loosen under tension.



Turnbuckle		Dimensions in inches			Thread Diameter	Weight lbs/pair	Product Code
Size							
3/8"		W	S	T	3/8"	0.02	29272024
1/2"		0.56	0.64	0.22	1/2"	0.06	29272032
5/8"		0.75	0.86	0.31	5/8"	0.11	29272040
3/4"		0.94	1.06	0.38	3/4"	0.15	29272048
7/8"		1.13	1.26	0.42	7/8"	0.22	29272056
1"		1.31	1.50	0.48	1"	0.40	29272100
1-1/4"		1.50	1.69	0.55	1-1/4"	0.79	29272016



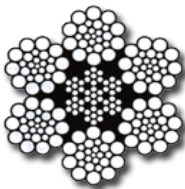
Supplied in pairs:

- 1 right hand painted Orange
- 1 left hand painted Yellow

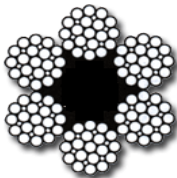
Do not over tighten locknuts during installation.

WARNING Lock Nuts do not have an established load rating and are meant to serve as a locking device only.

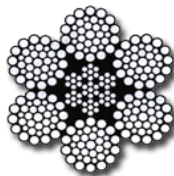
WIRE ROPE



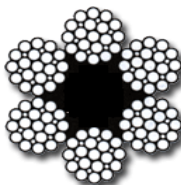
6 x 26 IWRC



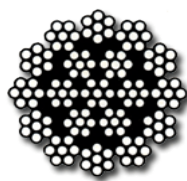
6 x 19 FC



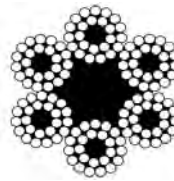
6 x 36 IWRC



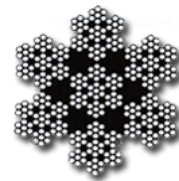
6 x 36 FC



19 x 7 IWRC



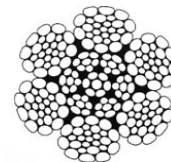
6 x 24 FC



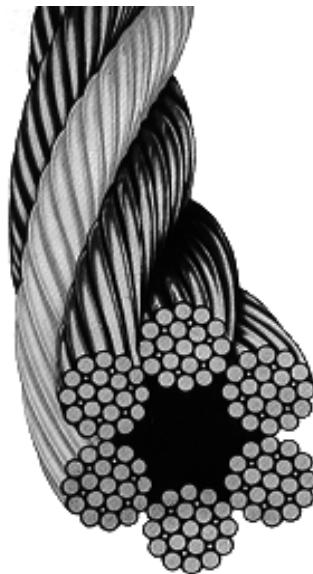
7 x 7 x 7



1 x 7



Swaged





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Wire Rope Cores

The core forms the heart of the rope and is the component around which the main strands are laid. The core supports the strand and is intended to keep them from jamming against or contacting each other under normal loads and flex. The most popular core constructions are the following:

Fiber Core (FC):

These cores can be made from natural or synthetic fibers. The majority of Vanguard's Fiber Core ropes feature a Polypropylene Core (PPC), as they are less susceptible to compacting (especially under moist conditions) and are impervious to many acids

Independent Wire Rope Core (IWRC):

IWRC ropes are used in applications requiring maximum strength, resistance to crushing and all applications for which fiber core ropes are not suitable (i.e. excessive heat of 250° F or greater).

Strand Core (SC):

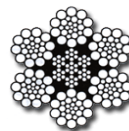
This type of core would only be chosen for applications where 'stiffness' of the rope is not a drawback but is, in fact, desirable.



Fibre core



Strand Core



Independent
Wire rope core

To protect against friction and corrosion, proper lubrication of individual wires and strands plays an important role in the production of wire rope. Additional field lubrication may be required if the ropes are subjected to heavy usage or lengthy storage. The type of lubrication depends on the intended usage of the rope:

Type A-1 & A-2: Vaseline based lubricant, for light and medium duty applications

Type B: Petroleum based lubricant, for more severe applications (i.e. construction)

Type C: Asphalt based lubricant, often specified for non-rotating ropes

For additional protection against premature corrosion, the individual wires of an uncoated rope (generally referred to as 'bright' or 'black') are hot dip galvanized at finished size. This will, however, reduce the breaking strength of the rope by approximately 10 % from a comparable bright rope.

Where wire ropes are subject to severe corrosive elements such as salt water, various acids, etc., stainless steel ropes may have to be considered.



Wire Rope Lay

The term 'rope lay' signifies the direction of rotation of the wires and the strands in the rope.

Rotation is either:

Right Lay - Clockwise, or
Left Lay - Counter-clockwise



Right Lang Lay (RLL)



Left Lang Lay (LLL)

Regular Lay :

Wires in strands are laid in one direction, while the strands in the rope are laid in the opposite direction. This results in wire crown running approximately parallel to the longitudinal axis of the rope. These ropes are stable, have good resistance to kinking and twisting and are easy to handle. They are also able to withstand a considerable amount of 'crushing' and distortion due to short length of exposed wires



Right Lay Regular Lay (RRL)



Left Lay Regular Lay (LRL)

Lang Lay:

Wires are laid in the same direction as the strands of the rope, and in an angle to the rope axis. With the outer wires presenting greater wearing surfaces, these ropes have greater resistance to abrasion than regular lay ropes. They are also more flexible ; possess greater fatigue resistance. Lang Lay ropes should have both ends permanently fixed to prevent untwisting. They are not recommended for use on single part hoist-lines, nor should they be used with swivel end terminals.

Other Consideration :

Stretch:

There are two types of stretch that occur in wire ropes:

Constructional Stretch:

This is a permanent elongation that takes place due to a slight lengthening of the rope lay, compression of the core and adjustment of the wires and strands to the load. Constructional stretch varies with the severity of the operation and generally occurs during the first weeks of operation. It increases the length of the rope by approximately. $1/2 f_s$ for fiber core ropes and $1/4 f_s$ for steel core ropes.

Elastic Stretch:

This is a recoverable elongation similar to the stretch in a rubber cord. If the load is kept within the elastic limit of the rope, the theory of elastic materials will apply.

Shifting Points of Wear:

Wear and fatigue usually take place at certain definite points along a rope. Removing short lengths from the drum end of the rope shifts these wear points and exposes relatively unworn sections of the rope to the harder working areas. To take advantage of this method of increasing service life, it is obviously necessary to initially order a slightly longer rope length than required.

Turning Rope End for End:

On many installations, destructive forces are more severe along one half of the rope than the other. By turning the rope end for end, it is possible to increase its service life.

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Measuring Wire Rope:

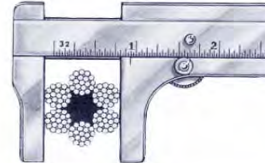
The diameter of a wire rope is the diameter of the circle which encloses all the wires. When measuring wire rope, it is important to take the greatest distance of the outer limits of the 'crowns' of two opposite strands.

A measurement across the valleys will result in incorrect (lower) readings.

Correct:



Incorrect:



Rope Constructions:

Small Diameter Cables:

Ranging in diameters up to 3/8", the construction, material and finish of these cables depends on their ultimate use:

- 1) **Commercial quality cables (often referred to as aircraft cables but not for use in aircraft!)**
- 2) **Control cables (used in the automotive industry)**
- 3) **Conveyor belt cables**

Engineering & General Purpose Wire Ropes

The construction of wire ropes and strands covered under this heading varies within specific Classifications and will depend on the desired performance features, such as flexibility, resistance to abrasion, resistance to rotation, etc.:

1 x 7 Classification (Guy Strand)

6 x 7 Classification

Used where ropes are dragged over the ground or over rollers and where resistance to abrasion is an important factor. The large outer wires will withstand a great deal of wear at the expense of flexibility.

6 x 19 Classification

Constructions falling under this classification are the most widely used throughout all industries, as they feature a good balance between abrasion resistance and flexibility.

6 x 37 Classification

Increasing the number of wires while reducing the wire diameter results in greater flexibility but diminishes abrasion resistance

19 x 7 Classification

Due to their rotation resistance characteristics, ropes falling under this classification are being used for many hoisting applications, but failure to easily detect damage to the inner core is among the reasons that usage has declined in favour of Specialty Ropes.

8 x 19 Classification

Reverse bends and small sheaves may render 8 strand ropes a better choice than 19 x 7 or other rope constructions. Specialty Ropes

For applications where performance, down-time and/or safety considerations outweigh a rope's cost of acquisition, a wide range of specialty ropes has been developed. Proper selection, handling and installation of such ropes is essential in maximizing results.

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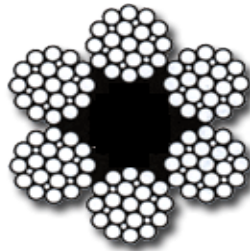


Ungalvanized 6 x 19 Class FC

A general purpose wire rope.

Most flexible rope in classification; best balance of abrasion and fatigue resistance

They give excellent service with sheaves and drums of moderate size. 6 x 19 classification ropes contain 6 strands with 15 through 26 wires per strand, no more than 12 of which are outside wires.



Ungalv. Wire Rope	Construction IPS Grade	B/S Tons	Product Code	Construction EIPS Grade	B/S Tons	Product Code	Weight 100 ft
Size	(2000 lbs)			(2000 lbs)			
1/4"	6 x 26 FC	2.74	25300016	6 x 26 FC	3.02	25310016	10.50
5/16"	6 x 26 FC	4.26	25300020	6 x 26 FC	4.69	25310020	16.40
3/8"	6 x 26 FC	6.10	25300024	6 x 26 FC	6.71	25310024	23.60
7/16"	6 x 26 FC	8.27	25300028	6 x 26 FC	9.09	25310028	32.00
1/2"	6 x 26 FC	10.70	25300032	6 x 26 FC	11.80	25310032	42.00
9/16"	6 x 26 FC	13.50	25300036	6 x 26 FC	14.90	25310036	53.00
5/8"	6 x 26 FC	16.70	25300040	6 x 26 FC	18.30	25310040	66.00
3/4"	6 x 26 FC	23.80	25300048	6 x 26 FC	26.20	25310048	95.00
7/8"	6 x 26 FC	32.20	25300056	6 x 26 FC	35.40	25310056	129.00
1"	6 x 26 FC	41.80	25300100	6 x 26 FC	46.00	25310100	168.00
1-1/8"	6 x 26 FC	52.60	25300108	6 x 26 FC	57.90	25310108	213.00
1-1/4"	6 x 26 FC	64.60	25300116	6 x 26 FC	71.00	25310116	263.00

Other sizes available upon request

APPLICATIONS

Most widely used of all wire rope - cranes hoists, skip hoists, haulage, mooring lines, conveyors, etc.

**Accepted strength is not less than 2.5 % below the nominal breaking strength listed
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.**

Prefix
2512xxxx 6 x 19 FC
2526xxxx 6 x 25 FC

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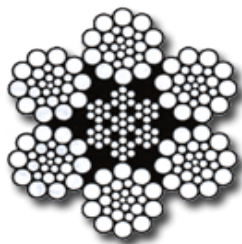
Ungalvanized 6 x 19 Class IWRC

A general purpose wire rope.

Most flexible rope in classification; best balance of abrasion and fatigue resistance

6 x 19 classification wire rope provides an excellent balance between fatigue and wear resistance.

They give excellent service with sheaves and drums of moderate size. 6 x 19 classification ropes contain 6 strands with 15 through 26 wires per strand, no more than 12 of which are outside wires.



Ungalv. Wire Rope Size	Construction IPS Grade	B/S Tons (2000 lbs)	Product Code	Construction EIPS Grade	B/S Tons (2000 lbs)	Product Code	Weight 100 ft
1/4"	6 x 26 IWRC	3.00	25800016	6 x 26 IWRC	3.40	25810016	11.00
5/16"	6 x 26 IWRC	4.40	25800020	6 x 26 IWRC	5.27	25810020	18.00
3/8"	6 x 26 IWRC	6.40	25800024	6 x 26 IWRC	7.55	25810024	25.00
7/16"	6 x 26 IWRC	8.60	25800028	6 x 26 IWRC	10.20	25810028	34.00
1/2"	6 x 26 IWRC	11.80	25800032	6 x 26 IWRC	13.30	25810032	44.00
9/16"	6 x 26 IWRC	14.30	25800036	6 x 26 IWRC	16.80	25810036	56.00
5/8"	6 x 26 IWRC	17.70	25800040	6 x 26 IWRC	20.60	25810040	69.00
3/4"	6 x 26 IWRC	25.50	25800048	6 x 26 IWRC	29.40	25810048	99.00
7/8"	6 x 26 IWRC	34.40	25800056	6 x 26 IWRC	39.80	25810056	135.00
1"	6 x 26 IWRC	44.80	25800100	6 x 26 IWRC	51.70	25810100	176.00
1-1/8"	6 x 26 IWRC	57.00	25800108	6 x 26 IWRC	65.00	25810108	223.00
1-1/4"	6 x 26 IWRC	70.40	25800116	6 x 26 IWRC	79.90	25810116	275.00

Other sizes and construction available upon request

APPLICATIONS

Boom hoists, logging and tubing lines; IWRC shown, fiber core available

**Accepted strength is not less than 2.5 % below the nominal breaking strength listed
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.**

Prefix:

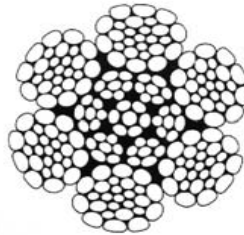
2563xxxx 6 x 19 IWRC
2566xxxx 6 x 19 IWRC S
2576xxxx 6 x 25 IWRC

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Ungalvanized Swaged IWRC

Developed to meet the demands of logging operations but can be adapted for other uses. Swaged ropes are produced by reducing the diameter of a regular round rope by compacting it. Swaging provides additional stability to rope shape and creates surface-to-surface contact between element wires. By packing more steel into a smaller diameter, the swaging process produces a superior strength to diameter ratio and breaking that is higher than traditional rope.



Ungalv. Wire Rope	Construction Swaged	B/S Tons	Product Code	Weight 100 ft	Construction Super Swaged	B/S Tons	Product Code	Weight 100 ft
Size				(2000 lbs)				
1/2"	6 x 26 IWRC	15.90	25990032	55	6 x 26 IWRC	17.40	25990033	61.00
9/16"	6 x 26 IWRC	19.30	25990036	71	6 x 26 IWRC	21.90	25990041	78.00
5/8"	6 x 26 IWRC	24.20	25990040	87	6 x 26 IWRC	27.00	25990045	96.50
3/4"	6 x 26 IWRC	34.90	25990048	125	6 x 26 IWRC	38.50	25990049	138.00
7/8"	6 x 26 IWRC	34.40	25990056	170	6 x 26 IWRC	52.00	25990058	187.00
1"	6 x 26 IWRC	62.00	25990100	222	6 x 26 IWRC	66.50	259901002	244.00
1-1/8"	6 x 26 IWRC	73.50	25990108	281	6 x 26 IWRC	79.50		309.00
1-1/4"	6 x 26 IWRC	90.00	25990116	347	6 x 26 IWRC	97.50		382.00

Other sizes and construction available upon request

APPLICATIONS

Boom hoists, logging operations but can be adapted for other uses; IWRC shown, fiber core available

Accepted strength is not less than 2.5 % below the nominal breaking strength listed
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

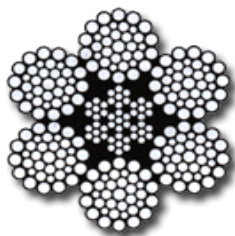
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Ungalvanized 6 x 36 Class IWRC

6 x 36 Classification Wire Ropes have a third layer of wires which make them more flexible, although less abrasion-resistant than ropes of the 6x19 class. Each strand contains numerous, comparatively small diameter wires which offer superior bending ability. As the number of wires in each strand increases, flexibility increases.

This classification covers ropes with 6 strands having 27 to 49 wires per strand.



Ungalv. Wire Rope Size	Construction IPS Grade	B/S Tons (2000 lbs)	Product Code	Construction EIPS Grade	B/S Tons (2000 lbs)	Product Code	Weight 100 ft
1/4"	6 x 36 IWRC	2.94	25900016	6 x 36 IWRC	3.40	25910016	11.60
5/16"	6 x 36 IWRC	4.58	25900020	6 x 36 IWRC	5.27	25910020	18.00
3/8"	6 x 36 IWRC	6.56	25900024	6 x 36 IWRC	7.55	25910024	26.00
7/16"	6 x 36 IWRC	8.89	25900028	6 x 36 IWRC	10.20	25910028	35.00
1/2"	6 x 36 IWRC	11.50	25900032	6 x 36 IWRC	13.30	25910032	46.00
9/16"	6 x 36 IWRC	14.50	25900036	6 x 36 IWRC	16.80	25910036	59.00
5/8"	6 x 36 IWRC	17.90	25900040	6 x 36 IWRC	20.60	25910040	72.00
3/4"	6 x 36 IWRC	25.60	25900048	6 x 36 IWRC	29.40	25910048	104.00
7/8"	6 x 36 IWRC	34.60	25900056	6 x 36 IWRC	39.80	25910056	142.00
1"	6 x 36 IWRC	44.90	25900100	6 x 36 IWRC	51.70	25910100	185.00
1-1/8"	6 x 36 IWRC	56.50	25900108	6 x 36 IWRC	65.00	25910108	234.00
1-1/4"	6 x 36 IWRC	69.40	25900116	6 x 36 IWRC	79.90	25910116	289.00

Other sizes and construction available upon request

APPLICATIONS

Overhead crane and mobile crane hoist ropes; winch lines; large diameter towing lines.

The ropes in this group have excellent flexibility, reasonable resistance to crushing, and are well adapted to high speed and multiple reeving applications.

Accepted strength is not less than 2.5 % below the nominal breaking strength listed
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

Vanguard Steel Ltd.



Ungalvanized 6 x 36 Class FC

6 x 36 Classification Wire Ropes have a third layer of wires which make them more flexible, although less abrasion-resistant than ropes of the 6x19 class. Each strand contains numerous, comparatively small diameter wires which offer superior bending ability. As the number of wires in each strand increases, flexibility increases.

This classification covers ropes with 6 strands having 27 to 49 wires per strand.



Ungalv. Wire Rope Size	Construction IPS Grade	B/S Tons (2000 lbs)	Product Code	Construction EIPS Grade	B/S Tons (2000 lbs)	Product Code	Weight 100 ft
1/4"	6 x 36 FC	2.74	25400016	6 x 36 FC	3.02		10.50
5/16"	6 x 36 FC	4.26	25400020	6 x 36 FC	4.69		16.40
3/8"	6 x 36 FC	6.10	25400024	6 x 36 FC	6.71		23.60
7/16"	6 x 36 FC	8.27	25400028	6 x 36 FC	9.09		32.00
1/2"	6 x 36 FC	10.70	25400032	6 x 36 FC	11.80		42.00
9/16"	6 x 36 FC	13.50	25400036	6 x 36 FC	14.90		53.00
5/8"	6 x 36 FC	16.70	25400040	6 x 36 FC	18.30		66.00
3/4"	6 x 36 FC	23.80	25400048	6 x 36 FC	26.20		95.00
7/8"	6 x 36 FC	32.20	25400056	6 x 36 FC	35.40		129.00
1"	6 x 36 FC	41.80	25400100	6 x 36 FC	46.00		168.00
1-1/8"	6 x 36 FC	52.60	25400108	6 x 36 FC	57.90		213.00
1-1/4"	6 x 36 FC	64.60	25400116	6 x 36 FC	71.00		263.00

Other sizes and construction available upon request

APPLICATIONS

Overhead crane and mobile crane hoist ropes; winch lines; large diameter towing lines.

The ropes in this group have excellent flexibility, reasonable resistance to crushing, and are well adapted to high speed and multiple reeving applications.

Accepted strength is not less than 2.5 % below the nominal breaking strength listed
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

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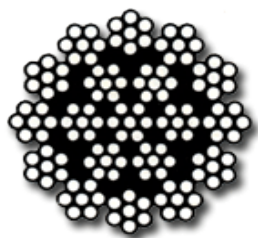


Ungalvanized 19 x 7 IWRC

The non-rotating charactericting is achived by two layers of strand, one having Right Lay, the other Left Lay.

This rope construction requires frequent inspection as damage to inner strands and wires cannot be easily detected.

Not recommended for multiple part lifting.



Ungalvanized Wire Rope	Construction EIPS Grade	B/S Tons	Product Code	Weight 100 ft
Size	(2000 lbs)			
1/4"	19 x 7 IWRC	2.70	25970016	10.50
5/16"	19 x 7 IWRC	4.30	25970020	16.40
3/8"	19 x 7 IWRC	6.10	25970024	23.60
7/16"	19 x 7 IWRC	8.33	25970028	32.00
1/2"	19 x 7 IWRC	10.50	25970032	42.00
9/16"	19 x 7 IWRC	13.30	25970036	53.00
5/8"	19 x 7 IWRC	16.00	25970040	66.00
3/4"	19 x 7 IWRC	23.50	25970048	95.00
7/8"	19 x 7 IWRC	31.80	25970056	129.00
1"	19 x 7 IWRC	41.60	25970100	168.00
1-1/8"	19 x 7 IWRC	52.30	25970116	213.00

APPLICATIONS

Rotation Resistant but NOT Non Rotating.

Hoisting ropes on derricks, boom cranes, shaft sinking hoists and freely suspended mine hoists, deck cranes and piling rigs.

Prefix:
2596xxx IPS

Accepted strength is not less than 2.5 % below the nominal breaking strength listed
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

Vanguard Steel Ltd.



Wireline Cable

The term wireline usually refers to a cabling technology used by operators of oil and gas wells to lower equipment or measurement devices into the well for the purposes of well intervention and reservoir evaluation

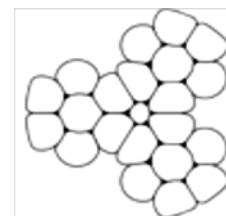
Swaged Wire Rope

A wire rope 3/16 in or 1/4 in (4.8 mm or 6.4 mm) in diameter; used to handle the inner tube of a wire-line core barrel.

The 3-strand compacted design provides resistance to rotation while also providing a high strength/weight ratio.

These 3-strand ropes are ideal for diamond drilling operations.

Ungalvanized Wire Rope	Construction Swaged	B/S lbs	Weight 100 ft	Product Code
Size				
3/16"	3 x 7 IWRC	5240	8.00	25990012
1/4"	3 x 7 IWRC	9240	16.00	25990016

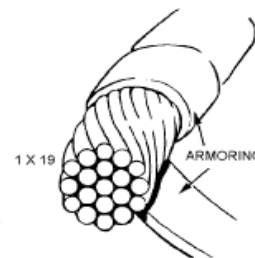
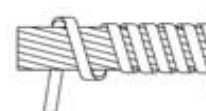


Armored Cable

Used for retrieving core samples

Armoring prevents fraying of cable in rough terrain

Outer Diameter	Inside Diameter	Construction	B/S lbs	Weight 100 ft	Product Code
11/16"	1/8"	1 x 19	4000	8	25991111



Accepted strength is not less than 2.5 % below the nominal breaking strength listed
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.



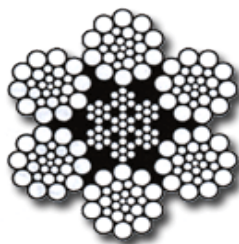
Galvanized 6 x 19 Class IWRC

A general purpose wire rope.

Most flexible rope in classification; best balance of abrasion and fatigue resistance

6 x 19 classification wire rope provides an excellent balance between fatigue and wear resistance.

They give excellent service with sheaves and drums of moderate size. 6 x 19 classification ropes contain 6 strands with 15 through 26 wires per strand, no more than 12 of which are outside wires.



Ungalvanized Wire Rope	Construction IPS Grade	B/S Tons	Product Code	Weight 100 ft
Size	(2000 lbs)			
1/4"	6 x 19 IWRC	3.00	26660016	11.00
5/16"	6 x 19 IWRC	4.40	26660020	18.00
3/8"	6 x 19 IWRC	6.40	26660024	25.00
7/16"	6 x 19 IWRC	8.00	26660028	34.00
1/2"	6 x 19 IWRC	10.30	26660032	44.00
5/8"	6 x 19 IWRC	16.10	26660040	69.00
3/4"	6 x 19 IWRC	23.00	26660048	99.00
7/8"	6 x 19 IWRC	31.10	26660056	135.00
1"	6 x 19 IWRC	40.40	26660100	176.00
1-1/8"	6 x 19 IWRC	50.90	26660108	223.00
1-1/4"	6 x 19 IWRC	62.50	26660116	275.00

Other sizes and construction available upon request

APPLICATIONS

Boom hoists, logging and tubing lines; IWRC shown, fiber core available

**Accepted strength is not less than 2.5 % below the nominal breaking strength listed
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.**

Prefix:

2663xxxx 6 x 19 IWRC
2676xxxx 6 x 25 IWRC
26806xxxx 6 x 26 IWRC

Vanguard Steel Ltd. _____

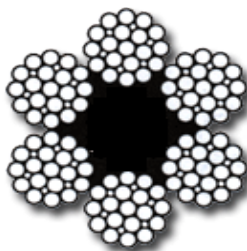


Galvanized 6 x 19 Class FC

A general purpose wire rope.

Most flexible rope in classification; best balance of abrasion and fatigue resistance

They give excellent service with sheaves and drums of moderate size. 6 x 19 classification ropes contain 6 strands with 15 through 26 wires per strand, no more than 12 of which are outside wires.



Ungalvanized Wire Rope	Construction IPS Grade	B/S Tons	Product Code	Weight 100 ft
Size	(2000 lbs)			
3/8"	6 x 19 FC	5.49	26120024	23.60
7/16"	6 x 19 FC	7.44	26120028	32.00
1/2"	6 x 19 FC	6.93	26120032	42.00
9/16"	6 x 19 FC	12.10	26120036	53.00
5/8"	6 x 19 FC	15.00	26120040	66.00
3/4"	6 x 19 FC	21.40	26120048	95.00
7/8"	6 x 19 FC	29.00	26120056	129.00
1"	6 x 19 FC	37.60	26120100	168.00
1-1/8"	6 x 19 FC	47.30	26120108	213.00
1-1/4"	6 x 19 FC	58.10	26120116	263.00

Other sizes available upon request

APPLICATIONS

Most widely used of all wire rope - cranes hoists, skip hoists, haulage, mooring lines, conveyors, etc.

**Accepted strength is not less than 2.5 % below the nominal breaking strength listed
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.**

Prefix

2512xxxx 6 x 19 FC

2526xxxx 6 x 25 FC

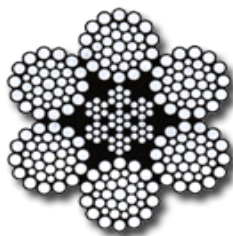
Vanguard Steel Ltd. _____



Galvanized 6 x 36 Class IWRC

6 x 36 Classification Wire Ropes have a third layer of wires which make them more flexible, although less abrasion-resistant than ropes of the 6x19 class. Each strand contains numerous, comparatively small diameter wires which offer superior bending ability. As the number of wires in each strand increases, flexibility increases.

This classification covers ropes with 6 strands having 27 to 49 wires per strand.



Ungalvanized Wire Rope	Construction EIPS Grade	B/S Tons	Weight 100 ft	Product Code
Size	(2000 lbs)			
1/4"	6 x 36 IWRC	3.06	11.60	26900016
5/16"	6 x 36 IWRC	4.74	18.00	26900020
3/8"	6 x 36 IWRC	6.80	26.00	26900024
7/16"	6 x 36 IWRC	9.18	35.00	26900028
1/2"	6 x 36 IWRC	11.97	46.00	26900032
9/16"	6 x 36 IWRC	15.12	59.00	26900036
5/8"	6 x 36 IWRC	18.54	72.00	26900040
3/4"	6 x 36 IWRC	26.46	104.00	26900048
7/8"	6 x 36 IWRC	35.82	142.00	26900056
1"	6 x 36 IWRC	46.53	185.00	26900100
1-1/8"	6 x 36 IWRC	58.50	234.00	26900108
1-1/4"	6 x 36 IWRC	71.90	289.00	26900116

Other sizes and construction available upon request

APPLICATIONS

Overhead crane and mobile crane hoist ropes; winch lines; large diameter towing lines.

The ropes in this group have excellent flexibility, reasonable resistance to crushing, and are well adapted to high speed and multiple reeving applications.

Accepted strength is not less than 2.5 % below the nominal breaking strength listed
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

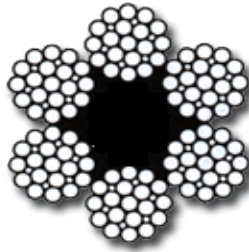
Vanguard Steel Ltd.



Galvanized 6 x 36 Class FC

6 x 36 Classification Wire Ropes have a third layer of wires which make them more flexible, although less abrasion-resistant than ropes of the 6x19 class. Each strand contains numerous, comparatively small diameter wires which offer superior bending ability. As the number of wires in each strand increases, flexibility increases.

This classification covers ropes with 6 strands having 27 to 49 wires per strand.



Ungalvanized Wire Rope	Construction IPS Grade	B/S Tons	Weight 100 ft	Product Code
Size	(2000 lbs)			
1/4"	6 x 36 FC	2.40	10.50	26400016
5/16"	6 x 36 FC	3.74	16.40	26400020
3/8"	6 x 36 FC	5.36	23.60	26400024
7/16"	6 x 36 FC	7.26	32.00	26400028
1/2"	6 x 36 FC	9.45	42.00	26400032
9/16"	6 x 36 FC	11.90	53.00	26400036
5/8"	6 x 36 FC	14.60	66.00	26400040
3/4"	6 x 36 FC	21.00	95.00	26400048
7/8"	6 x 36 FC	28.40	129.00	26400056
1"	6 x 36 FC	36.90	168.00	26400100
1-1/8"	6 x 36 FC	46.50	213.00	26400108
1-1/4"	6 x 36 FC	57.10	263.00	26400116

Other sizes and construction available upon request

APPLICATIONS

Overhead crane and mobile crane hoist ropes; winch lines; large diameter towing lines.

The ropes in this group have excellent flexibility, reasonable resistance to crushing, and are well adapted to high speed and multiple reeving applications.

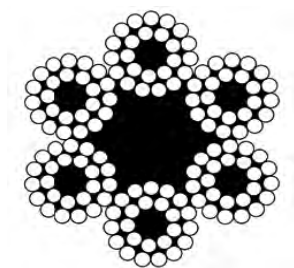
Accepted strength is not less than 2.5 % below the nominal breaking strength listed
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

Vanguard Steel Ltd. _____



Galvanized 6 x 24 FC

This 6-strand rope with seven fibre cores provides extreme flexibility, but low breaking strength.



Ungalvanized Wire Rope	Construction IPS Grade	B/S Tons	Product Code	Weight 100 ft
Size	(2000 lbs)			
3/8"	6 x 24 FC	4.77	26210024	20.00
1/2"	6 x 24 FC	8.40	26210032	35.00
9/16"	6 x 24 FC	10.60	26210036	44.00
5/8"	6 x 24 FC	13.00	26210040	54.00
3/4"	6 x 24 FC	18.60	26210048	78.00
7/8"	6 x 24 FC	25.20	26210056	106.00
1"	6 x 24 FC	33.90	26210100	138.00
1-1/8"	6 x 24 FC	42.20	26210108	175.00
1-1/4"	6 x 24 FC	52.20	26210116	216.00

Other sizes available upon request

APPLICATIONS

Used for towboat, goods net, timber floating, shipping loading and unloading, binding, fastening. Slings, Lashing and Fishing.

Accepted strength is not less than 2.5 % below the nominal breaking strength listed
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

Vanguard Steel Ltd.



Cable Laid IWRC Galvanized

An extremely flexible wire rope

Cable-laid rope consists of several constituent wire ropes that are helically laid or wound over a core into a single cable.

For example, a 7X7X7 cable-laid wire rope consists of seven (7x7) cables.



Galv. Wire Rope	Construction	B/S * lbs	Weight 100 ft	Product Code
Size				
5/16"	7 x 7 x 7 IWRC	10,700	14.00	36010020
3/8"	7 x 7 x 7 IWRC	11,400	21.00	36010024
7/16"	7 x 7 x 7 IWRC	18,000	30.00	36010028

* LISTED FOR COMPARISON ONLY

ACTUAL OPERATING LOADS MAY VARY, BUT SHOULD NEVER EXCEED RECOMMENDED DESIGN FACTOR OF 20% OF CATALOGUE BREAKING STRENGTH !

CABLE-LAID WIRE ROPE IS TO BE USED FOR MECHANICALLY SWAGED SLINGS ONLY.
DO NOT USE FOR HAND-SPLICED ASSEMBLIES OR GENERAL PURPOSE OPERATING ROPE.

Vanguard Steel Ltd. _____

Galvanized Grade 220 Guy Strand

Commonly used for guying purposes where flexibility is not important.

1x19 Extra High Strength Galvanized Strand is very stiff and cannot be spliced

Used as a messenger cable for guying high-performance communications cables and electrical conductors

Manufactured to CSA G12-92



Description		Galv. Guy Strand
Diameter		1"
Construction		1 x 19 IWRC
HTGS Wires after stranding		
Diameter	Standard	25.40 mm
	Minimum	25.27 mm
	Maximum	25.53 mm
Minimum ultimate tensile strength on 250 mm gauge length		
	Before Stranding N/mm ²	0.1511
	After Stranding N/mm ²	0.1448
% of Elongation on 250 mm Gauge length		4%
Minimum Mass of Zinc Coating g/m ²		305 g/m ²
Lay direction		
	6 + 1 wire layer	14x-RHL
	12 wire layer	13x-LHL
	18 wire layer	n/a
	Outmost layer	LHL
Min B/Sof Guy Wire		118,100 lbs.
Standard Weight of Guy Wire		207.3 lbs/100 ft.

* Minimum strand breaking load= A x T x E

- A =** Nominal metallic cross-sectional area of the strand in square inch
T = Tensile grade of the wire in pounds per square inch
E = Stranding efficiency factor
.90 for strands containing 19 or more wires.

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