CHAIN SLING BASICS

***Lift-All* chain slings meet or exceed all OSHA, ASME B30.9 and NACM standards and regulations**

Lift-All chain slings, available in grade 100 for 7/32" through 3/4", and grade 80 for 7/8" up to 1-1/4" are recommended for rugged industrial applications in harsh environments where flexibility, abrasion resistance, and long life are required. OSHA required annual inspections can be performed by *Lift-All* trained personnel.

Features and Benefits

Promotes Safety

- Permanent steel capacity tag is serialized for identification.
- Welded slings offer the security of tamper-proof assemblies.

Saves Money

- Alloy Steel construction assures long life.
- Can be repaired, proof-tested, and re-certified by *Lift-All*.

Saves Time

- Easy to inspect for damage.
- Stores easily.

Use of Chain Under Heat Conditions

When the chain itself is heated to temperatures shown below, the Working Load Limit (Rated Capacity) should be reduced as indicated.

Temperature of Chain (°F)	Reduction of Working Load Limit While at Temperature		Permanent Reduction of Working Load Limit After Exposure to Temperature	
	Grade 80	Grade 100	Grade 80	Grade 100
Below -40	Do Not Use	Do Not Use	None	None
Below -20	None	Do Not Use	None	None
400	10%	15%	None	None
500	15%	25%	None	5%
600	20%	30%	5%	15%
700	30%	40%	10%	20%
800	40%	50%	15%	25%
900	50%	60%	20%	30%
1000	60%	70%	25%	35%
Over 1000	**REMOVE FROM SERVICE**			

Consult *Lift-All* about galvanized chain.

Consult *Lift-All* about chain to be used in pickling operations.

HOW TO ORDER CHAIN SLINGS

Define Chain Diameter
9/32" shown in example

932 D O S W 10 X 12

Sling Reach (ft.)
Refer to drawings on following pages on how to measure.

'X'

Number of Chain Legs or Other Style
Single – ***S***
Double – ***D***
Triple – ***T***
Quad – ***Q***
Choker – ***C***
Endless – ***E***
(w/o oblong)

Master Link or Specials
Oblong – **O**
Basket – **B**
Adjustable – **A**
Endless:
with oblong – **E**
w/o oblong – **N**

Bottom Attachments
Sling Hook – **S**
Grab Hook – **G**
Foundry Hook – **F**
Latchlok Eye Hook – **L**
Adjustable Slings:
Loop Style A – **A**
Loop Style B – **B**
Style A – **SA**
Style B – **SB**
Endless – Leave Blank

Chain Grade
Grade 80 – **8**
Grade 100 – **10**

Welded or Mechanical
Welded couplers – **W**
Mechanical couplers – **M**

CHAIN SLING BASICS

Grade 100

- Available in sizes 7/32" through 3/4".
- Higher capacity per chain size can be used as an increased safety factor.
- Higher capacity may allow use of smaller diameter chain for your lifts, reducing sling weight and cost.
- Extreme abrasion resistance - more durable.
- Powder-coated attachments for corrosion resistance.

Grade 80

- Available in sizes 7/8" through 1-1/4".
- Greater temperature tolerance.

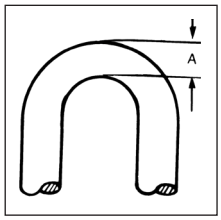
All Chain Slings

- Meet or exceed all OSHA, ASTM and NACM standards.
- Welded or mechanically assembled.

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.

Chain Size (in.)	Minimum Allowable Thickness - A (in.)
7/32	.189
9/32	.239
3/8	.342
1/2	.443
5/8	.546
3/4	.687
7/8	.750
1	.887
1-1/4	1.091



Minimum thickness based on OSHA recommendations.

[1]Rated Capacity For Chain Slings

Size of Chain			90°	60°	45°	30°	60°	45°	30°	Nominal Dimensions (in.)		Approx. No. of Links per ft.	Approx. Weight per 100 ft. (lbs.)
Grade	(in.)	(mm.)	Single Chain @ 90° (lbs.)	Double Chain Slings* (lbs.)			Triple & Quad Chain Slings* (lbs.)**			Inside Length	Inside Width		
100	7/32	5.5	2,700	4,700	3,800	2,700	7,000	5,700	4,000	0.676	0.312	17.8	44
100	9/32	7.0	4,300	7,400	6,100	4,300	11,200	9,100	6,400	0.883	0.395	13.6	73
100	3/8	10.0	8,800	15,200	12,400	8,800	22,900	18,700	13,200	1.247	0.574	9.6	144
100	1/2	13.0	15,000	26,000	21,200	15,000	39,000	31,800	22,500	1.559	0.734	7.7	246
100	5/8	16.0	22,600	39,100	32,000	22,600	58,700	47,900	33,900	1.916	0.855	6.3	370
100	3/4	20.0	35,300	61,100	49,900	35,300	91,700	74,900	53,000	2.397	1.070	5.0	580
80	7/8	22.0	34,200	59,200	48,400	34,200	88,900	72,500	51,300	2.250	1.137	5.3	776
80	1	26.0	47,700	82,600	67,400	47,700	123,900	101,200	71,500	2.664	1.348	4.5	995
80	1-1/4	32.0	72,300	125,200	102,200	72,300	187,800	153,400	108,400	3.250	1.656	3.7	1,571

[1] Rated Capacity also referred to as Working Load Limit.
When using chain slings in a choke hitch, reduce the sling's rated capacity by 20%.

** A **Quad Chain Sling** may not sustain the load evenly on each of its' four legs. The maximum working load limits are therefore set at the same values as the **Triple Chain Slings** of equal quality and size, and used with branches at the same angle of inclinations.

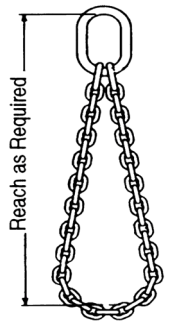
* **⚠ WARNING** Do not exceed rated capacities. Sling capacity decreases as the angle from horizontal decreases. Slings should not be used at angles of less than 30°. Refer to the chain chart on this page and the Effect of Angle chart in the General Information section of this catalog.

CHAIN SLINGS

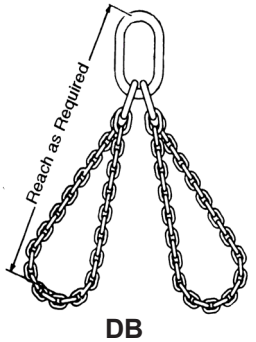
BASKET TYPE CHAIN SLINGS

Grade	Chain Size (in.)	[1]Rated Capacity*@ 60° (lbs.)	
		Single	Double
100	7/32	4,700	7,000
100	9/32	7,400	11,200
100	3/8	15,200	22,900
100	1/2	26,000	39,000
100	5/8	39,100	58,700
100	3/4	61,100	91,700
80	7/8	59,200	88,900
80	1	82,600	123,900
80	1-1/4	125,200	187,800

[1] Rated Capacity also referred to as Working Load Limit.



SB
Single Basket Type

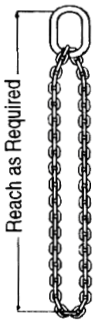


DB
Double Basket Type

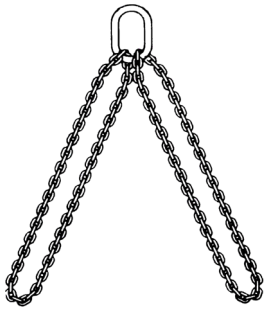
ENDLESS BASKET CHAIN SLINGS[2]

Grade	Chain Size (in.)	[1]Rated Capacity* (lbs.)	
		Single @ 90°	Double @ 60°
100	7/32	2,700	4,700
100	9/32	4,300	7,400
100	3/8	8,800	15,200
100	1/2	15,000	26,000
100	5/8	22,600	39,100
100	3/4	35,300	61,100
80	7/8	34,200	59,200
80	1	47,700	82,600
80	1-1/4	72,300	125,200

[1] Rated Capacity also referred to as Working Load Limit.
[2] Available as welded assembly only.



SE
Single Endless



DE
Double Endless

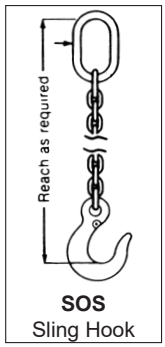
* **⚠ WARNING** Do not exceed rated capacities. Sling capacity decreases as the angle from horizontal decreases. Slings should not be used at angles of less than 30°. Refer to the chain chart on this page and the Effect of Angle chart in the General Information section of this catalog.

CHAIN SLINGS

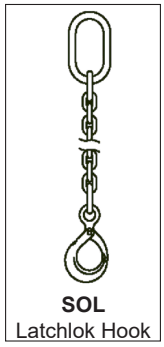
SINGLE CHAIN SLINGS

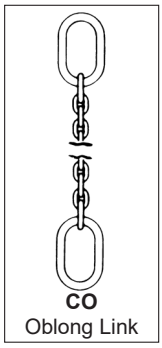
Grade	Chain Size (in.)	[1]Rated Capacity* Vertical (lbs.)	Approx. Weight 5-ft Reach Type SOS (lbs.)
100	7/32	2,700	4
100	9/32	4,300	5
100	3/8	8,800	10
100	1/2	15,000	18
100	5/8	22,600	27
100	3/4	35,300	44
80	7/8	34,200	58
80	1	47,700	79
80	1-1/4	72,300	121

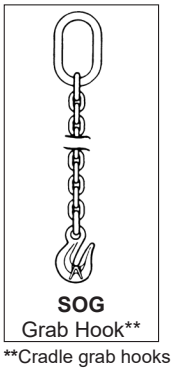
[1] Rated Capacity also referred to as Working Load Limit.
When using chain slings in a choke hitch, reduce the sling's rated capacity by 20%.

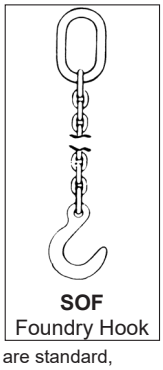


SOS
Sling Hook


SOL
Latchlok Hook


CO
Oblong Link


SOG
Grab Hook**

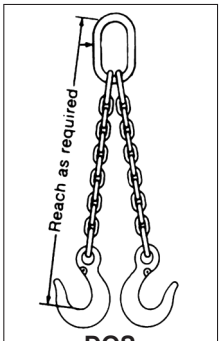

SOF
Foundry Hook

**Cradle grab hooks are standard, non-cradle hooks available on request.

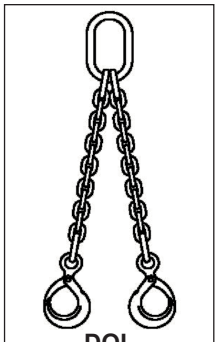
DOUBLE CHAIN SLINGS

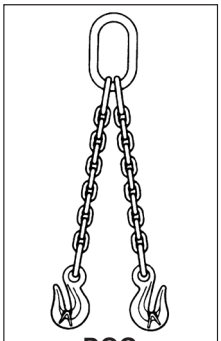
Grade	Chain Size (in.)	[1]Rated Capacity* @ 60° (lbs.)	Approx. Weight 5-ft. Reach Type DOS (lbs.)
100	7/32	4,700	8
100	9/32	7,400	10
100	3/8	15,200	17
100	1/2	26,000	32
100	5/8	39,100	51
100	3/4	61,100	74
80	7/8	59,200	99
80	1	82,600	134
80	1-1/4	125,200	211

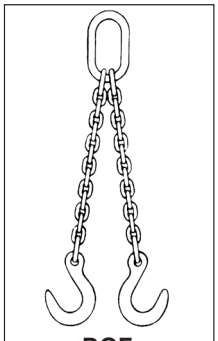
[1] Rated Capacity also referred to as Working Load Limit.
When using chain slings in a choke hitch, reduce the sling's rated capacity by 20%.



DOS
Sling Hook


DOL
Latchlok Hook


DOG
Grab Hook**


DOF
Foundry Hook

**Cradle grab hooks are standard, non-cradle hooks available on request.

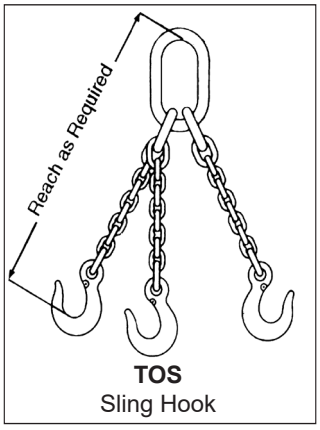
* **⚠ WARNING** Do not exceed rated capacities. Sling capacity decreases as the angle from horizontal decreases. Slings should not be used at angles of less than 30°. Refer to the chain chart on this page and the Effect of Angle chart in the General Information section of this catalog.

CHAIN SLINGS

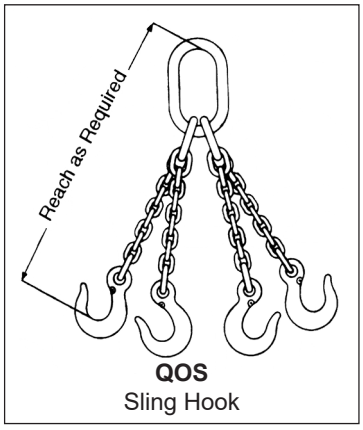
TRIPLE & QUAD CHAIN SLINGS

Grade	Chain Size (in.)	[1]Rated Capacity* @ 60° (lbs.)	Approx. Weight 5-ft. Reach Type TOS (lbs.)	Approx. Weight 5-ft. Reach Type QOS (lbs.)
100	**7/32**	7,000	12	16
100	**9/32**	11,200	16	19
100	**3/8**	22,900	28	36
100	**1/2**	39,000	53	63
100	**5/8**	58,700	81	100
100	**3/4**	91,700	116	140
80	**7/8**	88,900	154	187
80	**1**	123,900	209	250
80	**1-1/4**	187,800	358	406

[1] Rated Capacity also referred to as Working Load Limit.
When using chain slings in a choke hitch, reduce the sling's rated capacity by 20%.



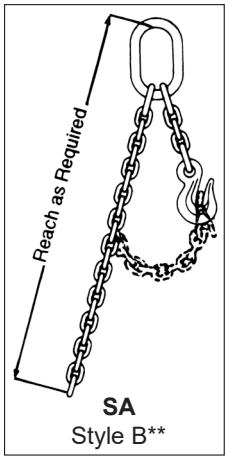
TOS
Sling Hook



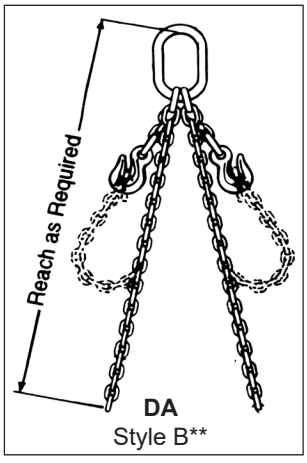
QOS
Sling Hook

ADJUSTABLE LOOP CHAIN SLINGS***

Grade	Chain Size (in.)	[1]Rated Capacity*@ 60° (lbs.)	
		Single	Double
100	**7/32**	4,700	7,000
100	**9/32**	7,400	11,200
100	**3/8**	15,200	22,900
100	**1/2**	26,000	39,400
100	**5/8**	39,100	58,700
100	**3/4**	61,100	91,700
80	**7/8**	59,200	88,900
80	**1**	82,600	123,900
80	**1-1/4**	125,200	187,800



SA
Style B**



DA
Style B**


Style A

Hook is attached directly to the master link with a coupling link.

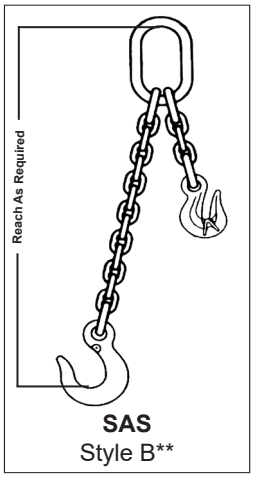
*** Cradle grab hooks standard; non-cradle hooks available on request. ** Style B slings are furnished with approximately one foot of chain.
When using chain slings in a choke hitch, reduce the sling's rated capacity by 20%.

* **⚠ WARNING** Do not exceed rated capacities. Sling capacity decreases as the angle from horizontal decreases. Slings should not be used at angles of less than 30°. Refer to the chain chart on this page and the Effect of Angle chart in the General Information section of this catalog.

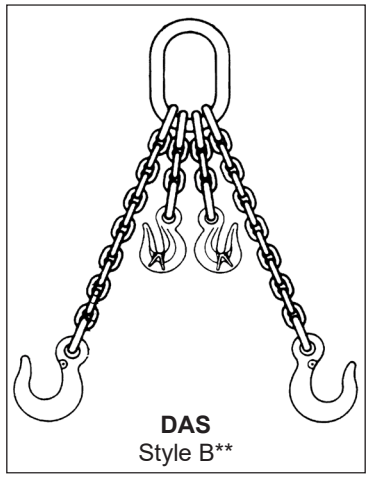
CHAIN SLINGS

ADJUSTABLE CHAIN SLINGS***

Grade	Chain Size (in.)	[1]Rated Capacity* (lbs.)	
		Single @ 90°	Double @ 60°
100	7/32	2,700	4,700
100	9/32	4,300	7,400
100	3/8	8,800	15,200
100	1/2	15,000	26,000
100	5/8	22,600	39,100
100	3/4	35,300	61,100
80	7/8	34,200	59,200
80	1	47,700	82,600
80	1-1/4	72,300	125,200



SAS
Style B**

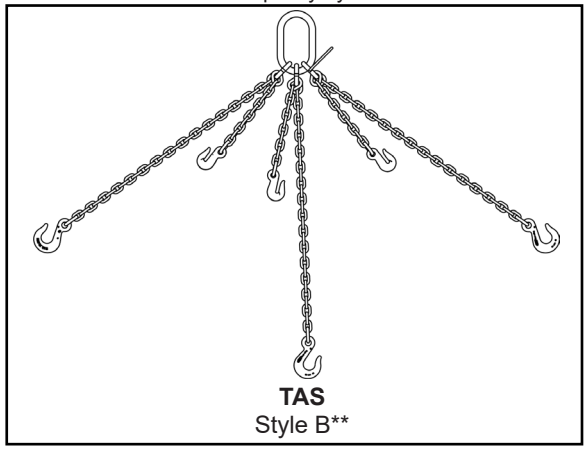

DAS
Style B**

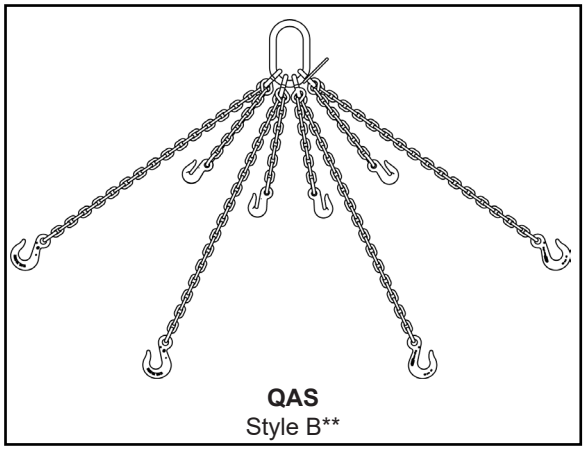
*** Cradle grab hooks standard; non-cradle hooks available on request. ** Style B slings are furnished with approximately one foot of chain. When using chain slings in a choke hitch, reduce the sling's rated capacity by 20%.

TRIPLE & QUAD ADJUSTABLE CHAIN SLINGS***

Chain Size (in.)	[1]Rated Capacity* (lbs.) @ 60°	
	Grade 80	Grade 100
7/32	5,450	7,000
9/32	9,100	11,200
3/8	18,400	22,900
1/2	31,200	39,000
5/8	47,000	58,700
3/4	73,500	91,700
7/8	88,900	-
1	123,900	-
1-1/4	187,800	-

*** Cradle grab hooks standard; non-cradle hooks available on request. When using chain slings in a choke hitch, reduce the sling's rated capacity by 20%.


TAS
Style B**


QAS
Style B**

** Style B slings are furnished with approximately one foot of chain.

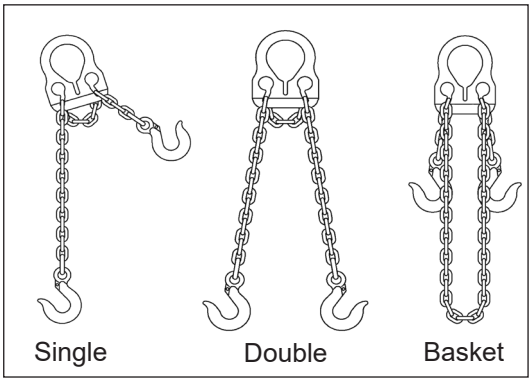
* **⚠ WARNING** Do not exceed rated capacities. Sling capacity decreases as the angle from horizontal decreases. Slings should not be used at angles of less than 30°. Refer to the chain chart on this page and the Effect of Angle chart in the General Information section of this catalog.

ADJUST-A-LINK™ GRADE 100 CHAIN SLINGS

The most versatile adjustable chain sling available.

Features and Benefits

- Alloy steel master control link for strength and reliability.
- Chain cannot be removed from the master control plate.
- Easily adjustable to accommodate a wide range of applications.
- Each assembly serialized for traceability.
- Complies with OSHA – proof-tested and certified.
- Versatile – one sling does many jobs.
- Yellow powder-coating on master plate and hooks prevents rust.
- Compact plate design fits larger hooks for easier rigging.
- Less bulk than typical double adjustable chain slings.
- High visibility yellow fittings.

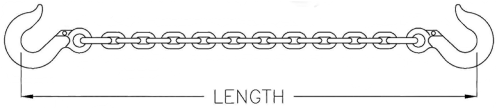


Chain Size (in.)	Rated Capacity* (lbs.)		6-ft. Length		10-ft. Length		14-ft. Length		Latch Kit Part Number
	Single @ 90°	Double @ 60°	Part Number	Wt. (lbs.)	Part Number	Wt. (lbs.)	Part Number	Wt. (lbs.)	
7/32	2,700	4,700	**30001G10**	4.2	**30002G10**	6.2	–	–	**4404**
9/32	4,300	7,400	**30003G10**	7.5	**30004G10**	10.5	–	–	**4404**
3/8	8,800	15,200	–	–	**30005G10**	18.5	**30006G10**	24.5	**38LK**
1/2⁺	12,000	20,800	–	–	**30007**	42	**30008**	52	**12LK**

Note: For AAL w/latches, insert an L after the first 5 numbers in the part number. Example: 30005LG10.

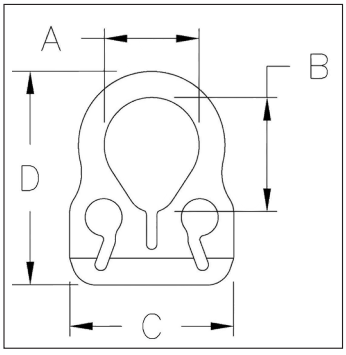
⁺ 1/2" size master link is flame cut, not forged; uses G80 capacity ratings.

* **⚠ WARNING** *Adjust-A-Link* slings should not be used at angles of less than 45°.

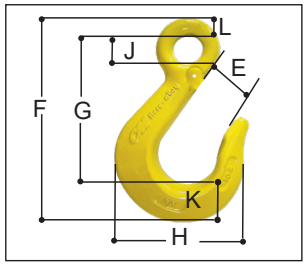


Chain must be seated at the base of adjusting slot of the master control link.

Master Plate Dimensions (in.)				
Chain Size (in.)	Eye Width A	Eye Height B	Overall Width C	Overall Length D
7/32	2.19	2.69	3.94	5.13
9/32	2.88	3.19	5.06	6.50
3/8	3.75	4.13	6.75	8.69
1/2⁺	4.38	4.38	9.75	12.75



⁺ 1/2" size master link is flame cut, not forged; uses G80 capacity ratings.



Hook Dimensions (in.)							
Chain Size	E	F	G	H	J	K	L
7/32	0.85	3.78	2.62	2.69	0.55	.872	0.30
9/32	1.01	4.41	3.01	3.19	0.64	1.03	0.37
3/8	1.44	6.66	4.77	4.33	0.91	1.30	0.58
1/2	1.78	8.16	5.69	5.50	1.13	1.66	0.75

* **⚠ WARNING** Do not exceed rated capacities. Sling capacity decreases as the angle from horizontal decreases. *Adjust-A-Link* Slings should not be used at angles of less than 45°. Refer to the chain chart on this page and the Effect of Angle chart in the General Information section of this catalog.

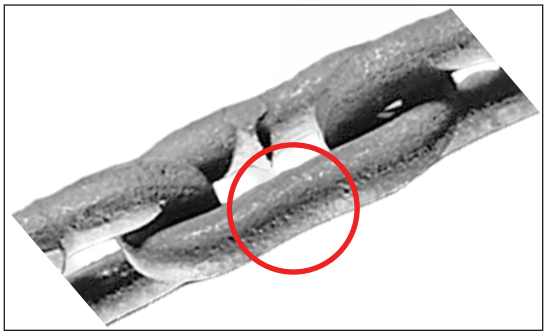
INSPECTION CRITERIA FOR CHAIN

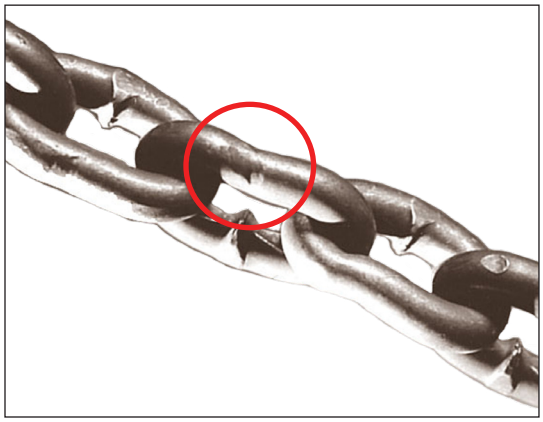
The following photos illustrate some of the common damage that occurs, indicating that the sling must be taken out of service. For inspection frequency requirements, see General Information section in this catalog.

STRETCHED CHAIN LINKS

WHAT TO LOOK FOR: Lengthening of the links and narrowing of the link width. Links that do not hinge freely with adjacent links are stretched and must be taken out of service; however, stretch **can** occur without this indicator. This damage indicates the sling has been extremely overloaded or subjected to shock loading.

TO PREVENT: Avoid overloading and shock loading.





BENT LINKS

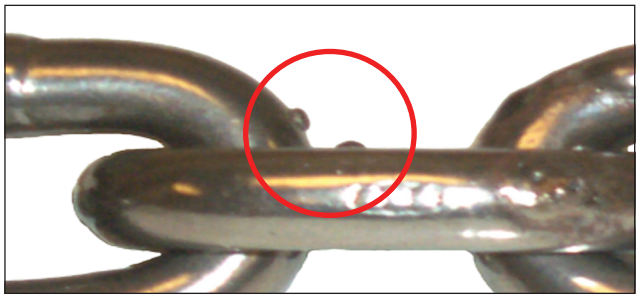
WHAT TO LOOK FOR: Bending usually occurs in only one or two adjacent links. Links will have an irregular shape when compared to other links.

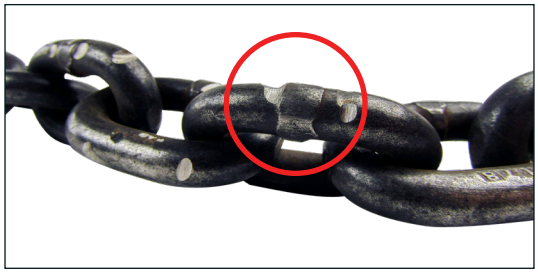
TO PREVENT: Bent links are usually the result of the chain going around the sharp edge of a load during a lift. Load edges must be padded to protect both chain and load.

WELD SPATTER

WHAT TO LOOK FOR: Metallic bumps on any link of chain.

TO PREVENT: The heat from weld spatter can adversely affect the strength of a chain link. Slings must be shielded from welding operations.





GOUGED LINKS

WHAT TO LOOK FOR: Indentations on an otherwise smooth link surface.

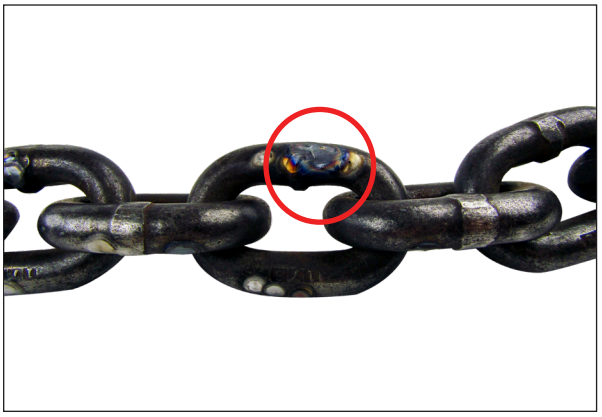
TO PREVENT: Gouging of links is usually caused by heavy loads being dragged over or dropped onto the chain. Protect sling from these situations.

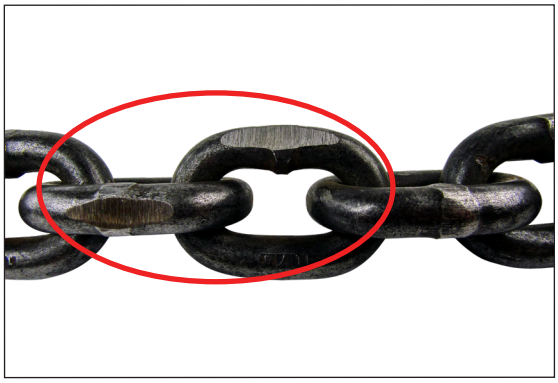
INSPECTION CRITERIA FOR CHAIN

HEAT DAMAGE

WHAT TO LOOK FOR: Discolored areas of chain

TO PREVENT: High temperatures begin to affect alloy chain strength at 400°F. When using chain slings at elevated temperatures, refer to the *Lift-All* temperature chart for working load reductions.





WORN LINKS

WHAT TO LOOK FOR: Excessive wear and a reduction of the material diameter, especially at the bearing points. Refer to *Lift-All* Wear Allowance Table for minimum allowable link thickness.

TO PREVENT: Wear is a natural result of sling use. Keeping load weights within the ratings of the slings being used will provide the maximum sling wear life.

DAMAGED HARDWARE

WHAT TO LOOK FOR: Wear on any area of the hook exceeding 10% (or as recommended by the manufacturer) or hooks showing any bend or twist from the plane of the unbent hook should be removed from service.

TO PREVENT: Never tip load hooks or lift with hardware on a load edge.