Performance Characteristics of Chain Slings

Safeway Gold Standard Alloy Chain Slings utilize grade 80, 100 and 120 lifting chain, manufactured from special analysis alloy steel. It represents the ultimate in strength and wearability. Gold Standard Chain Slings are furnished with gold I.D. Tags. Every Gold Standard Chain sling is proof tested (pull tested to 200% vertical rated capacity) to assure quality and unit integrity. Each unit is individually serialized for traceability. Proof test certificate provided.

Gold Standard Welded Assemblies

Gold Standard Welded Assemblies are fabricated to your specifications by welding coupling links to attach chain to hooks and masterlinks. The result is a tamper-proof assembly.

Gold Standard Mechanical Assemblies

Gold Standard Mechanical Assemblies add the flexibility and convenience of replaceable rings, hooks and coupling links. This equates to lower cost and less down time to repair damaged assemblies.

Safeway Gold Standard Alloy Chain Slings meet or exceed latest guidelines of the National Association of Chain Manufacturers (NACM), ANSI B30.9 standards and strict OSHA requirements.

Safeway Alloy Lifting Chain Specifications

Rugged, versatile, high strength, low weight chain manufactured from a special analysis alloy steel. Safeway Alloy chain has a comparatively high carbon content as well as containing various other alloying elements. The chain is quenched and tempered before proof testing. The ultimate tensile strength of alloy chain is over twice that of ordinary steel chain. The chain is marked to identify grade and manufacturer. **It is the only chain recommended for use in over-head lifting applications.** Regularly supplied in black protective finish.

Minimum elongation at break test 20%. All Safeway Chain meets or exceeds latest guidelines of the National Association of Chain Manufacturers (NACM), ANSI B30.9 standards and strict OSHA requirements.

Safeway Gold Standard Alloy Lifting Chain Specifications

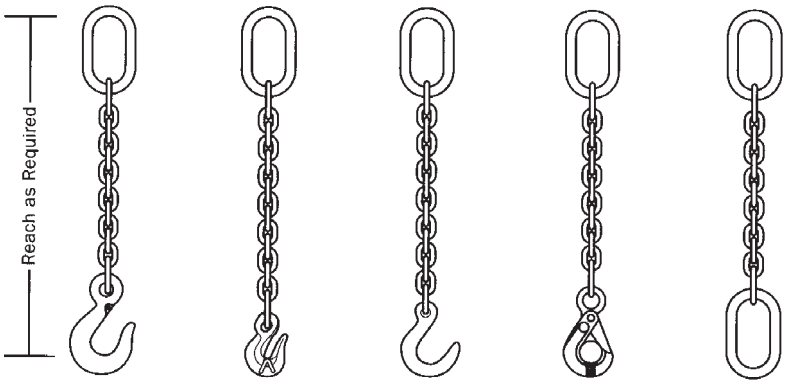
Chain Trade Size	Material Diameter Inches		Nominal Inside Link Dimension Inches		Maximum Weight Per 100 Ft./Lbs.	Working Load Limits Lbs.*		
	Fraction	Decimal	Length	Width		G-80	G-100	G-120
9/32	9/32	.281	.87	.40	78	3,500	4,300	5,200
3/8	13/32	.406	1.23	.56	153	7,100	8,800	10,600
1/2	17/32	.531	1.57	.75	281	12,000	15,000	17,900
5/8	5/8	.630	1.93	.87	365	18,100	22,600	**
3/4	3/4	.787	2.20	1.09	621	28,300	35,300	**
7/8	7/8	.881	2.45	1.22	750	34,200	42,700	**
1	1	1.000	2.80	1.40	965	47,700	59,700	**
1-1/4	1-1/4	1.250	3.50	1.75	1,525	72,300	**	**

Dimensions and weights are approximate.

* Caution: Working Load Limits (capacity) should not be exceeded. Manufacturers do not accept any liability for damages which may result from chain used in excess of working load limits.

** Consult factory

Single Chain Slings



Type SOS Sling Hook | **Type SOG Grab Hook** | **Type SOF Foundry Hook** | **Type SOL Self Locking Hook** | **Type CO Oblong Link**

1. Single Grab-Sling, Single Grab-Grab and Single Sling-Sling available but not shown
2. Cradle grab hooks are standard, non-cradle hooks available on request
3. Foundry Hooks not available in G-120

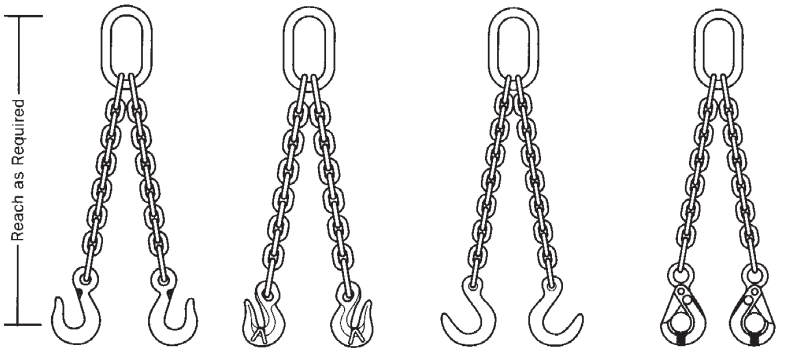
Single Chain Slings

Chain Size (In.)	Rated Capacity Vertical (Lb.)* G-80	G-100	G-120
9/32	3,500	4,300	5,200
3/8	7,100	8,800	10,600
1/2	12,000	15,000	17,900
5/8	18,100	22,600	-
3/4	28,300	35,300	-
7/8	34,200	42,700	-
1	47,700	59,700	-
1-1/4	72,300	-	-

* Also referred to as "Working Load Limit."

Warning! Do not exceed rated capacities. Rating must be reduced when used with slings at angles of less than 90° from horizontal.

Double Chain Slings



Type DOS Sling Hook | **Type DOG Grab Hook** | **Type DOF Foundry Hook** | **Type DOL Self Locking Hook**

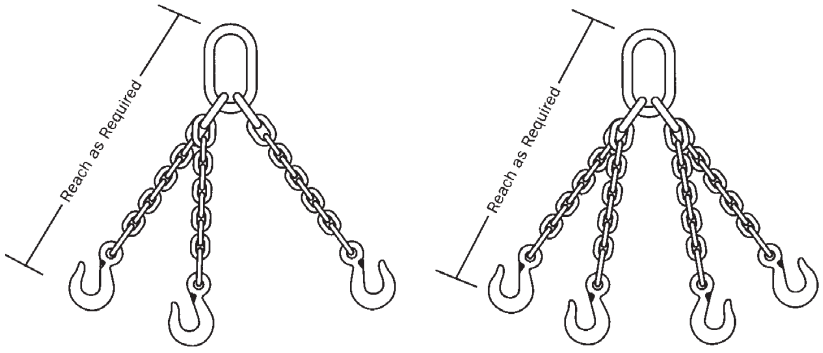
1. Cradle grab hooks are standard, non-cradle hooks available on request
2. Foundry Hooks not available in G-120

Double Chain Slings

Chain Size (In.)	Rated Capacity @ 60° (Lb.)* G-80	G-100	G-120
9/32	6,100	7,400	9,000
3/8	12,300	15,200	18,400
1/2	20,800	26,000	31,000
5/8	31,300	39,100	-
3/4	49,000	61,100	-
7/8	59,200	74,000	-
1	82,600	103,400	-
1-1/4	125,200	-	-

* Also referred to as "Working Load Limit."

Triple & Quad Chain Slings



Type TOS Sling Hook | **Type QOS Sling Hook**

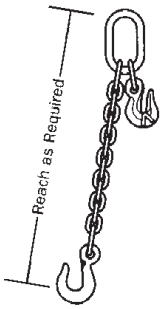
1. Cradle grab hooks, foundry hooks and self-locking hooks available but not shown
2. Cradle grab hooks are standard, non-cradle hooks available on request
3. Foundry hooks not available in G-120

Triple & Quad Chain Slings

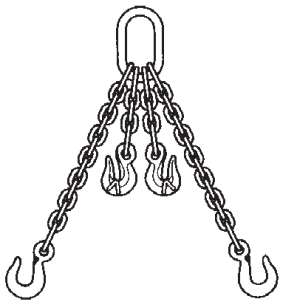
Chain Size (In.)	Rated Capacity @ 60° (Lb.)* G-80	G-100	G-120
9/32	9,100	11,200	13,500
3/8	18,400	22,900	27,500
1/2	31,200	39,000	46,500
5/8	47,000	58,700	-
3/4	73,500	91,700	-
7/8	88,900	110,900	-
1	123,900	155,100	-
1-1/4	187,800	-	-

* Also referred to as "Working Load Limit."

Adjustable Chain Slings



Type ASA
Single Adjustable
(Style A)



Type ADB
Double Adjustable
(Style B)

1. Single and double adjustable loop and basket slings available but not shown
2. Style A - Grab hook connected to masterlink
   Style B - Grab hook hung on one foot of chain
3. Cradle grab hooks are standard, non-cradle hooks available on request

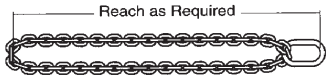
Adjustable Chain Slings

Chain Size (In.)	Rated Capacity (Lb.)*			
	G-80 Single @ 90°	G-80 Double @ 60°	G-100 Single @ 90°	G-100 Double @ 60°
9/32	3,500	6,100	4,300	7,400
3/8	7,100	12,300	8,800	15,200
1/2	12,000	20,800	15,000	26,000
5/8	18,100	31,300	22,600	39,100
3/4	28,300	49,000	35,300	61,100
7/8	34,200	59,200	42,700	74,000
1	47,700	82,600	59,700	103,400
1-1/4	72,300	125,200	-	-

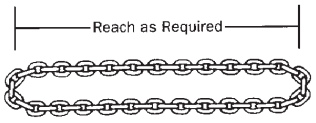
Adjustable slings available in G-120 - see other G-120 capacities.

* Also referred to as "Working Load Limit."

Endless Chain Slings



Type SE
Single Endless



Type EC
Endless Chain

Warning! Do not exceed rated capacities. Rating must be reduced when used with slings at angles of less than 90° from horizontal.

Endless Chain Slings

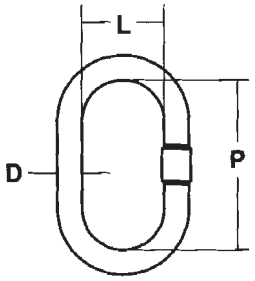
Chain Size (In.)	Rated Capacity Vertical (Lb.)*		
	G-80	G-100	G-120
9/32	3,500	4,300	5,200
3/8	7,100	8,800	10,600
1/2	12,000	15,000	17,900
5/8	18,100	22,600	-
3/4	28,300	35,300	-
7/8	34,200	42,700	-

* Also referred to as "Working Load Limit."

Working Load Limits

	Chain Trade Size, Inches	Single Branch Sling	Double Branch Sling			Triple & Quad Branch Sling		
		90°	60°	45°	30°	60°	45°	30°
Grade 80	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	123,900	101,200	71,500
	1-1/4	72,300	125,200	102,200	72,300	187,800	153,400	108,400
Grade 100	9/32	4,300	7,400	6,100	4,300	11,200	9,100	6,400
	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
	3/4	35,300	61,100	49,900	35,300	91,700	74,900	53,000
	7/8	42,700	74,000	60,400	42,700	110,900	90,600	64,000
	1	59,700	103,400	84,400	59,700	155,100	126,600	89,550
Grade 120	9/32	5,200	9,000	7,400	5,200	13,500	11,000	7,800
	3/8	10,600	18,400	15,000	10,600	27,500	22,500	15,900
	1/2	17,900	31,000	25,300	17,900	46,500	38,000	26,900

Oblong Master Link

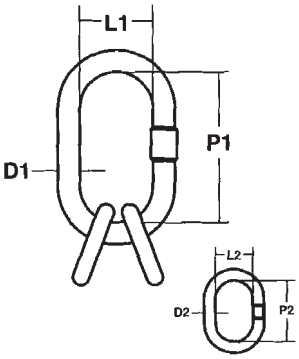


Safety Note:
Always select components that equal or exceed the working load limits of the Alloy Chain with which they will be used.

Diameter Material D	Dimensions in Inches Inside Width L	Inside Length P	Working Load Limits (lbs.) @60°
1/2″	2-3/8″	4-3/8″	6,000
5/8″	3-1/8″	5-1/2″	8,600
3/4″	3-1/2″	5-7/8″	12,900
7/8″	3-1/2″	6-3/8″	17,600
1″	4″	7″	26,000
1-1/4″	4-3/8″	7-7/8″	39,100
1-1/2″	5-1/2″	10-1/4″	61,100
1-3/4″	7-1/8″	13-3/8″	74,000

Consult factory for G-120 items.

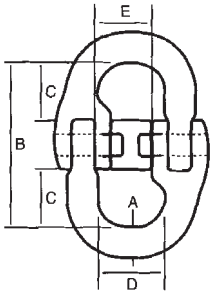
Oblong Master Link Sub-Assembly



Diameter Material D1	Dimensions in Inches Master Link Inside Width L1	Master Link Inside Length P1	Diameter Material D2	Coupler Link Inside Width L2	Coupler Link Inside Length P2	Working Load Limits (lbs.) @60°
3/4″	3-1/2″	5-7/8″	1/2″	1″	2-1/8″	11,200
7/8″	3-1/2″	6-3/8″	5/8″	1-3/8″	2-3/4″	15,200
1″	4″	7″	3/4″	1-1/2″	3-1/3″	26,000
1-1/4″	4-1/3″	7-7/8″	7/8″	2″	4-1/2″	39,000
1-1/2″	5-1/2″	10-1/4″	1″	2-1/2″	5-1/2″	58,700
2″	7-1/2″	13-3/4″	1″	2-1/2″	5-1/2″	91,700
2″	7-1/2″	13-3/4″	1-1/16″	2-3/4″	5-7/8″	110,900
2-1/4″	7-7/8″	15-3/4″	2-1/4″	3-1/8″	6-3/4″	155,100

Consult factory for G-120 items.

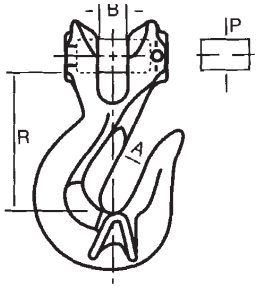
Mechanical Coupling Link



Chain Size	Dimensions in Inches A	B	C	D	E	Working Load Limits (lbs.) G-80	G-100
9/32″	5/16″	1-59/64″	5/8″	25/32″	47/64″	3,500	4,300
3/8″	15/32″	3-1/32″	7/8″	1-1/16″	63/64″	7,100	8,800
1/2″	5/8″	3-11/31″	1-1/4″	1-17/64″	1-3/16″	12,000	15,000
5/8″	25/32″	4-1/16″	1-17/32′″	1-17/32″	1-27/64″	18,100	22,600
3/4″	29/32″	4-9/16″	1-23/32″	1-55/64″	1-47/64″	28,300	35,300
7/8″	1-1/16″	5-15/64″	2″	2-11/64″	1-59/64″	34,200	42,700
1″	1-1/4″	6-15/16″	2-1/4″	2-27/32″	2-23/64″	47,700	59,700
1-1/4″	1-17/32″	6-13/16″	2-5/8″	2-3/4″	2-31/64″	72,300	-

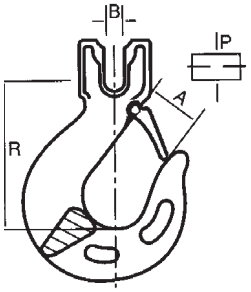
Consult factory for G-120 items.

Clevis Grab Hook



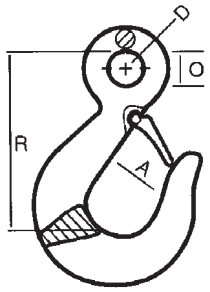
Chain Size	Dimensions in Inches R	A	B	P	Working Load Limits (lbs.) G-80	G-100
9/32″	1-31/32″	25/64″	23/64″	23/64″	3,500	4,300
3/8″	2-53/64″	33/64″	33/64″	33/64″	7,100	8,800
1/2″	3-15/32″	43/64″	43/64″	5/8″	12,000	15,000
5/8″	4-1/64″	25/32″	53/64″	53/64″	18,100	22,600
3/4″	4-39/64″	61/64″	61/64″	61/64″	28,300	35,300

Clevis Sling Hook With Latch



Chain Size	Dimensions in Inches R	A	B	P	Working Load Limits (lbs.) G-80	G-100
9/32″	3-25/64″	1-1/64″	11/32″	23/64″	3,500	4,300
3/8″	4-9/64″	1-13/64″	31/64″	33/64″	7,100	8,800
1/2″	5-1/16″	1-39/64″	39/64″	5/8″	12,000	15,000
5/8″	6-11/64″	1-31/32″	3/4″	53/64″	18,100	22,600
3/4″	7-1/4″	2-23/64″	53/64″	1-1/16″	28,300	35,300
7/8″	8-1/4″	2-7/16″	1″	1-1/8″	34,200	42,700

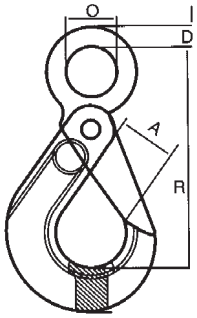
Eye Sling Hook With Latch



Chain Size	Dimensions in Inches A	D	O	R	Working Load Limits (lbs.) G-80	G-100
9/32″	1-5/32″	7/16″	63/64″	3-49/64″	3,500	4,300
3/8″	1-13/32″	35/64″	1-11/32″	4-3/4″	7,100	8,800
1/2″	1-23/32″	43/64″	1-43/64″	5-29/32″	12,000	15,000
5/8″	2-1/16″	13/16″	2-3/64″	7-13/64″	18,100	22,600
3/4″	2-29/32″	31/32″	2-7/16″	8-9/16″	28,300	35,300
7/8″	2-63/64″	1-5/32″	2-19/32″	8-57/64″	34,200	42,700
1″	3-3/16″	1-1/4″	2-1/16″	11-1/64″	47,700	59,700
1-1/4″	3-7/8″	1-1/2″	2-5/16″	11-1/2″	72,300	-

Consult factory for G-120 items.

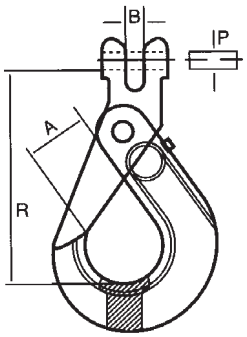
Self Locking Hook



Chain Size	Dimensions in Inches A	D	O	R	Working Load Limits (lbs.) G-80	G-100
9/32″	1-5/32″	25/64″	1-1/64″	4-27/64″	3,500	4,300
3/8″	1-1/2″	33/64″	1-19/64″	5-5/16″	7,100	8,800
1/2″	1-13/16″	5/8″	1-21/32″	7-9/32″	12,000	15,000
5/8″	2-1/4″	45/64″	2-3/64″	9-3/64″	18,100	22,600
3/4″	3-3/32″	61/64″	2-3/8″	10-7/8″	28,300	35,300
7/8″	4-11/16″	1-3/32″	2-3/4″	12-1/2″	34,200	42,700
1″	4-1/8″	1-1/2″	2-7/8″	14-5/8″	47,700	59,700

Consult factory for G-120 items.

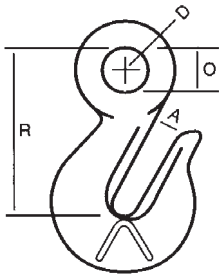
Clevis Self Locking Hook



Chain Size	Dimensions in Inches A	B	P	R	Working Load Limits (lbs.) G-80	G-100
9/32 - 5/16″	1-5/64″	11/32″	23/64″	3-23/32″	3,500	4,300
3/8″	1-1/2″	31/64″	33/64″	4-59/64″	7,100	8,800
1/2″	1-13/16″	39/64″	5/8″	6-3/16″	12,000	15,000
5/8″	2-1/4″	3/4″	32/64″	7-7/16″	18,100	22,600
3/4″	2-3/4″	29/32″	30/32″	9-1/2″″	28,300	35,300
7/8″	3-7/8″	1″	7/8″	11-1/8″	34,200	42,700
1″	4-1/16″	1-1/8″	1″	12-1/2″	47,700	59,700

Safeway Gold Standard Alloy Hardware

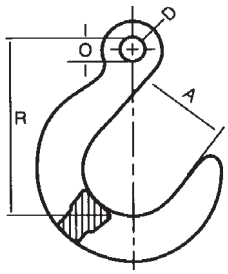
Cradle Grab Hook



Chain Size	Dimensions in Inches A	D	O	R	Working Load Limits (lbs.) G-80	G-100
9/32″	25/64″	23/64″	5/8″	2-23/64″	3,500	4,300
3/8″	33/64″	7/16″	53/64″	3-5/32″	7,100	8,800
1/2″	43/64″	5/8″	1-1/64″	4-3/32″	12,000	15,000
5/8″	25/32″	3/4″	1-3/16″	4-31/64″	18,100	22,600
3/4″	29/32″	55/64″	1-27/64″	5-13/16″	28,300	35,300
7/8″	1-1/16″	63/64″	1-1/2″	6-3/16″	34,200	42,700
1″	1-3/4″	1-1/4″	1-7/8″	8-3/32″	47,700	59,700
1-1/4″	1-1/2″	1-9/16″	2-1/4″	10-1/2″	72,300	-

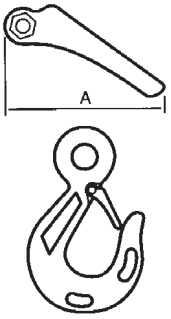
Consult factory for G-120 items.

Foundry Hook



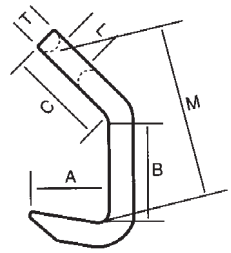
Chain Size	Dimensions in Inches A	D	O	R	Working Load Limits (lbs.) G-80	G-100
9/32″	2-31/64″	15/32″	33/64″	4-23/32″	3,500	4,300
3/8″	2-63/64″	5/8″	3/4″	5-3/4″	7,100	8,800
1/2″	3-1/2″	3/4″	63/64″	6-27/32″	12,000	15,000
5/8″	3-63/64″	55/64″	1-17/64″	8-5/64″	18,100	22,600
3/4″	4-31/64″	63/64″	1-1/2″	9-1/4″	28,300	35,300
7/8″	5″	1-1/8″	1-3/4″	10-3/8″	34,200	-
1″	5-1/2″	1-1/4″	2-1/8″	11-9/16″	47,700	-
1-1/4″	6″	1-3/8″	2-3/8″	12-7/8″	72,300	-

Sling Hook Latch Kit



Chain Size	Dimensions in Inches A
9/32″	2″
3/8″	2-7/16″
1/2″	3-1/32″
5/8″	3-41/64″
3/4″	4-9/32″
7/8″	5-1/8″
1″	5-1/8″
1-1/4″	5-1/2″

Plate Hook



Chain Size	Dimensions in Inches A	B	C	L	M	T	Working Load Limits (lbs.) G-80	G-100
9/32″	2″	1-3/4″	2-1/2″	1″	3-11/16″	5/8″	4,200	5,700
3/8″	2-5/8″	3″	4-5/16″	1-1/8″	6-3/8″	3/4″	7,400	8,800
1/2″	3-1/2″	4″	4-3/8″	1-1/2″	7-3/8″	1″	13,000	15,000
5/8″	4-3/8″	5″	5-7/16″	1-7/8″	9-1/4″	1-1/4″	20,400	22,600
3/4″	5-3/16″	6″	6-1/2″	2-1/4″	10-7/8″	1-1/2″	30,000	35,300
7/8″	6″	7″	7-5/8″	2-5/8″	13-1/16″	1-3/4″	40,000	42,700

Dimensions on G-100 items differ from above - consult factory.

Inspection Criteria

It is important to inspect chain slings before each use and to keep a record of individual chain inspections. The following is a suggestion for such an inspection system.

Before inspecting: clean the chains so that marks, nicks, wear and other defects can be seen. Each link should be inspected for the following danger signs that include but are not limited to:

1. Twists or bends
2. Nicks or gouges
3. Excessive wear at bearing points
4. Stretch
5. Evidence of heat damage
6. Weld splatter
7. Distorted or damaged master links, coupling links or attachments, especially spread in throat opening of hooks

Each link or attachment having any defect listed above should be marked with paint to plainly indicate rejection and removed from service until properly repaired.

Proper Care

Chain requires only minimum maintenance:

1. Store chains on an A-frame in a clean, dry place
2. Oil chains before prolonged storage
3. Never anneal chain

Use of Chain Under Heat Conditions

When the chain itself is heated to temperatures shown below, the Working Load Limits should be reduced as indicated.

Grade 80 & 100 Chain

Temperature (°F)	Temperature (°C)	Reduction of Working Load Limit While at Temperature		Reduction of Working Load Limit After Exposure at Temperature	
		G-80	G-100	G-80	G-100
Below 400	204	None	None	None	None
400	204	10%	15%	None	None
500	260	15%	25%	None	5%
600	316	20%	30%	5%	15%
700	371	30%	40%	10%	20%
800	427	40%	50%	15%	25%
900	482	50%	60%	20%	30%
1000	538	60%	70%	25%	35%
Over 1,000	538	OSHA 1910.184 requires all slings exposed to temperatures over 1000°F to be removed from service.			

G-120 is not to be used over 400°F (204°C).

Proper use

Observing these simple precautions when using chain slings can help protect both workers and materials.

1. Free all twists, knots or kinks
2. Center load on hook
3. Avoid sudden jerks when lowering or lifting
4. Balance all loads
5. Never overload
6. Use pads around sharp corners
7. Do not drop loads on chains

Chain Wear Allowance

Determine wear by measuring cross section at link ends. If worn to less than the minimum thickness allowable, chain should be removed from service.

Grade 80 & 100 Chain

Chain Size	Diameter	Minimum Allowable Thickness on Link
9/32″	.281	.239
3/8″	.406	.342
1/2″	.531	.443
5/8″	.630	.546
3/4″	.787	.687
7/8″	.881	.750
1″	1.000	.887
1-1/4″	1.250	1.091

Consult factory for G-120 specifications.

How to Select the Proper Chain Sling

1. Determine the maximum weight of LOAD
2. From the working load limit chart, determine the SIZE of the body chain for the Gold Standard Sling. Be sure to consider the effect of the angles
3. Determine the REACH for the selected angle by measuring the distance from the upper bearing surface of the master link to the bearing surface of the lower attachment
4. Standard attachments will be furnished. Attachments other than standard require detail specifications

How to Order the Proper Chain Sling

When ordering, please be sure to include the following:

Type of Sling
S - Single Chain
D - Double Chain
T - Triple Chain
Q - Quadruple Chain

Basket Styles
SB - Single
DB - Double
SE - Single Endless
DE - Double Endless

Adjustable Styles
ASA - Single Style A
ASB - Single Style B
ADA - Double Style A
ADB - Double Style B
SLA - Single Loop Style A
SLB - Single Loop Style B
DLA - Double Loop Style A
DLB - Double Loop Style B

Type of Master Attachment
O - Oblong Link
P - Pear Link
R - Ring
N - No Master Attachment

Type of End Attachment
S - Sling Hook
G - Grab Hook
F - Foundry Hook
L - Self-Locking Hook
P - Plate Hook
N - No End Attachment

See back cover for more information.