

GRADE 80 ALLOY STEEL CHAIN

CARE, USE & INSPECTION OF GRADE 80 CHAIN & SLINGS

CARE

- 1. WORKING LOAD LIMIT** - Select the proper size chain for the job keeping within the working load limits shown. The angle of inclination of the chain sling branches must be considered in determining the chain size for the job.
- 2. REMOVAL FROM SERVICE** - Before and after each use all chain slings regardless of type should be carefully inspected and if found defective removed from service immediately for repair or destruction.
- 3. OVERLOADING** - Individuals responsible for chain slings should repeatedly check the capacity of chain slings and the angle of loads to be lifted, thus avoiding overloading, the primary cause of damage to chain slings.
- 4. KINKS, TWISTS, KNOTS** - These are to be avoided when applying the load to the sling.
- 5. STRETCH** - Detect stretch by conducting a visual link by link inspection of the chain sling. Once a chain has been stretched it is unfit for further service and is to be replaced.
- 6. WEAR** - Wear occurs primarily on the inside of the links where the adjoining links are seated. When wear is noticed, separate each link, measure the bearing thickness at each end, and, if greater than TABLE B remove from service.

Chain Size	Max. Allowable Wear	Chain Size	Max. Allowable Wear
1/4	3/64	5/8	9/64
3/8	5/64	3/4	5/32
1/2	7/64	7/8	11/64

Table B

USE

- 1. ORGANIZATION OF CHAIN SLING MAINTENANCE** - A regular Chain Sling Maintenance system should be set up which will make certain individuals fully responsible. The result will be properly cared for slings, which will receive regular periodic inspections, causing unsafe slings to be removed from service.
- 2. CLEANING** - Chain Sling should be cleaned regularly as grit and dirt cause wear at link bearing point.
- 3. STORAGE** - Before prolonged storage, Chain Slings should be oiled and hung in a clean, dry place. They should never be placed on the floor as they are subject to damaging abuse.
- 4. ANNEALING** - Never anneal. Alloy chain is heat treated to provide high strength and long wear and annealing will damage the effects of the heat treatment.

INSPECTION

- 1. CLEAN** - Clean before inspection to detect gouges, nicks, and bent links.
- 2. HANG IN VERTICAL POSITION** - Provides quick preliminary inspection.
- 3. MEASURE THE REACH** - If the uniform reach of the assembly exceeds 6% of the original length, the assembly is to be removed from service.
- 4. STRETCH AND WEAR INSPECTION** - Lift each link and look for grooving. If grooving is not apparent, check clearance between links.
- 5. LINK BY LINK INSPECTION** - Check each link - the following are danger signs: twisted and bent links, cracks in any section of the link, marks, scores or nicks, pits from corrosion, lifted fins, (usually caused by overloads), wear at bearing points, stretched links, binding, caused by link collapse at the sides because of stretch or by being crushed under a load.
- 6. ATTACHMENTS** - Check master links, pear-shaped links, rings, etc., for above defects. Look for spread in the throat of the hooks, Watch for gouged or deformed attachments.

IMPORTANT WARNING:

Failure to follow the usage recommendation contained herein could result in premature failure of the chain possibly causing severe injury or death.

DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

Chain Sling Configurations

The Slings shown here are standard assemblies that can be made from "Proof Tested" Components and Alloy Chain.



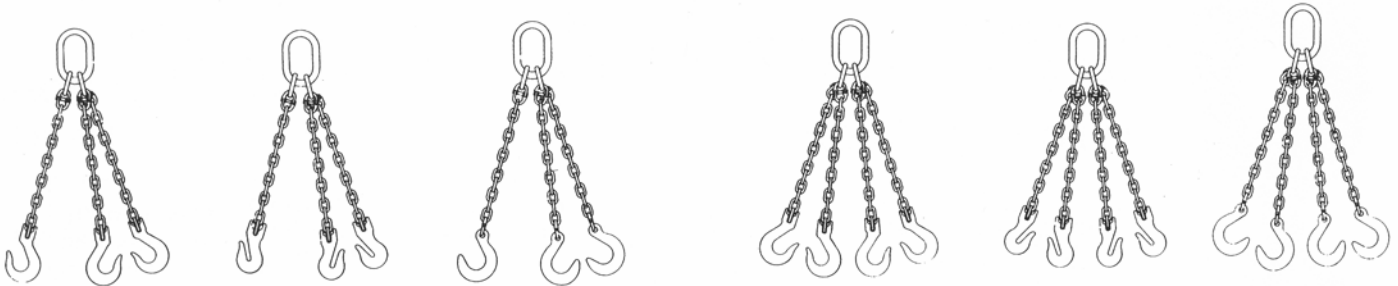
TYPE CO TYPE SOS TYPE SOG TYPE SOF TYPE SSS TYPE SGG TYPE SGS TYPE ASOS

Type	Description	Type	Description
CO	Single Chain Sling with Master Link each end	SSS	Single Chain Sling with Sling Hook each end
SOS	Single Chain Sling with Master Link and Sling Hook	SGG	Single Chain Sling with Grab Hook each end
SOG	Single Chain Sling with Master Link and Grab Hook	SGS	Single Chain Sling with Grab Hook and Sling Hook
SOF	Single Chain with Master Link and Foundry Hook	ASOS	Adjustable Single Chain Sling with Master Link and Sling Hook



TYPE DOS TYPE DOG TYPE DOF TYPE ADOS

Type	Description
DOS	Double Chain Sling with Master Link and Sling Hook
DOG	Double Chain Sling with Master Link and Grab Hook
DOF	Double Chain Sling with Master Link and Foundry Hook
ADOS	Adjustable Double Chain Sling with Master Link and Sling Hook










TYPE TOS TYPE TOG TYPE TOF TYPE QOS TYPE QOG TYPE QOF

Type	Description	Type	Description
TOS	Triple Chain Sling with Master Link and Sling Hook	QOS	Quadruple Chain Sling with Master Link and Sling Hook
TOG	Triple Chain Sling with Master Link and Grab Hook	QOG	Quadruple Chain Sling with Master Link and Grab Hook
TOF	Triple Chain Sling with Master link and Foundry Hook	QOF	Quadruple Chain Sling with Master Link and Foundry Hook

Alloy Chain Slings

WORKING LOAD LIMIT — 4 TO 1 DESIGN FACTOR

Grade 80 Ratings

8 Alloy Chain Size		Single Leg	Double Leg				Triple and Quad Leg		
(mm)	(in.)	90° 	60° 	45° 	30° 	60° 	45° 	30° 	
7	1/4 (9/32)	3500	6100	4900	3500	9100	7400	5200	
8	5/16	4500	7800	6400	4500	11700	9500	6800	
10	3/8	7100	12300	10000	7100	18400	15100	10600	
13	1/2	12000	20800	17000	12000	31200	25500	18000	
16	5/8	18100	31300	25600	18100	47000	38400	27100	
20	3/4	28300	49000	40000	28300	73500	60000	42400	
22	7/8	34200	59200	48400	34200	88900	72500	51300	
26	1	47700	82600	67400	47700	123900	101200	71500	
32	1 1/4	72300	125200	102200	72300	187800	153400	108400	

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

SAFETY NOTE:

A quad branch chain sling, especially when used on a load of rigid structure is usually not sustaining the load evenly distributed on each of its four branches. The maximum working load limits are therefore set at the same values as for triple branch chain slings of equal quality and size and used with branches at same angle of inclination.

USE OF CHAIN UNDER HEAT CONDITIONS

When the chain itself is heated to temperatures shown below, the Working Load Limits should be reduced as indicated.

Temperature of Chain	Reduction in Working Load Limit While Heated	Permanent Reduction in Working Load Limit
500°F	none	none
600°F	10%	none
700°F	20%	none
800°F	30%	none
900°F	40%	10%
1000°F	50%	15%

For ratings on GR100 chain slings, please contact us.

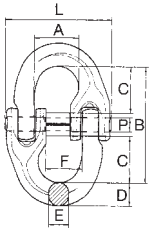


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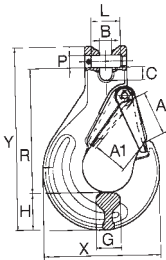
Chain Sling Components – Alloy Grade 80 and Grade 100

Weisslocks (G80 & G100)



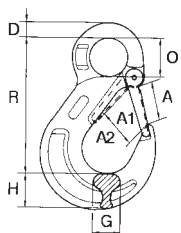
Stock No G80	Stock No G100	Chain Size	WLL Lbs* Grade 80	WLL Lbs* Grade 100	Dimensions in Inches							WT. EA. LBS
					A	B	C	D	E	F	PxL	
WA58	WA58-10	1/4(6mm)	2,460	3,050	0.71	1.77	0.71	0.31	0.30	0.55	.19x1.52	0.15
WA60	WA60-10	9/32	3,500	4,300	0.75	2.01	0.79	0.39	0.35	0.63	.24x1.83	0.22
WA59	WA59-10	5/16	4,500	5,700	0.91	2.44	0.98	0.45	0.39	0.71	.25x2.09	0.55
WA61	WA61-10	3/8	7,100	8,800	1.06	2.83	1.18	0.50	0.5	0.91	.31x2.5	0.77
WA62	WA62-10	1/2	12,000	15,000	1.34	3.46	1.42	0.75	0.66	1.06	.39x3.11	5.95
WA63		5/8	18,100	22,600	1.54	4.06	1.57	0.83	0.83	1.30	.55x4.17	2.42
WA64		3/4	28,300		1.85	4.52	1.76	1.16	0.96	1.64	.63x4.82	5.29
WA65		7/8	34,200		2.17	5.24	3.11	1.06	1.06	1.90	.63x5.28	5.95
WA66		1	47,700		2.60	6.46	2.68	1.26	1.18	2.40	.71x6.26	11.22
WA67		1-1/4	72,300		3.39	7.64	3.15	1.57	1.26	3.15	.98x7.68	18.71

Clevis Sling Hook (G80 & G100)



Stock No G80	Stock No G100	Chain Size	WLL Lbs* Grade 80	WLL Lbs* Grade 100	Dimensions in Inches										WT. EA. LBS
					A	A1	B	C	G	H	R	X	Y	PxL	
WA79	WA79-10	1/4(6mm)	2,460	3,050	1.02	0.75	0.28	0.31	0.59	0.79	2.72	2.60	4.02	.29x.65	0.53
WA80	WA80-7-10	9/32	3,500	4,300	1.34	1.02	0.37	0.39	0.75	1.10	3.74	3.54	5.51	.35x.91	1.17
WA80	WA80-8-10	5/16	4,500	5,700	1.34	1.02	0.37	0.39	0.75	1.10	3.74	3.54	5.51	.39x.91	1.17
WA81	WA81-10	3/8	7,100	8,800	1.57	1.22	0.47	0.53	0.98	1.30	4.33	4.25	6.50	.39x.91	2.09
WA82	WA82-10	1/2	12,000	15,000	2.01	1.57	0.59	0.67	1.18	1.57	5.35	5.16	8.03	.49x1.16	3.68
WA83	WA83-10	5/8	18,100	22,600	2.20	1.77	0.71	0.87	1.46	1.89	6.10	6.02	9.33	.78x2.05	5.95
WA84		3/4	28,300		2.40	2.05	0.91	1.02	1.81	2.05	7.20	6.97	10.9	.94x2.87	11.88
WA85		7/8	34,200		2.83	2.60	0.96	1.14	1.97		8.39	7.73	12.6	1.06x2.80	19.37

Eye Sling Hook (G80 & G100)



Stock No G80	Stock No G100	Chain Size	WLL Lbs* Grade 80	WLL Lbs* Grade 100	Dimensions in Inches							WT. EA. LBS
					A	A1	D	G	H	O	R	
WA.29	WA29-10	1/4(6mm)	2,460	3,050	1.02	0.75	0.39	0.63	0.79	0.81	3.19	0.53
WA.30	WA30-10	9/32-5/16	4,500	5,700	1.30	1.02	0.43	0.75	1.14	0.98	3.98	1.10
WA.31	WA31-10	3/8	7,100	8,800	1.57	1.22	0.63	1.02	1.30	1.34	5.16	1.98
WA.32	WA32-10	1/2	12,000	15,000	2.01	1.57	0.75	1.30	1.65	1.69	6.26	3.53
WA.33	WA33-10	5/8	18,100	22,600	2.20	1.77	0.96	1.57	1.97	1.97	7.20	6.50
WA.34		3/4	28,300		2.44	2.09	1.06	1.89	2.17	2.17	8.07	10.36
WA.35		7/8	34,200		2.99	2.44	1.14	1.97	2.44	2.36	8.86	16.09
WA.36		1	47,700		3.15	2.87	1.38	2.36	2.95	2.76	10.12	21.60
WA.37		1-1/4	72,300		4.00	3.43	1.54	2.80	3.50	2.60	11.77	36.16

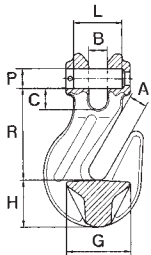


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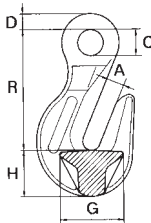
Chain Sling Components – Alloy Grade 80 and Grade 100

Clevis Cradle Grab Hook (G80 & G100)



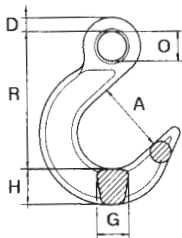
Stock No G80	Stock No G100	Chain Size	WLL Lbs* Grade 80	WLL Lbs* Grade 100	Dimensions in Inches							WT. EA. LBS
					A	A1	D	G	H	O	PxL	
WA.89	WA89-10	1/4(6mm)	2,460	3,050	0.31	0.28	0.33	0.94	0.75	1.77	.29x.65	0.22
WA.90	WA90-7-10	9/32	3,500	4,300	0.39	0.35	0.39	1.18	0.94	1.97	.35x.89	0.59
WA.90	WA90-8-10	5/16	4,500	5,700	0.39	0.35	0.39	1.18	0.94	1.97	.39x.89	0.59
WA.91	WA91-10	3/8	7,100	8,800	0.51	0.51	0.55	1.73	1.22	2.83	.39x.91	1.65
WA.92	WA92-10	1/2	12,000	15,000	0.67	0.67	0.67	2.09	1.50	3.46	.51x1.24	2.97
WA.93	WA93-10	5/8	18,100	22,600	0.79	0.83	0.79	2.52	1.73	4.02	.63x1.65	5.95
WA.94		3/4	28,300		0.94	0.94	0.94	3.35	2.09	4.61	.83x2.03	9.02
WA.95		7/8	34,200		1.02	1.02	1.02	3.82		5.47	1.02x2.83	12.44

Eye Cradle Grab Hook (G80 & G100)



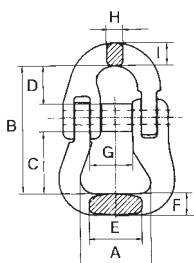
Stock No G80	Stock No G100	Chain Size	WLL Lbs* Grade 80	WLL Lbs* Grade 100	Dimensions in Inches						WT. EA. LBS
					A	D	G	H	O	R	
WA.40	WA40-10	9/32-5/16	4,500	5,700	0.39	0.39	1.18	0.94	0.63	2.36	0.51
WA.41	WA41-10	3/8	7,100	8,800	0.51	0.43	1.73	1.22	0.83	3.15	1.30
WA.42	WA42-10	1/2	12,000	15,000	0.67	0.63	2.09	1.50	1.02	4.09	2.73
WA.43	WA43-10	5/8	18,100	22,600	0.79	0.75	2.52	1.73	1.18	4.49	4.42
WA.44		3/4	28,300		0.91	0.87	3.35	2.09	1.42	5.51	6.60
WA.45		7/8	34,200		1.02	0.98	3.82	2.44	1.50	6.54	11.00
WA.46		1	47,700		1.18	1.18			2.17	8.27	21.57
WA.47		1-1/4	72,300		1.54	1.57			2.36	9.45	41.38

Eye Foundry Hook (G80)



Stock No	Chain Size	WLL Lbs* Grade 80	Dimensions in Inches						WT. EA. LBS
			A	D	G	H	O	R	
WA.50	9/32-5/16	4,500	2.52	0.43	0.98	1.14	0.94	5.16	2.02
WA.51	3/8	7,100	2.99	0.55	1.26	1.38	1.22	6.22	3.90
WA.52	1/2	12,000	3.50	0.67	1.50	1.57	1.54	7.52	6.21
WA.53	5/8	18,100	4.02	0.91	1.77	1.89	1.26	8.07	11.07
WA.54	3/4	28,300	4.49	0.98	2.01	2.13	1.57	9.25	16.73
WA.55	7/8	34,200	5.00	1.18	2.56	2.83	1.85	10.43	30.33
WA.56	1	47,700	5.35	1.34	2.83	3.15	2.13	12.01	42.28
WA.57	1-1/4	72,300	5.98	1.46	3.27	3.66	2.36	12.87	50.62

Web/Round Sling Connector (G80)



Stock No	Chain Size	WLL Lbs* Grade 80	Dimensions in Inches									WT. EA. LBS
			A	B	C	D	E	F	G	H	I	
WRS.10	3/8	7,100	1.97	3.19	1.54	1.18	0.83	0.63	0.91	0.51	0.51	1.10
WRS.13	1/2	12,000	2.36	4.09	2.05	1.42	1.06	0.79	1.10	0.67	0.75	2.43

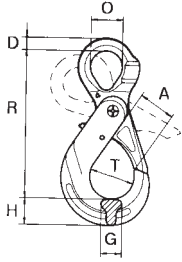


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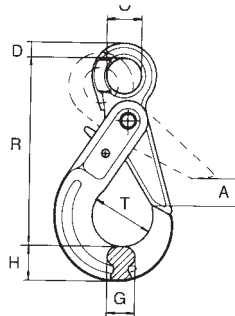
Chain Sling Components – Alloy Grade 80 and Grade 100

Self Locking “SL” Hook (G80)



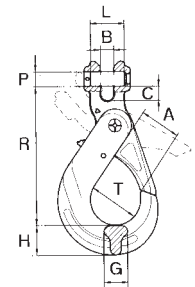
Stock No	Chain Size	WLL Lbs* Grade 80	Dimensions in Inches							WT. EA. LBS
			A	D	G	H	O	R	T	
SL.07	9/32-5/16	4,500	1.06	0.39	0.67	0.83	1.02	4.41	1.42	1.21
SL.10	3/8	7,100	1.50	0.51	0.9	1.06	1.30	5.94	1.81	2.47
SL.13	1/2	12,000	1.81	0.63	1.10	1.34	1.65	7.28	2.36	4.89
SL.16	5/8	18,100	2.24	0.71	1.26	1.69	2.05	9.06	2.95	8.80

Self Locking “SNE” Hook (G100)



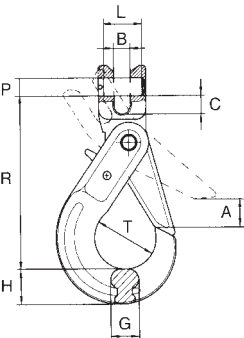
Stock No	Chain Size	WLL Lbs* Grade 100	Dimensions in Inches							WT. EA. LBS
			A	D	G	H	O	R	T	
SNE.06.10	1/4(6MM)	3,050	1.10	0.43	0.63	0.83	0.83	4.29	1.38	1.12
SNE.078.10	9/32-5/16	5,700	1.34	0.47	0.79	1.02	0.98	5.31	1.69	2.06
SNE.10.10	3/8	8,800	1.77	0.63	0.98	1.18	1.30	6.61	2.20	3.58
SNE.13.10	1/2	15,000	2.01	0.79	1.38	1.57	1.57	8.07	2.72	5.95
SNE.16.10	5/8	22,600	2.36	1.06	1.42	1.97	1.97	9.88	3.15	13.33

Self Locking “SC” Hook (G80)



Stock No	Chain Size	WLL Lbs* Grade 80	Dimensions in Inches								WT. EA. LBS
			A	B	C	G	H	R	T	PXL	
SC.07	9/32	4,500	1.08	0.35	0.39	0.67	0.83	3.74	1.42	.35x.89	1.19
SC.10	3/8	7,100	1.50	0.47	0.55	0.87	1.06	4.92	1.81	.51x1.24	2.58
SC.13	1/2	12,000	1.81	0.59	0.67	1.10	1.34	6.18	2.36	.63x1.65	5.95
SC.16	5/8	18,100	2.24	0.75	0.79	1.26	1.69	7.44	2.95	.83x2.03	9.03

Self Locking “SNC” Hook (G100)



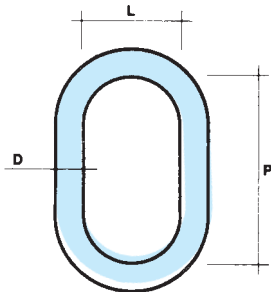
Stock No	Chain Size	WLL Lbs* Grade 100	Dimensions in Inches								WT. EA. LBS
			A	B	C	G	H	R	T	PXL	
SNC.06	1/4(6MM)	3,050	1.10	0.28	0.31	0.63	0.83	3.70	1.38	.29x.69	1.09
SNC.078	9/32-5/16	5,700	1.34	0.35	0.39	0.79	1.02	4.84	1.69	.35x.89	2.06
SNC.10	3/8	8,800	1.77	0.47	0.55	0.98	1.18	5.63	2.20	.51x1.24	3.48
SNC.13	1/2	15,000	2.01	0.59	0.67	1.38	1.57	7.09	2.72	.63x1.65	5.95
SNC.16	5/8	22,600	2.36	0.75	0.75	1.42	1.97	8.46	3.15	.83x2.03	13.11



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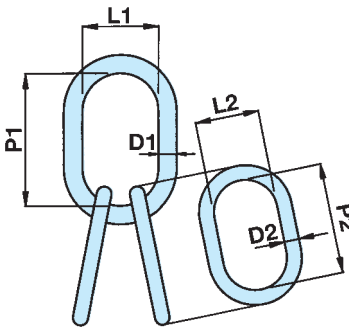
Chain Sling Components – Alloy Grade 80 and Grade 100

OBLONG MASTER LINK (G80)



STOCK NO. (WITH FLATS)	STOCK NO. (W/O FLATS)	DIMENSIONS IN INCHES				SLING SIZE & TYPE				WLL LBS	PROOF LOAD LBS	MBS LBS
		D	L	P	WT. EA LBS	SINGLE S+C	DOUBLE D	TRIPLE T	QUAD Q			
S.087.8	T.087.8	1/2	2.75	4.72	0.80	9/32-5/16	9/32			6,100	14,000	28,000
S.108.8	T.108.8	5/8	3.15	5.50	1.55	3/8	5/16			7,750	18,000	36,000
S.1310.8	T.1310.8	3/4	3.75	6.30	2.70	1/2	3/8	9/32-5/16	9/32-5/16	12,300	28,400	56,800
S.1613.8	T.1613.8	1	4.33	7.50	5.30	5/8	1/2	3/8	3/8	20,800	48,000	96,000
S.2016.8	T.2016.8	1-1/4	5.10	9.00	9.75	3/4	5/8	1/2	1/2	31,300	72,400	144,800
	T.2220.8	1-1/2	5.90	10.80	18.00	7/8	3/4	5/8	5/8	49,000	113,200	226,400
	T.2622.8	1-3/4	7.10	13.40	29.00	1	7/8	3/4	3/4	73,500	169,800	339,600
	T.3226.8	2	7.50	13.75	38.00	1-1/4	1	7/8	7/8	88,900	205,200	410,400
	T.4032.8	2-1/4	7.90	15.75	57.00	1-1/2	1-1/4	1	1	125,200	289,200	578,400

OBLONG MASTER LINK SUB-ASSEMBLY (G80)



STOCK NO. (WITH FLATS)	STOCK NO. (W/O FLATS)	CHAIN SLING SIZE	DIMENSIONS IN INCHES						WT. EA LBS	WLL BRANCH ANGLE 60	PROOF LOAD HEAD LINK LBS.	PROOF LOAD SUB-LINKS LBS.
			D ¹	L ¹	P ¹	D ²	L ²	P ²				
S.07.8	T.07.8	9/32	3/4	3.75	6.30	1/2	2.36	4.33	4.25	12,300	28,400	14,000
S.08.8	T.08.8	5/16	7/8	3.75	6.30	5/8	3.15	5.50	6.25	14,600	33,600	18,000
S.10.8	T.10.8	3/8	1	4.33	7.50	3/4	3.75	6.30	12.75	20,800	48,000	28,400
S.13.8	T.13.8	1/2	1-1/4	5.10	9.00	1	4.33	7.50	22.00	31,300	72,400	48,100
S.16.8	T.16.8	5/8	1-1/2	5.90	10.80	1-1/8	5.10	9.05	33.00	49,000	113,200	72,400
	T.20.8	3/4	1-3/4	7.10	13.40	1-1/4	5.10	9.05	48.00	73,500	169,800	113,200
	T.22.8	7/8	2	7.50	13.75	1-1/2	5.90	10.80	85.00	88,900	205,200	137,100
	T.26.8	1	2-1/4	7.90	15.75	1-3/4	7.10	13.40	125.00	125,200	289,200	191,100

OBLONG MASTER LINK (G100)

- ★ Available with recessed Flats (“S” series) (G80 only) or without Flats (“T” Series)
- ★ Ideal for Wire Rope-Chain-Nylon Slings
- ★ Load Limits meet or exceed ASTM 906/952
- ★ Larger OML Head Links = Better Fit with Crane Hooks
- ★ Wider and Longer Sub-Links = Better fit with Thimbles and other hardware
- ★ Head Links and Sub-Links Individually Proof Tested per ASTM 906/952 prescribed loads

Stock No	Link Dimensions			WT. EA. LBS	Sling Size & Type		WLL Lbs* Dbl Sling at 60 degree angle	Proof Load Lbs	MBS Lbs
	D	L	P		Single	Double			
T.076.10	0.55	2.76	4.72	0.97	9/32	1/4(6mm)	4,400	12,800	25,600
T.087.10	0.65	3.15	5.51	1.48	5/16	9/32	7,400	17,200	34,400
T.108.10	0.75	3.74	6.30	2.40	3/8	5/16	15,200	22,800	45,600
T.1310.10	0.91	4.33	6.30	3.73	1/2	3/8	26,000	35,200	70,400
T.1613.10	1.06	4.33	7.48	5.84	5/8	1/2	39,100	60,000	120,000
T.2016.10	1.30	5.12	9.06	10.54	3/4	5/8	61,100	90,400	180,800

OBLONG MASTER LINK SUB-ASSEMBLY (G100)

Stock No	Link Dimensions						WT. EA. LBS	Quad or Triple Chain Sling Size In	WLL Lbs* One Branch at 60 degree Angle	Proof Load Head Link Lbs	Proof Load Sub Link Lbs
	D1	L1	P1	D2	L2	P2					
T.078.10	0.91	4.33	6.30	0.63	1.34	2.76	5.31	9/32-5/16	12,100	34,200	22,800
T.10.10	1.06	4.33	7.48	0.77	1.57	3.35	8.84	3/8	22,900	52,800	35,200
T.13.10	1.30	5.12	9.06	0.91	1.97	4.53	15.67	1/2	39,000	90,000	60,000
T.16.10	1.50	5.91	10.83	1.06	2.56	5.51	24.96	5/8	58,700	135,600	90,400