Large Inventory Covering A Full Line of Products

Industrial Wire Rope Supply Co., Inc., maintains a large inventory of wire rope in all diameters and constructions to meet the needs and expectations of the market.

In addition, Industrial Wire Rope Supply Co., Inc. offers a complete range of wire rope slings, nylon slings, chain, shackles, thimbles, sockets, and other related hardware.

As a distributor for all manufacturers of wire rope and most manufacturers of rigging and hoisting equipment, we are able to provide prompt delivery of all products by utilizing their stocks from all around the country.

Full Range of Equipment and Services

- Proof testing on hardware and wire rope beyond 2,000,000 pounds
- Destruction test performed beyond 1,000,000 pounds 2-1/4" diameter wire rope
- Direct distribution with our own modern truck fleet
- Field inspections and consulting

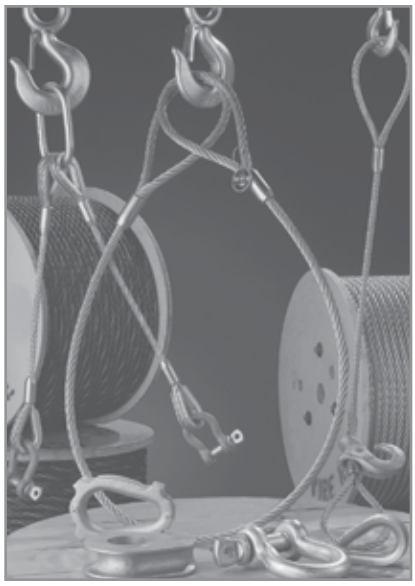
Quality and Service – Our Number One Priority

We have the opportunity to deal with a wide variety of successful companies in multiple industries, our key to growth has been to provide the products they need with the quality they demand and the service we know they deserve. This includes technical support that comes from a knowledgeable sales staff totalling over 200 years experience in wire rope.

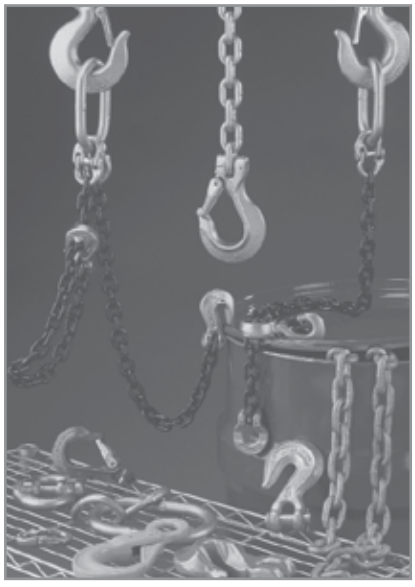
Our ability to provide "one-stop shopping" means our customers can rely on Industrial Wire Rope Supply Co., Inc. for all their demands and prompt reliable service.

Wire Rope

Wire Rope Fittings



Wire Rope Slings



Chain

Synthetic Web Slings

Miscellaneous Equipment

ST. LOUIS, MO • CINCINNATI, OH

WE CAN SUPPLY ALL THE RIGGING YOU NEED FOR LIFTING, LOADING AND LASHING!

BLOCKS

CHAIN
- Alloy - G80 & G100
- Anchor
- Boomer - G70
- Hi-Test - G43
- Hoist
- Proof Coil - G30
- Tail Chains

CLIPS
- Drop Forged
- Fist Grip
- Malleable

COLD SHUTS

CORDAGE
- Manila
- Nylon
- Poly
- HMPE

FENCING
- Orange Plastic
- Wire Rope
- SILT Barriers

HOOKS

LINKS

LOAD BINDERS

PENDANTS

SHACKLES
- Alloy
- Carbon
- Lifting
- Round Pin Anchor
- Round Pin Chain
- Safety Anchor
- Safety Chain
- Screw Pin Anchor
- Screw Pin Chain
- Stainless Steel
- Towing
- Trawling
- Wide Body

SHEAVES

SLINGS
- Chain
- Fiber Rope
- Nylon web
- Polyester Round
- Steel Mesh
- Synthetic Web
- Wire Rope

SOCKETS
- Bridge
- Spelter
- Strand
- Swage
- Wedge

SWIVELS
- Ball Bearing
- Chain
- Jaw End

THIMBLES
- Bronze
- Crescent
- Equalizing
- Fiber Rope
- Hawser
- Heavy Duty
- Regular
- Slip-On
- Slip-Thru
- Solid
- Stainless
- Towing

TURNBUCKLES
- Stainless Steel
- Galvanized

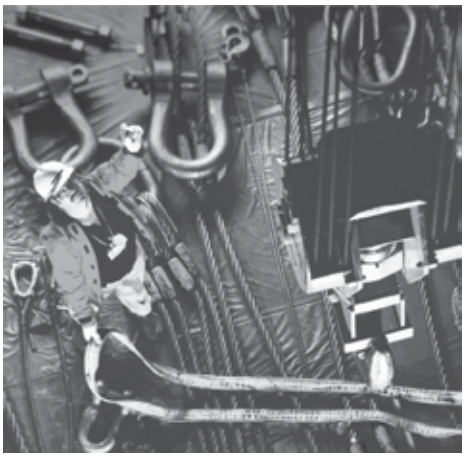
WIRE ROPE
- Aircraft Cable
- Cable-Laid
- Drill Line
- Galvanized
- Mooring Line
- Rotation Resistant
- Sandline
- Stainless Steel
- Trawl Cable
- Domestic
- Import

CONTENTS

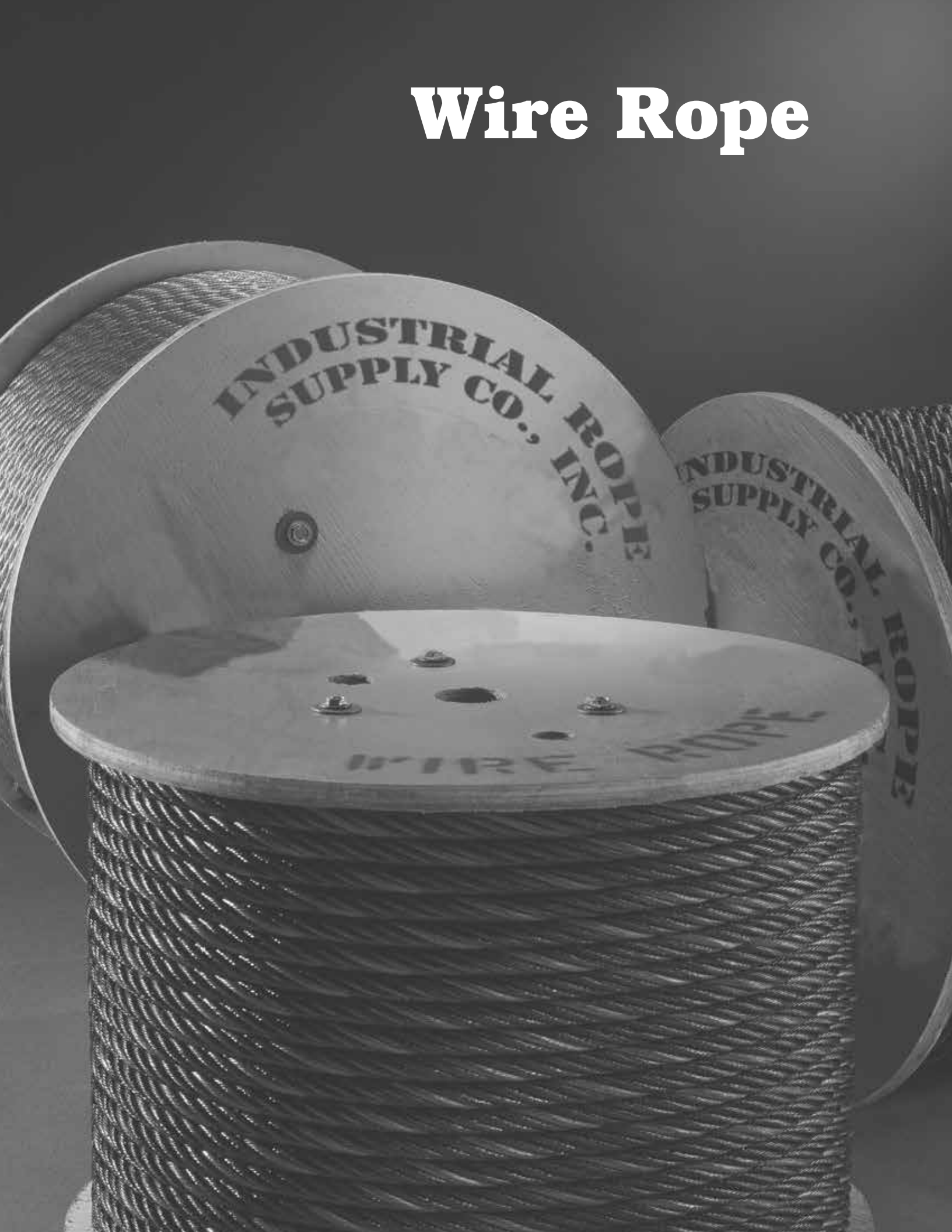
All specifications incuded herein are subject to change without notice.

CONTENTS

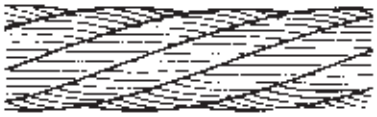
INDUSTRIAL WIRE ROPE SUPPLY COMPANY INC.



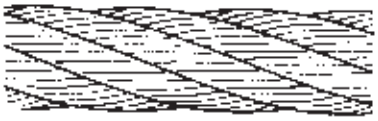
Wire Rope


INDUSTRIAL ROPE
SUPPLY CO., INC.
INDUSTRIAL ROPE
SUPPLY CO.,
WIRE ROPE

Wire Rope: Popular Classifications

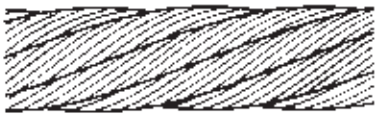


Left Lay REGULAR LAY

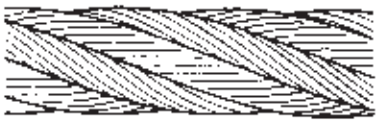


Right Lay REGULAR LAY

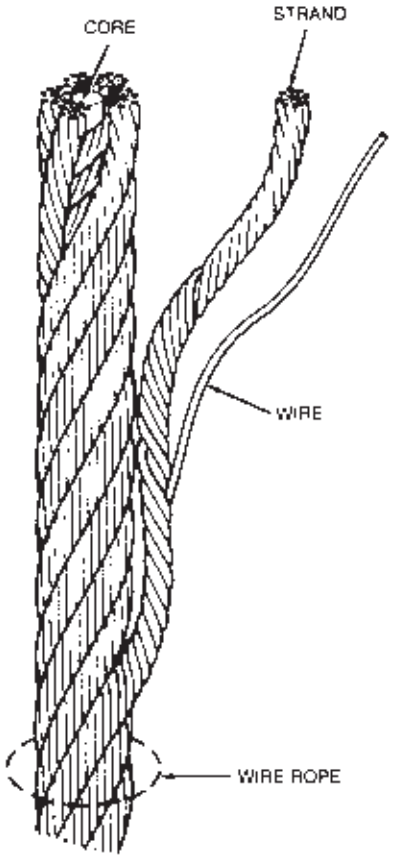
Right Lay LANG LAY



Left Lay LANG LAY



Alternate Lay



BASED ON THE NOMINAL NUMBER OF WIRES IN EACH STRAND

Classification	Description
6 × 7	Containing 6 strands that are made up of 3 through 14 wires, of which no more than 9 are outside wires.
6 × 19	Containing 6 stands that are made up of 15 through 26 wires, of which no more than 12 are outside wires.
6 × 37	Containing 6 strands that are made up of 27 through 49 wires, of which no more than 18 are outside wires.
6 × 61	Containing 6 strands that are made up of 50 through 74 wires, of which no more than 24 are outside wires.
6 × 91	Containing 6 strands that are made up of 75 through 109 wires, of which no more that 30 are outside wires.
6 × 127	Containing 6 strands that are made up of 110 or more wires, of which no more than 36 are outside wires.
8 × 19	Containing 8 strands that are made up of 15 through 26 wires, of which no more than 12 are outside wires.
19 × 7 and 18 × 7	Containing 19 strands, each strand is made up of 7 wires. It is manufactured by covering an inner rope of 7 × 7 left lang lay construction with 12 strands in right regular lay. (The rotation-resistant property that characterizes this highly specialized construction is a result of the counter torques developed by the two layers.) When the steel wire core strand is replaced by a fiber core, the decription becomes 18 × 7.

When a center wire is replaced by a strand, it is considered as a single wire, and the rope classification remains unchanged.

There are, of course, many other types of wire rope, but they are useful only in a limited number of applications and, as such, are sold as specialties.

1 Wire Rope Specifications

TYPES OF CENTERS

An important point to consider is the selection of the proper type center to be needed in the rope. Wire Ropes are made with either fiber core or steel wire core.

1) Fiber Center (FC)
   This center is made of either natural fibers or polypropylene and offers greater elasticity than the Independent Wire Rope Core.

2) Independent Wire Rope Core (IWRC)
   This center is usually composed of a separate 7 × 7 wire rope designated as IWRC. The steel core increases the strength by 7% and the weight by 10%. These steel cores provide more substantial support than fiber cores to the outer strands during the rope's operating life. Steel centers resist crushing, are more resistant to heat and increase the strength of the rope.

SAFETY FACTOR

The Safety Factor being the ratio between the minimum Breaking load of the rope and the safe working load (SWL) tells at what percentage of its ultimate strength a wire rope is operating. The Safety Factor takes into consideration both normal rope wear and potential stresses in various applications. The best practice in determining an adequate safety factor is to analyze the specific conditions involved in each individual installation. The following example shows how to determine the Safety Factor: If a rope is working under a max. operating load of 10,000 lbs and is having an ultimate strength of 50,000 lbs the factor is 5 which means it is operating at 20% of its ultimate strength.

FLEET ANGLE

The fleet angle is the angle formed between the rope running to or from the extreme left or right of the drum and a line drawn from the center of the sheave normal to the axis of the drum. For optimum efficiency, the angle here should not exceed 1½° for a smooth drum, or 2° for a grooved drum. If the fleet angle is larger than the recommended limits it can cause bad winding on smooth drums and rubbing against the flanges of the sheave grooves. Too small a fleet angle should also be avoided since it will cause the rope to pile up against the flange head.

Before installing any wire rope that winds onto a drum, the fleet angle should be checked and if found improper, conditions should be corrected.

SHEAVE ALIGNMENT

Proper alignment of sheaves is essential. The main sheave should line up with the center of the hoisting drum, otherwise both the rope and sheave flanges will be subjected to severe wear and rapid deterioration will occur. If rope speeds are high sheaves should also be balanced.

NOTE:

Wire rope products will break if abused, misused or overused.
Regular inspection and maintenance are necessary.
Consult industry recommendations and OSHA standards before using.

Wire Rope

SUGGESTED WIRE ROPE FOR PARTICULAR USES

Preformed or Form-Set construction is used for all ropes shown.

USE	SIZE (IN.)	CONSTRUCTION	LAY	CORE	GRADE
Clamshell					
Holding & Closing Lines	1/2—1 1/4	6 × 25 FW or 6 × 36 WS	RRL	IWRC	EIPS
Boom Hoist Line	1/2 & Up	6 × 25 FW	RRL	IWRC	EIPS
Tag Line	1/4 & 5/16	6 × 36 WS	RRL	FIBER	EIPS
	3/8 & Up	6 × 41 WS	RRL	FIBER	EIPS
Crawler & Truck Cranes					
Hoist Line	1/2—1 1/4	6 x 25 FW or 19 x 7 RR	RRL	IWRC	EIPS
Boom Hoist Line	All	6 x 25 FW	RRL	IWRC	EIPS
Whip Line	3/8—1 1/4	19 x 7 RR	RRL	IWRC	EIPS
Cranes & Hoists					
Overhead	1/4—7/16	6 × 19 S or 6 × 36 WS	RRL	IWRC	EIPS
	1/2—1	6 × 36 WS	RRL	IWRC	EIPS
	1 1/8 & Up	6 × 41 WS	RRL	IWRC	EIPS
Ladle Crane	1/2—1	6 × 36 WS	RRL	IWRC	EIPS
	1 1/8 & Up	6 × 41 WS	RRL	IWRC	EIPS
Dragline					
Hoist Line	Up To 1 1/4	6 x 25 FW or 8 x 25	RLL	IWRC	EIPS
	1 3/8 & Up	6 x 41 WS or 8 x 25, 8 x 36	RLL	IWRC	EIPS
Drag Line	3/4—1 1/2	6 x 21 FW or 8 x 25	RLL	IWRC	EIPS
	1 5/8—3	6 x 25 FW or 8 x 36	RLL	IWRC	EIPS
	3 & Up	6 x 41 WS or 8 x 36	RLL	IWRC	EIPS
Boom Hoist	1/2 & Up	6 x 25 FW or 8 x 25	RRL	IWRC	EIPS
Shovels					
Hoist Line	Up To 1 1/8	6 x 25 FW or 8 x 25	RLL	IWRC	EIPS
	1 1/4 & Up	6 x 41 WS or 8 x 25	RLL	IWRC	EIPS
Crowd & Retract	3/4 & Up	6 x 41 WS or 8 x 25	RLL	IWRC	EIPS
Boom Hoist	1/2—1 1/4	6 x 25 FW or 8 x 25	RRL	IWRC	EIPS
	1 3/8 & Up	6 x 41 WS or 8 x 25	RRL	IWRC	EIPS
Trip Rope	3/8—1	6 x 36 WS or 8 x 25	RRL	FIBER	IPS
	1" & Up	6 x 41 WS or 8 x 25	RRL	FIBER	IPS
Logging Ropes					
Chokers	All	6 × 26 WS or 6 × 25 FW	RRL	IWRC	EIPS
Winch Lines	All	6 × 26 WS or 6 X 25 FW	RRL	IWRC	EIPS
Mining					
Slope Rope	All	6 × 19 S or 6 × 21 FW	RLL	FIBER	IPS
Shaft Hoist Ropes	All	6 × 19 S or 6 × 25 FW	RLL or RRL	FIBER	IPS
Slusher Rope	All	3 × 19 S or 6 × 19 S	RRL	IWRC	IPS
Mining Machine Rope	All	6 × 36 WS or 6 × 41 WS	RRL	IWRC	EIPS

SUGGESTED WIRE ROPE FOR PARTICULAR USES

Preformed or Form-Set construction is used for all ropes shown.

USE	SIZE (IN.)	CONSTRUCTION	LAY	CORE	GRADE
Marine Ropes					
Towing Hawser	All	6 x 41 WS	RRL	F.C. or IWRC	EIPS
Mooring Lines	All	6 x 24 S or 6 x 41 WS	RRL	F.C. or IWRC	EIPS
Cargo Falls	All	6 x 36 WS	RRL	IWRC	EIPS
Oil Field					
Rotary Drill Lines	¾—1½	6 x 19 S or 6 x 21 S	RRL	IWRC	EIPS
Sand Lines	All	6 x 7	RRL	POLY	IPS
Tubing Line	All	6 x 26 WS or 19 x 7 RR	RRL or LRL	IWRC	EIPS
Cable Tool Line	All	6 x 21 S	LRL	POLY	IPS
Offshore					
Rotary Drill Lines	1-1¾	6 x 19 S	RRL	IWRC	EIPS
Riser Tensioner Lines	1¼-2	6 x 41 WS	RLL	IWRC	IPS
Guide Lines	½-1	6 x 25FW	RRL	IWRC	IPS
Sand Lines	½-⅞	6 x 7	RRL	FIBER	IPS
Pendant Lines	1½-3	6 x 25 FW or 6 x 37 WS	RRL	IWRC	EIPS
Crane-Main Hoist	⅜-2	6 x 25 FW or 6 x 37 WS	RRL	F.C. or IWRC	IPS or EIPS
Crane-Auxiliary Hoist	⅜-2¼	19 x 7 RR or 36 x 7 RR	RRL	IWRC	EIPS
Anchor Lines	1⅜-6	6 x 37 WS through 6 x 91	RRL	IWRC	EIPS
Heavy Lift Slings	1½-4	6 x 37 WS	RRL	IWRC	EIPS
Cable Laid Heavy Lift Slings	3½-10	7 x 6 x 41	RLL or LLL	IWRC	EIPS

Definition of Abbreviations

Grade

IPS - Improved Plow Steel
EIPS - Extra Improved Plow Steel
GIPS - Galvanized Improved Plow Steel

Construction

FW - Filler Wire
WS - Warrington Seale

SFW - Seale Filler Wire
RR - Rotation Resistant
W - Warrington
S - Seale

Lay

RRL - Right Regular Lay
RLL - Right Lang Lay

LRL - Left Regular Lay
LLL - Left Lang Lay

Core

IWRC - Wire Rope Core
FC - Fiber Core

Fiber - Hemp or Poly Core
Poly - Polypropylene Core

DIAGNOSTIC GUIDE TO COMMON WIRE ROPE DEGRADATION

Mode	Symptoms	Possible Causes
Fatigue	Wire break is transverse—either straight across or Z shape. Broken ends will appear grainy.	Check for rope bent around too small a radius; vibration or whipping; wobbly sheaves; rollers too small; reverse bends; bent shafts; tight grooves; corrosion; small drums & sheaves; incorrect rope construction; improper installation; poor end terminations. (In the absence of other modes of degradation, all rope will eventually fail in fatigue.)
Tension	Wire break reveals a mixture of cup and cone fracture and shear breaks.	Check for overloads; sticky, grabby clutches; jerky conditions; loose bearing on drum; fast starts, fast stops, broken sheave flange; wrong rope size & grade; poor end terminations. Check for too great a strain on rope after factors of degradation have weakened it.
Abrasion	Wire break mainly displays outer wires worn smooth to knife edge thinness. Wire broken by abrasion in combination with another factor will show a combination break.	Check for change in rope or sheave size; change in load; overburden change; frozen or stuck sheaves; soft rollers, sheaves or drums; excessive fleet angle; misalignment of sheaves; kinks; improperly attached fittings; grit & sand; objects imbedded in rope; improper grooving.
Abrasion plus Fatigue	Reduced cross-section is broken off square thereby producing a chisel shape.	A long term condition normal to the operating process.
Abrasion plus Tension	Reduced cross-section is necked down as in a cup and cone configuration. Tensile break produces a chisel shape.	A long term condition normal to the operating process.
Cut or Gouged or Rough Wire	Wire ends are pinched down, mashed and/or cut in a rough diagonal shear-like manner.	Check on all the above conditions for mechanical abuse, or either abnormal or accidental forces during installation.
Torsion or Twisting	Wire ends show evidence of twist and/or cork-screw effect.	Check on all the above conditions for mechanical abuse, or either abnormal or accidental forces during installation.
Mashing	Wires are flattened and spread at broken ends.	Check on all the above conditions for mechanical abuse, or either abnormal or accidental forces during installation. (This is a common occurrence on the drum.)
Corrosion	Wire surfaces are pitted with break showing evidence either of fatigue tension or abrasion.	Indicates improper lubrication or storage, or a corrosive environment.

1

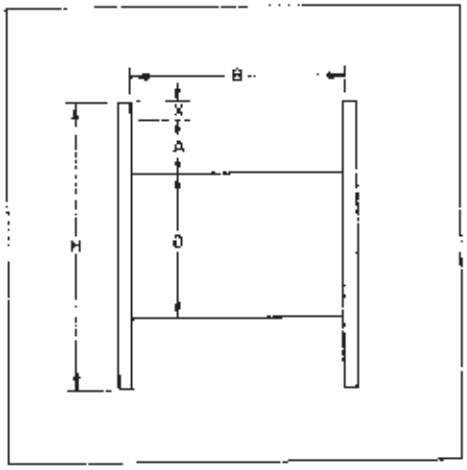
Figuring Reel Capacity

SHIPPING REEL CAPACITY

While it is virtually impossible to calculate the precise length of wire rope that can be spooled on a reel or drum, the following formula provides a sufficiently close approximation.

The formula* is: $L = (A + D) \cdot A \cdot B \cdot K$

where:
- L = length of rope (ft)
- A = depth of rope space on drum (inches)
- B = width of drum between flanges (inches)
- D = drum barrel diameter (inches)
- K = constant for given rope diameter (see table below)
- H = diameter of reel flanges (inches)
- x = clearance



"K" FACTORS**

(0.2618 ÷ rope diameter²)

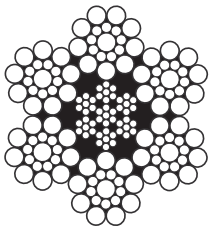
Diam. (inches)	K	Diam. (inches)	K	Diam. (inches)	K
1/16	49.8	1/2	0.925	1 3/8	0.127
3/32	23.4	9/16	0.741	1 1/2	0.107
1/8	13.6	5/8	0.607	1 5/8	0.0886
5/32	8.72	11/16	0.506	1 3/4	0.0770
3/16	6.14	3/4	0.428	1 7/8	0.0675
7/32	4.59	13/16	0.354	2	0.0597
1/4	3.29	7/8	0.308	2 1/8	0.0532
9/32	2.21	1	0.239	2 1/4	0.0476
3/8	1.58	1 1/8	0.191	2 3/8	0.0419
7/16	1.19	1 1/4	0.152	2 1/2	0.0380

*This formula is based on uniform rope winding on the reel. It will not give correct results if the winding is non-uniform. The formula also assumes that there will be the same number of wraps of rope in each layer. While this is not strictly correct, there is no appreciable error in the result unless the traverse of the reel is quite small relative to the flange diameter ("H").

**The values given for "K" factors take normal rope oversize into account. Clearance ("x") should be about 2 inches unless rope-end fittings require more.

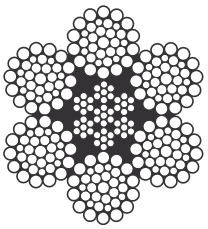
Choosing the right rope for your application

With each application, your choices of wire ropes can be many. How do you know which one works best for you? Ropes include a combination of properties that give them specific performance abilities. Before you choose, it pays to look closely at each rope's special properties.



IF YOU NEED ABRASION RESISTANCE

> Abrasion resistance increases with fewer, larger outside wires per strand.



IF YOU NEED FATIGUE RESISTANCE

> Fatigue resistance increases with more, smaller outside wires per strand.

NO SINGLE WIRE ROPE CAN DO IT ALL

All wire ropes feature design property tradeoffs. In most cases, a wire rope cannot increase both fatigue resistance and abrasion resistance. For example, when you increase fatigue resistance by selecting a rope with more wires, the rope will have less abrasion resistance because of its greater number of smaller outer wires.

When you need wire rope with greater abrasion resistance, one choice is a rope with fewer (and larger) outer wires to reduce the effects of surface wear. But that means the rope's fatigue resistance will decrease. That's why you need to choose your wire rope like you would any other machine. Very carefully. You must consider all operating conditions and rope properties.

THE BASIC PROPERTIES OF WIRE ROPE

How do you choose the wire rope that's best suited for your job? Following are the most common properties to be considered when selecting a rope for an application.

STRENGTH Wire rope strength is usually measured in tons of 2,000 lbs. In published material, wire rope strength is shown as minimum breaking force (MBF) or nominal (catalog) strength. These refer to calculated strength figures that have been accepted by the wire rope industry.

When placed under tension on a test device, a new rope should break at a figure equal to – or higher than – the minimum breaking force shown for that rope.

The values in this handbook apply to new, unused rope. A rope should never operate at – or near – the minimum breaking force. During its useful life, a rope loses strength gradually due to natural causes such as surface wear and metal fatigue.

FATIGUE RESISTANCE Fatigue resistance involves metal fatigue of the wires that make up a rope. To have high fatigue resistance, wires must be capable of bending repeatedly under stress – for example, a rope passing over a sheave.

Increased fatigue resistance is achieved in a rope design by using a large number of wires. It involves both the basic metallurgy and the diameters of wires.

In general, a rope made of many wires will have greater fatigue resistance than a same-size rope made of fewer, larger wires because smaller wires have greater ability to bend as the rope passes over sheaves or around drums. To reduce the effects of fatigue, ropes must never bend over sheaves or drums with a diameter so small as to bend wires excessively. There are precise recommendations for sheave and drum sizes to properly accommodate all sizes and types of ropes.

1

Every rope is subject to metal fatigue from bending stress while in operation, and therefore the rope's strength gradually diminishes as the rope is used.

CRUSHING RESISTANCE Crushing is the effect of external pressure on a rope, which damages it by distorting the cross-section shape of the rope, its strands or core – or all three.

Crushing resistance therefore is a rope's ability to withstand or resist external forces, and is a term generally used to express comparison between ropes.

When a rope is damaged by crushing, the wires, strands and core are prevented from moving and adjusting normally during operation.

In general, IWRC ropes are more crush resistant than fiber core ropes. Regular lay ropes are more crush resistant than lang lay ropes. Six strand ropes have greater crush resistance than 8 strand ropes or 19 strand ropes. Flex-X® ropes are more crush resistant than standard round-strand ropes.

RESISTANCE TO METAL LOSS AND DEFORMATION Metal loss refers to the actual wearing away of metal from the outer wires of a rope, and metal deformation is the changing of the shape of outer wires of a rope.

In general, resistance to metal loss by abrasion (usually called "abrasion resistance") refers to a rope's ability to withstand metal being worn away along its exterior. This reduces strength of a rope.

The most common form of metal deformation is generally called "peening" – since outside wires of a peened rope appear to have been "hammered" along their exposed surface.

Peening usually occurs on drums, caused by rope-to-rope contact during spooling of the rope on the drum. It may also occur on sheaves.

Peening causes metal fatigue, which in turn may cause wire failure. The hammering – which causes the metal of the wire to flow into a new shape – realigns the grain structure of the metal, thereby affecting its fatigue resistance. The out-of-round shape also impairs wire movement when the rope bends.

RESISTANCE TO ROTATION When a load is placed on a rope, torque is created within the rope as wires and strands try to straighten out. This is normal and the rope is designed to operate with this load-induced torque. However, this torque can cause loads to rotate. Load-induced torque can be reduced by specially designed rotation resistant ropes.

In standard 6 and 8 strand ropes, the torques produced by the outer strands and the IWRC is in the same direction and add together. In rotation resistant ropes, the lay of the outer strands is in the opposite direction to the lay of the inner strands, thus the torques produced are in opposite directions and the torques subtract from each other.

Depending upon your application, other wire rope properties such as stability, bendability or reserve strength may need to be considered.

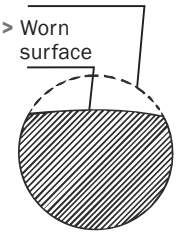
"SQUARED ENDS"

> Typical example of breaks due to fatigue.

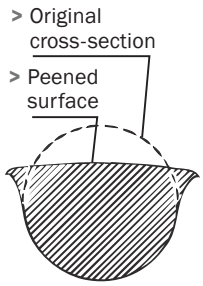
"CRUSHING"

> Typical example of external pressure on a wire rope.

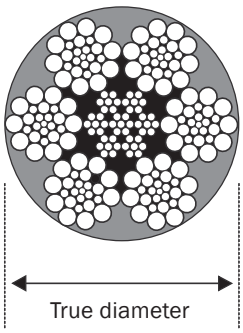
CROSS-SECTION OF A WORN WIRE



CROSS-SECTION OF A PEENED WIRE

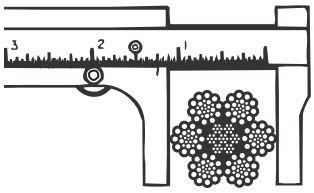


How to measure wire rope diameter

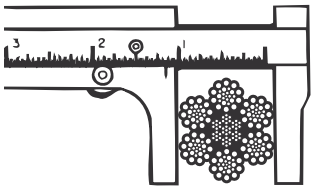


The actual diameter of a wire rope is the diameter of a circumscribed circle that will enclose all the strands. It's the largest cross-sectional measurement as shown here. You should make the measurement carefully with calipers.

The illustrations at left show the correct and incorrect methods of measuring wire ropes with even numbers of outer strands.



Correct



Incorrect

Metric conversion and equivalents

As we move toward metric measurements, it will become increasingly necessary to convert English units into SI – International System of Units – (or metrics), and vice versa. The following table and conversion factors are included in this handbook to help you.

ROPE DIAMETER

For standard, general purpose wire ropes, in measuring diameter, the industry is leaning toward a "soft" conversion to metric during the transition period. For example, a 1" diameter rope converts to 25.4 mm in metrics. Using the soft conversion, this is changed to the whole metric size that most nearly parallels the 1" size range, or 26 mm. In sizes smaller than 5/8", the rope diameter is rounded to the nearest 0.5 mm.

STRENGTHS AND WEIGHTS

The following table gives the closest equivalent metric diameters for rope sizes up through 5 inches. Again, these metric sizes are based on the industry's "soft" conversion. Your application may have tighter tolerances that require a hard conversion. Therefore, the values in the table would not apply.

Since rope minimum breaking force and weight per unit of length vary for different types and grade of ropes, the following conversion factors are given to help you convert the figures you need:

> To convert rope weight in pounds per foot (lb/ft) to kilograms per meter (kg/m), multiply by 1.488.

Nominal wire rope diameter

Inches	Millimeters	Inches	Millimeters
1/4	6.5	2 1/8	54
5/16	8	2 1/4	58
3/8	9.5	2 3/8	60
7/16	11.5	2 1/2	64
1/2	13	2 5/8	67
9/16	14.5	2 3/4	71
5/8	16	2 7/8	74
3/4	19	3	77
7/8	22	3 1/8	80
1	26	3 1/4	83
1 1/8	29	3 3/8	87
1 1/4	32	3 1/2	90
1 3/8	35	3 3/4	96
1 1/2	38	4	103
1 5/8	42	4 1/4	109
1 3/4	45	4 1/2	115
1 7/8	48	4 3/4	122
2	52	5	128

> To convert rope minimum breaking force in tons (T) to kilonewtons (kN), multiply by 8.897; 1 lb equals 4.448 newtons (N).

> To convert rope minimum breaking force in tons (T) to kilograms (kg), multiply by 907.2.

Note: The newton (a unit of force) is the correct unit for measurement of minimum breaking force in the SI system of units. We have included a conversion factor from tons to kilograms because a rope's minimum breaking force is often referred to in terms of kilograms (a unit of mass).

ALLOWABLE TOLERANCE IN WIRE ROPE DIAMETER

Wire rope is normally made slightly larger than its catalog (or nominal) size. The following chart lists the size tolerances of standard wire rope.

Nominal Diameter (in)	Tolerance Under	Tolerance Over	Nominal Diameter (mm)
Through 1/8	-0	+ 8%	From 2 to <4
Over 1/8 through 3/16	-0	+ 7%	From 4 to <6
Over 3/16 through 5/16	-0	+ 6%	From 6 to < 8
Over 5/16 and larger	-0	+ 5%	8 and greater

Design factors

The design factor is defined as the ratio of the minimum breaking force of a wire rope to the total load it is expected to carry.

Use of design factors provides rope installations with reasonable assurance of adequate capacity for the work to be done throughout a rope's service life. Considerations in establishing design factors include the type of service, design of equipment and consequences of failure.

In most applications, the selection of a rope based on the proper design factor has been made by the equipment manufacturer. In an application where a different rope is to be used, or in a new application, check government and industry regulations for the required design factor. Different rope types on the same application may have different design factor requirements.

HOW TO USE DESIGN FACTORS

Standards and regulations require that design factors be applied to the rope's minimum breaking force to determine the maximum working load. To determine the maximum working load for which an operating rope may be used, divide the rope's minimum breaking force by the required design factor. This is the rope's maximum working load. There may be other limiting factors in an application that make the maximum load the equipment can handle less than the rope's maximum working load.*

Remember, an installation is only at the prescribed design factor when the rope is new. As a rope is used, it loses strength and literally is "used up."

***NOTE**

> The rated capacity of a wire rope sling incorporates both a design factor and a splicing or attachment efficiency.

How to extend rope service life

How long will your rope last? There is not a simple answer but, rather, there are several factors involved, including:

- The manner in which you install and "break in" your new rope.
- The operating technique and work habits of the machine operators.
- Physical maintenance of the rope throughout its service life.
- Physical maintenance of the system in which your rope operates.

AVOID TWISTING OF NEW WIRE ROPE DURING INSTALLATION

- Handle the rope properly from the reel or coil to your equipment and, on smooth-faced drums, spool with wraps tight and close together on the first layer.

RECOMMENDED PRACTICES

We've outlined several recommended practices you may use to extend your rope's useful life. It's also important to note that all sections of this handbook, in some respect, also review ways to help you get greater useful life from your rope, and that's why you need to thoroughly understand all the material here.

INSTALL YOUR ROPE CORRECTLY

The primary concern when installing a new rope is to not trap any twist in the rope system. Proper handling of the rope from the reel or coil to your equipment will help avoid this situation. Another important step on smooth faced drums is to spool with tensioned wraps tight and close together on the first layer. This layer forms the foundation for succeeding layers. Finally, spool the remaining rope on the drum with tension approximating 1% to 2% of the rope's minimum breaking force.

BREAK IN YOUR NEW ROPE PROPERLY

When you install a new operating rope, you should first run it for a brief period of time with no load. Then, for best results, run it under controlled loads and speeds to enable the wires and strands in the rope to adjust to themselves.

"CONSTRUCTIONAL" STRETCH

When first put into service, new ropes normally elongate while strands go through a process of seating with one another and with the rope core. This is called "constructional" stretch because it is inherent in the construction of the rope, and the amount of elongation may vary from one rope to another. For standard ropes, this stretch will be about 1/4% to 1% of the rope's length.

When constructional stretch needs to be minimized, ropes may be factory prestretched. Please specify when placing your order.

Another type of stretch, "elastic" stretch, results from recoverable elongation of the metal itself.

CUT OFF ENDS TO MOVE WEAR POINTS

If you observe wear developing in a localized area, it may be beneficial to cut off short lengths of rope. This may require an original length slightly longer than you normally use. When severe abrasion or numerous fatigue breaks occur near one end or at any one concentrated area – such as drag ropes on draglines or closing lines in clamshell buckets, for example – the movement of this worn section can prolong rope life.

CLEAN AND LUBRICATE REGULARLY TO REDUCE WEAR

We lubricate our wire rope during manufacture so that the strands – as well as the individual wires in the strands – may move and adjust as the rope moves and bends. But no wire rope can be lubricated sufficiently during manufacture to last its entire life. That's why it's important to lubricate periodically throughout the life of the rope.

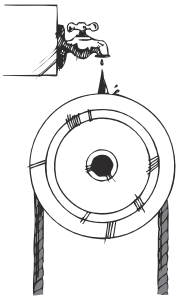
The surface of some ropes may become covered with dirt, rock dust or other material during their operation. This can prevent field-applied lubricants from properly penetrating into the rope, so it's a good practice to clean these ropes before you lubricate them.

The lubricant you apply should be light-bodied enough to penetrate to the rope's core. You can normally apply lubricant by using one of three methods: drip it on rope, spray it on or brush it on. In all cases, you should apply it at a place where the rope is bending, such as around a sheave. We recommend you apply it at the top of the bend because that's where the rope's strands are spread by bending and more easily penetrated. In addition, there are pressure lubricators available commercially. Your rope's service life will be directly proportional to the effectiveness of the method you use and the amount of lubricant that reaches the rope's working parts.

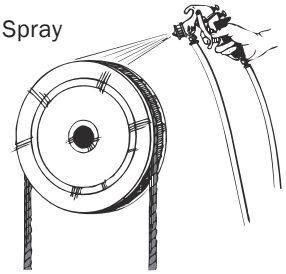
A proper lubricant must reduce friction, protect against corrosion and adhere to every wire. It should also be pliable and not crack or separate when cold – yet not drip when warm. Never apply heavy grease to the rope because it can trap excessive grit, which can damage the rope. Nor should you apply used "engine oil" because it contains materials that can damage the rope. For unusual conditions, you can specify special lubricants that we can apply at the factory.

THREE METHODS OF APPLYING LUBRICATION:

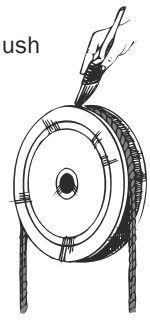
> Drip



> Spray



> Brush



Wire breaks from vibration fatigue occur at end terminations, so short lengths cut off there with reattachment of the socket may prolong the rope's life. When broken wires are found, you should cut off sections of rope. In the case of a socket, you should cut off at least five or six feet. In the case of clips or clamps, you should cut off the entire length covered by them.

Where there is an equalizing sheave, such as that found in many overhead cranes, fatigue is localized at rope tangency points to the equalizing sheave. Rope life may be increased if you shift this point by cutting off a short length at the end of one of the drums. Be sure to make this cutoff before significant wear occurs at the equalizing sheave, and always do so at the same drum. You must maintain the required minimum number of dead wraps on the drum.

REVERSING ENDS

Frequently, the most severe deterioration occurs at a point too far from the end or is too long to allow the worn section to be cut off. In such cases, you may turn the rope end for end to bring a less worn section into the area where conditions are most damaging. This practice is beneficial for incline rope and draglines. The change must be made well before the wear reaches the removal criteria. When changing ends, be careful to avoid kinking or otherwise damaging the rope.

Wire rope wear, abuse - and removal criteria

All wire ropes will wear out eventually and gradually lose work capability throughout their service life. That's why periodic inspections are critical. Applicable industry standards such as ASME B30.2 for overhead and gantry cranes or federal regulations such as OSHA refer to specific inspection criteria for varied applications.

INSPECT YOUR WIRE ROPE REGULARLY

> Inspection should be performed by a person with special training or practical experience.

THREE PURPOSES FOR INSPECTION

Regular inspection of wire rope and equipment should be performed for three good reasons:

> It reveals the rope's condition and indicates the need for replacement.

> It can indicate if you're using the most suitable type of rope.

> It makes possible the discovery and correction of faults in equipment or operation that can cause costly accelerated rope wear.

HOW OFTEN

All wire ropes should be thoroughly inspected at regular intervals. The longer it has been in service or the more severe the service, the more thoroughly and frequently it should be inspected. Be sure to maintain records of each inspection.

APPOINT A QUALIFIED PERSON TO INSPECT

Inspections should be carried out by a person who has learned through special training or practical experience what to look for and who knows how to judge the importance of any abnormal conditions they may discover. It is the inspector's responsibility to obtain and follow the proper inspection criteria for each application inspected.

For information on inspection methods and techniques, our Techreport 107: Wire Rope Inspection, is available on the unionrope.com website for download. If you need further assistance with our ropes, contact our Product Engineering Department.

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1

Rope Wear

Deterioration and Abuse

1. Mechanical damage due to rope movement over sharp edge projection whilst under load

2. Localised wear due to abrasion on supporting structure. Vibration of rope between drum and jib head sheave

3. Narrow path of wear resulting in fatigue fractures, caused by working in a grossly oversize groove, or over small support rollers

4. Two parallel paths of broken wires indicative of bending through an undersize groove in the sheave

5. Severe wear, associated with high tread pressure. Protrusion of fibre main core

6. Severe wear in Lang lay, caused by abrasion of cross-over points on multi-layer coiling application.

7. Corrosion of severe degree caused by immersion of rope in chemically treated water

Rope Wear

Deterioration and Abuse

8. Typical wire fractures as a result of bend fatigue.

9. Wire fractures at the strand, or core interface, as distinct from 'crown' fractures, caused by failure of core support.

10. Break up of IWRC resulting from high stress application. Note nicking of wires in outer strands

11. Strand core protusion as a result of torsional unbelance created by 'drop ball' application (i.e. shock loading)

12. Typical example of localised wear and deformation created at a previously kinked portion of rope

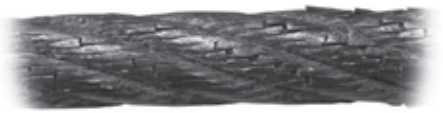
13. Multi strand rope 'bird-caged' due to torsional unbalance. Typical of build up seen at anchorage end of multi-fall crane application

14. Protusion of IWRC resulting from shock loading.

WHAT TO LOOK FOR

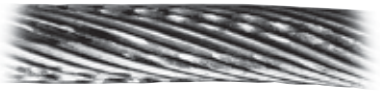
Here's what happens when a **wire breaks** under tensile load exceeding its strength. It's typically recognized by the "cup and cone" appearance at the point of failure. The necking down of the wire at the point of failure to form the cup and cone indicates failure has occurred while the wire retained its ductility.

This is a wire with a distinct **fatigue break**. It's recognized by the square end perpendicular to the wire. This break was produced by a torsion machine that's used to measure the ductility. This break is similar to wire failures in the field caused by fatigue.



Shown here is a wire rope that has been subjected to repeated bending over sheaves under normal loads. This results in **fatigue breaks** in individual wires – these breaks are square and usually in the crown of the strands.

This is an example of **fatigue failure** of a wire rope subjected to heavy loads over small sheaves. The breaks in the valleys of the strands are caused by "strand nicking." There may be crown breaks, too.



Here you see a single strand removed from a wire rope subjected to **strand nicking.** This condition is a result of adjacent strands rubbing against one another. While this is normal in a rope's operation, the nicking can be accentuated by high loads, small sheaves or loss of core support. The ultimate result will be individual wire breaks in the valleys of the strands.

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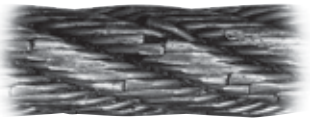
Wire rope wear, abuse - and removal criteria

KNOW WHEN TO REMOVE YOUR WIRE ROPE

> The chart on the facing page offers a guide for removal, based on the number of wires involved.

TYPICAL EVIDENCE OF WEAR AND ABUSE

A **"birdcage"** is caused by sudden release of tension and the resulting rebound of rope. These strands and wires will not be returned to their original positions. The rope should be replaced immediately.

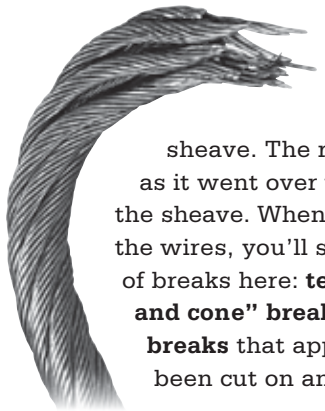


This shows a typical failure of a rotary drill line with a poor cutoff practice. These wires have been subjected to continued **peening**, causing fatigue type failures. A predetermined, regularly scheduled cutoff practice can help eliminate this type of problem.

This is **localized wear** over an equalized sheave. The danger here is that it's invisible during the rope's operation, and that's why you need to inspect this portion of an operating rope regularly. The rope should be pulled off the sheave during inspection and bent to check for broken wires.

This is a wire rope with a **high strand** – a condition in which one or more strands are worn before adjoining strands. This is caused by improper socketing or seizing, kinks or dog-legs. At top, you see a closeup of the concentration of wear. At bottom, you see how it recurs every sixth strand in a 6 strand rope.

A **kinked wire rope** is shown here. It's caused by pulling down a loop in a slack line during handling, installation or operation. Note the distortion of the strands and individual wires. This rope must be replaced.



Here's a wire rope that has jumped a sheave. The rope **"curled"** as it went over the edge of the sheave. When you study the wires, you'll see two types of breaks here: **tensile "cup and cone" breaks** and **shear breaks** that appear to have been cut on an angle.

Drum crushing is caused by small drums, high loads and multiple winding conditions.

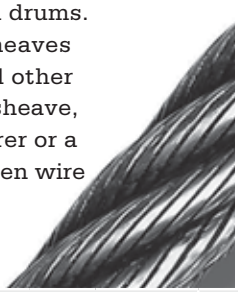
REMOVAL CRITERIA

A major portion of any wire rope inspection is the detection of broken wires. The number and type of broken wires are an indication of the rope's general condition and a benchmark for its replacement.

Frequent inspections and written records help determine the rate at which wires are breaking. Replace the rope when the values given in the table below are reached.

Valley wire breaks – where the wire fractures between strands or a broken wire protrudes between strands – are treated differently than those that occur on the outer surface of the rope. When there is more than one valley break, replace the rope.

Broken wire removal criteria cited in many standards and specifications, like those listed below, apply to wire ropes operating on steel sheaves and drums. For wire ropes operating on sheaves and drums made with material other than steel, please contact the sheave, drum or equipment manufacturer or a qualified person for proper broken wire removal criteria.



WHEN TO REPLACE WIRE ROPE – BASED ON NUMBER OF BROKEN WIRES

			# OF BROKEN WIRES IN RUNNING ROPES			# OF BROKEN WIRES IN STANDING ROPES	
Standard	**Equipment**	**Rope Type**	**In one rope lay**	**In one strand**	**At end connection**	**In one rope lay**	**At end connection**
ASME B30.2	Overhead and Gantry Cranes	All	12**	4	2	N/A	N/A
ASME B30.3	Construction Tower Cranes	Standard	12**	4	3	Not specified	3
		Rotation-resistant	2 randomly distributed broken wires in 6 rope diameters or 4 randomly distributed broken wires in 30 rope diameters**	N/A	3	N/A	3
ASME B30.4	Portal and Pedestal Cranes	Standard	6**	3	2	3	2
		Rotation-resistant	2 randomly distributed broken wires in 6 rope diameters or 4 randomly distributed broken wires in 30 rope diameters**	N/A	2	N/A	N/A
ASME B30.5	Mobile and Locomotive Cranes	Standard	6**	3	Not specified	3	2
		Rotation-resistant	2 randomly distributed broken wires in 6 rope diameters or 4 randomly distributed broken wires in 30 rope diameters**	N/A	Not specified	N/A	N/A
ASME B30.6	Derricks	Standard†	6**	3	Not specified	3	2
ASME B30.7	Winches	Standard	6 randomly distributed broken wires in 6 rope diameters or 3 broken wires in one strand in 6 rope diameters**	N/A	Not specified	N/A	N/A
		Rotation-resistant	2 randomly distributed broken wires in 6 rope diameters or 4 randomly distributed broken wires in 30 rope diameters**	N/A	Not specified	N/A	N/A
ASME B30.8	Floating Cranes and Floating Derricks	Standard	6 randomly distributed broken wires in 6 rope diameters or 3 broken wires in one strand in 6 rope diameters**	N/A	Not specified	3	2
		Rotation-resistant	2 randomly distributed broken wires in 6 rope diameters or 4 randomly distributed broken wires in 30 rope diameters**	N/A	Not specified	N/A	N/A
ASME B30.16	Overhead Hoists (Underhung)	Standard	6 randomly distributed broken wires in 6 rope diameters or 3 randomly distributed broken wires in 6 rope diameters**	N/A	2	N/A	N/A
		Rotation-resistant	2 randomly distributed broken wires in 6 rope diameters or 4 randomly distributed broken wires in 30 rope diameters**	N/A	2	N/A	N/A
ASME B30.29	Self-Erecting Tower Cranes	Standard	6**	3	3	3	2
		Rotation-resistant	2 randomly distributed broken wires in 6 rope diameters or 4 randomly distributed broken wires in 30 rope diameters**	N/A	3	N/A	N/A
ANSI A10.4	Personnel Hoists	All	6**	3	Not specified	Not specified	Not specified
ANSI A10.5	Material Hoists	All	6**	3		2**	1

** Also remove for 1 valley break
† Contact technical service engineering regarding rotation-resistant ropes

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How to unreel, uncoil and store wire rope

CORRECT WAYS TO UNREEL AND UNCOIL WIRE ROPE

THE RIGHT WAY TO UNREEL AND UNCOIL A WIRE ROPE

There is always a danger of kinking a wire rope if you improperly unreel or uncoil it. You should mount a reel on jacks or a turntable so that it will revolve as you pull the rope off. Apply sufficient tension by means of a board acting as a brake against the reel flange to keep slack from accumulating. With a coil, stand it on edge and roll it in a straight line away from the free end. You may also place a coil on a revolving stand and pull the rope as you would from a reel on a turntable.

HOW TO STORE WIRE ROPE PROPERLY

We recommend you store your wire rope under a roof or a weatherproof covering so that moisture cannot reach it. Similarly, you must avoid acid fumes or any other corrosive atmosphere – including ocean spray – in order to protect the rope from rust. If you're storing a reel for a lengthy period, you may want to order your rope with a protective wrap. If not, at least coat the outer layers of rope with a good rope lubricant.

If you ever take a rope out of service and want to store it for future use, you should place it on a reel after you've thoroughly cleaned and relubricated it. Give the same storage considerations to your used rope as you would your new rope.

Be sure to keep your wire rope in storage away from steam or hot water pipes, heated air ducts or any other source of heat that can thin out lubricant and cause it to drain out of your rope.

THE THREE STAGES OF KINKING

1. **The start:** A rope should never be allowed to accumulate twist as shown here because it will loop and eventually form a kink. If this loop is removed before being pulled down tight, you can normally avoid the kink.

2. **The kink:** By now, the damage is done, and the rope must not be used.

3. **The result:** Even if the wires do not appear badly damaged, the rope is still damaged and must be replaced.

If a twist develops, remove the twist from the rope before a kink can form.

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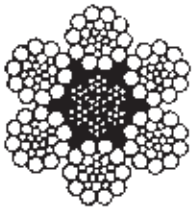
1

Wire Rope

6 x 19 SEALE

6 x 21 FILLER WIRE

6 x 25 FILLER WIRE



6 x 26
WARRINGTON-SEALE

NOMINAL STRENGTHS OF WIRE ROPE

6 x 19 Classification/Bright (Uncoated), or Drawn-Galvanized, Fiber Core, IPS

Nom. Diam.	Nominal Strength	Approx. Mass
	Improved Plow Steel	
inches	tons	lb/ft
¼	2.74	0.11
5/16	4.26	0.16
⅜	6.10	0.24
7/16	8.27	0.32
½	10.70	0.42
9/16	13.50	0.53
⅝	16.70	0.66
¾	23.80	0.95
⅞	32.20	1.29
1	41.80	1.68
1 ⅛	52.60	2.13
1 ¼	64.60	2.63
1 ⅜	77.70	3.18
1 ½	92.00	3.78
1 ⅝	107.00	4.44
1 ¾	124.00	5.15
1 ⅞	141.00	5.91
2	160.00	6.72

6 x 19 Classification/Bright (Uncoated), or Drawn-Galvanized, IWRC, EIPS

Nom. Diam.	Nominai Strength	Approx. Mass
	Extra Improved Plow Steel	
inches	tons	lb/ft
¼	3.40	0.12
5/16	5.27	0.18
⅜	7.55	0.26
7/16	10.20	0.35
½	13.30	0.46
9/16	16.80	0.59
⅝	20.60	0.72
¾	29.40	1.04
⅞	39.80	1.42
1	51.70	1.85
1 ⅛	65.00	2.34
1 ¼	79.90	2.89
1 ⅜	96.00	3.50
1 ½	114.00	4.16
1 ⅝	132.00	4.88
1 ¾	153.00	5.67
1 ⅞	174.00	6.50
2	198.00	7.39
2 ⅛	221.00	8.35
2 ¼	247.00	9.36
2 ⅜	274.00	10.40
2 ½	302.00	11.60

(Meets or exceeds federal specification RR-W-410 [latest revision].)

*To convert to Kilonewtons (kN), multiply tons (nominal breaking strength) by 8.896; 1 lb = 4.448 newtons (N).

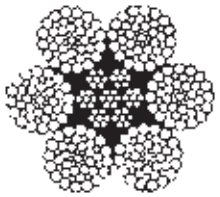
For Hot-Dipped Galvanized Strengths, Deduct 10%.

Wire Rope

6 x 31
WARRINGTON SEALE

6 x 36
WARRINGTON SEALE

6 x 41 SFW
SEALE FILLER WIRE



6 x 49 SWS
SEALE WARRINGTON SEALE

NOMINAL STRENGTHS OF WIRE ROPE

6 x 37 Classification/Bright (Uncoated), or Drawn-Galvanized, Fiber Core, IPS

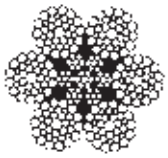
Nom. Diam.	Nominal Strength	Approx. Mass
	Improved Plow Steel	
inches	tons	lb/ft
¼	2.74	0.11
5/16	4.26	0.16
⅜	6.10	0.24
7/16	8.27	0.32
½	10.70	0.42
9/16	13.50	0.53
⅝	16.70	0.66
¾	23.80	0.95
⅞	32.20	1.29
1	41.80	1.68
1 ⅛	52.60	2.13
1 ¼	64.60	2.63
1 ⅜	77.70	3.18
1 ½	92.00	3.78
1 ⅝	107.00	4.44
1 ¾	124.00	5.15
1 ⅞	141.00	5.91
2	160.00	6.72

6 x 37 Classification/Bright (Uncoated), or Drawn-Galvanized, IWRC, EIPS

Nom. Diam.	Nominal Strength	Approx. Mass
	Extra Improved Plow Steel	
inches	tons	lb/ft
¼	3.40	0.12
5/16	5.27	0.18
⅜	7.55	0.26
7/16	10.20	0.35
½	13.30	0.46
9/16	16.80	0.59
⅝	20.60	0.72
¾	29.40	1.04
⅞	39.80	1.42
1	51.70	1.85
1 ⅛	65.00	2.34
1 ¼	79.90	2.89
1 ⅜	96.00	3.50
1 ½	114.00	4.16
1 ⅝	132.00	4.88
1 ¾	153.00	5.67
1 ⅞	174.00	6.50
2	198.00	7.39
2 ⅛	221.00	8.35
2 ¼	247.00	9.36
2 ⅜	274.00	10.40
2 ½	302.00	11.60
2 ⅝	331.00	12.80
2 ¾	361.00	14.00
2 ⅞	392.00	15.30
3	425.00	16.60
3 ⅛	458.00	18.00
3 ¼	492.00	19.50
3 ⅜	529.00	21.00
3 ½	564.00	22.70

Meets or exceeds federal specification RR-W-410 (latest revision).
*To convert to Kilonewtons (kN), multiply tons (nominal breaking strength) by 8.896; 1 lb = 4.448 newtons (N).
For Hot-Dipped Galvanized Strengths, Deduct 10%.

Wire Rope



6 X 36
WARRINGTON-SEALE

Specifications per API 9A

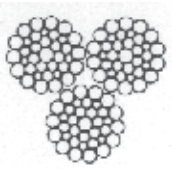
6 x 37 Classification Wire Rope Bright (Uncoated) or Drawn-Galvanized Wire, Independent Wire Rope Core (IWRC)

Nominal Diameter	Approx. Mass	Nominal Strength					
		Improved Plow Steel (IPS)		Extra Improved Plow Steel (EIPS)		Extra Extra Improved Plow Steel (EEIPS)	
In.	lb/ft	lb	kN	lb.	kN	lb	kN
1/2	0.46	23,000	102	26,600	118	29,200	130
9/16	0.59	29,000	129	33,600	149	37,000	165
5/8	0.72	35,800	159	41,200	183	45,400	202
3/4	1.04	51,200	228	58,800	262	64,800	288
7/8	1.42	69,200	308	79,600	354	87,600	389
1	1.85	89,800	399	103,400	460	113,800	506
1 1/8	2.34	113,000	503	130,000	578	143,000	636
1 1/4	2.89	138,800	617	159,800	711	175,800	782
1 3/8	3.50	167,000	743	192,000	854	212,000	943
1 1/2	4.16	197,800	880	228,000	1010	250,000	1112
1 5/8	4.88	230,000	1020	264,000	1170	292,000	1300
1 3/4	5.67	266,000	1180	306,000	1360	338,000	1500
1 7/8	6.50	304,000	1350	348,000	1550	384,000	1710
2	7.39	344,000	1530	396,000	1760	434,000	1930
2 1/8	8.35	384,000	1710	442,000	1970	488,000	2170
2 1/4	9.36	430,000	1910	494,000	2200	544,000	2420
2 3/8	10.4	478,000	2130	548,000	2440	604,000	2690
2 1/2	11.6	524,000	2330	604,000	2690	664,000	2950
2 5/8	12.8	576,000	2560	658,000	2930	728,000	3240
2 3/4	14.0	628,000	2790	736,000	3270	794,000	3530
2 7/8	15.3	682,000	3030	796,000	3540	864,000	3840
3	16.6	740,000	3290	856,000	3810	936,000	4160
3 1/8	18.0	798,000	3550	920,000	4090	1,010,000	4490
3 1/4	19.5	858,000	3820	984,000	4380	1,086,000	4830
3 1/8	21.0	918,000	4080	1,074,000	4780	1,164,000	5180
3 1/2	22.7	982,000	4370	1,144,000	5090	1,242,000	5520
3 3/4	26.0	1,114,000	4960	1,290,000	5740	1,410,000	6270
4	29.6	1,254,000	5580	1,466,000	6520	1,586,000	7050

EEEIPS & HIGHER GRADES - AVAILABLE ON SPECIAL ORDER.

Wire Rope

19 X 7
NON-ROTATING



3 X 36 CLASS

8 X 19 CLASS

ROTATION RESISTANT TYPES

SPIN RESISTANT
NOMINAL STRENGTHS OF WIRE ROPE

ROTATION RESISTANT
NOMINAL STRENGTHS OF WIRE ROPE

19 x 7 Classification/Bright (Uncoated) or
Drawn-Galvanized Wire Strand Core

Nominal Diameter	Nominal Strength	Approx. Mass
¼	2.77	0.113
5/16	4.30	0.175
⅜	6.15	0.25
7/16	8.33	0.35
½	10.8	0.45
9/16	13.6	0.58
⅝	16.8	0.71
¾	24.0	1.02
⅞	32.5	1.39
1	42.2	1.82
1 ⅛	53.1	2.30
1 ¼	65.1	2.84

TORQUE BALANCED
NOMINAL STRENGTHS OF WIRE ROPE

3 Strand Classification/Bright (Uncoated) or
Drawn-Galvanized Wire Strand Core

Size Inches	Construction	Mass Wt/Lb/Ft	Min Break Strength Lb.
½	3 x 41	.417	25,700
9/16	3 x 41	.517	32,500
⅝	3 x 41	.631	40,300
¾	3 x 41	.903	57,800
⅞	3 x 46	1.27	83,200
1	3 x 46	1.64	100,000
1 ⅛	3 x 46	2.07	124,000
1 ¼	3 x 46	2.60	158,000
1 ⅜	3 x 46	3.10	188,000
1 ½	3 x 46	3.69	222,000

8 x 19 Classification/Bright (Uncoated), or
Drawn-Galvanized, IWRC (EIPS)

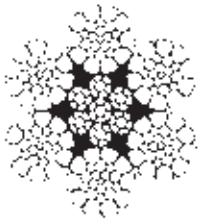
Nominal Diam. (in.)	Nominal Strength	Approx. Mass
½	11.6	.47
9/16	14.7	.60
⅝	18.1	.73
¾	25.9	1.06
⅞	35.0	1.44
1	45.5	1.88

Meets or exceeds API-9A and federal specification RR-W-410 (latest revision) where applicable.
*To convert to Kilonewtons (kN), multiply tons (nominal breaking strength) by 8.896; 1 lb = 4.448 newtons (N).
For Hot-Dipped Galvanized Strengths, Deduct 10%.

THE GIVEN STRENGTHS FOR 8 X 19 SPIN RESISTANT, 19 X 7 ROTATION RESISTANT WIRE ROPE ARE APPLICABLE ONLY WHEN A TEST IS CONDUCTED ON A NEW ROPE FIXED AT BOTH ENDS
When the rope is in use and one end is free to rotate, the nominal strength is reduced.

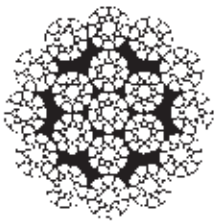
Wire Rope

COMPACTED STRAND



6 x 26

WIRE ROPE



19 X 19 & 19 X 7
Rotation Resistant

- Mining, industrial, construction, logging, and oilfield applications.
- Stability, strength, fatigue resistance, and abrasion resistance.
- All popular sizes.
- Longer service life.

Extra value means different things in different applications. **CompactGold™** is one of the most versatile new rope constructions to emerge from our new products effort. In applications where increased strength, stability, and abrasion resistance are beneficial, **CompactGold™** is a natural and can result in longer service life. From boom hoist ropes and drag ropes in mining applications, to sawmill carriage ropes and mainline ropes in logging, its versatility and extra value make a difference.

- As single-part hoist lines and wherever spooling problems, drum crushing, bird caging, block twisting and fast line speeds are likely to be encountered.
- At the design and specification stage, ideal when machinery space and weight savings are important.
- Greater fatigue resistance cuts rope expense in applications where fatigue is the primary cause for removal.
- Ideally suited to rugged applications.

This rotation resistant, higher strength rope provides extra value in both original equipment designs and replacement applications. **CompactGold™** provides higher strength in a smaller diameter, and resistance to drum crushing.

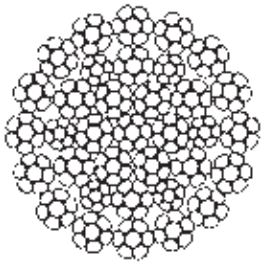
Nominal Diameter In.	6 X 26 Compacted Strand Bright		**19 X 7 and 19 X 19 Compacted Strand Rotation Resistant		
	Nominal Strength Tons	Approx. Mass	Construction	Nominal Strength Tons	Approx. Mass
¼	3.91	.131	19 x 19	3.74	.127
5/16	6.06	.218	19 x 19	5.8	.212
⅜	8.80	.32	19 x 19	8.3	.31
7/16	11.9	.41	19 x 19	11.2	.40
½	15.3	.55	19 x 19	14.6	.54
9/16	19.2	.70	19 x 19	18.5	.69
⅝	22.7	.86	19 x 19	22.7	.85
¾	32.4	1.25	19 x 19	32.4	1.25
⅞	43.8	1.67	19 x 19	43.8	1.68
1	56.9	2.18	19 x 19	56.9	2.17
1 ⅛	71.5	2.71	19 x 19	71.5	2.75
1 ¼	87.9	3.45	19 x 19	87.9	3.45
1 ⅜	106	4.25	19 x 19	106	4.33
1 ½	125	5.01	19 x 19	125	5.11

ALSO AVAILABLE
Compacted Strand
Wire Ropes from Various
Manufacturer's Overseas.
All meet the requirements as specified in API 9A and federal specification RR-W-410 (latest revision) when applicable.

* Availiable in U.S.A. and import.
** The given strengths for 19 strand rotation resistant wire ropes are applicable only when a test is conduced on a new rope fixed at both ends. When the rope is in use and one end is free to rotate, the nominal strength is reduced.

Metric Crane Ropes

* Available in inches and millimeters
* Super Rotation Resistance
* Can be used with in-line Swivels
* Up to 2160 Grade Tensile
* Drawn Galvanized available, for added corrosion protection, at same strength.
* Regular or Compacted Strand.



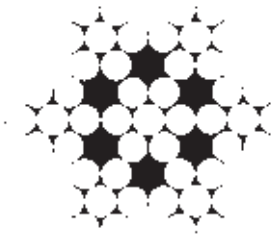
Compacted Strand
35 X 7 Class

2160 GRADE

Nominal Diameter mm-1/+4%	Mass (lbs/ft)	Estimated Break Strength (lbs)
10	0.312	31,580
12	0.450	30,570
13	0.538	36,460
14	0.622	42 260
15	0.712	49,000
16	0.800	54,400
17	0.907	61,370
18	1.011	70,140
19	1.136	78,230
20	1.297	87,450
21	1.431	96 660
22	1.556	105,210
23	1.699	114,650
24	1.848	123,950
25	2.009	134,430
1"	2.100	147,700
26	2.157	144,320
28	2.553	169,730
29	2.688	177,590
30	2.923	192,210
32	3.313	217,160
34	3.736	245,040
36	4.193	273,140

Estimated breaking strength shown. **Call for available breaking strength.**
ALL SPECIFICATIONS HEREIN ARE SUBJECT TO CHANGE WITHOUT NOTICE.

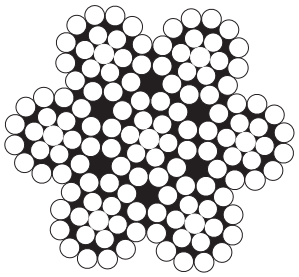
Aircraft Cables



7 X 7

GALVANIZED

Diameter in Inches	Construction	Breaking Strength (lbs)	Approx. Weight per Foot (lbs)
1/16	7x7	480	.0075
3/32	7x7	920	.016
1/8	7x7	1,700	.028
1/8	7x19	2,000	.029
5/32	7x7	2,600	.043
5/32	7x19	2,800	.045
3/16	7x7	3,700	.062
3/16	7x19	4,200	.065
7/32	7x19	5,600	.086
1/4	7x7	6,100	.106
1/4	7x19	7,000	.11
5/16	7x19	9,800	.173
3/8	7x19	14,400	.243



7 X 19

STAINLESS STEEL (T304)

Diameter in Inches	Construction	Breaking Strength (lbs)	Approx. Weight per Foot (lbs)
1/16	7x7	480	.007
3/32	7x7	920	.016
1/8	7x7	1,760	.028
1/8	7x19	1,760	.029
3/16	7x7	3,700	.062
3/16	7x19	3,700	.065
1/4	7x19	6,400	.11
5/16	7x19	9,000	.173
3/8	7x19	12,000	.243

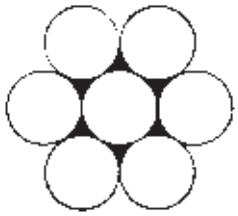
STAINLESS STEEL (T316)

Diameter in Inches	Construction	Breaking Strength (lbs)	Approx. Weight per Foot (lbs)
1/16	7x7	480	.007
1/8	7x19	1670	.029
3/16	7x19	3565	.065
1/4	7x19	5875	.11
5/16	7x19	8825	.173
3/8	7x19	11,760	.243

All meet or exceed federal specification RR-W-410 (latest revision).
Uncoated cable meets dimensional and strength requirements of MIL-W-83420E.

GALVANIZED STEEL STRAND* - 1 X 7

ASTM A475, CLASS A COATING,
LEFT REGULAR LAY, EXTRA HIGH STRENGTH**



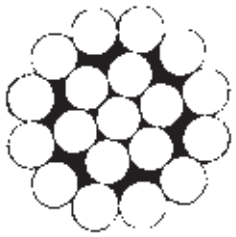
1x7 Strand

Diameter Inches	Nominal Breaking Strength (Tons)	Approx. Weight Per Foot (lbs)
3/16	1.99	.073
1/4	3.32	.12
5/16	5.6	.225
3/8	7.7	.273
7/16	10.7	.399
1/2	13.45	.517
9/16	19.5	.637
5/8	21.2	.796

MADE IN U.S.A.
**OTHER GRADES ALSO AVAILABLE

GALVANIZED STEEL STRAND* - 1 X 19

ASTM A475, CLASS A COATING,
LEFT REGULAR LAY, EXTRA HIGH STRENGTH



1x19 Strand

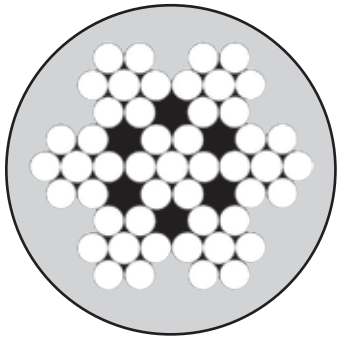
Diameter Inches	Nominal Breaking Strength (Tons)	Approx. Weight Per Foot (lbs)
3/4	29.15	1.16
7/8	39.85	1.58
1	52.25	2.07

MADE IN U.S.A.
*MEETS OR EXCEEDS FEDERAL SPECIFICATIONS RR-W-410 (latest revision)

ASTM A586 & A603 ALSO AVAILABLE
BRIDGE AND STRAND SOCKETS ALSO AVAILABLE
STAINLESS STEEL STRAND ALSO AVAILABLE

GALVANIZED, CLEAR VINYL COATED - 7 X 7 & 7 X 19

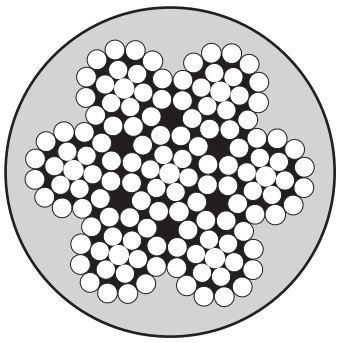
Diameter (In)	Coated To (In)	Weight per foot (lbs)	Breaking Strength (lbs)	Construction
1/16	3/32	.0093	480	7x7
1/16	1/8	.012	480	7x7
3/32	1/8	.018	920	7x7
3/32	3/16	.026	920	7x7
1/8	3/16	.035	1,700	7x7
3/32	1/8	.019	1,000	7x19
1/8	3/16	.036	2,000	7x19
3/16	1/4	.077	4,200	7X19
3/16	5/16	.08	4,200	7X19
1/4	5/16	.12	7,000	7X19
5/16	3/8	.20	9,800	7X19
3/8	7/16	.27	14,400	7X19



7 X 7

STAINLESS STEEL, CLEAR VINYL COATED - 7 X 19

Diameter (In)	Coated To (In)	Weight per foot (lbs)	Breaking Strength (lbs)	Construction
1/8	3/16	.036	1,760	7x19
3/16	1/4	.077	3,700	7x19
1/4	5/16	.128	6,400	7x19
5/16	3/8	.20	9,000	7x19
3/8	7/16	.27	12,000	7x19



7 X 19

MEETS OR EXCEEDS FEDERAL SPECIFICATION RR-W-410 (latest revision)

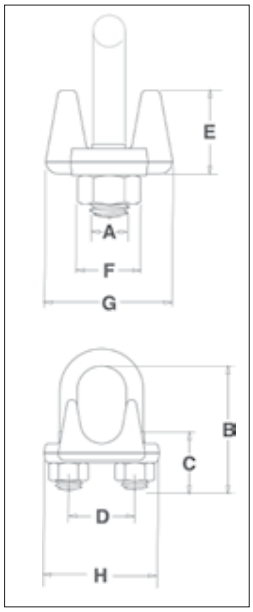
Wire Rope Fittings

Crosby

G-450
Red U-Bolt® Clip

- Each base has a Product Identification Code (PIC) for material traceability, the name Crosby or "CG," and a size forged into it.
- Based on the catalog breaking strength of wire rope, Crosby wire rope clips have an efficiency rating of 80% for 1/8" through 7/8" sizes, and 90% for sizes 1" through 3-1/2".
- Entire clip is galvanized to resist corrosive and rusting action.
- Sizes 1/8" through 2-1/2" and 3" have forged bases.
- All clips are individually bagged or tagged with proper application instructions and warning information.
- Clip sizes up through 1-1/2" have rolled threads.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these wire rope clips meet other critical performance requirements, including fatigue life, impact properties, and material traceability not addressed by ASME B30.26.
- Look for the Red U-Bolt®, your assurance of genuine Crosby Clips.

APPLICATION AND WARNING INFORMATION
SECTION 17



G-450 Crosby Clips

Rope Size (in)	Rope Size (mm)	Stock No.	Std. Package Qty.	Weight Per 100 (lb)	Dimensions (in) A	B	C	D	E	F	G	H
1/8	3-4*	1010015	100	6	.22	.72	.44	.47	.37	.38	.81	.99
3/16*	5*	1010033	100	10	.25	.97	.56	.59	.50	.44	.94	1.18
1/4	6-7	1010051	100	19	.31	1.03	.50	.75	.66	.56	1.19	1.43
5/16	8	1010079	100	28	.38	1.38	.75	.88	.73	.69	1.31	1.66
3/8	9-10	1010097	100	48	.44	1.50	.75	1.00	.91	.75	1.63	1.94
7/16 - 1/2	11-13	1010131	50	80	.50	1.88	1.00	1.19	1.13	.88	1.91	2.28
9/16 - 5/8	14-16	1010177	50	110	.56	2.25	1.25	1.31	1.34	.94	2.06	2.50
3/4	18-20	1010195	25	142	.62	2.75	1.44	1.50	1.39	1.06	2.25	2.84
7/8	22	1010211	25	212	.75	3.12	1.62	1.75	1.58	1.25	2.44	3.16
1	24-26	1010239	10	252	.75	3.50	1.81	1.88	1.77	1.25	2.63	3.47
1-1/8	28-30	1010257	10	283	.75	3.88	2.00	2.00	1.91	1.25	2.81	3.59
1-1/4	32-34	1010275	10	438	.88	4.44	2.22	2.34	2.17	1.44	3.13	4.13
1-3/8	36	1010293	10	442	.88	4.44	2.22	2.34	2.31	1.44	3.13	4.19
1-1/2	38	1010319	10	544	.88	4.94	2.38	2.59	2.44	1.44	3.41	4.44
1-5/8	41-42	1010337	Bulk	704	1.00	5.31	2.62	2.75	2.66	1.63	3.63	4.75
1-3/4	44-46	1010355	Bulk	934	1.13	5.75	2.75	3.06	2.92	1.81	3.81	5.24
2	48-52	1010373	Bulk	1300	1.25	6.44	3.00	3.38	3.03	2.00	4.44	5.88
2-1/4	56-58	1010391	Bulk	1600	1.25	7.13	3.19	3.88	3.19	2.00	4.56	6.38
2-1/2	62-65	1010417	Bulk	1900	1.25	7.69	3.44	4.13	3.69	2.00	4.69	6.63
** 2-3/4	** 68-72	1010435	Bulk	2300	1.25	8.31	3.56	4.38	4.88	2.00	5.00	6.88
3	75-78	1010453	Bulk	3100	1.50	9.19	3.88	4.75	4.44	2.38	5.31	7.61
** 3-1/2	** 85-90	1010426	Bulk	4000	1.50	10.75	4.50	5.50	6.00	2.38	6.19	8.38

*Electro-plated U-Bolt and Nuts. ** 2-3/4" and 3-1/2" base is made of cast steel.

Crosby

WIRE ROPE END FITTINGS

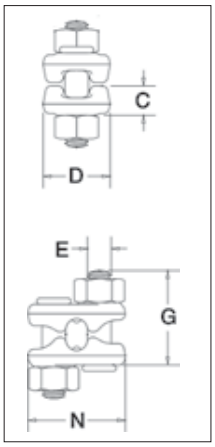
G-429
Fist Grip®,Clip
3/16" - 5/8"

- Entire clip is galvanized to resist corrosive and rusting action.
- Based on the catalog breaking strength of wire rope, Crosby wire rope clips have an efficiency rating of 80% for 3/16" through 7/8" sizes, and 90% for sizes 1" through 1-1/2".
- Bolts are an integral part of the saddle. Nuts can be installed in such a way as to enable the operator to swing the wrench in a full arc for fast installation.
- All sizes have forged steel saddles.
- All Clips are individually bagged or tagged with proper application instructions and warning information.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these wire rope clips meet other critical performance requirements, including fatigue life, impact properties, and material traceability not addressed by ASME B30.26.
- Assembled with standard heavy hex nuts.

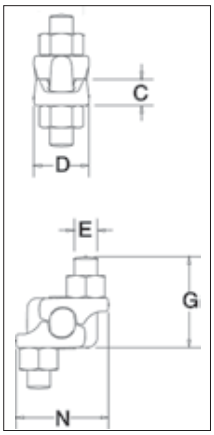
G-429
Fist Grip®,Clip
3/4" - 1-1/2"

2

3/16" - 5/8"



3/4" - 1-1/2"



G-429 Fist Grip® Clips

Rope Size (in)*	Rope Size (mm)	Stock No.	Std. Package Qty.	Weight Per 100 (lb)	Dimensions (in) C	D	E	G	N
3/16 - 1/4	5-7	1010471	100	23	.40	.94	.38	1.41	1.44
5/16	8	1010499	100	28	.47	1.06	.38	1.50	1.54
3/8	10	1010514	50	40	.51	1.06	.44	1.84	1.78
7/16 - 1/2	11-13	1010532	50	62	.59	1.25	.50	2.21	2.15
9/16 - 5/8	14-16	1010550	50	103	.72	1.50	.63	2.72	2.57
3/4	18-20	1010578	25	175	.86	1.81	.75	2.94	2.67
7/8	22	1010596	25	225	.97	2.12	.75	3.31	2.86
1	24-26	1010612	10	300	1.13	2.25	.75	3.72	3.06
1-1/8	28-30	1010630	10	400	1.28	2.38	.88	4.22	3.44
1-1/4	32-34	1010658	10	400	1.34	2.50	.88	4.25	3.56
1-3/8 - 1-1/2	36-40	1010676	Bulk	700	1.56	3.00	1.00	5.56	4.12

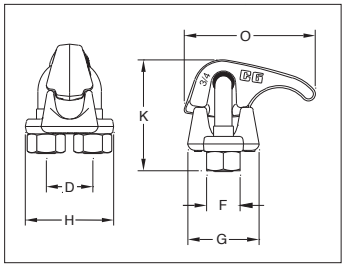
* Sizes through 5/8" incorporate new style design.

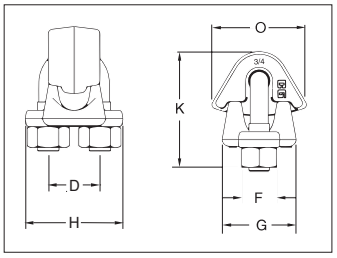
APPLICATION AND WARNING INFORMATION
SECTION 17

G-460
Soft Eye
Bundle Clip
(For use without Thimble)

- Forged bases and bundle clip adapters.
- All bundle clips are individually bagged or tagged with proper application instructions and warning information.
- Bundle Clip Adapter for Soft Eye (G4460) and for Thimble Eye (G4461) kits available.
- Meets or exceeds all requirements of ASME B30.26 including manufacturing ID and size requirements. Importantly, these wire rope bundle clips meet material traceability not addressed by ASME B30.26.

G-461
Thimble
Eye Bundle Clip



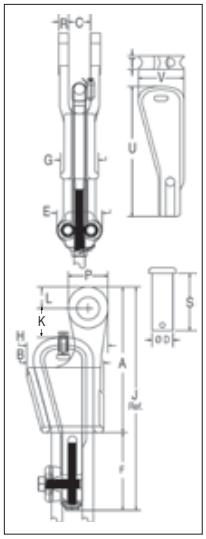


G-460 Soft Eye / G-461 Thimble Eye Bundle Clip

Rope Size (in)	Rope Size (mm)	Bundle Clip Style	Stock No.	Dimensions (in) D	F	G	H	K	O	Weight each (lb)
3/4	18-20	G460	1010509	1.50	1.06	2.25	2.84	3.50	4.13	2.5
3/4	18-20	G461	1010619	1.50	1.06	2.25	2.84	3.50	2.85	2.5

Crosby

S-421T



TA QUIC-CHECK

- Wedge socket terminations have an efficiency rating of 80% based on the catalog strength of XXIP wire rope.
- Meets or exceeds all requirements of ASME B30.26, including identification, ductility, design factor, proof load, and temperature requirements. Importantly, these sockets meet other critical performance requirements, including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.
- Type Approval certification in accordance with ABS rules for conditions of classification, Part 1 2017 Steel Vessels and ABS guide for certification of lifting appliances 2017 available. Certificates available when requested at time of order and may include additional charges.
- Basket is cast steel and individually magnetic particle inspected.
- Pin diameter and jaw opening allows wedge and socket to be used in conjunction with closed swage and spelter sockets.
- Secures the tail or dead end of the wire rope to the wedge, thus eliminates loss or punch out of the wedge.
- Eliminates the need for an extra piece of rope and is easily installed.
- The Terminator wedge eliminates the potential breaking off of the tail due to fatigue.
- The tail, which is secured by the base of the clip and the wedge, is left undeformed.
- Incorporates Crosby's patented QUIC-CHECK® 'Go' and 'No-Go' feature cast into the wedge. The proper size rope is determined when the following criteria are met:
  - 1) The wire rope should pass through the 'Go' hole in the wedge.
  - 2) The wire rope should NOT pass through the 'No-Go' hole in the wedge.
- Utilizes standard Crosby Red U-Bolt® wire rope clip.
- The 3/8 through 1-1/8 standard S-421 wedge socket can be retrofitted with the new style Terminator wedge.
- Available with bolt, nut, and cotter pin: S-421TB.
- US patent 5,553,360, Canada patent 2,217,004, and foreign equivalents.
- Meets the performance requirements of EN 13411-6.
- Available with API-2C certification upon request.
- Wedge sockets meet the performance requirements of Federal specification RR-S-550F, Type C, except those provisions required of the contractor.
- The S-423T Super Terminator wedge is designed to be assembled only into the Crosby S-421T Terminator socket body. Important: The S-423TW for sizes 5/8" through 1-1/8" (14mm through 28mm) will fit respective size standard Crosby S-421T basket. The 1-1/4" (30-32mm) S-423TW will only fit the Crosby S-421T 1-1/4" basket marked with Terminator.

APPLICATION AND WARNING INFORMATION
SECTION 17

S-421T WEDGE SOCKETS (Assembly includes socket, wedge, pin and wire rope clip)

Wire Rope Dia.							
(in)	(mm)	Stock No.	Weight Each (lb)	Wedge Only	Weight Each (lb)	Standard Bolt, Nut & Cotter Assy	Weight Each (lb)
3/8	9-10	1035000	3.30	1035555	.50	2038971	.38
1/2	11-13	1035009	6.10	1035564	1.05	2038972	.69
5/8	14-16	1035018	10.5	1035573	1.79	2038974	1.15
3/4	18-19	1035027	16.4	1035582	2.60	2038976	1.91
7/8	20-22	1035036	24.8	1035591	4.00	2038978	3.23
1	24-26	1035045	35.5	1035600	5.37	2038980	5.40
1-1/8	28	1035054	48.8	1035609	7.30	2038982	7.50
1-1/4	30-32	1035063	71.5	1035618	10.60	2038984	10.34

Wire Rope Dia.				Dimensions (in)														
(in)	(mm)	S-421T Stock No.	S-421TB Stock No.	A	B	C +/- .09	D	G	H	J*	K*	L	P	R	S	T	U	V
3/8	9-10	1035000	1035203	5.69	2.72	.81	.81	1.38	3.06	7.80	1.88	.88	1.56	.44	2.13	.44	1.25	1.38
1/2	11-13	1035009	1035212	6.88	3.47	1.00	1.00	1.62	3.76	8.91	1.26	1.06	1.94	.50	2.56	.53	1.75	1.88
5/8	14-16	1035018	1035221	8.25	4.30	1.25	1.19	2.12	4.47	10.75	1.99	1.22	2.25	.56	3.25	.69	2.00	2.19
3/4	18-19	1035027	1035230	9.88	5.12	1.50	1.38	2.44	5.28	12.36	2.41	1.40	2.63	.66	3.63	.78	2.34	2.56
7/8	20-22	1035036	1035249	11.25	5.85	1.75	1.63	2.69	6.16	14.37	2.48	1.67	3.13	.75	4.31	.88	2.69	2.94
1	24-26	1035045	1035258	12.81	6.32	2.00	2.00	2.94	6.96	16.29	3.04	2.00	3.75	.88	4.70	1.03	2.88	3.28
1-1/8	28	1035054	1035267	14.38	6.92	2.25	2.25	3.31	7.62	18.34	2.56	2.25	4.25	1.00	5.44	1.10	3.25	3.56
1-1/4	30-32	1035063	1035276	16.34	8.73	2.62	2.50	3.56	9.39	20.48	2.94	2.34	4.50	1.06	6.13	1.19	4.62	4.94

* Nominal **note:** For intermediate wire rope sizes, use next larger size socket.

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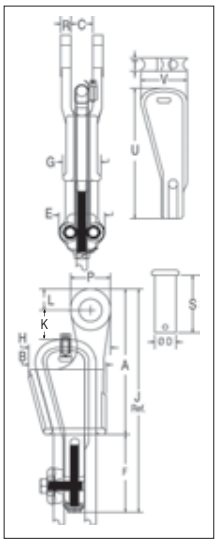
WIRE ROPE END FITTINGS

US-422T



- Wedge socket terminations have an efficiency rating of 80% based on the catalog strength of XXIP wire rope.
- Meets or exceeds all requirements of ASME B30.26, including identification, ductility, design factor, proof load, and temperature requirements. Importantly, these sockets meet other critical performance requirements, including fatigue life, impact properties, and material traceability not addressed by ASME B30.26.
- Basket is cast steel and individually magnetic particle inspected.
- Wedges are color coded for easy identification.
  - Blue - largest wire line size for socket.
  - Black - mid size wire line for socket.
  - 7/16" on US4
  - 9/16" on US5
  - Orange - smallest wire line size for socket.
- By simply changing out the wedge, each socket can be utilized for various wire line sizes (ensure correct wedge is used for wire rope size).
- Cast into each wedge is the model number of the socket and the wire line size for which the wedge is to be used.
- Load pin is forged and headed on one end.
- US-422T wedge sockets contain a hammer pad (lip) to assist in proper securement of termination.
- Incorporates Crosby's patented QUIC-CHECK® 'Go' and 'No-Go' feature cast into the wedge. The proper size rope is determined when the following criteria are met:
- 1) The wire rope should pass through the 'Go' hole in the wedge.
- 2) The wire rope should NOT pass through the 'No-Go' hole in the wedge.
- Available with API-2C certification upon request.
- UWO-422T Wedges are to be used only with the US-422T Wedge Socket Assemblies.

APPLICATION AND WARNING INFORMATION
SECTION 17

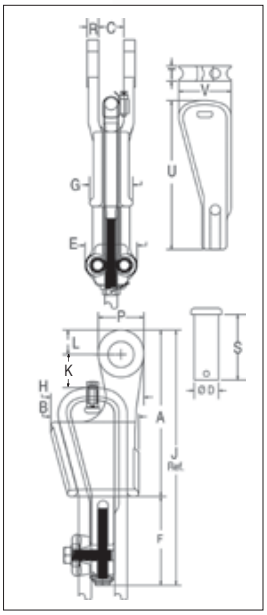
US-422T Utility Wedge Sockets

Model No.	Wire Rope Size (in)	Wire Rope Size (mm)	Stock No.	Weight Each (lb)	Wedge Only Stock No.	Wedge Only Weight Each (lb)	Dimensions (in) A	B	C +/- .09	D	G	H	J	K	L	P	R	S	T	U	V
US4T	3/8	10	1044300	4.6	1047310	0.7	6.81	3.55	1.00	1.00	1.63	2.81	8.43	1.38	1.06	1.94	.50	2.53	.44	1.91	2.14
US4T	7/16	11	1044309	4.6	1047301	1.0	6.81	3.55	1.00	1.00	1.63	2.81	8.73	1.08	1.06	1.94	.50	2.53	.53	1.76	1.88
US4T	1/2	13	1044318	4.6	1047329	1.0	6.81	3.55	1.00	1.00	1.63	2.81	8.73	1.02	1.06	1.94	.50	2.53	.53	1.76	1.88
US5T	1/2	13	1044327	8.5	1047338	2.0	9.19	4.23	1.41	1.25	2.13	3.31	11.19	1.84	1.50	3.00	.63	3.25	.75	1.92	2.16
US5T	9/16	14	1044336	8.5	1047347	1.8	9.19	4.23	1.41	1.25	2.13	3.31	11.47	2.40	1.50	3.00	.63	3.25	.69	2.00	2.18
US5T	5/8	16	1044345	8.5	1047356	1.8	9.19	4.23	1.41	1.25	2.13	3.31	11.47	2.34	1.50	3.00	.63	3.25	.69	2.00	2.18
US6T	5/8	16	1044354	9.4	1047365	3.0	9.45	4.70	1.50	1.25	2.24	3.63	11.91	2.48	1.50	3.00	.56	3.25	.88	2.38	2.75
US6T	3/4	19	1044363	9.4	1047374	2.5	9.45	4.70	1.50	1.25	2.24	3.63	11.81	2.03	1.50	3.00	.56	3.25	.88	2.13	2.63
US8AT	5/8	16	1044372	17.5	1047383	3.2	10.59	5.68	1.81	1.63	2.38	5.53	13.19	1.91	1.53	2.88	.75	4.13	.69	3.26	3.50
US8AT	3/4	19	1044381	17.5	1047392	3.4	10.59	5.68	1.81	1.63	2.38	5.84	13.54	2.38	1.53	2.88	.75	4.13	.78	3.12	3.38
US7*	7/8	22	1038580	16.5	1046674	2.6	11.26	5.11	1.31	1.25	2.69	—	—	2.56	1.63	3.26	.66	3.25	1.06	2.12	2.56
US7*	1	25	1038589	16.5	1046683	2.6	11.26	5.11	1.31	1.25	2.69	—	—	2.56	1.63	3.26	.66	3.25	1.06	1.88	2.38
US8T	7/8	22	1044404	20.8	1047425	5.5	12.77	6.96	1.81	1.63	3.06	7.20	16.02	2.87	1.65	3.12	.75	4.13	.88	3.88	4.18
US8T	1	25	1044417	20.8	1047431	6.1	12.77	6.96	1.81	1.63	3.06	7.31	16.41	2.32	1.65	3.12	.75	4.13	1.03	3.76	4.06
US10T	1-1/8	28	1044426	46.5	1047440	9.7	15.94	8.62	1.81	1.63	3.57	9.15	19.72	3.26	2.19	4.38	.75	4.13	1.09	4.76	5.06
US10T	1-1/4	32	1044435	46.5	1047459	10.4	15.94	8.62	1.81	1.63	3.57	9.39	20.22	2.83	2.19	4.38	.75	4.13	1.19	4.62	4.94
US11T	1-1/8	28	1044444	60.6	1047468	12.5	16.34	8.73	2.62	2.50	3.56	9.15	19.97	3.37	2.34	4.50	1.06	6.13	1.09	4.76	5.06
US11T	1-1/4	32	1044453	64.9	1047477	15.0	16.34	8.73	2.62	2.50	3.56	9.39	20.48	2.94	2.34	4.50	1.06	6.13	1.19	4.62	4.94

* Non-Terminator Style.

Crosby

S-423T



- The 423T wedge socket terminations have a minimum efficiency rating on most high-performance, high-strength, compacted-strand, rotation-resistant wire ropes of 80% based on the catalog breaking strength of the various ropes.
- Design eliminates the difficulty of properly seating the wedge with high performance wire rope into a wedge socket termination.
- Proper application of the Super Terminator eliminates the 'first load' requirement of conventional wedge socket terminations.
- S-423TW Wedge Kit can be retrofitted onto existing Crosby S-421T Terminator Wedge Sockets.
- Wedge and accessories provided with a zinc finish.
- Meets the performance requirements of EN13411-6.
- Meets or exceeds all requirements of ASME B30.26, including identification, ductility, design factor, proof load, and temperature requirements. Importantly, these sockets meet other critical performance requirements, including fatigue life, impact properties, and material traceability not addressed by ASME B30.26.
- Basket is cast steel and individually magnetic particle inspected.
- Pin diameter and jaw opening allows wedge and socket to be used in conjunction with closed swage and spelter sockets.
- Secures the tail or dead end of the wire rope to the wedge, thus eliminates loss or punch out of the wedge.
- Eliminates the need for an extra piece of rope, and is easily installed.
- The Terminator wedge eliminates the potential breaking off of the tail due to fatigue.
- The tail, which is secured by the base of the clip and the tension device, is left undeformed.
- Available with bolt, nut, and cotter pin: S-423TB.
- Available with API-2C certification upon request.
- Wedge sockets meet the performance requirements of Federal Specification RR-S-550F, Type C, except those provisions required of the contractor.
- The S-423T Super Terminator wedge is designed to be assembled only into the Crosby S-421T Terminator socket body. Important: The S-423TW for sizes 5/8" through 1-1/8" will fit respective size standard Crosby S-421T basket. The 1-1/4" S-423TW will only fit the Crosby S-421T 1-1/4" basket marked with Terminator.

Assembly includes socket, wedge, pin, wire rope clip, tensioner, bolts and secondary retention wire.

APPLICATION AND WARNING INFORMATION
SECTION 17

S-423T WEDGE SOCKETS

Wire Rope Dia.		S-423T Assembly with Round Pin and Cotter Pin			S-423TB Assembly with Bolt, Nut and Cotter Pin			S-423TW** Wedge Kit		
			S-423T Weight Each			S-423TB Weight Each			S-423TW Weight Each	
(in)	(mm)	S-423T Stock No.	(lb)	(kg)	S-423TB Stock No.	(lb)	(kg)	S-423TW Stock No.	(lb)	(kg)
5/8	14- 16	1035123	12.7	5.8	1035218	13.1	5.9	1034018	5.2	2.4
3/4	18-19	1035132	19.4	8.8	1035227	19.1	8.7	1034027	7.2	3.3
7/8	20-22	1035141	28.8	13.1	1035236	27.8	12.6	1034036	10.3	4.7
1	24-26	1035150	39.2	17.8	1035245	37.3	16.9	1034045	11.9	5.4
1-1/8	28	1035169	57.1	25.9	1035254	57.9	25.9	1034054	19.9	9.0
1-1/4	30-32	1035178	88.6	40.2	1035272	88.1	39.9	1034063	33.8	15.3

**Kit contains wedge, wire rope clip and bolts, tensioner bolt, and secondary retention wire.

Wire Rope Dia.		S-423T Stock No.	Dimensions (in)																
(in)	(mm)		A	B	C	D	E	F	G	H	J*	K	L	P	R	S	T	U	V
5/8	14- 16	1035123	8.25	4.50	1.25	1.19	3.00	4.06	2.13	4.61	12.31	1.09	1.22	2.25	.56	3.25	.75	6.88	2.60
3/4	18-19	1035132	9.88	5.20	1.50	1.38	3.25	4.81	2.44	5.37	14.69	1.50	1.40	2.62	.66	3.63	.88	7.65	3.02
7/8	20-22	1035141	11.25	5.88	1.75	1.63	3.81	5.73	2.69	6.16	16.98	1.59	1.67	3.13	.75	4.31	1.00	9.47	3.47
1	24-26	1035150	12.81	6.56	2.00	2.00	3.81	5.73	2.94	7.05	18.54	1.44	2.01	3.75	.88	4.70	1.13	10.41	3.82
1-1/8	28	1035169	14.38	6.94	2.25	2.25	4.00	6.85	3.38	7.81	21.23	1.12	2.26	4.25	1.00	5.44	1.25	11.83	4.22
1-1/4	30-32	1035178	16.34	8.63	2.62	2.50	4.50	7.76	3.57	9.38	24.10	1.50	2.34	4.50	1.06	6.62	1.38	13.87	5.82

* Nominal note: For intermediate wire rope sizes, use next larger size socket.

Crosby® Round Pin Shackles

Load Rated® Fatigue Rated "QT" QUIC-CHECK® MAXTOUGH®

ROUND PIN ANCHOR SHACKLES

G-213 / S-213

G-213 Round pin anchor shackles meet the performance requirements of Federal Specification RR-C-271F Type IVA, Grade A, Class 1, except for those provisions required of the contractor.

- Capacities 1/2 through 35 metric tons.
- Forged - Quenched and Tempered, with alloy pins.
- Working Load Limit permanently shown on every shackle.
- Hot Dip galvanized or Self Colored.
- Fatigue rated.
- Shackles 25t and larger are **RFID EQUIPPED.**
- Shackles can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification. Charges for proof testing and certification available when requested at the time of order.
- Shackles are Quenched and Tempered and can meet DNV impact requirements of 42 joules (31 ft-lbs.) at -20 degree C (-4 degree F).
- Look for the Red Pin® . . . the mark of genuine Crosby quality.

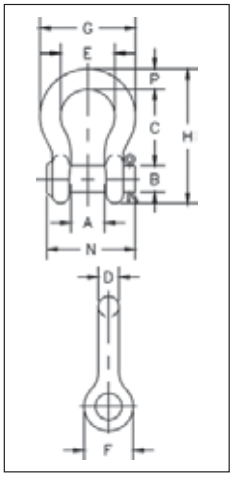
ROUND PIN CHAIN SHACKLES

G-215 / S-215

G-215 Round pin chain shackles meet the performance requirements of Federal Specification RR-C-271F Type IVB, Grade A, Class 1, except for those provisions required of the contractor.

G-213 / S-213 Round Pin Anchor Shackles

G-213 / S-213

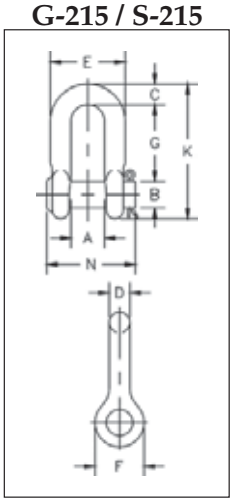


Nominal Size (in.)	Working Load Limit (t)*	Stock No. G-213	Stock No. S-213	Weight Each (lbs.)	Dimensions (in.) A	B	C	D	E	F	G	H	N	P	Tolerance + / - C	A
1/4	1/2	1018017	1018026	.13	.47	.31	1.13	.25	.78	.61	1.28	1.84	1.34	.25	.06	.06
5/16	3/4	1018035	1018044	.18	.53	.38	1.22	.31	.84	.75	1.47	2.09	1.59	.31	.06	.06
3/8	1	1018053	1018062	.29	.66	.44	1.44	.38	1.03	.91	1.78	2.49	1.86	.38	.13	.06
7/16	1-1/2	1018071	1018080	.38	.75	.50	1.69	.44	1.16	1.06	2.03	2.91	2.13	.44	.13	.06
1/2	2	1018099	1018106	.71	.81	.63	1.88	.50	1.31	1.19	2.31	3.28	2.38	.50	.13	.06
5/8	3-1/4	1018115	1018124	1.50	1.06	.75	2.38	.63	1.69	1.50	2.94	4.19	2.91	.69	.13	.06
3/4	4-3/4	1018133	1018142	2.32	1.25	.88	2.81	.75	2.00	1.81	3.50	4.97	3.44	.81	.25	.06
7/8	6-1/2	1018151	1018160	3.49	1.44	1.00	3.31	.88	2.28	2.09	4.03	5.83	3.81	.97	.25	.06
1	8-1/2	1018179	1018188	5.00	1.69	1.13	3.75	1.00	2.69	2.38	4.69	6.56	4.53	1.06	.25	.06
1-1/8	9-1/2	1018197	1018204	6.97	1.81	1.25	4.25	1.13	2.91	2.69	5.16	7.47	5.13	1.25	.25	.06
1-1/4	12	1018213	1018222	9.75	2.03	1.38	4.69	1.29	3.25	3.00	5.75	8.25	5.50	1.38	.25	.06
1-3/8	13-1/2	1018231	1018240	13.25	2.25	1.50	5.25	1.42	3.63	3.31	6.38	9.16	6.13	1.50	.25	.13
1-1/2	17	1018259	1018268	17.25	2.38	1.63	5.75	1.54	3.88	3.63	6.88	10.00	6.50	1.62	.25	.13
1-3/4	25	1018277	1018286	29.46	2.88	2.00	7.00	1.84	5.00	4.19	8.86	12.34	7.75	2.25	.25	.13
2	35	1018295	1018302	45.75	3.25	2.25	7.75	2.08	5.75	4.81	9.97	13.68	8.75	2.40	.25	.13

* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 6 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 91.

G-215 / S-215 Round Pin Chain Shackles

G-215 / S-215



Nominal Size (in.)	Working Load Limit (t)*	Stock No. G-215	Stock No. S-215	Weight Each (lbs.)	Dimensions (in.) A	B	C	D	E	F	G	K	N	Tolerance + / - G	A
1/4	1/2	1018810	1018829	.10	.47	.31	.25	.25	.97	.62	.91	1.59	1.34	.06	.06
5/16	3/4	1018838	1018847	.18	.53	.38	.31	.31	1.15	.75	1.07	1.91	1.63	.06	.06
3/8	1	1018856	1018865	.25	.66	.44	.38	.38	1.42	.92	1.28	2.31	1.86	.13	.06
7/16	1-1/2	1018874	1018883	.40	.75	.50	.44	.44	1.63	1.06	1.48	2.67	2.13	.13	.06
1/2	2	1018892	1018909	.50	.81	.63	.50	.50	1.81	1.18	1.66	3.03	2.38	.13	.06
5/8	3-1/4	1018918	1018927	1.21	1.06	.75	.63	.63	2.32	1.50	2.04	3.76	2.91	.13	.06
3/4	4-3/4	1018936	1018945	2.00	1.25	.88	.81	.75	2.75	1.81	2.40	4.53	3.44	.25	.06
7/8	6-1/2	1018954	1018963	3.28	1.44	1.00	.97	.88	3.20	2.10	2.86	5.33	3.81	.25	.06
1	8-1/2	1018972	1018981	4.75	1.69	1.13	1.00	1.00	3.69	2.38	3.24	5.94	4.53	.25	.06
1-1/8	9-1/2	1018990	1019007	6.30	1.81	1.25	1.25	1.13	4.07	2.68	3.61	6.78	5.13	.25	.06
1-1/4	12	1019016	1019025	9.00	2.03	1.38	1.38	1.25	4.53	3.00	3.97	7.50	5.50	.25	.13
1-3/8	13-1/2	1019034	1019043	12.00	2.25	1.50	1.50	1.38	5.01	3.31	4.43	8.28	6.13	.25	.13
1-1/2	17	1019052	1019061	16.15	2.38	1.63	1.62	1.50	5.38	3.62	4.87	9.05	6.50	.25	.13
1-3/4	25	1019070	1019089	29.96	2.88	2.00	2.12	1.75	6.38	4.19	5.82	10.97	7.75	.25	.13
2	35	1019098	1019105	43.25	3.25	2.25	2.36	2.10	7.25	5.00	6.82	12.74	8.75	.25	.13

* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 6 times the Working Load Limit. For Working Load Limit reduction due to side loading applications.

Crosby® Screw Pin Shackles

Load Rated® Fatigue Rated® "QT" QUIC-CHECK® MAXTOUGH® TA

SCREW PIN ANCHOR SHACKLES

G-209 / S-209

G-209 Screw pin anchor shackles meet the performance requirements of Federal Specification RR-C-271F Type IVA, Grade A, Class 2, except for those provisions required of the contractor.

- Capacities 1/3 thru 55 metric tons, grade 6.
- Forged - Quenched and Tempered, with alloy pins.
- Working Load Limit and grade "6" permanently shown on every shackle.
- Hot Dip galvanized or Self Colored.
- Fatigue rated.
- Shackles 25t and larger are **RFID EQUIPPED.**
- Shackles can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification. Charges for proof testing and certification available when requested at the time of order.
- Approved for use at -40 degree C (-40 degree F) to 204 degree C (400 degree F).
- 2t through 25t bow and screw pin are Certified to meet charpy impact testing of 42 joules (31 ft-lbs.) min. ave. at -20 degree C (-4 degree F).
- All shackles are Quenched and Tempered and can meet DNV impact requirements of 42 joules (31 ft. lbs.) at -20 degree C (-4 degree F).
- Meets or exceeds all requirements of ASME B30.26.
- Type Approval and certification in accordance with ABS 2006 Steel Vessel Rules 1-1-17.7, and ABS Guide for Certification of Cranes.
- Crosby 2t through 25t G209 anchor shackles are type approved to DNV Certification Notes 2.7-1 -Offshore Containers. These Crosby shackles are statistical proof and impact tested. The tests are conducted by Crosby and 3.1 test certification is available upon request.
- Look for the Red Pin® . . . the mark of genuine Crosby quality.

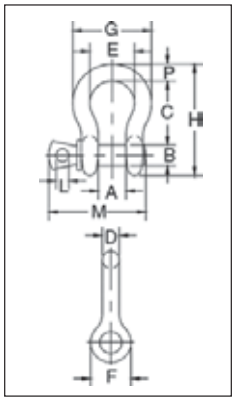
SCREW PIN CHAIN SHACKLES

G-210 / S-210

G-210 Screw pin chain shackles meet the performance requirements of Federal Specification RR-C-271F, Type IVB, Grade A, Class 2, except for those provisions required of the contractor.

G-209 / S-209 Screw Pin Anchor Shackles

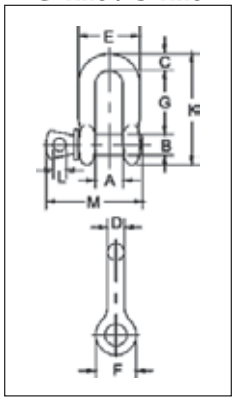
G-209 / S-209



Nominal Size (in.)	Working Load Limit (t)*	Stock No. G-209	Stock No. S-209	Weight Each (lbs.)	Dimensions (in.) A	B	C	D	E	F	G	H	L	M	P	Tolerance + / - C	A
3/16	1/3	1018357	–	.06	.38	.25	.88	.19	.60	.56	.98	1.47	.16	1.14	.19	.06	.06
1/4	1/2	1018375	1018384	.10	.47	.31	1.13	.25	.78	.61	1.28	1.84	.19	1.43	.25	.06	.06
5/16	3/4	1018393	1018400	.18	.53	.38	1.22	.31	.84	.75	1.47	2.09	.22	1.71	.31	.06	.06
3/8	1	1018419	1018428	.31	.66	.44	1.44	.38	1.03	.91	1.78	2.49	.25	2.02	.38	.13	.06
7/16	1-1/2	1018437	1018446	.38	.75	.50	1.69	.44	1.16	1.06	2.03	2.91	.31	2.37	.44	.13	.06
1/2	2	1018455	1018464	.72	.81	.63	1.88	.50	1.31	1.19	2.31	3.28	.38	2.69	.50	.13	.06
5/8	3-1/4	1018473	1018482	1.37	1.06	.75	2.38	.63	1.69	1.50	2.94	4.19	.44	3.34	.69	.13	.06
3/4	4-3/4	1018491	1018507	2.35	1.25	.88	2.81	.75	2.00	1.81	3.50	4.97	.50	3.97	.81	.25	.06
7/8	6-1/2	1018516	1018525	3.62	1.44	1.00	3.31	.88	2.28	2.09	4.03	5.83	.50	4.50	.97	.25	.06
1	8-1/2	1018534	1018543	5.03	1.69	1.13	3.75	1.00	2.69	2.38	4.69	6.56	.56	5.13	1.06	.25	.06
1-1/8	9-1/2	1018552	1018561	7.41	1.81	1.25	4.25	1.16	2.91	2.69	5.16	7.47	.63	5.71	1.25	.25	.06
1-1/4	12	1018570	1018589	9.50	2.03	1.38	4.69	1.29	3.25	3.00	5.75	8.25	.69	6.25	1.38	.25	.06
1-3/8	13-1/2	1018598	1018605	13.53	2.25	1.50	5.25	1.42	3.63	3.31	6.38	9.16	.75	6.83	1.50	.25	.13
1-1/2	17	1018614	1018623	17.20	2.38	1.63	5.75	1.54	3.88	3.63	6.88	10.00	.81	7.33	1.62	.25	.13
1-3/4	25	1018632	1018641	27.78	2.88	2.00	7.00	1.84	5.00	4.19	8.86	12.34	1.00	9.06	2.25	.25	.13
2	35	1018650	1018669	45.00	3.25	2.25	7.75	2.08	5.75	4.81	9.97	13.68	1.22	10.35	2.40	.25	.13
2-1/2	55	1018678	1018687	85.75	4.13	2.75	10.50	2.71	7.25	5.69	12.87	17.84	1.38	13.00	3.13	.25	.25

G-210 / S-210 Screw Pin Chain Shackles

G-210 / S-210



Nominal Size (in.)	Working Load Limit (t)*	Stock No. G-210	Stock No. S-210	Weight Each (lbs.)	Dimensions (in.) A	B	C	D	E	F	G	K	L	M	Tolerance + / - G	A
1/4	1/2	1019150	1019169	.11	.47	.31	.25	.25	.97	.62	.97	1.59	.19	1.43	.06	.06
5/16	3/4	1019178	1019187	.17	.53	.38	.31	.31	1.15	.75	1.07	1.91	.22	1.71	.06	.06
3/8	1	1019196	1019203	.28	.66	.44	.38	.38	1.42	.92	1.28	2.31	.25	2.02	.13	.06
7/16	1-1/2	1019212	1019221	.43	.75	.50	.44	.44	1.63	1.06	1.48	2.67	.31	2.37	.13	.06
1/2	2	1019230	1019249	.59	.81	.63	.50	.50	1.81	1.18	1.66	3.03	.38	2.69	.13	.06
5/8	3-1/4	1019258	1019267	1.25	1.06	.75	.63	.63	2.32	1.50	2.04	3.76	.44	3.34	.13	.06
3/4	4-3/4	1019276	1019285	2.63	1.25	.88	.81	.75	2.75	1.81	2.40	4.53	.50	3.97	.25	.06
7/8	6-1/2	1019294	1019301	3.16	1.44	1.00	.97	.88	3.20	2.10	2.86	5.33	.50	4.50	.25	.06
1	8-1/2	1019310	1019329	4.75	1.69	1.13	1.00	1.00	3.69	2.38	3.24	5.94	.56	5.13	.25	.06
1-1/8	9-1/2	1019338	1019347	6.75	1.81	1.25	1.25	1.13	4.07	2.69	3.61	6.78	.63	5.71	.25	.06
1-1/4	12	1019356	1019365	9.06	2.03	1.38	1.38	1.25	4.53	3.00	3.97	7.50	.69	6.25	.25	.13
1-3/8	13-1/2	1019374	1019383	11.63	2.25	1.50	1.50	1.38	5.01	3.31	4.43	8.28	.75	6.53	.25	.13
1-1/2	17	1019392	1019409	15.95	2.38	1.63	1.62	1.50	5.38	3.62	4.87	9.05	.81	7.33	.25	.13
1-3/4	25	1019418	1019427	26.75	2.88	2.00	2.12	1.75	6.38	4.19	5.78	10.97	1.00	9.06	.25	.13
2	35	1019436	1019445	42.31	3.25	2.25	2.36	2.10	7.25	5.00	6.77	12.74	1.13	10.35	.25	.13
2-1/2	55	1019454	1019463	71.75	4.12	2.75	2.63	2.63	9.38	5.68	8.07	14.85	1.38	13.00	.25	.25

* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 6 times the Working Load Limit. For Working Load Limit reduction due to side loading applications.

Crosby® Alloy Screw Pin Shackles

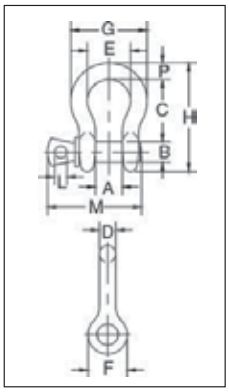
Load Rated®

QUIC-CHECK®

G-209A

G-209A Screw pin anchor shackles meet the performance requirements of Federal Specification RR-C-271F Type IVA, Grade B, Class 2, except for those provisions required of the contractor.

- Capacities 2 thru 21 metric tons. Meets performance requirements of Grade 8 shackles.
- Forged Alloy Steel – Quenched and Tempered, with alloy pins.
- Working Load Limit permanently shown on every shackle.
- Hot Dip Galvanized.
- Shackles can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification. Charges for proof testing and certification available when requested at the time of order.
- Approved for use at -40 degree C (-40 degree F) to 204 degree C (400 degree F).
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these shackles meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.



G-209A Crosby® Alloy Screw Pin Shackles

Nominal Size (in.)	Working Load Limit (t)*	G-209A Stock No.	Weight Each (lbs.)	Dimensions (in.)											Tolerance + / -	
				A	B	C	D	E	F	G	H	L	M	P	C	A
3/8	2	1017450	.31	.66	.44	1.44	.38	1.03	.91	1.78	2.49	.25	2.03	.38	.13	.06
7/16	2-2/3	1017472	.38	.75	.50	1.69	.44	1.16	1.06	2.03	2.91	.31	2.38	.44	.13	.06
1/2	3-1/3	1017494	.63	.81	.63	1.88	.50	1.31	1.19	2.31	3.28	.38	2.69	.50	.13	.06
5/8	5	1017516	1.38	1.06	.75	2.38	.63	1.69	1.50	2.94	4.19	.44	3.34	.69	.13	.06
3/4	7	1017538	2.35	1.25	.88	2.81	.75	2.00	1.81	3.50	4.97	.50	3.97	.81	.25	.06
7/8	9-1/2	1017560	3.61	1.44	1.00	3.31	.88	2.28	2.09	4.03	5.83	.50	4.50	.97	.25	.06
1	12-1/2	1017582	5.32	1.69	1.13	3.75	1.00	2.69	2.38	4.69	6.56	.56	5.07	1.06	.25	.06
1-1/8	15	1017604	7.25	1.81	1.25	4.25	1.16	2.91	2.69	5.16	7.47	.63	5.59	1.25	.25	.06
1-1/4	18	1017626	9.88	2.03	1.38	4.69	1.29	3.25	3.00	5.75	8.25	.69	6.16	1.38	.25	.06
1-3/8	21	1017648	13.25	2.25	1.50	5.25	1.42	3.63	3.31	6.38	9.16	.75	6.84	1.50	.25	.13

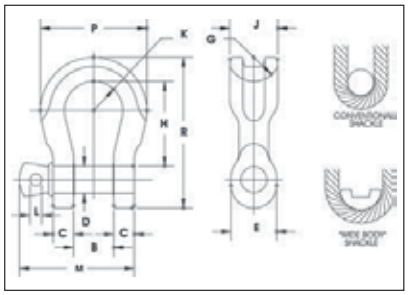
* Maximum Proof Load is 2 times the Working Load Limit (metric tons) and 2.2 times the Working Load Limit (short tons). Minimum Ultimate Strength is 4.5 times the Working Load Limit for metric tonnes, and 5 times the Working Load Limit for short tons. For Working Load Limit reduction due to side loading applications.

Load Rated®

G-2169

S-2169

- Capacities of 7, 12.5 and 18 metric tons.
- Quenched and Tempered for maximum strength.
- Forged Alloy Steel.
- Available in galvanized and self colored finished.
- Individually proof tested and magnetic particle inspected. Crosby certification available at time of order.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these shackles meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.
- Look for the Red Pin® . . . the mark of genuine Crosby quality.



G-2169 / S-2169 Screw Pin "Wide Body" Shackles

Working Load Limit (t)*	G-2169 Stock No.	S-2169 Stock No.	Weight Each (lbs.)	Dimensions (in.)												
				B +/- .25	C	D +/- .02	E	G	H	J	K	L	M	P	R	
7	1021655	1021664	3.5	1.25	.69	.88	1.82	1.25	3.56	1.60	1.25	.50	3.97	4.10	5.87	
12.5	1021673	1021682	8.8	1.69	.92	1.13	2.38	1.37	4.63	2.13	1.63	.56	5.13	5.51	7.63	
18	1021691	1021699	13	2.03	1.16	1.38	2.69	1.50	5.81	2.50	2.00	.69	6.25	6.76	9.38	

* Ultimate Load is 5 times the Working Load Limit. Forged Alloy Steel. Proof Load is 2 times the Working Load Limit.

Crosby® Bolt Type Shackles

Load Rated® Fatigue Rated® MAXTOUGH®

BOLT TYPE ANCHOR SHACKLES

- Capacities 1/3 thru 150 metric tons, grade 6.
- Working Load Limit and grade "6" permanently shown on every shackle.
- Forged – Quenched and Tempered, with alloy pins.
- Hot Dip galvanized or Self Colored. (85, 120, and 150 metric ton shackles are all hot dip galvanized bows and the bolts are Dimetcoted® and painted red)
- Fatigue rated (1/3t - 55t).
- Shackles 25t and larger are **RFID EQUIPPED.**
- Approved for use at -40 degree C (-40 degree F) to 204 degree C (400 degree F).
- Meets or exceeds all requirements of ASME B30.26.
- Shackles 85 metric tons and larger are individually proof tested to 2.0 times the working load limit.
- Shackles 120 metric tons and larger are proof tested, Magnetic Particle Inspected and provided with Serialized Pin and Bow.
- Type Approval and certification in accordance with ABS 2006 Steel Vessel Rules 1-1-17.7, and ABS Guide for Certification of Cranes.
- 3.1 Certification as standard available for charpy and statistical proof test for pg 79 only up to 25 tons to DNV2.7-1 and EN13889.
- Crosby 2t through 25t G2130 anchor shackles are type approved to DNV Certification Notes 2.7-1- Offshore Containers. These Crosby shackles are statistical proof and impact tested to 42 joules (31 ft-lbs.) min. ave. at -20 degree C (-4 degree F). The tests are conducted by Crosby and 3.1 test certification is available upon request. Refer to page 76 for Crosby COLD TUFF® shackles that meet the additional requirements of DNV rules for certification of lifting applications - Loose Gear.
- All other 2130 and all 2150 shackles can meet charpy requirements of 42 joules (31 ft-lbs) avg at -20 degree C (-4 degree F) upon special request.
- Look for the Red Pin® . . . the mark of genuine Crosby quality.

G-2130 / S-2130

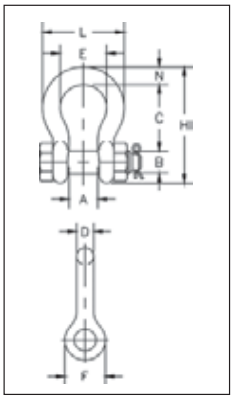
G-2130 Bolt Type Anchor shackles with thin head bolt - nut with cotter pin. Meets the performance requirements of Federal Specification RR-C-271F Type IVA, Grade A, Class 3, except for those provisions required of the contractor.

BOLT TYPE CHAIN SHACKLES

G-2150 / S-2150

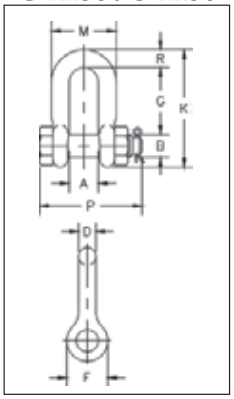
G-2150 Bolt Type Chain shackles. Thin hex head bolt - nut with cotter pin. Meets the performance requirements of Federal Specification RR-C-271F Type IVB, Grade A, Class 3, except for those provisions required of the contractors.

G-2130 / S-2130



Nominal Size (in.)	Working Load Limit (t)*	Stock No. G-2130	Stock No. S-2130	Weight Each (lbs.)	Dimensions (in.) A	B	C	D	E	F	H	L	N	Tolerance + / - C	A
3/16	1/3 ‡	1019464	–	.06	.38	.25	.88	.19	.60	.56	1.47	.98	.19	.06	.06
1/4	1/2	1019466	–	.11	.47	.31	1.13	.25	.78	.61	1.84	1.28	.25	.06	.06
5/16	3/4	1019468	–	.22	.53	.38	1.22	.31	.84	.75	2.09	1.47	.31	.06	.06
3/8	1	1019470	–	.33	.66	.44	1.44	.38	1.03	.91	2.49	1.78	.38	.13	.06
7/16	1-1/2	1019471	–	.49	.75	.50	1.69	.44	1.16	1.06	2.91	2.03	.44	.13	.06
1/2	2	1019472	1019481	.79	.81	.64	1.88	.50	1.31	1.19	3.28	2.31	.50	.13	.06
5/8	3-1/4	1019490	1019506	1.68	1.06	.77	2.38	.63	1.69	1.50	4.19	2.94	.69	.13	.06
3/4	4-3/4	1019515	1019524	2.72	1.25	.89	2.81	.75	2.00	1.81	4.97	3.50	.81	.25	.06
7/8	6-1/2	1019533	1019542	3.95	1.44	1.02	3.31	.88	2.28	2.09	5.83	4.03	.97	.25	.06
1	8-1/2	1019551	1019560	5.66	1.69	1.15	3.75	1.00	2.69	2.38	6.56	4.69	1.06	.25	.06
1-1/8	9-1/2	1019579	1019588	8.27	1.81	1.25	4.25	1.13	2.91	2.69	7.47	5.16	1.25	.25	.06
1-1/4	12	1019597	1019604	11.71	2.03	1.40	4.69	1.29	3.25	3.00	8.25	5.75	1.38	.25	.06
1-3/8	13-1/2	1019613	1019622	15.83	2.25	1.53	5.25	1.42	3.63	3.31	9.16	6.38	1.50	.25	.13
1-1/2	17	1019631	1019640	19.00	2.38	1.66	5.75	1.53	3.88	3.63	10.00	6.88	1.62	.25	.13
1-3/4	25	1019659	1019668	33.91	2.88	2.04	7.00	1.84	5.00	4.19	12.34	8.80	2.25	.25	.13
2	35	1019677	1019686	52.25	3.25	2.30	7.75	2.08	5.75	4.81	13.68	10.15	2.40	.25	.13
2-1/2	55	1019695	1019702	98.25	4.13	2.80	10.50	2.71	7.25	5.69	17.90	12.75	3.13	.25	.25
3	† 85	1019711	–	154.00	5.00	3.30	13.00	3.12	7.88	6.50	21.50	14.62	3.62	.25	.25
3-1/2	† 120 ‡	1019739	–	265.00	5.25	3.76	14.63	3.62	9.00	8.00	24.88	17.02	4.38	.25	.25
4	† 150 ‡	1019757	–	338.00	5.50	4.26	14.50	4.00	10.00	9.00	25.68	18.00	4.56	.25	.25

G-2150 / S-2150



Nominal Size (in.)	Working Load Limit (t)*	Stock No. G-2150	Stock No. S-2150	Weight Each (lbs.)	Dimensions (in.) A	B	D	F	G	K	M	P	R	Tolerance + / - G	A
1/4	1/2	1019768	–	.13	.47	.31	.25	.62	.91	1.59	.97	1.56	.25	.06	.06
5/16	3/4	1019770	–	.23	.53	.38	.31	.75	1.07	1.91	1.15	1.82	.31	.06	.06
3/8	1	1019772	–	.33	.66	.44	.38	.92	1.28	2.31	1.42	2.17	.38	.13	.06
7/16	1-1/2	1019774	–	.49	.75	.50	.44	1.06	1.48	2.67	1.63	2.51	.44	.13	.06
1/2	2	1019775	1019784	.75	.81	.64	.50	1.18	1.66	3.03	1.81	2.80	.50	.13	.06
5/8	3-1/4	1019793	1019800	1.47	1.06	.77	.63	1.50	2.04	3.76	2.32	3.56	.63	.13	.06
3/4	4-3/4	1019819	1019828	2.52	1.25	.89	.75	1.81	2.40	4.53	2.75	4.15	.81	.25	.06
7/8	6-1/2	1019837	1019846	3.85	1.44	1.02	.88	2.10	2.86	5.33	3.20	4.82	.97	.25	.06
1	8-1/2	1019855	1019864	5.55	1.69	1.15	1.00	2.38	3.24	5.94	3.69	5.39	1.00	.25	.06
1-1/8	9-1/2	1019873	1019882	7.60	1.81	1.25	1.13	2.68	3.61	6.78	4.07	5.90	1.25	.25	.06
1-1/4	12	1019891	1019908	10.81	2.03	1.40	1.25	3.00	3.97	7.50	4.53	6.69	1.38	.25	.06
1-3/8	13-1/2	1019917	1019926	13.75	2.25	1.53	1.38	3.31	4.43	8.28	5.01	7.21	1.50	.25	.13
1-1/2	17	1019935	1019944	18.50	2.38	1.66	1.50	3.62	4.87	9.05	5.38	7.73	1.62	.25	.13
1-3/4	25	1019953	1019962	31.40	2.88	2.04	1.75	4.19	5.82	10.97	6.38	9.33	2.12	.25	.13
2	35	1019971	1019980	46.75	3.25	2.30	2.10	5.00	6.82	12.74	7.25	10.41	2.36	.25	.13
2-1/2	55	1019999	1020004	85.00	4.12	2.80	2.63	5.68	8.07	14.85	9.38	13.58	2.63	.25	.25
3	† 85	1020013	–	124.25	5.00	3.25	3.00	6.50	8.56	16.87	11.00	15.13	3.50	.25	.25

* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 6 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 91.
† Individually Proof Tested with certification.
‡ Furnished in Anchor style only and furnished with Round Head Bolts with welded handles.

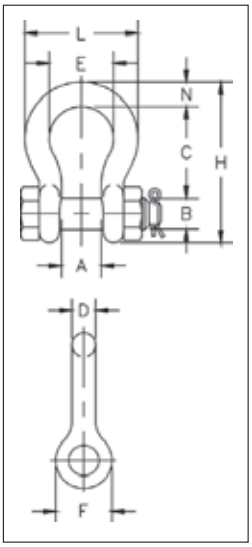
Crosby® Alloy Bolt Type Shackles

Load Rated "QT" QUENCHED & TEMPERED QUIC-CHECK® MAXTOUGH® "TA" TYPE APPROVED

G-2130A ALLOY BOLT TYPE SHACKLES GRADE 80

G-2130A
Bolt Type Anchor shackles with thin head bolt – nut with cotter pin. Meets the performance requirements of Federal Specification RR-C-271F Type IVA, Grade B, Class 3, except for those provisions required of the contractor.

- Capacities 2 to 17 metric tons.
- Working Load Limit permanently shown on every shackle.
- Forged Alloy Steel – Quenched and Tempered, with bow and bolt.
- Hot Dip galvanized.
- Shackles can be **RFID EQUIPPED.**
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these shackles meet other critical performance requirements including impact properties and material traceability, not addressed by ASME B30.26.
- Shackles can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification when requested at time of order.
- Type Approval and certification in accordance with DNV Type Approval under DNV 2.7-1.
- Shackles are Quenched and Tempered and meets DNV impact requirements of 42 joules (31 ft. lbs.) at -40 degree C (-40 degree F).



G-2130A Alloy Bolt Type Shackles Grade 80

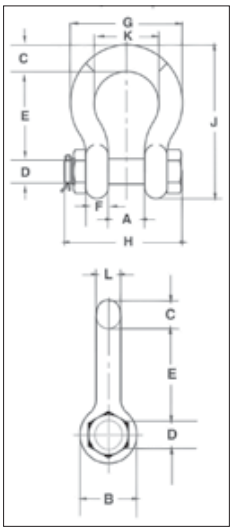
Nominal Size (in.)	Working Load Limit (t)*	G-2130A Stock No.	Weight Each (lbs.)	Dimensions (in)									Tolerance +/-	
				A	B	C	D	E	F	H	L	N	C	A
1/2	2	1219472	.79	.81	.63	1.88	0.50	1.31	1.19	3.29	2.30	0.50	0.13	0.06
5/8	3-1/4	1219491	1.37	1.06	.75	2.38	0.63	1.69	1.50	4.18	2.94	0.69	0.25	0.06
3/4	4-3/4	1219516	2.71	1.25	.88	2.82	0.75	2.01	1.81	4.96	3.51	0.81	0.25	0.06
7/8	6-1/2	1219534	3.95	1.44	1.00	3.31	0.88	2.29	2.09	5.83	4.02	0.97	0.25	0.06
1	8-1/2	1219552	5.03	1.69	1.10	3.76	1.00	2.70	2.38	6.58	4.69	1.06	0.25	0.06
1-1/8	9-1/2	1219578	8.27	1.81	1.25	4.26	1.13	2.92	2.70	7.49	5.16	1.25	0.25	0.06
1-1/4	12	1219598	11.7	2.03	1.38	4.69	1.25	3.25	2.99	8.27	5.75	1.38	0.25	0.06
1-3/8	13-1/2	1219614	15.8	2.25	1.50	5.24	1.38	3.62	3.31	9.18	6.38	1.50	0.25	0.13
1-1/2	17	1219632	19.0	2.38	1.63	5.75	1.50	3.88	3.62	10.0	6.90	1.62	0.25	0.13

* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 8 times the Working Load Limit. For Working Load Limit reduction due to side loading applications.

Crosby

G-2140 / S-2140

- Quenched & Tempered.
- Alloy bows, alloy bolts.
- Forged alloy steel 2 through 250 metric tons. Cast alloy steel 400 metric tons.
- Meets performance requirements of Grade 8 shackles.
- Working Load Limit is permanently shown on every shackle.
- 30, 40, 55, and 85 metric ton shackle bows are available galvanized (G) or self colored (S) with bolts that are galvanized and painted red.
- Size 3/8 inch is mechanically galvanized.
- 120, 150, 175 metric ton shackle bows are hot-dip galvanized; bolts are Dimetcoted and painted red.
- 200, 250, 300, 400 metric ton shackle bows are Dimetcoted; bolts are Dimetcoted and painted red.
- Approved for use at -40° C (-40° F) to 204° C (400° F).
- Shackles are Quenched & Tempered and can meet DNV impact requirements of 42 Joules (31 ft-lb) at -20° C (-4° F).



- Crosby COLD TUFF® shackles that meet the additional requirements of DNV rules for certification of lifting applications - loose gear are available.
- Shackles 200 metric tons and larger are provided as follows:
  - Serialized bolt and bow
  - Material certification (chemical)
  - Magnetic particle inspected.
  - Certification must be requested at time of order.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. 2140 shackles meet other critical performance requirements including impact properties and material traceability, not addressed by ASME B30.26.
- Type Approval certification in accordance with ABS 2016 Steel Vessel Rules and 2016 ABS Guide for Certification of Lifting Appliances. Certificates are available when requested at time of order and may include additional charges.
- G-2140 meets the performance requirements of Federal Specification RR-C-271H, Type IVA, Grade B, Class 3, except for those provisions required of the contractor. For additional information, see Warnings & Applications.
- Look for the Red Pin®... the mark of genuine Crosby quality.

G-2140 / S-2140 Alloy Bolt Type Anchor Shackles

Nominal Shackle Size (in)	Working Load Limit (t)	Stock No.			Weight Each (lb)	Dimensions (in)													Tolerance (+ / - in)		
		G-2140	S-2140	G-2140 OC		A	B	C	D	E	F	G	H	J	K	L	M	N	A	D	E
3/8	2	1021015	-	-	0.33	0.66	0.91	0.38	0.44	1.44	0.38	1.78	2.17	2.49	1.03	0.38	-	-	0.06	0.01	0.13
7/16	2.67	1021020	-	-	0.49	0.75	1.06	0.44	0.50	1.69	0.41	2.03	2.51	2.91	1.16	0.44	-	-	0.06	0.01	0.13
1/2	3.33	1021029	-	-	0.79	0.81	1.19	0.50	0.64	1.88	0.46	2.31	2.80	3.28	1.31	0.50	-	-	0.06	0.02	0.13
5/8	5	1021038	-	-	1.68	1.06	1.50	0.69	0.77	2.38	0.58	2.94	3.56	4.19	1.69	0.63	-	-	0.06	0.02	0.13
3/4	7	1021047	-	-	2.72	1.25	1.81	0.81	0.89	2.81	0.69	3.50	4.15	4.97	2.00	0.75	-	-	0.06	0.02	0.25
7/8	9.5	1021056	-	-	3.95	1.44	2.09	0.97	1.02	3.31	0.81	4.03	4.82	5.83	2.28	0.88	-	-	0.06	0.02	0.25
1	12.5	1021065	-	-	5.66	1.69	2.38	1.06	1.15	3.75	0.92	4.69	5.39	6.56	2.69	1.00	-	-	0.06	0.02	0.25
1-1/8	15	1021074	-	-	8.27	1.81	2.69	1.25	1.25	4.25	1.04	5.16	5.90	7.47	2.91	1.13	-	-	0.06	0.02	0.25
1-1/4	18	1021083	-	-	11.7	2.03	3.00	1.38	1.40	4.69	1.16	5.75	6.69	8.25	3.25	1.29	-	-	0.06	0.03	0.25
1-3/8	21	1021092	-	-	15.8	2.25	3.31	1.50	1.53	5.25	1.28	6.38	7.21	9.16	3.63	1.42	-	-	0.13	0.03	0.25
1-1/2	30	1021110	1021129	1262407	18.8	2.38	3.62	1.62	1.63	5.75	1.39	6.88	7.73	10.00	3.88	1.53	-	-	0.13	0.03	0.25
1-3/4	40	1021138	1021147	1262416	33.8	2.88	4.19	2.25	2.00	7.00	1.75	8.81	9.33	12.34	5.00	1.84	-	-	0.13	0.03	0.25
2	55	1021156	1021165	1262425	49.9	3.25	4.81	2.40	2.25	7.75	2.00	10.16	10.41	13.68	5.75	2.08	-	-	0.13	0.03	0.25
2-1/2	85	1021174	1021183	1262434	103	4.12	5.81	3.12	2.75	10.50	2.62	12.75	13.58	17.90	7.25	2.71	-	-	0.25	0.03	0.25
3	120	1021192	-	1262443	162	5.00	6.50	3.63	3.25	13.00	3.00	14.62	15.13	21.50	7.88	3.12	-	-	0.25	0.04	0.25
3-1/2	† 150	1021218	-	1262452	268	5.25	8.00	4.38	3.75	14.63	3.75	17.02	20.33	24.88	9.00	3.62	4.00	1.80	0.25	0.01	0.25
4	† 175	1021236	-	1262461	318	5.50	9.00	4.56	4.25	14.50	4.00	18.00	21.20	25.68	10.00	4.00	4.00	1.80	0.25	0.01	0.25
4-3/4	† 200	1021234	-	-	461	7.25	10.50	5.00	4.75	15.19	4.58	20.84	24.04	27.81	11.00	4.75	4.00	1.80	0.25	0.01	0.25
5	† 250	1021243	-	-	608	8.50	12.00	5.62	5.00	18.50	4.85	23.62	24.87	32.61	13.00	5.00	4.00	1.80	0.25	0.01	0.25
6	† 300	1021252	-	-	797	8.38	13.00	6.06	6.00	18.72	4.89	24.76	26.22	34.28	13.00	5.88	4.00	1.80	0.25	0.01	0.25
7*	† 400	1021478	-	-	1289	8.25	14.00	7.25	7.00	22.50	6.50	26.00	29.66	40.25	13.00	6.00	4.00	1.80	0.25	0.01	0.25

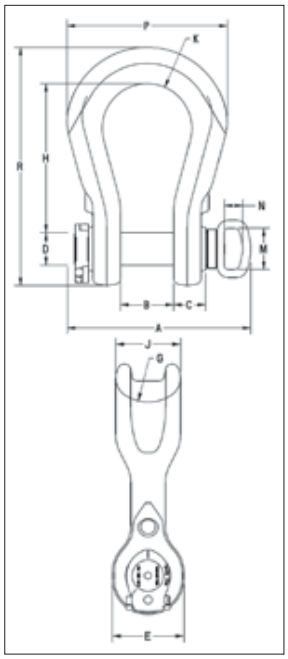
4.5:1 Design Factor for sizes 2 through 21 metric tons, 5.4:1 Design Factor for sizes 30 through 175 metric tons. 4:1 Design Factor for 200 through 400 metric tons. Maximum Proof Load is 2 times the Working Load Limit. *Cast alloy steel.†Furnished with round head bolts with a handle. For Working Load Limit reduction due to side loading applications, see Warnings & Applications.

APPLICATION AND WARNING INFORMATION SECTION 17

Crosby

G-2160E

- Increase in shackle bow radius provides minimum 58% gain in sling bearing surface and eliminates need for a thimble.
- Increases usable sling strength a minimum of 15% and greatly improves life of wire rope slings.
- Can be used to connect synthetic web slings, synthetic round slings or wire rope slings.
- All sizes Quenched & Tempered for maximum strength.
- Forged alloy steel from 75 through 300 metric tons.
- Proof tested as follows:
  - 75 metric tons and 200-300 metric tons: 2 x WLL.
  - 125 metric tons: 1.6 x WLL.
- All ratings are in metric tons, embossed on side of bow.
- G-2160E, (75t and larger), bows are furnished Dimetcoted, and pins are Dimetcoted, then painted red.
- Approved for use at -40° C (-40° F) to 204 degrees C (400° F).
- Bow and bolt are certified to meet Charpy impact testing of 42 Joules (31 ft-lb) min. avg. at -20° C (-4 degrees F).
- All 2160E shackles are individually proof tested and magnetic particle inspected. Crosby certification available at time of order.
- Shackles requiring ABS, Lloyds and other certifications are available upon special request and must be specified at time of order.
- Shackles have DNV Type Approval to Rules for Certification of Lifting Appliances, and are produced in accordance with DNV MSA requirements. Databook is provided that includes required documents.
  - Serialization / Identification
  - Material Testing (physical / chemical / Charpy)
  - Proof Testing
- Look for the Red Pin®... the mark of genuine Crosby quality.



G-2160E Easy-Loc Wide Body Shackles

Working Load Limit (t)	Stock No.	Weight Each (lb)	Dimensions (in)													
			A	B	C	D	E	G	H	J	K	M	N	P	R	Effective Body Diameter
75	1021500	110	15.04	4.13	2.39	2.75	5.34	3.75	11.54	5.00	3.64	4.00	1.80	12.64	18.66	6.3
125	1021509	190	17.70	5.12	3.10	3.15	6.50	3.75	14.37	5.91	4.33	4.00	1.80	15.47	23.00	6.8
200	1021518	408	19.35	5.91	3.39	4.12	8.41	5.25	18.91	8.56	5.42	4.00	1.80	20.27	30.44	9.5
300	1021527	787	22.61	7.38	4.30	5.25	10.50	6.13	23.63	10.38	6.31	4.00	1.80	23.93	37.51	11.4

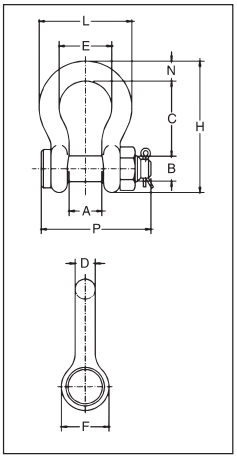
5:1 Design Factor on 75 through 300 metric tons. Maximum Proof Load is 2 times the Working Load Limit on 75 through 300 metric tons (except for 125 metric tons which is proof tested to 1.6 times the Working Load Limit).

APPLICATION AND WARNING INFORMATION
SECTION 17

Crosby® COLD TUFF® Shackles

G-2130CT and G-2140CT

- Forged - Quenched and Tempered, with alloy bolt.
  - G-2130CT - Carbon Steel
  - G-2140CT - Alloy Steel
- Working Load Limit permanently shown on every shackle.
- Individually Serialized with Certification.
- Fatigue Rated (G-2130CT only).
- Shackles 25t and larger are **RFID EQUIPPED.**
- All sizes are individually proof tested to 2.0 times the Working Load Limit.
- Finish is Inorganic Zinc Primer or Hot Dipped Galvanized.
- Bow and Bolt are Certified to meet charpy impact testing of 42 joules (31 ft-lbs.) min. ave. at -20 degree C (-4 degree F).
- Individually Mag Inspected with certification.
- COLD TUFF® shackles are suitable for use to -50° F.
- Type Approval and certification in accordance with DNV 2.7-1 Offshore Containers, and Rules for Certification of Lifting Appliances, DNV OS-101, and are produced in accordance with DNV MSA requirements, including required documents.



G-2130CT

- Bolt Type Anchor shackle with thin head bolt - nut with cotter pin. Meets the performance requirements of Federal Specification RR-C2.7-1F Type IVA, Grade A, Class 3, except for those provisions required of the contractor.

Nominal Shackle Size (in.)	Working Load Limit (t)*	G-2130CT Stock No.	Weight Each (lbs.)	Dimensions (in.)										Tolerance + / -	
				A	B	C	D	E	F	H	L	N	P	A	C
3/4	4-3/4	1260568	2.72	1.25	.88	2.81	.75	2.00	1.81	4.97	3.50	.81	4.25	.06	.25
7/8	6-1/2	1260577	3.87	1.44	1.00	3.31	.88	2.28	2.09	5.83	4.03	.97	4.71	.06	.25
1	8-1/2	1260586	5.66	1.69	1.13	3.75	1.03	2.69	2.38	6.56	4.69	1.06	5.38	.06	.25
1-1/8	9-1/2	1260595	8.26	1.81	1.25	4.25	1.13	2.91	2.69	7.47	5.16	1.25	5.90	.06	.25
1-1/4	12	1260604	11.71	2.03	1.38	4.69	1.29	3.25	3.00	8.25	5.75	1.38	6.63	.06	.25
1-3/8	13-1/2	1260613	15.1	2.25	1.50	5.25	1.38	3.63	3.31	9.16	6.38	1.50	7.21	.13	.25
1-1/2	17	1260622	20.8	2.38	1.63	5.75	1.54	3.88	3.63	10.00	6.88	1.62	7.66	.13	.25
1-3/4	25	1260633	33.9	2.88	2.00	7.00	1.84	5.00	4.19	12.34	8.86	2.25	9.19	.13	.25

* **NOTE:** Maximum Proof Load is 2.0 times the Working Load Limit.
4-3/4t - 25t, Minimum Ultimate Load is 5.4 times the Working Load Limit.

G-2140CT

- G-2140 meets the performance requirements of Federal Specifications RR-C-271F, Type IVA, Grade B, Class 3 except for those provisions required of the contractor.

Nominal Shackle Size (in.)	Working Load Limit (t)*	G-2140CT Stock No.	Weight Each (lbs.)	Dimensions (in.)										Tolerance + / -	
				A	B	C	D	E	F	H	L	N	P	A	C
1-1/2	30	1260801	20.8	2.38	1.63	5.75	1.54	3.88	3.62	10.00	6.88	1.62	7.73	.13	.25
1-3/4	40	1260812	33.9	2.88	2.00	7.00	1.84	5.00	4.19	12.34	8.81	2.25	9.33	.13	.25
2	55	1260823	52.0	3.25	2.25	7.75	2.08	5.75	4.81	13.68	10.16	2.40	10.41	.13	.25
2-1/2	85	1260834	96.0	4.12	2.75	10.50	2.72	7.25	5.69	17.84	12.87	3.12	13.58	.25	.25
3	120	1260843	178.0	5.00	3.25	13.00	3.11	7.88	6.50	21.50	14.36	3.63	15.13	.25	.25
3-1/2	† 150	1260852	265.0	5.25	3.75	14.63	3.62	9.00	8.00	24.62	16.50	4.12	17.62	.25	.25
4	† 175	1260861	338.0	5.50	4.25	14.5	4.10	10.00	9.00	25.69	18.42	4.56	20.37	.25	.25
4-3/4	† 200	1260870	450.0	7.25	4.75	15.63	4.50	11.00	10.50	29.25	21.00	6.00	21.21	.25	.25
5	† 250	1260889	600.0	8.50	5.00	20.00	4.50	13.00	12.00	35.00	24.50	6.50	22.68	.25	.25

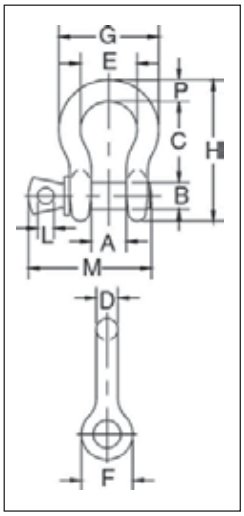
* **NOTE:** Maximum Proof Load is 2.0 times the Working Load Limit.
30t - 175t, Minimum Ultimate Load is 5.4 times the Working Load Limit.
200t and larger, Minimum Ultimate Load is 4 times the Working Load Limit.
† Furnished with Round Head Bolts with welded handle.

Crosby® Specialty Shackles

Load Rated® Fatigue Rated® "QT" QUIC-CHECK® MAXTOUGH®

S-209T THEATRICAL SHACKLES

- Sizes: 3/8" through 3/4"
- Capacities: 1 through 4-3/4 metric tonnes.
- Forged - Quenched and Tempered, with alloy pins.
- Working Load Limit permanently shown on every shackle.
- Flat black baked on power coat finish.
- Fatigue Rated.
- Industry leading 6 to 1 design factor.
- Screw pin anchor shackles meet the performance requirement of Federal Specification RR-C-271F Type A, Grade A, Class 2, except for those provisions required of the contractor.
- Meets the performance requirements of EN 13889:2003.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these shackles meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.



S-209T Theatrical Shackles

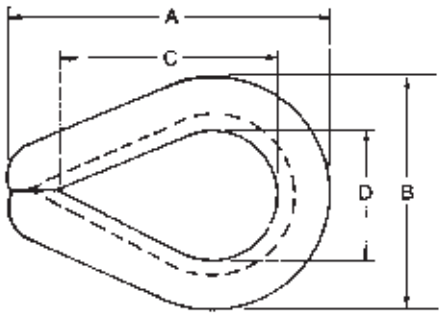
Nominal Size (in.)	Working Load Limit (t)*	S-209T Stock No.	Weight Each (lbs.)	Dimensions (in.)											Tolerance + / -	
				A	B	C	D	E	F	G	H	L	M	P	C	A
3/8	1	1018706	.31	.66	.44	1.44	.38	1.03	.91	1.78	2.49	.25	2.02	.38	.13	.06
7/16	1-1/2	1018724	.38	.75	.50	1.69	.40	1.16	1.06	2.03	2.91	.31	2.37	.44	.13	.06
1/2	2	1018742	.72	.81	.63	.188	.50	1.31	1.19	2.31	3.28	.38	2.69	.50	.13	.06
5/8	3-1/4	1018760	1.37	1.06	.75	2.38	.63	1.69	1.50	2.94	4.19	.44	3.34	.69	.13	.06
3/4	4-3/4	1018778	2.35	1.25	.88	2.81	.75	2.00	1.81	3.50	4.97	.50	3.97	.81	.25	.06

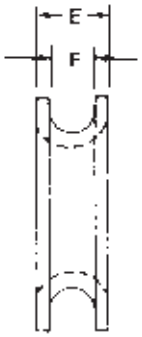
* Minimum Ultimate Load is 5 times the Working Load Limit.

Wire Rope Thimbles

EXTRA HEAVY DUTY WIRE ROPE THIMBLES GALVANIZED STEEL

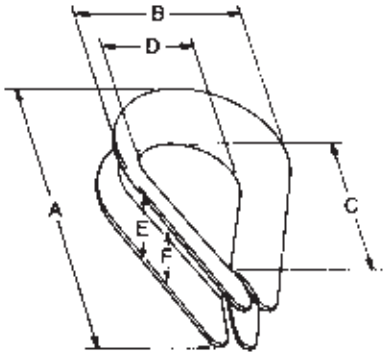
For Rope Diameter Inches	DIMENSIONS IN INCHES							Weight Pounds Per 100
	A Overall Length	B Overall Width	C Inside Length	D Inside Width	E Overall Thickness	F Inside Width of Score	Maximum Pin Diameter	
¼	2 3/16	1 ½	1 5/8	7/8	13/32	9/32	13/16	7.5
5/16	2 ½	1 13/16	1 7/8	1 1/16	½	11/32	15/16	14.0
⅜	2 7/8	2 1/8	2 1/8	1 1/8	21/32	13/32	1 1/16	25.0
7/16	3 ¼	2 ⅜	2 ⅜	1 ¼	¾	15/32	1 3/16	36.0
½-9/16	3 5/8	2 ¾	2 ¾	1 ½	27/32	17/32	1 7/16	51.0
5/8	4 ¼	3 ⅛	3 ¼	1 ¾	1	21/32	1 5/8	75.0
¾	5	3 13/16	3 ¾	2	1 ¼	25/32	1 7/8	147.0
⅞	5 ½	4 ¼	4 ¼	2 ¼	1 ⅜	15/16	2 ⅛	185.0
1	6 ⅛	4 15/16	4 ½	2 ½	1 9/16	1 1/16	2 ⅜	295.0
1 ⅛-1 ¼	7	5 ⅞	5 ⅛	2 ⅞	1 ⅞	1 5/16	2 ¾	390.0
1 ¼-1 ⅜	9 1/16	6 13/16	6 ½	3 ½	2 ¼	1 7/16	3 ¼	820.0
1 ⅜-1 ½	9	7 ⅛	6 ¼	3 ½	2 5/8	1 9/16	3 ⅜	1175.0
1 5/8	11 ¼	8 ⅛	8	4	2 ¾	1 23/32	3 7/8	1625.0
1 ¾	12 3/16	8 ½	9	4 ½	2 7/8	1 27/32	4 ⅜	1800.0
1 ⅞-2	15 ⅛	10 ⅜	12	6	3 ⅛	2 3/32	5 ⅞	2600.0
2 ¼	17 ⅛	11 ⅞	14	7	3 5/8	2 ⅜	6 ⅞	3880.0
2 ½	20 ½	13 ½	15 ¾	8 ½	4 ¼	2 5/8	8 ¼	7500.0





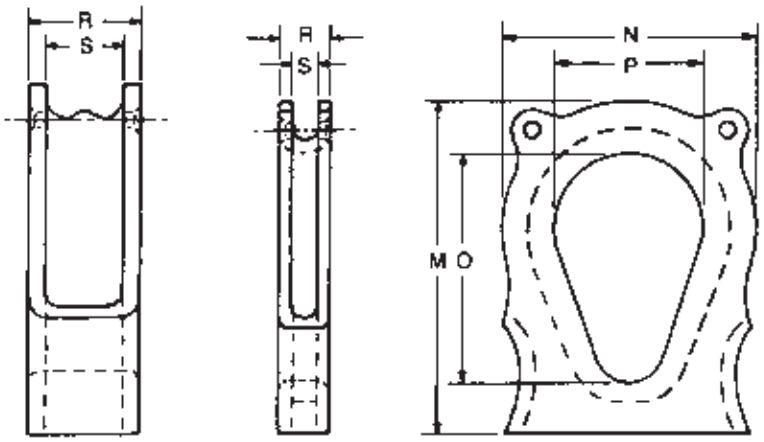
STAINLESS HEAVY DUTY WIRE ROPE THIMBLES

For Rope Diameter Inches	DIMENSIONS IN INCHES							Weight Pounds Per 100
	A Overall Length	B Overall Width	C Inside Length	D Inside Width	E Overall Thickness	F Inside Width of Score	Maximum Pin Diameter	
¼	1 15/16	1 1/16	1 5/16	1 1/16	3/8	9/32	5/8	3.5
5/16	2 ⅛	1 ¼	1 ½	1 3/16	7/16	3/8	¾	4.0
⅜	2 ⅜	1 15/32	1 5/8	1 5/16	1 7/32	7/16	⅞	7.5
½	2 ¾	1 ¾	1 ⅞	1 ⅛	1 1/16	9/16	1 1/16	15.8
5/8	3 ½	2 ⅜	2 ¼	1 ⅜	1 29/32	1 1/16	1 ¼	36.0
¾	3 ¾	2 1 1/16	2 ½	1 5/8	1 3/32	1 3/16	1 ½	50.0
⅞	5	3 3/16	3 ½	1 ⅞	1 9/32	1 5/16	1 ¾	90.0
1	5 1/16	3 ¾	4 ¼	2 ½	1 ⅜	1 1/16	2 ⅜	105.0
1 ⅛-1 ¼	6 ¼	4 5/16	4 ½	2 ¾	1 ¾	1 5/16	2 5/8	176.0



Meets or exceeds federal specification FF-T-276 (latest revision).

Equalizing Thimbles



- Legs of bridle slings may be adjusted in length, using the equalizing thimble.
- For use in lifting unbalanced loads.

SINGLE GROOVE

CAST 1035 STEEL

Wire Rope Size Range	Dimensions in Inches						Wt. Lbs.
	M	N	O	P	R	S	
⅜-7/16	6 7/16	4 ⅝	4 ½	3	⅞	½	3.0
½-9/16	8 ½	6 3/16	6	4	1 ⅛	⅝	6.3
⅝-¾	9 15/16	7	7	4 ½	1 7/16	1 5/16	9.8
⅞-1	10 ¾	8 ¾	7 ⅛	5	1 13/16	1 3/16	15.6
1 ⅛-1 ¼	14 ⅜	10 ⅞	10	6 ½	2 3/16	1 7/16	28.0
1 ⅜-1 ½	15 ⅞	11 ¾	11	7 ½	2 9/16	1 11/16	39 0
1 ⅝-1 ¾	20 13/16	14 ¼	15	9	2 15/16	1 15/16	65.0
1 ⅞-2	21 ⅝	14 ⅞	15	9	3 5/16	2 3/16	85.0

DOUBLE GROOVE

CAST 1035 STEEL

Wire Rope Size Range	Dimensions in Inches						Wt. Lbs.
	M	N	O	P	R	S	
⅝-¾	11 ¼	8	8 ¼	5 ½	2 ⅜	1 ¾	21.0
⅞-1	12 ¾	8 ½	9	6	2 ⅞	2 ¼	28.0
1 ⅛-1 ¼	16	12 ⅛	11 ½	7 ½	3 ¼	2 ⅝	45.0

Larger sizes upon application.
Cast Alloy Available Upon Request.

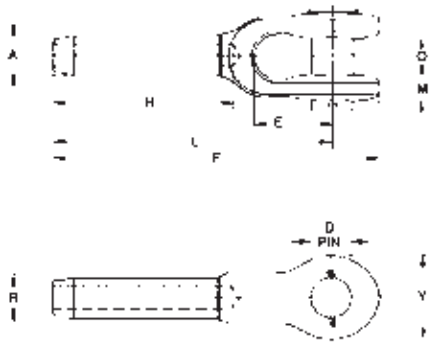
Swage Sockets

CAUTION: When attaching swage sockets to wire rope it is extremely important to follow recommended procedures. **Read important warnings and information preceding fittings setting.**

Swage sockets are recommend for use on 6 x 19 or 6 x 36 IWRC regular lay ropes. They are also satisfactory on galvanized bridge rope. They are NOT recommended for use on fiber core or lang lay ropes. Spheroidized annealed for cold swaging. Sockets properly applied have an efficiency rating of 100%. This rating is based on the catalog breaking strength of wire rope.

OPEN SWAGE SOCKETS

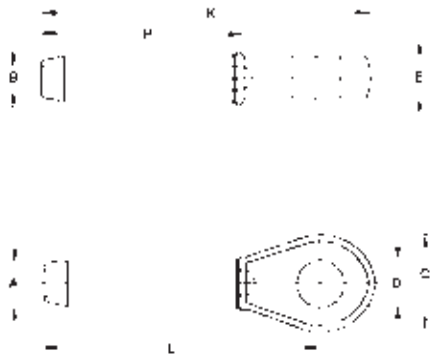
A/S indicates the proper dimension of A after swaging.



Rope Diameter in Inches	Dimensions in Inches										Approx. Weight Ea. in Pounds	A/S
	A	B	D	E	F	H	L	M	O	Y		
¼	.495	.272	.688	1.50	4.75	2.13	4.00	.31	.69	1.38	.55	.438
5⁄16	.770	.339	.812	1.75	6.25	3.19	5.31	.41	.81	1.63	1.10	.688
⅜	.770	.406	.812	1.75	6.25	3.19	5.31	.41	.81	1.63	1.08	.688
7⁄16	.982	.484	1.00	2.00	7.81	4.25	6.69	.50	1.00	2.00	2.30	.875
½	.982	.547	1.00	2.00	7.81	4.25	6.69	.50	1.00	2.00	2.25	.875
9⁄16	1.257	.609	1.19	2.25	9.56	5.31	8.13	.63	1.25	2.50	4.60	1.125
⅝	1.257	.672	1.19	2.25	9.56	5.31	8.13	.63	1.25	2.50	4.50	1.125
¾	1.545	.796	1.38	2.75	11.69	6.38	10.00	.75	1.50	3.00	7.80	1.375
⅞	1.700	.938	1.63	3.25	13.63	7.44	11.63	.94	1.75	3.38	11.70	1.50
1	1.975	1.062	2.00	3.75	15.63	8.50	13.38	1.03	2.00	4.00	17.8	1.75
1 ⅛	2.245	1.188	2.25	4.25	17.50	9.56	15.00	1.19	2.25	4.50	29.7	2.00
1 ¼	2.525	1.328	2.50	4.75	19.44	10.63	16.50	1.19	2.50	5.00	36.0	2.25
1 ⅜	2.800	1.453	2.50	5.25	21.25	11.69	18.13	1.31	2.50	5.25	47.0	2.50
1 ½	3.075	1.578	2.75	5.75	23.25	12.75	19.75	1.44	3.00	5.75	65.0	2.75
1 ¾	3.385	1.859	3.50	6.75	27.13	14.88	23.00	1.69	3.50	7.00	93.0	3.00
2	3.935	2.109	3.75	8.00	31.44	17.00	26.75	1.81	4.00	8.00	145.0	3.50

CLOSED SWAGE SOCKETS

A/S indicates the proper dimension of A after swaging.



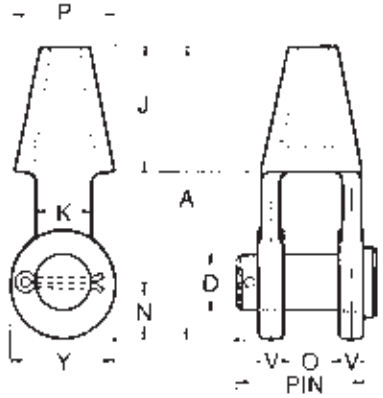
Rope Diameter in Inches	Dimensions in Inches								Approx. Weight Ea. in Pounds	A/S
	A	B	C	D	E	H	K	L		
¼	.495	.272	1.44	.750	.50	2.13	4.38	3.50	.34	.438
5⁄16	.770	.339	1.69	.875	.69	3.19	5.50	4.50	.79	.688
⅜	.770	.406	1.69	.875	.69	3.19	5.50	4.50	.78	.688
7⁄16	.982	.484	2.00	1.063	.88	4.25	6.94	5.75	1.45	.875
½	.982	.547	2.00	1.063	.88	4.25	6.94	5.75	1.38	.875
9⁄16	1.257	.609	2.50	1.250	1.13	5.31	8.75	7.25	2.78	1.125
⅝	1.257	.672	2.50	1.250	1.13	5.31	8.75	7.25	2.75	1.125
¾	1.545	.796	3.00	1.438	1.31	6.38	10.38	8.63	5.00	1.375
⅞	1.700	.938	3.50	1.688	1.50	7.44	12.13	10.13	7.50	1.50
1	1.975	1.062	4.00	2.063	1.75	8.50	13.75	11.50	11.2	1.75
1 ⅛	2.245	1.188	4.50	2.313	2.00	9.56	15.25	12.75	15.8	2.00
1 ¼	2.525	1.328	5.00	2.563	2.25	10.63	17.25	14.38	23.0	2.25
1 ⅜	2.800	1.453	5.25	2.563	2.25	11.69	18.88	15.75	31.0	2.50
1 ½	3.075	1.578	5.50	2.813	2.50	12.75	20.38	17.00	39.0	2.75
1 ¾	3.385	1.859	6.75	3.563	3.00	14.88	24.00	20.00	52.0	3.00
2	3.935	2.109	7.75	3.813	3.25	17.00	27.50	23.00	90.0	3.50

Open Wire Rope Spelter Sockets

Material Specification:
All cast sockets are ASTM, A148 steel, grade 90-60. All sockets are magnetic particle inspected at critical areas. Forged & cast sockets are proof tested on request.

Note: This drawing illustrates one groove used on sockets marked ½" & smaller. Sizes 9/16"-1½" have two grooves. Sizes 1⅝" & larger have three grooves.

Tolerances: Dimensions under 4", ±⅛"; over 4", ±¼"



STANDARD OPEN WIRE ROPE SOCKETS

Meets Federal Specifications RR-S-550 (latest revision).

Rope Diameter	Dimensions In Inches								Pin		Wt Each In Pounds
	A	J	K	N	O	P	V	Y	Length	D Diameter	
¼	4 9/16	2 ¼	¾	¾	1 1/16	1 9/16	5/16	1 5/16	1 ¾	1 1/16	1.1
5/16-⅜	4 ⅞	2 ¼	1 3/16	⅞	1 3/16	1 11/16	7/16	1 ½	2 1/16	1 3/16	1.3
7/16-½	5 9/16	2 ½	1	1 1/16	1	1 ⅞	½	1 ⅞	2 7/16	1	2.3
9/16-⅝	6 ¾	3	1 ¼	1 ¼	1 ¼	2 ¼	⅝	2 ¼	2 ⅞	1 3/16	3.8
¾	7 15/16	3 ½	1 ½	1 7/16	1 ½	2 ⅝	¾	2 ⅝	3 ¼	1 ⅜	6
⅞	9 ¼	4	1 ¾	1 ¾	1 ¾	3 ⅛	⅞	3 ⅛	3 ⅞	1 ⅝	10
1	10 9/16	4 ½	2	2 1/16	2	3 ⅝	⅞	3 ¾	4 ½	2	15.5
1 ⅛	11 13/16	5 1/16	2 ⅜	2 5/16	2 ¼	4	1	4 ⅛	5	2 ¼	22
1 ¼-1 ⅜	13 3/16	5 ½	2 ¾	2 11/16	2 ½	4 ¾	1 ⅛	4 ¾	5 ⅝	2 ½	32
1 ½	15 ⅛	6	3	3 ⅛	3	5 ¼	1 ¼	5 ⅜	6 ⅜	2 ¾	46
1 ⅝	16 ¼	6 ½	3 ¼	3 ¼	3	5 ½	1 5/16	5 ¾	6 ⅝	3	55
1 ¾-1 ⅞	18 ¼	7 ½	3 ⅝	3 ¾	3 ½	6 ⅜	1 9/16	6 ½	7 ⅝	3 ½	85
2-2 ⅛	21 ½	8 ½	4 ¼	4	4	7 ⅜	1 13/16	7	8 ¾	3 ¾	125
2 ¼-2 ⅜	23 ½	9	4 ⅜	4 ½	4 ½	8 ¼	2 ¼	7 ¾	10	4 ¼	165
2 ½-2 ⅝	25 ½	9 ¾	4 ⅝	5	5	9 ¼	2 ⅜	8 ½	11	4 ¾	252
2 ¾-2 ⅞	27 ¼	11	4 ⅞	5 ¼	5 ¼	10 ¾	2 ⅞	9	12	5	315
3-3 ⅛	29	12	5 ¼	5 ¾	5 ¾	11 ½	3	9 ½	12 ¾	5 ¼	380
3 ¼-3 ⅜	30 ⅞	13	5 ¾	6 ⅛	6 ¼	12 ¼	3 ⅛	10	13 ½	5 ½	435
3 ½-3 ⅝	33 ¼	14	6 ¼	6 ¾	6 ¾	13	3 ¼	10 ¾	14 ¼	6	563
3 ¾-4	36 ¼	15	7	7 ¾	7 ½	14 ½	3 ½	12 ½	15 ½	7	785

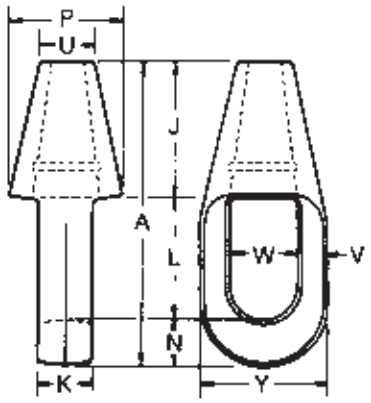
Larger Sizes Available Upon Request.
$5/16$" - $2\,1/2$" in accordance with Federal Specification RR-S-450D, Amendment 1.

Closed Wire Rope Spelter Sockets

Material Specification:
All cast sockets are ASTM A148 steel, grade 90-60. All sockets are magnetic particle inspected at critical areas. Forged & cast sockets are proof tested on special order.

Note: This drawing illustrates one groove used on sockets ½" & smaller. Sizes 9/16"-1½" have two grooves. Sizes 1⅝" & larger have three grooves.

Tolerances: Dimensions under 4", ±⅛"; over 4" ±¼". "U", "W", "L", & "N" are minimum dimensions.



STANDARD CLOSED WIRE ROPE SOCKETS

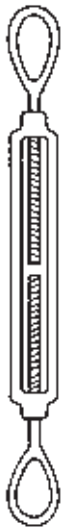
Meets Federal Specifications RR-S-550.

Rope Diameter	Dimensions In Inches								Weight Each In Pounds
	A	J	K	N	P	V	W	Y	
¼	4 ½	2 ¼	½	½	1 9/16	5/16	13/16	1 ½	0.7
5/16-⅜	4 ⅞	2 ¼	11/16	⅝	1 11/16	⅜	15/16	1 11/16	1.1
7/16-½	5 7/16	2 ½	⅞	11/16	1 ⅞	7/16	1 ⅜	2	1.5
9/16-⅝	6 5/16	3	1	13/16	2 ⅜	⅝	1 ⅜	2 ⅝	3.0
¾	7 9/16	3 ½	1 ¼	1 1/16	2 ¾	11/16	1 ⅝	3	4.5
⅞	8 ¾	4	1 ½	1 ¼	3 ¼	⅞	1 ⅞	3 ⅝	7
1	9 ⅞	4 ½	1 ¾	1 ⅜	3 ¾	15/16	2 ¼	4 ⅛	11
1 ⅛	11	5	2	1 ½	4 ⅛	1	2 ½	4 ½	16
1 ¼-1 ⅜	12 ⅛	5 ½	2 ¼	1 ⅝	4 ¾	1 ⅛	2 ¾	5	22
1 ½	13 15/16	6	2 ½	1 15/16	5 ¼	1 ⅛	3 ⅛	5 ⅜	28
1 ⅝	15 ⅛	6 ½	2 ¾	2 ⅛	5 ½	1 ¼	3 ¼	5 ¾	36
1 ¾-1 ⅞	17 ¼	7 ½	3	2 3/16	6 ⅜	1 ½	3 17/32	6 ¾	58
2-2 ⅛	19 ½	8 ½	3 ¼	2 7/16	7 ⅜	1 ⅝	3 25/32	7 ⅝	80
2 ¼-2 ⅜	21 ⅜	9	3 ⅝	2 ⅞	8 ¼	1 ¾	4 9/32	8 ½	106
2 ½-2 ⅝	23 ½	9 ¾	4	3 ⅛	9 ¼	2	5 ½	9 ½	140
2 ¾-2 ⅞	25 ⅝	11	4 ⅛	3 ⅛	10 ¾	2 ¼	6 ½	10 ¾	220
3-3 ⅛	27	12	5 ¼	3 ¼	11 ½	2 ½	6 ¾	11 ½	275
3 ¼-3 ⅜	29 ¼	13	5 ¾	4	12 ¼	2 ¾	7 ¼	12 ¼	315
3 ½-3 ⅝	31	14	6 ¼	4	13	3	7 ¾	13	400
3 ¾-4	33 ¼	15	7	4 ¼	14 ½	3 ⅛	8 ¼	14	540

Larger Sizes Available Upon Request.

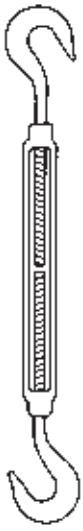
5/16" - 2½" in accordance with Federal Specification RR-S-450D, Amendment 1

Turnbuckles



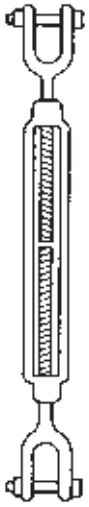
EYE & EYE

HOOK & EYE



HOOK & HOOK

JAW & EYE



JAW & JAW

When Ordering Be Sure To Specify:
1st— Diameter of thread.
2nd— Length of take-up.
3rd— Self colored or galvanized.
4th— The type of end fittings desired.

Meets Federal Specification FF-T-791 (latest revision)

Diameter (A) and Takeup (B) Inches	Average Overall Length in Closed Position Inches	WEIGHT POUNDS EACH		
		With Eyes or Hooks	Jaw and Eye	Jaw and Jaw
¼ X 4	8 ¼	.31	.33	.35
5/16 X 4½	9 5/16	.50	.53	.58
⅜ X 6	11 ⅜	.79	.86	.93
½ X 6	13 5/16	1.42	1.54	1.66
9	16 5/16	1.83	1.95	2.07
12	19 5/16	2.01	2.19	2.37
⅝ X 6	15 ½	2.61	2.81	3.02
9	18 ½	2.81	3.01	3.22
12	21 ½	3.12	3.32	3.53
18	28 ⅛	6.00	6.20	6.40
¾ X 6	17 1/16	3.60	3.87	4.18
9	20 ⅛	4.69	4.98	5.27
12	23 1/16	5.07	5.36	5.65
18	29 1/16	6.21	6.51	6.81
⅞ X 12	24 ⅝	8.10	8.75	9.40
18	30 ⅝	9.93	10.60	11.20
1 X 6	20 ⅝	8.75	9.15	9.50
12	26 ⅝	10.40	11.20	12.10
18	32 ⅝	13.20	14.10	14.90
24	38 ⅝	15.90	16.80	17.60
1 ¼ X 12	29 ⅞	19.00	20.50	22.00
18	35 ⅞	23.40	24.90	26.40
24	41 ⅞	27.80	29.30	30.90
1 ½ X 12	32 ⅜	26.10	28.20	30.30
18	38 ⅜	37.50	39.60	41.80
24	44 ⅜	43.10	45.20	47.30
36	58 ¾	52.60	54.80	57.00
1 ¾ X 18	41 ¾	45.00	48.80	52.40
24	47 ¾	52.20	56.00	59.60
2 X 24	51 ¾	89.80	94.60	100.00
2 ½ X 24	58 ½	140.00	150.00	161.00
2 ¾ X 24	61 ½	194.00	200.00	216.00

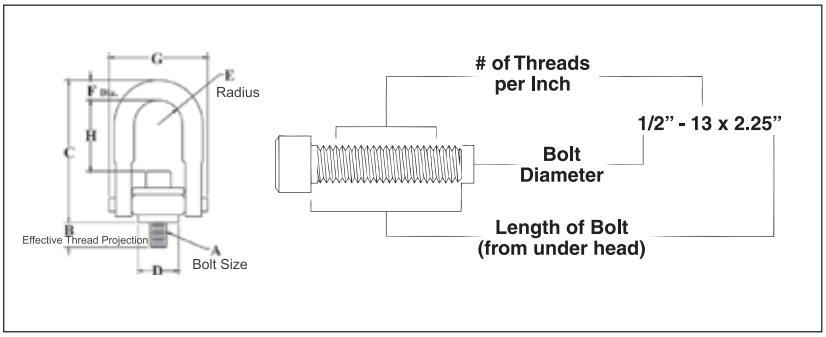
Larger sizes available per request.
Lock nuts available per request.
Jaw end fittings sizes ¼" through ⅝" have bolts and nuts.
Jaw end fittings sizes ¾" through 2 ¾" have pins and cotters.
Large jaw sizes available with bolts and nuts upon special request.

UNC Swivel Hoist Rings

Load Rated Fatigue Rated

HR-125

- Top washer has the following features:
  - The Working Load Limit and Recommended Torque value are permanently stamped into each washer.
  - Washer is color coded for easy identification: Red - UNC thread.
- Individually Proof Tested to 2-1/2 times Working Load Limit.
- Bolt specification is an Alloy socket head cap screw to ASTM A 574.
- All threads listed are UNC.
- **BOLT SIZE IDENTIFICATION**: The size of the bolt will be stated as in the drawing below. Illustration shows meaning of each dimension given.
- Frame 2 and larger are **RFID EQUIPPED**.



HR-125
UNC Threads

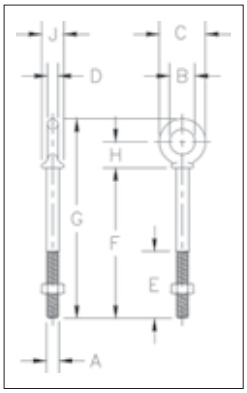
Frame Size No.	HR-125 Stock No.	Working Load Limit (lbs.)*	Torque in Ft. Lbs.	Dimensions (in.)								Weight Each (lbs.)
				Bolt Size A ‡	Effective Thread Projection Length B	C	D	Radius E	Diameter F	G	H	
1 †	1016887	800	7	5/16 - 18 x 1.50	.58	2.72	.97	.46	.34	1.87	1.12	.37
1 †	1016898	1000	12	3/8 - 16 x 1.50	.58	2.72	.97	.46	.34	1.87	1.05	.39
2	1016909	2500	28	1/2 - 13 x 2.00	.70	4.85	1.96	.87	.75	3.35	2.29	2.33
2 †	1016912	2500	28	1/2 - 13 x 2.50	1.20	4.85	1.96	.87	.75	3.35	2.29	2.36
2	1016920	4000	60	5/8 - 11 x 2.00	.70	4.85	1.96	.87	.75	3.35	2.16	2.41
2 †	1016924	4000	60	5/8 - 11 x 2.75	1.45	4.85	1.96	.87	.75	3.35	2.16	2.47
2	1016931	5000	100	3/4 - 10 x 2.25	.95	4.85	1.96	.87	.75	3.35	2.04	2.52
2 †	1016935	5000	100	3/4 - 10 x 2.75	1.45	4.85	1.96	.87	.75	3.35	2.04	2.59
3	1016942	7000 **	100	3/4 - 10 x 2.75	.89	6.57	2.96	1.36	.94	4.87	2.97	6.72
3 †	1016946	7000 **	100	3/4 - 10 x 3.50	1.64	6.57	2.96	1.36	.94	4.87	2.97	6.81
3	1016953	8000	160	7/8 - 9 x 2.75	.89	6.57	2.96	1.36	.94	4.87	2.84	6.84
3 †	1016957	8000	160	7/8 - 9 x 3.50	1.64	6.57	2.96	1.36	.94	4.87	2.84	6.96
3	1016964	10000	230	1 - 8 x 3.00	1.14	6.57	2.96	1.36	.94	4.87	2.72	7.09
3 †	1016969	10000	230	1 - 8 x 4.00	2.14	6.57	2.96	1.36	.94	4.87	2.72	7.31
4	1016975	15000	470	1-1/4 - 7 x 4.50	2.21	8.72	3.71	1.75	1.19	6.18	3.93	14.51
5	1016986	24000	800	1-1/2 - 6 x 6.75	3.00	12.55	4.71	2.39	1.75	8.48	5.52	37.73
5	1016997	30000	1100	2 - 4-1/2 x 6.75	3.00	12.55	4.71	2.39	1.75	8.48	5.02	40.69
6	1017001	50000	2100	2-1/2 - 4 x 8.0	4.00	16.88	5.75	3.00	2.25	11.00	8.03	88.00
7	1017005	75000	4300	3 - 4 x 10.5	5.00	19.50	7.25	3.75	2.75	14.16	8.50	166.00
8	1017009	100000	5100	3-1/2 - 4 x 13.0 #	7.00	22.09	7.75	4.00	3.25	15.91	9.28	265.00

*Ultimate Load is 5 times the Working Load Limit.
** Ultimate Load is 4.5 times the Working Load Limit for 7000# Hoist Ring when tested in 90 degree orientation.
† Long Bolts are designed to be used with soft metal (i.e., aluminum) workpiece. While the long bolts may also be used with ferrous metal (i.e.,steel & iron) workpiece, short bolts are designed for ferrous workpiecesonly.
‡ Bolt specification is an Alloy socket head cap screw to ASTM A 574.
# Hex head bolt used on Frame 8 (100,000lb.) Hoist Ring.

Crosby

G-277

- Forged steel, Quenched & Tempered.
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.
- Working Load Limits shown are for in-line pull. For angle loading, see applications and warning section.
- Meets or exceeds all requirements of ASME B30.26, including identification, ductility, design factor, proof load, and temperature requirements. Importantly, these bolts meet other critical performance requirements, including fatigue life, impact properties, and material traceability not addressed by ASME B30.26.
- All bolts hot-dip galvanized after threading (UNC).
- Furnished with standard hot-dip galvanized, heavy hex nuts.



G-277 Shoulder Nut Eye Bolts

Shank Diameter & Length (in)	Stock No.	Working Load Limit (lb)	Weight Each (lb)	Dimensions (in)								
				A	B	C	D	E	F	G	H	J
5/16 x 2-1/4	1045050	1200	0.13	.31	.62	1.12	.25	1.50	2.25	3.50	.69	.56
5/16 x 4-1/4	1045078	1200	0.19	.31	.62	1.12	.25	2.50	4.25	5.50	.69	.56
3/8 x 2-1/2	1045096	1550	0.21	.38	.75	1.38	.31	1.50	2.50	3.97	.78	.66
3/8 x 4-1/2	1045112	1550	0.25	.38	.75	1.38	.31	2.50	4.50	5.97	.78	.66
1/2 x 3-1/4	1045130	2600	0.43	.50	1.00	1.75	.38	1.50	3.25	5.12	1.00	.91
1/2 x 6	1045158	2600	0.57	.50	1.00	1.75	.38	3.00	6.00	7.88	1.00	.91
5/8 x 4	1045176	5200	0.69	.62	1.25	2.25	.50	2.00	4.00	6.44	1.31	1.12
5/8 x 6	1045194	5200	1.02	.62	1.25	2.25	.50	3.00	6.00	8.44	1.31	1.12
3/4 x 4-1/2	1045210	7200	1.45	.75	1.50	2.75	.62	2.00	4.50	7.44	1.56	1.38
3/4 x 6	1045238	7200	1.68	.75	1.50	2.75	.62	3.00	6.00	8.94	1.56	1.38
7/8 x 5	1045256	10600	2.25	.88	1.75	3.25	.75	2.50	5.00	8.46	1.84	1.56
1 x 6	1045292	13300	3.66	1.00	2.00	3.75	.88	3.00	6.00	9.97	2.09	1.81
1 x 9	1045318	13300	4.23	1.00	2.00	3.75	.88	4.00	9.00	12.97	2.09	1.81
1-1/4 x 8	1045336	21000	6.50	1.25	2.50	4.50	1.00	4.00	8.00	12.72	2.47	2.28
1-1/4 x 12	1045354	21000	7.95	1.25	2.50	4.50	1.00	4.00	12.00	16.72	2.47	2.28
1-1/2 x 15	1045372	24000	14.25	1.50	3.00	5.50	1.25	6.00	15.00	20.75	3.00	2.75

5:1 Design Factor. Maximum Proof Load is 2 times the Working Load Limit.

Fatigue Rated QT CE

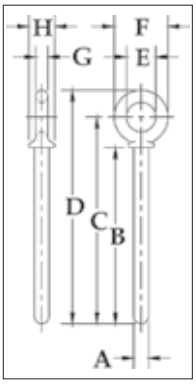
APPLICATION AND WARNING INFORMATION
SECTION 17

S-276 Shoulder Rivet Eye Bolts

- Forged steel - Quenched & Tempered.

Shank Dia. & Length (in)	Stock No.	Weight Per 100 (lb)	Dimensions (in)							
			A	B	C	D	E	F	G	H
1/2 x 3-1/4	1045862	33.00	.50	3.25	4.25	5.12	1.00	1.75	.38	.91
3/4 x 4-1/2	1045942	125.00	.75	4.50	6.06	7.44	1.50	2.75	.62	1.38
3/4 x 6	1045960	150.00	.75	6.00	7.56	8.94	1.50	2.75	.62	1.38
7/8 x 5	1045988	200.00	.88	5.00	6.84	8.46	1.75	3.25	.75	1.56
1 x 6	1046022	298.00	1.00	6.00	8.09	9.97	2.00	3.75	.88	1.81
1 x 9	1046040	425.00	1.00	9.00	11.09	12.97	2.00	3.75	.88	1.81
1-1/4 x 8	1046068	654.00	1.25	8.00	10.47	12.72	2.50	4.50	1.00	2.28
1-1/4 x 12	1046086	712.00	1.25	12.00	14.47	16.72	2.50	4.50	1.00	2.28
1-1/2 x 15	1046102	1425.00	1.50	15.00	18.00	20.75	3.00	5.50	1.25	2.75

QUIC-CHECK® QT

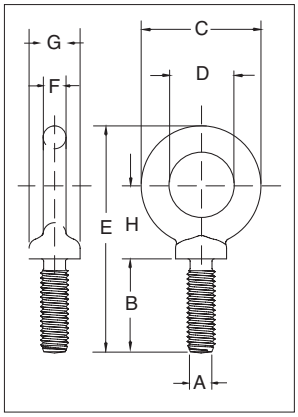


Crosby

LIFTING POINTS

S-279 / M-279

- Forged steel - Quenched & Tempered.
- Working Load Limits shown are for in-line pull. For angle loading, see Warnings & Applications.
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.
- Recommended for in-line pull.
- S-279 threaded UNC.
- M-279 metric threaded.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these bolts meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.



S-279 UNC Shoulder Type Machinery Eye Bolts

Size (in)	Stock No.	Working Load Limit (lb)	Weight Per 100 (lb)	Dimensions (in)							
				A* Thread	B	C	D	E	F	G	H
3/8 x 1-1/4	9900208	1550	15.00	3/8 - 16	1.27	1.62	1.00	3.07	.31	.69	1.05
1/2 x 1-1/2	9900217	2600	28.00	1/2 - 13	1.53	1.95	1.19	3.70	.38	.91	1.27
5/8 x 1-3/4	9900226	5200	55.00	5/8 - 11	1.79	2.38	1.38	4.45	.50	1.13	1.53
3/4 x 2	9900235	7200	96.00	3/4 - 10	2.05	2.76	1.50	5.07	.63	1.38	1.71
7/8 x 2-1/4	9900244	10600	154.00	7/8 - 9	2.31	3.25	1.75	5.87	.75	1.56	2.00
1 x 2-1/2	9900253	13300	238.00	1 - 8	2.57	3.76	2.00	6.66	.88	1.81	2.30
1-1/8 x 2-3/4	9900257	15000	320.00	1-1/8 - 7	2.75	4.19	2.25	7.20	.97	2.06	2.35
1-1/4 x 3	9900262	21000	399.00	1-1/4 - 7	3.09	4.50	2.50	7.95	1.00	2.28	2.73
1-1/2 x 3-1/2	9900271	24000	720.00	1-1/2 - 6	3.60	5.50	3.00	9.49	1.25	2.75	3.28
1-3/4 x 3-3/4	9900280	34000	1040.00	1-3/4 - 5	3.75	6.26	3.50	10.48	1.38	3.00	3.60
2 x 4	9900289	42000	1880.00	2 - 4-1/2	4.00	7.62	4.00	12.31	1.81	3.38	4.50
2-1/2 x 5	9900298	65000	3250.00	2-1/2 - 4	5.00	8.76	4.50	14.88	2.12	4.25	5.50

5:1 Design Factor. Maximum Proof Load is 2 times the Working Load Limit. *All bolts threaded UNC.

Fatigue Rated Q&T QUIC-CHECK®

APPLICATION AND WARNING INFORMATION SECTION 17

M-279 Metric Shoulder Type Machinery Eye Bolts

Size (mm)	Stock No.	Working Load Limit (kg)	Weight Each (kg)	Dimensions (mm)							
				A* Thread	B	C	D	E	F	G	H
M6 x 13	1045753	200	.03	M6 x 1.0	13.0	28.7	19.1	47.0	4.9	13.5	19.6
M8 x 13	1045789	400	.05	M8 x 1.25	13.0	35.1	22.4	54.6	6.4	15.0	24.1
M10 x 17	1045833	640	.07	M10 x 1.5	17.0	41.1	25.4	64.3	7.9	17.5	26.5
M12 x 20.5	1045869	1000	.11	M12 x 1.75	20.5	49.5	30.2	77.7	9.7	23.1	32.8
M16 x 27	1045913	1800	.25	M16 x 2.0	27.0	60.5	35.1	96.0	12.7	28.7	38.9
M20 x 30	1045995	2500	.42	M20 x 2.5	30.0	70.0	38.1	108	16.0	35.1	43.4
M24 x 36	1046029	4000	1.05	M24 x 3.0	36.0	95.5	51.0	142	22.4	46.0	58.4
M27 x 69.8	1046038	5000	1.42	M27 x 3.0	69.8	107	57.1	183	24.6	52.3	59.7
M30 x 45	1046075	6000	1.77	M30 x 3.5	45.0	114	63.5	171	25.4	58.0	69.3
M36 x 54	1046109	8500	3.12	M36 x 4.0	54.0	140	76.0	207	31.8	70.0	83.3
M42 x 95.2	1046118	14000	4.58	M42 x 4.5	95.2	159	88.9	266	35.0	76.2	91.4
M48 x 102	1046127	17300	8.71	M48 x 5.0	102	194	101	313	46.0	85.9	114
M64 x 127	1046136	29500	14.74	M64 x 6.0	127	223	114	378	53.8	108	140

5:1 Design Factor. Maximum Proof Load is 2 times the Working Load Limit.

Q&T

Crosby

L-320CN
Frame Size D-N

- Available in carbon steel and alloy steel.
- Eye hooks are load rated (marked with the Working Load Limit).
- Fatigue rated to 20,000 cycles at 1.5 times the Working Load Limit.
- Chemical analysis and tensile tests performed on each PIC to verify chemistry and mechanical properties.
- Hooks incorporate QUIC-CHECK® deformation and angle indicators. (For detailed information, see the Crosby Value Added page at the beginning of this section.)

L-320C
Frame Size O-T

Load Rated Fatigue Rated TA QUIC-CHECK® Q&T APPLICATION AND WARNING INFORM SECTI

L-320N / L-320 Eye Hooks

Working Load Limit (t)		Hook ID Code	Eye Hook Stock No.			Weight Each (lb)	Replacement Latch Kits		
Carbon	Alloy		Carbon L-320C L-320CN S.C.	Carbon GL-320CN Galv.	Alloy L-320A L-320AN S.C.		S-4320 Stock No.	PL Stock No.	SS-405 Stock N
0.75	1	†D	1022205	1022208	1022380	.61	1096325	-	-
1	1.5	†F	1022216	1022219	1022391	.89	1096374	-	-
1.5	2	†G	1022227	1022230	1022402	1.44	1096421	-	-
2	3	†H	1022238	1022241	1022413	2.07	1096468	-	-
3	5	†I	1022246	1022249	1022424	4.30	1096515	1092000	-
5	7	†J	1022260	1022262	1022435	8.30	1096562	1092001	-
7.5	11	†K	1022271	1022274	1022446	15.00	1096609	1092002	-
10	15	†L	1022282	1022285	1022457	20.77	1096657	1092003	-
15	22	†N	1022293	1022296	1022468	39.50	1096704	1092004	-
20	30	O	1022302	-	1022477	60.00	-	1093716	109016
25	37	P	1023306	-	1023565	105.00	-	1093717	109018
40	45	S	1023324	-	1023583	148.00	-	1093718	109018
40	60	T	1023342	-	1023609	228.00	-	1093719	109020

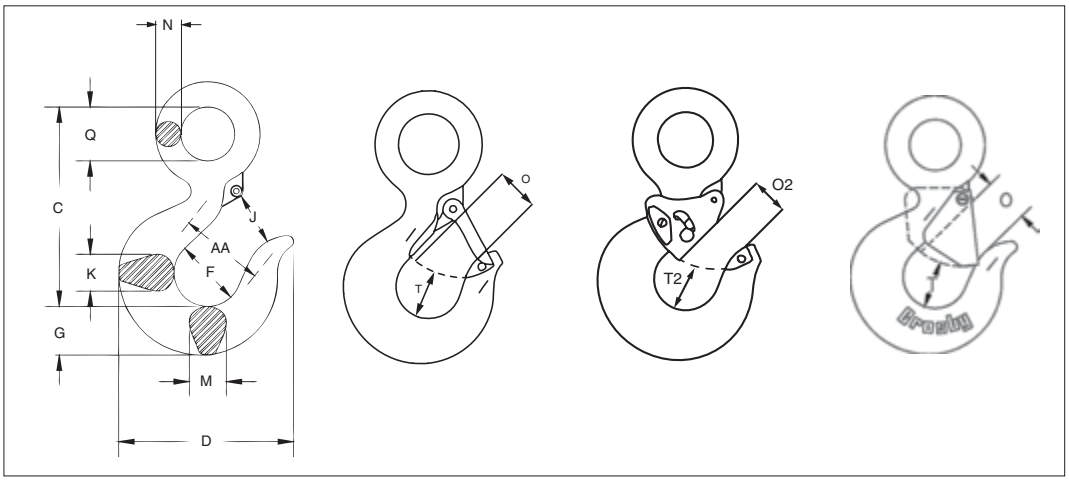
All carbon hooks have a 5:1 Design Factor. Alloy eye hooks 1t through 22t have a 5:1 Design Factor. Alloy eye hooks 30t through 60t have a 4.5:1 Design Factor. For carbon through 22t alloy eye hooks, Proof Load is 2.5 times Working Load Limit. For 20t carbon through 60t alloy eye hooks, Proof Load is 2 times Working Load Lim

Crosby

HOOKS & SWIVELS

L-320AN
Frame Size D-N

L-320AN
Frame Size O-T



Laval Rated Fatigue Rated TA QUIC-CHECK QT

APPLICATION AND WARNING INFORMATION
SECTION 17

L-320N / L-320 Eye Hooks

Hook ID Code*	Dimensions (in)													
	C	D	F	G	J	K	M	N	O †	O2 ††	Q	T †	T2 ††	AA**
†D	3.34	2.83	1.25	.73	.90	.63	.63	.36	.89	-	.75	.87	-	1.50
†F	3.81	3.11	1.38	.84	.93	.71	.71	.42	.91	-	.91	.98	-	2.00
†G	4.14	3.53	1.50	1.00	1.00	.88	.88	.55	1.00	-	1.13	1.03	-	2.00
†H	4.69	3.97	1.63	1.13	1.13	.94	.94	.58	1.09	-	1.25	1.16	-	2.00
†I	5.77	4.81	2.00	1.44	1.47	1.31	1.31	.72	1.36	1.00	1.56	1.53	1.50	2.50
†J	7.37	6.27	2.50	1.81	1.75	1.66	1.66	.90	1.61	1.31	2.00	1.96	1.88	3.00
†K	9.07	7.45	3.00	2.25	2.29	1.88	1.63	1.11	2.08	1.81	2.44	2.47	2.25	4.00
†L	10.08	8.30	3.25	2.59	2.50	2.19	1.94	1.27	2.27	2.00	2.84	2.62	2.31	4.00
†N	12.53	10.30	4.25	3.00	3.30	2.69	2.38	1.56	3.02	2.75	3.50	2.83	2.56	5.00
O	14.06	13.62	5.00	3.62	4.00	3.00	3.00	1.75	3.25	-	3.50	3.44	-	6.50
P	18.19	14.06	5.38	4.56	4.25	3.75	3.19	2.00	3.00	-	4.50	3.88	-	7.00
S	20.12	15.44	6.00	5.06	4.75	4.50	3.25	2.18	3.38	-	4.94	4.75	-	8.00
T	23.72	18.50	7.00	6.00	5.75	5.50	3.91	2.53	4.12	-	5.69	5.69	-	10.00

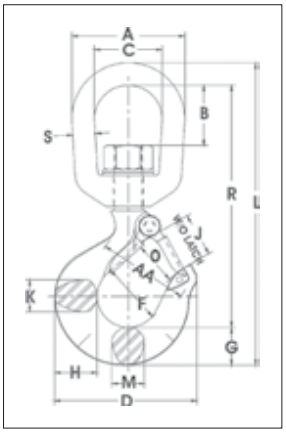
*Deformation indicators. †3/4t carbon though 22t alloy dimensions shown are for S-4320 Latch Kits. Dimensions for "O" frame size and larger are for PL Latch Kits.
††Dimensions are for PL-N latch kits.

Crosby

L-322CN / L-322AN

- Forged, Quenched & Tempered.
- Suitable for positioning of the hook before the load is lifted.
- Swivel hooks are load rated.
- Proper design, careful forging, and precision controlled quench and tempering gives maximum strength without excessive weight and bulk.
- Low profile hook tip designed to utilize Crosby S-4320 or PL-N latch kit.
- Hooks incorporate QUIC-CHECK® deformation and angle indicators. (For detailed information, see the Crosby Value Added page at the beginning of this section.)

Use in corrosive environment requires shank and nut inspection in accordance with ASME B30.10-1.10.4(b)(5)(c).



Load Rated | Fatigue Rated | TA | QUIC-CHECK | Q&T

APPLICATION AND WARNING INFORMATION SECTION 17

L-322CN / L-322AN Swivel Hooks with Latch

Working Load Limit (t)		Hook ID Code*	L-322CN Stock No.	L-322AN Stock No.	Weight Each (lb)	Dimensions (in)															Rep. Latch Stock No.
Carbon	Alloy					A	B	C	D	F	G	H	J	K	L	M	O †	R	S	AA*	
0.75	1	D	1048603	1048807	.75	2.00	.82	1.25	2.86	1.25	.73	.81	.93	.63	5.66	.63	.89	4.55	.38	1.50	1096325
1	1.5	F	1048612	1048816	1.25	2.50	1.31	1.50	3.15	1.38	.84	.94	.97	.71	6.71	.71	.91	5.37	.50	2.00	1096374
1.5	2	G	1048621	1048825	2.25	3.00	1.50	1.75	3.59	1.50	1.00	1.16	1.06	.88	7.75	.88	1.00	6.12	.63	2.00	1096421
2	3	H	1048630	1048834	2.30	3.00	1.50	1.75	4.00	1.62	1.13	1.31	1.19	.94	8.25	.94	1.09	6.50	.63	2.00	1096468
3	5	I	1048639	1048840	4.96	3.50	1.64	2.00	4.84	2.00	1.44	1.63	1.50	1.31	9.69	1.13	1.36	7.50	.75	2.50	1096515
5	7	J	1048648	1048859	10.29	4.56	2.29	2.50	6.28	2.50	1.81	2.06	1.78	1.66	12.47	1.44	1.61	9.63	1.00	3.00	1096562
7.5	11	K	1048657	1048868	19.40	5.00	2.44	2.75	7.54	3.00	2.25	2.63	2.41	1.88	14.75	1.63	2.08	11.37	1.13	4.00	1096609
10	15	L	1048666	1048880	23.25	5.62	2.48	3.12	8.34	3.25	2.59	2.94	2.62	2.19	16.40	1.94	2.27	12.25	1.25	4.00	1096657
15	22	N	1048675	1048889	47.00	7.10	3.76	4.10	10.34	4.25	3.00	3.50	3.41	2.69	21.34	2.38	3.02	16.71	1.50	5.00	1096704
-	30	O	-	1048898	70.50	7.10	3.76	4.10	13.62	5.00	3.61	4.63	4.00	3.00	23.25	3.00	3.62	18.01	1.50	6.50	1090161

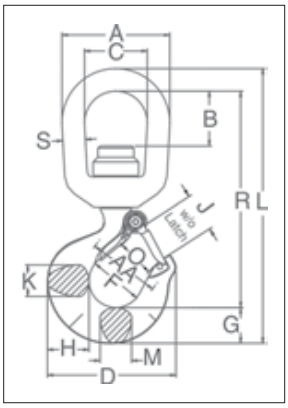
All carbon swivel hooks have a 5:1 Design Factor and Proof Load is 2 times the Working Load Limit. Alloy swivel hooks 1t through 22t have a 4.5:1 Design Factor and Proof Load is 2.5 times the Working Load Limit. Alloy swivel hooks of 30t capacity have a 4:1 Design Factor and Proof Load is 2 times the Working Load Limit. *Deformation indicators †Dimensions for hooks 3/4t carbon through 22t alloy are for S-4320 latch kits. Dimensions for hooks 30t alloy are for 4055 latch kit.

Crosby

HOOKS & SWIVELS

L-3322B

- Bearing design allows hook to rotate freely under load.
- Capacities ranging from 2 through 15 metric tons.
- Forged, Quenched & Tempered.
- Low profile hook tip designed to utilize Crosby S-4320 or PL-N latch kit.
- L-3322 hooks incorporate QUIC-CHECK® deformation and angle indicators. (For detailed information, see the Crosby Value Added page at the beginning of this section.)



QUIC-CHECK® Q&T

APPLICATION AND WARNING INFORMATION
SECTION 17

L-3322B Swivel Hooks with Bearing

Working Load Limit (t)	Hook ID Code*	Stock No.	Weight Each (lb)	Dimensions (in)															Rep. Latch Stock No.
				A	B	C	D	F	G	H	J	K	L	M	O	R	S	AA*	
2	GA	1028609	2.5	3.00	1.50	1.75	3.59	1.50	1.00	1.16	1.06	.88	7.64	.88	1.00	6.01	.63	2.00	1096421
3	HA	1028618	3.8	3.50	1.56	2.00	4.00	1.62	1.13	1.31	1.19	.94	8.60	.94	1.09	6.72	.75	2.00	1096468
5	IA	1028627	7.0	4.00	1.56	2.25	4.84	2.00	1.44	1.63	1.50	1.31	10.32	1.13	1.36	8.00	.88	2.50	1096515
7	JA	1028636	14.0	5.00	1.94	2.75	6.27	2.50	1.81	2.06	1.78	1.66	12.84	1.44	1.61	9.90	1.13	3.00	1096562
11	KA	1028645	22.3	5.62	2.05	3.12	7.54	3.00	2.25	2.63	2.41	1.88	15.24	1.63	2.08	11.74	1.25	4.00	1096609
15	LA	1028654	36.0	7.12	3.62	4.10	8.33	3.25	2.59	2.94	2.62	2.19	18.64	1.94	2.27	14.41	1.50	4.00	1096657

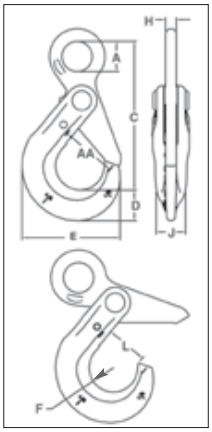
4.5:1 Design Factor. Maximum allowable proof load is 2.5 times Working Load Limit. *Deformation indicators.

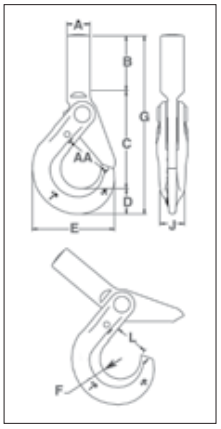
Crosby

S-1316

S-1318A

- All SHUR-LOC® hooks have the following features:
  - Forged alloy steel, Quenched & Tempered.
  - Recessed trigger design is flush with the hook body, protecting the trigger from potential damage.
  - Easy to operate with enlarged thumb access.
  - Positive lock latch is self-locking when the hook is loaded.
  - The SHUR-LOC® hook, if properly installed and locked, can be used for personnel lifting applications and meets the intent of OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B).
  - Fatigue rated to 20,000 cycles at 1-1/2 times the Working Load Limit.
  - Contact Engineered Solutions for additional threading or Split-Nut options at thecrosbygroup.com/engineeredsolutions.
- Eye Style incorporates these added features:
  - Individually Proof Tested to 2-1/2 times the chain Working Load Limit with certification.
  - S-1316 meets the performance requirements of EN1677-3.
  - Suitable for use with Grade 100 and Grade 80 chain.
  - Designed with 'engineered flat' to connect to S-1325 chain coupler.





Crosby 8/10™ Fatigue Rated Q&T CE

APPLICATION AND WARNING INFORMATION
SECTION 17

S-1316 SHUR-LOC® Eye Hook with Positive Locking Latch

Chain Size (in)	Chain Size (mm)	Stock No.	Frame code	Grade 100 Alloy Chain Working Load Limit (lb) 4:1	Working Load Limit (lb) 5:1	Weight Each (lb)	Dimensions (in) A	C	D	E	F	H	J	L	AA*
-	6	1022896	D	3200	2560	.85	.78	3.95	.79	2.60	.67	.31	.63	1.14	1.50
1/4-5/16	7-8	1022914	G	5700	4560	1.80	1.08	5.31	1.10	3.50	.87	.39	.81	1.48	2.00
3/8	10	1022923	H	8800	7040	3.40	1.30	6.57	1.17	4.39	1.10	.51	.94	1.83	2.50
1/2	13	1022932	I	15000	12000	6.00	1.65	8.23	1.67	5.45	1.26	.67	1.16	2.22	3.00
5/8	16	1022941	J	22600	18000	15.1	2.20	10.06	2.04	6.56	1.50	.87	1.50	2.65	3.50
3/4	18-20	1022952	-	35300	28240	19.0	2.60	10.77	2.22	7.76	2.01	.87	2.03	3.52	5.00
7/8	22	1022943	-	42700	34160	28.0	2.87	12.49	2.45	8.75	2.27	.98	2.20	3.83	6.00
1	26	1022944	-	59700	47760	49.5	3.15	14.60	3.21	9.87	2.46	1.26	2.68	4.09	6.50

*Deformation indicators.

S-1318A SHUR-LOC® Shank Hook

Chain Size (in)	Chain Size (mm)	Stock No.	Frame code	Grade 100 Alloy Chain Working Load Limit (lb)	Dimensions (in) A†	B	C	D	E	F	G	J	L	AA*	Weight Each (lb)
-	6	1098200	D	3200	.79	2.16	3.31	.79	2.60	.67	6.26	.63	1.16	1.50	1.00
1/4-5/16	7-8	1098209	G	5700	1.00	2.40	4.16	1.10	3.51	.87	7.66	.81	1.48	2.00	1.99
3/8	10	1098218	H	8800	1.14	2.95	5.14	1.17	4.39	1.10	9.26	.94	1.83	2.50	3.56
1/2	13	1098227	I	15000	1.34	3.35	6.31	1.67	5.49	1.26	11.33	1.16	2.22	3.00	7.00

4:1 Design Factor based on Grade 100 chain. *Deformation indicators. †Dimension before machining (as forged).

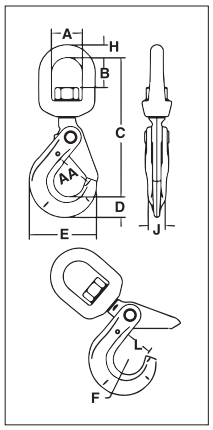
Crosby

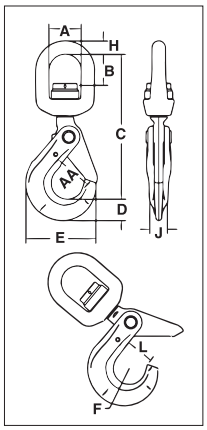
HOOKS & SWIVELS

S-1326

- The S-1326 hook is a positioning device and is not intended to rotate under load. For swivel hook designed to rotate under load, use the S-13326.
- S-13326 Swivel Hook utilizes anti-friction bearing design which allows hook to rotate freely under load.
- Rated for both wire rope and for use with Grade 80/100 chain.
- Forged alloy steel, Quenched & Tempered.
- Individually Proof Tested at 2-1/2 times the chain Working Load Limit with certification.
- Recessed trigger design is flush with the hook body, protecting the trigger from potential damage.
- Easy to operate with enlarged thumb access.
- Positive lock latch is self-locking when hook is loaded.
- Trigger repair kit available (S-4316). Consists of spring, roll pin, and trigger.
- Fatigue rated to 20,000 cycles at 1-1/2 times the Working Load Limit.
- The SHUR-LOC® Hook, if properly installed and locked, can be used for personnel lifting applications and meets the intent of OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B).

S-13326





Crosby 8/10™ Fatigue Rated QT CE

APPLICATION AND WARNING INFORMATION
SECTION 17

S-1326 SHUR-LOC® Swivel Hooks Suitable for positioning before lifting.

Chain Size		Frame code	Grade 100 Alloy Chain Working Load Limit (lb) 4:1 Design Factor	Working Load Limit (lb) 5:1 Design Factor	Stock No.	Weight Each (lb)	Dimensions (in)									
(in)	(mm)						A	B	C	D	E	F	H	J	L	AA*
-	6	D	3200	2560	1004304	1.26	1.50	1.32	6.13	.79	2.60	.67	.50	.63	1.13	1.50
1/4 - 5/16	7-8	G	5700	4560	1004313	2.62	1.75	1.59	7.60	1.10	3.50	.87	.63	.81	1.38	2.00
3/8	10	H	8800	7040	1004322	4.70	2.00	1.73	8.83	1.17	4.39	1.10	.75	.94	1.75	2.50
1/2	13	I	15000	12000	1004331	8.64	2.50	2.38	11.20	1.67	5.45	1.26	1.00	1.16	2.11	3.00
5/8	16	-	22600	18000	1004340	17.00	2.75	2.70	12.90	2.05	6.56	1.50	1.13	1.50	2.49	3.50
3/4	18 - 20	-	35300	28240	1004349	24.00	2.83	2.52	14.10	2.22	7.76	2.01	1.10	2.03	3.52	5.00
7/8	22	-	42700	34160	1004358	29.00	3.44	3.19	16.40	2.45	8.75	2.26	1.30	2.20	3.83	6.00

*Deformation indicators.

S-13326 SHUR-LOC® Swivel Hooks with Bearing Suitable for frequent rotation under load.

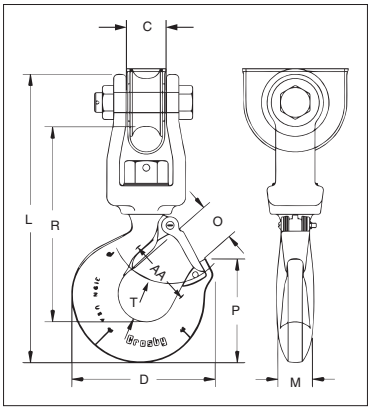
Chain Size		Frame code	Grade 100 Alloy Chain Working Load Limit (lb) 4:1 Design Factor	Working Load Limit (lb) 5:1 Design Factor	Stock No.	Weight Each (lb)	Dimensions (in)									
(in)	(mm)						A	B	C	D	E	F	H	J	L	AA*
-	6	D	3200	2560	1004404	1.50	1.50	1.14	6.17	.79	2.60	.67	.50	.63	1.13	1.50
1/4 - 5/16	7-8	G	5700	4560	1004413	3.10	1.75	1.52	7.54	1.10	3.50	.87	.63	.81	1.44	2.00
3/8	10	H	8800	7040	1004422	5.26	2.00	1.61	8.88	1.16	4.35	1.10	.75	.94	1.83	2.50
1/2	13	I	15000	12000	1004431	11.22	2.50	2.03	11.11	1.66	5.45	1.26	1.00	1.16	2.19	3.00
5/8	16	-	22600	18000	1004440	17.32	2.75	2.25	12.90	2.05	6.56	1.50	1.13	1.50	2.61	3.50

*Deformation indicators.

Crosby

S-3319

- Designed for utility applications using synthetic rope.
- Suitable for positioning before lifting.
- Hook is forged alloy steel, Quenched & Tempered.
- Design of hook provides needed overhaul weight.
- Utilizes spool & shield designed to protect rope and keep rope positioned correctly on spool.
- Spool provides wider rope bearing surface resulting in an increased area for load distribution and reduces rope abrasion.



APPLICATION AND WARNING INFORMATION
SECTION 17

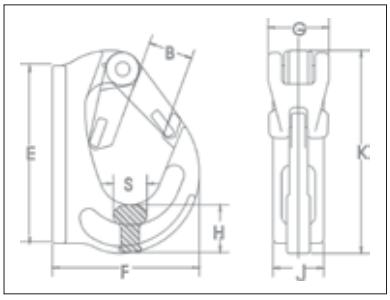
S-3319 Utility Swivel Hook

Working Load Limit (t)*	Stock No.	Weight Each (lb)	Hook ID Code	Synthetic Rope Size (in)	Dimensions (in)									Replacement Latch Kit Stock No.
					C	D	L	M	O	P	R	T	AA*	
1.63	1002054	4.2	HA	9/16 - 5/8	1.09	3.99	8.75	.94	1.16	2.78	5.94	1.16	2.00	1096468
2.50	1002063	8.0	IA	3/4 - 13/16	1.31	4.84	10.56	1.13	1.41	3.47	7.06	1.53	2.50	1096515
4.50	1002072	15.0	JA	7/8 - 1-1/16	1.78	6.29	12.75	1.44	1.78	4.59	8.69	1.94	3.00	1096562

5:1 Design Factor. Maximum allowable proof load is 2 times the Working Load Limit. *Deformation indicators.

BH-313

- Wide range of sizes available: 1-10 metric ton capacity.
- Forged alloy steel.
- Designed for attachment to mobile lifting equipment to provide a pick point for easy sling attachment.
- Large weld pad.
- Heavy duty latch interlocks with the hook tip. Replacement latches are available.
- Detailed installation and application instructions included with each hook.



BH-313 Weld-On Hooks

Working Load Limit (t)*	Stock No.	Weight Each (lb)	Dimensions (in)								Replacement Latch Stock No.
			B	E	F	G	H	J	K	S	
1	1029105	1.15	.91	3.82	2.80	1.42	1.06	1.02	4.21	.71	1092104
2	1029114	1.85	.91	3.23	3.58	1.42	.98	1.34	4.53	.83	1092104
3	1029123	2.60	1.14	4.61	4.13	1.42	1.22	1.42	5.16	.94	1092104
4	1029132	4.19	1.34	5.16	4.49	1.81	1.42	1.69	5.79	1.14	1092105
5	1029141	5.62	1.34	6.34	5.24	1.85	1.77	1.73	6.81	1.14	1092105
8	1029150	7.28	1.38	6.54	5.31	1.85	2.05	2.05	7.01	1.54	1092105
10	1029169	11.02	1.93	8.07	6.61	1.85	2.24	2.13	8.74	1.54	1092106

5:1 Design Factor

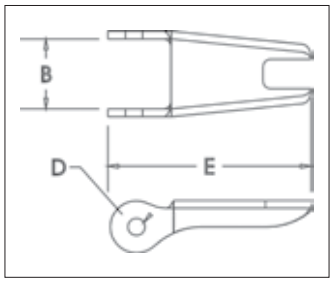
Crosby

HOOKS & SWIVELS

S-4320
Replacement Latch Kit

- Heavy duty stamped latch interlocks with the hook tip.
- High cycle, long life spring.
- Can be made into a "Positive Locking" Hook when proper cotter pin is utilized.
- Latch kits shipped unassembled and individually packaged with instructions.
- Meets the intent of OSHA Rule 1926.1431(g) and 1926.1501(g)(when secured with the bolt, nut and pin) for lifting personnel.

IMPORTANT: The new S-4320 Latch Kit will not fit the old style 319, 320 and 322 hooks.

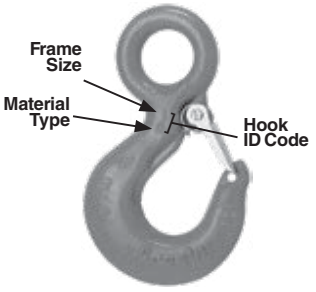


APPLICATION AND WARNING INFORMATION
SECTION 17

S-4320 Replacement Latch Kit for 319N, 320N, 322N, 339N, 1327 and 1339 Hooks

Hook Size (t)			Hook ID Code	Stock No.	Weight Each (lb)	Dimensions (in)		
Carbon	Alloy	Bronze				B	D	E
3/4	1	.5	D	1096325	.03	.50	.15	1.44
1	1-1/2	.6	F	1096374	.04	.54	.17	1.56
1-1/2	2	1	G	1096421	.04	.63	.17	1.66
2	3	1.4	H	1096468	.06	.66	.17	1.91
3	5	2	I	1096515	.10	.83	.20	2.31
5	7	3.5	J	1096562	.15	1.04	.20	2.88
7-1/2	11	5	K	1096609	.28	1.25	.27	3.56
10	15	6.5	L	1096657	.33	1.35	.27	3.81
15	22	10	N	1096704	.84	1.66	.39	5.18

Example of Hook ID Placement Location



Crosby® Hook Latch Kits

PL LATCH KITS

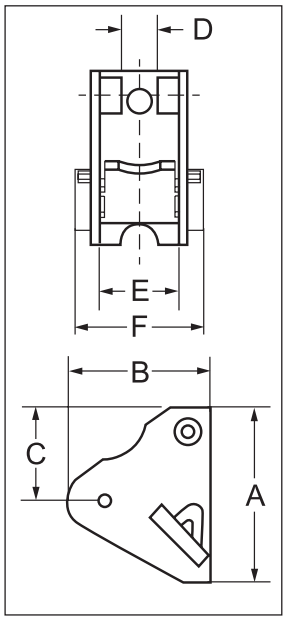
PL LATCH

LATCH ORDERING INSTRUCTIONS

1. Specify PL, PL-N or PL-O latch kit stock number from charts below.
2. Specify capacity of hook to which latch will be assembled.
3. Specify hook material (carbon or alloy).

NOTE: The PL latch will not work on 319N, 320N or 322N hooks. The PL-N/O Latches, in the sizes available, will work on both the old and new style hooks.

PL-N/O LATCH KITS

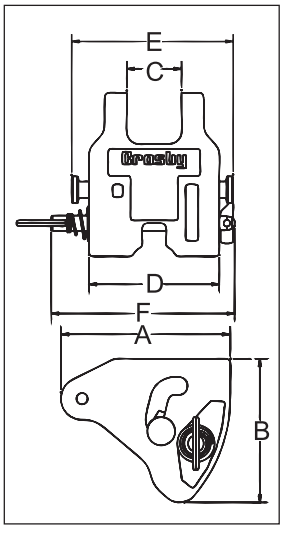


PL Latch Kits

- Hot dip galvanized.
- Heavy duty latch with easy operating features.
- Flapper lever indicates locked or unlocked position.
- Assembly instructions included with each latch.
- For additional dimensional data on eye, shank or swivel hooks refer to pages 110 through 115 in this section.
- Meets the intent of OSHA Rule 1926.1431(g) and 1926.1501(g) (when secured with the bolt, nut and pin) for lifting personnel.

Hook Size (t)		Hook ID Code	PL Latch Kit Stock No.	Weight Each (lbs.)	Dimensions (in.)					
Carbon	Alloy				A	B	C	D	E	F
3	4-1/2	†I	1093711	.54	2.57	2.34	1.94	.56	1.13	2.00
5	7	†J	1093712	.66	3.00	2.34	2.00	.63	1.38	2.22
7-1/2	11	†K	1093713	1.00	3.63	2.77	2.38	.63	1.63	2.38
10	15	†L	1093714	1.25	4.00	3.22	2.69	.63	1.88	3.38
15	22	†N	1093715	2.96	5.31	4.00	2.91	.84	2.38	3.44
20	30	O	1093716	4.05	6.00	4.44	3.19	1.06	2.88	4.25
25	37	P	1093717	8.63	7.00	6.63	4.06	2.24	4.50	6.12
30	45	S	1093718	10.00	6.75	7.00	4.03	2.24	4.75	6.38
40	60	T	1093719	14.30	8.00	7.66	4.38	3.46	5.50	7.25
50	75	U	1093720	27.00	9.88	8.19	5.13	3.38	6.50	8.88
-	100-150	W - X	1093721	33.25	10.88	11.06	6.38	3.38	7.50	10.00
-	200	Y	1093723	45.00	11.88	11.19	6.38	3.38	8.75	11.25
-	300	Z	1093724	55.00	12.50	12.19	8.00	3.38	9.75	13.00

†New 319N style hook.



PL-N/O Latch Kits

- Heavy duty latch with easy operating features.
- PL-N designed for Crosby 319N & 320N style hooks, PL-O designed for Crosby 319 & 320 old style hooks.
- Flapper lever indicates locked or unlocked position.
- Assembly instructions included with each latch.
- Meets the intent of OSHA Rule 1926.1431(g) and 1926.1501(g) (when secured with the supplied toggle pin) for lifting personnel.

Hook Size (t)		Hook ID Code	PL-N Latch Kit	PL-O Stock No.	Weight Each (lbs.)	Dimensions (in.)					
Carbon	Alloy					A	B	C	D	E	F
3	4.5 / 5 *	I	1092000	1091900	.8	2.40	2.01	.83	2.13	2.71	3.44
5	7	J	1092001	1091901	1.3	2.94	2.50	1.00	2.52	3.19	3.83
7-1/2	11	K	1092002	1091902	2.0	3.63	3.02	1.19	2.75	3.44	4.38
10	15	L	1092003	1091903	2.8	4.00	3.39	1.34	3.19	4.00	4.50
15	22	N	1092004	1091904	4.9	5.19	4.32	1.61	3.86	4.81	5.13

*"N" style hooks are rated at 5 tonnes.

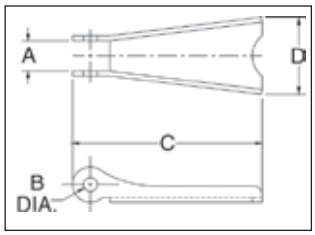
Crosby® Hook Latch Kits

SS-4055

LATCH ORDERING INSTRUCTIONS

1. Specify latch kit stock number.
2. Specify capacity of hook to which latch will be assembled.
3. Specify hook material (carbon or alloy).

NOTE: These latches will not work on new "N" style Hooks.



SS-4055 Latch Kits

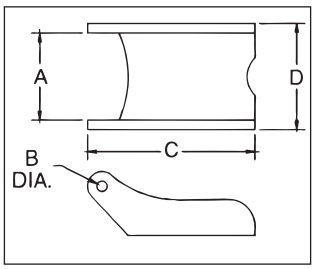
- Stainless steel construction with cadmium plated steel nuts.
- Shipped packaged and unassembled.
- Instructions included for easy field assembly.

Hook Size (t)			Hook ID Code	SS-4055 Stock No.	Weight Each (lbs.)	Dimensions (in.)			
Carbon	Alloy	Bronze				A	B	C	D
3/4	1	.5	D	1090027	.02	.38	.16	1.44	.59
1	1-1/2	.6	F	1090045	.02	.38	.16	1.60	.59
1-1/2 - 2	2 - 3	1.0 - 1.4	G / H	1090063	.03	.47	.19	1.84	.82
3	4-1/2	2.0	I	1090081	.06	.56	.17	2.41	1.00
5	7	3.5	J	1090107	.11	.58	.20	2.97	1.21
7-1/2 - 10	11 - 15	5.0 - 6.5	K / L	1090125	.17	.59	.27	3.66	1.50
15	22	10.0	N	1090143	.39	.83	.39	4.94	1.90
20	30	--	O	1090161	.63	.94	.52	5.88	2.56
25 - 30	37 - 45	--	P / S	1090189	1.12	2.19	.39	6.50	3.84
40	60	--	T	1090205	1.77	3.31	.52	7.88	4.12

S-4088

S-4088 Alloy Hook Latch Kits

- To be used on A-327 and A-339 Grade 8 Sling Hooks.
- Latch Kits shipped unassembled and individually packaged with instructions.



Hook Chain Size (in.)	S-4088 Stock No.	Weight Each (lbs.)	Dimensions (in.)			
			A	B	C	D
9/32 (1/4)	1090250	.06	.78	.16	2.03	.94
3/8	1090251	.14	1.03	.19	2.69	1.25
1/2	1090252	.15	1.03	.19	3.00	1.25
5/8	1090253	.15	1.03	.19	3.25	1.25
3/4	1090254	.15	1.53	.26	4.13	1.88
7/8	1090255	.15	1.53	.26	4.66	2.00

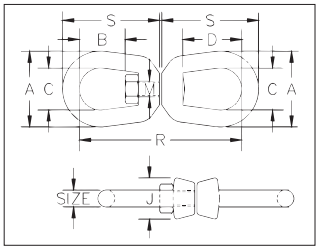
Crosby

Crosby® Forged Swivels

- 402 and 403 forged swivels are positioning devices and are not intended to rotate under load.
- Hot-dip galvanized.
- Quenched & Tempered.
- Crosby products meet or exceed all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, Crosby products meet other critical performance requirements, including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.
- G-402 swivels meet the performance requirements of Federal Specification RR-C-271G, Type VII, Class 2, except for those provisions required of the contractor.
- G-403 swivels meet the performance requirements of Federal Specification RR-C-271G, Type VII, Class 3, except for those provisions required of the contractor.

1/4" - 1 1/4" size

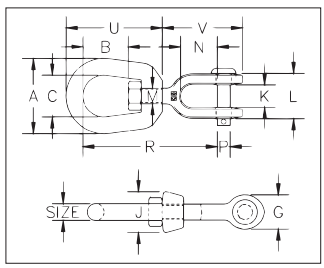
1 1/2" size



G-402 Regular Swivels

Size (in)	Stock No.	Working Load Limit (lb)*	Weight Each (lb)	Dimensions (in)							
				A	B	C	D	J	M	R	S
1/4	1016019	850	.21	1.25	.69	.75	1.06	.69	.31	2.94	1.69
5/16	1016037	1250	.39	1.63	.81	1.00	1.25	.81	.38	3.56	2.06
3/8	1016055	2250	.71	2.00	.94	1.25	1.50	1.00	.50	4.31	2.50
1/2	1016073	3600	1.32	2.50	1.31	1.50	2.00	1.31	.63	5.44	3.19
5/8	1016091	5200	2.49	3.00	1.56	1.75	2.38	1.50	.75	6.56	3.88
3/4	1016117	7200	4.02	3.50	1.75	2.00	2.63	1.88	.88	7.19	4.31
7/8	1016135	10000	6.25	4.00	2.06	2.25	3.06	2.13	1.00	8.38	5.00
1	1016153	12500	8.95	4.50	2.31	2.50	3.50	2.38	1.13	9.63	5.75
1-1/4	1016199	18000	16.37	5.63	2.69	3.13	3.69	3.00	1.50	11.44	6.75
1-1/2+	1016215	45200	45.79	7.09	3.88	4.09	3.88	3.75	2.25	16.69	9.91

5:1 Design Factor.



G-403 Jaw End Swivels

Size (in)	Stock No.	Working Load Limit (lb)*	Weight Each (lb)	Dimensions (in)												
				A	B	C	G	J	K	L	M	N	P	R	U	V
1/4	1016395	850	.21	1.25	.69	.75	.69	.69	.47	1.03	.31	.88	.25	2.63	1.69	1.69
5/16	1016411	1250	.34	1.63	.81	1.00	.81	.81	.50	1.13	.38	.88	.31	2.94	2.06	1.81
3/8	1016439	2250	.66	2.00	.94	1.25	1.00	1.00	.63	1.41	.50	1.06	.38	3.63	2.50	2.25
1/2	1016457	3600	1.34	2.50	1.31	1.50	1.31	1.31	.75	1.75	.63	1.31	.50	4.50	3.19	2.88
5/8	1016475	5200	2.48	3.00	1.56	1.75	1.63	1.50	.94	2.06	.75	1.50	.63	5.31	3.88	3.44
3/4	1016493	7200	3.88	3.50	1.75	2.00	1.88	1.88	1.13	2.53	.88	1.75	.75	6.06	4.31	4.00
7/8	1016518	10000	5.87	4.00	2.06	2.25	2.13	2.13	1.34	2.79	1.00	2.06	.88	7.00	5.00	4.53
1	1016536	12500	9.84	4.50	2.31	2.50	2.63	2.38	1.75	3.72	1.13	2.81	1.13	8.56	5.75	5.94
1-1/4	1016572	18000	15.75	5.69	2.69	3.13	3.13	3.00	2.06	4.31	1.63	2.81	1.38	9.75	7.06	6.38
1-1/2	1016590	45200	54.75	7.00	3.88	4.00	5.63	4.00	2.88	6.00	2.25	4.44	2.25	14.25	10.00	10.84

5:1 Design Factor.

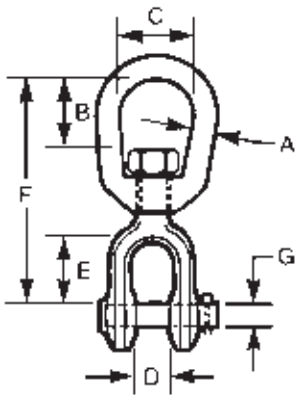
Drop Forged Swivels

CAUTION: NEVER EXCEED WORKING LOAD LIMIT.
Read important warnings and information preceding fittings section.
SWIVELS ARE NOT INTENDED TO ROTATE UNDER LOAD.

JAW & EYE SWIVELS

Meets or exceeds the performance requirements of Federal Specifiation RR-C-271 (latest revision).
Hot galvanized.

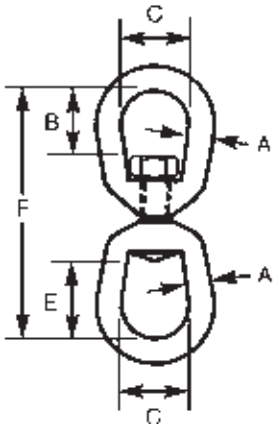
Size (A) in Inches	Working Load Limit in Pounds	Approximate Weight Each in Pounds	Dimensions in Inches					
			B	C	D	E	F	G
¼	850	.22	.69	.75	.38	.88	2.69	.25
5⁄16	1,200	.39	.88	1.00	.50	.88	2.88	.31
⅜	2,250	.71	.94	1.25	.63	1.00	3.50	.38
½	3,600	1.4	1.38	1.50	.81	1.31	4.50	.50
⅝	5,200	2.3	1.63	1.75	1.00	1.50	5.31	.63
¾	7,200	3.5	1.75	2.00	1.19	1.75	6.06	.75
⅞	10,000	5.7	2.08	2.25	1.20	2.07	7.06	.88
1	12,500	9.5	2.27	2.44	1.73	2.81	8.56	1.12
1 ¼	18,000	15.7	2.69	3.13	2.06	2.81	9.44	1.38
1 ½	45,200	55.0	4.20	4.00	2.37	4.43	14.75	2.25



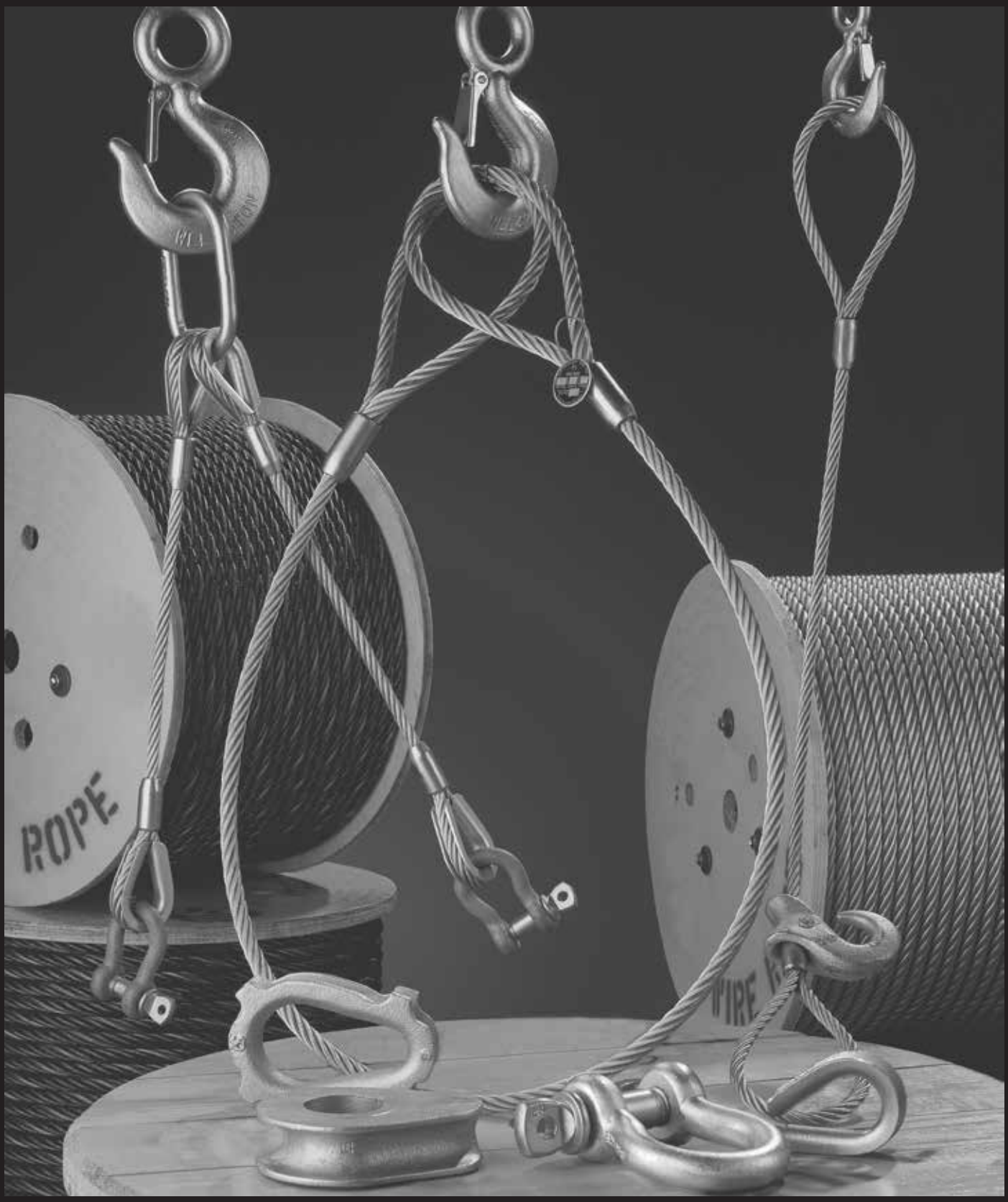
EYE & EYE SWIVELS

Meets or exceeds the performance requirements of Federal Specifiation RR-C-271 (latest revision).
Hot galvanized.

Size (A) in Inches	Working Load Limit in Pounds	Approximate Weight Each in Pounds	Dimensions in Inches			
			B	C	E	F
¼	850	.2	.69	.75	.94	2.88
5⁄16	1,200	.38	.75	1.00	1.13	3.63
⅜	2,250	.68	.94	1.25	1.38	4.25
½	3,600	1.4	1.38	1.50	1.94	5.63
⅝	5,200	2.5	1.63	1.75	2.31	6.63
¾	7,200	3.8	1.81	2.00	2.56	7.25
⅞	10,000	6.0	2.06	2.25	3.02	8.28
1	12,500	8.5	2.35	2.48	3.43	9.53
1 ¼	18,000	16.3	2.69	3.13	3.69	11.13
1 ½	45,200	46.0	4.18	4.00	4.18	17.12

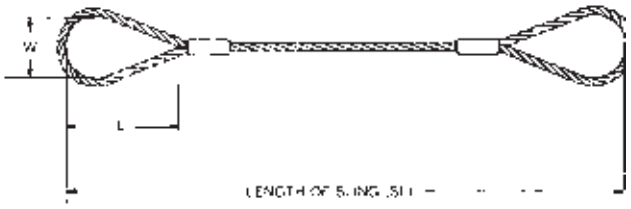


Wire Rope Slings



Type 11 Slings

Flemished Eye and Mechanically Swaged



Diam Of Wire Rope Inches	Min Length (SL) Of Sling Ft-In	Inside Loop Dimensions W Inches	Inside Loop Dimensions L Inches	Rated Capacity In Tons (2000 lbs) EIPS IWRC Single Leg Vertical	Choker**	Basket** Straight Pull	Basket** 60	Basket** 45	Basket** 30
1/4	1-6	2	4	.65	.46	1.3	1.1	.91	.65
5/16	1-9	2 1/2	5	1.00	.74	2.0	1.7	1.40	1.00
3/8	2-0	2 1/2	6	1.40	1.10	2.8	2.5	2.00	1.40
7/16	2-3	3 1/2	7	1.90	1.40	3.9	3.4	2.70	1.90
1/2	2-6	4	8	2.50	1.90	5.1	4.4	3.60	2.50
9/16	2-9	4 1/2	9	3.20	2.40	6.4	5.5	4.50	3.20
5/8	3-0	5	10	3.90	2.90	7.8	6.8	5.50	3.90
3/4	3-6	6	12	5.60	4.10	11.0	9.7	7.90	5.60
7/8	4-0	7	14	7.60	5.60	15.0	13.0	11.00	7.60
1	4-6	8	16	9.80	7.20	20.0	17.0	14.00	9.80
1 1/4	5-0	9	18	12.00	9.10	24.0	21.0	17.00	12.00
1 1/4	5-6	10	20	15.20	11.00	30.0	26.0	21.00	15.20
1 3/8	6-0	11	22	16.20	13.00	36.0	31.0	25.00	16.00
1 1/2	7-0	12	24	21.00	16.00	42.0	37.0	30.00	21.00
1 5/8	7-6	13	26	24.00	18.00	48.0	42.0	35.00	24.00
1 3/4	8-0	14	28	28.00	21.00	57.0	49.0	40.00	28.00
2	9-0	16	32	37.00	28.00	73.0	63.0	52.00	37.00
2 1/4	10-0	18	36	44.00	34.00	89.0	77.0	64.00	44.00
2 1/2	11-0	20	40	54.00	42.00	109.0	94.0	77.00	54.00
2 3/4	12-0	22	44	65.00	51.00	130.0	113.0	92.00	65.00
3	13-0	24	48	77.00	60.00	153.0	133.0	108.00	77.00
3 1/4	17-8	32	64	89.00	69.00	177.0	153.0	125.00	89.00
3 1/2	19-8	36	72	102.00	79.00	203.0	176.0	144.00	102.00
3 3/4	21-6	40	80	115.00	87.00	231.0	200.0	163.00	115.00
4	23-8	45	90	130.00	97.00	259.0	224.0	183.00	130.00

*Rated capacities of choker hitches apply when the angle of choke is greater than 120.

**Rated capacities of basket hitches are based on a minimum diameter of curvature at the point of load contact of 20 times the rope diameter.

For approximate capacities using Fiber Core IPS, deduct 10% from IPS IWRC strengths.

For approximate capacities on Hand Spliced Slings, deduct 15% from corresponding mechanically swaged strengths.

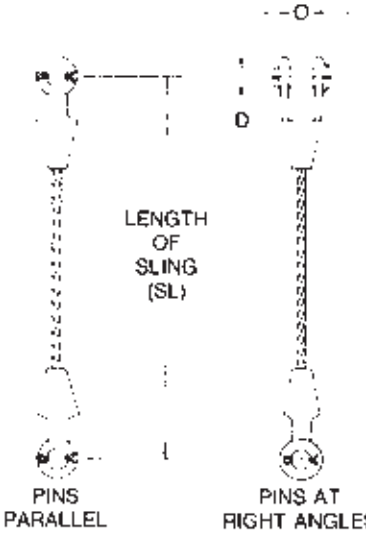
For approximate capacities on Socket Attachments, add 5% to corresponding IWRC swaged strengths.

Wire Rope Diam Inches	Heavy Duty Thimble Inside Width Inches	Heavy Duty Thimble Inside Length Inches	Alloy Hook Size-Tons For EIPS	Carbon Shackle With Thimble Size-Inches For EIPS	Open Swaged Socket Pin Size Inches	Open Swaged Socket Jaw Size Inches	Closed Swaged Socket Hole Diam Inches	Closed Swaged Socket Head Opening Inches
6 x 19 WITH IWRC								
1/4	7/8	1 5/8	1	1/2	1/2	1/2	1/4	1/2
5/16	1 1/16	1 7/8	1 1/2	5/8	5/8	5/8	5/16	5/8
3/8	1 1/8	2 1/2	2	3/4	3/4	3/4	3/8	3/4
7/16	1 1/4	2 3/4	3	7/8	1	1	7/16	3/4
1/2	1 1/2	2 3/4	4 1/2	7/8	1	1	7/16	3/4
9/16	1 1/2	2 3/4	4 1/2	1	1 1/16	1	1/2	3/4
5/8	1 3/4	3 1/4	7	1	1 1/16	1	1/2	3/4
3/4	2	3 3/4	11	1 1/4	1 1/4	1 1/8	5/8	1 1/8
7/8	2 1/4	4 1/4	15	1	1 3/16	1 1/8	5/8	1 1/8
1	2 1/2	4 1/2	15	1 1/2	2	2	3/4	1 1/2
1 1/8	2 7/8	5 1/4	22	1 1/2	2 1/4	2 1/4	7/8	2
6 x 37 WITH IWRC								
1/4	2 1/8	5 1/4	22	1 1/4	2 1/4	2 1/4	2 1/16	2 1/4
5/16	2 1/8	5 1/4	30	1 1/4	2 1/4	2 1/4	2 1/16	2 1/4
3/8	3 1/2	6 1/4	30	1 1/2	2 1/2	3	2 1/16	2 1/2
7/16	4	8	30	1 1/2	3 1/2	3	3 1/16	3
1/2	4 1/2	9	37	2	3 1/2	3 1/2	3 1/16	3
9/16	5	12	50	2 1/2	3 1/2	4	3 1/16	3 1/2
5/8	7	14	60	2 1/2	4 1/2	4 1/2	4 1/16	4
3/4				3	4 1/2	4 1/2	4 1/16	4
7/8				3				
1	—			3				
1 1/8	—	—		3 1/2				
1 1/4	—	—	—	3 1/2				
1 3/8	—	—		4				
1 1/2	—	—		4				

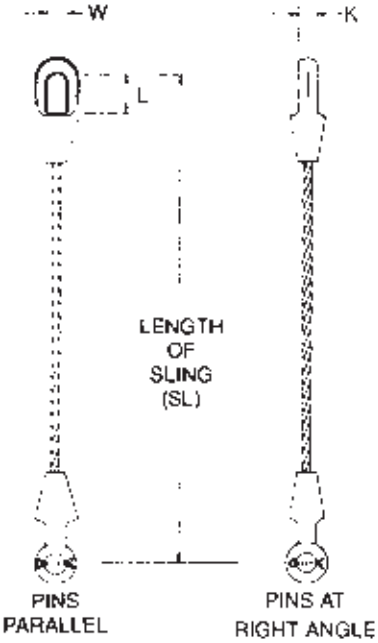
Type 11 Slings

SLINGS WITH SINGLE-ROPE LEGS AND OPEN AND/OR CLOSED SOCKETS (POURED ATTACHED)

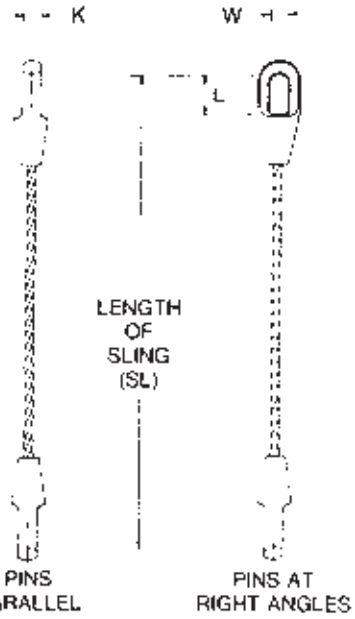
TYPE 11 OPEN SOCKETS



TYPE 11 OPEN AND CLOSED SOCKETS



TYPE 11 CLOSED SOCKETS



Diameter Of Wire Rope Inches	Minimum Length (SL) Of Sling Ft-In	Rated Capacities In Tons (2,000 lbs.) EIPS-IWRC				Important Dimensions				
						Open Socket		Closed Socket		
		Single Part Vertical	Two Slings When Used @			O	D	W	L	K
			60°	45°	30°	Inches	Inches	Inches	Inches	Inches
1/4	1-0	68	1.2	.96	68	1/2	1/2	1 1/4	1 1/4	1/2
5/16	1-0	1.10	1.9	1.60	1.10	1/2	1/2	1 1/4	2	11/16
3/8	1-0	1.50	2.6	2.10	1.50	9/16	9/16	1 1/4	2	11/16
7/16	1-2	2.00	3.5	2.80	2.00	1	1	1 3/4	2 1/4	7/8
1/2	1-3	2.60	4.6	3.70	2.60	1	1	1 3/4	2 1/4	7/8
9/16	1-5	3.40	5.9	4.80	3.40	1 1/4	1 3/16	1 3/4	2 1/2	1
5/8	1-6	4.10	7.1	5.90	4.10	1 1/4	1 1/16	1 3/4	2 1/2	1
3/4	1-9	5.90	10.0	8.30	5.90	1 1/2	1 3/8	1 3/4	3	1 1/4
7/8	2-0	7.90	14.0	11.00	7.90	1 1/4	1 1/8	1 3/4	3 1/2	1 1/2
1	2-6	10.00	17.0	15.00	10.00	2	2	2 1/4	4	1 3/4
1 1/8	2-9	13.00	22.0	18.00	13.00	2 1/4	2 1/4	2 1/2	4 1/2	2
1 1/4	3-0	16.00	28.0	23.00	16.00	2 1/2	2 1/2	2 3/4	5	2 1/4
1 3/8	3-0	20.00	33.0	28.00	20.00	2 1/2	2 1/2	2 3/4	5	2 1/4
1 1/2	3-3	23.00	39.0	32.00	23.00	3	2 3/4	3 1/8	6	2 1/2
1 5/8	3-9	26.00	46.0	37.00	26.00	3	3	3 1/4	6 1/2	2 3/4
1 3/4	4-3	31.00	53.0	44.00	31.00	3 1/2	3 1/2	3 17/32	7 1/16	3
2	4-9	39.00	68.0	56.00	39.00	4	3 1/2	3 29/32	8 1/16	3 1/2
2 1/4	5-0	49.00	85.0	70.00	49.00	4 1/2	4 1/2	4 1/32	9 1/2	3 1/2
2 1/2	5-9	60.00	104.0	85.00	60.00	5	4 1/2	5 1/2	10 1/16	4
2 3/4	6-5	72.00	125.0	102.00	72.00	5 1/4	5	6 1/2	11 1/4	4 1/2
3	6-10	85.00	147.0	120.00	85.00	5 1/4	5 1/2	6 3/4	11 1/2	5 1/4
3 1/4	7-7	98.00	170.0	139.00	98.00	6 1/2	5 1/2	7 1/4	12 1/2	5 1/4
3 1/2	8-2	113.00	196.0	160.00	113.00	6 1/2	6	7 1/4	13	6 1/4
3 3/4	8-8	128.00	222.0	181.00	128.00	7 1/2	7	8 1/2	14	7
4	9-1	143.00	248.0	202.00	143.00	7 1/2	7	8 1/2	14	7

Sockets available up through 6" diameter wire rope upon request.

Type 11 Slings

SLINGS WITH SINGLE-ROPE LEGS AND OPEN AND/OR CLOSED SOCKETS*

TYPE 11 OPEN SWAGED SOCKETS

PINS PARALLEL

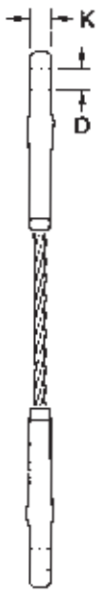
PINS AT RIGHT ANGLES

TYPE 11 OPEN AND CLOSED SWAGED SOCKETS

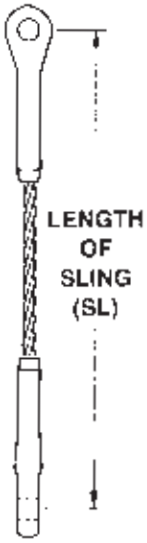
PINS PARALLEL

PINS AT RIGHT ANGLES

TYPE 11 CLOSED SWAGED SOCKETS



PINS PARALLEL



PINS AT RIGHT ANGLES

Diameter Of Wire Rope Inches	Minimum Length (SL) Of Sling Ft.-In.	Rated Capacity In Tons (2000 lbs) EIPS-IWRC				Important Dimensions				
						Open Swage Socket			Closed Swage Socket	
		Single Part Vertical	Two Slings When Used @ 60°	45°	30°	O Inches	D Inches	E Inches	K Inches	D Inches
1/4	0-11	.68	1.2	.96	.68	7/8	1 1/16	1 29/32	1/2	7/16
5/16	1-1	1.10	1.9	1.60	1.10	1 1/16	1 1/16	1 11/32	11/16	7/16
3/8	1-3	1.50	2.6	2.10	1.50	1 1/16	1 1/16	1 11/32	11/16	7/16
7/16	1-6	2.00	3.5	2.80	2.00	1	1	1 1/2	7/8	1 1/16
1/2	1-8	2.60	4.6	3.70	2.60	1	1	1 1/2	7/8	1 1/16
9/16	1-10	3.40	5.9	4.80	3.40	1 1/4	1 1/16	1 21/32	1 1/8	1 1/4
5/8	2-0	4.10	7.1	5.90	4.10	1 1/4	1 3/16	1 21/32	1 1/8	1 1/4
3/4	2-5	5.90	10.0	8.30	5.90	1 1/2	1 1/8	2 1/16	1 5/16	1 7/16
7/8	2-10	7.90	14.0	11.00	7.90	1 1/4	1 1/8	2 1/16	1 1/2	1 1/2
1	3-2	10.00	17.0	15.00	10.00	2	2	2 3/4	1 3/4	2 1/16
1 1/8	3-7	13.00	22.0	18.00	13.00	2 1/4	2 1/4	3 1/4	2	2 5/16
1 1/4	4-0	16.00	28.0	23.00	16.00	2 1/2	2 1/2	3 1/2	2 1/4	2 9/16
1 3/8	4-5	20.00	33.0	28.00	20.00	2 1/2	2 1/2	4	2 1/4	2 9/16
1 1/2	4-9	23.00	39.0	32.00	23.00	3	2 1/2	4 1/16	2 1/2	2 13/16
1 5/8	5-1	26.00	46.0	37.00	26.00	3 1/2	3 1/2	5	3	3 1/16
1 3/4	5-5	31.00	53.0	44.00	31.00	3 1/2	3 1/2	5	3	3 1/16
2	6-4	39.00	68.0	56.00	39.00	4	3 3/4	6 1/16	3 1/4	3 3/16
2 1/4	7-2	49.00	85.0	70.00	49.00	4 1/4	4 1/4	4 1/16	4	4 7/16
2 1/2	8-0	60.00	104.0	85.00	60.00	4 1/2	4 1/4	4 1/16	4	4 7/16

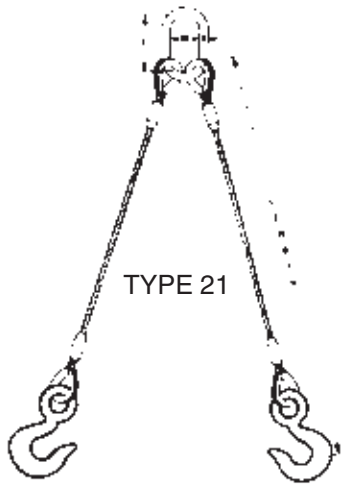
*Interchangeable with zinc sockets

Type 21 Slings

FLEMISHED EYE AND MECHANICALLY SWAGED

Type 21 slings are 2-leg All-Purpose bridles, designed for general lifting purposes where attachment may be made directly to the load, such as hooking into lifting eyes or placing loops over lugs.

Diam Of Wire Rope Inches	Min. Length (Ft.) Of Sling Ft.-In.	Rated Capacities in Tons EIPS IWRC 60°	45°	30°	Alloy Links Diam. Inches
1/4	1-3	1.10	.91	.65	1/2
5/16	1-6	1.70	1.40	1.00	1/2
3/8	1-8	2.50	2.00	1.40	5/8
7/16	1-10	3.40	2.70	1.90	3/4
1/2	2-0	4.40	3.60	2.50	1
9/16	2-2	5.50	4.50	3.20	1 1/4
5/8	2-4	6.80	5.50	3.90	1 1/4
3/4	2-8	9.70	7.90	5.60	1 1/4
7/8	3-3	13.00	11.00	7.80	1 1/2
1	3-6	17.00	14.00	9.80	1 1/2
1 1/8	4-0	21.00	17.00	12.00	1 1/4
1 1/4	4-6	26.00	21.00	15.00	2
1 3/8	5-0	31.00	25.00	18.00	2
1 1/2	5-6	37.00	30.00	21.00	2 1/4
1 5/8	6-0	42.00	35.00	24.00	2 1/2
1 3/4	6-6	49.00	40.00	28.00	2 1/2
2	8-0	63.00	52.00	37.00	2 3/4
2 1/4	8-9	77.00	63.00	44.00	3 1/4
2 1/2	10-0	94.00	77.00	54.00	3 1/4



For approximate capacities using Fiber Core EIP: deduct 10% from EIP-IWRC strengths.
For approximate capacities on Hand Braided Slings: deduct 15% from corresponding mechanically swaged strengths.
For approximate capacities on Socket Attachments: add 5% to corresponding IWRC swaged strengths.

PERTINENT DIMENSIONS FOR END FITTINGS

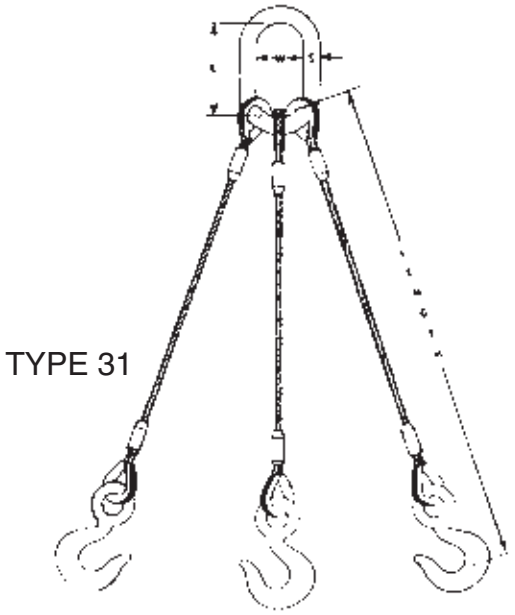
Diam Of Wire Rope Inches	Standard Loop Inside Width Inches	Standard Loop Inside Length Inches	Heavy Duty Thimble Inside Width Inches	Heavy Duty Thimble Inside Length Inches	Alloy Hook Size-Tons For EIPS	Carbon Shackle Size-Inches For EIPS	Hall Thimble Inside Loop Width Inches	Hall Thimble Inside Loop Length Inches	Open Swage Socket Pin Diam Inches	Open Swage Socket Jaw Opening Inches	Closed Swage Socket Hole Diam Inches	Closed Swage Socket Head Thickness Inches
6 x 19 with IWRC												
1/4	2	4	1/2	1 3/16	1	1/2			1 1/16	1 1/16	3/4	1/2
5/16	2 1/2	5	1 1/16	1 7/8	1 1/2	5/8			1 1/16	1 1/16	7/8	1 1/16
3/8	3	6	1 1/8	2 1/8	2	3/4	2	4	1 1/16	1 1/16	1	1 1/16
7/16	3 1/2	7	1 1/4	2 1/8	3	1	2 1/4	5	1	1	1 1/16	1 1/8
1/2	4	8	1 1/2	2 1/4	4 1/2	1	2 1/4	5 1/2	1	1	1 1/16	1 1/8
9/16	4 1/2	9	1 1/2	2 1/4	4 1/2	1	2 1/4	5 1/2	1 1/16	1 1/4	1 1/4	1 1/8
5/8	5	10	1 1/4	3 1/4	7	1	3 1/4	7	1 1/16	1 1/4	1 1/4	1 1/8
3/4	6	12	2	3 1/4	11	1 1/8	3 1/4	9	1 1/4	1 1/2	1 1/16	1 1/16
7/8	7	14	2 1/4	4 1/4	11	1 1/4	4 1/2	10 1/2	1 1/8	1 3/4	1 1/16	1 1/2
1	8	16	2 1/2	4 1/2	15	1 1/4	4 1/2	12	2	2	2 1/16	1 1/8
1 1/8	9	18	2 7/8	5 1/8	22	1 1/2	4 1/2	13 1/2	2 1/4	2 1/4	2 5/16	2
6 x 37 with IWRC												
1 1/4	10	20	2 7/8	5 1/8	22	1 1/2	5 1/2	15	2 1/2	2 1/4	2 9/16	2 1/4
1 3/8	11	22	3 1/2	6 1/4	30	1 1/4	6	17	2 1/2	2 1/2	2 9/16	2 1/4
1 1/2	12	24	3 1/2	6 1/4	30	1 1/4	6 1/2	18	2 1/4	3	2 13/16	2 1/2
1 5/8	13	26	4	8	30	1 1/2	6 1/2	18	3 1/2	3 1/2	3 1/16	3
1 3/4	14	28	4 1/2	9	37	2	7	21 1/2	3 1/2	3 1/2	3 1/16	3
2	16	32	6	12	60	2 1/2	7	24 1/2	3 3/4	4	3 13/16	3 1/4
2 1/4	18	36	7	14	60	2 1/2	8 1/2	25 1/2	4 1/4	4 1/4	4 5/16	4
2 1/2	20	40				3	8 1/2	26 1/2	4 1/4	4 1/4	4 5/16	4
2 3/4	22	44				3	10	30			-	-
3	24	48				3	10	32			-	
3 1/4						3 1/2						
3 1/2						3 1/2						
3 3/4						4						
4						4						

Type 31 Slings

FLEMISHED EYE & MECHANICALLY SWAGED

Type 31 slings are 3-leg All-Purpose bridles, generally recommended for handling unbalanced loads.

Diam Of Wire Rope Inches	Min. Length (SL) Of Sling Ft-In	Rated Capacities in Tons EIPS-IWRC 60°	45°	30°	Alloy Links Diam. Inches
½	1-3	1.70	1.40	.97	⅞
5/16	1-6	2.60	2.10	1.50	1
⅜	1-8	3.70	3.00	2.20	1¼
7/16	1-10	5.00	4.10	2.90	1
½	2-0	6.60	5.40	3.80	1
9/16	2-2	8.30	6.80	4.80	1⅛
⅝	2-4	10.00	8.20	5.90	1¼
¾	2-9	15.00	12.00	8.40	1½
⅞	3-3	20.00	16.00	11.00	1¾
1	3-6	26.00	21.00	15.00	2
1⅛	4-0	31.00	25.00	18.00	2
1¼	4-6	38.00	31.00	22.00	2¼
1⅜	5-0	46.00	38.00	27.00	2½
1½	5-6	55.00	45.00	32.00	2¾
1⅝	6-0	63.00	52.00	37.00	2¾
1¾	6-6	74.00	60.00	42.00	3
2	8-0	95.00	78.00	55.00	3½
2⅛	8-9	116.00	94.00	67.00	4
2½	10-0	141.00	115.00	82.00	4½



For approximate capacities using Fibre Core EIPS: deduct 10% from EIPS-IWRC strengths.
For approximate capacities on Hand Braided Slings: deduct 15% from corresponding mechanically swaged strengths.
For approximate capacities on Socket Attachments: add 5% to corresponding IWRC swaged strengths.

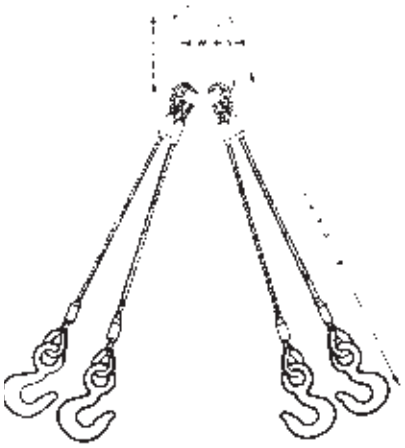
Diam Of Wire Rope Inches	Standard Loop Inside Width Inches	Standard Loop Inside Length Inches	Heavy Duty Thimble Inside Width Inches	Heavy Duty Thimble Inside Length Inches	Alloy Hook Size-Tons For EIPS	Carbon Shackle Size-Inches For EIPS	Hall Thimble Inside Loop Width Inches	Hall Thimble Inside Loop Length Inches	Open Swage Socket Pin Diam Inches	Open Swage Socket Jaw Opening Inches	Closed Swage Socket Hole Diam Inches	Closed Swage Socket Head Thickness Inches
6 x 19 with IWRC												
1/4	2	4	5/8	1 5/8	1	5/16		-	1 1/16	1 1/16	1/4	1
5/16	2 1/2	5	1 1/16	1 7/8	1 1/2	3/8			1 1/16	1 1/16	1/4	1 1/16
3/8	3	6	1 1/8	2 1/8	2	7/16	2	4	1 1/16	1 1/16	1/4	1 1/16
7/16	3 1/2	7	1 1/4	2 3/8	3	1/2	2 1/8	5	1	1	1 1/16	1
1/2	4	8	1 1/2	2 3/4	4 1/2	5/8	2 3/8	4 1/2	1	1	1 1/16	1
9/16	4 1/2	9	1 1/2	2 3/4	4 1/2	5/8	2 3/8	5 1/2	1 1/16	1 1/4	1 1/4	1 1/8
5/8	5	10	1 3/4	3 1/4	7	3/4	3 1/8	7	1 1/16	1 1/4	1 1/4	1 1/8
3/4	6	12	2	3 1/4	11	7/8	3 3/8	9	1 1/8	1 1/2	1 5/16	1 1/16
7/8	7	14	2 1/4	4 1/4	11	1	4 1/2	10 1/2	1 5/8	1 7/8	1 1/16	1 1/2
1	8	16	2 1/2	4 1/2	15	1 1/4	4 1/2	12	2	2	2 1/16	1 1/4
1 1/8	9	18	2 1/2	5 1/4	22	1 1/4	4 3/4	13 1/2	2 1/4	2 1/4	2 1/16	2
6 x 37 with IWRC												
1 1/4	10	20	2 7/8	5 1/8	22	1 1/2	5 1/2	15	2 1/2	2 1/2	2 1/16	2 1/4
1 3/8	11	22	3 1/2	6 1/4	30	1 3/4	6	17	2 1/2	2 1/2	2 9/16	2 1/4
1 1/2	12	24	3 1/2	6 1/4	30	1 1/1	6 1/2	18	2 1/4	3	2 1/16	2 1/2
1 5/8	13	26	4	8	30	1 1/4	6 1/2	18	3 1/2	3 1/2	3 1/16	3
1 3/4	14	28	4 1/2	9	37	2	7	21 1/2	3 1/2	3 1/2	3 1/16	3
2	16	32	6	12	60	2 1/2	7	24 1/2	3 1/2	6	3 1/16	3 1/4
2 1/4	18	36	7	14	60	2 1/2	8 1/2	25 1/2	4 1/4	6 1/4	4 1/16	4
2 1/2	20	40				3	8 1/2	26 1/2	4 1/4	6 1/4	4 1/16	4
2 3/4						3						
3						3						
3 1/8						3 1/2						
3 1/2						3 1/2						
3 3/4						4						
4						4						

Type 41 Slings

FLEMISHED EYE & MECHANICALLY SWAGED

Type 41 slings are 4-leg All Purpose bridles, used both for balanced and unbalanced loads and for heavier loads where design calls for more distribution of weight by the use of attachment at four points.

Diam Of Wire Rope Inches	Min Length (SLI) Of Sling Ft-In	Rated Capacities in Tons EIPS-IWRC* 60°	45°	30°	Alloy Oblong Links Diam Inches
1/4	1-3	2.20	1.80	1.30	5/8
5/16	1-6	3.50	2.80	2.00	1/4
3/8	1-8	5.00	4.10	2.90	1
7/16	1-10	6.70	5.50	3.90	1
1/2	2-0	8.80	7.10	5.10	1 1/4
9/16	2-2	11.00	9.00	6.40	1 1/4
5/8	2-4	14.00	11.00	7.80	1 1/2
3/4	2-9	19.00	16.00	11.00	1 3/4
7/8	3-3	26.00	21.00	15.00	2
1	3-6	34.00	28.00	20.00	2 1/4
1 1/8	4-0	42.00	34.00	24.00	2 1/2
1 1/4	4-6	51.00	42.00	30.00	2 1/2
1 3/8	5-0	62.00	50.00	36.00	3 1/4
1 1/2	5-6	73.00	60.00	42.00	3 1/4
1 5/8	6-0	85.00	69.00	49.00	3 1/4
1 3/4	6-6	98.00	80.00	57.00	4 1/2
2	8-0	127.00	104.00	73.00	4 1/2
2 1/4	8-9	154.00	126.00	89.00	Call
2 1/2	10-0	188.00	154.00	109.00	Call



TYPE 41

For approximate capacities using Fiber Core EIP: deduct 10% from EIP-IWRC strengths.
For approximate capacities on Hand Braided Slings: deduct 15% from corresponding mechanically swaged strengths.
For approximate capacities on Socket Attachments: add 5% to corresponding IWRC swaged strengths.

* These ratings refer to an evenly balanced load between the four legs.
In most instances, the ratings for a 3-leg sling should be used to accommodate for an unevenly balanced load.

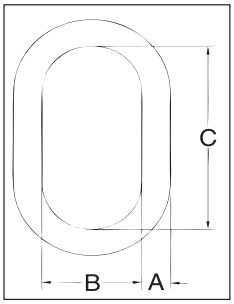
Diam Of Wire Rope Inches	Standard Loop Inside Width Inches	Standard Loop Inside Length Inches	Heavy Duty Thimble Inside Width Inches	Heavy Duty Thimble Inside Length Inches	Alloy Hook Size-Tons For EIPS	Carbon Shackle Size-Inches For EIPS	Rail Thimble Inside Loop Width Inches	Rail Thimble Inside Loop Length Inches	Open Swage Socket Pin Diam Inches	Open Swage Socket Jaw Opening Inches	Closed Swage Socket Hole Diam Inches	Closed Swage Socket Head Thickness Inches
6 x 19 With IWRC												
1/4	2	4	3/4	1 5/8	1	5/16	...	—	11/16	11/16	1/4	1/2
5/16	2 1/2	5	1 1/16	1 7/8	1 1/2	1/4	...	—	11/16	11/16	5/16	11/16
3/8	3	6	1 1/16	2 1/8	2	5/16	2	4	11/16	11/16	3/8	11/16
7/16	3 1/2	7	1 1/4	2 1/8	3	3/8	2 1/4	5	1	1	1 1/16	3/4
1/2	4	8	1 1/2	2 3/4	4 1/2	5/8	2 1/4	5 1/2	1	1	1 1/16	3/4
9/16	4 1/2	9	1 1/2	2 3/4	4 1/2	5/8	2 1/4	5 1/2	1 1/16	1 3/8	1 1/4	1 1/8
5/8	5	10	1 1/4	3 1/4	7	7/8	3 1/4	7	1 1/16	1 3/8	1 1/4	1 1/8
3/4	6	12	2	3 3/4	11	7/8	3 1/4	9	1 1/16	1 1/2	1 7/16	1 1/16
7/8	7	14	2 1/4	4 1/4	11	1	4 1/2	10 1/2	1 5/8	1 3/4	1 7/16	1 1/2
1	8	16	2 1/2	4 1/2	15	1 1/4	4 1/2	12	2	2	2 1/16	1 3/4
1 1/8	9	18	2 3/4	5 1/4	22	1 1/4	4 5/8	13 1/2	2 1/4	2 1/4	2 1/16	2
6 x 37 With IWRC												
1 1/4	10	20	2 3/4	5 1/4	22	1 1/2	5 1/2	15	2 1/2	2 1/2	2 5/16	2 1/4
1 3/8	11	22	3 1/2	6 1/4	30	1 1/8	6	17	2 1/2	2 1/2	2 5/16	2 1/4
1 1/2	12	24	3 1/2	6 1/4	30	1 1/8	6 1/2	19	2 1/4	3	2 11/16	2 1/2
1 5/8	13	26	4	8	30	1 1/4	6 1/2	18	3 1/2	3 1/2	3 5/16	3
1 3/4	14	28	4 1/2	9	37	2	7	21 1/2	3 1/2	3 1/2	3 5/16	3
2	16	32	6	12	60	2 1/2	7	24 1/2	3 1/2	4	3 11/16	3 1/4
2 1/4	18	36	7	14	60	2 1/2	8 1/2	25 1/2	4 1/2	4 1/2	4 5/16	4
2 1/2	20	40				3	8 1/2	25 1/2	4 1/2	4 1/2	4 5/16	4
2 3/4						3						
3						3						
3 1/4						3 1/2						
3 1/2						3 1/2						
3 3/4						4						
4						4						

Alloy Master Links

Load Rated | Fatigue Rated | QUIC-CHECK® | MAXTOUGH®

A-342

- Alloy Steel — Quenched and Tempered.
- Individually Proof Tested to values shown, with certification.
- Proof Tested with 60% inside width special fixtures sized to prevent localized point loading per ASME A-952.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these links meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.
- Forgings have a Product Identification Code (PIC) for material traceability, along with the size, the name Crosby and USA in raised lettering.
- Selected sizes designated with "W" in the size column have enlarged inside dimensions to allow additional room for sling hardware and crane hook.
- Crosby 1 ¼" to 2" 342/345 master links are type approved to DNV Certification Notes 2.7-1- Offshore Containers. These Crosby master links are 100% proof tested, MPI and impact tested. The tests are conducted by Crosby and 3.1 test certification is available upon request. Refer to page 161 for Crosby COLD TUFF® master links that meet the additional requirements of DNV rules for certification of lifting applications - Loose Gear.
- Incorporates patented **QUIC-CHECK®** deformation indicators.



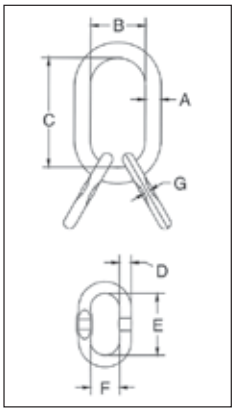
A-342 Alloy Master Links

Size (in.)	Size (mm)	A-342 Stock No	Weight Each (lbs.)	Working Load Limit (lbs.)	Proof Load (lbs.)**	Dimensions (in.) A	B	C	Deformation Indicator
1/2W	13W	1014266	1.3	7400	17200	.62	2.80	5.00	3.50
5/8	16	1014280	1.5	9000	18000	.62	3.00	6.00	3.50
3/4W	19W	1014285	2.0	12300	28400	.73	3.20	6.00	4.00
7/8W	22W	1014319	3.3	15200	35200	.88	3.75	6.38	4.50
1W	26W	1014331	6.1	26000	60000	1.10	4.30	7.50	5.50
1-1/4W	32W	1014348	12.0	39100	90400	1.33	5.50	9.50	7.00
1-1/2W	38W	1014365	18.6	61100	141200	1.61	5.90	10.50	7.50
1-3/4	44	1014388	25.2	84900	212250	1.75	6.00	12.00	7.50
2	51	1014404	37.0	102600	256500	2.00	7.00	14.00	9.00
2-1/4	57	1014422	54.1	143100	289200	2.25	8.00	16.00	10.00
2-1/2	63	1014468	68.5	160000	320000	2.50	8.38	16.00	11.00
2-3/4	70	1014440	94.0	216900	433800	2.75	9.88	18.00	12.50
3	76	1014486	115	228000	456000	3.00	9.88	18.00	13.00
3-1/4	83	1014501	145	262200	524400	3.25	10.00	20.00	13.50
3-1/2	89	1014529	200	279000	558000	3.50	12.00	24.00	15.50
3-3/4	95	1015051	198	336000	672000	3.75	10.00	20.00	13.50
4	102	1015060	264	373000	746000	4.00	12.00	24.00	16.00
†† 4-1/4	†† 108	1015067	302	354000	708000	4.25	12.00	24.00	-
†† 4-1/2	†† 114	1015079	345	360000	720000	4.50	14.00	28.00	-
†† 4-3/4	†† 121	1015088	436	389000	778000	4.75	14.00	28.00	-
†† 5	†† 127	1015094	516	395000	790000	5.00	15.00	30.00	-

*****Ultimate Load is 5 times the Working Load Limit. Based on single leg sling (in-line load), or resultant load on multiple legs with an included angle less than or equal to 120 degrees. Applications with wire rope and synthetic sling generally require a design factor of 5.
** Proof Test Load equals or exceeds the requirement of ASTM A952(8.1) and ASME B30.9. †† Welded Master Link.

A-345

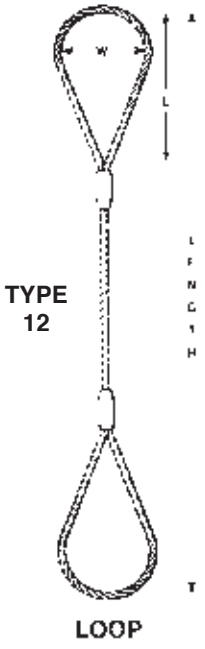
A-345 Master Link Assembly with Engineered Flat for use with S-1325A coupler link.



Size (in.)	Size (mm)	A-345 Stock No.	Weight Each (lbs.)	Working Load Limit Based on 5:1 Design Factor (lbs.)	Proof Load (lbs.)**	Dimensions (in.) A	B	C	D	E	F	G	Deformation Indicator
3/4W	19W	1014739	3.5	12300	28400	.73	3.20	6.00	.56	3.35	1.77	.30	4.00
7/8W	22W	1014742	4.8	15200	35200	.88	3.75	6.38	.56	3.35	1.77	.30	4.50
1W	26W	1014766	9.3	26000	60000	1.10	4.30	7.50	.75	3.94	2.36	.33	5.50
1-1/4W	32W	1014779	15.8	39100	90400	1.33	5.50	9.50	1.00	6.30	3.54	.51	7.00
1-1/2W	38W	1014807	34.1	61100	141200	1.61	5.90	10.50	1.25	7.09	3.94	.65	7.50
1-3/4	44	1014814	46.7	84900	212250	1.75	6.00	12.00	1.38	8.00	5.00	.73	7.50
2	51	1014832	67.2	102600	256500	2.00	7.00	14.00	1.50	9.00	5.75	-	9.00
2-1/2	64	1014855	206	160000	320000	2.50	8.38	16.00	2.50	16.00	8.38	-	11.00
2-3/4	70	1014864	282	216900	433800	2.75	9.88	18.00	2.75	18.00	9.88	-	12.50
4	102	1014999	667	373000	746000	4.00	12.00	24.00	3.50	24.00	12.00	-	15.50***

* Ultimate Load is 5 times the Working Load Limit. The maximum individual sublink working load limit is 75% of the assembly working load limit except for 2-1/2"and 2-3/4", which are 100% of assembly working load limit. Applications with wire rope and synthetic sling generally require a design factor of 5.
** Proof Test Load equals or exceeds the requirement of ASTM A952(8.1) and ASME B30.9. *** Sublink only.

Type 12 Slings



SINGLE LEG

CABLE-LAID: GALVANIZED

Cable-Laid slings are specialized slings, designed specifically for applications that require extreme flexibility, resistance to kinking. Type 12 is a single-leg construction for use singularly or in pairs. Where cutting abrasion or extreme conditions are factors, however, the All-Purpose Type 11 sling is recommended.

Diam of Rope Inches	Min. Length (SL) of Sling ft—in.	Inside Loop Dimensions W in.	Inside Loop Dimensions L in.	Rated Capacities in Tons (2000 lb) ** Choker Hitch	Rated Capacities in Tons (2000 lb) Single Part Vertical	Rated Capacities in Tons (2000 lb) Basket Hitch when used* @ 60°	45°	30°
7×7×7								
3/8	2	3	6	0.8	1.1	1.9	1.5	1.1
1/2	2—6	4	8	1.3	1.9	3.2	2.6	1.9
5/8	3	5	10	1.9	2.8	4.8	3.9	2.8
7×7×19								
3/4	3—6	6	12	2.6	4.1	7.0	5.8	4.1
7/8	4	7	14	3.8	5.4	9.3	7.6	5.4
1	4—6	8	16	4.8	6.9	12	9.7	6.9
1 1/8	5	9	18	5.8	8.3	14	12	8.3
1 1/4	5—6	10	20	6.9	9.9	17	14	9.9

PERTINENT DIMENSIONS FOR END FITTINGS

Rope Diam. Inches	LOOP INSIDE Width In.	LOOP INSIDE Length In.	THIMBLE INSIDE Width In.	THIMBLE INSIDE Length In.	ALLOY HOOK Size Tons	SHACKLE with thimble Size In.	HALF THIMBLE INSIDE LOOP Width In.	HALF THIMBLE INSIDE LOOP Length In.
7×7×7								
3/8	3	6	1 1/8	2 1/8	1 1/2	7/16	2	4
1/2	4	8	1 1/2	2 3/4	3	1/2	2 1/4	5
5/8	5	10	1 3/4	3 1/4	4 1/2	5/8	3 1/4	5 1/2
7×7×19								
3/4	6	12	2	3 3/4	7	3/4	3 1/4	7
1	8	16	2 1/2	4 1/2	11	1	4 1/2	9
1 1/8	9	18	2 7/8	5 1/8	11	1 1/8	4 5/8	10 1/2
1 1/4	10	20	3 1/2	6 1/2	15	1 3/4	6	12

* Rated capacities of basket hitches are based on a minimum diameter of curvature at the point of load contact of 10 times the rope diameter.

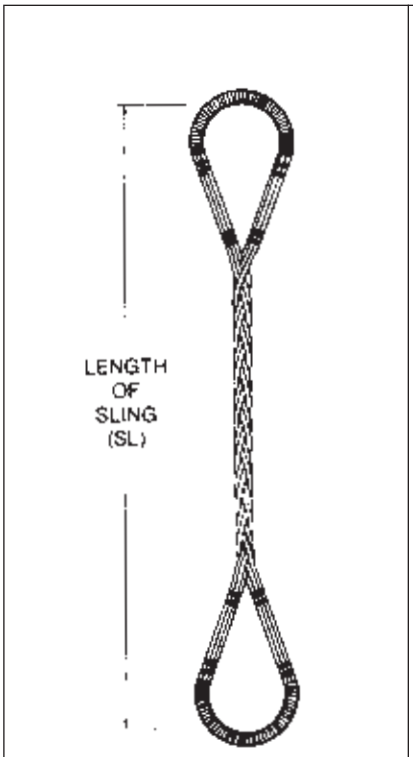
** Rated capacities for choker hitches apply when the angle of choke is greater than 135°.

Bright 7 X 6 x 19 with IWRC Class Rope may be used on larger sizes. Capacities w... other

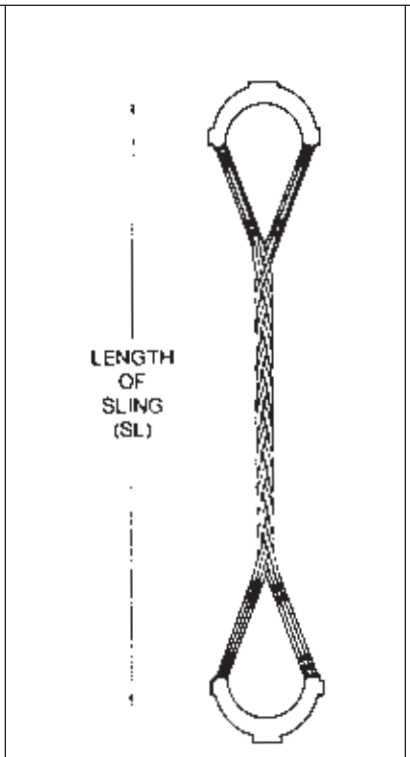
Braided Slings
Type 16

6-PART FLAT BODY

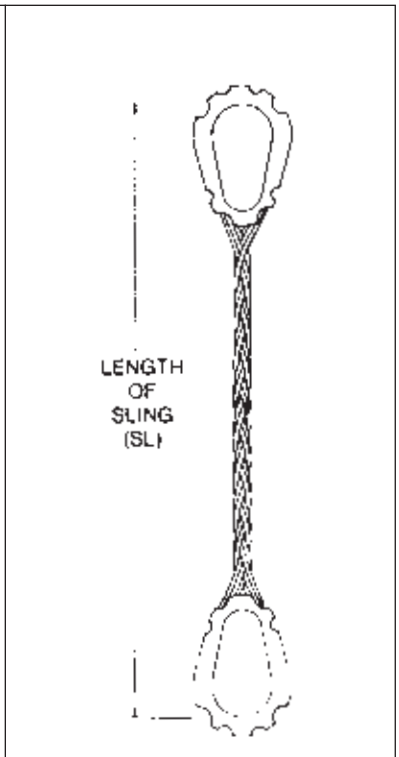
TYPE 16 (WITH SERVED LOOPS)



TYPE 16 (WITH CRESCENT THIMBLES)



TYPE 16 (WITH SLIP-THRU THIMBLES)



Diam* of Individual Ropes in	Min Length (SL) of Slings ft—in	Rated Capacities in Tons at 2000 lb — FIPS Rope IWRC — Choker Hitch**	Single Leg Vertical	Basket Hitch* 60°	Basket Hitch* 45°	Basket Hitch* 30°	Lengths of Loops — Suggested L, in	Lengths of Loops — Min	Slip-Thru Thimbles Size No	Crescent Thimbles Size No
1/4	1—6	0.53	0.71	1.2	1.0	0.71	6	6	W-2	5C
5/16	2—0	1.3	1.4	2.5	2.2	1.4	8	6	W-3	8C
3/8	2—6	2.2	2.5	4.4	3.6	2.5	12	8	W-4	9C
7/16	2—9	3.4	3.9	6.8	5.0	3.9	12	8	W-4	10C
1/2	3—6	4.9	5.6	9.8	8.0	5.6	16	10	W-5	14C
9/16	4—0	6.7	7.6	13	11	7.6	18	12	W-5	16C
5/8	4—6	8.7	9.9	17	14	9.9	18	12	W-5	18C
11/16	5—6	11	12	22	18	12	20	14	W-6	20C
3/4	6—6	14	15	27	22	15	24	18	W-7	22C
7/8	7—6	19	22	38	31	22	28	20	W-7	24C
1	8—9	26	30	52	42	30	32	24	W-8	32C
1	10—6	34	39	67	55	39	36	30	W-9	40C

* Larger sizes available upon request.
Rated capacities basket hitch based on D/d ratio of 25 times the component rope diameter.
Rated capacities based on pin diameter no larger than natural eye width or less than the nominal sling diameter.
Rated capacities based on design factor of 5.
Horizontal sling angles less than 30 degrees shall not be used.

** Rated capacities of choker hitches apply when the angle of choke is greater than 135°.
Available in Galvanized Aircraft Cable up to 3/8" ropes.

Type 18 Slings

8-PART BRAIDED

Diameter of Individual Ropes Inches	Diameter of Sling Body Inches	Min. Length (SL) of Sling ft—in.	Rated Capacities**						Inside Loop Dimensions Approx.	
			Single Leg Vertical	** Choker Hitch	Basket Hitch*					
					Straight Pull Vertical	60°	45°	30°	W in.	L in.
* 3/32	7/16	1—5	.59	.44	1.18	1.00	.83	.59	2	4
* 1/8	9/16	1—10	1.10	.82	2.20	1.90	1.50	1.10	3	6
* 3/16	13/16	2—10	2.20	1.80	4.30	3.70	3.00	2.20	5	10
* 1/4	1 1/8	3—6	3.80	3.30	7.60	6.60	5.40	3.80	6	12
* 5/16	1 3/8	4—6	5.90	5.20	12.00	10.00	8.30	5.90	8	16
* 3/8	1 11/16	5—0	8.50	7.40	17.00	15.00	12.00	8.50	8	16
7/16	2	5—9	11.00	10.00	23.00	20.00	16.00	11.00	9	18
1/2	2 1/4	6—5	15.00	13.00	30.00	26.00	21.00	15.00	9	18
9/16	2 1/2	8—0	19.00	16.00	38.00	33.00	27.00	19.00	12	24
5/8	2 13/16	9—4	23.00	20.00	46.00	40.00	33.00	23.00	14	28
3/4	3 3/8	—	33.00	29.00	66.00	57.20	47.85	33.20	—	—
7/8	4	—	45.00	39.00	89.00	77.60	63.80	45.55	—	—
1	4 1/2	—	58.00	51.00	116.00	100.60	82.35	58.35	—	—
1 1/8	5	—	73.00	64.00	146.00	126.00	103.00	73.00	—	—
1 1/4	5 5/8	—	89.00	78.00	179.00	155.00	127.00	89.00	—	—
1 3/8	6 3/16	—	108.00	94.00	215.00	186.00	152.00	108.00	—	—
1 1/2	6 3/4	—	128.00	112.00	255.00	221.00	181.00	128.00	—	—
1 5/8	7 5/16	—	148.00	129.00	296.00	256.00	209.00	148.00	—	—
1 3/4	7 7/8	—	171.00	150.00	343.00	297.00	242.00	171.00	—	—
1 7/8	8 7/16	—	195.00	171.00	390.00	338.00	276.00	195.00	—	—
2	9	—	222.00	194.00	444.00	384.00	314.00	222.00	—	—

Larger sizes available.

* Galvanized Aircraft Cable may be used on Individual Ropes up to 3/8" Dia.

** Rated capacities are given in tons of 2000 lb using EIPS rope with IWRC. Rated capacities of basket hitches are based on minimum diameter of curvature at the point of load contact of 20 times the rope diameter.

*** Rated capacities of choker hitches apply when the angle of choke is greater than 135°.

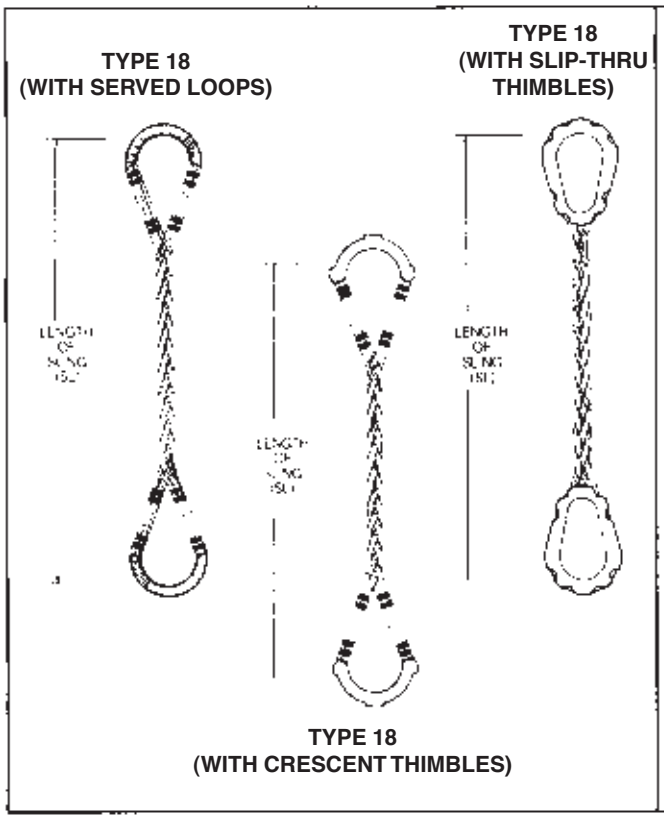
TYPE 18

PERTINENT DIMENSIONS FOR END FITTINGS

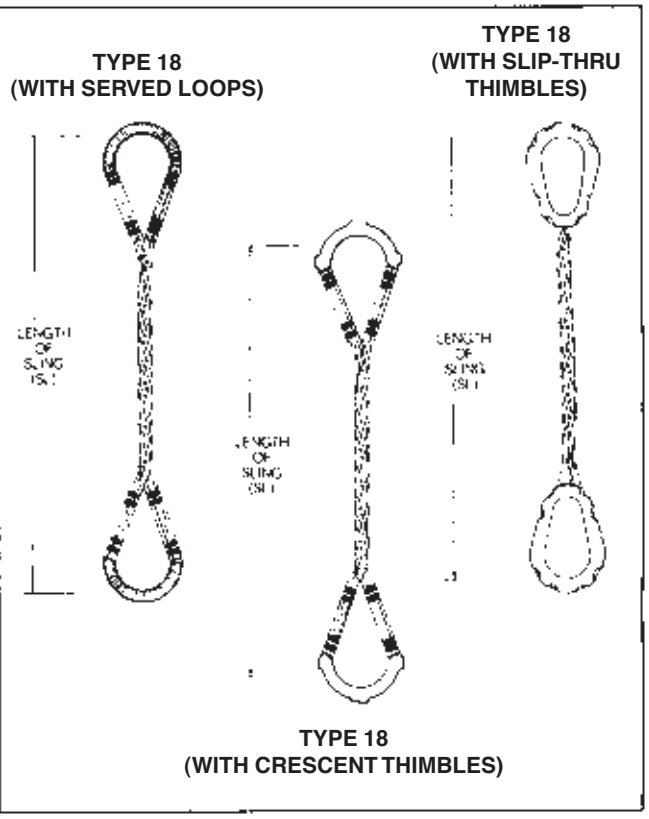
Sling Size Inches	LOOP		SLIP-THRU THIMBLE		ALLOY HOOK	SHACKLE with Thimble	HALF THIMBLE	
	INSIDE		INSIDE				INSIDE LOOP	
	Width In.	Length In.	Width In.	Length In.	Size Tons	Size In.	Width In.	Length In.
3/32	1 1/2	3	2 1/8	4 1/8	1	1/4		
1/8	2	4	2 1/8	4 1/8	1 1/2	3/8	2	4
3/16	3	6	2 3/8	4 3/8	3	1/2	2 1/4	6
1/4	4	8	3 3/8	6 5/8	4 1/2	5/8	3 1/4	8
5/16	5	10	3 3/4	7 1/8	7	3/4	4 1/2	10
3/8	6	12	3 3/4	7 1/8	11	7/8	4 5/8	12
7/16	7	14	4 3/8	8 3/8	15	1 1/8	5 1/2	14
1/2	8	16	5	9 1/2	15	1 1/4	6	16
9/16	9	18	5	9 1/2	22	1 1/2	6 1/2	18
5/8	10	20	6 3/4	11 3/4	30	1 3/4	7	20
3/4	12	24	8	14 1/2	37	2	8	24
7/8	14	28	8 3/8	17 5/8	45	2		
1	16	32	8 3/8	17 5/8	60	2 1/8		

Type 18
Braided Slings

8-PART FLAT BODY ERECTOR SLINGS



8-PART ROUND BODY ERECTOR SLINGS



Diam. of Individual Ropes in.	Min. Length (SL) of Sling ft—in.	Rated Capacities in Tons (2000 lb)										Lengths of Loops		Thimbles	
		EIPS—Fiber Core					EIPS—IWRC								
				Basket Hitch*					Basket Hitch*						
		** Choker Hitch	Single Leg Vertical	60°	45°	30°	** Choker Hitch	Single Leg Vertical	60°	45°	30°	Sug-gested L in.	Min L in.	Slip-Thru Thimbles Size No.	Crescent Thimbles Size No.
1/8	1—6	—	—	—	—	—	1	1.1	1.9	1.6	1.1	6	6	W-2	8C
3/16	2—0	1.7	1.9	3.3	2.7	1.9	1.9	2.2	3.7	3.0	2.2	10	6	W-3	9C
1/4	2—6	3.0	3.4	5.8	4.8	3.4	3.3	3.8	6.6	5.4	3.8	12	8	W-4	10C
5/16	2—9	4.6	5.2	9.1	7.4	5.2	5.2	5.9	10	8.3	5.9	16	8	W-5	14C
3/8	3—6	6.6	7.5	13	11	7.5	7.4	8.5	15	12	8.5	16	10	W-5	16C
7/16	4—0	8.9	10	18	14	10	10	11	20	16	11	18	12	W-6	18C
1/2	4—6	12	13	23	19	13	13	15	26	21	15	18	12	W-7	20C
9/16	5—6	15	17	29	24	17	16	19	33	27	19	24	14	W-7	22C
5/8	6—6	18	21	36	29	21	20	23	40	33	23	28	18	W-8	24C
3/4	7—6	26	29	51	41	29	29	33	57	47	33	30	20	W-9	28C
7/8	8—9	35	40	69	56	40	39	45	77	63	45	36	24	W-10	32C
1	10—6	45	51	89	73	51	51	58	100	82	58	48	30	W-10	40C
1 1/8	12—6	57	65	112	92	65	64	73	126	103	73	60	36	W-11	48C
1 1/4	15—0	70	80	138	113	80	78	89	155	127	89	72	42	W-11	—
1 3/8	18—8	84	96	166	135	96	94	108	186	152	108	84	54	—	—

* NOTE: 1/8 utilize Galvanized Small Cord minimum breakage force.
Rated capacities basket hitch based on D/d ratio of 25 times the component rope diameter.
Rated capacities based on pin diameter no larger than natural eye width or less than the nominal sling diameter.
Rated capacities based on design factor of 5.
Horizontal sling angles less than 30 degrees shall not be used.

** Rated capacities of choker hitches apply when the angle of choke is greater than 135°.
Also available made from Galvanized Aircraft Cable.
Larger sizes available.

Braided Slings
Type 19

Cross Section
Through Body

Helically laid with one continuous wire rope running through both eyes and the body

Flexibility and handing ease for rigging large lifts is achieved in these 9-part slings by laying a single wire rope continuously through both eyes and the sling body so that nine parts of rope form the body. This proven design provides internal adjustment to distribute the load evenly among all nine parts of the body when a sling is in tension. In addition, the construction makes it possible to visually inspect all internal parts of the sling before and after each lift – important when a sling is to be used many times. Only two splices occur in the entire sling, where the two rope ends are spliced at the eyes.

A 9-part sling construction exhibits constructional stretch of approximately 1 $^1/_2$% on the first loading, and a lesser amount thereafter. For this reason, lifts using two or more legs should always be made with legs which have been subjected to the same past usage when such stretch may affect the lift.

Where a sling body must conform to a tight choke hitch, or must bend in a tight radius, as around a pin or post, a 9-part construction may be the most suitable, since it can develop greater lifting capacity from a smaller component rope.

Conforms with WRTB Publication “Wire Rope Sling Users Manual”.

9-PART BRAID
HAND TUCKED SPLICE
IWRC
VERTICAL, CHOKER OR VERTICAL BASKET
RATED CAPACITY IN TONS OF 2,000 lbs.
RATED CAPACITIES SHOWN APPLY ONLY TO 6X19 AND 6X36 CLASSIFICATION WIRE ROPE

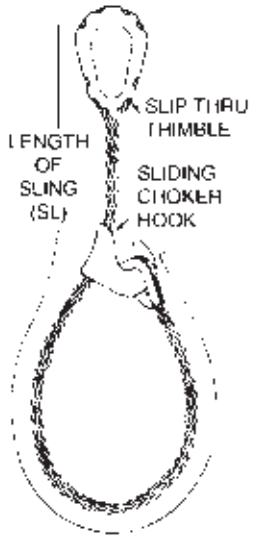
ROPE DIAMETER (INCHES)	VERTICAL		CHOKER		VERTICAL BASKET	
	IPS	EIPS	IPS	EIPS	IPS	EIPS
3/32*	0.63		0.55		1.3	
1/8*	1.3		1.1		2.5	
3/16	2.1	2.4	1.8	2.1	4.2	4.8
1/4	3.7	4.3	3.2	3.7	7.4	8.6
5/16	5.8	6.6	5.0	5.8	12	13
3/8	8.3	9.5	7.2	8.3	17	19
7/16	11	13	9.8	11	22	26
1/2	14	17	13	15	29	34
9/16	18	21	16	19	37	42
5/8	23	26	20	23	45	52
3/4	32	37	28	32	65	74
7/8	44	50	38	44	87	100
1	57	65	50	57	113	130
1 1/8	71	82	62	72	142	164
1 1/4	87	101	77	88	175	201
1 3/8	105	121	92	106	210	242
1 1/2	125	144	109	126	249	287
1 5/8	145	166	127	146	290	333
1 3/4	168	193	147	169	335	386
1 7/8	192	219	168	192	383	438
2	217	249	190	218	433	499

* NOTE: 3/32 & 1/8 utilize Galvanized Small Cord minimum breaking force.

Rated capacities basket hitch based on D/d ratio of 25 times the component rope diameter.
Rated capacities based on pin diameter no larger than natural eye width or less than the nominal sling diameter.
Rated capacities based on design factor of 5
Horizontal sling angles less than 30 degrees shall not be used.

Choker Slings

Braided Slings



TYPE 18

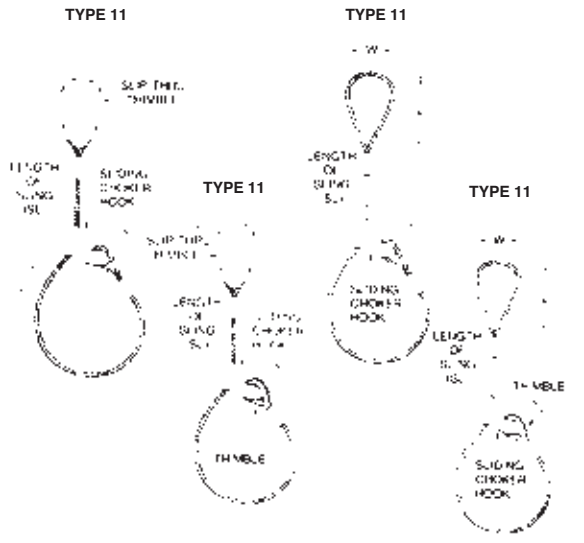
CHOKER HITCH RATING

Diameter of Ropes in Braided Sling Inches	Rated Capacities** in Tons (2000 lb)		Slip-Thru Thimbles	Choker Hooks
	EIPS Fiber Core	EIPS IWRC	Size No.	Size No.
1/8	—	1.0	W-2	2
3/16	2.7	1.9	W-3	3
1/4	3.6	3.3	W-4	4
5/16	4.6	5.2	W-5	5
3/8	6.6	7.4	W-5	6
7/16	8.9	10	W-6	7
1/2	12	13	W-7	8

** Rated capacities of basket hitches are based on a minimum diameter of curvature at the point of load contact of 25 times the component rope diameter.

Rated capacities of choker hitches apply when the angle of choke is greater than 135°.

Flemished Eye & Mechanically Swaged



Diameter of Individual Ropes Inches	Rated Capacities** in Tons (2000 lb)		Slip-Thru Thimbles	Spliced Loops		Sliding Choker Hooks	
	EIPS Fiber Core	EIPS IWRC	Size No.	W in.	L in.	Size No.	Weight lbs
1/4	.42	.48	W-2	2	2	1/4 - 5/16	1.0
3/8	.94	1.1	W-2	3	3	3/8	0.8
1/2	1.6	1.9	W-3	4	4	1/2	1.25
5/8	2.6	2.9	W-4	5	5	5/8	2.5
3/4	3.7	4.1	W-4	6	6	3/4	4.5
7/8	5.8	5.6	W-5	7	7	7/8 - 1	10
1	6.4	7.2	W-5	8	8	7/8 - 1	10
1 1/8	8.1	9	W-6	9	9	1 1/8 - 1 1/4	26
1 1/4	9.9	11	W-6	10	10	1 1/8 - 1 1/4	26
1 3/8	12	13	W-7	11	11	1 3/8 - 1 1/2	42
1 1/2	14	16	W-7	12	12	1 3/8 - 1 1/2	42

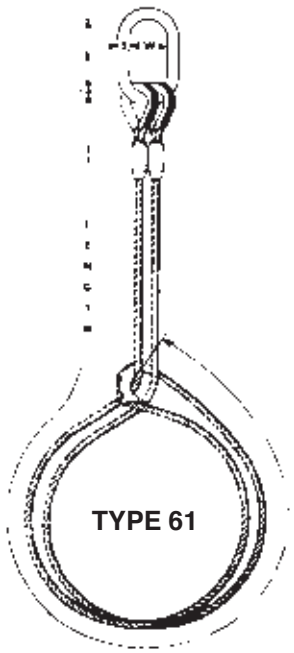
* When ordered (no HT): Bottom Eye will be supplied standard size (with no thimble).
** Rated capacities of choker hitches apply when the angle of choke is greater than 135°.

Choker Slings

TAPERED SLEEVE ATTACHMENTS

These Choker Slings are designed to grip or choke the load. Ideally suited to lifting bar stock, beams, lumber, bundles of pipe and similar material. The tapered sleeve splice, as well as the anchor hitch on Type 61, allows close snubbing of the load, insuring a positive grip.

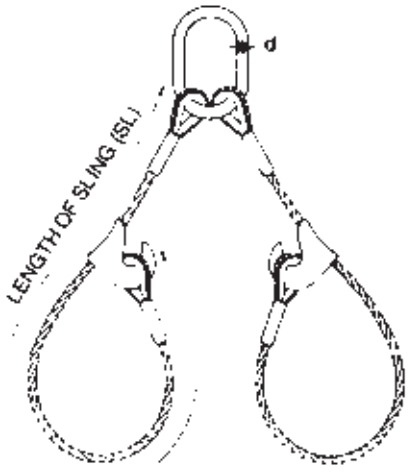
The use of sliding choker hooks on Type 21 increases sling life and permits faster handling.



TYPE 61

For Ratings on Type 61 shown above call IRSCI.

TWO LEG BRIDLE CHOKER SLING - TYPE 21



TYPE 21

Diameter of Wire Rope Inches	Rated Capacities* in Tons (2000 lb) EIPS (WIC)** When Used at			Sliding Choker Hooks		Alloy Oblong Links
	60°	45°	30°	Size	WI lb	d in
5/8	1.8	1.5	1.1	3/4	8	1/2
1/2	3.2	2.6	1.9	3/4	1.25	3/4
5/8	5.0	4.1	2.9	3/4	2.5	3/4
3/4	7.1	5.8	4.1	3/4	4.5	1
7/8	9.7	7.9	5.6	1 1/4—1	8	1 1/4
1	13	10	7.2	1 1/4—1	8	1 1/2
1 1/8	16	13	9.1	1 1/4—1 1/4	26	1 1/2
1 1/4	19	16	11	1 1/4—1 1/2	28	1 3/4
1 3/8	23	19	13	1 3/4—1 1/2	42	2
1 1/2	28	23	16	1 3/4—1 1/2	42	2

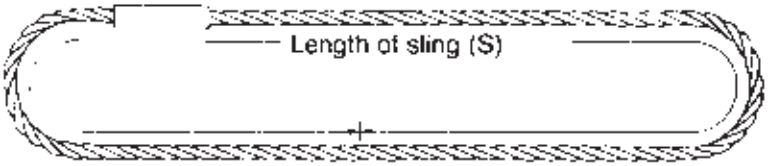
*Rated capacities are based on minimum diameter of curvature at the point of load contact of 25 times the rope diameter. Rated capacities of choker hitches apply when the angle of choke is greater than 135°.

**Information on EEIPS ropes and fitting sizes with higher rated capacities is available on request.

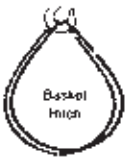
Grommet Slings

Mechanically Spliced

TYPE 53
STRAND-LAID CONSTRUCTION

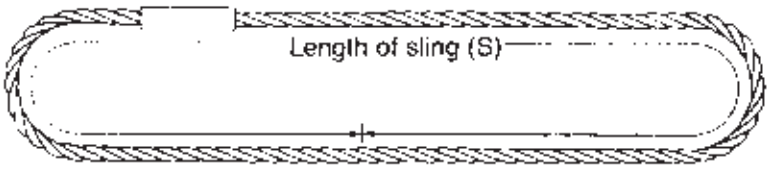


Diam. of Grommet Inches	Rated Capacities in Tons (2000 lb) EIPS				
	Choker Hitch	Leg Vertical	Basket Hitch When Used		
			30°	45°	60°
3/8	1.6	2.4	4.1	3.3	2.4
1/2	2.9	4.1	7.2	5.9	4.1
5/8	4.5	6.4	11	9.1	6.4
3/4	6.4	9.2	16	13	9.2
7/8	8.7	12	22	18	12
1	11	16	28	23	16



Larger sizes available upon request
Rated capacities basket hitch and vertical lift based on D/d ratio of 5 where "d" = body diameter of the finished grommet
Rated capacities based on design factor of 5.
Rated capacities based on pin diameter no smaller than 5 times the body diameter.
Horizontal sling angles less than 30 degrees shall not be used.
Length of sling (SL) is measured as indicated on sketch.
Rated capacities of choker hitches apply when the angle of choke is greater than 120°.

TYPE 54 FLEXIBLE GROMMET SLINGS
CABLE-LAID CONSTRUCTION



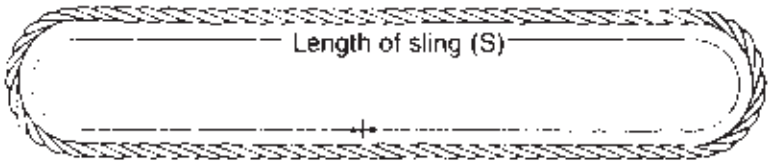
Diam of Grommet Inches	Construction of Grommet	Rated Capacities in Tons (2000 lb) EIPS				
		Choker Hitch	Leg Vertical	Basket Hitch When Used		
				30°	45°	60°
3/8	7 x 7 x 7	1.2	1.8	3.1	2.5	1.8
1/2	7 x 7 x 7	2.0	3.0	5.3	4.3	3.0
5/8	7 x 7 x 7	3.0	4.6	7.9	6.4	4.6
3/4	7 x 6 x 19	4.1	6.2	11	8.8	6.2
1	7 x 6 x 19	6.8	11	18	15	11

Larger sizes available upon request
Rated capacities basket hitch and vertical lift based on D/d ratio of 5 where "d" = body diameter of the finished grommet
Rated capacities based on design factor of 5.
Rated capacities based on pin diameter no smaller than 5 times the body diameter.
Horizontal sling angles less than 30 degrees shall not be used.
Length of sling (SL) is measured as indicated on sketch.
Rated capacities of choker hitches apply when the angle of choke is greater than 120°.

Grommet Slings

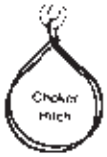
Hand Tucked

TYPE 51
STRAND-LAID CONSTRUCTION

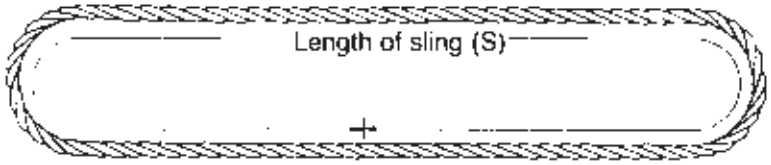


Diam. of Grommet Inches	Rated Capacities in Tons (2000 lb) EIPS				
	Choker Hitch	Leg Vertical	Basket Hitch When Used		
			30°	45°	60°
3/8	1.5	2.9	3.6	3.0	2.1
1/2	2.6	3.7	6.4	5.2	3.7
5/8	4.0	5.7	9.9	8.1	5.7
3/4	5.7	8.2	14	12	8.2
7/8	7.7	11	19	16	11
1	10	14	25	20	14

Larger sizes available on request
Length of sling (SL) is measured as indicated on sketch
Rated capacities of choker hitches apply when the angle of choke is greater than 120°



TYPE 52 FLEXIBLE GROMMET SLINGS
CABLE-LAID CONSTRUCTION



Diam. of Grommet Inches	Diam. of Rope Used Inches	Construction of Grommet	Rated Capacities in Tons (2000 lb) EIPS				
			Choker Hitch	Leg Vertical	Basket Hitch When Used		
					30°	45°	60°
3/8	1/8	7 x 7 x 7	1.2	1.6	2.8	2.3	1.6
9/16	3/16	7 x 7 x 7	2.0	3.5	6.0	4.9	3.5
5/8	1/2	7 x 7 x 7	3.0	4.5	7.8	6.4	4.5
3/4	1/4	7 x 6 x 19	4.1	5.6	9.7	7.9	5.6
15/16	5/16	7 x 6 x 19	6.8	8.7	15	12	8.7

Larger sizes available on request
Length of sling (SL) is measured as indicated on sketch
Rated capacities of choker hitches apply when the angle of choker is greater than 120°

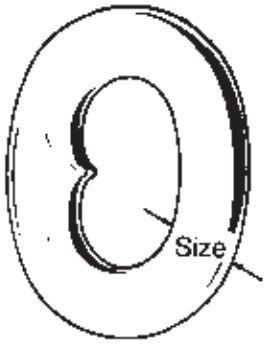
Rated capacities basket hitch and vertical lift based on D/d ratio of 5 where "d" = body diameter of the finished grommet
Rated capacities based on design factor of 5.
Rated capacities based on pin diameter no smaller than 5 times the body diameter.
Horizontal sling angles less than 30 degrees shall not be used.

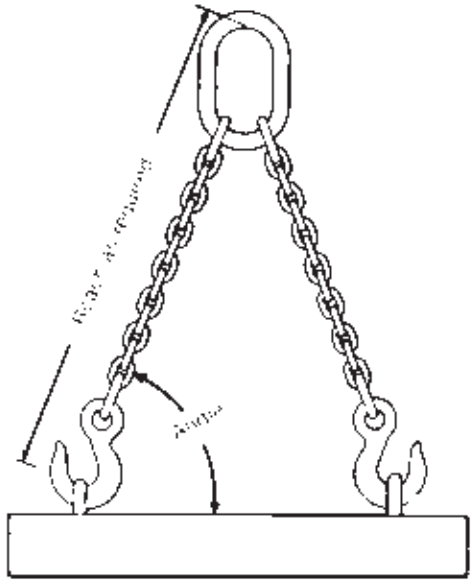
Chain

Alloy Chain Slings

HOW TO ORDER THE PROPER CHAIN SLING

When ordering, please be sure to include the following:





SIZE

Size means diameter of the material from which the link of the body chain is formed. Throughout this bulletin, size will be given in fractions.

REACH("PULL TO PULL")

If chain slings are to be used in pairs and are to be matched for reach, please indicate when ordering.

TYPE

In describing the type of chain sling, the following symbols should be used. If attachments required are other than standard, give detailed specifications and description.

First symbol (basic type)

S — Single chain sling.
C — Single Choker chain sling with a standard end link on each end, no hooks.
D — Double branch chain sling.
T — Triple branch chain sling.
Q — Quadruple branch chain sling.

Second symbol (type of master link or end link)

O — Oblong master link of standard dimensions.
P — Pear-shaped master link (available on request, not a standard item).

Third symbol (type of hook)

S — Sling hook
G — Grab hook
F — Foundry hook
L — Latchlok
PH — Plate hook (available on request, not a standard item).
PC — Plate clamp (available on request, not a standard item).

Grade 80 & 100 Alloy Chain

GENERAL INFORMATION

WORKING LOAD LIMIT

The "Working Load Limit" is the maximum load in pounds which should ever be applied to chain, when the chain is new or "in as new" condition, and when the load is uniformly applied in direct tension to a straight length of chain.

PROOF TEST

The "Proof Test" is a term designating the tensile test applied to new chain for the sole purpose of detecting injurious defects in the material or manufacture. It is the load which the chain has withstood under a test in which the load has been applied in direct tension to a straight length of chain.

MINIMUM ULTIMATE LOAD

The "Minimum Ultimate Load" is the minimum load at which new chain will break when tested by applying direct tension to a straight length of chain at a uniform rate of speed in a testing machine.

ATTACHMENTS

Any attachments, such as hooks or links, should have a rated "Working Load Limit" at least equal to the chain with which it is used.

SYMMETRICAL LOADING

Rated Working Load Limit assumes symmetrical loading of all sling legs.

SPECIFICATIONS: ANSI / ASME B30.9 2006

Paragraph 9-1.6.1 "Prior to initial use, all new and repaired chain and components of an alloy steel chain sling, either individually or as an assembly, shall be proof tested by the sling manufacturer or qualified person."

CAUTION

Only Crosby Alloy chain, Spectrum 8® or Spectrum 10®, should be used for overhead lifting applications.

General Usage – It must be recognized that certain factors in the usage of chain and attachments can be abusive and lessen the load that the chain or attachments can withstand. Some examples are twisting of the chain; disfigurement; deterioration by straining, usage, weathering and corrosion; rapid application of load or jerking; applying excessive loads; sharp corner cutting action and non-symmetrical loading effects.

When using chain slings in choker applications, the Working Load Limit must be reduced by 20%. Crosby recommends a minimum angle of choke of 120 degrees. Consult Crosby when planning to use an angle of choke of less than 120 degrees. If Crosby A-1338 cradle grab hooks are used at a minimum angle of choke of 120 degrees, the full sling rated WLL can be utilized.

In shortening applications, a 20% reduction of the Working Load Limit is required except when using the Crosby A-1338 cradle grab hooks or S-1311N chain shortener link. They can be used without any reduction to the Working Load Limit.

Care should be taken to observe these derated applications or chain may fracture or permanently stretch at loads less than the advertised chain ultimate strength and proof load respectively.

Environmental Effects – Excessive high or low temperatures, or exposure to chemically active environments such as acids or corrosive liquids or fumes, can reduce the performance of the chain.

Temperature

- Extreme temperatures will reduce the performance of alloy steel chain slings.
- Normal operating temperature is -40° F to 400° F (-40° C to 204° C).
- See the temperature exposure chart (Table 1) to determine reduction of WLL due to operation at, and exposure to, elevated temperatures.

Chemically Active Environments can have detrimental effects on the performance of chain. The effects can be both visible loss of material and undetectable material degradation causing significant loss of strength.

- Usage Exposure – Exposure to chemically active environments such as acids or corrosive liquids or fumes can reduce the performance of the chain.
- Special Surface Coating/Plating/Galvanizing – Chain should not be subjected to galvanizing, or any plating process.
- If it is suspected that the chain has been exposed to chemically active environment, remove from service.

TABLE 1
Use of Crosby Alloy Chain at Elevated Temperatures

Temperature of Chain		Grade 8 (80) Chain		Grade 10 (100) Chain	
(F°)	(C°)	Temporary Reduction of Rated Load at Elevated Temperature*	Permanent Reduction of Rated Load After Exposure to Temperature**	Temporary Reduction of Rated Load at Elevated Temperature*	Permanent Reduction of Rated Load After Exposure to Temperature**
Below 400	Below 204	None	None	None	None
400	204	10%	None	15%	None
500	260	15%	None	25%	5%
600	316	20%	5%	30%	15%
700	371	30%	10%	40%	20%
800	427	40%	15%	50%	25%
900	482	50%	20%	60%	30%
1000	538	60%	25%	70%	35%
Over 1000	Over 538	OSHA 1910.184 and ASME B30.9 requires all slings exposed to temperatures over 1000° F to be removed from service.			

* Crosby does not recommend the use of Alloy Chain at temperatures above 800° F.

** When chain is used at room temperature after being heated to temperatures shown in the first column.

Crosby® Grade 100 Chain Sling Configurations

TO MAKE YOUR CROSBY® GRADE 100 ALLOY CHAIN SLING

Follow these simple steps in making a sling assembly:

1. Determine the maximum load to be lifted by the sling assembly.
2. Choose the type of sling assembly suited for the shape of the load and the size of the sling assembly for the load to be lifted. The decision must take into account the angle of the sling legs in multileg slings.
3. Determine the overall reach from bearing point of master link to bearing point on hook (see Fig. 1).
4. Select components, assemble chain and components.
5. Affix sling identification tag to sling. The tag is available from your Authorized Crosby Distributor.

Fig. 1

Each sling shall be marked to show: name or trademark of manufacturer, grade, nominal chain size, number of legs, rated load for the type(s) of hitch(es) used and angle upon which it is based (reach).

If measurement comes in the link, cut the following link. For two leg type slings, count the links and use an even number for clevis hooks and an odd number for eye hooks. This will position hooks in the same plane. In multileg slings always use the same number of links in each leg.

When using chain slings in choker applications, the Working Load Limit must be reduced by 20%. Crosby recommends a minimum angle of choke of 120 degrees. Consult Crosby when planning to use an angle of choke of less than 120 degrees. If Crosby A-1338 cradle grab hooks are used at a minimum angle of choke of 120 degrees, the full sling rated WLL can be utilized.

In shortening applications, a 20% reduction of the Working Load Limit is required except when using the Crosby A-1338 cradle grab hooks or S-1311N chain shortener link. They can be used without any reduction to the Working Load Limit.

The Slings shown here are standard assemblies that can be made from "Proof Tested" Crosby Components and Alloy Chain supplied by your authorized Crosby distributor. Assemblies must include chain sling identification tag (not shown).

TYPE CO | TYPE SOS | TYPE SOG | TYPE SOF | TYPE SSS | TYPE SGS | TYPE ASOS | TYPE ASOF | TYPE ASOG | TYPE SOCH

Type	Description	Type	Description
CO	Single Chain Sling with Master Link each end	SGS	Single Chain Sling with Grab Hook and Sling Hook
SOS	Single Chain Sling with Master Link and Sling Hook	ASOS	Adjustable Single Chain with Master Link and Sling Hook
SOG	Single Chain Sling with Master Link and Grab Hook	ASOF	Adjustable Single Chain Sling with Master Link and Foundry Hook
SOF	Single Chain Sling with Master Link and Foundry Hook	ASOG	Adjustable Single Chain Sling with Master Link and Grab Hook
SSS	Single Chain Sling with Sling Hook each end	SOCH	Single with 1355 Choker

TYPE DOS | TYPE DOG | TYPE DOF | TYPE ADOS | TYPE ADOG | TYPE DOCH

Type	Description	Type	Description
DOS	Double Chain Sling with Master Link and Sling Hook	ADOS	Adjustable Double Chain Sling with Master Link and Sling Hook
DOG	Double Chain Sling with Master Link and Grab Hook	ADOG	Adjustable Double Chain Sling with Master Link and Grab Hook
DOF	Double Chain Sling with Master Link and Foundry Hook	DOCH	Double with 1355 Choker

TYPE TOS | TYPE TOG | TYPE TOF | TYPE TOCH | TYPE QOS | TYPE QOG | TYPE QOF

Type	Description	Type	Description
TOS	Triple Chain Sling with Master Link and Sling Hook	QOS	Quadruple Chain Sling with Master Link and Sling Hook
TOG	Triple Chain Sling with Master Link and Grab Hook	QOG	Quadruple Chain Sling with Master Link and Grab Hook
TOF	Triple Chain Sling with Master Link and Foundry Hook	QOF	Quadruple Chain Sling with Master Link and Foundry Hook
TOCH	Triple with 1355 Choker		

Crosby ELIMINATOR®

TO ORDER YOUR CROSBY ELIMINATOR® GRADE 100 ALLOY CHAIN SLING

Follow these simple steps to order a sling assembly:

1. Determine the maximum load to be lifted by the sling assembly.
2. Choose the type of sling assembly suited for the shape of the load and the size of the sling assembly for the load to be lifted. The decision must take into account the angle of the sling legs in multileg slings.
3. Determine the overall reach from bearing point of Eliminator Bail to bearing point on hook (see Fig. 1).
4. Select components, assemble chain and components.
5. Affix sling identification tag to sling. The tag is available from your Authorized Crosby Distributor.

Fig. 1

Each sling shall be marked to show: name or trademark of manufacturer, grade, nominal chain size, number of legs, rated load for the type(s) of hitch(es) used and angle upon which it is based (reach).

When using chain slings in choker applications, the Working Load Limit must be reduced by 20%. Crosby recommends a minimum angle of choke of 120 degrees. Consult Crosby when planning to use an angle of choke of less than 120 degrees. If Crosby A-1338 cradle grab hooks are used at a minimum angle of choke of 120 degrees, the full sling rated WLL can be utilized.

In shortening applications, a 20% reduction of the Working Load Limit is required except when using the Crosby A-1338 cradle grab hook, S-1311N chain shortener link or the Crosby ELIMINATOR® Shortener Link. They can be used without any reduction to the Working Load Limit.

TYPE ESOS TYPE ESOG TYPE ESOL TYPE ESOF

Type	Description	Type	Description
ESOS	Crosby ELIMINATOR® Single Chain Sling with Sling Hook	ESOL	Crosby ELIMINATOR® Single Chain with SHUR-LOC® Hook
ESOG	Crosby ELIMINATOR® Single Chain Sling with Grab Hook	ESOF	Crosby ELIMINATOR® Single Chain with Foundry Hook

TYPE EDOS TYPE EDOG TYPE EDOL TYPE EDOF

Type	Description	Type	Description
EDOS	Crosby ELIMINATOR® Double Chain Sling with Sling Hooks	EDOL	Crosby ELIMINATOR® Double Chain with SHUR-LOC® Hooks
EDOG	Crosby ELIMINATOR® Double Chain Sling with Grab Hooks	EDOF	Crosby ELIMINATOR® Double Chain with Foundry Hooks

TYPE ETOS TYPE ETOG TYPE ETOL TYPE ETOF TYPE EQOS TYPE EQOG TYPE EQOL TYPE EQOF

Type	Description	Type	Description
ETOS	Crosby ELIMINATOR® Triple Chain Sling with Master Link and Sling Hooks	EQOS	Crosby ELIMINATOR® Quad Chain Sling with Master Link and Sling Hooks
ETOG	Crosby ELIMINATOR® Triple Chain Sling with Master Link and Grab Hooks	EQOG	Crosby ELIMINATOR® Quad Chain Sling with Master Link and Grab Hooks
ETOL	Crosby ELIMINATOR® Triple Chain Sling with Master Link and SHUR-LOC® Hooks	EQOL	Crosby ELIMINATOR® Quad Chain Sling with Master Link and SHUR-LOC® Hooks
ETOF	Crosby ELIMINATOR® Triple Chain Sling with Master Link and Foundry Hooks	EQOF	Crosby ELIMINATOR® Quad Chain Sling with Master Link and Foundry Hooks

Grade 100 Assembly Chart

SINGLE LEG SLING

													
Spectrum 10® Chain Size		Grade 100 Chain Stock No.	Master Link A-1342N + Stock No	Master Link Assembly A-1345N + Stock No	Master Link A-342 Stock No	Master Link A-345 Stock No	ELIMINATOR® L-1361 Stock No.	LOK-A-LOY® A-1337 Stock No.	Chain Coupler S-1325A Stock No.	Chain Shortener Link S-1311N Stock No.	SHUR-LOC® Clevis Hook S-1317 Stock No.	SHUR-LOC® Swivel Hook S-1316 Stock No.	SHUR-LOC® Swivel Hook S-1326 Stock No.
(in.)	(mm)												
1/4 (9/32)	7	273710	1011403X1	—	1014266	—	1049802	1015104	1098500	1017869	1029000	1022914	1004313
5/16	8	273729	1011412X2	—	1014266 1014280 1014285	—	1049809	1015113	1098504	1017878	1029009	1022914	1004313
3/8	10	273738	1011421X3	—	1014285 1014319	—	1049818	1015122	1098508	1017897	1029018	1002923	1004323
1/2	13	273747	1011430X4	—	1014319 1014331	—	1049827	1015136	1098512	1017906	1029027	1002932	1004331
5/8	16	273756	1011449X5	—	1014331 1014348	—	1049836	1015145	1098516	1017915	1029036	1002941	1004340
3/4	20	273858	1011458X6	—	1014348 1014365	—	—	1015154	—	—	1021071	1022942	1004349
7/8	22-23	273867	1011467X7	—	1014365 1014388	—	—	1015163	—	—	1029080	1022943	1004358
1	26	273876	—	—	1014388 1014404	—	—	1015172	—		1029089	1022944	–
1-1/4	32	—	—	—	1014404 1014422	—	—	1015181	—				

DOUBLE LEG SLING

Spectrum 10® Chain Size		Grade 100 Chain Stock No.	Master Link A-1342N + Stock No	Master Link Assembly A-1345N + Stock No	Master Link A-342 Stock No	Master Link A-345 Stock No	ELIMINATOR® L-1362 Stock No.	LOK-A-LOY® A-1337 Stock No.	Chain Coupler S-1325A Stock No.	Chain Shortener Link S-1311N Stock No.	SHUR-LOC® Clevis Hook S-1317 Stock No.	SHUR-LOC® Swivel Hook S-1316 Stock No.	SHUR-LOC® Swivel Hook S-1326 Stock No.
(in.)	(mm)												
1/4 (9/32)	7	273710	1011403X1	—	1014266	—	1049913	1015104	1098500	1017869	1029000	1022914	1004313
5/16	8	273729	1011412X2	—	1014285	—	1049922	1015113	1098504	1017878	1029009	1022914	1004313
3/8	10	273738	1011421X3	—	1014319	—	1049931	1015122	1098508	1017897	1029018	1002923	1004323
1/2	13	273747	1011430X4	—	1014331	—	1049940	1015136	1098512	1017906	1029027	1002932	1004331
5/8	16	273756	1011449X5	—	1014348	—	1049949	1015145	1098516	1017915	1029036	1002941	1004340
3/4	20	273858	1011458X6	—	1014365	—	—	1015154	—	—	1021071	1022942	1004349
7/8	22-23	273867	1011467X7	—	1014388	—	—	1015163	—	—	1029080	1022943	1004358
1	26	273876	—	—	1014404	—	—	1015172	—		1029089	1022944	–
1-1/4	32	—	—	—	1014468	—	—	1015181	—				

TRIPLE AND QUAD LEG SLINGS

Spectrum 10® Chain Size		Grade 100 Chain Stock No.	Master Link A-1342N + Stock No	Master Link Assembly A-1345N + Stock No	Master Link A-342 Stock No	Master Link A-345 Stock No	ELIMINATOR® Stock No.	LOK-A-LOY® A-1337 Stock No.	Chain Coupler S-1325A Stock No.	Chain Shortener Link S-1311N Stock No.	SHUR-LOC® Clevis Hook S-1317 Stock No.	SHUR-LOC® Swivel Hook S-1316 Stock No.	SHUR-LOC® Swivel Hook S-1326 Stock No.
(in.)	(mm)												
1/4 (9/32)	7	273710	—	1011510	—	1014739	See Page 219	1015104	1098500	1017869	1029000	1022914	1004313
5/16	8	273729	—	1011510	—	1014742		1015113	1098504	1017878	1029009	1022914	1004313
3/8	10	273738	—	1011529	—	1014766		1015122	1098508	1017897	1029018	1002923	1004323
1/2	13	273747	—	1011538	—	1014779		1015136	1098512	1017906	1029027	1002932	1004331
5/8	16	273756	—	1011547	—	1014807		1015145	1098516	1017915	1029036	1002941	1004340
3/4	20	273858	—	1011556	—	1014810		1015154	—	—	1021071	1022942	1004349
7/8	22-23	273867	—	1011565	—	1014845		1015163	—	—	1029080	1022943	1004358
1	26	273876	—	—	—	1014845		1015172	—		1029089	1022944	—
1-1/4	32	—	—	—	—	1014986		1015181	—				

Grade 100 Assembly Chart

SINGLE LEG SLING

										
Spectrum 10® Chain Size		SHUR-LOC® Swivel Hook w/ Bearing S-13326 Stock No.	Clevis Sling Hook L-1339 Stock No.	Eye Sling Hook L-1327 Stock No.	Cradle Grab Hook A-1338* Stock No.	Clevis Grab Hook A-1358* Stock No.	Eye Grab Hook A-1328 Stock No.	Clevis Foundry Hook A-1359 Stock No.	Eye Foundry Hook A-1329 Stock No.	Chain Choker A-1355 Stock No.
(in.)	(mm)									
1/4 (9/32)	7	1004413	1049112	1025869	1049417	1049610	1026169	1049907	1026280	1015204
5/16	8	1004413	1049121	1025869	1049426	1049629	1026169	1049911	1026280	1015204
3/8	10	1004422	1049130	1025878	1049435	1049638	1026187	1049916	1026289	1015213
1/2	13	1004431	1049149	1025887	1049444	1049647	1026196	1049925	1026297	1015222
5/8	16	1004440	1049158	1025896	1049453	1049656	1026205	1049934	1026306	1015231
3/4	20	—	1049167	1025915	—	—	1026214	1049943	1026315	—
7/8	22-23	—	1049176	1025924	—	—	1026223	1049952	1026324	—
1	26	—	—	1025933	—	—	1016232	—	1026333	—
1-1/4	32	—	—	1025942	—	—	1026241	—	1026342	—

DOUBLE LEG SLING

Spectrum 10® Chain Size		SHUR-LOC® Swivel Hook w/ Bearing S-1326 Stock No.	Clevis Sling Hook L-1339 * Stock No.	Eye Sling Hook L-1327 Stock No.	Cradle Grab Hook A-1338* Stock No.	Clevis Grab Hook A-1358* Stock No.	Eye Grab Hook A-1328 Stock No.	Clevis Foundry Hook A-1359 Stock No.	Eye Foundry Hook A-1329 Stock No.	Chain Choker A-1355 Stock No.
(in.)	(mm)									
1/4 (9/32)	7	1004413	1049112	1025869	1049417	1049610	1026169	1049907	1026280	1015204
5/16	8	1004413	1049121	1025869	1049426	1049629	1026169	1049911	1026280	1015204
3/8	10	1004422	1049130	1025878	1049435	1049638	1026187	1049916	1026289	1015213
1/2	13	1004431	1049149	1025887	1049444	1049647	1026196	1049925	1026297	1015222
5/8	16	1004440	1049158	1025896	1049453	1049656	1026205	1049934	1026306	1015231
3/4	20	—	1049167	1025915	—	—	1026214	1049943	1026315	—
7/8	22-23	—	1049176	1025924	—	—	1026223	1049952	1026324	—
1	26	—	—	1025933	—	—	1026232	—	1026333	—
1-1/4	32	—	—	1025942	—	—	1026241	—	1026342	—

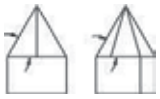
TRIPLE AND QUAD LEG SLINGS

Spectrum 10® Chain Size		SHUR-LOC® Swivel Hook w/ Bearing S-1326 Stock No.	Clevis Sling Hook L-1339 Stock No.	Eye Sling Hook L-1327 Stock No.	Cradle Grab Hook A-1338* Stock No.	Clevis Grab Hook A-1358* Stock No.	Eye Grab Hook A-1328 Stock No.	Clevis Foundry Hook A-1359 Stock No.	Eye Foundry Hook A-1329 Stock No.	Chain Choker A-1355 Stock No.
(in.)	(mm)									
1/4 (9/32)	7	1004413	1048991	1025869	1049417	1049610	1026169	1049907	1026280	1015204
5/16	8	1004413	1049000	1025869	1049426	1049629	1026169	1049911	1026280	1015204
3/8	10	1004422	1049009	1025878	1049435	1049638	1026187	1049916	1026289	1015213
1/2	13	1004431	1049018	1025887	1049444	1049647	1026196	1049925	1026297	1015222
5/8	16	1004440	1049027	1025896	1049453	1049656	1026205	1049934	1026306	1015231
3/4	20	—	1049036	1025915	—	—	1026214	1049943	1026315	—
7/8	22-23	—	1049045	1025924	—	—	1026223	1049952	1026324	—
1	26	—	—	1025933	—	—	1026232	—	1026333	—
1-1/4	32	—	—	1025942	—	—	1026241	—	1026342	—

* Available with latch attached.

Grade 100 Chain Sling Components

WORKING LOAD LIMIT – 4 TO 1 DESIGN FACTOR

Chain Size		90°	60°	45°	30°	60°	45°	30°
								
(in.)	(mm)	Single Leg	Double Leg			Triple and Quad Leg		
—	6	3200	5500	4500	3200	8300	6800	4800
1/4 (9/32)	7	4300	7400	6100	4300	11200	9100	6400
5/16	8	5700	9900	8100	5700	14800	12100	8500
3/8	10	8800	15200	12400	8800	22900	18700	13200
1/2	13	15000	26000	21200	15000	39000	31800	22500
5/8	16	22600	39100	32000	22600	58700	47900	33900
3/4	20	35300	61100	49900	35300	91700	74900	52950
7/8	22	42700	74000	60400	42700	110900	90600	64000
1	26	59700	103400	84400	59700	155100	12600	89550
1-1/4	32	90400	156600	127800	90400	234900	191700	135600

*For choker applications, the Working Load Limit must be reduced by 20%. The Crosby A-1338 cradle grab hook and S1311N chain shortner link do not require any reduction of the Working Load Limit. The design factor of 4 to 1 on Spectrum® 10 Alloy Chain agrees with the design factor used by the International Standards Organization (I.S.O.) and ANSI B30.9 and is the preferred set of Working Load Limit values to be used.

Crosby ELIMINATOR® Fittings

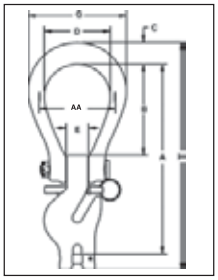
Fatigue Rated® | QT® Quenched & Tempered | QUIC-CHECK® | Crosby 8/10™ | RFID EQUIPPED

A-1361

The Crosby ELIMINATOR® combines selected features and functionality of a master link, connecting link, grab hook and adjuster legs to provide you with one fitting that is suitable for applications that require an adjustable length chain sling.

- Forged Alloy Steel - Quenched and Tempered.
- Innovative two piece design allows for maximum flexibility.
- Individually Proof Tested with certification.
- The Crosby ELIMINATOR®, if properly installed and locked, can be used for personnel lifting applications and meets the intent of OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B).
- Suitable for use with Grade 100 and Grade 80 chain.
- Engineered to accommodate optional locking pins that can be inserted to "lock" the shortened chain legs into place.
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.
- Use the A-1361 and A-1362 in combination to make 3 leg chain slings.
- Load pin assembly instructions on page 269.
- "Look for the Platinum Color - Crosby Grade 100 Alloy Products."
- All sizes are **RFID EQUIPPED.**

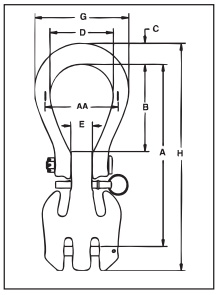
A-1362



A-1361 Crosby ELIMINATOR® Single Hook

Chain Size		Frame Size	Working Load Limit (lbs.)*	A-1361 Stock No.	L-1361 Stock No.	Weight Each (lbs.)	Dimensions (in.)							
(in.)	(mm)						A	B	C	D	E	G	H	AA
1/4	7	2	4300	1049797	1049802	3.9	8.20	3.88	.90	3.00	.94	4.40	9.78	3.50
5/16	8	2	5700	1049804	1049809	3.9	8.18	3.88	.90	3.00	.94	4.40	9.78	3.50
3/8	10	3	8800	1049813	1049818	6.5	10.05	4.81	1.16	3.50	1.13	5.20	12.06	4.00
1/2	13	4	15000	1049822	1049827	13.5	12.88	6.00	1.63	4.13	1.31	6.39	15.57	5.00
5/8	16	5	22600	1049831	1049836	24.1	15.26	6.88	1.96	4.75	1.63	7.41	18.58	6.00

* Proof tested at 2.5 times the Working Load Limit. Minimum Ultimate Load is 4 times the Working Load Limit.



A-1362 Crosby ELIMINATOR® Double Hook

Chain Size		Frame Size	Working Load Limit (lbs.)*	A-1362 Stock No.	L-1362 Stock No.	Weight Each (lbs.)	Dimensions (in.)							
(in.)	(mm)						A	B	C	D	E	G	H	AA
1/4	7	2	8600	1049859	1049913	4.7	8.20	3.88	.90	3.00	.94	4.40	10.10	3.50
5/16	8	2	11400	1049868	1049922	4.7	8.18	3.88	.90	3.00	.94	4.40	10.10	3.50
3/8	10	3	17600	1049877	1049931	8.1	10.05	4.81	1.16	3.50	1.13	5.20	12.56	4.00
1/2	13	4	30000	1049886	1049940	17.3	12.88	6.00	1.63	4.13	1.31	6.39	16.25	5.00
5/8	16	5	45200	1049895	1049949	31.5	15.26	6.88	1.96	4.75	1.63	7.41	19.33	6.00

* Proof tested at 2 times the Working Load Limit. Minimum Ultimate Load is 4 times the Working Load Limit.

Using Crosby ELIMINATOR® in 3 and 4 Leg Slings

Spectrum 10 Chain Size		Master Link A-342 Stock No.	Master Link A-1342 Stock No.	Crosby ELIMINATOR® Single A-1361 Stock No.	Crosby ELIMINATOR® Double A-1362 Stock No.
(in.)	(mm)				
1/4 (9/32)	7	1014285	1011412	1049797	1049859
5/16	8	1014319	1011421	1049804	1049868
3/8	10	1014331	1011430	1049813	1049877
1/2	13	1014348	1011449	1049822	1049886
5/8	16	1014365	1011458	1049831	1049895

Use one of either A-342 or A-1342 master link.
Use one of each when making three leg sling.

Spectrum 10 Chain Size		Master Link A-342 Stock No.	Master Link A-1342 Stock No.	Crosby ELIMINATOR Single A-1361 Stock No.	Crosby ELIMINATOR Double A-1362 Stock No.
(in.)	(mm)				
1/4 (9/32)	7	1014285	1011412	–	1049859
5/16	8	1014319	1011421	–	1049868
3/8	10	1014331	1011430	–	1049877
1/2	13	1014348	1011449	–	1049886
5/8	16	1014365	1011458	–	1049895

Use one of either A-342 or A-1342 master link.
Use two A-1362 fittings when making quad leg sling.

Crosby ELIMINATOR® Fittings

Crosby ELIMINATOR® Components

A-1360B Bail

Chain Size (in.)	Chain Size (mm)	Frame Size	A-1360B Stock No.	Weight Each (lbs.)	Dimensions (in.) Inside Length	Inside Width	Jaw Width	Deformation Indicator	S-4103 Replacement Hinge Pin Kit Stock No.
1/4 - 5/16	7 - 8	2	1049626	2.1	3.88	3.00	.94	3.50	1092916
3/8	10	3	1049635	3.7	4.81	3.50	1.13	4.00	1092925
1/2	13	4	1049644	7.4	6.00	4.13	1.31	5.00	1092934
5/8	16	5	1049653	13.0	6.88	4.75	1.63	6.00	1092943

A-1360S Single Hook (shown with optional S-4104 Latch Pin)

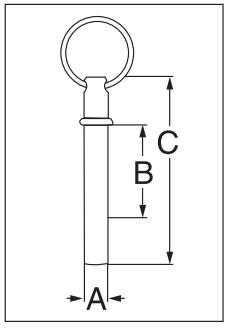
Chain Size (in.)	Chain Size (mm)	Frame Size	Working Load Limit (lbs.)*	A-1360S Stock No.	L-1360S Stock No.	Weight Each (lbs.)	S-4100 Replacement Load Pin Kit Stock No.
1/4	7	2	4300	1049671	1049790	1.8	1091801
5/16	8	2	5700	1049680	1049799	1.8	1091810
3/8	10	3	8800	1049699	1049808	2.8	1091829
1/2	13	4	15000	1049706	1049817	6.1	1091838
5/8	16	5	22600	1049715	1049826	11.1	1091847

* Ultimate Load is 4 times the Working Load Limit.

A-1360D Double Hook (shown with optional S-4104 Latch Pin)

Chain Size (in.)	Chain Size (mm)	Frame Size	Working Load Limit (lbs.)*	A-1360D Stock No.	L-1360D Stock No.	Weight Each (lbs.)	S-4102 Replacement Load Pin Kit Stock No.
1/4	7	2	8600	1049733	1049838	2.6	1092713
5/16	8	2	11400	1049742	1049847	2.6	1092722
3/8	10	3	17600	1049751	1049856	4.4	1092731
1/2	13	4	30000	1049760	1049865	9.9	1092740
5/8	16	5	45200	1049779	1049874	18.5	1092759

* Ultimate Load is 4 times the Working Load Limit.



S-4104N Latch Pin

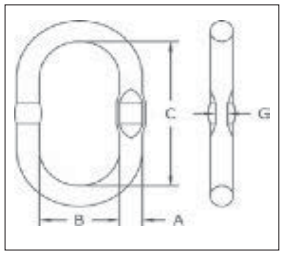
- The new style S-4104N latch pin is colored yellow zinc.
- The old style S-4104 latch pin is colored silver zinc.

Chain Size (in.)	Chain Size (mm)	Frame Size	S-4104N Stock No.	Weight Each (lbs.)	Dimensions (in.) A	B	C
1/4 - 5/16	7 - 8	2	1092983	.06	.313	1.36	2.58
3/8	10	3	1092992	.10	.313	1.62	3.08
1/2	13	4	1093001	.12	.313	1.83	3.83
5/8	16	5	1093010	.15	.313	2.21	4.59

Crosby

A-1343

- Alloy steel — Quenched & Tempered.
- Individually Proof Tested to values shown, with certification.
- Design Factor of 5 to 1.
- Proof Tested with 70% inside width special fixtures sized to prevent localized point loading per EN 1677-4, reference applications & warnings.
- Each main link is marked with Product Identification Code (PIC) for material traceability, Grade, CE, chain size and the "CG" (Crosby Group).
- A-1343 master links are type approved to DNV Certification. Notes 2.7-1- Offshore Containers. These Crosby master links are 100% proof tested. Every batch is impact tested. The tests are conducted by Crosby and 3.1 test certification is available upon request.
- Engineered Flat for use with S-1325A coupler link.
- Fatigue rated to 20,000 cycles at 1.5 times the Working Load Limit.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these links meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.



Grade 100 A-1343 Welded Master Link

Stock No.	Weight Each (lb)	Grade 100 Chain Sling		Grade 80 Chain Sling		WLL (lb)	Proof Load (lb)	Dimensions (in)				Engineered Flat Size for S-1325A (in)
		Single Leg Chain Size (in)	Double Leg Chain Size (in)	Single Leg Chain Size (in)	Double Leg Chain Size (in)			A	B	C	G	
1247051	0.8	6mm, 9/32	6mm	6mm, 9/32	6mm, 9/32, 5/16	7000	17632	0.51	2.36	4.72	0.26	6mm, 9/32, 5/16
1247087	1.9	5/16, 3/8	9/32	5/16, 3/8	5/16	9000	22701	0.67	3.54	6.30	0.33	3/8
1247096	2.3	3/8, 1/2	5/16	3/8, 1/2	3/8	14700	37027	0.75	3.54	6.30	0.33	3/8, 1/2
1247122	5.2	3/8, 1/2	3/8	3/8, 1/2	3/8	15400	38570	0.87	5.71	10.83	0.41	1/2
1247120	3.6	3/8, 1/2	3/8	5/8	3/8	19400	48488	0.87	3.94	7.09	0.41	1/2
1247126	6.7	1/2	-	1/2, 5/8	3/8	19600	48929	0.98	5.71	10.83	0.53	5/8
1247124	5.3	5/8, 1/2	3/8	5/8	1/2	25300	63475	0.98	4.53	8.27	0.53	5/8
1247133	8.5	5/8, 1/2	1/2	5/8	1/2	28600	71630	1.10	5.71	10.83	0.53	5/8
1247142	10.6	5/8, 3/4	1/2	3/4	5/8	37400	93670	1.26	5.71	10.83	0.66	-
1247151	15.2	3/4	5/8	3/4, 7/8	3/4	52900	132240	1.42	6.10	11.22	-	-
1247163	16.1	7/8	3/4	7/8	7/8	69400	173675	1.57	5.51	10.63	-	-
1247164	28.4	1	7/8	1	1	84400	210923	1.77	7.09	13.39	-	-
1247166	42.1	1, 1-1/4	7/8	1	1	99200	247950	2.01	8.46	15.35	-	-
1247175	55.3	1-1/4	1	1-1/4	1-1/4	147600	369170	2.17	7.99	15.98	-	-

5:1 Design Factor. Applications with wire rope and synthetic sling generally require a Design Factor of 5. Based on single leg sling (in-line load), or resultant load on multiple legs with an included angle less than or equal to 120 degrees. Proof Test Load equals or exceeds the requirement of ASTM A952(8.1) and ASME B30.9. Chain slings require that the Design Factor be 4:1. Refer to Applications & Warnings to determine product's actual Ultimate Load. There are no manufactured flats on links over 1 1/4" (32mm).

Fatigue Rated Crosby 8/10 CE QT

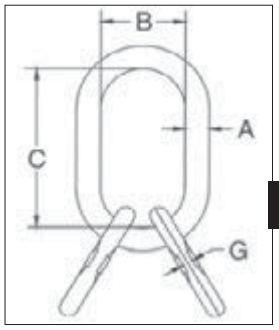
APPLICATION AND WARNING INFORMATION
SECTION 17

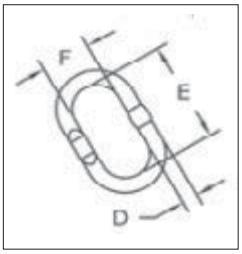
Crosby

MASTER LINKS

A-1346

- Alloy steel — Quenched & Tempered.
- Individually Proof Tested to values shown, with certification.
- Design Factor of 5 to 1.
- Proof Tested with 70% inside width special fixtures sized to prevent localized point loading per EN 1677-4, reference Applications & Warnings.
- Each main link is marked with Product Identification Code (PIC) for material traceability, Grade, CE, chain size and the "CG" (Crosby Group). Each sublink is marked with traceability code.
- A-1346 master links are type approved to DNV Certification. Notes 2.7-1-Offshore Containers. These Crosby master links are 100% proof tested. Every batch is impacted tested. The tests are conducted by Crosby and 3.1 test certification is available upon request.
- Engineered Flat for use with S-1325A coupler link.
- Fatigue rated to 20,000 cycles at 1-1/2 times the Working Load Limit.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these links meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.





Grade 100 A-1346 Welded Master Link Assembly

Stock No.	Weight Each (lb)	Grade 100 Chain Sling Three / Four Legs Chain Size (in)	Grade 80 Chain Sling Three / Four Legs Chain Size (in)	WLL (lb)	Proof Load (lb)	Dimensions (in)							Engineered Flat Size for S-1325A Chain Size (in)
						A	B	C	D	E	F	G	
1256865	2.4	-	6mm	7000	17632	0.51	2.36	4.72	0.51	4.72	2.36	0.26	6mm
1256868	3.5	6mm	6mm	9000	22701	0.67	3.54	6.30	0.51	4.72	2.36	0.26	6mm, 9/32
1256874	3.9	6mm	9/32	9200	23362	0.75	3.54	6.30	0.51	4.72	2.36	0.26	9/32, 5/16
1256878	7.3	5/16, 9/32	5/16	15400	38570	0.87	3.94	7.09	0.67	6.30	3.54	0.33	3/8
1256880	8.9	5/16, 9/32	5/16	15400	38570	0.87	5.71	10.83	0.67	6.30	3.54	0.33	3/8
1256876	8.4	5/16	3/8	18700	46725	0.87	3.94	7.09	0.75	6.30	3.54	0.33	3/8
1256882	10.1	5/16	3/8	19600	49149	0.98	4.53	8.27	0.75	6.30	3.54	0.33	3/8
1256892	11.4	5/16	3/8	19600	49149	0.98	5.71	10.83	0.75	6.30	3.54	0.33	3/8
1256917	15.6	3/8	1/2	31900	80005	1.10	5.71	10.83	0.87	7.09	3.94	0.41	1/2
1256926	21.2	3/8	1/2	37400	93670	1.26	5.71	10.83	0.98	8.27	4.53	0.53	5/8
1256929	28	1/2	5/8	52000	130036	1.42	6.10	11.22	1.10	7.48	4.33	0.53	5/8
1256930	40.6	5/8	5/8	61900	154941	1.57	5.51	10.63	1.26	10.83	5.71	0.66	-
1256953	58.6	5/8	3/4	84400	211143	1.77	7.09	13.39	1.42	11.22	6.10	-	-
1256958	78.2	3/4	7/8	99200	247950	2.01	8.46	15.35	1.57	10.63	5.51	-	-
1256973	134.6	7/8	1	147600	369170	2.17	7.99	15.98	2.01	15.35	8.46	-	-

5:1 Design Factor. Applications with wire rope and synthetic sling generally require a Design Factor of 5. Based on single leg sling (in-line load), or resultant load on multiple legs with an included angle less than or equal to 120 degrees. Proof Test Load equals or exceeds the requirement of ASTM A952(8.1) and ASME B30.9. Chain slings require that the Design Factor be 4:1. Refer to applications & warnings to determine product's actual Ultimate Load. There are no manufactured flats on links over 1 1/4" (32mm).

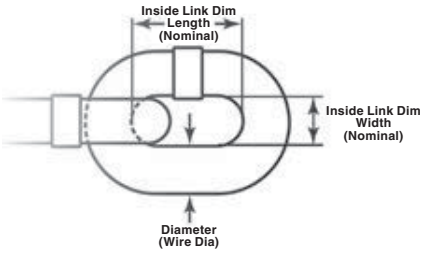
Fatigue Rated Crosby 8/10™ CE QT

APPLICATION AND WARNING INFORMATION SECTION 17

Crosby

Peerless 10
Alloy Chain

- 25% stronger than Grade 80 alloy chain.
- Permanently embossed with P (Peerless) and 10 (Grade).
- Finish - black paint.
- Meets the latest guidelines of the National Association of Chain Manufacturers (NACM) and ASTM A952/ A952M and ASTM A973/A973M for Grade 10 chain.
- Proof Tested at minimum 2 times the Working Load Limit with certification.



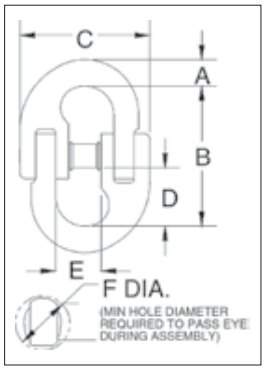
Grade 100 Alloy Chain Recommended for overhead lifting applications

Chain Size (in)	Chain Size (mm)	Stock No.	Feet Per Drum / Crate	Material Size (in)	Working Load Limit (lb)	Nominal Inside Length (in)	Nominal Inside Width (in)	Weight Per Foot (lb)
9/32 (1/4)	7	5510226	800	.286	4300	.87	.42	0.77
5/16	8	5510326	500	.332	5700	1.01	.49	1.12
3/8	10	5510426	500	.394	8800	1.23	.58	1.52
1/2	13	5510626	300	.529	15000	1.57	.75	2.71
5/8	16	5510826	200	.641	22600	1.96	.90	3.74
3/4	20	5510926	100	.812	35300	2.42	1.14	6.29
7/8	22	5511026	100	.906	42700	2.66	1.26	7.94
1	26	5511126	50	1.06	59700	3.09	1.42	10.10
1-1/4	32	*1210075	82	1.34	90400	3.89	1.73	16.40

4:1 Design Factor.
*Size 1-1/4" (32mm) is embossed "CG" instead of "P".

A-1337

- Suitable for use with both Grade 80 and Grade 100 chain.
- Individually Proof Tested at 2-1/2 times Working Load Limit with certification.
- Locking system that provides for simple assembly and disassembly - no special tools needed.
- Meets ASTM A-952 standards for Grade 100 chain fittings.
- Forged alloy steel — Quenched & Tempered.
- Sizes 9/32 through 1 inch are fatigue rated.



Crosby 8/10™ Fatigue Rated® QT

A-1337 LOK-A-LOY® 10 Alloy Connecting Link

Chain Size (in)	Chain Size (mm)	Stock No.	Pkg. Qty.	Weight Each (lb)	Working Load Limit (lb)	Dimensions (in) A	B	C	D	E	F
9/32 (1/4)	7	1015104	60	0.29	4300	0.38	1.94	2.00	0.80	0.68	0.53
5/16	8	1015113	50	0.42	5700	0.37	2.36	2.13	0.99	0.72	0.59
3/8	10	1015122	40	0.77	8800	0.51	2.65	2.55	1.09	0.91	0.73
1/2	13	1015136	12	1.60	15000	0.68	3.46	3.39	1.45	1.13	0.89
5/8	16	1015145	10	3.10	22600	0.78	4.25	4.00	1.77	1.34	1.20
3/4	20	1015154	1	6.39	35300	1.01	5.14	5.30	2.15	1.64	1.56
7/8	22	1015163	1	7.85	42700	1.09	5.46	5.78	2.27	1.97	1.55
1	26	1015172	1	11.05	59700	1.24	5.94	6.50	2.41	2.21	1.88
1-1/4	32	1015181	1	21.00	90400	1.56	7.43	7.60	3.07	2.57	2.22

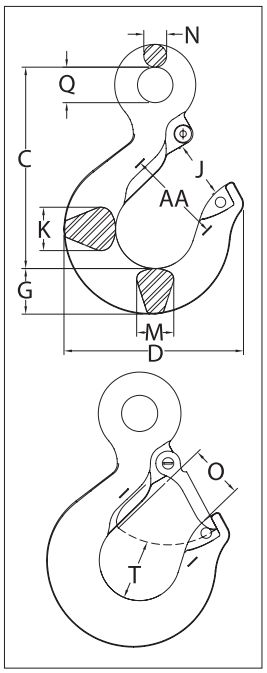
4:1 Design Factor.

Crosby

HOOKS & SWIVELS

L-1327

- For use with wire rope. Suitable for use with Grade 100 and Grade 80 chain. Working load limit needs to be de-rated to achieve a 5:1 design factor.
- Forged alloy steel, Quenched & Tempered.
- Each hook has a Product Identification Code (PIC) for material traceability, along with the size and the name Crosby.
- 25% stronger than Grade 80.
- Eye Sling Hooks incorporate QUIC-CHECK® deformation and angle indicators. (For detailed information, see the Crosby Value Added page at the beginning of this section.)
- When secured with the proper cotter pin through the hole in the tip of hook, meets the intent of OSHA Rule 1926.1431(g) and 1926.1501(g) for personnel lifting.
- Individually Proof Tested to 2.5 times the Working Load Limit with certification.
- Fatigue rated to 20,000 cycles at 1.5 times the Working Load Limit.



Crosby 8/10™ Fatigue Rated QUIC-CHECK® Q&T

APPLICATION AND WARNING INFORMATION
SECTION 17

L-1327 Eye Sling Hook

Grade 100 Alloy Chain Size		Working Load Limit (lb)*	Hook ID Code	Stock No.	Weight Each (lb)	Dimensions (in)											Replacement Latch Stock No.
(in)	(mm)					C	D	G	J	K	M	N	O	Q	T	AA	
-	6	3200	DA	1025860	.50	3.34	2.86	.73	.90	.63	.63	.36	.89	.75	.87	1.50	1096325
1/4-5/16	7 - 8	5700	HA	1025869	1.3	4.21	3.90	1.03	1.18	.75	.75	.50	1.15	.75	1.16	2.00	1096468
3/8	10	8800	IA	1025878	2.3	4.99	4.34	1.19	1.53	1.19	1.00	.56	1.40	.94	1.23	2.50	1096515
1/2	13	15000	JA	1025887	4.5	6.36	5.67	1.44	1.78	1.37	1.17	.72	1.67	1.12	1.88	3.00	1096562
5/8	16	22600	KA	1025896	8.4	7.43	6.78	1.88	2.38	1.66	1.44	.88	2.08	1.31	2.03	4.00	1096609
3/4	18-20	35300	KA	1025915	15.0	9.07	7.45	2.25	2.38	1.88	1.63	1.11	2.08	2.44	2.47	4.00	1096609
7/8	22-23	44100	LA	1025924	20.7	10.08	8.30	2.59	2.50	2.19	1.94	1.27	2.27	2.84	2.62	4.00	1096657
1	26	59700	NA	1025933	39.5	12.82	10.30	3.00	3.30	2.69	2.38	1.56	3.02	3.50	2.83	5.00	1096704
1 1/4	32	90400	PA	1025942	105.0	18.19	14.06	4.56	4.25	3.75	3.19	2.00	3.00	4.50	3.88	7.00	1093717

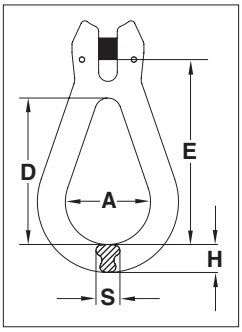
4:1 Design Factor. *Deformation indicators.

Hook Ductility: Compare an 'as forged' hook to the superior quality of a Crosby® Quenched & Tempered® hook. Watch video at thecrosbygroup.com/QT

Crosby

A-1370

- Forged alloy steel — Quenched & Tempered.
- Individually proof tested to 2.5 times the Working Load Limit.
- Proof test certification shipped with each link.
- Each link has a Product Identification Code (PIC) for material traceability, along with the size and the name Crosby in raised letters.
- Suitable for use with Grade 100 and Grade 80 chain.



Crosby 8/10™ QT

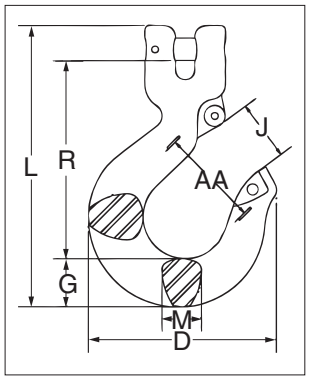
A-1370 Reeving Link

Chain Size (in)	Chain Size (mm)	Working Load Limit (lb)	Stock No.	Weight Each (lb)	Dimensions (in) A	D	E	H	S
1/4-5/16	7-8	5700	1012000	0.57	1.54	2.66	3.54	0.63	0.39
3/8	10	8800	1012009	1.10	1.93	3.37	4.25	0.67	0.55
1/2	13	15000	1012018	2.43	2.46	4.25	5.43	0.83	0.71
5/8	16	22600	1012027	5.62	3.11	5.47	7.09	1.20	1.00

4:1 Design Factor.

L-1339

- Forged alloy steel — Quenched & Tempered.
- Individually Proof Tested to 2-1/2 times the Working Load Limit with certification.
- Each hook has a Product Identification Code (PIC) for material traceability, along with the size and the name Crosby.
- Hoist hooks incorporate QUIC-CHECK® deformation and angle indicators.
- Low profile hook tip.
- New integrated latch (S-4320/S-4339) meets the world standard for lifting.
  - Heavy duty stamped latch interlocks with the hook tip.
  - High cycle, long life spring.
  - When secured with the proper cotter pin through the hole in the tip of hook, meets the intent of OSHA Rule 1926.1431(g) and 1926.1501(g) for personnel lifting.
- Suitable for use with Grade 100 and Grade 80 chain.
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.



L-1339 Clevis Sling Hook

Chain Size (in)	Chain Size (mm)	Working Load Limit (lb)	Hook ID Code	Stock No.	Weight Each (lb)	Dimensions (in) D	G	J	L	M	R	AA	S-4320 Repl. Latch Stock No.	S-4339 Repl. Latch Stock No.
-	6	3200	DA	1049103	0.64	2.86	0.73	0.93	4.21	0.63	2.95	1.50	1096325	-
1/4	7	4300	HA	1049112	1.58	3.86	1.04	1.19	5.67	0.75	3.97	2.00	1096468	-
5/16	8	5700	HA	1049121	1.57	3.86	1.04	1.19	5.67	0.75	3.95	2.00	1096468	-
3/8	10	8800	IA	1049130	2.58	4.38	1.19	1.53	6.75	1.00	4.71	2.50	1096515	-
1/2	13	15000	JA	1049149	5.28	5.60	1.44	1.78	8.38	1.17	5.89	3.00	1096562	-
5/8	16	22600	KA	1049158	9.81	6.76	1.89	2.41	10.21	1.44	6.97	4.00	1096609	-
3/4	18-20	35300	-	1049167	18.3	8.31	2.83	2.69	13.07	1.97	8.00	4.50	-	1048714
7/8*	22-23*	44100	-	1049176	24.6	9.17	3.07	3.05	13.98	1.97	8.76	5.00	-	1048732

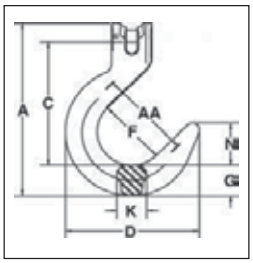
4:1 Design Factor.
*7/8 in (22-23 mm) size does not have cam, latch attaches to unique pin.

Crosby® Grade 100 Foundry Hooks

Fatigue Rated® QT QUIC-CHECK® Crosby 8/10™

A-1359

- Forged Alloy Steel - Quenched and Tempered.
- Individually Proof Tested to 2-1/2 times the Working Load Limit with certification.
- Each hook has a Product Identification Code (PIC) for material traceability, along with the size and the name Crosby & U.S.A. in raised letters.
- Suitable for use with Grade 100 and Grade 80 chain.
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.
- "Look for the Platinum Color - Crosby Grade 100 Alloy Products."
- Hook can be tip loaded at the reduced Working Load Limit, see below. Operator must ensure the load is retained properly in the hook.



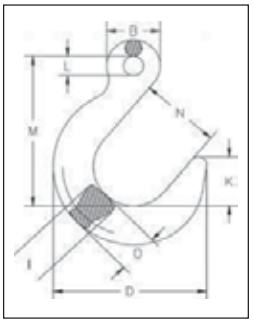
A-1359 Clevis Foundry Hook

Chain Size		A-1359 Stock No.	Working Load Limit at Saddle of Hook (lbs.)*	Working Load Limit at Tip of Hook (lbs.)*	Weight Each (lbs.)	Dimensions (in.)							
(in.)	(mm)					A	C	D	F	G	K	N	AA
1/4	7	1049907	4300	2150	2.15	6.26	4.38	4.82	2.50	1.13	0.88	1.57	3.50
5/16	8	1049911	5700	2850	2.06	6.26	4.37	4.82	2.50	1.13	0.88	1.57	3.50
3/8	10	1049916	8800	4400	4.29	7.76	5.54	5.82	3.00	1.38	1.30	1.88	4.00
1/2	13	1049925	15000	7500	7.97	9.38	6.67	7.04	3.50	1.63	1.50	2.25	4.50
5/8	16	1049934	22600	11300	14.2	11.25	7.68	8.17	4.00	2.19	1.75	2.53	5.00
3/4	18-20	1049943	35300	17650	24.7	14.43	9.79	9.65	5.00	2.40	2.20	3.39	6.00
7/8	22-23	1049952	44100	22050	43.8	16.25	11.02	11.03	5.50	3.07	2.72	3.74	6.50

* Ultimate Load is 4 times the Working Load Limit.

A-1329

- Forged Alloy Steel - Quenched and Tempered.
- Individually Proof Tested to 2-1/2 times the Working Load Limit with certification.
- Each hook has a Product Identification Code (PIC) for material traceability, along with the size and the name Crosby & U.S.A. in raised letters.
- Suitable for use with Grade 100 and Grade 80 chain.
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.
- "Look for the Platinum Color - Crosby Grade 100 Alloy Products."
- Hook can be tip loaded at the reduced Working Load Limit, see below. Operator must ensure the load is retained properly in the hook.



A-1329 Eye Foundry Hook

Chain Size		A-1329 Stock No.	Working Load Limit at Saddle of Hook (lbs.)*	Working Load Limit at Tip of Hook (lbs.)	Weight Each (lbs.)	Dimensions (in.)							
(in.)	(mm)					B	D	I	K	L	M	N	O
1/4 - 5/16	7-8	1026280	5700	2850	2.00	1.56	4.82	.88	1.57	.63	4.81	2.50	1.13
3/8	10	1026289	8800	4400	3.80	2.07	5.82	1.30	1.88	.81	5.50	3.00	1.38
1/2	13	1026297	15000	7500	7.20	2.53	7.04	1.50	2.25	1.03	7.11	3.50	1.63
5/8	16	1026306	22600	11300	12.3	3.00	8.17	1.75	2.53	1.25	7.96	4.00	2.19
3/4	18-20	1026315	35300	17650	23.0	4.13	9.65	2.20	3.39	1.97	10.75	5.00	2.40
7/8	22-23	1026324	44100	22050	40.6	4.77	11.03	2.72	3.74	2.28	12.25	5.50	3.07
1	26	1026333	59700	29850	51.7	5.33	11.90	2.83	3.93	2.56	13.37	6.00	3.31
1 1/4	32	1026342	90400	45200	84.4	6.61	13.25	3.50	4.33	3.15	15.25	6.50	3.84

* Ultimate Load is 4 times the Working Load Limit.

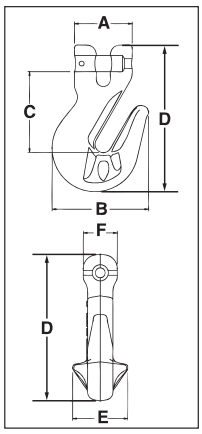
Crosby® Grade 100 Clevis Grab Hooks

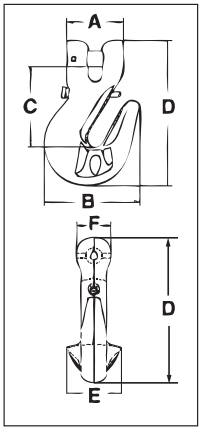
Fatigue Rated® | QT | Crosby 8/10™

A-1338

- Forged Alloy Steel - Quenched and Tempered.
- Innovative cradle design allows for 100% efficiency of Grade 100 chain.
- Individually Proof Tested to 2-1/2 times the Working Load Limit with certification.
- Each hook has a Product Identification Code (PIC) for material traceability, along with the size and the name Crosby & U.S.A. in raised letters.
- Suitable for use with Grade 100 and Grade 80 chain.
- The use of A-1338 Cradle Grab Hook will allow 100 percent of the chain sling capacity. When used to hook back to chain leg to form a choker, the angle of the choke must be 120 degrees or greater. When used as a chain shortener, minimize twist of chain and ensure chain is fully engaged in hook.
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.
- "Look for the Platinum Color - Crosby Grade 100 Alloy Products."

L-1338





A/L-1338 Cradle Grab Hook

Chain Size		Working Load Limit (lbs.)*	A-1338 Stock No.	L-1338 Stock No.	Weight Each (lbs.)	Dimensions (in.)						S-4338 Replacement Latch Kit Stock No.
(in.)	(mm)					A	B	C	D	E	F	
1/4	7	4300	1049417	1049480	.45	1.72	2.54	2.20	3.88	1.50	.88	1048426
5/16	8	5700	1049426	1049489	.99	1.72	2.54	2.18	3.88	1.50	.88	1048426
3/8	10	8800	1049435	1049498	1.80	1.85	3.09	2.58	4.69	1.83	1.09	1048435
1/2	13	15000	1049444	1049507	3.92	2.39	3.83	3.28	5.88	2.25	1.42	1048444
5/8	16	22600	1049453	1049516	7.00	2.67	4.52	3.85	7.03	2.94	1.75	1048453

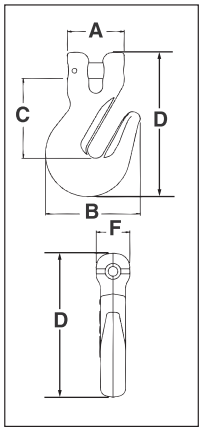
* Ultimate Load is 4 times the Working Load Limit.

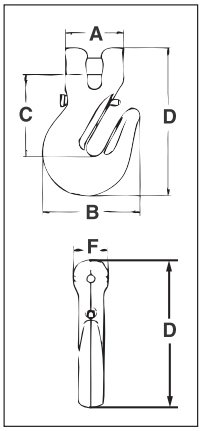
Fatigue Rated® | QT | Crosby 8/10™

A-1358

- Forged Alloy Steel - Quenched and Tempered.
- Individually Proof Tested to 2-1/2 times the Working Load Limit with certification.
- Each hook has a Product Identification Code (PIC) for material traceability, along with the size and the name Crosby & U.S.A. in raised letters.
- Suitable for use with Grade 100 and Grade 80 chain.
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.
- "Look for the Platinum Color - Crosby Grade 100 Alloy Products."

L-1358





A/L-1358 Grab Hook

Chain Size		Working Load Limit (lbs.)*	A-1358 Stock No.	L-1358 Stock No.	Weight Each (lbs.)	Dimensions (in.)					S-4338 Replacement Latch Kit Stock No.
(in.)	(mm)					A	B	C	D	F	
1/4	7	4300	1049610	1049605	1.00	1.72	2.54	2.20	3.88	.88	1048426
5/16	8	5700	1049629	1049614	.99	1.72	2.54	2.18	3.88	.88	1048426
3/8	10	8800	1049638	1049623	1.80	1.85	3.09	2.58	4.69	1.09	1048435
1/2	13	15000	1049647	1049634	3.92	2.39	3.83	3.28	5.88	1.42	1048444
5/8	16	22600	1049656	1049643	7.00	2.67	4.52	3.85	7.03	1.75	1048453

* Ultimate Load is 4 times the Working Load Limit.

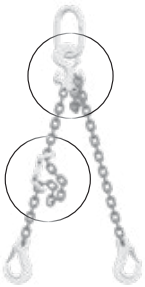
GUNNEBO Industries

GrabiQ: Components with multiple functions

Innovative designs that combine several clever functions in one component

Midgrab, MIG

Instant mounting, positioning, shortening on any part of the chain.



C-grab Duo, CGD

Built in shortening function.

Master Grab, MG

- All-in-one compact top link.
- Every chain leg can instantly be altered.
- Using the built in shortening function, you can alter between a straight lift to a looped sling in a matter of seconds.

Fewer components & lighter assembly

GrabIQ™ 4-leg sling with shortening function

(1) Master link
(2) C-grab Duos

Total: 3 components
with GrabiQ system

(1) Master link
(2) Sub links
(8) Berglok chain couplers
(4) Grab hooks

Total: 15 components
with traditional system

GrabIQ™ 2-leg sling with shortening function

(1) Master Grab Duo

Total: 1 component
with GrabiQ

(1) Master link
(4) Berglok chain couplers
(2) Grab hooks

Total: 7 components
with traditional system

4

Less is more with FlexiLeg

Thanks to the unique features of our GrabiQ product range, we offer solutions that increase the flexibility in lifting operations even further. Our FlexiLeg solution allows you to have an instant leg change on site.

With one single master link in combination with five Flexi-legs, we offer a solution that replaces four complete traditional slings, a total of ten legs. In addition, FlexiLeg also gives you the opportunity to modify the chain sling to different lifting operations, whenever and wherever it is needed.

GrabiQ FlexiLeg – a total of 5 legs replaces the total of 10 legs with the old traditional system.

The benefits of instant leg-change

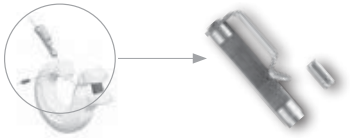
- Enables the user to change slings, leg by leg.
- Makes the sling lighter and easier to work with.
- Sling legs that are not being used can easily be removed, thereby increasing safety at the work site.
- The quantity of sling material is greatly reduced, providing cost savings.
- The chain sling can be reconfigured on site, thus increasing efficiency.

Traditional System

Related Products

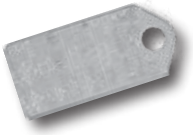
QuickPin – For safe exchange of sling legs

- Fits all C-components (CL, CLD, CG, CGD)
- Instant close/open function, no tools needed
- Easy to retrofit
- Made of stainless steel for long product life span



FlexiTag – For every GrabiQ sling

- Specially designed for FlexiLeg
- Fits all other GrabiQ slings
- WLL and chain size pre-stamped for 1 – 4 legs
- Leg angle 30/45 degree shown in contour
- Made of stainless steel for use in all weather conditions



GUNNEBO Industries

GrabiQ – solutions for every need

1-leg chain slings

MG1-GBK
Consist of: Master Link MG,
Chain KLA, Safety Hook GBK

Chain Size		WLL (lb)	Total Components Length (in)
(mm)	(in)		
6	-	3300	6.73
8	5/16”	5700	11.65
10	3/8”	8800	14.21
13	1/2”	15000	17.83
16	5/8”	22600	20.75

4:1 Design Factor

MG1-EGKN
Type: Master Link MG, Chain KLA,
Hook with Latch EGKN

Chain Size		WLL (lb)	Total Components Length (in)
(mm)	(in)		
6	-	3300	9.09
8	5/16”	5700	10.28
10	3/8”	8800	13.03
13	1/2”	15000	16.06
16	5/8”	22600	18.94

4:1 Design Factor

TG1-GBK
Master Link MF, C-grab CG,
Chain KLA, Safety Hook GBK

Chain Size		WLL (lb)	Total Components Length (in)
(mm)	(in)		
6	-	3300	7.87
8	5/16”	5700	13.62
10	3/8”	8800	16.69
13	1/2”	15000	19.84
16	5/8”	22600	24.45

4:1 Design Factor

2-leg chain slings

TG1-EGKN
Consists of: Master Link MF, C-grab CG,
Chain KLA, Hook with Latch EGKN

Chain Size		WLL (lb)	Total Components Length (in)
(mm)	(in)		
6	-	3300	11.26
8	5/16”	5700	13.46
10	3/8”	8800	16.34
13	1/2”	15000	19.96
16	5/8”	22600	24.57

4:1 Design Factor

MGD2-EGKN
Consists of: Master Link MGD,
Chain KLA, Latch Hook EGKN

Chain Size		WLL (lb)			Total Components Length (in)
(mm)	(in)	β 60°	β 45°	β 30°	
6	-	5500	4625	3300	9.06
8	5/16”	9900	8100	5700	10.28
10	3/8”	15200	12400	8800	13.03
13	1/2”	26000	21200	15000	16.06
16	5/8”	39100	32000	22600	18.94

4:1 Design Factor

MGD2-GBK
Consists of: Master Link MGD,
Chain KLA, Safety Hook GBK

Chain Size		WLL (lb)			Total Components Length (in)
(mm)	(in)	β 60°	β 45°	β 30°	
6	-	5500	4625	3300	9.25
8	5/16”	9900	8100	5700	11.65
10	3/8”	15200	12400	8800	14.21
13	1/2”	26000	21200	15000	17.83
16	5/8”	39100	32000	22600	20.75

4:1 Design Factor

TG2-GBK
Consists of: Master Link MF, C-grab Duo CGD,
Chain KLA, Safety Hook GBK

Chain Size		WLL (lb)			Total Components Length (in)
(mm)	(in)	β 60°	β 45°	β 30°	
6	-	5500	4625	3300	11.46
8	5/16”	9900	8100	5700	14.41
10	3/8”	15200	12400	8800	17.48
13	1/2”	26000	21200	15000	21.02
16	5/8”	39100	32000	22600	26.42

4:1 Design Factor

TG2-EGKN
Consists of: Master Link MF, C-grab Duo CGD,
Chain KLA, Latch Hook EGKN

Chain Size		WLL (lb)			Total Components Length (in)
(mm)	(in)	β 60°	β 45°	β 30°	
6	-	5500	4625	3300	11.26
8	5/16”	9900	8100	5700	13.46
10	3/8”	15200	12400	8800	16.34
13	1/2”	26000	21200	15000	19.96
16	5/8”	39100	32000	22600	24.61

4:1 Design Factor

MGD2-CL
Consists of: Master Link MGD,
Chain KLA, C-lok CL

Chain Size		WLL (lb)			Total Components Length (in)
(mm)	(in)	β 60°	β 45°	β 30°	
6	-	5500	4625	3300	7.36
8	5/16”	9900	8100	5700	9.06
10	3/8”	15200	12400	8800	11.22
13	1/2”	26000	21200	15000	14.13
16	5/8”	39100	32000	22600	16.89

4:1 Design Factor

GUNNEBO Industries

CHAIN & ACCESSORIES

3-leg chain sling

TG3-GBK
Consists of: Master Link MF, C-grab CG, C-grab Duo CGD, Chain KLA, Safety Hook GBK

Chain Size		WLL (lb)			Total Component Length (in)
(mm)	(in)	β 60°	β 45°	β 30°	
6	-	8400	6800	4850	12.24
8	5/16"	14800	12100	8500	15.43
10	3/8"	22900	18700	13200	18.66
13	1/2"	39000	31800	22500	23.78
16	5/8"	58700	47900	33900	26.77

4:1 Design Factor

TG3-EGKN
Consists of: Master link MF, C-grab CG, C-grab Duo CGD, Chain KLA, Latch Hook EGKN

Chain Size		WLL (lb)			Total Component Length (in)
(mm)	(in)	β 60°	β 45°	β 30°	
6	-	8400	6800	4850	12.05
8	5/16"	14800	12100	8500	14.06
10	3/8"	22900	18700	13200	17.48
13	1/2"	39000	31800	22500	22.01
16	5/8"	58700	47900	33900	24.96

4:1 Design Factor

4-leg chain sling

TG4-GBK
Consists of: Master Link MF, C-grab Duo CGD, Chain KLA, Safety Hook GBK

Chain Size		WLL (lb)			Total Component Length (in)
(mm)	(in)	β 60°	β 45°	β 30°	
6	-	8400	6800	4850	12.24
8	5/16"	14800	12100	8500	15.43
10	3/8"	22900	18700	13200	18.66
13	1/2"	39000	31800	22500	23.78
16	5/8"	58700	47900	33900	26.77

4:1 Design Factor

TG4-EGKN
Consists of: Master link MF, C-grab Duo CGD, Chain KLA, Latch Hook EGKN

Chain Size		WLL (lb)			Total Component Length (in)
(mm)	(in)	β 60°	β 45°	β 30°	
6	-	8400	6800	4850	12.05
8	5/16"	14800	12100	8500	14.06
10	3/8"	22900	18700	13200	17.48
13	1/2"	39000	31800	22500	22.01
16	5/8"	58700	47900	33900	24.96

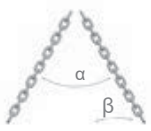
4:1 Design Factor

Grade 10 chain slings

Working Load Limits in tonnes for chain slings grade 10

Based on EN 818-4:2008 WLL +25%

4

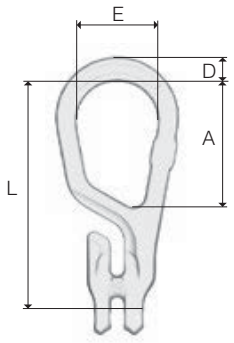


			β 60°	β 45°	β 30°	β 60°	β 45°	β 30°
Chain Size (mm)	Chain Size (in)	WLL (lb)	α 60°	α 90°	α 120°	α 60°	α 90°	α 120°
6	-	3300	5500	4625	3300	8400	6800	4850
7	9/32"	4300	7400	6100	4300	11200	9100	6400
8	5/16"	5700	9900	8100	5700	14800	12100	8500
10	3/8"	8800	15200	12400	8800	22900	18700	13200
13	1/2"	15000	26000	21200	15000	39000	31800	22500
16	5/8"	22600	39100	32000	22600	58700	47900	33900
20	3/4"	35300	61100	49900	35300	91700	74900	52950
22	7/8"	42700	74000	60400	42700	110900	90600	64000
26	1"	59700	103100	84100	59500	155600	126600	89250
32	1-1/4"	88160	152700	124600	88160	229000	186950	132200

4:1 Design Factor. Working Load Limits are based on equally loaded and disposed sling legs.

APPLICATION AND WARNING INFORMATION
SECTION 17

GUNNEBO Industries

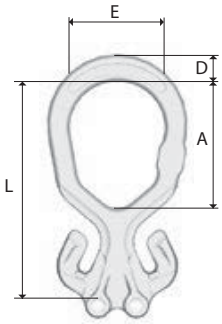


Master Grab MG

For use with Grade 100 or Grade 80 chain. "All-in-one" compact top link.

Stock No.	Code	WLL (lb)	L	A	E	D	Weight (lb)
B14710	MG-6-10	3306	5.71	3.46	2.36	0.59	1.10
B14711	MG-8-10	5700	6.73	3.62	2.36	0.71	1.98
B14712	MG-10-10	8800	8.31	4.45	2.95	0.87	3.97
B14713	MG-13-10	15000	10.28	5.43	3.54	1.02	7.72
B14714	MG-16-10	22600	12.24	6.18	4.13	1.22	13.45

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.



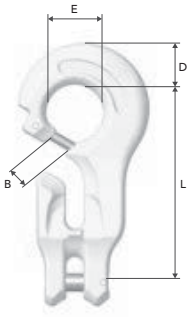
Master Grab Duo MGD

For use with Grade 100 or Grade 80 chain. "All-in-one" compact top link for 2-leg slings.

Stock No.	Code	WLL (lb)	L	A	E	D	Weight (lb)
B14700	MGD-6-10	4700	5.7	3.5	2.4	0.67	1.5
B14701U	MGD-8-10	9900	6.7	3.9	3.0	0.83	2.9
B14702U	MGD-10-10	15200	8.3	4.9	3.5	0.94	5.1
B14703U	MGD-13-10	26000	10.3	5.9	4.1	1.2	11.5
B14704U	MGD-16-10	39100	12.2	6.9	4.7	1.4	17.4

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.
Note: The maximum in service temperature is 392°F.

C-Grab CG

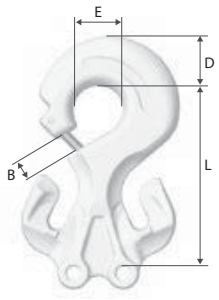


For use with Grade 100 or Grade 80 chain. For use with MF master and BK type hooks.

Stock No.	Code	WLL (lb)	L	B	E	D	Weight (lb)
B14730	CG-6-10	3306	3.15	0.43	0.94	0.75	0.66
B14731	CG-8-10	5700	4.21	0.47	1.26	0.94	1.54
B14732	CG-10-10	8800	5.28	0.59	1.57	1.14	3.31
B14733	CG-13-10	15000	6.77	0.71	2.05	1.50	7.05
B14734	CG-16-10	22600	8.46	0.87	2.52	1.85	13.45

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.

C-Grab Duo CGD



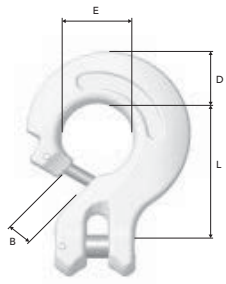
For use with Grade 100 or Grade 80 chain. For use with master links.

Stock No.	Code	WLL (lb)	L	B	E	D	Weight (lb)
B14720	CGD-6-10	4700	3.1	0.43	0.94	0.87	1.1
B14721U	CGD-8-10	9900	4.2	0.47	1.3	1.1	2.4
B14722U	CGD-10-10	15200	5.3	0.59	1.6	1.5	4.8
B14723	CGD-13-10	26000	6.8	0.75	1.9	1.9	11.9
B14724U	CGD-16-10	39100	8.5	0.87	2.5	2.2	20.1

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.

Note: The maximum in service temperature is 392°F.

C-Lok CL

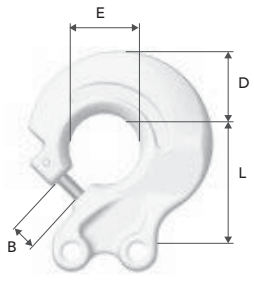


For use with Grade 100 or Grade 80 chain. For use with master links, eye hooks and choke.

Stock No.	Code	WLL (lb)	L	B	E	D	Weight (lb)
B14750	CL-6-10	3306	1.69	0.43	0.94	0.71	0.44
B14751	CL-8-10	5700	2.28	0.47	1.26	0.94	1.10
B14752	CL-10-10	8800	2.91	0.59	1.57	1.14	2.20
B14753	CL-13-10	15000	3.70	0.71	2.05	1.50	4.41
B14754	CL-16-10	22600	4.69	0.87	2.52	1.89	8.38

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.

C-Lok Duo CLD



For use with Grade 100 or Grade 80 chain. For use with master links.

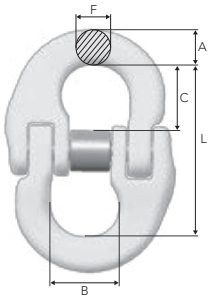
Stock No.	Code	WLL (lb)	L	B	E	D	Weight (lb)
B14740	CLD-6-10	5 700	1.69	0.43	0.94	0.87	0.88
B14741U	CLD-8-10	9 918	2.28	0.47	1.26	1.14	1.32
B14742U	CLD-10-10	15 317	2.91	0.59	1.57	1.46	2.65
B14743U	CLD-13-10	26 007	3.70	0.71	2.05	1.81	6.83
B14744U	CLD-16-10	39 231	4.69	0.98	2.52	2.24	12.13

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.
Note: The maximum in service temperature is 392°F.

GUNNEBO Industries

Coupling Link G

For use with Grade 100 or Grade 80 chain. For use with master link and eye hook.



Stock No.	Code	WLL (lb)	L	B	F	A	C	Weight (lb)
Z100821	G-6-10	3306	1.77	0.59	0.28	0.31	0.63	0.22
Z101358	G-7-10	4500	2.20	0.71	0.35	0.43	0.87	0.44
Z100822	G-8-10	5700	2.20	0.71	0.35	0.43	0.87	0.44
Z100823	G-10-10	8800	2.68	0.98	0.47	0.51	1.02	0.66
Z100824	G-13-10	15000	3.50	1.14	0.59	0.67	1.30	1.54
Z100825	G-16-10	22600	4.17	1.42	0.75	0.79	1.57	3.09
Z101119	G-20-10	35300	4.92	1.69	0.91	1.02	1.73	4.85
Z101339	G-22-10	44080	5.98	1.97	1.02	1.10	2.32	7.72
Z101365	G-26-10	60169	6.34	2.28	1.26	1.34	2.40	12.57
Z101666	G-32-10	88160	7.87	2.76	1.50	1.57	3.03	20.94

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M-02 and AS 3776:2015.

Grab Hook GG

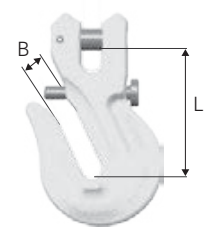
Clevis shortening hook. For use with Grade 100 or Grade 80 chain. No reduction of working load limit, thanks to supporting cradle lugs on either side of hook to prevent chain link deformation.

Stock No.	Code	WLL (lb)	L	B	Weight (lb)
Z101844	GG-6-10	3306	2.13	0.31	0.44
Z100845	GG-7-10	4500	2.24	0.39	0.66
B14771	GG-8-10	5700	2.24	0.39	0.88
B14772	GG-10-10	8800	2.99	0.47	1.98
B14773	GG-13-10	15000	3.82	0.63	3.97
B14774	GG-16-10	22600	4.49	0.79	6.83
Z101152	GG-20-10	35300	5.79	1.02	15.43

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.

Grab Hook GG with Locking Pin

Clevis shortening hook with locking pin for extra safety. For use with Grade 100 or Grade 80 chain. No reduction of working load limit, thanks to supporting cradle lugs on either side of hook to prevent chain link deformation.

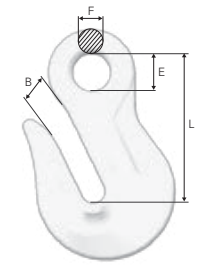


Stock No.	Code	WLL (lb)	L	B	Weight (lb)
B14971	GG-8-10 LP	5700	2.24	0.39	0.88
B14972	GG-10-10 LP	8800	3.03	0.47	1.98
B14973	GG-13-10 LP	15000	3.82	0.63	4.19
B14974	GG-16-10 LP	22600	4.49	0.79	7.05

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.

Grab Hook OG

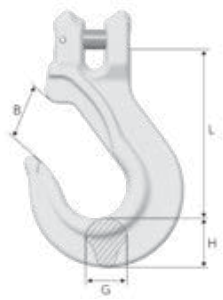
Eye shortening hook. For use with Grade 100 or Grade 80 chain. No reduction of working load limit, thanks to supporting lugs on either side of hook to prevent chain link deformation.



Stock No.	Code	WLL (lb)	L	B	E	F	Weight (lb)
Z101296	OG-7/8-10	5700	2.56	0.39	0.67	0.39	0.66
Z101297	OG-10-10	8800	3.35	0.47	0.79	0.47	1.54
Z101298	OG-13-10	15000	4.09	0.63	1.02	0.63	3.53
Z101299	OG-16-10	22600	5.16	0.79	1.26	0.75	6.17
Z101300	OG-20-10	35300	6.57	1.02	1.61	0.91	13.45
Z101301	OG-22-10	44094	7.36	1.02	1.81	1.26	18.96
Z101302	OG-26-10	60169	8.98	1.26	2.17	1.50	30.86
Z101303	OG-32-10	88160	9.02	1.57	1.97	1.06	45.64

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.

Sling Hook EGK

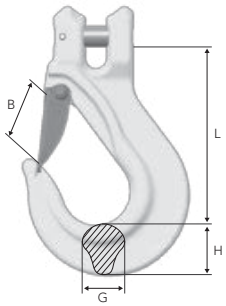


For use with Grade 100 or Grade 80 chain. Sling hook with clevis connector.

Stock No.	Code	WLL (lb)*	L	B	G	H	Weight (lb)
Z100915	EGK-6-10	3306	3.39	1.14	0.67	0.79	0.88
Z100918	EGK-7-10	4500	3.74	1.26	0.67	0.87	1.10
Z100938	EGK-8-10	5700	3.74	1.26	0.67	0.91	1.10
Z100942	EGK-10-10	8800	4.76	1.61	0.91	1.22	2.20
Z100946	EGK-13-10	15000	5.71	1.93	1.10	1.50	4.41
Z100950	EGK-16-10	22600	6.69	2.40	1.42	1.81	8.38
Z101138	EGK-20-10	35300	8.23	2.80	1.65	2.36	16.09

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.

Sling Hook EGKN

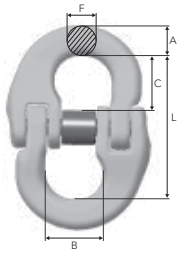


For use with Grade 100 or Grade 80 chain. Sling hook with latch.

Stock No.	Code	WLL (lb)*	L	B	G	H	Weight (lb)
B14460	EGKN-6-10	3306	3.39	0.98	0.67	0.79	0.88
Z100843	EGKN-7-10	4500	3.74	1.06	0.67	0.91	1.10
B14461	EGKN-8-10	5700	3.74	1.10	0.67	0.91	1.10
B14462	EGKN-10-10	8800	4.76	1.38	0.91	1.22	2.43
B14463	EGKN-13-10	15000	5.71	1.65	1.10	1.50	4.85
B14464	EGKN-16-10	22600	6.69	2.09	1.42	1.81	8.82
Z101127	EGKN-20-10	35300	8.23	2.56	1.65	2.36	16.76

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.

Coupling Link GF – stain proof

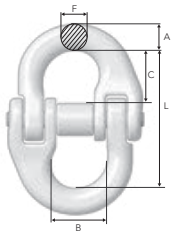


High strength stainless steel.

Stock No.	Code	WLL (lb)	For chain dim.	L	B	F	A	C	Weight (lb)
B80202	GF-10-8 SP	7100	3/8”	2.68	0.98	0.43	0.51	1.02	0.66
B80203	GF-13-8 SP	12000	1/2”	3.50	1.18	0.59	0.63	1.30	1.54
B80204	GF-16-8 SP	18000	5/8”	4.13	1.42	0.75	0.79	1.57	2.65

4:1 Design Factor

Coupling Link G HDG



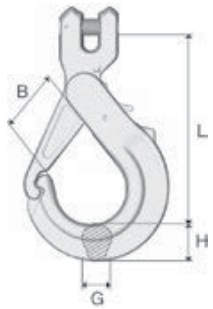
Hot-dip galvanized for marine environments.

Stock No.	Code	WLL (lb)	L	B	F	A	C	Weight (lb)
ZG100821	G-6-8 HDG	2500	1.77	0.59	0.28	0.31	0.67	0.22
ZG100822	G-8-8 HDG	4500	2.20	0.71	0.35	0.43	0.87	0.44
ZG100823	G-10-8 HDG	7100	2.68	0.98	0.43	0.51	1.02	0.66
ZG100824	G-13-8 HDG	12000	3.50	1.18	0.59	0.63	1.30	1.54
ZG100825	G-16-8 HDG	18000	4	1.42	0.75	0.79	1.57	2.65

4:1 Design Factor

GUNNEBO Industries

Safety Hook GBK

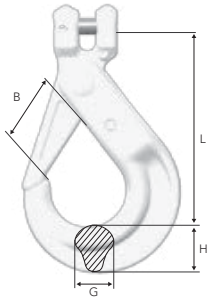


For use with Grade 100 or Grade 80 chain. Safety hook with clevis connector and grab latch.

Stock No.	Code	WLL (lb)	L	B	G	H	Weight (lb)
Z100758	GBK-6-10	3306	3.43	1.02	0.59	0.67	0.88
Z100849	GBK-7-10	4500	4.49	1.42	0.79	0.87	1.10
Z100759	GBK-8-10	5700	4.69	1.42	0.79	0.87	1.76
Z100760	GBK-10-10	8800	5.91	1.85	0.87	1.14	3.09
Z100761	GBK-13-10	15000	6.77	2.09	1.14	1.50	5.95
Z100762	GBK-16-10	22600	8.19	2.68	1.18	1.77	9.70

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.

Safety Hook BKG

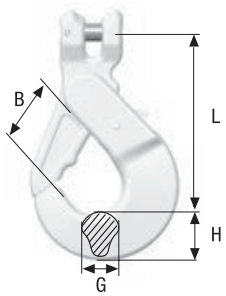


For use with Grade 100 or Grade 80 chain. Safety hook with clevis connector and standard latch.

Stock No.	Code	WLL (lb)	L	B	G	H	Weight (lb)
Z101110	BKG-6-10	3306	3.58	1.14	0.59	0.83	1.10
Z101098	BKG-7-10	4500	4.72	1.46	0.67	0.87	1.10
Z101100	BKG-8-10	5700	4.76	1.46	0.67	1.02	1.98
Z101026	BKG-10-10	8800	5.67	1.77	0.83	1.22	3.31
Z101034	BKG-13-10	15000	7.09	2.17	1.18	1.57	6.61
Z101042	BKG-16-10	22600	8.62	2.44	1.46	1.97	12.13
Z101091	BKG-20-10	35300	9.45	2.68	1.73	2.44	21.16

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.

Safety Hook BKGC



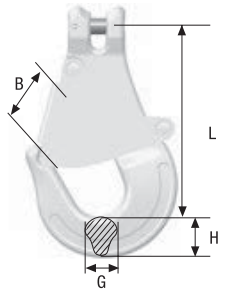
For use with Grade 100 or Grade 80 chain. Safety hook with clevis connector for skip loaders.

Stock No.	Code	WLL (lb)	L	B	G	H	Weight (lb)
Z1002401	BKGC-13-10	15000	6.46	2.17	1.06	1.69	7.05

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.

4

Sling Hook GKC



For use with Grade 100 or Grade 80 chain. Sling hook with clevis connector for skip loaders.

Stock No.	Code	WLL (lb)	L	B	G	H	Weight (lb)
Z7006461	GKC-13-10	15000	7.40	2.36	1.06	1.69	5.51

4:1 Design Factor. Fulfills requirements in: EN 1677:2008 (WLL +25%), ASTM A952/A952M and AS 3776:2015.

Clevis Egglink CEL

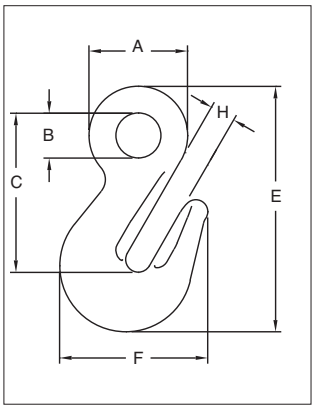
Stock No.	Code	WLL (lb)	C	E	G	H	L	Weight (lb)
Z701968	CEL-8-10	5733	3.15	1.57	0.55	0.59	3.94	0.88
Z701969	CEL-10-10	8820	3.94	1.97	0.71	0.75	4.96	1.54
Z701970	CEL-13-10	14994	5.12	2.56	0.91	0.98	6.38	3.31

4:1 Deisgn Factor. Fulfills requirements in: EN 1677:2008, ISO 8539:2009, ASTM A952/A952M and AS 3776:2015.

Crosby

A-1328

- Forged alloy steel — Quenched & Tempered.
- Individually Proof Tested to 2-1/2 times the Working Load Limit with certification.
- Each hook has a Product Identification Code (PIC) for material traceability, along with the size and the name Crosby.
- Suitable for use with Grade 100 and Grade 80 chain.
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.



Crosby 8/10™ FATIGUE RATED QUIC-CHECK® Q&T

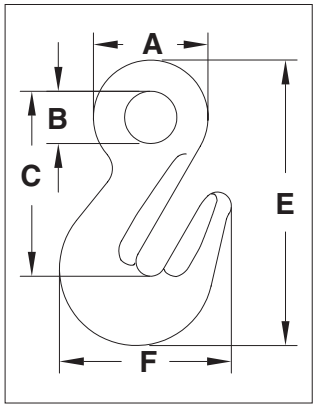
A-1328 Eye Grab Hook

Chain Size		Working Load Limit		Weight Each	Dimensions (in)					
(in)	(mm)	(lb)	Stock No.	(lb)	A	B	C	E	F	H
1/4 - 5/16	7 - 8	5700	1026169	.98	1.75	.75	2.79	4.29	2.57	.44
3/8	10	8800	1026187	1.6	2.06	.94	3.33	5.13	3.09	.53
1/2	13	15000	1026196	3.3	2.56	1.12	4.11	6.38	3.83	.66
5/8	16	22600	1026205	6.0	3.07	1.31	4.91	7.62	4.53	.79
3/4	19-20	35300	1026214	10.0	3.25	1.50	5.41	8.76	6.00	.94
7/8	22-23	44100	1026223	13.1	3.94	1.81	6.48	10.10	6.53	1.09
1	26	59700	1026232	18.9	4.44	2.00	7.22	11.45	7.75	1.19
1 1/4	32	90400	1026241	39.4	5.64	2.38	9.08	14.59	9.50	1.50

4:1 Design Factor.

A-1348

- Forged alloy steel — Quenched & Tempered.
- The use of A-1348 Cradle Grab Hook will allow 100% percent of the chain sling capacity. When used to hook back to chain leg to form a choker, the angle of the choke must be 120 degrees or greater. When used as a chain shortener, minimize twist of chain and ensure chain is fully engaged in hook.
- Innovative cradle design allows for 100% efficiency of Grade 100 chain.
- Individually Proof Tested to 2-1/2 times the Working Load Limit with certification.
- Each hook has a Product Identification Code (PIC) for material traceability, along with the size and the name Crosby in raised letters.
- Suitable for use with Grade 100 and Grade 80 chain.
- Fatigue rated to 20,000 cycles at 1-1/2 times the Working Load Limit.



Crosby 8/10™ Q&T

A-1348 Eye Cradle Grab Hook

Chain Size		Working Load Limit		Weight Each	Dimensions (in)				
(in)	(mm)	(lb)	Stock No.	(lb)	A	B	C	E	F
1/4-5/16	7-8	5700	1026200	0.77	1.43	0.65	2.52	3.87	2.29
3/8	10	8800	1026209	1.41	1.95	1.02	3.07	4.72	2.71
1/2	13	15000	1026218	1.92	2.44	1.14	3.82	5.75	3.24
5/8	16	22600	1026227	6.24	3.11	1.42	4.98	7.72	4.40

4:1 Design Factor.

Crosby® Grade 100 SHUR-LOC® Hooks

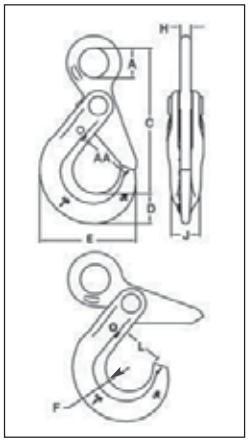
Fatigue Rated® | QT QUENCHED & TEMPERED | QUIC-CHECK® Q | Crosby 8/10™

S-1316

- Forged Alloy Steel - Quenched and Tempered.
- 25% stronger than Grade 80.
- Individually Proof Tested to 2-1/2 times the Working Load Limit with certification.
- Recessed trigger design is flush with the hook body, protecting the trigger from potential damage.
  - Easy to operate with enlarged thumb access.
- Positive Lock Latch is Self-Locking when hook is loaded.
- Eye style is designed with "Engineered Flat" to connect to S-1325 chain coupler.
- Suitable for use with Grade 100 and Grade 80 chain.
- The SHUR-LOC® hook, if properly installed and locked, can be used for personnel lifting applications and meets the intent of OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B).
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.
- "Look for the Platinum Color - Crosby Grade 100 Alloy Products.

S-1317

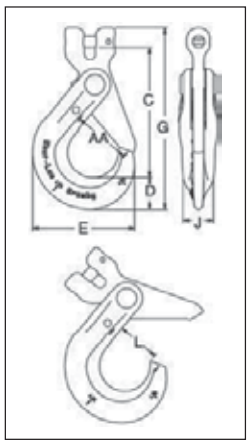
SHUR-LOC® Hook Series with Positive Locking Latch



S-1316 Eye Hook

Chain Size		Working Load Limit	S-1316	Weight Each	Dimensions (in.)								
(in.)	(mm)	(lbs.)*	Stock No.	(lbs.)	A	C	D	E	F	H	J	L	AA
-	6	3200	1022896	.85	.78	3.95	.79	2.60	.67	.31	.63	1.14	1.50
1/4-5/16	7-8	5700	1022914	1.80	1.08	5.31	1.10	3.50	.87	.39	.81	1.48	2.00
3/8	10	8800	1022923	3.40	1.30	6.57	1.17	4.39	1.10	.51	.94	1.83	2.50
1/2	13	15000	1022932	6.00	1.65	8.23	1.67	5.45	1.26	.67	1.16	2.22	3.00
5/8	16	22600	1022941	15.1	2.20	10.06	2.04	6.56	1.50	.87	1.50	2.65	3.50
3/4	18-20	35300	1022942	19.0	2.60	10.77	2.22	7.76	2.01	.87	2.03	3.52	-
7/8	22	42700	1022943	28.0	2.87	12.49	2.45	8.75	2.27	.98	2.20	3.83	-
1	26	59700	1022944	49.5	3.15	14.60	3.21	9.87	2.46	1.26	2.68	4.09	-

* Minimum Ultimate Load is 4 times the Working Load Limit.



S-1317 Clevis Hook

Chain Size		Working Load Limit	S-1317	Weight Each	Dimensions (in.)						
(in.)	(mm)	(lbs.)*	Stock No.	(lbs.)	C	D	E	G	J	L	AA
-	6	3200	1028991	.77	3.44	.79	2.60	4.75	.63	1.16	1.50
1/4	7	4300	1029000	1.80	4.48	1.10	3.51	6.25	.81	1.48	2.00
5/16	8	5700	1029009	1.80	4.47	1.10	3.51	6.25	.81	1.48	2.00
3/8	10	8800	1029018	3.66	5.53	1.17	4.39	7.54	.94	1.83	2.50
1/2	13	15000	1029027	6.80	6.81	1.67	5.49	9.52	1.16	2.22	3.00
5/8	16	22600	1029036	11.9	8.22	2.04	6.55	11.61	1.50	2.65	3.50
3/4	18-20	35300	1029071	15.0	9.42	2.22	7.76	13.21	2.03	3.52	-
7/8	22	42700	1029080	28.0	11.14	2.45	8.75	15.45	2.20	3.83	-
1	26	59700	1029089	49.5	12.56	3.21	9.87	18.44	2.68	4.09	-

* Minimum Ultimate Load is 4 times the Working Load Limit.

Crosby® Grade 100 SHUR-LOC® Hooks

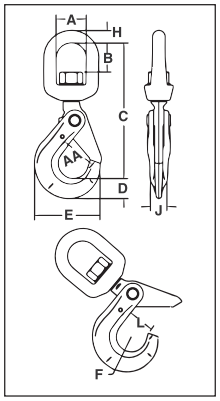
Fatigue Rated · QT · QUIC-CHECK Q · Crosby 8/10™

S-1326

- Forged Alloy Steel - Quenched and Tempered.
- Individually Proof Tested at 2-1/2 times the Working Load Limit with certification.
- Recessed trigger design is flush with the hook body, protecting the trigger from potential damage.
  - Easy to operate with enlarged thumb access.
- Positive Lock Latch is Self-Locking when hook is loaded.
- G-414 Heavy Thimble should be used with wire rope slings.
- Trigger repair Kit available (S-4316). Consists of spring, roll pin and trigger.
- S-13326 Swivel Hook utilizes anti-friction bearing design which allows hook to rotate freely under load.
- Fatigue rated.
- The SHUR-LOC® hook, if properly installed and locked, can be used for personnel lifting applications and meets the intent of OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B).
- "Look for the Platinum Color – Crosby Grade 100 Alloy Products".
- U.S. Patent 5,381,650 and foreign equivalents.

S-13326

Use in corrosive environment requires shank and nut inspection in accordance with ASME B30.10-1.10.4(b)(5)(c)2009.

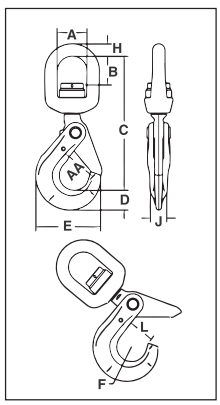


S-1326 SHUR-LOC® Swivel Hooks

- Suitable for infrequent, non-continuous rotation under load.

Chain Size		S-1326 Stock No.	Grade 100 Alloy Chain Working Load Limit (lbs.) 4:1*	Weight Each (lbs.)	Dimensions (in.)									
(in.)	(mm)				A	B	C	D	E	F	H	J	L	AA
–	6	1004304	3200	1.26	1.50	1.32	6.13	.79	2.60	.67	.50	.63	1.13	1.50
1/4-5/16	7-8	1004313	5700	2.62	1.75	1.59	7.60	1.10	3.50	.87	.63	.81	1.38	2.00
3/8	10	1004322	8800	4.70	2.00	1.73	8.83	1.17	4.39	1.10	.75	.94	1.75	2.50
1/2	13	1004331	15000	8.64	2.50	2.38	11.20	1.67	5.45	1.26	1.00	1.16	2.11	3.00
5/8	16	1004340	22600	17.00	2.75	2.53	12.98	2.05	6.56	1.50	1.13	1.50	2.49	3.50
3/4	18-20	1004349	35300	24.00	2.83	2.52	17.42	2.22	7.76	2.01	1.10	2.03	3.52	5.00
7/8	22	1004358	42700	29.00	3.44	3.19	16.47	2.45	8.75	2.26	1.30	2.20	3.83	6.00

* Ultimate Load is 4 times the Working Load Limit.



S-13326 SHUR-LOC® Swivel Hooks with Bearing

- Suitable for frequent rotation under load.

Chain Size		S-13326 Stock No.	Grade 100 Alloy Chain Working Load Limit (lbs.) 4:1*	Weight Each (lbs.)	Dimensions (in.)									
(in.)	(mm)				A	B	C	D	E	F	H	J	L	AA
–	6	1004404	3200	1.50	1.50	1.14	6.17	.79	2.60	.67	.50	.63	1.13	1.50
1/4-5/16	7-8	1004413	5700	3.10	1.75	1.52	7.54	1.10	3.50	.87	.63	.81	1.44	2.00
3/8	10	1004422	8800	5.26	2.00	1.61	8.88	1.16	4.35	1.10	.75	.94	1.83	2.50
1/2	13	1004431	15000	11.22	2.50	2.03	11.11	1.66	5.45	1.26	1.00	1.16	2.19	3.00
5/8	16	1004440	22600	17.32	2.75	1.98	12.61	2.05	6.56	1.50	1.13	1.50	2.61	3.50

* Ultimate Load is 4 times the Working Load Limit.

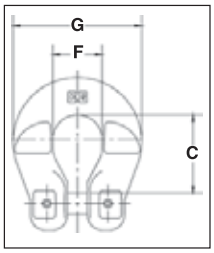
Crosby® Grade 100 Chain Fittings

Fatigue Rated® "QT" Quenched & Tempered Crosby 8/10™

S-1325A

- Designed to connect Grade 100 chain fittings produced with "Engineered Flat" to Grade 100 chain.
- Forged Alloy Steel - Quenched and Tempered.
- Suitable for use with Grade 100 and Grade 80 chain.
- Individually Proof Tested to 2-1/2 times the Working Load Limit with certification.
- Locking system that provides for simple assembly and disassembly – no special tools required.
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.
- "Look for the Platinum Color – Crosby Grade 100 Alloy Products."

S-1325A Grade 100 Chain Coupler



Chain Size		S-1325A Stock No.	Working Load Limit (lbs.)*	Weight Each (lbs.)	Dimensions (in.)		
(in.)	(mm)				C	F	G
-	6	1098496	3200	.25	1.03	.74	1.74
1/4	7	1098500	4300	.50	1.41	.88	2.32
5/16	8	1098504	5700	.50	1.40	.88	2.32
3/8	10	1098508	8800	.80	1.84	1.18	2.72
1/2	13	1098512	15000	1.70	2.12	1.50	3.62
5/8	16	1098516	22600	1.90	2.84	1.96	4.40

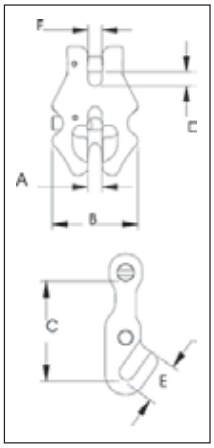
* Minimum Ultimate Load is 4 times the Working Load Limit.

Fatigue Rated® "QT" Quenched & Tempered Crosby 8/10™

S-1311N

- Alloy Steel - Quenched and Tempered.
- Individually Proof Tested to 2-1/2 times the Working Load Limit with certification.
- Suitable for use with Grade 100 and Grade 80 chain.
- Spring loaded chain locking system keeps chain in place under slack conditions.
- The use of S-1311N Chain Shortener will allow 100 percent of the chain sling capacity.
- Fatigue rated at 1-1/2 times the Working Load Limit at 20,000 cycles.
- "Look for the Platinum Color - Crosby Grade 100 Alloy Products."

S-1311N Grade 100 Chain Shortener Link



Chain Size		S-1311N Stock No.	Working Load Limit (lbs.)*	Weight Each (lbs.)	Dimensions (in.)					
(in.)	(mm)				A	B	C	D	E	F
-	6	1017860	3200	.49	.30	1.76	1.83	.29	.76	.29
1/4	7	1017869	4300	.84	.34	2.04	2.17	.34	.88	.33
5/16	8	1017878	5700	1.22	.40	2.36	2.53	.39	1.01	.38
3/8	10	1017897	8800	2.03	.48	2.84	3.07	.48	1.23	.46
1/2	13	1017906	15000	4.31	.62	3.56	3.77	.61	1.57	.59
5/8	16	1017915	22600	7.20	.73	4.24	4.64	.73	1.91	.70

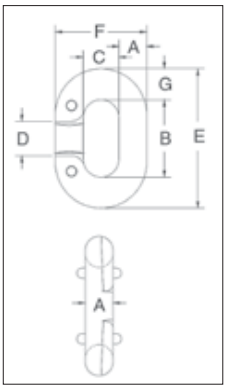
* Minimum Ultimate Load is 4 times the Working Load Limit.

Crosby

CHAIN & ACCESSORIES

G-335

- Forged steel - Quenched & Tempered.
- Integral rivets join the two halves.
- After making connections, rivets must be peened.
- All sizes have countersunk rivet holes.
- Meets or exceeds the performance requirements of Federal Specifications RR-C-27IG, Type II, except for those provisions required of the contractor.
- Not suitable for use with Grade 80 or Grade 100 chain and chain slings used in overhead lifting.



G-335 "Missing Link"® Replacement Links

Chain Size (in)	Stock No.	Working Load Limit (lb)	Links Per Box	Weight Per 100 (lb)	Dimensions (in)						
					A	B	C	D	E	F	G
*1/4	1013110	1325	10	6.25	.28	.88	.44	.44	1.50	1.00	.31
3/8	1013156	2750	10	20.00	.41	1.13	.56	.56	2.06	1.38	.47
7/16	1013174	3625	10	27.50	.47	1.28	.59	.59	2.34	1.53	.53
1/2	1013192	4750	10	37.50	.53	1.47	.66	.66	2.66	1.72	.59
5/8	1013236	7250	10	72.50	.66	1.81	.78	.81	3.31	2.09	.75
3/4	1013254	10250	10	122.50	.78	2.13	.94	1.06	3.88	2.50	.88
7/8	1013272	12000	Bulk	175.00	.91	2.50	1.13	1.13	4.50	2.94	1.00
† 1	1013290	15500	Bulk	250.00	1.03	2.75	1.25	1.25	5.00	3.31	1.13

4:1 Design Factor. *Rivets Only - No interlocking lugs. †Has reinforced rivet holes.

SLING IDENTIFICATION TAG KITS

Stamped ID Tag

RFID Equipped Tags

Forged ID Tags

Stamped RFID Tag

Wire Rope

RFID QUIC Tag

Stamped ID Tags

- Heavy duty, pre-stamped, zinc-plated metal tag.
- 4-1/8" x 1-7/16" tag dimensions.
- 2-1/2" diameter metal attaching ring.
- Tag pre-stamped for simple inclusion of sling type, Working Load Limit, reach, serial number, chain size and grade.

ID Tag Stock No.	Carton Qty.	Weight Per Carton (lb)
115244	50	10.55

ID Tags

- Heavy Duty tags.
- 1-5/16" diameter ring opening (will fit 1/4" - 5/8" A-1337).
- Chain tags meet requirements of ASME B30.9 for Sling Identification.
- Raised edge and recessed pads to protect lettering.
- Raised lettering for quick reference.

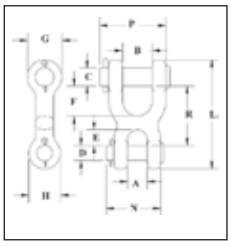
Operating Frequency: 13.5MHz

Stock No.	Style	Material Type	RFID Equipped	Tag Size (in)	Weight Each (lb)
115369	Chain	Cast Stainless Steel	Yes	6-5/16 x 1-5/8	.46
115350	Wire Rope	Cast Stainless Steel	Yes	1-11/16 x 1-5/16	.07
115217	Chain	Forged Steel	No	5-3/4 x 1-7/8	.40
115353	Chain	Stamped Zinc Plated Steel	Yes	5-3/4 x 1-5/8	.29
115355	Wire Rope	Stamped Zinc Plated Steel	Yes	1-11/16 x 1-5/16	.04
1224692	Zip Tie	High Crystalline Polyamide	Yes	7.625	.05

Crosby® Connecting Links

S-247

- All pins Alloy Steel - Quenched and Tempered.
- Body is forged and heat treated carbon steel.
- Designed for linking all popular sizes of Crosby Spectrum 3® and Spectrum 4® chain to rings, end links, eye hooks, pad eyes, tractor eye bolts, etc.
- Features quick and easy assembly.



S-247 Double Clevis Link

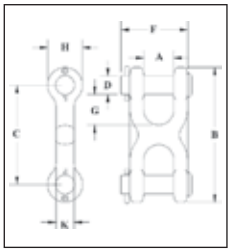
Chain Size (in.)	S-247 Stock No.	Working Load Limit (lbs.)*	Weight Each (lbs.)	Dimensions (in.)											
				A	B	C	D	E	F	G	H	L	N	P	R
1/4	1013021	2600	.38	.50	.75	.50	.31	.38	.75	1.00	.81	2.81	1.38	1.66	1.50
5/16-3/8	1013049	5400	.81	.56	1.00	.63	.44	.47	1.00	1.19	1.00	3.53	1.75	2.25	1.91
7/16	1013067	7200	1.25	.69	1.13	.69	.56	.59	1.09	1.31	1.19	4.06	2.00	2.50	2.19
1/2	1013085	9200	1.56	.81	1.25	.75	.63	.68	1.25	1.44	1.31	4.53	2.25	2.75	2.47

* Ultimate Load is 4 times the Working Load Limit.

Not Suitable for use with Grade 80 or Grade 100 chain and chain slings used in overhead lifting.

S-249

- Available in three popular sizes.
- Body is forged and heat treated carbon steel.
- All pins Alloy Steel - Quenched and Tempered.
- Features quick and easy assembly.
- Twin Clevis design provides a variety of uses and can be used with Crosby Spectrum 3®, Spectrum 4® and Spectrum 7® chain.



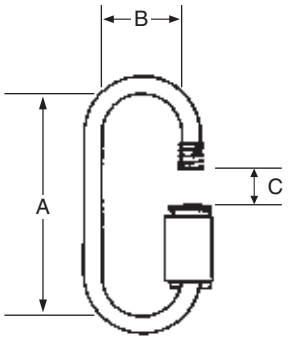
S-249 Twin Clevis Link

Chain Size (in.)	S-249 Stock No.	Working Load Limit (lbs.)*	Weight Each (lbs.)	Dimensions (in.)							
				A	B	C	D	F	G	H	K
1/4-5/16	1012861	4700	.31	.47	2.50	1.56	.38	1.31	.43	.94	.50
3/8	1012889	6600	.44	.53	2.81	1.81	.44	1.53	.50	1.00	.56
7/16-1/2	1012905	11300	.98	.65	3.62	2.31	.56	1.91	.63	1.31	.81

* Ultimate Load is 4 times the Working Load Limit.

Not Suitable for use with Grade 80 or Grade 100 chain and chain slings used in overhead lifting.

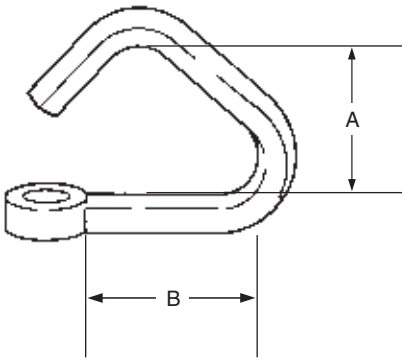
Chain Connecting Links



Quick Link or Rapid Link

Trade Size Inches	A Inside Length Inches	B Inside Width Inches	C Side Opening Inches	Working Load Limit Pounds*	Avg. Wt Pounds Per 100
3/16	1 1/2	1/2	1/4	750	4.50
1/4	1 3/4	9/16	9/32	1,250	8.00
5/16	2 5/16	11/16	3/8	1,900	17.00
3/8	2 7/16	3/4	7/16	2,650	23.00
1/2	3 3/16	15/16	19/32	4,500	51.00

*CAUTION: This working load limit should not be exceeded.
APPLICATIONS: Used as a repair link, connecting link or attaching device on proof coil chain only.
DESCRIPTION: Zinc-plated NOT heat-treated.



Cold Shut

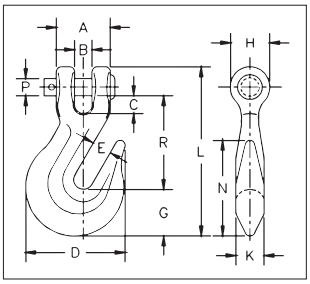
Trade Size Inches	A Inside Length Inches	B Inside Width Inches	Working Load Limit* Pounds	Avg. Wt. Pounds Per 100
3/16	11/16	5/16	525	3
1/4	1 3/16	3/8	925	6
5/16	1 7/16	13/32	1,450	10
3/8	1 3/4	15/32	2,110	18
7/16	1 3/8	13/16	2,850	26
1/2	1 9/16	13/16	3,750	38
5/8	2 1/4	1 1/4	5,850	78
3/4	2 1/2	1 3/8	8,425	130
7/8	3 3/8	1	11,475	200
1	3 7/8	1 3/16	15,000	325

*CAUTION: This working load limit should not be exceeded.
APPLICATIONS: As temporary repair link, use **one size larger** than the proof coil chain with which it is to be used. Also used to couple light attachments.
DESCRIPTION: Low carbon steel, self-colored or zinc-plated finish.

Crosby

A-330
Clevis Grab Hook

- Forged steel - Quenched & Tempered.
- Design factor is 4:1.
- Features quick and easy assembly.
- Designed for Grade 8 chain.



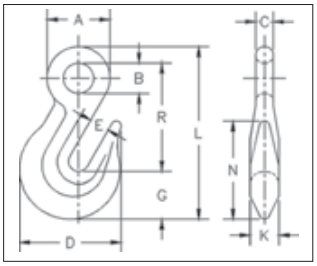
A-330 Clevis Grab Hooks

Chain Size (in)	Stock No.	Working Load Limit (lb)	Weight Each (lb)	Dimensions (in) (lb)	B	C	D	E	G	H	K	L	N	P	R
1/4	1027249*	3500	.36	1.00	.32	.31	1.81	.34	.88	.72	.47	3.05	1.75	.31	1.64
5/16	1027267*	4700	.62	1.22	.43	.36	2.12	.44	.97	.91	.59	3.66	2.06	.38	2.02
3/8	1027285*	7100	1.00	1.42	.48	.49	2.53	.50	1.17	1.00	.72	4.42	2.34	.44	2.41
1/2	1027329*	12000	2.22	1.88	.57	.51	3.56	.66	1.53	1.25	.78	5.72	2.97	.63	3.19
5/8	1027347	18100	4.41	2.31	.71	.67	4.39	.78	1.78	1.56	1.09	6.83	4.31	.75	4.09
3/4	1027365	24700	6.50	2.62	.94	.94	5.22	.94	2.13	1.88	1.31	8.13	5.09	.88	4.63

* These A-330 hooks are forged with an "8" designating Grade 80, and are suitable for use with Grade 8 chain in overhead lifting applications as long as the hook is proof-tested as part of the chain sling assembly or as an individual component per ASME B30.9. We recommend the use of the A-1338 / A-1358 which is proof tested and supplied with a proof test certificate.

A-323
Eye Grab Hook

- Forged steel - Quenched & Tempered.
- Design Factor is 4:1.
- Designed for Grade 8 chain.



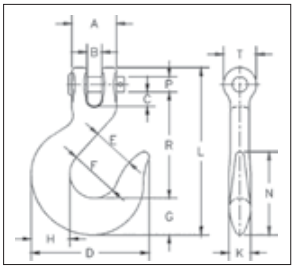
A-323 Eye Grab Hooks

Chain Size (in)	Stock No.	Working Load Limit (lb)	Weight Each (lb)	Dimensions (in) (lb)	B	C	D	E	G	K	L	N	R
1/4	1026384*	3500	.28	1.09	.53	.31	1.81	.34	.88	.47	3.05	1.75	1.88
5/16	1026400*	4700	.45	1.31	.62	.38	2.12	.44	.97	.59	3.59	2.06	2.28
3/8	1026428*	7100	.79	1.56	.75	.44	2.53	.50	1.17	.72	4.28	2.34	2.69
1/2	1026464*	12000	1.75	1.94	.88	.53	3.56	.66	1.53	.78	5.44	2.97	3.38
5/8	1026482*	18100	3.25	2.48	1.16	.66	4.41	.79	1.89	1.16	6.82	4.25	4.25
3/4	1026507	24700	5.94	2.88	1.38	.75	5.22	.94	2.13	1.31	8.06	5.09	5.16

* These A-323 hooks are forged with an "8" designating Grade 80, and are suitable for use with Grade 8 chain in overhead lifting applications as long as the hook is proof-tested as part of the chain sling assembly or as an individual component per ASME B30.9. We recommend the use of the A-1328 which is proof tested and supplied with a proof test certificate.

A-331
Clevis Slip Hook

- Forged alloy steel – Quenched & Tempered.
- All pins are alloy steel – Quenched & Tempered.
- Not suitable for use with Grade 80 chain and chain slings used in overhead lifting. For slings or lifting chains, Grade 80 or 100 alloy components are recommended.



A-331 Clevis Slip Hooks

Chain Size (in)	Stock No.	Working Load Limit (lb)	Weight Each (lb)	Dimensions (in) A	B	C	D	E	F	G	H	K	L	N	P	R	T
1/4	1027524	2750	0.55	1.06	0.32	0.29	2.76	0.94	1.19	0.81	0.88	0.50	3.94	2.13	0.31	2.58	0.72
5/16	1027542	4300	0.79	1.22	0.43	0.34	3.05	1.06	1.25	0.94	1.00	0.56	4.53	2.24	0.38	2.87	0.97
3/8	1027560	5250	1.21	1.38	0.45	0.44	3.62	1.31	1.50	1.13	1.19	0.66	5.16	2.56	0.44	3.25	1.06
7/16	1027588	7000	2.05	1.73	0.59	0.60	4.33	1.56	1.81	1.38	1.44	0.81	5.98	3.05	0.56	3.70	1.19
1/2	1027604	9000	2.76	1.88	0.57	0.53	4.80	1.69	1.94	1.56	1.63	0.91	6.54	3.44	0.63	4.02	1.31
5/8	1027622	13500	4.74	2.30	0.71	0.71	5.63	2.01	2.38	1.81	1.94	1.09	7.87	4.02	0.75	4.92	1.56
3/4	1027640	19250	11.28	3.19	1.18	1.29	7.38	2.50	3.00	2.38	2.50	1.44	10.02	5.06	1.00	6.09	2.09

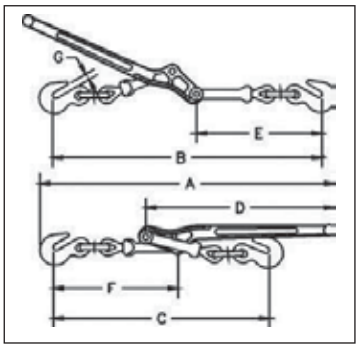
4:1 Design Factor.

Lebus® Load Binders

"QT" Quenched & Tempered — Load Rated

L-150

- Extra heavy construction at leverage point to prevent spreading. Heel of binder toggles away from load, permitting easy release.
- Ball and socket swivel joints at hook assemblies permit a straight line pull.
- Binders shown with Proof Loads have been individually proof tested to values shown, prior to shipment.



L-150 Standard Lever Type Load Binders

- **Meets or exceeds requirements of US DOT FMCSA Part 393 Subpart I.**

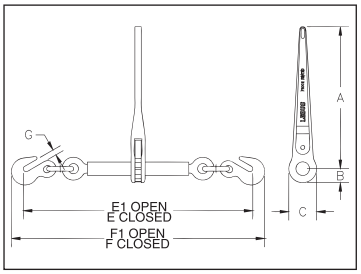
Model	Stock No.	Std. Pkg.	Min-Max Chain Size (in.)	Working Load Limit (lbs.)	Proof Load (lbs.)	Ultimate Load (lbs.)	Weight Each (lbs.)	Handle Length (in.)	Take Up (in.)	Dimensions (in.)						
										A	B	C	D	E	F	G
7-1	1048128	4	5/16-3/8	5400	10800	19000	7.02	16.00	4.50	24.13	22.13	17.88	16.00	10.38	10.38	.50
A-1	1048146	4	3/8-1/2	9200	18400	33000	12.47	18.69	4.50	28.75	25.75	21.25	18.69	12.31	12.38	.63
C-1	1048164	4	1/2-5/8	13000	26000	46000	19.68	21.00	4.75	31.25	29.75	25.00	21.00	14.63	13.75	.72

Lebus® Load Binders

Load Rated

L-140

- Upgraded for use with Grades 70, 80 and 100 Chain.
- Utilizes standard Crosby A-323 Alloy Eye Grab Hooks.
- New design "one piece" forged handle.
- Continuous take-up feature provides finite adjustment to tie down load.
- One piece assembly, no bolts or nuts to loosen.
- Ratchet spring is rust proofed.
- All load bearing or holding parts forged.
- Easy operating positive ratchet.
- Binders shown with Proof Loads have been individually proof tested to values shown, prior to shipment.



L-140 Standard Ratchet Type Load Binders

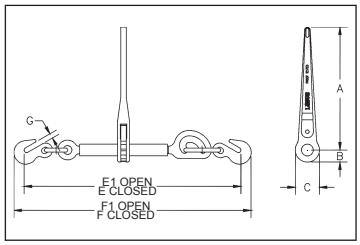
- **Meets or exceeds requirements of US DOT FMCSA Part 393 Subpart I.**

Model	Stock No.	Min-Max Chain Size (in.)	Working Load Limit (lbs.)*	Proof Load (lbs.)	Weight Each (lbs.)	Handle Length (in.)	Barrel Length (in.)	Take Up (in.)	Dimensions (in.)							
									A	B	C	E	E1	F	F1	G
R-7 **	1048404	5/16-3/8	8800	17600	12.11	14	10	8.0	14.00	1.38	2.75	22.94	30.94	25.13	33.13	.50
R-A **	1048422	3/8-1/2	15000	30000	14.70	14	10	8.0	14.00	1.38	2.75	25.25	33.25	27.63	35.63	.63
R-C ***	1048440	1/2-5/8	16000	32000	14.55	14	10	8.0	14.00	1.38	2.75	26.38	24.38	29.44	37.44	.72

* Ultimate Load is 3 times the Working Load Limit.
** Matches the Working Load Limit of Grade 100 chain for both sizes.
*** Matches the Working Load Limit of Grade 100 chain for 1/2" size.

R-7QL

- For use with Grade 7 Transport Chain.
- Utilizes standard Crosby A-323 Alloy Eye Grab Hooks.
- New design "one piece" forged handle.
- Continuous take-up feature, infinite adjustment, gets the last half of chain.
- One piece assembly, no bolts or nuts to loosen.
- Ratchet spring is rust proofed.
- All load bearings or holding parts forged.
- Easy operating positive ratchet.
- Binders shown with Proof Loads have been individually proof tested to values shown, prior to shipment.



R-7QL QUIC-LINK Ratchet Load Binder

Model	R-7QL Stock No.	Min-Max Chain Size (in.)	Working Load Limit (lbs.)*	Proof Load (lbs.)	Weight Each (lbs.)	Handle Length (in.)	Barrel Length (in.)	Take Up (in.)	Dimensions (in.)							
									A	B	C	E	E1	F	F1	G
R-7QL	1048413	5/16-3/8	6600	13200	12.25	14	10	8.0	14.00	1.38	2.75	24.81	32.81	27.00	35.00	.50

* Ultimate Load is 3 times the Working Load Limit.

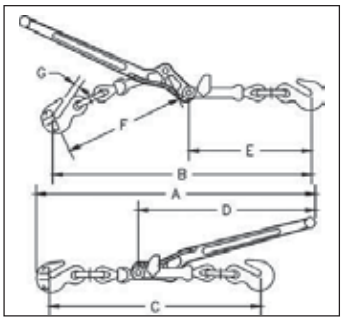
4

Lebus® Load Binders

Load Rated

A-1W

- Forged steel – Quenched and Tempered.
- Used as a come-a-long for short take-up on chain.
- Binder toggles away from the load.
- Binders shown with Proof Loads have been individually proof tested to values shown, prior to shipment.

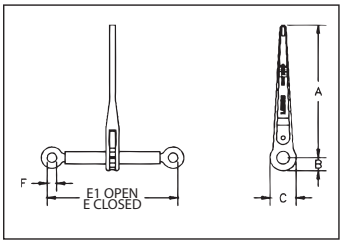


A-1W Walking Load Binders

- **Meets or exceeds requirements of US DOT FMCSA Part 393 Subpart I.**

Model	Stock No.	Chain Size (in.)	Working Load Limit (lbs.)	Proof Load (lbs.)	Ultimate Load (lbs.)	Weight Each (lbs.)	Handle Length (in.)	Dimensions (in.)						
								A	B	C	D	E	F	G
A-1W	1048388	1/2 only	9200	18400	33000	13.10	18.69	28.75	25.75	21.25	18.69	12.31	12.38	.63

R-10



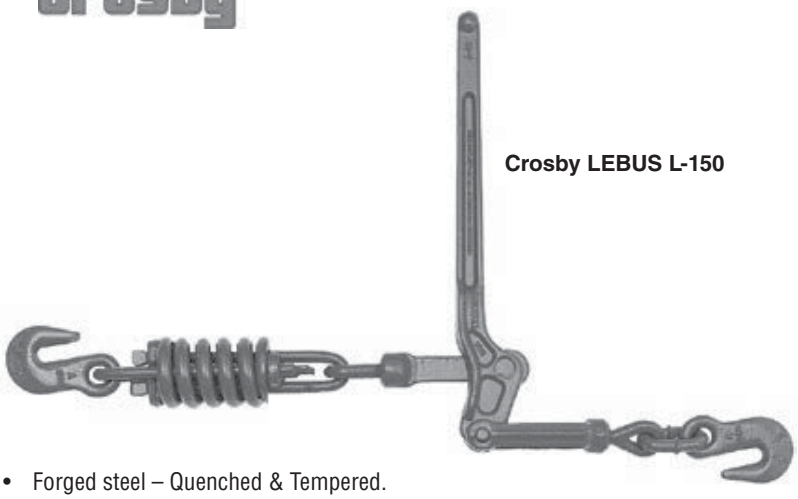
R-10 Binder without Links and Hooks

- **Meets or exceeds requirements of US DOT FMCSA Part 393 Subpart I.**

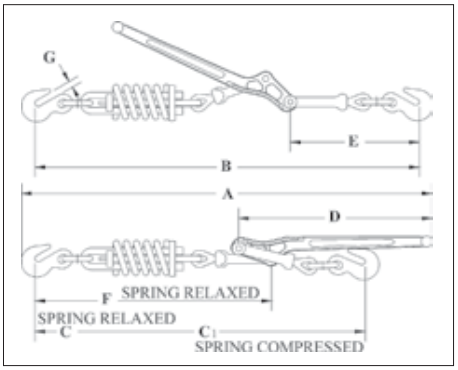
Model	R-10 Stock No.	Working Load Limit (lbs.)*	Weight Each (lbs.)	Handle Length (in.)	Barrel Length (in.)	Take Up (in.)	Dimensions (in.)					
							A	B	C	E	E1	F
R-10	1048468	16000	8.04	14	10	8.0	14	1.38	2.75	14	22	1.00

* Ultimate Load is 3 times the Working Load Limit.

Crosby



Crosby LEBUS L-150



- Forged steel – Quenched & Tempered.
- Spring cushion for load protection, cushions shock and sway.
- Binder toggles away from the load.

APPLICATION AND WARNING INFORMATION
SECTION 17

Crosby LEBUS L-150 Snubbing Load Binders

Model	Stock No.	Min-Max Chain Size (in)	Working Load Limit (lb)	Ultimate Load (lb)	Weight Each (lb)	Handle Length (in)	Take Up (in)	Compression Strength of Spring (lb)	Dimensions (in)							
									A	B	C	C1	D	E	F	G
7-12	1048280	5/16 - 3/8	5400	16000	11.25	16.00	4.25	2300	32.75	30.75	28.00	26.50	16.00	10.38	19.00	.50
A-12	1048306	3/8 - 1/2	9200	20000	18.69	18.50	4.50	3300	37.19	34.00	29.50	30.44	18.69	12.31	20.88	.63

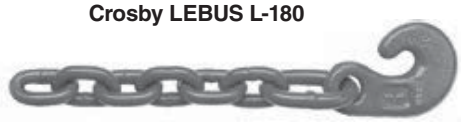
Crosby LEBUS C-188 Spectrum 8®

- Heat treated alloy steel.
- Ends fitted with Crosby A-330 Quenched & Tempered alloy clevis grab hook.
- Finish – self colored.
- Meets or exceeds requirements of US DOT FMCSA Part 393 Subpart I.

Crosby LEBUS C-188 Spectrum 8® Alloy Boomer Chains

Chain Size (in)	Stock No.	Working Load Limit (lb)	Standard Length (ft)	Weight Each (lb)
3/8	279889	7100	20	30.28
1/2	279898	12000	20	54.04

Crosby LEBUS L-180



- Hooks are Forged – Quenched & Tempered.
- Individually Proof Tested.
- Spectrum 8® alloy steel from 3/4" through 1-1/4" (20 - 32mm).
- Meets or exceeds requirements of US DOT FMCSA Part 393 Subpart I.

Crosby LEBUS L-180 Winchline Tail Chain

Wire Rope Diameter (in)*	Stock No.	Working Load Limit (lb)†	Length (in)	No. of Links	Weight Each (lb)
5/16 - 3/8	1091473	5400	18	11	3.0
1/2 - 5/8	1091482	13000	18	7	6.2
3/4 - 7/8	1091511	34200	24	8	18.2
1 - 1-1/8	1091516	47700	18	5	21.2
1 - 1-1/8	1091525	47700	24	7	23.3
1-1/4	1091532	72300	24	5	40.0

* Recommended for IPS or XIP (EIP), PPI, FC or IWRC wire rope. † Ultimate Load is 3.5 times the Working Load Limit.

Welded Chain Specifications

TRANSPORT CHAIN (GRADE 70)

Significantly higher tensile strength for all load binding and tie down applications, which permits you to hold a given load with the next smaller size chain than High Test. This increased strength-to-weight ratio means lower costs and a lighter chain, for easier storage and handling.

Trade Size In Inches	Size Material In Inches	Working* Load Limit Lbs	Nominal Inside Length in Inches	Nominal Inside Width in Inches	Maximum Length 100 Links in Inches	Weight per 100 Feet Lbs
1/4	9/32	3,150	.76	.40	87	76
5/16	11/32	4,700	.98	.46	102	113
3/8	13/32	6,600	1.14	.54	119	162
7/16	15/32	8,700	1.29	.62	134	212
1/2	17/32	11,300	1.43	.72	149	270

*Working load limit must not be exceeded.
Not to be used for overhead lifting.
Boomer chains or binder chains available on request.

HIGH TEST CHAIN (GRADE 40 OR 43)

High test chain features both high tensile strength and resistance to wear needed by modern hauling and heavy duty trucking. Working load limit exceeds those of ordinary low carbon or general utility chain.
MATERIAL High carbon steel. Minimum tensile 85,000 psi. **FINISH** Self-colored, and hot galvanized.

Trade Size In Inches	Size Material In Inches	Working* Load Limit Lbs	Nominal Inside Length in Inches	Nominal Inside Width in Inches	Maximum Length 100 Links in Inches	Weight Per 100 Feet Lbs
1/4	9/32	2,600	.82	.39	86	75
5/16	11/32	4,000	1.01	.48	105	111
3/8	13/32	5,400	1.15	.56	121	157
7/16	15/32	7,200	1.29	.65	135	213
1/2	17/32	9,200	1.43	.75	150	274
5/8	21/32	11,500	1.79	.90	186	409
3/4	25/32	16,200	1.96	1.06	205	603
7/8	29/32	22,500	2.25	1.14	235	735
1	1 1/32	26,500	2.66	1.34	277	975

*Working load limit must not be exceeded.
Not to be used for overhead lifting.

HIGH TEST BOOMER CHAINS OR BINDER CHAINS

Made according to ASTM specifications. Bright Polished High Test Steel. Ridgeless electrically welded, with grab hook at each end.

Size x Length	Working Load Limit	Approx. Weight Each Lbs
1/4" x 20'	2,600	16
5/16" x 20'	4,000	22
3/8" x 20'	5,400	32
7/16" x 20'	7,200	44
1/2" x 20'	9,200	54
5/8" x 20'	11,500	86

*Working load limit must not be exceeded.
Not to be used for overhead lifting.

PROOF COIL CHAIN (GRADE 28 OR 30)

A general utility chain for such uses as log chain, cargo lashing chain, pipe line hanging chain, tailgate, guard rail, tow and switch chain.
MATERIAL Low carbon steel. Minimum tensile 55,000 psi. **FINISH** Self-colored, bright zinc and hot galvanized.

Trade Size In Inches	Size Material in Inches	Working* Load Limit Lbs.	Nominal Inside Length in Inches	Nominal Inside Width in Inches	Maximum Length 100 Links in Inches	Weight per 100 Fet Lbs.
3/16	7/32	750	.95	.40	99	40
1/4	9/32	1,250	1.00	.50	104	71
5/16	11/32	1,875	1.10	.50	114	107
3/8	13/32	2,625	1.23	.62	128	156
7/16	15/32	3,500	1.38	.75	142	213
1/2	17/32	4,500	1.50	.81	156	278
5/8	21/32	6,800	1.87	1.00	194	410
3/4	25/32	9,500	2.12	1.12	220	580
7/8	29/32	11,375	2.50	1.37	260	811
1	1 1/32	13,950	2.75	1.50	286	1045

*Working load limit must not be exceeded.
Not to be used for overhead lifting.

Synthetic Web Slings

Recommended Practices

For a complete review of recommended industry practices, please refer to:

- ASME B30.9 Sling Safety Standard
- OSHA Industrial Slings Regulations (Office of the Federal Register)
- Web Sling Tie Down Association Technical Manual

Do:

- Make sure load weight is within the sling's rated capacity; slings should be long enough so the rated load is adequate when the sling to load angle is considered.
- Select sling characteristics that are suitable for the load, hitch and environment
- Slings with fittings used in a choker hitch should be of sufficient length to ensure choking action is on the webbing, not the fitting
- Balance loads on basket hitch slings to prevent slippage
- Make sure fitting opening shape and size ensure proper seating in the hook and other attachments
- Protect slings from being cut by sharp edges or abrasive surfaces.
- Keep tags and labels away from the load, hook, and point of choke
- Place blocks under a load to allow removal of sling
- Hitch slings so that the load is controlled.
- Make sure personnel stand clear of suspended loads and remain alert for snagging
- Avoid shock loading
- Avoid twisting and kinking of legs (branches)
- Sling legs (branches) should support the load from the sides above the center of gravity when in a basket hitch
- Center load applied to the hook

Don't:

- Load slings in excess of rated capacity (consider load angle)
- Twist, shorten, lengthen, or tie knots in slings
- Drag slings on the floor or abrasive surfaces
- Pull slings out from under a load
- Drop slings equipped with metal fittings
- Constrict or bunch slings and labels between the ears of a clevis, shackle, or in a hook
- Use slings that appear to be damaged
- Allow personnel to ride the sling or load being lifted
- Use slings with illegible tags

Removal from Service

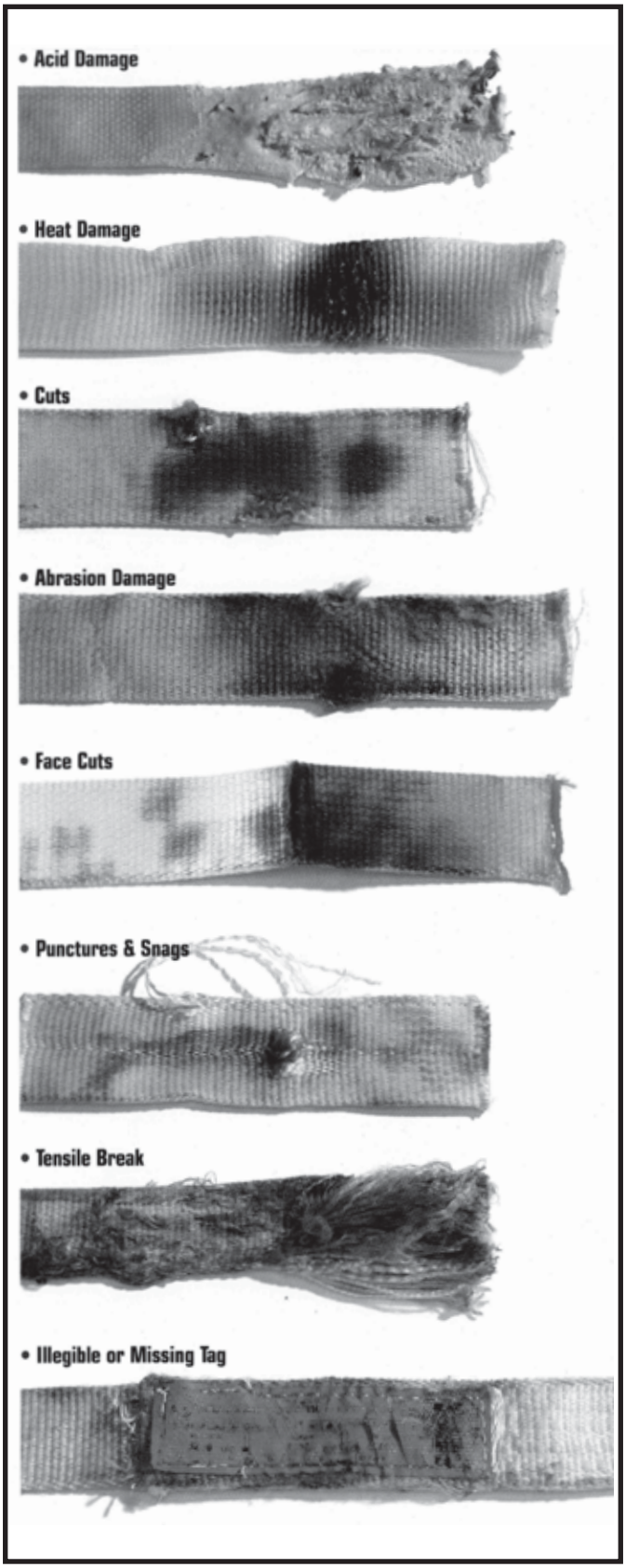
A flat web sling shall be removed from service if any of the following is visible:

- If sling rated capacity or sling material identification is missing or not readable.
- Acid or alkali burns.
- Melting, charring or weld spatter of any part of the web sling.
- Holes, tears, cuts snags or embedded particles.
- Broken or worn stitching in load bearing splices.
- Excessive abrasive wear.
- Knots in any part of the web sling.
- Distortion and excessive pitting, corrosion or broken fittings.
- Any conditions which cause doubt as to the strength of the sling.

Exposure To Common Chemicals

Chemical	Polyester	Nylon
Acid	*	No
Alcohol	OK	OK
Aldehydes	NO	OK
Strong Alkalis	**	OK
Bleaching Agents	OK	NO
Dry Cleaning Solvents	OK	OK
Ethers	NO	OK
Halogenated Hydrocarbons	OK	OK
Hydrocarbons	OK	OK
Ketones	OK	OK
Oil, Crude	OK	OK
Oil, Lubricating	OK	OK
Soaps, Detergents	OK	OK
Water, Seawater	OK	OK
Weak Alkalis	OK	OK

* Disintegrated by concentrated sulphuric acid.
** Degraded by strong alkalis at elevated temperatures



Rated Capacity Information

Angle Degrees	Factor
90	1.0000
85	0.9962
80	0.9848
75	0.9659
70	0.9397
65	0.9063
60	0.8660
55	0.8192
50	0.7660
45	0.7071
40	0.6528
35	0.5736
30	0.5000
25	0.4226
20	0.3420
15	0.2588

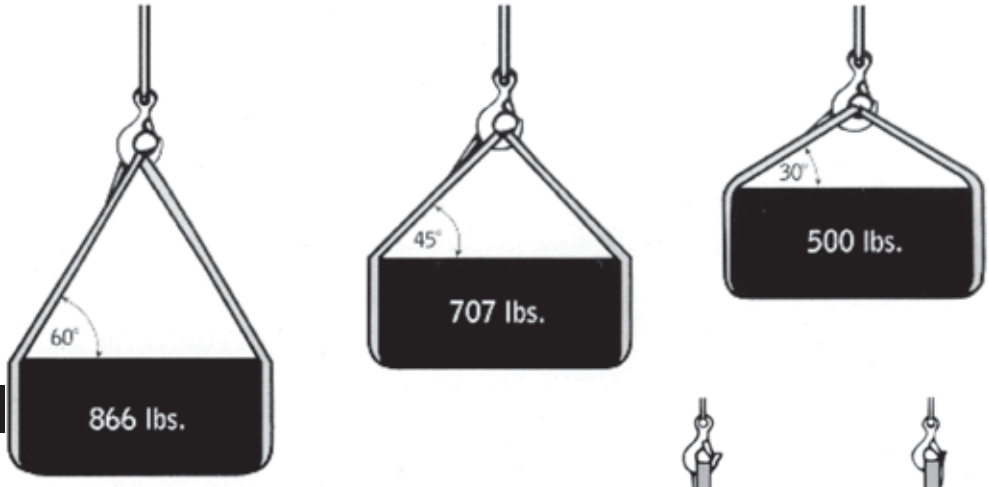
Rated Capacity

The rated capacities of the slings in this catalog are given in pounds. Refer to the maximum recommended weight for which the sling is to be used in one of the standard types of lifts as illustrated:

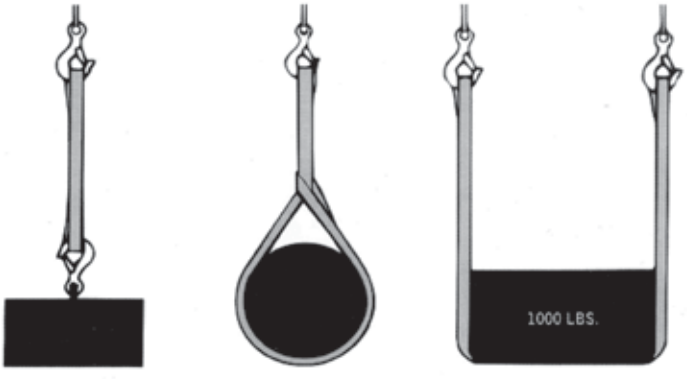
Effect of Angle

When slings are used at an angle (i.e.-two slings or one sling in a basket attached to only one crane hook), sling capacity is reduced. How much it is reduced depends on the degree of the angle. You can determine whether a sling will be rated high enough if you know the angle between the sling leg and the horizontal. Once you know this angle, multiply the sling's rating by the appropriate factor in the table. This will give you the sling's reduced rating.

Sling Capacity decreases as the angle increases.



A sling capable of lifting 1,000 lbs. in a 90 vertical basket hitch, can only lift 866 lbs. at a 60° angle, 707 lbs. at a 45° angle, and 500 lbs. at a 30° angle.



Vertical Hitch | Choker Hitch | Basket Hitch

Customize Your Sling

Flat Web Material Options

9800# Heavy Duty Nylon Webbing: Industry standard webbing, suited for most applications.

7000# Light Duty Nylon Webbing: An economical alternative for lighter applications.

9800# Polyester Webbing: For applications where the sling is exposed to acidic environments or strong alkalis.

9800# Scuff Edge™: These polyester web slings have polymer coated yarns woven into the edges to reduce damage and increase life.

Cordura Jacketed: Has Cordura fibers woven into the outer layer of the web material, providing increased strength and wear protection.

Custom Printed Tags

IRSCI can custom print tags in Tyvek, vinyl and leather. Each type has unique qualities, depending upon customer preference. (Private label programs available)

Tyvek:

These durable tags are printed on demand by IRSCI. Tyvek tags offer customers greater flexibility and can be serialized, customized with company logos, and bar coded; there is no minimum quantity or premium charge for Tyvek tags.

Vinyl:

A very durable tag, printed with diagrams accompanying the rated lifting capacities of the slings. The vinyl tag must be pre-printed and carries a small premium charge (price varies by quantity). IRSCI will stock and maintain customers vinyl tag inventory.

Leather:

Leather is the most durable of the three tags. Leather tags can be branded with serial numbers and other identifying information, such as your company's logo, at the distributor or end user level. It carries a premium charge, but can be purchased in any quantity.

Wear Protection

Wear protection prolongs life of the sling, ultimately resulting in cost effectiveness. IRSCI utilizes four wear materials: Pukka (a 5/16" felt pad, as shown), leather, Cordura and nylon, which can be used in any of the following configurations:

- Eye or Body Wrapped
- Edge guard treatment, protects against edge abrasion
- Lined eye, protects the sling at lifting point
- Velcro sliding pad, easily removable
- Sewn-on, attached to sling
- Sliding sleeve, adjustable

Nylon and Polyester Web Slings

type 1 triangle choker

type 2 triangle triangle

HEAVY DUTY

TYPE 1 (TC)	TYPE 2* (TT)	RATED CAPACITIES IN LBS. VERTICAL	CHOKER	BASKET
ONE PLY				
TC1-902	TT1-902	3,200	2,500	6,400
TC1-903	TT1-903	4,800	3,800	9,600
TC1-904	TT1-904	6,400	5,000	12,800
TC1-906	TT1-906	9,600	7,700	19,200
TC1-908	TT1-908	12,800	10,200	25,600
TC1-910	TT1-910	16,000	12,800	32,000
TC1-912	TT1-912	19,200	15,400	38,400
TWO PLY				
TC2-902	TT2-902	6,400	5,000	12,800
TC2-903	TT2-903	8,600	6,900	17,200
TC2-904	TT2-904	11,500	9,200	23,000
TC2-906	TT2-906	16,300	13,000	32,600
TC2-908	TT2-908	19,200	15,000	38,400
TC2-910	TT2-910	22,400	17,400	44,800
TC2-912	TT2-912	26,900	21,500	53,800

Three and four ply hardware slings are available upon request.
* Type 2 can not be used in a choker hitch.

LIGHT DUTY

TYPE 1 (TC)	TYPE 2* (TT)	RATED CAPACITIES IN LBS. VERTICAL	CHOKER	BASKET
ONE PLY				
TC1-702	TT1-702	2,400	1,900	4,800
TC1-703	TT1-703	3,600	2,900	7,200
TC1-704	TT1-704	4,800	3,800	9,600
TC1-706	TT1-706	7,200	5,800	14,400
TWO PLY				
TC2-702	TT2-702	4,800	3,800	9,600
TC2-703	TT2-703	6,500	5,200	13,000
TC2-704	TT2-704	8,600	6,900	17,200
TC2-706	TT2-706	12,600	10,100	25,200

*** Type 2 can not be used in a choker hitch.**

Note:

Hardware – Aluminum hardware is available on single ply types 1 and 2 slings in 2", 3", 4" and 6" widths.

Nylon and Polyester Web Slings

type 3
eye & eye flat

type 4
eye & eye twist

HEAVY DUTY

TYPE 3 FLAT EYE	TYPE 4 TWISTED EYE	RATED CAPACITIES IN POUNDS		
		VERTICAL	CHOKER	BASKET
EE1-901		1,600	1,250	3,200
EE1-902		3,200	2,500	6,400
EE1-903		4,800	3,800	9,600
EE1-904		6,400	5,000	12,800
EE1-906		9,600	7,700	19,200
EE1-908		12,800	10,200	25,600
EE1-910		16,000	12,800	32,000
EE1-912		19,200	15,400	38,400
EE2-901		3,200	2,500	6,400
EE2-902		6,400	5,000	12,800
EE2-903		8,600	6,900	17,200
EE2-904		11,500	9,200	23,000
EE2-906		16,300	13,000	32,600
EE2-908		19,200	15,400	38,400
EE2-910		22,400	17,900	44,800
EE2-912		26,900	21,500	53,800
EE3-901		4,100	3,300	8,200
EE3-902		8,300	6,600	16,600
EE3-903		12,500	10,000	25,000
EE3-904		16,000	12,800	32,000
EE3-906		23,000	18,400	46,000
EE3-908		30,700	24,500	61,400
EE3-910		36,800	29,400	73,600
EE3-912		44,000	35,200	88,000
EE4-901		5,000	4,000	10,000
EE4-902		10,000	8,000	20,000
EE4-903		14,900	11,900	29,800
EE4-904		19,800	15,800	39,600
EE4-906		29,800	23,800	59,600
EE4-908		39,700	31,700	79,400
EE4-910		49,600	39,600	99,200
EE4-912		59,500	47,600	119,000

Note:
Tapering – types 3 and 4 are tapered at 3" and wider unless otherwise ordered. These wider slings are tapered at the bearing points to accommodate a crane hook.

LIGHT DUTY

TYPE 3 FLAT EYE	TYPE 4 TWISTED EYE	RATED CAPACITIES IN POUNDS VERTICAL	CHOKER	BASKET
ONE PLY				
EE1-701		1,200	950	2,400
EE1-702		2,400	1,900	4,800
EE1-703		3,600	2,900	7,200
EE1-704		4,800	3,800	9,600
EE1-706		7,200	5,800	14,400
TWO PLY				
EE2-701		2,400	1,900	4,800
EE2-702		4,800	3,800	9,600
EE2-703		6,500	5,200	13,000
EE2-704		8,600	6,900	17,200
EE2-706		12,200	9,800	24,400
THREE PLY				
EE3-701		3,500	2,800	7,000
EE3-702		7,000	5,600	14,000
EE3-703		9,400	7,500	18,800
EE3-704		12,000	9,600	24,000
EE3-706		18,000	14,400	36,000
FOUR PLY				
EE4-701		4,200	3,400	8,400
EE4-702		8,000	6,400	16,000
EE4-703		12,000	9,600	24,000
EE4-704		16,000	12,800	32,000
EE4-706		23,500	18,800	47,000

type 3
eye & eye flat

type 4
eye & eye twist

Eye Length Chart

Sling Width	Plies of Webbing 1	2	3	4
1"	9"	9"	12"	12"
2"	9"	9"	12"	12"
3"	12"	12"	18"	18"
4"	12"	12"	18"	18"
5"	15"	15"	20"	20"
6"	18"	18"	24"	24"
8"	24"	24"	30"	30"
10"	30"	30"	36"	36"
12"	30"	30"	36"	36"

Nylon and Polyester Web Slings

HEAVY DUTY

TYPE 5 (EN)	RATED CAPACITIES IN LBS. VERTICAL	CHOKER	BASKET
ONE PLY			
EN1-901	3,200	2,500	6,400
EN1-902	6,400	5,000	12,800
EN1-903	8,600	6,900	17,200
EN1-904	11,500	9,200	23,000
EN1-906	16,300	13,000	32,600
EN1-908	19,200	15,400	38,400
EN1-910	22,400	17,900	44,800
EN1-912	26,900	21,500	53,800
TWO PLY			
EN2-901	6,200	4,900	12,400
EN2-902	12,200	9,800	24,400
EN2-903	16,300	13,000	32,600
EN2-904	20,700	16,500	41,400
EN2-906	28,600	23,000	57,200
EN2-908	30,700	24,500	61,400
EN2-910	33,600	26,800	67,200
EN2-912	37,600	30,000	75,200
THREE PLY			
EN3-901	8,000	6,400	16,000
EN3-902	16,000	12,800	32,000
EN3-903	21,500	17,200	43,000
EN3-904	28,700	23,000	57,400
EN3-906	40,700	32,500	81,400
EN3-908	46,000	36,800	92,000
EN3-910	51,500	41,200	103,000
EN3-912	59,200	47,300	118,400
FOUR PLY			
EN4-901	10,000	8,000	20,000
EN4-902	19,800	15,800	39,600
EN4-903	26,700	21,300	53,400
EN4-904	35,600	28,400	71,200
EN4-906	50,500	40,400	101,000
EN4-908	57,600	46,000	115,200
EN4-910	67,200	53,700	134,400
EN4-912	80,700	64,500	161,400

LIGHT DUTY

TYPE 5 (EN)	RATED CAPACITIES IN LBS. VERTICAL	CHOKER	BASKET
ONE PLY			
EN1-701	2,400	1,900	4,800
EN1-702	4,800	3,800	9,600
EN1-703	6,500	5,200	13,000
EN1-704	8,600	6,900	17,200
EN1-706	12,200	9,800	24,400
TWO PLY			
EN2-701	4,800	3,800	9,600
EN2-702	9,600	7,700	19,200
EN2-703	11,700	9,400	23,400
EN2-704	15,500	12,400	31,000
EN2-706	22,500	18,000	45,000
THREE PLY			
EN3-701	6,200	4,900	12,400
EN3-702	12,500	10,000	25,000
EN3-703	16,300	13,000	32,600
EN3-704	20,600	16,400	41,200
EN3-706	29,300	23,400	58,600
FOUR PLY			
EN4-701	7,700	6,200	15,400
EN4-702	15,500	12,400	31,000
EN4-703	20,800	16,600	41,600
EN4-704	26,600	21,200	53,200
EN4-706	37,800	30,200	75,600

Cordura Lined Reversed Eye Slings

type 6 reversed eye

HEAVY DUTY

TYPE 6 (RE)	VERTICAL	CHOKER	BASKET	SLING WIDTH	EYE LENGTH
ONE PLY					
RE1-902	4,500	3,600	9,000	2	9
RE1-904	7,700	6,200	15,400	4	15
RE1-906	11,000	8,800	22,000	6	15
TWO PLY					
RE2-902	6,500	5,200	13,000	2	9
RE2-904	13,000	10,400	26,000	4	15
RE2-906	20,000	16,000	40,000	6	15
THREE PLY					
RE3-904	16,400	13,100	32,800	4	15
RE3-906	25,500	20,400	51,000	6	15
FOUR PLY					
RE4-906	34,000	27,200	68,000	6	15

type 7 flat eye

LIGHT DUTY

TYPE 6 (RE)	VERTICAL	CHOKER	BASKET	SLING WIDTH	EYE LENGTH
ONE PLY					
RE1-702	3,600	2,900	7,200	2	9
RE1-704	6,800	5,400	13,600	4	15
RE1-706	8,000	6,400	16,000	6	15
TWO PLY					
RE2-702	5,200	4,200	10,400	2	9
RE2-704	10,500	8,400	21,000	4	15
RE2-706	14,400	11,500	28,000	6	15
THREE PLY					
RE3-704	14,000	11,200	28,000	4	15
RE3-706	20,000	16,000	40,000	6	15

Wide Body Basket

When surface area is more critical than weight capacity, a wide body basket is the preferred alternative. A wide body basket is also an economical approach to load balancing. Contact a IRSCI specialist for more information on Wide Body and Load Balancing Baskets.

type 8 wide body basket

type 9 load balancer basket

Multi-leg Bridle

A multi-leg bridle can be manufactured from either flat web or polyester round slings. IRSCI application specialists are available to assist in determining the best configuration for your lifting requirements.

type 10 multi-leg bridle

Round Slings

Tubular Polyester Round Slings

Lift Capacities according to polyester round sling type (color) and hitch used.

			CAPACITIES IN LBS.		
CODE	COLOR	VERTICAL	CHOKER	BASKET	MINIMUM LENGTH
SWG30	PURPLE	2,650	2,120	5,300	3 ft.
SWG60	GREEN	5,300	4,240	10,600	3 ft.
SWG90	YELLOW	8,400	6,720	16,800	3 ft.
SWG120	TAN	10,600	8,500	21,200	3 ft.
SWG150	RED	13,200	10,560	26,400	3 ft.
SWG180	ORANGE	16,800	13,440	33,600	3 ft.
SWG240	BLUE	21,200	17,000	42,400	3 ft.
SWG300	ORANGE	25,000	20,000	50,000	3 ft.
SWG360	GREY	31,700	25,300	63,400	3 ft.
SWG500	ORANGE	40,000	32,000	80,000	3 ft.
SWG600	BROWN	52,900	42,300	105,800	6 ft.
SWG800	OLIVE	66,100	52,880	132,200	6 ft.
SWG1000	BLACK	90,000	72,000	180,000	6 ft.

Removal from Service

A polyester round sling shall be removed from service if any of the following is visible:

- If polyester round slings identification tag is missing or unreadable.
- Melting, charring or weld spatter of any part of the polyester round sling.
- Holes, tears cuts, embedded particles, abrasive wear, or snags that expose the core fibers of the polyester round sling.
- Broken or worn stitching in the cover which exposes the core fibers.
- Fittings when damaged, stretched or distorted in any way.
- Polyester round slings that are knotted.
- Acid or alkalis burns of the polyester round sling.
- Any conditions which cause doubt as to the strength of the polyester round sling.

8 Part Braided Round Slings

		RATED CAPACITIES (LBS.)			APPROXIMATE MEASUREMENTS					
CODE	COLOR	VERTICAL	CHOKER	BASKET	MINIMUM LENGTH (FT.)	WEIGHT (LBS./FT.)	STANDARD EYE (EL) (IN.)	WIDTH AT LOAD (W) (IN.)	THICKNESS AT LOAD (IN.)	EYE DIA. (IN.)
SWG30	PURPLE	8,800	7,100	17,600	4 1/2	1.1	15	3 1/2	1	1 3/4
SWG60	GREEN	18,000	14,400	36,000	5	1.5	15	4	1 9/8	2
SWG90	YELLOW	28,500	22,800	57,000	5 1/2	2.2	15	4 3/4	1 5/8	2 1/2
SWG120	TAN	36,000	28,800	72,000	5 1/2	2.6	15	5	1 3/4	2 1/2
SWG150	RED	44,900	35,900	89,800	6 1/2	3.6	20	6	2 1/6	2 3/4
SWG180	ORANGE	57,100	45,600	114,200	7	4.1	20	6 1/4	2 1/2	3 1/4
SWG240	BLUE	72,000	57,600	144,000	9	5.6	20	7 1/2	2 3/4	3 3/4
SWG360	GREY	105,400	84,300	210,800	9 1/2	8.3	30	9 1/2	3 1/4	4 1/2
SWG600	BROWN	180,200	144,100	360,400	10 1/2	12.0	30	13	3 3/4	5 1/2
SWG800	OLIVE	224,400	179,500	448,800	13	16.0	30	13 1/2	4 1/2	6
SWG1000	BLACK	306,000	244,000	612,000	14 1/2	20.0	31	15 3/4	5 1/4	6 1/2

Endless and Eye & Eye styles of Round Slings are made to a tolerance of ± 1% of the specified length (± 1" minimum tolerance) and can stretch 3% at rated capacity.

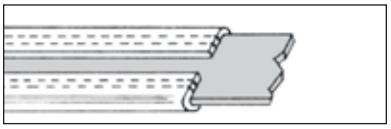
Braided Round Slings length tolerance is ± 5% of the ordered length (sling at rest). At its rated capacity, braided Round Slings will stretch approximately 9%.

Note: Matched lengths of slings must be specified at time of order.
Higher capacity round slings available upon request.

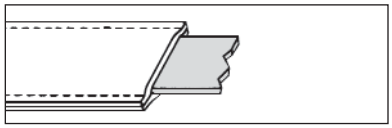
Wear Pads

SCUFF EDGE™

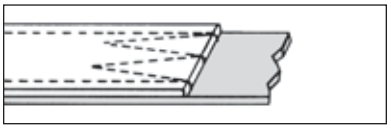
EDGEGUARD



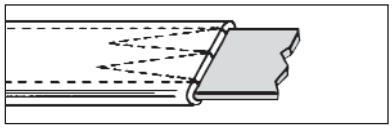
SLEEVE



REGULAR



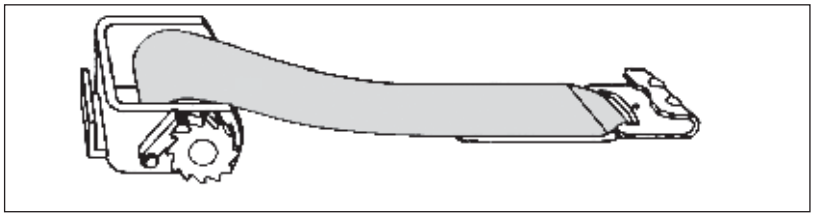
WRAP



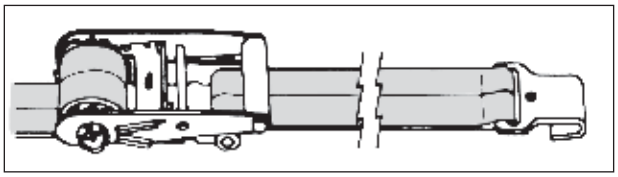
Truck Tiedowns

Polyester Webbing

- 27' and 30' Standard Lengths
- Fits Standard 3" & 4" Winches
- Manufactured to Customer Order
- Corner Protectors, Sliding Sleeves Available
- Meets or Exceeds California and Federal Regulations



Ratchet Snugger (Truck Tiedown)

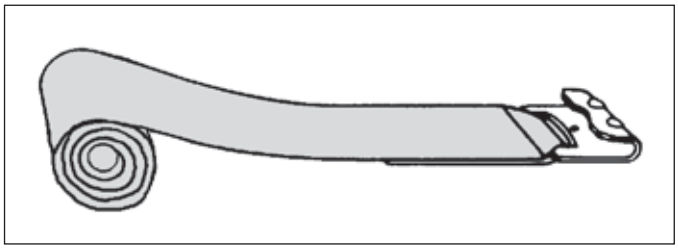


Size	W.L.L.
1” X 10’ W/Ratchet	1500
1” X 12’ W/Ratchet	1500
2” X 27’ W/Ratchet	3300
3” X 27’ W/Ratchet	5000
4” X 27’ W/Ratchet	5000

Replacement Strap for Standard Truck Tiedowns

Size	W.L.L.
3”	5000
4”	5000

Length to your requirements



INDUSTRIAL WIRE ROPE SUPPLY COMPANY INC.

GUARDIAN FALL PROTECTION

INDUSTRIAL WIRE ROPE SUPPLY COMPANY INC.
PROUDLY SUPPLIES AND REPAIRS GUARDIAN FALL PROTECTION

SUPPLYING FALL PROTECTION

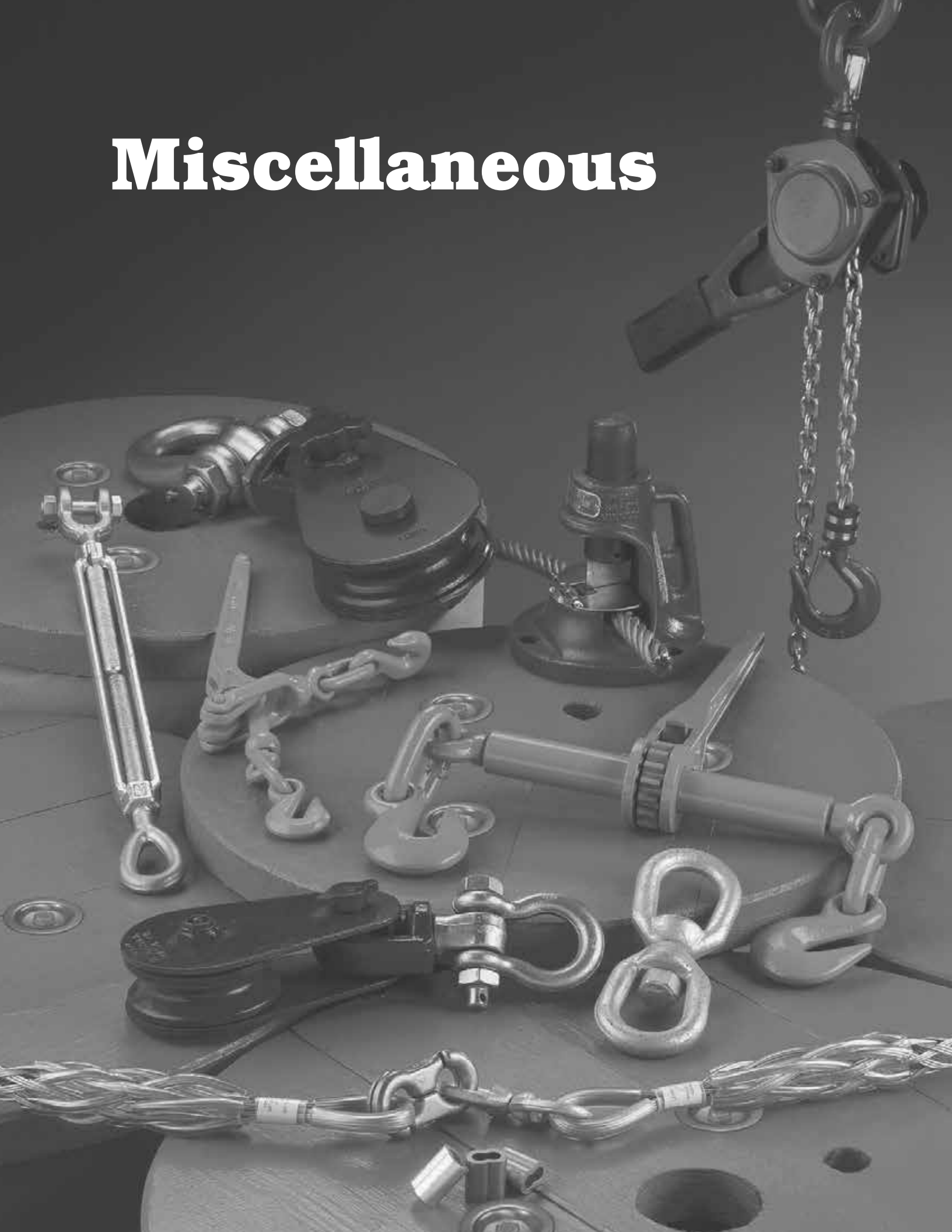
Industrial Wire Rope Supply Company Inc. carries quality fall protection solutions.

• Anchors • Harnesses • Self-Retracting Lifelines • Lanyards • Safety kits • And more

REPAIRING FALL PROTECTION

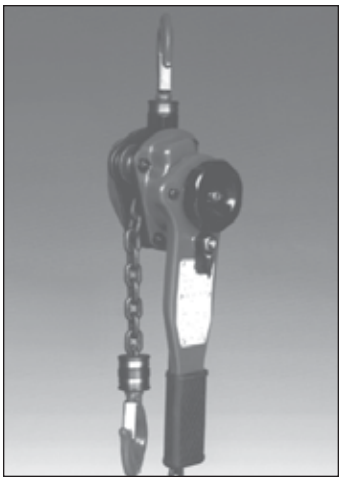
Industrial Wire Rope Supply Company Inc. is a certified repair center for all Guardian Fall Protection self-retracting lifelines.

Miscellaneous



Available From Stock For Immediate Delivery

Custom Made - To Order



LEVER HOIST
1/2 TON - 6 TON

CHAIN HOIST

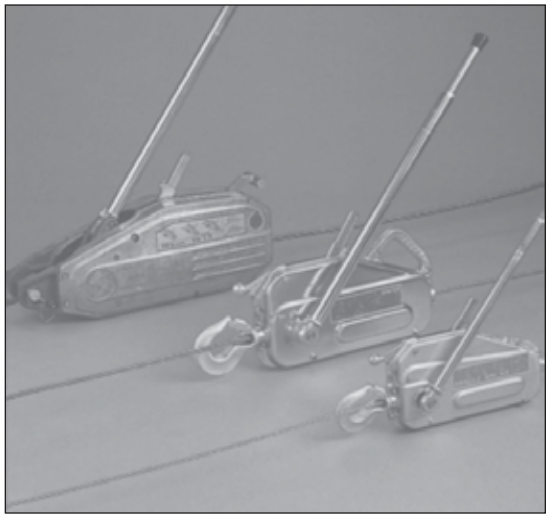
Call for information:

513-941-2443
636-255-0600

CHAIN LIFT
1/2 TON - 10 TON

Larger Hoists Available Upon Request

WIRE ROPE HOIST



Or Call Toll Free:

Cincinnati, Ohio (888) 345-0919
St. Charles, Missouri (866) 852-9714

McKISSICK®

UB-500 Series Non Swiveling Overhaul Balls

S320
Eye Hook

S1316 A
SHUR-LOC®
Eye Hook

Both styles available with optional **McKissick®** Wedge Socket Assembly or S-422 **TERMINATOR** Wedge Socket

UWO 422T
TERMINATOR
Wedge Only

- Sizes 4 short Tons through 15 short Tons are available with Crosby's S1316A "Positive Locking" SHUR-LOC® hook which may be used for lifting personnel. Meets the intent of OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B).
- Design Factor 4:1.
- Each ball can be equipped with the new McKissick® US-422T Wedge Socket which can be easily adjusted to fit various sizes of wireline by changing the wedge.

Key to McKissick® UB-500 Utility Overhaul Ball Model Number

MB	4	T	35	E
McKissick® Utility Overhead Ball	Working Load Limit (Tons)	Swivel Style T = Top NS = Non	Ball Only Weight	Hook Style E = 320 or 320N S = SHUR-LOC® Eye Hook

Overhaul Ball Assembly

Optional US-422T Wedge Sockets

McKissick® UB-500 Model No.	UB-500 "E" Eye Hook Stock No.*	UB-500 "S" SHUR-LOC® Stock No.	Working Load Limit (short tons)	Weight Each (lb)	Wire Rope Diameter (in)	Model No.	Wedge Socket Assy. Stock No.	Weight Each (lb)	Wedge Only Stock No.	Weight Each (lb)
MB4NS35E	1036402	1036407	4	54						
MB4NS85E	1036411	1036416	4	98	3/8	US4T	1044300	4.6	1047310	0.7
MB4NS150E	1036420	1036425	4	158	7/16	US4T	1044309	4.6	1047301	1.0
MB4NS200E	1036429	1036434	4	200	1/2	US4T	1044318	4.6	1047329	1.0
MB7NS85E	1036438	1036443	7	104	1/2	US5T	1044327	8.5	1047338	2.0
MB7NS150E	1036447	1036452	7	165	9/16	US5T	1044336	8.5	1047347	1.8
MB7NS200E	1036456	1036461	7	205	5/8	US5T	1044345	8.5	1047356	1.8
MB7NS285E	1036465	1036470	7	316	5/8	US6T	1044354	9.4	1047365	3.0
MB10NS150E	1036474	1036479	10	198	3/4	US6T	1044363	9.4	1047374	2.5
MB10NS200E	1036483	1036488	10	242						
MB10NS285E	1036492	1036497	10	347						
MB10NS350E	1036501	1036506	10	385	5/8	US6T	1044354	9.4	1047365	3.0
MB10NS650E	1036510	1036511	10	700	3/4	US6T	1044363	9.4	1047374	2.5
MB12NS150E	1036519	–	12	198	7/8	US8T	1044404	20.8	1047425	5.5
MB12NS200E	1036528	–	12	240	1	US8T	1044417	20.8	1047431	6.1
MB12NS285E	1036537	–	12	347	1-1/8	US10T	1044426	46.5	1047440	9.7
MB12NS350E	1036546	–	12	385	1-1/4	US10T	1044435	46.5	1047459	10.4
MB12NS650E	1036555	–	12	700						
MB15NS200E	1036564	–	15	267	5/8	US8AT	1044372	17.5	1047383	3.2
MB15NS350E	1036573	–	15	425	3/4	US8AT	1044381	17.5	1047392	3.4
MB15NS650E	1036582	–	15	722	7/8	US8T	1044404	20.8	1047425	5.5
MB15NS1150E	1036591	–	15	1280	1	US8T	1044417	20.8	1047431	6.1
					1-1/8	US10T	1044426	46.5	1047440	9.7
					1-1/4	US10T	1044435	46.5	1047459	10.4

4:1 Design Factor. *Utilizes Crosby "N" style hooks with integrated latch. Replacement latch kit is S-4320. PL latch and S-4055 latch will not fit.

McKISSICK®

UB-500 Series Top Swiveling Overhaul Balls

With **S320** Eye Hook

With **S1316 A SHUR-LOC®** Eye Hook

Both styles available with optional **McKissick®** Wedge Socket Assembly or S-422 **TERMINATOR** Wedge Socket

UWO 422T TERMINATOR Wedge Only

- Sizes 4 short Tons through 30 short Tons are available with Crosby's S1316A positive-locking SHUR-LOC® hook, which may be used for lifting personnel. Meets the intent of OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B).
- Design Factor 4:1
- The top swivel design on the UB-500 assures the ball remains stationary if the wireline spins.
- The swivel incorporates a sealed roller thrust bearing together with a grease fitting for easy lubrication.
- Each ball can be equipped with the new McKissick® US-422T Wedge Socket which can be easily adjusted to fit various sizes of wireline by changing the wedge (ensure that correct wedge is used for selected wireline size).
- All hooks used on UB-500 Overhaul Balls (S320, S320N & S1316A) are forged from alloy steel. The S320 and S320N hooks come complete with latches.
- The S320 hook (PL latch) and the S320N hook (S4320 latch), with the proper latch attached, may be used for personnel lifting when secured with proper device (bolt, nut and pin for the PL latch; Cotter pin for the S4320 latch). Meets the intent of OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B).

Overhaul Ball Assembly | **Optional US-422T Wedge Sockets**

McKissick® UB-500 Model No.	UB-500 "E" Eye Hook Stock No.	UB-500 "S" SHUR-LOC® Stock No.	Working Load Limit (short tons)	Weight Each (lb)	Wireline Size (in)	Model No.	Wedge Socket Assy. Stock No.	Weight Each (lb)	Wedge Only Stock No.	Weight Each (lb)
MB4T35E	1036000*	1036005	4	58	3/8	US4T	1044300	4.6	1047310	0.7
MB4T85E	1036009*	1036018	4	102	7/16	US4T	1044309	4.6	1047301	1.0
MB4T150E	1036027*	1036032	4	162	1/2	US4T	1044318	4.6	1047329	1.0
MB4T200E	1036036*	1036041	4	201	1/2	US5T	1044327	8.5	1047338	2.0
MB7T85E	1036045*	1036050	7	109	9/16	US5T	1044336	8.5	1047347	1.8
MB7T150E	1036054*	1036063	7	170	5/8	US5T	1044345	8.5	1047356	1.8
MB7T200E	1036072*	1036077	7	210	5/8	US6T	1044354	9.4	1047365	3.0
MB7T285E	1036081*	1036086	7	321	3/4	US6T	1044363	9.4	1047374	2.5
MB10T150E	1036090*	1036095	10	216						
MB10T200E	1036099*	1036108	10	260						
MB10T285E	1036117*	1036122	10	365	5/8	US6T	1044354	9.4	1047365	3.0
MB10T350E	1036126*	1036131	10	403	3/4	US6T	1044363	9.4	1047374	2.5
MB10T650E	1036135*	1036140	10	718	7/8	US8T	1044404	20.8	1047425	5.5
MB12T150E	1036144*	1036520	12	216	1	US8T	1044417	20.8	1047431	6.1
MB12T200E	1036153*	1036529	12	258	1-1/8	US10T	1044426	46.5	1047440	9.7
MB12T285E	1036171*	1036538	12	365	1-1/4	US10T	1044435	46.5	1047459	10.4
MB12T350E	1036180*	1036547	12	403						
MB12T650E	1036189*	1036556	12	718						
MB15T200E	1036198*	1036565	15	298						
MB15T350E	1036207*	1036574	15	456						
MB15T650E	1036216*	1036583	15	753						
MB15T1150E	1036225*	1036592	15	1311						
MB20T200E	1036234*	1036611	20	298	5/8	US8AT	1044372	17.5	1047383	3.2
MB20T350E	1036243*	1036620	20	456	3/4	US8AT	1044381	17.5	1047392	3.4
MB20T650E	1036252*	1036629	20	753	7/8	US8T	1044404	20.8	1047425	5.5
MB20T1150E	1036261*	1036638	20	1311	1	US8T	1044417	20.8	1047431	6.1
MB25T350E	1036270	1036647	25	533	1-1/8	US10T	1044426	46.5	1047440	9.7
MB25T650E	1036279	1036656	25	865	1-1/4	US10T	1044435	46.5	1047459	10.4
MB25T1150E	1036288	1036665	25	1421						
MB30T650E	1036297	1036674	30	865						
MB30T1150E	1036306	1036683	30	1421						

4:1 Design Factor. * Utilizes Crosby "N" style hooks with integrated latch. Replacement latch kit is S-4320. PL latch and S-4055 latch will not fit. Standard Crosby S-5 Thrust style swivels can not be used with UB-500 Overhaul Balls. For replacement swivels, contact Crosby Customer Service.

McKISSICK

BLOCKS

VALUE ADDED

- **Dual Rated:** To meet the requirements of both short tons and metric tons.
- **Metric Rating:** McKissick® snatch blocks are metric rated to a design factor of 4:1. Because they are metric rated with a world-class design, they are applicable to global use without conversion.
- **US Rating:** When compared to other blocks that are rated in short tons, the design factor of McKissick snatch blocks is 4.5 to 1.
- **Fatigue Properties:** McKissick snatch blocks are fatigue rated. The blocks are designed to meet specific fatigue performance levels and the requirements for the new Euronorm Standards: 20,000 cycles at 1-1/2 times the Working Load Limit.
- **Latch Kits:** McKissick snatch blocks that utilize a hook as an end fitting connection are equipped with latches.
- **Application Information:** Application and warning information for tackle block systems is attached directly to each block. In addition, each block has a product warning sticker attached directly to it for the purpose of giving specific warning instructions about the block.
- **Lock Nut:** McKissick snatch blocks have a special high-performance lock nut on the non-moveable side plate for securing the sheave pin.
- **Sheave & Wireline:** Sheaves for McKissick snatch blocks have a machine-formed groove.
- **Secondary Securement Systems:** McKissick snatch blocks are designed to incorporate a secondary securement system that retains the end fitting connection bolt when the block is in the closed position. In addition, a patented system retains the end fitting connection bolt when the block is in the open position, thus eliminating the loss of block parts.

404
TAIL BOARD

418
WITH HOOK

419
WITH SHACKLE

SNATCH BLOCK DEMONSTRATION

- How to determine snatch block capacity
- How to use a snatch block to gain a mechanical advantage
- Importance of using a load cell in conjunction with a snatch block on a lift

WATCH VIDEO
thecrosbygroup.com/snatchblockdemo

McKISSICK

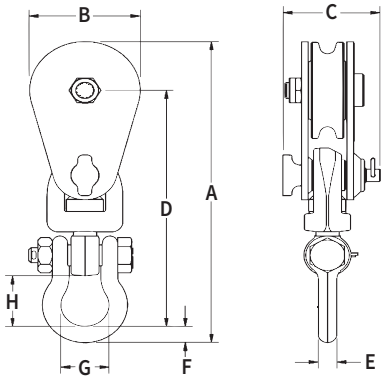
SNATCH BLOCK WITH SHACKLE FITTING, SINGLE SHEAVE, 2-12t

Fatigue Rated CE

L-170

L-160

417



- Opening feature permits easy insertion of rope without reeving, or while the block is suspended.
- Bolt for opening feature is retained, to ensure no lost bolts.
- Forged steel swivel tees, yokes and shackles.
- Can be furnished with bronze bushings or roller bearings.
- Center pin equipped with pressure lube fitting.
- All sizes feature sheave grooves suited for a range of wireline diameters.
- Meets or exceeds all requirements of ASME B30.26. Importantly, these blocks meet other critical performance requirements including fatigue life and material traceability, not addressed by ASME B30.26.
- 417 alloy snatch blocks feature a significant reduction in weight compared to snatch blocks made of non-alloy materials.
- L-170 snatch blocks (with shackle or hook) feature an easy-to-open bolt design. The retaining bolt is released by rotating the fitting assembly, no tools required.
- Crosby's Engineered Solutions Group is ready to discuss your requirements and help select or develop the ideal block for your application.
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APPLICATION AND WARNING INFORMATION
SECTION 17

Working Load Limit (t)	Wire Rope Diameter (in)	Sheave Diameter (in)	Bearing Code	Weight Each (lb)	Catalog No.	Stock No.	Dimensions (in)							
							A	B	C	D	E	F	G	H
2 metric tons														
2	5/16 - 3/8	3	BB	4	419 w/Eye	109037†	8.67	3.00	2.64	6.61	0.56	0.56	1.38	1.38
2	5/16 - 3/8	3	BB	5	419	109091	9.27	3.00	2.64	7.27	0.50	0.50	1.32	1.56
4 metric tons														
4	3/8 - 1/2	4.5	BB	12	419	109064	13.38	4.24	3.13	10.57	0.62	0.69	1.70	2.00
5 metric tons														
5	3/8 - 1/2 ‡	4	BB	11	L-170	599828	13.88	4.50	2.94	10.94	0.62	0.69	1.70	2.00
5	3/8 - 1/2 ‡	4	RB	11	L-170	599837	13.88	4.50	2.94	10.94	0.62	0.69	1.70	2.00
6 metric tons														
6*	3/8 - 1/2	5	BB	13	L-160	599524	13.82	5.12	3.69	10.57	0.62	0.69	1.70	2.00
6*	3/8 - 1/2	5	RB	13	L-160	599533	13.82	5.12	3.69	10.57	0.62	0.69	1.70	2.00
8 metric tons														
8	5/8 - 3/4	6	BB	28	419	109126	18.93	6.00	4.19	14.68	1.25	1.25	3.00	3.47
8	5/8 - 3/4	6	RB	28	419	109153	18.93	6.00	4.19	14.68	1.25	1.25	3.00	3.47
8	5/8 - 3/4	8	BB	33	419	109224	20.99	8.12	4.19	15.68	1.25	1.25	3.00	3.47
8	5/8 - 3/4	8	RB	33	419	109251	20.99	8.12	4.19	15.68	1.25	1.25	3.00	3.47
8	5/8 - 3/4	10	BB	43	419	109322	23.06	10.12	4.19	16.75	1.25	1.25	3.00	3.47
8	5/8 - 3/4	10	RB	43	419	109359	23.06	10.12	4.19	16.75	1.25	1.25	3.00	3.47
8	5/8 - 3/4	12	BB	55	419	109420	25.87	12.12	4.19	18.56	1.25	1.25	3.00	3.47
8	5/8 - 3/4	12	RB	55	419	109457	25.87	12.12	4.19	18.56	1.25	1.25	3.00	3.47
8	5/8 - 3/4	14	BB	67	419	109527	27.37	14.12	4.19	19.06	1.25	1.25	3.00	3.47
8	5/8 - 3/4	14	RB	67	419	109545	27.37	14.12	4.19	19.06	1.25	1.25	3.00	3.47
12 metric tons														
12*	5/8 - 3/4	5.75	BB	29	L-160	599588	19.03	6.00	4.19	14.78	1.25	1.25	3.00	3.47
12*	5/8 - 3/4	5.75	RB	29	L-160	599597	19.03	6.00	4.19	14.78	1.25	1.25	3.00	3.47
12	3/4 - 7/8	6	BB	28	417	168972	18.93	6.00	4.19	14.68	1.25	1.25	3.00	3.47
12	3/4 - 7/8	6	RB	28	417	193757	18.93	6.00	4.19	14.68	1.25	1.25	3.00	3.47
12	3/4 - 7/8	8	BB	34	417	168990	20.99	8.12	4.19	15.68	1.25	1.25	3.00	3.47
12	3/4 - 7/8	8	RB	34	417	193819	20.99	8.12	4.19	15.68	1.25	1.25	3.00	3.47
12	3/4 - 7/8	10	BB	42	417	193882	23.06	10.12	4.19	16.75	1.25	1.25	3.00	3.47
12	3/4 - 7/8	10	RB	42	417	193935	23.06	10.12	4.19	16.75	1.25	1.25	3.00	3.47

4:1 Design Factor. *3.5:1 Design Factor. **† Fitted with 1-1/4" ID Swivel Eye. ‡ Special Dual Groove Sheave also accepts 1-1/4" Manilla Rope.**

McKISSICK

BLOCKS

SNATCH BLOCK WITH SHACKLE FITTING, SINGLE SHEAVE, 15-60t

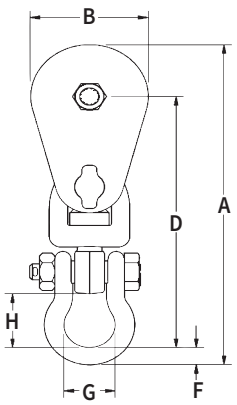
Fatigue Rated CE

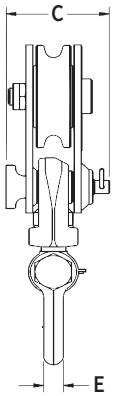

421


419


431


435





- Opening feature permits easy insertion of rope without reeving, or while the block is suspended.
- Can be furnished with bronze bushings or roller bearings.
- Center pin equipped with pressure lube fitting.
- All sizes feature sheave grooves suited for a range of wireline diameters.
- Meets or exceeds all requirements of ASME B30.26. Importantly, these blocks meet other critical performance requirements including fatigue life and material traceability, not addressed by ASME B30.26.
- 435 alloy snatch blocks feature a significant reduction in weight compared to snatch blocks made of non-alloy materials.
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APPLICATION AND WARNING INFORMATION
SECTION 17

Working Load Limit (t)	Wire Rope Diameter (in)	Sheave Diameter (in)	Bearing Code	Weight Each (lb)	Catalog No.	Stock No.	Dimensions (in)							
							A	B	C	D	E	F	G	H
15 metric tons														
15	3/4 - 7/8	8	BB	59	421	108308	23.00	8.12	5.09	17.19	1.50	1.75	3.12	3.12
15	3/4 - 7/8	8	RB	59	421	108309	23.00	8.12	5.09	17.19	1.50	1.75	3.12	3.12
15	3/4 - 7/8	10	BB	68	421	108390	24.75	10.12	5.09	17.94	1.50	1.75	3.12	3.12
15	3/4 - 7/8	10	RB	68	421	108391	24.75	10.12	5.09	17.94	1.50	1.75	3.12	3.12
15	3/4 - 7/8	16	BB	130	419	109607	31.75	16.12	5.09	22.00	1.50	1.75	3.12	3.12
15	3/4 - 7/8	16	RB	130	419	109625	31.75	16.12	5.09	22.00	1.50	1.75	3.12	3.12
15	7/8 - 1	18	BB	159	419	109643	33.12	18.12	5.09	22.25	1.50	1.75	3.12	3.12
15	7/8 - 1	18	RB	159	419	109661	33.12	18.12	5.09	22.25	1.50	1.75	3.12	3.12
20 metric tons														
20	1 - 1-1/8	8	BB	92	431	121022	26.57	8.12	6.00	19.76	2.00	2.75	3.72	4.00
20	1 - 1-1/8	8	RB	92	431	121040	26.57	8.12	6.00	19.76	2.00	2.75	3.72	4.00
20	1 - 1-1/8	10	BB	112	431	121095	28.64	10.12	6.00	20.72	2.00	2.75	3.72	4.00
20	1 - 1-1/8	10	RB	112	431	121111	28.64	10.12	6.00	20.72	2.00	2.75	3.72	4.00
20	1 - 1-1/8	12	BB	130	431	121175	30.65	12.25	6.00	21.78	2.00	2.75	3.72	4.00
20	1 - 1-1/8	12	RB	130	431	121193	30.65	12.25	6.00	21.78	2.00	2.75	3.72	4.00
20	1 - 1-1/8	14	BB	160	431	121255	33.00	14.00	6.00	23.25	2.00	2.75	3.72	4.00
20	1 - 1-1/8	14	RB	160	431	121273	33.00	14.00	6.00	23.25	2.00	2.75	3.72	4.00
25 metric tons														
25	1 - 1-1/4	8	BB	103	435	208954	27.08	8.25	6.13	20.21	2.00	2.75	3.72	4.00
25	1 - 1-1/4	10	BB	117	435	208965	29.33	10.24	6.13	21.46	2.00	2.75	3.72	4.00
25	1 - 1-1/4	18	BB	270	431	119495	41.36	18.25	7.13	29.12	2.00	3.12	3.50	4.81
25	1 - 1-1/4	18	RB	280	431	119496	41.36	18.25	7.13	29.12	2.00	3.12	3.50	4.81
30 metric tons														
30	1 - 1-1/4	12	BB	208	435	208976	36.61	12.25	7.00	27.37	2.00	3.12	3.50	4.81
30	1 - 1-1/4	14	BB	230	435	208977	38.86	14.25	7.00	28.62	2.00	3.12	3.50	4.81
30	1 - 1-1/4	20	BB	503	431	119589	52.40	20.25	8.31	38.34	2.50	3.94	5.62	7.06
30	1 - 1-1/4	20	RB	485	431	119598	52.40	20.25	8.31	38.34	2.50	3.94	5.62	7.06
30	1 - 1-1/4	24	BB	581	431	119605	56.00	24.25	8.31	40.00	2.50	3.94	5.62	7.06
30	1 - 1-1/4	24	RB	575	431	119614	56.00	24.25	8.31	40.00	2.50	3.94	5.62	7.06
60 metric tons														
60	1 - 1-1/4	12	BB	315	435	8027291	41.65	12.12	8.66	33.19	2.06	2.40	5.75	6.12

4:1 Design Factor.

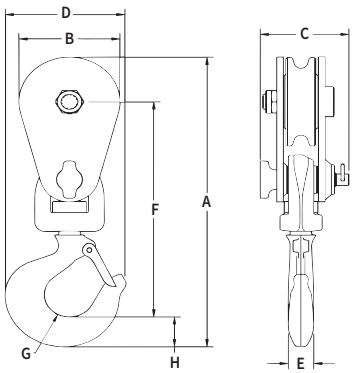
McKISSICK

SNATCH BLOCK WITH HOOK FITTING, SINGLE SHEAVE, 2-12t

Fatigue Rated CE







416 **L-170** **L-160** **C-720**

- Opening feature permits easy insertion of rope without reeving, or while the block is suspended.
- Bolt for opening feature is retained, to ensure no lost bolts.
- Forged steel swivel tees, yokes and hooks.
- Furnished with a latch installed.
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- 416 alloy snatch blocks feature a significant reduction in weight compared to snatch blocks made of non-alloy materials.
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2 metric tons														
2	5/16 - 3/8	3	BB	5	418	108038	9.74	3.00	2.64	3.59	0.75	7.24	0.75	1.00
4 metric tons														
4	3/8 - 1/2	4.5	BB	12	418	108065	14.12	4.24	3.13	5.24	1.00	10.13	0.94	1.87
5 metric tons														
5	3/8 - 1/2 ‡	4	BB	11	L-170	599800	14.62	4.56	2.94	5.24	1.00	10.50	0.94	1.87
5	3/8 - 1/2 ‡	4	RB	11	L-170	599819	14.62	4.56	2.94	5.24	1.00	10.50	0.94	1.87
6 metric tons														
6*	3/8 - 1/2	5	BB	13	L-160	599506	14.56	5.12	3.69	5.24	1.00	10.13	0.94	1.87
6*	3/8 - 1/2	5	RB	13	L-160	599515	14.56	5.12	3.69	5.24	1.00	10.13	0.94	1.87
7 short Tons														
7T*	3/4 - 7/8	6	BB	28	C-720	280010	16.14	6.00	3.81	6.27	1.44	11.33	1.25	1.61
8 metric tons														
8	5/8 - 3/4	6	BB	27	418	108127	18.95	6.00	4.19	6.81	1.56	13.55	1.31	2.41
8	5/8 - 3/4	6	RB	27	418	108154	18.95	6.00	4.19	6.81	1.56	13.55	1.31	2.41
8	5/8 - 3/4	8	BB	33	418	108225	21.01	8.12	4.19	6.81	1.56	14.54	1.31	2.41
8	5/8 - 3/4	8	RB	33	418	108252	21.01	8.12	4.19	6.81	1.56	14.54	1.31	2.41
8	5/8 - 3/4	10	BB	41	418	108323	23.08	10.12	4.19	6.81	1.56	15.61	1.31	2.41
8	5/8 - 3/4	10	RB	41	418	108350	23.08	10.12	4.19	6.81	1.56	15.61	1.31	2.41
8	5/8 - 3/4	12	BB	48	418	108421	25.89	12.12	4.16	6.81	1.56	17.42	1.31	2.41
8	5/8 - 3/4	12	RB	48	418	108458	25.89	12.12	4.16	6.81	1.56	17.42	1.31	2.41
8	5/8 - 3/4	14	BB	55	418	108528	27.39	14.12	4.19	6.81	1.56	17.92	1.31	2.41
8	5/8 - 3/4	14	RB	55	418	108546	27.39	14.12	4.19	6.81	1.56	17.92	1.31	2.41
12 metric tons														
12*	5/8 - 3/4	5.75	BB	29	L-160	599560	19.99	6.00	4.19	7.88	1.56	14.37	1.44	2.62
12*	5/8 - 3/4	5.75	RB	29	L-160	599579	19.99	6.00	4.19	7.88	1.56	14.37	1.44	2.62
12	3/4 - 7/8	6	BB	26	416	193427	19.89	6.00	4.19	7.88	1.56	14.27	1.44	2.62
12	3/4 - 7/8	6	RB	26	416	193472	19.89	6.00	4.19	7.88	1.56	14.27	1.44	2.62
12	3/4 - 7/8	8	BB	33	416	193490	21.95	8.12	4.19	7.88	1.56	15.27	1.44	2.62
12	3/4 - 7/8	8	RB	33	416	193542	21.95	8.12	4.19	7.88	1.56	15.27	1.44	2.62
12	3/4 - 7/8	10	BB	41	416	193613	24.02	10.12	4.19	7.88	1.56	16.34	1.44	2.62
12	3/4 - 7/8	10	RB	41	416	193677	24.02	10.12	4.19	7.88	1.56	16.34	1.44	2.62

4:1 Design Factor. *3.5:1 Design Factor.. ‡ Special Dual Groove Sheave also accepts 1-1/4" Manilla Rope

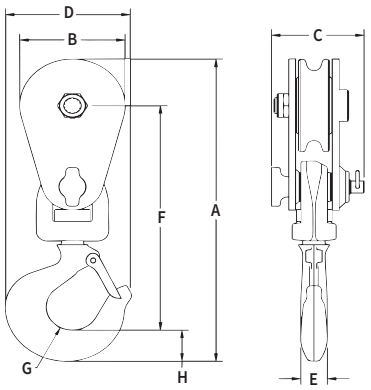
McKISSICK

BLOCKS

SNATCH BLOCK WITH HOOK FITTING, SINGLE SHEAVE, 15-30t

Fatigue Rated CE

420 418 430 434



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							A	B	C	D	E	F	G	H
15 metric tons														
15	3/4 - 7/8	8	BB	51	420	108275	23.50	8.12	5.09	8.34	1.76	16.51	1.50	2.93
15	3/4 - 7/8	8	RB	51	420	108276	23.50	8.12	5.09	8.34	1.76	16.51	1.50	2.93
15	3/4 - 7/8	10	BB	63	420	108371	25.25	10.12	5.09	8.34	1.76	17.26	1.50	2.93
15	3/4 - 7/8	10	RB	63	420	108372	25.25	10.12	5.09	8.34	1.76	17.26	1.50	2.93
15	3/4 - 7/8	16	BB	130	418	108608	32.25	16.12	5.09	8.34	1.76	21.26	1.50	2.93
15	3/4 - 7/8	16	RB	130	418	108626	32.25	16.12	5.09	8.34	1.76	21.26	1.50	2.93
15	7/8 - 1	18	BB	150	418	108644	33.50	18.12	5.09	8.34	1.76	21.51	1.50	2.93
15	7/8 - 1	18	RB	150	418	108662	33.50	18.12	5.09	8.34	1.76	21.51	1.50	2.93
20 metric tons														
20	1 - 1-1/8	8	BB	75	430	120023	25.87	8.12	6.00	9.39	2.00	18.43	1.50	3.38
20	1 - 1-1/8	8	RB	75	430	120041	25.87	8.12	6.00	9.39	2.00	18.43	1.50	3.38
20	1 - 1-1/8	10	BB	89	430	120096	27.94	10.12	6.00	9.39	2.00	19.50	1.50	3.38
20	1 - 1-1/8	10	RB	89	430	120112	27.94	10.12	6.00	9.39	2.00	19.50	1.50	3.38
20	1 - 1-1/8	12	BB	103	430	120176	30.00	12.25	6.00	9.39	2.00	20.50	1.50	3.38
20	1 - 1-1/8	12	RB	103	430	120194	30.00	12.25	6.00	9.39	2.00	20.50	1.50	3.38
20	1 - 1-1/8	14	BB	123	430	120256	32.34	14.00	6.00	9.39	2.00	21.96	1.50	3.38
20	1 - 1-1/8	14	RB	123	430	120274	32.34	14.00	6.00	9.39	2.00	21.96	1.50	3.38
25 metric tons														
25	1 - 1-1/4	8	BB	90	434	208896	26.56	8.25	6.13	9.36	2.00	19.06	1.50	3.38
25	1 - 1-1/4	10	BB	107	434	208910	28.63	10.25	6.13	9.36	2.00	20.13	1.50	3.38
25	1 - 1-1/4	18	BB	240	430	119486	41.41	18.25	7.12	11.76	2.50	27.97	1.94	4.32
25	1 - 1-1/4	18	RB	240	430	119487	41.41	18.25	7.12	11.76	2.50	27.97	1.94	4.32
30 metric tons														
30	1 - 1-1/4	12	BB	165	434	208931	36.32	12.25	7.00	11.76	2.50	25.88	1.94	4.32
30	1 - 1-1/4	14	BB	180	434	208932	38.57	14.25	7.00	11.76	2.50	27.13	1.94	4.32
30	1 - 1-1/4	20	BB	375	430	119507	52.15	20.25	8.31	15.24	3.00	36.12	2.25	5.91
30	1 - 1-1/4	20	RB	375	430	119516	52.15	20.25	8.31	15.24	3.00	36.12	2.25	5.91
30	1 - 1-1/4	24	BB	450	430	119525	55.75	24.25	8.31	15.24	3.00	37.75	2.25	5.91
30	1 - 1-1/4	24	RB	450	430	119534	55.75	24.25	8.31	15.24	3.00	37.75	2.25	5.91

4:1 Design Factor.

McKISSICK

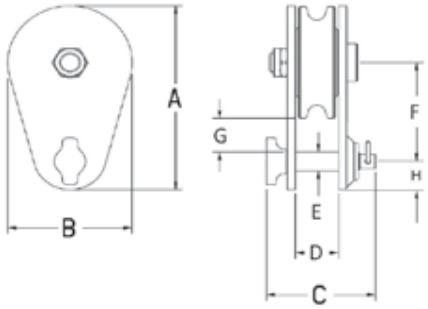
SNATCH BLOCK, TAIL BOARD, SINGLE SHEAVE, 2-12t


404


L-170


L-160


402



- Opening feature permits easy insertion of rope without reeving. Bolt for opening feature is retained, to ensure no lost bolts.
- All sizes feature sheave grooves suited for a range of wireline diameters.
- Meets or exceeds all requirements of ASME B30.26. Importantly, these blocks meet other critical performance requirements including fatigue life and material traceability, not addressed by ASME B30.26.
- 402 snatch blocks feature a significant reduction in weight compared to snatch blocks made of non-alloy materials.
- Crosby's Engineered Solutions Group is ready to discuss your requirements and help select or develop the ideal block for your application. Visit thecrosbygroup.com/engineeredsolutions for more information.

APPLICATION AND WARNING INFORMATION
SECTION 17

Working Load Limit (t)	Wire Rope Diameter (in)	Sheave Diameter (in)	Bearing Code	Weight Each (lb)	Model No.	Stock No.	Dimensions (in)							
							A	B	C	D	E	F	G	H
2 metric tons														
2	5/16 - 3/8	3	BB	3	404	102016	4.87	3.00	2.64	1.04	0.50	2.62	0.87	0.75
4 metric tons														
4	3/8 - 1/2	4.5	BB	7	404	102025	7.75	4.25	3.13	1.56	0.75	4.25	1.63	1.38
5 metric tons														
5	3/8 - 1/2 ‡	4	BB	11	L-170	599846	8.38	4.50	2.94	1.57	0.85	4.69	2.25	1.44
5	3/8 - 1/2 ‡	4	RB	11	L-170	599855	8.38	4.50	2.94	1.57	0.85	4.69	2.25	1.44
6 metric tons														
6*	3/8 - 1/2	5	BB	13	L-160	599542	8.25	5.12	3.69	1.53	0.75	4.25	1.38	1.44
6*	3/8 - 1/2	5	RB	13	L-160	599551	8.25	5.12	3.69	1.53	0.75	4.25	1.38	1.44
8 metric tons														
8	5/8 - 3/4	6	BB	15	404	102098	9.87	6.00	4.19	1.80	1.00	5.12	1.62	1.75
8	5/8 - 3/4	6	RB	15	404	102114	9.87	6.00	4.19	1.80	1.00	5.12	1.62	1.75
8	5/8 - 3/4	8	BB	21	404	102169	11.93	8.12	4.19	1.80	1.00	6.12	1.62	1.75
8	5/8 - 3/4	8	RB	21	404	102187	11.93	8.12	4.19	1.80	1.00	6.12	1.62	1.75
8	5/8 - 3/4	10	BB	29	404	102230	14.00	10.12	4.19	1.80	1.00	7.19	1.69	1.75
8	5/8 - 3/4	10	RB	29	404	102258	14.00	10.12	4.19	1.80	1.00	7.19	1.69	1.75
8	5/8 - 3/4	12	BB	36	404	102301	16.81	12.12	4.19	1.80	1.00	9.00	2.50	1.75
8	5/8 - 3/4	12	RB	36	404	102329	16.81	12.12	4.19	1.80	1.00	9.00	2.50	1.75
12 metric tons														
12*	5/8 - 3/4	5.75	BB	29	L-160	599604	9.97	6.00	4.19	1.72	1.00	5.22	1.85	1.75
12*	5/8 - 3/4	5.75	RB	29	L-160	599613	9.97	6.00	4.19	1.72	1.00	5.22	1.85	1.75
12	3/4 - 7/8	6	BB	15	402	179238	9.87	6.00	4.19	1.80	1.00	5.12	1.62	1.75
12	3/4 - 7/8	6	RB	15	402	179283	9.87	6.00	4.19	1.80	1.00	5.12	1.62	1.75
12	3/4 - 7/8	8	BB	21	402	179318	11.93	8.12	4.19	1.80	1.00	6.12	1.62	1.75
12	3/4 - 7/8	8	RB	21	402	179363	11.93	8.12	4.19	1.80	1.00	6.12	1.62	1.75
12	3/4 - 7/8	10	BB	29	402	179434	14.00	10.12	4.19	1.80	1.00	7.19	1.69	1.75
12	3/4 - 7/8	10	RB	29	402	179498	14.00	10.12	4.19	1.80	1.00	7.19	1.69	1.75

4:1 Design Factor. *3.5:1 Design Factor. **‡ Special Dual Groove Sheave also accepts 1-1/4" Manilla Rope.**

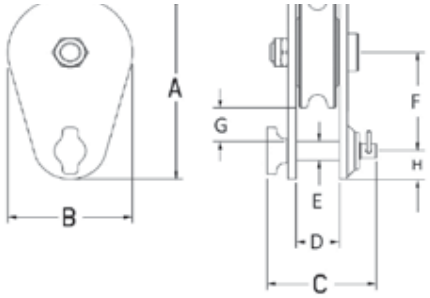
McKISSICK

SNATCH BLOCK, TAIL BOARD, SINGLE SHEAVE, 15-60t

406

407

401



- Opening feature permits easy insertion of rope without reeving. Bolt for opening feature is retained, to ensure no lost bolts.
- Can be furnished with bronze bushings or roller bearings.
- Center pin equipped with pressure lube fitting.
- All sizes feature sheave grooves suited for a range of wireline diameters.
- Meets or exceeds all requirements of ASME B30.26. Importantly, these blocks meet other critical performance requirements including fatigue life and material traceability, not addressed by ASME B30.26.
- Visit thecrosbygroup.com/engineeredsolutions for more information.

APPLICATION AND WARNING INFORMATION
SECTION 17

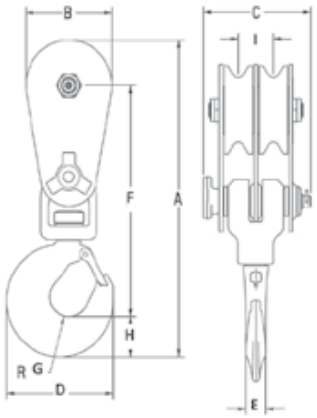
Working Load Limit (t)	Wire Rope Diameter (in)	Sheave Diameter (in)	Bearing Code	Weight Each (lb)	Model No.	Stock No.	Dimensions (in)							
							A	B	C	D	E	F	G	H
15 metric tons														
15	3/4 - 7/8	8	BB	30	406	108311	13.19	8.12	5.13	2.35	1.25	6.75	2.13	2.38
15	3/4 - 7/8	8	RB	30	406	108312	13.19	8.12	5.13	2.35	1.25	6.75	2.13	2.38
15	3/4 - 7/8	10	BB	42	406	108406	14.94	10.12	5.13	2.35	1.25	7.50	1.94	2.38
15	3/4 - 7/8	10	RB	42	406	108407	14.94	10.12	5.13	2.35	1.25	7.50	1.94	2.38
20 metric tons														
20	1 - 1-1/8	8	BB	42	407	103523	13.56	8.12	6.00	2.55	1.50	7.12	2.37	2.38
20	1 - 1-1/8	8	RB	42	407	103541	13.56	8.12	6.00	2.55	1.50	7.12	2.37	2.38
20	1 - 1-1/8	10	BB	55	407	103603	15.63	10.12	6.00	2.55	1.50	8.19	2.44	2.38
20	1 - 1-1/8	10	RB	55	407	103621	15.63	10.12	6.00	2.55	1.50	8.19	2.44	2.38
20	1 - 1-1/8	12	BB	70	407	103685	17.75	12.25	6.00	2.55	1.50	9.25	2.56	2.38
20	1 - 1-1/8	12	RB	70	407	103701	17.75	12.25	6.00	2.55	1.50	9.25	2.56	2.38
20	1 - 1-1/8	14	BB	90	407	103765	20.10	14.00	6.00	2.55	1.50	10.72	2.97	2.38
20	1 - 1-1/8	14	RB	90	407	103783	20.10	14.00	6.00	2.55	1.50	10.72	2.97	2.38
25 metric tons														
25	1 - 1-1/4	8	BB	50	401	178151	13.49	8.25	6.13	2.55	1.50	7.12	2.37	2.25
25	1 - 1-1/4	10	BB	65	401	179167	15.43	10.25	6.13	2.55	1.50	8.19	2.44	2.12
25	1 - 1-1/4	18	BB	165	407	119652	24.62	18.25	7.12	3.05	1.75	13.00	3.13	2.5
25	1 - 1-1/4	18	RB	165	407	119653	24.62	18.25	7.12	3.05	1.75	13.00	3.13	2.5
30 metric tons														
30	1 - 1-1/4	12	BB	95	401	179178	18.62	12.25	7.00	3.05	1.75	10.00	3.13	2.5
30	1 - 1-1/4	14	BB	110	401	179187	20.88	14.25	7.00	3.05	1.75	11.25	3.38	2.5
30	1 - 1-1/4	20	BB	215	407	119669	28.88	20.25	8.31	3.55	2.25	15.25	4.13	3.5
30	1 - 1-1/4	20	RB	215	407	119678	28.88	20.25	8.31	3.55	2.25	15.25	4.13	3.5
30	1 - 1-1/4	24	BB	290	407	119687	32.50	24.25	8.31	3.55	2.25	16.88	3.76	3.5
30	1 - 1-1/4	24	RB	290	407	119696	32.50	24.25	8.31	3.55	2.25	16.88	3.76	3.5
60 metric tons														
60	1 - 1-1/4	12	BB	95	401	8027292	20.32	12.12	8.66	2.78	2.50	10.75	3.50	3.5

4:1 Design Factor.

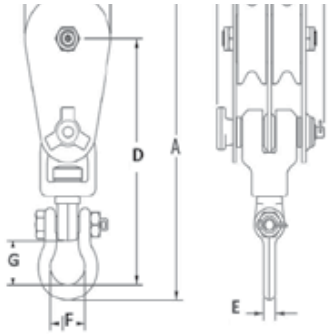
McKISSICK

SNATCH BLOCK WITH HOOK OR SHACKLE FITTING DOUBLE SHEAVE, 4-12t

408
With Hook



409
With Shackle



- Two sheave snatch block to allow for additional mechanical advantage, must be reeved with four parts of line.
- Opening feature permits easy insertion of wireline in both sheaves with removal of one bolt.
- 408 is furnished with S-4320 hook latch.
- Center Pin equipped with pressure lube fittings.
- All sizes feature sheave grooves suited for a range of wireline diameters.
- Meets or exceeds all requirements of ASME B30.26. Importantly, these blocks meet other critical performance requirements including fatigue life and material traceability, not addressed by ASME B30.26.
- Crosby's Engineered Solutions Group is ready to discuss your requirements and help select or develop the ideal block for your application. Visit thecrosbygroup.com/engineeredsolutions for more information.

408 Double Sheave Snatch Block with Hook

Working Load Limit (t)	Wire Rope Diameter (in)	Sheave Diameter (in)	Bearing Code	Weight Each (lb)	Stock No.	Dimensions (in)								
						A	B	C	D	E	F	G	H	I
4 metric tons														
4	3/8 - 1/2	4.5	BB	18	104023	14.77	4.24	5.25	5.24	1.00	10.78	0.94	1.87	1.72
12 metric tons														
12	5/8 - 3/4	6	BB	45	104103	21.12	6.00	6.13	7.86	1.56	15.50	1.44	2.62	2.03
12	5/8 - 3/4	6	RB	45	104121	21.12	6.00	6.13	7.86	1.56	15.50	1.44	2.62	2.03
12	5/8 - 3/4	8	BB	53	104185	23.18	8.12	6.13	7.86	1.56	16.50	1.44	2.62	2.03
12	5/8 - 3/4	8	RB	53	104201	23.18	8.12	6.13	7.86	1.56	16.50	1.44	2.62	2.03

4:1 Design Factor.

409 Double Sheave Snatch Block with Shackle

Working Load Limit (t)	Wire Rope Diameter (in)	Sheave Diameter (in)	Bearing Code	Weight Each (lb)	Stock No.	Dimensions (in)							
						A	B	C	D	E	F	G	H
4 metric tons													
4	3/8 - 1/2	4.5	BB	18	105022	14.03	4.24	5.25	11.22	0.62	1.70	2.01	1.72
12 metric tons													
12	5/8 - 3/4	6	BB	50	105102	21.12	6.00	6.13	16.36	1.50	3.12	3.12	2.03
12	5/8 - 3/4	6	RB	50	105120	21.12	6.00	6.13	16.36	1.50	3.12	3.12	2.03
12	5/8 - 3/4	8	BB	58	105184	23.17	8.12	6.13	17.36	1.50	3.12	3.12	2.03
12	5/8 - 3/4	8	RB	58	105200	23.17	8.12	6.13	17.36	1.50	3.12	3.12	2.03

4:1 Design Factor.

Fatigue Rated CE

APPLICATION AND WARNING INFORMATION
SECTION 17

Vertical Clamps

IPU10

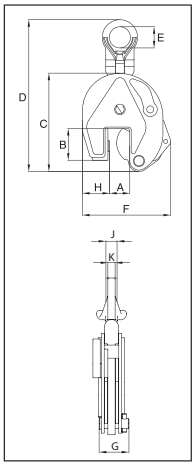
The IPU10 vertical lifting clamp is used for the lifting, turning, moving or vertical transfer of sheet, plates, or fabrications from horizontal to vertical and down to horizontal (180°) as needed. The hinged hoisting eye allows for the clamp to place and lift the load from any direction, or with a multiple leg sling without side-loading the clamp.

Universal - For Lifting in any Direction

- Available in capacities of .5 thru 30 metric tons (Higher Working Load Limits are available upon request).
- Wide variety of jaw openings available: 0" to 6.13".
- Welded alloy steel body for strength and smaller size. Forged alloy components, where required.
- Individually Proof Tested to 2 times the Working Load Limit with certification.
- Company name (CrosbyIP), logo, Working Load Limit and jaw opening permanently stamped on body.
- Each product is individually serialized, with the serial number and Proof Load test date stamped on body. Serial number is included on the test certificate with maintenance and warranty logbook.
- Available in a variety of styles:
  - IPU10 - Standard clamp for materials with a surface hardness to 37Rc (345HB)
  - IPU10J - Larger jaw opening.
  - IPU10S - For use with Stainless Steel material.
  - IPU10H - For use with materials with a surface hardness to 47Rc (450HB).
- Full 180° turning range for material transfer, turning or moving.
- Lock open, lock closed ability with latch for pretension on material and then release of material.
- Optional IP-5000 Stinger assembly available. Allows for easy connection between the clamp and hoist hook.
- Minimum WLL of 10% of Maximum WLL.
- Maintenance replacement kits are available.
- Manufactured by a ISO 9001 facility.
- All sizes are **RFID EQUIPPED.**

IPU10S

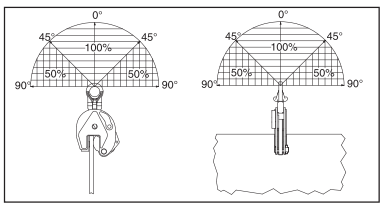
IPU10S: For use on Stainless Steel material.
IPU10H: For use on materials with a surface hardness to 47Rc (450 HB).



Model IPU10

Model	Working Load Limit (t)*	IPU10 Stock No.	Weight Each (lbs.)	Dimensions (in.)									
				Jaw A	B	C	D	E	F	G	H	J	K
IPU10	0.5	2701675	4.19	0 - .63	1.73	5.04	8.98	1.57	4.53	1.61	1.10	-	.43
IPU10	1	2701663	5.29	0 - .75	1.77	5.47	8.74	1.57	4.96	1.61	1.50	-	.43
IPU10	2	2701677	18.7	0 - 1.38	3.07	7.91	14.65	2.76	7.48	2.40	2.17	-	.63
IPU10	3	2701665	32.6	0 - 1.56	3.94	9.96	17.52	2.95	8.86	3.07	2.36	-	.79
IPU10	4.5	2701667	35.3	0 - 1.56	3.94	9.96	17.52	2.95	9.13	3.23	2.56	-	.79
IPU10	6	2701669	53.0	0 - 2.00	4.96	11.89	20.67	3.15	11.50	3.31	3.74	1.73	.79
IPU10/J	6	2702469	67.3	2.00 - 4.00	4.96	11.89	20.67	3.15	13.46	3.31	3.74	1.73	.79
IPU10	9	2701671	65.0	0 - 2.00	4.96	12.80	21.93	3.15	12.20	3.62	4.13	1.73	.79
IPU10/J	9	2701673	67.2	2.00 - 4.00	4.96	12.80	22.13	3.15	14.17	3.62	4.13	1.73	.79
IPU10	12	2701679	126	0 - 2.13	6.30	15.39	24.53	3.15	13.03	4.61	5.39	1.61	.98
IPU10/J	12	2701681	130	2.13 - 4.25	7.01	17.28	26.50	3.15	16.34	4.61	5.39	1.61	.98
IPU10	16	2701683	159	.25 - 2.50	7.01	18.31	28.90	3.46	15.63	4.69	6.02	1.77	.98
IPU10/J	16	2701685	187	2.50 - 5.00	8.19	20.51	31.10	3.46	18.58	4.69	6.34	1.77	.98
IPU10	22.5	2701687	280	.25 - 3.13	8.74	21.81	33.66	4.33	18.50	5.35	7.32	1.93	.98
IPU10/J	22.5	2701689	287	3.13 - 6.13	9.96	24.72	36.61	4.33	22.64	5.35	7.72	1.93	.98
IPU10	30	2701691	337	.25 - 3.13	8.74	21.46	33.86	4.33	18.50	5.98	7.32	2.13	1.18
IPU10/J	30	2701693	364	3.13 - 6.13	9.84	24.41	36.81	4.33	22.24	5.98	7.72	2.13	1.18
For stainless steel - with universal hoisting eye													
IPU10/S	0.5	2702275	4.19	0 - .63	1.73	5.04	8.98	1.57	4.53	1.61	1.10	-	.43
IPU10/S	1	2702263	4.63	0 - .75	1.77	5.47	8.74	1.57	4.96	1.61	1.50	-	.43
IPU10/S	2	2702277	16.8	0 - 1.38	3.07	7.91	14.65	2.76	7.48	2.40	2.17	-	.63
IPU10/S	3	2702265	32.7	0 - 1.56	3.94	9.96	1.752	2.95	8.86	3.07	2.36	-	.79
IPU10/S	4.5	2702267	35.3	0 - 1.56	3.94	9.96	17.52	2.95	9.13	3.23	2.56	-	.79
IPU10/S	6	2702269	53.0	0 - 2.00	4.96	11.89	20.67	3.15	11.50	3.31	3.74	1.73	.79
IPU10/S	9	2702271	65.1	0 - 2.00	4.96	12.80	21.93	3.15	12.20	3.62	4.13	1.73	.79
IPU10/S	12	2702279	67.3	0 - 2.13	6.30	15.39	24.53	3.15	13.03	4.61	5.39	1.61	.98
For very hard materials - with universal hoisting eye													
IPU10/H	0.5	2702175	4.19	0 - .63	1.73	5.04	8.98	1.57	4.53	1.61	1.10	-	.43
IPU10/H	1	2702177	16.8	0 - 1.38	3.07	7.91	14.65	2.76	7.48	2.40	2.17	-	.63
IPU10/H	2	2702165	32.7	0 - 1.56	3.94	9.96	17.52	2.95	8.86	3.07	2.36	-	.79
IPU10/H	3	2702167	35.3	0 - 1.56	3.94	9.96	17.52	2.95	9.13	3.23	2.56	-	.79
IPU10/H	4.5	2702169	53.0	0 - 2.00	4.96	11.89	20.67	3.15	11.50	3.31	3.74	1.73	.79
IPU10/H	6	2702171	65.1	0 - 2.00	4.96	12.80	21.93	3.15	12.20	3.62	4.13	1.73	.79

* Design Factor based on EN 13155 and ASME B30.20.



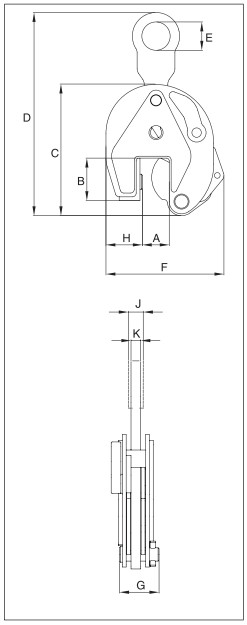
Vertical Clamps

IP10

The IP10 vertical lifting clamp is used for the lifting, turning, moving or vertical transfer of sheet, plates, or fabrications from horizontal to vertical and down to horizontal (180°) as needed. Usually used as a single point pick or when used with a spreader beam with multiple vertical drop lines.

For Vertical Lifting, Turning and Transfer

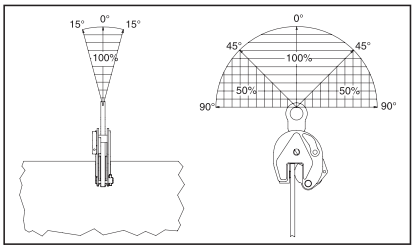
- Available in capacities of .5 thru 30 metric tons (Higher Working Load Limits are available upon request).
- Wide variety of jaw openings available: 0" to 6.10".
- Welded alloy steel body for strength and smaller size. Forged alloy components, where required.
- Individually Proof Tested to 2 times the Working Load Limit with certification.
- Company name (CrosbyIP), logo, Working Load Limit and jaw opening permanently stamped on body.
- Each product is individually serialized, with the serial number and Proof Load test date stamped on body. Serial number is included on the test certificate with maintenance and warranty logbook.
- Available in a variety of styles:
  - IP10 - Standard clamp for materials with a surface hardness to 37Rc (345 HB).
  - IP10J - Larger jaw opening.
  - IP10S - For use with Stainless Steel material.
  - IP10H - For use with materials with a surface hardness to 47Rc (450 HB).
- Full 180° turning range for material transfer, turning or moving.
- Lock open, lock closed ability with latch for pretension on material and then release of material.
- Optional IP-5000 Stinger assembly available. Allows for easy connection between the clamp and hoist hook.
- Minimum WLL of 10% of Maximum WLL.
- Maintenance replacement kits are available.
- Manufactured by a ISO 9001 facility.
- All sizes are **RFID EQUIPPED.**



Model IP10

Model	Working Load Limit (t)*	IP10 Stock No.	Weight Each (lbs.)	Dimensions (in.)									
				Jaw A	B	C	D	E	F	G	H	J	K
IP10	0.5	2701674	3.97	0 - .63	1.73	5.04	8.15	1.18	4.53	1.61	1.10	-	.39
IP10	1	2701662	4.85	0 - .75	1.77	5.47	8.46	1.18	4.96	1.61	1.50	-	.39
IP10	2	2701676	16.8	0 - 1.38	3.07	7.91	13.23	2.76	7.48	2.40	2.17	-	.63
IP10	3	2701664	30.4	0 - 1.56	3.94	9.96	17.17	2.95	8.86	3.07	2.36	-	.79
IP10	4.5	2701666	33.1	0 - 1.56	3.94	9.96	17.17	2.95	9.13	3.23	2.56	-	.79
IP10	6	2701668	51.9	0 - 2.00	4.96	11.89	20.28	3.15	11.50	3.31	3.74	1.57	.79
IP10/J	6	2701705	62.9	2.00 - 4.00	4.96	11.89	20.28	3.15	13.46	3.31	3.74	1.57	.79
IP10	9	2701670	60.7	0 - 2.00	4.96	12.80	21.65	3.15	12.20	3.62	4.13	1.73	.79
IP10/J	9	2701672	62.9	2.00 - 4.00	4.96	12.80	21.85	3.15	14.17	3.62	4.13	1.73	.79
IP10	12	2701678	108	0 - 2.13	6.30	15.39	22.83	3.16	13.03	4.61	5.39	1.61	.98
IP10/J	12	2701680	128	2.13 - 4.25	7.01	17.28	24.80	3.15	16.34	4.61	5.39	1.61	.98
IP10	16	2701682	150	.25 - 2.50	7.01	18.31	27.17	3.46	15.63	4.69	6.02	1.93	.98
IP10/J	16	2701684	199	2.50 - 5.00	8.19	20.51	29.37	3.46	18.58	4.69	6.34	1.93	.98
IP10	22.5	2701686	238	.25 - 3.13	8.74	21.81	31.50	4.33	18.50	5.35	7.32	1.93	.98
IP10/J	22.5	2701688	243	3.13 - 6.10	9.96	24.72	34.65	4.33	22.64	5.35	7.72	1.93	.98
IP10	30	2701690	327	.25 - 3.13	8.74	21.46	31.50	4.33	18.50	5.98	7.32	2.13	1.18
IP10/J	30	2701692	335	3.13 - 6.10	9.84	24.41	34.65	4.33	22.24	5.98	7.72	2.13	1.18
For stainless steel - with fixed hoisting eye													
IP10/S	0.5	2702274	3.97	0 - .63	1.73	5.04	8.15	1.18	4.53	1.61	1.10	-	.39
IP10/S	1	2702262	4.41	0 - .75	1.77	5.47	8.46	1.18	4.96	1.61	1.50	-	.39
IP10/S	2	2702276	15.0	0 - 1.38	3.07	7.91	13.23	2.76	7.48	2.40	2.17	-	.63
IP10/S	3	2702264	30.5	0 - 1.56	3.94	9.96	17.17	2.95	8.86	3.07	2.36	-	.79
IP10/S	4.5	2702266	33.1	0 - 1.56	3.94	9.96	17.17	2.95	9.13	3.23	2.56	-	.79
IP10/S	6	2702268	51.9	0 - 2.00	4.96	11.89	20.67	3.15	11.50	3.31	3.74	1.57	.79
IP10/S	9	2702270	60.7	0 - 2.00	4.96	12.80	21.93	3.15	12.20	3.62	4.13	1.73	.98
IP10/S	12	2702278	108	0 - 2.13	6.30	15.39	24.53	3.15	13.03	4.61	5.39	1.61	.98
For very hard materials - with fixed hoisting eye													
IP10/H	0.5	2702174	3.97	0 - .63	1.73	5.04	8.15	1.18	4.53	1.61	1.10	-	.39
IP10/H	1	2702176	15.0	0 - 1.38	3.07	7.91	13.23	2.76	7.48	2.40	2.17	-	.39
IP10/H	2	2702164	30.4	0 - 1.56	3.94	9.96	17.17	2.95	8.86	3.07	2.36	-	.63
IP10/H	3	2702166	33.1	0 - 1.56	3.94	9.96	17.17	2.95	9.13	3.23	2.56	-	.79
IP10/H	4.5	2702168	51.9	0 - 2.00	4.96	11.89	20.28	3.15	11.50	3.31	3.74	1.57	.79
IP10/H	6	2702170	60.7	0 - 2.00	4.96	12.80	21.65	3.15	12.20	3.62	4.13	1.73	.98

* Design Factor based on EN 13155 and ASME B30.20.

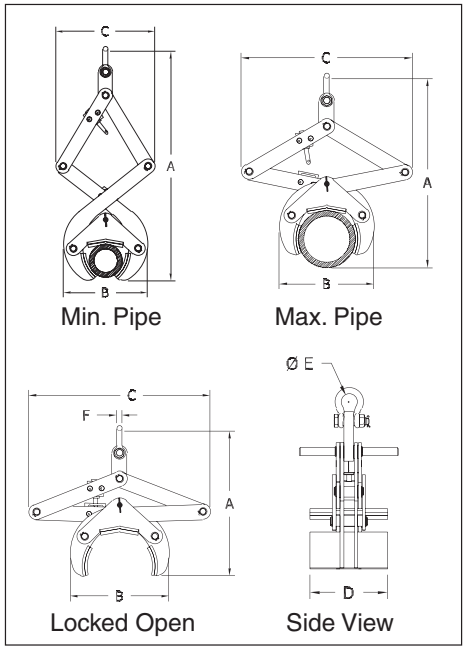


Crosby® Clamp-Co Padded Pipe Grab

CCPA

The new Crosby Clamp-Co Adjustable Pipe Grab provides an excellent means of handling cylindrical objects. Featuring padded grabs, the new Grab offers an excellent method of handling any pipe or solid bar, 3.5" to 36", especially where damage to material surface is not permitted.

- Capacities: 1,200 lbs. to 20,000 lbs.
- Each Grab size accommodates several diameters of pipe or solid bar.
- Auto indexing system provides quick connect and disconnect to load (one person - hands free).
- Individually Proof Tested to 2 times the Working Load Limit with certification.
- Designed to handle loads of various types of material, including:
  - Cast Iron / Steel
  - PVC
  - Painted
  - Epoxy Coated
- Finish - Red Paint
- Replacement pads are available.
- Features Crosby shackle as upper connection point.
- Custom sizes are available.
- All sizes are **RFID EQUIPPED**.



Padded Pipe Grab

Model No.	CCPA Stock No.	Working Load Limit* (lbs.)	Weight Each (lbs.)	Grip Width	Dimensions (in.)					
					A	B	C	D	E	F
PA-5	2736000	1200	23	Locked Open	13.50	10.00	18.00	6.50	1.31	.50
				Min. Pipe 3.50"	27.00	9.00	8.00			
				Max. Pipe 5.56"	23.00	9.00	14.75			
PA-8	2736009	2000	75	Locked Open	23.50	15.50	27.75	10.00	1.69	.63
				Min. Pipe 5.56"	40.50	14.50	14.00			
				Max. Pipe 8.81"	34.00	14.75	24.00			
PA-14	2736018	4500	230	Locked Open	28.75	24.00	28.50	15.50	1.50	1.00
				Min. Pipe 8.81"	46.00	22.50	13.50			
				Max. Pipe 14.00"	34.00	23.00	26.00			
PA-22	2736027	10,000	496	Locked Open	42	36	42.5	20	2.5	1.5
				Min. Pipe 14.00"	67.5	34	19			
				Max. Pipe 22.00"	52	36	40			
PA-36	2736036	20,000	1250	Locked Open	57.27	57.03	57.31	30.00	3.37	1.50
				Min. Pipe 24.00"	92.02	52.38	26.98			
				Max. Pipe 36.00"	66.36	55.03	53.24			

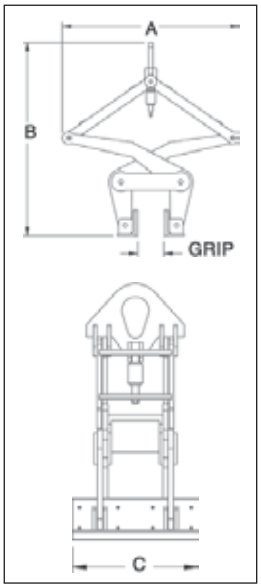
* Maximum Proof Load is 2 times the Working Load Limit and design factor based on EN13155 and ASME B30.20.

Crosby® Clamp-Co Barrier / Curb Grabs

CCBG

Crosby Clamp-Co Barrier Grabs provide a fast and efficient method for handling concrete road barriers.

- Hands-free operation.
- Alloy Steel Construction.
- Available with polyurethane pads or hardened steel jaw
- (Replacement kits available).
- Eliminates the need for slings, chokers and spreader bars.
- Individually Proof Tested to 2 times the Working Load Limit with certification.
- Finish - Red Paint.
- All sizes are **RFID EQUIPPED.**



Barrier Grab

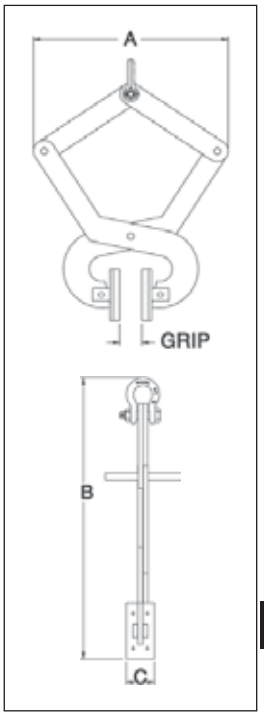
Model No.	CCBG-150 Stock No.	Working Load Limit (Tons)*	Weight Each (lbs.)	Grip Width (in.)	Dimensions (in.)		
					A	B	C
BG-9000	2734009	4.5	290	6 (min.)	40.88	44.88	18.00
				12 (max.)	44.00	36.75	18.00

* Design factor based on EN13155 and ASME B30.20.

CCGG

Crosby Clamp-Co Curb Grabs provide a fast and efficient method for handling large granite curbs.

- Virtually no manual assistance is required.
- Alloy Steel Construction.
- Available with polyurethane pads or hardened steel jaw.
- (Replacement kits available).
- Eliminates the need for slings, chokers and spreader bars.
- Individually Proof Tested to 2 times the Working Load Limit with certification.
- Finish - Red Paint.
- All sizes are **RFID EQUIPPED.**



Curb Grab

Model No.	CCGG-140 Stock No.	Working Load Limit (lbs.)*	Weight Each (lbs.)	Grip Width (in.)	Dimensions (in.)		
					A	B	C
CG-1400	2734000	1400	290	4 (min.)	22.5	27.25	3.00
				7 (max.)	25.0	20.25	3.00

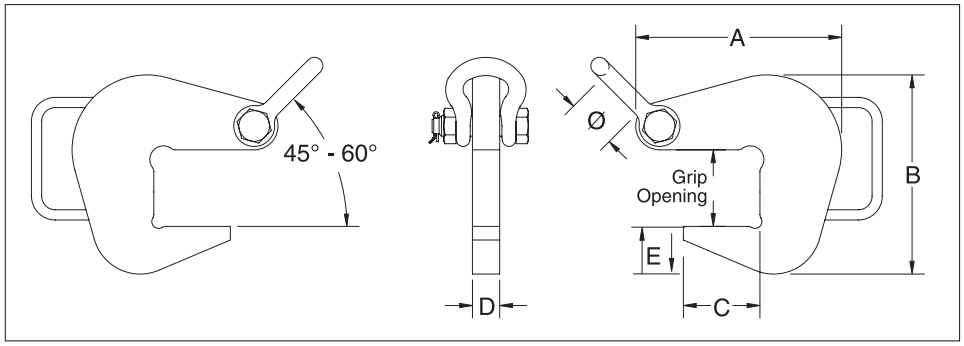
* Design factor based on EN13155 and ASME B30.20.

Crosby® Clamp-Co Pipe Hooks

CCPH

Crosby Clamp-Co Pipe Hooks provide a fast and efficient method for lifting pipe, tube or any similarly shaped fabrications.

- Alloy steel plate construction.
- Equipped with a convenient handle.
- Equipped with a Bolt Type Shackle.
- Non marring inserts available.
- Used in pairs with 45° - 60° horizontal angle or 60° - 90° included angle.



Pipe Hooks

Model	Stock No.	Working Load Limit Per Pair (t.)**	Grip (in.)	Weight Each (lbs.)	Dimensions (in.)						Shackle Size (in.)	Cast Aluminium Inserts*
					A	B	C	D	E	Ø		
PH-2	2734500	2	2.06	5.94	5.81	5.06	2.06	1.00	1.25	1.69	5/8	2734800 2734809
PH-4	2734509	4	2.81	10.03	7.56	7.31	2.81	1.00	1.75	1.69	5/8	2734818
PH-6	2734518	6	4.06	17.74	10.18	10.06	4.06	1.00	2.25	2.00	3/4	2734827
PH-10	2734527	10	6.06	38.67	14.81	15.06	6.06	1.00	3.50	2.69	1.0	2734836

* See CCPHI chart for Pipe ID range.
**Design factor based on EN13155 and ASME B30.20.

Pipe Hook Inserts

- Interchangeable cast aluminium inserts for use with the CCPH Pipe Hook that minimizes thread and pipe damage.

CCPHI

Catalog Number	Stock No.	ID of Pipe (in.)
CCPHI	2734800	3-12
	2734809	12-18
	2734818	18-30
	2734827	30-42
	2734836	42-72

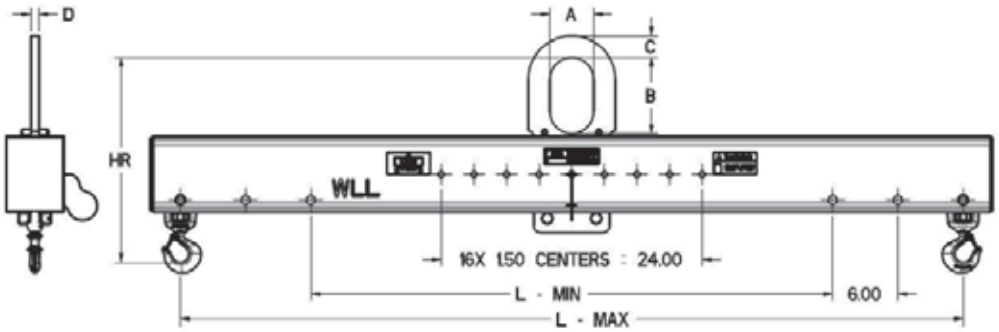
Adjustable Length Lifting Beams with Swivel Hook bottoms

- Manufactured to exceed all ASME B30.20 and OSHA regulations.
- Painted safety yellow for increased visibility.
- **ALL** Lifting Beams proof loaded and shipped with certification paperwork.
- Durable construction ideally suited to jobsite or warehouse use.
- Made in U.S.A.
- Custom lettering available - call for details.
- Custom designs available - call for engineering.
- **ALL** lifting equipment individually proof loaded per OSHA requirements.
- All dimensions in inches unless otherwise noted.

- Quick and easy adjustment of unbalanced loads.
- Ideally suited to low headroom applications.
- Pictured with standard alloy swivel latch hooks.
- Eye hooks and custom connections available - call for ordering assistance.

RFID TRACKING

CHIP EQUIPPED

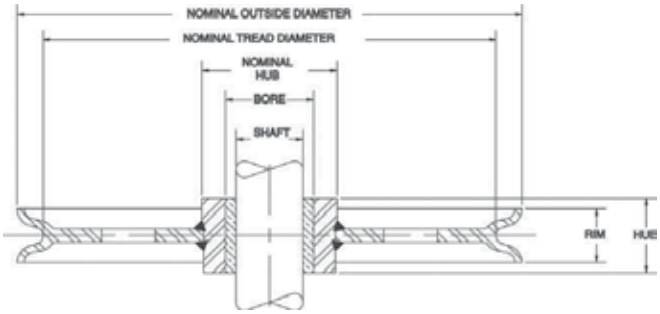


Working Load Limit in Pounds*	Part Number	L min	L max	A	B	C	D	HR	Weight in Pounds
2,000	**16410**	48	72	3	5	0.75	0.63	13.8	85
2,000	**16411**	120	144	3	5	0.75	0.63	15.7	285
4,000	**16412**	48	72	3	5	1.5	0.63	14.6	135
4,000	**16413**	120	144	3	5	1.5	0.63	16.6	330
6,000	**16414**	48	72	3	5	1.5	0.63	16.2	160
6,000	**16415**	120	144	3	5	1.5	0.63	19.1	530
8,000	**16416**	48	72	4	7	2	0.75	18.9	200
8,000	**16417**	120	144	4	7	2	0.75	20.9	540
10,000	**16418**	48	72	4	7	2	0.75	21.2	300
10,000	**16419**	120	144	4	7	2	0.75	22.2	795
15,000	**16420**	48	72	4	7	2	1.00	22.1	315
15,000	**16421**	120	144	4	7	2	1.00	25.1	815

* Call for specifications on larger sizes and capacities

McKissick® Custom Sheaves

Customer Name:		Date:
Address:	City:	State, Zip:
Phone:	Fax:	E-Mail:
Customer Contact Name:		Quantity:



DIMENSIONAL INFORMATION

Nominal Outside Diameter: _____ Wire Rope Size: _____ Rim Width: _____

+ Shaft Size: _____ * Hub Width: _____

Nominal Tread Diameter (Optional): _____ Nominal Hub Diameter (Optional): _____

+ Shaft size is bore size on Plain Bore Sheaves.
* Hub width is measured over the cone of the Tapered Bearing Sheaves.

BEARING TYPE

- ❑ Bronze Bushing
- ❑ Ball Bearing
- ❑ Tapered Roller Bearing
- ❑ Finish / Plain Bore
- ❑ Roller Bearing (requires hardened and ground shaft)
- ❑ Underwater
- ❑ Full Complement Double-Row Cylindrical Roller Bearings with Seals
- ❑ Other

MATERIAL TYPE

- ❑ Roll Forged (Flame hardened 14" (356mm) and larger)
- ❑ Forged Steel
- ❑ Cast Steel
- ❑ Domed
- ❑ Fabricated
- ❑ Other

APPLICATION INFORMATION

Line Pull: _____ Fleet Angle: _____ Degree of Wrap: _____

Line Speed: _____ Environment: _____ Groove Angle: _____

SPECIAL REQUIREMENTS

Special Testing: _____

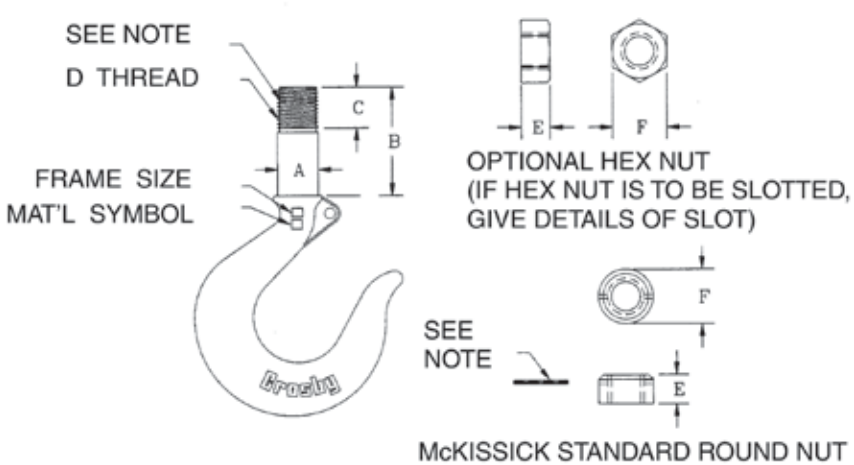
Finish: _____

Third Party Inspection / Approval: _____
(If 3rd party inspection or approval is required, please contact Crosby Customer Service.)

Crosby® Custom Design Hooks

CROSBY CUSTOM MACHINED SHANK HOOK & NUT QUOTATION REQUEST FORM

Customer Name:		Date:
Address:	City, State, Zip	
Phone:	Fax:	
Customer Contact Name:		
Quotation Due Date:	Product Delivery Date:	
Crosby / McKissick Proposal Number:		Quantity:



NOTE:
FOR INSTALLATION OF SPRING PIN, STANDARD PRACTICE IS TO FIELD DRILL NUT AND SHANK AFTER ASSEMBLY AND ADJUSTED TAKE-UP IS MADE.

Dimensions:	
Frame Size and material Symbol:	
Working Load Limit (tons)	
A.	Round or Hex Nut
B.	E.*
C.*	F.
D.	
	Hook Latch Kit
	_____ SS-4055 Flipper latch _____ PL Flapper latch _____ 4320 Latch
* The minimum thread length engaged in the nut should not be less than one (1) thread diameter.	

For additional information concerning customer design products, contact:
In U.S.A. - Crosby's Special Engineered Products Group at 1-800-777-1555
In Canada - Crosby Canada at (905) 451-9261
In Europe - N.V. Crosby Europe at 32-15-757125 (26)

Crosby® Swivel Hoist Ring Data Form

Specification sheet for Crosby HR125 & HR125M Hoist Rings with optional bolt lengths

Date:	
CG #:	Crosby Quote Number:
Customer #:	Contact:
Distributor's Names:	Distributor's Fax Number:
Distributor's Phone Number:	Quantity Requested:
Distributor's P.O. #	Crosby Representative:

1. Determine the *Type of Threads* required on the Hoist Ring - Metric or UNC, UNF, Etc. **NOTE - NOT DESIGNED FOR PIPE, ACME OR TAPERED THREADS.**

2. Determine the *Working Load Limit* of the requested Hoist Ring.

3. Determine *Bolt Diameter* - The diameter of the required bolt.

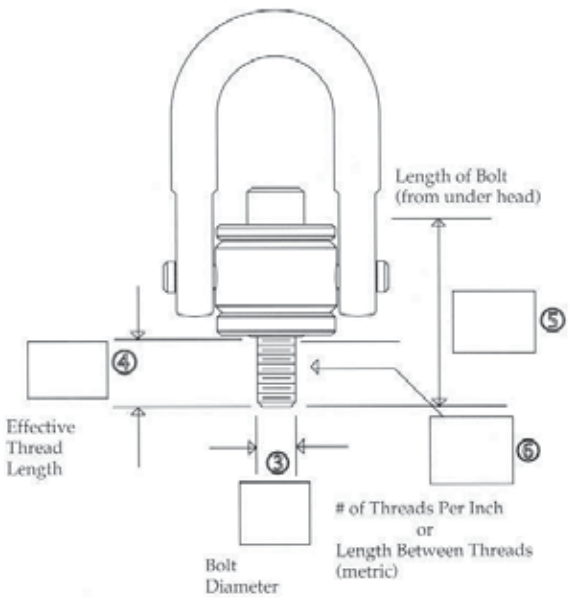
4. Determine *Effective Thread Length* -This is the length the threads must be in order to fully engage, or project through, the work piece. **NOTE; If the Effective Thread Length is not known, the Length of Bolt is required.**

5. Determine *Length of the Bolt* - The over all length of the bolt as measured from under the head of the bolt. **NOTE: If the Effective Thread Length is not known, the Length of the bolt is required.**

6. *# of Thread Threads per Inch (Length Between Threads for Metric threads)* - This information is required to ensure we ship proper bolt size (i.e., 1/2 - 13, 7/8 - 9, 8 x 1.25, etc.).

1. **Thread Type** (Circle One)
U.N.C. Thread
Metric Thread
Other
(NOT DESIGNED FOR PIPE, ACME, OR TAPERED THREADS)

2. Hoist Ring Capacity
(Working Load Limit)
_____lbs. Kgs.



Crosby® / Bullard® Golden Gate® Hook

HOOK DATA FORM

Hook Size:	Name of Person Completing Form:
Sales Order:	
Working Load Limit (Tons)	Telephone:
Hoist Name and Model:	Distributor:
Top Hook ❑ Bottom Hook ❑	Distributor P.O.:
Is Self-Closing Gate Required? Yes ❑ No ❑	Accurate dimensions are important. If you have any questions, contact your authorized Crosby Distributor.

Shank Length

1. Measure total USABLE shank length from top of hook shank to top of gate assembly. Gate assembly is not considered part of the USABLE shank. When measuring other manufacturer's hooks, measure from the top of the hook shank to the hook shoulder.

2. Measure threaded portion (enter BLANK if threads not required). NOTE: Hook is supplied with Steel Hex-Load Nut and Bronze Load Washer. Hook and Nut threads areNational Coarse. If a SPECIAL Load Nut or Load Washer is required, attach a drawing to this form.

Shank Diameter

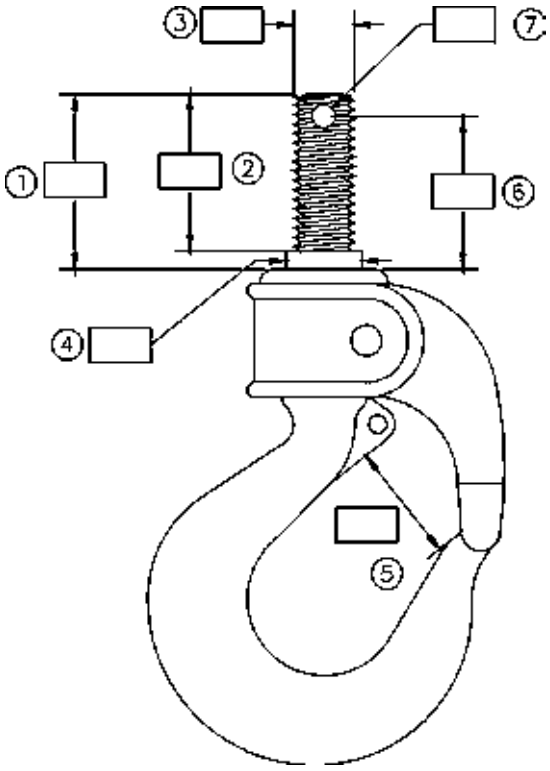
3. Measure width of threaded portion.
4. Measure width of blank portion.

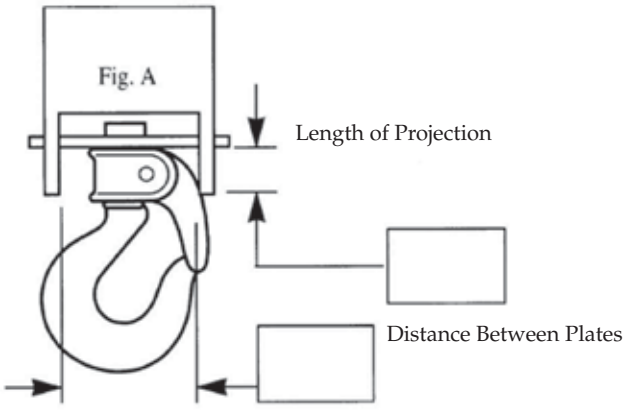
Throat Opening

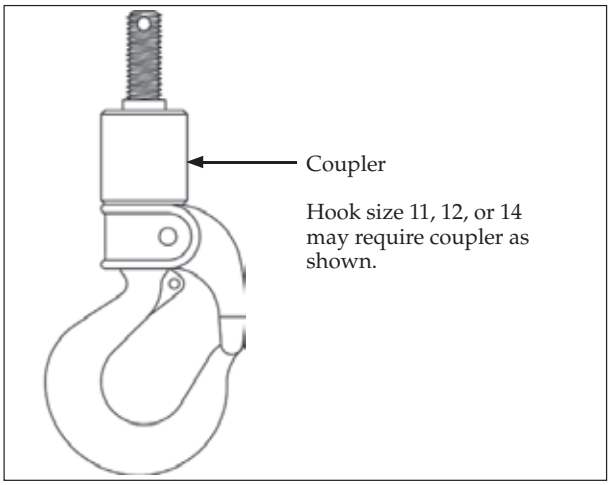
5. ONLY measure throat opening if this distance is critical to customer's operation.

Cross Hole in Shank Hooks
(complete only if required)

6. Measure shank length from center of hole to top of gate assembly.
7. Measure diameter of hole.



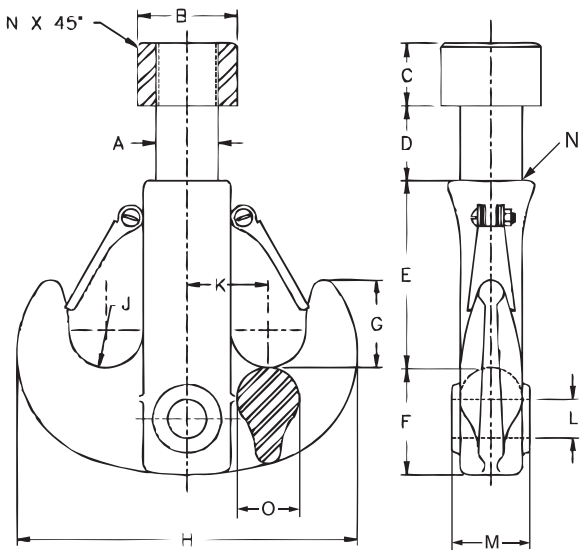




McKissick® Custom Design Hooks

McKissick® Duplex Hook Assemblies

- Cast alloy steel.
- Available in forged steel upon special request.
- Can be machined to optional dimensions upon request.
- Furnished complete with two flipper latches.
- The working load limits shown are in short tons and applicable for loading up to an included sling angle of 90 degrees. For included sling angles up to 60 degrees, the hooks can be rated in metric tons.



Duplex Hook with Nut and Latches Dimensions (in.)																	
Stock No. Hook Assembly	Size (tons)	A	B	C	D	E	F	G	H	J	K	L	M	N	O	Weight Each (lbs.)	Replacement Latch Kit Stock No.
127384	25	2.50	4.00	2.50	3.00	7.50	4.31	3.50	13.75	1.50	3.25	2.06	2.75	.12	2.50	62	1090143
126802	50	3.00	4.88	3.00	3.25	10.00	5.50	5.00	18.50	2.00	4.25	2.81	3.75	.25	3.50	136	1090189
137373	75	4.00	7.50	4.00	4.00	13.50	8.00	6.50	25.00	2.50	5.50	3.31	4.62	.25	4.50	311	1090223
137364	100	5.00	9.00	5.00	5.50	16.00	9.00	9.00	30.00	3.00	6.75	3.81	5.00	.25	5.00	532	1090223
137266	125	5.00	9.00	5.00	5.50	19.00	10.00	9.00	31.50	3.00	7.50	4.31	5.25	.25	5.00	844	1090223
137355	150	6.00	10.00	6.00	6.00	19.00	10.00	9.00	31.50	3.00	7.50	4.31	5.25	.12	5.00	844	1090223
137346	200	7.00	12.00	6.00	8.25	20.50	12.75	10.50	36.50	3.50	8.00	4.81	6.75	.25	6.00	1085	1090241
137337	250	8.00	14.00	7.00	9.00	23.75	14.00	11.75	40.00	3.75	8.75	5.12	8.00	.25	7.00	1635	1090241
137328	350	8.00	15.50	8.00	10.00	24.00	16.00	12.00	45.25	4.25	10.25	7.16	9.50	.25	9.00	2423	143080
2022897	500	10.00	18.00	8.25	16.75	26.50	18.50	12.25	45.00	4.50	10.00	7.16	9.50	.25	9.00	3300	8022575*
137319	600	10.00	18.00	8.25	8.75	25.00	18.00	14.00	51.00	5.00	11.00	7.94	9.75	.25	9.00	3120	143071
+2031520	1000	12.00	23.00	10.00	22.00	36.50	28.75	16.00	69.50	4.50	17.00	10.75	14.50	—	11.50	7800	8015361*

Ultimate Load is 4 times the Working Load Limit.
* Bolt style latch.
+ 1000 ton has different prong profile than shown.
For the purpose of calculating D/d ratio, utilize dimension O.
For additional information concerning custom design products, contact:
In U.S.A. — Crosby's Special Engineered Products Group at 1-800-777-1555, Fax (918) 834-5035.
In Canada — Crosby Canada at (905) 451-9261.
In Europe — N.V. Crosby Europe at 32 15 757125 (26).

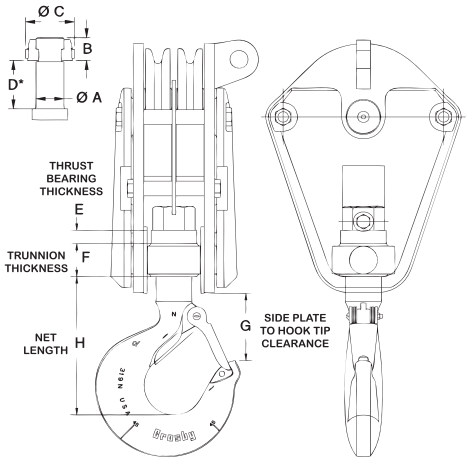
Custom Split-Nut Hook for Mobile Cranes

Customer Name:		Date:
Address:	City, State, Zip Code:	
Phone:	Fax:	
Customer Contact Name:	Quantity:	Requested Delivery Date:
- INTERNAL USE ONLY - Crosby / McKissick Proposal Number:		

Crosby McKissick® patented (U.S. Patent 7,000,905 and 7,293,763) Split-Nut Hook Retention System featured on McKissick® crane blocks makes inspection easier. The hook can be disassembled, inspected and put back into service in a fraction of the time of a conventional threaded nut.

Available Configurations

319 Hook Type and Working Load Limit 4:1 Alloy (t)	Crosby Hook ID Code	"A" Available Shank Dia. (in.)	"A" Available Shank Dia. (mm)	"B" Dimension (in.)	"B" Dimension (mm)	"C" Dimension (in.)	"C" Dimension (mm)	"D" Maximum Grip Length (in.)	"D" Maximum Grip Length (mm)
15	L	1.75	44.4	1.62	41.1	3.25	82.5	5.38	137
22	N	2.00	50.8	1.62	41.1	3.50	88.9	5.38	137
30	O	2.50	63.5	2.31	58.7	4.38	111	15.69	398
37	P	2.50	63.5	2.31	58.7	4.38	111	21.69	551
45	S	3.00	76.2	2.75	69.9	5.50	140	21.25	540
60	T	3.00	76.2	2.75	69.9	5.50	140	23.25	591
75	U	4.00	102	3.75	95.2	7.50	190	19.25	489



Steps to fit your block with the patented McKissick® Split-Nut Hook Retention System

1. Measure side plate to hook tip clearance and record in box "G" below. (The net length "H" dimension may be affected by holding the "G" dimension. If there is adequate clearance at tip of hook, the net length "H" dimension may be the dimension to specify).
2. Remove hook and thrust bearing from existing crane block.
3. Measure shank diameter and record in box "A" below.
4. Measure nut thickness and record in box "B" below. The standard "B" dimension (shown above) is a minimum and will be utilized unless actual measured "B" dimension is required.
5. Measure nut diameter and record in box "C" below. The standard "C" dimension (shown above) is a minimum and will be utilized.
6. Measure thrust bearing thickness and record in box "E" below. If known, record thrust bearing manufacturer and stock number below.
7. Measure trunnion thickness through the hook shank hole and record in box "F" within 1/32".
8. The required grip length "D" will be the addition of the "E" and "F" dimensions plus 0.06" for running clearance.
9. Determine the required hook size based on shank diameter and tonnage. Other shank /hook / tonnage combinations may be available. Your supplied information will be reviewed for the Split-Nut application.
10. Complete the form and forward to your local Authorized Distributor for quotation.

Thrust Bearing Standard

Shank Ø (in.)	Shank Ø (mm)	Bearing Outside Dia. (in.)	Bearing Outside Dia. (mm)	Bearing Thickness (in.)	Bearing Thickness (mm)	Bearing Description
1.75	44.4	3.266	83.0	0.938	23.8	T-176
2.00	50.8	3.672	93.3	1.062	26.9	T-202
2.50	63.5	4.375	111	1.063	27.0	T-251
3.00	76.2	5.250	133	1.313	33.4	T-301-W
4.00	102	7.000	178	1.750	44.4	40-TP-114

Required Dimensions

Frame Code or other distinguishable size designator:			Material Type: ***Check One:*** ❑ Carbon ❑ Alloy	
Working Load Limit: ***Check One:*** ❑ Tons ❑ Metric Tonnes			Thrust Bearing Identification:	
	Check One:		Check One:	**Hook Latch Kit** ***Check One:*** ❑SS-4055 Flipper latch ❑PL / PL-N Flapper latch ❑S-4320 Latch
Dimension A:	❑(in.) ❑(mm)	Dimension E:	❑(in.) ❑(mm)	***For personnel hoisting applications, only a PL, PL-N or S-4320 shall be utilized.***
Dimension B:	❑(in.) ❑(mm)	Dimension F:	❑(in.) ❑(mm)	
Dimension C:	❑(in.) ❑(mm)	Dimension G:	❑(in.) ❑(mm)	
Dimension D*:	❑(in.) ❑(mm)	Dimension H:	❑(in.) ❑(mm)	

*D = Bearing Thickness "E" + Trunnion Thickness "F" + .06" running clearance.

For additional information concerning customer design products, contact:
U.S.A. - Crosby's Special Engineered Products Group at 1-800-777-1555
Canada - Crosby Canada at (905) 451-9261
Europe - N.V. Crosby Europe at 32-15-757125 (26)

the Crosby® group

Cordage and Pull Tape

Cordage

Comparative Weight Strength and Working Load Chart

NOMINAL SIZE		MANILA			NYLON			POLYPROPYLENE		
Diameter	Circum-ference	Linear Density[1] (Lbs/100ft)	Minimum Tensile Strength[2] (Lbs.)	Max. Working[3] Load (Lbs.)	Linear Density[1] (Lbs/100ft)	Minimum Tensile Strength[2] (Lbs.)	Max. Working[3] Load (Lbs.)	Linear Density[1] (Lbs/100ft)	Minimum Tensile Strength[2] (Lbs.)	Max. Working[3] Load (Lbs.)
3/16	5/8	1.50	405	41	1.00	900	75	.70	720	72
1/4	3/4	2.00	540	54	1.50	1,490	124	1.20	1,130	113
5/16	1	2.90	900	90	2.50	2,300	192	1.80	1,710	171
3/8	1 1/8	4.10	1,220	122	3.50	3,340	278	2.80	2,440	244
7/16	1 1/4	5.25	1,580	176	5.00	4,500	410	3.80	3,160	352
1/2	1 1/2	7.50	2,380	264	6.50	5,750	525	4.70	3,780	420
9/16	1 3/4	10.4	3,100	388	8.15	7,200	720	6.10	4,600	575
5/8	2	13.3	3,960	496	10.5	9,350	935	7.50	5,600	700
3/4	2 1/4	16.7	4,860	695	14.5	12,800	1,420	10.7	7,650	1,090
13/16	2 1/2	19.5	5,850	835	17.0	15,300	1,700	12.7	8,900	1,270
7/8	2 3/4	22.4	6,950	995	20.0	18,000	2,000	15.0	10,400	1,490
1	3	27.0	8,100	1,160	26.4	22,600	2,520	18.0	12,600	1,800
1 1/16	3 1/4	31.2	9,450	1,350	29.0	26,000	2,880	20.4	14,400	2,060
1 1/8	3 1/2	36.0	10,800	1,540	34.0	29,800	3,320	23.8	16,500	2,360
1 1/4	3 3/4	41.6	12,200	1,740	40.0	33,800	3,760	27.0	18,900	2,700
1 5/16	4	47.8	13,500	1,930	45.0	38,800	4,320	30.4	21,200	3,020
1 1/2	4 1/2	60.0	16,700	2,380	55.0	47,800	5,320	38.4	26,800	3,820
1 5/8	5	74.5	20,200	2,880	66.5	58,500	6,500	47.6	32,400	4,620
1 3/4	5 1/2	89.5	23,800	3,400	83.0	70,000	7,800	59.0	38,800	5,550
2	6	108.	28,000	4,000	95.0	83,000	9,200	69.0	46,800	6,700
2 1/8	6 1/2	125.	32,400	4,620	109.	95,500	10,600	80.0	55,000	7,850
2 1/4	7	146.	37,000	5,300	129.	113,000	12,600	92.0	62,000	8,850
2 1/2	7 1/2	167.	41,800	5,950	149.	126,000	14,000	107.	72,000	10,300
2 5/8	8	191	46,800	6,700	168.	146,000	16,200	120.	81,000	11,600
2 7/8	8 1/2	215.	52,000	7,450	189.	162,000	18,000	137.	91,000	13,000
3	9	242.	57,500	8,200	210.	180,000	20,000	153.	103,000	14,700
3 1/4	10	298.	69,500	9,950	264.	226,000	25,200	190.	123,000	17,600
3 5/8	11	366.	82,000	11,700	312.	270,000	30,000	232.	146,000	20,800
4	12	434.	94,500	13,500	380	324,000	36,000	276.	171,000	24,000
4 1/4	13				445.	380,000	42,200	325	202,000	28,900
4 1/2	14				520.	441,000	49,000	375.	234,000	33,400
5	15				590.	507,000	56,300	430.	268,000	38,300
5 1/4	16				675.	572,000	63,600	490.	302,000	43,100
5 5/8	17				765.	635,000	70,600	555	329,000	47,000
6	18				860.	698,000	77,600	625.	360,000	51,400

NOTES:

1. LINEAR DENSITY: (pounds per 100 feet) shown is "average." Maximum is 5% higher.
2. NEW ROPE TENSILE STRENGTHS: are based on tests of new and unused rope of standard construction in accordance with Cordage Institute Standard Test Methods.
3. MAX. WORKING LOADS: are for rope in good condition with appropriate splices in noncritical applications, and under normal service conditions. Working loads should be reduced where life, limb, or valuable property are involved, or for exceptional service conditions such as shock loads, sustained loads, etc.

These specifications are for 3 strand laid standard ropes. Four-strand ropes weigh approximately 7% more and breaking tests are approximately 5% less than 3-strand ropes.

CAUTION!

1. Working loads are recommended guidelines only.
2. Specs are based on test of new and unused ropes of current manufacturers.
3. Once rope is put into service it is continuously deteriorating.
4. Manila and sisal rope will deteriorate in storage even under ideal conditions.

Industrial Wire Rope Supply Co., Inc.

Cincinnati Division
7390 Harrison Avenue
Cincinnati, Ohio 45247
Phone: (513) 941-2443
Fax: (513) 941-2445
Toll Free:(888)-345-0919

St. Charles Division
2086 Exchange Drive
St. Charles, Missouri 63303
Phone: (636) 255-0600
Fax: (636) 255-0602
Toll Free: (866) 852-9714

DOUBLE BRAID POLYESTER

STANDARD WHITE / GREEN TRACER

Diameter	Diameter in MM	Circumference	LBS/100 Feet	KGS/100 Meters	Approx. Tensile in LBS	Approx. Tensile In KG
1/4"	6	3/4"	2.00	3.0	1900	856
5/16"	8	1	3.50	5.2	3200	1441
3/8"	10	1 1/8"	4.40	6.6	4200	1892
7/16"	11	1 5/16"	6.70	10.0	6000	2703
1/2"	12	1 1/2"	8.20	12.2	7500	3378
9/16"	14	1 3/4"	9.70	14.5	9500	4279
5/8"	16	2"	13.00	19.4	12700	5721
3/4"	18	2 1/4"	17.50	26.1	18800	8468
7/8"	22	2 3/4"	23.30	34.7	27660	12459
1"	24	3"	30.50	45.4	31000	13964
1 1/8"	28	3 1/2"	40.00	59.6	40650	18311
1 1/4"	30	3 3/4"	49.00	73.0	49000	22072
1 5/16"	32	4"	55.00	82.0	55000	24775
1 1/2"	36	4 1/2"	64.00	95.0	70500	31725
1 5/8"	40	5"	82.00	122.2	89600	33558
1 3/4"	44	5 1/2"	95.00	141.6	103800	38626
2"	48	6"	124.00	184.8	126000	46846
2 1/8"	50	6 1/2"	137.00	204.0	143000	64414
2 1/4"	56	7"	153.00	339.0	160000	72072
2 1/2"	60	7 1/2"	189.00	281.0	181000	81531

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St. Charles, Missouri 63303
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Toll Free: (866) 852-9714

Double Braid Nylon

KEY BENEFITS:
- High strength
- High energy absorption and elasticity.

For mooring, anchoring, towing and any other application that requires controlling sudden shock loading. Meets or Exceeds US Military Specifications # Mil-DTL—24050 E and Canadian Military Specifications 40-16-95 Type 1. Specific Gravity 1.14.

Standard White/Blue Tracer, Also available in Red, Blue, Black, Green and Gold.

Diameter	Diameter in MM	Circumference	LBS/100 Feet	KGS/100 Meters	Approx. Tensile in LBS	Approx. Tensile In KG
1/4"	6	3/4"	1.7	2.5	2170	984
5/16"	8	1	2.5	3.7	3090	1401
3/8"	10	1 1/8"	3.4	5.1	4220	1914
7/16"	11	1 5/16"	5.3	7.8	5400	2449
1/2"	12	1 1/2"	6.3	9.3	7200	3265
9/16"	14	1 3/4"	7.8	11.7	10500	4729
5/8"	16	2"	10.8	16.1	14000	6349
3/4"	18	2 1/4"	14.2	21.1	20000	9070
7/8"	22	2 3/4"	20.0	29.8	28000	12698
1"	24	3"	25.0	37.2	33500	15193
1 1/8"	28	3 1/2"	33.3	49.6	47000	21171
1 1/4"	30	3 3/4"	39.2	58.3	53000	23873
1 5/16"	32	4"	44.2	65.7	56940	25823
1 1/2"	36	4 1/2"	53.3	79.4	72500	32658
1 5/8"	40	5"	67.5	100.5	88000	39639
1 3/4"	44	5 1/2"	82.0	122.0	105000	47297
2"	48	6"	97.0	144.4	125000	56306
2 1/8"	52	6 1/2"	114.0	169.7	143000	64414
2 1/4"	56	7"	132.0	196.4	165000	74324
2 1/2"	60	7 1/2"	152.0	226.2	185000	83333
2 5/8"	64	8"	173.0	257.5	201000	91172

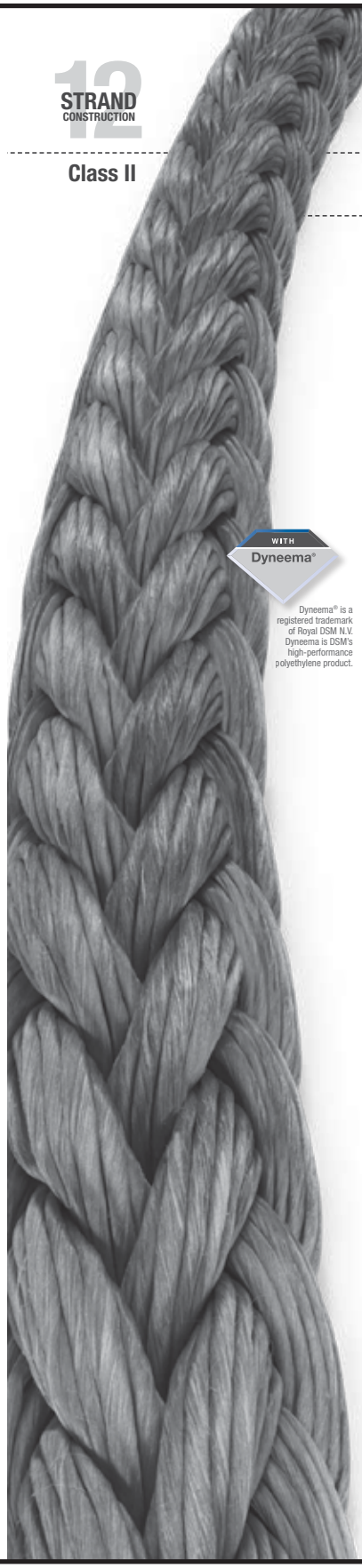
12 STRAND CONSTRUCTION

Class II

AmSteel®-Blue

Product Code: 872

Recognized worldwide as the standard for single braid HMPE ropes



WITH Dyneema®

Dyneema® is a registered trademark of Royal DSM N.V. Dyneema is DSM's high-performance polyethylene product.

FEATURES AND BENEFITS:

- Made with Dyneema®
- Wire rope replacement
- Size for size as strong as wire
- 1/7th the weight of wire
- Similar elastic elongation to wire rope
- Torque free
- Flexible
- Easy to inspect
- Easy to splice in the field
- Floats

AmSteel®Blue is a torque-free 12-strand single braid that, size-for-size, is as strong as steel and lasts up to three times longer in certain applications, making it an excellent wire rope replacement. At only 1/7th the weight of wire, it is a safe and efficient solution for all applications where wire is traditionally used. The combination of Dyneema® fiber and Samthane coating provide abrasion and tension fatigue resistance for superior wear. AmSteel®Blue is easily spliced and inspected.

SIZE DIAMETER INCHES	SIZE CIRC. INCHES	WEIGHT PER 100 FT. POUNDS	SAMSON MBS* POUNDS	SIZE DIAMETER MILLIMETERS	WEIGHT PER 100 m KILOGRAMS	SAMSON MBS* KILOGRAMS	BS EN ISO 2307:2010 STRENGTH*** METRIC TONS
7/64"**	5/16"	0.30 lb	1,400 lb	**2.5** ** mm	0.45 kg	650 kg	0.73 t
1/8"	3/8"	0.50 lb	2,300 lb	**3** mm	0.74 kg	1,000 kg	1.1 t
5/32"	15/32"	0.75 lb	3,600 lb	**4** mm	1.1 kg	1,600 kg	1.8 t
3/16"	9/16"	1.0 lb	4,900 lb	**5** mm	1.5 kg	2,200 kg	2.4 t
1/4"	3/4"	1.6 lb	7,700 lb	**6** mm	2.4 kg	3,500 kg	3.9 t
5/16"	1"	2.7 lb	12,300 lb	**8** mm	4.0 kg	5,600 kg	6.2 t
3/8"	1-1/8"	3.6 lb	17,600 lb	**9** mm	5.4 kg	8,000 kg	8.9 t
7/16"	1-1/4"	4.2 lb	21,500 lb	**11** mm	6.2 kg	9,800 kg	10.8 t
1/2"	1-1/2"	6.4 lb	30,600 lb	**12** mm	9.5 kg	13,900 kg	15.4 t
9/16"	1-3/4"	7.9 lb	36,500 lb	**14** mm	11.8 kg	16,500 kg	18.4 t
5/8"	2"	10.2 lb	47,500 lb	**16** mm	15.2 kg	21,600 kg	24.0 t
3/4"	2-1/4"	13.3 lb	58,000 lb	**18** mm	19.8 kg	26,300 kg	29.2 t
13/16"	2-1/2"	17.0 lb	73,800 lb	**20** mm	25.3 kg	33,500 kg	37.2 t
7/8"	2-3/4"	19.6 lb	81,700 lb	**22** mm	29.2 kg	37,100 kg	41.2 t
1"	3"	21.8 lb	98,100 lb	**24** mm	32.4 kg	44,500 kg	49.4 t
1-1/16"	3-1/4"	27.5 lb	118,000 lb	**26** mm	40.9 kg	53,500 kg	59.4 t
1-1/8"	3-1/2"	31.9 lb	133,000 lb	**28** mm	47.5 kg	60,400 kg	67.1 t
1-1/4"	3-3/4"	36.2 lb	149,000 lb	**30** mm	53.9 kg	67,400 kg	74.8 t
1-5/16"	4"	41.8 lb	166,000 lb	**32** mm	62.2 kg	75,100 kg	83.5 t
1-3/8"	4-1/8"	45.0 lb	185,000 lb	**34** mm	67.0 kg	83,700 kg	93.0 t
1-1/2"	4-1/2"	51.7 lb	205,000 lb	**36** mm	76.9 kg	93,100 kg	103 t
1-9/16"	4-3/4"	57.6 lb	229,000 lb	**38** mm	85.7 kg	104,000 kg	115 t
1-5/8"	5"	65.2 lb	255,000 lb	**40** mm	97.0 kg	116,000 kg	128 t
1-11/16"	5-1/4"	71.0 lb	276,000 lb	**42** mm	106 kg	125,000 kg	139 t
1-3/4"	5-1/2"	78.4 lb	302,000 lb	**44** mm	117 kg	137,000 kg	152 t
2"	6"	87.0 lb	343,000 lb	**48** mm	129 kg	155,000 kg	173 t
2-1/16"	6-1/4"	95.0 lb	376,000 lb	**50** mm	141 kg	171,000 kg	190 t
2-1/8"	6-1/2"	109 lb	411,000 lb	**52** mm	162 kg	187,000 kg	207 t
2-1/4"	7"	116 lb	483,000 lb	**56** mm	173 kg	219,000 kg	244 t
2-1/2"	7-1/2"	148 lb	529,000 lb	**60** mm	220 kg	240,000 kg	267 t
2-5/8"	8"	167 lb	596,000 lb	**64** mm	248 kg	270,000 kg	300 t
2-3/4"	8-1/2"	187 lb	662,000 lb	**68** mm	278 kg	300,000 kg	333 t
3"	9"	206 lb	749,000 lb	**72** mm	307 kg	340,000 kg	377 t
3-1/8"	9-1/2"	228 lb	828,000 lb	**76** mm	339 kg	376,000 kg	417 t
3-1/4"	10"	240 lb	906,000 lb	**80** mm	357 kg	411,000 kg	457 t
3-3/8"	10-1/8"	265 lb	1,008,000 lb	**82** mm	394 kg	457,000 kg	508 t
3-1/2"	10-1/2"	295 lb	1,053,000 lb	**86** mm	439 kg	478,000 kg	531 t
3-5/8"	11"	340 lb	1,313,000 lb	**88** mm	506 kg	596,000 kg	662 t
3-3/4"	11-1/4"	362 lb	1,464,000 lb	**92** mm	539 kg	664,000 kg	738 t
4"	12"	399 lb	1,637,000 lb	**96** mm	594 kg	743,000 kg	825 t
4-1/4"	13"	452 lb	1,826,000 lb	**104** mm	673 kg	828,000 kg	920 t
4-1/2"	13-1/2"	504 lb	2,021,000 lb	**110** mm	750 kg	917,000 kg	1,019 t
4-5/8"	14"	551 lb	2,216,000 lb	**112** mm	820 kg	1,005,000 kg	1,117 t
5"	15"	609 lb	2,421,000 lb	**120** mm	906 kg	1,098,000 kg	1,220 t

**Spliced strength. ** Size 7/64" (2.5 mm) changes from 12-strand to 8-strand construction.*
****This standard replaces BS EN 919:1995 and BS EN ISO 2307:2005.*

SPECIFICATIONS†

FIBER: Dyneema®

SPECIFIC GRAVITY: 0.98 (floats)

STANDARD COLOR: Blue (also available by special order in red, green, and orange)

ELASTIC ELONGATION PERCENTAGE

At % of break strength
10% 0.46%
20% 0.70%
30% 0.96%

SPLICE/CLASS: 12-strand Class II

†Due to our continued research and development of product performance, the specifications listed herein are subject to change. For the most current sizes, weights, and strengths, go to SamsonRope.com.

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SAMSON® THE STRONGEST NAME IN ROPE

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Fax: (636) 255-0602
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HERCULINE© is the premium choice for underground measuring and pulling of fiber optic and other lightweight cables. Specifically designed for the telecommunications, power utility and CATV industries, HERCULINE© can be easily blown through innerduct to provide smooth, safe pulls. Durable footmarkings allow for accurate measurement while flat construction and specially formulated lubricants work to minimize friction and duct cutting.

HERCULINE©

Item No.	Tensile	Width	Construction	Prelubrication	Footmarkings
P160S	160 lbf	3/16"	Stranded	No	Yes
P400W	400 lbf	1/4"	Woven	No	Yes
P900W	900 lbf	3/8"	Woven	No	Yes
P1100W	1100 lbf	1/2"	Woven	No	No
P1250W	1250 lbf	1/2"	Woven	No	Yes
P1800W	1800 lbf	5/8"	Woven	No	Yes
P2500W	2500 lbf	3/4"	Woven	No	Yes

All products are available by special request with or without lubricant and with or without footmarkings HERCULINE© is also available by request with metric markings

KEVLAR*

Item No.	Tensile	Width	Construction	Prelubrication	Footmarkings
A900W	900 lbf	1/4"	Woven	No	Yes
A1250W	1250 lbf	1/4"	Woven	No	Yes
A1800W	1800 lbf	3/8"	Woven	No	Yes
A2500W	2500 lbf	1/2"	Woven	No	Yes

*Kevlar is a registered trademark of E.I. Du Pont

DETECTABLE POLYESTER HERCULINE©

Item No.	Tensile	Width	Construction	Prelubrication	Footmarkings
P1250T	1250 lbf	1/2"	Woven	No	Yes
P1800T	1800 lbf	5/8"	Woven	No	Yes
P2500T	2500 lbf	3/4"	Woven	No	Yes

Detectable HERCULINE© features a corrosion resistant 22 gauge solid copper wire woven directly into the pulling tape to detect underground conduit and dielectric cable

HURCULINE Meets Telcordia (Bellcore) GR356-5.3

SPXFLOW

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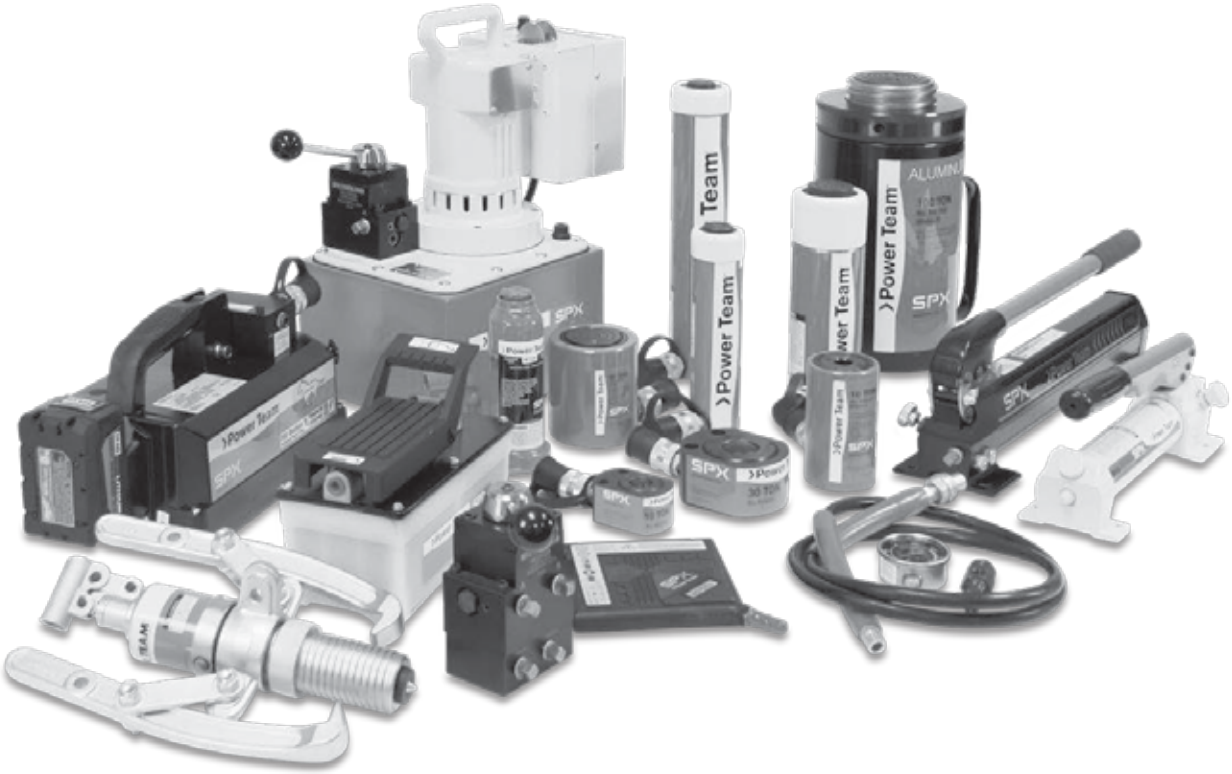


Power Team®

Power Team

LOW PROFILE, SINGLE-ACTING, SPRING RETURN
TONNAGE RANGE: 5 - 150

RLS SERIES

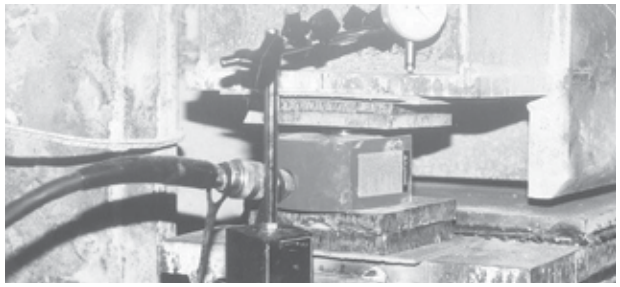
Model Shown:
RLS100

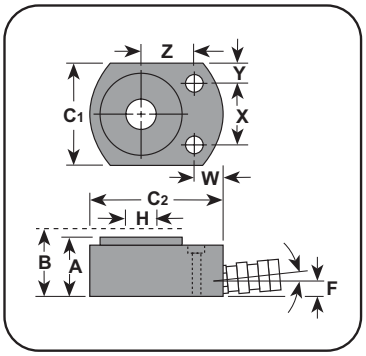
Features

IDEAL LOW CLEARANCE OR TIGHT CONSTRAINT APPLICATIONS REQUIRING HIGH FORCES.

- Low height starting at 1.63" to 4.00".
- Cylinder body, piston and gland nut are "Power-Tech" treated for corrosion and abrasion resistance.
- Standard domed piston rod (5-30 tons) or swivel cap (50-150 tons) minimize effects of off-center loading.
- Unique heavy-duty spring provides fast piston return on all cylinders, except RLS50.
- Coupler is angled upward for extra clearance.
- Complies with ANSI / ASME B30.1 Safety Standards.

RLS200 used in this lifting application.





RLS1000S (with swivel load cap)

RLS Series ending with an "S" suffix denotes models equipped with a swivel load cap.

Mounting holes for "RLS" cylinders

RLS Series	Description
RLS50	0.34" C'bore x 0.25" deep, 0.22" thru hole
RLS100	0.42" C'bore x 0.34" deep, 0.28" thru hole
RLS200	0.62" C'bore x 0.41" deep, 0.41" thru hole
RLS300	0.62" C'bore x 0.44" deep, 0.28" thru hole

RLS Series	Description
RLS500S	0.70" C'bore x 0.50" deep, 0.47" thru hole
RLS750S	0.80" C'bore x 0.56" deep, 0.53" thru hole
RLS1000S	0.80" C'bore x 0.56" deep, 0.53" thru hole
RLS1500S	0.81" C'bore x 0.56" deep, 0.53" thru hole

Ordering Information

Cyl. Cap.	Stroke	Order No.	Oil Cap.	A	B	C1	C2	F	H	W	X	Y	Z	Bore Dia.	Cylinder Effective Area	Int. Press. at Cap.	Tons at 10,000	Prod. Wt.
				Retracted Height	Extended Height	Outside Dia.		Base to Port	Piston Rod Dia.	Mounting Hole Location								
(tons)	(in.)		(cu. in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(sq. in.)	(psi)	(tons)	(lbs.)
5	0.56	RLS50	0.62	1.63	2.19	1.63	2.56	0.75	0.63	0.75	1.13	0.25	1.00	1.13	0.994	10,061	4.97	2.20
10	0.44	RLS100	1.00	1.75	2.19	2.19	3.25	0.63	0.75	0.69	1.44	0.38	1.31	1.69	2.236	8,943	11.18	3.30
20	0.44	RLS200	2.00	2.00	2.44	3.00	4.00	0.66	1.13	0.72	1.94	0.53	1.56	2.38	4.430	9,029	22.15	5.60
30	0.50	RLS300	3.20	2.31	2.81	3.75	4.50	0.72	1.38	0.81	2.06	0.84	1.75	2.88	6.492	9,242	32.46	8.60
50	0.63	RLS500S	6.00	2.63	3.25	4.50	5.50	0.84	1.75	0.94	2.63	0.94	2.13	3.50	9.621	10,394	48.10	14.00
75	0.63	RLS750S	9.90	3.13	3.75	5.53	6.50	1.00	2.13	0.94	3.00	1.27	2.59	4.50	15.904	9,431	79.52	23.30
100	0.63	RLS1000S	12.30	3.38	4.00	6.00	7.00	1.00	2.50	0.81	3.00	1.50	2.81	5.00	19.635	10,186	98.17	30.00
150	0.56	RLS1500S	17.20	4.00	4.56	7.50	8.50	1.31	3.00	1.31	4.63	1.44	3.13	6.25	30.680	9,778	153.39	52.00

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C SERIES

SINGLE-ACTING, SPRING RETURN
TONNNAGE RANGE: 5 - 100

Power Team

Cylinders

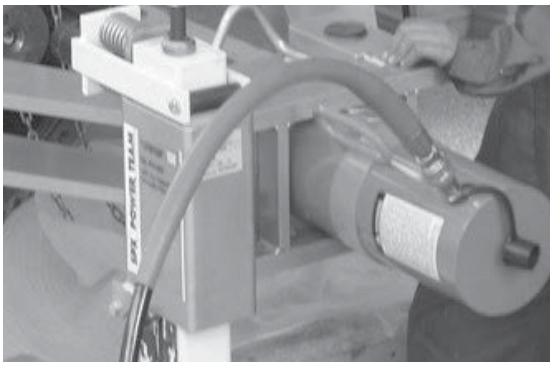
Model Shown:
C756C

Features

RUGGED, HIGH QUALITY CYLINDER USED FOR LIFTING AND PRESSING.

- Aluminum bronze bearing reduces wear caused by off-center loads.
- Maximum sized springs speed piston return and increase spring life.
- Collar threads are standard on all C-Series models, simplifying fixturing applications.
- Removable rubber boots protect collar threads during transport and storage.
- Solid steel cylinder body for durability.
- Chrome plated piston rod resists wear and corrosion.
- Wide range of accessories available that mount onto the piston rod, collar, or base.
- Base mounting holes standard on 5 through 55 ton cylinders and optional on 75 and 100 ton cylinders.
- A 3/8" NPTF female half coupler is standard.
- Complies with ANSI / ASME B30.1 Safety Standards.

C10010C used in this pulling application.



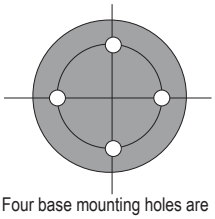
Best Practice for Cylinder Selection

Power Team recommends using 80% of the rated capacity and stroke to maximize product performance and safety.

Optional Cylinders Lifting Handle

Order Number: 4206550R9
Lifting handle for "C" series, 25 ton cylinders

Technical Dimensions, Base Mounting Holes



Four base mounting holes are 45° apart - standard on all models.

Cylinder Tonnage	5	10	15	25	30	55	75*	100*
# of Holes	2	2	2	2	2	2	4	4
Thread Size	1/4 - 20	5/16 - 18	3/8 - 16	1/2 - 13	1/2-13	1/2 - 13	3/4 - 10	1 - 8
Thread Depth (in.)	0.38	0.50	0.50	0.75	0.75	0.75	1.00	1.00
Bolt Circle Diameter (in.)	1.00	1.56	1.88	2.31	2.90	3.75	4.50	4.75

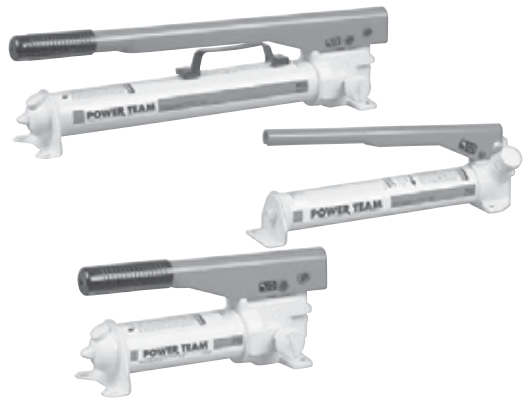
*** Consult Factory for optional base mounting holes.**

P SERIES

SINGLE/TWO-SPEED, SINGLE-ACTING HYDRAULIC HAND PUMP 12 TO 55 CU. IN.

Power Team

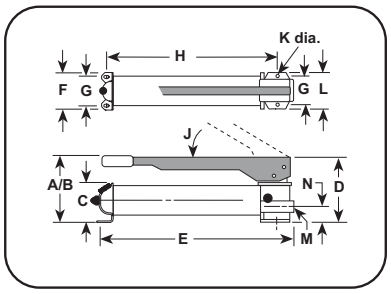
Model Shown:
P55, P12, P23



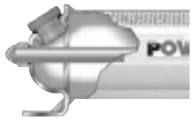
Features

STEEL HAND PUMPS BEST SUITED FOR MRO APPLICATIONS.

- All metal construction won't burn through in welding environments.
- Formed metal handle provides rigidity, and reduces operator fatigue with grip.
- Convenient fill port enables pumps to be filled in a horizontal or vertical position, excluding P12.
- Fill cap seal acts as safety valve preventing over-pressurizing of reservoir.
- Large valve knob gives added control for slowly metering loads down.



Pump Protection System



Power Team hand pumps, with the angled fill port, have a built in "relief valve" protection system. This system is designed to protect over-pressurization of the reservoir from sudden back pressure. This system also works as a seal to prevent oil leaks only fill to bottom of threads.

Foot Pump Conversion Kit

For Use With:	Kit Order No.	Wt. (lbs.)
P55, P59	FK59	6.0

Technical Dimensions

Order No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (deg.)	K (in.)	L (in.)	M (in.)	N (in.)
P12	4.00	13.00	2.06	4.00	13.50	3.38	2.19	11.50	45°	0.19	3.38	3/8 NPTF	1.13
P19	5.50	14.63	2.88	4.56	13.69	4.00	3.25	11.06	53°	0.31	4.00	3/8 NPTF	1.41
P23*	6.25	13.00	3.50	5.56	13.63	4.25	3.25	10.31	38°	0.31	4.75	3/8 NPTF	1.63
P55	6.50	21.00	3.50	5.56	23.00	4.25	3.25	19.75	38°	0.31	4.75	3/8 NPTF	1.63
P59	7.00	21.00	3.50	5.00	23.00	4.25	3.25	19.75	38°	0.31	4.75	3/8 NPTF	1.63
P59F	3.50	16.75	3.50	6.00	23.25	4.25	3.25	20.25	—	0.31	4.50	3/8 NPTF	1.69

*The P23 pump maximum pressure is 3000 psi only.

For Use With	Speed	Order No.	Volume per Stroke LP (cu. in)	Volume per Stroke HP (cu. in)	Max. Pressure LP (psi)	Max. Pressure HP (psi)	Handle Effort (lbs.)	Reservoir Oil Cap. (cu. in.)	Reservoir Usable Oil Cap. (cu. in.)	Oil Port (in.)	Prod. Wt. (lbs.)
Single-Acting Cylinders	1	P12	—	0.069	—	10,000	75	12.00	9.00	3/8 NPTF	5.70
	2	P19	0.305	0.076	325	10,000	99	24.40	20.00	3/8 NPTF	6.60
	1	P23	—	0.160	—	3,000	70	23.80	20.30	3/8 NPTF	12.00
	1	P55	—	0.160	—	10,000	145	55.00	45.00	3/8 NPTF	15.80
	2	P59	0.662	0.160	325	10,000	145	55.00	45.00	3/8 NPTF	17.20
	2	P59F	0.550	0.130	325	10,000	120	55.00	45.00	3/8 NPTF	14.00

LP = Low Pressure HP = High Pressure

PB SERIES

COMPACT, LI-ION BATTERY-POWERED, HYDRAULIC PUMP 70 CU. IN.

Power Team

Model Shown:
PB102-1, PB102P-1

Features

COMPACT, PORTABLE, CORDLESS HYDRAULIC PUMP FOR MRO APPLICATIONS.

- Compact, Li-ion 18VDC, 9.0 Ah battery-powered pump provides extended run-time.
- Two-stage, high-pressure hydraulic pump offers quick tool advancement in the first stage.
- Extremely compact, lightweight with an ergonomic handle grip and transport strap to ease portability.
- Self-contained, rubber bladder reservoir allows pump usage in most positions with an impressive capacity of 70 cu. in. usable.
- Quiet, smooth-running, serviceable brushed 18VDC motor.
- High-impact, fiberglass reinforced shroud protects your investment in the most demanding and harsh applications.
- Interchangeable valve configuration accommodates a vast array of applications.
- CSA rated for intermittent duty, CE compliant.

Ordering Information

Order No.	Description	Refer to Note	Tool Type	Valve Type	Valve Function	Remote Control
PB102-0	18VDC Power Pump SA 2-Way Auto-Dump NO Charger	(1)	SA	2-Way Hold/Auto Dump (9561)	Advance/Return	Optional
PB102P-0	18VDC Power Pump SA 2-Way Auto-Dump w/Pendent NO Charger	(1)	SA	2-Way Hold/Auto Dump (9561)	Advance/Return	Included Pendant with 10 ft. cord
PB102R-0	18VDC Power Pump SA 2-Way Auto-Dump Pressure Reg. NO Charger	(1), (3)	SA	2-Way Hold/Auto Dump w/ Pressure Regulator (9561, 9560)	Advance/Return Pressure Adjustment 1-10K	Optional
PB102A-0	18VDC Power Pump SA Auto-Dump NO Charger	(2)	SA	2-Way Auto Dump (9562)	Advance/Return (Auto)	Optional
PB104-0	18VDC Power Pump DA 4-Way NO Charger	(4)	DA	4-Way (9563)	Advance/Hold/Return	Optional
PB102-CP	18VDC Power Pump SA 2-Way Auto-Dump w/Popper	(2), (5)	SA	2-Way Dump w/ Pop Off RV (3001123)	Advance/Auto Return	Optional
PB102-1	18VDC Power Pump SA 2-Way Auto-Dump US Charger	(1)	SA	2-Way Hold/Auto Dump (9561)	Advance/Return	Optional
PB102P-1	18VDC Power Pump SA 2-Way Auto-Dump w/Pendent US Charger	(1)	SA	2-Way Hold/Auto Dump (9561)	Advance/Return	Included, Pendant with 10 ft. cord
PB102R-1	18VDC Power Pump SA 2-Way Auto-Dump Pressure Reg. US Charger	(1), (3)	SA	2-Way Hold/Auto Dump w/Pressure Regulator (9561, 9560)	Advance/Return Pressure Adjustment 1-10K	Optional
PB102A-1	18VDC Power Pump SA Auto-Dump US Charger	(2)	SA	2-Way Auto Dump (9562)	Advance/Return (Auto)	Optional
PB104-1	18VDC Power Pump DA 4-Way US Charger	(4)	DA	4-Way (9563)	Advance/Hold/Return	Optional
PB102-2	18VDC Power Pump SA 2-Way Auto-Dump EU Charger	(1)	SA	2-Way Hold/Auto Dump (9561)	Advance/Return	Optional
PB102P-2	18VDC Power Pump SA 2-Way Auto-Dump w/Pendent EU Charger	(1)	SA	2-Way Hold/Auto Dump (9561)	Advance/Return	Included Pendant with 10 ft. cord
PB102R-2	18VDC Power Pump SA 2-Way Auto-Dump Pressure Reg. EU Charger	(1), (3)	SA	2-Way Hold/Auto Dump w/Pressure Regulator (9561, 9560)	Advance/Return Pressure Adjustment 1-10K	Optional
PB102A-2	18VDC Power Pump SA Auto-Dump EU Charger	(2)	SA	2-Way Auto Dump (9562)	Advance/Return (Auto)	Optional
PB104-2	18VDC Power Pump DA 4-Way EU Charger	(4)	DA	4-Way (9563)	Advance/Hold/Return	Optional

(1) 2-Way Auto Dump Function: Flapper handle in "hold" position will allow the tool to advance and maintain pressure when the motor is shut-off, flapper handle must be switched back to retract and dump pressure. Flapper handle is set to "return" position, power on will advance tool and power-off will retract tool and dump pressure.
(2) Auto Dump Function: Power on - tool advances, and power-off - tool returns, releasing pressure to tank.
(3) Using the external knob, the pressure regulator valve allows the operator to externally adjust the pressure on demand, ranges from 500 - 10,000 psi.
(4) Four-way valve direction is controlled by the handle lever. Three position; Advance, hold, retract.
(5) For crimping applications only. Once full pressure is reached, RV provides audible noise.
SA = Single-Acting DA = Double-Acting

PE55 SERIES

SINGLE AND DOUBLE-ACTING, ELECTRIC PUMP, VANGUARD®, 55 CU. IN. / MIN.

Power Team

Model Shown:

PE554S, PE552, PE554W

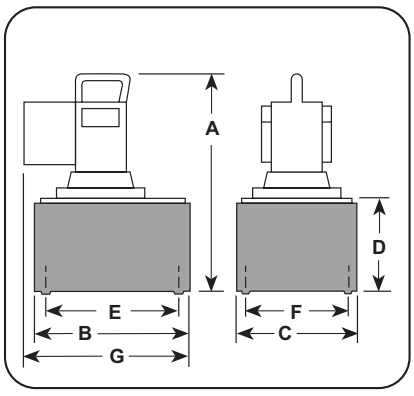
Features

INDUSTRY LEADING HEAVY-DUTY PUMP FOR MULTIPLE APPLICATIONS

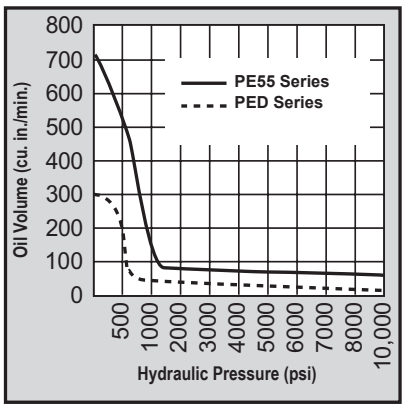
- 1-1/8 hp, 12,000 rpm, 110/115VAC, 50/60 Hz universal motor. Draws 25 amps at full load, starts at reduced voltage.
- True unloading valve achieves greater pump efficiency, allowing higher flow at maximum pressure.
- Reservoirs available in sizes up to 10 gallons, refer to pump accessories page.
- Lightweight and portable. Best performance-to-weight ratio of all Power Team pumps.
- 10 foot remote motor control (except PE552S which has a 25 foot remote motor and valve control).
- "Assemble to Order" System allows you to choose from a wide range of pre-engineered, off-the-shelf components to build a customized pump to fit specific requirements. Refer to the "Assemble to Order" (ATO) Pump Pages.
- CSA rated for intermittent duty.

Torque Wrench Pumps

For Torque Wrench Pump Configurations, refer to the Tools Section.



Performance Specifications



Technical Dimensions

Order No.	A	B	C	D	E	F	G	Max. Pressure Output	rpm	dBA at Idle and 10,000	115VAC* Amp Draw at 10,000	Oil Del. (cu. in./min. @)				Prod. Wt. with Oil
												0	700	5,000	10,000	
	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(psi)		(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(lbs.)
PE55 Series	18.25	11.50	9.50	7.00	10.00	8.00	14.00	10,000	12,000	90/89*	25	704	440	74	56	65.00

* Amp draw at 10,000 psi, 230VAC 50/60 Hz is 15 Amps.

Power Team

SPREADERS, HYDRAULIC
TONNAGE RANGE: 1 - 1.5

HS SERIES

Model Shown:
HS2000, HS3000

Features

HYDRAULIC SPREADERS OFFER A GREATER FORCE THAN TRADITIONAL MECHANICAL TOOLS.

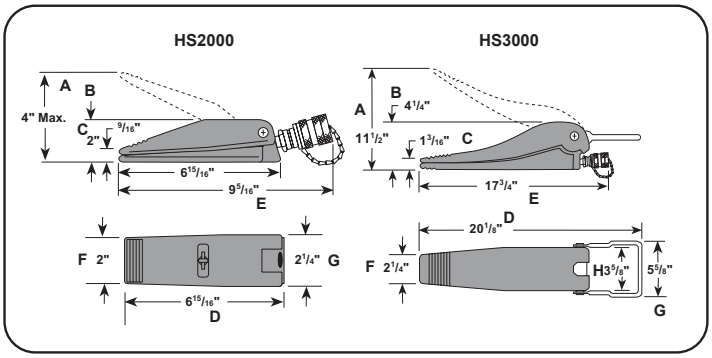
- Use to lift machines to spread concrete forms or rebar and perform straightening jobs.
- Conforms to ASME B30.1 standard.
- High strength alloy steel forged upper and lower jaws on HS2000.
- Jaws are spring-return to retract automatically when pressure is released.

HS2000 (FORGED STEEL)

- 1 ton capacity spreader, full 2,000 lbs. capacity at 10,000 PSI with 4" spread.
- Can be "dead-ended" at 4" spread under full load.
- Needs only 0.56" clearance to engage jaws.

HS3000 (HIGH GRADE DUCTILE IRON)

- 1.5 ton capacity spreader, full 3,000 lb. capacity at 10,000 psi. with 11.5" spread.
- Needs only 1.25" clearance to engage jaws.
- Can be "dead-ended" at 11.50" spread at full load.



Tools

Ordering Information

Order No.	Cap. (ton)	Max. Spread (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	Oil Cap. (cu. in.)	Min. Clearance Required (in.)	Prod. Wt. (lbs.)
HS2000	1.0	4.00	4.00	2.00	0.56	6.94	9.31	2.00	2.25	—	0.63	0.56	4.80
HS3000	1.5	11.50	11.50	4.50	1.19	20.13	17.75	2.25	5.63	3.63	3.50	1.25	22.00

Cylinder Order Number	Seal Kit*	Viton ™ Seal Kit
C51C	300404	300210
C53C	300404	300210
C55C	300404	300210
C57C	300404	300210
C59C	300404	300210
C101C	300116	300211
C102C	300116	300211
C104C	300116	300211
C106C	300116	300211
C108C	300116	300211
C1010C	300116	300211
C1012C	300116	300211
C1014C	300116	300211
C1016C	300116	300211
C151C	300453	300471
C152C	300453	300471
C154C	300453	300471
C156C	300453	300471
C158C	300453	300471
C1510C	300453	300471
C1512C	300453	300471
C1514C	300453	300471
C1516C	300453	300471
C251C	300147	300213
C252C	300147	300213
C254C	300147	300213
C256C	300147	300213
C258C	300147	300213
C2510C	300147	300213
C2512C	300147	300213
C2514C	300147	300213
C552C	300114	300215
C554C	300114	300215
C556C	300114	300215
C5510C	300114	300215
C5513C	300114	300215
C756C	300647	300846
C7513C	300647	300846
C1002C	300112	300216
C1006C	300112	300216
C10010C	300112	300216
C55CBT	300404	300210
C106CBT	300116	300211
C256CBT	300147	300213

Cylinder Order Number	Seal Kit*	Viton ™ Seal Kit
R1502C	300676	—
R1506C	300676	—
R15010C	300676	—
R2002C	300677	—
R2006C	300677	—
R20010C	300677	—
R2802C	300678	—
R2806C	300678	—
R28010C	300678	—
R3552C	300679	—
R3556C	300679	—
R35510C	300679	—
R4302C	300680	—
R4306C	300680	—
R43010C	300680	—
R5652C	300681	—
R5656C	300681	—
R56510C	300681	—
R1002D	300928	—
R1006D	300928	—
R10010D	300928	—
R1502D	300929	—
R1506D	300929	—
R15010D	300929	—
R2002D	300930	
R2006D	300930	—
R20010D	300930	—
R2802D	300931	—
R2806D	300931	—
R28010D	300931	—
R3552D	300932	—
R3556D	300932	—
R35510D	300932	—
R4302D	301047	—
R4306D	301047	—
R43010D	301047	—
R5652D	300681	—
R5656D	300681	—
R56510D	300681	—
R552L	300674	—
R556L	300674	—
R5510L	300674	—
R1002L	300675	—
R1006L	300675	—

Cylinder Order Number	Seal Kit*	Viton ™ Seal Kit
R10010L	300675	—
R1502L	300676	—
R1506L	300676	—
R15010L	300676	—
R2002L	300677	—
R2006L	300677	—
R2008L	300677	—
R20010L	300677	—
R2802L	300678	—
R2806L	300678	—
R28010L	300678	—
R3552L	300679	—
R3556L	300679	—
R35510L	300679	—
R4302L	300680	—
R4306L	300680	—
R43010L	300680	—
R5652L	300681	—
R5656L	300681	—
R56510L	300681	—
RA202	300631	—
RA204	300631	—
RA206	300631	—
RA302	300632	—
RA304	300632	—
RA306	300632	—
RA552	300391	—
RA554	300391	—
RA556	300391	—
RA5510	300391	—
RA1002	300444	—
RA1006	300444	—
RA10010	300444	—
RA556L	300395	—
RA1006L	300396	—
RD106	300017	—
RD1010	300017	—
RD256	300018	—
RD2514	300018	—
RD556	300005	—
RD5513	300005	—
RD5518	300005	—
RD8013	300410	—
RD1006	300120	—

Cylinder Order Number	Seal Kit*	Viton ™ Seal Kit
RD10013	300120	—
RD10020	300120	—
RD1506	300007	—
RD15013	300007	—
RD15018	300007	—
RD2006	300008	—
RD20013	300008	—
RD3006	300466	—
RD30013	300466	—
RD4006	300467	—
RD40013	300467	—
RD5006	300468	—
RD50013	300468	—
RDG552	3000906	—
RDG554	3000906	—
RDG556	3000906	—
RDG558	3000906	—
RDG5510	3000906	—
RDG5512	3000906	—
RDG5513	3000906	—
RDG5514	3000906	—
RDG752	3000908	—
RDG754	3000908	—
RDG756	3000908	—
RDG758	3000908	—
RDG7510	3000908	—
RDG7512	3000908	—
RDG7513	3000908	—
RDG7514	3000908	—
RDG1002	3000876	—
RDG1004	3000876	—
RDG1006	3000876	—
RDG1008	3000876	—
RDG10010	3000876	—
RDG10012	3000876	—
RDG10013	3000876	—
RDG10014	3000876	—
RDG1502	3000881	—
RDG1504	3000881	—
RDG1506	3000881	—
RDG1508	3000881	—
RDG15010	3000881	—
RDG15012	3000881	—
RDG15013	3000881	—

* Nitrile seals comes standard on all cylinders.

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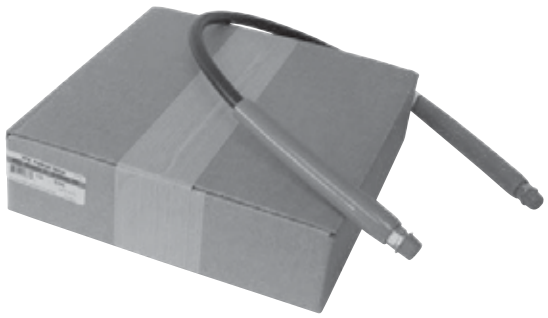
ACC.

WIRE-BRAID RUBBER HOSES
1/4" & 3/8" I.D., 20,000 PSI

Power Team

Model Shown:
9755



Features

REINFORCED WIRE-BRAID RUBBER HOSES OFFER INCREASED DURABILITY

- 2-ply rated hose reinforced with two braids of high tensile steel wire.
- The rubber covering is oil and weather resistant.
- Hoses are equipped with spring guards.
- 3/8" NPTF fittings on both ends.
- Operating pressure is 10,000 psi. All comply with MHI standard IJ100.
- These hoses are MSHA approved.

Cylinder Return Time

Cylinder No.	9769	9781
	10 Ft. Hose 1/4" I.D.	10 Ft. Hose 3/8" I.D.
C2514C	51 sec.	14 sec.
C556C	1 min., 30 sec.	24 sec.
C5513C	4 min., 12 sec.	59 sec.
C10010C	6 min., 56 sec.	1 min. 3 sec.

Hose with Coupler Half

9754 hose coupler with 9798 hose half coupler and 9800 dust cap.

Ordering Information

Hose Type	Hose I.D.	Hose Length (ft.)	Burst Rating (psi.)	Order Number
Rubber, Wire-Braid	1/4"	3	20,000	9755
Rubber, Wire-Braid	1/4"	6	20,000	9756
Rubber, Wire-Braid	1/4"	6	20,000	9754**
Rubber, Wire-Braid	1/4"	8	20,000	9757
Rubber, Wire-Braid	1/4"	10	20,000	9758
Rubber, Wire-Braid	1/4"	12	20,000	9759
Rubber, Wire-Braid	1/4"	20	20,000	9760
Rubber, Wire-Braid	1/4"	30	20,000	9761
Rubber, Wire-Braid	1/4"	50	20,000	9762

**Furnished with 9798 hose half coupler and 9800 dust cap.

Hose Type	Hose I.D.	Hose Length (ft.)	Burst Rating (psi.)	Order Number
Rubber, Wire-Braid*	3/8"	3	20,000	9733
Rubber, Wire-Braid*	3/8"	6	20,000	9776
Rubber, Wire-Braid*	3/8"	10	20,000	9777
Rubber, Wire-Braid*	3/8"	15	20,000	9734
Rubber, Wire-Braid*	3/8"	20	20,000	9778
Rubber, Wire-Braid*	3/8"	30	20,000	9735
Rubber, Wire-Braid*	3/8"	40	20,000	9736
Rubber, Wire-Braid*	3/8"	50	20,000	9779

* High Flow