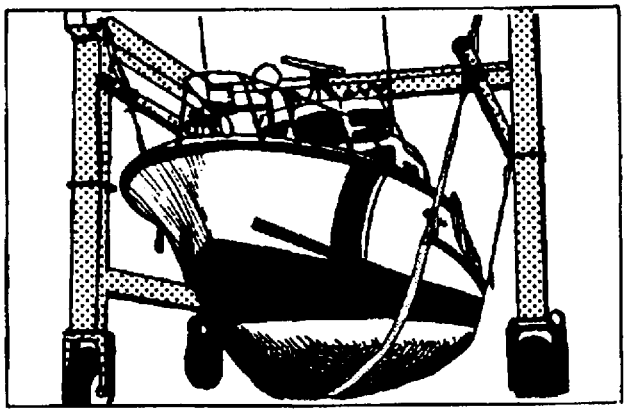
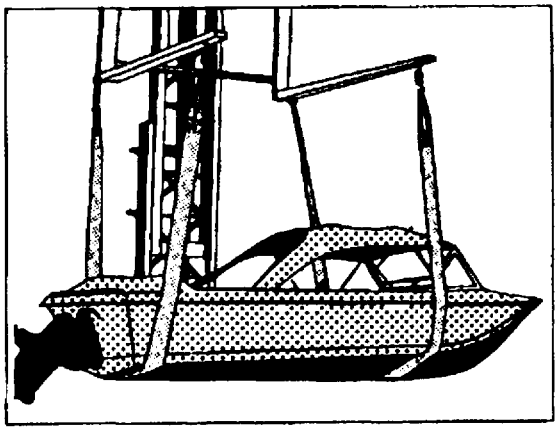
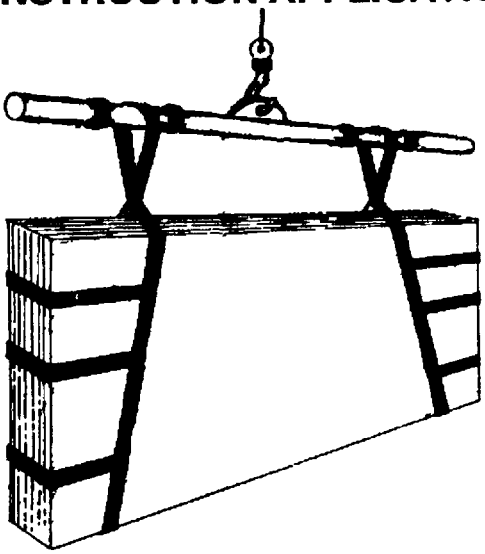
SPECIALLY MANUFACTURED SLINGS

MARINE APPLICATIONS

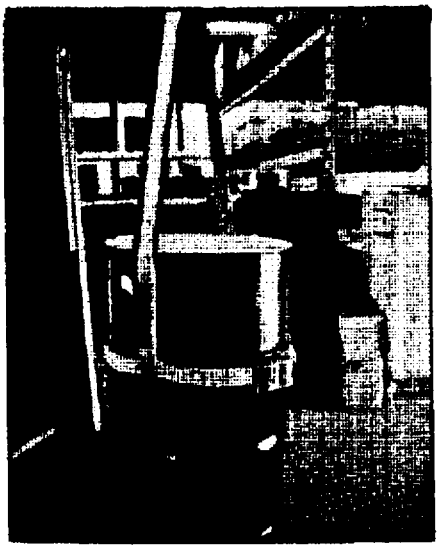




CONSTRUCTION APPLICATIONS



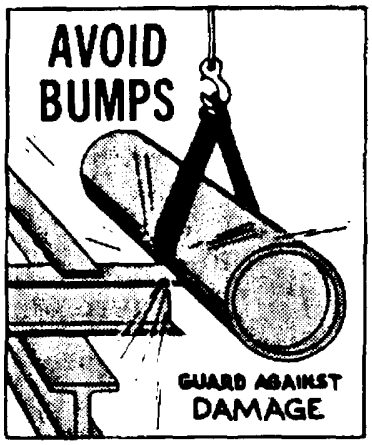
INDUSTRIAL APPLICATIONS

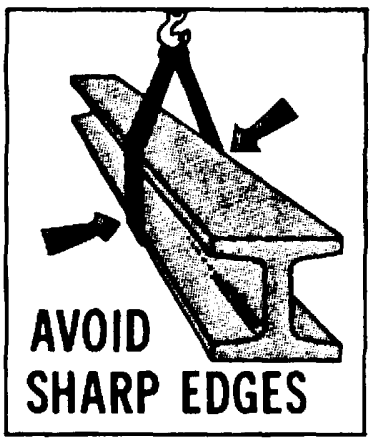


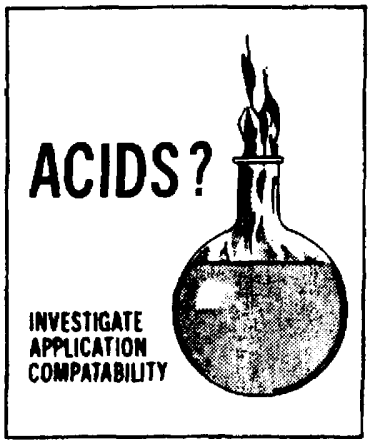
FOR MORE INFORMATION ABOUT
SPECIALLY MANUFACTURED SLINGS CALL:
SAMSEL SUPPLY CO.
(216) 241-0333 FAX (216) 241-3426
TOLL FREE 1 (800) 892-8012 OHIO 1 (800) 892-6781

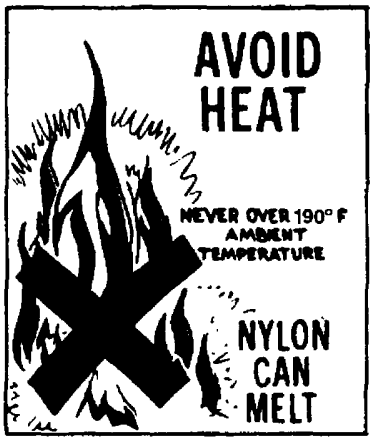
NYLON SLINGS

CAUTION: AVOID UNSAFE PRACTICES

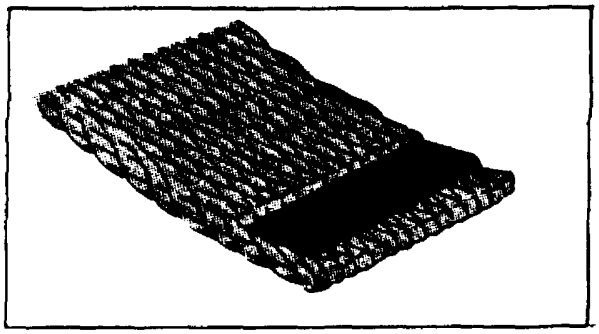








WATCH FOR SIGNS OF WEAR OR ABUSE



DISCARD SLING WHEN RED WEAR-WARNING THREADS SHOW AT SURFACE OF SLING.

Nylon Slings are manufactured of webbing that has Red Wear-Warning threads woven into the inner load bearing layer, which will become exposed as *the protective outer layer becomes damaged or* worn away. This serves as a visible warning, simplifying inspection, showing when a sling needs replacement.

A SLING SHOULD BE INSPECTED FOR INDICATIONS OF WEAR OR ABUSE, PHYSICAL OR CHEMICAL, BEFORE EACH USE!

INSPECTION OF SLINGS

Initial Inspection- Before any new or repaired web sling is placed in service, it shall be inspected by a designated person to ensure that the correct web sling is being used, as well as to determine that the web sling meets the requirements of this specification.

Frequent Inspection- This inspection shall be conducted by a qualified person handling the sling each time the sling is used.

Periodic Inspection- This inspection shall be conducted by designated personnel. Frequency of inspection should be based on:

* Frequency of web sling use.
* Severity of service conditions.
* Experience gained on the service life of web slings used in similar applications.
* Inspections should be conducted at least annually.

REMOVAL FROM SERVICE

Slings shall be removed from service if any of the following are visible:

a.) If sling rated capacity or sling material identification tag is missing or not readable.

b.) Acid or Alkali burns

c.) Melting, charring or weld spatter of any part of the web sling

d.) Holes, tears, cuts snags, or embedded particles

e.) Broken or warn stitching in load bearing splices

f.) Excessive abrasive wear

g.) Knots in any part of the web sling

h.) Distortion and excessive pitting, corrosion or broken fittings

i.) Any conditions which cause doubt as to the strength of the sling

INSPECTION RECORDS

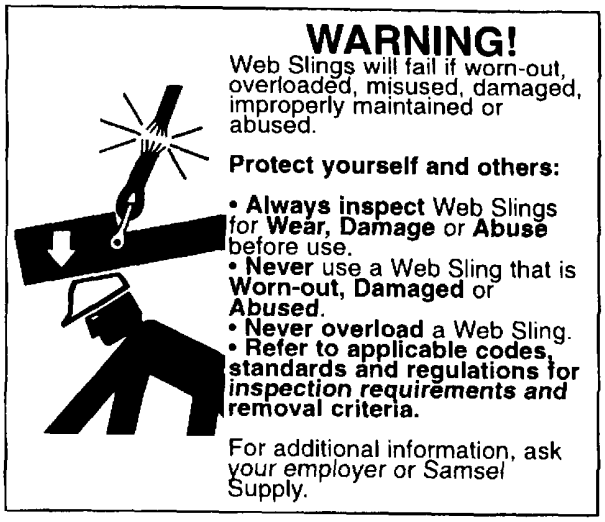
Written inspection records, utilizing the identification for each sling as established by the user, should be kept on file for all web slings. These records should show a description of the new web sling and its condition on each subsequent inspection.

REPAIR OF WEB SLINGS

Sling webbing with structural damage shall NEVER be repaired.

Temporary repairs of webbing, fittings, or stitching shall NOT be permitted.

ANY QUESTIONS ABOUT WEB SLINGS, CALL SAMSEL SUPPLY

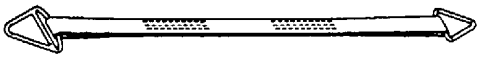


TEMINOLOGY AND DEFINITIONS OF WEB SLINGS

SYNTHETIC WEB SLING- Synthetic webbing fabricated into a configuration with or without fittings for raising, lowering or suspending applications in general industrial and specialized operations.

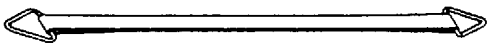
BASIC SLING TYPES

TYPE I - A web sling made with a triangle fitting on one end and a slotted triangle choker fitting on other end. It can be used in a vertical, basket or choker hitch.



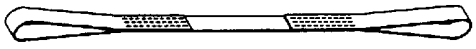
TYPE I

TYPE II - A web sling made with a triangle fitting on both ends. I can be used in a vertical or basket hitch only.



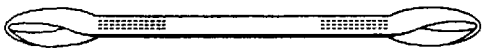
TYPE II

TYPE III - A web sling made with a flat loop eye on each end with a loop eye opening on same plane as sling body. This type of sling is sometimes called a flat eye and eye, eye and eye, or double eye sling.



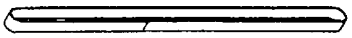
TYPE III

TYPE IV - A web sling made with both loop eyes formed as in Type III, except that the loop eyes are turned to form a loop eye which is at a right angle to the plane of the sling body. This type of sling is commonly referred to as a twisted eye sling.



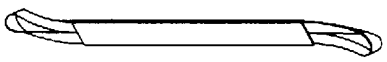
TYPE IV

TYPE V - An endless web sling, sometimes referred to as a grommet. It is a continuous loop formed by joining the ends of the webbing together with a load bearing splice.



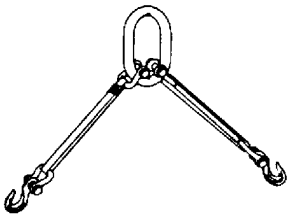
TYPE V

TYPE VI - A return eye or reversed eye web sling is formed by using multiple widths of webbing held edge to edge. A wear pad is attached on one or both sides of the web sling body and on one or both sides of the loop eyes to form a loop eye at each end which is at a right angle to the plane of the web sling body.



TYPE VI

BRIDLE SLINGS - An assembly of synthetic web slings, (usually 2, 3, or 4, of equal length) and synthetic web sling hardware. Each leg as attached to a main or master fitting to form the central fixture to which the bridle can be attached to lifting or raising equipment.



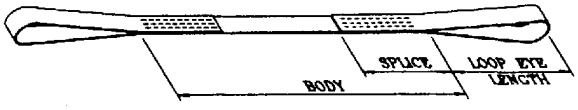
BRIDLE SLING

OTHER SLING TYPES ARE AVAILABLE AND SHALL BE USED IN ACCORDANCE WITH WEB SLING MANUFACTURER OR QUALIFIED PERSON'S RECOMMENDATION.

DEFINITIONS

ABRASION - The mechanical wearing of a surface resulting from frictional contact with other materials.

BODY- That part of a web sling which is between the end fittings or loop eyes.



BREAKING STRENGTH - That load in pound or kilograms at which point any load bearing part of the sling fails.

CLASS 5 - A synthetic sling made from webbing possessing a minimum certified tensile strength of 6800 lbs. per inch of width.

CLASS 7 - A synthetic sling made from webbing possessing a minimum certified tensile strength of 9800 lbs. per inch of width.

COATING - A finish applied for a special purpose.

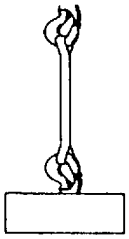
DESIGN FACTOR - The ratio of the minimum breaking strength to the "rated capacity" for each new web sling. The design factor for new synthetic web slings with or without fittings shall be a minimum of five (5) when tested in accordance with the standards established.

ELONGATION - The measurement of stretch at a given load, expressed as a percentage of the original unloaded length.

FABRICATION EFFICIENCY - The ratio of web sling assembly strength to webbing stretch proper to fabrication, expressed as a percentage.

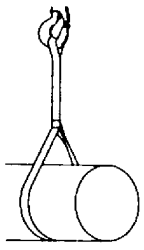
FITTING: A load bearing device which is attached to the web sling.

HITCH/VERTICAL - A method of rigging a web sling in which the load is attached to one end of the web sling and the other end of the web sling is attached to the lifting device.



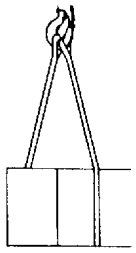
HITCH/VERTICAL

HITCH/CHOKER - A method of rigging a web sling in which the web sling is passed around the load, then through itself, then attached to the lifting device.



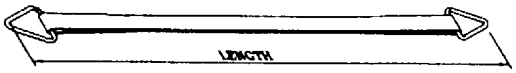
HITCH/CHOKER

HITCH/BASKET - A method of rigging a web sling in which the web sling is passed around the load and both ends are attached to the lifting device.

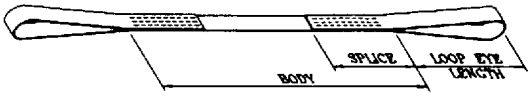


HITCH/BASKET

LENGTH (Reach) - The distance between the extreme and bearing points of the web sling, including fittings if applicable.



LOOP EYE - A length of webbing which has been folded back upon itself, forming an opening and join to the web sling body to form a bearing surface.



MINIMUM BREAKING STRENGTH - Minimum load at which a new web sling or component will break when loaded to the destruction in direct tension.

PLIES - The number of thicknesses of load bearing webbing used in the web sling assembly.

PROOF LOAD TEST - A non-destructive load test of the web sling to some multiple of the rated capacity of that web sling, including fittings if applicable. (usually twice the rated load capacity.)

QUALIFIED PERSON - A person who by possession of a recognized degree or certificate of professional standing or who by extensive knowledge, training and experience has successfully demonstrated the ability to solve or resolve problems related to the subject matter and work.

RATED CAPACITY (Working Load Limit) - The maximum allowable load for each web sling assembly for the type of hitch used. The formula for determining the rated capacity of a new web sling is:

$$RC = \frac{CTS \times FE}{5}$$

RC	=	Rated Capacity
CTS	=	Certified Tensile Strength of Webbing
FE	=	Fabrication Efficiency
5	=	Design factor of 5

a.) Choker Hitch Capacity - Shall be rated at a maximum of 80% of the vertical capacity.

b.) Vertical Basket Hitch - Shall be rated at a maximum of two (2) time the vertical capacity.

SELVEDGE - The woven or knitted edge of a webbing formed to prevent raveling.

SPLICE - That part of the web sling which is lapped and secured to become an integral part of the web sling.

a.) Load Bearing Splice - Any splice that carries a portion of the total load applied.

b.) Assembly Splice - Any splice that joins two or more parts of the sling without bearing any of the applied load.

STITCH PATTERN FAILURE (Lap pulled apart) - Separation of the load bearing splice due to thread failure.

SYNTHETIC FIBER - Man-made fibers.

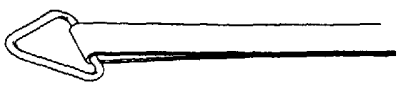
SYNTHETIC WEB SLING - A lifting assembly made of synthetic webbing which is to be used to connect the load to the lifting device.

TAPERED EYE - A loop eye which is formed by folding the webbing to a narrower width at its bearing point to accommodate the lifting device. A tapered eye may either be flat (Type III) or twisted (Type IV)

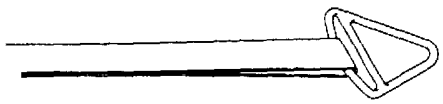
THICKNESS - The depth of the sling, as opposed to the width or length.

THREAD - A synthetic yarn which is used to sew the web sling together.

TRIANGLE FITTING - An end attachment which is used to connection the web sling to the lifting device.

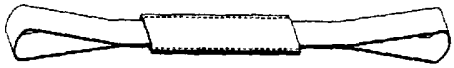


TRIANGLE CHOKER FITTING - Similar to the "triangle fitting" except that it also has a slot through which the "triangle fitting" can be passed through in order to permit a "choker hitch" on the load.



WEAR PAD - Leather, webbing, or other fixed of sliding material used to protect the web sling from being damaged.

Fixed Wear Pad



Sliding Wear Pad

WEBBING - A fabric woven of high tenacity synthetic yarns offering suitable characteristics for use in the manufacture of web slings.

WEBBING STRENGTH RATING - The minimum strength of webbing expressed in pounds per inch, or kilograms per centimeter of webbing width.

WIDTH - the distance across the web sling body from the outer selvedge to the outer selvedge.

WORKING LOAD LIMIT - See Rated Capacity.

YARN - The synthetic fibers used to make the webbing and thread.Capacity.

The web sling manufacturer of qualified person should be consulted before slings are used in chemically active environments.

Acids and Alkalis

***Nylon** is subject to degradation in acids ranging from little to total degradation. It is resistant to many alkalis, but is subject a loss of integrity ranging from little to moderate with some alkalis.*

***Polyester** is resistant to many acids but is subject to degradation ranging from little to moderate in some acids. It is subject to a loss of integrity in alkalis ranging from little to total degradation.*

Each application shall be evaluated, taking into consideration the following:

A.) Type of Alkalis 5 or Acids
B.) Exposure Conditions
C.) Concentration
D.) Temperature

Nylon and polyester web slings shall not be used at temperatures in excess of 194 degrees Fahrenheit (90 degrees Celsius) or temperatures below minus 40 degrees Fahrenheit (minus 40 degrees Celsius).

Web slings incorporating aluminum fittings shall not be used where fumes, vapors, sprays, mists or liquids of alkalis and/or acids are present.

Environments in which synthetic slings are continuously exposed to ultra-violet rays can effect the strength of synthetic web slings in varying degrees rang7ing from slight to total degradation.

CAUTION. DEGRADATION CAN TAKE PLACE WITHOUT VISIBLE INDICATIONS.

Factors which effect the degree of strength loss:
a.) Length of time of continuous exposure.
b.) Web sling construction and design.
c.) Weather conditions and geographic location.

Indication of ultra-violet degradation:
a.) Bleaching out of web sling color.
b.) Increased stiffness of web sling material
c.) Surface abrasion in areas not normally in contact with the load.

To minimize the affects of ultra-violet rays store in a cool, dry and dark place when not in use for prolonged periods of time.

Slings used in environments where they are subject to continuous exposure to ultra-violet light shall be proof tested to twice the rated capacity semi-annually or more frequently depending on the seventy of exposure.

ASSOCIATED WIRE ROPE FABRICATORS

RECOMMENDED OPERATING PRACTICES for WEB SLINGS

MECHANICAL CONSIDERATIONS

Determine the weight of the load. The weigh of the load shall be within the rated capacity of the web sling.

Select a web sling having suitable characteristics for the type of load, hitch and environment.

Web stings shall not be loaded in excess of the rated capacity. Consideration shall be given tothe sling to load angle which affects rated capacity.

Web slings with fittings which are used in a choker hitch shall be of sufficient length to assure that the choking action is on the webbing, and never on the fitting.

Web slings used in a basket hitch shall have the load balanced to prevent slippage.

The opening in fittings shall be the proper shape and size to ensure that the fitting will seat properly in the hook or other attachments.

Web slings shall always be protected from being cut by sharp corners, sharp edges, protrusions or abrasive surfaces.

Web slings shall not be dragged on the floor or over abrasive surfaces.

Web slings shall not be twisted, shortened, lengthened tied in knots, or joined by knotting.

Web slings shall not be pulled from under loads when the load is resting on the web sling.

Do not drop web slings equipped with metal fittings.

Web slings that appear to be damaged shall not be used unless inspected and accepted as usable by a qualified person.

The web sling shall be hitched in a manner providing control of the load.

Personnel, including portions of the human body, shall be kept from between the sling and the load, and from between the sling and the crane hook or hoist hoot

Personnel shall stand clear of suspended loads.

Shock loading shall be avoided.

Twisting and kinking the legs (branches) shall be avoided.

Load applied to the hook shall be centered the base (bowl) of hook to prevent point loading on the hoot

During lifting, with or without the load, personnel shall be alert for possible snagging.

The web slings shall be long enough so that the rated load, rated capacity is adequate when the sling to load angle is taken into consideration.

Only web slings with legible identification tags shall be used.

Tags and labels should be kept away from the load, hook and point of choke.

Web slings shall not be constricted or bunched between the ears of a clevis, shackle in a hoot

ENVIRONMENTAL CONSIDERATIONS

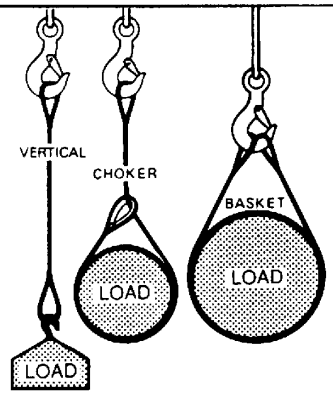
Web slings should be stored in a cool, dry and dark place to prevent loss of strength when not in use through exposure to u violet rays. Web slings shall not be stored in chemically active areas.

Chemically active environments can affect the strength of synthetic web slings in varying degrees ranging from little to total degradation.

*** For web slings used in a choker hitch, rated loads in earlier tables 1-4 are for an angle of choke of 120 degrees or greater for the angle formed in the web sling body as it passes through the choking eye.**

RATED CAPACITY of CHOKER HITCH TABLE

Angle of Choke (Degrees)	Sling Rated Load Factor
120 - 180	1.00
105 - 120	.93
90 - 105	.87



Every Lift Uses 1 of 3 Basic Hitches

VERTICAL- or straight, attachment is simply using a sling to connect a lifting hook or other device to a load. Full rated load of the sling may be used, but never exceeded. A tagline should be used on such a lift to prevent rotation which can damage the sling.

CHOKER- hitches reduce lifting capability of a sling, places angular loading on the body of the sling, and creates a small diameter bend in the sling body at the choke point.

BASKET- hitches distribute a load equally between two legs of the sling, within limitations imposed by the angles at which legs are rigged to the load.

CALL SAMSEL SUPPLY FOR THE ANSWERS TO YOUR WEB SLING QUESTIONS.

CAUTION - - - -CAUTION

* **The choker capacity for 1 and 2 ply slings shall be rated at a maximum of 80% of vertical capacity, with an angle of choke of 120 degrees at the point of choke.**

* **When attaching any hardware to a web sling not specifically designed for synthetic webbing, a wear pad shall be used between the surface of the hardware and the *synthetic web sling.***

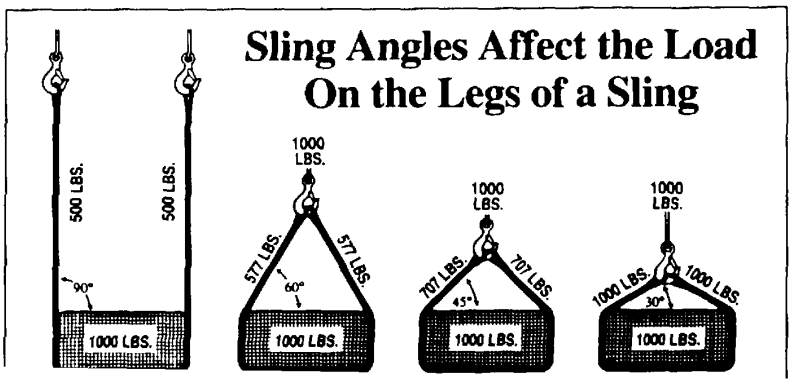
* **Rated capacities are affected by angle of lift (sling to load) measured from the horizontal when used with multi-legged slings or choker/basket hitches. To determine the actual sling capacity at a given angle of lift multiply the original sling *rating by the appropriate loss factor determined from the table below.***

SLING ANGLE TABLE (ANGLE OF LIFT)

Angle/Degrees Horizontal	Loss Factor	Angle/Degrees Horizontal	Loss Factor
90	1.00*	55	.819
85	.996	50	.766
80	.985	45	.707*
75	.966	40	.643
70	.940	35	.574
65	.906	30	.500*
60	.866*		

Example: 1 inch, Class 7, type 5 endless web sling without fittings, 3200 lbs. vertical rating used in a basket hitch at a 60 degree angle. (See below)

* See illustrations below for angles of lift.



SLING ANGLE (also called Angle of Loading) is the angle measured between a horizontal line and the sling leg or body. This angle is very important and can have a dramatic effect on the rated load of the sling. As illustrated here, when this angle DECREASES, the LOAD ON EACH LEG INCREASES. This principle applies whether one sling is used with legs at an angle in a basket hitch, or for multi-leg bridle slings. Horizontal sling angles of LESS THAN 30 DEGREES SHALL NOT BE USED.

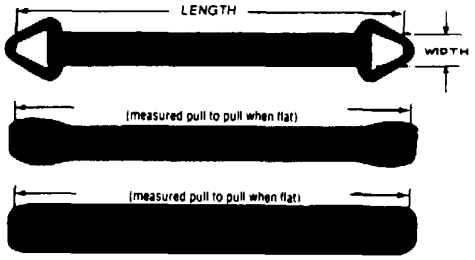
3200lbs X 2 = 6400lbs X 0.86 = 5542 Rated Capacity
Sling Rating X Factor = New Rated Capacity
Vertical Basket

ORDERING SAMSEL'S STANDARD NYLON SLINGS

ESSENTIAL INFORMATION

It is necessary that this information is supplied when placing an order for slings.

- Show quantity needed.
- Show the width and length needed - measured as shown on the right.
- Show webbing material (nylon or other).
- Show the type of sling as identified in this literature. (As Type 1,2, or 3 etc. - or specials.)
- Describe wear pads and placement.
- Describe end fittings if special or a choice is indicated.



EXAMPLE

QUANTITY	WIDTH	LENGTH	WEBBING MATERIAL	TYPE SLING	ADDITIONAL INFORMATION—IF REQUIRED
6	2 inch	18 feet	Nylon	1	4 ft length sleeve pad on each.

CAUTION
HAVE YOU LOAD-RATED THE SLING CONSERVATIVELY

(SEE PREVIOUS PAGES)

WEAR PADS

Often special wear pads are desired to protect or reinforce slings. These should be noted as additional information and requirements when ordering slings. Carefully describe type of pads needed and include sketches of any unique requirements.

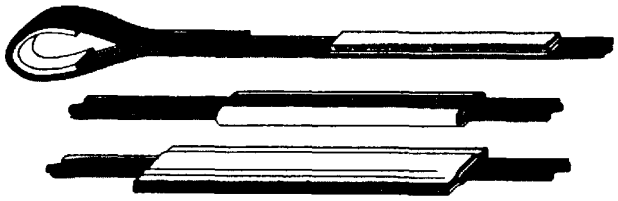
REGULAR PADS - Sewn to webbing at wear points.

EDGEGUARD PADS - Sewn along edges of sling body.

SLEEVE PADS - Protect both sides of sling body and are moveable along length. Sling stretches within pad as load is lifted.

STANDARD PADDING FABRIC —Cordura Nylon

PADS, SPECIAL MATERIAL - Chrome Leather or Webbing the same as the Sling Body.



CHEMICAL ENVIRONMENT

It is important to select a sling that has the proper chemical characteristics, making the sling compatible with its environment. Nylon and polyester are ideal materials for slings because they offer resistance to a wide range of chemicals. Refer to chart below for specific chemical agents.

POLYESTER	*	OK	NO	**	OK	OK	NO	OK	OK	OK	OK	OK	OK	OK

*Disintegrated by concentrated sulphuric acid

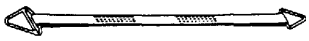
**Degraded by strong alkalies at elevated temperatures.

For specific temperature, concentration, and time factors, please consult, prior to purchasing.

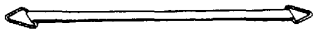
RATED CAPACITY TABLES FOR CLASS 7

TYPES I, II, III, IV SLING CAPACITY TABLES IN TONS*

CLASS 7 1-PLY SLING CAPACITY TABLE*

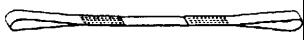


TYPE I

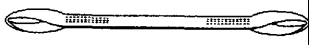


TYPE II

WIDTH	RATED CAPACITY	VERTICAL 90	CHOKER 30	BASKET 90
1"	1600 LB	3/4 T	1/2 T	1-1/2 T
2"	3100 LB	1-1/2 T	1-1/4 T	3 T
3"	4700 LB	2-1/3T	2 T	4-3/4 T
4"	6200 LB	3 T	2-1/2 T	6 T
5"	7800 LB	3-3/4T	3 T	7-3/4 T
6"	9300 LB	4-1/2 T	3-1/2 T	9-1/4 T
8"	12400 LB	6 T	5 T	12-1/4 T
10"	15600 LB	7-3/4 T	6 T	15-1/2 T
12"	18600 LB	9-1/4 T	7-1/4 T	18-1/2 T



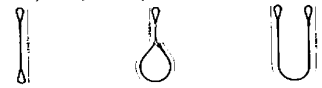
TYPE III

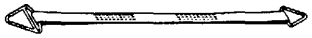


TYPE IV

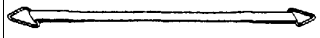
CLASS 7 2-PLY SLING CAPACITY TABLE*

TYPE I, II, III, IV



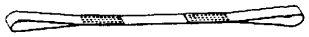


TYPE I

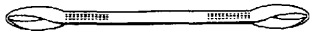


TYPE II

WIDTH	RATED CAPACITY	VERTICAL 90	CHOKER 30	BASKET 90
1"	3100 LB	1-1/2 T	1 T	3 T
2"	6200 LB	3 T	2-1/2 T	6 T
3"	8800 LB	4-1/3 T	3-1/2 T	8-3/4 T
4"	11000 LB	5-1/2 T	4-1/3 T	11 T
5"	13700 LB	6-3/4 T	5-1/3 T	13-1/2 T
6"	16500 LB	8-1/4 T	6-1/2 T	16-1/2 T
8"	22000 LB	11T	8-3/4 T	22 T
10"	27400 LB	13-1/2	10-3/4 T	27-1/4 T
12"	33000 LB	16-1/2 T	13 T	33 T



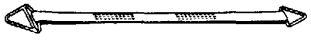
TYPE III



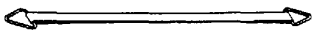
TYPE IV

CLASS 7 3-PLY SLING CAPACITY TABLE*

TYPE I, II, III, IV

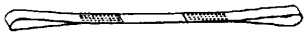


TYPE I

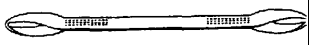


TYPE II

WIDTH	RATED CAPACITY	VERTICAL 90	CHOKER 30	BASKET 90
1"	4700 LB	2-1/4 T	1-1/4 T	4-1/4 T
2"	9300 LB	4-1/2 T	3-1/2 T	8-3/4 T
3"	13500 LB	6-3/4 T	5-1/4 T	13 T
4"	17200 LB	8-1/2 T	6-1/4 T	16-1/2 T
5"	21500 LB	10-3/4 T	8 T	20-1/2 T
6"	28800 LB	14-1/3 T	9-1/2 T	24-1/2 T
8"	34400 LB	17 T	13 T	31-1/2 T
10"	43000 LB	21-1/2 T	16 T	41-1/2 T
12"	57600 LB	28-3/4 T	19 T	49-3/4 T



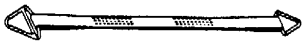
TYPE III



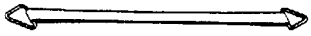
TYPE IV

* Table is based on a pound equaling 16 ounces, and ton equaling 2,000 pounds.

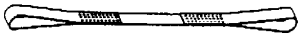
CLASS 7 4-PLY SLING CAPACITY TABLE*
TYPE I, II, III, IV



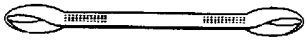
TYPE I



TYPE II



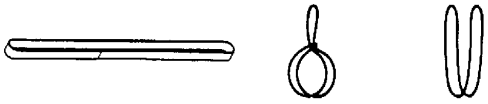
TYPE III



TYPE IV

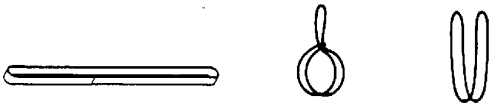
WIDTH	RATED CAPACITY	VERTICAL 90	CHOKER 30	BASKET 90
1"	6200 LB	3 T	2 T	5-3/4 T
2"	12400 LB	6 T	4-3/4 T	11-1/2 T
3"	17600 LB	8-3/4 T	6-3/4 T	16-3/4 T
4"	22000 LB	11 T	6-1/4 T	16-1/2 T
5"	27400 LB	13-1/2 T	8 T	20-1/2 T
6"	33000 LB	16-1/2 T	9-1/2 T	24-1/2 T
8"	44000 LB	22 T	13 T	31-1/2 T
10"	54800 LB	27-1/4 T	16 T	41-1/2 T
12"	66000 LB	33 T	19 T	49-3/4 T

CLASS 7 1-PLY SLING CAPACITY TABLE*
TYPE V**



WIDTH	RATED CAPACITY	CHOKER 30	BASKET 90
1"	3200 LB	1 T	3 T
2"	6200 LB	2-1/4 T	6 T
3"	9400 LB	3-1/2 T	9 T
4"	12400 LB	5 T	12-1/2 T
5"	15600 LB	6 T	15 T
6"	18600 LB	7 T	18-1/2 T

CLASS 7 2-PLY SLING CAPACITY TABLE*
TYPE V**



WIDTH	RATED CAPACITY	CHOKER 30	BASKET 90
1"	6200 LB	2 T	5-3/4 T
2"	12400 LB	4-1/4 T	11-1/2 T
3"	17600 LB	6-3/4 T	17-1/2 T
4"	22000 LB	9-1/2 T	24-1/4 T
5"	27400 LB	11-1/2 T	29 T
6"	33000 LB	13-1/2 T	36 T

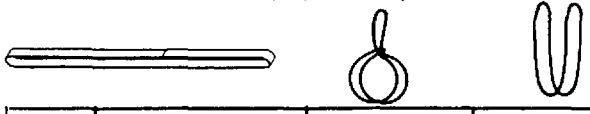
*Table is based on a pound equaling 16 ounces, and a ton equaling 2,000 pounds.

Rated loads for Type V Slings are based on untapered slings. **Folding or bunching which occurs when used with shackles, hooks, or other applications will reduce the rated load.

CLASS 7 3-PLY SLING CAPACITY TABLE
TYPE V**

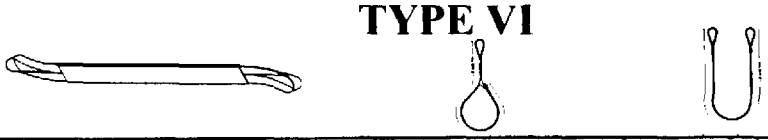
WIDTH	RATED CAPACITY	CHOKER 30	BASKET 90
1"	9000 LB	2-3/4 T	8-1/2 T
2"	17800 LB	6-1/4 T	17 T
3"	25900 LB	10 T	25-3/4 T
4"	33000 LB	14 T	35-1/2 T
5"	41200 LB	17 T	42-1/2 T
6"	49500LB	19-3/4 T	52-3/4 T

CLASS 7 4-PLY SLING CAPACITY TABLE*
TYPE V**



WIDTH	RATED CAPACITY	CHOKER 30	BASKET 90
1'	11900 LB	3-3/4 T	11 T
2"	23800 LB	8-1/4 T	22-1/4 T
3"	33700 LB	13 T	34 T
4"	42200 LB	18-1/4 T	47 T
5"	52600 LB	22-1/4 T	56-1/4 T
6"	63300 LB	26 T	70 T

CLASS 7 1-PLY SLING CAPACITY TABLE IN TONS*
TYPE VI



WIDTH	RATED CAPACITY	CHOKER 30	BASKET 90
2"	3200 LB	1 T	3 T
4"	6200 LB	2-1/4 T	6 T
6"	9400 LB	3-1/4 T	9 T

*Table is based on a pound equaling 16 ounces, and a ton equaling 2,000 pounds.

Rated loads for Type V Slings are based on untapered slings. **Folding or bunching which occurs when used with shackles, hooks, or other applications will reduce the rated load.

SAMSEL SUPPLY USES 9800 LB. WEBBING ONLY FOR ALL STANDARD SLINGS.

CLASS 7 2-PLY SLING CAPACITY TABLE IN TONS* TYPE VI

WIDTH	RATED CAPACITY	CHOKER 30	BASKET 90
2"	6200 LB	2 T	5-3/4 T
4"	12400 LB	4-1/4 T	11-1/2 T
6"	17600 LB	6-3/4 T	17-1/2 T

CLASS 7 3-PLY SLING CAPACITY TABLE IN TONS* TYPE VI

WIDTH	RATED CAPACITY	CHOKER 30	BASKET 90
2"	9000 LB	2-3/4 T	8-1/2 T
4"	17800 LB	6-1/4 T	17 T
6"	25900 LB	10 T	25-3/4 T

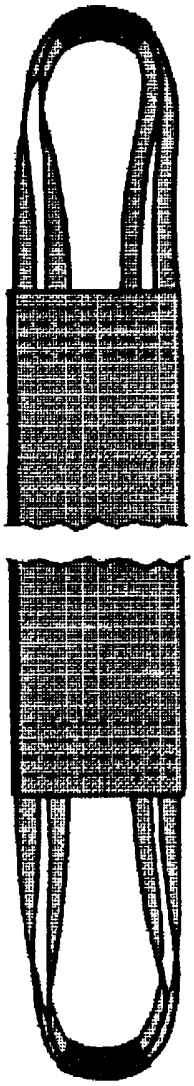
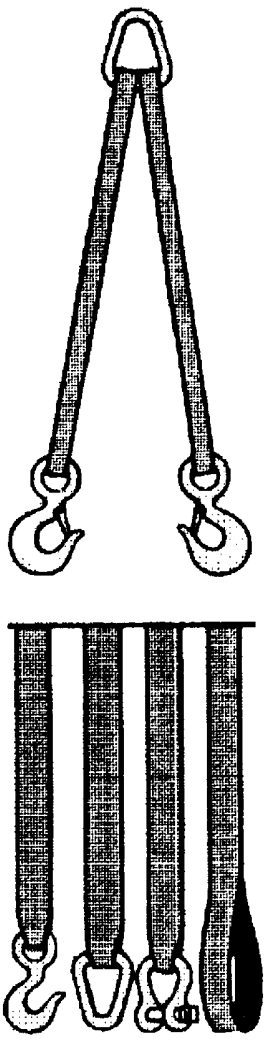
CLASS 7 4-PLY SLING CAPACITY TABLE IN TONS* TYPE VI

WIDTH	RATED CAPACITY	CHOKER 30	BASKET 90
2"	11900 LB	3-3/4 T	11 T
4"	23800 LB	8-1/4 T	22-1/4 T
6"	33700 LB	13 T	34 T

*Table is based on a pound equaling 16 ounces, and a ton equaling 2,000 pounds.

SAMSEL SUPPLY USES 9800 LB. <u>ONLY</u> WEBBING FOR ALL STANDARD SLINGS.

SLING TYPE

Endless or Grommet	Reversed Eye
	
TYPE 9 A light-duty basket for use where load balancing or cradling is required.	**TYPE 10** Bridles offer a variety of leg designs for quick hook-up on repetitive lifts. Three or more legs available on special request.

TO AVOID CONFUSION

We show the common, most popular slings. We do manufacture other webbing and configurations, styles. If the ratings are not familiar to you, don't risk your safety - call us - our representatives will be glad to assist you.

SLING FITTINGS AND SPECIAL FEATURES

Most sling requirements are covered when ordered by type (style) and measurements. Special applications may make it necessary to order specific end fittings or configurations, and/or to require wear pads.

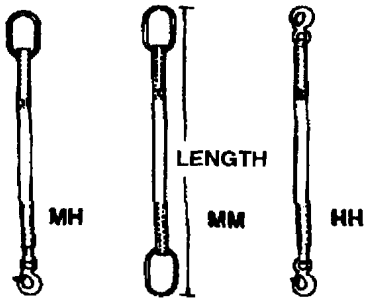
(A) Mating Triangle. Used as an end on Type 1 Slings.
(B) Forged Alloy Steel or Aluminum. Used on Type 2 and as one end on Type 1.
(C) Pear Link, Forged Steel. Used on Basket or Vertical Hitch applications.
(D) Heat Treated Shackles. For Basket Hitch or Vertical applications. Practical as in field replacement shackle.

ALL SLINGS SHOULD BE INSPECTED FOR INDICATIONS OF WEAR OR ABUSE, PHYSICAL OR CHEMICAL, BEFORE EACH USE!

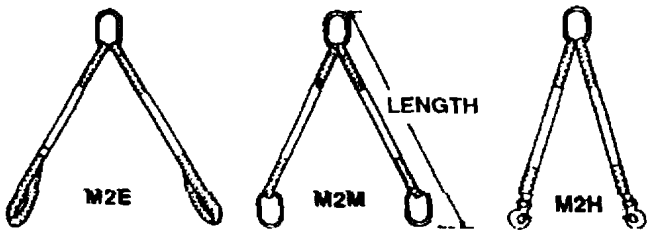
BRIDLE LEG SLINGS
Type10

Special purpose slings with various combinations of hardware and loops. Available in Single Leg (SL) and Multiple Leg (ML) combinations. Available in nylon and polyester.

SINGLE LEG (SL)



MULTI LEG (ML)

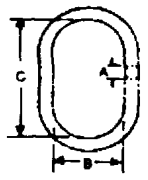


STOCK NUMBER	LEG WIDTH	PLY	RATED CAPACITY (LBS.)* VERTICAL	30° ∧	45° ∧	60° ∧	TOP FITTING	BOTTOM FITTING
SL1-91-MH	1"	1	1600	—	—	—	1	4
SL1-91-MM	1"	1	1600	—	—	—	1	1
SL1-91-HH	1"	1	1600	—	—	—	4	4
SL2-91-MH	1"	2	3000	—	—	—	1	5
SL2-91-MM	1"	2	3000	—	—	—	1	1
SL2-91-HH	1"	2	3000	—	—	—	5	5
SL2-92-MH	2"	2	6000	—	—	—	2	6
SL2-92-MM	2"	2	6000	—	—	—	2	2
SL2-92-HH	2"	2	6000	—	—	—	6	6
ML1-91-M2H	1"	1	—	2750	2250	1600	1	4
ML1-91-M2M	1"	1	—	2750	2250	1600	1	1
ML1-91-M2E	1"	1	—	2750	2250	1600	1	9" EYE
ML2-91-M2H	1"	2	—	5100	4200	3000	2	5
ML2-91-M2M	1"	2	—	5100	4200	3000	2	1
ML2-91-M2E	1"	2	—	5100	4200	3000	2	9" EYE
ML2-92-M2H	2"	2	—	10200	8400	6000	3	6
ML2-92-M2M	2"	2	—	10200	8400	6000	3	2
ML2-92-M2E	2"	2	—	10200	8400	6000	3	9" EYE

*NEVER exceed rated capacities.

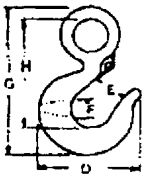
FORGED FITTINGS SPECIFICATIONS (Specifications may vary slightly)

WELDLESS ALLOY OBLONG MASTER LINKS



Link Style No.	Dimensions in Inches A Stock Diameter	B Inside Width	C Inside Length
1	1/2	2-1/2	5
2	5/8	3	6
3	1	3-1/2	7

SLING HOOKS — FORGED, QUENCHED, AND TEMPERED

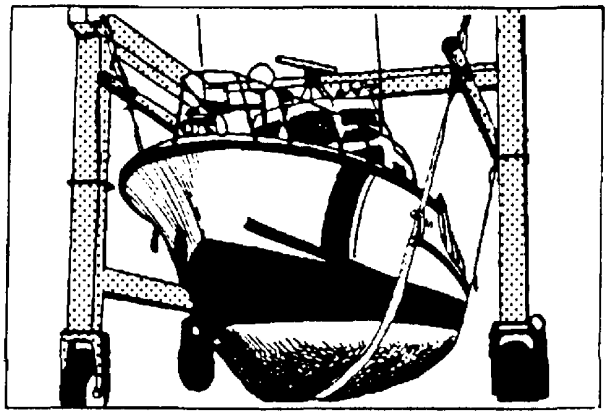


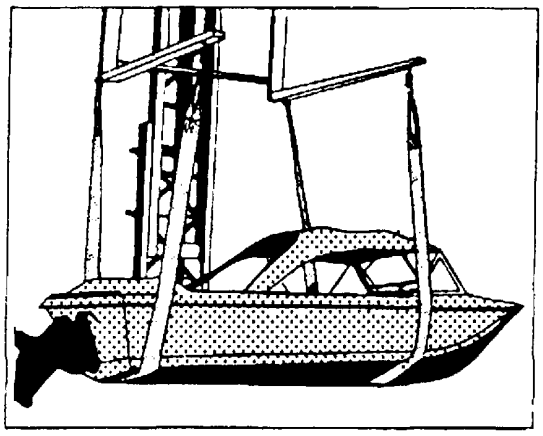
Sling Hook Style No.	Dimensions in Inches D Overall Width	E Hook Opening	F Max. Thick.	G Overall Length	H Net Length
4	2.88	.94	.56	4.34	3.22
5	3.19	1.03	.62	4.94	3.66
6	4.09	1.22	1.84	6.4	4.69

Product Safety Information is available. FAX us your questions (216) 241-3426.

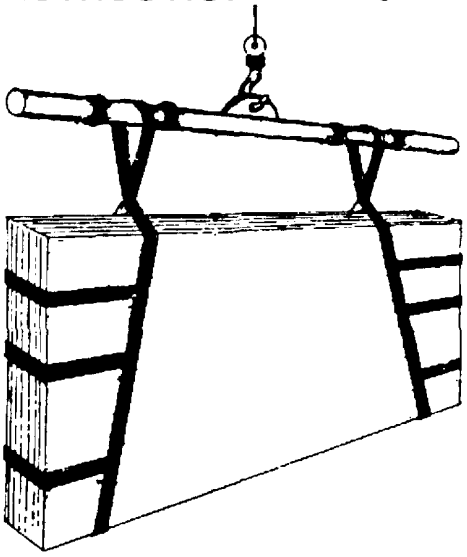
SPECIALLY MANUFACTURED SLINGS

MARINE APPLICATIONS

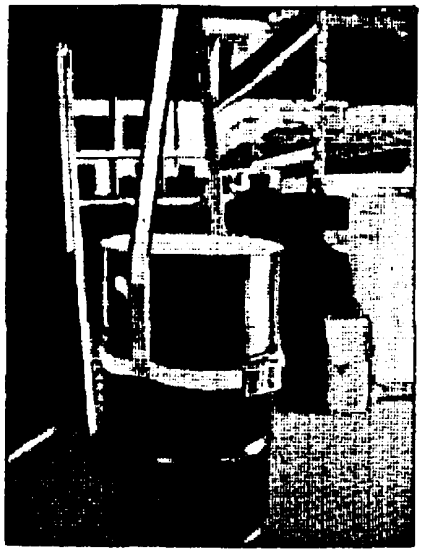




CONSTRUCTION APPLICATIONS



INDUSTRIAL APPLICATIONS



FOR MORE INFORMATION ABOUT
SPECIALLY MANUFACTURED SLINGS CALL:
SAMSEL SUPPLY CO.
(216) 241-0333 FAX (216) 241-3426
TOLL FREE 1 (800) 892-8012 OHIO 1 (800) 892-6781

WEB SLING HOOKS

The Web Sling hook, originally designed for 2-Ply Web slings, can also be used with Round Slings as long as the Working Load Limit ratings are compatible. The new hook incorporates the following features:

Eye is designed with a wide surface which:

- Eliminates bunching effects
- Reduces sling tendency to slide
- Allows a better load distribution on internal fibers

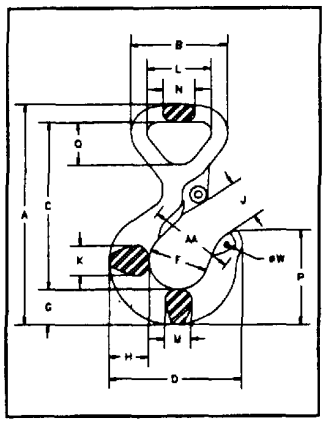
Each hook has a Product Identification Code (PIC) for material traceability along with a working load limit .

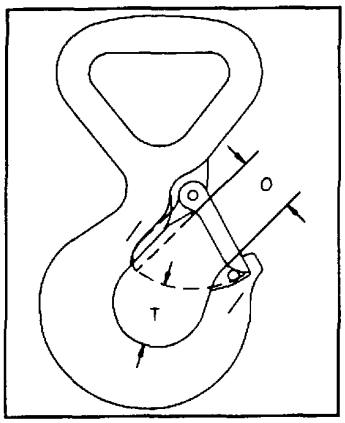
Hooks available in sizes 1 1/2 (1"), 3 (2") and 5 (3") tons.

All alloy construction.

Design factor of 5 to 1

Fatigue rated to 20,000 cycles at 1 1/2 times the Working Load Limit.





	WebSling Nominal Size (in.)	Round Sling Size (Number)	Working Load Limit* (Tons)	Hook Identification Code	WS-320-A S.C.	WSL-320A with Latch	S-4320 Replacement Latch Kit Stock No.
HKW 015	1"	1	1 1/2	FA	1022701	1022706	1096374
HKW 030	2"	2	3	FA	1022712	1022717	1096468
HKW 050	3"	3	5	FA	1022723	1022728	1096515

320 AN - Alloy Steel

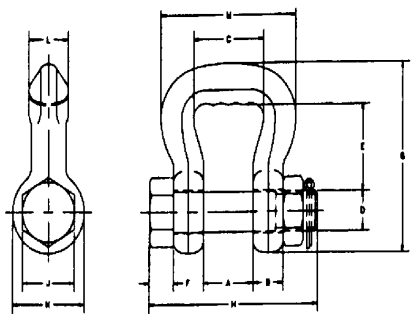
WebSling Nominal Size (in.)	Round Sling Size (Number)	Working Load Limit* (Tons)	Dimensions (in.)																	Weight Each (lbs.)
			A	B	C	D	F	G	H	J	K	L	M	N	O	P	Q	T	AA	
1"	1	1 1/2	5.25	2.26	3.98	3.11	1.38	.84	.94	.93	.71	1.50	.63	.75	.91	2.24	1.01	.98	2.00	.69
2"	2	3	7.11	3.66	5.31	3.97	1.63	1.13	1.32	1.13	.94	2.50	.85	1.13	1.09	2.82	1.69	1.16	2.00	2.07
3"	3	5	9.33	5.13	7.06	4.81	2.00	1.44	1.63	1.47	1.31	3.75	1.13	1.63	1.36	3.51	2.59	1.53	2.50	4.30

*Note: Proof load is 2 1/2 times Working Load Limit. Average straightening load (ultimate load) is 5 times Working Load Limit.

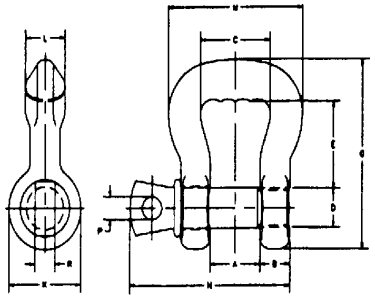
"Synthetic Sling Saver" Shackles

DIMENSIONAL INFORMATION

S-252

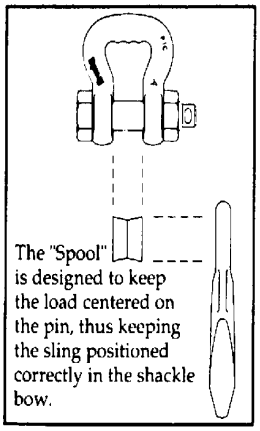


S-253



	Web Sling Nominal Size (in.)	Round Sling Size (Number)	Working Load Limit* (tons)	S-252 Bolt Type S-252 Stock No.	S-252 Bolt Type Weight Each (lbs.)	S-253 Screw Type S-253 Stock No.	S-253 Screw Type Weight Each (lbs.)	Dimensions (in.) A	B	C	D	E	F	G	H	J	K	L	M	N	P	R
BTW 010	1	1 & 2	3¼	1020485	1.4	1020575	1.4	.88	.62	1.38	.75	1.50	.44	3.38	3.68	1.12	1.50	.75	2.69	3.22	.44	1.00
BTW 015	1.5	3 & 4	6½	1020496	2.4	1020584	2.2	1.25	.75	1.75	.88	1.88	.50	4.15	4.25	1.31	1.81	1.00	3.38	4.03	.50	1.19
BTW 020	2	5 & 6	8¾	1020507	4.1	1020593	3.8	1.38	.88	2.25	1.00	2.81	.56	5.50	4.72	1.50	2.09	1.12	4.19	4.50	.50	1.44
BTW 030	3	7 & 8	12½	1020518	8.0	1020602	7.3	1.62	1.12	3.25	1.25	3.06	.75	6.34	5.88	1.88	2.62	1.38	5.62	5.59	.62	1.81
	4	9 & 10	20½	1020529	16.9	1020611	15.2	2.12	1.38	4.50	1.50	5.75	.88	9.75	7.19	2.25	3.12	1.75	7.50	6.88	.75	2.13
	5	11 & 12	35	1020540	35.0	1020620	30.8	2.50	1.75	5.50	2.00	6.34	1.12	11.50	9.31	3.00	4.19	2.25	9.19	8.66	1.00	2.88
	6	13	50	1020551	57.5	1020629	52.0	3.00	2.12	6.50	2.25	7.70	1.25	13.75	10.38	3.38	4.75	2.75	11.00	10.22	1.22	3.19

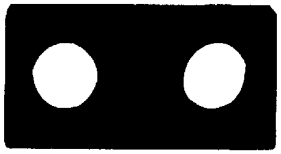
* Note: Maximum Proof Load is 2½ times the Working Load Limit. Minimum Ultimate Strength is 5 times the Working Load Limit.



The "Spool" is designed to keep the load centered on the pin, thus keeping the sling positioned correctly in the shackle bow.

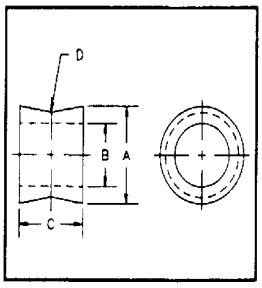
S-255 SPOOL

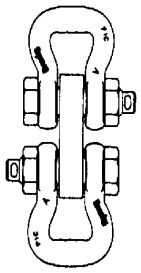
S-256 LINK PLATE



SPOOL

Shackle Size (in.)	S-255 Stock No.	Dimensions (in.) A	B	C	D	Weight Each (lbs.)
1	1020903	1.25	.81	.75	.19	.33
1.5	1020912	1.50	.94	1.00	.25	.57
2	1020921	1.75	1.05	1.19	.31	.89
3	1020930	2.00	1.31	1.50	.38	1.45
4	1020939	2.50	1.63	1.88	.44	2.20
5	1020948	3.25	2.13	2.25	.50	2.40
6	1020957	3.75	2.38	2.75	.62	4.10

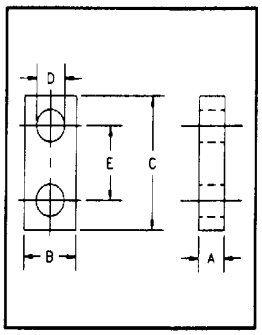




The "Link Plate" is designed to connect two (2) S-252 or S-253 "Sling Saver" Shackles together.

LINK PLATE

Shackle Size* (in.)	S-256 Stock No.	Dimensions (in.) A	B	C	D	E	Weight Each (lbs.)
1	1020785	.75	1.50	3.38	.81	1.88	.80
1.5	1020796	1.00	1.75	4.12	.94	2.25	1.60
2	1020807	1.25	2.00	4.75	1.06	2.62	2.70
3	1020818	1.50	2.50	6.00	1.31	2.35	5.20
4	1020829	1.75	3.00	7.00	1.62	3.75	8.20
5	1020840	2.00	4.00	9.25	2.12	5.00	17.20
6	1020851	3.00	5.00	10.50	2.38	5.75	37.40

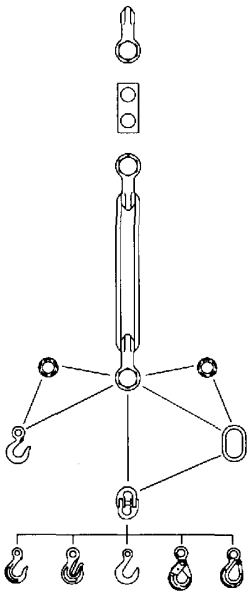


"Synthetic Sling Saver" Shackles

EASILY INTEGRATED INTO "SYNTHETIC SLING SYSTEM"

The "Synthetic Sling Saver" shackle line has been designed to easily adapt to other Crosby sling fittings to develop complete systems for synthetic slings.

SINGLE LEG SLING



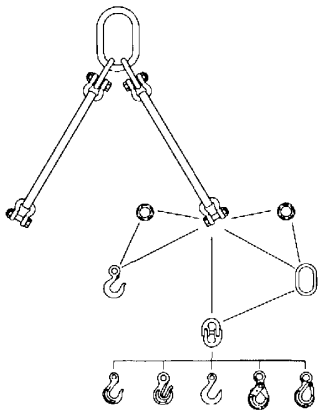
Parts needed to Fabricate "Synthetic" Sling Assemblies

SINGLE LEG SLING

Sling Saver Shackle							LOK-A-LOY Link * A-337				
Web Size (in.)	Working Load Limit (tons)	Sling Saver Shackle Spool S-255 (in.)	Sling Saver Shackle Link Plate S-256 (in.)	Eye Hoist Hook S-320AN† S-320A (tons)	Alloy Master Link A-342 (in.)	Master Link Assy. A-345 (in.)	Sling Hook A-327 (in.)	Eye Grab Hook A-328 (in.)	Eye Foundry Hook A-329 (in.)	Eye SHUR-LOC S-316A (in.)	Eye Latching S-315A (in.)
1	3¼	1	1	÷ 5	¾	—	⅜	⅜	⅜	⅜	⅜
1.5	6½	1.5	1.5	÷ 7	1	—	⅝	⅝	⅝	⅝	⅝
2	8¾	2	2	†11	1	—	⅝	⅝	⅝	⅝	⅝
3	12½	3	3	†15	1¼	—	¾	¾	¾	—	—
4	20½	4	4	† 22	1¾	—	—	—	—	—	—
5	35	5	5	37	2	—	—	—	—	—	—
6	50	6	6	60	2¼	—	—	—	—	—	—

* Lok-A-Loy size same as hook size.
†New 320N Eye Hook.

DOUBLE LEG SLING



DOUBLE LEG SLING

Sling Saver Shackle							LOK-A-LOY Link * A-337				
Web Size (in.)	Working Load Limit (tons)	Sling Saver Shackle Spool S-255 (in.)	Sling Saver Shackle Link Plate S-256 (in.)	Eye Hoist Hook S-320AN† S-320A (tons)	Alloy Master Link A-342 (in.)	Master Link Assy. A-345 (in.)	Sling Hook A-327 (in.)	Eye Grab Hook A-328 (in.)	Eye Foundry Hook A-329 (in.)	Eye SHUR-LOC S-316A (in.)	Eye Latching S-315A (in.)
1	3¼	1	1	÷ 5	¾	1	⅜	⅜	⅜	⅜	⅜
1.5	6½	1.5	1.5	÷ 7	1	1¼	⅝	⅝	⅝	⅝	⅝
2	8¾	2	2	†11	1	1¼	⅝	⅝	⅝	⅝	⅝
3	12½	3	3	†15	1¼	1½	¾	¾	¾	—	—
4	20½	4	4	†22	1¾	1¾	—	—	—	—	—
5	35	5	5	37	2	—	—	—	—	—	—
6	50	6	6	60	2¼	—	—	—	—	—	—

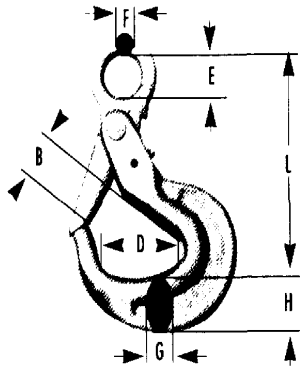
* Lok-A-Loy size same as hook size.
†New 320N Eye Hook.

SAFETY HOOKS FOR WEB SLINGS (EYE TYPE)

CODE	CHAIN SIZE	WORKING LOAD LIMIT *(LBS)	DIMENSIONS (INCHES) L	B	D	E	F	G	H	WEIGHT EACH (LBS)
BKB-10-8	3/8	7,100	6.7	1.5	2.8	1.3	.5	1.3	1.7	5.3

3/8 - HKK 252

** Design factor 4:1 Proof tested and certified. Particularly suitable for use with Web/round slings.*

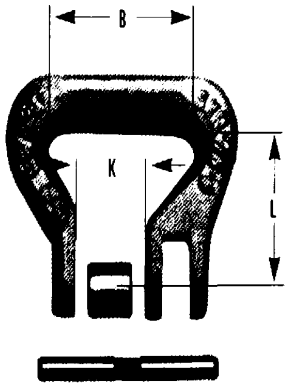


WEB ROUND SLING CONNECTOR

CODE	CHAIN SIZE	WORKING LOAD LIMIT *(LBS)	DIMENSIONS (INCHES) L	B	K	S	WEIGHT EACH (LBS)
SKR-7/8-8	1/4	3,500	1.4	1.6	.71	.95	.4
SKR-10-8	3/8	7,100	1.7	1.9	.95	1.1	.8
SKR-13-8	1/2	12,000	2.0	2.1	1.1	1.4	1.4
SKR-16-8	5/8	18,100	2.4	2.6	1.4	1.7	2.6
SKR-18/20-8	3/4	28,300	2.8	3.2	1.7	2.0	4.2

1/4 - LNK 078 1/2 - LNK 077

** Design Factor 4:1 Proof tested and certified.*



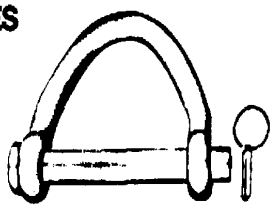
WEB SLING SHACKLES

Finish: Hot Dip Galvanized.

Klik Pin (Zinc Plated) As Shown Furnished as Standard-Cotter or Hair Pin Can Be Used Also.

Shackle Body: Carbon Steel, Heat Treated and Tempered.

Shackle Pin: Alloy Steel, Heat Treated and Tempered.

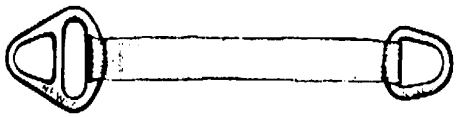


Tolerances: -1/32" Unless Otherwise Indicated.

Webshackle Body Pin
WEB 064 6"
Webshackle Click Pin
WEB 065 6"

Shackle
Web FGD Galvanized
WEB 045 2"
WEB 047 3"
WEB 049 4"
WEB 052 5"
WEB 059 6" HD
WEB 060 6"

ALUMINUM OR STEEL TRIANGLES & CHOKERS



ALUMINUM
Forged from aircraft quality aluminum alloy that combines the highest strength and durability with the lightness of aluminum. Available 2" through 6".

STEEL
steel for extra high strength. Sizes available 2" through 12".

Triangle

Aluminum			Steel		
WEB 071	2"	FGD	WEB 094	2"	FC
WEB 076	3"	FGD	WEB 095	3"	FC
WEB 081	4"	FGD	WEB 096	4"	FC
WEB 086	5"	FGD	WEB 097	4"	FGD
WEB 091	6"	FGD	WEB 101	5"	FC
			WEB 106	8"	FC
			WEB 111	12"	FC

Choker

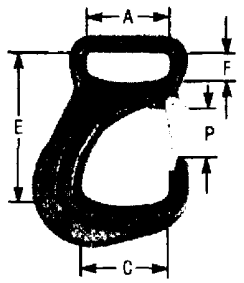
Aluminum			Steel		
WEB 006	2"	FGD	WEB 022	3"	FC
WEB 011	3"	FGD	WEB 023	4"	FC
WEB 013	4"	FGD	WEB 027	5"	FC
WEB 016	5"	FGD	WEB 031	8"	FC
WEB 021	6"	FGD	WEB 041	12"	FC

CALL OR FAX FOR INFORMATION ABOUT SPECIALLY MANUFACTURED SLINGS - MARINE, CONSTRUCTION AND INDUSTRIAL APPLICATIONS.

For other end fittings or sling information see Web Slings

Webbing Sling Hook - Design Factor 5:1

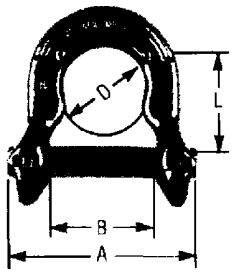
Size mm	WLL lbs.	Weight lbs.	A	C	E	F	P	P
50	3,500	2.35	2.16	2.32	4.03	0.78	1.06	1.06
75	4,800	4.86	3.18	3.07	5.51	0.94	1.41	1.41



U Link - Design Factor 4:1

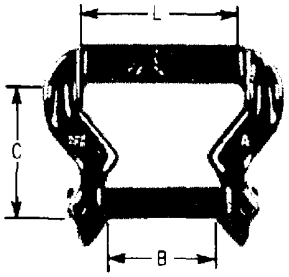
Chain Size inches	mm	WLL lbs.	Weight lbs.	A	B	L	D	
7/32	5-6	1,100	0.17	1.92	1.14	1.06	0.90	NS
1/4-5/16	7-8	2,200	0.35	2.20	1.29	1.32	1.02	NS
3/8	10	4,400	0.71	2.35	1.65	1.61	1.22	NS
1/2	13	6,600	1.35	3.58	2.20	1.88	1.61	NS
5/8	16	8,800	2.73	4.64	2.67	2.12	2.08	NS

NS: Non Stock Item



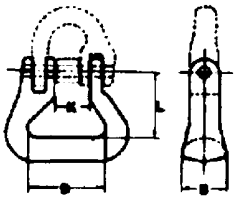
Web Link - Design Factor 4:1

Chain Size inches	mm	WLL lbs.	Weight lbs.	B	C	L
1-31/32	50	3,520	0.37	1.29	1.37	2.00
2-3/8	60	4,400	0.68	1.69	1.85	2.40
2-31/32	75	6,600	1.33	2.16	1.57	2.99
3-15/16	100	8,600	3.04	2.67	3.14	3.93



Alloy roundsling coupling link type SKR

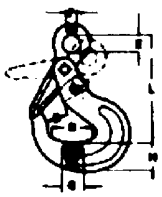
Special shape for full W.L.L. of the roundsling



Code	Chain size	Working Load Limit Pounds	Dimensions Inches L	B	K	S	Weight approx. Lbs
LNK 078	1/4	4100	1.4	1.6	.71	.94	.4
	3/8	7300	1.7	1.9	.94	1.1	.8
	1/2	13000	2	2.1	1.1	1.4	1.4
	5/8	20300	2.4	2.6	1.4	1.7	2.6
	3/4	29300	2.8	3.1	1.7	2	4.2

Alloy safety hook for web slings type BKB

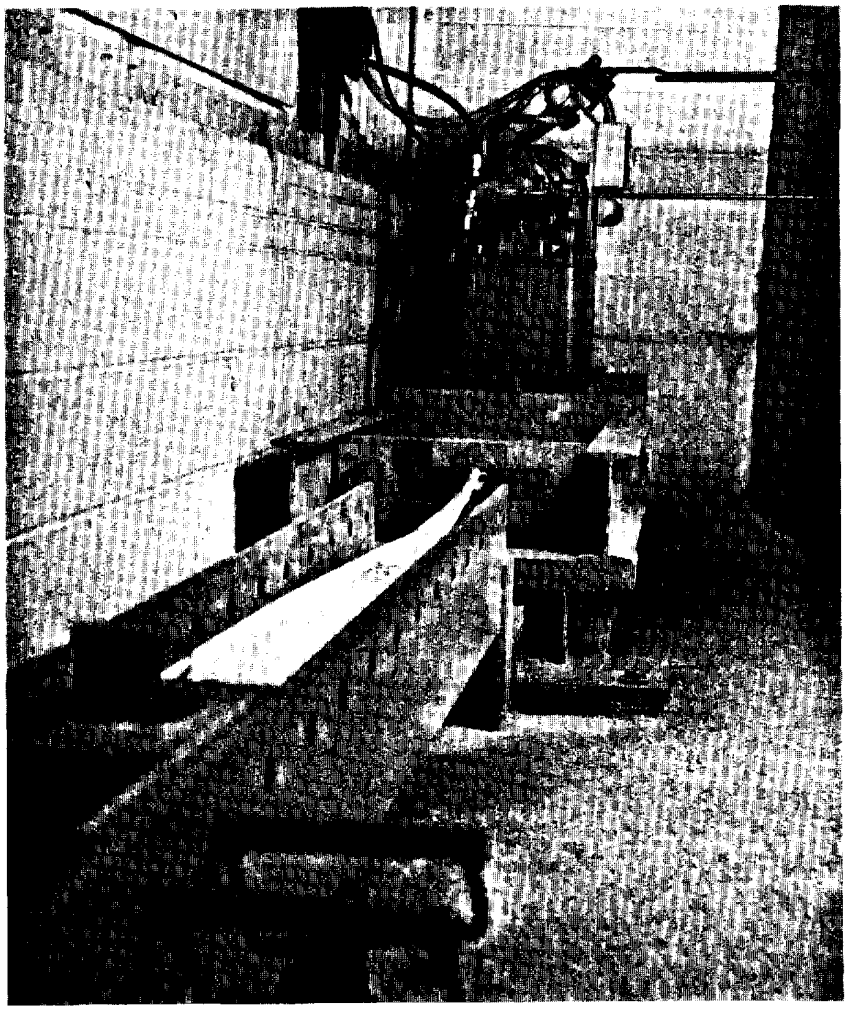
Particularly suitable for soft slings



Code	Chain size	Working Load Limit Pounds	Dimensions Inches L	B	D	E	F	G	H	Weight approx. Lbs
	3/8	7300	6.7	1.5	2.8	1.3	.5	1.3	1.7	5.3

TRUSTWORTHY-TOUGH DEPENDABLE QUALITY

WITH SAMSEL'S CONTINUOUS CARE PRODUCTION



Components and finished slings are load tested and / or pulled to destruction on our proof tester. **Samsel Nylon Slings** are a top choice sling where the sling will not be subjected or exposed to bleaching agents or acids. Other slings are available for these applications.

TESTED & PROVEN

Nylon normally is unaffected by grease & oils and
has a high resistance to aldehydes, strong alkalis and others.
These slings should never be subjected to temperatures over **190°** F.