



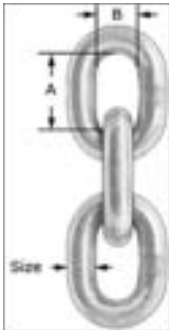
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# Grade 100 Alloy Lifting Chain

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				
<b>Full Drums</b>						
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 Blue Powder Coated  
 Elongation Min 20 %  
 Design Factor 4 : 1 In accordance with NACM Specifications

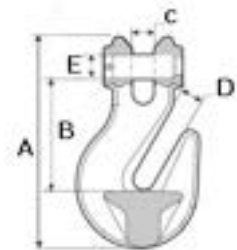
**WARNING: NEVER EXCEED WORKING LOAD LIMITS!  
 LOAD RATINGS ARE FOR CHAINS IN 'NEW CONDITION'!  
 INSPECT LIFTING CHAINS REGULARLY AND  
 REPLACE ALL COMPONENTS SHOWING SIGNS OF WEAR!**

## 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			Nominal Diameter Inches							
Code	Chain Size		A	B	C	D	E	WLL lbs.	Lbs. Pc	Product Code
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
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



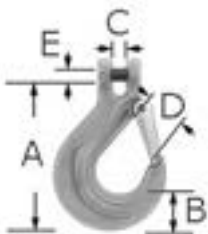
Cotter Pin	Product Code
9/32"	39506016
5/16"	39506020
3/8"	39506024
1/2"	39506032
5/8"	39506040



**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 !

# 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.  
 25 % higher WLL than grade 80.



Slip Hooks Grade 100		Chain Size	Dimensions Inches					WLL lbs.	Lbs. Pc.	Product Code
Codes	A		B	C	D	E				
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 !**

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

# Grade 100 Connecting Links

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

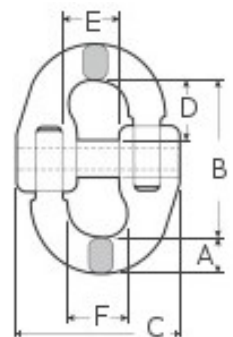
Designed for attaching hooks, master links and other end fittings to Grade 100 alloy chain

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

25 % higher WLL than grade 80.



Con. Links		Dimensions									
Grade 80		Inches									
Codes	Chain	A	B	C	D	E	F	WLL	Lbs.	Product	
	Size								lbs.	Pc	Code
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		Collars	
Grade 80			
Code	Hook	Product	
	Size	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



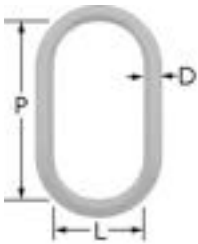
Load Pins	
Hook	Product
Size	Code
9/32"	39505016
5/16"	39505020
3/8"	39505024
1/2"	39505032
5/8"	39505040
3/4"	39505048
7/8"	39505056



**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 defor-

# 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							WLL lbs.	Weight lbs.	Product Code
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	10.2 4	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:**

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

## Grade 100 Master Link Sub-Assemblies

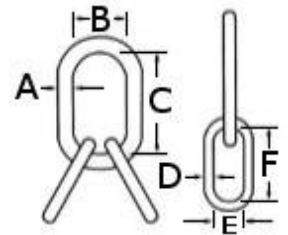
For Triple and Quad branch slings.

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 Size	Master Link			Coupling Link					
		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.

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 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 Clevis SL 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 Clevis		Dimensions											
Grade 100		Inches											
Code	Chain	A	B	C	G	H	R	T	WLL	Lbs.	Product		
	Size								lbs.	Pc	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		Product	
SL Hook		Code	

VTK-107/8	CKSLX-08		39693016
VTK-110	CKSLX-10		39693024
VTK-113	CKSLX-13		39693032
VTK-116	CKSLX-16		39693040

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



# Grade 100 Self Locking Eye SL Hooks

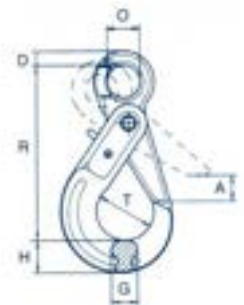
For Triple and Quad branch slings.

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

25 % higher WLL than grade 80.



SL Eye Grade 100			Dimensions Inches							WLL lbs.	Lbs. Pc	Product Code
Code	Chain Size		A	D	G	H	O	R	T			
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

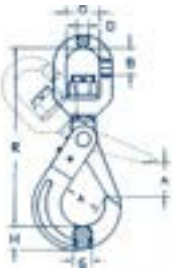
Trigger Kit SL Hook		Product Code
VTK-107/8	CKSLX-08	39693016
VTK-110	CKSLX-10	39693024
VTK-113	CKSLX-13	39693032
VTK-116	CKSLX-16	39693040



**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 SL 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 Swivel 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

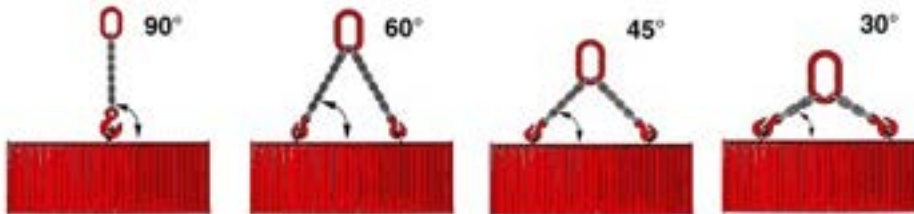
Design Factor: 4 : 1



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

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## Grade 100 Chain Working Load Limit



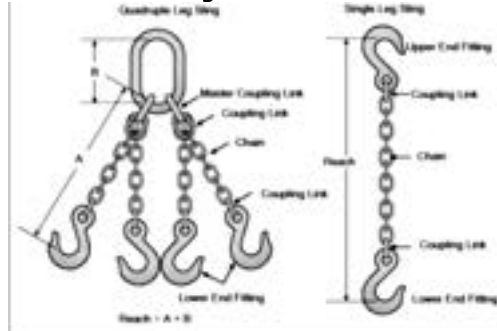
Chain Size	Single	Double			Triple/Quad		
	90°	60°	45°	30°	60°	45°	30°
9/32"	4,300	7,400	6,100	4,300	11,200	9,100	6,400
5/16"	5,700	9,900	8,100	5,700	14,800	12,100	8,500
3/8"	8,800	15,200	12,400	8,800	22,900	18,700	13,200
1/2"	15,000	26,000	21,200	15,000	39,000	31,800	22,500
5/8"	22,600	39,100	32,000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

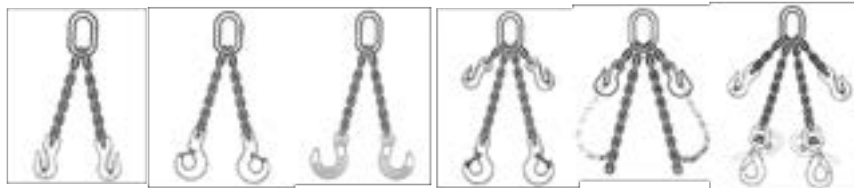
# Various Styles of Chain Slings



Single Leg Type Slings



Double Leg Type Slings



Triple Leg Type Slings

Quadruple Type Leg Slings



Basket Type



Calculate the WLL of lifting Chain angles

To determine the angle WLL of a lifting chain find the WLL at 90°

At 60°	Multiply by	0.8660	For Each leg x Number of legs for WLL of Slings
At 45°	Multiply by	0.7071	For Each leg x Number of legs for WLL of Slings
At 30°	Multiply by	0.5000	For Each leg x Number of legs for WLL of Slings



### General Warnings

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

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

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

### Standards

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

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

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

**The WLL rating must never be exceeded!!!!**



### General information disclaimer

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

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

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

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

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

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

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

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