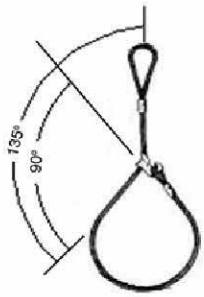
Choker Hitch Capacities



When the pull on a choker hitch results in an angle of less than 135°, an adjustment must be made to reduce the sling's rated capacity.Follow this table.

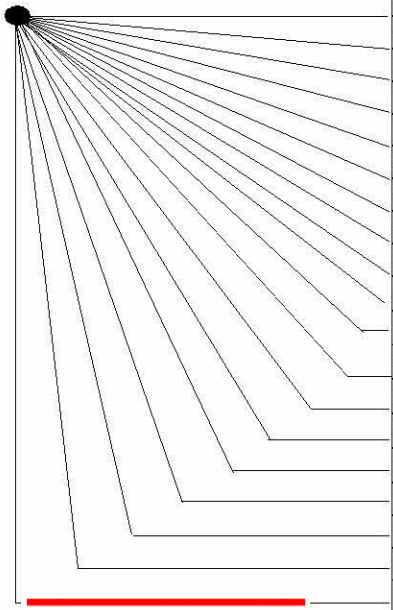
Angle of Choke in degrees	% Rated Capacity Applicable
121-135	95%
91-120	82%
61-90	71%
31-60	60%
0-30	48%

Alloy Links

Master	Joiners
¾ x 3 x 6	½ x 1 x 2 x 3
1 x 4 x 8	¾ x 1½ x 3 x 4½
1½ x 6 x 12	1 x 2 x 4 x 6
2 x 8 x 16	1¼ x 2½ x 5 x 7½
2¼ x 8 x 16	1½ x 3 x 6 x 9
2½ x 8 x 16	2 x 4 x 8 x 12
3¼ x 10 x 20	2½ x 5 x 10 x 15
4 x 12 x 24	3 x 6 x 12 x 18

Sling Load Chart

Showing Sling Stresses at Various Angles



All Angles Measured from Vertical (1,000 lb. Load)	Equivalent vertical load on 1 leg (lbs)	Increase in stress due to sling angle	Total Sling Stress (lbs.)	Angle
90°	1,000			90°
85°	1,000	1047%	11,473	85°
80°	1,000	476%	5,759	80°
75°	1,000	286%	3,863	75°
70°	1,000	192%	2,924	70°
65°	1,000	136%	2,366	65°
60°	1,000	100%	2,000	60°
55°	1,000	74.3%	1,743	55°
50°	1,000	55.5%	1,555	50°
45°	1,000	41.4%	1,414	45°
40°	1,000	30.5%	1,305	40°
35°	1,000	22.0%	1,220	35°
30°	1,000	15.4%	1,154	30°
25°	1,000	10.3%	1,103	25°
20°	1,000	6.4%	1,064	20°
15°	1,000	3.5%	1,035	15°
10°	1,000	1.5%	1,015	10°
5°	1,000	0.3%	1,003	5°
0°	1,000	0.0%	1,000	0°

This chart illustrates how the stress in a sling increases as the angle increases (all angles measured from the vertical).

When one sling leg lifts 1,000 pounds at 0 degrees, the sling stress is also 1,000 pounds. If the sling angle increases to 45 degrees, the stress actually exerted on the sling would be 1,414 pounds, an increase of 41.4%.

Should the sling angle be increased to 60°, the stress would be 2,000 lbs., or a 100% increase. At an 85° angle (highly unlikely), sling stress increases 1,047%. With a load of 1,000 lbs. the sling stress would be 11,473 lbs.

How to Select a Sling for Use at Any Angle

When calculating for selection of the proper sling for use at any angle, select vertical angle in the chart at left, read the "increase in stress" as a percentage factor. Multiply the actual load weight by this percentage, then add the answer to the actual load to be lifted. This gives the Rated Capacity to look for in selecting the proper size of sling.

IMPORTANT

Efficiencies of Wire Rope Fittings

The figures represent the efficiency of the attachment. The approximate percentage of effective rope strength available with each type of fitting depends upon the diameter, construction and grade of rope.

Wire rope sockets – Spelter Attachment	100%
"Swage-Sleeve" Thimble Attachment	100%
"Swage-Sleeve" Loop Attachment	100%
Wedge Sockets – depending upon design	80-90%
Clips (Number of clips varies with size of rope)	80%

Thimble Splice:

3/8" to 5/8" diameter incl.	90-95%
3/4" to 1 1/8" diameter incl.	85-90%
1 1/4" to 1 1/2" diameter incl.	80-85%
1 5/8" to 2" diameter incl.	75-80%
2 1/8" and up	70-75%

Loop splice:

The efficiency of a loop splice without a thimble is somewhat less than given above for a thimble splice.

Vertical

Choker

Vertical Basket

Loop

Thimble

Thimble & Hook

Rope Diameter (inches)	Loop Size (approx.)	Choker Hook Size	IPS FC† Capacity – Pounds				IPS IWRC†† Capacity – Pounds				EIPS FC††† Capacity – Pounds			
			Vertical	Choker	Vertical* Basket	Alloy Eye Hook No.	Vertical	Choker	Vertical* Basket	Alloy Eye Hook No.	Vertical	Choker	Vertical* Basket	Alloy Eye Hook No.
1/4	2 x 4	1/4	1,020	760	2,000	1	1,120	840	2,200	1	1,300	960	2,600	1
1/3	2 ½ x 5	1/3	1,580	1,180	3,200	1	1,740	1,300	3,400	1.5	2,000	1,500	4,000	1.5
3/8	3 x 6	3/8	2,200	1,700	4,400	1.5	2,400	1,860	5,000	1.5	2,800	2,200	5,800	2
4/9	3 ½ x 7	1/2	3,000	2,200	6,000	2	3,400	2,600	6,800	3	3,800	2,800	7,800	3
1/2	4 x 8	1/2	4,000	3,000	7,800	3	4,400	3,200	8,800	3	5,000	3,800	10,000	4.5
5/9	4 ½ x 9	5/8	5,000	3,800	10,000	4.5	5,400	4,200	11,000	4.5	6,400	4,800	12,800	4.5
5/8	5 x 10	5/8	6,200	4,600	12,400	4.5	6,800	5,000	13,600	4.5	7,800	5,800	15,600	7
3/4	6 x 12	3/4	8,800	6,600	17,600	7	9,800	7,200	19,400	7	11,200	8,400	22,000	7
7/8	7 x 14	7/8	11,800	9,000	24,000	11	13,200	9,800	26,000	11	15,200	11,400	30,000	11
1	8 x 16	1	15,400	11,600	30,000	11	17,000	12,800	34,000	11	19,600	14,800	40,000	15
1 1/8	9 x 15	1 1/8	19,000	14,200	38,000	15	20,000	15,600	42,000	15	24,000	18,000	48,000	15
1 1/4	10 x 20	1 1/4	24,000	18,000	48,000	15	26,000	19,200	52,000	22	30,000	22,000	58,000	22
1 3/8	11 x 22	1 3/8	28,000	22,000	56,000	22	30,000	22,000	62,000	22	36,000	26,000	70,000	30
1 1/2	12 x 24	1 1/2	34,000	26,000	68,000	22	36,000	28,000	72,000	30	42,000	32,000	84,000	30
1 3/4	14 x 28	-	46,000	34,000	92,000	30	50,000	36,000	98,000	37	56,000	42,000	114,000	37
2	18 x 36	-	-	-	-	-	64,000	48,000	128,000	45	74,000	54,000	146,000	45

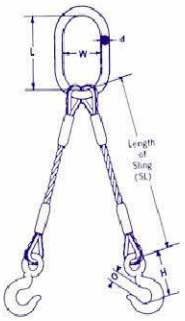
* These values apply only when D d ratio is 20 or greater

† IPS FC – Improved Plow Fiber Core

†† IPS IWRC - Improved Plow Steel Independent Wire Rope Core

††† EIPS FC – Extra Improved Plow Steel with Independent Wire Rope Core

Two Leg Bridle Slings

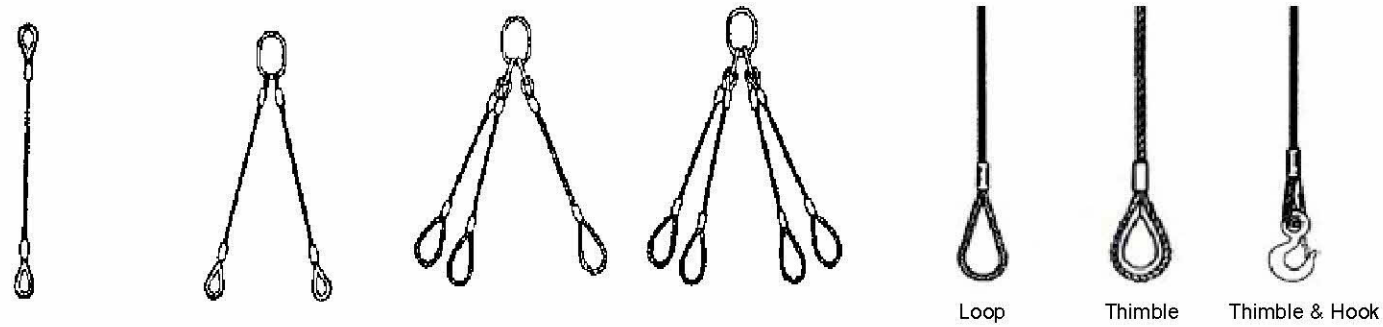


Rope Diameter (inches)	IPS FC† Capacity - Pounds				IPS IWRC†† Capacity - Pounds				EIPS FC††† Capacity - Pounds			
	Vertical Angle		Alloy Eye Hook #	Alloy Oblong Link Stock Dia.	Vertical Angle		Alloy Eye Hook #	Alloy Oblong Link Stock Dia.	Vertical Angle		Alloy Eye Hook #	Alloy Oblong Link Stock Dia.
	30°	45°			30°	45°			30°	45°		
1/4	1,760	1,440	1	1/2	1,940	1,580	1	1/2	2,200	1,820	1	1/2
1/3	2,800	2,200	1	1/2	3,000	2,400	1.5	1/2	3,400	2,800	1.5	1/2
3/8	3,800	3,200	1.5	1/2	4,200	3,600	1.5	1/2	5,000	4,000	2	5/8
4/9	5,200	4,400	2	5/8	5,800	4,800	3	5/8	6,600	5,400	3	5/8
1/2	6,800	5,600	3	5/8	7,600	6,200	3	3/4	8,800	7,200	4.5	3/4
5/9	8,600	7,000	4.5	3/4	9,600	7,800	4.5	3/4	11,000	9,000	4.5	7/8
5/8	10,600	8,800	4.5	7/8	11,800	9,600	4.5	7/8	13,600	11,000	7	1
3/4	15,200	12,400	7	1	16,800	13,800	7	1	19,400	15,800	7	1 1/8
7/8	20,000	16,800	11	1 1/8	22,000	18,600	11	1 1/4	26,000	22,000	11	1 1/4
1	26,000	22,000	11	1 1/4	30,000	24,000	11	1 3/8	34,000	28,000	15	1 1/2
1 1/8	32,000	26,000	15	1 1/2	36,000	30,000	15	1 1/2	42,000	34,000	15	1 3/4
1 1/4	40,000	32,000	15	1 3/4	44,000	36,000	22	1 3/4	52,000	42,000	22	2
1 3/8	48,000	40,000	22	1 3/4	54,000	44,000	22	2	62,000	50,000	30	2 1/4
1 1/2	58,000	46,000	22	2	64,000	52,000	30	2 1/4	72,000	60,000	30	2 1/4
1 3/4	78,000	62,000	30	2 1/2	86,000	70,000	37	2 1/2	98,000	80,000	37	2 3/4
2	-	-	-	-	108,000	88,000	45	3	124,000	100,000	45	3 1/2

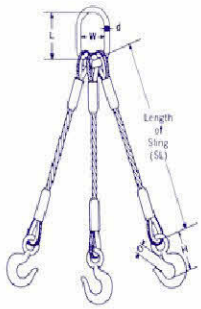
† IPS FC – Improved Plow Fiber Core

†† IPS IWRC - Improved Plow Steel Independent Wire Rope Core

††† EIPS FC – Extra Improved Plow Steel with Independent Wire Rope Core



Three Leg Bridle Slings



Rope Diameter (inches)	IPS FC† Capacity - Pounds				IPS IWRC†† Capacity - Pounds				EIPS FC††† Capacity - Pounds			
	Vertical Angle		Alloy Eye Hook #	Alloy Oblong Link Stock Diameter	Vertical Angle		Alloy Eye Hook #	Alloy Oblong Link Stock Diameter	Vertical Angle		Alloy Eye Hook #	Alloy Oblong Link Stock Diameter
	30°	45°			30°	45°			30°	45°		
1/4	2,600	2,200	1	1/2	2,800	2,400	1	1/2	3,400	2,800	1	1/2
1/3	4,000	3,400	1	1/2	4,600	3,600	1.5	1/2	5,200	4,200	1.5	5/8
3/8	5,800	4,800	1.5	5/8	6,400	5,200	1.5	5/8	7,400	6,000	2	3/4
4/9	8,000	6,400	2	3/4	8,800	7,200	3	3/4	10,000	8,200	3	3/4
1/2	10,200	8,400	3	7/8	11,400	9,200	3	7/8	13,200	10,600	4.5	7/8
5/9	13,000	10,600	4.5	7/8	14,200	11,600	4.5	1	16,600	13,600	4.5	1
5/8	16,000	13,000	4.5	1	17,600	14,400	4.5	1 1/8	20,000	16,600	7	1 1/8
3/4	22,000	18,600	7	1 1/4	26,000	20,000	7	1 1/4	28,000	24,000	7	1 3/8
7/8	30,000	26,000	11	1 3/8	34,000	28,000	11	1 1/2	40,000	32,000	11	1 3/4
1	40,000	32,000	11	1 3/4	44,000	36,000	11	1 3/4	50,000	42,000	15	2
1 1/8	48,000	40,000	15	1 3/4	54,000	44,000	15	1 7/8	62,000	50,000	15	2 1/4
1 1/4	60,000	50,000	15	2	66,000	54,000	22	2	76,000	62,000	22	2 1/4
1 3/8	72,000	60,000	22	2 1/4	80,000	66,000	22	2	92,000	76,000	30	2 3/4
1 1/2	86,000	70,000	22	2 1/2	94,000	78,000	30	2 1/2	110,000	90,000	30	3
1 3/4	116,000	94,000	30	3	128,000	104,000	37	3 1/4	146,000	120,000	37	3 1/2
2	-	-	-	-	160,000	132,000	45	3 3/4	184,000	152,000	45	4

IMPORTANT

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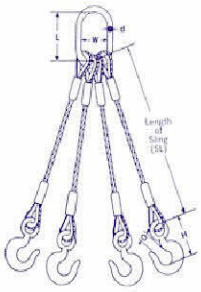
Four Leg Bridle Slings



Rope Diameter (inches)	IPS FC† Capacity - Pounds				IPS IWRC†† Capacity - Pounds				EIPS FC††† Capacity - Pounds			
	Vertical Angle		Alloy Eye Hook #	Master Link Stock Diameter	Vertical Angle		Alloy Eye Hook #	Master Link Stock Diameter	Vertical Angle		Alloy Eye Hook #	Master Link Stock Diameter
	30°	45°			30°	45°			30°	45°		
1/4	3,400	2,800	1	3/4	3,800	3,200	1	3/4	4,400	3,600	1	3/4
1/3	5,400	4,400	1	3/4	60,000	5,000	1.5	3/4	7,000	5,600	1.5	3/4
3/8	7,800	6,400	1.5	3/4	8,600	7,000	1.5	1	10,000	8,000	2	1
4/9	10,600	8,600	2	1	11,600	9,600	3	1	13,400	11,000	3	1
1/2	13,600	11,200	3	1	15,200	12,400	3	1	17,400	14,200	4.5	1 1/2
5/9	17,200	14,200	4.5	1 1/2	19,000	15,600	4.5	1 1/4	22,000	18,000	4.5	1 1/2
5/8	22,000	17,400	4.5	1 1/2	24,000	19,200	4.5	1 1/4	26,000	22,000	7	1 1/2
3/4	30,000	24,000	7	1 1/2	34,000	28,000	7	1 1/2	38,000	32,000	7	2
7/8	42,000	34,000	11	2	46,000	36,000	11	1 3/4	52,000	42,000	11	2 1/4
1	54,000	44,000	11	2 1/4	58,000	48,000	11	2	68,000	56,000	15	2 1/4
1 1/8	66,000	54,000	15	2 1/4	72,000	58,000	15	2	84,000	68,000	15	2 1/2
1 1/4	80,000	66,000	15	2 1/2	88,000	72,000	22	2 1/4	102,000	84,000	22	2 3/4
1 3/8	96,000	78,000	22	2 1/2	106,000	88,000	22	2 1/2	122,000	100,000	30	3 1/4
1 1/2	114,000	94,000	22	3 1/4	126,000	104,000	30	2 3/4	146,000	120,000	30	3 1/4
1 3/4	154,000	126,000	30	3 1/4	170,000	138,000	37	4	196,000	160,000	37	4

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