



Advantages of Sun Alloy G 120

Durability: higher wear resistance due to increased hardness

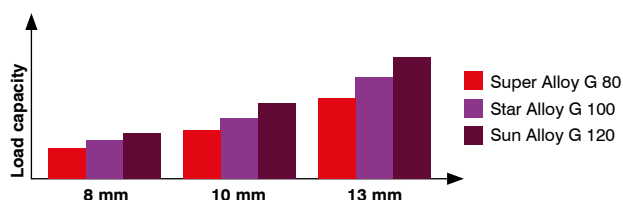
Simple: smart and easy assembling of chain slings

Traceability: appropriate marking on chains & components

Quality: ISO 9001 certified company

Reliability: Decades of experience

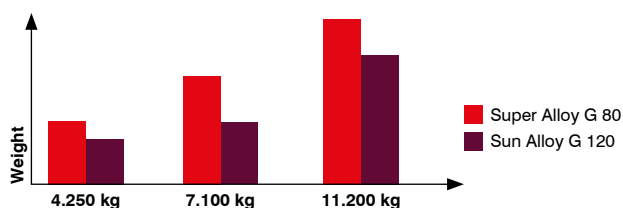
Strong: 50 % higher load capacity compared to G 80, 20 % higher load capacity compared to G 100



e.g. 2-leg chain slings

Working Load Limit kg	Previous Chain – Ø G 80 mm	Sun Alloy-Chain – Ø mm
4,250	10	8
7,100	13	10
11,200	16	13

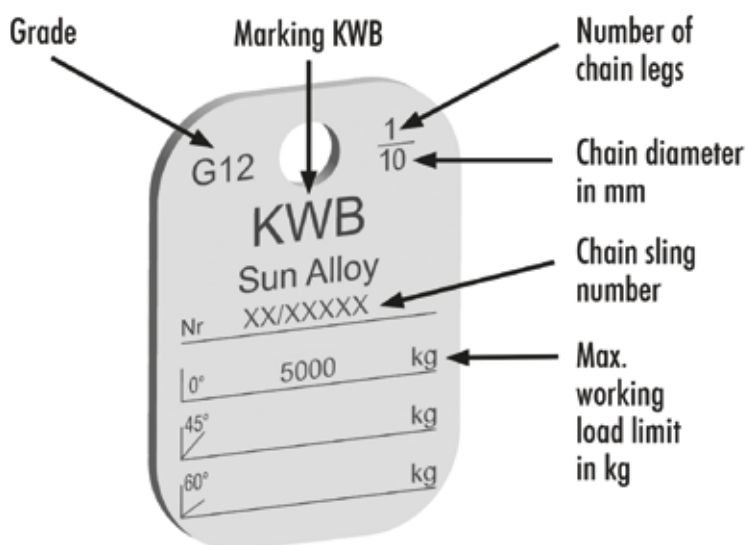
Light: Obvious weight reduction and consequently easier handling



e.g. with 2-leg chain slings 3 m length

Working Load Limit kg	Previous Chain Weight G 80 mm	Sun Alloy-Chain Weight kg
4,250	11	7.5
7,100	19.6	12.9
11,200	31.2	22.4

Clear Identification



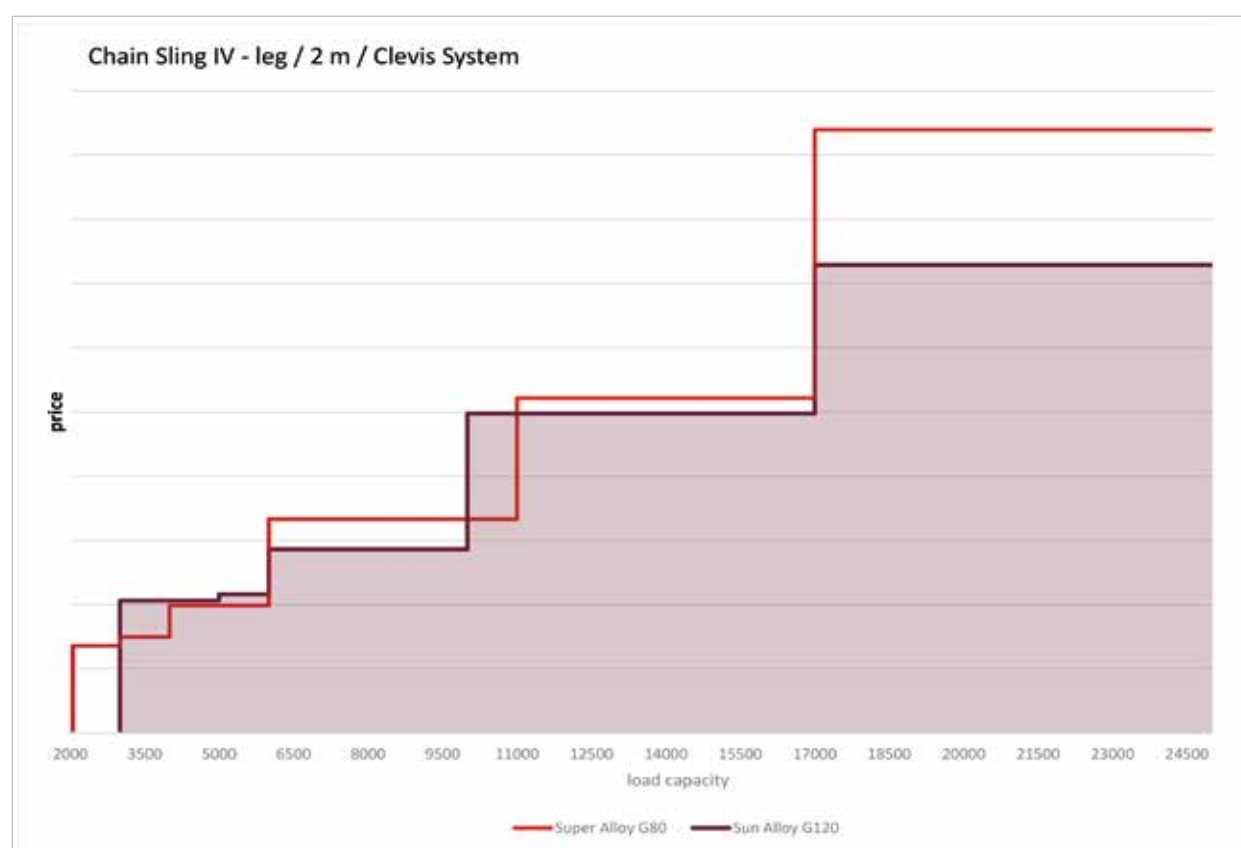
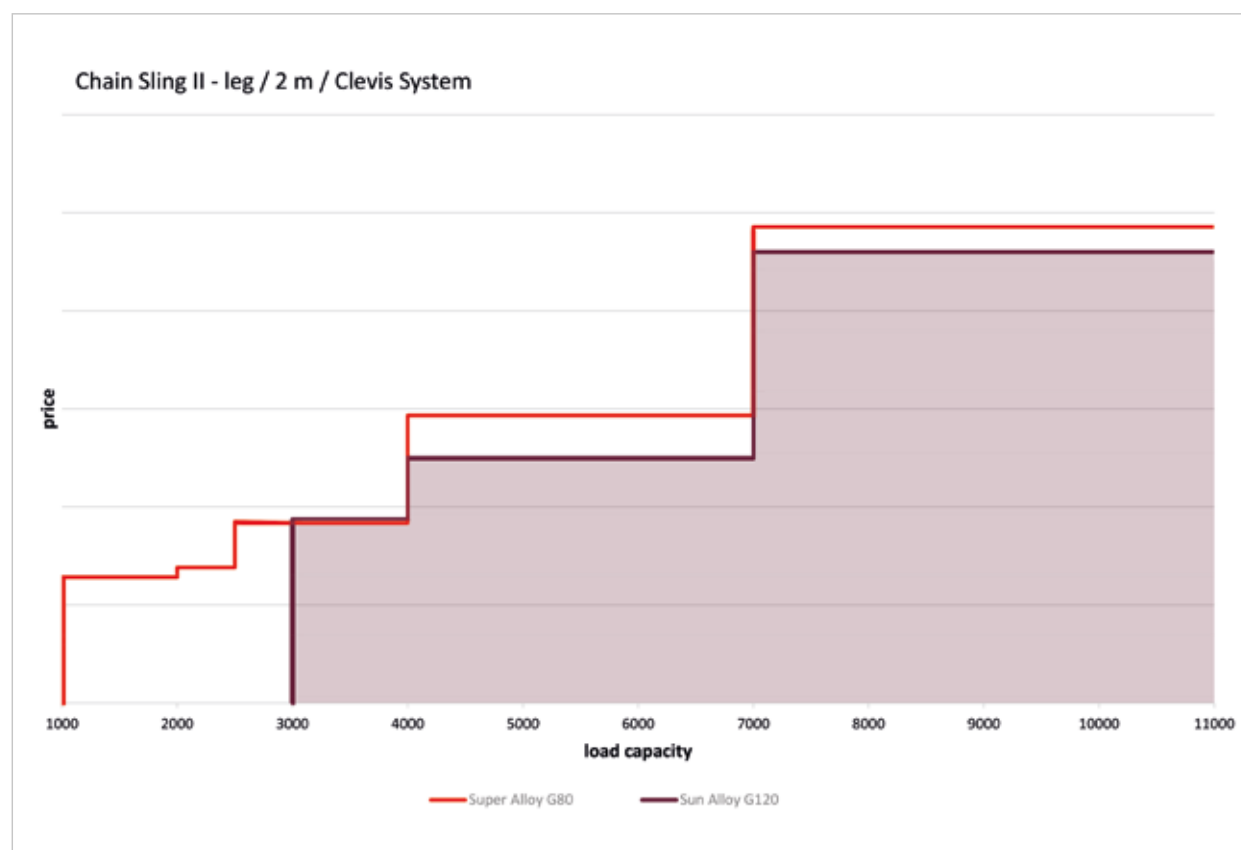
Sample of tag for ready made chain sling

Certificate

A test certificate is issued for all our products which certifies all the specified characteristics.



Economic: cheaper compared to G 80



Sun Alloy G 120 – Characteristics

Chain Quality:	Sun Alloy Chain	SUN	Corresponds with EN 818-2 & machinery directive 2006/42/EC
Stress at Load Capacity Limit:			300 N/mm ²
Test Stress:			750 N/mm ² – corresponds to 2.5 times the load capacity
Breaking Stress:			1.200 N/mm ² – corresponds to 4 times the load capacity
Breaking Elongation:			min. 20 %
Bending acc. to EN 818-2:			0.8 x nominal diameter
Permissible Working Temperature:	Sun Alloy Chain	SUN	max. 200 °C
	Components		max. 200 °C
Grade marking:	Sun Alloy Chain	SUN	12
	Components		12
Surface:	Sun Alloy Chain	SUN	Bordeaux Violet painted
	Components		Bordeaux Violet powder coated

Working Load Tag:



All the required data is shown on the working load tag.

Note: Working load tags should only be assembled acc. EN 818-4 and by competent persons. Working load tags should be used, solely when the respective chain & KWB components are assembled in the chain sling. Should alternative Working load limits arise in the chain sling through the use of special parts, the tags are impermissible. Disregard of these instructions can lead to material damage and personal injury. KWB will not assume liability.

Temperature	-40° to 200 °C		
Load Factor Sun Alloy	1		
Asymmetric Load Distribution	In this case the working load limit must be reduced by at least one chain leg, for example a 3-leg or 4-leg sling is to be classified as a 2-leg chain sling. In case of doubt, it must be supposed that only one of the chain legs carries the entire load.		
Edge Loads	R = larger than 2x chain Ø 	R = larger than chain Ø 	R = chain Ø or smaller 
Load Factor	1	0.7	0.5
Impact Load	slight impact	medium impact	strong impact
Load Factor	1	0.7	impermissible

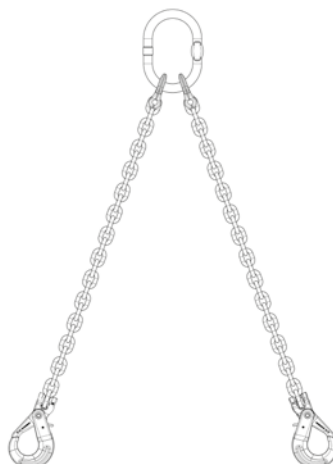
Sling Examples



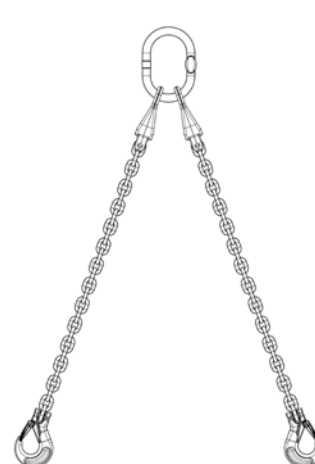
I GTKR/SUN - HKS/SUN



I GTVK/SUN - HKS/SUN



II GTKR/SUN - HKS/SUN



II GTVK/SUN - HKS/SUN



IV GTKR/SUN - HKS/SUN



IV GTVK/SUN - HKS/SUN

Example of Order Text:

Chain Sun Alloy SUN 10 mm, 2 legs with Special Clevis Sub-Assembly GTKR/SUN and Clevis Sling Hook HKS/SUN, length 2,000 mm.

SUN 10 II GTKR/SUN - HKS/SUN 2000

Chain

Nominal diameter

Number of legs

Special Clevis Sub-Assembly

Hook

Length

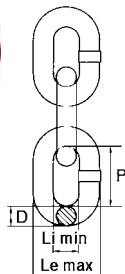
Sub-Assemblies					
		1-leg		2-leg	
					
Sun Alloy Chain Ø SUN		Special Clevis Sub-Assembly GTKV/SUN 1		Special Clevis Sub-Assembly GTKR/SUN 2	
mm	inch	Code	Code	Code	Code
7	9/32	GTKV/SUN 1-7	GTKR/SUN 1-7	GTKV/SUN 2-7	GTKR/SUN 2-7
8	5/16	GTKV/SUN 1-8	GTKR/SUN 1-8	GTKV/SUN 2-8	GTKR/SUN 2-8
10	3/8	GTKV/SUN 1-10	GTKR/SUN 1-10	GTKV/SUN 2-10	GTKR/SUN 2-10
13	1/2	GTKV/SUN 1-13	GTKR/SUN 1-13	GTKV/SUN 2-13	GTKR/SUN 2-13
16	5/8	GTKV/SUN 1-16	GTKR/SUN 1-16	GTKV/SUN 2-16	GTKR/SUN 2-16
Page 11		Page 12		Page 13	

Sub-Assemblies					
		3 & 4-leg			
					
Sun Alloy Chain Ø SUN		Special Clevis Sub-Assembly GTKV/SUN 4		Special Clevis Sub-Assembly GTKR/SUN 4	
mm	inch	Code	Code	Code	Code
7	9/32	GTKV/SUN 4-7	GTKR/SUN 4-7	GTKV/SUN 4-7	GTKR/SUN 4-7
8	5/16	GTKV/SUN 4-8	GTKR/SUN 4-8	GTKV/SUN 4-8	GTKR/SUN 4-8
10	3/8	GTKV/SUN 4-10	GTKR/SUN 4-10	GTKV/SUN 4-10	GTKR/SUN 4-10
13	1/2	GTKV/SUN 4-13	GTKR/SUN 4-13	GTKV/SUN 4-13	GTKR/SUN 4-13
16	5/8	GTKV/SUN 4-16	GTKR/SUN 4-16	GTKV/SUN 4-16	GTKR/SUN 4-16
Page 11		Page 12		Page 13	

Sling Hooks					
					
Sun Alloy Chain Ø SUN		Clevis Self Locking Hook HKSB/SUN		Clevis Sling Hook with forged Safety Latch HKS/SUN	
mm	inch	Code	Code	Code	Code
7	9/32	HKSB/SUN 7	HKS/SUN 7	HKSB/SUN 7	HKS/SUN 7
8	5/16	HKSB/SUN 8	HKS/SUN 8	HKSB/SUN 8	HKS/SUN 8
10	3/8	HKSB/SUN 10	HKS/SUN 10	HKSB/SUN 10	HKS/SUN 10
13	1/2	HKSB/SUN 13	HKS/SUN 13	HKSB/SUN 13	HKS/SUN 13
16	5/8	HKSB/SUN 16	HKS/SUN 16	HKSB/SUN 16	HKS/SUN 16
Page 11		Page 13		Page 13	

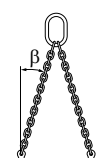
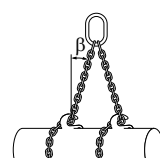
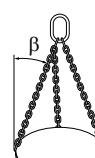
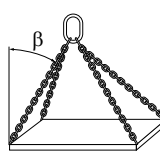
Sun Alloy Chain

Chain Sun Alloy SUN – Measurements, Load Values, Weights



Chain		Pitch	Li/min.	Le/max.	Weight	Working Load limit	Breaking Load
D	P						
mm	inch	mm	mm	mm	kg/m	kg	kN
7	9/32	21	9.8	26.0	1.33	2,360	92.6
8	5/16	24	11.0	30.5	1.59	3,000	118
10	3/8	30	14.3	38.0	2.66	5,000	196
13	1/2	39	18.0	48.5	4.43	8,000	319
16	5/8	48	21.5	59.0	6.73	12,200	479

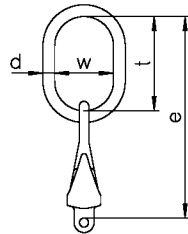
Maximum Working Load Limit for Sun Alloy Chains

Safety factor	1-leg Chains		2-leg Chains				3- and 4-leg Chains	
4								
	-	-	up to 45°	45°-60°	up to 45°	45°-60°	up to 45°	45°-60°
	1	0.8	1.4	1	1.12	0.8	2.1	1.5
	Load Capacity [kg]							
Ø								
7	2,360	1,900	3,350	2,360	2,650	1,900	5,000	3,550
8	3,000	2,360	4,250	3,000	3,350	2,360	6,300	4,500
10	5,000	4,000	7,100	5,000	5,600	4,000	10,600	7,500
13	8,000	6,300	11,200	8,000	9,000	6,300	17,000	11,800
16	12,200	9,700	17,000	12,200	13,600	9,700	25,600	18,300

If the chain slings are used in more demanding conditions (e.g. high temperature, asymmetric load distribution, edge loads, impacts) the maximum load capacities in the table must be reduced. Please use the load factors on page 8 and refer to the specification in the user information.

Sub-Assemblies

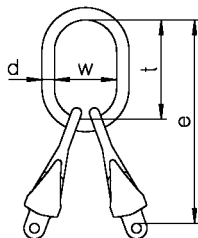
1 Special Clevis Sub-Assembly GTVK/SUN



For 1-leg slings with shortening element.

Chain Ø		Code	Can be used to single hook acc. to DIN15401 no.	Dimensions				Weight	Working Load Limit
				d	t	w	e		
mm	inch			mm				kg	kg
7	9/32	GTKV/SUN 1-7	4	14	120	70	244	1.22	2,360
8	5/16	GTKV/SUN 1-8	5	17	140	80	264	1.48	3,000
10	3/8	GTKV/SUN 1-10	6	19	160	95	318	2.63	5,000
13	1/2	GTKV/SUN 1-13	10	27	190	110	391	6.11	8,000
16	5/8	GTKV/SUN 1-16	12	30	190	110	423	8.90	12,200

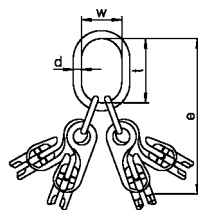
2 Special Clevis Sub-Assembly GTVK/SUN



For 2-leg slings with shortening element.

Chain Ø		Code	Can be used to single hook acc, to DIN15401 no.	Dimensions				Weight	Working Load Limit β	
∧				d	t	w	e		up to 45°	45°-60°
mm	inch			mm				kg	kg	kg
7	9/32	GTVK/SUN 2-7	6	19	160	95	284	2.62	3,350	2,360
8	5/16	GTVK/SUN 2-8	6	19	160	95	284	2.64	4,250	3,000
10	3/8	GTVK/SUN 2-10	10	23	170	105	328	4.83	7,100	5,000
13	1/2	GTVK/SUN 2-13	10	30	190	110	391	10.54	11,200	8,000
16	5/8	GTVK/SUN 2-16	12	38	275	150	508	18.33	17,000	12,200

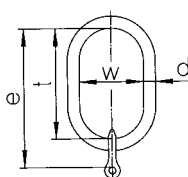
4 Special Clevis Sub-Assembly GTVK/SUN



For 3 and 4-leg slings with shortening element.

Chain Ø		Code	Can be used to single hook acc, to DIN15401 no.	Dimensions				Weight	Working Load Limit β	
				d	t	w	e		up to 45°	45°-60°
mm	inch			mm				kg	kg	kg
7	9/32	GTVK/SUN 4-7	10	27	190	110	368	6.35	5,000	3,550
8	5/16	GTVK/SUN 4-8	10	27	190	110	368	6.39	6,300	4,500
10	3/8	GTVK/SUN 4-10	12	30	190	110	433	10.94	10,600	7,500
13	1/2	GTVK/SUN 4-13	12	38	275	150	616	25.35	17,000	11,800
16	5/8	GTVK/SUN 4-16	12	38	275	150	658	37.17	25,600	18,300

1 Special Clevis Sub-Assembly GTKR/SUN



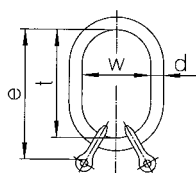
For 1-leg slings.

Chain Ø		Code	Can be used to single hook acc. to DIN15401 no.	Dimensions				Weight	Working Load Limit
⊥				d	t	w	e		
mm	inch			mm				kg	kg
7	9/32	GTKR/SUN 1-7	4	14	120	70	163	0.66	2,360
8	5/16	GTKR/SUN 1-8	5	17	140	80	183	0.92	3,000
10	3/8	GTKR/SUN 1-10	6	19	160	95	211	1.55	5,000
13	1/2	GTKR/SUN 1-13	10	27	190	110	254	3.34	8,000
16	5/8	GTKR/SUN 1-16	12	30	190	110	268	4.92	12,200

2 Special Clevis Sub-Assembly GTKR/SUN



For 2-leg slings.

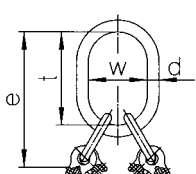


Chain Ø		Code	Can be used to single hook acc. to DIN15401 no.	Dimensions				Weight	Working Load Limit β	
Λ				d	t	w	e		up to 45°	45°-60°
mm	inch			mm				kg	kg	kg
7	9/32	GTKR/SUN 2-7	6	19	160	95	203	1.50	3,350	2,360
8	5/16	GTKR/SUN 2-8	6	19	160	95	203	1.52	4,250	3,000
10	3/8	GTKR/SUN 2-10	10	23	170	105	221	2.67	7,100	5,000
13	1/2	GTKR/SUN 2-13	10	30	190	110	257	5.00	11,200	8,000
16	5/8	GTKR/SUN 2-16	12	38	275	150	353	10.37	17,000	12,200

4 Special Clevis Sub-Assembly GTKR/SUN



For 3 and 4-leg slings.



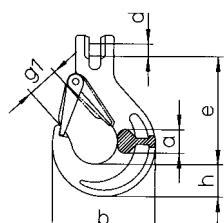
Chain Ø		Code	Can be used to single hook acc. to DIN15401 no.	Dimensions				Weight	Working Load Limit β	
				d	t	w	e		up to 45°	45°-60°
mm	inch			mm				kg	kg	kg
7	9/32	GTKR/SUN 4-7	10	27	190	110	287	4.11	5,000	3,550
8	5/16	GTKR/SUN 4-8	10	27	190	110	287	4.15	6,300	4,500
10	3/8	GTKR/SUN 4-10	12	30	190	110	326	6.62	10,600	7,500
13	1/2	GTKR/SUN 4-13	12	38	275	150	479	14.27	17,000	11,800
16	5/8	GTKR/SUN 4-16	12	38	275	150	503	21.25	25,600	18,300

Sling Hooks

Clevis Sling Hook with Forged Safety Latch HKS/SUN



General purpose hook.

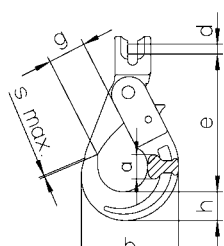


Chain		Code	Dimensions						Weight	Working Load Limit
			e	h	a	b	d	g1		
mm	inch		mm						kg	kg
7	9/32	HKS/SUN 7	93	27	21	89	9,5	26	0.67	2,360
8	5/16	HKS/SUN 8	92	27	21	89	11	26	0.67	3,000
10	3/8	HKS/SUN 10	108	33	25	110	14	31	1.23	5,000
13	1/2	HKS/SUN 13	130	41	34	132	17,5	38	2.42	8,000
16	5/8	HKS/SUN 16	158	49	37	160	21	45	4.22	12,200

Clevis Self Locking Hook HKSB/SUN



Closes and locks automatically.



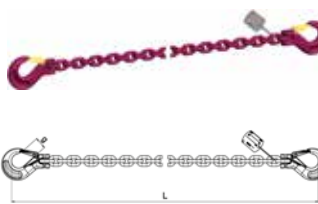
Chain		Code	Dimensions							Weight	Working Load Limit
			e	h	a	b	d	g	s max.		
mm	inch		mm							kg	kg
7	9/32	HKSB/SUN 7	125	26	21	92	9,5	32	1	0.94	2,360
8	5/16	HKSB/SUN 8	124	26	21	92	11	32	1	0.95	3,000
10	3/8	HKSB/SUN 10	143	31	26	115	14	45	1	1.91	5,000
13	1/2	HKSB/SUN 13	183	42	35	145	17,5	54	2	3.66	8,000
16	5/8	HKSB/SUN 16	218	51	41	169	21	60	2	6.80	12,200

SUN Alloy lashing

Load Binder RLSP/SUN

	Code	Marking/ Stamping	LC Lashing capacity [kN]	STF Standard tension force [daN]	Length L closed [mm]	Length L opened [mm]	Tension distance [mm]	Lever length l [mm]	Jaw opening g [mm]	Weight [kg/pc.]
	RLSP/SUN 8	Type A	60	1.900	473	615	140	237	10	4,30
	RLSP/SUN 10	Type B	100	3.000	504	657	140	355	13	6,20
	RLSP/SUN 13	Type C	160	2.500	765	1.054	290	359	16	13,30

Lashing chain ZK/SUN

	Code	LC Lashing capacity [kN]	Length L [mm]	Jaw opening g [mm]	Weight [kg/pc.]
	ZK/SUN 8	60	3.500	26	6,90
	ZK/SUN 10	100	3.500	31	11,10
	ZK/SUN 13	160	3.500	38	19,10

Spare Parts

Forged Safety Latch Kits for Clevis Sling Hooks

	Dimension		Code	Spare Part for
	mm	inch		
	7+8	9/32+5/16	FG/SUN 7/8	HKS/SUN 7, HKS/SUN 8
	10	3/8	FG/SUN 10	HKS/SUN 10
	13	1/2	FG/SUN 13	HKS/SUN 13
	16	5/8	FG/SUN 16	HKS/SUN 16

Pin Kit for Clevis Self Locking Hook & Special Clevis Sub Assembly

	Dimension		Code	Accessory for use
	mm	inch		
	7	9/32	KBG/SUN 7	HKS/SUN 7, HKSB/SUN 7, GTVK/SUN ...-7, GTKR/SUN ...-7
	8	5/16	KBG/SUN 8	HKS/SUN 8, HKSB/SUN 8, GTVK/SUN ...-8, GTKR/SUN ...-8
	10	3/8	KBG/SUN 10	HKS/SUN 10, HKSB/SUN 10, GTVK/SUN ...-10, GTKR/SUN ...-10
	13	1/2	KBG/SUN 13	HKS/SUN 13, HKSB/SUN 13, GTVK/SUN ...-13, GTKR/SUN ...-13
	16	5/8	KBG/SUN 16	HKS/SUN 16, HKSB/SUN 16, GTVK/SUN ...-16, GTKR/SUN ...-16

Trigger Kit for Clevis Self Locking Hooks

	Dimension		Code	Spare Part for
	mm	inch		
	7+8	9/32+5/16	HBG/SUN 7/8	HKSB/SUN 7 + HKSB/SUN 8
	10	3/8	HBG/SUN 10	HKSB/SUN 10
	13	1/2	HBG/SUN 13	HKSB/SUN 13
	16	5/8	HBG/SUN 16	HKSB/SUN 16

Working Load Tag with Wire Rope Binder and Fastener

	Code	
	ID-Set	1/2/3/4-legs