

# ALLOY CHAIN SLING TYPES & TERMS GUIDE



## ALLOY CHAIN SLING COMPONENTS

### Chain Grades

There are only three grades of chain that, per industry standards, are acceptable for executing overhead lifts:

- Grade 80
- Grade 100
- Grade 120

Anything less than Grade 80 chain is made for transport, or general-use, but not overhead lifting. Grade 70 chain is a transportation chain used to tie-down loads on the back of flatbed trailers. However, it is never recommended for overhead lifting.

Grade 120 chain is made by very few manufacturers in the United States. While it is available, it isn't always readily accessible. Grade 80 and Grade 100 are generally 99% of what comes out of Mazzella's rigging shops across the country.

\* One exception to this rule is Grade 63 chain. This stainless steel grade of chain is required in food grade and some specific chemical applications.

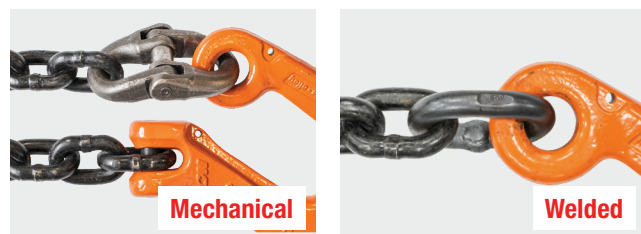


### Mechanical vs. Welded Connections

The terms "mechanical" and "welded" refer to the end fittings, including hooks and rings, on either end of the chain and how they are attached.

Mechanical chain sling attachments are connected to a welded chain and held in place by pins. Mechanical components can be removed and interchanged with other hooks and lifting devices, if necessary.

Welded chain sling attachments are connections that are welded to both sides of the chain, and then heat treated. These are permanent connections to the chain sling assembly.



### Adjustability

Adjustability is one of the main benefits of chain slings, especially when using long chain slings. Having a chain sling with a grab hook or another adjustment device allows for easy changing of the length of the legs.



# ALLOY CHAIN SLING

## TYPES & TERMS GUIDE



### ALLOY CHAIN SLING REACH

When determining the alloy chain sling reach (length), measure from the top load-bearing point of the master link to the load-bearing point of the end fitting.

Endless alloy chain sling length is measured by pull to pull. See example below.



### ALLOY CHAIN BRIDLE REACH

Multi-leg sling assemblies, or single-leg slings with fittings, are measured from the load-bearing point of any rings, hooks, or fittings.

\* Chain sling length is the distance between the extreme bearing points of the sling assembly.



### ALLOY CHAIN DIAMETER

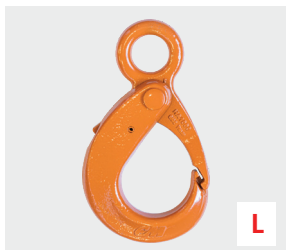
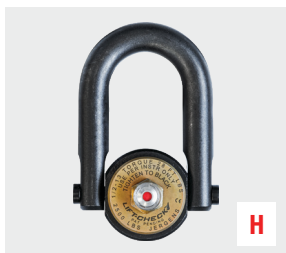
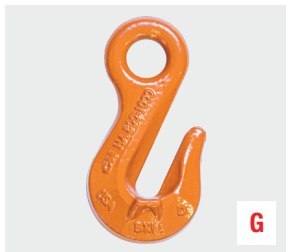
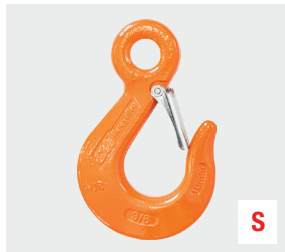
Alloy steel chains can be made from steel rod ranging between 7/32" and 1-1/4" in diameter, with capabilities ranging from 2,100 lbs. (single-leg assemblies) to over 10,000 lbs. (multi-leg assemblies).

### HITCHES

Alloy chain slings can be used in the following hitch orientations:



# ALLOY CHAIN SLING TYPES & TERMS GUIDE



## NUMBER OF LEGS

- S** Single (1) Leg
- D** Double (2) Leg
- T** Triple (3) Leg
- Q** Quadruple (4) Leg

## FITTING AT TOP OF SLING

- O** Oblong (Oval) Master Link
- P** Pear-Shaped Master Link
- R** Round (Circle) Master Link
- S** Sling Hook
- G** Grab Hook
- F** Foundry Hook
- H** Hoist Ring
- P** Plate Hook
- L** Locking Hook

## FITTING AT BOTTOM OF SLING

- O** Oblong (Oval) Master Link
- P** Pear-Shaped Master Link
- R** Round (Circle) Master Link
- S** Sling Hook
- G** Grab Hook
- F** Foundry Hook
- H** Hoist Ring
- P** Plate Hook
- L** Locking Hook

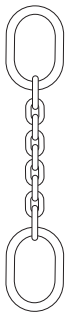
## ADJUSTER STYLE

- A** Type A Adjuster  
(present on a length of chain less than 2" from collector ring)
- B** Type B Adjuster  
(present on a length of chain more than 2" from collector ring)

# ALLOY CHAIN SLING

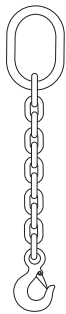
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### COMMON ALLOY CHAIN SLING CONFIGURATIONS



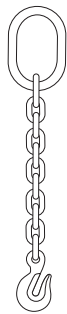
**S00**

Single chain sling  
with master link  
each end



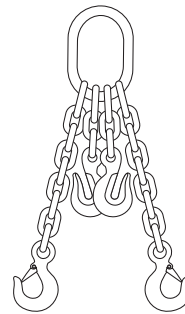
**S0S**

Single chain sling  
with master link  
and sling hook



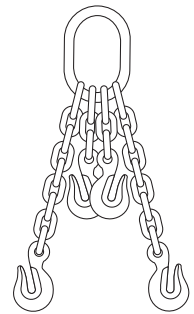
**S0G**

Single chain sling  
with master link  
and grab hook



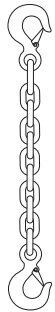
**D0SA**

Adjustable double  
chain sling with master  
link and sling hooks



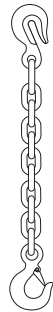
**D0GA**

Adjustable double  
chain sling with master  
link and grab hooks



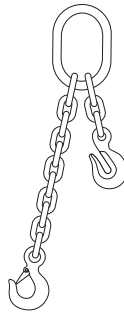
**SSS**

Single chain sling  
with sling hook  
each end



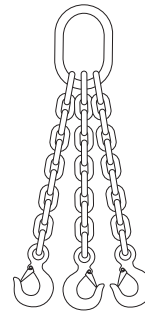
**SGS**

Single chain sling  
with sling hook  
and grab hook



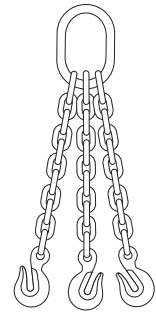
**S0SA**

Adjustable single chain  
sling with master link  
and sling hook



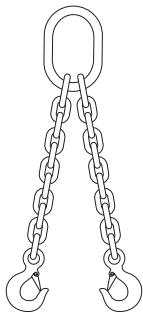
**T0S**

Triple chain sling  
with master link  
and sling hooks



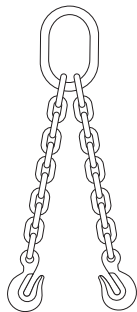
**T0G**

Triple chain sling  
with master link  
and grab hooks



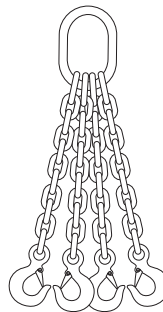
**D0S**

Double chain sling  
with master link  
and sling hooks



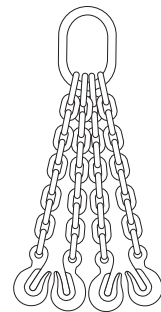
**D0G**

Double chain sling  
with master link  
and grab hooks



**Q0S**

Quadruple chain sling  
with master link  
and sling hooks



**Q0G**

Quadruple chain sling  
with master link  
and grab hooks



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## ALLOY CHAIN SLING PROTECTION

Sling protection should always be used if an alloy chain sling is going to be exposed to an edge or abrasive surface. For alloy chain slings, a tubular sleeve is common. This thin layer of padding can go around abrasive edges and soften the contact between the sling and the load.

Custom sleeves and wear pads can be made from a range of materials, including Cordura, synthetic nylon or polyester webbing, leather, felt-lined fabrics, and more, depending on your lifting need.



### Good-Fit Applications

Good-fit applications for alloy chain slings include:

- Construction
- Heavy manufacturing
- Mining
- Oil & gas
- Ship building
- Steel mills

### Bad-Fit Applications

Alloy steel chains are durable pieces of rigging equipment, but are heavy and less ergonomic than other slings of comparable capacity. Alloy chain slings should not be used for loads that are susceptible to crushing or loads that are highly finished and could be scratched, scuffed, or marred by a chain sling.

# ALLOY CHAIN SLING TYPES & TERMS GUIDE

## HOW TO READ A MAZZELLA ALLOY CHAIN SLING TAG

Per ASME B30.9, each alloy chain sling shall be marked by the manufacturer to include:

- 1** Name or trademark of manufacturer, or if repaired, the entity performing repairs
- 2** Grade
- 3** Nominal chain size
- 4** Number of legs
- 5** Rated load for at least one hitch type and the angle upon which it is based
- 6** Length (reach)
- 7** Individual sling identification (e.g., serial number)

