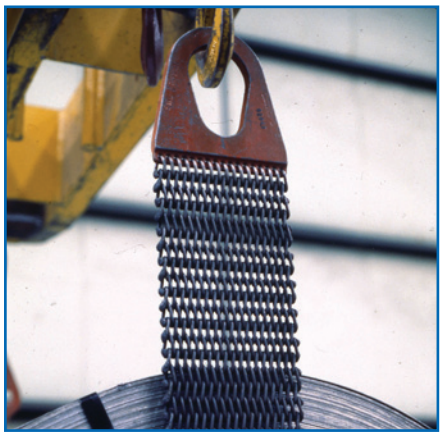
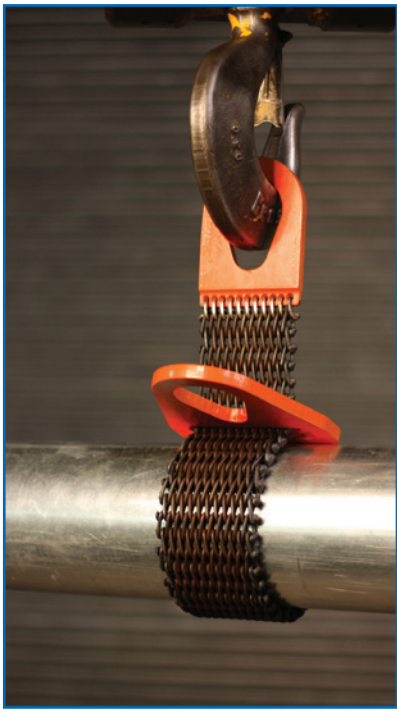
GRIPPER SLINGS | CAMBRIDGE ENGINEERED SOLUTIONS

CAMBRIDGE GRIPPERSLINGS

Move your materials with the industry's strongest, safest and most versatile metal mesh slings





Metal Mesh Slings That Hold On. And On. And On.

Cambridge's metal mesh GRIPPER® Slings offer many advantages over other types of slings, especially if the load being handled is abrasive or sharp-edged, unstable, hot or corrosive, or needs delicate handling to reduce load damage.

The GRIPPER Sling's most important quality is its durability. The steel fabric used in our GRIPPER Sling is of low carbon content. The low carbon content prevents the wire from becoming hard and brittle during welding of the spiral to the cross rod. This fabric offers excellent resistance to abrasive loads and as a result offers unsurpassed longevity.

Further, our handles are laser-cut from hot rolled annealed steel plate. This is a very strong and tough steel with excellent resistance to shock loading. Custom handles are also easily fabricated. The handles are joined to the metal mesh fabric with stainless steel connector spirals. Using stainless steel connector spirals reduces the likelihood of failure at this point and assures complete flexibility between the handle and the metal mesh fabric.

Everything A Sling's Supposed To Be. And Then Some.

Strong. Cambridge's GRIPPER Sling's all steel metal mesh construction tolerates even the most abrasive loads without fear of sling failure. In addition, its environmental tolerance permits use at temperatures up to 550 degrees F. Other alloys are available for greater strength and resistance to chemical environments. See Chemical Environment Data, page 3, for a discussion of these alloys. Consult Cambridge Engineeered Solutions for specific recommendations for your operating conditions.

Safe. Proof-tested at 200 percent of its rated work load, every GRIPPER Sling's wide bearing surface improves load balance and gripping power. And since it won't kink or tangle in use like wire rope or chain slings, loads won't shift or slip. What's more, its woven spiral construction eliminates the danger of sudden failure such as can occur with a rotting core in a synthetic sling or a weak link in a chain sling. All GRIPPER products are manufactured in accordance with OSHA and ANSI B-30.9 requirements.

Gentle. The GRIPPER Sling's interwoven, smooth spiral wires offer complete flexibility. So the sling conforms to the contours of its load, eliminating the dangers of gouging, marring, cursching or cutting so common with wire rope or chain slings.

Saves Time. Easy to rig in either a choke or basket hitch, the GRIPPER Sling greatly reduces rigging and unhitching time, and often eliminates the need for two-legged slings or spreader bars.

Saves Money. The GRIPPER Sling's ability to outlast wire rope and synthetic slings will cut your costs in the long run. And, of course, you'll also reduce the costs of damage to your loads. Finally, GRIPPER Slings can be repaired or restored at a fraction of the cost of a new sling.

Versatile. The GRIPPER Sling is ideal for handling all types of products, such as a coiled strip, thin walled tubing, polished shafting, hot rolled flat bar stock, round bar stock, sheet steel, lumber, paper machine rolls, precast hollow core concrete beams, prestressed concrete, structural beams, cold drawn flats, irregularly shaped objects, and loads subjected to hot or corrosive environments.

Durable Slings From A Durable Company: Cambridge Engineered Solutions

Since 1915, we've built our business through products that solve problems for customers. We'd like to tell you more about our company and what our products can do for you. Why not give us a call, send us a fax, or visit your authorized Cambridge Service Center. And, ask for a free copy of "Guides for Safer Lifting". It's filled with safety tips and practical advice for getting the most out of your slings.

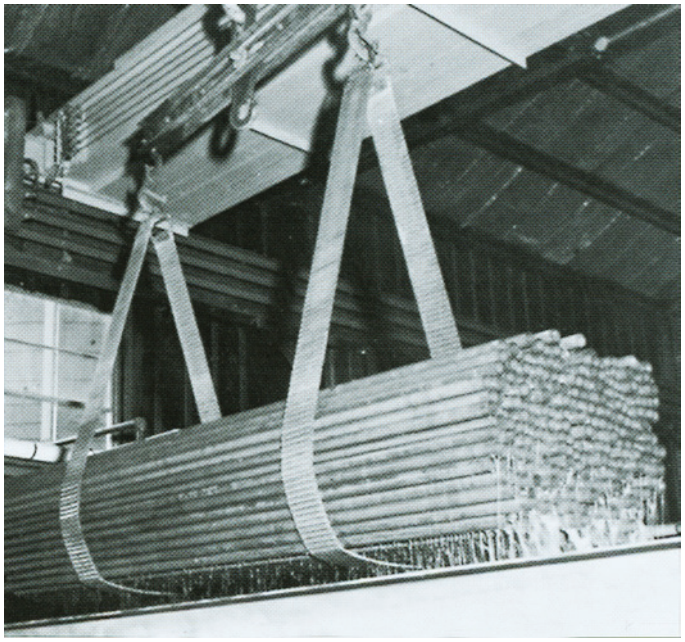
GRIPPER Slings for Hostile Environments

GRIPPER Slings can be manufactured of special alloys to meet operating conditions involving elevated temperatures or corrosive materials.

Stainless Steel, Type 304 or Type 316, is resistant to corrosion and temperature both in the atmosphere and in a wide variety of corrosive media, including many acid solutions, alkalies, organic liquids, and other liquids and gases.

4130 Heat Treated Alloy Steel provides more strength, abrasion resistance and greater capacity than standard carbon steel slings.

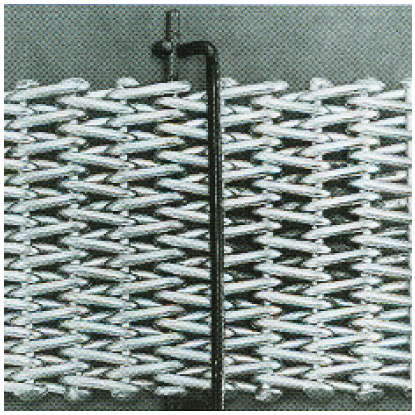
Exotic Alloys Available - email or call sales for more information.



Pickling bundles of thin wall tubing with chain slings requires a spreader bar and two slings. Even then, chains can cut or crush the thin walls of the tubing.

On the other hand, GRIPPER Slings used in a basket hitch provide a gentle flexing action that eliminates the possibility of damaging delicate tubing. The GRIPPER Sling's open mesh also provides quick drainage of pickling solutions, eliminating costly carry-out procedures. Finally, special alloy construction eliminates corrosion problems.

For Endless Slings, Ask About Our Safety Pin



Chemical Environment Data

The following chart is designed as a general guide only. All data is listed for 70°F. For specific temperature, concentration, and time factors, consult Cambridge Engineered Solutions prior to purchase or use.

Metal Mesh Composition	Weak Sulphuric Acid	Weak Hydrochloric Acid	Alkaline Caustic Solutions	Salt Solutions	Organic Solvents	Water
Carbon Steel	No	No	No	No	Yes	No
T-304 Steel	No	No	Yes	No	Yes	Yes
T-316 Steel	No	No	Yes	No	Yes	Yes
AISI 4130 Alloy Steel*	No	No	No	No	Yes	No
Urethane-Coated	No	Yes	No	Yes	No	Yes

*Heat Treated

Metal Mesh Slings That Hold On. And On. And On.

First, determine the hitch you will use for your sling. Next, read down the column on page 4 under the selected hitch to the load weight you wish to lift. Then read across to the first column on the left to find the required **sling width**.

For Example: If you wish to use a G-35 sling with a choke hitch to lift 6,000 pounds, the required sling width is 6".

Most of our customers use the G-35 Heavy Duty sling fabric shown below. It is extremely durable and cost effective. But, some applications may require a lighter duty sling. On request, Cambridge Engineered Solutions offers a Light Duty sling fabric made with G-59. Compared to the G-35 Heavy Duty option, this sling fabric is lighter weight, more flexible and has greater contact with the load. It also provides a tighter grip so it is less likely to cause load damage, but does not offer the same level of lifting strength and abrasion resistance.

G-35 Heavy Duty

(10 Gauge)

Offers the longest service life and is most resistant to rough treatment. Excellent for handling abrasive loads.

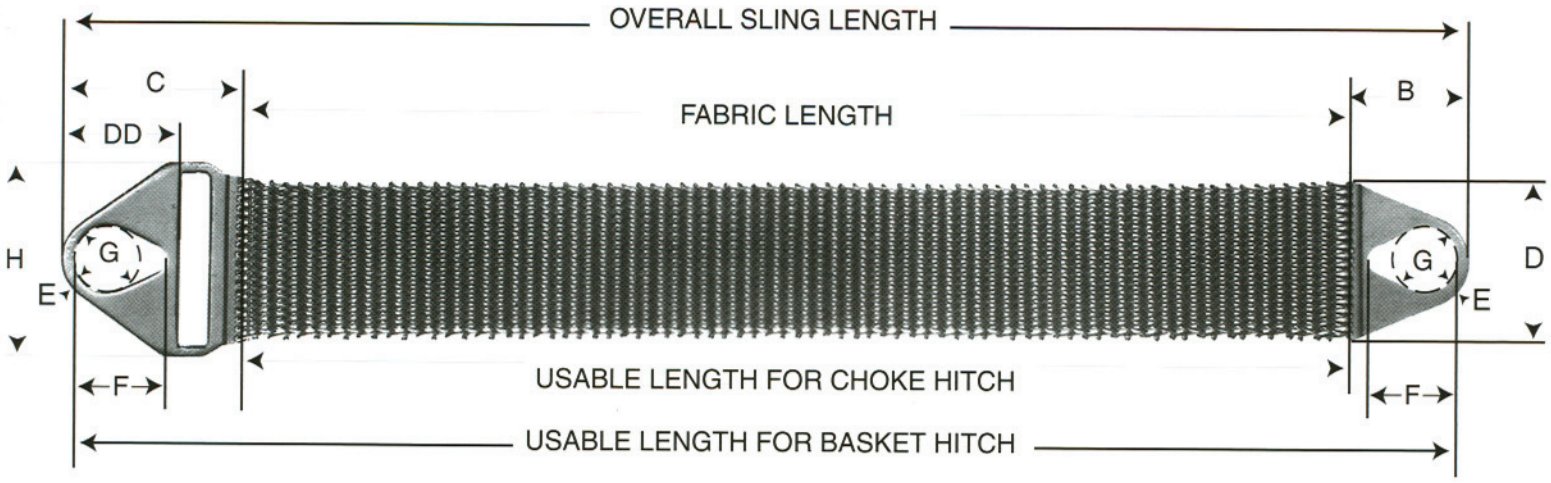
G-59 Light Duty

(14 Gauge)

Recommended where maximum flexibility and minimum load damage are the two most important considerations.

	NOMINAL WIDTH OF SLING (inches)	CHOKER	VERTICAL BASKET	EFFECT OF ANGLE ON RATED CAPACITIES IN BASKET HITCH		
				30° Vert. 60° Horiz.	45° Vert. 45° Horiz.	60° Vert. 30° Horiz.
G-35 HEAVY DUTY (weight in lbs.)	2	1,600	3,200	2,700	2,000	1,600
	3	3,000	6,000	5,100	3,800	2,800
	4	4,400	8,800	7,480	5,600	4,400
	6	6,600	13,200	11,225	8,400	6,600
	8	8,800	17,600	15,000	11,250	8,800
	10	11,000	22,000	18,700	14,000	11,000
	12	13,200	26,400	22,440	16,800	13,200
	14	15,400	30,800	26,180	19,600	15,400
	16	17,600	35,200	29,920	22,400	17,600
	18	19,800	39,600	33,660	25,200	19,800
	20	22,000	44,000	37,400	28,000	22,000
G-59 LIGHT DUTY (weight in lbs.)	2	900	1,800	1,600	1,300	900
	3	1,400	2,800	2,400	2,000	1,400
	4	2,000	4,000	3,500	2,800	2,000
	6	3,000	6,000	5,200	4,200	3,000
	8	4,000	8,000	6,900	5,700	4,000
	10	5,000	10,000	8,600	7,100	5,000
	12	6,000	12,000	10,400	8,500	6,000
	14		14,000	12,100	9,900	7,000
	16		16,000	13,900	11,300	8,000
	18		18,000	15,600	12,700	9,000
	20		20,000	17,300	14,100	10,000

Specifications



After determining the width of sling needed, based on hitch configuration and weight of the load, determine the length of sling needed using dimensions in the table below.
Examples: In Column A, find sling width.
For CHOKE style hitches
Minimum overall sling length=circumference of load in inches + Column B + Column C + 6".

For vertical BASKET STYLE HITCHES, the formula for minimum length is:
Dimension E times 2 plus the circumference of load in inches.

INCHES									HOOK SIZE	APPROX.WT. 36" SLING (LBS.)	FABRIC LBS./FT. OF LENGTH	
SLING WIDTH (Nom.)	SEE DRAWING ABOVE											
A	B	C	D	E	F	G	H	DD			10 GA.	14GA.
2	4	6	2	1/2	2 3/4	1 3/4	4	3 3/4	5 TON	5	1 1/4	3/4
3	5 1/4	7 1/2	3	3/4	3 1/2	2 1/2	5 1/4	5	10 TON	8	1 7/8	1 1/8
4	5 1/2	7 3/4	4	3/4	3 1/2	2 1/2	6 1/4	5	10 TON	10	2 1/2	1 1/2
6	6 1/2	9	6	1	4	2 3/4	8 1/2	6	15 TON	15	3 7/8	2 1/4
8	8 3/4	12	8	1 1/4	5 1/2	4	11 1/4	8 1/2	25 TON	20	5 1/8	3
10	9 3/8	13	10	1 3/8	5 1/2	4	13 1/2	9 7/8	25 TON	33	6 3/8	3 3/4
12	10 1/4	14	12	1 1/2	6	4 1/2	15 3/4	10 1/2	30 TON	42	7 5/8	4 1/2
14	10 5/8	14 2/3	13 7/8	1 5/8	6	4 1/2	18	10 5/8	30 TON	47	8 7/8	5 1/4
16	11 1/4	15 9/16	15 7/8	1 3/4	6	4 1/2	20 1/4	10 3/4	30 TON	55	10 1/8	6
18	11 7/8	16 9/16	17 7/8	1 7/8	6	4 1/2	22 1/2	10 7/8	30 TON	64	11 3/8	6 3/4
20	12 1/2	17 9/16	19 7/8	2	6	4 1/2	24 3/4	11	30 TON	73	12 3/4	7 1/2

Our Engineering Department can design end fittings with larger crane hook openings (dimension G) where required.

Specifications

Urethane-Coated GRIPPER Slings for Added Load Protection

Even the most delicate jobs are no problem for the GRIPPER Sling. Thanks to the smooth wire mesh consruction, you can get your sling coated with polyurethane to protect extra sensitive loads such as polished shafts, machined parts, marble, concrete, anything and everything that requires extra careful handling.

Polyurethane plastic-covered slings also provide flexibility and long life, free of attack by weak nitric, hydrofluoric, sulphuric, hydrochloric acids and sodium hydroxide.

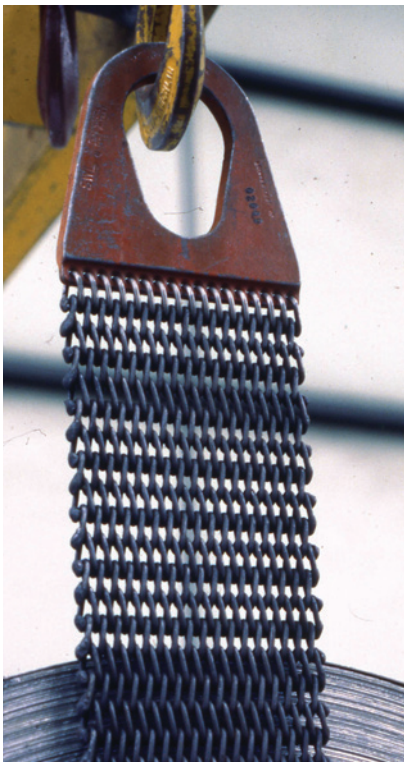
For protected handling in more corrosive environments, neoprene coatings are available. Tough, yet flexible, neoprene resists attack by oils, greases, and stronger concentrations of sodium hydroxide, and sulphuric, hydrochloric and hydroflouric acids.

Cambridge Engineered Solutions offers these coatings in Black and Clear.

Handle Material Available in Hard Rolled Steel, 4130 (Required for 10”and larger), T304, Inconel

Sling Types
Type 1, Choker: Male/Female
Type 2, Basket: Male/Male or Triangle/Triangle

Handle Stamping For example: Tool ID#, Customer Number (up to 10 digits)



Maintenance and Safety

Maintenance

Although each sling is examined and fully tested prior to shipment to you, the effects of normal wear and tear vary greatly depending on application and usage. This, in addition to the degree of care in handling, makes it imperative that the sling is properly maintained.

Slings should be frequently inspected and should be returned to an Authorized Service Center for repair if any of the following defects are present:

- Broken welds along the sling edge.
- Broken wire in any part of the mesh.
- A 25% or more reduction in wire diameter due to abrasion.
- Damage due to corrosive environments.
- An increase in overall length of the sling (handle eye to handle eye) of more than 3% for carbon steel slings and 4% for stainless steel.
- Distortion of the female handle so the lower member is bowed more than 10% of its original width.
- Distortion of either handle so the width of the eye is decreased by more than 10% of its original width.
- A 15% reduction of the original cross-sectional area of metal at the upper portion of either or both handle eyes.
- Slings employing welded handles should be tested yearly by means of magnetic particle inspection or other suitable non-destructive test to assure soundness of welds.

Special Precautions

Special precautions should be taken and a sling of ample size used:

- When exact load weight is in doubt.
- When there is a possibility of mechanical shock or jerking.
- When conditions are abnormal or severe.
- When there is exceptional hazard to personnel.
- Slings should not be used in pairs unless vertically attached to a spreader beam.
- Special care should be taken to avoid snatch or sudden loading.

Contact Us

By phone, email or website, contact a Cambridge representative for sales, service and solutions:

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