



GRADE 80

# GRADE 80 ALLOY LIFTING



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## GRADE 80 ALLOY LIFTING TABLE OF CONTENTS

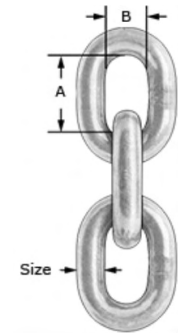
|                          | Page |
|--------------------------|------|
| Chain                    | 3    |
| Clevis Grab Hook         | 4    |
| Clevis Slip Hook         | 5    |
| Connecting Links         | 6    |
| Container Lifting Hook   | 7    |
| Master Link              | 8    |
| Master Link Sub-Assembly | 9    |
| SL Clevis Hook           | 10   |
| SL Eye Hook              | 11   |
| SL Swivel Hook           | 12   |
| Swivel Hoist Rings       | 13   |
| WLL & Selection Guide    | 14   |
| Styles of Chain Slings   | 15   |

# 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    |           |         |               |              |
| <b>Full Drums</b> |                          |      |           |         |               |              |
| 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     |



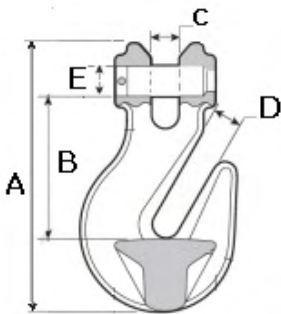
Material: High grade Ni-Cr-Mo Alloy Chain  
 Finish: Special Black Epoxy.  
 Elongation: Min 20 %  
 Design Factor: 4 : 1 In accordance with NACM Specifications

**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 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 |          | Grab & Slip Hooks |  |
|-------------|----------|-------------------|--|
| Code        | Load Pin | Product 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    |



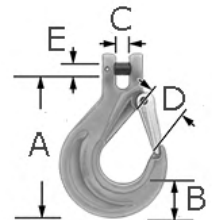
**WARNING: NEVER EXCEED WORKING LOAD LIMITS !**  
 Do not use lesser than Grade 80 components for any lifting application !  
 Do not use chains or accessories with signs of wear or deformation !

# 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

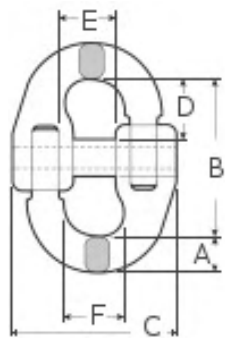
| Replacement Cast Latch |            |  |             |              |
|------------------------|------------|--|-------------|--------------|
| Grade 80               |            |  |             |              |
| Code                   | Chain Size |  | Weight lbs. | Product Code |
| V-80LKU                | 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    |



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

# 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<br>Grade 80 |               | Dimensions<br>Inches |      |      |      |      |      |             |            |                 |
|------------------------|---------------|----------------------|------|------|------|------|------|-------------|------------|-----------------|
| Code                   | Chain<br>Size | A                    | B    | C    | D    | E    | F    | WLL<br>lbs. | Lbs.<br>Pc | Product<br>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<br>Grade 80 |              | Collars         |
|------------------------|--------------|-----------------|
| Code                   | Hook<br>Size | Product<br>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<br>Pins |                 |
|--------------|-----------------|
| Hook<br>Size | Product<br>Code |
| 9/32"        | 39504016        |
| 3/8"         | 39564024        |
| 1/2"         | 39564032        |
| 5/8"         | 39564040        |
| 3/4"         | 39564048        |
| 7/8"         | 39504056        |
| 1"           | 39564100        |



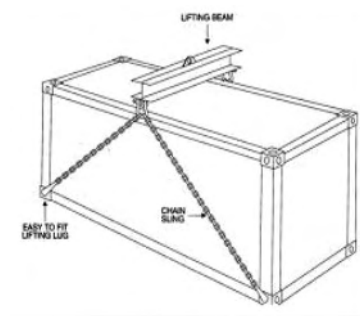
**WARNING: NEVER EXCEED WORKING LOAD LIMITS !**

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

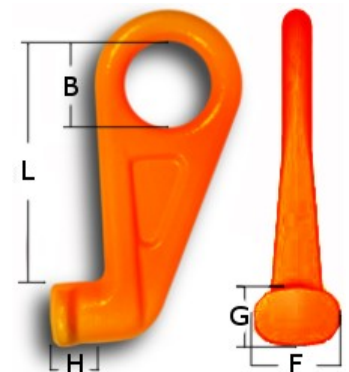
Do not use chains or accessories with signs of wear or deformation !

# Container Lifting Hook

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

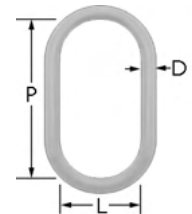
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# VGD Grade 80 Master Links

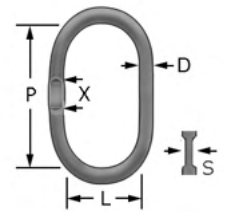
Design Factor 4 : 1

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



GRADE 80

| Master Link  |        | Nominal Dimensions |        |            |            |       |      |       |          |             |              |
|--------------|--------|--------------------|--------|------------|------------|-------|------|-------|----------|-------------|--------------|
| No Flat Spot |        | Inches             |        |            |            |       |      |       |          |             |              |
| 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.

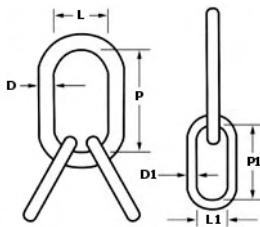
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# VGD Grade 80 Master Link Sub-Assembly

For Triple and Quad branch slings.  
 Approved for overhead lifting, when all components are grade 80.



| Master Link  |       | Dimensions |      |       |      |      |      |        | WLL<br>(lbs @<br>60°) | Lbs.<br>Pc | Product<br>Code |
|--------------|-------|------------|------|-------|------|------|------|--------|-----------------------|------------|-----------------|
| Sub Assembly |       | Inches     |      |       |      |      |      |        |                       |            |                 |
| Code         | Chain | D          | L    | P     | D-1  | L-1  | P-1  |        |                       |            |                 |
|              | 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.

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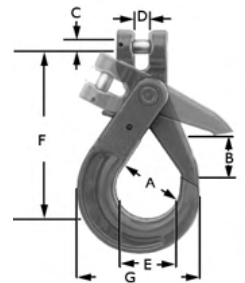


# VGD Grade 80 Self Locking SL Hooks

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 |      |      |      |      |       |      | WLL    | Lbs. Pc | Product Code |
|-----------|------------|------------|------|------|------|------|-------|------|--------|---------|--------------|
| Grade 80  |            | Inches     |      |      |      |      |       |      |        |         |              |
| Code      | Chain      | A          | B    | C    | D    | E    | F     | G    | lbs.   | Pc      | Code         |
|           | Size       |            |      |      |      |      |       |      |        |         |              |
| 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    |

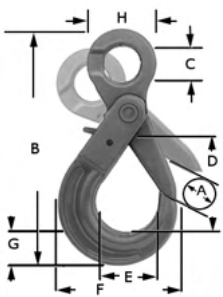


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# VGD Grade 80 Self Locking SL Hooks

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 Size | A          | B     | C    | D    | E    | F    | G    | H    | WLL lbs. | Lbs. Pc | Product 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    |

Design Factor: 4 : 1



| Trigger Kit SL Hook | Product Code |
|---------------------|--------------|
| VSLG-7/8            | 396910161    |
| VSLG-10             | 396910241    |
| VSLG-13             | 396910321    |
| VSLG-16             | 396910401    |

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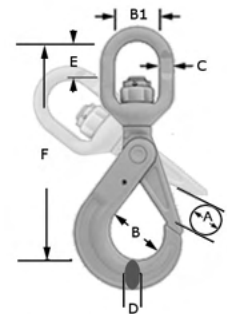


# VGD Grade 80 Self Locking Swivel SL Hooks

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 Swivel |            | Dimensions |      |      |      |      |      |       | WLL    | Lbs.  | Product Code |
|-----------|------------|------------|------|------|------|------|------|-------|--------|-------|--------------|
| Grade 80  |            | Inches     |      |      |      |      |      |       |        |       |              |
| Code      | Chain 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    |

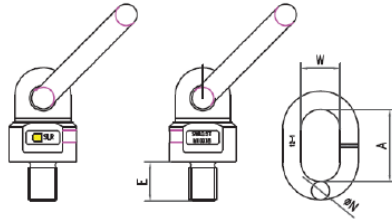


Design Factor: 4 : 1

| Trigger Kit SL Hook | Product Code |
|---------------------|--------------|
| VSLG-7/8            | 396910161    |
| VSLG-10             | 396910241    |
| VSLG-13             | 396910321    |
| VSLG-16             | 396910401    |

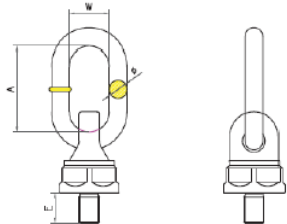


**WARNING: NEVER EXCEED WORKING LOAD LIMITS !**  
 Do not use lesser than Grade 80 components for any lifting application !  
 Do not use chains or accessories with signs of wear or deformation !

**SWIVEL HOIST RINGS (METRIC THREADS)**


- Embossed with VGDM trace code
- WLL and nominal size to meet ASME B 30.26

| Tap Size   | Dimensions (mm) |    |    |    | WLL at Lift Angle (lbs) |         | Weight (lbs/pc) | Vanguard Code |
|------------|-----------------|----|----|----|-------------------------|---------|-----------------|---------------|
|            | A               | E  | W  | NØ | 0 Deg.                  | 90 Deg. |                 |               |
| 1/4" - 20  | 55              | 13 | 30 | 14 | 1,213                   | 606     | 0.90            | 2978 11613    |
| 5/16" - 18 | 55              | 13 | 30 | 14 | 1,323                   | 661     | 0.92            | 2978 12013    |
| 3/8" - 16  | 55              | 18 | 30 | 14 | 1,984                   | 1,102   | 0.95            | 2978 12418    |
| 7/16" - 14 | 55              | 18 | 30 | 14 | 2,205                   | 1,102   | 0.96            | 2978 12818    |
| 1/2" - 13  | 55              | 20 | 30 | 14 | 2,205                   | 1,102   | 0.98            | 2978 13220    |
| 5/8" - 11  | 55              | 20 | 30 | 14 | 4,409                   | 2,469   | 1.05            | 2978 14020    |
| 3/4" - 10  | 70              | 30 | 35 | 16 | 8,818                   | 4,409   | 2.11            | 2978 14830    |
| 7/8" - 9   | 70              | 30 | 35 | 16 | 11,023                  | 5,512   | 2.45            | 2978 15630    |
| 1" - 8     | 85              | 30 | 40 | 18 | 13,889                  | 6,945   | 3.11            | 2978 16430    |
| 1-1/4" - 7 | 115             | 50 | 50 | 25 | 26,015                  | 17,637  | 8.00            | 2978 18050    |

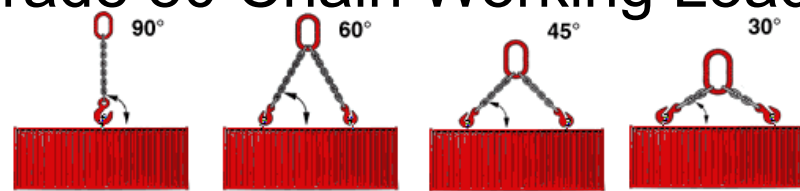

**GRADE 80**

**SWIVEL HOIST RINGS (UNC THREADS)**

- Embossed with VGD trace code
- WLL and nominal size to meet ASME B 30.26

| Tap Size | Dimensions (mm) |    |    |    | WLL at Lift Angle (tons) |         | Weight (lbs/pc) | Vanguard Code |
|----------|-----------------|----|----|----|--------------------------|---------|-----------------|---------------|
|          | A               | E  | W  | Ø  | 0 Deg.                   | 90 Deg. |                 |               |
| M8       | 55              | 13 | 30 | 13 | 0.60                     | 0.30    | 0.92            | 2978 20813    |
| M8       | 55              | 18 | 30 | 13 | 0.60                     | 0.30    | 0.95            | 2978 20818    |
| M10      | 55              | 18 | 30 | 13 | 0.90                     | 0.45    | 0.96            | 2978 21018    |
| M10      | 55              | 25 | 30 | 13 | 0.90                     | 0.45    | 1.11            | 2978 21025    |
| M12      | 55              | 20 | 30 | 13 | 1.00                     | 0.50    | 1.11            | 2978 21220    |
| M12      | 55              | 27 | 30 | 13 | 1.00                     | 0.50    | 1.11            | 2978 21227    |
| M16      | 55              | 24 | 30 | 13 | 2.00                     | 1.12    | 1.11            | 2978 21624    |
| M16      | 55              | 30 | 30 | 13 | 2.00                     | 1.12    | 1.12            | 2978 21630    |
| M16      | 55              | 35 | 30 | 13 | 2.00                     | 1.12    | 1.15            | 2978 21635    |
| M20      | 85              | 30 | 40 | 18 | 4.00                     | 2.00    | 2.14            | 2978 22030    |
| M20      | 85              | 43 | 40 | 18 | 4.00                     | 2.00    | 2.20            | 2978 22043    |
| M24      | 85              | 30 | 40 | 18 | 6.30                     | 3.15    | 3.22            | 2978 22430    |
| M24      | 85              | 38 | 40 | 18 | 6.30                     | 3.15    | 3.27            | 2978 22438    |
| M30      | 115             | 35 | 50 | 25 | 10.60                    | 5.30    | 4.81            | 2978 23035    |
| M30      | 115             | 50 | 50 | 25 | 11.80                    | 8.00    | 8.30            | 2978 23050    |
| M36      | 115             | 54 | 50 | 25 | 11.80                    | 8.00    | 8.65            | 2978 23654    |



# Grade 80 Chain Working Load Limit



| Chain Size | Single 90° | Double |        |        | Triple/Quad |         |        |
|------------|------------|--------|--------|--------|-------------|---------|--------|
|            | 90°        | 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 |

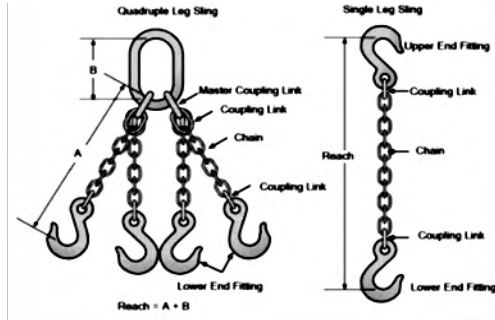
## Grade 80 Component Selection Guide

| Sling Type | Chain Size | Master Link |         | Coupling Link | Hooks |      |          |           |
|------------|------------|-------------|---------|---------------|-------|------|----------|-----------|
|            |            | Oblong      | Sub Ass |               | Grab  | Slip | Eye Grab | Eye Sling |

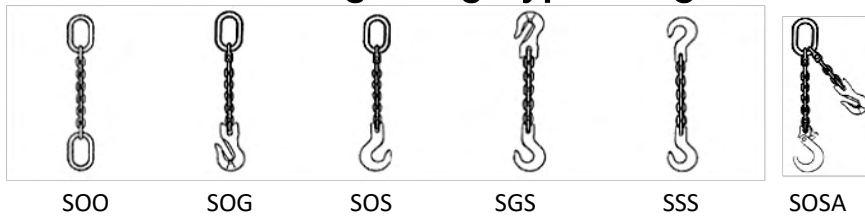
|             |       |        |        |       |       |       |       |       |
|-------------|-------|--------|--------|-------|-------|-------|-------|-------|
| Single      | 9/32" | 1/2"   |        | 9/32" | 9/32" | 9/32" | 9/32" | 9/32" |
| Double      |       | 1/2"   |        |       |       |       |       |       |
| 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"  | 7/8"  |
| Double      |       | 1-3/4" |        |       |       |       |       |       |
| Triple/Quad |       |        | 2"     |       |       |       |       |       |
| Single      | 1"    | 1-3/4" |        | 1"    | 1"    | 1"    | 1"    | 1"    |
| Double      |       | 2"     |        |       |       |       |       |       |
| Triple/Quad |       |        | 2-1/4" |       |       |       |       |       |

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 Sling |
| At 45° | Multiply by | 0.7071 | For Each leg x Number of legs for WLL of Sling |
| At 30° | Multiply by | 0.5000 | For Each leg x Number of legs for WLL of Sling |



### 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.