

Industrial Products

pewag

**WORLD'S
STRONGEST
CHAIN**

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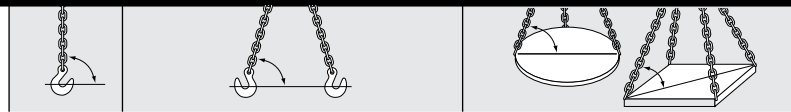
M^cLaughlin Hoist & Crane

1850 Larkin Williams Rd.
Fenton, MO 63026
(636)343-9700
www.stlcrane.com

Maximum Work Load [lbs] of Various Chain Sling Applications

Design Factor
4:1



Grade 120 Alloy Winner Pro

Chain	Diameter	Angle: Load Factor:	90 degrees 1	60 degrees 1.7	45 degrees 1.4	30 degrees 1	60 degrees 2.6	45 degrees 2.1	30 degrees 1.45	Temperature Resistance
NI720	9/32"		5,200	9,000	7,400	5,200	13,500	11,000	7,800	Retains 100% of work load limit at -40 to 400°F. Not for temperatures over 400°F.
NI820	5/16"		6,600	9,300	11,400	6,600	17,100	14,000	9,900	
NI1020	3/8"		10,600	18,400	15,000	10,600	27,500	22,500	15,900	
NI1320	1/2"		17,900	31,000	25,300	17,900	46,500	38,000	26,900	

Grade 100 Alloy Winner

Chain	Diameter	Angle: Load Factor:	90 degrees 1	60 degrees 1.7	45 degrees 1.4	30 degrees 1	60 degrees 2.6	45 degrees 2.1	30 degrees 1.45	Temperature Resistance
NI5.50	7/32"		2,700	4,700	3,800	2,700	7,000	5,700	4,000	Retains 100% of work load limit at -40 to 400°F. Not for temperatures over 400°F.
NI70	9/32"		4,300	7,400	6,100	4,300	11,200	9,100	6,400	
NI80	5/16"		5,700	9,900	8,100	5,700	14,800	12,100	8,500	
NI100	3/8"		8,800	15,200	12,400	8,800	22,900	18,700	13,200	
NI130	1/2"		15,000	26,000	21,200	15,000	39,000	31,800	22,500	
NI160	5/8"		22,600	39,100	32,000	22,600	58,700	47,900	33,900	
NI200	3/4"		35,300	61,100	49,900	35,300	91,700	74,900	53,000	
NI220	7/8"		42,700	74,000	60,400	42,700	110,900	90,600	64,000	
NI260	1"		59,700	103,400	84,400	59,700	155,100	126,600	89,550	
NI320	1-1/4"		90,400	156,600	127,800	90,400	234,900	191,800	135,600	

Grade 80 Alloy

Chain	Diameter	Angle: Load Factor:	90 degrees 1	60 degrees 1.7	45 degrees 1.4	30 degrees 1	60 degrees 2.6	45 degrees 2.1	30 degrees 1.45	Temperature Resistance
NI5.5	7/32"		2,100	3,600	3,000	2,100	5,500	4,400	3,200	Retains 100% of work load limit at -40 to 400°F, 90% at 400 to 570°F, and 75% at 570 to 750°F. Not for temperatures over 750°F.
NI7	9/32"		3,500	6,100	4,900	3,500	9,100	7,400	5,200	
NI8	5/16"		4,500	7,800	6,400	4,500	11,700	9,500	6,800	
NI10	3/8"		7,100	12,300	10,000	7,100	18,400	15,100	10,600	
NI13	1/2"		12,000	20,800	17,000	12,000	31,200	25,500	18,000	
NI16	5/8"		18,100	31,300	25,600	18,100	47,000	38,400	27,100	
NI20	3/4"		28,300	49,000	40,000	28,300	73,500	60,000	42,400	
NI22	7/8"		34,200	59,200	48,400	34,200	88,900	72,500	51,300	
NI26	1"		47,700	82,600	67,400	47,700	123,900	101,200	71,500	
NI32	1-1/4"		72,300	125,200	102,200	72,300	187,800	153,400	108,500	

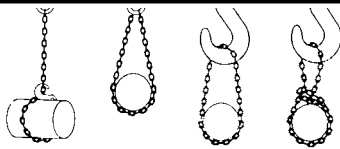
Grade 50 Stainless Steel

Chain	Diameter	Angle: Load Factor:	90 degrees 1	60 degrees 1.7	45 degrees 1.4	30 degrees 1	60 degrees 2.6	45 degrees 2.1	30 degrees 1.45	Temperature Resistance
NIK5	3/16"		1,100	1,900	1,600	1,100	2,900	2,300	1,700	Retains 100% of work load limit at -50 to 750°F, 75% at 750 to 1100°F and 50% at 1100-1290°F. Not for temperatures over 1290°F.
NIK7	9/32"		2,200	3,800	3,100	2,200	5,700	4,600	3,300	
NIK10	3/8"		4,400	7,500	6,200	4,400	11,500	9,300	6,600	
NIK13	1/2"		7,100	12,100	10,000	7,100	18,500	14,900	10,700	
*NIK 16	5/8"		11,000	18,700	15,600	11,000	23,100	23,100	16,500	

*Sling work load limits are reduced 10% when the HSK16 eye sling hook is used.

Reduction Factors

To be used for various slinging methods and conditions without shock loads.



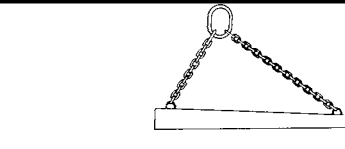
Load factor:

0.8

1.4

1.4

1.6



Reduction factor:

0.7

Asymmetrical distribution of load



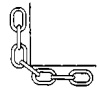
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R = more than 2 x chain dia.



0.7

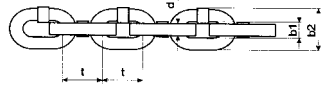
R = more than chain dia.



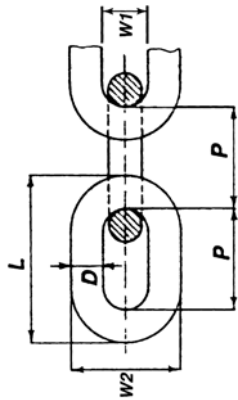
0.5

Sharp corners

Chain | Dimensions, Weights



Grade 120 Alloy							
Code	Nominal Thickness d	Pitch t	Width Inside b1 min.	Width Outside b2 max	WLL lb Design Factor 4:1	Breaking Load [lb]	Weight [lb/ft]
NI720 (9/32")	0.276 (7mm)	0.866	0.393	1.024	5,200	20,800	0.874
NI820 (5/16")	0.315 (8mm)	0.984	0.433	1.142	6,600	26,400	1.040
NI1020 (3/8")	.394 (10mm)	1.300	0.559	1.457	10,600	42,400	1.747
NI1320 (1/2")	.512 (13mm)	1.614	0.732	1.949	17,900	71,600	3.091



Diameter	Grade 100 Alloy	Grade 80 Alloy	Grade 50 Stainless Steel	Nominal Dia. D	Pitch P	Inside W1 min	Outside W2 max.	Weight [lb/ft]
3/16"	-	-	NIK5	0.197	0.630	0.295	0.728	0.376
7/32"	NI5.50	NI5.5	-	0.217	0.680	0.319	0.787	0.470
9/32"	NI70	NI7	NIK7	0.276	0.826	0.375	0.992	0.738
5/16"	NI80	NI8	-	0.315	0.945	0.430	1.134	0.939
3/8"	NI100	NI10	NIK10	0.394	1.181	0.531	1.417	1.475
1/2"	NI130	NI13	NIK13	0.512	1.535	0.689	1.843	2.548
5/8"	NI160	NI16	NIK16	0.630	1.890	0.846	2.268	3.830
3/4"	NI200	NI20	-	0.787	2.440	1.008	2.776	5.780
7/8"	NI220	NI22	-	0.866	2.598	1.161	3.118	7.324
* 1"	NI260	NI26	-	1.024	3.071	1.378	3.704	10.214
1-1/4"	NI320	NI32	-	1.260	3.780	1.657	4.646	15.455

* Dimensions are for Grade 100, for Grade 80 the inner width minimum is smaller, also W2 max is bigger.

Chain | Load Rating

Grade 120 Alloy				Grade 100 Alloy				Grade 80 Alloy				Grade 50 Stainless Steel			
Diameter	Working load [lb]	Manufacturing test load [lb]	Breaking load [lb]	Diameter	Working load [lb]	Manufacturing test load [lb]	Breaking load [lb]	Diameter	Working load [lb]	Manufacturing test load [lb]	Breaking load [lb]	Diameter	Working load [lb]	Manufacturing test load [lb]	Breaking load [lb]
	Design factor 4:1				Design factor 4:1				Design factor 4:1				Design factor 4:1		
												3/16"	1,100	2,200	4,400
				7/32"	2,700	5,400	10,800	7/32"	2,100	4,200	8,400				
9/32"	5,200	10,400	20,800	9/32"	4,300	8,600	17,200	9/32"	3,500	7,000	14,000	9/32"	2,200	4,400	8,800
5/16"	6,600	13,200	26,400	5/16"	5,700	11,400	22,800	5/16"	4,500	9,000	18,000				
3/8"	10,600	21,200	42,400	3/8"	8,800	17,600	35,200	3/8"	7,100	14,200	28,400	3/8"	4,400	8,800	17,600
1/2"	17,900	35,800	71,600	1/2"	15,000	30,000	60,000	1/2"	12,000	24,000	48,000	1/2"	7,100	14,200	28,200
				5/8"	22,600	45,200	90,400	5/8"	18,100	36,200	72,400	5/8"	11,000	22,000	44,000
				3/4"	35,300	70,600	141,200	3/4"	28,300	56,600	113,200				
				7/8"	42,700	85,400	170,800	7/8"	34,200	68,400	136,800				
				1"	59,700	119,400	238,800	1"	47,700	95,400	190,800				
				1 1/4"	90,400	180,800	361,600	1 1/4"	72,300	144,600	289,200				

Continuous Maintenance

Chain and fittings must be withdrawn from service if any damage or deformation is noticed.

Maintenance

Keep a record on all chain slings. Depending on the use of the slings, they should be inspected regularly in accordance with national regulations (ASME B30.9).

Inspection Procedure

Each link and each attachment shall be examined individually, taking care to expose inner link surfaces of the chain and attachments.

Visual Inspection

Check for wear, nicks, cracks, breaks, gouges, stretch, bends, weld splatter, discoloration from excessive heat and throat opening of hooks.

Measuring

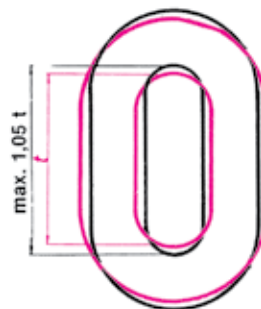
The medium link thickness must not be reduced by more than 10% of the nominal diameter on any part of the chain. The elongation of the chain should not exceed 5% at any point.

Maximum Tolerance

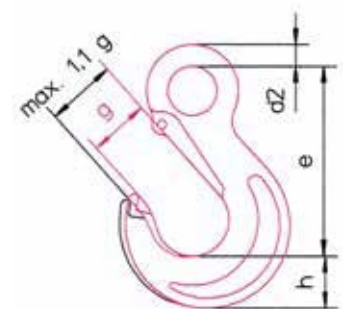
(For all chain and components).

Designation	Dimension	Max. Tolerance
Chain and Master rings	d	-10%
	t	+5%
HS, HSK, LH, F PS, P, KHS, KLH, KF, KP, XK, KO	e	+5%
	d2 and h	-10%
	g	+10%
C, CL, CK, CAR	e	+5%
	c (same as d2)	-10%
BW	e	+5%
	angle	≥ 90

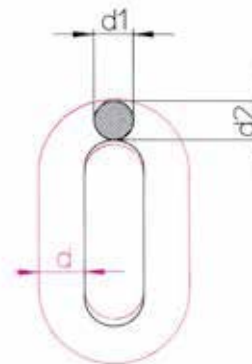
To be removed whenever $dm = \frac{d1 + d2}{2} \leq 0.9 d$



Pitch (p) stretched due to elongation (overloading)



Hook bent open



Pitch (p) increased due to wear



To be removed whenever a deformation is noticed

*Red denotes original dimension



Lifting

...is dangerous work only competent persons are allowed to do.

Please keep in mind all the hazards and risks covered in ASTM-A906, ISO 3056, EN 818-6 and other relevant standards.

Inspection and testing should be carried out in accordance with national regulations.

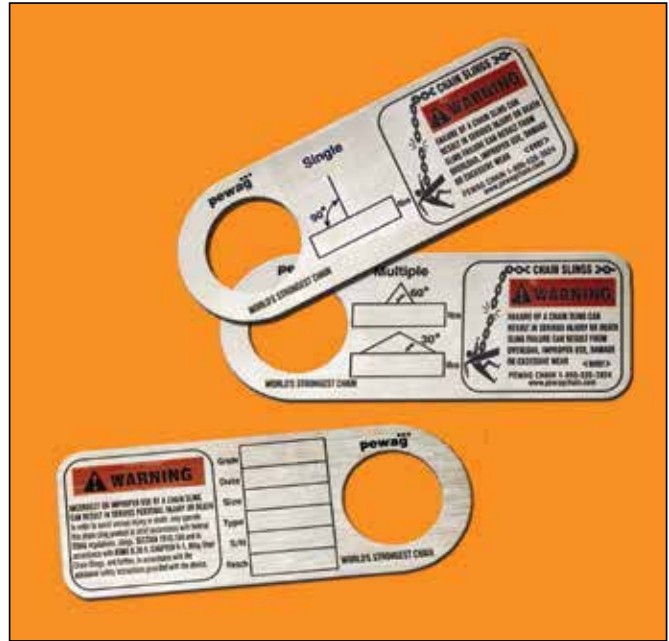
Identification And Testing



Pewag lifting chain and fittings are marked with a batch identification number and the manufacturer's identification marking: the number "120" or "12" to indicate Grade 120 Alloy, "100", "10" or "V" to indicate Grade 100 Alloy, "8" to indicate Grade 80 Alloy and "50" to indicate grade 50 Stainless.

All Alloy chains are 100% tested to 2 times the working load values and are furnished with a test certificate to this effect.

Every chain sling manufactured by Pewag is supplied with a steel tag and test certificate as shown.



Messrs.		TEST CERTIFICATE					
Order No.							
Works Ref. No.							
Dimension of Chain	Nominal Diameter <i>D</i>	Pitch <i>P</i>	Outside Length <i>L</i>	Width <i>W</i>	Weight Lbs.		
	Norm Designation						
Material		Welding Process		Heat Treatment			
Pieces	Length in Feet	Weight in Lbs.	Safe Working Load in Lbs.	Production Proof Test Load in Lbs.	Breaking Load in Lbs.	Minimum Elongation	
Total safe working load for multiple-leg chain		PEWAG INCORPORATED					
30°	LBS.						
45°	LBS.						
60°	LBS.						
Result of test		DATE:					



Caution

...do not exceed rated capacities

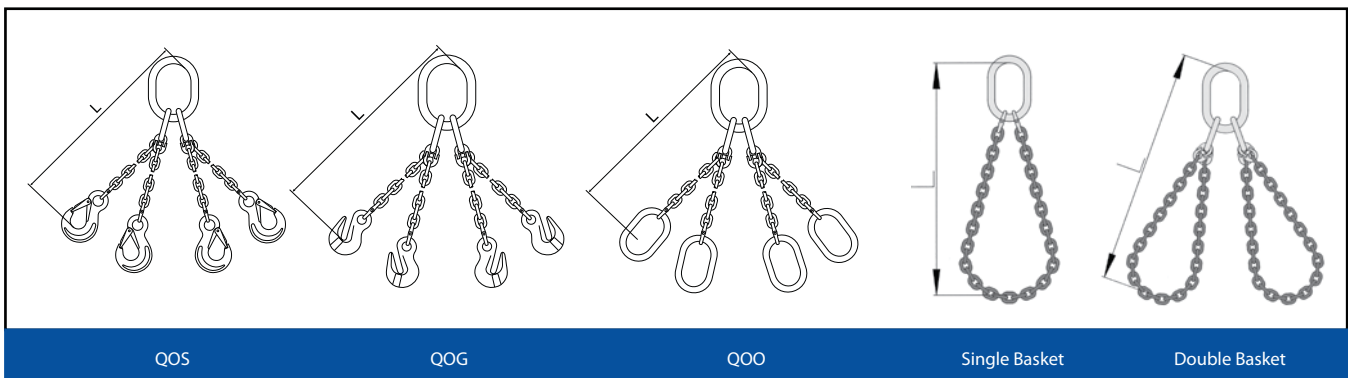
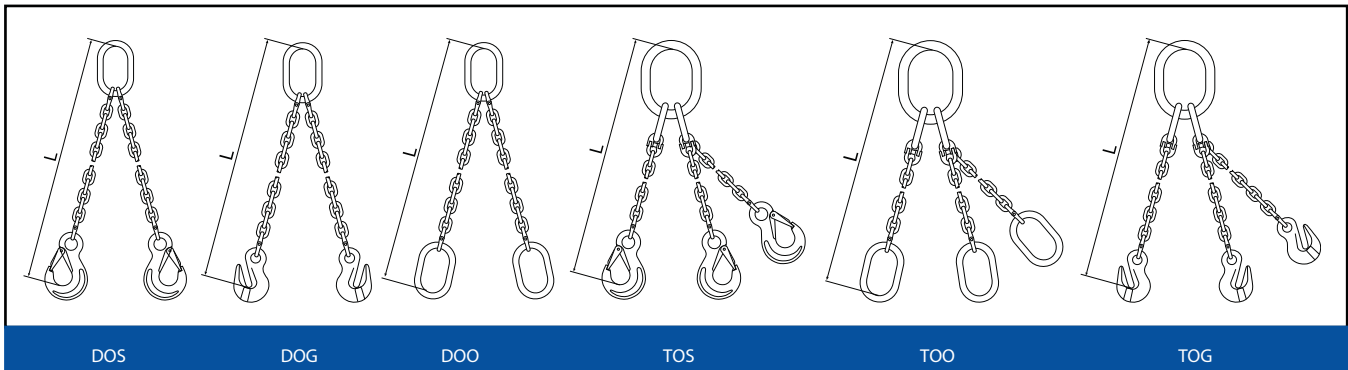
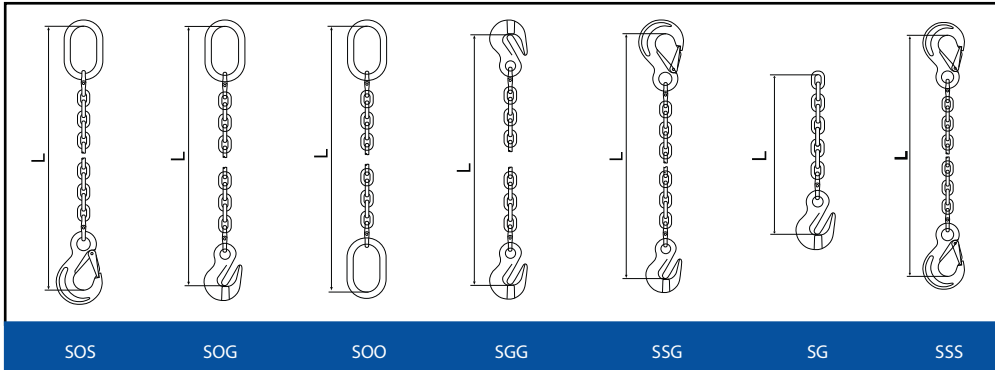
Alloy Slings can be assembled with the XK Shortening Hook



Standard Assemblies of Pewag Chain

Chain slings can be delivered with Connex connecting links and accessories ready fitted, with clevis fittings, or in welded construction.

Should you require any chain sling assemblies other than those in this brochure, please send us a sketch of the desired model. The standard tolerance of the length "L" is + 2 - 0 chain pitch.



Ordering Data Example of How to Order

1. Determine the maximum load to be lifted.
2. Determine the type of slings needed (single, double, etc.).
3. Estimate the proper angle between the leg of the sling and the load during operation (see page 7).
4. Select the proper fittings (hooks, master links, etc.).
5. Determine the overall reach (measured from bearing point on master link to bearing point of fitting).
6. Choose chain size which meets your required work load, angle and reduction factor (see page 7).
7. Choose grade, type and finish of steel which meets your requirements.

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