

## Cotter Pins for Crosby Shackles

The Crosby Group, Inc. uses extended prong type cotter pins per ANSI B18.8.1 for securing the nuts of bolt type shackles, and for securing the pins of round pin shackles. Crosby recommends that replacement cotter pins be this type. Crosby does not endorse alternative style retaining pins. Using an alternative design is done purely upon the user's judgment, experience and own risk. The charts on the next page show the recommended cotter pin size based on Crosby shackle type and size. The following general guidelines are provided for cotter pin installation in shackle bolts and pins.

1. Cotter pins should be inserted into hole until the head is tangent to the bolt/pin, and oriented so the axis of the eye is parallel to the shank of the bolt/pin.
2. The prongs are to be bent in opposite directions around the bolt or pin as shown in Figure 1 below.
3. After installation, the cotter pin prongs should wrap around the bolt or pin by at least 60 degrees opposite directions of bolt or pin diameter.
4. The prongs may be bent with pliers or by gently tapping with a hammer.  
*\*Note: Avoid bending the prongs over sharp radii which may promote breakage. If a prong breaks off or becomes damaged during installation, replace the cotter pin.*
5. The ends of the prongs may be curled to form a small loop to reduce the potential for snagging or puncture wounds.

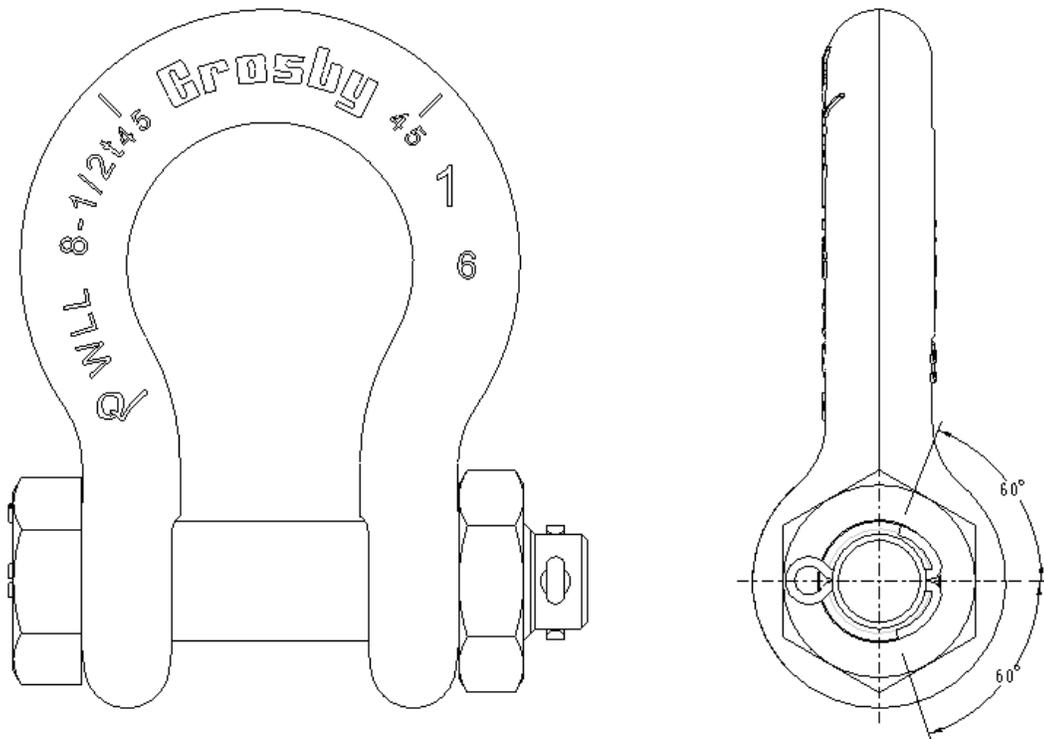


Figure 1: Cotter pin installation in a 1" bolt type shackle.

Classification	Catalog No.	Document No.	Revision No.	File Name
SHACKLE	ALL	TDSSHA7	4	tdssha7.doc

## Cotter Pin Sizes For Crosby Shackles

### 213 & 215 SHACKLES

SHACKLE SIZE	COTTER PIN SIZE
1/4"	3/32 x 3/4"
5/16"	3/32 x 1"
3/8"	1/8 x 1"
7/16"	1/8 X 1"
1/2"	1/8 x 1"
5/8"	3/16 x 1 1/4"
3/4"	3/16 x 1 1/4"
7/8"	5/16 x 1 1/2"
1"	5/16 x 1 3/4"
1 1/8"	5/16 x 1 3/4"
1 1/4"	5/16 x 2"
1 3/8"	5/16 x 2 1/4"
1 1/2"	5/16 x 2 1/4"
1 3/4"	5/16 x 2 3/4"
2"	3/8 x 3"

### 2140 SHACKLES

SHACKLE SIZE	COTTER PIN SIZE
1 1/2"	5/16" x 2 1/4"
1 3/4"	5/16" x 2 3/4"
2"	3/8" x 3"
2 1/2"	7/16" x 4"
3"	3/8" x 4 1/2"
3 1/2"	3/8" x 4 1/2"
4"	3/8" x 4 1/2"
4 3/4"	3/8" x 7"
5"	3/8" x 8"
6"	3/8" x 8 1/2"
7"	3/8" x 10 1/2"
7 1/2"	3/8" x 10 1/2"
8"	3/8" x 13 1/2"

### 2130 & 2150 SHACKLES

SHACKLE SIZE	COTTER PIN SIZE
3/16"	3/32x3/4"
1/4"	3/32x3/4"
5/16"	3/32x1"
3/8"	1/8x1"
7/16"	1/8x1"
1/2"	1/8x1"
5/8"	3/16x1 1/4"
3/4"	3/16x1 1/4"
7/8"	1/4x1 1/2"
1"	1/4x1 3/4"
1 1/8"	1/4x1 3/4"
1 1/4"	1/4x2"
1 3/8"	5/16x2 1/4"
1 1/2"	5/16x2 1/4"
1 3/4"	5/16x2 3/4"
2"	3/8x3"
2 1/2"	7/16x4"
3"	3/8x4 1/2"
3 1/2"	3/8x4 1/2"
4"	3/8x4 1/2"

### 2160 SHACKLES

SHACKLE WLL (t)	COTTER PIN SIZE
7	3/16" x 1 1/4"
12-1/2	1/4" x 1 3/4"
18	1/4" x 2"
30	5/16" x 2 1/4"
40	5/16" x 2 3/4"
55	3/8" x 3"
75	3/8" x 3"
125	3/8" x 4"
200	1/2" x 5 1/4"
300	5/8" x 6"
400	5/8" x 8"
500	3/4" x 9"
600	3/4" x 10"
700	3/4" x 11"
800	3/4" x 13" <sub>R3</sub>
900	3/4" x 13"
1000	3/4" x 14"
1250	3/4" x 15"
1550 <sub>R3</sub>	3/4" x 17"

REV 4: ADD VERBAGE REGARDING ALTERNATIVES TO STANDARD COTTER PINS IN FIRST PARAGRAPH

REV 3: WAS 3/4" X 12"; WAS 1500

REV 2: ADD FIRST PAGE, INST. & SKETCH

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