WIRE ROPE SLING
WEBBING SLING
CHAIN SLING
RIGGING EQUIPMENT AND ACCESSORIES

บริษัท เคซีบี สลิง (ประเทศไทย) จำกัด
KCB SLING (THAILAND) CO.,LTD.
33/7 หมู่ 17 ตำบลบึงคำพร้อย อำเภอลำลูกกา จังหวัดปทุมธานี 12150
33/7 Moo 17 Tumbol Buangkamproy, Ampher Lamlukka, Pathumthani 12150
Tel. : 02-1010323-4, 080-4495720 Fax, : 02-1010726
E-mail : centerkcb@hotmail.com, kobchokkcb@hotmail.com Website : www.kcbsling.co.th

บริษัท เคซีบี สลิง (ประเทศไทย) จำกัด ดำเนินกิจการ นำเข้าสินค้าเกี่ยวกับอุปกรณ์การยก ที่มีคุณภาพสูง จากต่างประเทศเพื่อมาประกอบ จัดจำหน่าย และให้บริการแก่กลุ่มลูกค้าชั้นนำ ภายในประเทศ อาทิ เช่น กลุ่มธุรกิจก่อสร้างโครงการต่างๆ กลุ่มโรงงานอุตสาหกรรม และ กลุ่ม บริษัทสำรวจขุดเจาะน้ำมันและก๊าซธรรมชาติ ทั้งบนบก ในทะเล ฯลฯ

ด้วยประสบการณ์อันยาวนานโดยตรง จากการให้บริการลูกค้าในกลุ่มธุรกิจต่างๆ ภายใต้ การควบคุมดูแลขั้นตอนการผลิต และ ประกอบอุปกรณ์การยกในแต่ละประเภท เพื่อให้เหมาะสม กับการใช้งานที่แตกต่างกันไป โดยทำการทดสอบแรงดึง อุปกรณ์การยกทุกครั้ง เพื่อออกใบรับรอง (Certificate) ให้กับลูกค้าก่อนส่งมอบงานเสมอมา ด้วยคุณภาพและบริการที่ดี บริษัทฯจึงได้รับ ความไว้วางใจในการให้บริการจากกลุ่มลูกค้าชั้นนำต่างๆด้วยดีตลอดมา

ชื่อ	:	บริษัท เคซีบี สลิง (ประเทศไทย) จำกัด
สถานที่ตั้ง	:	เลขที่ 33/7 หมู่ 17 ตำบลบึงคำพร้อย
		อำเภอลำลูกกา จังหวัดปทุมธานี 12150
โทรศัพท์	:	02-1010323-4, 080-4495720
โทรสาร	:	02-1010726
E-mail	:	centerkcb@hotmail.com, kobchokkcb@hotmail.com
Website	:	www.kcbsling.co.th

สินค้าหลักของบริษัทฯ ประกอบด้วย

กลุ่มลวดสลิง :

ประกอบไปด้วย ลวดสลิง ลวดสลิงยก ลวดสลิงสแตนเลส สลิงประกอบเป็นชุดรูปแบบต่างๆ

ภายใต้ยี่ห้อ KISWIRE, USHA, TAYMAX ซึ่งได้มาตรฐาน API 9A รับรองคุณภาพ

กลุ่มสลิงอ่อน :

ประกอบไปด้วย สลิงแบนห่วงหัวท้าย (Webbing Sling) สลิงกลม (Round Sling) สายรัด (Ratchet Lashing)

ภายใต้ยี่ห้อ TRACK คุณภาพสูงตามมาตรฐาน EN-1492-1, EN-1492-2, EN-12195-2

กลุ่มอุปกรณ์ช่วยยก :

ประกอบไปด้วย SHACKLE, HOOK, EYE BOLT, TURNBUCKLE, SNACTHBLOCK, LINK, CONNECTING LINK, SWIVEL, ALLOY CHAIN OTHER

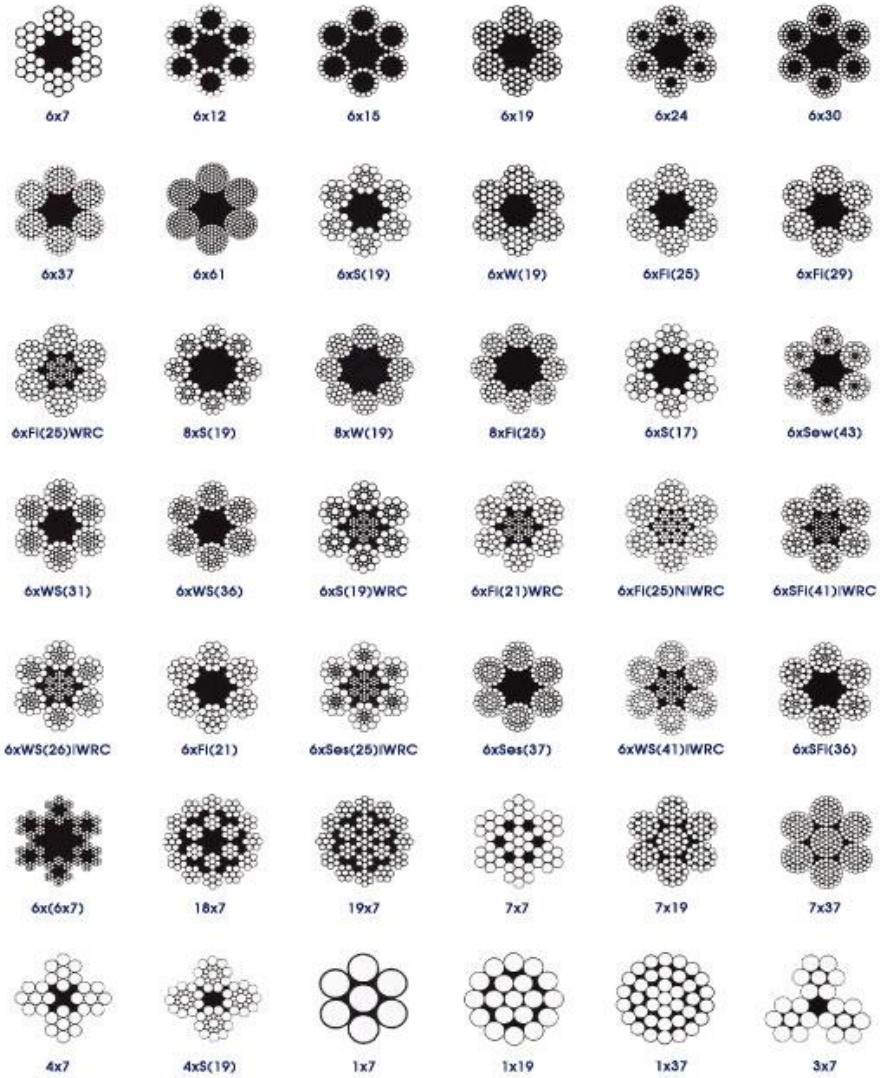
ภายใต้ยี่ห้อ "CROSBY" พร้อมใบรับรอง Certificate

นอกจากนี้ บริษัทฯยังให้การบริการออกแบบ อุปกรณ์การยกในรูปแบบต่างๆ เพื่อให้เหมาะ กับการใช้งานในแต่ละประเภท ตามมาตฐานสากล BS EN 13414-1 (European standard covering wire rope slings for general lifting service)

How To Order

In ordering steel wire rope, you are requested to give us complete information as specified below :

1. Application : Working condition, type of reprocessing.
2. Size : Diameter of the rope in millimeters or inches.
3. Construction : Number of strands, number of wires per strand and type of strand construction.
4. Type of Core : Fiber core (FC), independent wire rope core (IWRC), or independent wire strand core (IWSC).
5. Lay : Right regular lay, left regular lay, right lang lay, left lang lay.
6. Preforming : Preformed or not.
7. Material : Bright (ungalvanized), galvanized or stainless steel.
8. Wire Grade : Tensile strength of the wires.
9. Breaking Load : Minimum or calculated breaking load in tones or pounds.
10. Lubrication : Whether lubrication is desired or not, and required lubricant.
11. Packing Length : Lenght of wire rope per package.
12. Packing : In coils wrapped with oil paper and hessian (or PP) cloth, or on wooden reels.
13. Quantity : By number of coils or reels, by length or weight.
14. Specification : Any recognized specification, if required.
15. Test Report : Any format or ISO/IEC 17025 accredited test report.
16. Remarks : Other requirements such as coating, swaging, armouring, shipping, etc.



WHAT IS A WIRE ROPE

Fig. illustrates the component parts of a wire rope. In general, a wire rope consists of a number of wire stands formed helically about a central axis. The most popular ropes have six or eight strands supported by an axial member known as the core. There are other constructions, but they are less common. Each strand is composed of a number of individual wires which have been formed helically about an axial member called the center. This center supporting member of the strand is generally once or more wires, however, it may be natural fibers (cotton, hemp, sisal, etc.) or synthetic fibers (rayon, nylon, polypropylene).

RAW MATERIALS

Ungalvanized (Bright) Steel Wire

Bright steel wire is chiefly used for wire ropes of which the (rope) life is determined by wear and deterioration rather than by corrosion. When comparing the effects of wear and deterioration with that of corrosion one should bear in mind that even a bright wire rope can to some extent be protected from corrosion by adequate lubrication and maintenance with a suitable wire rope lubricant.

Drawn Galvanized Steel Wire

The wire is drawn to a diameter larger than the required final diameter, then it is hot dip galvanized and afterwards drawn to the right size. During this last phase the wire is drawn cold and thereby the quality of the bright raw material which was partially lost by the galvanizing process is restored. Therefore the international standards do not make a distinction between bright wire and drawn galvanired wire where resistance to bending and torsion is concerned. Moreover, the smoothness and density of the zinc coating are improved by post drawing so that it offers for better protection than a zinc coating of the same thickness applied by drawing after galvanizing.

Stainless Steel Wire

Wire ropes made of stainless steel wire are extremely resistant to corrosion and moreover, to temperature up to 1050 °c. Originally only the AISI types 304 and 302 were used for rope making but today almost all our stainless steel wire ropes are made of steel according to AISI type 316 which has better mechanical properties and higher resistance to electrolytic corrosion, which increased resistance to seawater.

TENSILE STRENGTHS OF STEEL WIRE

Steel wire is made in various tensile strength to meet the different requirements of a particular job. For the production of our ropes, we use wire in the following tensile strength ranges:

1470 N/mm² (=150 kgf/ mm²)
1570 N/mm² (=160 kgf/ mm²)
1770 N/mm² (=180 kgf/ mm²)
1960 N/mm² (=200 kgf/ mm²)
2160 N/mm² (=220 kgf/ mm²)

In the U.S.A. the various grades are designated as follows:

Traction Steel
Mild Plow Steel (MPS)
Plow Steel (PS)
Improved Plow Steel (IPS)
Extra Improved Plow Steel (EIPS)

The most common grades is "Improved Plow Steel" which comes nearest to our 1770 N/mm² (=180 kgf/ mm²) tensile strength.

TENSILE GRADES

MANUFACTURING STANDARDS

ISO	Metric	American
1960 N/mm²	200 kgf/ mm²	Extra Improved Plow Steel (EIPS)
1770 N/mm²	180 kgf/ mm²	Improved Plow Steel (IPS)
1570 N/mm²	160 kgf/ mm²	Plow Steel (PS)
1420 N/mm²	145 kgf/ mm²	Traction Steel

STRAND

Components of the Strand

A strand consists of a strand core and a layer or a number of layers of round wires. The round wire are laid helically around the strand core. The strand core consists either of a wire (core wire) or a number of wires or even fiber yarns.

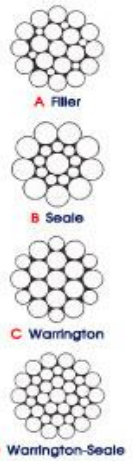
STRAND CONSTRUCTION

Two different types of laying the strand are Equal Lay and Cross Lay.

Strands with Equal Lay Wires

In these constructions the pitches of the various layers of wires are identical as stranding is carried out in a single operation, therefore, the contacts between wires are linear. Seale, Warrington and Filler strands belong to this construction. Wires of different diameters are required for these constructions.

As for example: Seale : 9+9+1
Warrington : 6/6+6+1
Filler : 12+6F+6+1



Strands with Cross Lay Wires

All the wires in this type of strand are of equal diameter and for geometrical reasons the number of wires decreases in each layer, starting from the outermost one, according to an arithmetical progression based on number (e.g. 16+10+3 or 18+12+6+1 or 12+6). In cross lay constructions each layer of the various layers of wires. Consequently strong pressure occurs between the wires which may break, especially with variable with variable loads.

ROPE CORES

Ropes are supplied either with fiber or steel core, the choice being largely dependent on the application.

Fiber Core

Fiber cores are mainly made from polypropylene. This material has the advantage that it neither absorbs nor retains moisture, and thus it eliminates conditions creating internal corrosion. Polypropylene core will have small variations in size and weight and are less susceptible to damage, especially under moist conditions. The following precautions must be taken during use:

- Do not use fiber core ropes where these are exposed to high temperatures, i.e. aboveb 90°c, this will damage the fiber core.
- The fiber core ropes should not be used when muti-layer winding is required as the fiber cores susceptible to crushing.

Steel Core

The steel core is designated IWRC (Independent Wire Rope Core) and normal construction is 7x7. Steel core proves advantageous in severe working conditions involving a low factor of safety, small drums and sheaves, high operational speeds and wide fleet angles. Steel core tends to preserve the circular cross-section of the rope when it is crushed by over-winding on drums. It also prevents the strands from bridging, (being forcibly against each other) which can result in fatigue failure of wires.

WIRE ROPE LAY

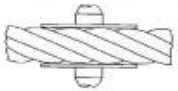
The direction of lay or rotation of the strands is normally right hand. But some machinery needs left hand lay.

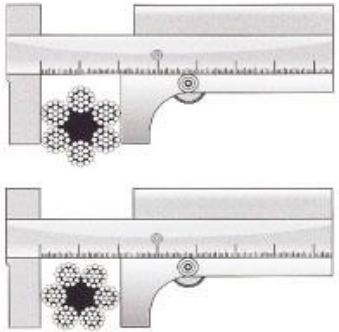
Diameter Of Wire Ropes

The diameter of a wire rope is the diameter of circle which encloses all of the wires. When measuring wire rope it is important to take the greatest distance of the outer limits of the Crowns' of two opposite strands. A measurement across the valleys will result in incorrect lower readings.

Method Of Measuring Diameter

Caliper, fitted with jaws broad enough to cover not less than two adjacent strands (see figure).





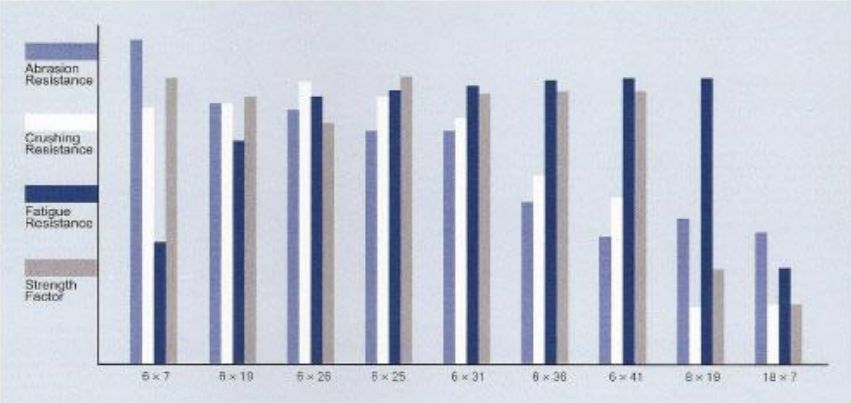
Safety Factor of Wire Rope

It is difficult to fix the safety factor for each type of wire rope to be used for various equipments, as this factor depends not only on the load carried, but also on the speed of rope working, the kinds of fitting used for rope ends, the acceleration and deacceleration, length of rope, the number, size and arrangements of sheave and drums etc. The following safety factors are minimum requirements for safety and economy in the common installation.

Purpose	Min. S. F.
Elevator	10
Crane, Hoist Derrick, Sling	6
Guy or Stay Horizontal Pull or Traction	4
Main Wire of Aerial Rope Way	3

Rope Characteristics

This chart is purely an attempt to illustrate the relative characteristics for different constructions of wire rope as indicated in the text. No numerical scale is shown or intended.



The following list of suggested constructions of wire rope for various applications is of course not exhaustive and, may often be modified the light of a particular machine manufacturer's advice or of local experience where unusual conditions may favor some variation from accepted practice elsewhere.

These suggestions should therefore be taken as a guide where no other guidance exists, or as possible alternatives where one construction has been found unsatisfactory.

		CONSTRUCTION		
		STRANDS	CORE	LAY
CRANES Incl. Clamshells	Derrick/Boom	6 x 19 Filler (6 x 25Fi)	IWRC	O or L
		6 x 36	IWRC	O or L
	Hoist (holding/closing)	6 x 19 Filler (6 x 25Fi)	IWRC	O
		6 x 36	IWRC	O
		18 x 7	FC or Strand	O or L
	Tag lines	6 x 19	FC	O
Tower Cranes	Hoist	18 x 7 19 x 7	FC or Strand	O or L
Dredgers	Boom Hoist	6 x 19 Filler (6 x 25Fi)	IWRC	O
	Swing	6 x 19 Filler (6 x 25Fi)	IWRC	O
	Ladder Hoist	6 x 19 Filler (6 x 25Fi)	IWRC	O
		6 x 36	IWRC	O or L
	Spud	6 x 19 Filler (6 x 25Fi)	IWRC	O
Drilling Rigs (Rotary)	Drilling Lines	6 x 19 Scale	IWRC	O
	Sand Coring Swabbing	6 x 7 Galv.	Poly	O
	Casing	6 x 19 Filler (6 x 25Fi)	IWRC or FC	O
Drilling Rigs (Percussion)	Drilling Lines	6 x 21 Filler, Generally Left Hand	FC	O

Handling and Installation

MUST AVOID FOR LONGER LIFE OF ROPE

- Twist, loop or kink of wire rope.
- Moisture, dust and acid or sulphuric hume gas.
- Overload.
- Crushing or hammering.
- Sever or reverse bending (S-Bending).
- Too small sheaves, drums and guide rollers.
- Hard rolling of sheaves and guide rollers.
- Worn groove, broken or soft sheaves and rollers.
- Poor or no lubrication.
- Heat influence.
- Wrong fitting and spooling on the drum.
- Excessive fleet angle.
- Vibration.
- Obstacles, sand and grit on the surface of operation line.
- Shock too fast strat or stop.

6 x 7 + FC

Usage : Mining, Stay, Logging, Tramway Marine

Diameter mm.	TIS 514-2527				En 12385-4		
	Min. Breaking Load (KN.)			Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1420 N/mm²	1570 N/mm²	1770 N/mm²		1670 N/mm²	1770 N/mm²	
2	-	-	2.36	1.43	2.22	2.35	1.38
3	-	-	5.29	3.22	4.99	5.29	3.11
4	-	-	9.41	5.72	8.87	9.40	5.52
5	-	-	14.70	8.94	13.90	14.70	8.63
6	-	-	21.20	12.90	20.00	21.20	12.40
7	-	-	28.80	17.50	27.10	28.80	16.90
8	30.20	33.40	37.60	22.90	35.50	37.60	22.10
9	38.20	42.20	47.60	28.90	44.90	47.60	27.90
10	47.20	52.20	58.80	35.70	55.40	58.80	34.50
11	57.10	63.10	71.10	43.20	67.10	71.10	41.70
12	67.90	75.10	84.70	51.50	79.80	84.60	49.70
13	79.70	88.10	99.40	60.40	93.70	99.30	58.30
14	92.50	102.00	115.00	70.10	109.00	115.00	67.60
16	121.00	134.00	151.00	91.50	142.00	150.00	88.30
18	153.00	169.00	191.00	116.00	180.00	190.00	112.00
20	189.00	209.00	235.00	143.00	222.00	235.00	138.00
22	228.00	252.00	285.00	173.00	268.00	284.00	167.00
24	272.00	300.00	339.00	206.00	319.00	338.00	199.00
26	319.00	353.00	397.00	242.00	395.00	397.00	233.00
28	370.00	409.00	461.00	280.00	435.00	461.00	270.00
32	483.00	534.00	602.00	366.00	568.00	602.00	353.00

6 x 12 + 7FC

Usage : Marine, General Industry Lashing

Diameter mm.	TIS 514-2527			En 12385-4			
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)			Approx. Weight (Kg/100m.)
	1420 N/mm²	1570 N/mm²		1570 N/mm²	1670 N/mm²	1770 N/mm²	
3	-	-	-	2.95	3.14	3.33	2.30
4	-	-	-	5.25	5.58	5.92	4.00
5	-	-	-	8.20	8.73	9.25	6.30
6	-	-	-	11.80	12.56	13.32	9.00
8	19.00	21.00	16.00	21.00	22.30	23.70	16.00
9	24.00	26.50	20.30	26.60	28.30	30.00	20.30
10	29.60	32.80	25.10	32.80	34.90	37.00	25.00
12	42.70	47.20	30.30	47.30	50.30	53.30	36.00
14	64.20	64.20	49.10	64.30	68.0	72.50	49.00
16	83.80	83.80	64.20	84.00	89.40	94.70	64.00
18	106.00	106.00	81.20	106.00	113.00	120.00	81.00
20	131.00	131.00	100.00	131.00	140.00	148.00	100.00

6 x 7 + IWS

Usage : Mining, Stay, Logging, Tramway Marine

Diameter mm.	TIS 514-2527				En 12385-4		
	Min. Breaking Load (KN.)			Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1420 N/mm²	1570 N/mm²	1770 N/mm²		1670 N/mm²	1770 N/mm²	
2	-	-	2.54	1.57	2.59	2.75	1.54
3	-	-	5.72	3.54	5.83	6.18	3.46
4	-	-	10.20	6.29	10.37	10.99	6.14
5	-	-	15.90	9.83	16.20	17.17	9.60
6	-	-	22.90	14.20	23.33	24.72	13.80
7	-	-	31.10	19.30	31.75	33.65	18.80
8	32.60	36.10	40.60	25.20	41.47	43.95	24.60
9	41.30	45.60	51.40	31.80	52.48	55.63	31.10
10	50.90	56.30	63.60	39.30	64.80	68.68	38.40
11	61.60	68.20	76.80	47.50	78.40	83.10	46.50
12	73.40	81.10	91.50	56.70	93.31	98.89	55.30
13	86.10	95.20	107.00	66.40	110.00	116.00	64.90
14	99.90	110.00	124.00	77.10	127.00	135.00	75.30
16	130.00	144.00	163.00	101.00	166.00	176.00	98.30
18	165.00	183.00	206.00	128.00	210.00	223.00	124.00
20	204.00	225.00	254.00	157.00	259.00	275.00	154.00
22	247.00	273.00	307.00	190.00	314.00	332.00	186.00
24	293.00	324.00	366.00	227.00	373.00	396.00	221.00
26	344.00	381.00	429.00	266.00	438.00	464.00	260.00
28	399.00	442.00	496.00	308.00	508.00	538.00	301.00
32	522.00	577.00	650.00	403.00	664.00	703.00	393.00

6 x 24 + 7FC

Usage : Fishery, Marine, General Industry

Diameter Range : 2 - 32mm.

Diameter mm.	TIS 514-2527		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1420 N/mm²	1570 N/mm²	
8	25.50	29.20	20.40
9	32.20	36.80	25.80
10	38.60	44.00	31.80
11	49.10	53.20	38.50
12	57.30	63.30	45.80
13	67.20	74.30	53.80
14	78.00	88.20	62.40
16	102.00	113.00	81.50

Diameter mm.	TIS 514-2527		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1420 N/mm²	1570 N/mm²	
18	129.00	143.00	103.00
20	189.00	178.00	127.00
22	193.00	213.00	154.00
24	229.00	283.00	183.00
26	289.00	297.00	215.00
28	312.00	345.00	249.00
32	407.00	450.00	326.00

6 x 19 + FC

Usage : Hoist, Marine, Tramway, General Industry, Crane

Diameter mm.	EN 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1770 N/mm²	1960 N/mm²	
3	4.89	5.42	3.11
4	8.69	9.63	5.54
5	13.60	15.00	8.65
6	19.60	21.70	12.50
7	26.60	29.50	17.00
8	34.78	38.51	22.14
9	44.01	48.74	28.03
10	54.34	60.17	34.60
11	65.75	72.81	41.87
12	78.25	86.65	49.82

Diameter mm.	EN 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1770 N/mm²	1960 N/mm²	
13	91.83	102.00	58.47
14	106.00	118.00	67.82
16	139.00	154.00	88.58
18	176.00	195.00	112.00
20	217.00	241.00	138.00
22	263.00	291.00	167.00
24	312.00	347.00	199.00
26	367.00	407.00	234.00
28	426.00	472.00	271.00
32	556.00	616.00	354.00

6 x 37 + FC

Usage : Hoist, General Industry, Crane

Diameter mm.	TIS 514-2527				En 12385-4		
	Min. Breaking Load (KN.)			Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1420 N/mm²	1570 N/mm²	1770 N/mm²		1770 N/mm²	1960 N/mm²	
5	-	-	-	-	13.10	14.50	8.65
6	-	-	18.80	12.50	18.80	20.80	12.50
7	-	-	26.80	17.00	25.60	28.30	17.00
8	26.80	29.60	33.40	22.10	33.40	37.00	22.10
9	33.90	37.50	42.30	28.00	42.30	46.80	28.00
10	41.90	46.30	52.20	34.60	52.20	57.80	34.60
11	50.70	56.00	63.10	41.90	63.20	70.00	41.90
12	80.30	66.60	78.10	49.80	75.20	83.30	49.80
13	70.70	76.20	98.20	58.50	88.24	97.72	58.47
14	82.00	90.70	102.00	67.80	102.34	113.33	67.82
16	107.00	118.00	134.00	88.60	134.00	148.00	88.58
18	138.00	150.00	169.00	112.00	169.00	187.00	112.00
20	167.00	186.00	209.00	138.00	209.00	231.00	138.00
22	203.00	224.00	263.00	167.00	252.00	280.00	167.00
24	241.00	267.00	301.00	199.00	300.00	333.00	199.00
26	283.00	313.00	363.00	234.00	353.00	391.00	234.00
28	328.00	363.00	408.00	271.00	409.00	453.00	271.00
32	429.00	474.00	534.00	354.00	534.00	592.00	354.00

6 x 19 + IWS

Usage : Hoist, Marine, Logging, Tramway, General Industry, Crane

Diameter mm.	TIS 514-2527			En 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1670 N/mm²	1770 N/mm²		1670 N/mm²	1770 N/mm²	
3	4.98	5.28	3.43	5.77	6.39	3.43
4	8.87	9.40	6.10	10.30	11.40	6.10
5	13.80	14.60	9.52	16.00	17.70	9.53
6	19.90	21.10	13.70	23.10	25.50	13.70
7	27.10	28.70	18.70	31.40	34.80	18.70
8	35.40	37.60	24.40	41.01	45.41	24.38
9	44.90	47.50	30.90	51.90	57.47	30.86
10	55.40	58.70	38.10	64.07	70.95	38.10
11	67.00	71.10	46.10	77.53	85.85	46.10
12	79.80	84.60	54.90	92.27	102.17	54.86
13	93.70	99.30	64.40	108.29	119.91	64.39
14	108.00	115.00	74.70	126.00	139.00	74.68
16	141.00	150.00	97.50	164.00	182.00	97.54
18	179.00	190.00	123.00	208.00	230.00	123.00
20	221.00	235.00	152.00	256.00	284.00	152.00
22	268.00	284.00	184.00	310.00	343.00	184.00
24	319.00	338.00	219.00	369.00	409.00	219.00
26	374.00	397.00	258.00	433.00	480.00	258.00
28	434.00	460.00	299.00	502.00	556.00	299.00
32	567.00	601.00	390.00	656.00	727.00	390.00

6 x 37 + IWRC

Usage : Hoist, General Industry, Crane

Diameter mm.	EN 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1770 N/mm²	1960 N/mm²	
5	14.12	15.63	9.53
6	20.33	22.51	13.70
7	27.67	30.64	18.70
8	36.14	40.02	24.40
9	45.74	50.64	30.90
10	56.64	62.52	38.10
11	68.32	75.65	46.10
12	81.31	90.03	54.90
13	95.42	105.67	64.39

Diameter mm.	EN 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1770 N/mm²	1960 N/mm²	
14	111.00	123.00	74.68
16	145.00	160.00	97.54
18	183.00	203.00	123.00
20	226.00	250.00	152.00
22	273.00	303.00	184.00
24	325.00	360.00	219.00
26	382.00	423.00	258.00
28	443.00	590.00	299.00
32	578.00	640.00	390.00

6 x Fi (29) + FC

Usage : Hoist, General Industry, Crane, Mine Lifting,
High-Furnance Hoisting, Oil Drilling, Excavator, Marine, Cable Car

Diameter mm.	TIS 514-2527		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1670 N/mm²	1770 N/mm²	
12	74.60	84.10	54.70
13	87.50	98.70	84.30
14	102.00	114.00	74.50
16	133.00	149.00	97.30
18	168.00	189.00	123.00
20	207.00	234.00	152.00
22	251.00	283.00	184.00
24	298.00	336.00	219.00
26	350.00	395.00	257.00
28	406.00	458.00	298.00
32	530.00	598.00	389.00

6 x S (19) + FC 6 x W (19) + FC

Usage : Hoist, General Industry, Crane, Mine Lifting,
High-Furnance Hoisting, Oil Drilling, Excavator, Marine

Diameter mm.	TIS 514-2527			En 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1420 N/mm²	1570 N/mm²		1770 N/mm²	1960 N/mm²	
6	-	-	-	21.00	23.30	12.90
7	-	-	-	28.60	31.70	17.60
8	33.20	37.50	23.80	37.40	41.40	23.00
9	42.10	47.40	30.20	47.30	52.40	29.10
10	52.00	58.60	37.30	58.40	64.70	35.90
11	62.90	70.90	45.10	70.70	78.30	43.30
12	74.80	84.30	53.70	84.10	93.10	51.70
13	87.80	98.00	63.00	98.70	109.00	60.70
14	102.00	115.00	73.00	114.00	127.00	70.40
16	133.00	150.00	95.40	150.00	166.00	91.90
18	168.00	190.00	121.00	189.00	210.00	116.00
20	208.00	234.00	149.00	234.00	259.00	144.00
22	251.00	283.00	180.00	283.00	313.00	174.00
24	299.00	337.00	215.00	336.00	373.00	207.00
26	351.00	395.00	252.00	395.00	437.00	243.00
28	407.00	458.00	292.00	458.00	507.00	281.00
32	532.00	600.00	382.00	598.00	662.00	368.00

6 x Fi (29) + IWRC

Usage : Well Drilling, Hoist, General Industry, Crane,
Construction Machine, Mine Lifting,
High-Furnance Hoisting, Excavator, Marine

Diameter mm.	TIS 514-2527		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1670 N/mm²	1770 N/mm²	
12	74.60	84.10	54.70
13	87.50	98.70	84.30
14	102.00	114.00	74.50
16	133.00	149.00	97.30
18	168.00	189.00	123.00
20	207.00	234.00	152.00
22	251.00	283.00	184.00
24	298.00	336.00	219.00
26	350.00	395.00	257.00
28	406.00	458.00	298.00
32	530.00	598.00	389.00

6 x S (19) + IWRC 6 x W (19) + IWRC

Usage : Hoist, General Industry, Crane, Mine Lifting,
High-Furnance Hoisting, Oil Drilling, Excavator, Marine, Cable Car

Diameter mm.	TIS 514-2527			En 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1420 N/mm²	1570 N/mm²		1770 N/mm²	1960 N/mm²	
6	-	-	-	22.70	25.10	14.40
7	-	-	-	30.90	34.20	19.60
8	35.90	40.50	26.20	40.30	44.70	25.60
9	45.50	51.20	33.20	51.00	56.50	32.40
10	58.10	63.30	41.00	63.00	69.80	40.00
11	67.90	76.50	49.60	76.20	84.40	48.40
12	80.80	91.10	59.00	90.70	100.00	57.60
13	94.80	107.00	68.30	106.00	118.00	67.60
14	110.00	124.00	80.30	124.00	137.00	78.40
16	144.00	162.00	105.00	161.00	179.00	102.00
18	182.00	206.00	133.00	204.00	226.00	130.00
20	224.00	283.00	164.00	252.00	279.00	160.00
22	272.00	306.00	198.00	305.00	338.00	194.00
24	323.00	364.00	237.00	363.00	402.00	230.00
26	379.00	428.00	277.00	426.00	472.00	270.00
28	440.00	496.00	321.00	494.00	547.00	314.00
32	576.00	646.00	420.00	645.00	715.00	410.00

6 x Fi (25) + FC 6 x WS (26) + FC

Usage : Hoist, General Industry, Crane, Mine Lifting,
High-Furnace Hoisting, Oil Drilling, Excavator, Marine, Cable Car

Diameter mm.	TIS 514-2527			En 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1670 N/mm²	1770 N/mm²		1770 N/mm²	1960 N/mm²	
6	-	-	-	21.00	23.30	12.90
7	-	-	-	28.60	31.70	17.60
8	-	-	-	37.40	41.40	23.00
9	42.00	47.30	30.80	47.30	52.40	29.10
10	51.80	58.40	36.00	58.40	64.70	35.90
11	62.70	70.70	46.00	70.70	78.30	43.30
12	74.60	84.10	54.70	84.10	93.10	51.70
13	87.50	98.70	84.30	98.70	109.00	60.70
14	102.00	114.00	74.50	114.00	127.00	70.40
16	133.00	149.00	97.30	150.00	166.00	91.90
18	168.00	189.00	123.00	189.00	210.00	116.00
20	207.00	234.00	152.00	234.00	259.00	144.00
22	251.00	283.00	184.00	283.00	313.00	174.00
24	298.00	336.00	219.00	336.00	373.00	207.00
26	350.00	395.00	257.00	395.00	437.00	243.00
28	406.00	458.00	298.00	458.00	507.00	281.00
32	530.00	598.00	389.00	598.00	662.00	368.00

6 x WS (31) + FC 6 x WS (36) + FC

Usage : Hoist, General Industry, Crane, Mine Lifting,
High-Furnace Hoisting, Oil Drilling, Excavator, Marine

Diameter mm.	TIS 514-2527			En 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1670 N/mm²	1770 N/mm²		1770 N/mm²	1960 N/mm²	
8	-	-	-	37.40	41.40	23.50
9	42.00	47.30	30.80	47.30	52.40	29.70
10	51.80	58.40	36.00	58.40	64.70	36.70
11	62.70	70.70	46.00	70.70	78.30	44.40
12	74.60	84.10	54.70	84.10	93.10	52.80
13	87.50	98.70	84.30	98.70	109.00	62.00
14	102.00	114.00	74.50	114.00	127.00	71.90
16	133.00	149.00	97.30	150.00	166.00	94.00
18	168.00	189.00	123.00	189.00	210.00	119.00
20	207.00	234.00	152.00	234.00	259.00	147.00
22	251.00	283.00	184.00	283.00	313.00	178.00
24	298.00	336.00	219.00	336.00	373.00	211.00
26	350.00	395.00	257.00	395.00	437.00	248.00
28	406.00	458.00	298.00	458.00	507.00	288.00
32	530.00	598.00	389.00	598.00	662.00	376.00

6 x Fi (25) + IWRC 6 x WS (26) + IWRC

Usage : Hoist, General Industry, Crane, Mine Lifting,
High-Furnace Hoisting, Oil Drilling, Excavator, Marine, Cable Car

Diameter mm.	TIS 514-2527			En 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1670 N/mm²	1770 N/mm²		1770 N/mm²	1960 N/mm²	
6	-	-	-	22.70	25.10	14.40
7	-	-	-	30.90	34.20	19.60
8	-	-	-	40.30	44.70	25.60
9	42.00	47.30	30.80	51.00	56.50	32.40
10	51.80	58.40	36.00	63.00	69.80	40.00
11	62.70	70.70	46.00	76.20	84.40	48.40
12	74.60	84.10	54.70	90.70	100.00	57.60
13	87.50	98.70	84.30	106.00	118.00	67.60
14	102.00	114.00	74.50	124.00	137.00	78.40
16	133.00	149.00	97.30	161.00	179.00	102.00
18	168.00	189.00	123.00	204.00	226.00	130.00
20	207.00	234.00	152.00	252.00	279.00	160.00
22	251.00	283.00	184.00	305.00	338.00	194.00
24	298.00	336.00	219.00	363.00	402.00	230.00
26	350.00	395.00	257.00	426.00	472.00	270.00
28	406.00	458.00	298.00	494.00	547.00	314.00
32	530.00	598.00	389.00	645.00	715.00	410.00

6 x WS (31) + IWRC 6 x WS (36) + IWRC

Usage : Well Drilling, Hoist, General Industry,
Crane, Construction Machine, Mine Lifting,
High-Furnace Hoisting, Cable Car, Excavator, Marine

Diameter mm.	TIS 514-2527			En 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1670 N/mm²	1770 N/mm²		1770 N/mm²	1960 N/mm²	
8	-	-	-	40.30	44.70	26.20
9	45.30	51.10	33.90	51.00	56.50	33.10
10	55.90	63.10	41.80	63.00	69.80	40.90
11	67.70	76.30	50.60	76.20	84.40	49.50
12	80.60	90.80	60.20	90.70	100.00	58.90
13	94.50	107.00	70.70	106.00	118.00	69.10
14	110.00	124.00	82.00	124.00	137.00	80.20
16	143.00	162.00	107.00	161.00	179.00	105.00
18	181.00	204.00	136.00	204.00	226.00	133.00
20	224.00	252.00	167.00	252.00	279.00	164.00
22	271.00	306.00	202.00	305.00	338.00	198.00
24	322.00	363.00	241.00	363.00	402.00	236.00
26	378.00	426.00	283.00	426.00	472.00	276.00
28	439.00	494.00	328.00	494.00	547.00	321.00
32	573.00	646.00	426.00	645.00	715.00	419.00

8 x S (19) + FC 8 x W (19) + FC

Usage : Fishery, Marine, General Industry

Diameter mm.	TIS 514-2527			En 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1420 N/mm²	1770 N/mm²		1770 N/mm²	1960 N/mm²	
8	28.80	32.50	22.30	33.20	36.80	21.80
9	36.60	41.10	28.20	42.00	46.50	27.50
10	45.10	50.80	34.80	51.90	57.40	34.00
11	54.50	61.50	42.20	62.80	69.50	41.10
12	64.90	73.20	50.20	74.70	82.70	49.00
13	75.10	86.90	58.90	87.30	97.10	57.50
14	88.30	98.60	68.30	102.00	113.00	66.60
16	115.00	130.00	89.20	133.00	147.00	87.00
18	146.00	186.00	113.00	168.00	186.00	110.00
20	180.00	203.00	139.00	207.00	230.00	136.00
22	218.00	246.00	169.00	251.00	278.00	165.00
24	280.00	293.00	201.00	299.00	331.00	196.00
26	305.00	343.00	236.00	351.00	388.00	230.00
28	363.00	398.00	273.00	407.00	450.00	267.00
32	461.00	520.00	357.00	531.00	588.00	348.00

8 x Fi (25) + FC 8 x WS (26) + FC

Usage : General Engineering, Crane

Diameter mm.	EN 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1770 N/mm²	1960 N/mm²	
8	33.20	36.80	21.80
9	42.00	46.50	27.50
10	51.90	57.40	34.00
11	62.80	69.50	41.10
12	74.70	82.70	49.00
13	87.30	97.10	57.50
14	102.00	113.00	66.60
16	133.00	147.00	87.00
18	168.00	186.00	110.00
20	207.00	230.00	136.00
22	251.00	278.00	165.00
24	299.00	331.00	196.00
26	351.00	388.00	230.00
28	407.00	450.00	267.00
32	531.00	588.00	348.00

8 x S (19) + IWRC 8 x W (19) + IWRC

Usage : Hoist, General Industry, Crane, Mine Lifting,

High-Furnace Hoisting, Oil Drilling, Excavator, Marine

Diameter mm.	TIS 514-2527			En 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1420 N/mm²	1770 N/mm²		1770 N/mm²	1960 N/mm²	
8	34.00	38.40	27.20	40.30	44.70	26.00
9	43.10	48.50	34.40	51.00	56.50	33.00
10	53.20	59.90	42.50	63.00	69.80	40.70
11	64.30	72.50	51.40	76.20	84.40	49.20
12	76.60	86.30	61.20	90.70	100.00	58.60
13	89.80	101.00	71.90	106.00	118.00	68.80
14	104.00	117.00	83.30	124.00	137.00	79.80
16	136.00	153.00	109.00	161.00	179.00	104.00
18	172.00	194.00	138.00	204.00	226.00	132.00
20	213.00	240.00	170.00	252.00	279.00	163.00
22	257.00	290.00	206.00	305.00	338.00	197.00
24	306.00	346.00	246.00	363.00	402.00	234.00
26	359.00	405.00	287.00	426.00	472.00	275.00
28	417.00	470.00	333.00	494.00	547.00	319.00
32	544.00	614.00	436.00	645.00	715.00	417.00

8 x Fi (25) + IWRC 8 x WS (26) + IWRC

Usage : General Engineering, Crane

Diameter mm.	EN 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1770 N/mm²	1960 N/mm²	
8	40.30	44.70	26.00
9	51.00	56.50	33.00
10	63.00	69.80	40.70
11	76.20	84.40	49.20
12	90.70	100.00	58.60
13	106.00	118.00	68.80
14	124.00	137.00	79.80
16	161.00	179.00	104.00
18	204.00	226.00	132.00
20	252.00	279.00	163.00
22	305.00	338.00	197.00
24	363.00	402.00	234.00
26	426.00	472.00	275.00
28	494.00	547.00	319.00
32	645.00	715.00	417.00

8 x WS (31) + FC 8 x WS (36) + FC

Usage : General Engineering, Crane

Diameter mm.	EN 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1770 N/mm²	1960 N/mm²	
8	33.20	36.80	22.30
9	42.00	46.50	28.20
10	51.90	57.40	34.80
11	62.80	69.50	42.10
12	74.70	82.70	50.10
13	87.30	97.10	58.80
14	102.00	113.00	68.20
16	133.00	147.00	89.10
18	168.00	186.00	113.00
20	207.00	230.00	139.00
22	251.00	278.00	168.00
24	299.00	331.00	200.00
26	351.00	388.00	235.00
28	407.00	450.00	273.00
32	531.00	588.00	356.00

18 x 7 + FC 17 x 17 + FC

Usage : Well Drilling, Hoist, General Engineering, Construction Machine, Crane

Diameter mm.	TIS 514-2527			En 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1420 N/mm²	1770 N/mm²		1770 N/mm²	1960 N/mm²	
6	-	-	-	20.90	23.10	13.80
7	-	-	-	28.40	31.50	18.70
8	32.00	36.10	24.50	37.20	41.10	24.40
9	40.50	46.70	31.00	47.00	52.10	30.90
10	50.00	56.40	38.30	58.10	64.30	38.20
11	60.50	68.20	46.30	70.20	77.80	46.20
12	72.00	81.20	56.10	83.60	92.60	55.00
13	84.50	96.30	64.70	98.10	109.00	64.60
14	98.00	111.00	75.00	114.00	126.00	74.90
16	126.00	144.00	96.00	149.00	165.00	97.80
18	162.00	183.00	124.00	188.00	208.00	124.00
20	200.00	226.00	153.00	232.00	257.00	153.00
22	242.00	273.00	195.00	281.00	311.00	185.00
24	298.00	336.00	220.00	334.00	370.00	220.00
26	338.00	381.00	269.00	392.00	435.00	258.00
28	382.00	442.00	300.00	455.00	504.00	299.00

8 x WS (31) + IWRC 8 x WS (36) + IWRC

Usage : Well Drilling, Hoist, General Engineering, Construction Machine, Crane

Diameter mm.	EN 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1770 N/mm²	1960 N/mm²	
8	40.30	44.70	26.70
9	51.00	56.50	33.80
10	63.00	69.80	41.70
11	76.20	84.40	50.50
12	90.70	100.00	60.00
13	106.00	118.00	70.50
14	124.00	137.00	81.70
16	161.00	179.00	107.00
18	204.00	226.00	135.00
20	252.00	279.00	167.00
22	305.00	338.00	202.00
24	363.00	402.00	240.00
26	426.00	472.00	282.00
28	494.00	547.00	327.00
32	645.00	715.00	427.00

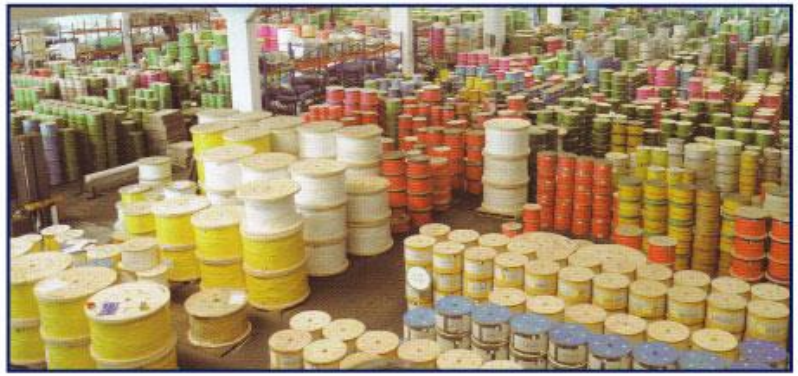
18 x 7 + IWS 17 x 17 + IWS

Usage : Well Drilling, Hoist, General Engineering, Construction Machine, Crane

Diameter mm.	TIS 514-2527			En 12385-4		
	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)	Min. Breaking Load (KN.)		Approx. Weight (Kg/100m.)
	1420 N/mm²	1770 N/mm²		1770 N/mm²	1960 N/mm²	
6	-	-	-	20.90	23.10	14.40
7	-	-	-	28.40	31.50	19.60
8	33.00	37.20	26.70	37.20	41.10	25.70
9	41.70	47.00	32.60	47.00	52.10	32.50
10	51.50	56.10	40.20	58.10	64.30	40.10
11	62.30	70.30	46.50	70.20	77.80	48.50
12	74.20	83.60	57.90	83.60	92.60	57.70
13	87.10	98.10	67.90	98.10	109.00	67.80
14	101.00	114.00	78.80	114.00	126.00	78.60
16	132.00	148.00	103.00	149.00	165.00	103.00
18	167.00	198.00	130.00	188.00	208.00	130.00
20	206.00	222.00	161.00	232.00	257.00	160.00
22	249.00	281.00	196.00	281.00	311.00	194.00
24	267.00	336.00	231.00	334.00	370.00	231.00
26	348.00	383.00	272.00	392.00	435.00	271.00
28	404.00	495.00	315.00	455.00	504.00	314.00

Construction	Diameter mm.	Min. Breaking Load (Kg.)			Approx. Weight (Kg/100m.)
		Galvanized	SUS 316	SUS 304	
 1 x 7	0.3	10	8	10	0.05
	0.4	18	15	17	0.08
	0.5	29	25	27	0.13
	0.6	41	34	39	0.18
	0.8	72	60	68	0.32
	1.0	110	93	105	0.50
	1.2	155	135	150	0.74
	1.4	210	183	205	1.01
	1.5	240	210	230	1.15
	1.6	270	240	260	1.42
	1.8	340	300	330	1.63
	2.0	420	370	410	2.05
 1 x 12	1.0	105	80	95	0.49
	1.2	150	120	140	0.70
	1.4	200	160	190	0.95
	1.5	230	185	215	1.09
	1.6	250	210	245	1.24
	1.8	310	265	310	1.56
 1 x 19	0.8	70	50	60	0.32
	1.0	105	80	95	0.50
	1.2	150	120	140	0.72
	1.4	220	160	190	0.98
	1.5	250	185	215	1.12
	1.6	280	210	245	1.27
	1.8	340	265	310	1.61
	2.0	425	330	365	2.00
	2.5	665	520	570	3.10
	3.0	850	745	820	4.48
	3.5	1100	950	1080	6.00
	4.0	1400	1245	1418	7.90
	5.0	2180	1816	2140	12.50
	6.0	3150	2600	3100	18.10
 1 x 37	2.5	580	440	555	30.50
	3.0	830	640	800	43.90
	3.5	1130	870	1090	59.90
	4.0	1480	1140	1420	78.20
	4.8	2130	1640	2050	11.30
	5.0	2300	1670	2110	12.20
	6.0	3330	2400	3000	17.60

Construction	Diameter mm.	Min. Breaking Load (Kg.)			Approx. Weight (Kg/100m.)
		Galvanized	SUS 316	SUS 304	
 7 x 7	0.8	55	45	50	0.27
	1.0	85	65	75	0.42
	1.2	120	96	108	0.61
	1.5	180	150	170	0.95
	1.6	220	170	190	1.08
	1.8	260	216	245	1.34
	2.0	310	260	290	1.65
	2.5	480	400	460	2.57
	3.0	700	585	660	3.71
	3.5	920	796	900	5.05
	4.0	1200	1040	1150	6.60
	5.0	1870	1620	1800	10.00
	6.0	2700	2326	2570	14.40
 7 x 19	1.5	200	130	157	0.95
	1.6	230	150	180	1.08
	2.0	360	231	280	1.68
	2.5	560	390	435	2.63
	3.0	810	565	625	3.78
	3.5	1100	745	835	5.28
	4.0	1275	970	1100	6.71
	5.0	2100	1520	1700	10.50
	6.0	2950	2200	2450	15.20



Galvanized Aircraft Cable	Diameter Inch	GAC Min. Breaking Load (Lb.)	GAC Approx. Weight (Lb./100Ft.)
 1 x 19	1/32	185	0.25
	3/64	375	0.55
	1/16	500	0.85
	5/64	800	1.40
	3/32	1200	2.00
	7/64	1600	2.70
	1/8	2100	3.50
	9/64	2820	4.50
	5/32	3300	5.50
	3/16	4700	7.70
	7/32	6300	10.20
	1/4	8200	13.50
	9/32	10300	17.00
	5/16	12500	21.00
	3/8	17500	30.10
 7 x 7	1/16	480	0.75
	5/64	650	1.10
	3/32	920	1.60
	7/64	1260	2.20
	1/8	1700	2.80
	9/64	2100	3.50
	5/32	2600	4.30
	3/16	3700	6.20
	7/32	4800	8.30
	1/4	6100	10.60
	9/32	7600	13.40
	5/16	9200	16.70
	3/8	13100	23.60
 7 x 19	3/32	1000	1.70
	7/64	1400	2.20
	1/8	2000	2.90
	9/64	2300	3.70
	5/32	2800	4.50
	3/16	4200	6.50
	7/32	5600	8.60
	1/4	7000	11.00
	9/32	8000	13.90
	5/16	9800	17.30
	3/8	14000	24.30

A Wire rope is a machine, by dictionary definition : "An assemblage of parts...that transmit forces, motion, and energy one to another in some predetermined manner and to some desired end."

A Typical wire rope may contain hundreds of individual wires which are formed and fabricated to operate at close bearing tolerances one to another. When a wire rope bends, each of its many wire slides and adjusts in the bend to accommodate the difference in length between the inside and the outside bend. The sharper the bend, the greater the movement.

Every wire rope has three basic components :

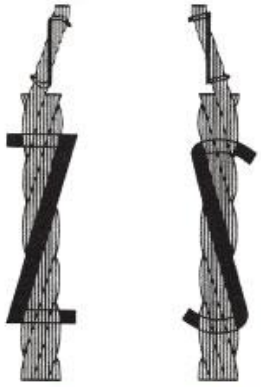
(1) The wire which form the strands and collectively provide rope strength ;
(2) The strands, which are helically around the core ; and,
(3) The core, which forms a foundation for the strands.

The core of wire rope may be an Independent Wire Rope Core (Steel Core, IWRC, SE or CW), which in many cases is actually a rope in itself. This core provides between 10% and 50% (in non-rotating constructions) of the wire rope's strength.

The greatest difference in wire ropes are found in the number of strands, the construction of strands, the size of the core, and the lay direction of the strand versus the core.

The wires of wire rope are made of high-carbon steel. These carbon steel wires come in various grades. The term "Grade" is used to designate the strength of the wire rope. Rope wires are usually made of 1770 N/mm², 1960 N/mm², or 2160 N/mm² steel grades [Approximate equivalents are Improved Plow Steel (IPS), Extra Improved Plow Steel (EIPS) or Extra Extra Improved Plow Steel (EEIPS)].

One cannot determine the Tensile Grade of a wire rope by its feel or appearance. To properly evaluate a rope's tensile grade you must obtain the Grade from your employer.



sZ or RRL
Right Regular Lay

zS or LRL
Left Regular Lay

zZ or RLL
Right Langs Lay

sS or LLL
Left Langs Lay

MECHANICAL DAMAGES

It is nearly impossible to list all variations of mechanical damage a rope might be subjected to. Therefore, the following list should only be taken as a guideline.
None of these damages are repairable. However, the magnitude of the damages mayvary from a slight cosmetic damage to total destruction of the wire rope. If you are not sure about the extent of the damage, change the rope, or call us for technical assistance and advice.

Bird Cage (6-Strand rope) caused by shock loading

Bird Cage (non-rotating rope) caused by worn sheave grooves

Bird Cage forced through a tight sheave

Protruding Core because of shock loading, torque build-up during installation, tight sheaves, or incorrect rope design.

Wire rope rolled off a sheave

Multiple drum winding: Layer-to-Layer Crushing

Smooth drum winding:
Srubbing between drum wraps

Smooth drum winding:
Crushing at Crossover Points

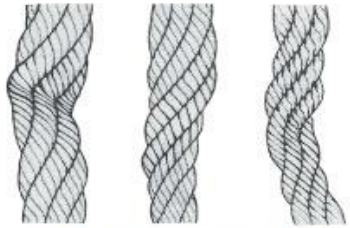
FITTINGS

Inspect the fittings on your rope and look for wire breaks at the shank of sockets or sleeves. Inspect the fittings for wear, distortion, cracks, and corrosion. Follow the inspection criteria of the fitting manufacturer and DO NOT ATTEMPT TO REPIAR ANY WIRE ROPE FITTING YOURSELF ! Watch for missing hook latches and install new ones if necessary. If latches wear out too rapidly, ark us for special Heavy Duty latches which may fit your hook. Some hook manufacturer offer self-locking and special Gate Latch hooks.

Inspect wire rope at all fittings. Replace fitting if any broken wires are detected.

KINKS

Kinked wire rope due to inproper installation procedure



Kinked wire ropes which have been used. Kinks are pulled tight and caused distortion and failure.

Efficiency Ratings

This tables lists several types of end terminations used for overhead lifting applications. Some of them are normally used for smaller rope diameters only (Buttons, threaded Studs), while others are recommended only for 6-strand wire rope (Flemish Eye Splices). We do not recommend hand spliced end terminations for crane wire rope

All efficiency ratings are based on the difference between the actual breaking strength of a rope and the attained breaking strength with that specific fittings. The only fitting which will attain a 100% efficiency are spelter sockets; provided they are properly attached.

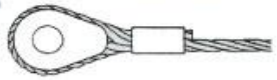
All the fittings are swaged or clamped onto the rope. The swaging or clamping process the rope to varying degrees causing a slight loss of strength. Some publications refer to '100%' effciency with swaged sockets. Bear in mind. that most wire ropes have anactual breaking strength up to approximately 20% HIGHER than the breaking strength tables indicate. In these case, a fitting having an efficiency rating of 90% may very well develop 100% of the rope's catalogue breaking strength; that doesn't mean that the fitting is also 100% EFFICIENT

(2)

90%

DIN 3093 Aluminum Splice with HD Thimble

(2)



90%

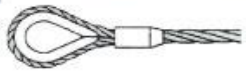
DIN 3093 Aluminum Splice with Solid Thimble

(1)

90%

Flemish Eye with steel sleeve

(1)



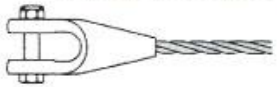
90%

Flemish Eye with steel sleeve and Solid Thimble

(1)

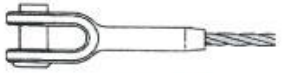
90%

Flemish Eye with steel sleeve and HD Thimble



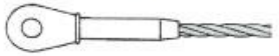
100%

Open Spelter Socket (Closed not shown)



90%

Open Swaged Socket



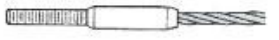
90%

Closed Swaged Socket

(3)

90%

UNI-LOC™ Button



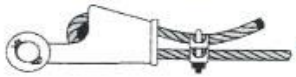
90%

UNI-LOC™ Threaded Stud

(3)

80%

Forged Wire Rope Clips



75% - 80%

Wedge Socket

(1) Use only with 6-strand wire rope

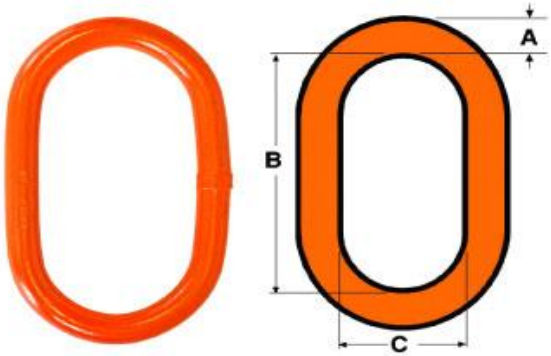
(2) Meets German DIN 3093 and European Safety Standards. Follow the DIN 3093 manufacturing procedure.

(3) Fabrication efficiency depends on fitting dimensions. Ask for information on UNI-LOC™ Assemblies.

DNV Master Links & Quad Assemblies - In accordance with DNV 2.7-1, EN 12079 & EN 1677-4

The HA range of master links and quad assemblies is the most complete range of links available today, in diameters from 16mm. up to 120 mm. and working load limits up to 250 tones. The links are manufactured from triple alloy steel in accordance with EN1677, they are individually proof load tested to 2.5 times working load limit in accordance with EN1677 and they are all supplied with charpy impact values of in excess of 42J at -20°c. The links are suitable for use in a temperature range of -40°c up to 200°c without reduction in working load limit.

The HA range of links are widely used in lifting sets for offshore containers and they are type approved to DNV 2.7-1 under approval number S-7732.



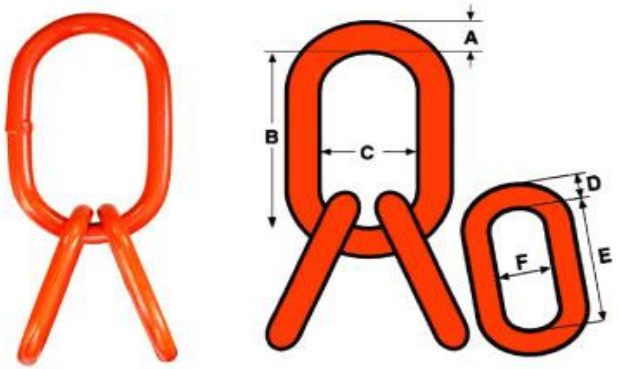
William Hackett

Part Code	Description	A (mm.)	B (mm.)	C (mm.)	WLL (t.)	Mass (kg.)
330.160	HA16ML	16	150	75	4.10	0.7
330.22s	HA22MS	22	162	90	8.83	1.5
330.220	HA22ML	22	270	140	5.80	2.3
330.250	HA25ML	25	270	140	8.83	3.3
330.28s	HA28MS	28	200	110	14.50	3.0
330.280	HA28ML	28	270	140	11.80	3.8
330.320	HA32ML	32	270	140	17.10	5.1
330.360	HA36ML	36	270	140	23.00	6.5
330.400	HA40ML	40	280	155	28.10	8.5
330.450	HA45ML	45	320	175	38.30	12.2
330.500	HA50ML	50	350	195	45.00	16.6
330.600	HA60ML	60	430	230	65.00	29.2
330.700	HA70ML	70	480	260	85.00	44.3
330.900	HA90ML	90	500	300	150.00	86.0
330.1200	HA120ML	120	610	410	250.00	197.0

DNV Master Links & Quad Assemblies - In accordance with DNV 2.7-1, EN 12079 & EN 1677-4

The HA range of master links and quad assemblies is the most complete range of links available today, in diameters from 16mm. up to 120 mm. and working load limits up to 250 tones. The links are manufactured from triple alloy steel in accordance with EN1677, they are individually proof load tested to 2.5 times working load limit in accordance with EN1677 and they are all supplied with charpy impact values of in excess of 42J at -20°c. The links are suitable for use in a temperature range of -40°c up to 200°c without reduction in working load limit.

The HA range of links are widely used in lifting sets for offshore containers and they are type approved to DNV 2.7-1 under approval number S-7732.



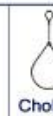
William Hackett

Part Code	Description	A (mm.)	B (mm.)	C (mm.)	D (mm.)	E (mm.)	F (mm.)	WLL (t.)	Mass (kg.)
350.160	HA16QA	16	150	75	13	90	50	4.10	1.3
350.220	HA22QA	22	162	90	20	140	70	8.83	3.6
350.230	HA23QA	22	270	140	16	150	75	5.80	3.8
350.250	HA25QA	25	270	140	20	140	70	8.83	5.3
350.260	HA26QA	28	270	140	20	140	70	11.80	5.9
350.280	HA28QA	28	200	110	22	140	70	14.50	5.5
350.320	HA32QA	32	270	140	26	185	90	17.10	9.7
350.360	HA36QA	36	270	140	28	190	100	23.00	11.9
350.400	HA40QA	40	280	155	32	200	110	28.10	16.4
350.450	HA45QA	45	320	175	36	225	125	38.30	23.5
350.500	HA50QA	50	350	195	40	260	130	45.00	32.3
350.600	HA60QA	60	430	230	50	350	195	65.00	63.9
350.700	HA70QA	70	480	260	60	410	220	85.00	102.6
350.900	HA90QA	90	500	300	70	400	200	150.00	164.0

WIRE ROPE SLING WLL. TABLE TENSILE 180 Kgf/mm² (IPS)

Capacity (Tonnes) Safety factor 5 : 1

Rated load for wire rope 6x19 or 6x37 Classification Improved Plow Steel grade rope with Independent Wire rope Core

Nominal Diameter of rope		Approximate Mass Kgs./100M.	Minimum Breaking Load Tonnes							
Inch	mm.			Single Leg	Choker 120-180 Degree	2-Legs Basket Hitch	2-Legs 45-60 Degree	2-Legs 30 Degree	3&4-Legs 45-60 Degree	3&4-Legs 30 Degree
1/4"	6.00	24.10	2.80	0.56	0.29	1.12	0.80	0.56	1.59	1.12
5/16"	8.00	26.20	4.11	0.82	0.58	1.64	1.16	0.82	1.74	1.23
3/8"	9.50	33.10	5.20	1.04	0.73	2.08	1.47	1.04	2.21	1.56
13/32"	10.00	40.90	6.42	1.28	0.90	2.57	1.82	1.28	2.72	1.93
7/16"	11.00	49.50	7.77	1.55	1.09	3.11	2.20	1.55	3.30	2.33
15/32"	12.00	58.90	9.20	1.84	1.29	3.68	2.60	1.84	3.90	2.76
1/2"	12.70	69.05	10.90	2.18	1.53	4.36	3.08	2.18	4.62	3.27
9/16"	14.20	80.30	12.60	2.52	1.76	5.04	3.56	2.52	5.34	3.78
5/8"	16.00	105.00	16.40	3.28	2.30	6.56	4.64	3.28	6.96	7.92
11/16"	18.00	133.00	20.80	4.16	2.91	8.32	5.88	4.16	8.82	6.24
3/4"	19.00	148.00	23.10	4.62	3.23	9.24	6.53	4.62	9.80	6.93
13/16"	20.00	164.00	25.70	5.14	3.60	10.28	7.27	5.14	10.90	7.71
7/8"	22.00	198.00	31.10	6.22	4.35	12.44	8.80	6.22	13.19	9.33
15/16"	24.00	236.00	37.00	7.40	5.18	14.80	10.46	7.40	15.70	11.10
1"	25.40	277.00	43.40	8.68	6.08	17.36	12.27	8.68	18.41	13.02
1-1/8"	28.00	321.00	50.40	10.08	7.06	20.16	14.25	10.08	21.38	15.12
1-1/4"	32.00	419.00	65.80	13.16	9.21	26.32	18.61	13.16	27.91	19.71
1-3/8"	35.00	501.00	78.70	15.74	11.02	31.48	22.26	15.74	33.38	23.61
1-1/2"	38.00	591.00	92.80	18.56	12.99	37.12	26.24	18.56	39.37	27.84
1-5/8"	41.00	660.00	103.00	20.60	14.42	41.20	29.13	20.60	43.69	30.90
1-3/4"	44.00	792.00	124.00	24.80	17.36	49.60	35.07	24.80	52.60	37.20
1-7/8"	48.00	942.00	148.00	29.60	20.72	59.20	41.85	29.60	62.78	44.40
2"	50.00	1,100.00	173.00	34.60	24.22	69.20	48.92	34.60	73.39	51.90

Remarks : The figure in the above table is calculated according to ASME B30.9-1996
(Some value might not be the same as indicated in the standard which caused by minimum breaking load of rope.)
Rated capacities based on pin diameter or hook no longer than the natural eye width (1/2 x Eye Length) or less than the nominal sling diameter.
Horizontal sling angles of less than 30° are not recommended (refer to ASME B30.9 for full details.

IPS : Improved Plow Steel (Grade 1770 N/mm² or Tensile 180 Kgf/mm²)

WIRE ROPE SLING WLL. TABLE TENSILE 200 Kgf/mm² (EIPS)

Capacity (Tonnes) Safety factor 5 : 1

Rated load for wire rope 6x19 or 6x37 Classification Extra Improved Plow Steel grade rope with Independent Wire rope Core

Nominal Diameter of rope		Approximate Mass Kgs./100M.	Minimum Breaking Load Tonnes							
Inch	mm.			Single Leg	Choker 120-180 Degree	2-Legs Basket Hitch	2-Legs 45-60 Degree	2-Legs 30 Degree	3&4-Legs 45-60 Degree	3&4-Legs 30 Degree
1/4"	6.00	24.10	3.25	0.65	0.38	1.30	0.92	0.65	1.84	1.30
5/16"	8.00	26.20	4.56	0.91	0.64	1.82	1.29	0.91	1.93	1.37
3/8"	9.00	33.10	5.76	1.15	0.81	2.30	1.63	1.15	2.44	1.73
13/32"	10.00	40.90	7.12	1.42	1.00	2.85	2.01	1.42	3.02	2.14
7/16"	11.00	49.50	8.61	1.72	1.21	3.44	2.43	1.72	3.65	2.58
15/32"	12.00	58.90	10.30	2.06	1.44	4.12	2.91	2.06	4.37	3.09
1/2"	12.70	69.05	12.00	2.40	1.68	4.80	3.39	2.40	5.09	3.60
9/16"	14.20	80.30	14.00	2.80	1.96	5.60	3.96	2.80	5.94	4.20
5/8"	16.00	105.00	18.30	3.66	2.56	7.32	5.18	3.66	7.76	5.49
11/16"	18.00	133.00	23.00	4.60	3.22	9.20	6.50	4.60	9.76	6.90
3/4"	19.00	148.00	25.70	5.14	3.60	10.28	7.27	5.14	10.90	7.71
13/16"	20.00	164.00	28.40	5.68	3.98	11.36	8.03	5.68	12.05	8.52
7/8"	22.00	198.00	34.50	6.90	4.83	13.80	9.76	6.90	14.63	10.35
15/16"	24.00	236.00	41.00	8.20	5.74	16.40	11.59	8.20	17.39	12.30
1"	25.40	277.00	48.10	9.62	6.73	19.24	13.60	9.62	20.40	14.43
1-1/8"	28.00	321.00	55.80	11.16	7.81	22.32	15.78	11.16	23.67	16.74
1-1/4"	32.00	419.00	72.90	14.58	10.21	29.16	20.62	14.58	30.92	21.87
1-3/8"	35.00	501.00	87.20	17.44	12.21	34.88	24.66	17.44	36.99	26.16
1-1/2"	38.00	591.00	103.00	20.60	14.42	41.20	29.13	20.60	43.69	30.90
1-5/8"	41.00	660.00	114.00	22.80	15.96	45.60	32.24	22.80	48.36	34.20
1-3/4"	44.00	792.00	138.00	27.60	19.32	55.20	39.03	27.60	58.54	41.40
1-7/8"	48.00	942.00	164.00	32.80	22.96	65.60	46.38	32.80	69.57	49.20
2"	50.00	1,100.00	193.00	38.60	27.02	77.20	54.58	38.60	81.87	57.90

Remarks : The figure in the above table is calculated according to ASME B30.9-1996
(Some value might not be the same as indicated in the standard which caused by minimum breaking load of rope.)
Rated capacities based on pin diameter or hook no longer than the natural eye width (1/2 x Eye Length) or less than the nominal sling diameter.
Horizontal sling angles of less than 30° are not recommended (refer to ASME B30.9 for full details.

EIPS : Extra Improved Plow Steel (Grade 1960 N/mm² or Tensile 200 Kgf/mm²)

Aluminum Ferrules Spec. acc. to EN13411-3 (DIN 3093)

Aluminum ferrules are manufactured per EN 13411-3 (DIN 3093) from #6 to #60. For safety in fabrication and application, our ferrules are made of strictly seamless material corresponding to the requirements of EN 13411-3 (DIN 3093) regarding material composition and mechanical properties.

Art No.	Ferrule Code (mm.)	A (mm.)	B (mm.)	S (mm.)	L (mm.)	N,W (Kg.) Per 1000 Pcs.	After Swage Dimensions (mm.)
W901-006	6	6.6	6	6	6	6	12
W901-010	10	10.9	10	10	10	10	20
W901-012	12	13.2	12	12	12	12	24
W901-014	14	15.3	14	14	14	14	28
W901-018	18	19.6	18	18	18	18	36
W901-020	20	21.7	20	20	20	20	40
W901-024	24	26.4	24	24	24	24	48
W901-028	28	31.0	28	28	28	28	56
W901-030	30	33.1	30	30	30	30	60
W901-032	32	35.2	32	32	32	32	64
W901-034	34	37.8	34	34	34	34	68
W901-038	38	41.9	38	38	38	38	76
W901-040	40	44.0	40	40	40	40	80
W901-042	42	46.2	42	42	42	42	84
W901-044	44	48.4	44	44	44	44	88
W901-046	46	50.6	46	46	46	46	92
W901-048	48	52.8	48	48	48	48	96
W901-050	50	55.0	50	50	50	50	100
W901-052	52	57.2	52	52	52	52	104
W901-054	54	59.4	54	54	54	54	108
W901-056	56	61.6	56	56	56	56	112
W901-058	58	63.8	58	58	58	58	116
W901-060	60	66.0	60	60	60	60	120

EN13411-3 (DIN 3093) Form C Aluminum Ferrules

Art No.	Ferrule Code (mm.)	L1 (mm.)	L2 (mm.)	After Swage Dimensions (mm.)
W901C-008	8	43	34.0	16
W901C-010	10	53	42.0	20
W901C-012	12	65	50.2	24
W901C-014	14	75	58.2	28
W901C-018	18	96	75.0	36
W901C-020	20	106	83.0	40
W901C-024	24	126	99.5	48
W901C-028	28	147	115.5	56
W901C-030	30	158	125.0	60

The inspection hole quarantees control of the correct inserted length of wire rope before and after swaging. These types of ferrules have to be swaged with the conical type C swaging dies.

Flemish Eye Steel Swaging Sleeves

Our modern in-house forging, heat treatment, sand blasting, auto-marking facilities assures the consistent quality of Flemish eye steel sleeves from 1/4" to 1-3/4" (galvanized and self-colored).

Art No.	For Wire Rope Size (Inch)	Weight 100 Pcs (Kg.)	Dimension (Inch)					Max. After Swage Dimensions (Inch)
			A	B	D	E	C	
W902-06	1/4"	2.27	1.00	0.66	0.31	0.28	0.47	0.57
W902-08	5/16"	7.20	1.50	0.91	0.38	0.44	0.62	0.75
W902-10	3/8"	6.36	1.50	0.91	0.47	0.39	0.66	0.75
W902-11	7/16"	15.00	2.00	1.22	0.53	0.65	0.85	1.01
W902-13	1/2"	13.00	2.00	1.22	0.63	0.56	0.91	1.01
W902-14	9/16"	29.00	2.75	1.47	0.70	0.63	1.03	1.24
W902-16	5/8"	26.00	2.75	1.47	0.75	0.63	1.09	1.24
W902-19	3/4"	40.00	3.19	1.72	0.91	0.84	1.28	1.46
W902-22	7/8"	60.00	3.56	2.03	1.03	1.00	1.53	1.68
W902-26	1"	89.00	4.00	2.28	1.16	1.13	1.72	1.93
W902-28	1-1/8"	118.00	4.80	2.50	1.28	1.25	1.94	2.13
W902-32	1-1/4"	161.00	5.19	2.78	1.44	1.41	2.16	2.32
W902-35	1-3/8"	192.00	5.81	3.00	1.56	1.56	2.38	2.52
W902-38	1-1/2"	227.00	6.25	3.25	1.69	1.69	2.63	2.71
W902-45	1-3/4"	366.00	7.25	3.84	1.94	1.97	3.13	3.10

Swage Thread Stud Ends

Art No.	Size (Inch)	B (Inch)	E (Inch)	F (Inch)	L (Inch)	T* (Inch)	D* (Inch)	After Swage OD.
W908-06	1/4"	0.50	0.27	2.13	2.48	1.97	M12	0.46
W908-08	5/16"	0.77	0.34	3.19	3.54	2.36	M16	0.71
W908-10	3/8"	0.77	0.41	3.19	3.54	2.36	M20	0.71
W908-11	7/16"	0.98	0.48	4.25	4.69	3.15	M20	0.91
W908-13	1/2"	0.98	0.55	4.25	4.69	3.15	M24	0.91
W908-14	9/16"	1.25	0.63	5.28	5.87	3.94	M24	1.16
W908-16	5/8"	1.25	0.67	5.28	5.87	3.94	M27	1.16
W908-19	3/4"	1.55	0.80	6.38	7.24	5.91	M30	1.42
W908-22	7/8"	1.70	0.94	7.44	8.35	5.91	M39	1.55

1. T* : The thread length can be altered as requested.
2. D* : The N.C.,N.F. and left hand thread are available upon request.
3. Stainless steel available upon request.

GRADE 80 (SPECTRUM 8) ALLOY CHAIN SLING

Working Load Limit - 4 to 1 Design Factor

Rated load for Alloy chain spectrum 8 Proof Loaded at 2 times the Working Load Limit

Spectrum 8 Alloy Chain Size		90°	60°	45°	30°	60°	45°	30°
Inch.	mm.	Single Leg (lbs.)	Double Leg (lbs.)			Triple & Quad Leg (lbs.)		
7/32"	6	2500	3600	3000	2500	6500	5300	3750
1/4"	7	3500	6100	4900	3500	9100	7400	5200
5/16"	8	4500	7800	6400	4500	11700	9500	6800
3/8"	10	7100	12300	10000	7100	18400	15100	10600
1/2"	13	12000	20800	17000	12000	31200	25500	18000
5/8"	16	18100	31300	25600	18100	47000	38400	27100
3/4"	20	28300	49000	40000	28300	73500	60000	42400
7/8"	20	34200	59200	48400	34200	88900	72500	51300
1"	26	47700	82600	67400	47700	123900	101200	71500
1-1/4"	32	72300	125200	102200	72300	187800	153400	108400

Remarks : The design factor of 4 to 1 on Spectrum 8 Alloy chain agrees with the design factor used by the International Standards.
Organization (I.S.O.) and ANSI B30.9 and is the preferred set of Working Load Limit values to be use

GRADE 100 (SPECTRUM 10) ALLOY CHAIN SLING

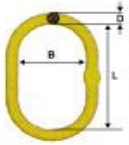
Working Load Limit - 4 to 1 Design Factor

Rated load for Alloy chain spectrum 10 Proof Loaded at 2 times the Working Load Limit

Spectrum 10 Alloy Chain Size		90°	60°	45°	30°	60°	45°	30°
Inch.	mm.	Single Leg (lbs.)	Double Leg (lbs.)			Triple & Quad Leg (lbs.)		
7/32"	6	3200	5500	4500	3200	8300	6800	4800
1/4"	7	4300	7400	6100	4300	11200	9100	6400
5/16"	8	5700	9900	8100	5700	14800	12100	8500
3/8"	10	8800	15200	12400	8800	22900	18700	13200
1/2"	13	15000	26000	21200	15000	39000	31800	22500
5/8"	16	22600	39100	32000	22600	58700	47900	33900
3/4"	20	35300	61000	49900	35300	91700	74900	52950
7/8"	20	42700	74000	60400	42700	110900	90600	64000
1"	26	59700	103400	84400	59700	155100	12600	89550
1-1/4"	32	90400	156600	127800	90400	234900	191700	135600

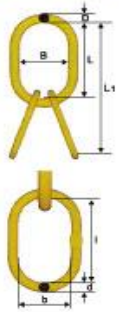
Remarks : The design factor of 4 to 1 on Spectrum 10 Alloy chain agrees with the design factor used by the International Standards.
Organization (I.S.O.) and ANSI B30.9 and is the preferred set of Working Load Limit values to be use

Master link, MF Acc to EN1677-4. Disigned for use with chain or wire rope



Code	WLL (tonnes)* 0 - 45°	L	B	D	Weight appr. kgs.
MF-6-8***	1.25	100	60	11	0.2
MF-86-8***	2.50	120	70	14	0.4
MF-108-8***	4.00	140	80	17	0.8
MF-1310-8***	7.50	160	95	22	1.5
MF-1613-8***	10.00	190	110	25	2.3
MF-2016-8***	17.00	240	140	34	5.3
MF-2220-8***	25.00	250	150	38	7.0

Master link, MF Acc to EN1677-4. Disigned for use with chain or wire rope



Code	WLL (tonnes)* 0 - 45°	L1	L	B	D	l	b	d	Weight appr. kgs.
MT-6-8***	3.5	270	150	90	19	120	70	14	1.8
MT-8-8***	5.0	300	160	95	22	140	80	17	3.1
MT-10-8***	11.5	360	200	120	30	160	95	22	6.5
MT-13-8***	17.0	450	250	150	40	200	120	30	15.0
MT-16-8***	28.0	500	300	200	50	200	120	32	23.0
MT-20-8***	35.0	550	300	200	55	250	150	38	33.0
MT-22-8	53.0	610	350	200	60	260	140	45	46.0
MT-26-8	70.0	730	450	250	70	280	160	50	71.0
MT-32-8	90.0	750	450	260	80	280	160	55	91.0

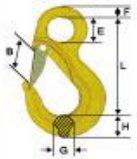
Chain KLB

Code	WLL tonnes*	D	Weight appr. kgs./m.	W1	Weight appr. kgs./m.
KLB-6-8E	1.12	6	18	8.5	0.8
KLB-7-8E	1.50	7	21	10.0	1.1
KLB-8-8E	2.00	8	24	11.0	1.4
KLB-10-8E	3.15	10	30	14.0	2.2
KLB-13-8E	5.30	13	39	18.0	3.7
KLB-16-8E	8.00	16	48	22.0	5.6
KLB-19-8E	11.20	19	57	26.0	7.8
KLB-22-8E	15.00	22	66	30.0	11.0
KLB-26-8E	21.20	26	78	35.0	14.3
KLB-32-8E	31.50	32	96	43.0	23.0

Coupling link G

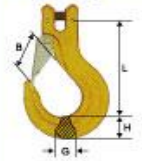
Code	WLL tonnes*	For chain size mm.	L	Dim. in mm. B	G	E	Weight appr. kgs.
G-6-8	1.12	1.12	44	15	8	16	0.1
G-7/8-8	2.00	2.00	56	18	9	22	0.2
G10-8	3.20	3.20	68	25	12	26	0.3
G13-8	5.40	5.40	89	29	15	33	0.7
G16-8	8.00	8.00	105	36	19	40	1.2
G18/20-8	12.50	12.50	125	43	22	47	1.9
G-22-8	15.50	15.50	152	50	24	59	3.0
G-26-8	21.60	21.60	160	58	29	61	4.6
G-32-8	32.00	32.00	200	70	38	78	8.6

Sling hook, EKN with latch



Code	WLL tonnes*	For chain size mm.	Dim. in mm. L	B	E	F	G	H	Weight appr. kgs.
EKN-6-8	1.12	6	94	24	22	10.0	17	19	0.4
EKN-7/8-8	2.00	7.8	105	28	25	11.5	17	22	0.5
EKN-10-8	3.20	10	131	37	32	13.5	20	29	0.9
EKN-13-8	5.40	13	161	42	40	17.5	27	37	1.8
EKN-16-8	8.00	16	197	52	50	22.0	34	44	3.4
EKN18/20-8	12.50	18.20	229	60	60	26.0	37	52	5.2
EKN-22-8	15.50	22	269	77	64	31.0	42	67	9.4
EKN-26-8	21.60	26	301	81	66	32.0	51	75	12.6
EKN-32-8	32.00	32	333	93	76	38.0	61	80	17.9

Sling hook, EGKN/GKN



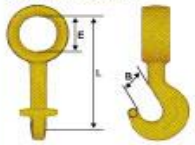
Code	WLL tonnes*	For chain size mm.	Dim. in mm. L	B	G	H	Weight appr. kgs.
EGKN/GKN-7/8-8	2.0	7.8	95	29	17	22	0.5
EGKN/GKN-10-8	3.2	10	121	34	23	29	1.0
EGKN/GKN-3-8	5.4	13	147	42	28	36	2.1
EGKN/GKN-16-8	8.0	16	170	49	33	43	3.6
EGKN/GKN-19/20-8	12.5	19	212	60	43	51	6.0

Foundry hook OKE

Code	WLL tonnes*	For chain size mm.	L	B	Dim. in mm. E	F	G	H	Weight appr. kgs.
OKE-7/8-8	2.0	7.8	122	63	25	11	18	26	0.6
OKE-10-8	3.2	10	150	76	32	14	25	30	1.2
OKE-13-8	5.4	13	182	90	40	18	32	38	2.3
OKE-16-8	8.0	16	215	102	50	22	40	45	3.9
OKE-18/20-8	12.5	19	247	114	60	26	46	57	6.1
OKE-26-8	21.6	26	300	113	66	38	64	73	16.4
OKE-32-8	32.0	32	384	145	80	48	77	94	35.0

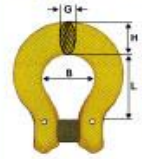
Choker hook LK

Use with Berglok as end component.



Code	WLL tonnes*	For chain size mm.	L	Dim. in mm. B	E	Weight appr. kgs.
LK-7/8-8	2.0	7.8	96	19	32	0.3
LK-10-8	3.2	10	120	21	42	0.8
LK-13-8	5.4	13	150	26	52	1.8

Berglok chain coupler BL

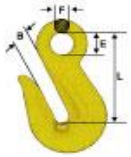


Code	WLL tonnes*	For chain size mm.	L	Dim. in mm. B	G	H	Weight appr. kgs.
BL-6-8	1.12	6	27	20	9	14	0.1
BL-7/8-8	2.00	7.8	35	25	11	18	0.2
BL-10-8	3.20	10	45	32	14	22	0.4
BL-13-8	5.40	13	56	40	17	28	1.0
BL-16-8	8.00	16	68	50	22	35	1.4
BL-19-8	11.50	19	80	58	25	41	2.3

Grab hook OG

Not for use with Berglok.

No reduction of working load limit, Thanks to supporting lugs on either side of hook to prevent chain link deformation.



Code	WLL tonnes*	For chain size mm.	L	Dim. in mm. B	E	F	Weight appr. kgs.
OG-7-8	1.5	7	60	10.0	15	9	0.2
OG-8-8	2.0	8	72	10.0	16	10	0.4
OG-10-8	3.2	10	85	12.0	20	12	0.6
OG-13-8	5.4	13	104	15.0	25	16	1.2
OG-16-8	8.0	16	130	19.0	28	19	2.4
OG-19/20-8	12.5	19	156	22.5	36	23	4.6
OG-22-8	15.5	22	180	25.5	42	26	6.2

Grab hook GG

Not for use with Berglok.

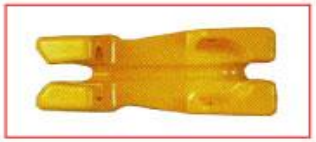
No reduction of working load limit, Thanks to supporting lugs which prevent chain link deformation.

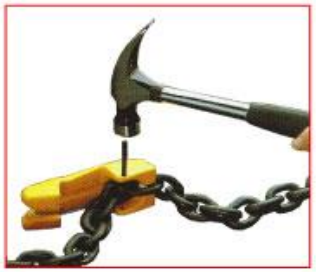
Code	WLL tonnes*	For chain size mm.	Dim. in mm. L	B	Weight appr. kgs.
GG-7-8	1.5	7	56	10.0	0.3
GG-10-8	3.2	10	77	12.0	0.8
GG-13-8	5.4	13	97	15.0	1.5
GG-16-8	8.0	16	124	19.0	2.8
GG-19/20-8	15.5	19	145	25.5	4.8

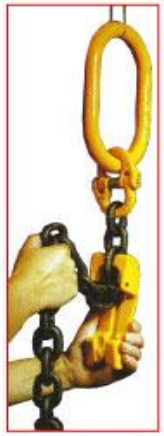
Shortening clutch GKL

Can be supplied without safety latch.

Code	WLL tonnes*	For chain size mm.	A	Dim. in mm. B	C	D	L	Weight appr. kgs.
GKL-6-8	1.12	6	75	34	38	15	53	0.3
GKL-7-8	1.50	7	93	42	42	20	66	0.5
GKL-8-8	2.00	8	93	42	42	20	65	0.5
GKL-10-8	3.20	10	120	55	58	25	84	1.0
GKL-13-8	5.40	13	151	66	74	32	103	2.4
GKL-16-8	8.00	16	179	79	90	40	122	3.4







TYPE

- Double-ply polyester webbing sling with reinforced lifting eyes
- Working load limit WLL. 1-20 tons

TECHNICAL SPECIFICATIONS

- Slings are constructed of 100% polyester
- Certified standard EN-1492-1
- Safety factor 7:1
- Each kg class has its own color code. (see technical data)
- Melting point 260°C (500°F)
- Max. working temp 100°C (200°F)
- Excellent resistant to acids, oil, ultra violet ray, rot and mildew
- Light and easy to handle, store and clean
- No less of strength in water
- Only 3% elongation

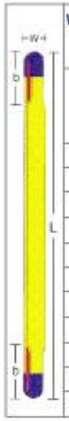
NORM

- According to Machine Directive 89/392/EC.

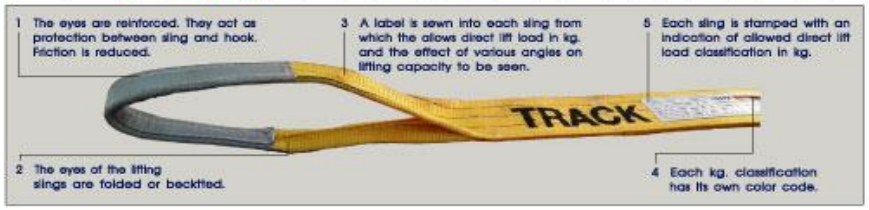
CHEMICAL RESISTANCE INFORMATION CHART

Material	acids	alkalis	ethers	aldehydes	alcohols	oils	organic solvents	water & seawater
Polyester	ok*	no	no	no	ok	ok	ok	ok

* desintegrated by concentrated sulfuric acid
Higher chemical concentrations and/or higher temperatures will lower the resistance of the sling.



Webbing width (mm.)	Color code according to EN-1492-1		Working Load Limits with 1 webbing sling					Working Load Limits with 2 webbing sling			
			straight lift	choked lift	B			straight lift up to 45°	choked lift up to 45°	straight lift up to 45°-60°	choked lift up to 45°-60°
					0°-7°	7°-45°	45°-60°				
			1,0	0,8	2,0	1,4	1,0	1,4	1,12	1,0	0,8
35	WLL 1 t	violet	1,000	800	2,000	1,400	1,000	1,400	1,120	1,000	800
60	WLL 2 t	green	2,000	1,600	4,000	2,800	2,000	2,800	2,240	2,000	1,600
90	WLL 3 t	yellow	3,000	2,400	6,000	4,200	3,000	4,200	3,360	3,000	2,400
120	WLL 4 t	gray	4,000	3,200	8,000	5,600	4,000	5,600	4,480	4,000	3,200
150	WLL 5 t	red	5,000	4,000	10,000	7,000	5,000	7,000	5,600	5,000	4,000
180	WLL 6 t	brown	6,000	4,800	12,000	8,400	6,000	8,400	6,720	6,000	4,800
240	WLL 8 t	blue	8,000	6,400	16,000	11,200	8,000	11,200	8,960	8,000	6,400
250	WLL 10 t	orange	10,000	8,000	20,000	14,000	10,000	14,000	11,200	10,000	8,000
300	WLL 12 t	orange	12,000	9,600	24,000	16,800	12,000	16,800	13,440	12,000	9,600
300/3	WLL 15 t	orange	15,000	12,000	30,000	21,000	15,000	21,000	16,800	15,000	12,000
300/4	WLL 20 t	orange	20,000	16,000	40,000	28,000	20,000	28,000	22,400	20,000	16,000



TYPE

- Polyester roundsling with two-ply woven heavy-duty sleeve.
- Working load limit WLL. 1-40 tons

TECHNICAL SPECIFICATIONS

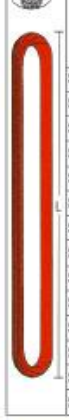
- Slings are constructed of 100% polyester
- Certified standard EN-1492-2
- Safety factor 7:1
- The load bearing yarns are protected by a double-layer seamless polyester-cover.
- Only 3% elongation

NORM

- According to Machine Directive 89/392/EC.

S-5 ROUNDSLING WITH 2-PLY WOVEN HEAVY-DUTY SLEEVE

The roundsling inner core is made from high tensile polyester fiber which is wound continuously without a joint to provide the maximum possible strength.
This core is protect both the inner core of the sling and the surface of the product which is lifted.



Type	Color code according to EN-1492-2		Working Load Limits with 1 webbing sling							Working Load Limits with 2 webbing sling			
			straight lift	choked lift	0°-7°	B				straight lift up to 45°	choked lift up to 45°	straight lift up to 45°-60°	choked lift up to 45°-60°
						bis 7°	7°-45°	45°-60°	45°-60°				
			1,0	0,8	2,0	1,4	1,0	0,7	0,5	1,4	1,12	1,0	0,8
S-5 / 10	WLL 1 t	violet	1,000	800	2,000	1,400	1,000	700	500	1,400	1,120	1,000	800
S-5 / 20	WLL 2 t	green	2,000	1,600	4,000	2,800	2,000	1,400	1,000	2,800	2,240	2,000	1,600
S-5 / 30	WLL 3 t	yellow	3,000	2,400	6,000	4,200	3,000	2,100	1,500	4,200	3,360	3,000	2,400
S-5 / 40	WLL 4 t	gray	4,000	3,200	8,000	5,600	4,000	2,800	2,000	5,600	4,480	4,000	3,200
S-5 / 50	WLL 5 t	red	5,000	4,000	10,000	7,000	5,000	3,500	2,500	7,000	5,600	5,000	4,000
S-5 / 60	WLL 6 t	brown	6,000	4,800	12,000	8,400	6,000	4,200	3,000	8,400	6,720	6,000	4,800
S-5 / 80	WLL 8 t	blue	8,000	6,400	16,000	11,200	8,000	5,600	4,000	11,200	8,960	8,000	6,400
S-5 / 100	WLL 10 t	orange	10,000	8,000	20,000	14,000	10,000	7,000	5,000	14,000	11,200	10,000	8,000
S-5 / 120	WLL 12 t	orange	12,000	9,600	24,000	16,800	12,000	8,400	6,000	16,800	13,440	12,000	9,600
S-5 / 150	WLL 15 t	orange	15,000	12,000	30,000	21,000	15,000	10,500	7,500	21,000	16,800	15,000	12,000
S-5 / 200	WLL 20 t	orange	20,000	16,000	40,000	28,000	20,000	14,000	10,000	28,000	21,000	20,000	16,000
S-5 / 250	WLL 25 t	orange	25,000	20,000	50,000	35,000	25,000	17,500	12,500	35,000	28,000	25,000	20,000
S-5 / 300	WLL 30 t	orange	30,000	24,000	60,000	42,000	30,000	21,000	15,000	42,000	33,600	30,000	24,000
S-5 / 400	WLL 40 t	orange	40,000	32,000	80,000	56,000	40,000	28,000	20,000	56,000	44,800	40,000	32,000

POLYESTER LIFTING SLING APPLICATIONS

AIR CONDITIONNING UNITS	ELECTRICAL EQUIPMENT	NUCLEAR EQUIPMENT	SINGS
AUTOMOBILES	FINISHED PARTS	OIL DRILLING PARTS	STEEL FACTORY
AUTOMOBILE PARTS	HARBOR-LOADING AND UNLOADING	PAPER ROLLS	TELEPHONE POLE HANDLING
BALES	UNLOADING	PREFAB UNITS	TRANSFORMERS
BEARINGS	HEATING UNITS	PROPELLERS	VAULTS
BOILERS	JET ENGINES	QUENCHING OPERATINGS	VENTILATION UNITS
BOAT HANDLING	INSTRUMENTS	RADIOACTIVE MATERIALS	WASTE DISPOSAL
BULK MATERIALS	LIGHTING FIXTURES	SALVAGE OPERATIONS	X-RAY EQUIPMENT
CONCRETE PIPE	LOGGING	SCULPTURES	YARD LIFTING-RAILAND LUMBER
DRUMS	MACHINERY AND MACHINE PARTS	SHAFTS	

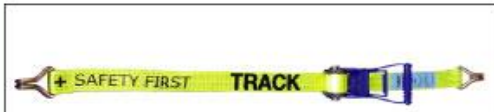
HEAVY-DUTY LASHING SYSTEMS

GENERAL HEAVY HAULAGE

TRACK ratchet lashings are made from polyester according to EN 12195-2 and offer the following advantag

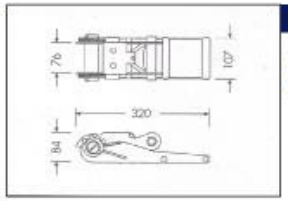
- light weight and handy
- flexible
- high load-carrying capacities
- low-strain, wear-resistant, long-life strap material (100% polyester)
- moisture-resistant fabric, thus eliminating frost damage, at the same time providing largely decay-resistant properties
- all TRACK ratchet lashings are heat set, stretched, PU-impregnated and in conformity with EN 12195-2

LASHING STRENGTH



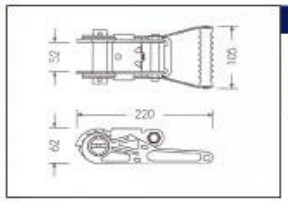
6000 kg.	12000 kg.
Lashing with: Ratchet type **RB 5060 LOK** & end fitting as below	
Webbing width: 50 mm.	

5000 kg.	10000 kg.
Lashing with: Ratchet type **RB 5050 KB** & end fitting as below	
Webbing width: 50 mm.	



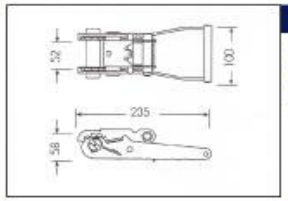
RB 75100

75 mm. Ratchet Buckle
Break Strength
B/S : 10,000 kgs./22,000 lbs.



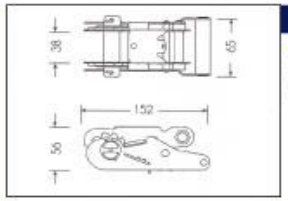
RB 5060 LOK

50 mm. Ratchet Buckle, Heavy Duty
NATO BUCKLE (Military) Epoxy Coated
Break Strength
B/S : 6,000 kgs./13,000 lbs.



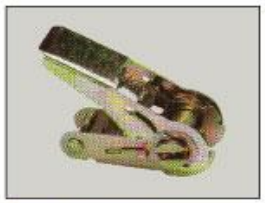
RB 5050 KB

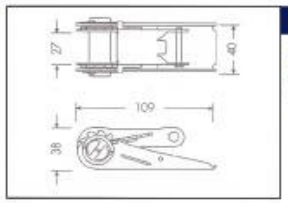
50 mm. Ratchet Buckle
Break Strength
B/S : 5,000 kgs./11,000 lbs.



RB 3530 WH

35 mm. Ratchet Buckle
Break Strength
B/S : 3,000 kgs./6,600 lbs.

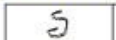




RB 2509

25 mm. Ratchet Buckle
Break Strength
B/S : 1,000 kgs./2,200 lbs.

END FITTINGS

							
1065	1006	1019	1014	1075	1210	1209	3018

SCREW PIN ANCHOR SHACKLES

G-209 S-209

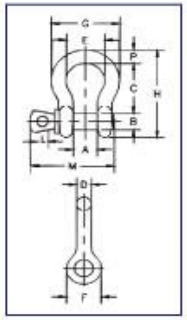
Screw pin anchor shackles meet the performance requirements of Federal Specification RR-C-271D Type IVA, Grade A, Class 2, except for those provisions required of the contractor.

- Capacities 1/3 thru 55 metric tons.
- Forged-Quenched and Tempered, with alloy pins.
- Working Load Limit permanently shown on every shackle.
- Hot Dip galvanized or Self Colored.
- Fatigue rated.
- Shackles 25t and larger are RFID EQUIPPED.
- Shackles can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification. Charges for proof testing and certification available when requested at the time of order.
- Shackles are Quenched and Tempered and can meet DNV impact requirements of 42 joules at-20C.
- Sizes 1/2t-25t meet the performance requirements of EN13889:2003.
- Crosby products meet or exceed all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, Crosby products 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.
- Type Approval and certification in accordance with ABS 2006 Steel Vessel Rules 1-1-17.7, and ABS Guide for Certification of Cranes.

SCREW PIN CHAIN SHACKLES

G-210 S-210

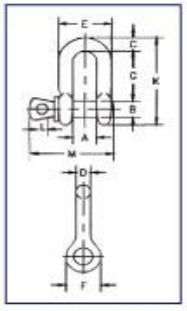
Screw pin chain shackles meet the performance requirements of Federal Specification RR-C-271D Type IVB, Grade A, Class 2, except for those provisions required of the contractor.



G-209 S-209

Nominal Size (in.)	Working Load Limit (L)*	Stock No. G-209	Stock No. S-209	Weight Each (Kg.)	Dimensions (mm.) A	B	C	D	E	F	G	H	L	M	P	Tolerance + / − C	A
3/16	1/3	1018367	-	0.03	9.65	6.35	22.40	4.85	15.20	14.20	24.90	37.50	4.06	28.40	4.85	1.50	1.50
1/4	1/2	1018375	1018384	0.05	11.90	7.85	28.70	6.35	19.80	15.50	32.50	46.70	4.85	35.10	6.35	1.50	1.50
5/16	3/4	1018293	1018400	0.09	13.50	9.65	31.00	7.85	21.30	19.10	37.30	53.00	5.60	42.20	7.85	3.30	1.50
3/8	1	1018419	1018428	0.14	16.80	11.20	36.60	9.65	26.20	23.10	45.20	63.00	6.35	51.50	9.65	3.30	1.50
7/16	1 1/2	1018437	1018446	0.17	19.10	12.70	42.90	11.20	29.50	26.90	51.50	74.00	7.85	60.50	11.20	3.30	1.50
1/2	2	1018455	1018464	0.33	20.60	16.00	47.80	12.70	33.30	30.20	58.50	83.50	9.65	68.50	12.70	3.30	1.50
5/8	3 1/4	1018473	1018482	0.62	26.90	19.10	60.50	16.00	42.90	38.10	74.50	106.00	11.20	85.00	17.50	6.35	1.50
3/4	4 3/4	1018491	1018507	1.07	31.80	22.40	71.50	19.10	51.00	46.00	89.00	126.00	12.70	101.00	20.60	6.35	1.50
7/8	6 1/2	1018516	1018525	1.84	36.60	25.40	84.00	22.40	58.00	53.00	102.00	148.00	12.70	114.00	24.60	6.35	1.50
1	8 1/2	1018534	1018543	2.28	42.90	28.70	95.50	25.40	68.50	60.50	119.00	167.00	14.20	129.00	26.90	6.35	1.50
1 1/8	9 1/2	1018552	1018561	3.36	46.00	31.80	108.00	28.50	74.00	68.50	131.00	190.00	16.00	142.00	31.80	6.35	1.50
1 1/4	12	1018570	1018589	4.31	51.50	35.10	119.00	32.80	82.50	76.00	146.00	210.00	17.50	156.00	35.10	6.35	1.50
1 3/8	13 1/2	1018598	1018605	6.14	57.00	38.10	133.00	36.10	92.00	84.00	162.00	233.00	19.10	174.00	38.10	6.35	3.30
1 1/2	17	1018514	1018623	7.80	60.50	41.40	146.00	38.10	98.50	92.00	175.00	254.00	20.60	187.00	41.10	6.35	3.30
1 3/4	25	1018632	1018641	12.60	7.300	51.00	178.00	46.70	127.00	106.00	225.00	313.00	25.40	231.00	57.00	6.35	3.30
2	35	1018650	1018669	20.40	82.50	57.00	197.00	53.00	146.00	122.00	253.00	348.00	31.00	263.00	61.00	6.35	3.30
2 1/2	55	1018678	1018687	38.90	105.00	70.00	267.00	69.00	184.00	145.00	327.00	453.00	35.10	330.00	79.50	6.35	6.35

* NOTE : Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 6 times the Working Load Limit.



G-210 S-210

Nominal Size (in.)	Working Load Limit (L)*	Stock No. G-210	Stock No. S-210	Weight Each (Kg.)	Dimensions (mm.) A	B	C	D	E	F	G	K	L	M	Tolerance + / − G	A
1/4	1/2	1018150	1019169	0.05	11.90	7.85	6.35	6.35	24.60	15.50	22.40	40.40	4.85	35.10	1.50	1.50
5/16	3/4	1019178	1019187	0.09	13.50	9.65	7.85	7.85	29.50	19.10	26.20	48.50	5.60	42.20	1.50	1.50
3/8	1	1019196	1019203	0.13	16.80	11.20	9.65	9.65	35.80	23.10	31.80	58.50	6.35	51.50	3.30	1.50
7/16	1 1/2	1019212	1019221	0.20	19.10	12.70	11.20	11.20	41.40	26.90	36.60	67.50	7.85	60.50	3.30	1.50
1/2	2	1019230	1019249	0.27	20.60	16.00	12.70	12.70	46.00	30.20	41.40	77.00	9.65	68.50	3.30	1.50
5/8	3 1/4	1019258	1019267	0.57	26.90	19.10	15.70	16.00	58.50	38.10	51.00	95.50	11.20	85.00	3.30	1.50
3/4	4 3/4	1019276	1019285	1.20	31.80	22.40	20.60	19.10	70.00	46.00	60.50	115.00	12.70	101.00	6.35	1.50
7/8	6 1/2	1019294	1019301	1.43	36.60	25.40	24.60	22.40	81.00	53.00	71.50	135.00	12.70	114.00	6.35	1.50
1	8 1/2	1019310	1019329	2.15	42.90	28.70	25.40	25.40	93.50	60.50	81.00	151.00	14.20	129.00	6.35	1.50
1 1/8	9 1/2	1019338	1019347	3.06	46.00	31.80	31.80	28.70	103.00	68.50	91.00	172.00	16.00	142.00	6.35	1.50
1 1/4	12	1019356	1019365	4.11	51.50	35.10	35.10	31.80	115.00	76.00	100.00	191.00	17.50	156.00	6.35	3.30
1 3/8	13 1/2	1019374	1019383	5.28	57.00	38.10	38.10	35.10	127.00	84.00	111.00	210.00	19.10	174.00	6.35	3.30
1 1/2	17	1019392	1019409	7.23	60.50	41.40	41.10	38.10	137.00	92.00	122.00	230.00	20.60	187.00	6.35	3.30
1 3/4	25	1019418	1019427	12.10	73.00	51.00	54.00	44.50	162.00	106.00	146.00	278.00	25.40	231.00	6.35	3.30
2	35	1019436	1019445	19.20	82.50	57.00	65.00	51.00	184.00	122.00	172.00	312.00	31.00	263.00	6.35	3.30
2 1/2	55	1019454	1019463	32.50	105.00	70.00	66.50	66.50	238.00	145.00	203.00	377.00	35.10	330.00	6.35	6.35

* NOTE : Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 6 times the Working Load Limit.

BOLT TYPE ANCHOR SHACKLES

G-2130 S-2130

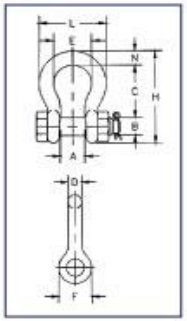
Bolt Type Anchor shackles with thin head bolt-nut with cotter pin. Meets the performance requirements of Federal Specification RR-C-271D Type IVA, Grade A, Class 3, except for those provisions required of the contractor.

- Capacities 1/3 thru 150 metric tons.
- Working Load Limit permanently shown on every shackle.
- Forged-Quenched and Tempered, with alloy pins.
- Hot Dip galvanized or Self Colored.
- Fatigue rated (1/3t-55t).
- Shackles 25t and larger are RFID EQUIPPED.
- Crosby products meet or exceed all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, Crosby products meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.
- Sizes 1/2t-25t meet the performance requirements of EN13889:2003.
- Shackles 55 metric tons and smaller can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification when requested at the time of order.
- Shackles 85 metric tons and larger can be provided as follows.
- Non Destructive Tested.
- Serialized Pin and Bow.
- Material Certification (Chemical) Certification must be requested at time of order.
- Look for the Red Pin®...the mark of genuine Crosby quality.
- Type Approval and certification in accordance with ABS 2006 Steel Vessel Rules 1-1-17.7, and ABS Guide for Certification of Cranes.

BOLT TYPE CHAIN SHACKLES

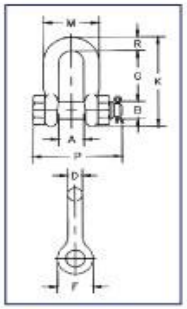
G-2150 S-2150

Bolt Type Chain shackles. Thin hex head bolt-nut with cotter pin. Meets the performance requirements of Federal Specification RR-C-271D Type IVB, Grade A, Class 3, except for those provisions required of the contractor.



G-2130 S-2130

Nominal Size (in.)	Working Load Limit (L)*	Stock No. G-2130	Stock No. S-2130	Weight Each (Kg.)	Dimensions (mm.) A	B	C	D	E	F	H	L	N	Tolerance + / − C	A
3/16	1/3 ‡	1019464	-	0.03	9.65	6.35	22.40	4.85	15.20	14.20	37.30	24.90	4.85	1.50	1.50
1/4	1/2	1019468	-	0.05	11.90	7.85	28.70	6.35	19.80	15.50	46.70	32.50	6.35	1.50	1.50
5/16	3/4	1019468	-	0.10	13.50	9.65	31.00	7.85	21.30	19.10	53.00	37.30	7.85	3.30	1.50
3/8	1	1019470	-	0.15	16.80	11.20	36.60	9.65	26.20	23.10	63.00	45.20	9.65	3.30	1.50
7/16	1 1/2	1019471	-	0.22	19.10	12.70	42.90	11.20	29.50	26.90	74.00	51.50	11.20	3.30	1.50
1/2	2	1019472	1019481	0.36	20.60	16.00	47.80	12.70	33.30	30.20	83.50	58.50	12.70	3.30	1.50
5/8	3 1/4	1019490	1019506	0.82	26.90	19.10	60.50	16.00	42.90	38.10	106.00	74.50	17.50	6.35	1.50
3/4	4 3/4	1019515	1019524	1.23	31.80	22.40	71.50	19.10	51.00	46.00	126.00	89.00	20.60	6.35	1.50
7/8	6 1/2	1019533	1019542	1.79	36.60	25.40	84.00	22.40	58.00	53.00	148.00	102.00	24.60	6.35	1.50
1	8 1/2	1019551	1019560	2.28	42.90	28.70	95.50	25.40	68.50	60.50	167.00	119.00	26.90	6.35	1.50
1 1/8	9 1/2	1019579	1019588	3.75	46.00	31.80	108.00	28.70	74.00	68.50	190.00	131.00	31.80	6.35	1.50
1 1/4	12	1019597	1019604	5.31	51.50	35.10	119.00	31.80	82.50	76.00	210.00	146.00	35.10	6.35	1.50
1 3/8	13 1/2	1019613	1019622	7.18	57.00	38.10	133.00	35.10	92.00	84.00	233.00	162.00	38.10	6.35	3.30
1 1/2	17	1019631	1019640	8.62	60.50	41.40	146.00	38.10	98.50	92.00	254.00	175.00	41.10	6.35	3.30
1 3/4	25	1019659	1019668	15.40	7.300	51.00	178.00	44.50	127.00	106.00	313.00	225.00	57.00	6.35	3.30
2	35	1019677	1019686	23.70	82.50	57.00	197.00	51.00	146.00	122.00	348.00	253.00	61.00	6.35	3.30
2 1/2	55	1019695	1019702	44.60	105.00	70.00	267.00	66.50	184.00	145.00	453.00	327.00	79.50	6.35	6.35
3	† 85	1019711	-	70.00	127.00	82.50	330.00	76.00	200.00	165.00	546.00	365.00	92.00	6.35	6.35
3 1/2	† 120 ‡	1019739	-	120.00	133.00	95.50	372.00	92.00	229.00	203.00	626.00	419.00	105.00	6.35	6.35
4	† 150 ‡	1019757	-	163.00	140.00	108.00	368.00	104.00	254.00	229.00	853.00	468.00	116.00	6.35	6.35



G-2150 S-2150

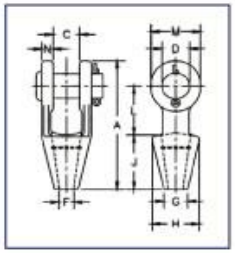
Nominal Size (in.)	Working Load Limit (L)*	Stock No. G-2150	Stock No. S-2150	Weight Each (Kg.)	Dimensions (mm.) A	B	D	F	G	K	M	P	R	Tolerance + / − G	A
1/4	1/2	1019768	-	0.05	11.90	7.85	6.35	15.50	19.10	40.40	24.60	39.60	6.35	1.50	1.50
5/16	3/4	1019770	-	0.10	13.50	9.65	7.85	19.10	25.40	48.50	28.50	46.20	7.85	1.50	1.50
3/8	1	1019772	-	0.15	16.80	11.20	9.65	23.10	31.00	58.50	35.80	55.00	9.65	3.30	1.50
7/16	1 1/2	1019774	-	0.22	19.10	12.70	11.20	26.90	36.10	67.50	41.10	63.50	11.20	3.30	1.50
1/2	2	1019775	1019784	0.34	20.60	16.00	12.70	30.20	41.40	77.00	46.00	71.00	12.70	3.30	1.50
5/8	3 1/4	1019793	1019800	0.67	26.90	19.10	16.00	38.10	51.00	95.50	58.50	89.50	16.00	3.30	1.50
3/4	4 3/4	1019819	1019828	1.14	31.80	22.40	19.10	46.00	60.50	115.00	70.00	103.00	20.60	6.35	1.50
7/8	6 1/2	1019837	1019846	1.74	36.60	25.40	22.40	53.00	71.50	135.00	81.00	120.00	24.60	6.35	1.50
1	8 1/2	1019855	1019864	2.52	42.90	28.70	25.40	60.50	81.00	151.00	93.50	135.00	25.40	6.35	1.50
1 1/8	9 1/2	1019873	1019882	3.45	46.00	31.80	28.70	68.50	91.00	172.00	103.00	150.00	31.80	6.35	1.50
1 1/4	12	1019891	1019908	4.90	51.50	35.10	31.80	76.00	100.00	191.00	115.00	165.00	35.10	6.35	1.50
1 3/8	13 1/2	1019917	1019926	6.24	57.00	38.10	35.10	84.00	111.00	210.00	127.00	183.00	38.10	6.35	3.30
1 1/2	17	1019935	1019944	8.39	60.50	41.40	38.10	92.00	122.00	230.00	137.00	196.00	41.10	6.35	3.30
1 3/4	25	1019953	1019952	14.20	73.00	51.00	44.50	106.00	146.00	279.00	162.00	230.00	54.00	6.35	3.30
2	35	1019971	1019980	21.20	82.50	57.00	51.00	122.00	172.00	312.00	184.00	264.00	60.00	6.35	3.30
2 1/2	55	1019999	1020004	38.60	105.00	70.00	66.50	145.00	203.00	377.00	238.00	344.00	66.50	6.35	6.35
3	† 85	1020013	-	56.00	127.00	82.50	76.00	165.00	216.00	429.00	279.00	419.00	89.00	6.35	6.35

* NOTE : Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 6 times the Working Load Limit.
† Individually Proof Tested with certification.
‡ Furnished in Anchor style only and furnished with Round Head Bolts with welded handles.

G-416 / S-416

Open Grooved Sockets meet the performance requirements of Federal Specification RR-S-550D, Type A, except for those provisions required of the contractor.

- Forged Steel Sockets thru 1-1/2", cast alloy steel 1-5/8" thru 4".
- Spelter socket terminations have an efficiency rating of 100% based on the catalog strength of wire rope. Ratings are based on recommended use with 6 x 7, 6 x 19, or 6 x 37, IPS or XIP (EIP), XXIP (EEIP), RRL, FC or IWRC wire rope.



NOTICE :
All cast steel sockets 1-5/8" and larger are magnetic particle inspected and ultrasonic inspected. Proof testing available on special order. Drawing illustrates one groove used on sockets 1/4" thru 3/4". Sizes 7/8" thru 1-1/2" use 2 grooves. Sizes 1-5/8" and larger use 3 grooves.

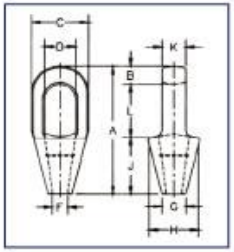
Rope Dia.		Structural Strand Dia. (in.)	Ultimate Load (L)	Stock No.		Weight Each (lbs.)	Dimensions (in.)									
(in.)	(mm.)			G-416 Galv.	S-416 S.C.		A	C	D	F	G	H	J	L	M	N
1/4	6-7	-	4.5	1039619	1039628	1.10	4.56	0.75	0.69	0.38	0.69	1.56	2.25	1.56	1.31	0.36
5/16 - 3/8	8-10	-	12	1039637	1039646	1.30	4.84	0.81	0.81	0.50	0.81	1.69	2.25	1.75	1.50	0.44
7/16 - 1/2	11-13	-	20	1039655	1039664	2.25	5.56	1.00	1.00	0.56	0.94	1.88	2.50	2.00	1.88	0.50
9/16 - 5/8	14-16	1/2	27	1039673	1039682	3.60	6.75	1.25	1.19	0.69	1.13	2.25	3.00	2.50	2.25	0.56
3/4	18	9/16 - 5/8	43	1039691	1039708	5.83	7.94	1.50	1.38	0.81	1.25	2.62	3.50	3.00	2.62	0.62
7/8	20-22	11/16 - 3/4	55	1039717	1039726	9.65	9.25	1.75	1.63	0.94	1.50	3.25	4.00	3.50	3.13	0.80
1	24-26	13/16 - 7/8	78	1039735	1039744	15.50	10.56	2.00	2.00	1.13	1.75	3.75	4.50	4.00	3.75	0.88
1-1/8	28-30	15/16 - 1	92	1039753	1039762	21.50	11.81	2.25	2.25	1.25	2.00	4.12	5.00	4.62	4.12	1.00
1-1/4 - 1-3/8	32-35	1-1/16 - 1-1/8	136	1039771	1039780	31.00	13.19	2.50	2.50	1.50	2.25	4.75	5.50	5.00	4.75	1.13
1-1/2	38	1-3/16 - 1-1/4	170	1039799	1039808	47.25	15.12	3.00	2.75	1.63	2.75	5.25	6.00	6.00	5.38	1.19
* 1-5/8	* 40-42	1-5/16 - 1-3/8	188	1039815	1039824	55.00	16.25	3.00	3.00	1.75	3.00	5.50	6.50	6.50	5.75	1.31
*1-3/4 - 1-7/8	* 44-48	1-7/16 - 1-5/8	268	1039833	1039842	82.00	18.25	3.50	3.50	2.00	3.13	6.38	7.50	7.00	6.50	1.56
* 2 - 2-1/8	* 50-54	1-11/16 - 1-3/4	291	1039851	1039860	129.00	21.50	4.00	3.75	2.25	3.75	7.38	8.50	9.00	7.00	1.81
* 2-1/4 - 2-3/8	* 56-60	1-13/16 - 1-7/8	360	1039879	1039888	167.00	23.50	4.50	4.25	2.50	4.00	8.25	9.00	10.00	7.75	2.13
* 2-1/2 - 2-5/8	* 64-67	1-15/16 - 2-1/8	424	1041633	1041642	252.00	25.50	5.00	4.75	2.88	4.50	9.25	9.75	10.75	8.50	2.38
* 2-3/4 - 2-7/8	* 70-73	2-3/16 - 2-7/16	511	1041651	1041660	315.00	27.25	5.25	5.00	3.12	4.88	10.50	11.00	11.00	9.00	2.88
* 3 - 3-1/8	* 75-80	2-1/2 - 2-5/8	563	1041679	1041688	380.00	29.00	5.75	5.25	3.38	5.25	11.12	12.00	11.25	9.50	3.00
* 3-1/4 - 3-3/8	* 82-86	2-3/4 - 2-7/8	722	1041697	1041704	434.00	30.88	6.25	5.50	3.62	5.75	11.88	13.00	11.75	10.00	3.12
* 3-1/2 - 3-5/8	* 88-92	3 - 3-1/8	779	1041713	1041722	563.00	33.25	6.75	6.00	3.88	6.50	12.38	14.00	12.50	10.75	3.25
* 3-3/4 - 4	* 94-102	-	875	1041731	1041740	783.00	36.25	7.50	7.00	4.25	7.25	13.62	15.00	13.50	12.50	3.50

* Cast Alloy Steel

G-417 / S-417

Closed Grooved Sockets meet the performance requirements of Federal Specification RR-S-550D, Type B, except for those provisions required of the contractor.

- Forged Steel Sockets thru 1-1/2", cast alloy steel 1-5/8" thru 4".
- Spelter socket terminations have an efficiency rating of 100% based on the catalog strength of wire rope. Ratings are based on recommended use with 6 x 7, 6 x 19, or 6 x 37, IPS or XIP (EIP), XXIP (EEIP), RRL, FC or IWRC wire rope.



NOTICE :
All cast steel sockets 1-5/8" and larger are magnetic particle inspected and ultrasonic inspected. Proof testing available on special order. Drawing illustrates one groove used on sockets 1/4" thru 3/4". Sizes 7/8" thru 1-1/2" use 2 grooves. Sizes 1-5/8" and larger use 3 grooves.

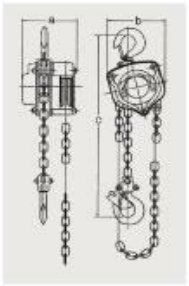
Rope Dia.		Structural Strand Dia. (in.)	Ultimate Load (L)	Stock No.		Weight Each (lbs.)	Dimensions (in.)									
(in.)	(mm.)			G-417 Galv.	S-417 S.C.		A	B	C	D*	F	G	H	J	K	L
1/4	6-7	-	4.50	1039897	1039904	0.50	4.50	0.50	1.50	0.88	0.38	0.69	1.56	2.25	0.50	1.75
5/16 - 3/8	8-10	-	12.0	1039913	1039922	0.75	4.94	0.62	1.69	0.97	0.50	0.81	1.69	2.25	0.69	2.06
7/16 - 1/2	11-13	-	20.0	1039931	1039940	1.50	5.50	0.69	2.00	1.16	0.56	0.94	2.00	2.50	0.88	2.31
9/16 - 5/8	14-16	1/2	30.8	1039959	1039968	2.50	6.31	0.81	2.63	1.41	0.69	1.12	2.38	3.00	1.00	2.50
3/4	18	9/16 - 5/8	43.5	1039977	1039986	4.25	7.62	1.06	3.00	1.66	0.88	1.25	2.75	3.50	1.25	3.06
7/8	20-22	11/16 - 3/4	65.3	1039995	1040000	7.25	8.75	1.25	3.63	1.94	1.00	1.50	3.25	4.00	1.50	3.50
1	24-26	13/16 - 7/8	81.6	1040019	1040028	10.50	9.88	1.38	4.13	2.30	1.13	1.75	3.75	4.50	1.75	4.00
1-1/8	28-30	15/16 - 1	100	1040037	1040046	14.25	11.00	1.50	4.50	2.56	1.25	2.00	4.13	5.00	2.00	4.50
1-1/4 - 1-3/8	32-35	1-1/16 - 1-1/8	136	1040055	1040064	19.75	12.12	1.63	5.00	2.81	1.50	2.25	4.75	5.50	2.25	5.00
1-1/2	38	1-3/16 - 1-1/4	170	1040073	1040082	29.20	13.94	1.94	5.38	3.19	1.63	2.75	5.25	6.00	2.50	6.00
†1-5/8	†40-42	1-5/16 - 1-3/8	188	1040091	1040108	36.00	15.13	2.13	5.75	3.25	1.75	3.00	5.50	6.50	2.75	6.50
†1-3/4 - 1-7/8	†44-48	1-7/16 - 1-5/8	268	1040117	1040126	57.25	17.25	2.19	6.75	3.75	2.00	3.13	6.38	7.50	3.00	7.56
†2 - 2-1/8	†50-54	1-11/16 - 1-3/4	309	1040135	1040144	79.00	19.87	2.44	7.63	4.38	2.25	3.75	7.38	8.50	3.25	8.81
†2-1/4 - 2-3/8	†56-60	1-13/16 - 1-7/8	360	1040153	1040162	105.00	21.50	2.75	8.50	5.00	2.63	4.13	8.25	9.00	3.63	9.75
†2-1/2 - 2-5/8	†64-67	1-15/16 - 2-1/8	424	1041759	1041768	140.00	23.50	3.12	9.50	5.50	2.88	4.50	9.25	9.75	4.00	10.62
†2-3/4 - 2-7/8	†70-73	2-3/16 - 2-7/16	549	1041777	1041786	220.00	25.38	3.12	10.75	6.25	3.12	4.88	10.19	11.00	4.88	11.25
†3 - 3-1/8	†75-80	2-1/2 - 2-5/8	656	1041795	1041802	276.00	27.12	3.37	11.50	6.75	3.38	5.25	11.50	12.00	5.25	11.75
†3-1/4 - 3-3/8	†82-86	2-3/4 - 2-7/8	750	1041811	1041820	313.00	29.25	4.00	12.25	7.25	3.62	5.75	12.25	13.00	5.75	12.25
†3-1/2 - 3-5/8	†88-92	3 - 3-1/8	820	1041839	1041848	400.00	31.00	4.00	13.00	7.75	3.88	6.31	13.00	14.00	6.25	13.00
†3-3/4 - 4	†94-102	-	1005	1041857	1041866	542.00	33.25	4.25	14.25	8.50	4.25	7.25	14.25	15.00	7.00	14.00

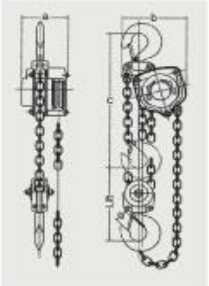
* Diameter of pin must not exceed pin used on companion 416 socket.
† Cast Alloy Steel

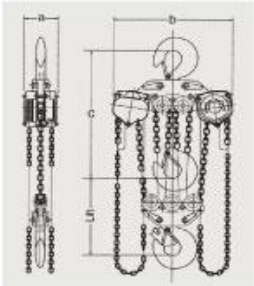
1/2 - 2 t

3 - 5 t 7 1/2 - 10 t

15 - 20 t







Capacity (t.)	Model Number	Standard Lift (m.)	Net Weight (kg.)	Gross Weight (kg.)	Pull to Lift Load (kgf.)	Pull to Lift Load (N.)	Head Room c (mm.)	a (mm.)	b (mm.)	g (mm.)	Test Load (t.)
1/2	VP5-05	2.5	8.6	9.0	25	245	305	129	145	27	0.75
1	VP5-10	2.5	11.5	12.0	33	324	345	149	158	30	1.50
1 1/2	VP5-15	2.5	13.8	14.5	34	333	370	149	177	34	2.25
2	VP5-20	3.0	21.6	22.5	34	333	425	181	204	37	3.00
3	VP5-30	3.0	23.0	23.7	35	343	505	149	208	43	4.50
5	VP5-50	3.0	41.0	42.5	39	382	635	181	263	47	7.50
7 1/2	VP5-75	3.5	60.5	68.0	41	402	740	181	354	67	9.50
10	VP5-90	3.5	78.0	85.0	41	402	760	181	367	67	12.50
15	VP5-92	3.5	150.0	174.0	41x2	402x2	850	209	730	84	18.75
20	VP5-93	3.5	190.0	220.0	41x2	402x2	870	209	858	84	25.00

Hoists with the lift in other lengths are also available.
'VH' Series.....With a High-hardened special alloy steel load chain, and equipped.
With a thrust bearing on the bottom hook (Only for the capacity up to 10 tons).

V LEVER VR2 (For Lifting, Lowering, Fastening and Pulling)

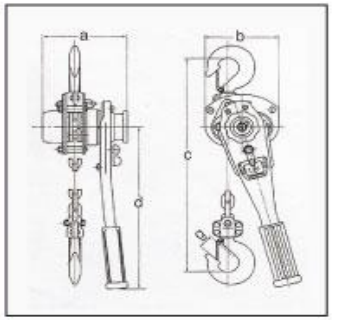
Idling Operation :

1. Depress the retaining pawl all the way down and pull the glip ring towards you.
2. The chain can be adjusted up and down by hand.
3. To terminate the idling. Set the change lever in the down (⇩) position. (See diagram at right).
   Then, depressing the retaining pawl as far as possible, push the grip ring gently so as to let the pawl engage the outer edge of the retaining plate.
   Next, grip the grip ring and handle with a single hand and push them while turning them counterclockwise.
   The retaining pawl returns to its original position.

0.8 t 1 t 1.6 t 3.2 t 6.3 t

Specifications

Model Number			VR2-08	VR2-10	VR2-15	VR2-30	VR2-60
Capacity		(t.)	0.8	1.0	1.6	3.2	6.3
Standard Lift		(m.)	1.5	1.5	1.5	1.5	1.5
Net Weight		(kg.)	6.9	7.1	9.7	16.3	26.7
Min. Distance between Hooks		(mm.)	295.0	310.0	335.0	405.0	550.0
Pull Required to Lift Full Load		(kgf.)	15.0	20.0	18.0	38.0	39.0
		(n.)	147.0	196.0	177.0	373.0	382.0
Chain thickness		(mm.)	6.3	6.3	7.1	9.0	9.0
Dimension	a	(mm.)	148.0	148.0	163.0	191.0	191.0
	b	(mm.)	128.0	128.0	148.0	181.0	244.0
	c	(mm)	295.0	310.0	335.0	405.0	550.0
	d	(mm.)	256.0	256.0	368.0	368.0	368.0
	g	(mm.)	27.0	30.0	34.0	43.0	47.0

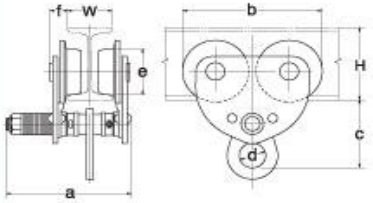


Hoists with the lift in other lengths are also available.

Strong, safe lateral load transportation!
Freely adjusts to a wide-range of rail widths!

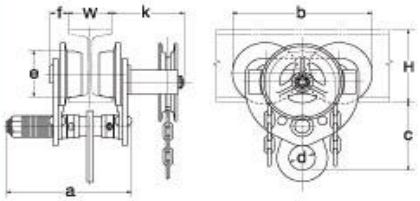
- Can be adjusted to 9 types of rail widths.
- Extremely easy work-site installation.
- Uses high-quality sealed ball bearings.
- Compatible with I-beam and H-beam rails.
- Easily travels over minor rail surface irregularities.

AP PLAIN TROLLEY



Model Number	Load Capacity (Tons)	Compatible Rail Size (mm.) Width Min.	Width Max.	Height Min.	Height Max.	Dimensions (mm.) a	b	c	d	e	f	min. Rotation Radius (mm.)	Net Weight (Kg.)
AP-05	0.5	75	125	100	150	207	174	120	45	55	28.5	900	6.0
AP-10	1.0	75	125	125	250	207	230	120	45	80	28.5	1300	10.0
AP-20	2.0	100	150	150	400	241	271	155	60	100	33.0	1500	18.5
AP-30	3.0	100	150	180	400	252	311	185	70	113	40.5	2000	27.0
AP-50	5.0	125	175	250	450	284	351	220	80	125	42.5	2600	44.0
AP-90	10.0	150	175	250	450	284	721	165	63	125	42.5	infinity	96.0

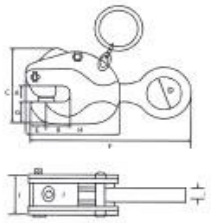
AG GEARED TROLLEY



Model Number	Load Capacity (Tons)	Compatible Rail Size (mm.) Width Min.	Width Max.	Height Min.	Height Max.	Dimensions (mm.) a	b	c	d	e	f	k	min. Rotation Radius (mm.)	Net Weight (Kg.)
AG-10	1.0	75	125	125	250	207	230	120	45	80	28.5	108.0	1300	14.0
AG-20	2.0	100	150	150	400	241	271	155	60	100	33.0	109.5	1500	23.5
AG-30	3.0	100	150	180	400	252	311	185	70	113	40.5	113.0	2000	33.5
AG-50	5.0	125	175	250	450	284	351	220	80	125	42.5	113.0	2600	53.5
AG-90	10.0	150	175	250	450	284	721	165	63	125	42.5	113.0	infinity	101.0

Vertical Lifting Clamps

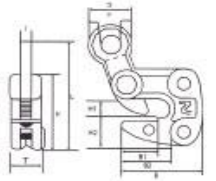
- Drop-forged parts
- Safety and realiability
- High strength durability
- Individually Serialized
- With locking device



Specifications Model	Lifting Capacity (Tons)	Test Load (Tons)	Dimensions (mm.) A	B	C	D	E	F	G	H	I	J	Weight (Kg.)
CVL-1.0T	1.0	2.0	0-22	36	125	50	24	220-260	30	156	52	14	5.5
CVL-2.0T	2.0	4.0	0-30	45	155	60	30	250-295	38	190	60	18	6.0
CVL-3.0T	3.0	6.0	0-40	50	175	60	35	296-360	40	226	68	20	10.0

Horizontal Lifting Clamps

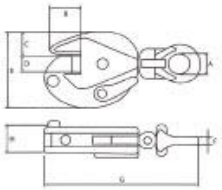
- Drop-forged parts
- Chrome shinning surface
- High strength durability
- Individually Serialized
- Safety and reliability



Specifications Model	Lifting Capacity (Tons)	Clamping Range (mm.)	Dimensions (mm.) L	t	T	H	h1	h2	B	b1	b2	D	d	Weight (Kg.)
CHL-1.0T	1.0	3-18	173	14	32	104	23.5	39.5	105	66	44	72	46	2.0
CHL-2.0T	2.0	3-22	233	18	42	130	36.0	50.0	137	87	58	96	61	4.4
CHL-3.0T	3.0	12-35	261	23	52	177	42.0	67.5	174	107	68	80	35	8.9

Heavy Duty Vertical Lifting Clamps

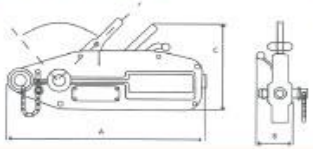
- Drop-forged parts
- Self-locking device
- High strength durability
- Individually Serialized
- Safety and reliability



Specifications Model	Lifting Capacity (Tons)	Clamping Range (mm.)	Dimensions (mm.) A	B	C	D	E	F	G	H	Weight (Kg.)
CVLHD-1.0T	1.0	2.0	48	63	51	0-22	138	12	294	50	4.8
CVLHD-2.0T	2.0	4.0	68	76	59	0-27	164	16	370	52	6.5
CVLHD-3.0T	3.0	6.0	74	85	56	0-32	193	20	418	78	16.0
CVLHD-5.0T	5.0	10.0	80	90	65	25-52	240	32	450	88	21.0

NHS Wire Rope Puller

- Virtually maintenance-free.
- Accurate operation, standard safety latch.
- High strength cast aluminium body, operated n by engaging clutch and working the handle.
- Can be used in any position to lift, pull, lower or heavy loads.
- CE and GS Certified.

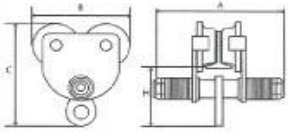


Specifications Item Code	NHS 0.8 T.	NHS 1.6 T.	NHS 3.2 T.
Rated capacity	0.8 Ton	1.6 Ton	3.2 Ton
Rated forward handpower (N.)	< 284	< 412	< 441
Rated forward travel (mm.)	> 52	> 55	> 28
Rope diameter (mm.)	8 mm. x 20 Mtr.	11 mm. x 20 Mtr.	16 mm. x 20 Mtr.
Net Weight (kg.)	16	16	16
Max. Overall Size AxBxC (mm.)	428 x 64 x 235	545 x 97 x 286	660 x 116 x 350

Trolleys

- Adjustable to any beam width by adjusting number of collars.
- High Grade Sealed Bearing absorbradial and thrust loads to ensure smooth rolling motion and reduce operating effort.
- High strength cast aluminium body, operated n by engaging clutch and working the handle.
- Heavy Rolled Steel side plates are used to provide Stability and Rigidity.
- Available in both Plain AND Geared type.

Product Code	Capacity (Tons)	I-Beam Weight (mm.)	Minimum Revolving Radius (mm.)	Weight (kg.)	Dimensions (mm.)			
					A	B	C	H
GLT 005	0.5	68-94	900	5.3	189	170	183	112
GLT 010	1.0	68-100	1000	7.5	208	193	215	143
GLT 020	2.0	94-124	1100	11.2	250	235	260	175
GLT 030	3.0	116-140	1300	21.0	288	280	308	215
GLT 050	5.0	140-180	1400	30.5	355	355	382	250
GLT 100	10.0	125-180	1500	90.0	362	395	510	295



Product Code	Capacity (Tons)	I-Beam Weight (mm.)	Minimum Revolving Radius (mm.)	Weight (kg.)	Dimensions (mm.)			
					A	B	C	H
GRT 005	0.5	68-94	900	7.8	233	170	183	112
GRT 010	1.0	68-100	1000	10.2	255	193	215	143
GRT 020	2.0	94-124	1100	15.5	301	235	260	175
GRT 030	3.0	116-140	1300	25.5	343	280	308	215
GRT 050	5.0	140-180	1400	39.5	415	355	382	250
GRT 100	10.0	125-180	1500	100.0	442	395	510	295