

Screw Pin Anchor Shackle Field Inspection

Following is a general field inspection guideline for Crosby Screw Pin Anchor Shackles to determine if a shackle is acceptable for continued use.

1. Examine shackles¹ for nicks, gouges, cracks and other defects by visual means and/or suitable crack-detecting processes (ie. Magnetic Particle, Dye Penetrant, etc.). Shackles containing cracks shall be removed from service. Shackles with severe nicks and gouges in critical areas should be repaired by grinding longitudinally following the contour of the shackle providing such reduction in the stock material does not exceed 10% of the cross-sectional dimension.
2. Examine shackles for excessive wear. Shackles showing a wear-reduction of greater than 10% in the diameter of the bow or pin should be removed from service. Excessive wear at other critical points may also be cause for removing from service.
3. In areas where both grinding and wear has occurred, the total accumulated material reduction should not exceed the grind allowance of 10%.
4. Examine shackles for deformation. Shackles which can be determined to have any measurable deformation should be removed from service. Any detectable bending or twisting out of the natural plane of the shackle is cause for removal from service.
5. Repair of shackles by means of welding is not recommended.
6. Inspect the integrity of the screw threads on the pin and in the bow.
7. Following are dimensions relative to a proper assembly. If a shackle assembly does not conform to these dimensions it should be removed from service.

WLL (TONS)	SIZE (INCHES)	D REF.	E REF.	F ² MAX.	G ² MAX.
1/3	3/16	1/4	3/8	.08	.05
1/2	1/4	5/16	15/32	.09	.06
3/4	5/16	3/8	17/32	.10	.06
1	3/8	7/16	21/32	.11	.07
1-1/2	7/16	1/2	3/4	.12	.08
2	1/2	5/8	13/16	.14	.09
3-1/4	5/8	3/4	1-1/16	.15	.10
4-3/4	3/4	7/8	1-1/4	.17	.11
6-1/2	7/8	1	1-7/16	.19	.12
8-1/2	1	1-1/8	1-11/16	.22	.12
9-1/2	1-1/8	1-1/4	1-13/16	.22	.14
12	1-1/4	1-3/8	2-1/32	.25	.15
13-1/2	1-3/8	1-1/2	2-1/4	.25	.15
17	1-1/2	1-5/8	2-3/8	.27	.15
25	1-3/4	2	2-7/8	.33	.17
35	2	2-1/4	3-1/4	.33	.22
55	2-1/2	2-3/4	4-1/8	.38	.25

(1) The word "shackle" in this case indicates all components of the shackle assembly.

(2) This dimension to be measured after screw pin has been tightened a minimum of 1/2 turn beyond hand tight.

(3) If screw pin cannot be threaded into shackle by hand, this may be the result of deformation.

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