



TUFFY

PRODUCTS



SLINGS - HARDWARE - TIE DOWNS - PIPELINER PLUS® - HOISTS & TROLLEYS

Made in America for over 40 years!

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TAKE A LOAD OFF YOUR MIND

INFORMATION TO HELP YOU FIT WEB SLINGS TO YOUR APPLICATION

In this handbook, you'll find how to match the sling to your load according to rated capacity, how to use the right hitch, how to calculate the load on each leg of a sling and how to adjust the rated capacity of choker hitches. You'll also find out how to choose the right material, coatings and wear pads to fit your many different lift requirements.

SETTING THE STANDARD FOR QUALITY

Tuffy™ Products is proud to announce that it is now certified as an ISO 9001:2008 Quality Management Standard compliant organization. Tuffy™ Products received the certification after extensive audits, from a third party auditing organization, reviewed the Company's internal sling fabrication and quality systems. The scope of the certification includes the design, manufacture, distribution, and sale of synthetic slings and tie downs. This ISO certification will ensure that Tuffy™ Products is continually delivering high quality products that meet and exceed customers' needs and expectations.



PROVEN EXPERIENCE IN TECHNICAL AND SALES SUPPORT

Nobody else has more experience in the lifting industry than we do. Look to us for engineering assistance in sling selection and design, including experience in high-capacity, multiple-sling rigging systems. We also offer expert technical sales support at the local level.

Call us today, and we'll help you take a load off your mind.

WARRANTY

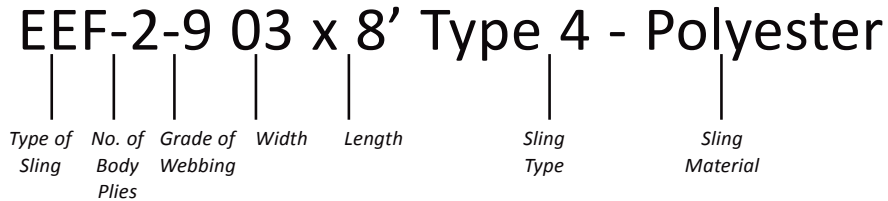
Any warranty, expressed or implied as to quality, performance or fitness for use is always premised on the condition that the published rated capacities apply only to new, unused slings and assemblies, that the mechanical equipment on which such products are used is properly designed and maintained, that such products are properly stored, handled, used and maintained, and properly inspected on a regular basis during the period of use.

Seller shall not be liable under any circumstances for consequential or incidental damages or secondary charges including but not limited to personal injury, labor costs, a loss of profits resulting from the use of said products or from said products being incorporated in or becoming a component of any other product.



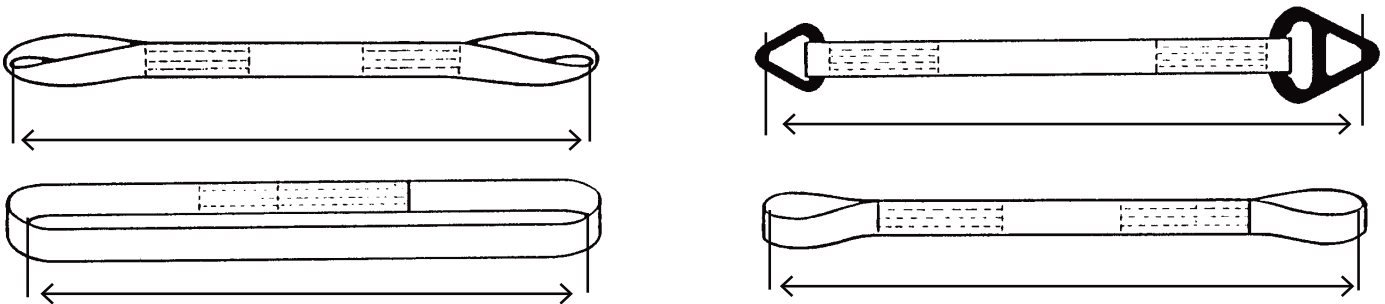
MAKING SLING BUYING EASY: HOW TO ORDER

UNDERSTANDING PART NUMBERS



MEASURING LENGTH OF SLING

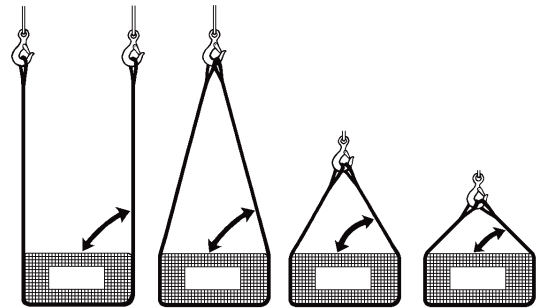
To calculate the correct length of the sling, measure pull to pull when flat.



CALCULATING SLING'S RATED CAPACITY

We use the following guidelines for calculating a sling's rated capacity:

1. Web tensile strength: This factor is the foundation for the calculation. Every webbing material is made with a specified nominal strength, measured in pounds per inch of width, in two basic grades. The webbing manufacturer is required to meet or exceed these nominal strengths with written proof. Any variation must exceed these ratings. This nominal strength of the webbing is used to calculate the sling's rated capacity.



2. Fabrication factor: This compensates for the reduction in webbing strength that occurs due to stitching and tapering. The greater the stitching, the more the reduction in webbing strength. Two-ply slings, for example, require more stitching than one-ply slings, thereby increasing the fabrication factor for the two-ply sling. Another factor is applied when webbing must be tapered such as in slings' eyes.

3. Hardware strength: This becomes a factor only when the nominal strength of the hardware is lower than the nominal strength of the sling. If so, the nominal strength of the hardware is used in calculating a sling's rated capacity.

4. Design factor: After web nominal strength has been adjusted by applying the fabrication factor, the sling's rated capacity is then determined by using a design factor of 5 to 1, as specified by American Society of Mechanical Engineers (ASME) standard ASME B30.9, Section 9 - 4.4. ANSI and OSHA both require sling manufacturers to document published sling ratings with records of test data.

5. Random testing: In addition to using the above factors for calculating each sling's rated capacity, we test randomly selected slings from production runs to make sure every new sling meets or exceeds specifications and the rated capacity.



CHOOSE MATERIAL, AND COATINGS TO FIT YOUR LOAD

All the synthetic web products in this handbook are both the same and different.

They all have the same proven workmanship and long-lasting quality you can depend on. But they've all been engineered to give you different performance traits and rated capacities to perform to your different lifting needs.

NYLON VS. POLYESTER

Both materials are heavy webbing loomed specifically to deliver dependable service in tough industrial conditions. Each is offered in two grades or strength ratings, identified in the numbering code of every stock number. Choose the strength that fits your application.

Nylon and polyester perform equally well in many applications, but each is designed for use in specific conditions. Here's a summary of their differences and similarities.

DIFFERENCES

Elastic stretch: Nylon will stretch about 6% when loaded — about twice that of polyester — at sling's rated capacity and still return to original length. Overloading beyond rated capacity will permanently stretch and weaken both types.

Stability to acids vs. alkalis: In general, nylon is more stable when exposed to alkalis, while polyester performs better when exposed to acids. But there are exceptions to each. For more details, please check with us.

SIMILARITIES

Handling characteristics: Each type handles the same way. Water absorption is also low for both, which means the sling's rated capacity isn't seriously affected.

Identical temperature constraints. Neither nylon nor polyester should be exposed to heat exceeding 194° F (90° C) or below -40° F (-40° C).

Susceptibility to prolonged sunlight: Although we've added special treatments to provide some protection against long-term exposure to direct sunlight, both nylon and polyester are vulnerable. In direct exposure to sunlight, properly stabilized nylon outperforms polyester, but when exposed under glass, it's polyester that outperforms nylon. We recommend you store both types inside or under cover.

Stability under exposure to many common chemicals: As shown in the chart, neither is affected by common chemicals, normal dry-cleaning solutions, or soap and water. Both also retain their strength in oil and grease.

Both materials work best clean: Neither material supports the growth of mildew or bacteria, although dirt may accumulate on slings to support such growth. That's why we recommend cleaning with water and then hanging to allow the sling to completely dry before use.

CHEMICAL	NYLON	POLYESTER
Acid	✗	*
Alcohol	✓	✓
Aldehydes	✓	✗
Strong Alkalis	✓	**
Bleaching Agents	✗	✓
Dry Cleaning Solvents	✓	✓
Ethers	✓	✗
Halogenated Hydrocarbons	✓	✓
Hydrocarbons	✓	✓
Ketones	✓	✓
Oil, Crude	✓	✓
Oil, Lubricating	✓	✓
Soaps, Detergents	✓	✓
Water, Seawater	✓	✓
Weak Alkalis	✓	✓

*Disintegrated by concentrated sulfuric acid.

**Degraded by strong alkalis at elevated temperatures.

WE TAKE RESPONSIBILITY FOR EVERY SLING

SLING IDENTIFICATION TAG

That's why we sew a permanent tag on each new sling to show its rated capacity and can trace each sling to a manufacturing work order. It's not only a stamp of quality assurance, it's also a permanent record for us to know the precise sources and specification of webbing and hardware, even the machine operator who made the sling. Think of it as our seal of approval. What better way to take a load off your mind?

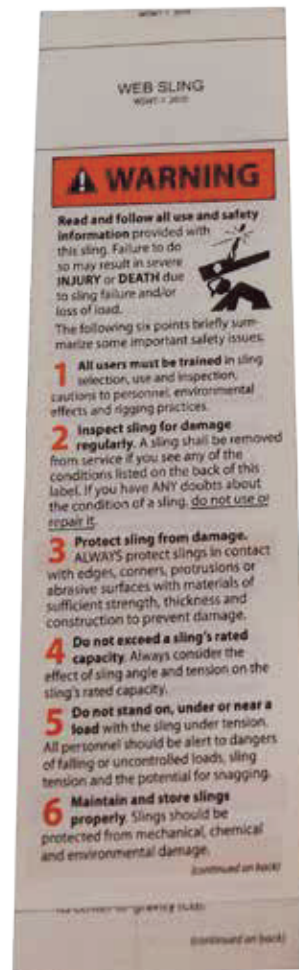
Each sling shall be marked to show the following:

- Name or Trademark of Manufacturer
- Manufacturer's code or stock number
- Rated loads for the type(s) of hitch(es) used and the angle upon which it is based
- Type of synthetic web material
- Number of legs, if more than one
- Sling identification shall be done by the manufacturer



SLING WARNING TAG

Each sling, web or round, has a specific set of recommended warnings and standards for users to ensure proper use of slings in the field. We attach the Web Sling Tie Down Association official tags. These four sided tags are attached to each sling next to the sling identification tag.



CHOOSE THE RIGHT HITCH FOR YOUR LOAD

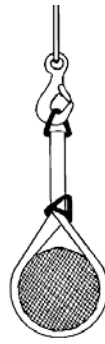
By using the following descriptions, you'll ensure the right choice when selecting a hitch for your various lifting operations:



Vertical

Vertical: Also called straight hitches. These attach by simply using a sling to connect a lifting hook to a load. Use the sling to its full rated lifting capacity, but never above it. Use a tagline to keep the load from rotating, which may damage the sling. When you attach two or more slings to the same lifting hook, the total hitch becomes a lifting bridle, distributing the load among the individual slings. When using two or more slings, remember that the sling angle affects the slings' rated capacities.

Choker: These hitches are used when the load won't be seriously damaged by the sling body (or vice versa) and when the lift requires the sling to hug the load. These reduce a sling's lifting capability.

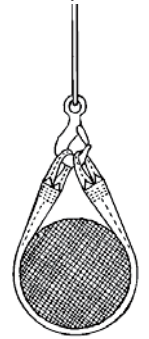


Choker

The diameter of the bend where the sling contacts the load should keep the point of choke against the sling body — never against a splice or the base of the eye. When a choke is used at an angle of less than 120°, the sling rated capacity must be reduced.

Two notes of caution:

Always pull a choker hitch tight before a lift is made — not during the lift. And never use only one choker hitch to lift a load that may shift or slide out of the choke.

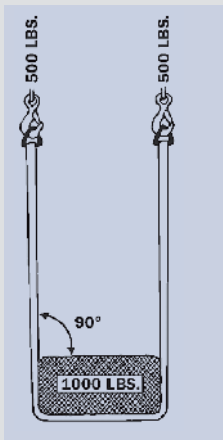


Basket

Basket: These hitches distribute a load between the two legs of a sling within the limitations described below.

CALCULATE THE LOAD OF BASKET HITCHES

There's an important principle to remember before you calculate your load. As the horizontal angle of a sling decreases, the load on each leg increases (see illustrations at right). That's true whether you use a single sling as a basket or two slings with each in a straight pull such as a two-legged bridle.



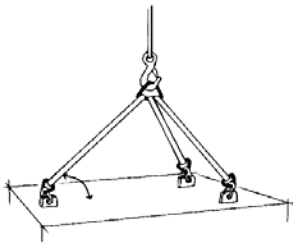
Anytime you lift a load with a leg (or legs) of a sling at an angle, you can calculate the load per leg as well as the sling's rated capacity by using the following three-step formula.

- 1. Divide your total load by the number of legs you're using.** This gives you the load per leg if the lift were being made with all lifting vertically. All of these calculations assume the center of gravity is directly below the hook. If not, more complicated engineering calculations are needed.
- 2. Find out the angle between the legs of the sling and the horizontal plane.**
- 3. Multiply the load per leg** (from step 1) by the load factor for the leg angle you're using (from the table above). This gives you the actual load on each leg for this lift and angle. The actual load must never exceed the sling's rated capacity.

CALCULATING THE ANGLE OF BRIDLES

The horizontal angle of bridles with three or more legs is measured the same way as horizontal sling angles of two-legged hitches. If a bridle is designed with different leg lengths, it may result in different horizontal angles. Normally, the leg with the smallest horizontal angle will carry the greatest load. That means you should use the smallest horizontal angle when you calculate the actual leg load and evaluate your sling's rated capacity.

In extreme angular conditions, an engineering analysis should be made.



Load Factor Guidelines

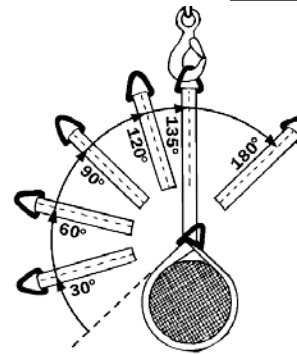
Leg Angle	Load Factor
90	1.000
85	1.003
80	1.015
75	1.035
70	1.064
65	1.103
60	1.154
55	1.220
50	1.305
45	1.414
40	1.555
35	1.743
30	2.000

ADJUSTING CHOKER HITCH RATED CAPACITY

When a choker hitch is drawn tight at an angle of less than 120°, you'll need to reduce the hitch's rated capacity to allow for loss of rated capacity as the chart shows. Our tests have shown that when the angle was less than 120°, the sling body always failed at the point of choke when pulled to maximum. You must always allow for this anytime you use a choker hitch to shift, turn or control a load, or when the pull is against the choke in a multi-leg lift.

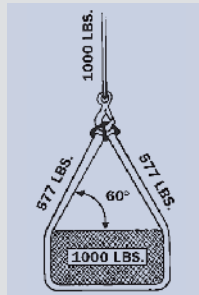
Angle of Choke	Rated Capacity*
120° - 180°	100%
60° - 119°	95%
0° - 59°	90%

*Percent of sling's rated capacity in a choker hitch.



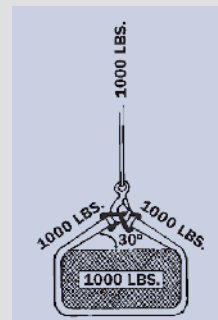
Example 1:

1. Total load is 1,000 lbs. divided by two legs = 500 lbs. (load per leg if vertical lift).
2. Horizontal sling angle is 60°.
3. Multiply 500 lbs. by 1.154 load factor (from table) = 577 lbs. actual load per leg.



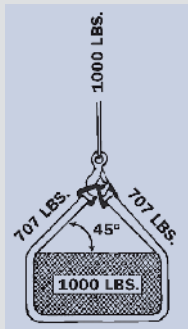
Example 3:

1. Two-leg total load is 1,000 lbs.
2. Horizontal sling angle is 30°.
3. Multiply by 2 and actual load is 1,000 lbs.



Example 2:

1. Total load is 1,000 lbs. divided by two legs = 500 lbs. (load per leg if vertical lift).
2. Horizontal sling angle is 45°.
3. Multiply 500 lbs. by 1.414 load factor (from table) = 707 lbs. actual load per leg.



WARNING: Horizontal sling angles less than 30° shall not be used.

TRIANGLE - CHOKER TCA/TCS – Type 1
TRIANGLE - TRIANGLE TTA/TTS – Type 2



TCA Type 1 - Aluminum Choker & Basket Fitting



TTA Type 2 - Aluminum Basket Fittings



TCS Type 1 - Steel Choker & Basket Fitting



TTS Type 2 - Steel Basket Fittings

These are nylon or polyester web slings with steel or aluminum end fittings for use in vertical, choker and basket hitch applications.







These are nylon or polyester web slings with steel triangles, aluminum triangles, links or shackles for use in vertical or basket hitch applications.

Features:

These are nylon or polyester web slings with steel or aluminum end fittings for use in vertical, choker and basket hitch applications.

How to Order:

* Insert TCA/TTA prefix for aluminum fitting or TCS/TTS prefix for steel fitting.

Stock No.	Width (inches)	Ply	Rated Capacities in Lbs.					
			Vertical 	Choker** 	Basket 	60° 	45° 	30° 
*-1-902	2	1	3,100	2,480	6,200	5,369	4,383	3,100
*-2-902	2	2	6,200	4,960	12,400	10,738	8,767	6,200
*-1-903	3	1	4,700	3,760	9,400	8,140	6,646	4,700
*-2-903	3	2	8,800	7,040	17,600	15,242	12,443	8,800
*-1-904	4	1	6,200	4,960	12,400	10,738	8,767	6,200
*-2-904	4	2	11,000	8,800	22,000	19,052	15,554	11,000
*-1-906	6	1	9,300	7,440	18,600	16,108	13,150	9,300
*-2-906	6	2	16,500	13,200	33,000	28,578	23,331	16,500
*-1-908	8	1	11,800	9,440	23,600	20,438	16,665	11,800
*-2-908	8	2	22,700	18,160	45,400	39,316	32,098	22,700
*-1-910	10	1	14,700	11,760	29,400	25,460	20,786	14,700
*-2-910	10	2	28,400	22,720	56,800	49,189	40,158	28,400
*-1-912	12	1	17,600	14,080	35,200	30,483	24,886	17,600
*-2-912	12	2	34,100	27,280	68,200	59,061	48,217	34,100

** Choker rated capacities apply to Type 1 slings only.

Notes:

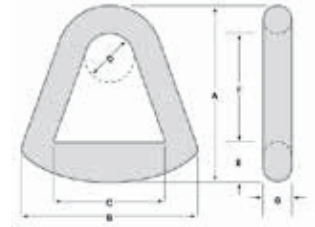
- Polyester Webbing standard, unless otherwise requested
- Steel fittings are standard on both 1-ply and 2-ply slings.
- These slings are also available in 3-ply and 4-ply construction
- Aluminum fittings are available up to 6" in 1-ply capacities.
- See the next page for rated capacities of hardware.

Warning: Never use aluminum fittings where fumes, vapors, mists or liquids of caustics are present. Horizontal sling angles less than 30° shall not be used.

HARDWARE SPECIFICATIONS

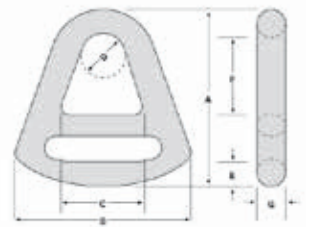
Aluminum Triangles

Size	A	B	C	D	E	F	G	Approx. Weight (lbs.)	Rated Capacity (lbs.)	Minimum Break
T2	4	3-5/8	2-1/4	1-3/4	15/16	2-3/8	9/16	.31	3,360	16,800
T3	5-1/4	5	3-1/4	2	1-3/16	3-5/16	5/8	.75	5,000	25,000
T4	6-1/4	6-5/8	4-3/8	2-3/8	1-7/16	4	11/16	1.1	6,700	33,500
T6	8-5/16	8-7/8	6-3/8	3-1/8	1-3/4	5-1/2	15/16	2.7	9,700	48,500



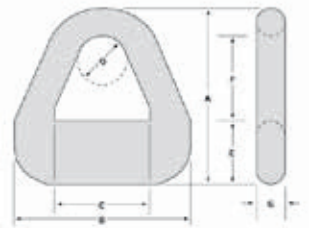
Aluminum Chokers

Size	A	B	C	D	E	F	G	Approx. Weight (lbs.)	Rated Capacity (lbs.)	Minimum Break
C2	6-1/8	5-1/4	2-1/8	1-3/4	15/16	2-3/8	9/16	.73	3,360	16,800
C3	7-1/2	7-1/8	3-1/8	2	1-1/8	3-5/16	5/8	1.3	5,000	25,000
C4	8-3/4	8-3/4	4-1/8	2-3/8	1-7/16	4	11/16	1.9	6,700	33,500
C6	11-5/16	11-3/4	6-1/8	3-1/8	1-3/4	5-1/2	15/16	5.1	9,700	48,500



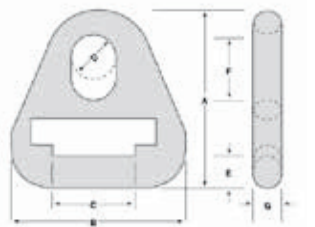
Steel Triangles

Size	A	B	C	D	E	F	G	Approx. Weight (lbs.)	Rated Capacity (lbs.)	Minimum Break
ST2	3-7/8	3-3/4	2-1/8	1-3/4	1	2-5/16	1/2	1	6,600	33,000
ST3	5-3/16	5	3-1/16	2	1-1/4	3-5/16	1/2	1.6	8,900	44,500
ST4	6-7/16	6-5/8	4-5/16	2	1-5/8	3-7/8	1/2	2.7	11,600	58,000
ST5	7-7/8	7-15/16	5-3/16	2-1/2	2	4-15/16	1/2	3.5	14,000	70,000
ST6	9	9-1/4	6-1/8	2-3/4	2-5/16	5-9/16	1/2	5.3	16,800	84,000
ST8	11-7/16	12	8-1/4	3-5/8	2-7/8	7-3/16	3/4	12	22,400	112,000
ST10	13-1/4	14-1/8	10-1/8	4-7/8	3-5/8	8-1/4	3/4	17	28,000	140,000
ST12	13-13/16	16-7/16	12-3/8	5	4-1/16	8	3/4	19	32,000	160,000



Steel Chokers

Size	A	B	C	D	E	F	G	Approx. Weight (lbs.)	Rated Capacity (lbs.)	Minimum Break
SC2	6	5-1/2	2-1/8	2	1-1/16	2-1/4	1/2	2	6,600	33,000
SC3	7-1/2	7	3-1/8	2	1-3/16	3-3/16	1/2	2.9	8,900	44,500
SC4	9-5/16	9-9/16	4-1/8	2-1/2	1-13/16	3-1/2	1/2	6	11,600	58,000
SC5	10-9/16	11-5/8	5-1/8	2-3/4	2-1/16	4-7/16	1/2	7	14,000	70,000
SC6	12	12-3/4	6-1/8	2-7/8	2-11/16	4-9/16	1/2	9.8	16,800	84,000
SC8	14-7/16	16-1/2	8-1/8	5	2-13/16	6-7/16	3/4	24	22,400	112,000
SC10	16-1/2	18-3/4	10-1/4	5-1/8	3-1/2	7-5/8	3/4	28	28,000	140,000
SC12	19-1/4	22-5/8	12-1/8	5-1/2	4-1/4	9-3/4	3/4	40	32,000	160,000



*See page 15 for other Type 2 hardware specifications.









EYE & EYE - FLAT EEF – Type 3 EYE & EYE - TWIST EET – Type 4

E/E Type 3 – These are web slings with a flat loop eye on each end. The eye openings are in the same plane as sling. This sling can be used in all hitches (vertical, Choker, Basket).



E/E Type 4 --- These are web slings with a twisted loop eye on each end. The eye openings are at a right angle to the sling body. This sling is suitable in all hitches, but recommended when the sling will be used primarily in a choker hitch application.

Stock No. <small>(* start with EEF or EET)</small>	Width (inches)	Ply	Rated Capacities in Pounds						Nominal Eye Dimensions	
			Vertical 	Choker 	Basket Hitch				Eye Length L (inches)	Eye Width W (inches)
						60° 	45° 	30° 		
*-1-901	1	1	1,600	1,280	3,200	2,771	2,262	1,600	9	1
*-2-901	1	2	3,100	2,480	6,200	5,369	4,383	3,100	9	1
*-3-901	1	3	4,100	3,300	8,200	7,052	5,781	4,100	12	1
*-4-901	1	4	5,500	4,400	11,000	9,526	7,777	5,500	12	1
*-1-902	2	1	3,100	2,480	6,200	5,369	4,383	3,100	9	2
*-2-902	2	2	6,200	4,960	12,400	10,738	8,767	6,200	9	2
*-3-902	2	3	8,200	6,600	16,400	14,104	11,562	8,200	12	2
*-4-902	2	4	11,000	8,800	22,000	19,052	15,554	11,000	12	2
*-1-903	3	1	4,700	3,760	9,400	8,140	6,646	4,700	12	1-1/2
*-2-903	3	2	8,800	7,040	17,600	15,242	12,443	8,800	12	1-1/2
*-3-903	3	3	12,300	9,900	24,600	21,156	17,343	12,300	15	1-1/2
*-4-903	3	4	16,400	13,120	32,800	28,405	23,190	16,400	15	1-1/2
*-1-904	4	1	6,200	4,960	12,400	10,738	8,767	6,200	12	2
*-2-904	4	2	11,000	8,800	22,000	19,052	15,554	11,000	12	2
*-3-904	4	3	15,300	12,200	30,600	26,316	21,573	15,300	15	2
*-4-904	4	4	20,400	16,320	40,800	35,333	28,846	20,400	15	2
*-1-906	6	1	9,300	7,440	18,600	16,108	13,150	9,300	12	2
*-2-906	6	2	16,500	13,200	33,000	28,578	23,331	16,500	15	2
*-3-906	6	3	22,900	18,300	45,800	39,388	32,289	22,900	18	3
*-4-906	6	4	30,600	24,480	61,200	52,999	43,268	30,600	18	3
*-1-908	8	1	11,800	9,440	23,600	20,438	16,665	11,800	18	3
*-2-908	8	2	22,700	18,160	45,400	39,316	32,098	22,700	18	3
*-3-908	8	3	30,700	24,600	61,400	52,804	43,287	30,700	24	4
*-4-908	8	4	40,960	32,768	81,920	70,451	57,753	40,960	24	4
*-1-910	10	1	14,700	11,760	29,400	25,460	20,786	14,700	18	3-1/2
*-2-910	10	2	28,400	22,720	56,800	49,189	40,158	28,400	18	3-1/2
*-3-910	10	3	36,000	28,800	72,000	61,920	50,760	36,000	24	5
*-4-910	10	4	48,000	38,400	96,000	82,560	67,680	48,000	24	5
*-1-912	12	1	17,600	14,080	35,200	30,483	24,886	17,600	24	4
*-2-912	12	2	34,100	27,280	68,200	59,061	48,217	34,100	24	4
*-3-912	12	3	40,300	32,200	80,600	69,316	56,823	40,300	24	6
*-4-912	12	4	53,760	43,008	107,520	92,467	75,801	53,760	24	6







* Insert EEF prefix to indicate Type 3 and EET prefix to indicate Type 4.*
* Polyester Webbing standard, unless otherwise requested

Warning: Horizontal sling angles less than 30° shall not be used.

ENDLESS EN – Type 5

Nylon or polyester web sling designed in a continuous loop formed by joining the ends of webbing together with a load bearing splice. Sometimes referred to as a grommet. Can be used in any hitch.



Stock No.	Width (inches)	Ply	Rated Capacities in Pounds						Taper	
			Vertical 	Choker 	Basket Hitch				Width W (inches)	Length L (inches)
						60° 	45° 	30° 		
EN-1-901	1	1	3,100	2,480	6,200	5,369	4,525	3,100	—	—
EN-2-901	1	2	6,200	4,960	12,400	10,738	8,767	6,200	—	—
EN-3-901	1	3	8,200	6,600	16,400	14,104	11,562	8,200	—	—
EN-4-901	1	4	11,000	8,800	22,000	19,052	15,554	11,000	—	—
EN-1-902	2	1	6,200	4,960	12,400	10,738	8,767	6,200	1	9
EN-2-902	2	2	12,400	9,920	24,800	21,477	17,534	12,400	1	9
EN-3-902	2	3	16,500	13,200	33,000	28,380	23,265	16,500	*	*
EN-4-902	2	4	22,000	17,600	44,000	38,104	31,108	22,000	—	—
EN-1-903	3	1	9,400	7,520	18,800	16,281	13,292	9,400	1-1/2	12
EN-2-903	3	2	17,600	14,080	35,200	30,483	24,866	17,600	1-1/2	12
EN-3-903	3	3	24,700	19,800	49,400	42,484	34,827	24,700	*	*
EN-4-903	3	4	32,900	26,320	65,800	56,983	46,521	32,900	—	—
EN-1-904	4	1	12,400	9,920	24,800	21,477	17,534	12,400	2	12
EN-2-904	4	2	22,000	17,600	44,000	38,104	31,108	22,000	2	12
EN-3-904	4	3	30,600	24,500	61,200	52,632	43,146	30,600	*	*
EN-4-904	4	4	40,800	32,640	81,600	70,666	57,691	40,800	—	—
EN-1-906	6	1	18,600	14,880	37,200	32,215	26,300	18,600	2	15
EN-2-906	6	2	33,000	26,400	66,000	57,156	46,662	33,000	3	15
EN-3-906	6	3	45,900	36,700	91,800	78,948	64,719	45,900	*	*
EN-4-906	6	4	61,200	48,960	122,400	105,998	86,537	61,200	—	—
EN-1-908	8	1	21,200	16,960	42,400	36,718	29,977	21,200	3	18
EN-2-908	8	2	42,300	33,840	84,600	73,264	59,812	42,300	4	18
EN-3-908	8	3	61,400	49,100	122,800	105,608	86,574	61,400	*	*
EN-4-908	8	4	81,920	65,536	163,840	140,902	115,507	81,920	—	—
EN-1-910	10	1	26,500	21,200	53,000	45,580	37,471	26,500	3-1/2	18
EN-2-910	10	2	52,900	42,320	105,800	91,623	74,801	52,900	5	18
EN-3-910	10	3	72,000	57,600	144,000	123,840	101,520	72,000	*	*
EN-4-910	10	4	96,000	76,800	192,000	165,120	135,360	96,000	—	—
EN-1-912	12	1	31,800	25,440	63,600	55,078	44,965	31,800	4	18
EN-2-912	12	2	63,500	50,800	127,000	109,982	89,789	63,500	6	18
EN-3-912	12	3	80,600	64,500	161,200	138,632	113,646	80,600	*	*
EN-4-912	12	4	107,520	86,016	215,040	184,934	151,603	107,520	—	—

Please specify when sling is to be tapered at hook contact area.

Warning: Horizontal sling angles less than 30° shall not be used.

*Three-ply slings are tapered by special request only.

*Polyester Webbing standard, unless otherwise requested



REVERSED EYE RE – Type 6







FLAT EYE FE – Type 7



RE TYPE 6-- These are exceptionally durable slings that feature full body and eye protection. Eye openings are 90° to the sling body for tighter choker hitches and easy vertical and basket hitch rigging.



FE TYPE 7--These slings are the same construction as Reversed Eyes with one exception: the eyes are on the same plane as the sling body. Flat eye permits rigging through narrower openings and easier removal from under loads. These slings also rig effectively in choker and basket hitches.

Stock No. <small>(* start with RE or FE)</small>	Width (inches)	Ply	Rated Capacities in Pounds						Taper	
			Vertical 	Choker 	Basket Hitch				Width W (inches)	Length L (inches)
						60° 	45° 	30° 		
*-1-902	2	1	3,100	2,480	6,200	5,369	4,383	3,100	1	9
*-2-902	2	2	6,200	4,960	12,400	10,738	8,767	6,200	1	12
*-1-904	4	1	6,200	4,960	12,400	10,738	8,767	6,200	2	12
*-2-904	4	2	12,400	9,920	24,800	21,477	17,534	12,400	2	12
*-3-904	4	3	16,500	13,200	33,000	28,380	23,265	16,500	2	15
*-4-904	4	4	22,000	17,600	44,000	38,104	31,108	22,000	2	15
*-1-906	6	1	9,400	7,520	18,800	16,281	13,262	9,400	1-1/2	12
*-2-906	6	2	17,600	14,080	35,200	30,483	24,866	17,600	1-1/2	15
*-3-906	6	3	24,700	19,800	49,400	42,484	34,827	24,700	3	18
*-4-906	6	4	32,900	26,320	65,800	56,983	46,521	32,900	3	18

* Insert RE prefix to indicate Type 6 and FE prefix to indicate Type 7.





* Polyester Webbing standard, unless otherwise requested

Warning: Horizontal sling angles less than 30° shall not be used.

WIDE BODY BASKET WBB - TYPE 8

These are designed for use in basket hitches where you need a wide sling for load stability and for proper handling of fragile or highly finished surfaces. Eyes of slings are tapered to fit in hoist or crane hooks.



Stock No.	Width (inches)	Ply	Rated Capacity in Lbs.				Nominal Eye Dimensions	
							Eye Length L (inches)	Eye Width W (inches)
WBB-1-906	6	1	17,200	14,900	12,100	8,600	12	1-1/2
WBB-2-906	6	2	32,000	27,700	22,600	16,000	15	1-1/2
WBB-1-908	8	1	22,600	19,600	16,000	11,300	12	2
WBB-2-908	8	2	42,000	36,400	29,700	21,000	15	2
WBB-1-910	10	1	28,200	24,400	20,000	14,100	15	1-3/4
WBB-2-910	10	2	52,500	45,500	37,100	26,300	18	2-1/2
WBB-1-912	12	1	33,900	29,300	23,900	16,900	15	2
WBB-2-912	12	2	63,000	54,600	44,600	31,500	18	3*
WBB-1-916	16	1	43,900	38,000	31,000	22,000	18	3*
WBB-2-916	16	2	72,800	63,000	51,400	36,400	24	4*
WBB-1-920	20	1	51,000	44,100	36,000	25,500	24	3-1/2*
WBB-2-920	20	2	80,000	69,300	56,500	40,000	24	5*
WBB-1-924	24	1	56,400	48,900	39,900	28,200	24	4*
WBB-2-924	24	2	88,400	76,600	62,500	44,200	24	6*

* Narrower taper available on special request only.

* Wider widths available upon request.

* Polyester Webbing standard, unless otherwise requested





Wear pads are available for eyes and sling body on request.

Warning: Horizontal sling angles less than 30° shall not be used.

LOAD BALANCER BASKET LBB - TYPE 9



These are designed for applications where you need a wide sling for load stability and for proper handling of fragile or highly finished surfaces. They have lower rated capacity than the Wide Body Basket. Eyes are constructed to fit properly on small hoist hooks and are reinforced for longer life.

Stock No.	Width (inches)	Ply	Rated Capacity in Lbs.				Nominal Eye Dimensions	
							Eye Length L (inches)	Eye Width W (inches)
LBB-1-906	6	1	6,000	5,200	4,200	3,000	1	9
LBB-1-908	8	1	6,000	5,200	4,200	3,000	1	12
LBB-1-910	10	1	6,000	5,200	4,200	3,000	1	15
LBB-1-912	12	1	6,000	5,200	4,200	3,000	1	18
LBB-1-916	16	1	10,000	8,700	7,100	5,000	2	24
LBB-1-920	20	1	10,000	8,700	7,100	5,000	2	24
LBB-1-924	24	1	10,000	8,700	7,100	5,000	2	24

* Wider widths available upon request.

* Polyester Webbing standard, unless otherwise requested

Warning: Horizontal sling angles less than 30° shall not be used.



MULTI-LEG BRIDLES Type 10

These bridle assemblies are ideal for loads equipped with permanent lifting attachments. They're lightweight, easy to use and economical. Choose from Scuff-Edge®, nylon or polyester.

Choose from P (pear-shaped) or O (oblong) links for bridles. Hoist hooks and shackles are options on sling legs as well.



"O" - Oblong

"P" - Pear



Stock No.	Width (inches)	Ply	Rated Capacity for 2 legs (lbs.)			Pear Link (P)	Oblong Link (O)	Eye Hook (SH)	Eye Dimensions	
			60°	45°	30°	Size (inches)	Size (inches)	Size (W.L.L)	L	W
*-1-901	1	1	2,800	2,300	1,600	1/2	1/2	1	9	1
*-2-901	1	2	5,400	4,400	3,100	3/4	5/8	2	9	1
*-1-192	1-3/4	1	3,200	2,600	1,800	5/8	1/2	1	9	1-3/4
*-1-262	1-3/4	1	4,600	3,700	2,600	3/4	5/8	1-1/2	9	1-3/4
*-2-192	1-3/4	2	6,400	5,200	3,700	3/4	3/4	2	9	1-3/4
*-2-262	1-3/4	2	9,200	7,500	5,300	1	3/4	3	9	1-3/4
*-1-902	2	1	5,400	4,400	3,100	3/4	5/8	2	9	2
*-2-902	2	2	10,700	8,800	6,200	1	1	5	9	2
*-1-903	3	1	8,100	6,800	4,800	7/8	3/4	3	12	1-1/2
*-2-903	3	2	15,400	12,400	8,800	1-1/4	1	5	12	1-1/2

* Insert prefix by code letters for leg and end attachments (see above).
 * Polyester Webbing standard, unless otherwise requested


Note: One-, three- and four-legged assemblies are available on request. Additional end fittings can also be supplied. Please check with your distributor for details.
Warning: Horizontal sling angles less than 30° shall not be used.

HOW TO ORDER

1

CHOOSE THE STOCK NUMBER

Choose the stock number you'll need for your application from the chart.



2

CHOOSE THE ATTACHMENT

Each end attachment is represented by the code letters shown above. Insert these letters as a prefix for your stock number in this sequence:

- Link attachment: P (pear-shaped) or O (oblong) link.
- Number of legs: 2, 3, or 4
- End attachment: SH (hook with latch), E (sewn eye), P (pear-shaped), SS (shackle) or O (oblong). For each leg you need, use a letter to designate the end attachment.

For example, an "O3E" is a three-leg assembly with an alloy oblong (O) link as leg attachment and sewn eyes (E) as the end attachments for each of the three legs.

3

CHOOSE THE LENGTH

Choose the length you'll need, and add it at the end of the stock number.

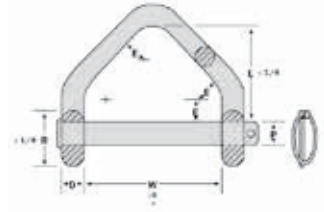
Example: A P2SH-1-902 x 10' is what to order when you need:

- A pear-shaped (P) link for the leg attachment.
- A hook with latch (SH) on each of the two legs for the end attachment.
- A "-1-902" stock number representing a two-inch wide, one-ply sling.
- A "10-ft." designation when you need a bridle 10 feet long

SLING HARDWARE SPECIFICATIONS

Steel Shackles

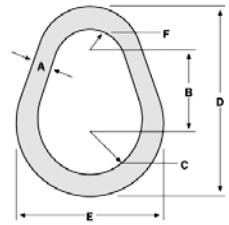
Part No.	Webbing Width (inches)	Ultimate Strength (lbs.)	Working Load Limit (lbs.)	W	L	D	P	R	E	Weight ea ch (lbs.)
SS-2	2	32,200	8,050	2	2-1/4	5/8	3/4	1-5/8	5/8	1.7
SS-3	3	52,200	13,050	3	3-1/4	3/4	7/8	1-7/8	3/4	2.8
SS-4	4	43,200	10,800	4	3-3/4	3/4	7/8	1-7/8	7/8	3.1
SS-5	5	72,000	18,000	5	4-1/4	7/8	1	2-1/8	7/8	4.8
SS-6	6	72,000	18,000	6	4-3/4	1	1-1/8	2-3/8	1	6.8
SS-6H	6	95,400	23,850	6	4-3/4	1-1/8	1-1/4	2-5/8	1	9.8



*Working load limit. Shackle body is carbon steel, heat-treated and tempered. Shackle pin is alloy steel, heat-treated and tempered. Finish is hot dip galvanized. Klik pin is zinc-plated, furnished as standard cotter, but hair pin may also be used.

Pear Shaped Links

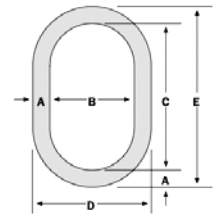
Size inches (A)	B	C	D	E	F	Weight each (lbs.)	Rated Capacity Single Pull (lbs.)
3/8	1.13	.75	3.00	2.25	.38	.23	1,800
1/2	1.50	1.00	4.00	3.00	.50	.55	2,900
5/8	1.87	1.25	5.00	3.75	.63	1.06	4,200
3/4	2.25	1.50	6.00	4.50	.75	1.88	6,000
7/8	2.63	1.75	7.00	5.25	.88	2.75	8,300
1	3.00	2.00	8.00	6.00	1.00	4.35	10,800
1 1/4	4.00	2.50	10.25	7.50	1.25	7.60	16,750
1 3/8	4.13	2.75	11.00	8.25	1.38	11.30	20,500



6 to 1 Design Factor
You may substitute rings or other links if desired. Links 3/8" through 1 3/8" are made with drop-forged steel. All others are welded.

Alloy Oblong Links

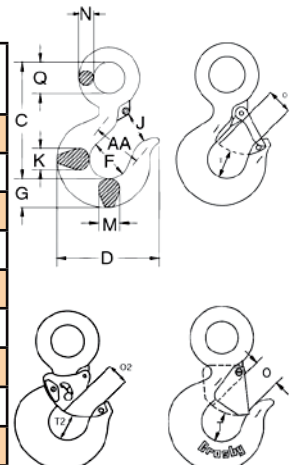
Size (inches)	Working Load Limit (lbs.)	Weight each (lbs.)	Dimensions (inches)		
			A	B	C
1/2	7,400	1.3	.62	2.80	5.00
5/8	9,000	1.5	.62	3.00	6.00
3/4	12,300	2.0	.73	3.20	6.00
1	26,000	6.1	1.10	4.30	7.50
1 1/4	39,100	12	1.33	5.50	9.50



* Based on single leg sling. Minimum ultimate load is 5 times the working load limit.

Eye Hoist Hooks

Carbon (tons)	Alloy (tons)	C	D	F	G	J	K	M	N	O†	O2††	Q	T†	T2 ††	AA
3/4	1	3.34	2.83	1.25	.73	.90	.63	.63	.36	.89	-	.75	.87	-	1.50
1	1-1/2	3.81	3.11	1.38	.84	.93	.71	.71	.42	.91	-	.91	.98	-	2.00
1-1/2	2	4.14	3.53	1.50	1.00	1.00	.88	.88	.55	1.00	-	1.13	1.03	-	2.00
2	3	4.69	3.97	1.63	1.13	1.13	.94	.94	.58	1.09	-	1.25	1.16	-	2.00
3	5	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
5	7	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
7-1/2	11	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
10	15	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
15	22	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



TUFFY FLEXI-GRIP® ROUND SLINGS

ECONOMICAL ANSWER TO DIFFICULT LOADS

We've combined "flexible" and "grip" to give you Flexi-Grip®, the round sling that lifts many loads most other types of slings can't. The Flexi-Grip® wraps easily around just about any shape and size and grips the load with ease, hugs it tight (especially in a choker hitch) and lifts with security and flexibility like no other.

Flexi-Grip® roundslings are made in accordance with ASME B30.9 Sling Standard section 9.6.

ALL-POLYESTER CONSTRUCTION

The all-polyester construction of Tuffy Flexi-Grip's virtually eliminates moisture absorption, rot and mildew for long service life. They feature a relatively low stretch (3% maximum at its rated capacity) and returns to original length.

Polyester also offers good resistance to common industrial acids (except concentrated sulfuric acid) and hot bleaching solutions. You can use Flexi-Grip slings in the presence of many common chemicals such as alcohol, dry cleaning solvent, hydrocarbons, halogenated hydrocarbons, ketones, crude oil, lubricating oils, soaps, detergents, seawater and weak alkalis. Never use or allow exposure to temperatures above 194° F (90° C) or below -40° F (-40° C).

COLOR-CODED BY CAPACITY

Every Flexi-Grip® sling is encased in a color-coded double-layer polyester jacket which protects the internal load-bearing fibers from abrasion and wear while protecting against ultraviolet degradation.




INSPECT YOUR SLINGS REGULARLY

Before each lift (as you would do with any sling), visually inspect your Flexi-Grip® for any damage. Remove sling from service if you see:

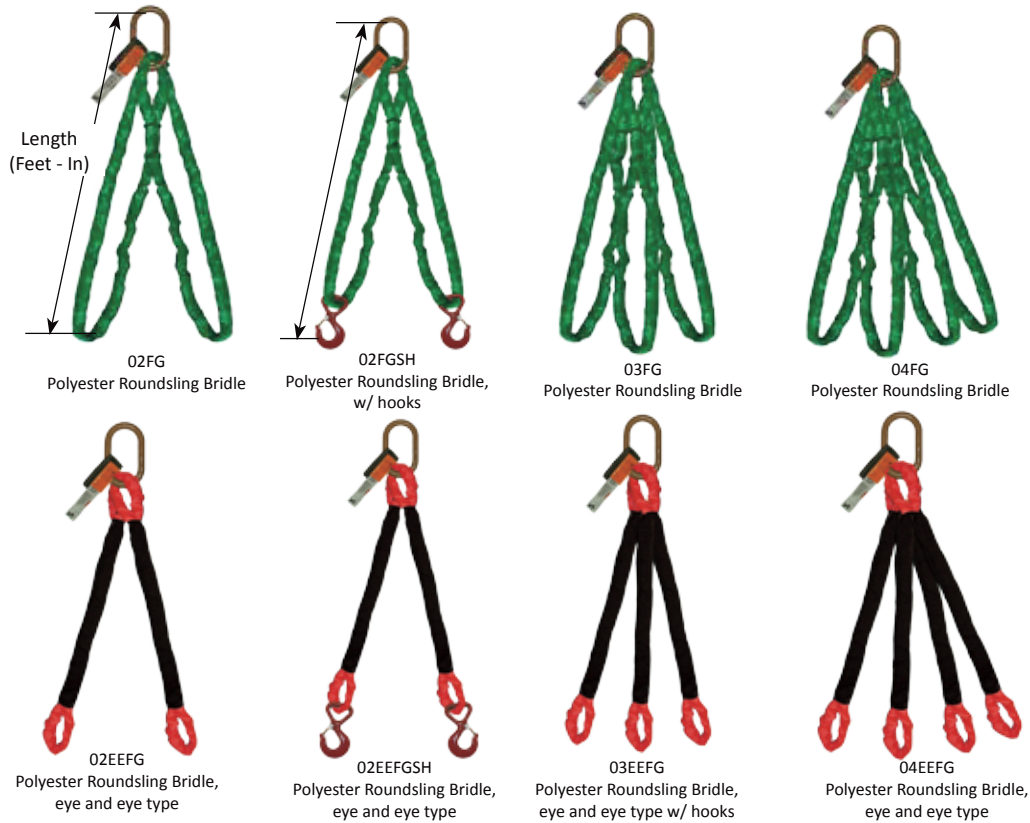
- Missing or illegible identification tag.
- Melting, charring, weld spatter, acid or alkali burns.
- Holes, tears, cuts, embedded particles, abrasive wear or snags that expose the sling's core yarns.
- Fittings that are damaged, stretched, cracked, pitted or distorted in any way.
- Any visual damage causing doubt as to the sling's strength.
- Sling being loaded beyond its rated capacity.
- Round slings are not designed for turning or shifting loads.

Failure to follow proper care, use and inspection criteria may result in personal injury. **Do not exceed rated capacities.**



Color Code	Model No.	Approx. Body Diameter (inches)	Approx. Body Weight/Ft. (lbs.)	Rated Capacity in Lbs.			Minimum Hardware Diameter (inches)	Minimum Contact Width (inches)
				Vertical 	Choker 	Basket 		
Purple	TuffyFG-0600	0.60	0.30	2,600	2,100	5,200	0.50	1.00
Green	TuffyFG-0800	0.80	0.40	5,300	4,200	10,600	0.62	1.25
Yellow	TuffyFG-1000	1.00	0.50	8,400	6,700	16,800	0.75	1.62
Tan	TuffyFG-1200	1.20	0.60	10,600	8,500	21,200	0.88	1.75
Red	TuffyFG-1300	1.30	0.80	13,200	10,600	26,400	1.00	2.00
White	TuffyFG-1400	1.40	0.90	16,800	13,400	33,600	1.12	2.12
Blue	TuffyFG-1550	1.55	1.20	21,200	17,000	42,400	1.25	2.62
Orange	TuffyFG-1750	1.75	1.50	25,000	20,000	50,000	1.25	2.88
Orange	TuffyFG-1950	1.95	2.00	31,000	24,800	62,000	1.50	3.12
Black	TuffyFG-2350	2.35	2.80	40,000	32,000	80,000	1.62	3.50
Black	TuffyFG-3150	3.15	3.60	53,000	42,400	106,000	1.88	4.00
Black	TuffyFG-3950	3.95	4.60	66,000	52,800	132,000	2.12	4.50
Black	TuffyFG-4800	4.80	5.80	90,000	72,000	180,000	2.50	5.12
Black	TuffyFG-5000	6.1	6.50	103,200	82,650	206,400	2.50	5.12

POLYESTER ROUNDSLING BRIDLES



Features:

- Double polyester tubing for better abrasion resistance, and easier inspection
- Vinyl tag with clear vinyl cover to protect data
- Design factor of 5 to 1
- Made in USA

How to order: Combine model, length in feet, and type, specify if eye & eye type or hooks required. Replace the * in the part number to specify end fittings:

- FG- Bridle no end attachments
- FGSH - bridle with sling hooks
- EEFG - bridle made in eye and eye type. Sleeve used will be black or grey color.
- EEFGSH - bridle made in eye and eye type with sling hooks. Sleeve used will be black or grey color

Model	Length	Color	No. Legs	Master link or Sub Assembly	Alloy Hook Size	Rated Capacity in lbs.		
						60 °	45 °	30 °
02*0600	*	Purple	2	3/4"	2 ton	4,500	3,675	2,600
03*0600	*	Purple	3	1"	2 ton	6,750	5,500	3,900
04*0600	*	Purple	4	1"	2 ton	9,000	7,300	5,200
02*0800	*	Green	2	3/4"	5 ton	9,100	7,450	5,300
03*0800	*	Green	3	1"	5 ton	13,700	12,200	7,900
04*0800	*	Green	4	1-1/4"	5 ton	18,300	14,900	10,600
02*1000	*	Yellow	2	1"	7 ton	14,500	11,800	8,400
03*1000	*	Yellow	3	1-1/4"	7 ton	21,800	17,800	12,600
04*1000	*	Yellow	4	1-1/2"	7 ton	29,000	23,700	16,800
02*1200	*	Tan	2	1-1/4"	7 ton	18,300	14,900	10,600
03*1200	*	Tan	3	1-1/2"	7 ton	27,500	22,400	15,900
04*1200	*	Tan	4	1-3/4"	7 ton	36,700	29,900	21,200
02*1300	*	Red	2	1-1/4"	11 ton	22,800	18,600	13,200
03*1300	*	Red	3	1-3/4"	11 ton	43,600	27,900	19,800
04*1300	*	Red	4	2"	11 ton	45,700	37,300	26,400
02*1400	*	White	2	1-1/2"	11 ton	29,000	23,700	16,800
03*1400	*	White	3	1-3/4"	11 ton	43,600	35,600	25,200
04*1400	*	White	4	2"	11 ton	58,100	47,500	33,600
02*1550	*	Blue	2	1-3/4"	15 ton	36,700	29,900	21,200
03*1550	*	Blue	3	2"	15 ton	55,000	44,900	31,800
04*1550	*	Blue	4	2-1/2"	15 ton	73,400	59,900	42,400

Note: WS-320 Sling Saver Hooks available for FG0600 through FG1200 bridles









ECONYLON® WEB SLINGS

IDEAL FOR LIGHTWEIGHT LIFTS

We've combined "economical" and "nylon" to create Econylon, a full line of light-duty nylon web slings fabricated from economical military webbing. The material is somewhat softer and more flexible than our Red-Guard® nylon, but without the red warning yarn. They







feature the same standards of quality and workmanship as found in our other synthetic web products. Econylon is ideal for your lighter lifts in nonabrasive conditions or many single-lift applications. If you plan to use one of these slings in abrasive situations, we recommend you add one of the wear pads seen on page 7.

ECONYLON® EYE & EYE - FLAT **EEF – Type 3** ECONYLON® EYE & EYE - TWIST **EET – Type 4**

Stock No.	Width (inches)	Ply	Rated Capacities in Pounds						Width W (inches)	Length L (inches)
			Vertical 	Choker 	Basket Hitch					
						60° 	45° 	30° 		
*-1-181	1	1	1,120	900	2,200	1,940	1,600	1,120	1	9
*-2-181	1	2	2,200	1,800	4,500	3,900	3,200	2,200	1	9
*-1-192	1-3/4	1	1,840	1,500	3,700	3,200	2,600	1,840	1-3/4	9
*-2-192	1-3/4	2	3,700	2,900	7,400	6,400	5,200	3,700	1-3/4	9
*-3-192	1-3/4	3	5,500	4,400	11,000	9,600	7,800	5,500	1-3/4	12
*-4-192	1-3/4	4	7,400	5,900	14,700	12,800	10,400	7,400	1-3/4	12
*-1-262	1-3/4	1	2,600	2,100	5,300	4,600	3,700	2,600	1-3/4	9
*-2-262	1-3/4	2	5,300	4,200	10,600	9,200	7,500	5,300	1-3/4	9
*-3-262	1-3/4	3	7,300	5,900	14,700	12,700	10,300	7,300	1-3/4	12
*-4-262	1-3/4	4	9,800	7,800	19,500	16,900	13,800	9,800	1-3/4	12







* Insert EEF prefix to indicate Type 3 and EET prefix to indicate Type 4. Warning: Horizontal sling angles less than 30° shall not be used.

ECONYLON® ENDLESS **EN – Type 5**

Stock No.	Width (inches)	Ply	Rated Capacities in Pounds					
			Vertical 	Choker 	Basket Hitch			
						60° 	45° 	30° 
EN-1-181	1	1	2,200	1,800	4,500	3,900	3,200	2,200
EN-2-181	1	2	4,500	3,600	9,000	7,800	6,300	4,500
EN-3-181	1	3	6,700	5,400	13,400	11,700	9,500	6,700
EN-4-181	1	4	9,000	7,200	17,900	15,500	12,700	9,000
EN-1-192	1-3/4	1	3,700	2,900	7,400	6,400	5,200	3,700
EN-2-192	1-3/4	2	7,400	5,900	14,700	12,800	10,400	7,400
EN-3-192	1-3/4	3	11,000	8,800	22,100	19,100	15,600	11,000
EN-4-192	1-3/4	4	14,700	12,800	29,400	25,500	20,800	14,700
EN-1-262	1-3/4	1	5,300	4,200	10,600	9,200	7,500	5,300
EN-2-262	1-3/4	2	10,600	8,400	21,100	18,300	14,900	10,600
EN-3-262	1-3/4	3	14,700	11,700	29,300	25,400	20,700	14,700
EN-4-262	1-3/4	4	19,500	15,600	39,100	33,900	27,600	19,500

ECONYLON® REVERSED EYE RE – Type 7

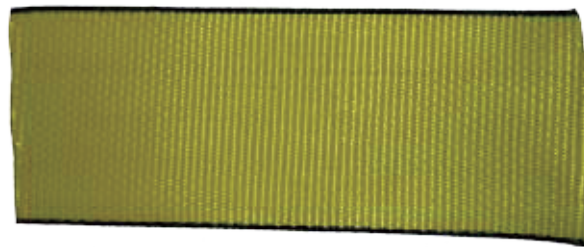
ECONYLON® FLAT EYE FE – Type 7

Stock No.	Width (inches)	Ply	Rated Capacities in Pounds						Width W (inches)	Length L (inches)
			Vertical 	Choker 	Basket Hitch					
						60° 	45° 	30° 		
*-1-181	2	1	2,200	1,800	4,500	3,900	3,200	2,200	1	9
*-2-181	2	2	4,500	3,600	9,000	7,800	6,300	4,500	1	9
*-1-192	3-1/2	1	3,700	2,900	7,400	6,400	5,200	3,700	1-3/4	9
*-2-192	3-1/2	2	7,400	5,900	14,700	12,800	10,400	7,400	1-3/4	9
*-3-192	3-1/2	3	11,000	8,800	22,100	19,100	15,600	11,000	1-3/4	12
*-4-192	3-1/2	4	14,700	11,800	29,400	25,500	20,800	14,700	1-3/4	12
*-1-262	3-1/2	1	5,300	4,200	10,600	9,200	7,500	5,300	1-3/4	9
*-2-262	3-1/2	2	10,600	8,400	21,100	18,300	14,900	10,600	1-3/4	9
*-3-262	3-1/2	3	14,700	11,700	29,300	25,400	20,700	14,700	1-3/4	12
*-4-262	3-1/2	4	19,500	15,600	39,100	33,900	27,600	19,500	1-3/4	12

* Insert RE prefix to indicate Type 6 and FE prefix to indicate Type 7.

Warning: Horizontal sling angles less than 30° shall not be used.

SCUFF-EDGE® Edge Abrasion Resistant Webbing



REDUCE EDGE CUTTING BY OVER 60% WITH OPTIONAL SCUFF-EDGE® WEBBING

The first place you normally see damage to a web sling is along its edges. Once a cut starts, it quickly spreads across the face of the webbing and shortens its useful life. With Scuff-Edge webbing, you can increase the resistance to edge cutting over 60% compared to standard sling webbing, according to independent research.

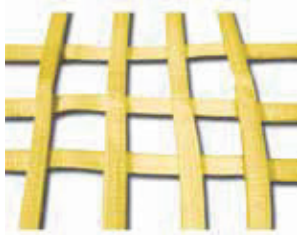
Scuff-Edge webbing has a patented polymer-coated web edge woven into slings that reduces edge abrasion as well as edge cutting to help make the most of your sling's useful life.

Slings with Scuff-Edge webbing are available only in the 900 series and have the same rated capacities as the regular 900 series slings.



NETS

Made to order for:



- Buoys
- Military Equipment
- Vehicles
- Cargo
- Pallets
- Aerospace



LUMBER SORTER SLINGS



A must for all sawmills. These slings are made with 4" polyester webbing that's specially treated for abrasion resistance and a steel triangle sewn into one end. Choose a length that fits your application.

ADJUSTABLE MATRIX SLINGS



Adjustable Load Rated Lifting Slings – Single Leg or Adjustable Bridles.

STONE HANDLING SLINGS



Ideal for handling polished granite, marble blocks and concrete panels. Slings are made with white, untreated nylon webbing that won't rub off on stone. The webbing features a special facing of soft, abrasion resistant fabric woven on one side. Also available with Neoprene

coating for extra abrasion resistance, giving the sling more grip when handling wet stone.

INDUSTRIAL CORDAGE SLINGS

Custom spliced, single or double braided high-modulus performance rope. Perfect for:



- Winch Lines
- Pulling & Stringing Lines
- Utility Lines
- Hand Lines/Block Lines
- Auger Roll up Line
- Adjustable Matrix Slings
- Specialty configurations
- Transformer Slings

DRUM-TOTE SLINGS



Hauling heavy 55-gallon drums has never been easier. Just slip the 1/4" diameter binder assembly down the sides of the drum, latch the binder firmly below the drum's first rib and lift. No toppling or heavy shoving required. Drum-Tote can lift up to 1,000 lbs. and is adjustable to varying 55-gallon drum diameters.



HIGH-CAPACITY LABOR-SAVING SLINGS

You can lift virtually any size boat with our Boat Lifting Slings, engineered to offer labor-saving convenience with all types of overhead lifting devices. Choose from one or two-ply construction in webbing widths from 2" to 12" to give you rated capacities ranging from 4,800 lbs. to 53,000 lbs. per sling. When rigged in basket hitches, pairs of standard slings can lift up to 53 tons per pair. If you need even more capability than that, you may rig additional slings or pairs in your lift.

FITTINGS & ACCESSORIES FOR BOAT SLINGS

Loose pin hardware allows in-field removal for use on other slings or on additional eyes for different sized boats.



Reusable alloy steel triangle is a permanent end fitting that slides easily onto the lifting hook.



Extra sewn eyes allow lifting of different sized boats with one set of slings. Single ply capacity only.



Edge guard wear pads can protect sling's edges and extend its useful life. Can be sewn on any portion of sling.



Sliding chine and keel pads permit positioning padding at any point to prevent rubbing on hull and protects sling from sharp corners.



Lead weights help keep sling from twisting and also serve as anchor for sling in water. Can be sewn into keel pad. Fixed or sliding options.



Disconnect lets you remove sling from beneath the boat without removing sling eye from hook. Protective flap standard.



NOTE: For loose-pin hardware (shackles) on 2-ply slings made with 8", 10" or 12" webbing, please check with your distributor, distribution center or factory.

** Polyester Webbing standard, unless otherwise requested*



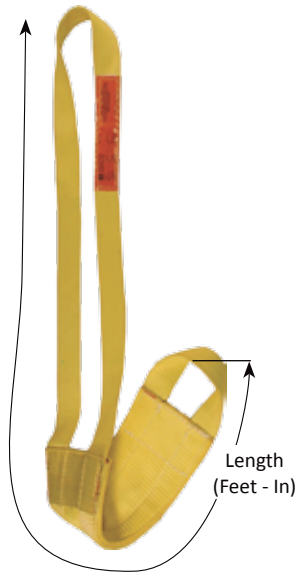
Stock No.	Width (inches)	Ply	Basket Hitch (lbs.)
BLS-1-602	2	1	4,800
BLS-1-902	2	1	6,400
BLS-2-602	2	2	9,600
BLS-2-902	2	2	12,800
BLS-1-603	3	1	7,200
BLS-1-903	3	1	9,600
BLS-2-603	3	2	13,300
BLS-2-903	3	2	17,800
BLS-1-604	4	1	9,600
BLS-1-904	4	1	12,800
BLS-2-604	4	2	17,300
BLS-2-904	4	2	23,000
BLS-1-606	6	1	14,400
BLS-1-906	6	1	19,200
BLS-2-606	6	2	24,500
BLS-2-906	6	2	32,600
BLS-1-908	8	1	25,600
BLS-2-908	8	2	41,000
BLS-1-910	10	1	32,000
BLS-2-910	10	2	48,000
BLS-1-912	12	1	38,400
BLS-2-912	12	2	53,700

ADVANTAGES OF BOAT LIFTING SLINGS

- Non-abrasive material to help protect boat's hull and finish.
- Lightweight for ease in handling and rigging.
- Excellent resistance to rot, mildew, oil and seawater. Neither fiber supports bacterial or fungal growth, or is adversely affected by water immersion.
- Long life: All loose pin hardware is plated for corrosion resistance.
- Flexible design adapts to hull's configuration to cradle load.
- Custom designs available for specific application and unusual rigging configurations.
- Wide choice of accessories and fittings.
- Low stretch: Approximately 3% for polyester, 6% for nylon at rated capacity with the ability to return to original length when relaxed.



HOSE HANDLING SLINGS HH



HH
Hose handling slings

Features:

- Heavy duty 9800 lb. webbing with UV inhibitors
- Orange vinyl tag with clear vinyl cover to protect data
- Specifically designed to handle hoses
- 3-6 % Stretch with polyester
- Proof testing available upon request
- Design factor of 5 to 1

How to order:

Specify model

Hose Dia.	Polyester Model	Sling Width	Sling Length	Choker Rated Capacity (lbs)
4"	HH1-94P	4"	3'6"	2,600
6"	HH1-96P	6"	4'6"	5,100
8"	HH1-98P	8"	6'	5,800
10"	HH1-910P	10"	9'	7,700
12"	HH1-912P	12"	11'	7,700

Note:

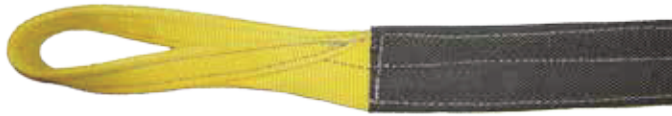
- The hose handling sling is used in the handling of hoses and is designed to prevent crushing, kinking and cutting of hoses by evenly distributing the load over the width of the sling webbing
- Hose handling slings are designed to be used in choker hitch only
- Polyester Webbing standard, unless otherwise requested

INCREASE LIFE OF SLINGS WITH WEAR PROTECTION

WEAR PADS

Wear protection is standard only on Types 6 and 7. If you plan to use any of our other slings in damaging conditions, please specify wear pads when you order.

Our padded slings include a nylon and polyester buffer designed specially for this application. They're also available in synthetic leather that's more economical and stiffer than regular leather or in the same material as the sling body. You may choose another material if you wish — please specify when you order.



REGULAR:

An extra layer of material is sewn at the wear points on either or both sides of the sling body or eyes. Multiple layers are also available upon request.



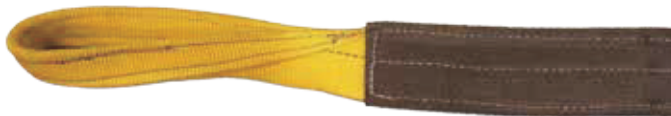
EDGE GUARD:

Pads are sewn along the edges of the sling body to offer extra protection at a critical wear area.



SLEEVE OR TUBE:

Protects both sides of the sling body, and you can easily slide it across the sling. It remains stationary as the sling stretches while the load is being lifted.



WRAP:

Similar to the sleeve, but is sewn onto the sling body to protect the edges as well as the lifting surface.

PROTECTIVE COATINGS

To protect the finished webbing against moisture and dirt penetration, we treat all our sling webbing with a special coating during the final stages of looming to promote cohesion of the yarns in the fabric. This also helps reduce abrasion.

You may also choose a coating of **Neoprene** if you wish. We'll apply it after sling fabrication but it will increase the stiffness of the finished sling. The coating helps improve abrasion resistance and helps decrease absorption of fluids and dirt.

RED-GUARD® WEAR WARNING TELLS YOU WHEN TO REPLACE SLINGS

Standard in all slings except Econylon™, Red-Guard web features inner, load-bearing yarns that carry over 80% of the load. When the protective outer layer of webbing is worn away or damaged, it exposes the red yarns of the inner layer to give you a telltale warning. If visible, remove sling from service immediately.



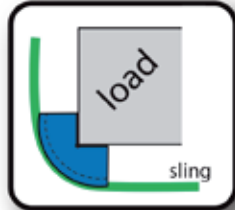
CUT PROTECTION

All slings, especially synthetic slings, can be damaged when lifting a load if they are not properly protected. Edge protection with sling use is critical in preventing a sling failure, and is a requirement in current sling safety standards. Cut and damaged slings are the leading cause of most rigging related accidents.

These nylon protectors attach with strong magnets to the steel corner and keep the sling from contacting the load.



REGULAR



REGULAR

Length	Part #
6"	6-3-90
9"	9-3-90
12"	12-3-90
18"	18-3-90



HEAVY DUTY



HEAVY DUTY

Length	Part #
6"	6-3-270
9"	9-3-270
12"	12-3-270
18"	18-3-270



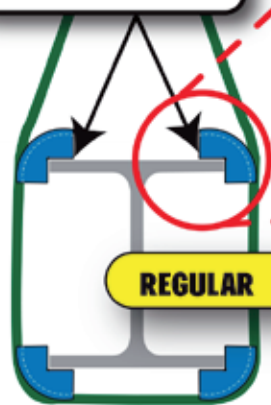
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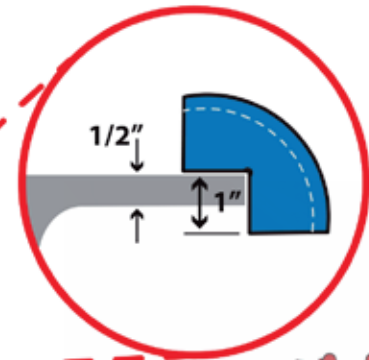
Length	Part #
9"	9-3-360G
12"	12-3-360G
18"	18-3-360G

other sizes can be manufactured on request

NOT Full Contact on both inside surfaces. Only 6,250 lbs per inch of web sling width



REGULAR



FULL Contact on both inside surfaces. 12,500 lbs per inch of web sling width

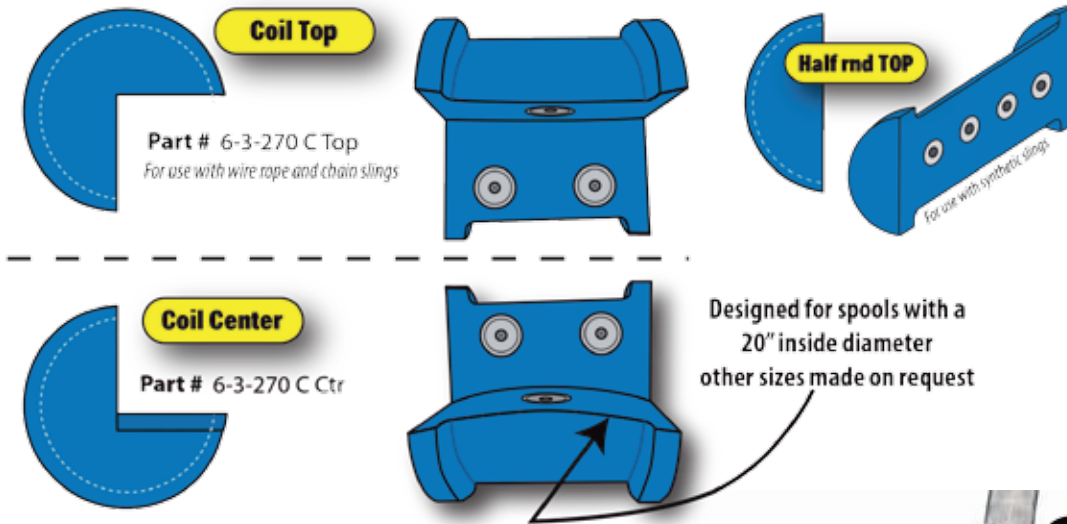


HEAVY DUTY

Regular style corner protectors withstand 12,500 lbs per inch ONLY if they have full contact between the steel and the corner protector. The example above shows an H beam with 0.500" flange thickness and a corner protector with a vertical face of 1.00"

This example demonstrates a 50% reduction because the H beam does not have full contact with the corner protector.





Precautions for using Magnetic Sling Protectors

1. Do not use at temperatures over 220° F (104°C) or below - 40°F (- 40°C)
2. Check with manufacturer if used in a chemical environment. Avoid acid and alkali.
3. Inspect BEFORE use -check for distortion, cracks or other damage that would cause doubt as to the strength of the sling protector.
4. Maximum compressive strength is 12,500 PSI - DO NOT OVERLOAD.
5. The working load limit is 12,500 lbs per inch of synthetic sling width when fully supported on the inside 90° surfaces. DO NOT OVERLOAD.
6. When using wire rope, if material starts to turn white or distort, the sling protector is being overloaded. However, this is not always the case with synthetic slings. DO NOT OVERLOAD.
7. Keep magnets clean and free of debris.
8. Always use good rigging practices and follow federal, state and local regulations.
9. User must be trained in good rigging practices and procedures before using this product.
10. Sling protector may fail if damaged, misused, or overloaded.
11. Store in an area where they will not be subjected to mechanical damage, corrosive action, extreme temperatures, or exposure to ultraviolet light.
12. Avoid shock loading. Stand clear of lifted loads and slings under tension.
13. Do not bridge gaps with the corner protectors.
14. Check slings, sling protectors, and sling position on sling protector as load is being applied and before lifting more than a few inches.
15. Load must be rigged in a manner that will provide load control and stability.
16. Sling must be held in the center of the sling protector.
17. Optional nylon straps are only intended to help hold the sling in place on the sling protector. Additionally straps may be used to attach the protector to the sling when not attached to a load.
18. Slings should be vertical or 90° to horizontal when possible. The farther away from vertical the slings are, the greater the likelihood the slings and sling protectors will slide into the center of the load and the load lost.
19. The further a sling moves away from vertical the more tension is introduced into the sling and sling protector, due to the angle. You must allow for the added tension.
20. Injury or death may occur from improper use.



HOW TO INSPECT WEB SLINGS.

All of our synthetic web products are designed for long life under punishing conditions, but they will eventually wear out after extended use. The key is knowing when to replace them, and that's why it's very important to inspect your slings on a regular basis.

We've developed an inspection program based on the procedure outlined in ASME B30.9 Slings Standard that will make the most of your investment. It's based on four sound beliefs:

- The importance of following regular and uniform inspections.
- A respect for the capabilities and limitations of synthetic web slings.
- The need to keep complete, permanent records.
- Perhaps most importantly, a lot of common sense.

HOW OFTEN TO INSPECT SLINGS

The frequency of inspection depends on three important factors:

1. *Sling usage – the more you use a sling, the more you need to inspect it.*
2. *The working environment – the harsher the conditions, the more often you need to inspect.*
3. *Sling service life – based on your experience in using slings.*

It's a good idea for the person handling the slings to visually inspect all slings before each lift. Additional inspections should be performed at least annually by a qualified designated person and permanent records kept.

OSHA specifies, "Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by the employer. Additional inspections shall be performed during sling use, where service conditions warrant." In other words, you should visually inspect your sling before each lift.

WHEN TO REPLACE SLINGS

Remove all slings, including Flexi-Grip® round slings, from service if you see damage such as the following, and return to service only when approved by a designated person. These are removal criteria established by ASME B30.9 Slings Standard:

1. *Acid or caustic burns.*
2. *Melting or charring of any part of the sling.*
3. *Holes, tears, cuts or snags.*
4. *Broken or worn stitching in load-bearing splices.*
5. *Excessive abrasive wear.*
6. *Knots in any part of the sling.*
7. *Excessive pitting or corrosion, or cracked, distorted or broken fittings.*
8. *Other visible damage that causes doubt as to the strength of the sling.*
9. *Missing or illegible sling identification.*

In addition, we recommend three other important reasons to remove slings from service:

1. *Anytime you see our Red-Guard® warning yarns.*
2. *Distortion of the sling.*
3. *Anytime a sling is loaded beyond its rated capacity for whatever reason.*

While most of these standards are very specific regarding reasons for removal, others require your good judgment. The critical areas to watch are wear to the sling body, the selvage edge of webbing and the condition of the sling eyes.

OUR SYNTHETIC WEB PRODUCTS MEASURE UP.

Our synthetic web products don't merely meet our own strict standards for workmanship and performance. They also meet or exceed these military and federal specifications:

1. MIL-W-4088 – military specification for textile webbing — woven nylon.
2. MIL-W-23223B – military specification for slotted nylon webbing.
3. Fed. Spec. VT-285F – federal specification for polyester thread.
4. Fed. Spec. VT-295E – federal specification for nylon thread.

In addition, all work conforms to standards established by the following national safety institutions and their respective regulations:

- ASME B30.9 Slings - American Society of Mechanical Engineers
- OSHA 1910.184 Standard for Slings
- OSHA 1926.251 Rigging Equipment for Material Handling
- WSTDA-RS-1 Roundslings Standard
- WSTDA-WS-1 Web Slings Standard
- WSTDA-T-1 Tie-Downs Standard



IDENTIFYING WEAR AND ABUSE.

These are some of the most common types of web sling damage caused by abuse and misuse. When you see any of these problems during your regular inspection, stop. Replace the sling immediately because the damage is done. Never attempt to mend the sling yourself and, more so, never attempt to lift with these slings.

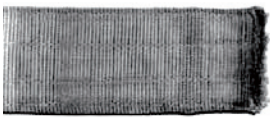
Whether a sling is damaged from improper use or normal wear, the same rule applies in all cases: Always cut the sling eyes and discard the sling right away when you see damage. Only with properly working slings can you take a load off your mind.

TENSILE BREAK



The distinguishing sign of a tensile break is a frayed appearance close to the point of failure or damage. This usually happens when a sling is loaded beyond its existing strength. The photo shows an example of a sling pulled to destruction on a testing machine. You can avoid tensile breaks by never overloading your sling.

CUT



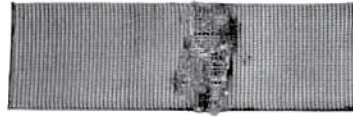
You can easily see a cut in your sling when you see a clean break in the webbing structure or fibers. This can result when a sling contacts a load edge, protrusions and corners, abrasive surfaces or unprotected edge of a load. This can happen anywhere on the sling body or eyes. Many slings feature Red-Guard warning yarns to alert you of serious cuts. One way you can avoid cuts from contacting sharp corners is to use wear pads on the sling to protect the fabric.

CUT AND TENSILE DAMAGE



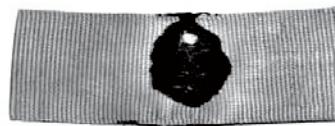
A good example is the photo shown here. It shows what can happen when you use a sling that's already been cut by an object along one edge of the sling body. The cut sling should be removed from service, continued use will ultimately lead to sling failure. The solution, obviously, is to never use a sling after it's been cut.

ABRASION DAMAGE



Anytime you see frayed fibers on the surface exposing the “picks,” or cross fibers, of the webbing that hold the load-bearing (lengthwise) fibers in place, it's abrasion damage. The most common abrasion damage occurs either when the sling slips while in contact with a load during a lift or when the sling is pulled from under a load. When you see the Red-Guard warning yarns exposed, it's your signal that serious damage — and loss of lifting capacity — has occurred. We recommend that slings with any damage to load-bearing fibers be discarded. Wear pads are one way to avoid this damage.

ACID DAMAGE




It's true nylon and polyester webbing are stable when exposed to many common chemicals, but they should never be exposed to any strong acids or corrosive liquids whenever possible. The same is true for metal fittings on slings.

Example 1 (top photo). This is what happens when sulfuric acid, like car battery acid, is heated to the boiling point and dropped on nylon webbing. The charring on the surface fibers deteriorates the sling and will continue to get worse, severely affecting the webbing strength.

Example 2 (bottom photo). This is what happens when nylon webbing is immersed in sulfuric acid at room temperature for three weeks, resulting in major damage. Note the fibers are softened and swollen, and the entire fabric is grossly distorted, virtually destroying the webbing. You can help prevent this damage by never storing slings in areas where they may be exposed to acid or acid fumes, which are as destructive as liquid.











When inspecting a web or round sling, it shall be taken out of service immediately and returned for repair or replacement when any of the defects on the right are present.

⚠ WEB SLING WARNINGS

<p>Missing or illegible sling identification (tag)</p> 	<p>Acid or caustic burn</p> 	<p>Melting or charring of any part of the sling</p> 
<p>Holes, tears, cuts, abrasive wear, or snags that expose core yarns</p> 	<p>Broken or worn stitching in load bearing splices</p> 	<p>Excessive abrasive wear</p> 
<p>Knots in any part of the sling</p> 	<p>Discoloration and brittle or stiff areas on any part of the sling, which may mean chemical or ultraviolet/sunlight damage</p> 	<p>Damaged rigging hardware per ASME B30.26</p> 
<p>Fittings that are pitted, corroded, cracked, bent, twisted, gouged, or broken</p> 	<p>Damaged hooks per ASME B30.10</p> 	

and... Any condition that causes doubt about the continued use of the sling

⚠️ ROUND SLING WARNINGS

<p>Missing or illegible sling identification (tag)</p> 	<p>Acid or caustic burns</p>  <p>Weld splatter that exposes core yarns</p> 	<p>Evidence of heat damage</p> 
<p>Holes, tears, cuts, abrasive wear, or snags that expose core yarns</p> 	<p>Broken or damaged core yarns</p> 	<p>Knots in any part of the sling</p> 
<p>Fittings that are pitted, corroded, cracked, bent, twisted, gouged, or broken</p> 	<p>Damaged hooks per ASME B30.10</p> 	<p>Damaged rigging hardware per ASME B30.26</p> 

and... Any condition that causes doubt about the continued use of the sling

TRUCK TIE-DOWN ASSEMBLIES

SECURE CARGO ON TRUCKS AND TRAILERS

With a soft, pliable and non-abrasive polyester webbing, our Truck Tie-down Assemblies are ideal straps for securing cargo on flatbed trucks and trailers. They're lighter and easier to handle than chain load binders, and stronger and more durable than elastic tension bands. They also adjust easily in length to fit the size of load you're hauling.

The polyester webbing offers many advantages:

- Fabricated to meet your specific order.
- Fits standard 3" and 4" winches.
- Low-stretch design (approximately 3% at Working Load Limit) for improved handling.
- High-strength design isn't affected by moisture.
- All cut ends are heat-sealed to prevent fraying.
- Corner protectors and sliding sleeves also available.

OTHER OPTIONS

1. Sliding winches designed to slide along the winch track are available. Please specify manufacturer of winch track when ordering.
2. Other winches and winch tracks are also available. For more information, please call your distributor, distribution center or the factory.
3. You may also order sliding sleeve-type wear pads and metal corner protectors (see page 7 for details).



Flat Hook
 F1803: 4,000 lbs. WLL; 12,000 lbs. nominal strength*
 F1804: 5,000 lbs. WLL; 15,000 lbs. nominal strength*

D-Ring
 D1803: 4,000 lbs. WLL; 12,000 lbs. nominal strength*
 D1804: 5,000 lbs. WLL; 15,000 lbs. nominal strength*

Sewn Eye
 E1803: 4,000 lbs. WLL; 12,000 lbs. nominal strength*
 E1804: 5,000 lbs. WLL; 15,000 lbs. nominal strength*

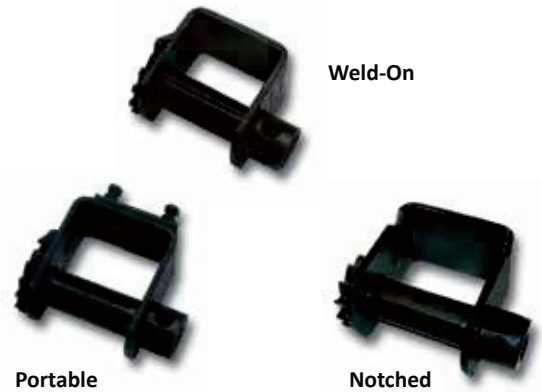
Chain Anchor Assembly**
 C1803: 4,000 lbs. WLL; 12,000 lbs. nominal strength*
 C1804: 5,000 lbs. WLL; 15,000 lbs. nominal strength*

CHOICE OF FOUR END TREATMENTS, EACH WITH TWO WORKING LOAD LIMITS

**Type G Grab Hook end fitting is the same as C without the chain section. Other end fittings are available on request.
 * **CAUTION:** Do not subject these assemblies to loads greater than the Working Load Limits because permanent loss of strength may result. These cargo straps have a design factor of 3 calculated into the Working Load Limit.

WINCHES

Part No.	Description
W-10	Low Profile Weld-On Winch, holds 10' of 4"
W-20	Standard Weld-On Winch, holds 20' of 4"
W-30	Storable Weld-On Winch, holds 30' of 4"
W-10P2	Low Profile Portable Winch, 2 set screws, 10' of 4"
W-20P	Standard Portable Winch, 2 set screws, 20' of 4"
W-30P	Storable Portable Winch, 2 set screws, 30' of 4"
W-20N	Standard Notched Winch, holds 20' of 4"
W-30N	Storable Notched Winch, holds 30' of 4"



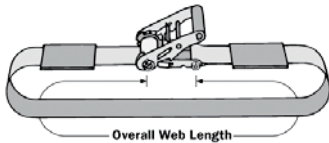
RATCHET SNUGGER® BINDERS

FAST, ONE-HANDED SNUGDOWNS

Ideal for use on pallets, in trucks or vans, baggage compartments, shipping containers or aircraft. Just snug down your load with a Ratchet Snugger control binder, adjust the tension and lock in place by pressing down on the ratchet handle. Your load is secure. When unloading, you can release the Ratchet Snugger binder just as easily. Choose from 1,670-lb. to 3,300-lb. Working Load Limits (WLL) in 2" webbing. Also available in 1", 3" and 4" sizes.



Ratchet Snugger Straight Assemblies (Type RSA). One end of webbing is sewn to the ratchet head, leaving the other end free to pass around the load or through narrow openings to insert into the ratchet spool. Fabricated to any practical web length plus 6" extra length for end hold. Optional sliding sleeve-type wear pads, ratchet pads and corner protectors help protect the webbing on both types



of binders.

Ratchet Snugger two-piece devices (Type RS__). All feature metal fittings or eyes sewn at the ends of two pieces of webbing with the shorter piece sewn to the ratchet head. The variable length piece is heat-sealed to prevent fraying for easy insertion into the ratchet spool. Fabricated to any practical web length (between bearing points of eyes or hooks) plus 6" extra length for end hold. Ratchet buckle and metal end fittings are plated to resist corrosion. Other fittings are also available.

HARDWARE

Flat Hooks

Type RSFF1802

Rated 3,300 lbs. WLL; 10,000 lbs. nominal strength

Order code letter F (1 3/4" or 2" only).

Snap Hooks

Type RSSS1802

2" Snap Hook rated 3,300 lbs. WLL;

10,000 lbs. nominal strength

Order code letter S.

Ratchets

Standard Handle

Rated 3,300 lbs. WLL; 10,000 lbs. nominal strength

Long/Wide Handle

Rated 3,300 lbs.

WLL; 10,000 lbs. nominal strength

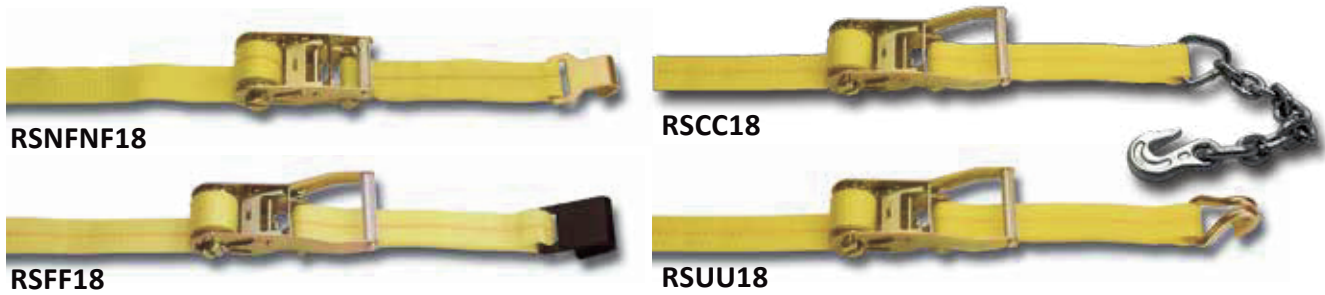
D-Rings

Type RSDD1802

Rated 3,300 lbs. WLL; 10,000 lbs. nominal strength

Order code letter D.

RATCHET ASSEMBLIES



Width (in.)	Length (ft.)	Part Number	End Fitting	Rated Capacity (lbs.)
2"	27'	RSNFNF1802-27	Narrow Flat Hooks	1,666
2"	27'	RSUU1802-27	Wire Hooks	3,333
2"	30'	RSUU1802-30	Wire Hooks	3,333
2"	27'	RSFF1802-27	Flat Hooks	3,333
2"	30'	RSFF1802-30	Flat Hooks	3,333
2"	27'	RSCC1802-27	Chain Extension	3,333
2"	30'	RSCC1802-30	Chain Extension	3,333
3"	27'	RSFF1803-27	Flat Hooks	4,000
3"	30'	RSFF1803-30	Flat Hooks	4,000
4"	27'	RSFF1804-27	Flat Hooks	5,000
4"	30'	RSFF1804-30	Flat Hooks	5,000

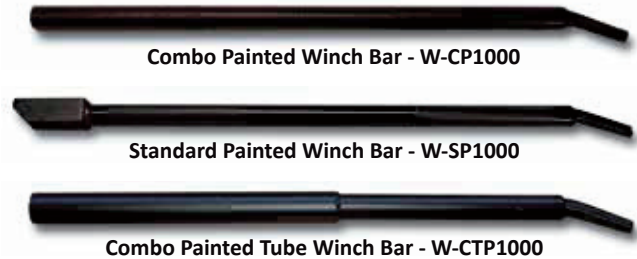
WINCH STRAPS








Width (in.)	Length (ft.)	Part Number	End Fitting	Rated Capacity (lbs.)
2"	27'	F1802-27	Flat Hook	3,333
2"	27'	U1802-27	Wire Hook	3,333
2"	27'	C1802-27	Chain Extension	3,333
3"	27'	F1803-27	Flat Hook	4,000
3"	30'	F1803-30	Flat Hook	4,000
3"	27'	C1803-27	Chain Extension	4,000
3"	30'	C1803-30	Chain Extension	4,000
4"	27'	F1804-27	Flat Hook	5,000
4"	30'	F1804-30	Flat Hook	5,000
4"	50'	F1804-50	Flat Hook	5,000
4"	27'	C1804-27	Chain Extension	5,000
4"	30'	C1804-30	Chain Extension	5,000

*Other options available are: flat hook with keeper and forged D-ring

WINCH BARS



TIE DOWN ACCESSORIES

	<p>CargoArmor Strap Guard</p> <ul style="list-style-type: none"> Accommodates straps up to 4" wide <ul style="list-style-type: none"> Made from Tough HDPE Protects Freight from Strap Damage Lightweight, UV/Weather Resistant Extends Life of Straps and Tarps
	<p>CargoArmor Corner Guard</p> <ul style="list-style-type: none"> Made from Tough HDPE Protects Tarp from Tearing on Corners Nestable for Easy Stacking/Storage Lightweight, UV/Weather Resistant Extends Life of Straps and Tarps
	<p>Tarp Straps</p> <ul style="list-style-type: none"> Heavy duty American made tarp and transport bungee cords <ul style="list-style-type: none"> Available in: 10", 15", 21", 31", and 41"
	<p>Roll-Off Truck Straps & Hooks</p> <p>Secures the end of the Roll Off Container to the frame of the truck.</p>
	<p>ESCO Roll-Off Hooks</p> <p>Fits ropes up to 7/8" and ferrules up to 2-1/8" OD (light)</p>



J-Tow Hooks



Tow Bridle Assemblies

CUSTOM PRINTED TIEDOWNS

SECURE CARGO WITH A PERSONALIZED TOUCH

With custom imprinted tiedowns, you can keep your image and services always in front of your customer, even after the sale.

If you are interested in getting a step up on your competition, give us a call and let us create an impression that will last for years.

AVAILABLE COLORS:



Nylon Soft Tie



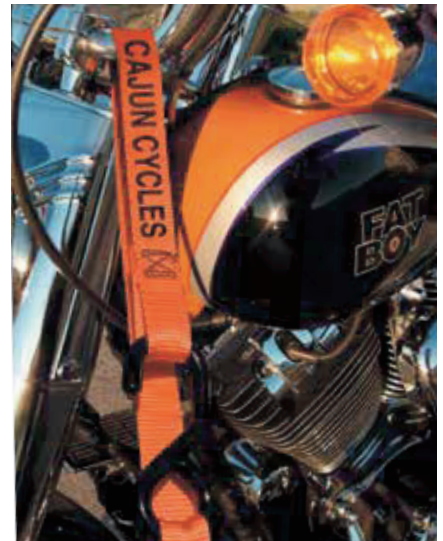
7 Ft. Nylon Tiedown with Built-in Soft Tie



7 Ft. Nylon Tiedown with Heavy Duty 1" Ratchet













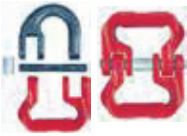

7 ft. Nylon Tiedown



HARDWARE SELECTIONS



WITH CROSBY'S NEW SLING SAVER LINE OF HARDWARE, YOU WILL GET THE FULL RATED STRENGTH OF THE SLING AND EXTEND ITS LIFE.

Recommended Application Chart		
Application	Use	Comments
Web Slings, connect to Pad Eye, Eye Bolt, or Lifting Lug.	S-281 Sling Saver Web Sling Shackle 	<p style="text-align: center;">Always ensure rated Working Load Limits are greater than the load placed on the fitting.</p>
Web Slings or Roundslings, connecting to Pad Eye, Eye Bolt, or Lifting Lug.	S-253 or S-252 Sling Saver Shackle 	
Connect two S-252 or S-253 Sling Saver shackles together.	S-256 Link Plate 	
To keep the load centered on the Pin, thus keeping the sling positioned correctly in the shackle bow.	S-255 Spool 	
Web Slings or Roundslings connecting to Master Links, Rings, or Crosby 320N Eye Hooks.	S-280 Sling Saver Web Connector with spool 	
Web Slings or Roundslings connecting to Grade 8 Chain.	S-282 Sling Saver Chain Connector with spool 	
High Strength, High Capacity Web or Roundslings.	WS-320A Web Sling Hook 	
Choking with Web Slings or Roundslings.	S-287 Sliding Choker Hook 	
Master Links or Master Link Assembly to be sewn into eye of Web Sling or attached utilizing web connector.	Welded Master Link A-344 and Master Link Assembly A-347 	
Web Sling being used to lift die blocks, or other equipment where standard Hoist Rings are used.	HR-125W 	
Connecting High Performance slings to master links or eye hooks and to other High Performance slings.	S-237 or S-238 High Performance Connectors 	
Wide Body Shackles greatly improve wearability of wire rope slings.	S/G-2160 "Wide Body" bolt type Shackles S/G-2169 "Wide Body" Screw Pin Shackles 	
<p>Crosby Sling Saver hardware meets the requirements for minimum stock diameter or thickness and effective contact width shown in the recommended standard specification for synthetic Polyester Round Slings by the Web Sling and Tie Down Association. WSTDA-RS1 (revised 2010).</p>		



S-281 WEB SLING SHACKLE



Sling Saver® Load Rated **"QT"**
OVERHEATED & TEMPERED

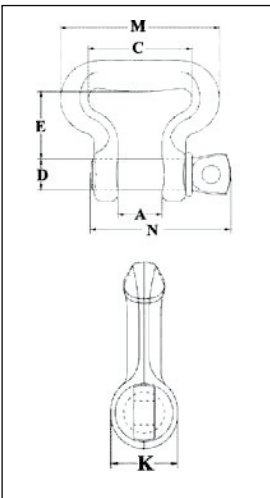
S-281



Web Sling Shackle is designed to connect Synthetic Web Slings and Synthetic Round Slings to eyebolts, pad eyes, and lifting lugs.

- All Alloy Construction.
- Design Factor of 5 to 1.
- Each shackle has a Product Identification Code (PIC) for material traceability along with a Working Load Limit and the name Crosby forged into it.
- Incorporates same ear spread and pin dimensions as conventional Crosby Shackles. Allows easy connection to pad eyes, eye bolts, and lifting lugs.
- Increased radius of bow gives wider sling bearing surface resulting in an increased area for load distribution, thus:
 - Increasing Synthetic Sling efficiency as compared to standard anchor and chain shackle bows and conventional eye hooks. This allows 100% of the slings rated Working Load Limit to be achieved.
 - Allows better load distribution on internal fibers.
- 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.

S-281 Web Sling Shackle



Round Sling Size (No.)	Web Slings*			Working Load Limit (Tons)†	S-281 Stock No.	Weight Each (lbs.)	Dimensions (in.)						
	Webbing Width (in.)	Eye Width (in.)	Ply				A	C	D	E	K	M	N
1 & 2	2	2	2	3-1/4	1021048	1.2	1.06	2.50	.75	1.62	1.22	3.84	3.34
3	3	1.5	2	4-1/2	1021057	1.5	1.25	2.00	.88	1.50	1.41	3.38	3.97
4	4	2	2	6-1/4	1021066	2.5	1.44	2.50	1.00	2.00	1.62	4.22	4.50
5 & 6	6	3	2	8-1/2	1021075	4.3	1.69	3.62	1.13	2.75	1.84	5.64	5.13

* NOTE: Designed for use with Type III, (Eye & Eye), Class 7, 2 Ply web slings. For 3" and larger webbing width, tapered eye is required.
 † Maximum Proof Load is 2-1/2 times the Working Load Limit. Minimum Ultimate strength is 5 times the Working Load Limit.

Crosby Sling Saver hardware meets the requirements for minimum stock diameter or thickness, and effective contact width shown in the Recommended Standards Specification for Synthetic Polyester Round Slings by the Web Sling & Tie Down Association. WSTDA-RS1 (revised 2010)

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S-252 BOLT TYPE SLING SHACKLE
S-253 SCREW PIN SLING SHACKLE



Sling Saver® Fatigue Rated® Load Rated® "QT" QUENCHED & TEMPERED

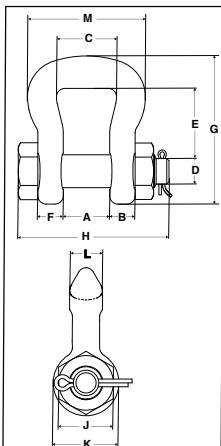
S-252 BOLT TYPE SLING SHACKLE



S-253 SCREW PIN SLING SHACKLE

- Shackles available in size 3-1/4 to 50 metric tons.
- All Alloy construction.
- Design factor of 5 to 1.
- Each shackle has a Product Identification Code (PIC) for material traceability along with a Working Load Limit and the name Crosby forged into it.
- Increased radius of bow gives wider sling bearing surface resulting in an increased area for load distribution, thus:
 - Increasing Synthetic Sling efficiency as compared to standard anchor and chain shackle bows and conventional hooks. This allows 100% of the slings rated Working Load Limit to be achieved.
 - Allows better load distribution on internal fibers.
- 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.
- Shackles available in both a Screw Pin and Bolt, Nut and cotter pin configuration.
- Bolt (Pin) has a larger diameter that provides better load distribution.
- Look for the Red Pin®... the mark of Genuine Crosby quality.

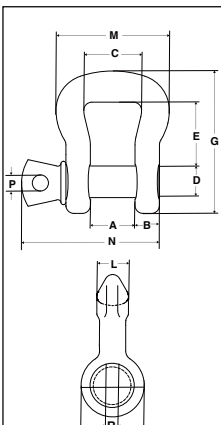
S-252 Bolt Type Sling Shackle



Web Sling Eye Width (in.)	Round Sling Size (No.)	Working Load Limit (t)*	S-252 Stock No.	Weight Each (lbs.)	Dimensions (in.)											
					A	B	C	D	E	F	G	H	J	K	L	M
1	1 & 2	3-1/4	1020485	1.4	1.06	.58	1.38	.75	1.50	.44	3.38	3.68	1.12	1.50	.75	2.69
1.5	3 & 4	6-1/2	1020496	2.4	1.25	.75	1.75	.88	1.88	.50	4.15	4.25	1.31	1.81	1.00	3.38
2	5 & 6	8-3/4	1020507	4.1	1.38	.88	2.25	1.00	2.81	.56	5.50	4.72	1.50	2.09	1.12	4.19
3	7 & 8	12-1/2	1020518	8.0	1.62	1.12	3.25	1.25	3.06	.75	6.34	5.88	1.88	2.62	1.38	5.62
4	9 & 10	20-1/2	1020529	16.9	2.12	1.38	4.50	1.50	5.25	.88	9.45	7.19	2.25	3.12	1.75	7.50
5	11 & 12	35	1020540	35.0	2.50	1.75	5.50	2.00	6.34	1.12	11.50	9.31	3.00	4.19	2.25	9.19
6	13	50	1020551	57.5	3.00	2.12	6.50	2.25	7.70	1.25	13.75	10.38	3.38	4.75	2.75	11.00

* Maximum Proof Load is 2.5 times the Working Load Limit. Minimum Ultimate strength is 5 times the Working Load Limit.

S-253 Screw Pin Sling Shackle



Web Sling Eye Width (in.)	Round Sling Size (No.)	Working Load Limit (t)*	S-253 Stock No.	Weight Each (lbs.)	Dimensions (in.)											
					A	B	C	D	E	G	K	L	M	N	P	R
1	1 & 2	3-1/4	1020575	1.4	.88	.62	1.38	.75	1.50	3.38	1.50	.75	2.69	3.22	.44	1.00
1.5	3 & 4	6-1/2	1020584	2.2	1.25	.75	1.75	.88	1.88	4.15	1.81	1.00	3.38	4.03	.50	1.19
2	5 & 6	8-3/4	1020593	3.8	1.38	.88	2.25	1.00	2.81	5.50	2.09	1.12	4.19	4.50	.50	1.44
3	7 & 8	12-1/2	1020602	7.3	1.62	1.12	3.25	1.25	3.06	6.34	2.62	1.38	5.62	5.59	.62	1.81
4	9 & 10	20-1/2	1020611	15.2	2.12	1.38	4.50	1.50	5.25	9.45	3.12	1.75	7.50	6.88	.75	2.13
5	11 & 12	35	1020620	30.8	2.50	1.75	5.50	2.00	6.34	11.50	4.19	2.25	9.19	8.66	1.00	2.88
6	13	50	1020629	52.0	3.00	2.12	6.50	2.25	7.70	13.75	4.75	2.75	11.00	10.22	1.22	3.19

* Maximum Proof Load is 2.5 times the Working Load Limit. Minimum Ultimate strength is 5 times the Working Load Limit.

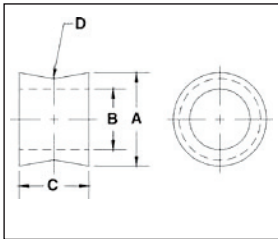
Crosby Sling Saver hardware meets the requirements for minimum stock diameter or thickness, and effective contact width shown in the Recommended Standards Specification for Synthetic Polyester Round Slings by the Web Sling & Tie Down Association. WSTDA-RS1 (revised 2010)



S-255 SPOOL
S-256 LINK PLATE



S-255 SPOOL



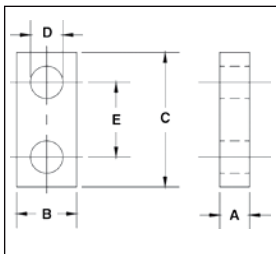
S-255 Spool

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

Working Load Limit (t)*	S-255 Stock No.	Weight Each (lbs.)	Dimensions (in.)			
			A	B	C	D
3-1/4	1020903	.33	1.25	.81	.75	.19
6-1/2	1020912	.57	1.50	.94	1.00	.25
8-3/4	1020921	.89	1.75	1.05	1.19	.31
12-1/2	1020930	1.45	2.00	1.31	1.50	.38
20-1/2	1020939	2.79	2.50	1.63	1.88	.44
35	1020948	2.40	3.25	2.13	2.25	.50
50	1020957	4.06	3.75	2.38	2.75	.62

* Maximum Proof Load is 2.5 times the Working Load Limit. Minimum Ultimate strength is 5 times the Working Load Limit.

S-256 LINK PLATE



S-256 Link Plate

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

Working Load Limit (t)*	S-256 Stock No.	Weight Each (lbs.)	Dimensions (in.)				
			A	B	C	D	E
3-1/4	1020785	.83	.75	1.50	3.38	.81	1.88
6-1/2	1020796	1.62	1.00	1.75	4.12	.94	2.25
8-3/4	1020807	2.71	1.25	2.00	4.75	1.06	2.62
12-1/2	1020818	5.18	1.50	2.50	6.00	1.31	3.37
20-1/2	1020829	8.19	1.75	3.00	7.00	1.62	3.75
35	1020840	17.19	2.00	4.00	9.25	2.12	5.00
50	1020851	37.40	2.88	5.00	10.50	2.38	5.75

* Maximum Proof Load is 2.5 times the Working Load Limit. Minimum Ultimate strength is 5 times the Working Load Limit.

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S-280 WEB CONNECTOR

Sling Saver® Load Rated "QT" QUENCHED & TEMPERED

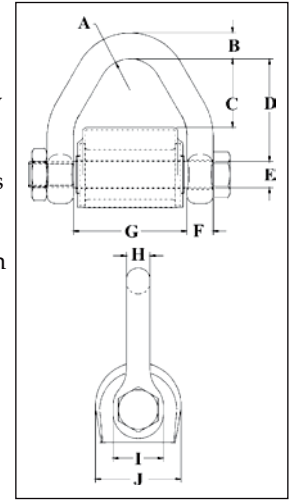


S-280



- All Alloy construction.
- Durable vinyl cover that:
 - Protects sling at eye
 - Keeps sling positioned correctly on spool.
- Design Factor of 5 to 1.
- Connects Synthetic Web and Synthetic Round Slings to conventional Crosby hardware including:
 - 320N Eye Hook
 - Additional Crosby Grade 8 Fittings
 - Master Links
 - Rings
 - Shackles
- Makes a field assembled bridle quick and easy.
- No cotter pin to snag sling material.

- Increased radius of spool gives wider sling bearing surface resulting in an increased area for load distribution, thus:
 - Increasing Synthetic Sling efficiency as compared to standard anchor and chain shackle bows and conventional eye hooks. This allows 100% of the slings rated Working Load Limit to be achieved.
 - Allowing better load distribution on internal fibers.
- Replacement kit for spool and web cover available.
- Designed for use with Type III (Eye & Eye), Class 7, 2 ply webbing & Synthetic Round Slings. Also accommodates single ply and endless slings.



S-280 Web Connector

Round Sling Size (No.)	Web Slings*			Working Load Limit (Tons)†	S-280 Stock No.	Weight Each (lbs.)	Dimensions (in.)									
	Webbing Width (in.)	Eye Width (in.)	Ply				A	B	C	D	E	F	G	H	I	J
1 & 2	2	2	2	3-1/4	1021681	1.5	.75	.62	1.63	2.44	.63	.62	2.69	.56	1.19	2.02
3	3	1.5	2	4-1/2	1021690	1.9	.75	.69	1.10	2.01	.75	.69	2.19	.60	1.38	2.34
4	4	2	2	6-1/4	1021700	2.9	.75	.81	1.66	2.56	.88	.75	2.69	.69	1.62	2.46
5 & 6	6	3	2	8-1/2	1021709	5.1	1.00	.94	2.47	3.50	1.00	.88	3.69	.88	1.88	2.84

* Designed for use with Type III, (Eye & Eye), Class 7, 2 Ply web slings. For 3" and larger webbing width, tapered eye is required.
 † Maximum Proof Load is 2 times the Working Load Limit. Minimum Ultimate strength is 5 times the Working Load Limit.

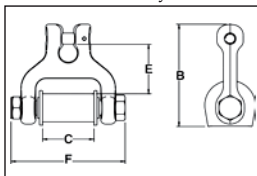
Crosby Sling Saver hardware meets the requirements for minimum stock diameter or thickness, and effective contact width shown in the Recommended Standards Specification for Synthetic Polyester Round Slings by the Web Sling & Tie Down Association. WSTDA-RS1 (revised 2010)

S-282 WEB/CHAIN CONNECTOR

S-282 WEB / CHAIN CONNECTOR



Designed around the same concept as our S-280 Web Connector, the S-282 Chain Connector makes the connection from your web sling to existing chain quick and easy.



- Available in three sizes:
 - 3-1/4 ton Working Load Limit - 2" Webbing to 3/8" (10 mm) chain.
 - 4-1/2 ton Working Load Limit - 1-1/2" (3" Tapered Webbing) to 1/2" (13 mm) chain.
 - 6-1/4 ton Working Load Limit - 2" (4" Tapered Webbing) to 5/8" (16 mm) chain.
- Alloy Steel (Quenched and Tempered).
- Each Connector has a Product Identification Code (PIC) for material traceability along with a Working Load Limit and the name Crosby forged into it.
- Uses same spool and cover as S-280 Web Connector.
 - Replacement Kit for Spool and Web Cover available.

S-282 Web / Chain Connector

Round Sling Size (No.)	Web Slings*			Chain Size	Working Load Limit (Tons) †	S-282 Stock No.	Weight Each (lbs.)	Dimensions (in.)			
	Webbing Width (in.)	Eye Width (in.)	Ply					B	C	E	F
1 & 2	2	2	2	3/8	3-1/4	1021084	1.9	4.33	2.13	2.11	4.77
3	3	1.5	2	1/2	4-1/2	1021093	2.8	5.04	1.63	2.44	4.54
4	4	2	2	5/8	6-1/4	1021100	4.3	5.69	2.13	2.54	5.31

* NOTE: Designed for use with Type III, (Eye & Eye), Class 7, 2 Ply web slings.

† Maximum Proof Load is 2 times the Working Load Limit. Minimum Ultimate Strength is 4 times the Working Load Limit.



S-287 SLIDING CHOKER HOOK

Sling Saver®

Load Rated®

"QT"
QUENCHED & TEMPERED

QUIC-CHECK®

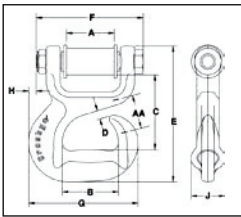
Crosby®

**S-287
CHOKER
HOOK**



- Available in 2 sizes: 3-1/4 tons (2" webbing) and 4-1/2 tons (3" webbing)
- Forged Alloy steel – Quenched & Tempered
- Design factor of 5 to 1.
- Each Connector has a Product Identification Code (PIC) for material traceability along with a Working Load Limit and the name Crosby forged into it.
- Special design of hook protects the synthetic sling when dropped or dragged.
- Designed to reduce friction, abrasion, and fraying in choker area.
- Uses same spool and cover as S-280 Web Connector.
 - Replacement Kit for Spool and Web Cover available.

S-287 Sliding Choker Hook



Round Sling Size (No.)	Web Slings*			Working Load Limit (Tons) †	S-287 Stock No.	Weight Each (lbs.)	Dimensions (in.)									
	Webbing Width (in.)	Eye Width (in.)	Ply				A	B	C	D	E	F	G	H	J	AA
1 & 2	2	2	2	3-1/4	1021909	3.7	2.13	2.50	3.32	.38	6.03	4.77	4.88	.34	1.50	1.50
3	3	1.5	2	4-1/2	1021918	6.1	1.63	3.50	3.67	.38	7.06	4.53	6.51	1.36	1.88	-

* NOTE: Designed for use with Type III, (Eye & Eye), Class 7, 2 Ply web slings.

† Maximum Proof Load is 2 times the Working Load Limit. Average straightening load (ultimate load) is 5 times the Working Load Limit.

Crosby Sling Saver hardware meets the requirements for minimum stock diameter or thickness, and effective contact width shown in the Recommended Standards Specification for Synthetic Polyester Round Slings by the Web Sling & Tie Down Association. WSTDA-RS1 (revised 2010)

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Sling Saver® Fatigue Rated®
Load Rated® "QT" QUIC-CHECK®

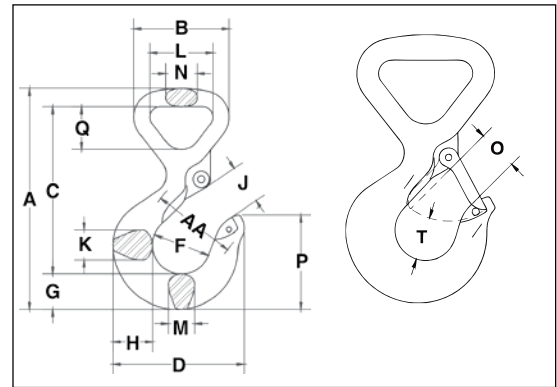
Crosby®

APPLICATION & WARNING INFORMATION
See the Crosby General Catalog

WS-320A SYNTHETIC SLING HOOK



- Hook capacities available: 1-1/2, 3, and 5 metric tons.
- All Alloy construction.
- Design factor of 5 to 1.
- Each hook has a Product Identification Code (PIC) for material traceability along with a working load limit and the name Crosby forged into it.
- Originally designed for 2-Ply Web slings, the Crosby Web Sling hook 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 beam surface which:
 - Eliminates bunching effects.
 - Reduces sling tendency to slide.
 - Allows a better load distribution on internal fibers.
- All hooks feature Crosby's patented QUIC-CHECK® indicators.
- Hook Web Sling Eye width available: 1", 2", and 3".
- Fatigue rated to 20,000 cycles at 1-1/2 times the Working Load Limit.



WS-320A Synthetic Sling Hook

Web Sling Eye Width (in.)	Round Sling Size (No.)	Working Load Limit (t)	WS-320A Stock No.	WSL-320A with Latch	Weight Each (lbs.)	Hook I.D. Code	S-4320 Rep. Latch
1"	1	1-1/2	1022701	1022706	1.10	FA	1096374
2"	2	3	1022712	1022717	2.86	HA	1096468
3"	3	5	1022723	1022728	6.60	IA	1096515

Hook ID Code	Working Load Limit (t)*	Dimensions (in.)																
		A	B	C	D	F	G	H	J	K	L	M	N	O	P	Q	T	AA
FA	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
HA	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
IA	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

* Maximum Proof Load is 2-1/2 times the Working Load Limit. Average straightening load (ultimate load) is 5 times the Working Load Limit.

Crosby Sling Saver hardware meets the requirements for minimum stock diameter or thickness, and effective contact width shown in the Recommended Standards Specification for Synthetic Polyester Round Slings by the Web Sling & Tie Down Association. WSTDA-RS1 (revised 2010)

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S-287 HIGH PERFORMANCE SLING CONNECTOR

Sling Saver® Load Rated **"QT"**
QUENCHED & TEMPERED

S-237

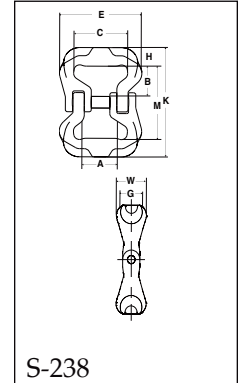
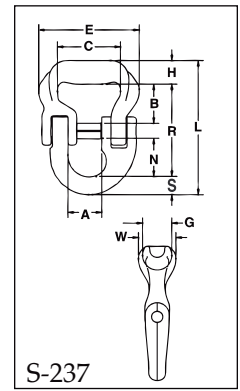


S-238



High Performance Sling Connector is designed to connect High Performance Synthetic Slings of all materials.

- Capacities available:
 - Working Load Limit (5 to 1): 5,000 through 60,000 lbs.
 - Sling Body Widths: 2" through 6".
- Allows easy connection to master links or eye hooks, and is ideal for bridles.
- Increased radius of bow gives wider sling bearing surface resulting in an increased area for load distribution, thus:
 - Increasing Synthetic Sling efficiency as compared to master links, shackle bows and conventional eye hooks. This allows 100% of the slings rated Working Load Limit to be achieved.
 - Allows better load distribution on internal fibers.
- All Alloy Construction
- Design Factor of 5 to 1.
- Individually Proof Tested at 2.5 times the Working Load Limit.
- Each connector has a Product Identification Code (PIC) for material traceability, along with a frame size, and the name Crosby and USA in raised letters.



S-237 High Performance Sling Connector

Working Load Limit		S-237 Web to Lok-A-Loy Assy. Stock No.	Frame No.	Nominal Sling Body Width (in.)	Lok-A-Loy Size (in.)	Weight Each (lbs.)	Dimensions (in.)										
4:1 (lbs.)*	5:1 (lbs.)						A	B	C	E	G	H	L	N	R	S	W
6250	5000	1020695	5	2	3/8	1.14	.88	1.42	2.00	3.18	1.00	.80	4.20	1.04	2.92	.48	1.38
12500	10000	1020704	10	3	5/8	2.96	1.42	1.52	2.75	4.13	1.25	.98	5.68	1.71	3.94	.75	1.75
18750	15000	1020713	15	3	3/4	4.75	1.63	1.58	2.75	4.37	1.38	1.10	6.49	2.04	4.46	.93	1.88
31250	25000	1020722	25	4	7/8	8.59	2.00	2.33	3.75	6.00	1.75	1.41	7.97	2.27	5.51	1.06	2.25
37500	30000	1020731	30	4	7/8	9.24	2.00	2.20	3.75	6.19	1.75	1.41	7.84	2.27	5.38	1.06	2.38
50000	40000	1020740	40	5	1	15.7	2.25	2.91	4.75	7.25	2.25	1.78	9.45	2.44	6.45	1.22	3.09
75000	60000	1020759	60	6	1-1/4	26.0	2.56	3.36	5.75	9.13	2.31	1.86	11.08	3.07	7.72	1.50	3.16

* Maximum Proof Load is 2 times the Working Load Limit at 4:1 design factor. Minimum Ultimate strength is 5 times the Working Load Limit.

Crosby Sling Saver hardware meets the requirements for minimum stock diameter or thickness, and effective contact width shown in the Recommended Standards Specification for Synthetic Polyester Round Slings by the Web Sling & Tie Down Association. WSTDA-RS1 (revised 2010)

S-238 High Performance Sling Connector

Working Load Limit (lbs.)	S-238 Web to Web Assembly Stock No.	Frame No.	Nominal Sling Body Width (in.)	Lok-A-Loy Size (in.)	Weight Each (lbs.)	Dimensions (in.)								
						A	B	C	E	G	H	K	M	W
5000	1020415	5	2	3/8	1.6	.88	1.42	2.00	3.18	1.00	.80	4.90	3.30	1.38
10000	1020423	10	3	5/8	3.3	1.42	1.52	2.75	4.13	1.25	.98	5.72	3.76	1.75
15000	1020432	15	3	3/4	4.9	1.63	1.58	2.75	4.37	1.38	1.10	6.16	3.96	1.88
25000	1020441	25	4	7/8	10.1	2.00	2.33	3.75	6.00	1.75	1.41	8.40	5.58	2.25
30000	1020450	30	4	7/8	11.4	2.00	2.20	3.75	6.19	1.75	1.41	8.14	5.32	2.38
40000	1020469	40	5	1	20.7	2.25	2.91	4.75	7.25	2.25	1.78	10.48	6.92	3.09
60000	1020478	60	6	1-1/4	32.0	2.56	3.36	5.75	9.13	2.31	1.86	11.72	8.00	3.16

* Maximum Proof Load is 2 times the Working Load Limit at 4:1 design factor. Minimum Ultimate strength is 5 times the Working Load Limit.

Crosby Sling Saver hardware meets the requirements for minimum stock diameter or thickness, and effective contact width shown in the Recommended Standards Specification for Synthetic Polyester Round Slings by the Web Sling & Tie Down Association. WSTDA-RS1 (revised 2010)

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MAINLINE LOWERING-IN BELTS FOR PLACING PIPELINE

Model # TPL - Lowering-in Belts

- Experienced, leading belt manufacturer for over 15 years.
- Heavy Duty Polyester webbing for durability and strength.
- Alloy steel end irons for greater strength with less weight.
- Web coated with Heavy Duty coating.
- Orange Vinyl Tag with clear protective cover sewn
- End irons painted
- Custom Belts available for pipe diameters not listed.
- Belts used around the world, in all types of climates, in sizes up to 60" Diameter Pipe.
- Head Iron not included as pictured.
- Lowering-in Belt and Head Iron sold separately.



Part No.	Max Pipe Diameter		Belt Width		Belt Length		Approx. Weight		Rated Capacity	
	in.	mm.	in.	mm.	ft.-in.	m	lbs.	kg	lbs.	kg
TPL-0212	12	305	12	305	4'-9"	1.45	32	14.5	48,000	21,772
TPL-0418	18	457	18	457	7'-0"	2.13	52	23.6	73,000	33,112
TPL-0420	20	508	18	457	7'-6"	2.29	55	24.9	73,000	33,112
TPL-0524	24	610	24	610	8'-6"	2.59	81	36.7	97,000	43,998
TPL-0630	30	762	30	762	10'-0"	3.05	90	40.8	122,000	55,338
TPL-0736	36	914	36	914	11'-6"	3.51	120	54.4	146,000	66,224
TPL-0742	42	1067	36	914	13'-6"	4.11	135	61.2	146,000	66,224
TPL-0748	48	1219	36	914	15'-0"	4.57	155	70.3	146,000	66,224
TPL-0842	42	1067	42	1067	13'-6"	4.11	150	68.0	171,000	77,564
TPL-0848	48	1219	42	1067	15'-0"	4.57	170	77.1	171,000	77,564
TPL-0948	48	1219	48	1219	15'-0"	4.57	200	90.7	195,000	88,450
TPL-0956	56	1422	48	1219	17'-0"	5.18	222	100.0	195,000	88,450
TPL-1156	56	1422	56	1422	17'-0"	5.18	250	113.0	228,000	103,418
TPL-1160	60	1524	56	1422	18'-0"	5.49	270	122.0	228,000	103,418

- 5 to 1 design factor standard
- 7 to 1 design factor available upon request
- Pipe sizes and lengths not listed are available on special request.



STEEL LINED CHOKER BELT MODEL: TPC



Model # TPC - Lined Steel Choker Belt

- Aligns pipe exactly without slippage for bending, welding, etc.
- Roll pipe, pull pipe, secure extreme bends-all without damage
- Fastest tool available for positioning and handling pipe
- Fully adjustable for coating thickness
- Super Heavy Duty Barrier webbing for increased life and gripping efficiency
- Easily repairable in field for longer life
- Used around the world on pipe up to 60"
- Replacement Parts Available



Part No.	Max Pipe Diameter		Belt Width		Approx. Weight		Rated Capacity	
	in.	mm.	in.	mm.	lbs.	kg	lbs.	kg.
TPC-110	10	254	8	203	50	23	7,600	3,447
TPC-112	12	305	8	203	93	42	7,600	3,447
TPC-114	14	356	8	203	109	49	7,600	3,447
TPC-116	16	406	8	203	115	52	7,600	3,447
TPC-118	18	457	8	203	120	54	7,600	3,447
TPC-120	20	508	8	203	125	57	7,600	3,447
TPC-124	24	607	8	203	133	60	16,800	7,620
TPC-126	26	660	8	203	137	62	16,800	7,620
TPC-128	28	711	8	203	140	64	16,800	7,620
TPC-130	30	762	8	203	142	64	16,800	7,620
TPC-136	36	660	8	203	160	73	16,800	7,620
TPC-140	40	1016	8	203	190	86	21,400	9,707
TPC-142	42	1067	8	203	200	91	21,400	9,707
TPC-148	48	1219	8	203	210	95	21,400	9,707
TPC-156	56	1422	8	203	225	102	27,200	12,338
TPC-160	60	1524	8	203	235	107	27,200	12,338

- 5 to 1 design factor standard
- 7 to 1 design factor available upon request
- Higher capacities available on special request
- Designed to meet or exceed: ASME B30.9 Slings, B30.20 Below-the-Hook Lifting Devices; AWS D14.1 Welding Procedures

Model # TPH – Head Irons

- Used to suspend lowering-in belts
- Alloy steel bail for greater strength with less weight
- Painted
- Stainless Steel Data Plate
- Easy release hooks on one side
- Lowering-in Belt not included



Part#	Fits Lowering-in Belt #	Lifting Eye Size		Approx. Weight	
		in. Width x Length	mm Width x Length	Lbs.	Kg.
TPH-02	TPL-02 Series	5" x 6.5"	127 x 165	45	20
TPH-04	TPL-04 Series	4.75" x 6.25"	121 x 159	78	35
TPH-05	TPL-05 Series	4.75" x 6.25"	121 x 159	110	50
TPH-06	TPL-06 Series	4.75" x 6.25"	121 x 159	147	67
TPH-07	TPL-07 Series	6.5" x 9"	165 x 229	180	82
TPH-08	TPL-08 Series	6.5" x 9"	165 x 229	215	98
TPH-09	TPL-09 Series	6.5" x 9"	165 x 229	230	104
TPH-11	TPL-11 Series	6.5" x 9"	165 x 229	275	125

PIPELINE ROUNDSLING **PPFG**

Roundsling for Pipelines

- Special tracer yarn for material inspection
- Heavy duty polyester double walled jacketed
- Pipeliners Plus® logo stenciled on jacket to easily differentiate in the field
- Vinyl Tag with Clear Vinyl Cover to protect data
- Individually packaged for better storage

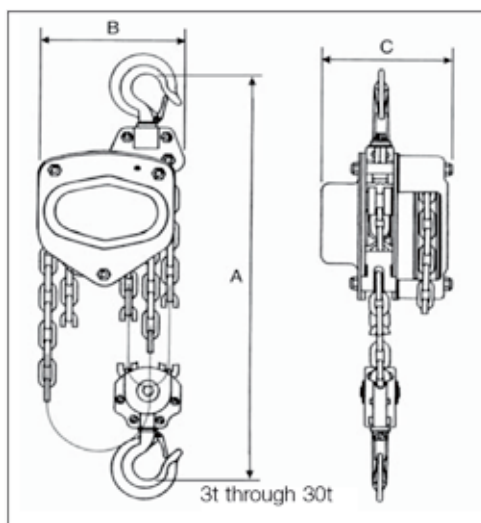
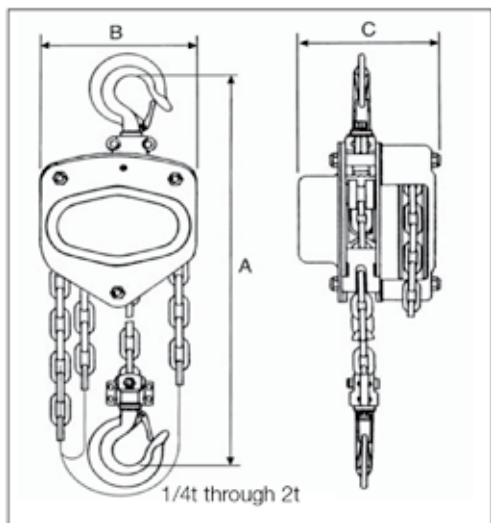


Color Code	Model No.	Approx. Body Diameter (inches)	Approx. Body Weight/Ft. (lbs.)	Rated Capacity in Lbs.			Minimum Hardware Diameter (inches)	Minimum Contact Width (inches)
				Vertical	Choker	Basket		
Red	PPFG1300	1.35	0.84	15,500	12,400	31,000	1.00	2.00
Blue	PPFG-1550	1.63	1.25	24,900	20,000	49,800	1.25	2.62

HAND CHAIN HOISTS MODEL: CF

FEATURES:

- Overload clutch standard feature on chain hoists
- Modern small body, compact, stamped steel construction
- Fully machined steel load sheaves
- Cast steel hook latches instead of stamped steel
- Fully enclosed gear train and caged internal bearings
- All exposed parts plated or powder coated for corrosion protection
- Bottom hooks of chain hoists equipped with roller thrust bearings
- Double pawl Weston style load brake
- Conforms to ASME B30.16 - Chain Hoists and Standard B30.21 - Lever Hoists



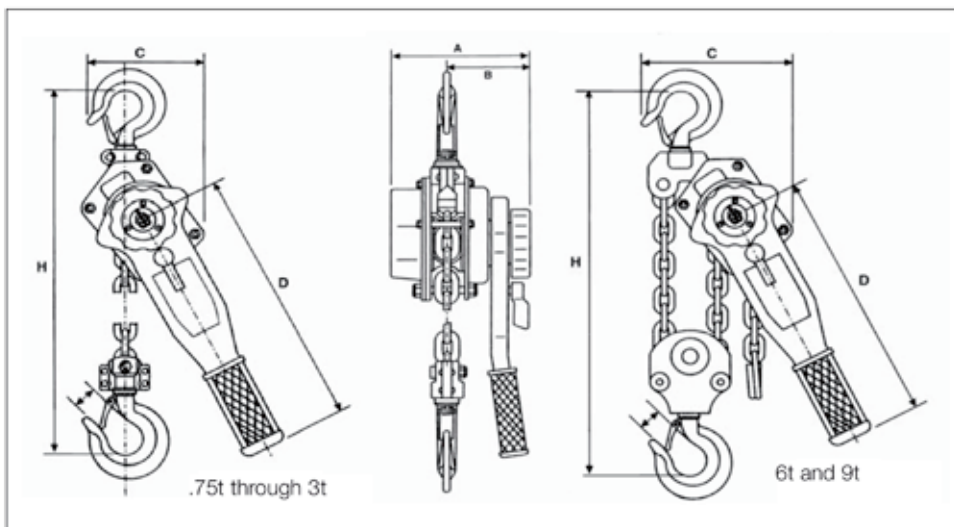
Model	Working Load Limit	Standard Lift	Chain Size	Falls of Chain	Effort to Lift Rated Load (lbs.)	Net Weight with 10 ft of Lift (lbs.)	Dimensions (inches)			
							A	B	C	Hook Openings
TUF-CF05	0.5t	10 ft	6	1	51	22	10.64	5.00	5.16	.99
TUF-CF10	1t	10 ft	8	1	66	26	12.49	6.23	5.52	.99
TUF-CF1.5	1.5t	10 ft	8	1	70	30	15.7	7.36	6.34	1.42
TUF-CF20	2t	10 ft	8	1	77	49	16.31	7.37	6.34	1.32
TUF-CF30	3t	10 ft	8	2	60	71	18.32	8.27	6.34	1.58
TUF-CF50	5t	10 ft	10	2	90	102	25.06	9.97	6.34	1.97
TUF-CF7.5	7.5t	10 ft	10	3	90	140	30.24	14.8	7.24	1.97
TUF-CF100	10t	10 ft	10	4	90	183	31.42	14.1	8.15	2.52
TUF-CF150	15t	10 ft	10	8	90 x 2	374	35	25.6	8.46	3.35
TUF-CF200	20t	10 ft	10	8	*Call for dimensions on larger sizes*					
TUF-CF300	30t	10 ft	10	12						
TUF-CF500	50t	10 ft	10	20						

NOTE: Please specify chain length required when ordering, by adding a -5, -10, -15, -20 to the end of model number. Standard is 10 ft.

LEVER CHAIN HOIST **MODEL: LH**

FEATURES:

- Standard overload clutch
- Double pawl Weston style load brake
- Fully machined steel load sheaves
- Cast steel hook latches
- Fully enclosed gear train and caged internal bearings
- All exposed parts plated or powder coated for corrosion protection
- Double pawl Weston style load brake
- Conforms to ASME B30.16 - Chain Hoists and Standard B30.21 - Lever Hoists



Model	Working Load Limit	Effort to Lift Rated Load (lbs.)	Net Weight with 10 ft Lift (lbs.)	Chain Size	Falls of Chain	Dimensions (inches)					Hook Openings
						A	B	C	D	H	
TUF-LH075	.75 t	30.86	16	6	1	5.83	3.55	5.36	11.03	12.8	0.87
TUF-LH150	1.5 t	48.49	25	8	1	6.78	3.86	6.3	16.15	14.97	1.26
TUF-LH300	3 t	70.53	47	10	1	7.88	4.53	7.09	16.15	18.91	1.46
TUF-LH600	6 t	74.94	69	10	2	7.88	4.53	9.26	16.15	24.43	1.77
TUF-LH900	9 t	79.2	103.4	10	3	7.88	4.53	12.44	16.15	27.56	2.36

NOTE: Please specify chain length required when ordering, by adding a -5, -10, -15, -20 to the end of model number.

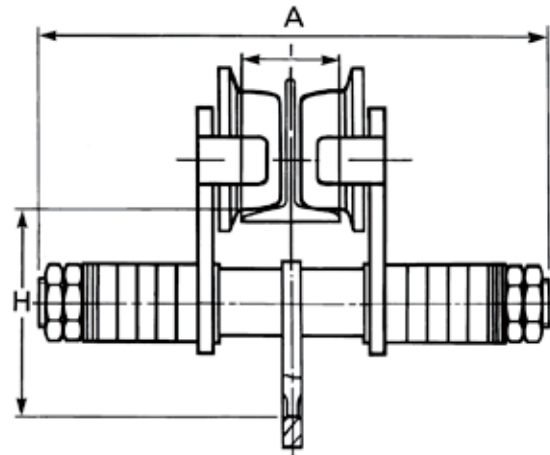
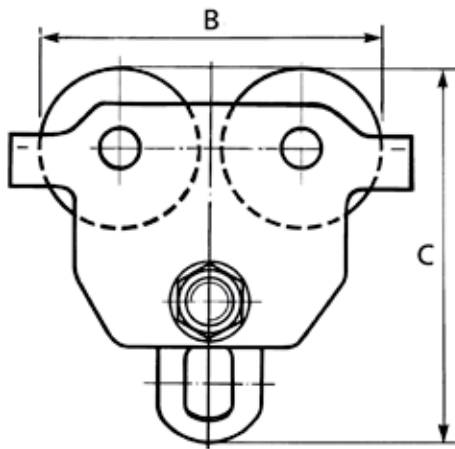
PLAIN TROLLEYS MODEL: PT

These trolleys are designed to suit a wide range of monorails and fabricated beams. They have many applications in the mining, oil & gas, heavy construction and marine industries.

- Strong rugged construction.
- Easily adjusted to any beam width within range.
- Powder coated paint finish.
- Precision ball bearing trolley wheels with machined tread for smooth operation.
- Conforms to ASME/ANSI B30 standards where applicable.



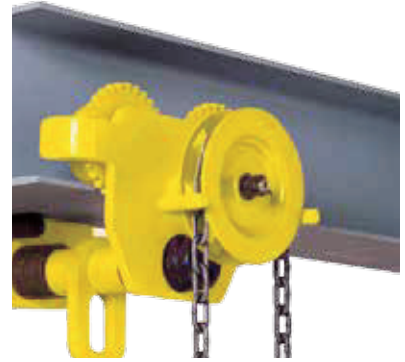
Model	Capacity	Adjustable Beam Width (inches)	Dimensions (inches)				Minimum Radius Curve (ft)	Weight (lbs.)
			A	B	C	H		
TUF-PT.5	0.5 ton	* Call for specifications*						
TUF-PT10	1 ton	2.52 - 8.27	12.52	10.24	9.41	5.31	3.28	31
TUF-PT20	2 ton	3.46 - 8.27	13.19	11.81	11.26	6.34	3.61	46
TUF-PT30	3 ton	4.02 - 8.27	14.31	13.58	13.23	7.4	4.26	88
TUF-PT50	5 ton	4.49 - 8.27	15.07	15.55	15.47	8.66	4.59	113
TUF-PT100	10 ton	6.5 - 8.27	16.13	17.91	19.69	11.02	5.58	198
TUF-PT200	20 ton	6.5 - 8.27	19.5	25.48	24.5	12.4	15	502



GEAR TROLLEYS MODEL: GT

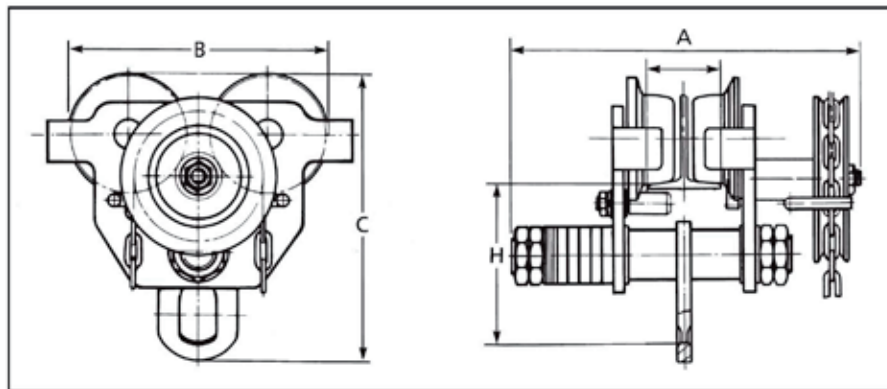
These trolleys are designed to suit a wide range of monorails and fabricated beams. They have many applications in the mining, oil & gas, heavy construction and marine industries.

- Strong rugged construction
- Easily adjusted to any beam width within range
- Powder coated paint finish
- Precision ball bearing trolley wheels with machined tread for smooth operation
- Conforms to ASME/ANSI B30 standards where applicable



Item Number	Capacity	Adjustable Beam Width (Inches)	Clearance Dimensions (inches)				Minimum Radius Curve (feet)	Weight (lbs.)
			A	B	C	H		
TUF-GT10	1 ton	2.52 - 8.27	14.96	10.24	9.41	5.31	3.28	39.6
TUF-GT20	2 ton	3.46 - 8.27	15.35	11.81	11.26	6.34	3.61	59.4
TUF-GT30	3 ton	4.02 - 8.27	17.69	13.58	13.23	7.4	4.26	94.6
TUF-GT50	5 ton	4.49 - 8.27	18.25	15.55	15.47	8.66	4.59	132
TUF-GT100	10 ton	4.92 - 8.27	18.75	18.5	19.69	11.02	5.58	231
TUF-GT200	20 ton	4.92 - 8.27	18.43	25	19.69	13	15	502

NOTE: Please specify hand drop chain length when ordering.



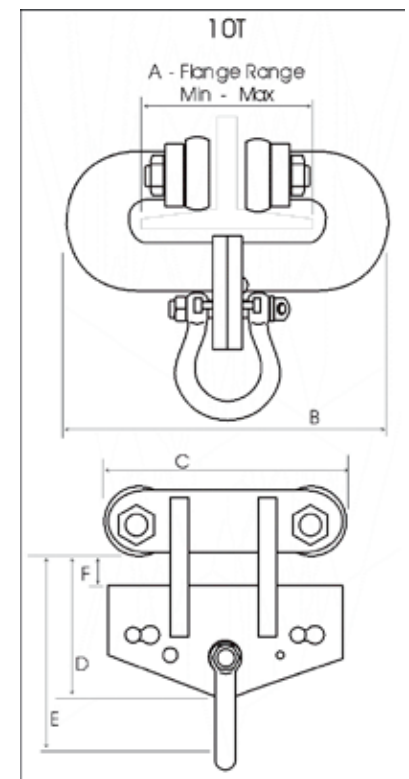
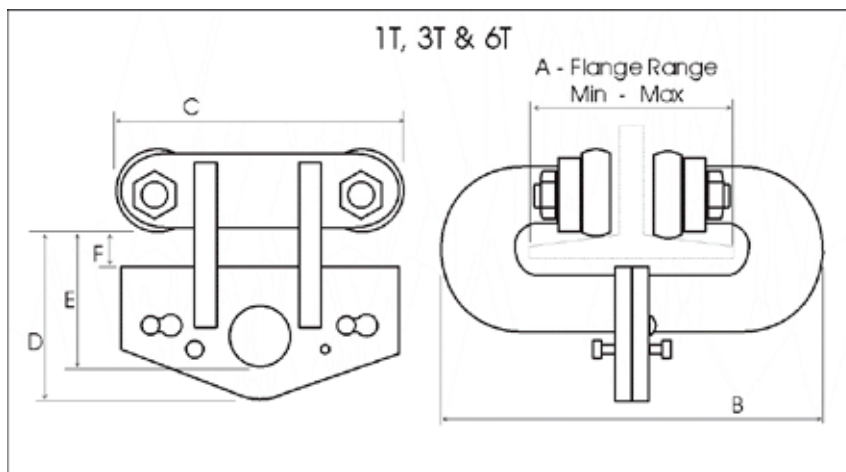
UNIVERSAL TROLLEY MODEL: V2



FEATURES:

- Quick and easy installation on beam -- No special tools required. No adjustment required. No spacers or nuts required.
- Lightweight and portable
- Fits "S" or "W" beams
- Low headroom design
- Tuffy Universal Trolleys are built to ASME B30.16 standards as applicable.

Model	Capacity	Dimensions (inches)							Weight (lbs)
		A		B	C	D	E	F	
		Min	Max						
TUF-T101-V2	1 ton	3	8.5	13.1	8.3	4.6	3.9	1.2	19.8
TUF-T301-V2	3 ton	4	8	13.3	10	6	5.1	1	44
TUF-T601-V2	6 ton	4	10	17.6	12.6	7.5	6.3	1.2	101.2
TUF-T1001-V2	10 ton	4	11	21	13	8.2	12.5	2.1	180.4



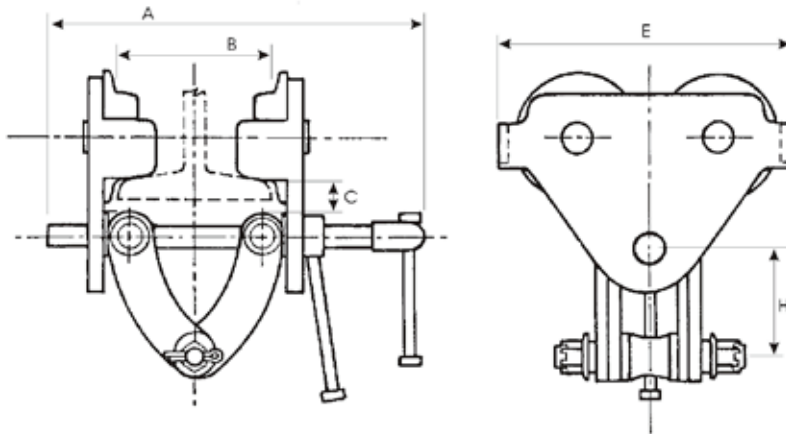
SCREWLOCK ADJUSTABLE TROLLEY MODEL: AT

FEATURES:

- Hand push/pull beam trolley, easy to use, with ball bearing wheels
- Developed for moving from beam to beam in industrial applications with varying flange widths
- Adjusts to beam width by turning left and right hand adjusting bar fitted with T-Handle
- Fitted with width adjustment locking mechanism
- Wheel guards and anti-drop, anti-climb features
- Flange width adjustment accomplished with no special tools



Model	Capacity	Dimensions (inches)							Weight (lbs.)
		A	B		C	E	H		
			Min	Max			Min	Max	
TUF-AT1	1 ton	13.58	2.48	8.27	1.18	9.37	2.56	4.88	23.10
TUF-AT2	2 ton	13.58	2.99	8.27	1.54	10.87	2.56	4.88	27.50
TUF-AT3	3 ton	17.72	2.99	8.27	1.85	12.76	2.76	4.84	49.50
TUF-AT5	5 ton	18.11	3.94	12.01	2.24	13.78	2.91	6.30	92.50
TUF-AT10	10 ton	22.50	6.00	13.50	2.50	18.00	4.50	7.00	215.00



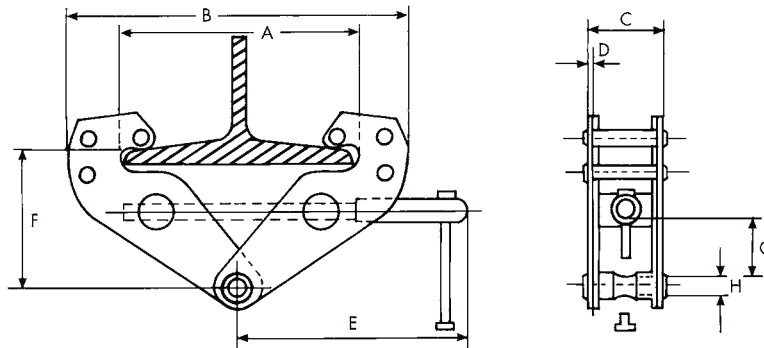
BEAM CLAMPS MODEL: GC



FEATURES:

- All steel construction
- Special design reduces flange stress
- Adjustable clamp ensures a secure fit for a range of beam and girder sizes
- Low headroom design

Model	Capacity	Adjustable Beam Width (inches)	Dimensions (inches)									
			A	B		C	D	E	F		G	H
				Min	Max				Min	Max		
TUF-GC1	1 ton	2.95 - 8.66	10.23	7.08	14.17	2.51	.19	8.46	4.01	6.10	.98	.86
TUF-GC2	2 ton	2.95 - 8.66	10.23	7.08	14.17	2.91	.23	8.46	4.01	6.10	.98	.86
TUF-GC3	3 ton	3.15 - 12.59	13.93	9.25	19.29	4.05	.31	10.23	5.5	8.85	1.77	.94
TUF-GC5	5 ton	3.15 - 12.59	13.93	9.25	19.29	4.33	.39	10.23	5.5	8.85	1.77	1.10
TUF-GC10	10 ton	3.15 - 12.59	14.37	12.59	19.88	4.72	.47	11.02	6.69	9.25	1.96	1.57







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