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www.HANESSUPPLY.com price: **$5.95**

Flemish Eye Wire Rope Slings - 105BX

DESIGN FACTOR 5:1

	Dia. of Rope (IN)	Min. Sling Length (FT IN)	Loop Dimensions		Rated Capacities In Tons (2000 LBS)					
			Width (IN)	Length (IN)	Single Leg Vertical	Choker Hitch	90°	Basket Hitch* 60°	45°	30°
6 X 19 EIP IWRC	1/4	1' 6"	2	4	0.65	0.48	1.3	1.1	.91	.65
	5/16	1' 9"	2-1/2	5	1.0	0.74	2.0	1.7	1.4	1.0
	3/8	2'	3	6	1.4	1.1	2.9	2.5	2.0	1.4
	1/2	2' 6"	4	8	2.5	1.9	5.1	4.4	3.6	2.5
	5/8	3'	5	10	3.9	2.9	7.8	6.8	5.5	3.9
	3/4	3' 6"	6	12	5.6	4.1	11	9.7	7.9	5.6
	7/8	4'	7	14	7.6	5.6	15	13	11	7.6
	1	4' 6"	8	16	9.8	7.2	20	17	14	9.8
	1-1/8	5'	9	18	12	9.1	24	21	17	12
6 X 37 EIP IWRC	1-1/4	5' 6"	10	20	15	11	30	26	21	15
	1-3/8	6'	11	22	18	13	36	31	25	18
	1-1/2	7'	12	24	21	16	42	37	30	21
	1-3/4	8'	14	28	28	21	57	49	40	28
	2	9'	16	32	37	28	73	63	52	37
	2-1/4	10'	18	36	44	35	89	77	63	44
	2-1/2	11'	20	40	54	42	109	94	77	54
	2-3/4	12'	22	44	65	51	130	113	92	65
	3	13'	24	48	77	60	153	133	108	77

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

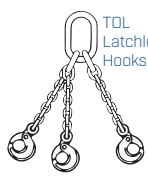
2-Leg, 3-Leg & 4-Leg Wire Rope Bridles

	Rope Dia. (IN)	Min. Sling Length (FT IN)	Eye Hook Cap. (TONS)	TYPE 200 Rated Capacity (TONS) 60°	45°	30°	Oblong Link Dia. (IN)	TYPE 300 Rated Capacity (TONS) 60°	45°	30°	Oblong Link Dia. (IN)	TYPE 400 Rated Capacity (TONS) 60°	45°	30°	Oblong Link Dia. (IN)
6 X 19 EIP IWRC	1/4	1' 3"	1	1.1	.91	.65	1/2	1.7	1.4	.97	1/2	2.2	1.8	1.3	1/2
	5/16	1' 6"	1	1.7	1.4	1.0	1/2	2.6	2.1	1.5	3/4	3.5	2.8	2.0	3/4
	3/8	1' 8"	1.5	2.5	2.0	1.4	3/4	3.7	3.0	2.2	3/4	5.0	4.1	2.9	1
	7/16	1' 10"	2	3.4	2.7	1.9	3/4	5.0	4.1	2.9	1	6.7	5.5	3.9	1
	1/2	2'	3	4.4	3.6	2.5	3/4	6.6	5.4	3.8	1	8.8	7.1	5.1	1-1/4
	9/16	2' 2"	5	5.5	4.5	3.2	1	8.3	6.8	4.8	1	11	9.0	6.4	1-1/4
	5/8	2' 4"	5	6.8	5.5	3.9	1	10	8.3	5.9	1-1/4	14	11	7.8	1-1/4
	3/4	2' 9"	7	9.7	7.9	5.6	1-1/4	15	12	8.4	1-1/2	19	16	11	1-3/4
	7/8	3' 3"	11	13	11	7.6	1-1/4	20	16	11	1-1/2	26	21	15	1-3/4
	1	3' 6"	11	17	14	9.8	1-1/2	26	21	15	1-3/4	34	28	20	2-1/4
	1-1/8	4'	15	21	17	12	1-3/4	31	26	18	2	42	34	24	2-3/4
6 X 37 EIP IWRC	1-1/4	4' 6"	15	26	21	15	1-3/4	38	31	22	2-1/4	51	42	30	2-3/4
	1-3/8	5'	22	31	25	18	2	46	38	27	2-3/4	62	50	36	3-1/4
	1-1/2	5' 6"	22	37	30	21	2-1/4	55	45	32	2-3/4	73	60	42	3-3/4
	1-3/4	6' 6"	30	49	40	28	2-1/2	74	60	42	3	98	80	57	4-1/2
	2	8'	37	63	52	37	2-3/4	95	78	55	3-1/2	127	104	73	4-1/2

Alloy Chain Slings

DESIGN FACTOR 4:1

	Chain Size IN	Chain Size MM	Type S or C 90°	Double Branch Type D 60°	Double Branch Type D 45°	Double Branch Type D 30°	Triple/Quad Branch Type 60°
GRADE 100	7/32	5.5	2,700	4,700	3,800	2,700	7,000
	9/32	7.0	4,300	7,400	6,100	4,300	11,200
	3/8	10.0	8,800	15,200	12,400	8,800	22,900
	1/2	13.0	15,000	26,000	21,200	15,000	39,000
	5/8	16.0	22,600	39,100	32,000	22,600	58,700
	3/4	20.0	35,300	61,100	49,900	35,300	91,700
	7/8	22.2	42,700	74,000	60,400	42,700	110,900
	1	26	59,700	103,200	84,200	59,600	154,800
	1-1/4	32	90,400	156,500	127,800	90,400	313,100
GRADE 80	7/32	5.5	2,100	3,600	3,000	2,100	5,450
	9/32	7.0	3,500	6,100	4,900	3,500	9,100
	3/8	10.0	7,100	12,300	10,000	7,100	18,400
	1/2	13.0	12,000	20,800	17,000	12,000	31,200
	5/8	16.0	18,100	31,300	25,600	18,100	47,000
	3/4	20.0	28,300	49,000	40,000	28,300	73,500
	7/8	22.0	34,200	59,200	48,400	34,200	88,900
	1	26.0	47,700	82,600	67,400	47,700	123,900
	1-1/4	32.0	72,300	125,200	102,200	72,300	187,800



Nylon Web Slings - Type 3 & 4

DESIGN FACTOR 5:1

Flat-Eye

	Web Width (IN)	Type 3 & 4 (EE)	Rated Capacities (LBS) Vertical	Choker	Basket
1 PLY	1	EE1-801	1,600	1,200	3,200
	2	EE1-802	3,200	2,400	6,400
	3	EE1-803	4,800	3,600	9,600
	4	EE1-804	6,400	4,800	12,800
	5	EE1-805	8,000	6,000	16,000
	6	EE1-806	9,600	7,200	19,200
	8	EE1-808	12,800	9,600	25,600
	10	EE1-810	16,000	12,000	32,000
	12	EE1-812	19,200	14,400	38,400
2 PLY	1	EE2-801	3,200	2,400	6,400
	2	EE2-802	6,400	4,800	12,800
	3	EE2-803	8,600	6,500	17,200
	4	EE2-804	11,500	8,600	23,000
	5	EE2-805	13,600	10,200	27,200
	6	EE2-806	16,300	12,200	32,600
	8	EE2-808	19,200	14,400	38,400
	10	EE2-810	22,400	16,800	44,800
	12	EE2-812	26,900	20,100	53,800

Twisted-Eye

	Web Width (IN)	Type 3 & 4 (EE)	Rated Capacities (LBS) Vertical	Choker	Basket
3 PLY	1	EE3-801	4,100	3,100	8,200
	2	EE3-802	8,300	6,200	16,600
	3	EE3-803	12,500	9,300	25,000
	4	EE3-804	16,000	12,000	32,000
	5	EE3-805	19,200	14,400	38,400
	6	EE3-806	23,000	17,200	46,000
	8	EE3-808	30,700	23,000	61,400
	10	EE3-810	36,800	27,600	73,600
	12	EE3-812	44,000	33,000	88,000
4 PLY	1	EE4-801	5,000	3,800	10,000
	2	EE4-802	10,000	7,500	20,000
	3	EE4-803	14,900	11,100	29,800
	4	EE4-804	19,800	14,800	39,600
	5	EE4-805	24,800	18,600	49,600
	6	EE4-806	29,800	22,300	59,600
	8	EE4-808	39,700	29,700	79,400
	10	EE4-810	49,600	37,200	99,200
	12	EE4-812	59,500	44,600	119,000

Nylon Web Slings - Type 5

DESIGN FACTOR 5:1

	Web Width (IN)	Type 5 (EN)	Rated Capacities (LBS) Vertical	Choker	Basket
1 PLY	1	EN1-801	3,200	2,500	6,400
	2	EN1-802	6,400	5,000	12,800
	3	EN1-803	8,600	6,900	17,200
	4	EN1-804	11,500	9,200	23,000
	5	EN1-805	13,600	10,900	27,200
	6	EN1-806	16,300	13,000	32,600
	8	EN1-808	19,200	15,400	38,400
	10	EN1-810	22,400	17,900	44,800
	12	EN1-812	26,900	21,500	53,800
2 PLY	1	EN2-801	6,200	4,900	12,400
	2	EN2-802	12,200	9,800	24,400
	3	EN2-803	16,300	13,000	32,600
	4	EN2-804	20,700	16,500	41,400
	5	EN2-805	24,500	19,600	49,000
	6	EN2-806	28,600	23,000	57,200
	8	EN2-808	30,700	24,500	61,400
	10	EN2-810	33,600	26,800	67,200
	12	EN2-812	37,600	30,000	75,200

	Web Width (IN)	Type 5 (EN)	Rated Capacities (LBS) Vertical	Choker	Basket
3 PLY	1	EN3-801	8,000	6,400	16,000
	2	EN3-802	16,000	12,800	32,000
	3	EN3-803	21,500	17,200	43,000
	4	EN3-804	28,700	23,000	57,400
	5	EN3-805	34,000	27,200	68,000
	6	EN3-806	40,700	32,500	81,400
	8	EN3-808	46,000	36,800	92,000
	10	EN3-810	51,500	41,200	103,000
	12	EN3-812	59,200	47,300	118,400
4 PLY	1	EN4-801	10,000	8,000	20,000
	2	EN4-802	19,800	15,800	39,600
	3	EN4-803	26,700	21,300	53,400
	4	EN4-804	35,600	28,400	71,200
	5	EN4-805	42,200	33,700	84,400
	6	EN4-806	50,500	40,400	101,000
	8	EN4-808	57,600	46,000	115,200
	10	EN4-810	67,200	53,700	134,400
	12	EN4-812	80,700	64,500	161,400

Nylon Web Slings - Type 1,2 & 6

	Web Width (IN)	Type 1 (TC)	Type 2 (TT)	Rated Capacities (LBS) Vertical	Choker*	Basket
1 PLY	2	TC1-802	TT1-802	3,200	2,400	6,400
	3	TC1-803	TT1-803	4,800	3,600	9,600
	4	TC1-804	TT1-804	6,400	4,800	12,800
	5	TC1-805	TT1-805	8,000	6,000	16,000
	6	TC1-806	TT1-806	9,600	7,200	19,200
	8	TC1-808	TT1-808	12,800	9,600	25,600
	10	TC1-810	TT1-810	16,000	12,000	32,000
	12	TC1-812	TT1-812	19,200	14,400	38,400
	16	TC1-816	TT1-816	25,500	19,200	51,000
	18	TC1-818	TT1-818	28,700	21,000	57,400
	20	TC1-820	TT1-820	32,000	24,000	64,000
	24	TC1-824	TT1-824	38,400	28,800	76,800
2 PLY	2	TC2-802	TT2-802	6,400	4,800	12,800
	3	TC2-803	TT2-803	8,600	6,500	17,200
	4	TC2-804	TT2-804	11,500	8,600	23,000
	5	TC2-805	TT2-805	14,000	10,500	28,000
	6	TC2-806	TT2-806	16,800	12,600	33,600
	8	TC2-808	TT2-808	22,400	16,800	44,800
	10	TC2-810	TT2-810	28,000	21,000	56,000
	12	TC2-812	TT2-812	33,600	25,200	67,200
	16	TC2-816	TT2-816	44,800	33,600	89,600
	18	TC2-818	TT2-818	50,400	37,800	100,800
	20	TC2-820	TT2-820	56,000	42,000	112,000
	24	TC2-824	TT2-824	67,200	50,400	134,400

Three & Four Ply Hardware Slings are Available upon Request.
* Type Two cannot be used with a choker hitch.

	Sling Width (IN)	Type 6 (RE)	Vertical (LBS)	Choker (LBS)	Basket (LBS)	Sling Thkns. (IN)	Eye Length (IN)
TYPE 6 - REVERSED EYE - HEAVY DUTY WEB							
1 PLY	2	RE1-802	4,500	3,600	9,000	5/16	9
	4	RE1-804	7,700	6,200	15,400	5/16	15
	6	RE1-806	11,000	8,800	22,000	5/16	15
2 PLY	2	RE2-802	6,500	5,200	13,000	1/2	9
	4	RE2-804	13,000	10,400	26,000	1/2	15
	6	RE2-806	20,000	16,000	40,000	1/2	15
3 PLY	4	RE3-804	16,400	13,100	32,800	11/16	15
	6	RE3-806	25,500	20,400	51,000	11/16	15
4 PLY	6	RE4-806	34,000	27,200	68,000	7/8	15
TYPE 6 - REVERSED EYE - LIGHT DUTY WEB							
1 PLY	2	RE1-602	3,600	2,900	7,200	1/4	9
	3-1/2	RE1-603.5	5,000	4,000	10,000	1/4	12
	4	RE1-604	6,800	5,400	13,600	1/4	15
	6	RE1-606	8,000	6,400	16,000	1/4	15
2 PLY	2	RE2-602	5,200	4,200	10,400	3/8	9
	3-1/2	RE2-603.5	9,000	7,200	18,000	3/8	12
	4	RE2-604	10,500	8,400	21,000	3/8	15
	6	RE2-606	14,400	11,500	28,800	3/8	15
3 PLY	3-1/2	RE3-603.5	12,000	9,600	24,000	1/2	12
	4	RE3-604	14,000	11,200	28,000	1/2	15
	6	RE3-606	20,000	16,000	40,000	1/2	15

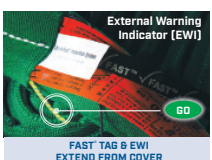
Endless Polyester Round Slings

DESIGN FACTOR 5:1

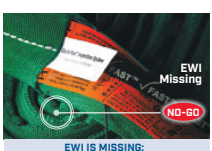
Stock Number	Color	Rated Capacities (LBS) Vertical	Choker	Basket	Min. Length (FT)	Approx. Measurements Weight (LBS/FT)	Body Dia. Relaxed (IN)	Width at Load (IN)
SP260	Purple	2,600	2,100	5,200	3	.20	5/8	1-1/8
SP530	Green	5,300	4,200	10,600	3	.30	7/8	1-1/2
SP840	Yellow	8,400	6,700	16,800	3	.40	1-1/8	1-7/8
SP1060	Tan	10,600	8,500	21,200	3	.50	1-1/8	2-1/8
SP1320	Red	13,200	10,600	26,400	3	.70	1-3/8	2-1/4
SP1680	White	16,800	13,400	33,600	3	.80	1-3/8	2-1/2
SP2120	Blue	21,200	17,000	42,400	3	1.1	1-3/4	3
SP3100	Grey	31,000	24,800	62,000	3	1.6	2-1/4	3-3/4
SP4000	Orange	40,000	32,000	80,000	5	2.0	2-1/2	4-3/16
SP5300	Brown	53,000	42,400	106,000	8	2.5	2-3/4	4-5/8
SP6600	Olive	66,000	52,800	132,000	8	3.1	3-1/8	5-1/4
SP9000	Black	90,000	72,000	180,000	8	4.0	3-5/8	6
SP10000	Black	100,000	80,000	200,000	8	4.4	4	6-1/4

Twin-Path® Extra Covermax® Slings

SLINGMAX® RIGGING SOLUTIONS



FAST® TAG & EWI EXTEND FROM COVER



EWI IS MISSING: REMOVE FROM SERVICE

TWIN-PATH EXTRA COVERMAX CHECKFAST	RATED CAPACITIES (LBS) DESIGN FACTOR 5:1 Vertical	Choker	Vertical Basket 90°	Basket Hitches 60°	45°	Approx Weight (LBS/FT) (Bearing-Bearing)	Nominal Body Width (IN)
						Find USA Patent Information: www.hanessupply.com/slingmax-patents	
TPXCCF 1000	10,000	8,000	20,000	17,320	14,140	.40	1.5 - 3
TPXCCF 1500	15,000	12,000	30,000	25,980	21,210	.45	1.5 - 3
TPXCCF 2000	20,000	16,000	40,000	34,640	28,280	.51	1.5 - 3
TPXCCF 2500	25,000	20,000	50,000	43,300	35,350	.57	1.5 - 3
TPXCCF 3000	30,000	24,000	60,000	51,960	42,420	.71	2.0 - 4
TPXCCF 4000	40,000	32,000	80,000	69,280	56,560	.83	2.0 - 4
TPXCCF 5000	50,000	40,000	100,000	86,600	70,700	1.14	2.5 - 5
TPXCCF 6000	60,000	48,000	120,000	103,920	84,840	1.27	2.5 - 5
TPXCCF 7000	70,000	56,000	140,000	121,240	98,980	1.39	2.5 - 5
TPXCCF 8500	85,000	68,000	170,000	147,220	120,190	1.65	3.0 - 6
TPXCCF 10000	100,000	80,000	200,000	173,200	141,400	1.84	3.0 - 6
TPXCCF 12500	125,000	100,000	250,000	216,500	176,750	2.35	4.0 - 8
TPXCCF 15000	150,000	120,000	300,000	259,800	212,100	2.66	4.0 - 8
TPXCCF 17500	175,000	140,000	350,000	303,100	247,450	3.14	5.0 - 10
TPXCCF 20000	200,000	160,000	400,000	346,400	282,800	3.45	5.0 - 10
TPXCCF 25000	250,000	200,000	500,000	433,000	353,500	4.07	5.0 - 10
TPXCCF 27500	275,000	220,000	550,000	476,300	388,850	4.61	6.0 - 12
TPXCCF 30000	300,000	240,000	600,000	519,600	424,200	4.92	6.0 - 12
TPXCCF 40000	400,000	320,000	800,000	692,800	565,600	6.54	7.0 - 14
TPXCCF 50000	500,000	400,000	1,000,000	866,000	707,000	8.15	8.0 - 16

Inspection Criteria - Slings

INSPECTION FREQUENCY PER ASME B30.9

A visual inspection for damage shall be performed by the user or designated person each day or shift the sling is used.
A complete inspection for damage shall be performed periodically by a designated person, at least annually.
Written records of most recent periodic inspection shall be maintained.

REJECTION CRITERIA PER ASME B30.9

Missing or illegible sling identification; evidence of heat damage; slings that are knotted; fittings that are pitted, corroded, cracked, bent, twisted, gouged, or broken; **other conditions, including visible damage, that cause doubt as to the continued use of the sling.**

WIRE ROPE SLINGS	CHAIN SLINGS	WEB SLINGS	ROUND SLINGS
Excessive broken wires, for strand-laid and single part slings, ten randomly distributed broken wires in one rope lay or five broken wires in one strand in one rope lay. Severe localized abrasion or scraping, kinking, crushing, or birdcaging. Any other damage resulting in damage to the rope structure. Severe corrosion of the rope or end attachments.	Cracks or breaks. Excessive wear, nicks or gouges. Stretched chain links or components. Bent, twisted or deformed chain links or components. Excessive pitting or corrosion. Lack of ability of chain or components to hinge freely. Weld spatter.	Acid or caustic burns. Melting or charring of any part of the sling. Holes, tears, cuts or snags. Broken or worn stitching in load bearing splices. Excessive abrasive wear. Discoloration and/or brittle or stiff areas on any part of the sling, which may mean chemical or ultraviolet/sunlight damage.	Acid or caustic burns. Evidence of heat damage. Holes, tears, cuts, abrasive wear or snags that expose the core yarns. Broken or damaged core yarns. Weld spatter that exposes core yarns. Discoloration and/or brittle or stiff areas on any part of the slings, which may mean chemical or ultraviolet/sunlight damage.

ALL HSI SLINGS HAVE DOUBLE RATED CAPACITY TAGS

Inspection Criteria - Hardware

INSPECTION FREQUENCY PER ASME B30.26

A visual inspection shall be performed by the user or designated person each day before the rigging hardware is used. A periodic inspection shall be performed by a designated person, at least annually. The rigging hardware shall be examined and a determination made as to whether they constitute a hazard. Written records are not required.

Semi-permanent and inaccessible locations where frequent inspections are not feasible, shall have periodic inspections performed.

REJECTION CRITERIA PER ASME B30.26

- Missing or illegible manufacturer's name or trademark and/or rated load identification (or size as required).
- A 10% or more reduction of the original dimension.
- Bent, twisted, distorted, stretched, elongated, cracked or broken load bearing components.
- Excessive nicks, gouges, pitting, and corrosion.
- Indications of heat damage including weld spatter or arc strikes, evidence of unauthorized welding.
- Loose or missing nuts, bolts, cotter pins, snap rings, or other fasteners and retaining devices.
- Unauthorized replacement components or other visible conditions that cause doubt as to the continued use of the rigging hardware and sling.

Additionally inspect wire rope clips for:
- Insufficient number of clips.
- Incorrect spacing between clips.
- Improperly tightened clips.
- Indications of damaged wire rope or wire rope slippage.
- Improper assembly.

Additionally, inspect wedge sockets for:
- Indications of damaged wire rope or wire rope slippage.
- Improper assembly.

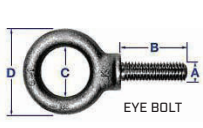
ADDITIONAL REJECTION CRITERIA PER ASME B30.10-HOOKS

- Any visibly apparent bend or twist from the plane of the unbent hook.
- Any distortion causing an increase in throat opening of 5%, not to exceed 1/4".
- Missing or illegible rated load identification.
- Missing or illegible hook manufacturer's identification or secondary manufacturer identification.

Eye Bolts & Swivel Hoist Rings

UNC-2A EYE BOLTS

Shank Diameter (IN) A	Shank Length (IN) B	Eye I.D. (IN) C	Eye O.D. (IN) D	Rated Capacity (LBS)	Weight (LBS)
1/4 - 20	1	3/4	1-3/16	500	.06
5/16 - 18	1-1/8	7/8	1-7/16	900	.11
3/8 - 16	1-1/4	1	1-21/32	1300	.18
7/16 - 14	1-3/8	1-3/32	1-27/32	1800	.23
1/2 - 13	1-1/2	1-3/16	2-1/16	2400	.35
9/16 - 12	1-5/8	1-9/32	2-9/32	3000	.47
5/8 - 11	1-3/4	1-3/8	2-1/2	4000	.70
3/4 - 10	2	1-1/2	2-13/16	5000	1.10
7/8 - 9	2-1/4	1-11/16	3-1/4	7000	1.70
1 - 8	2-1/2	1-13/16	3-9/16	9000	2.36
1-1/8 - 7	2-3/4	2	4	12000	3.41
1-1/4 - 7	3	2-3/16	4-7/16	15000	4.68
1-1/2 - 6	3-1/2	2-1/2	5-3/16	21000	7.77
1-3/4 - 5	3-3/4	2-7/8	6-1/16	28000	11.35
2 - 4-1/2	4	3-1/4	6-7/8	38000	16.70
2-1/2 - 4	5	4	8-9/16	56000	29.80



EYE BOLT


SWIVEL HOIST RING

DESIGN FACTOR 5:1

SWIVEL HOIST RINGS UNC THREADS

Rated Loads (LBS)	Thread Size (IN)	Torque (FT/LBS)
600	1/4 - 20	6
800	5/16 - 18	7
1,000	3/8 - 16	12
2,500	1/2 - 13	28
4,000	5/8 - 11	60
5,000	3/4 - 10	100
8,000	7/8 - 9	160
10,000	1 - 8	230
15,000	1-1/4 - 7	470
24,000	1-1/2 - 6	800
30,000	2 - 4-1/2	1100
50,000	2-1/2 - 4	2100
75,000	3 - 4	4300
100,000	3-1/2 - 4	5100

Shackles

Crosby®

SCREW PIN AND BOLT TYPE SHACKLES

Nominal Dia. Size of Bow (IN)	Carbon Maximum Working Load (TONS)	Alloy Maximum Working Load (TONS)	Inside Width at Pin (IN)	Dia. of Pin (IN)
3/16	1/3	—	.38	.25
1/4	1/2	—	.47	.31
5/16	3/4	—	.53	.38
3/8	1	2	.66	.44
7/16	1-1/2	2.6	.75	.50
1/2	2	3.3	.81	.63
5/8	3-1/4	5	1.06	.75
3/4	4-3/4	7	1.25	.88
7/8	6-1/2	9.5	1.44	1.00
1	8-1/2	12.5	1.69	1.13
1-1/8	9-1/2	15	1.81	1.25
1-1/4	12	18	2.03	1.38
1-3/8	13-1/2	21	2.25	1.50
1-1/2	17	30	2.38	1.63
1-3/4	25	40	2.88	2.00
2	35	55	3.25	2.25
2-1/2	55	85	4.12	2.75


G-209


G-209A


G-2130/G-2140

WIDE BODY SHACKLES

Working Load Limit (TONS)	Effective Body Diameter (IN)	Inside Width at Pin (IN)	Dia. of Pin (IN)
30	4.1	2.37	1.63
40	3.6	2.88	2.00
55	4.3	3.25	2.25
75	5.9	4.13	2.75
EASY LOC® WIDE BODY SHACKLES			
125	6.8	5.12	3.15
200	9.5	5.91	4.12
300	11.4	7.38	5.25


G-2160


G-2160E

SLING SAVER® ROUND SLING SHACKLES

Sling Eye Width (IN)	Round Sling Size #	WLL (TONS)*
1	1 & 2	3-1/4
1.5	3 & 4	6-1/2
2	5 & 6	8-3/4
3	7 & 8	12-1/2
4	9 & 10	20-1/2
5	11 & 12	35
6	13	50


S-252
(S-253 SCREW PIN)

*Consult manufacturers catalog for exact load ratings of hardware being used.

Wire Rope Clips

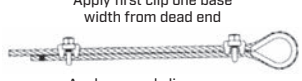
U-BOLT CLIP

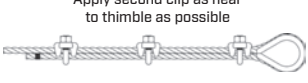
Size (IN)	Number of Clips	Turnback Length (IN)	Torque (FT/LBS)
1/8	2	3-1/4	4.5
3/16	2	3-3/4	7.5
1/4	2	4-3/4	15
5/16	2	5-1/4	30
3/8	2	6-1/2	45
7/16	2	7	65
1/2	3	11-1/2	65
9/16	3	12	95
5/8	3	12	95
3/4	4	18	130
7/8	4	19	225
1	5	26	225
1-1/8	6	34	225
1-1/4	7	44	360
1-3/8	7	44	360
1-1/2	8	54	360
1-5/8	8	58	430
1-3/4	8	61	590
2	8	71	750


G-450


G-429


Apply first clip one base width from dead end


Apply second clip as near to thimble as possible


Apply all additional clips evenly between the first two clips

Crosby®

FIST GRIP CLIP

Size (IN)	Number of Clips	Turnback Length (IN)	Torque (FT/LBS)
3/16	2	4	30
1/4	2	4	30
5/16	2	5	30
3/8	2	5-1/4	45
7/16	2	6-1/2	65
1/2	3	11	65
9/16	3	12-3/4	130
5/8	3	13-1/2	130
3/4	3	16	225
7/8	4	26	225
1	5	37	225

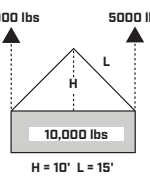
Some standards may require a minimum of 3 wire rope clips. The number of clips shown (see Table) is based upon using RRL or RLL wire rope, 6 x 19 or 6 x 37 Class, FC or IWRC; IPS or EIP, EIPS. The number of clips shown also applies to rotation-resistant RRL wire rope, 8 x 19 Class, IPS, EIP, EIPS sizes 1-1/2 inch and smaller; and to rotation-resistant RRL wire rope, 19 x 7 Class, IPS, EIP, EIPS sizes 1-3/4 inch and smaller. If a pulley (sheave) is used for turning back the wire rope, add one additional clip. Clips are 80% efficient under 1" and 90% 1" and above.

Technical Data

LOAD FACTOR MULTIPLIER

Leg Angle	Load Factor	Capacity Reduction Sin (a)
90°	1.000	1.000
85°	1.003	.9962
80°	1.015	.9848
75°	1.035	.9659
70°	1.064	.9397
65°	1.103	.9063
60°	1.154	.8660
55°	1.220	.8191
50°	1.305	.7660
45°	1.414	.7071
30°	2.000	.5000

LOAD ANGLE FACTORS



H = 10' L = 15'

$\frac{L}{H}$ = LAF (Load Angle Factor)

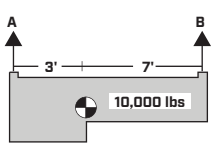
Example: $\frac{15}{10}$ 1.5 (LAF)

Tension in L = $\frac{L}{H}$ X L's share of the load

Tension in L = $\frac{15}{10}$ X 5,000

1.5 x 5,000 Ten. = 7,500 lbs

OFF-SET CENTER OF GRAVITY (SHARE OF THE LOAD)



Inverse Proportion to Distance

Lift Point A
7 + 3 = 10, $\frac{7}{10}$ = .70
.70 x 10,000 = 7,000lbs.

Lift Point B
7 + 3 = 10, $\frac{3}{10}$ = .30
.30 x 10,000 = 3,000lbs.

WEIGHTS

Unit Weight Steel = 490 lbs/ft³
Unit Weight Aluminum = 165 lbs/ft³
Unit Weight Concrete = 150 lb/ft³
Unit Weight Wood = 50 lbs/ft³
Unit Weight Water = 62 lbs/ft³
Unit Weight Sand and Gravel = 120 lbs/ft³
Unit Weight Copper = 560 lbs/ft³
Unit Weight Oil = 58 lbs/ft³

MEASURES

1 Cubic Ft. = 7.5 gals
1 Metric Ton = 1.1 US Tons
1 Kilogram = 2.2 lbs
1/2 Inch = 12.7 mm
1 Inch = 25.4mm

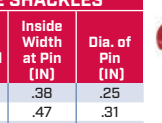
Technical Data

D/d Ratio

D/d Ratio	Efficiencies	D/d Ratio	Efficiencies
25	100%	3.5	73%
20	92%	3.25	72%
15	88%	3	71%
10	86%	2.75	70%
8	84%	2.5	68%
6	80%	2.25	67%
5	78%	2	65%
4.75	77%	1.75	62%
4.5	76%	1.5	59%
4	75%	1.25	55%
3.75	74%	1	50%

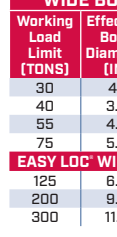
BASKET HITCH CAPACITY

A basket hitch has twice the capacity of a single leg only if D/d ratio is 25/1 and the legs are vertical.



CAPACITY % OF ANGLE	SINGLE LEG
90	200%
60	170%
45	140%
30	100%

RATED CAPACITY ADJUSTMENT FOR CHOKER HITCHES



RATED CAPACITY ADJUSTMENT FOR CHOKER HITCHES	
Angle of Choke in Degrees	Percent of Sling Rated Capacity Applicable
120-180°	100%
90-119°	87%
60-89°	74%
30-59°	62%
0-29°	49%

When a choke is drawn down tight against a load, or a side, pull is exerted resulting in an angle of less than 120°, an adjustment must be made for further reduction of the sling rated capacity.

HORIZONTAL SLING ANGLE

EYE BOLTS - ANGULAR LOADING

Horizontal Sling Angle	Loss of Strength	Adjusted WLL
90°	0%	100% of in Line
60°	35%	65% of in Line
45°	70%	30% of in Line
30°	75%	25% of in Line

SIDE LOADING OF SHACKLES

SIDE LOADING OF SHACKLES	
Angle of Side Load	Loss of WLL
None, In-Line	None
45°	30% Loss
90°	50% Loss

Mobile Crane Hand Signals

*Flex fingers in and out as load movement is desired.

The Basic Rigging Plan

1. Who is responsible (competent) for the rigging?
2. Has communications been established?
3. Is the rigging in acceptable condition?
4. Is the rigging appropriate for lifting?
5. Does the rigging have proper identification?
6. Does all gear have known working load limits?
7. What is the weight of the load?
8. Where is the load's center of gravity?
9. What is the sling angle?
10. Will there be any side or angular loading?
11. Are the slings padded against corners, edges, protrusions or abrasive surfaces?
12. Are the working load limits adequate?
13. Is the load rigged to the center of gravity?
14. Is the hitch appropriate for the load?
15. Is a tag line required to control load?
16. Will personnel be clear of suspended loads?
17. Is there any possibility of fouling?
18. Will the load lift level and be stable?
19. Any unusual environmental concerns?
20. Any special requirements?

The rigging must be used within manufacturer's recommendations and industry standards that include OSHA, ASME, ANSI, API and others.

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