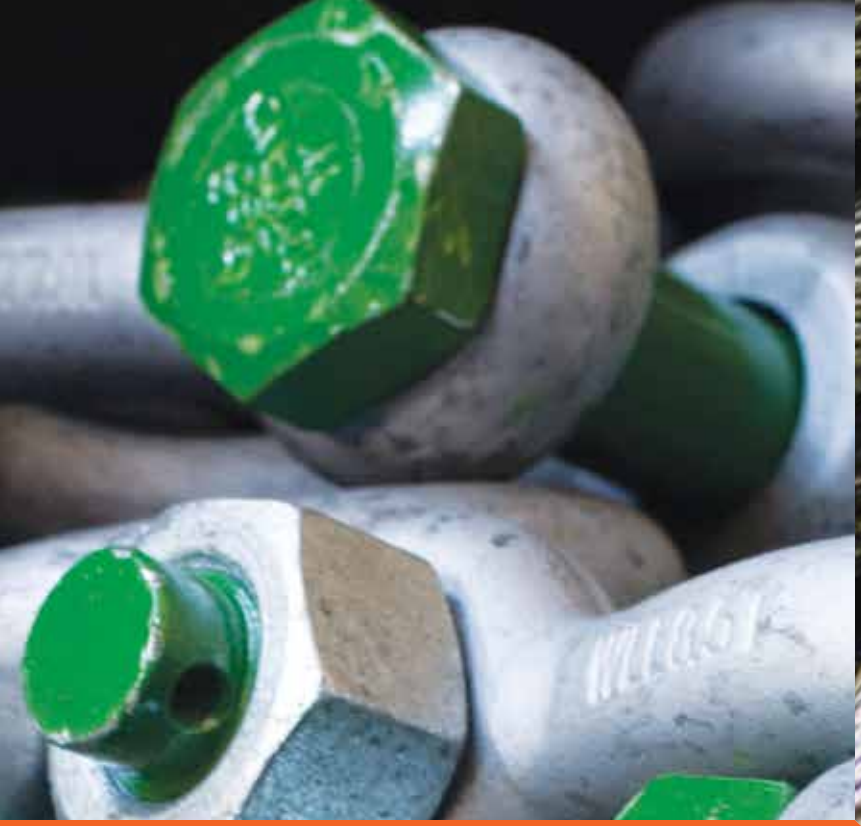

Anchor INDUSTRIES

Reliability, secured.

LIFTING AND RIGGING

PRODUCTS AND SERVICES

Reliability, secured.

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Lifting and Rigging Equipment

SALES – TESTING – RENTALS

Anchor Industries supplies lifting, pulling, lashing and rigging equipment in Southern Africa, offering superior quality products and services required to ensure the success of all lifting and rigging operations. Anchor Industries' highly trained workforce provides thorough inspection on-site and off-site, as well as repair, testing and re-certification of lifting and rigging equipment. Comprehensive training across all staff levels ensures that quality levels and standard of services are maintained at all times.

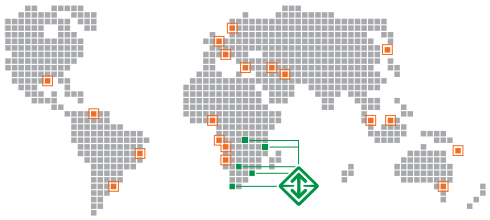
With continued emphasis on quality and safety, Anchor Industries has formed partnerships and alliances with major equipment suppliers worldwide. Anchor Industries stocks a complete range of lifting chain and Steel wire rope as well as shackles and has one of the largest swaging presses in South Africa.

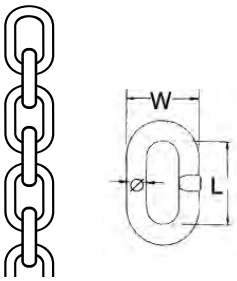
Anchor Industries is an internationally operating, privately owned company based in Southern Africa with fully fledged offices in Durban, Cape Town, Johannesburg, Pemba, Mozambique and in Kitwe, Zambia. Anchor Industries was established in 1994 to satisfy the demand for marine and offshore mooring equipment around the southern Africa coastline, with Lifting & Rigging equipment later added to the range. Established in 2011, Anchor Testing & Rigging Services specialises in load testing, rigging services and training.

Today, Anchor Industries offers sales, testing and rentals of equipment throughout the marine, offshore, lifting and rigging divisions to local and international clients.

Quality and reliability form the pillars of Anchor Industries' philosophy. Equipment and processes are strictly monitored through the DNV approved ISO9001:2008 Quality Management System.

International accolades of Anchor Industries





Open Link Chain

Short Link Grade 30

Made to DIN766 specifications

Chain Size	Work Load Limit	Links /m	Link Dimensions			Break Load	Weight
			∅	L	W		
[mm]	[t]		[mm]	[mm]	[mm]	[t]	[kg/m]
4	0.15	41.7	4.0	16.0	24.0	0.6	0.32
5	0.25	35.7	5.0	18.0	28.0	1.0	0.50
6	0.35	32.8	6.0	18.5	30.5	1.4	0.80
7	0.45	27.8	7.0	22.0	36.0	1.8	1.10
8	0.63	25.0	8.0	24.0	40.0	2.5	1.40
10	1.00	20.8	10.0	30.0	48.0	4.0	2.20
13	1.60	16.1	13.0	39.0	62.0	6.4	3.80
16	2.50	13.0	16.0	45.0	77.0	10.0	5.70
20	4.00	10.4	20.0	56.0	96.0	16.0	9.00
22	4.80	9.4	22.0	62.0	106.0	19.2	11.00
26	6.30	8.0	26.0	73.0	125.0	25.2	15.00
28	7.50	7.5	28.0	78.0	134.0	30.0	18.00
30	8.50	6.9	30.0	84.0	144.0	34.0	19.50
32	9.50	6.5	32.0	90.0	154.0	38.0	23.00

Factor of Safety 4:1
Material: High quality carbon-steel, ideal for lashing and general purpose use
Finish: Natural (black), electro galvanised or hot-dip galvanised

Short Link Grade 43

Made to DIN766 specifications

Chain Size	Work Load Limit	Links /m	Link Dimensions			Break Load	Weight
			∅	L	W		
[mm]	[t]		[mm]	[mm]	[mm]	[t]	[kg/m]
4	0.27	41.7	4.0	16.0	24.0	1.10	0.32
5	0.42	35.7	5.0	18.0	28.0	1.68	0.50
6	0.58	32.8	6.0	18.5	30.5	2.32	0.80
7	0.80	27.8	7.0	22.0	36.0	3.20	1.10
8	1.08	25.0	8.0	24.0	40.0	4.32	1.40
10	1.68	20.8	10.0	30.0	48.0	6.72	2.20
13	2.85	16.1	13.0	39.0	62.0	11.40	3.80
16	4.32	13.0	16.0	45.0	77.0	17.28	5.70
20	6.80	10.4	20.0	56.0	96.0	27.20	9.00
22	8.17	9.4	22.0	62.0	106.0	32.68	11.00
26	11.40	8.0	26.0	73.0	125.0	45.60	15.00
28	13.25	7.5	28.0	78.0	134.0	53.00	18.00
30	15.20	6.9	30.0	84.0	144.0	60.80	19.50
32	17.25	6.5	32.0	90.0	154.0	69.00	23.00

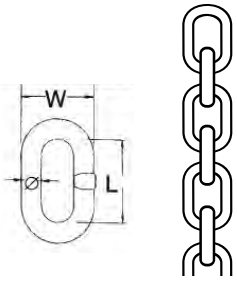
Factor of Safety 4:1
Material: Hardened and tempered higher tensile steel, ideal for lashing and general purpose use
Finish: Natural (black), electro galvanised or hot-dip galvanised
Short Link Grade 50 and 60 available on request.

Short Link Gr T(8)

Made to DIN766 (EN818-2) specifications

Chain Size	Work Load Limit	Links /m	Link Dimensions			Break Load	Weight	Minimum Permissible ∅
			∅	L	W			
[mm]	[t]		[mm]	[mm]	[mm]	[t]	[kg/m]	[mm]
6	1.15	55.6	6.0	18.0	22.2	4.60	0.80	5.40
7	1.57	47.0	7.0	21.0	25.9	6.28	1.08	6.30
10	3.20	33.3	10.0	30.0	37.0	12.80	2.22	9.00
13	5.40	25.6	13.0	39.0	48.1	21.60	3.73	11.70
16	8.20	20.8	16.0	48.0	59.2	32.80	5.58	14.40
20	12.80	16.7	20.0	60.0	74.0	51.20	8.92	18.00
22	15.50	15.2	22.0	66.0	81.4	62.00	10.80	19.80
26	21.70	12.8	26.0	78.0	96.2	86.80	15.10	23.40
32	32.80	10.4	32.0	96.0	118.4	131.20	22.80	28.80

Factor of Safety 4:1
Material: Heat-treated alloy steel, ideal for lifting slings and applications requiring high grade chain



Open Link Chain

Long Link Grade 304 and 316 Stainless Steel

Made to DIN5685 (Short) specifications

Chain Size	Links /m	Link Dimensions			Weight
		∅	L	W	
[mm]		[mm]	[mm]	[mm]	[kg/m]
2	62.5	2.0	8.0	7.0	0.071
3	45.5	3.0	12.0	10.5	0.165
4	37.0	4.0	16.0	14.0	0.300
5	32.3	5.0	20.0	17.5	0.500
6	27.8	6.0	24.0	21.0	0.730
7	23.8	7.0	28.0	24.5	1.000
8	20.8	8.0	32.0	28.0	1.300
9	18.5	9.0	36.0	31.5	1.650
10	16.7	10.0	40.0	35.0	2.050
11	15.2	11.0	44.0	38.5	2.400
12	13.9	12.0	48.0	42.0	2.900
13	12.8	13.0	52.0	45.5	3.450
16	10.4	16.0	64.0	56.0	5.080

Long Link Grade 30

Made to DIN5685 (Short) specifications

Chain Size	Work Load Limit	Links /m	Link Dimensions			Break Load	Weight
			∅	L	W		
[mm]	[t]		[mm]	[mm]	[mm]	[t]	[kg/m]
4	0.10	37.0	4.0	16.0	14.0	0.50	0.30
5	0.16	32.3	5.0	20.0	17.5	0.80	0.50
5.5	0.19	29.4	5.5	22.0	19.3	0.95	0.60
6	0.23	27.8	6.0	24.0	21.0	1.15	0.73
7	0.31	23.8	7.0	28.0	24.5	1.55	1.00
8	0.40	20.8	8.0	32.0	28.0	2.00	1.30
10	0.63	16.7	10.0	40.0	35.0	3.15	2.05
13	1.06	12.8	13.0	52.0	45.5	5.30	3.45
14	1.90	11.9	14.0	56.0	49.0	9.50	3.89
16	2.50	10.4	16.0	64.0	56.0	12.50	5.08
20	3.80	8.3	20.0	80.0	70.0	19.50	7.93
26	6.00	6.6	26.0	104.0	91.0	30.00	12.39

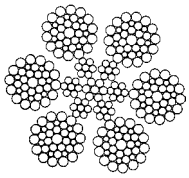
Factor of Safety 5:1
Material: Mild steel, ideal, for securing and general purpose use
Finish: Natural (black), electro galvanised or hot-dip galvanised
Sizes available up to 50.00 mm.

Extra Long Link Grade 43

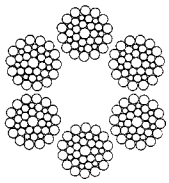
Made to DIN5685 (Long) specifications

Chain Size	Work Load Limit	Links /m	Link Dimensions			Break Load	Weight
			∅	L	W		
[mm]	[t]		[mm]	[mm]	[mm]	[t]	[kg/m]
6	0.600	18.5	6	42.2	24	2.40	0.63
7	0.825	15.9	7	49.4	27	3.32	0.86
8	1.080	14.7	8	52.2	32	4.40	1.10
10	1.180	11.7	10	65.0	39	6.80	1.75
13	2.850	9.3	13	82.0	52	11.40	2.95
16	3.300	7.6	16	100.0	64	13.20	4.45

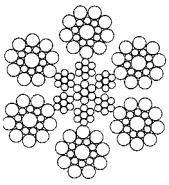
Factor of Safety 4:1
Material: Higher tensile steel, ideal for pipe suspension, securing and general applications
Finish: Natural (black), electro galvanised or hot-dip galvanised



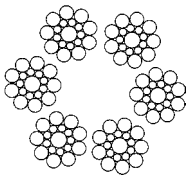
6 × 36 / IWRC



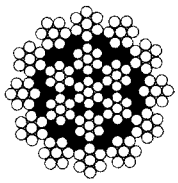
6 × 36 / FC



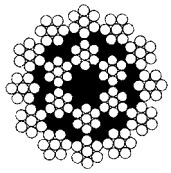
6 × 19 / IWRC



6 × 19 / FC



19 × 7 / IWRC



18 × 7 / FC

6 × 36 (14/7 - 7/7/1)

Rope ∅	IWRC		FC	
	Weight	Break Load	Weight	Break Load
[mm]	[kg/100m]	[t]	[kg/100m]	[t]
8	26.8	4.11	23.7	3.81
10	41.8	6.42	37.1	5.96
12	60.7	9.25	55.7	8.56
13	71.4	10.81	65.7	10.02
14	82.6	12.54	75.8	11.62
16	107.1	16.41	98.3	15.19
18	136.3	20.80	125.0	19.27
20	170.1	25.80	156.0	23.85
22	201.7	30.10	185.0	28.75
24	239.8	37.00	220.0	34.25
26	280.1	43.53	257.0	40.27
28	325.9	50.46	299.0	46.69
32	409.0	72.88	—	—
36	525.0	92.15	—	—
38	590.0	102.96	—	—
40	648.0	114.17	—	—
41	694.0	126.40	—	—
44	787.0	137.60	—	—
48	927.0	164.12	—	—
51	1050.0	185.52	—	—
57	1330.0	230.38	—	—
60	1480.0	265.04	—	—
67	1820.0	319.06	—	—
68	1900.0	316.00	—	—
70	2000.0	331.29	—	—
72	2130.0	356.78	—	—
73	2190.0	366.97	—	—
76	2380.0	423.04	—	—

Grade: 1770 N/mm²
Finish: Galvanised or ungalvanised
Lubricated or dry

19 × 7 / IWRC + 18 × 7 / FC

Rope ∅	IWRC	FC	FC/IWRC
	Weight	Weight	Break Load
[mm]	[kg/100m]	[kg/100m]	[t]
6	14.7	14.0	2.14
8	25.8	24.6	3.79
10	40.4	38.5	5.93
12	58.9	56.2	8.53
14	79.4	75.8	11.57
16	103.1	98.5	15.14
18	129.8	124.0	19.23
20	160.2	153.0	23.71
22	195.2	186.5	28.62
26	272.2	260.0	39.97
28	316.2	302.0	46.40
30	361.2	345.0	53.00
32	413.5	395.0	59.12

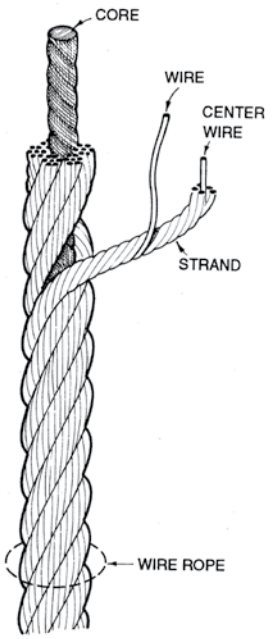
Grade: 1770 N/mm²
Finish: Galvanised or ungalvanised
Lubricated or dry

6 × 19 (9/9/1)

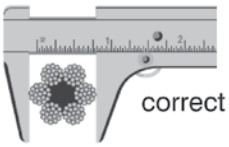
Rope ∅	IWRC		FC	
	Weight	Break Load	Weight	Break Load
[mm]	[kg/100m]	[t]	[kg/100m]	[t]
3	3.43	0.54	3.03	0.51
4	6.10	0.96	5.39	0.89
5	9.53	1.50	8.43	1.39
6	15.5	2.42	13.9	2.13
8	27.5	4.31	24.7	3.79
10	43.0	6.75	38.6	5.92
12	61.9	9.69	55.6	8.52
13	72.7	11.40	65.2	9.98
14	84.3	13.20	75.6	11.60
16	110.0	17.30	98.8	15.20
18	139.0	21.90	125.0	19.20
20	172.0	27.00	154.0	23.70
22	208.0	32.60	187.0	28.60
24	248.0	38.80	222.0	34.00
26	291.0	45.50	261.0	39.90
28	337.0	52.90	302.0	46.40
30	387.0	60.70	347.0	53.30

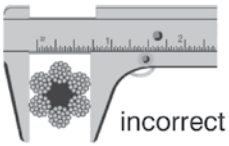
Grade: 1770 N/mm²
Finish: Galvanised or ungalvanised
Lubricated or dry

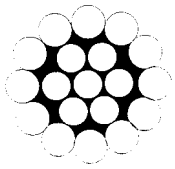
SWR construction



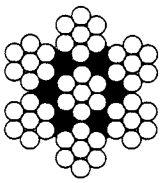
How to measure SWR



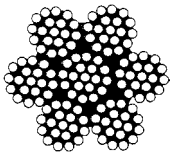




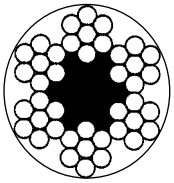
1 × 19



7 × 7



7 × 19



6 × 7 PVC

35 × 7

1 × 19 Stainless Steel

Rope ∅	Weight	Break Load
[mm]	[kg/100m]	[t]
2.5	3.2	0.486
3.0	4.6	0.852
4.0	8.1	1.238
5.0	12.8	2.266
6.0	18.5	2.933

Grade: 1770 N/mm²
Finish: AISI 316

7 × 7 Stainless Steel

Rope ∅	Weight	Break Load
[mm]	[kg/100m]	[t]
1.5	0.9	0.168
2.0	1.6	0.296
2.5	2.6	0.439
3.0	3.7	0.650
5.0	10.5	1.776
6.0	15.1	2.466
10.0	39.0	6.881

Grade: 1770 N/mm²
Finish: AISI 316

7 × 19 Stainless Steel

Rope ∅	Weight	Break Load
[mm]	[kg/100m]	[t]
2.0	1.9	0.286
2.5	2.6	0.428
3.0	3.7	0.634
4.0	6.7	1.109
5.0	10.5	1.707
6.0	15.2	2.402
8.0	26.9	4.182
10.0	39.0	6.286

Grade: 1770 N/mm²
Finish: AISI 316

PVC Covered

Rope ∅	Weight	Break Load	Colour	Construction
[mm]	[kg/100m]	[t]		
1.5 — 3	1.1	0.13	Yellow	6 × 7 /FC
3 — 5	6.6	0.54	Red / Clear	6 × 7 /FC
4 — 6	11.4	0.96	Blue / Clear	6 × 19 /FC
6 — 8	17.0	2.00	Green	6 × 19 /FC

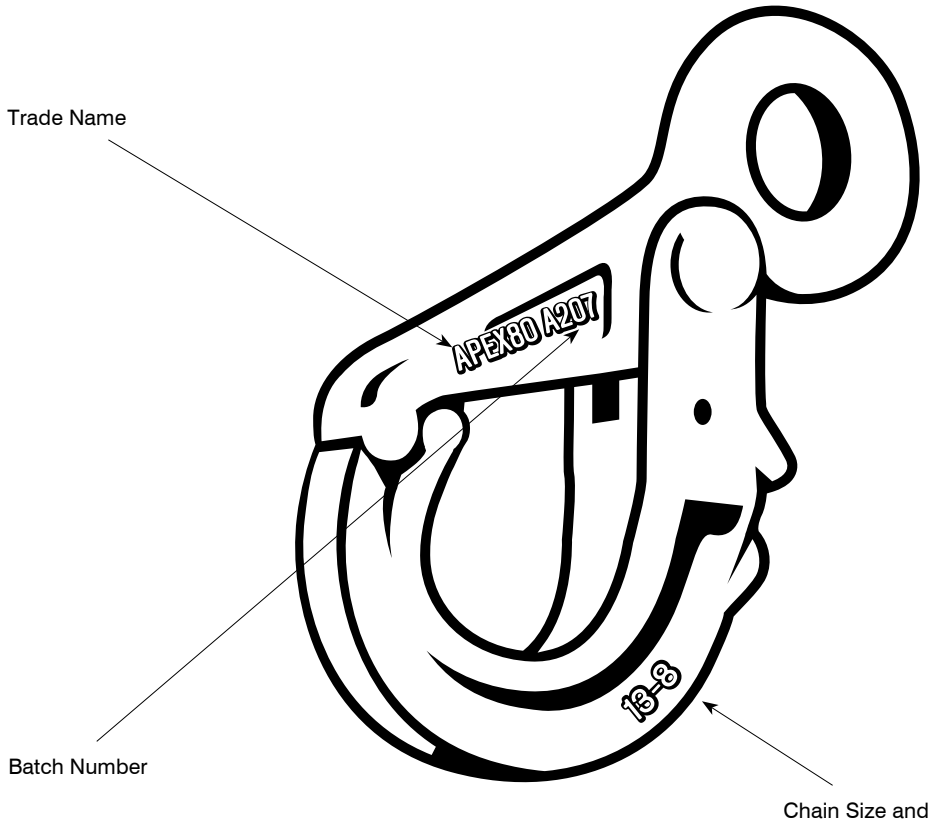
Grade: 1770 N/mm²
Finish: Galvanised, PVC Covered

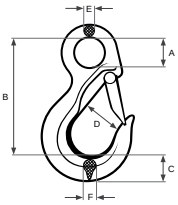
35 × 7 (1–6) + WSC Compact Strand

Rope ∅	Rope ∅	Approx. Mass	Minimum Break Force	
			1960 N/mm²	2160 N/mm²
[mm]	[in]	[kg/100m]	[kN]	[kN]
13	0.51	81.1	148	160
14	0.55	98.6	180	192
16	0.62	129	233	252
18	0.70	163	300	321
19	0.74	182	331	358
20	0.78	201	372	399
22	0.86	243	444	484
24	0.94	290	531	572
26	1.02	340	621	661
28	1.10	394	720	788
30	1.18	453	827	904
32	1.25	515	944	1035
35	1.37	616	1125	1216
38	1.49	726	1326	1437
40	1.57	805	1477	1588
42	1.65	887	1485	–
46	1.81	1064	1765	–
48	1.88	1159	1935	–
52	2.04	1360	2256	–

Grade: 1960 N/mm² or 2160 N/mm²
Finish: Galvanized, lubricated

Product Markings



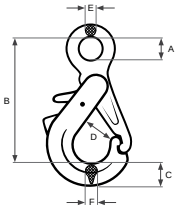


Sling Hook c/w Safety Latch Eye Type

Made to EN1677-2 specifications

Product Code	For Chain Size	Dimensions						Weight
		A	B	C	D	E	F	
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
SSE7-8	7 / 8	25.0	95.0	26.0	32.5	13.0	18.0	0.5
SSE10-8	10	37.0	114.0	37.0	33.0	17.0	22.0	0.9
SSE13-8	13	43.0	148.0	47.0	47.0	21.0	29.0	1.8
SSE16-8	16	49.0	181.0	55.0	53.0	23.0	35.0	3.4
SSE20-8	20	60.0	215.0	60.0	55.0	28.0	44.0	5.2
SSE22-8	22	60.0	240.0	77.0	87.0	32.0	49.0	9.4
SSE26-8	26	62.0	275.0	85.0	97.0	35.0	60.0	13.5
SSE32-8	32	87.0	350.0	91.0	120.0	38.0	65.0	19.5

Finish: Powder coated yellow

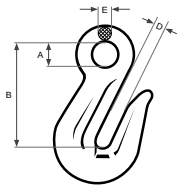


Self Locking Hook Eye Type

Made to EN1677-3 specifications

Product Code	For Chain Size	Dimensions						Weight
		A	B	C	D	E	F	
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
SLE7-8	7 / 8	25.0	128.0	26.0	33.0	12.0	18.5	0.8
SLE10-8	10	32.0	157.0	28.0	41.0	16.0	23.0	1.3
SLE13-8	13	40.0	191.0	35.0	49.0	18.0	29.0	2.3
SLE16-8	16	49.0	230.0	38.0	58.0	25.0	33.0	4.0
SLE20-8	20	67.0	268.0	62.0	71.0	27.0	52.0	7.5
SLE22-8	22	69.0	315.0	70.0	85.0	29.5	52.5	10.0
SLE26-8	26	80.0	363.0	75.0	110.0	34.0	60.0	18.0

Finish: Powder coated yellow

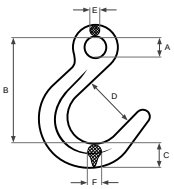


Grab Hook with Cradle Eye Type

Made to EN1677-2 specifications

Product Code	For Chain Size	Dimensions				Weight
		A	B	D	E	
	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
GBE7-8	7 / 8	17.0	57.5	9.0	10.0	0.3
GBE10-8	10	20.0	78.0	12.0	15.0	0.6
GBE13-8	13	26.0	97.5	14.5	17.0	1.2
GBE16-8	16	30.0	103.0	17.5	18.0	2.4
GBE20-8	20	37.0	137.0	21.0	24.0	4.6
GBE22-8	22	43.0	166.0	25.0	26.0	6.2

Finish: Powder coated yellow

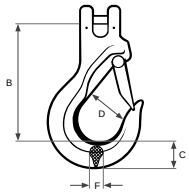


Foundry Hook Eye Type

Made to EN1677-2 specifications

Product Code	For Chain Size	Dimensions						Weight
		A	B	C	D	E	F	
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
FDE7-8	7 / 8	18.0	119.0	33.0	61.0	12.0	25.0	0.7
FDE10-8	10	21.0	144.0	38.0	74.0	14.0	33.5	1.3
FDE13-8	13	27.0	170.0	48.0	84.0	19.0	39.0	2.8
FDE16-8	16	32.0	200.0	53.0	99.0	23.0	46.0	4.9
FDE20-8	20	38.0	175.0	65.0	110.0	26.0	57.0	10.0
FDE22-8	22	43.0	253.0	68.0	120.0	30.0	69.0	11.5

Finish: Powder coated yellow

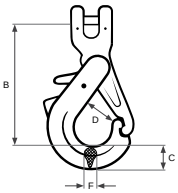


Sling Hook c/w Safety Latch Clevis Type

Made to EN1677-2 specifications

Product Code	For Chain Size	Dimensions				Weight
		B	C	D	F	
	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
SSC7-8	7 / 8	84.0	34.0	21.0	18.0	0.5
SSC10-8	10	103.0	34.0	27.0	22.0	0.9
SSC13-8	13	124.0	50.0	42.0	29.0	2.0
SSC16-8	16	143.0	60.0	46.0	36.0	3.6
SSC20-8	20	174.0	62.0	49.0	44.0	6.0
SSC22-8	22	195.0	71.0	65.0	51.0	10.0

Finish: Powder coated yellow

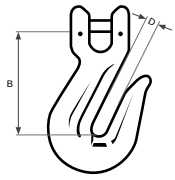


Self Locking Hook Clevis Type

Made to EN1677-3 specifications

Product Code	For Chain Size	Dimensions				Weight
		B	C	D	F	
	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
SLC7-8	7 / 8	107.0	26.0	32.0	18.5	0.8
SLC10-8	10	137.0	28.0	41.0	22.0	1.3
SLC13-8	13	166.0	33.0	49.0	28.5	2.9
SLC16-8	16	187.0	39.0	59.0	32.0	3.9
SLC20-8	20	225.0	59.0	82.0	47.0	8.3
SLC22-8	22	270.0	72.5	82.0	52.5	11.2
SLC26-8	26	310.5	75.0	110.0	60.0	18.5

Finish: Powder coated yellow

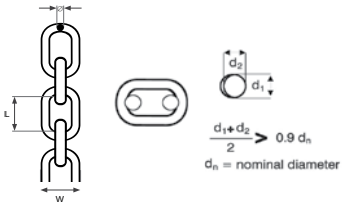


Grab Hook with Cradle Clevis Type

Made to EN1677-2 specifications

Product Code	For Chain Size	Dimensions		Weight
		B	D	
	[mm]	[mm]	[mm]	[kg]
GBC7-8	7 / 8	54.0	10.0	0.4
GBC10-8	10	75.0	12.5	0.8
GBC13-8	13	93.0	15.0	1.5
GBC16-8	16	102.0	17.0	2.8
GBC20-8	20	124.0	22.0	4.8
GBC22-8	22	142.0	24.0	9.0

Finish: Powder coated yellow



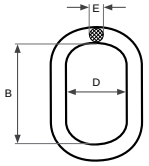
Short Link Chain Grade T(8)

Made to EN818-2 specifications

Product Code	Size	Links /m	Link Dimensions			Break Load	Weight
			∅	L	W		
	[mm]		[mm]	[mm]	[mm]	[t]	[kg/m]
APX7-8	7	47.0	7.0	21.0	25.9	6.28	1.08
APX10-8	10	33.3	10.0	30.0	37.0	12.80	2.22
APX13-8	13	25.6	13.0	39.0	48.1	21.60	3.73
APX16-8	16	20.8	16.0	48.0	59.2	32.80	5.58
APX20-8	20	16.7	20.0	60.0	74.0	51.20	8.92
APX22-8	22	15.2	22.0	66.0	81.4	62.00	10.80
APX26-8	26	12.8	26.0	78.0	96.2	86.80	15.10
APX32-8	32	10.4	32.0	96.0	118.4	131.20	22.80

Finish: Black oxide or black painted

Inter-link wear may be tolerated until the thickness of material at the point of contact has been reduced to 90 % of the nominal diameter. The inter-link wear should be measured in 2 directions at right angles from each other.

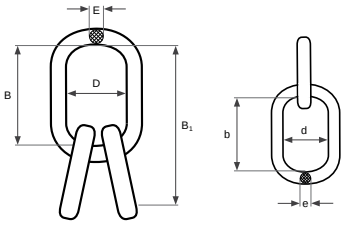


Oblong Master Link for 1 + 2 Leg Slings

Made to EN1677-4 specifications

Product Code	Nominal Break Load	Dimensions			Weight
		B	D	E	
	[t]	[mm]	[mm]	[mm]	[kg]
ML7-8	16.00	129.0	67.0	14.0	0.36
ML10-8	28.00	138.0	68.5	19.0	0.95
ML13-8	34.00	161.0	88.0	23.0	1.50
ML16-8	55.00	181.5	88.0	26.0	2.85
ML20-8	82.00	224.0	108.0	33.5	4.25
ML22-8	123.00	270.0	145.0	38.0	7.20
ML26-8	192.50	307.0	158.0	45.0	13.00
ML32-8	232.50	360.0	176.0	52.0	17.00

Finish: Powder coated yellow

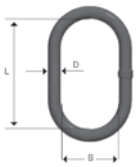


Sub Assembly for 3 + 4 Leg Slings

Made to EN1677-4 specifications

Product Code	Nominal Break Load	Dimensions of Oblong				Dimensions of Sub			Weight
		B1	B	D	E	b	d	e	
	[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
SAL7-8	17.20	248.0	136.0	74.0	18.0	114.0	56.0	18.0	2.20
SAL10-8	34.00	290.0	170.0	92.0	25.0	122.0	66.0	20.0	3.10
SAL13-8	52.00	340.0	200.0	119.0	31.0	138.0	72.0	31.0	6.50
SAL16-8	68.00	390.0	250.0	151.0	35.0	136.0	70.0	35.0	11.00

Finish: Powder coated yellow



Fram Oblong Master Link

Made to EN1677-4 specifications

Product Code	WLL	Dimensions			Net Weight
		D	B	L	
	[t]	[mm]	[mm]	[mm]	[kg]
ML22.B.6	8.2	22	90	170	1.6
ML25.B.6	10.7	25	103	190	2.3
ML28.B.6	12.9	28	113.5	209	3.2
ML32.B.6	17.1	32	140	270	5.3
ML38.B.6	28.1	38	140	270	7.5
ML45.B.6	38.3	45	170	320	12.5
ML60.B.6	65.3	60	220	430	30

Finish: Powder coated blue

DNV approved

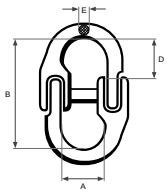
Fram Sub Assembly

Made to EN1677-4 specifications

Product Code	WLL	Master Link		Intermediate M.L.		Net Weight
		Code	Size	Code	Size	
	[t]		[mm]		[mm]	[kg]
SAQ.28.B	12.9	28.B.6	113.5 × 209	22.B.6	90 × 170	6.4
SAQ.32.B	17.1	32.B.6	140 × 270	25.B.6	100 × 190	9.9
SAQ.38.B	28.1	38.B.6	140 × 270	32.B.6	140 × 270	18.2
SAQ.45.B	38.3	45.B.6	170 × 320	39.B.6	140 × 270	27.7
SAQ.50.B	45.0	50.B.6	200 × 380	38.B.6	140 × 270	33.2
SAQ.60.B	65.3	60.B.6	220 × 430	50.B.6	200 × 380	66.0
SAQ.70.B	84.0	70.B.6	250 × 500	60.B.6	220 × 430	103

Finish: Powder coated blue

DNV approved

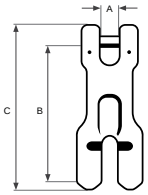


Connecting Link

Made to EN1677-1 specifications

Product Code	For Chain Size	Dimensions				Weight
		A	B	D	E	
	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
CNL7-8	7 / 8	22.0	58.0	22.0	10.0	0.15
CNL10-8	10	29.0	68.0	26.0	12.0	0.30
CNL13-8	13	32.0	88.0	31.0	16.0	0.60
CNL16-8	16	38.0	105.0	40.0	20.0	1.00
CNL20-8	20	43.0	118.0	45.0	25.0	1.90
CNL22-8	22	53.0	138.0	55.0	27.5	3.00
CNL26-8	26	65.0	150.0	53.0	31.0	4.00
CNL32-8	32	80.0	194.0	67.0	40.0	8.50

Finish: Powder coated yellow

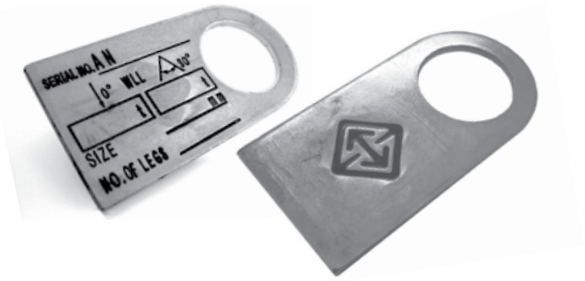


Shortening Clutch Clevis Type

Made to EN1677-1 specifications

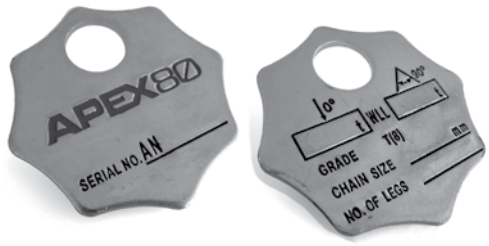
Product Code	For Chain Size	Dimensions			Weight
		A	B	C	
	[mm]	[mm]	[mm]	[mm]	[kg]
SCC7-8	7 / 8	100	72	44	2.0
SCC10-8	10	136.0	100	55	2.5
SCC13-8	13	175.0	124	74	3.5
SCC16-8	16	217.0	155	82	5.2

Finish: Powder coated yellow



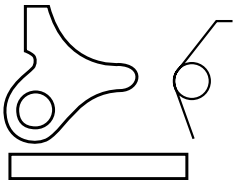
Sling ID Tag for SWR Sling

Chain Size	Product Code
[mm]	
45 × 90	IDS-8



Sling ID Tag for Chain Sling

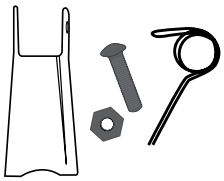
Chain Size	Product Code
[mm]	
76	IDC-8



Trigger Kit for Self Locking Hook

Available for Clevis and Eye Type

Product Code	Hook Size
	[mm]
TRK7-8	7 / 8
TRK10-8	10
TRK13-8	13
TRK16-8	16
TRK20-8	20
TRK22-8	22
TRK26-8	26

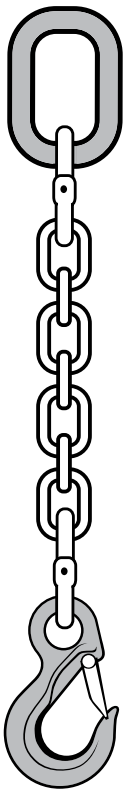


Latch Kit for Safety Hook

Available for Clevis and Eye Type

Product Code		Hook Size
For Eye Type	For Clevis Type	[mm]
LKE7-8	LKC7-8	7 / 8
LKE10-8	LKC10-8	10
LKE13-8	LKC13-8	13
LKE16-8	LKC16-8	16
LKE20-8	LKC20-8	20
LKE22-8	LKC22-8	22
LKE26-8	—	26
LKE32-8	—	32

How to order chain slings



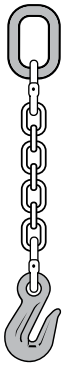
10 S 2.0 SSE

Sling Code	10	S	2.5	SLE	-G
	1	2	3	4	5

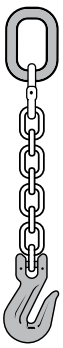
1	Chain size [mm]			
2	Number of legs	E	= endless	
		S	= 1 Leg	
		D	= 2 Legs	
		T	= 3 Legs	
		Q	= 4 Legs	
3	Length of each leg [m]			
4	End fittings	SSE	= sling hook	Eye type
		SLE	= self locking hook	
		GBE	= grab hook	
		FDE	= foundry hook	
		SSC	= sling hook	Clevis type
		SLC	= self locking hook	
		GBC	= grab hook	
		FDC	= foundry hook	
		ML	= master link	
		BSK	= basket	
5	Adjustable	-G	= grab hook eye type	
		-SGE	= shortening chain (4 links) and grab hook eye type	
		-SGC	= shortening chain (4 links) and grab hook clevis type	
		-SC	= shortening chain (4 links) and shortening clutch	

Single Leg Chain Slings examples

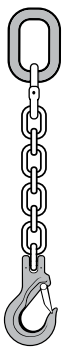
10 S 2.0 SSE-G



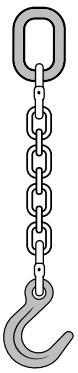
10 S 2.0 GBE



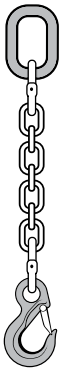
10 S 2.0 GBC



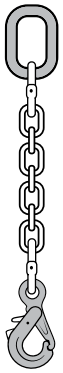
10 S 2.0 SSC



10 S 2.0 FDE



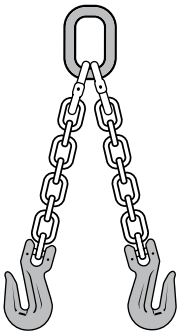
10 S 2.0 SSE



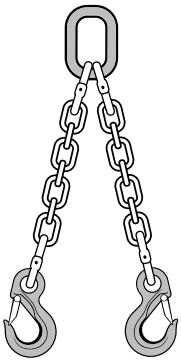
10 S 2.0 SLE

All codes assume that you are using 10 mm Gr T(8) chain of 2 m length.

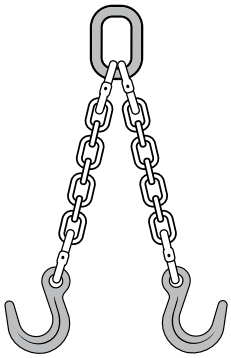
2 Leg Chain Slings



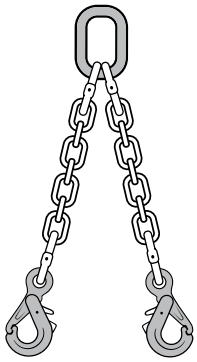
10 D 2.0 GBC



10 D 2.0 SSE



10 D 2.0 FDE



10 D 2.0 SLE

10 D 2.0 SLE-SGE

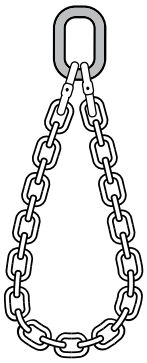
3 Leg Chain Slings

10 T 2.0 SSE

4 Leg Chain Slings

10 Q 2.0 SSE

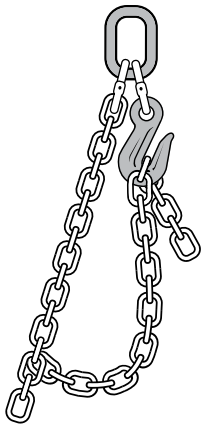
Basket Slings



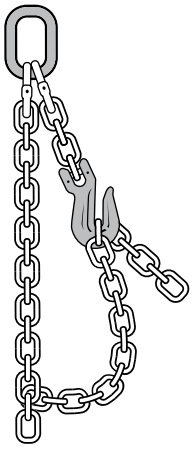
10 S 2.0 BSK

10 D 2.0 BSK

Double Adjustable Loop Chain Slings

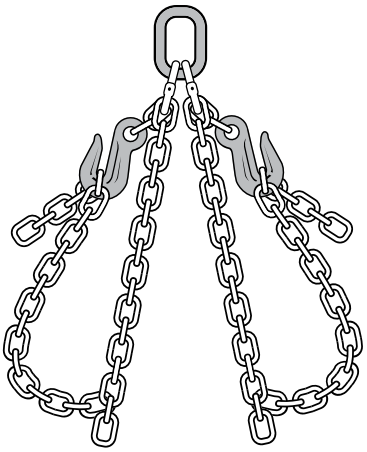


-G



-SGC

-SC



-SGE

Work Load Limits of Gr T(8) Chain Slings

Made to SANS7593, SANS50818-6 and EN818-4:1994 specifications

Chain Size	1 Leg				2 Leg				Uneven Load 90°	3 / 4 Leg			
	0°	Choke Hitch	Endless Basket	Endless Reeving	60°	90°	120°	Choke Hitch		60°	90°	120°	Choke Hitch
[mm]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]
7	1.50	1.20	1.95	2.40	2.55	2.10	1.50	1.65	1.47	3.90	3.15	2.25	2.55
8	2.00	1.60	2.60	3.20	3.40	2.80	2.00	2.20	1.96	5.20	4.20	3.00	3.40
10	3.15	2.52	4.10	5.04	5.36	4.41	3.15	3.47	3.09	8.19	6.62	4.73	5.36
13	5.30	4.24	6.89	8.48	9.01	7.42	5.30	5.83	5.19	13.78	11.13	7.95	9.01
16	8.00	6.40	10.40	12.80	13.60	11.20	8.00	8.80	7.84	20.80	16.80	12.00	13.60
20	12.50	10.00	16.25	20.00	21.25	17.50	12.50	13.75	12.25	32.50	26.25	18.75	21.25
22	15.00	12.00	19.50	24.00	25.50	21.00	15.00	16.50	14.70	39.00	31.50	22.50	25.50
26	21.20	16.96	27.56	33.92	36.04	29.68	21.20	23.32	20.78	55.12	44.52	31.80	36.04
32	31.50	25.20	40.95	50.40	53.55	44.10	31.50	34.65	30.87	81.90	66.15	47.25	53.55
Load Factor													
—	1.00	0.80	1.30	1.60	1.70	1.40	1.00	1.10	0.70	2.60	2.10	1.50	1.70

Factor of Safety 4:1

The Work Load Limits above apply only to normal conditions of use in straight configuration and are based on the “uniform load” method of rating.

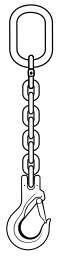
The capacity of the chain sling decreases when (a) The angle between the legs increases (b) The sling is in choke mode.

It is assumed that endless slings will only be used in the choke hitch mode, hence the derated capacities. If single leg slings are used in the choke mode, the capacities listed must be reduced by 20%. If using grab hooks as shortening clutches, those without cradles to support the chain links, the listed Work Load Limit must be reduced (usually by 20%).

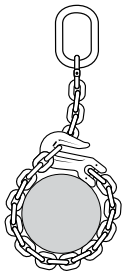
Work Load Limit as a function of temperature			
0°C–200°C	200°C–300°C	300°C–400°C	400°C and above
1 × WLL	0.9 × 0.9 WLL	0.75 × 0.9 WLL	Do not use

Chain Slings of Gr T(8) should not be used either immersed in acid solutions or exposed to acid fumes.
Chain slings should not be galvanised or subjected to any plating processes without the manufacturer's approval.

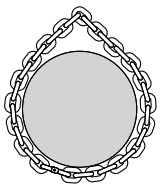
See page 53 for use and maintenance of chain slings



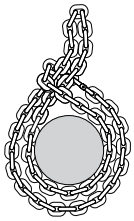
1 Leg



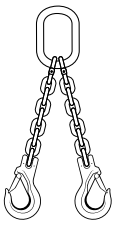
1 Leg Choke



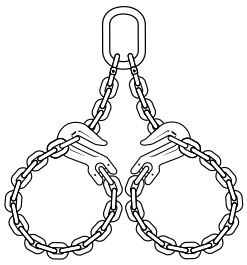
1 Leg Endless Basket



1 Leg Endless Reeving

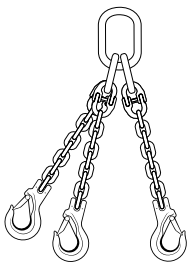


2 Leg

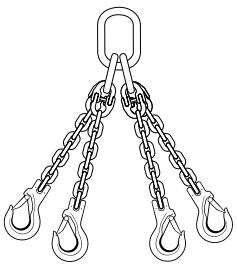


2 Leg Choke Hitch

2 Leg Uneven Load



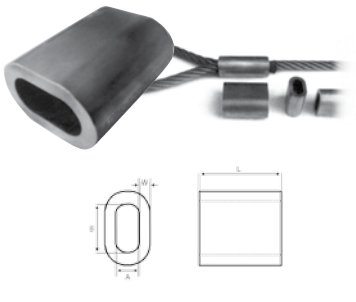
3 Leg



4 Leg

3 Leg Choke

Sling Angles



Aluminium Ferrules

Form C Aluminium Ferrules

Aluminium Ferrules

Made to EN13411-3 (formerly DIN3093) specifications

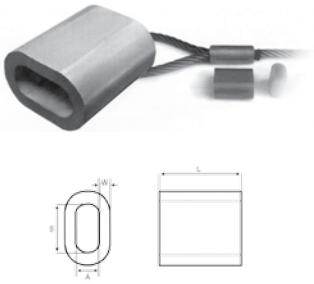
Code	A	B	W	L	Weight
	[mm]	[mm]	[mm]	[mm]	[kg/1000pcs]
1.0	1.2	2.4	0.65	5	0.094
1.5	1.7	3.4	0.75	6	0.211
2.0	2.2	4.4	0.85	7	0.375
2.5	2.7	5.4	1.05	9	0.499
3.0	3.3	6.6	1.25	11	0.843
3.5	3.8	7.6	1.50	13	1.320
4.0	4.4	8.8	1.70	14	1.81
4.5	4.9	9.8	1.90	16	2.61
5.0	5.5	11.0	2.10	18	3.57
6.0	6.6	13.2	2.50	21	5.86
6.5	7.2	14.4	2.70	23	7.55
7.0	7.8	15.6	2.90	25	9.53
8.0	8.8	17.6	3.30	28	13.7
9.0	9.9	19.8	3.70	32	19.8
10.0	10.0	21.8	4.10	35	26.4
11.0	12.1	24.2	4.50	39	35.8
12.0	13.2	26.4	4.90	42	45.8
13.0	14.2	28.4	5.40	46	59.7
14.0	15.3	30.6	5.80	49	73.5
16.0	17.5	35.0	6.70	56	111
18.0	19.6	39.2	7.60	63	156
20.0	21.7	43.4	8.40	70	217
22.0	24.3	48.6	9.20	77	292
24.0	26.4	52.8	10.00	84	376
26.0	28.5	57.0	10.90	91	481
28.0	31.0	62.0	11.70	98	603
30.0	33.1	66.2	12.50	105	739
32.0	35.2	70.4	13.40	112	897
34.0	37.8	75.6	14.20	119	1077
36.0	39.8	79.6	15.00	126	1275
38.0	41.9	83.8	15.80	133	1503
40.0	44.0	88.0	16.60	140	1734
42.0	46.2	92.4	17.50	147	2024
44.0	48.4	96.8	18.30	154	2314
46.0	50.6	101.2	19.20	161	2662
48.0	52.8	105.6	20.00	168	3010
50.0	55.0	110.0	20.80	175	3412
52.0	57.2	114.4	21.60	182	3813
54.0	59.4	118.8	22.50	189	4293
56.0	61.6	123.2	23.30	196	4772
58.0	63.8	127.6	24.20	203	5326
60.0	66.0	132.0	25.00	210	5880
64.0	69.0	137.0	26.00	225	6500
78.0	83.0	166.0	32.00	272	11500

Form C Aluminium Ferrules

Made to EN13411-3 (formerly DIN3093) specifications

Code	L1	L2
	[mm]	[mm]
8	43	34.0
9	48	38.5
10	53	42.0
11	59	46.7
12	65	50.2
13	70	54.7
14	75	58.2
16	85	66.5
18	96	75.0
20	106	83.0
22	116	91.0
24	126	99.5
26	136	107.2
28	147	115.5
30	158	125.0

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



Copper Ferrules

Flemish Eye Steel Swaging Sleeves

Copper Ferrules

Made to EN13411-3 (formerly DIN3093) specifications

Code	A	B	W	L
	[mm]	[mm]	[mm]	[mm]
1.0	1.3	2.6	0.86	5
1.5	1.8	3.6	1.05	6
2.0	2.4	4.8	0.85	7
2.5	2.7	5.4	1.10	9
3.0	3.3	6.6	1.35	11
3.5	3.9	7.8	1.60	13
4.0	4.3	8.8	1.70	14
4.5	5.1	10.2	1.90	16
5.0	5.6	11.2	2.10	18
6.0	6.7	13.4	2.50	21
6.5	6.9	14.0	2.70	23
7.0	7.5	15.0	3.00	25
8.0	8.5	17.0	3.50	28
9.0	9.9	19.8	3.70	32
10.0	10.9	21.8	4.10	35
11.0	11.6	23.2	4.20	39
12.0	13.2	26.4	4.90	42
13.0	14.2	28.4	5.40	46
14.0	15.3	30.6	5.80	49
16.0	17.5	35.0	6.70	56
18.0	19.0	38.0	7.80	63

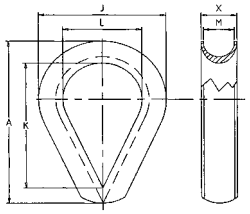
Flemish Eye Steel Swaging Sleeves

Made to EN13411-3 specifications

Rope Ø	A	B	D	E	C	Max. Size after Swage	Weight
[in.]	[in.]	[in.]	[in.]	[in.]	[in.]	[in.]	[kgs/100pcs]
1/4	1.00	0.66	0.31	0.28	0.47	0.57	2.27
5/16	1.50	0.91	0.38	0.44	0.62	0.75	6.36
3/8	1.50	0.91	0.47	0.39	0.66	0.75	6.36
7/16	2.00	1.22	0.53	0.65	0.85	1.01	15
1/2	2.00	1.22	0.63	0.56	0.91	1.01	13
9/16	2.75	1.47	0.70	0.63	1.03	1.24	29
5/8	2.75	1.47	0.75	0.63	1.09	1.24	26
3/4	3.19	1.72	0.91	0.84	1.28	1.46	40
7/8	3.56	2.03	1.03	1.00	1.53	1.68	60
1	4.00	2.28	1.16	1.13	1.72	1.93	89
1 1/8	4.80	2.5	1.28	1.25	1.94	2.13	118
1 1/4	5.19	2.78	1.44	1.41	2.16	2.32	161
1 3/8	5.81	3.00	1.56	1.56	2.38	2.52	192
1 1/2	6.25	3.25	1.69	1.69	2.63	2.71	227
1 3/4	7.25	3.84	1.94	1.97	3.13	3.10	366
2	8.50	4.38	2.25	2.25	3.63	3.56	514
2 1/4	9.56	5.03	2.50	2.53	4.03	4.12	879
2 1/2	10.50	5.50	2.75	2.81	4.50	4.50	1068
2 3/4	11.50	5.75	3.00	3.09	4.75	4.70	1271
3	12.00	6.00	3.25	3.38	5.00	4.96	1335
3 1/4	13.00	6.50	3.86	3.54	5.43	5.37	1650
3 1/2	14.00	7.00	3.88	3.94	5.84	5.77	2106
3 3/4	15.00	7.50	4.06	4.25	6.31	6.23	2497
4	16.00	8.13	4.38	4.50	6.81	6.69	3087
4 1/2	18.00	9.13	4.88	5.06	7.66	7.45	4540
5	20.00	10.52	5.50	5.63	8.73	8.28	6600
6	24.00	12.54	6.50	6.75	10.20	9.93	12300

Finish: Galvanised or self-coloured

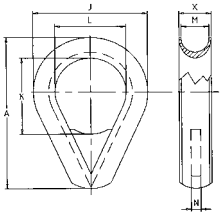
Recommended to be used with 6 × 19, 6 × 25, 6 × 29, 6 × 36 IPS or XIP (EIP), FC / IWRC steel wire rope. If using with any other type of construction or grade of steel wire rope, it is recommended to perform a Break Load test of the swaged termination to prove the adequacy of the assembly to be manufactured.



Heavy Duty Stub-End Thimbles

A	J	K	L	M	X	Weight
[in.]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/100pcs]
2	42	35	22	9	14	8
2 1/2	50	45	30	11	16	10
3	50	55	35	13	18	20
3 1/2	73	65	45	15	20	26
4	75	75	50	17	22	36
4 1/2	85	80	53	19	25	50
5	100	90	60	21	29	60
5 1/2	110	95	65	23	33	70
6	115	120	70	25	34	100
7	135	140	80	30	38	160
8	155	160	100	33	44	180
9	175	185	115	38	49	350
10	190	195	120	41	52	440
11	210	215	130	46	60	520
12	225	240	140	52	65	730
14	240	250	150	56	68	1100
17	290	310	180	70	82	1700
19	320	360	220	81	119	2800
22	375	405	240	92	127	3400
24	410	450	250	105	145	4400
26	450	480	280	130	155	5600

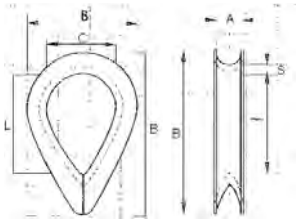
Material: Mild steel
Finish: Galvanised



Heavy Duty Stub-End Thimbles with Plate

A	J	K	L	M	N	X	Weight
[in.]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/100pcs]
4	75	50	50	17	5	22	40
4 1/2	85	50	53	19	5	25	50
5	100	60	60	21	5	29	80
5 1/2	110	60	65	23	5	33	90
6	115	70	70	25	10	34	100
7	135	75	80	30	10	38	170
8	155	80	100	33	10	44	250
9	175	110	115	38	10	49	400
10	190	120	120	41	15	52	450
11	210	120	130	46	15	60	700
12	225	140	140	52	15	65	830
14	240	150	150	56	20	68	1250
17	290	185	180	70	20	82	1950
19	320	225	220	81	20	119	2900
22	375	280	240	92	20	127	3500
24	410	280	250	105	25	145	4200
26	450	280	280	130	30	155	5800

Material: Mild steel
Finish: Galvanised

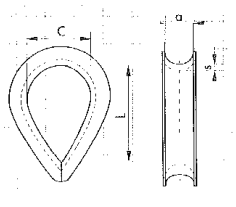


General Purpose Thimbles

Made to EN13411-1 (formerly BS464) specifications

Rope ∅	A	B	L	C	S	Weight
[in.]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/100pcs]
5/16	8	54	33	22	4	5.7
3/8	10	64	38	25	4.8	7.6
7/16	13	73	41	29	4.8	14.2
1/2	14	80	44	32	5.6	18.0
9/16	14	80	44	32	5.6	18.9
5/8	16	98	59	41	7.9	34.0
11/16	19	108	67	44	7.9	39.7
3/4	21	124	73	51	9.5	62.4
13/16	21	124	73	51	9.5	62.4
7/8	22	133	83	57	9.5	75.6
15/16	25	146	92	64	10.3	105.7
1	27	162	108	70	10.3	124.7
1 1/8	29	178	111	76	12.7	151.0
1 1/4	33	197	133	95	12.7	204.0
1 3/8	38	229	152	105	15.9	318.0
1 1/2	41	254	165	114	17.5	488.0
1 5/8	43	254	165	114	17.5	499.0
1 3/4	51	286	178	127	25.4	556.0
1 7/8	60	318	191	133	28.6	—
2	64	330	203	140	28.6	—
2 1/8	64	330	203	140	28.6	—
2 1/4	67	356	216	146	30.2	—
2 1/2	70	413	241	159	31.8	—
2 3/4	86	502	273	203	41.3	—

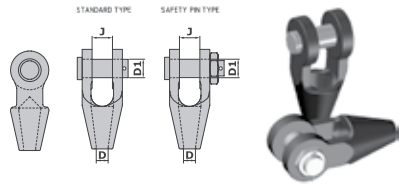
Material: Mild steel
Finish: Galvanised



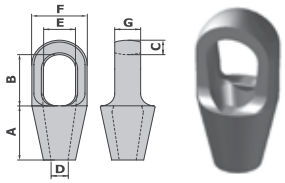
Commercial Thimbles

Rope ∅	A	L	B	I	C	Weight
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/100pcs]
4	4	25	19	16	11	0.4
5	5	31	22	22	16	0.8
6	6	37	29	26	19	1.4
7	7	44	32	32	22	2.0
8	8	51	38	34	24	2.8
9	9	57	42	38	29	3.0
10	10	64	44	42	32	4.8
11	11	70	51	48	35	7.5
12	12	76	57	51	38	8.0
14	14	82	60	57	40	10.0
16	16	89	64	60	42	15.0
18	18	102	69	67	45	22.0
20	20	115	79	76	51	25.0
22	22	127	89	83	54	32.0
24	24	140	102	88	64	46.0
26	26	152	105	102	68	66.0
28	28	165	115	110	73	77.0
30	30	178	121	115	79	80.0
32	32	203	133	140	93	130.0

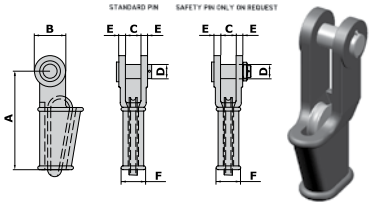
Material: Mild steel
Finish: Galvanised



Open Spelter Socket



Closed Spelter Socket



Open Wedge Socket

Open Spelter Socket

Break Load	Rope ∅	Rope ∅	D	D1	J
[t]	[mm]	[in.]	[mm]	[mm]	[mm]
32	18—19	3/4	21	35	38
45	20—22	7/8	24	41	44
70	23—26	1	28	51	51
100	27—30	1 1/8	32	57	57
125	31—36	1 1/4—1 3/8	38	63	63
150	37—39	1 1/2	41	70	76
200	40—42	1 5/8	44	76	76
260	43—48	1 3/4—1 7/8	51	89	89
280	49—54	2—2 1/8	57	95	101
360	55—60	2 1/4—2 3/8	63	108	113
450	61—68	2 1/2—2 5/8	73	121	127
480	69—75	2 3/4—2 7/8	79	127	133
520	76—80	3—3 1/8	86	133	146
600	81—86	3 1/4—3 3/8	92	140	159
700	87—93	3 1/2—3 5/8	99	152	171
875	94—102	3 3/4—4	108	178	191
1250	122—130	5	138	250	210

Factor of Safety 5:1

Material: Cast steel
Finish: Painted or galvanised

Open Wedge Socket

Break Load	Rope ∅	A	B	C	D	E	F	Weight
[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
10	9—10	122	47	20	21	11	26	2
16	11—13	146	57	25	25	12	32	3
25	14—16	176	70	31	30	15	44	4
32	18—19	212	80	38	35	16	44	6
45	20—22	240	96	44	41	19	52	9
70	24—26	274	114	51	50	22	58	15
100	28	310	130	57	57	25	66	20
125	32	350	146	63	64	28	79	25
125	35	400	148	69	64	28	79	38
150	38	450	160	76	70	30	93	55
200	41	500	174	76	76	33	95	66
260	44—48	550	200	89	89	39	111	90
280	51	650	200	101	95	46	140	142
360	56	660	250	114	108	54	136	176
450	63	840	270	127	121	60	161	271
520	75	1000	300	146	133	76	186	437

Factor of Safety 5:1

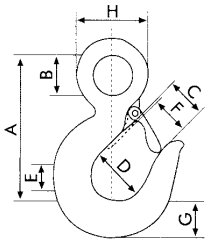
Material: Cast steel
Finish: Painted or galvanised

Closed Spelter Socket

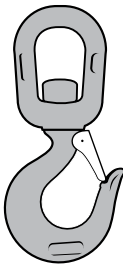
Break Load	Rope ∅	Rope ∅	A	B	C	D	E	F	G
[t]	[mm]	[in.]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
45	20—22	7/8	101	90	33	24	47	92	38
70	24—27	1	114	103	36	28	57	104	44
100	27—30	1 1/8	127	116	39	32	63	114	51
125	31—36	1 1/4–1 3/8	139	130	43	38	70	127	57
150	37—39	1 1/2	152	155	51	41	79	136	63
200	40—42	1 5/8	165	171	54	44	82	146	70
200	43—48	1 3/4—1 7/8	190	198	55	51	89	171	76
260	49—54	2—2 1/8	216	224	62	57	96	193	82
280	55—60	2 1/4—2 3/8	228	247	73	63	108	216	92
360	61—68	2 1/2—2 5/8	248	270	79	73	140	241	102
450	69—75	2 3/4—2 7/8	279	286	76	79	159	273	124
480	76—80	3—3 1/8	305	298	83	86	171	292	133
600	81—86	3 1/4—3 3/8	330	311	102	92	184	311	146
700	87—93	3 1/2—3 5/8	356	330	102	99	197	330	159
875	94—102	3 3/4—4	381	356	108	108	216	362	178
1250	122—130	5	500	475	120	138	260	515	210

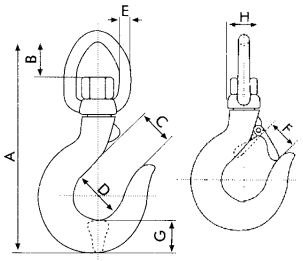
Factor of Safety 5:1

Material: Cast steel
Finish: Painted or galvanised



Large Eye Hook





Swivel Hook

Large Eye Hook

Made to EN1677-5 specifications

Work Load Limit	A	B	C	E	G	H	Weight
[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc]
0.75	82	19	25	15	20	38	0.27
1.00	93	25	27	18	22	45	0.40
1.50	104	28	28	19	26	52	0.55
2.00	119	32	32	22	29	61	0.83
3.00	146	40	38	29	37	75	1.90
5.00	187	51	48	35	46	97	3.30
7.50	230	62	58	42	58	119	5.70
10.00	255	72	65	50	66	136	8.40
15.00	318	89	89	62	77	168	17.00

Factor of Safety 5:1

Material: Carbon steel
Finish: Powder coated

Available with safety latch

Swivel Hook

Work Load Limit	A	B	C	D	E	F	G	G	Weight
[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc]
0.25	110	21	21	28	8	19	18.5	24	0.36
0.50	130	25	25	33	10	23	23.6	26	0.60
0.80	155	29	29	37	12	27	28.0	28	0.93
1.00	170	30	30	40	16	28	30.7	32	1.27
1.60	185	35	34	45	18	32	36.5	40	1.92
2.00	215	40	35	46	20	33	40.0	45	2.67
3.20	245	50	42	53	24	40	48.0	55	4.22
4.00	260	47	46	60	30	44	50.0	55	4.84
5.00	300	60	52	67	30	50	56.0	65	7.75
6.30	310	55	59	75	33	57	63.0	65	9.87
8.00	360	65	65	85	33	63	71.0	75	13.65
10.00	420	71	71	95	36	69	80.0	90	18.77

Factor of Safety 5:1

Material: Carbon steel
Finish: Powder coated

Available with safety latch

Work Load Limits of SWR Slings using 6 × 19 or 6 × 36 /FC

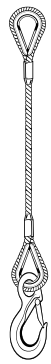
Compiled in compliance with SANS7531:1987 and ISO7531:1987

Rope ∅	Nominal Break	1 Leg				2 Leg				3 / 4 Legs			Endless Choke	Std. Size Soft Eye
		0°	Choke	Halshing	Basket	60°	90°	120°	Reeving	60°	90°	120°		
[mm]	[kN]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[mm]
8	37.4	0.60	0.45	0.90	0.84	1.02	0.84	0.60	0.63	1.56	1.26	0.90	0.67	160
9	47.3	0.76	0.57	1.14	1.07	1.29	1.06	0.76	0.80	1.97	1.59	1.14	0.85	160
10	58.4	0.93	0.70	1.40	1.32	1.59	1.31	0.93	0.99	2.43	1.96	1.40	1.05	200
11	70.7	1.13	0.85	1.70	1.59	1.92	1.58	1.13	1.20	2.94	2.38	1.70	1.27	200
12	84.1	1.35	1.01	2.02	1.90	2.29	1.88	1.35	1.43	3.50	2.83	2.02	1.51	200
13	98.7	1.58	1.18	2.37	2.23	2.68	2.21	1.58	1.67	4.11	3.32	2.37	1.78	260
14	114.0	1.82	1.37	2.74	2.57	3.10	2.55	1.82	1.93	4.74	3.83	2.74	2.05	260
16	150.0	2.40	1.80	3.60	3.38	4.08	3.36	2.40	2.54	6.24	5.04	3.60	2.70	260
18	189.0	3.02	2.27	4.54	4.26	5.14	4.23	3.02	3.21	7.86	6.35	4.54	3.40	300
20	234.0	3.74	2.81	5.62	5.28	6.36	5.24	3.74	3.97	9.73	7.86	5.62	4.21	300
22	283.0	4.53	3.40	6.79	6.38	7.70	6.34	4.53	4.80	11.77	9.51	6.79	5.09	300
24	336.0	5.38	4.03	8.06	7.58	9.14	7.53	5.38	5.70	13.98	11.29	8.06	6.05	360
26	395.0	6.32	4.74	9.48	8.91	10.74	8.85	6.32	6.70	16.43	13.27	9.48	7.11	360
28	458.0	7.33	5.50	10.99	10.33	12.46	10.26	7.33	7.77	19.05	15.39	10.99	8.24	400
30	526.0	8.42	6.31	12.62	11.87	14.31	11.78	8.42	8.92	21.88	17.67	12.62	9.47	400
32	598.0	9.57	7.18	14.35	13.49	16.27	13.40	9.57	10.14	24.88	20.09	14.35	10.76	460
34	675.0	10.80	8.10	16.20	15.23	18.36	15.12	10.80	11.45	28.08	22.68	16.20	12.15	460
36	757.0	12.11	9.08	18.17	17.08	20.59	16.96	12.11	12.84	31.49	25.44	18.17	13.63	500
38	843.0	13.49	10.12	20.23	19.02	22.93	18.88	13.49	14.30	35.07	28.32	20.23	15.17	500
40	935.0	14.96	11.22	22.44	21.09	25.43	20.94	14.96	15.86	38.90	31.42	22.44	16.83	600
42	1030.0	16.48	12.36	24.72	23.24	28.02	23.07	16.48	17.47	42.85	34.61	24.72	18.54	600
44	1130.0	18.08	13.56	27.12	25.49	30.74	25.31	18.08	19.16	47.01	37.97	27.12	20.34	700
48	1350.0	21.60	16.20	32.40	30.46	36.72	30.24	21.60	22.90	56.16	45.36	32.40	24.30	800
52	1580.0	25.28	18.96	37.92	35.64	42.98	35.39	25.28	26.80	65.73	53.09	37.92	28.44	1000
54	1700.0	27.20	20.40	40.80	38.35	46.24	38.08	27.20	28.83	70.72	57.12	40.80	30.60	1000
56	1830.0	29.28	21.96	43.92	41.28	49.78	40.99	29.28	31.04	76.13	61.49	43.92	32.94	1100
60	2100.0	33.60	25.20	50.40	47.38	57.12	47.04	33.60	35.62	87.36	70.56	50.40	37.80	1200
64	2390.0	38.24	28.68	57.36	53.92	65.01	53.54	38.24	40.53	99.42	80.30	57.36	43.02	1500
70	2860.0	45.76	34.32	68.64	64.52	77.79	64.06	45.76	48.51	118.98	96.10	68.64	51.48	1500
76	3370.0	53.92	40.44	80.88	76.03	91.66	75.49	53.92	57.16	140.19	113.23	80.88	60.66	1500
Load Factor														
—	—	1.00	0.75	1.50	1.41	1.70	1.40	1.00	1.06	2.60	2.10	1.50	1.50	—

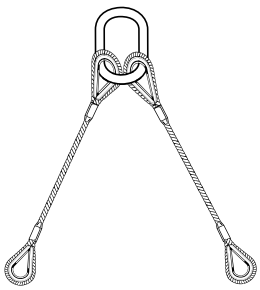
Factor of Safety 6:1
Factor of Safety (Endless Choke) 8:1

For SWR slings 6 × 19 or 6 × 36 FC c/w ferrule secured eye termination made to SANS7531:1987 specifications
"Uniform load" method calculation is used throughout. A termination efficiency of 90% is assumed.

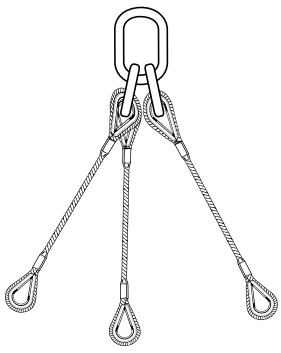
See page 54 for use and maintenance of SWR slings



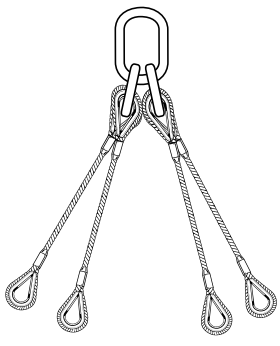
1 Leg



2 Leg



3 Leg



4 Leg

Work Load Limits of SWR Slings using 6 × 19 or 6 × 36 /IWRC

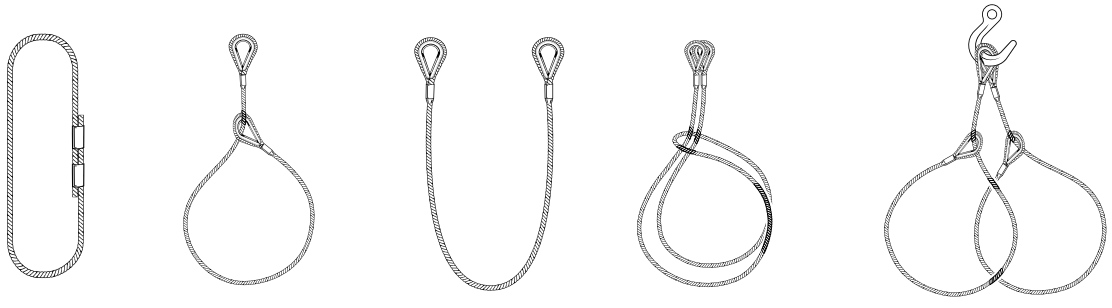
Compiled in compliance with SANS7531:1987 and ISO7531:1987

Rope ∅	Nominal Break	1 Leg				2 Leg				3 / 4 Legs			Endless Choke	Std. Size Soft Eye
		0°	Choke	Halshing	Basket	60°	90°	120°	Reeving	60°	90°	120°		
[mm]	[kN]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[mm]
8	40.3	0.64	0.48	0.97	0.91	1.10	0.90	0.64	0.68	1.68	1.35	0.97	0.73	160
9	51.0	0.82	0.61	1.22	1.15	1.39	1.14	0.82	0.86	2.12	1.71	1.22	0.92	160
10	62.4	1.00	0.75	1.50	1.41	1.70	1.40	1.00	1.06	2.60	2.10	1.50	1.12	200
11	76.2	1.22	0.91	1.83	1.72	2.07	1.71	1.22	1.29	3.17	2.56	1.83	1.37	200
12	90.7	1.45	1.09	2.18	2.05	2.47	2.03	1.45	1.54	3.77	3.05	2.18	1.63	200
13	106.0	1.70	1.27	2.54	2.39	2.88	2.37	1.70	1.80	4.41	3.56	2.54	1.91	260
14	124.0	1.98	1.49	2.98	2.80	3.37	2.78	1.98	2.10	5.16	4.17	2.98	2.23	260
16	161.0	2.58	1.93	3.86	3.63	4.38	3.61	2.58	2.73	6.70	5.41	3.86	2.90	260
18	204.0	3.26	2.45	4.90	4.60	5.55	4.57	3.26	3.46	8.49	6.85	4.90	3.67	300
20	252.0	4.03	3.02	6.05	5.69	6.85	5.64	4.03	4.27	10.48	8.47	6.05	4.54	300
22	305.0	4.88	3.66	7.32	6.88	8.30	6.83	4.88	5.17	12.69	10.25	7.32	5.49	300
24	363.0	5.81	4.36	8.71	8.19	9.87	8.13	5.81	6.16	15.10	12.20	8.71	6.53	360
26	425.0	6.80	5.10	10.20	9.59	11.56	9.52	6.80	7.21	17.68	14.28	10.20	7.65	360
28	493.0	7.89	5.92	11.83	11.12	13.41	11.04	7.89	8.36	20.51	16.56	11.83	8.87	400
30	567.0	9.07	6.80	13.61	12.79	15.42	12.70	9.07	9.62	23.59	19.05	13.61	10.21	400
32	644.0	10.30	7.73	15.46	14.53	17.52	14.43	10.30	10.92	26.79	21.64	15.46	11.59	460
34	728.0	11.65	8.74	17.47	16.42	19.80	16.31	11.65	12.35	30.28	24.46	17.47	13.10	460
36	817.0	13.07	9.80	19.61	18.43	22.22	18.30	13.07	13.86	33.99	27.45	19.61	14.71	500
38	910.0	14.56	10.92	21.84	20.53	24.75	20.38	14.56	15.43	37.86	30.58	21.84	16.38	500
40	1010.0	16.16	12.12	24.24	22.79	27.47	22.62	16.16	17.13	42.02	33.94	24.24	18.18	600
42	1110.0	17.76	13.32	26.64	25.04	30.19	24.86	17.76	18.83	46.18	37.30	26.64	19.98	600
44	1220.0	19.52	14.64	29.28	27.52	33.18	27.33	19.52	20.69	50.75	40.99	29.28	21.96	700
48	1450.0	23.20	17.40	34.80	32.71	39.44	32.48	23.20	24.59	60.32	48.72	34.80	26.10	800
52	1700.0	27.20	20.40	40.80	38.35	46.24	38.08	27.20	28.83	70.72	57.12	40.80	30.60	1000
54	1840.0	29.44	22.08	44.16	41.51	50.05	41.22	29.44	31.21	76.54	61.82	44.16	33.12	1000
56	1980.0	31.68	23.76	47.52	44.67	53.86	44.35	31.68	33.58	82.37	66.53	47.52	35.64	1100
60	2270.0	36.32	27.24	54.48	51.21	61.74	50.85	36.32	38.50	94.43	76.27	54.48	40.86	1200
64	2580.0	41.28	30.96	61.92	58.20	70.18	57.79	41.28	43.76	107.33	86.69	61.92	46.44	1500
70	3090.0	49.44	37.08	74.16	69.71	84.05	69.22	49.44	52.41	128.54	103.82	74.16	55.62	1500
76	3450.0	55.20	41.40	82.80	77.83	93.84	77.28	55.20	58.51	143.52	115.92	82.80	62.10	1500
Load Factor														
—	—	1.00	0.75	1.50	1.41	1.70	1.40	1.00	1.06	2.60	2.10	1.50	1.50	—

Factor of Safety 6:1
Factor of Safety (Endless Choke) 8:1

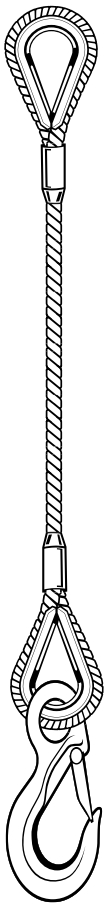
For SWR slings: 6 × 19 or 6 × 36 IWRC c/w ferrule secured eye termination made to SANS7531:1987 specifications
"Uniform load" method calculation is used throughout. A termination efficiency of 90% is assumed.

See page 54 for use and maintenance of SWR slings



Endless | Choke | Basket | Halshing | Reeving

How to order SWR slings

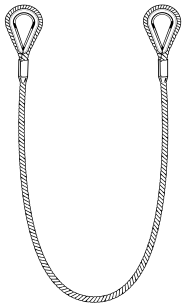


Sling Code	10	FC	S	2.5	LEH	-HS/HS
	1	2	3	4	5	6

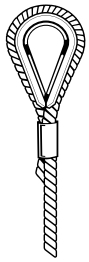
1	Rope ∅ [mm]		
2	Construction of rope	FC	= Fibre Core
		IWRC	= Inner Wire Rope Core
3	Number of legs	E	= Endless
		S	= 1 Leg
		D	= 2 Legs
		T	= 3 Legs
		Q	= 4 Legs
4	Length of each leg [m]		
5	End fittings	LEH	= Large Eye Hook
		SWH	= Swivel Hook
		BSC	= Screw Pin Bow Shackle
		BSF	= Safety Pin Bow Shackle
		DSC	= Screw Pin Dee Shackle
		DSF	= Safety Pin Dee Shackle
		ML	= Master Link
6	Type of eye	-SA	= Soft Eye (aluminium ferrule)
		-SS	= Soft Eye (steel ferrule)
		-SA/SA	= Soft Eye / Soft Eye (aluminium ferrule)
		-HA/HA	= Hard Eye / Hard Eye (aluminium ferrule)
		-HA/SA	= Hard Eye / Soft Eye (aluminium ferrule)
		-SS/SS	= Soft Eye / Soft Eye (steel ferrule)
		-HS/HS	= Hard Eye / Hard Eye (steel ferrule)
		-HS/SS	= Hard Eye / Soft Eye (steel ferrule)

Note: Item 5 can be excluded if there are no end fittings

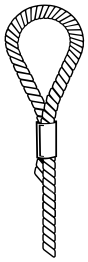
Choke



Basket



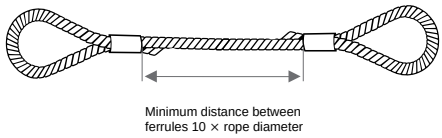
Hard Eye
Using Aluminium Ferrule

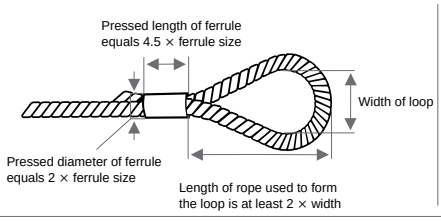


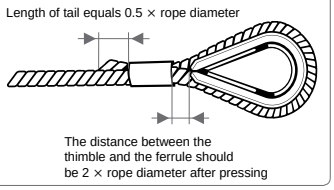
Soft Eye
Using Aluminium Ferrule

Flemish Soft Eye
Using Steel Ferrule

Use of ferrules on SWR slings







Work Load Limits of Round Slings

Manufactured to EN1492-2 and SANS94-2 specifications

Colour Coding	1 Leg					2 Leg		3 / 4 Leg	
	Vertical	Choke	Basket	Basket 90°	Basket 120°	90°	120°	90°	120°
	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]
violet	1.00	0.80	2.00	1.40	1.00	1.40	1.00	2.10	1.50
white	1.50	1.20	3.00	2.10	1.50	2.10	1.50	3.15	2.25
green	2.00	1.60	4.00	2.80	2.00	2.80	2.00	4.20	3.00
yellow	3.00	2.40	6.00	4.20	3.00	4.20	3.00	6.30	4.50
grey	4.00	3.20	8.00	5.60	4.00	5.60	4.00	8.40	6.00
red	5.00	4.00	10.00	7.00	5.00	7.00	5.00	10.50	7.50
brown	6.00	4.80	12.00	8.40	6.00	8.40	6.00	12.60	9.00
blue	8.00	6.40	16.00	11.20	8.00	11.20	8.00	16.80	12.00
orange	10.00	8.00	20.00	14.00	10.00	14.00	10.00	21.00	15.00
Load Factor									
—	1.0	0.8	2.0	1.4	1.0	1.4	1.0	2.1	1.5
The Work Load Limits above apply only to normal conditions of use in straight configuration and are based on the "uniform load" method of rating.									

Factor of Safety 7:1

Work Load Limits of Simplex and Duplex Flat Webbing Slings

Manufactured to EN1492-1 and SANS94-1 specifications

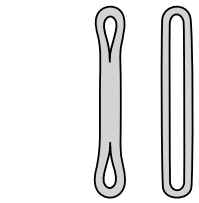
Colour Coding	1 Leg					2 Leg		3 / 4 Leg	
	Vertical	Choke	Basket	Basket 90°	Basket 120°	90°	120°	90°	120°
	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]	[t]
violet	1.00	0.80	2.00	1.40	1.00	1.40	1.00	2.10	1.50
white	1.50	1.20	3.00	2.10	1.50	2.10	1.50	3.15	2.25
green	2.00	1.60	4.00	2.80	2.00	2.80	2.00	4.20	3.00
yellow	3.00	2.40	6.00	4.20	3.00	4.20	3.00	6.30	4.50
grey	4.00	3.20	8.00	5.60	4.00	5.60	4.00	8.40	6.00
red	5.00	4.00	10.00	7.00	5.00	7.00	5.00	10.50	7.50
brown	6.00	4.80	12.00	8.40	6.00	8.40	6.00	12.60	9.00
blue	8.00	6.40	16.00	11.20	8.00	11.20	8.00	16.80	12.00
orange	10.00	8.00	20.00	14.00	10.00	14.00	10.00	21.00	15.00
Load Factor									
—	1.0	0.8	2.0	1.4	1.0	1.4	1.0	2.1	1.5
The Work Load Limits above apply only to normal conditions of use in straight configuration and are based on the "uniform load" method of rating.									

Factor of Safety 7:1

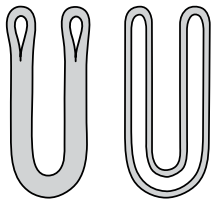
Slings are colour coded according to their WLL as follows:

Colour	Violet	White	Green	Yellow	Gray	Red	Brown	Blue	Orange
Work Load Limit	1 t	1.5 t	2 t	3 t	4 t	5 t	6 t	8 t	10—15 t

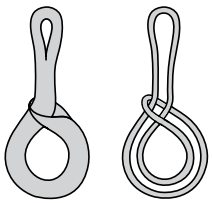
See page 56 for use and maintenance of webbing slings



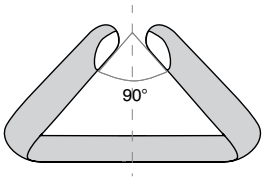
Vertical

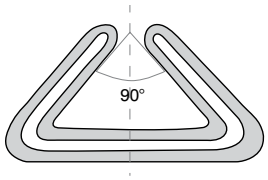


Basket

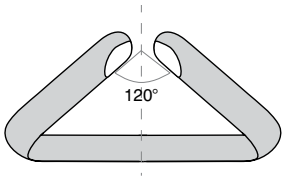


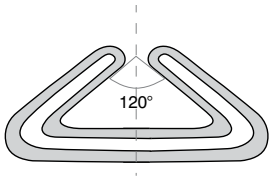
Choke





Basket 90°



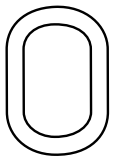
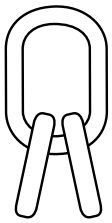
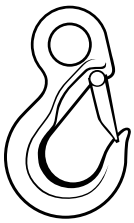
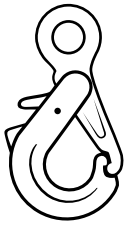
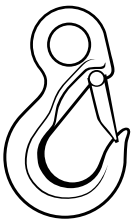


Basket 120°

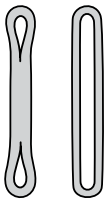
VERTEX
Webbing Products

Webbing Sling Connecting Link Grade 80

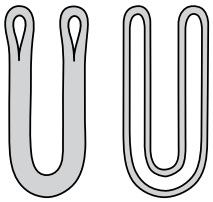
Made to EN1677-1 specifications

Webbing	Code	Oblong	Sub	Hook	Hook	C/S Hook
						
1 t	CNW7-8	ML7-8	SAL7-8	SSE7-8	SLE7-8	1.5 t
2 t	CNW13-8	ML13-8	SAL13-8	SSE13-8	SLE13-8	3.0 t
3 t	CNW13-8	ML13-8	SAL13-8	SSE13-8	SLE13-8	5.0 t
4 t	CNW16-8	ML16-8	SAL16-8	SSE16-8	SLE16-8	7.5 t

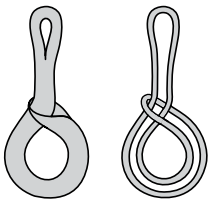
Finish: Powder coated yellow



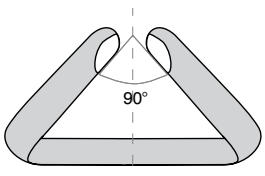
Vertical

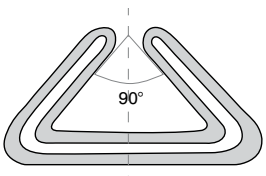


Basket

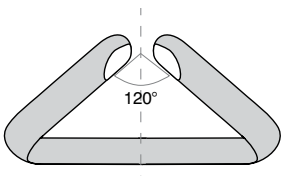


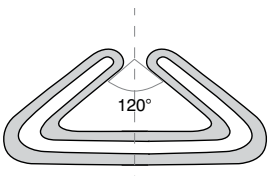
Choke



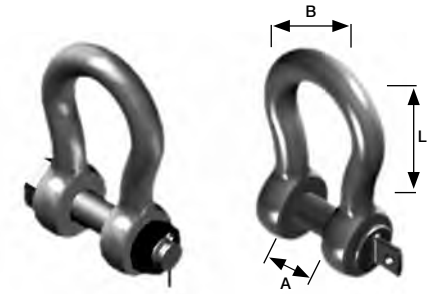


Basket 90°



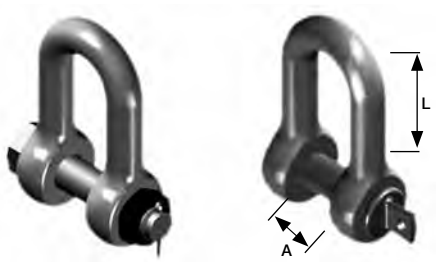


Basket 120°



Safety Pin Screw Pin

Shackles – Bow Type



Safety Pin Screw Pin

Shackles – Dee Type

Alloy Steel Shackles

Screw pin and safety pin made to U.S. Federal Specifications RR-C-271

Body ∅ Bow+Dee	Pin ∅ Bow+Dee	Work Load Limit	Bow Type			Dee Type	
			A	B	L	A	L
[mm]	[mm]	[t]	[mm]	[mm]	[mm]	[mm]	[mm]
6	8	0.50	12	19	29	12	25
10	11	1.00	17	26	36	17	31
11	13	1.50	18	29	43	18	37
13	16	2.00	20	33	47	20	43
16	20	3.25	27	43	60	27	51
20	22	4.75	30	51	71	30	59
22	25	6.50	36	58	84	36	73
25	28	8.50	44	67	95	44	85
28	32	9.50	47	73	108	47	90
32	35	12.0	52	81	119	52	94
35	38	13.5	58	91	132	58	115
38	42	17.0	61	98	146	61	127
44	51	25.0	74	126	178	74	149
51	56	35.0	85	143	197	85	171
64	70	55.0	105	184	267	105	203

Factor of Safety of 6:1

Finish: Body galvanised; pin powder coated
Marking: Body: material grade, size, WLL, manufacturer, batch number; Pin: material grade, manufacturer

Stainless and Mild Steel Commercial Type Shackles

Size	Work Load Limit	Dee Type		Bow Type	
		L	Weight	L	Weight
[mm]	[t]	[mm]	[kg]	[mm]	[kg]
4	0.055	16	0.010	16	0.009
5	0.08	19	0.018	19	0.015
6	0.10	25	0.023	25	0.030
8	0.20	32	0.067	32	0.065
10	0.32	38	0.126	38	0.120
12	0.52	51	0.235	51	0.250
16	0.80	64	0.494	64	0.520
20	1.1	76	0.790	76	0.930
22	1.5	89	1.280	89	1.620
25	2.1	100	1.980	100	2.250
28	3.0	115	2.970	115	2.850
32	3.5	128	3.720	127	3.720

These shackles should not be used for lifting applications.
Finish: Galvanised, natural (black), AISI 316

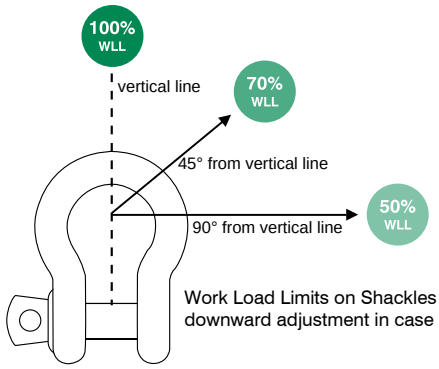
Large Dee Type Shackles

Made to BS3032 specifications

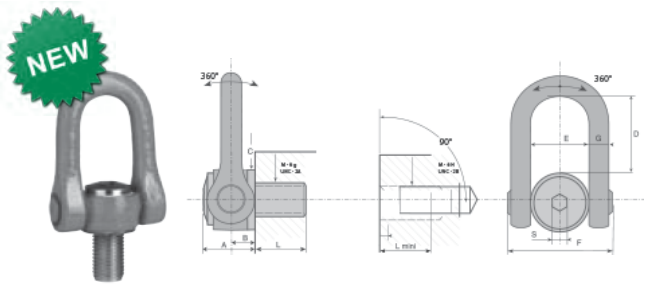
Size	Work Load Limit	L	Pin ∅	Weight
[mm]	[t]	[mm]	[mm]	[kg]
6	0.15	29	10	0.10
10	0.45	41	12	0.18
12	0.75	54	16	0.33
16	1.25	70	20	0.63
20	2.00	86	22	0.98
22	2.75	98	25	1.50
25	3.75	108	28	2.18
28	4.75	124	32	3.02
32	5.75	137	35	4.05
38	8.50	168	44	6.40
45	11.50	206	51	10.30
50	15.00	238	57	19.10

Proof Load = Work Load Limit × 2
Finish: Galvanised

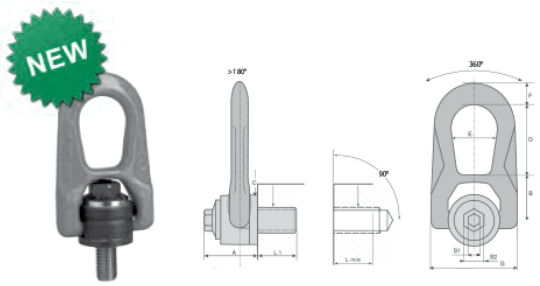
Effects of Side Loading on Work Load Limits



Work Load Limits on Shackles are subject to downward adjustment in case of side loading



DSS Eyebolts



DSR Eyebolts

Double Swivel Shackles

Made to EN1677-1 specifications

Product Code	∅	Work Load Limit	Factor of Safety	A	B	C	D	E	F	G	Std. L1	S	Weight
	[mm]/[in]	[t]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]/[in]	[kg]
DSS M 24	M24 (× 3)	4.5	5	61	31	70	104	73	145	29	36	19	5.4
DSS M 30	M30 (× 3.5)	7.3	5	61	31	70	104	73	145	29	45	19	5.5
DSS M 33	M33 (× 3.5)	8	5	61	31	70	104	73	145	29	50	19	5.5
DSS M 36	M36 (× 4)	10	5	61	31	70	104	73	145	29	54	19	5.5
DSS M 36 × 3	M36 (× 3)	10	5	61	31	70	104	73	145	29	54	19	5.5
DSS M 39	M39 (× 4)	10	5	61	31	70	104	73	145	29	58	19	5.7
DSS M 42	M42 (× 4.5)	12.5	5	61	31	70	104	73	145	29	63	19	5.8
DSS M 42 × 3	M42 (× 3)	12.5	5	61	31	70	104	73	145	29	63	19	5.8
DSS M 45	M45 (× 4.5)	15	4	61	31	70	104	73	145	29	63	19	5.9
DSS M 48	M48 (× 5)	20	4	79	38	90	125	91	184	33	68	19	11
DSS M 48 × 3	M48 (× 3)	20	4	79	38	90	125	91	184	33	68	19	11
DSS M 48 × 4	M48 (× 4)	20	4	79	38	90	125	91	184	33	68	19	11
DSS M 52	M52 (× 5)	20	4	79	38	90	125	91	184	33	68	19	11.2
DSS M 56	M56 (× 5.5)	25	4	79	38	90	125	91	184	33	78	19	11.3
DSS M 56 × 4	M56 (× 4)	25	4	79	38	90	125	91	184	33	78	19	11.4
DSS M 64	M64 (× 6)	32.1	4	79	38	95	125	91	184	33	90	19	12.2
DSS M 64 × 4	M64 (× 4)	32.1	4	79	38	95	125	91	184	33	90	19	12.2
DSS M 72	M72 (× 6)	25	4	79	38	95	125	91	184	33	90	19	14
DSS M 72 × 4	M72 (× 4)	25	4	79	38	95	125	91	184	33	90	19	14
DSS M 80	M80 (× 6)	32.1	4	79	38	95	125	91	184	33	90	19	15
DSS M 90	M90 (× 6)	32.1	4	79	38	95	125	91	184	33	90	19	15.5
DSS M 100	M100 (× 6)	32.1	4	79	38	95	125	91	184	33	90	19	16.5
	[in]	[lb]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[in]	[kg]
DSS U 125	UNC 1"1/4-7	14.000	5	61	31	70	104	73	145	29	45	3/4"	5.4
DSS U 138	UNC 1"3/8-6	20.000	5	61	31	70	104	73	145	29	54	3/4"	5.4
DSS U 150	UNC 1"1/2-6	20.000	5	61	31	70	104	73	145	29	61	3/4"	5.4
DSS U 200	UNC 2"-4 1/2	50.000	4	79	38	90	125	91	184	33	76	3/4"	11.1

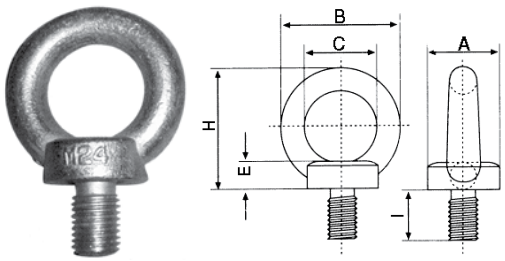
Material: Fatigue-resistant alloy steel
Finish: Powder coated red
Marking: Brand, WLL, serial number, grade
Female, Centering and Mega versions are available upon request.

Double Swivel Ring

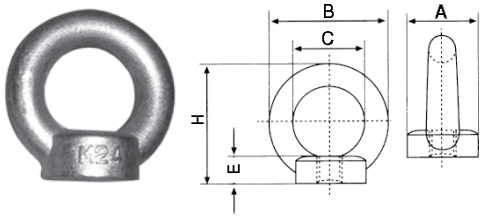
Made to EN1677-1 specifications

Product Code	∅	Work Load Limit	A	B	C	D	E	F	G	H	Std. L1	S1	S2	Weight
	[mm]	[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
DSR M 4	M 4 (× 0.7)	0.05	33	30	30	38	27	14	53	9.5	15	3	–	0.3
DSR M 5	M 5 (× 0.8)	0.075	33	30	30	38	27	14	53	9.5	15	4	–	0.3
DSR M 6	M 6 (× 1)	0.1	33	30	30	38	27	14	53	9.5	15	5	–	0.3
DSR M 8	M 8 (× 1.25)	0.3	33	30	30	38	27	14	53	9.5	14	8	16	0.3
DSR M 10	M 10 (× 1.50)	0.6	33	30	30	38	27	14	53	9.5	17	8	16	0.3
DSR M 12	M 12 (× 1.75)	1	33	30	30	38	27	14	53	9.5	21	8	16	0.3
DSR M 14	M 14 (× 2)	1.3	45	42	45	54	38	17	76	13	23	8	20	0.9
DSR M 16	M 16 (× 2)	1.6	45	42	45	54	38	17	76	13	27	8	20	0.9
DSR M 18	M 18 (× 2.5)	2	45	42	45	54	38	17	76	13	27	8	20	0.9
DSR M 20	M 20 (× 2.5)	2.5	45	42	45	54	38	17	76	13	30	8	20	0.9
DSR M 22	M 22 (× 2.5)	3	62	55	60	83	55	25	117	19	33	14	24	2.6
DSR M 24	M 24 (× 3)	4	62	55	60	83	55	25	117	19	36	14	24	2.6
DSR M 27	M 27 (× 3)	5	62	55	60	83	55	25	117	19	40	14	24	2.7
DSR M 30	M 30 (× 3.5)	6.3	62	55	60	83	55	25	117	19	45	14	24	2.7
	[in]	[lb]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[in]	[in]	[kg]
DSR U 516	UNC 5/16"-18	650	33	30	30	38	27	14	53	9.5	15	5/16"	5/8"	0.3
DSR U 038	UNC 3/8"-16	1.200	33	30	30	38	27	14	53	9.5	17	5/16"	5/8"	0.3
DSR U 050	UNC 1/2"-13	2.200	33	30	30	38	27	14	53	9.5	21	5/16"	5/8"	0.3
DSR U 058	UNC 5/8"-11	3.800	45	42	45	54	38	17	76	13	27	5/16"	20	0.9
DSR U 075	UNC 3/4"-10	5.500	45	42	45	54	38	17	76	13	30	5/16"	20	0.9
DSR U 078	UNC 7/8"-9	6.600	62	55	60	83	55	25	117	19	33	9/16"	24	2.5
DSR U 100	UNC 1"-8	10.000	62	55	60	83	55	25	117	19	36	9/16"	24	2.6

Factor of Safety of 5:1
Material: Fatigue-resistant alloy steel
Finish: Powder coated red
Marking: Brand, WLL, serial number, grade
Female, Centering and Mega versions are available upon request.
Designed for use at temperatures between -20° and + 200°. Not recommended for use in aggressive or sandy conditions and in mines.



Eyebolts



Eyenuts

Eyebolts – Drop Forged

Made to DIN580 specifications

Size	Work Load Limit	A	B	C	I	E	H	Weight
[mm]	[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/100pcs]
6	0.07	17	28	16	13	6	34	3.0
8	0.14	20	36	20	13	6	36	6.0
10	0.23	25	45	25	17	8	45	10.3
12	0.34	30	54	30	20.5	10	53	17.7
14	0.49	35	63	35	27	12	60	27.7
16	0.70	35	63	35	27	12	62	28.0
20	1.2	40	72	40	30	14	71	42.4
22	1.5	45	81	45	35	14	80	67.0
24	1.8	50	90	50	36	18	90	83.4
30	3.6	65	108	60	45	22	109	166
36	5.1	75	126	70	54	26	128	265
42	7.0	85	144	80	63	30	147	403
45	8.0	85	144	80	63	30	150	521
48	8.6	100	166	90	68	35	168	632

Factor of Safety 6:1

Material: C15
Finish: Galvanised
Marking: Material grade, size, WLL, manufacturer's mark

Eyenuts – Drop Forged

Made to DIN582 specifications

Size	Work Load Limit	A	B	C	E	H	Weight
[mm]	[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/100pcs]
6	0.07	20	36	20	8.5	34	4.2
8	0.14	20	36	20	8.5	36	5.2
10	0.23	25	45	25	10	45	9.4
12	0.34	30	54	30	11	53	16.0
16	0.7	35	63	35	13	62	24.0
20	1.2	40	72	40	16	71	35.2
22	1.5	45	81	45	18	80	58.0
24	1.8	50	90	50	20	90	70.6
30	3.6	65	108	60	25	109	132.0
33	4.3	65	108	60	25	110	170.0
36	5.1	75	126	70	30	128	208.0
39	6.1	75	126	70	30	130	260.0
42	7.0	85	144	80	35	147	311.0
45	8.0	85	144	80	35	150	407.0
48	8.6	100	166	90	40	168	502.0

Factor of Safety 6:1

Material: C15
Finish: Galvanised
Marking: Material grade, size, WLL, manufacturer's mark

Eyebolts – Stainless Steel

Size	Work Load Limit	A	B	C	I	E	H	Weight
[mm]	[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/100pcs]
6	0.07	17	28	16	13	6	34	3.0
8	0.14	20	36	20	13	6	36	6.0
10	0.23	25	45	25	17	8	45	10.3
12	0.34	30	54	30	20.5	10	53	17.7
14	0.49	35	63	35	27	12	60	27.7
16	0.70	35	63	35	27	12	62	28.0
20	1.2	40	72	40	30	14	71	42.4
22	1.5	45	81	45	35	14	80	67.0
24	1.8	50	90	50	36	18	90	83.4

Finish: AISI 316

Eyenuts – Stainless Steel

Size	Work Load Limit	A	B	C	E	H	Weight
[mm]	[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/100pcs]
6	0.07	20	36	20	8.5	34	4.2
8	0.14	20	36	20	8.5	36	5.2
10	0.23	25	45	25	10	45	9.4
12	0.34	30	54	30	11	53	16.0
16	0.7	35	63	35	13	62	24.0
20	1.2	40	72	40	16	71	35.2
22	1.5	45	81	45	18	80	58.0
24	1.8	50	90	50	20	90	70.6

Finish: AISI 316

Weldable lifting points with spring

Work Load Limit	Break Load	A	B	C
[t]	[t]	[mm]	[mm]	[mm]
1	4	41	78	13
2	8	42	88	14
3	12	45	94	17
5	20	55	118	22

Factor of Safety 4:1

Material: G80
Finish: Power coated yellow
Marking: WLL, batch number, manufacturer's mark

Carabine Hooks

Carabine Hooks c/w Insert

Quick Link c/w Screw Nut

Stainless Steel Carabine Hooks

∅ [mm]	Outside Length [mm]	Product Code
4	40	CH4x40S
5	50	CH5x50S
6	60	CH6x60S
8	80	CH8x80S
10	100	CH10x100S
12	140	CH12x140S

Material: AISI 316
Finish: Stainless Steel
Can also be supplied with a screw nut

Mild Steel Carabine Hooks

∅ [mm]	Outside Length [mm]	Product Code
4	40	CH4x40
5	50	CH5x50
6	60	CH6x60
8	80	CH8x80
10	100	CH10x100

Material: Mild steel
Finish: Nickel plated

Mild Steel Carabine Hooks c/w Insert

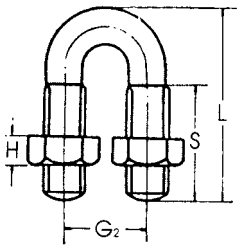
∅ [mm]	Outside Length [mm]	Insert ∅ [mm]	Product Code
4	40	4	CH4x40I
5	50	5	CH5x50I
6	60	6	CH6x60I
8	80	8	CH8x80I
10	100	10	CH10x100I
12	140	12	CH12x140I

Material: Mild steel
Finish: Nickel plated

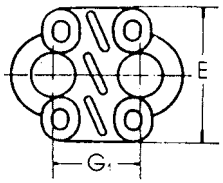
Mild Steel Quick Links c/w Screw Nut

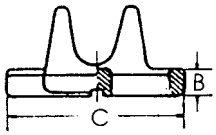
∅ [mm]	Outside Length [mm]	Product Code
4	40	QL4x40
6	58	QL6x58
8	76	QL8x72
10	92	QL10x92

Material: Mild steel
Finish: Nickel plated



U-Bolt





Saddle

SWR Clamps – Drop Forged

Made to EN13411-5 Type B specifications

Size	B	C	E	G2	H	L	S	Thread ∅	Weight
[mm]	[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/100pcs]
6	6	29	24	14	5.0	35	20	6	4.7
8	6	36	31	18	6.5	40	20	8	8.0
10	7	45	35	22	8.0	50	28	10	15
12	8	51	39	26	10.0	60	53	12	25
14	9	53	45	28	10.0	65	40	12	29
16	10	60	48	32	11.0	75	45	14	35
18	11	62	53	34	11.0	80	50	14	45
20—22	12	78	62	44	15.0	100	60	18	96
24—25	13	86	68	48	16.0	110	65	20	125

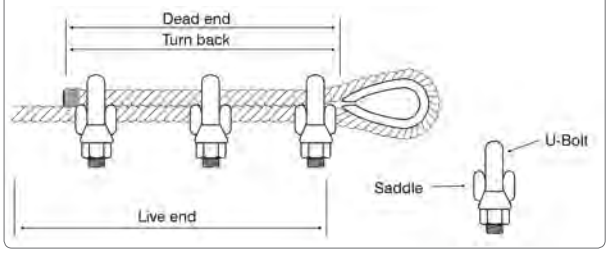
Finish: Body galvanised
Pin powder coated

Correct Fitting of SWR Clamps

Rope ∅	Minimum No. of clips required	Torque Value
[in.]		[ft. lbs.]
1/4	2	12
5/16	2	19
3/8	2	25
1/2	3	35
5/8	3	50
3/4	4	100
7/8	4	140
1	5	140
1 1/8	6	140
1 1/4	7	275
1 3/8	7	275
1 1/2	8	275

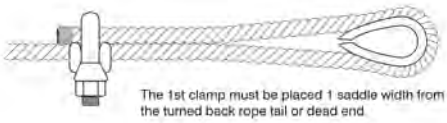
In pull tests, rope end connections with wire rope clamps achieve ± 90% of the breaking load of the wire rope used.

Overview of terms



Instructions

Figure 1

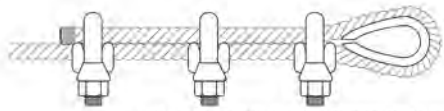


The 1st clamp must be placed 1 saddle width from the turned back rope tail or dead end.

Figure 2

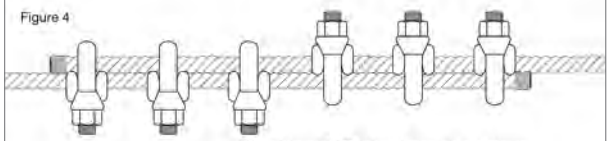
The 2nd clamp must be placed immediately against the thimble but in such a position that the tightening does not damage the outer wires of the SWR.

Figure 3



The 3rd clamp must be placed between the 1st and 2nd clamp in such a way that they are separated by at least 1.5 times the clamp width with a maximum of 3 times the clamp width.

Figure 4

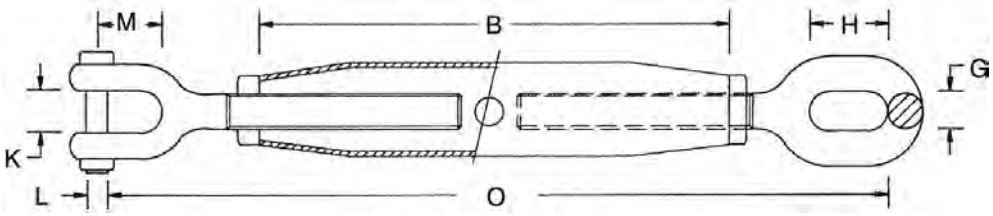


When joining SWR using clamps always ensure the U-Bolt is on the dead end of the SWR.

Oval Eye and Oval Eye

Oval Eye and Jaw

Jaw and Jaw



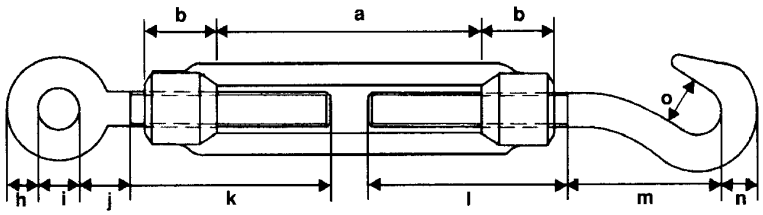
Rigging Screws with Lock-Nuts

Thread ∅	Work Load Limit	Body Length B	Approx. Take-up	Oval Eye Inside Length H	Oval Eye Inside Width K	Jaw Inside Length M	Jaw Inside Width K	Eye Material ∅ G	Jaw Pin ∅ L	Length In O	Length Out O	Weight
[mm]	[t]	[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
10	0.5	123	80	13	13	21	10	8	8	235	315	0.28
12	0.7	193	130	29	14	25	12	11	10	330	462	0.66
16	1.2	230	140	40	16	32	17	15	10	410	550	1.20
20	1.5	230	140	50	21	37	19	17	16	440	580	2.15
22	2.2	295	215	50	23	43	24	17	20	535	750	3.30
24	3.2	350	240	55	24	52	28	17	18	610	850	5.20
32	4.8	370	260	64	30	62	31	20	26	700	960	9.35
38	6	410	280	64	35	70	36	22	32	740	1020	11.20
51	11	420	310	100	44	100	53	38	39	800	1110	22.00

Factor of Safety 5:1

Finish: Galvanised

Always ensure that the end fittings are correctly screwed into the body and use the locking nuts to prevent the rigging screw from unscrewing.
The Work Load Limit values are only indicative. Rigging screws are not suitable for lifting purposes.



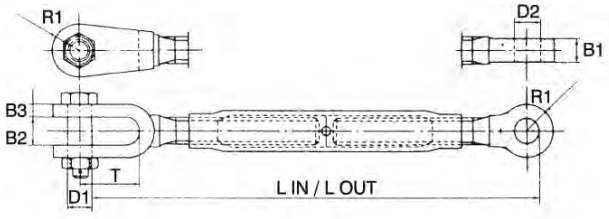
Turnbuckles – Drop Forged

Made to DIN1480 specifications

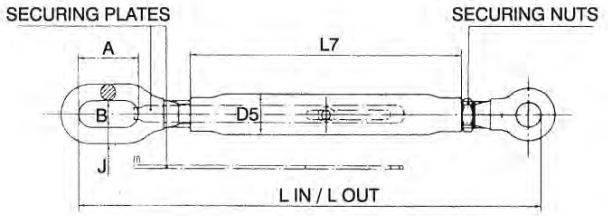
Dimensions	A	B	H	I	J	K	L	M	N	O	Eye/Eye		Hook/Eye	
											Length In A	Length Out B	Length In A	Length Out B
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
M 6 × 110	80	15	5.5	8.5	10	55	55	27	8.0	8	147	227	155	235
M 8 × 110	75	18	6.0	10.0	8	60	55	30	10.0	11	147	221	158	237
M10 × 125	85	20	8.0	12.5	13	70	63	32	13.0	10	176	276	182	255
M12 × 125	80	23	10.5	17.5	14	65	65	45	15.0	16	189	273	201	285
M14 × 140	90	25	11.5	17.5	19	75	75	45	16.0	18	213	313	221	321
M16 × 170	110	30	14.0	19.0	22	88	90	48	18.5	20	252	368	259	377
M20 × 200	130	35	14.0	24.0	22	105	103	61	24.0	22	292	432	307	445
M22 × 220	145	38	17.0	27.0	25	115	115	70	29.0	26	325	479	342	496
M24 × 255	170	43	18.0	27.0	25	135	135	70	31.0	27	360	544	377	561
M30 × 255	160	48	20.0	31.0	30	135	140	75	38.0	31	378	552	391	570
M33 × 295	180	58	22.0	34.0	30	155	150	90	39.0	36	424	618	449	638
M36 × 295	180	58	28.0	38.0	33	160	160	100	45.0	44	438	642	466	670
M39 × 330	200	65	32.0	42.0	40	175	175	100	47.0	44	494	714	512	732
M42 × 330	200	65	32.0	49.0	40	170	190	150	52.0	48	508	718	569	799
M48 × 355	195	80	37.0	58.0	55	185	190	170	60.0	58	581	791	638	853

Material: Mild steel
Finish: Galvanised

Turnbuckles are not suitable for lifting purposes.



Jaw



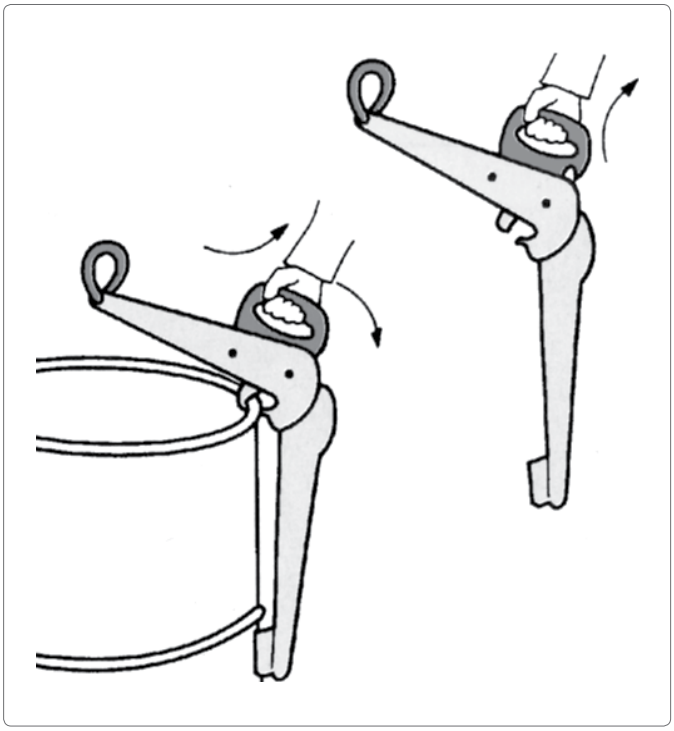
Eye

Oval Eye

Heavy Duty Turnbuckles

Work Load Limit	Jaw/Jaw		Eye/Jaw		Eye/Eye		Oval Eye/Jaw		Oval Eye/Eye		Oval Eyes Only	
	Length In	Length Out	Length In	Length Out	Length In	Length Out	Length In	Length Out	Length In	Length Out	Length In	Length Out
[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
1.0	360	525	340	500	320	480	370	535	350	515	380	545
1.6	395	575	380	555	365	540	420	595	400	575	440	610
2.0	425	615	410	595	390	580	440	630	425	610	460	645
2.5	470	675	445	645	420	620	495	695	470	670	515	715
3.0	515	730	485	700	455	665	530	740	500	710	540	755
4.0	555	785	520	750	490	720	590	820	555	785	625	850
5.0	590	830	560	800	525	770	615	855	585	825	645	885
6.0	665	920	625	880	585	845	695	950	655	910	725	980
8.0	720	1000	685	970	650	935	755	1040	720	1000	790	1075
10.0	770	1075	740	1045	710	1020	815	1125	785	1095	860	1170
12.5	835	1170	805	1140	770	1110	895	1230	865	1200	955	1290
16.0	895	1245	870	1220	845	1195	975	1325	950	1300	1055	1400
20.0	965	1345	935	1315	910	1290	1045	1425	1020	1395	1125	1500
25.0	1035	1445	1000	1410	965	1375	1125	1535	1090	1500	1215	1625
31.5	1110	1550	1070	1510	1030	1470	1210	1650	1175	1615	1315	1755
40.0	1190	1710	1160	1680	1130	1650	1310	1830	1280	1800	1430	1950
50.0	1310	1860	1265	1815	1220	1770	1430	1980	1385	1935	1550	2100
63.0	1200	1780	1270	1850	1340	1920	1440	2020	1510	2090	1680	2260
80.0	1320	1930	1385	1995	1450	2060	1570	2180	1635	2245	1820	2430
100.0	1400	2040	1475	2115	1550	2190	1680	2320	1755	2395	1960	2600
120.0	1510	2190	1610	2290	1710	2390	1825	2525	1925	2625	2140	2860
160.0	1610	2310	1725	2425	1840	2540	1965	2665	2080	2780	2320	3020

Material: High tensile steel
Finish: Galvanised



Vertical Drum Clamp

Work Load Limit	Suspension Eye	Drum Length	Weight
[t]	[mm]	[mm]	[kg]
0.5	80 × 60	560	6.5
0.8	80 × 60	560	8.0

Factor of Safety 5:1

For vertical lifting of steel drums containing 215—225 *l*; single hand operation.
Made from high grade steel.

Sling with Drum Hooks

Made to EN818-4 specifications

Factor of Safety 4:1

For horizontal lifting of steel drums containing 215—225 *l*.
Made from Gr T(8) components.

Single Rope Block

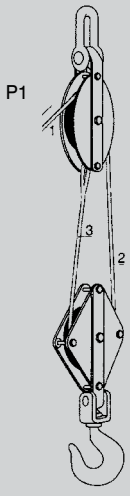
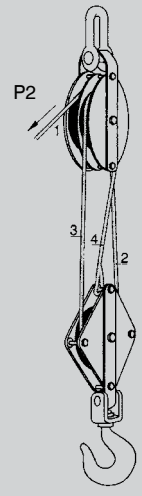
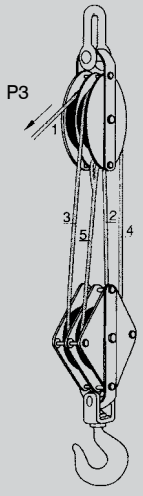
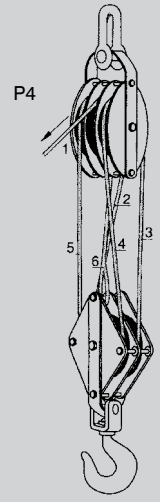
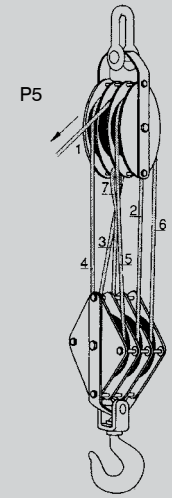
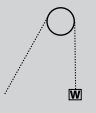
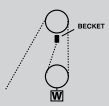
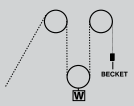
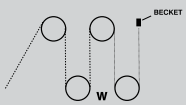
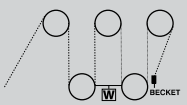
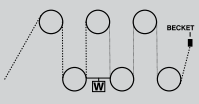
Double Rope Block

Treble Rope Block

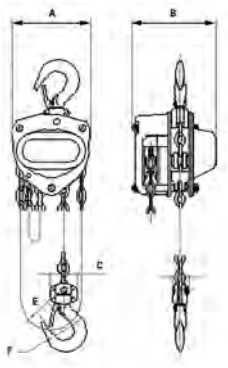
Manilla Rope Blocks (London Pattern)

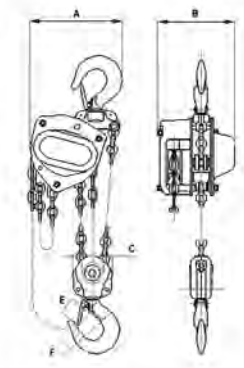
Sheave ∅	Manilla Rope ∅	Single Sheave			Double Sheave			Treble Sheave		
		Weight	Work Load Limit	Length without Eye	Weight	Work Load Limit	Length without Eye	Weight	Work Load Limit	Length without Eye
[mm]	[mm]	[kg]	[t]	[mm]	[kg]	[t]	[mm]	[kg]	[t]	[mm]
50	10	0.64	0.10	180	1.0	0.10	200	1.2	0.15	210
75	12	1.10	0.15	210	1.8	0.15	235	2.8	0.25	245
100	16	2.00	0.25	280	3.5	0.50	345	4.7	1.00	365
120	20	3.30	0.50	330	5.2	0.50	390	7.0	1.00	395
130	22	3.50	0.50	350	5.9	1.00	420	8.2	1.50	435
150	26	6.10	1.00	385	10.0	1.50	445	12.5	2.00	470

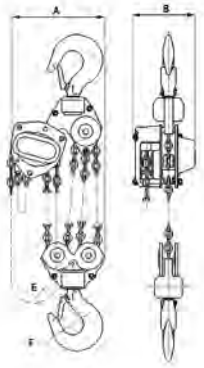
Reeving of Rope Blocks

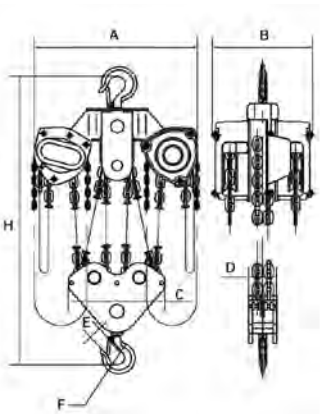
Single Whip	Single Single	Double Single	Double Double	Treble Double	Treble Treble
					
P = 108% of W	P = 56% of W	P = 39% of W	P = 30% of W	P = 25% of W	P = 22% of W
					

P = Force required to lift weight
W = Weight to be lifted









Chain Block 0.5 t—3.2 t 5 t 10 t 20 t

WITH OVERLOAD PROTECTION

Titan Tuff Chain Block – K-II

Capacity	No. of Falls	Std. Lift	Load Chain	Effort to Lift Load	Test Load	Hand Chain	Net Weight	Gross Weight	Extra Weight/m	A	B	C	E	F
[t]		[m]	[mm]	[kN]	[t]	[mm]	[kg]	[kg]	[kg]	[mm]	[mm]	[mm]	[mm]	[mm]
0.5	1	3.0	5.0 × 15	25	0.75	4.8 × 22.2	9.0	9.4	1.416	161	158	53	27.0	35.5
1.0	1	3.0	6.3 × 19	33	1.50	5 × 25	12.2	12.7	1.732	161	162	53	29.0	42.5
1.5	1	3.0	7.1 × 21	34	2.25	5 × 25	14.5	15.0	1.972	182	171	64	34.0	47.5
2	1	3.0	8 × 24	34	3.00	5 × 25	21.0	22.2	2.580	202	182	64	35.0	50.0
3.2	1	3.0	10 × 28	35	4.50	5 × 25	22.0	22.7	3.072	235	171	106	42.5	55.0
5	2	3.0	9 × 27(2)	39	7.50	5 × 25	40.0	41.5	4.710	282	192	133	46.5	63.0
10	4	5.0	9 × 27(4)	41	15	5 × 25	95.0	94.0	8.230	438	192	254	72.5	85.0
20	8	5.0	9 × 27(8)	41x2	30	5 × 25	259.0	289.0	16.460	873	192	416	92.0	92.0

Factor of Safety 4:1

Main Features and Benefits

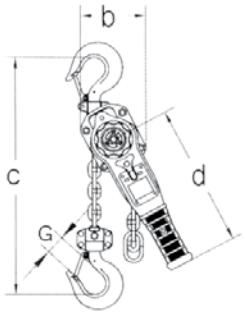
- All steel construction: maximises impact resistance and ensures strength and durability of the unit even in harsh working environments
- Sealed bearings on load wheel and pinion shaft: minimises the effort to lift the load
- Grade 100 zinc plated load chain: provides a weight-reduced chain with higher resistance to wear and enhanced resistance to corrosion
- Compact, light-weight unit with low headroom: increases lift height and ensures easy manouvering of the unit even in confined working environments
- Reinforced double pawl brake system: provides more reliable brakes
- Fused brake disks on ratchet: seals disks against water and other fluids and generally prolongs life span of the disks
- Cast safety latches: prevents latch from bending under load
- Overload protection: safeguards operator, load as well as the unit from dangers and/or damage of overloading. Overload protection is calibrated at 140% of the Work Load Limit, e.g. a 1 ton unit will not allow a lift of more than 1.4 ton
- All load-bearing parts marked for traceability: delivers complete manufacturing history
- Full range of spares available: maximises service performance of the unit since any part can be replaced
- CSIR tested

Instructions for the Safe Use

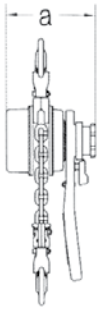
Only trained staff are to operate this equipment. Before using the unit, always check the following:
- Rated capacity (Work Load Limit) of the unit is correct for the load.
- Suspension points are sound, runway and carriages are suitable for the equipment.
- Load will be lifted in a vertical plane.
- Load chain does not show any twists, kinks or knots.
- Chain length is sufficient to lower the load fully.

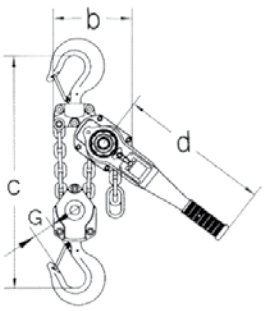
In general, a visual inspection of the unit should be conducted prior to use and independently inspected every 6 months, along with a proof test once a year conducted by a registered LME/LMI.

Lever Hoist

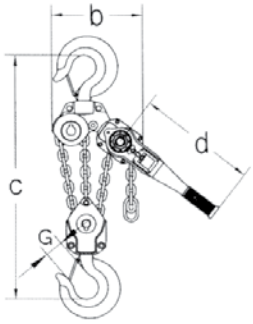


0.8 t—3 t





6.3 t



9 t

WITH OVERLOAD PROTECTION

Titan Tuff Lever Hoist – K-V

Capacity	No. of Falls	Std. Lift	Load Chain	Effort to Lift Load	Test Load	Net Weight	Gross Weight	Extra Weight/m	A	B	C	D	G
[t]		[m]	[mm]	[kg]	[t]	[kg]	[kg]	[kg]	[mm]	[mm]	[mm]	[mm]	[mm]
0.8	1	3	5.6 × 15.7	29	1.2	5.7	6.0	0.7	144	119	280	245	23.5
1.6	1	3	7.1 × 19.9	34	2.4	8.0	8.3	1.1	159	126	335	265	32.0
3	1	3	10 × 28	37	4.8	15.0	16.0	2.3	190	159	395	415	39.0
6.3	2	3	10 × 28(2)	38	9.5	26.0	27.0	4.7	190	217	540	415	50.0
9	3	3	10 × 28(3)	40	13.5	40	46.5	6.6	196	298	680	415	72.5

Factor of Safety 4:1

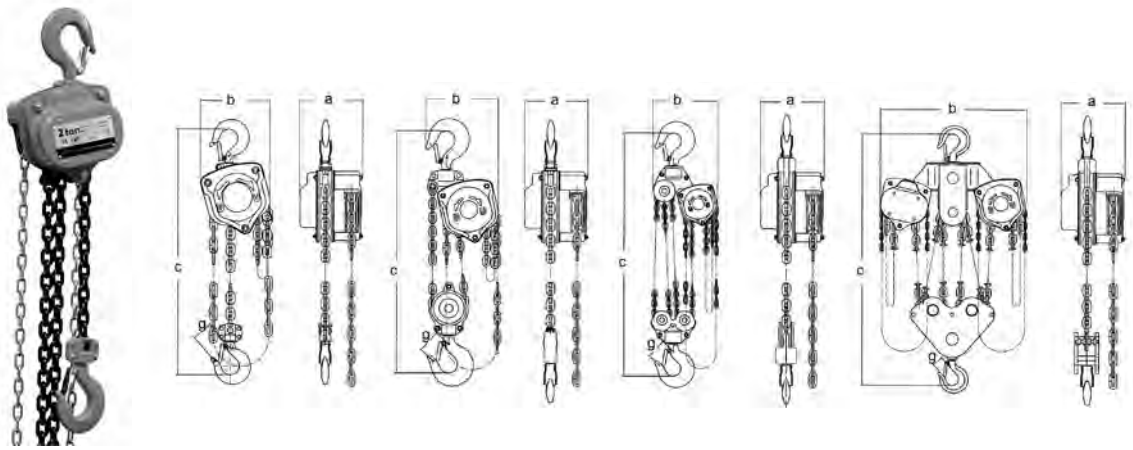
Complies with EN13157 specifications.
Each chain block is operationally tested to 1.5 times rated capacity.

Caged roller bearings on load sprocket.

Innovative hand wheel and knob design; no brake disc required making it different from conventional free wheel systems.

Main Features and Benefits

- All steel construction: maximises impact resistance and ensures strength and durability of the unit even in harsh working environments
- Sealed bearings on load wheel and pinion shaft: minimises the effort to lift the load
- Grade 100 zinc plated load chain: provides a weight-reduced chain with higher resistance to wear and enhanced resistance to corrosion
- Compact, light-weight unit with low headroom: increases lift height and ensures easy manouvering of the unit even in confined working environments
- Reinforced double pawl brake system: provides more reliable brakes
- Fused brake disks on ratchet: seals disks against water and other fluids and generally prolongs life span of the disks
- Cast tongue and groove safety latches: optimises resistance to side impact and bending of the latch
- Gear and handwheel cover fastened with cap nuts: protects threads from damage and simplifies maintenance
- Overload protection: safeguards operator, load as well as the unit from dangers and/or damage of overloading. Overload protection is calibrated at 140% of the Work Load Limit, e.g. a 1 ton unit will not allow a lift of more than 1.4 ton
- All load-bearing parts marked for traceability: delivers complete manufacturing history
- Full range of spares available: maximises service performance of the unit since any part can be replaced
- CSIR tested



Chain Block 0.5 t—3 t 5 t 10 t 20 t

Titan Chain Block – VT-II

Capacity	Std. Lift	No. of Falls	Test Load	Load Chain		Hand Chain	Pull to Lift Rated Load	Net Weight	Gross Weight	Extra Weight /m	A	B	C	G
[t]	[m]		[t]	[mm]	Grade	[mm]	[kg]	[kg]	[kg]	[kg]	[mm]	[mm]	[mm]	[mm]
0.5	3	1	0.75	5 × 15	80	4.8 × 22.2	25	9.0	9.4	1.416	127	144	285	37
1	3	1	1.5	6.3 × 19	80	4.8 × 22.2	33	12.2	12.7	1.732	147	157	315	45
1.5	3	1	2.25	7.1 × 21	100	4.8 × 22.2	34	14.5	15.0	1.972	147	174	340	49
2	3	1	3.0	8 × 24	100	4.8 × 22.2	34	21.0	22.2	2.58	179	204	380	52
3	3	2	4.5	9 × 27	100	5.5 × 23.6	35	22.0	22.7	3.072	147	206	475	67
5	3	2	7.5	9 × 27(2)	100	5.5 × 23.6	39	40.0	41.5	4.71	179	263	600	78
10	5	4	15	9 × 27(4)	100	5.5 × 23.6	41	89.4	96.9	8.23	179	367	740	64
20	5	8	30	9 × 27(8)	100	5.5 × 23.6(2)	41 × 2	214.7	244.7	16.46	207	873	870	92

Factor of Safety 4:1

30 t and 50 t units are available upon request.

Standard Features

- Meets all pertinent world standards
- Gears are designed in Japan
- Compact design for limited headroom applications
- High strength steel frame and gear case built to be durable for the rugged needs of construction, mining and rigging
- Heat treated spur gear efficiently designed to provide smooth load handling and low hand chain pull
- Reinforced double pawl brake system and larger diameter pawl springs ensure reliable brake
- Open frame design for easy cleaning, quick load sheave inspection and easy hoist maintenance
- Lightweight high strength Grade 100 alloy steel load chain, except on 0.5 ton and 1 ton units
- Cast safety latches on hooks
- Zinc plated load chain
- CSIR tested

Optional Features

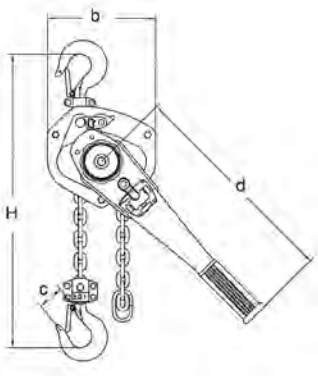
- Caged roller bearings on load sheave
- Thrust bearings in bottom hook assembly

Instructions for Safe Use

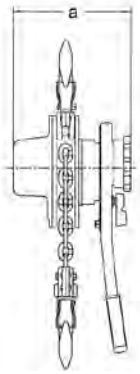
Only trained staff are to operate this equipment. Before using the unit, always check the following:
- Rated capacity (Work Load Limit) of the unit is correct for the load.
- Suspension points are sound, runway and carriages are suitable for the equipment.
- Load will be lifted in a vertical plane.
- Load chain does not show any twists, kinks or knots.
- Chain length is sufficient to lower the load fully.

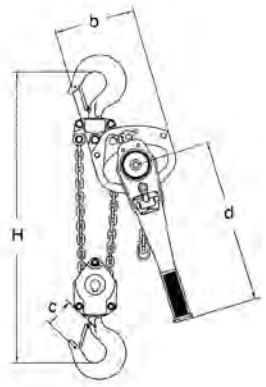
In general, a visual inspection of the unit should be conducted prior to use and independently inspected every 6 months, along with a proof test once a year conducted by a registered LME/LMI.

Lever Hoist



0.75 t—3 t





6 t

Titan Lever Hoist – VT-II

Capacity	No. of Falls	Load Chain		Pull to Lift Rated Load	Net Weight with 1.5 m of Lift	Extra Weight /m	A	B	C	D	H
[t]		[mm]	Grade	[kg]	[kg]	[kg]	[mm]	[mm]	[mm]	[mm]	[mm]
0.75	1	6.3	80	15	6.9	0.85	148	128	37	256	295
1	1	6.3	80	20	7.1	0.85	148	128	45	256	310
1.5	1	7.1	100	18	9.7	1.11	163	148	47	368	335
3	1	9.0	100	38	16.3	1.77	191	181	62	368	405
6	2	9.0	100	39	26.7	3.55	191	244	78	368	550

Factor of Safety 4:1

A dependable lever hoist with capacities and features that make it ideal for all industrial lifting, pulling and positioning applications.

Standard Features

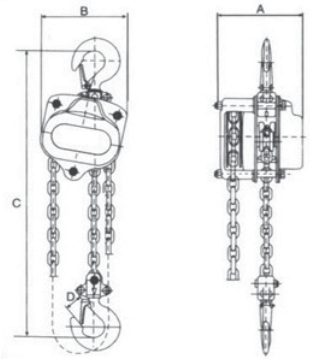
- All steel construction for external impact resistance
- High-strength, cold-formed, stamped steel construction makes it lighter in weight yet impact resistant for longer life
- Open frame design provides access for easy cleaning and inspection
- 360° handle rotation with short stroke to ratchet loads
- Rubber grip handle for a better comfortable operation
- Easy free chaining operation
- Cast safety latches on hooks
- CSIR tested

Advanced Features

- 360° rotation handle needs only 15 position loads, a big plus in tight places
- Responsive load control through six pinion gear teeth and a four pocket load sheave
- Alloy steel load chain is induction welded and quenched for strength and endurance. 1.5 ton, 3 ton and 6 ton fitted with Grade 100 chain
- Forged alloy steel hooks have a wide throat opening with deformation indicators. Hooks are designed to spread at 270—350% of the rated load to indicate a clear visual warning of hoist overload

TITAN MK II

Chain Block



0.5 t—20 t

Titan MKII Chain Block CB-1

Made to EN13157:2004 specifications

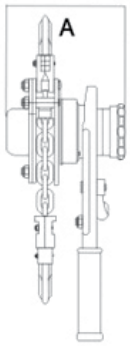
Product Code	Capacity	Std. Lift	No. of Falls	Test Load	Load Chain	Pull to Lift Rated Load	Net Weight	A	B	C	D
	[t]	[m]		[t]	[mm]	[kg]	[kg]	[mm]	[mm]	[mm]	[mm]
CB-1005	0.5	3.0	1	0.75	5.0	16	9.1	127	144	285	27
CB-1010	1.0	3.0	1	1.50	6.3	24	12.0	147	157	315	30
CB-1015	1.5	3.0	1	2.25	7.1	28	13.8	179	174	340	34
CB-1020	2.0	3.0	1	3.00	8.0	32	21,6	179	204	380	37
CB-1020A	2.0	3.0	2	3.00	6.3	30	20.4	147	174	380	37
CB-1030	3.0	3.0	2	4.50	7.1	32	21.0	179	206	475	43
CB-1050	5.0	3.0	2	6.30	9.0	36	37.5	179	263	635	46
CB-1100	10.0	3.0	4	12.50	9.0	38	59.5	179	367	760	67
CB-1150	15.0	5.0	6	18.80	9.0	38 × 2	125.0	207	754	850	84
CB-1200	20.0	5.0	8	25.00	9.0	38 × 2	145.6	207	873	870	96

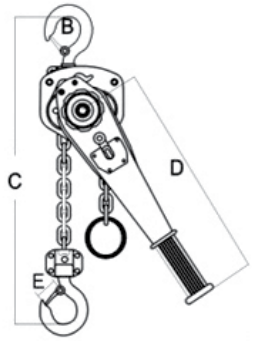
Factor of Safety 4:1

Features

- Individually proof load tested with serial number
- Specially heat treated load chain of ISO Grade T (900N/mm2) with tensile strength far surpassing the ISO T class
- Double pawls supporting fail-safe brake mechanism
- Bottom hook with thrust bearing enabling the lifted load to be moved in any direction without subjecting it to stress
- Hooks of easier handling shape
- Tough gear case, reinforced with four ribs and four knock pins, providing accurate gear centering and high mechanical efficiency
- Rolled edge hand wheel cover providing smooth operation of the hand chain when pulled side ways; strong and least corrosive electrostatic powder coating
- Wet friction discs with longer life
- Load sheave with sealed roller bearing
- Anchor plate avoiding overlowering

Lever Hoist





0.75 t—6 t

Titan MKII Lever Hoist LB-1

Made to EN13157:2004 specifications

Product Code	Capacity	Std. Lift	No. of Falls	Test Load	Load Chain	Pull to Lift Rated Load	Net Weight	A	B	C	D	E
	[t]	[m]		[t]	[mm]	[kg]	[kg]	[mm]	[mm]	[mm]	[mm]	[mm]
LB-1050	0.50	1.5	1	0.75	5	11	6.1	148	1128	295	256	45
LB-1075	0.75	1.5	1	1.13	6.3	15	6.9	148	128	295	256	45
LB-1100	1.00	1.5	1	1.50	6.3	20	7.0	152	128	310	368	48
LB-1150	1.50	1.5	1	2.25	7.1	18	9.6	161	148	335	368	52
LB-1200	2.00	1.5	1	3.00	7.1	24	10.1	168	148	350	368	60
LB-1300	3.00	1.5	1	4.50	9	38	15.9	191	180	405	368	66
LB-1600	6.00	1.5	2	9.00	9	39	25.7	191	180	550	368	80

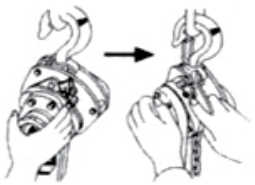
Factor of Safety 4:1

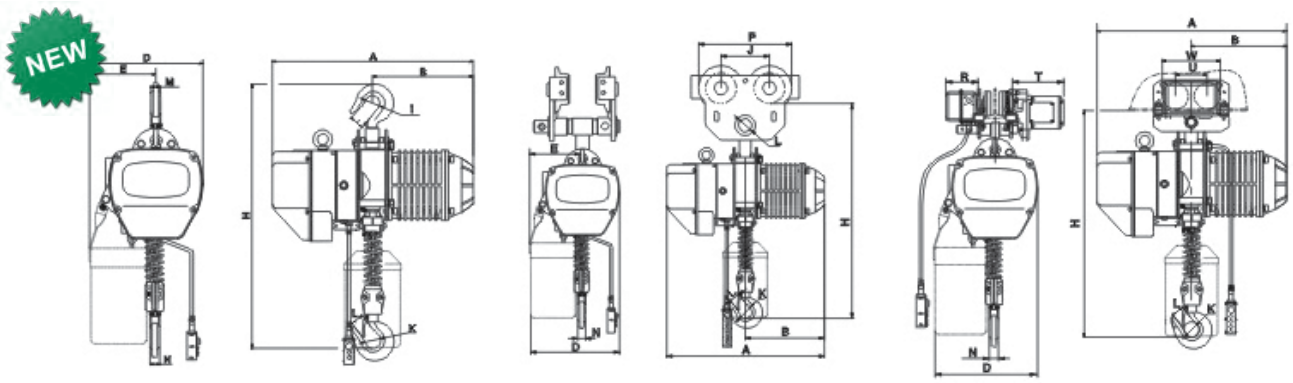
Standard Features

- One touch operation for free chain adjustment
- Grade 80 alloy load chain ISO and JIS Standard
- Forged and heat treated load hooks with batch traceability and stretch indicators

Instructions for Safe Use: Idling Operation

- Depress the retaining pawl all the way and pull the grip ring towards you.
- The chain can be adjusted up and down by hand.
- To terminate the idling: Set the change lever in the down position. 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 counter-clockwise. The retaining pawl returns to its original position.



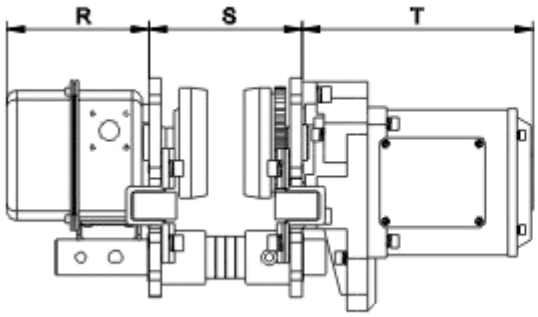


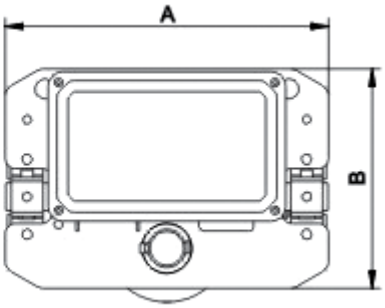
Electric Chain Hoist – HKD

Model	Capacity	Chain	H	A	B	D	E	I	J	K	L	M	N
	[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
HKD00501S	0.5	6.3	540	455	240	285	165	34	28	34	25	19	19
HKD0102S	1	6.3	575	455	240	285	165	34	28	34	25	19	19
HKD0101S	1	7.1	650	520	260	300	176	42	32	42	32	24	24
HKD01501S	1.5	10.0	800	615	295	430	265	49	40	49	40	30	30
HKD0201S	2	10.0	800	615	295	430	265	49	40	49	40	30	30
HKD0202S	2	7.1	835	520	260	300	236	49	40	49	40	30	30
HKD02501S	2.5	11.2	845	615	295	430	265	59	48	59	48	35	35
HKD0301S	3	11.2	845	615	295	430	265	59	48	59	48	35	35
HKD0302S	3	10.0	950	615	295	430	320	59	48	59	48	35	35
HKD0303S	3	7.1	950	520	260	350	205	59	48	59	48	35	35
HKD0502S	5	11.2	1030	615	295	430	325	60	48	60	48	43	43

Technical Parameters

Model	Capacity	Std. Lift	No. of Falls	Chain	Lifting Speed	Motor Power	Power Supply	E.D. Rating
	[t]	[m]	[mm]	[mm]	[m/min]	[kW]	[v]	[%]
HKD00301S	0.3	3 / 9	1	6.1	7.1	0.75	200 - 600	40
HKD00501S	0.5	3 / 9	1	6.3	6.8	0.75	200 - 600	40
HKD0102S	1	3 / 9	2	6.3	3.4	0.75	200 - 600	40
HKD0101S	1	3 / 9	1	7.1	6.6	1.50	200 - 600	40
HKD01501S	1.5	3 / 9	1	10.0	8.8	3.00	200 - 600	40
HKD0201S	2	3 / 9	1	10.0	6.6	3.00	200 - 600	40
HKD0202S	2	3 / 9	2	7.1	3.3	1.50	200 - 600	40
HKD02501S	2.5	3 / 9	1	11.2	5.4	3.00	200 - 600	40
HKD0301S	3	3 / 9	1	11.2	5.4	3.00	200 - 600	40
HKD0302S	3	3 / 9	2	10.0	4.4	3.00	200 - 600	40
HKD0303S	3	3 / 9	3	7.1	2.2	1.50	200 - 600	40
HKD0502S	5	3 / 9	2	11.2	2.7	3.00	200 - 600	40
HKD07503S	7.5	3 / 9	3	11.2	1.8	3.00	200 - 600	40





Electric Trolley

Model	Capacity	A	B	R	S	T	Speed	Motor	Minimum Radius of Turn	Net Weight
	[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[m/min]		[kg]
DDPC-0.5	0.5	315	212	142	58–127	231	11/21	0.4	0.8	45
DDPC-01	1	315	212	142	58–127	231	11/21	0.4	0.8	45
DDPC-02	2	325	220	142	82–153	231	11/21	0.4	0.8	53
DDPC-03	3	340	250	142	190–240	231	11/21	0.75	1.0	65
DDPC-05	5	400	291	142	100–178	231	11/21	0.75	1.8	88
DDPC-7.5	7.5	400	291	142	100–178	230	11/21	0.75	1.8	95

How to order an electric hoist

HKD	M	03	02	S	SD
1	2	3	4	5	6

1	Model		
2	Type	M	= Electric Trolley
		HC	= Hand Chain Block
		H	= Manual Trolley
		SL	= Low Headroom
3	Capacity		
4	No. of Falls		
5	Lifting Speed	S	= Single Speed
		L	= Single Speed of Low Lifting
		SD	= Dual Speed of Lifting
6	Operating Speed	H	= High Speed
		L	= Low Speed
		SD	= Dual Speed

Capacity
1(NL),1(NH).t

Capacity
2(NL),2(NH).t

Capacity
3(NL),3(NH).t

Electric Chain Hoist – PSM

Model	Capacity	Lifting Speed						Motor Power	A	B	C	D	
		50Hz			60Hz								
		4 P		6 P	4P		6P						
		Single	Dual	Single	Single	Dual	Single						
	[t]	[m/min]	[m/min]	[m/min]	[m/min]	[m/min]	[m/min]	[kW]	[mm]	[mm]	[mm]	[mm]	
PSM-0100A	1	—	—	10	—	—	12	0.4	730	300	230	75–200	Single Phase
PSM-0200A	2	—	—	10	—	—	12	0.4	730	300	230	75–200	
PSM-0100L	1	—	—	12.5, 6.6	—	—	15, 12, 8	0.4	730	300	230	75–200	3 Phase
PSM-0100H	1	18.75	—	—	22.5	—	—	0.4	730	300	230	75–200	
PSM-0100D	1	—	20/6.6	—	—	24/8	—	0.4	730	300	230	75–200	
PSM-0200L	2	—	—	12.5, 6.6	—	—	15, 12, 8	0.4	730	300	230	75–200	
PSM-0200H	2	18.75	—	—	22.5	—	—	0.4	730	300	230	75–200	
PSM-0200D	2	—	20/6.6	—	—	24/8	—	0.4	730	300	230	75–200	
PSM-0300L	3	—	—	12.5, 6.6	—	—	15, 12, 8	0.4	730	300	250	100–300	
PSM-0300H	3	18.75	—	—	22.5	—	—	0.4	730	300	250	100–300	
PSM-0300D	3	—	20/6.6	—	—	24/8	—	0.4	730	300	250	100–300	
PSM-0500L	5	—	—	12.5, 6.6	—	—	15, 12, 8	0.75	800	400	300	100–300	
PSM-500H	5	18.75	—	—	22.5	—	—	0.75	800	400	300	100–300	
PSM-0500D	5	—	20/6.6	—	—	24/8	—	0.75	800	400	300	100–300	
PSM-0750L	7.5	—	—	12.5, 6.6	—	—	15, 12, 8	0.75	900	510	380	100–300	
PSM-0750H	7.5	18.75	—	—	22.5	—	—	0.75	900	510	380	100–300	
PSM-0750D	7.5	—	20/6.6	—	—	24/8	—	0.75	900	510	380	100–300	
PSM-1000L	10	—	—	12.5, 6.6	—	—	15, 12, 8	0.75	900	510	380	100–300	
PSM1000H	10	18.75	—	—	22.5	—	—	0.75	900	510	380	100–300	
PSM1000D	10	—	20/6.6	—	—	24/8	—	0.75	900	510	380	100–300	

Features

- Equipped with torque limit device to avoid overload
- Distance between upper and lower hangers is shorter
- Simple parts and less maintenance

Monorail Motorized Trolley

Model	Motor Power	Duty Rating	Speed Ratio	Motor Speed	Module
	[kW]			[rpm]	
MT040	0.4	4P	1:7.5	191	M3.5 × 13T
MT075	0.75	4P	1:7.5	191	M4 × 12T

Electric Chain Hoist

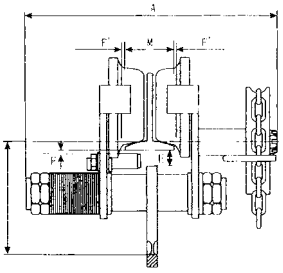
Electric Chain Hoist – BB

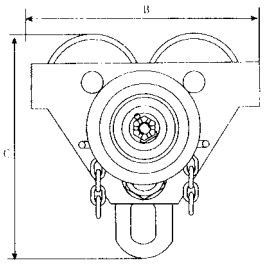
Capacity	No. of Falls	Load Chain	Motor Power	Lifting Speed				Net Weight		Gross Weight		
				50Hz		60Hz						
				Single	Dual	Single	Dual	Single	Dual	Single	Dual	
[t]		[mm]	[kW]	[m/min]	[m/min]	[m/min]	[m/min]	[kg]	[kg]	[kg]	[kg]	
0.5	1	7.1	1.5(1.8)	6.7	—	8.0	—	55	—	58.5	—	Single Phase
1	1	7.1	1.5(1.8)	4.7	—	5.6	—	55	—	58.5	—	
2	2	7.1	1.5(1.8)	2.3	—	2.8	—	64.5	—	67	—	
0.5	1	7.1	1.5(1.8)	6.7	6.7 / 2.2	8.0	8.0 / 2.7	—	50.5	—	53	3 Phase
0.5	1	7.1	1.5(1.8)	9.2	9.2 / 3.1	11.0	11 / 3.7	—	50.5	—	53	
1	1	7.1	1.5(1.8)	4.7	4.7 / 1.6	5.6	5.6 / 1.8	—	50.5	—	53	
1	1	7.1	1.5(1.8)	6.7	6.7 / 2.2	8.0	8 / 2 / 7	—	50.5	—	53	
2	2	7.1	1.5(1.8)	2.3	2.3 / 0.8	2.8	2.8 / 0.6	—	61	—	64	
2	2	7.1	1.5(1.8)	3.3	3.3 / 1.1	4.0	4 / 1.3	—	61	—	64	
3	3	7.1	1.5(1.8)	1.5	1.5 / 0 / 5	1.8	1.8 / 0.6	—	73	—	96	
3	3	7.1	1.5(1.8)	2.2	2.2 / 0.7	2.6	2.6 / 0.9	—	73	—	96	
2	1	10	3.7	6.6	6.6 / 2.2	7.9	7.9 / 2.6	—	125	—	155	
2.5	1	11.2	3.7	5.2	5.2 / 1.7	6.4	6.4 / 2.0	—	130	—	160	
3	2	10	3.7	4.3	4.3 / 1.4	5.2	5.2 / 1.7	—	140	—	170	
5	2	11.2	3.7	2.6	2.6 / 0.9	3.2	3.2 / 1.0	—	153	—	183	
7.5	3	11.2	3.7	1.8	1.8 / 0.6	2.1	2.1 / 0.7	—	195	—	230	
10	4	11.2	3.7 × 2	2.6	2.6 / 0.9	3.2	3.2 / 1.0	—	410	—	470	

Standard lift 3 m
Power supply: Single Phase 100V, 220V, 230V. 3 Phase 220V–600V
Duty Rating: Single Phase 15%, 3 Phase 40%

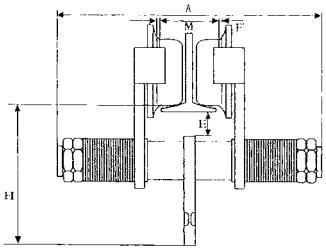
Special Features

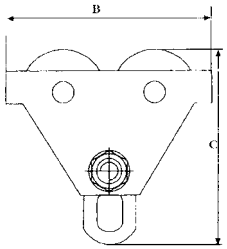
- Control voltage transformed into 24V/48V to eliminate possible accident caused by circuit short and assure safety operation when raining
- Automatic motor brake system features simultaneous braking upon power failure or switching off
- Dual brake system assures safe operation
- Limit switches hold load chain from running out
- Advanced phase error relay keeps motor motionless at incorrect power operation
- Optional emergency stop features available
- Optional electronic overload protection available





Geared Beam Trolley





Plain Beam Trolley

Geared Beam Trolley – TG Series

Model	Work Load Limit	Test Load	Force to Move Load	Min Radius Curve	A	B	C	F	H	I-Beam Recommended	Net Weight	Gross Weight	Packing Measurements (L×W×H)
										M			
	[t]	[kN]	[N]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	[kg]	[cm]
TG0.5	0.5	7.40	60	0.9	248	196	190	3	108	68—126	9.0	10.0	26 × 21 × 15
TG1.0	1.0	14.70	80	1.0	280	236	211	3	115	80—146	14.0	15.0	28 × 25 × 17
TG1.5	1.5	22.06	110	1.0	307	260	226	3	120	80—150	15.3	15.8	31 × 27 × 24
TG2.0	2.0	29.40	140	1.1	318	273	236	3	130	80—168	16.0	17.0	32 × 28 × 19
TG3.0	3.0	44.10	150	1.3	340	320	295	3	164	88—168	24.0	25.0	34 × 33 × 22
TG5.0	5.0	73.55	170	1.4	365	366	334	3	177	100—170	36.0	48.0	38 × 37× 27
TG10	10.0	147.10	320	1.7	410	389	460	3	237	122—203	90.0	106.0	51 × 49 × 44
TG15	15.0	220.65	250	2.2	420	500	446	3	270	122—203	121.0	132.0	43 × 51 × 461

Factor of Safety 4:1

Standard lift 3m

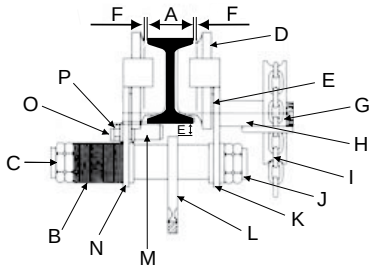
Plain Beam Trolley – TP Series

Model	Work Load Limit	Test Load	Min Radius Curve	A	B	C	F	H	I-Beam Recommended		Net Weight	Gross Weight	Packing Measurements (L×W×H)
									M	E Min			
	[t]	[kN]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	[kg]	[cm]
TP0.5	0.5	7.40	0.9	208	196	190	3	108	68—126	9	5.3	5.8	22 × 17 × 6
TP1.0	1.0	14.70	1.0	242	236	211	3	115	80—146	9	8.7	9.5	26 × 20 × 7
TP1.5	1.5	22.06	1.0	260	260	226	3	120	80—146	9	12.3	12.8	27 × 27 × 24
TP2.0	2.0	29.40	1.1	280	273	236	3	130	80—168	10	10.4	11.4	30.5 × 23 × 8
TP3.0	3.0	44.10	1.3	300	320	295	3	164	88—168	10	24.0	25.0	34 × 27 × 10
TP5.0	5.0	73.55	1.4	316	366	334	3	177	100—170	12	36.0	46.0	37 × 27 × 11
TP10	10.0	147.10	1.7	343	389	460	3	237	122—203	22	83.0	108.0	48 × 42 × 20

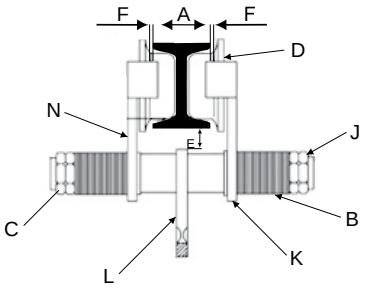
Factor of Safety 4:1

Features for Geared and Plain Beam Trolleys

- Adjustable to any beam width, simply by adjusting the number of spacers
- The wheels are made to fit any shape of beam, i.e. I-Beam or RSJ types
- High grade sealed ball bearings
- With anti-drop plates
- Operationally tested to 150% of the Working Load Limit and issued with an individual test certificate



TG-Series

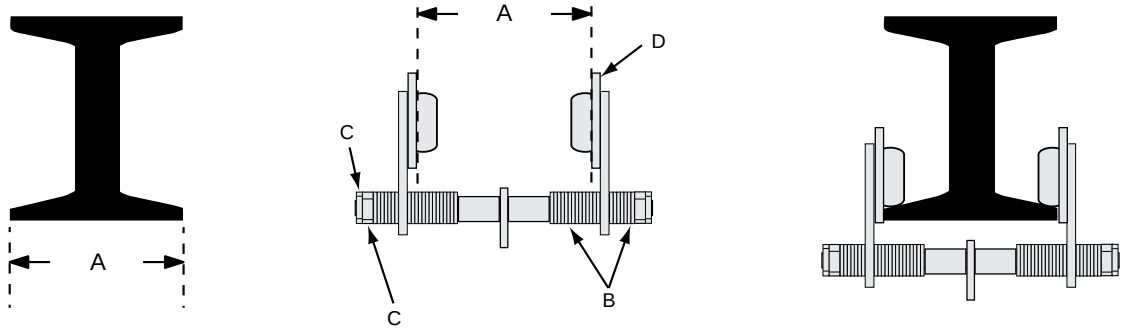


TP-Series

A	I-beam width	E	Hand wheel gear	I	Hand chain	M	Rolling sleeve
B	Spacers	F	Side clearance	J	Load bar	N	Left side plate
C	Load bar lock nut	G	Hand chain wheel	K	Right side plate	O	Axle
D	Trolley wheels	H	Hand chain wheel shaft	L	Hanger plate	P	Axle lock nut

Installation

1. Beam trolleys should only be installed by a competent person.
2. Measure the I-beam flange width (A)
3. An equal number of spacers (B) should used on either side when installing the plain trolley.
4. Once the trolley is assembled and mounted on the I-beam, tighten the load bar lock nut (C) and suspend a light load to test. When the wheels (D) are flush with the I-beam, tighten the lock nut completely.
5. To adjust the clearance distance between the rolling sleeve (M) and the I-beam on the geared trolley, loosen the axle lock nut (P) and move the axle (O) to the required distance before tightening the axle nut again.



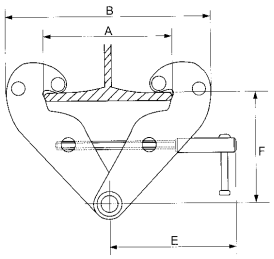
Safe use instructions

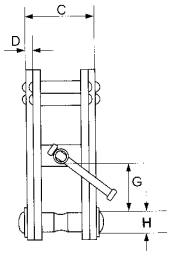
1. Ensure that the trolley is of the correct Work Load Limit (WLL) for the load and there is sufficient adjustment to fit the beam width.
2. Adjust the trolley to allow approximately 1.5mm-3mm side clearance (F) between the wheel flanges and the beam flange.
3. Ensure that the beam is fitted with suitable end stops.
4. Only use for loads suspended directly below the trolley. Do not side pull.
5. Always push rather than pull the load suspended on the trolley.
6. Never travel a load over anybody.
7. Once installed check the trolley to ensure that there is free and safe travel along the beam.
8. Always ensure that the trolley is kept clean and the moving parts are lubricated.
9. Never exceed the stated pull force for the hand chain on the geared trolley.
10. Bearings, gears and I-beam surface should be well greased regularly and all bolts and nuts checked to make sure they are tight.

Inspections

Inspections should be completed by a competent person before use and at intervals of at least 3 months or sooner if deemed necessary.
If you are in any doubt as to the suitability of the product for your application, please contact Anchor Industries' sales department for further information.

Beam Clamp





Beam Clamp

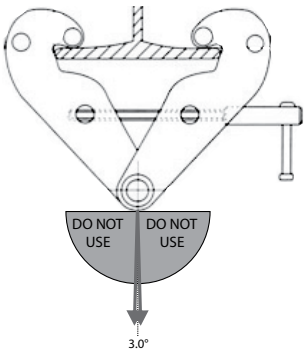
Work Load Limit	Test Load	Jaw Opening	A Max	B		C	D	E	F		G Min	H	Net Weight	Packing Size
				Min	Max				Min	Max				
[t]	[t]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	[mm]
1	1.5	75—220	260	180	360	64	5	215	102	155	25	22	4.5	430 × 100 × 170
2	3	75—220	260	180	360	74	6	215	102	155	25	22	5	430 × 100 × 170
3	4.5	80—320	354	235	490	103	8	260	140	225	45	24	10.5	390 × 140 × 340
5	7.5	80—320	354	235	490	110	10	260	140	225	45	28	11	390 × 140 × 340
10	15	80—350	400	250	520	120	12	280	160	230	70	44	16	550 × 170 × 280

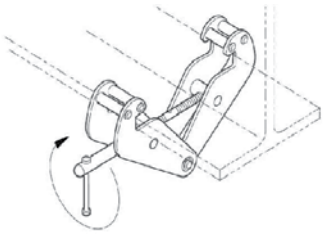
Factor of Safety 4:1

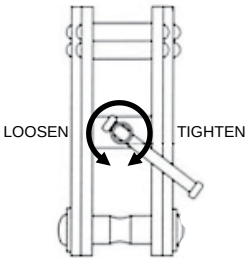
Operationally tested to 150% of the Work Load Limit and issued with an individual test certificate.

Safe use instructions

1. Always read the safe use instructions before using a clamp.
2. Beam clamps are suitable for creating a temporary or semi-permanent hoist anchor point.
3. Ensure that the I-beam and supporting structure is capable of carrying the full load required.
4. Never overload a beam clamp and prevent the jerking of loads.
5. Never use a beam clamp as an anchor point to lift people.
6. Only a competent person should install a beam clamp.
7. Always keep your distance during lifting and lowering of a load.
8. Never travel the load over anybody.
9. Any welding to the beam clamp is forbidden, this can influence the hardness and strength of the clamp.
10. Always ensure that the beam clamp is centred in the middle of the load to be lifted and do not swing the load.
11. Never force the hook of the hoist into the attachment eye or fitting of the beam clamp.







Inspections

1. Inspections should be completed by a competent person, before use and at intervals of at least 3 months or sooner if deemed necessary.
2. Once inspected make sure that the beam clamp is cleaned and working parts lubricated before returning to service.
3. Never use a beam clamp without a WLL or a serial number that can be linked to a valid certificate.

Vertical Lifting Clamp

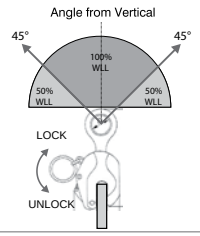
Horizontal Lifting Clamp

Universal Lifting Clamp

Vertical Lifting Clamp – DSQ-A Series

Model	Work Load Limit	Test Load	Jaw Opening	Net Weight
	[t]	[t]	[mm]	[kg]
DSQ-A1	1.0	2.0	0—22	3.8
DSQ-A2	2.0	4.0	0—30	6.0
DSQ-A3	3.0	6.0	0—35	9.3
DSQ-A4	4.0	8.0	0—45	18.5
DSQ-A5	5.0	10.0	0—50	33.0
DSQ-A10	10.0	20.0	0—50	48.5

Effects of Side Loading on WLL

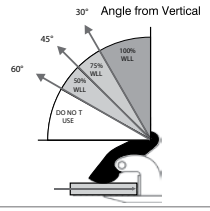


Factor of Safety 5:1
Operationally tested to 200% of the Work Load Limit and issued with an individual test certificate.

Horizontal Lifting Clamp – DHQ Series

Model	Work Load Limit	Test Load	Jaw Opening	Net Weight
	[t]	[t]	[mm]	[kg]
DHQ1-30	1.0	2.0	0—30	4.0
DHQ2-35	2.0	4.0	0—35	7.2
DHQ3-40	3.0	6.0	0—40	8.0
DHQ4-45	4.0	8.0	0—45	8.5
DHQ5-50	5.0	10.0	0—50	9.0

Effects of Side Loading on WLL

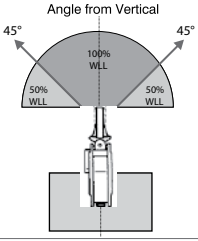


Factor of Safety 5:1
Operationally tested to 200% of the Work Load Limit and issued with an individual test certificate.

Universal Lifting Clamp – DSQ-C Series

Model	Work Load Limit	Test Load	Jaw Opening	Net Weight
	[t]	[t]	[mm]	[kg]
DSQ-C1	1.0	2.0	0—22	3.8
DSQ-C2	2.0	4.0	0—30	6.0
DSQ-C3	3.0	6.0	0—35	9.3
DSQ-C4	4.0	8.0	0—45	18.5
DSQ-C5	5.0	10.0	0—50	33.0
DSQ-C10	10.0	20.0	0—50	48.5

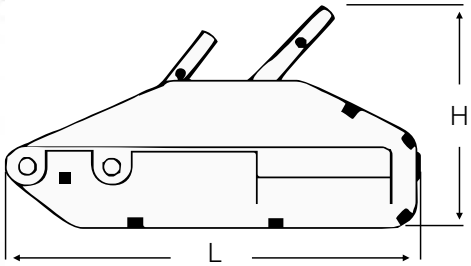
Effects of Side Loading on WLL

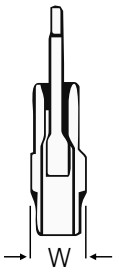


Factor of Safety 5:1
Operationally tested to 200% of the Work Load Limit and issued with an individual test certificate.

Safe use instructions (Always read before using a clamp)

1. The lifting clamps are suitable for lifting and transporting of steel plates with a maximum hardness of 37 HrC (345 HB, 1166 N/mm²).
2. The lifting clamps are suitable for usage in normal atmospheric conditions, between -40°C and +100°C.
3. Never overload a clamp and prevent the jerking of loads.
4. When loading always use the whole jaw depth.
5. Never lift more than one plate at the same time.
6. Always keep your distance during lifting and lowering of a load, never travel the load over anybody.
7. Any welding to the clamp is forbidden, this can influence the hardness and strength of the clamp.
8. Horizontal lifting clamps must only be used in pairs and should never be used to drag or turn a load.
9. When lifting a steel plate from two points, always lift from the centre of balance.
10. When lifting a long plate, lift at four or more points and use a spreader beam if possible.
11. If more than two gripper teeth are broken, the clamp cannot be used.





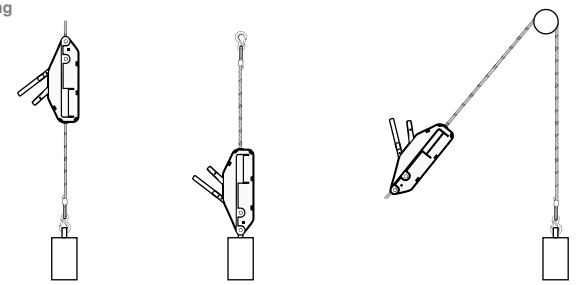
SWR Lifting and Pulling Machine (Cast Aluminium Body)

SWR Lifting and Pulling Machine (Cast Aluminium Body)

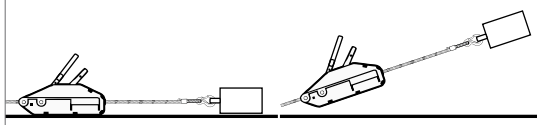
Model	Lifting Capacity	Pulling Capacity	Lever Pull at Rated Load	Foward Travel	Rope ∅	Net Weight			Dimensions		
						Body	SWR 20 m	Lever Handle	L	W	H
	[t]	[t]	[N]	[mm]	[mm]	[kg]	[kg]	[kg]	[mm]	[mm]	[mm]
YAL008	0.8	1.2	284	52	8.3	6.4	7.0	1.15	440	70	255
YAL016	1.6	2.4	412	55	11	12.4	11.5	2.5	560	100	295
YAL032	3.2	4	441	28	16	23.3	23.5	2.5	675	120	350
YAL054	5.4	8.1	850	25	20	58	36	3.7	940	170	440

Factor of Safety (Winch) 4:1
Factor of Safety (SWR) 4:1

Lifting



Pulling



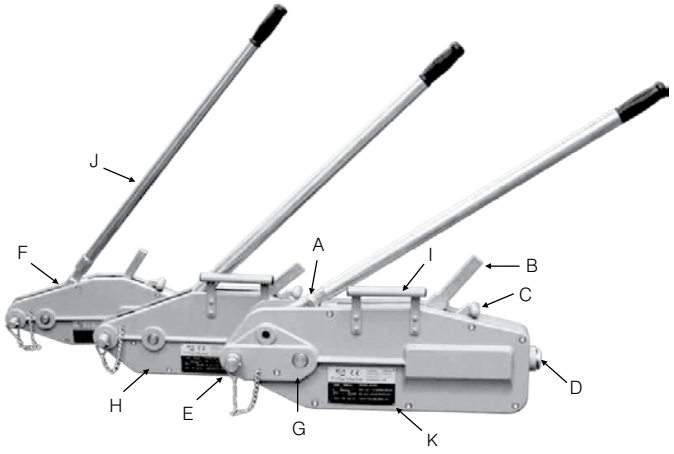
Can be used at any angle

Check before each use

- Inspect the SWR for defects such as twisted or bent links, kinks, bird caging excessive wear
- Ensure the free end is slightly tapered to enable easy threading of the wire through the winch
- Check for any increase in the throat opening of the hooks and distortion or damage to ferrule secured eye
- Presence of label and legibility of markings
- If any defects are detected withdraw the winch from service

Cleaning, lubrication and storage

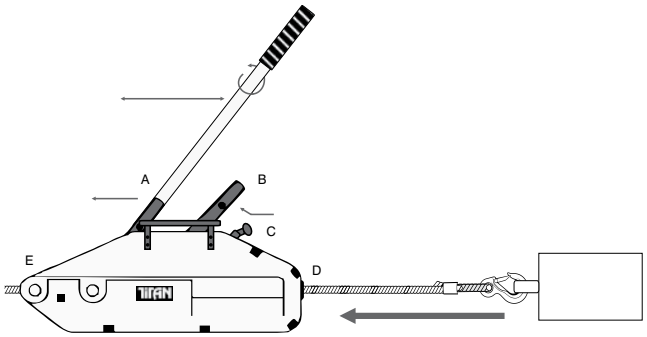
- Keep all visual parts clean, free from grease, mud or material that may affect the performance of the winch
- Spray the working parts except the jaws with chain lubricant
- Only use SWR as recommended by the manufacturer
- When storing the unit for extended periods clean and spray the unit and SWR to prevent rust
- Always wind the SWR back onto the spools for storage



A	Forward Lever	D	Rope guide	G	Pivot pin	J	Adjustable handle
B	Backward Lever	E	Anchor pin	H	Cast aluminium body	K	ID lable
C	Rope clamp	F	Shear pin	I	Carry handle		

Features

- Built-in shearing pin (F): Prevents overload. It functions at approx 25% overload and the pins can be replaced without removing load
- Backward Lever (B) and Forward Lever (A): Placed in tandem providing a slim design and assuring power transfer along the center
- Spare shear pins (F): Two pieces of spare shear pins located in the carrying handle
- Rope clamp system (C): Easily disengaged with a lever allowing smooth installation of the steel wire rope
- High strength cast aluminium alloy body (H): Light weight, simple to operate. Large, flat bottom surface for increased stability in horizontal as well as vertical working position
- Stamped serial number (K): For easy identification
- Anchor Pin (E): Offers numerous and versatile connection possibilities with load hooks, steel wire rope and chain slings
- Adjustable handle (J): For easy operation
- Galvanised SWR mounted on a reel: Standard lengths of 10 m, 20 m and 30 m. Custom lengths available on request
- Each unit is tested to 1.5 times its capacity and a test certificate is issued



Operation

Anchoring

The winch should be secured to a fixed point ensuring the Anchor pin (E) is fully engaged and locked. Secure the safety hook to the load and lay out the SWR.

Insertion of SWR

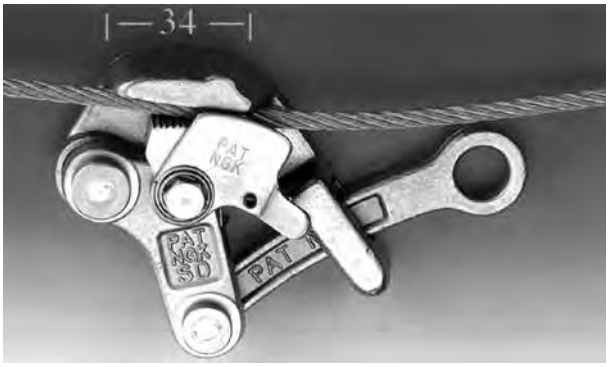
Position levers (A) and (B) fully to the left. Move the rope clamp (C) left and then up to disengage the lock. Feed the tapered end of the SWR through the rope guide (D) and internal jaws from right to left until the excess SWR protrudes through the unit.
Press the rope clamp down firmly to engage the lock.
Check that the SWR in now locked between in the winch jaws.

Commence winching

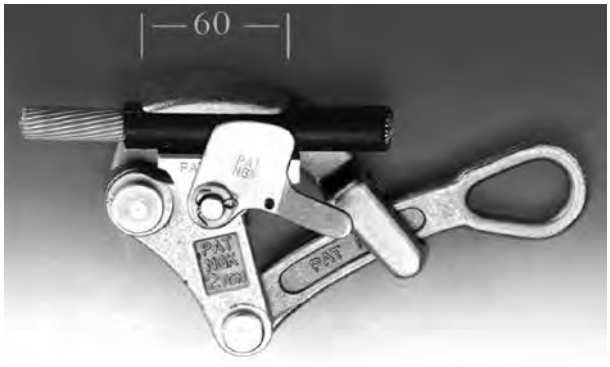
Slide the adjustable handle down over lever (A) and rotate to lock into position.
Move the handle left and right to operate the winch and take up the load.

Release the load

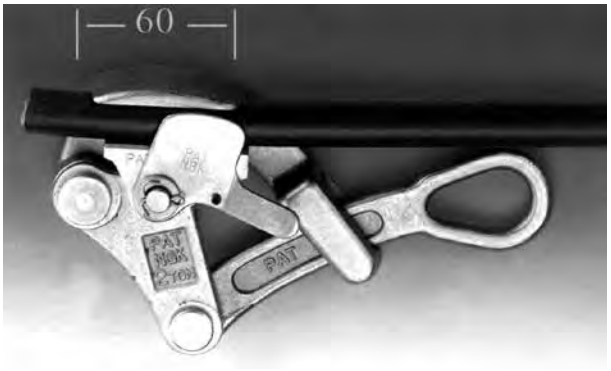
Remove the handle from lever (A) and place fully onto lever (B). Move the handle from left to right to operated the winch and release the load.
After the tension has been fully release move levers (A) and (B) fully right and open the jaws by moving the rope clamp as described.



SD Wire Grip



2 Ton Mighty Grip



2 Ton Aluminium Covered Grip (Smooth Jaws)

3 Ton Grip

NGK Grips

Model	Product Code	Rope ∅	Work Load Limit	Weight
		[mm]	[t]	[kg]
1 Ton SD Wire Grip	SD-1000C	2.6 ~ 15	1	0.6
2 Ton Mighty Grip	S-2000CL	4 ~ 22	2	1.3
2 Ton Aluminium Covered Grip Smooth Jaws	S-2000AL	4 ~ 22	2	1.3
3 Ton Grip	S-3000CL	16 ~ 32	3	2.5

Powerline Kits available on request including: Sling, Lever Hoist, NGK Grip and carry bag.

Load Binder – Ratchet Type

Load Binder – Lever Type

Load Binder – Ratchet Type

Product Code	Chain Size	Min. Break Load	Lashing Capacity	Take-Up	Handle Length	Barrel Length	Weight
	[mm]	[t]	[kg]	[mm]	[mm]	[mm]	[kg]
10RB13	10 / 13	14.97	4.175	200	356	254	5.6

Finish: Powder coated

Features

- Continuous take-up feature with infinite adjustment
- One piece assembly, no bolts or nuts to loosen
- Ratchet spring rust proofed
- All load bearing and load holding parts forged
- Eye bolts and hooks are alloy steel, quenched and tempered
- Easy to operate – positive ratchet
- Traceable batch marking on each unit

Load Binder – Lever Type

Product Code	Chain Size	Min. Break Load	Lashing Capacity	Take-Up	Handle Length	Weight
	[mm]	[t]	[kg]	[mm]	[mm]	[kg]
8LB10	10	8.563	2.450	102	405	3.5
10LB13	13	14.970	4.175	115	470	5.1

Finish: Powder coated

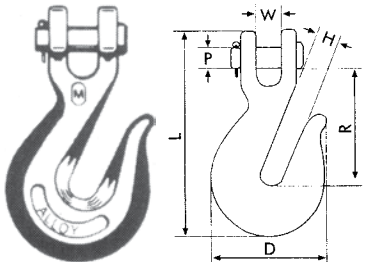
Features

- Drop forged and heat treated
- Each binder is proof tested
- Traceable batch marking on each unit

Precautions

- Do not use "extender bars" for additional leverage when tensioning binders
- Inspect tensioning devices for any sign of damage or wear prior to use
- Ensure the load binder handle is locked in place by rope, wire, chain or locking mechanism to prevent the handle from accidentally releasing
- Load binders should not be used for lifting purposes

Lashing Chain



Grab Hook

Cargo Ratchet and Strap with J-Hook

Lashing Chain Grade 43

Product Code	Chain Size	Link Dimensions			Break Load
		∅	L	W	
	[mm]	[mm]	[mm]	[mm]	[t]
SLC10-4	10	10	30	34.0	6.72
SLC13-4	13	13	39	44.2	11.40

Material: Grade (M)4
Finish: Hot-dip galvanised or self coloured (black)

Grab Hook – Heat treated and tempered Grade 43

For Chain Size	D	H	L	P	R	W	Weight
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
10	68	12.7	114	11	68	11	0.5
13	84	16.7	143	14	85	15	0.9

Material: Grade 43
Finish: Gold powder coated

Lashing Ratchet

Product Code	Minimum Break Load	Tail Length	Tail Width	Weight
[mm]	[mm]	[m]	[mm]	[kg]
LR-025	0.80	0.4	25.00	0.29
LR-050	4.00	0.4	50.00	1.30

Factor of Safety 2:1

Material: Strap polyester; ratchet mild steel
Lashing ratchets are available up to 100 mm

Lashing Strap with J-Hook

Product Code	Minimum Break Load	Strap Length	Strap Width	Weight
[mm]	[mm]	[m]	[mm]	[kg]
LS-025x1	0.80	1.00	25.00	0.09
LS-025x2	0.80	3.00	25.00	0.11
LS-025x3	0.80	4.00	25.00	0.13
LS-050x9	4.00	9.00	50.00	1.08
LS-050x12	4.00	12.00	50.00	1.39
LS-050x16	4.00	16.00	50.00	1.85
LS-050x18	4.00	18.00	50.00	1.91

Factor of Safety 2:1

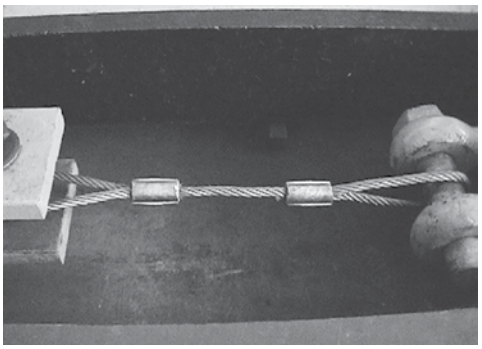
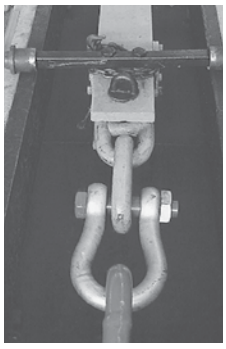
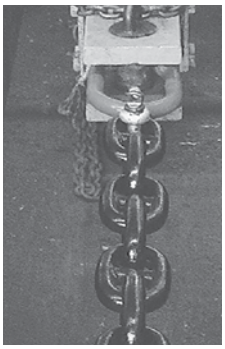
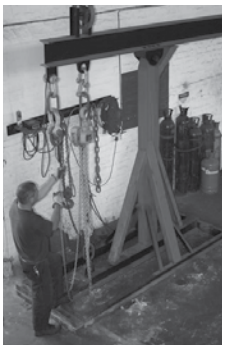
Material: Strap polyester; J-hook mild steel
Finish: Polyester colour coded orange with a marker strand

Lashing straps can also be supplied with D-rings as terminal fittings and in lengths as required.
The sum of the lashing capacity of all the tie downs should not be less than the vehicle payload

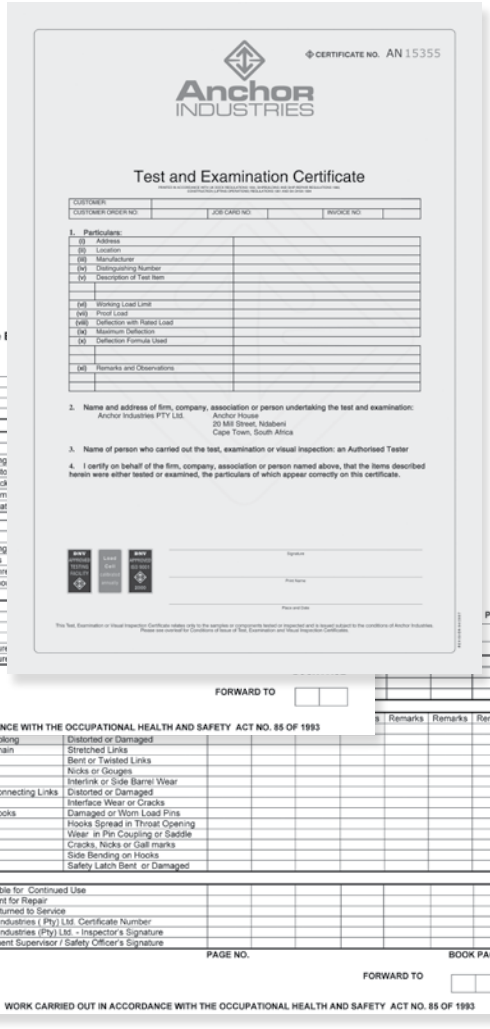
Precautions

- Remove twists, kinks or knots from chain before use.
- It is advisable that the total breaking strength of the lashing chain must at least equal 1.7 times the mass of the load carried.
- Inspect chain, fittings, ratchets and straps for sign of wear prior to use.
- Always apply the lashing chains or straps across the load where the mass is concentrated to avoid unbalanced binding.

Testing and Re-certification

Anchor Industries provides a complete testing and re-certification service for open link chain, steel wire rope, shackles, hoists, slings and fittings. This is designed to ensure customer compliance with the South African Occupational Health and Safety Act and all relevant international standards.



Services provided include:

- Visual inspections
- Compilation of safety registers
- Tensile testing up to 200 t
- Repairs
- Re-certification

Additional services include:

- Colour coded inspection boards
- Safety training

Processes are strictly monitored through the DNV approved ISO9001:2008 Quality Management System and backed by fully traceable certification.

Anchor Testing & Rigging Services, a subsidiary of Anchor Industries, specialises in load testing. Using state-of-the-art equipment such as digital load cells and water bags, load tests can be performed to clients' requirements.

Services provided include:

- Inspection and testing of equipment
- NDT testing
- Rigging lofts
- Rope access

Additional services include:

- MPI and certification
- Training

Certification of Anchor Industries

LEEASA

CERTIFICATE

This is to certify that

Anchor Industries (Pty) Ltd

is a Company member of the

LIFTING EQUIPMENT ENGINEERING ASSOCIATION of SOUTH AFRICA

Chairman, Mr K Greenwood — Secretary, Mr V Nel

2009/07/31

Date.

810513

Membership Number.

Affiliated to The Chamber of Engineering Technology

Membership validity may be checked with LEEASA.

Membership and this certificate are subject to the rules and regulations of the association.

LEEASA is an association not for gain.

DEPARTMENT OF LABOUR

Certificate

This is to certify that

ANCHOR INDUSTRIES (PTY) LTD

has been approved in terms of
Driven Machinery Regulation 18(5)
of the
Occupational Health and Safety Act, 1993
Examining of Lifting machines and lifting tackles.

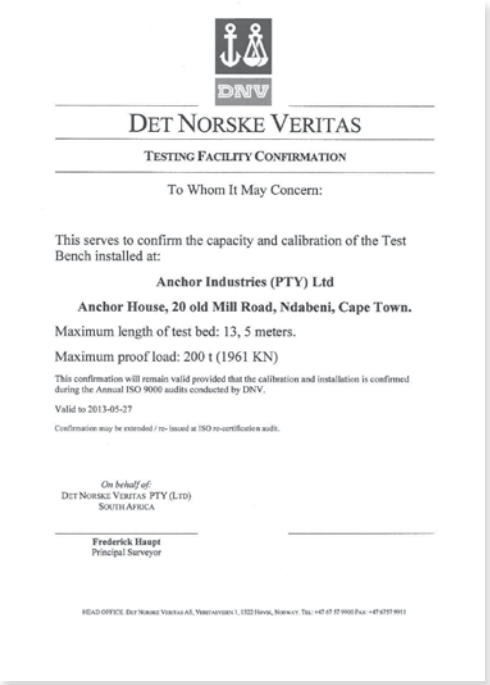
Scope of Approval:

Overhead Cranes
Manual chain Hoists
Electric Hoists
Lever Hoists
Beams
Lifting Tackles

Signed on: 12 February 2008

Chief Inspector

No: LME 193



DNV

DET NORSKE VERITAS

TESTING FACILITY CONFIRMATION

To Whom It May Concern:

This serves to confirm the capacity and calibration of the Test Bench installed at:

Anchor Industries (PTY) Ltd

Anchor House, 20 old Mill Road, Ndabeni, Cape Town.

Maximum length of test bed: 13, 5 meters.

Maximum proof load: 200 t (1961 KN)

This confirmation will remain valid provided that the calibration and installation is confirmed during the Annual ISO 9000 audits conducted by DNV.

Valid to 2013-05-27

Confirmation may be extended / re- issued at ISO re-certification audit.

On behalf of:
DET NORSKE VERITAS PTY (LTD)
SOUTH AFRICA

Frederick Haupt
Principal Surveyor

HEAD OFFICE: DET NORSKE VERITAS AS, VERITASVEIEN 1, 1322 HØVIK, NORWAY. TEL: +47 67 57 99 00 FAX: +47 67 57 99 11

Quality Management at Anchor Industries

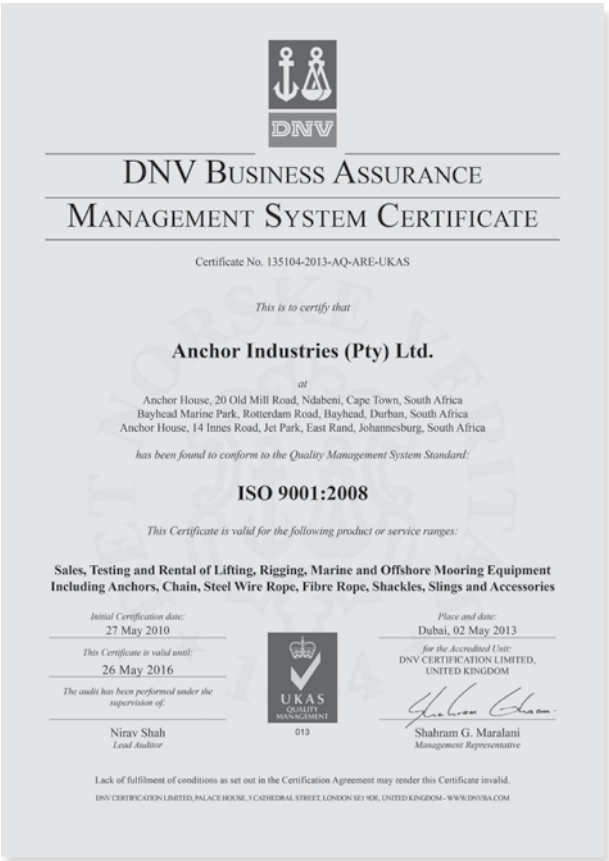
Anchor Industries' procedures are strictly monitored and controlled through our DNV approved ISO9001 Quality Management System.

Anchor Industries' Quality Policy

Anchor Industries strives for excellence in the Lifting, Rigging, Marine and Offshore Mooring markets, locally and internationally.

We set our objectives to achieve total customer satisfaction and delivery of precise, reliable, and competitive products on time.

Our commitment to quality is supported by our promise of dedicated customer service.



DNV

DNV BUSINESS ASSURANCE

MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 135104-2013-AQ-ARE-UKAS

This is to certify that

Anchor Industries (Pty) Ltd.

at

Anchor House, 20 Old Mill Road, Ndabeni, Cape Town, South Africa
Bayhead Marine Park, Rotterdam Road, Bayhead, Durban, South Africa
Anchor House, 14 Innes Road, Jet Park, East Rand, Johannesburg, South Africa

has been found to conform to the Quality Management System Standard:

ISO 9001:2008

This Certificate is valid for the following product or service ranges:

Sales, Testing and Rental of Lifting, Rigging, Marine and Offshore Mooring Equipment Including Anchors, Chain, Steel Wire Rope, Fibre Rope, Shackles, Slings and Accessories

Initial Certification date:
27 May 2010

This Certificate is valid until:
26 May 2016

The audit has been performed under the supervision of:
Nirav Shah
Lead Auditor

UKAS QUALITY MANAGEMENT
013

Place and date:
Dubai, 02 May 2013

for the Accredited Unit:
DNV CERTIFICATION LIMITED, UNITED KINGDOM

Shahram G. Maralani
Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

DNV CERTIFICATION LIMITED, PALACE HOUSE, 3 CATHEDRAL STREET, LONDON SE1 9DE, UNITED KINGDOM - WWW.DNVBA.COM

Limitations on the use of the sling due to environmental conditions or hazardous applications

a. Select material resistant to chemicals.
Chain and components must not be used in alkaline or acidic environments.
Comprehensive and regular examination must be carried out when used in severe or corrosive inducing environments.

b. Restrictions due to temperature.

Temperature of Sling	Reduction of Work Load Limit
[˚C]	[%]
-40—200	0%
+200—300	10%
+300—400	25%
above 400	do not use

Upon return to normal temperature, the sling reverts to its full capacity within the above temperature range.

c. Due to the crushing effect of Grab Hooks without saddles have upon chain, the design factor for all assemblies must be reduced by 20% when using these.

d. Chain slings should not be galvanised or subjected to any plating processes without the manufacturer's approval.

Before putting the sling into first use check the following:

a. Availability of manufacturer's certificate.

b. The sling corresponds precisely to the product specified on the order.

c. The identification and WLL marked on the sling correspond with the information on the certificate.

d. All details of the sling are entered into a lifting equipment register.

e. The availability of instructions for use and adequate training has been given to staff to enable the safe use of the sling.

Before each use / period of use check the following:

a. A thorough inspection of the chain for twisted or bent links, nicks and gouges, excessive wear at the bearing points, stretched links. Increase in the throat opening of Hooks. Distortion or damage to Master links, Coupling links and attachments.

b. Presence of a label and legibility of markings.

c. If any defects are detected withdraw the sling from service.

Selection and use of chain slings

a. Determine the mass of the load, its centre of gravity, attachment points and proposed method of attachment.

b. Observe the marked WLL and mode factors. In the case of multi-leg slings, this will include restrictions on the angle of sling legs.

c. Always protect slings from sharp edges using suitable packing.

d. Do not drag a load in the sling and do not drag slings over the ground or rough surfaces.

e. Take care to avoid snatch or shock loads which can overstress chain.

f. Never tie knots in chain. Always make sure chain is free of knots before putting it under tension.

g. Never load a hook on its tip or wedge a hook into a lifting point.

h. Never use a multi-leg sling at an angle greater that 120° between the sling legs (60° from the vertical).

i. The load should be secured by the sling in such a manner that it cannot topple or fall out of the sling during lift. The sling should be arranged so that the point of lift is directly above the centre of gravity and the load is balanced and stable.

j. When using multi-leg slings make sure that the load is evenly distributed between the legs and each leg carries the same weight.

k. Slings should be protected from edges, friction and abrasions, whether from the load or lifting appliance.

l. Care should be taken to ensure that the load is controlled to prevent accidental rotation or collision with objects.

m. Snatch or shock loading should be avoided as this will increase the forces acting on the sling.

n. Care should be taken to ensure the safety of personnel during lift. Hands and other body parts should be kept away from the sling to prevent injury as the slack is taken up.

o. When using less than the full number of legs, make sure that the legs not in use are hooked back into the Oblong or Sub-Assembly to avoid swinging or snagging causing accidental damage to property or personnel.

Apply the following factors when not using the full number of legs:

Type of Chain Sling	No. of legs used	Load Factor
2	1	WLL × 0.5
3 / 4	2	WLL × 0.75
3 / 4	1	WLL × 0.33

p. The load should be lowered in an equally controlled manner as when lifted.

q. Trapping the sling when lowering should be avoided and the load should not rest on the sling as this could cause damage.

r. On completion of the lifting operation the sling should be returned to proper storage. When not in use, slings should be stored in clean, dry conditions on a rack, away from abrasive grit and dust.

Periodic examination and maintenance

a. Examination periods should be determined by a competent person, taking into account the application, environment, frequency of use and similar matters, but in any event should be visually examined at least annually by a competent person.

b. The sling should be cleaned prior to inspection to ensure that it is free from oil, dust or any other matter which may cover up cracks or surface defects.

c. Records of such examinations should be maintained in a lifting equipment register.

d. Damaged slings should be withdrawn from service. Never attempt to carry out repairs to the slings yourself.

Limitations on the use of the sling due to environmental conditions or hazardous applications

a. Select material resistant to chemicals
   - Steel wire rope and components must not be used in alkaline or acidic environments.
   - Comprehensive and regular examination must be carried out when used in severe or corrosive inducing environments.

b. Hardness of steel wire rope.

Rope Grade	API Grade
2160N/mm²	EEIPS
1960N/mm²	EIPS
1770N/mm²	IPS
1570N/mm²	PS

Before putting the sling into first use check the following:

a. Availability of manufacturer's certificate.

b. The sling corresponds precisely to the product specified on the order.

c. The identification and WLL marked on the sling correspond with the information on the certificate.

d. All details of the sling are entered into a lifting equipment register.

e. The availability of instructions for use and adequate training has been given to staff to enable the safe use of the sling.

Before each use / period of use check the following:

a. A thorough inspection of the steel wire rope for broken strands, kinks, crushing, nicks and gouges, ecessive wear, severe corrosion. Increase in the throat opening of Hooks. Distortion or damage to Master links, Thimbles, Ferrules and attachments.

b. Presence of a label and legibility of markings.

c. If any defects are detected withdraw the sling from service.

Selection and use of steel wire rope slings

a. Determine the mass of the load, its centre of gravity, attachment points and proposed method of attachment.

b. Observe the marked WLL and mode factors. In the case of multi-leg slings, this will include restrictions on the angle of sling legs.

c. Always protect slings from sharp edges using suitable packing.

d. Do not drag a load in the sling and do not drag slings over the ground or rough surfaces.

e. Take care to avoid snatch or shock loads which can overstress steel wire rope.

f. Always make sure steel wire rope is free of kinks before putting it under tension.

g. Never load a hook on its tip or wedge a hook into a lifting point.

h. Never use a multi-leg sling at an angle greater that 120° between the sling legs (60° from the vertical).

i. The load should be secured by the sling in such a manner that it cannot topple or fall out of the sling during lift. The sling should be arranged so that the point of lift is directly above the centre of gravity and the load is balanced and stable.

j. When using multi-leg slings make sure that the load is evenly distributed between the legs and each leg carries the same weight.

k. Slings should be protected from edges, friction and abrasions, whether from the load or lifting appliance.

l. Care should be taken to ensure that the load is controlled to prevent accidental rotation or collision with objects.

m. Snatch or shock loading should be avoided as this will increase the forces acting on the sling.

n. Care should be taken to ensure the safety of personnel during lift. Hands and other body parts should be kept away from the sling to prevent injury as the slack is taken up.

o. When using less than the full number of legs, make sure that the legs not in use are hooked back into the Oblong or Sub-Assembly to avoid swinging or snagging causing accidental damage to property or personnel.

   Apply the following factors when not using the full number of legs:

Type of Chain Sling	No. of legs	Load Factor
2	1	WLL × 0.5
3 / 4	2	WLL × 0.75
3 / 4	1	WLL × 0.33

p. The load should be lowered in an equally controlled manner as when lifted.

q. Trapping the sling when lowering should be avoided and the load should not rest on the sling as this could cause damage.

r. On completion of the lifting operation the sling should be returned to proper storage. When not in use, slings should be stored in clean, dry conditions on a rack, away from abrasive grit and dust.

Periodic examination and maintenance

a. Examination periods should be determined by a competent person, taking into account the application, environment, frequency of use and similar matters, but in any event should be visually examined at least annually by a competent person.

b. The sling should be cleaned prior to inspection to ensure that it is free from oil, dust or any other matter which may cover up cracks or surface defects.

c. Records of such examinations should be maintained.

d. Damaged slings should be withdrawn from service. Never attempt to carry out repairs to the slings yourself.

Use and Maintenance of Webbing Slings

Limitations on the use of the sling due to environmental conditions or hazardous applications

a. Selective material resistant to chemicals
   - Polyester is resistant to most mineral acids but is damaged by alkalis.
   - Polyamides are virtually immune to the effects of alkalis, however they are attacked by mineral acids.
   - Polypropylene is little affected by acids or alkalis.
   - Contaminated slings should be taken out of service at once, soaked in cold water, dried naturally and referred to a competent person for examination.
   - Slings with Grade 8 fittings of master links should not be used in acidic conditions.

b. Restrictions due to temperature
   - Flat woven and Round slings are suitable for use and storage in the following temperature ranges:

Suitable for use and storage of Webbing Slings	Temperature Range
Polyester	-40°C — 100°C
Polymide	-40°C — 100°C
Polypropylene	-40°C — 80°C

These ranges vary in a chemical environment, in which case the advice of the manufacturer or supplier should be sought.

c. Susceptibility to cutting and abrasion
   - Always protect webbing slings from sharp edges.
   - Do not drag a load in the sling and do not drag slings over the ground or rough surfaces.

d. Degradation due to ultra-violet radiation
   - Flat woven and Round slings are susceptible to degradation if exposed to ultra-violet radiation.

Before putting the sling into use first check the following:

a. Availability of manufacturer's certificate.
b. The sling corresponds precisely to the specifications on the order.
c. The identification and WLL marked on the sling correspond with the information on the certificate.
d. All details of the sling are entered into a lifting equipment register.
e. The availability of instructions for use and adequate training has been given to staff to enable the safe use of the sling.

Before each use / period of use check the following:

a. Inspect for defects such as cuts, tears, abrasions, knots, chemical damage, friction damage or deformed fittings.
b. Presence of label and legibility of marking.
c. If any defects are detected withdraw the sling from service.

Selection and use of woven webbing slings

a. Determine the mass of the load, its centre of gravity, attachment points and proposed method of attachment.
b. Observe the marked WLL and mode factors. In the case of multi-leg slings, this will include restrictions on angle of sling legs.
c. When using slings with soft eyes, the minimum eye length for a sling for use with a hook should be not less than 3.5 times the maximum thickness of the hook.
d. The load should be secured by the sling in such a manner that it cannot topple or fall out of the sling during the lift. The sling should be arranged so that the point of lift is directly above the centre of gravity and the load is balanced and stable.
e. Slings should be protected from sharp edges, friction and abrasions, whether from the load or lifting appliance.
f. Care should be taken to ensure that the load is controlled to prevent accidental rotation or collision with objects.
g. Snatch or shock loading should be avoided as this will increase the forces acting on the sling.
h. Care should be taken to ensure the safety of personnel during lift. Hands and other body parts should be kept away from the sling to prevent injury as the slack is taken up.
i. The load should be lowered in an equally controlled manner as when lifted. Trapping the sling when lowering should be avoided and the load should not rest on the sling as this could cause damage.
k. On completion of the lifting operation the sling should be returned to proper storage. When not in use, slings should be stored in clean, dry and well ventilated conditions, at ambient temperature and on a rack, away from heat sources.

Periodic examination and maintenance

a. Examination periods should be determined by a competent person, taking into account the application, environment, frequency of use and similar matters, but in any event should be visually examined at least annually by a competent person.
b. Records of such examinations should be maintained.
c. Damaged slings should be withdrawn from service. Never attempt to carry out repairs to the slings yourself.

18. Lifting Machines and Lifting Tackle

1. No user shall use or permit the use of a lifting machine unless
   (a) it has been designed and constructed in accordance with a generally accepted technical standard;
   (b) it is conspicuously and clearly marked with the maximum mass load which it is designed to carry with safety: Provided that when this mass load varies with the conditions of use a table showing the maximum mass load with respect to every variable condition shall be posted up by the user in a conspicuous place easily visible to the operator; and
   (c) it has at all times at least three full turns of rope on the drum of each winch which forms part of such a machine when such winch has been run to its lowest limit.

2. The user shall, where practicable, provide every power-driven lifting machine with
   (a) a brake or other device capable of holding the maximum mass load should the power supply fail, or which is such that it will automatically prevent the uncontrolled downward movement of the load when the raising effort is interrupted; and
   (b) a limiting device which will automatically arrest the driving effort when
      (i) the hook or load attachment point of the power-driven lifting machine reaches its highest safe position; and
      (ii) in the case of a winch-operated lifting machine with a lifting capacity of 5000 kg or more, the load is greater than the rated mass load of such machine.

3. The user shall cause every chain or rope which forms an integral part of a lifting machine to have a factor of safety as prescribed by the standard to which such machine was manufactured: Provided that in the absence of such prescribed factor of safety, chains, steel-wire ropes and fibre ropes shall have a factor of safety of at least four, five and ten, respectively, with respect to the rated carrying capacity of the lifting machine.

4. The user shall cause every hook or any other load-attaching device which forms and integral part of a lifting machine to be so designed or proportioned that accidental disconnection of the load under working conditions cannot take place.

5. The user shall cause the whole installation and all working parts of every lifting machine to be thoroughly examined and subjected to a performance test, as prescribed by the standard to which the lifting machine was manufactured, by a person who has knowledge and experience of the erection and maintenance of the type of lifting machine involved or similar machinery and who shall determine the serviceability of the structures, ropes, machinery and safety devices, before they are put into use following every time they are dismantled and re-erected, and thereafter at intervals not exceeding 12 months: Provided that in the absence of such prescribed performance test the whole installation of the lifting machine shall be tested with 110 % of the rated mass load, applied over the complete lifting range of such machine and in such a manner that every part of the installation is stressed accordingly.

6. Notwithstanding the provisions of subregulation (5), the user shall cause all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices forming an integral part of a lifting machine to be thoroughly examined by a person contemplated in subregulation (5) at intervals not exceeding six months.

7. Every user of a lifting machine shall at all times keep on his premises a register in which he shall record or cause to be recorded full particulars of any performance test and examination prescribed by subregulation (5) and (6) and any modification or repair to the lifting machine, and shall ensure that the register is available on request for inspection by an inspector.

8. No user of machinery shall require or permit any persons to be moved or supported by means of a lifting machine, unless such machine is fitted with a cradle approved for that purpose by an inspector.

9. No user shall use or permit any person to use a jib-crane with a lifting capacity of 5 000 kg or more at minimum jib radius, unless it is provided with
   (a) a load indicator that will indicate to the operator of the jib-crane the mass of the load being lifted: Provided that such a device shall not require manual adjustment, from application of a load to the jib crane until the release of that load, using any motion or combination of motions permitted by the crane manufacturer to ensure safe lifting; or
   (b) a limiting device which will automatically arrest the driving effort whenever the load being lifted is greater than the rated mass load of the jib-crane, at that particular radius, using any motion or combination of motions permitted by the crane manufacturer to ensure safe lifting: Provided that such a device shall not arrest the driving effort when the jib-crane is being operated into a safer condition.

10. No user shall use or allow the use of any lifting tackle unless the following conditions are complied with, namely that
   (a) every item of lifting tackle is well constructed of sound material, is strong enough and is free from patent defects and is in general constructed in accordance with a generally accepted technical standard;
   (b) every lifting assembly consisting of different items of lifting tackle is conspicuously and clearly marked with identification particulars and the maximum mass load which it is designed to lift with safety;
   (c) ropes of chains have a factor of safety with respect to the maximum mass load they are designed to lift with safety of
      (i) ten for natural-fibre ropes;
      (ii) six for man-made fibre ropes or woven webbing;
      (iii) six for steel-wire ropes except for double part spliced endless sling legs and double part endless grommet sling legs made from steel-wire rope, in which case the factor of safety shall be at least eight;
      (iv) five for steel chains; and
      (v) four for high-tensile or alloy steel chains. Provided that when the load is equally shared by two or more ropes or chains the factor of safety may be calculated

in accordance with the sum of the breaking strengths taking into consideration the angle of loading;

(d) steel-wire ropes are discarded and not used again for lifting purposes if the rope shows signs of excessive wear, too many broken wires, corrosion or other defects that have made its use in any way dangerous;

(e) such lifting tackle is examined at intervals not exceeding three months by a person contemplated in sub-regulation (5) who shall enter and sign the result of each such inspection in a book kept for this purpose; and

(f) such lifting tackle is stored or protected so as to prevent damage or deterioration when not in use.

11. The user shall ensure that every lifting machine is operated by an operator specifically trained for a particular type of lifting machine: Provided that in the case of a lift truck with a lifting capacity of 750 kg or more and jib-cranes with a lifting capacity of 5000 kg or more at minimum jib radius, the user shall not require or permit any person to operate such a lifting machine unless the operator is in possession of a certificate of training, issued by a person or organization approved for the purpose by the Chief Inspector.

[Date effective 10 October 1993 – G.N.R.2483 of 4 September 1992]

SANS	Title
SANS 33	Equipment for use in industrial rope access work
SANS 61-1	Cranes – Limiting and indicating devices Part 1: General
SANS 94-1	Textile slings – Safety Part 1: Flat woven webbing slings, made of man-made fibres, for general purpose use
SANS 94-2	Textile slings – Safety Part 2: Roundslings, made of man-made fibres, for general purpose use
SANS 189:2006	Short-link steel chain (medium-tolerance) for lifting purposes
SANS 251	Long-link and extra-long link medium tolerance steel chains for general purpose
SANS 0293	Condition assessment of steel wire ropes on mine winders
SANS 500	Inspection and testing of manually operated chain blocks and chain lever hoists
SANS 813	Clamps for wire ropes
SANS 1562	Aging-resistant steels for haulage and lifting equipment
SANS 1592	Short-link steel chain (close-tolerance) for lifting appliances
SANS 1594	Manually operated chain blocks
SANS 1595	Forged steel lifting hooks for use with steel chains of strength Grade M(4), P(5), S(6), T(8) and V(10)
SANS 1596	Drop forged eyebolts and eyenuts for lifting purposes
SANS 1599-2	Cranes Part 2: Power-driven mobile cranes
SANS 1636	Manually operated chain lever hoists
SANS 1637	Reconditioned manually operated chain lever hoists
SANS 1638	Pneumatically operated chain hoists
SANS 1639	Reconditioned pneumatically operated chain hoists
SANS 1640	Reconditioned manually operated chain blocks
SANS 1819	Snatch blocks
SANS 1820	Reconditioned snatch blocks
SANS 1824	Beam trolleys (crawls)
SANS 2262	General purpose thimbles for use with steel wire ropes – Specification
SANS 2408	Steel wire ropes for general purposes – Minimum requirements
SANS 2415	Forged shackles for general lifting purposes – Dee shackles & bow shackles
SANS 3056	Non-calibrated round steel link lifting chain and chain slings – Use and maintenance
SANS 3189-1	Sockets for wire ropes for general purposes Part 1: General characteristics and conditions of acceptance
SANS 3189-2	Sockets for wire ropes for general purposes Part 2: Special requirements for sockets produced by forging or machine from solid
SANS 3189-3	Sockets for wire ropes for general purposes Part 3: Special requirements for sockets produced by casting
SANS 4301-1	Cranes and lifting appliances – Classification Part 1: General
SANS 4301-2	Lifting appliances – Classification – Part 2: Mobile cranes
SANS 4301-3	Cranes – Classification – Part 3: Tower cranes
SANS 4301-5	Cranes – Classification Part 5: Overhead travelling and portal bridge cranes
SANS 4308-1	Cranes and lifting appliances – Selection of wire ropes Part 1: General
SANS 4308-2	Cranes and lifting appliances – Selection of wire ropes Part 2: Mobile cranes – Coefficient of utilization
SANS 4309	Cranes – Wire ropes – Care, maintenance, installation, examination and discard
SANS 4310	Cranes – Test code and procedures
SANS 4344	Steel wire ropes for lifts – Minimum requirements
SANS 7363	Cranes and lifting appliances – Technical characteristics and acceptance documents
SANS 7531	Wire rope slings for general purposes – Characteristics and specifications
SANS 7592	Calibrated round steel link lifting chains – Guidelines to proper use and maintenance
SANS 7593	Chain slings assembled by methods other than welding – Grade T(8)
SANS 7752-5	Lifting appliances – Controls – Layout and characteristics – Part 5: Overhead travelling cranes and portal bridge cranes
SANS 8539	Forged steel lifting components for use with Grade T(8) chain
SANS 9374-1	Cranes – Information to be provided Part 1: General
SANS 9926-1	Cranes – Training of drivers Part 1: General
SANS 9928-1	Cranes – Crane driving manual Part 1: General

South African National Standards and Titles

SANS	Title
SANS 10148	The installation and operation of cable cranes and aerial rope-ways
SANS 10295-2	Suspended access equipment Part 2: Temporary suspended platforms (TSPs)
SANS 10296	Hand signals used with cranes and with lifting and suspended equipment
SANS 10316	Aircraft ground support – Vehicle-mounted loading equipment
SANS 10335	The installation, maintenance and safe use of overhead monorail transport systems for underground use
SANS 11661	Mobile cranes – Presentation of rated capacity charts
SANS 23853	Cranes – Training of slingers and signallers
SANS 50818-6	Short link chain for lifting purposes – Safety Part 6: Chain slings – Specification for information for use and maintenance to be provide by the manufacturer
SANS 52195-2	Load resistant assemblies on road vehicles – Safety Part 2: Web lashing made from man-made fibres
SANS 52195-3	Load resistant assemblies on road vehicles – Safety Part 3: Lashing chains
SANS 52195-4	Load resistant assemblies on road vehicles – Safety Part 4: Lashing steel wire rope
ARP 051	Steel wire rope end connections

Decimal Equivalents Inch to Millimetre

[in.]	Decimal	[mm]
1/64	.015625	.396875
1/32	.03125	.793750
3/64	.046875	1.190625
1/16	.0625	1.587500
5/64	.078125	1.984375
3/32	.09375	2.381250
7/64	.109375	2.778125
1/8	.1250	3.175000
9/64	.140625	3.571875
5/32	.15625	3.968750
11/64	.171875	4.365625
3/16	.1875	4.762500
13/64	.203125	5.159375
7/32	.21875	5.556250
15/64	.234375	5.953125
1/4	.2500	6.350000
17/64	.265625	6.746875
9/32	.28125	7.143750
19/64	.266875	7.540625
5/16	.3125	7.937500
21/64	.328125	8.334375
11/32	.34375	8.731250

[in.]	Decimal	[mm]
23/64	.359375	9.128125
3/8	.3750	9.525000
25/64	.390625	9.921875
13/32	.40625	10.318750
27/64	.421875	10.715625
7/16	.4375	11.112500
29/64	.453125	11.509375
15/32	.46875	11.906250
31/64	.484375	12.303125
1/2	.5000	12.700000
33/64	.515625	13.096875
17/32	.53125	13.493750
35/64	.546875	13.890625
9/16	.5625	14.287500
37/64	.578125	14.684375
19/32	.59375	15.081250
39/64	.609375	15.478125
5/8	.6250	15.875000
41/64	.640625	16.271875
21/32	.65625	16.668750
43/64	.71875	17.065625
11/16	.6875	17.462500

[in.]	Decimal	[mm]
45/64	.703125	17.859375
23/32	.71875	18.265250
47/64	.734375	18.653125
3/4	.7500	19.050000
49/64	.765625	19.446875
25/32	.78125	19.843750
51/64	.796875	20.240625
13/16	.8125	20.637500
53/64	.828125	21.034375
27/32	.84375	21.431250
55/64	.859375	21.828125
7/8	.8750	22.225000
56/64	.890625	22.621875
29/32	.90625	23.018750
59/64	.921875	23.415625
15/16	.9375	23.812500
61/64	.953125	24.209375
31/32	.96875	24.606250
63/64	.984375	25.003125
1	1.000	25.400000

Non-metric to Metric

Linear		
Units	**To Convert**	**Multiply by**
in. > cm	inches into centimetres	2.540
in. > m	inches into metres	2.540×10^{2}
in. > mm	inches into millimetres	25.4
ft > m	feet into metres	0.3048
yd > m	yards into metres	0.9144
mi > km	miles into kilometres	1.609344
mi > m	miles into metres	1609.344
ft > cm	feet into centimetres	30.48

Mass		
Units	**To Convert**	**Multiply by**
oz > g	ounces into grams	28.3495
lb > g	pounds into grams	453.6
lb > kg	pounds into kilograms	0.4536
t > kg	tons into kilograms	1000
gr > g	grains into grams	0.0648

Area		
Units	**To Convert**	**Multiply by**
$in.^2 > cm^2$	sq. inches into sq. centimetres	6.4516
$ft^2 > cm^2$	sq. feet into sq. centimetres	929.03
$ft^2 > m^2$	sq. feet into sq. metres	0.092903
$yd^2 > m^2$	sq. yards into sq. metres	0.8361
$mi^2 > km^2$	sq. miles into sq. kilometres	2.58999
$mi^2 > m^2$	sq. miles into hectares	258.999
$ac > m^2$	acres into sq. metres	4046.856
ac > ha	acres into hectares	0.40469

Volume and Capacity		
Units	**To Convert**	**Multiply by**
$in.^3 > in.^3$	cu. inches into cu. centimetres	16.3871
$in.^3 > l$	cu. inches into litres	0.016387
$ft^3 > m^3$	cu. feet into cu. metres	0.028317
$ft^3 > l$	cu. feet into litres	28.32
pt > *l*	pints into litres	0.56826
qt > *l*	quarts into litres	1.13652
$yd^3 > m^3$	cu. yards into cu. metres	0.7646
UK gal > *l*	UK gallon into litres	4.54609
US gal > *l*	US gallon into litres	3.7854

Metric to non-metric

Linear		
Units	**To Convert**	**Multiply by**
mm > ft	millimetres into feet	3.281×10^{3}
mm > in.	millimetres into inches	0.03937
cm > in.	centimetres into inches	0.3937
m > ft	metres into feet	3.281
m > yd	metres into yards	1.09361
km > yd	kilometres into yards	1093.61
km > mi	kilometres into miles	0.62137

Mass		
Units	**To Convert**	**Multiply by**
g > oz	grams into ounces	0.03527
g > gr	grams into grains	15.4324
kg > lb	kilograms into pounds	2.2046
kg > t	kilograms into tons	0.001
kg > st	kilograms into stones	0.1575
kg > swt	kilograms into hundredweights	0.01968

Area		
Units	**To Convert**	**Multiply by**
$mm^2 > in.^2$	sq. millimetres into sq. inches	1.550×10^{3}
$cm^2 > in.^2$	sq. centimetres into sq. inches	0.1550
$m^2 > ft^2$	sq. metres into sq. feet	10.7639
$m^2 > yd^2$	sq. metres into sq. yards	1.19599
$m^2 > ac$	sq. metres into acres	2.47105×10^{4}
$km^2 > mi^2$	sq. kilometres into sq. miles	0.3861
$km^2 > ac$	sq. kilometres into acres	247.105
ha > ac	hectares into acres	2.47105

Volume and Capacity		
Units	**To Convert**	**Multiply by**
$cm^3 > in.^3$	cu. centimetres into cu. inches	0.06102
$m^3 > ft^3$	cu. metres into cu. feet	35.3147
$m^3 > yd^3$	cu. metres into cu. yards	1.30795
l > $in.^3$	litres into cu. inches	61.03
l > pt	litres into pints	1.7598
l > qt	litres into quarts	0.8799
l > UK gal	litres into UK gallons	0.219976
l > US gal	litres into US gallons	0.264178

Non-metric to Metric

Power		
Units	**To Convert**	**Multiply by**
hp > kW	horsepower into kilowatts	0.7457
hp > PS	horsepower into metric horsepower	1.01387
ft lb–f/s > kW	foot pounds - force per second into kilowatts	0.001356

Force		
Units	**To Convert**	**Multiply by**
lbf > N	pounds force into newtons	4.44822
pdl > N	poundals into newtons	0.138255
kN > t	kilonewtons into tons	0.10197

Velocity		
Units	**To Convert**	**Multiply by**
mph > km/h	miles per hour into kilometres per hour	1.609344
ft/s > cm/s	feet per second into metres per second	0.3048
ft/s > cm/s	feet per second into centimetres per second	30.48

To Calculate	Multiply
area of triangle	base by ½ height
area of circle	$(\text{diameter})^2$ by 0.7854
area of sector of circle	arc by ¼ diameter
area of square rhombus	base by height
area of equaliteral triangle	$(\text{side})^2$ by 0.433
area of trapezium	height by ¼ sum of parallel sides
area of ellipse	major axis by minor axis × 0.7854
circumference of circle	diameter by 3.1416
convex surface of sphere	$(\text{diameter})^2$ by 3.1416
surface of cone	½ side by perimeter of base + area of base
solidity of sphere	$(\text{diameter})^3$ by 0.5236
volume of cylinder	area of base by height
content of cube or prism	length by breadth of depth
content of cone	height by 1/3 area of base
volume of hexagonal prism	$(\text{side})^2$ by height by 2.598

Metric to non-metric

Power		
Units	**To Convert**	**Multiply by**
kw > hp	kilowatts into horsepower	1.341
PS > hp	metric horsepower into horsepower	0.98632
PS > ft.lbf/s	metric horsepower into foot pounds – force per second	542.48

Force		
Units	**To Convert**	**Multiply by**
N > lbf	newtons into pounds force	0.2248
N > pdl	newtons into poundals	7.2330
t > kN	tons into kilonewtons	9.8066

Velocity		
Units	**To Convert**	**Multiply by**
cm/s > ft/s	centimetres per second into feet per second	0.03281
m/s > ft/min	metres per second into feet per minute	196.9
m/s > ft/s	metres per second into feet per second	3.281
km/h > mph	kilometres per hour into miles per hour	0.6214

A

Abrasion Resistance: The ability of a material or surface to withstand mechanical action such as rubbing, scraping, or erosion, that tends progressively to remove material from its surface.

AISI: Abbr. *American Iron and Steel Institute,* defines the standardised numbered AISI steel grades by American Iron and Steel Institute.

API: Abbr. *American Petroleum Institute*

Attachments: Any attachment, such as hooks or links, should have a rated Work Load Limit at least equal to the chain with which it is used.

B

Black: Term used to describe a product that is in its natural state and has not been galvanised.

Break Load: The load at which a product may fail and release the load.

Break Strength: See Break Load

BS: Abbr. *British Standard*

C

Carbon Steel: Lower grade steel, generally 300 MPa

Cast Steel: Material used in the casting process to manufacture a product. The molten material is poured into a mould and left to harden.

Chain Size: The diameter of the chain link material.

Chemical Resistance: The ability of a material to withstand exposure to acids, alkalis, solvents and other chemicals.

Clevis Type: The u-shaped top fitting on a hook that allows for direct connection between chain and hook without the need for a connecting link. Also known as pin coupling.

Competent Person: An individual who through knowledge, experience and training is able to perform certain tasks within the lifting and rigging industry. A formal certificate from ECSA may be required depending on the task. See also LMI and LTI.

D

DIN: Abbr. *Deutsches Institut für Normung* (German Institute for Standardisation), the German national organisation for standardisation and is that country's ISO member body.

DNV: Abbr. *Det Norske Veritas:* Norwegian headquarters of international organisation for standardisation.

Drop Forged: Method of manufacturing a product. The product is hot formed using a stamping process.

Duty Rating: The number of repetitive cycles a product is required to perform during testing, Also called E.D. Rating.

E

ECSA: Abbr. *Engineering Council of South Africa:* The governing body and statutory leg of the engineering profession.

EIPS: Abbr. *Extra Improved Plough Steel*

Electro Galvanised: Method of finishing whereby an electric current is used to induce a chemical reaction to coat steel with zinc.

EN: Technical European Standards developed by the European Committee for Standardisation to harmonise material or product specifications.

Eye Type: The round top fitting on a hook that only allows connection between the chain and the hook with a connecting link.

F

Factor of Safety: Industry term denoting theoretical reserve capability. Usually computed by dividing the catalogue stated ultimate load by the catalogue stated Work Load Limit and generally expressed as a ratio, for example 5:1.

FC: Abbr. *Fibre Core:* Inner core of a wire rope made from man-made fibre material.

Forged High Alloy Steel: Method of manufacturing a product by forming it into shape with a hydraulic machine and then heat treating the product. High alloy steel provides better mechanical properties or greater resistance to corrosion.

Forged Steel: Method of manufacturing a product by forming it into shape with a hydraulic machine and then heat treating the product. Also see drop forged and fully forged.

FOS: Abbr. *Factor of Safety*

Fully Forged Steel: Refers to the process of making steel objects by forming them into shape with hydraulic machines (as opposed to casting), and then heat treating the product. Fully forged steel is stronger and less prone to cracking than cast parts.

G

Gr T(8): Abbr. *Grade 80 Alloy Chain*

H

Hard Eye: The end termination of a SWR sling made by looping the wire back around a thimble and through a ferrule to create an eye. Hard eyes should always be used when adding end fittings to a SWR sling.

High Tensile Steel: Steel with a higher yield point than that of mild steel and which is used, where necessary, for engineering structures or machine parts.

Hot-Dip Galvanised: Method of using molten zinc to coat steel.

I

I-Beam: Steel beam used in building construction.

ID Tag: Abbr. *Identity Tag*: Used to identify the Lifting Machine or Lifting Tackle. This should be affixed to the item having the information as defined in the various specifications permanently embossed, engraved or stamped. For slings, this should not be

a washer.

IPS: Abbr. *Improved Plough Steel*

ISO: Abbr. *International Standards Organisation*

IWRC: Abbr. *Inner Wire Rope Core*: Inner core of a wire rope made from steel wire.

L

LEEASA: Abbr. *The Lifting Equipment Engineering Association of South Africa*

Lifting Machine / **Appliance:** Any mechanical device capable of raising or lowering a load e.g. crane, chain block hoist.

Lifting Tackle / **Accessories:** Any device which is used or designed to be used directly or indirectly to connect a load to a lifting machine / appliance and which does not form part of the load, e.g. sling, shackle, eyebolt. Also know as "Below the Hook" equipment.

LME: Abbr. *Lifting Machinery Entity* (Companies, Close Corporations and or Sole Proprietors)

LMI: Abbr. *Lifting Machinery Inspector*, an individual person registered with ECSA, who is able to perform inspections and tests on lifting machinery/appliances.

LTI: Abbr. *Lifting Tackle Inspector*, an individual qualified by knowledge, experience and training, who is able to perform inspections and tests on lifting tackle/accessories.

M

Mild Carbon Steel: Steel with less than 0.15% carbon Mild Steel: Hot-rolled steel

Minimum Break Force: The force at which a product will fracture. This is specified by the manufacturer and is less than the actual break force.

Minimum Break Load: The minimum load at which a product may fail and release the load.

Minimum Ultimate Load: The minimum load at which a new chain will break when tested by applying direct tension to a straight length of chain at a uniform rate of speed in a testing machine.

N

Nominal Break: The force at which a product will fracture.

P

Powder Coated: Type of coating, which is applied as a free-flowing, dry powder. The coating is typically applied electrostatically and is then cured under heat to allow it to flow and form a coat.

Proof Load: The load applied in excess of the Work Load Limit. At this load, the product should show no visual deformation.

Proof Test: The tensile test applied to new chain for the sole purpose of detecting injurious defects in the material or manufacture. It is the load which the chain has withstood under a test in which the load has been applied in direct tension to a straight length of chain.

PVC Covered: Method of encasing steel wire rope with a PVC sheath.

R

Rated Load: The maximum recommended load that should be exerted on the item. Also used for the Rated Load: Work Load Limit (WLL), and “Resultant Safe Working Load”. All Rated Load values – unless noted otherwise – are for in-line pull with respect to the centerline on the item.

Reach: Is the distance between the upper and lower load bearing points of a sling or hoist. Also known as "Pull to Pull".

S

SABS: Abbr. *South African Bureau of Standards;* now SANS

Safe Work Load Limit: The maximum load a piece of equipment is capable of raising, lowering or suspending under particular service conditions. The SWL can be less than the WLL if the working conditions are extreme but it can never be more.

SANS: Abbr. *South African National Standards*

Shock Load: The resulting load for a rapid change of movement, such as impacting or jerking of a static load. A shock load is generally significantly greater than the static load.

Sling Angle: The angle between legs of a multi-leg sling. Usually show as angle from the vertical or angle between legs. As the angle between the legs increases the WLL of the sling decreases.

Soft Eye: The end termination of a SWR sling made by looping the wire back through a ferrule to create an eye.

Standard Lift: Standard height a chain or lever hoist is required to lift or lower a load. This depends on the length of load and hand chain fitted to the hoist.

Swage: The process of clamping together steel wire rope using a ferrule in order to make an eye.

SWL: Abbr. *Safe Work Load Limit*

SWR: Abbr. *Steel Wire Rope*

T

Test Certificate: A detailed record issued by the manufacturer of a product stating Work Load Limit and Factor of Safety. This document highlights the capacity of the product and how it should be used.

Test Load: The force to which a product is tested. At this load, the product should show no visual deformation.

Tolerance: The permissible variation of an object or objects in some characteristic such as hardness, weight, or quantity. The permissible range of variation in a dimension of an object.

U

Uniform Load method calculation: The method of calculating the Work Load Limit for multi-leg slings using the assumption that the load will be evenly distributed to each leg and that each leg will therefore carry the same force.

W

WLL: Abbr. *Work Load Limit*

Work Load Limit: The maximum load which should be applied to a chain, when the chain is new or “in as new” condition, and when the load is uniformly applied in direct tension to a straight length of chain.

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