READ THESE INSTRUCTIONS CAREFULLY BEFORE STARTING INSTALLATION

PRECISION PULLEY & IDLER

OPERATION & MAINTENANCE

TROUGHER IMPACT SYSTEM

The Trougher Impact System (TIS) is designed to handle severe impacts generated in the loading zone of a conveyor. The Trougher Impact System comes in lengths of 2 feet and 5 feet.

BEFORE INSTALLATION

Assure that all bolts shown in locations A, B, and C in figure 1 on both sides are tightened securely.

Assure that the bolts holding the rubber springs are tight and secure, shown in figure 2.

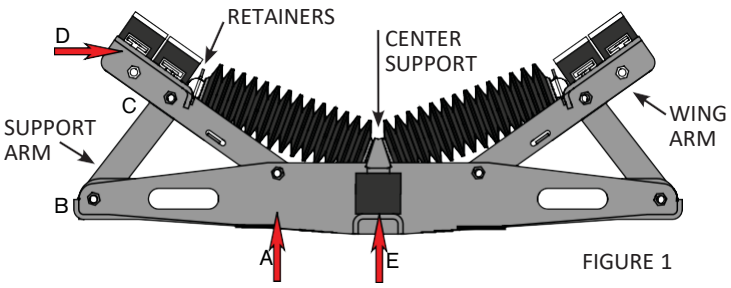


FIGURE 1

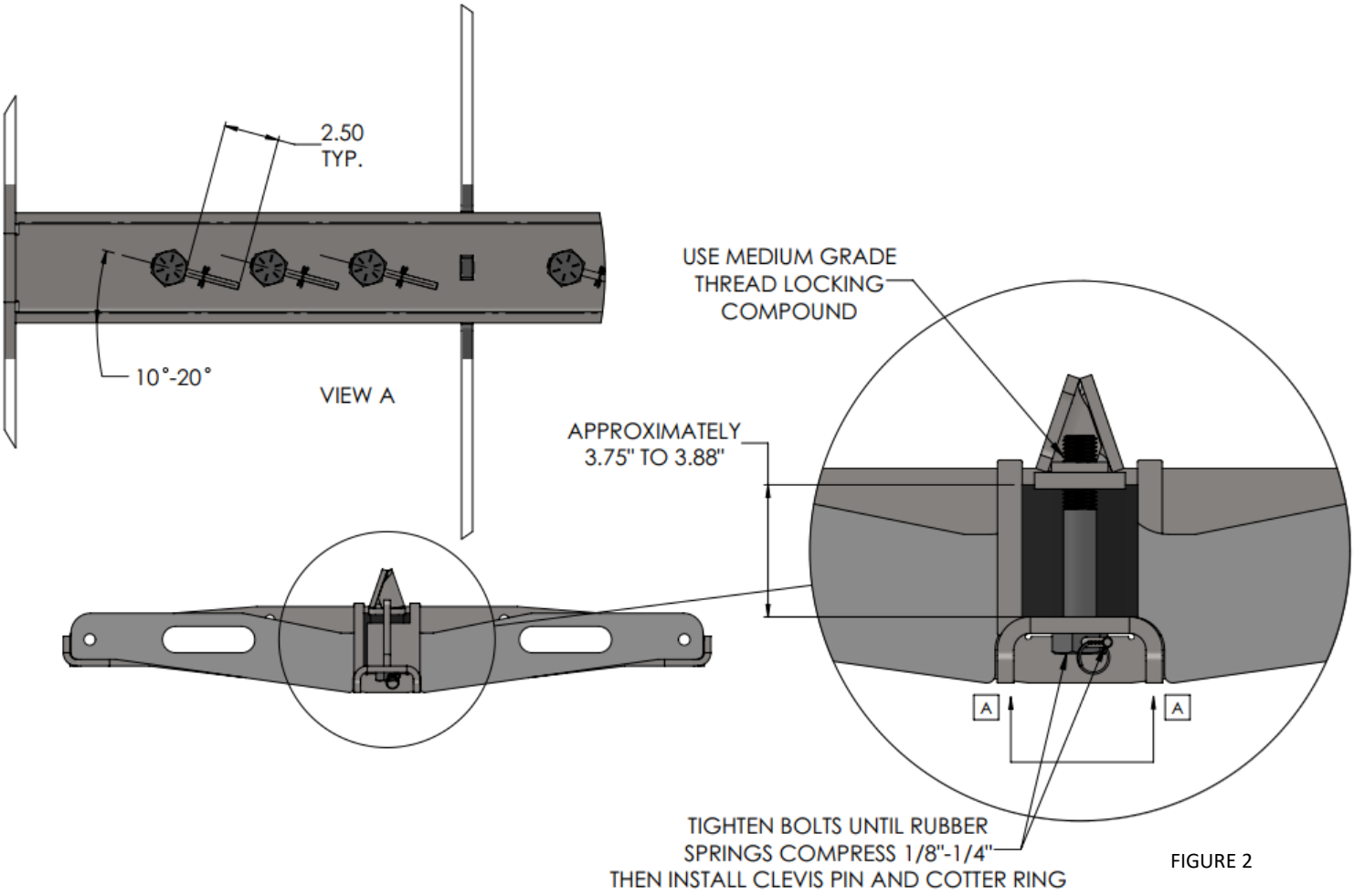
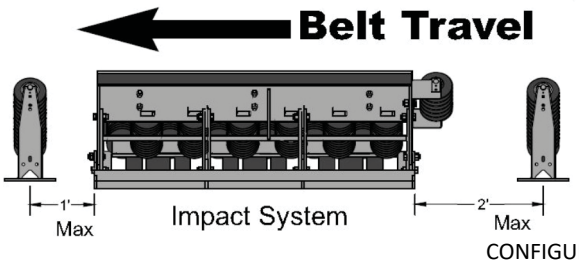


FIGURE 2

INSTALLATION

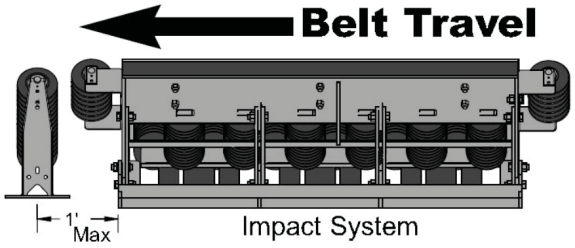
Shown to the right are some common configurations for the installation of the Trougher Impact System. Your application and requirements will determine the best configuration.

The belt transition should be complete before entering the Trougher Impact System. A troughing idler must be used before the belt travels into the Trougher Impact System as shown in Configuration A.



CONFIGURATION A

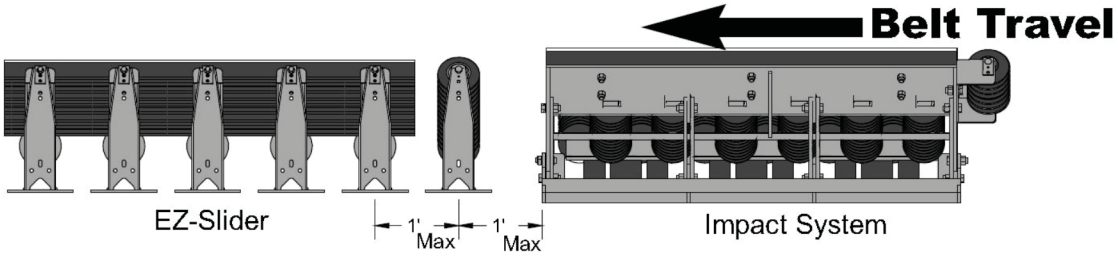
CONFIGURATION A: Using a lift roll kit at the lead end is a common configuration of the Trougher Impact System. A troughing idler must be used before the belt travels into the Trougher Impact system with a maximum distance of 2 feet as shown. A troughing impact idler is placed after the Trougher Impact System. This impact idler should be located 1 foot maximum distance from the Trougher Impact System. This impact idler will dampen the shock to the belt and idler for lumps and material to settle into the troughing shape of the idlers.



CONFIGURATION B

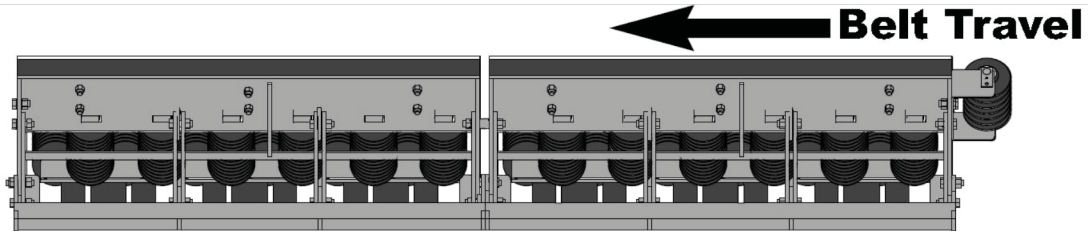
CONFIGURATION B: Using a Lift Kit at both ends of the Trougher Impact System is common to help prevent wear on the edges of the slider rails. When using a Trougher Impact System on reversing belts a Lift Kit at both ends is recommended. Although not shown in configuration B a troughing idler must be used before the belt travels into the Trougher Impact System

CONFIGURATION C: Another option is an EZ Slider in combination with the Trougher Impact System. A troughing impact idler is placed after the Trougher Impact System with a maximum distance of 1 foot to absorb shock from settling of lumps and the material. The EZ Slider should be an EZI model with rubber disc center rolls. This will reduce friction and help settle the lumps and material. The EZ Slider will help maintain skirtboard sealing as the material settles into the shape of the troughing idlers. A troughing idler must be used before the belt travels into the Trougher Impact system with a maximum distance of 2 feet.



CONFIGURATION C

CONFIGURATION D: For longer impact areas, 2 or more Trougher Impact Systems can be bolted together. For these situations, the Lift Roll Kit will only be needed on the first Trougher Impact System. This configuration can be done with 5 foot long or 2 foot long Trougher Impact Systems. A combination of 5 foot and 2 foot Trougher Impact Systems is also possible. The spacing between rolls on a Trougher Impact System is 9 inches. When 2 Trougher Impact Systems are placed end to end the spacing between these rolls will be 15 inches. A troughing idler must be used before the belt travels into the Trougher Impact system with a maximum distance of 2 feet.



CONFIGURATION D

REPLACING ROLLS

1. Support the Wing Arm using a strap or chain with a come-along, hoist, jack, or some lifting device to hold the Wing Arm as shown in figure 3.
2. Loosen the Wing Arm pivot bolts (A in figure 4). Loosen these enough so that the Wing Arm will pivot, do not remove these bolts.
3. Remove the bolts at the foot pad (B in figure 4).
4. Remove the bolts where the Wing Arm and Support Arm meet (C in figure 4). The Wing Arm will remain supported by the Support Arm (BC) even with the bolts removed. If your TIS was supplied with a lift roll kit or kits, the lift roll and bracket will need to be removed.
5. Lift the Wing Arm up using the strap or chain shown in figure 3 and remove the Support Arms.
6. Slowly lower the Wing Arm until it is resting on the foot pads as shown in figure 5 and 6. On some configurations the Retainers can bend to facilitate removal of the roll for replacement.
7. Lift and remove the rolls.
8. Check Slider Rails for wear. If the white plastic is worn through to the black rubber the Slider Rails should be replaced. If the Slider Rails need replacing see section Replacing Slider Rails for instructions. If not proceed to the next step.
9. Inspect the shock absorbing cylinders. Check these each time the rolls or Slider Rails are replaced. If the shock absorbers need replacing see section Replacing Shock Absorbers for instructions. If not proceed to the next step.
10. The shaft ends of the new roll will need to be inspected to make sure that the round adapters line up. See figure 7.
11. Insert the roll into the center support and lay the roll on the lift strap near C. Bend the Retainers back toward the center if they were bent to remove the roll.
12. After all the rolls and slider rails are in place; begin lifting the Wing Arm into its troughed position. It is important to watch the roll ends, to assure that the round adapters find their way into the retainers near C. Check to make sure the round adapters are in their slots in the Center Support and the Retainers in the Wing Arm. If all the round adapters are in place proceed to the next step. If not lower the Wing Arm and reposition the roll.
13. Replace the support arms and insert the bolts and nuts. Do not tighten the bolts and nuts at this point, the Support Arms should be held in place by the lip on the foot pad and the lip on the Wing Arm at B and C in figure 4. To insert the bolts onto the Wing Arm you may need to position yourself slightly lower than the Wing Arm to line up the holes for the bolts.
14. With the bolts still loose, take a hammer and tap the Wing Arm towards the Center Support, such that the round adapters on the rolls are fully seated in the Wing Arms near C and fully seated in the Center Support.

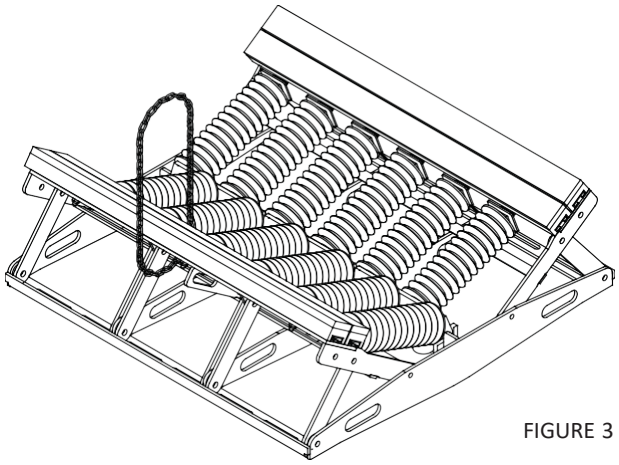


FIGURE 3

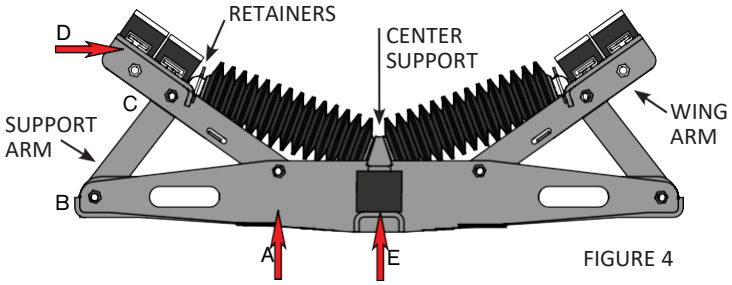


FIGURE 4

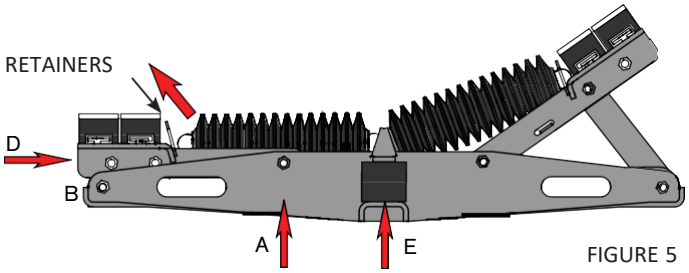


FIGURE 5

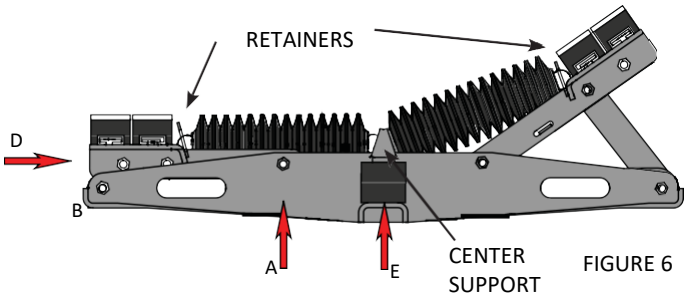


FIGURE 6

FIGURE 7

15. Check to see if the Lift Roll Bracket needs to be replaced.The Lift Roll and Bracket should be outside the impact area, but at times the bracket can get damaged. If the Lift Roll Bracket needs to be replaced see section Replacing Lift Roll Bracket. If not proceed to the next step.
16. Tighten all bolts.
17. Repeat this process to replace rolls on the other side of the Trougher Impact System.

REPLACING SLIDER RAILS

The Slider Rails will need to be replaced when the belt has worn through the white plastic and is showing the black rubber beneath. Typically, the Slider Rails are replaced with the Wing Arm in the lowered position as shown in figure 9. Depending on the amount of room around the Trougher Impact System it may be possible to change the Slider Rails with the Wing Arm in the raised position as shown in figure 8.

1. Loosen the T-Bolt nuts under the Wing Arm near D as shown in figures 8 and 9. Once the nuts have been loosened, the T-Bolt will turn ¼ of a turn and release the rail. Rotate the T-Bolt a ¼ of a turn. The T-Bolt will line up with the slot that runs the length of the Slider Rail allowing the slider rail to lift off the Wing Arm.

2. To reinstall the Slider Rail, line up the T-bolts as shown in figure 10 on the Wing Arm as shown in figure 9. Fit the Slider Rail over the T-Bolts. Then push the T-Bolts up into the rail slot and tighten. The T-bolts should be tightened to a torque of 10 to 20 ft-lbs.

3. Some Slider Rails will have an angled surface at one edge,see figure 11. This angled surface normally has the belt coming onto this surface. However, since the Trougher Impact System has Lift Rolls, this is not necessary, as the Lift Rolls will lift the belt onto the slider rails to help minimize the wear to the leading edge. Therefore, the angled surface can be used on the leading or trailing edge, assuming that the Lift Rolls are properly maintained.

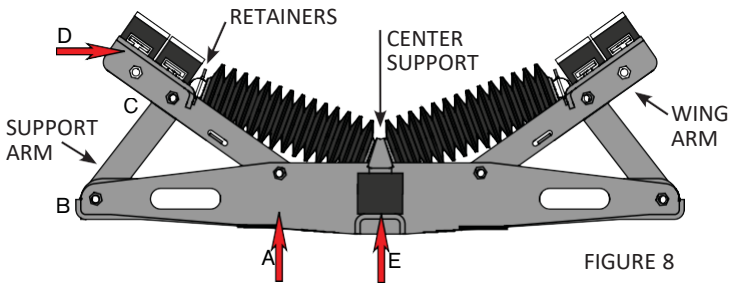


FIGURE 8

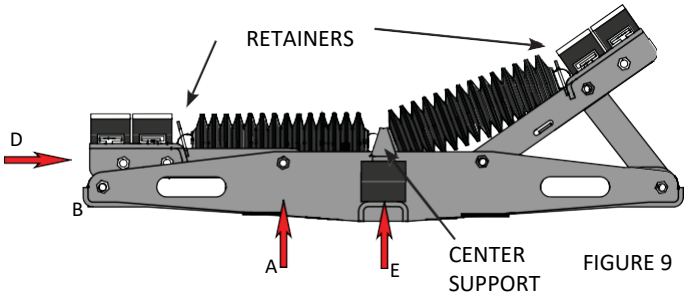


FIGURE 9

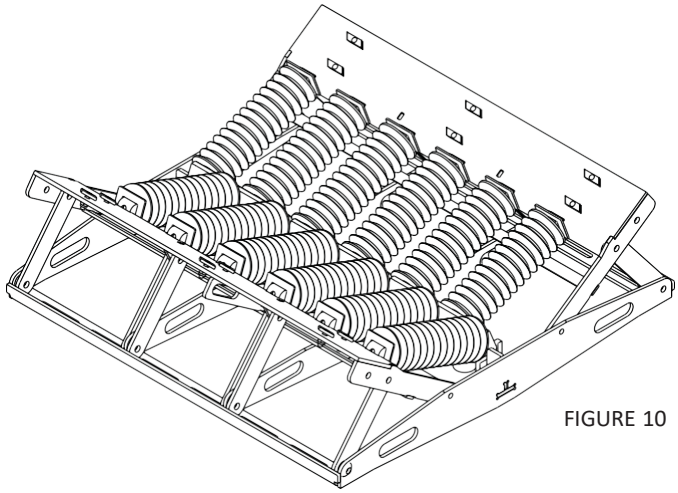


FIGURE 10

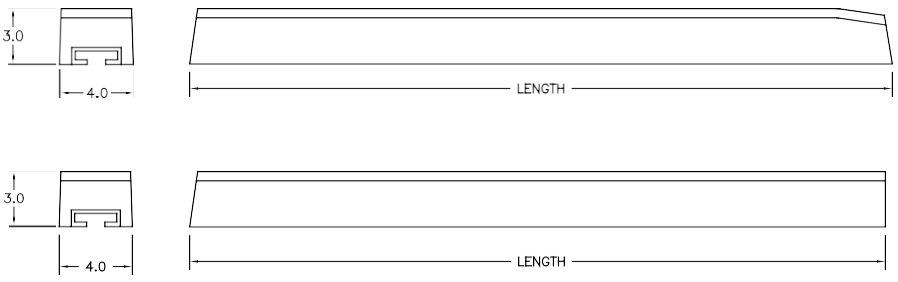


FIGURE 11

ALTERNATE METHOD TO REPLACE SLIDER RAILS

1. Remove the nuts and lock washers located under the Wing Arm near D as shown in figures 8 and 9. Once the bolts have been removed the Slider Rails along with the T-Bolts can be lifted off the Wing Arm.
2. To reinstall the Slider Rail, first install the T-Bolts into the holes in the Wing Arm and line them up as shown in figure 10. Fit the new Slider Rail over the top of the T-Bolts. Then push the T-bolts up into the slot of the Slider Rail and tighten. The T-bolts should be tightened to a torque of 10 to 20 ft-lbs.

REPLACING RUBBER SPRINGS

On the Trougher Impact System each Center Support has 2 or 3 shock absorbers underneath depending on the configuration purchased. There are also two different diameter shock absorbers that can be used, depending on the TIS configuration. The larger one is 3 ½ inch diameter and the smaller one is 2 ½ inch diameter. Some configurations also have 2 large and 1 small shock absorber and some have 1 large and 2 small shock absorbers. When replacing the shock absorbers, we recommend staying with the original configuration.

It is recommended that only one shock absorber is replaced at a time. This way the other two shock absorbers will hold the center assembly in position.

1. Remove the rolls. See section Replacing Rolls.
2. Remove the large bolts from underneath the Trougher Impact System shown in figure 12 at location E. To remove these bolts, first remove the roll pin from the head of the bolt. See figure 13.
3. Remove the existing shock absorbers.
4. The threads on the Center Support will need to be cleaned and a medium strength thread-locking compound used to secure the bolt into the threads.
5. Replace the bolt, sliding it up through the bottom frame and through the center of the shock absorber and into the Center Support.
6. Once all the bolts are threaded into the Center Support, tighten all three bolts to compress the shock absorbers about 1/8 inch.

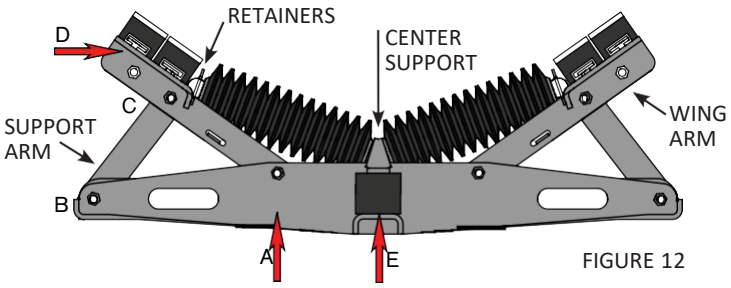


FIGURE 12

7. Once the bolts have been tightened, install the clevis pins into the head of each bolt. This can be accomplished when the hole in the bolt head is 10-20 degrees from the center axis of the U-channel (See figure 13 below). Then insert a cotter ring into first hole of each clevis pin.
8. Replace the rolls. See section Replacing Rolls.

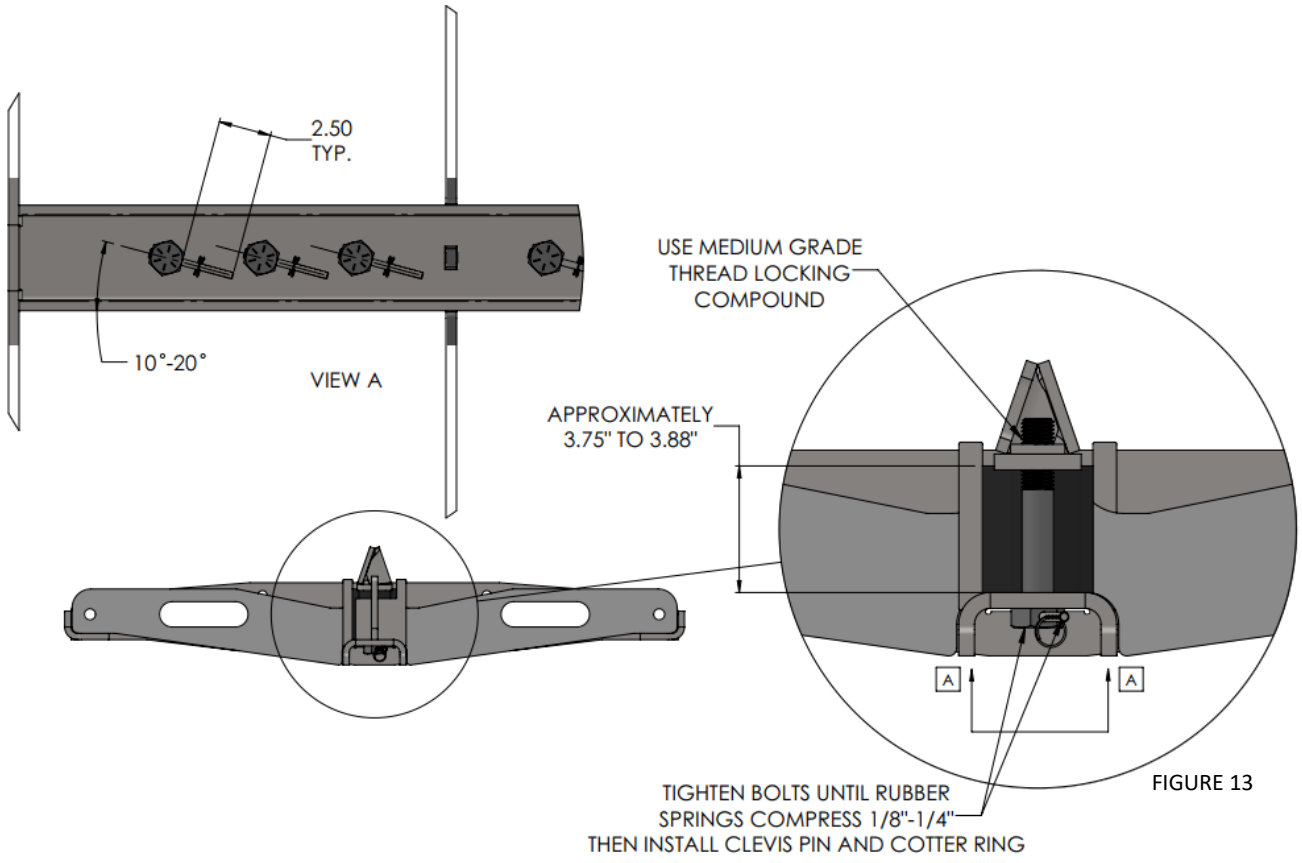


FIGURE 13

REPLACING LIFT ROLLS

1. Remove the end clips and screws. (Save these.)
2. Remove the roll and replace with new roll.
3. The lift rolls on the leading edge of the Impact system have slots in the mounting bracket. You will want to adjust these such that the top edge of the lift roll is ¼ to ½ inch higher than the rails. These rolls are rubber discs, and will compress under load. The purpose of these rolls is to lift the belt up over the rail, to prevent excessive wear on the leading or trailing edge of the rails. Figure 14 shows a Lift Roll and Bracket.
4. Replace end clips and screws. Do not overtighten this screw and strip the threads.

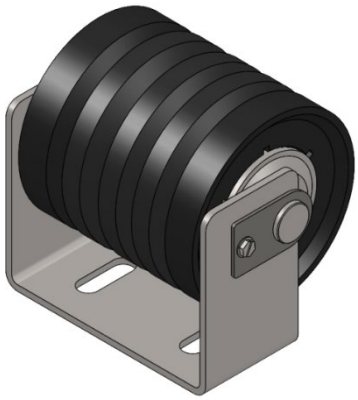


FIGURE 14

REPLACING LIFT ROLL BRACKET

1. Remove bolts holding lift roll bracket to the Trougher Impact System Wing Arm. These bolts are near C & D in figure 15.
2. If the lift roll is in good condition, take the roll out of the bracket and install it in the new bracket. Usually, if the bracket is damaged, the roll will also need to be replaced.
3. Place the lift roll bracket against the Wing Arm and align the holes.
4. Install the bolts and snug them.
5. Adjust the lift rolls such that the top edge of the lift roll is ¼ to ½ inch higher than the slider rails.
6. Tighten bolts.

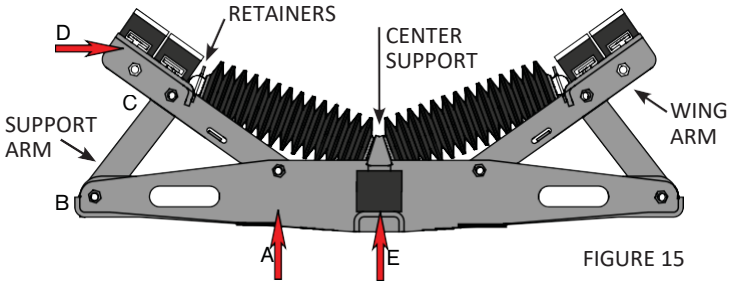


FIGURE 15

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Contact your sales representative for more information