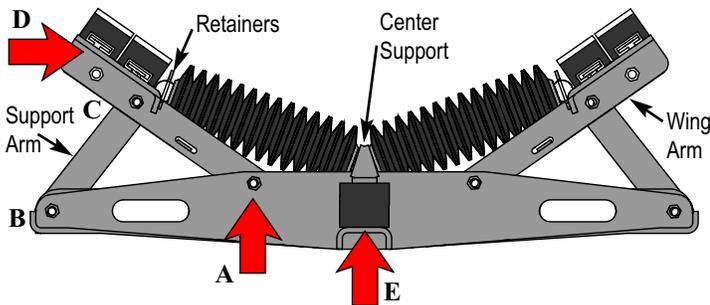


## MAINTENANCE OF TROUGHER IMPACT SYSTEM

**Caution: During installation, the user needs to assure that the rubber springs are tight and secure as in steps 7 & 8 of Section III AND the user needs to check all bolts are tighten according to steps 15 & 16 of Section I**

The Trougher Impact System is designed to handle severe impacts of the loading zone and provide ease of maintenance. The bolts used in the frame assembly are ¾ x 3" UNC bolts with 2 flat washers, 1 lock washer and nut. The bolts are designed to hold the parts in place and NOT carry the load.



### Section I - Replacing Rolls

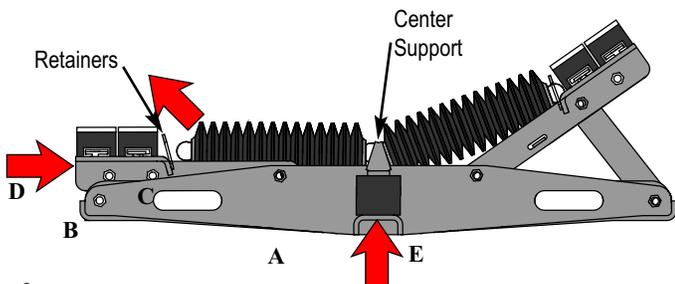
- 1) To replace the rolls, the first step is to loosen the pivot bolts (A). Just loosen these enough so that the Wing arm will pivot on these bolts.
- 2) Loosen foot bolts (B). These should be loosen several turns, to give enough room to tip the support to the side, and around the interlocking lip.
- 3) Support the Wing arm at C. The Trougher Impact system is heavy, it is recommended that a come-along, hoist, jack, or some lifting device is used to hold the wing arm up.
- 4) Remove the wing bolt (C). The support arm will remain supported by the support straps (BC). The bolts hold the support in place.
- 5) While lifting the wing arm, move the support arms to the side and around the lip on the wing arm, and down towards the center.
- 6) Lower the wing arm.
- 7) Lift and remove the rolls.
- 8) Check Slider Rails for wear. If the UHMW plastic is worn through to the rubber the rails should be replaced. See Replacing Slider Rails, if

the slider rails need replacing. If not proceed to step 9.

- 9) Inspect the absorbing rubber springs. The rubber springs will need to be replaced much less frequently than rolls and slider rails, but over time will wear. Check these each time the rolls or slider rails are replaced. See Replacing Rubber Springs, if the rubber springs need to be replaced, If not proceed to step 10
- 10) The shaft ends of the new roll will need to be inspected to make sure that the round adapters line up.
- 11) Insert the roll into the center support and lay the roll on the lift strap near C.
- 12) After all the rolls and rails are into place, lift the Wing Arm up, while watching the rolls, to assure that they find their way into the retainers near (C).
- 13) Move the supports back into place and insert bolt(s) at C to hold them into place, so until everything can be secured. Note: the supports should be held in place by the lip on the foot and on the slider place at (B) and (C) respectively.
- 14) Before tightening the bolts that hold the wing in place, take a hammer and tap the wings in towards the center, such that the knuckle is fully seated in the wing. Check the knuckles near C to see if this has been accomplished.
- 15) Before tightening the bolts, check to see if the Lift Roll Bracket needs to be replaced. The lift roll should be outside the impact area, but at times the bracket can get damaged. If the bracket needs to be replaced see Replacing Lift Roll Bracket. If not proceed to step 16.
- 16) Tighten all bolts.

### Section II - Replacing Slider Rails.

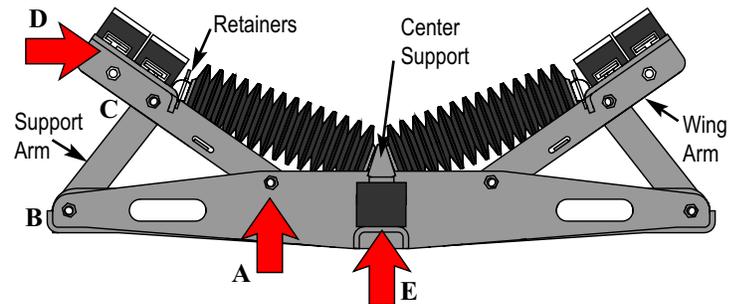
- 1) If the slider rails need to be replaced, loosen the bolts (D). Once the bolts have been loosened, it will turn ¼ of a turn and release the rail.
- 2) To reinstall the rail, line up the T-bolts and fit the rail over the bolts. Then push the T-bolts up into the rail and tighten. This will turn the T-bolt ¼ turn and then the T-bolt will hit the rail and the nut will begin to tighten. Tighten all Slider Rail bolts (10 to 20 ft-lbs).
- 3) Some slider rails will have an angled surface at one edge. This angled surface is normally facing into the belt direction. However, since the TIS will come with a lift roll kit, this is not necessary, as the lift roll kit will lift the belt onto the slider rails to minimize the wear to the leading edge. Therefore, the angled surface can be used on the leading or trailing edge, assuming that one maintains the lift rolls kit.



## Section

### III - Replacing Rubber Springs

- 1) The rolls should be removed. If they are not, please remove them at this time. (See steps 1-6 under replacing rolls)
- 2) Remove the 1 x 6 UNC bolt (E). To remove the 1 x 6 UNC bolt, first remove the roll pin from the head of the bolt.
- 3) Remove the old rubber spring. Note: depending upon your location, it is suggested that one rubber spring is replaced at a time. That way the other two rubber springs will hold the center assembly into position. If you choose to replace all three at once, simply mount the center assembly on top of the rubber springs.
- 4) There are 2 sizes of rubber springs; the smaller one (about 2½ to 3 inches in diameter) goes on each end. While the larger one (3½ to 4½ inches in diameter) goes in the center position of each of the 18 inch long sections. Note: The size range varies, depending upon the material composition of the rubber springs, i.e. chemistry and durometer. Earlier versions were larger in diameter. Both versions have the same shock absorption capacity.
- 5) The center assembly is threaded. The threads will need to be cleaned and a medium strength thread-locking compound used to secure the bolt into the threads.
- 6) Replace the bolt, sliding it up through the bottom frame and through the center of the rubber spring and into the center assembly.
- 7) Once all the bolts are threaded into the center assembly, tighten all three bolts to compress the rubber springs about 1/8 to 1/4"
- 8) Once the bolts have been tighten, hammer the roll pins into the head of each bolt. This is easiest when the hole in the bolt head is 10 to 20 degrees from the center axis of the U channel (and center assembly) (See figure below.)
- 9) Proceed with Replacing Rolls steps 10-16.

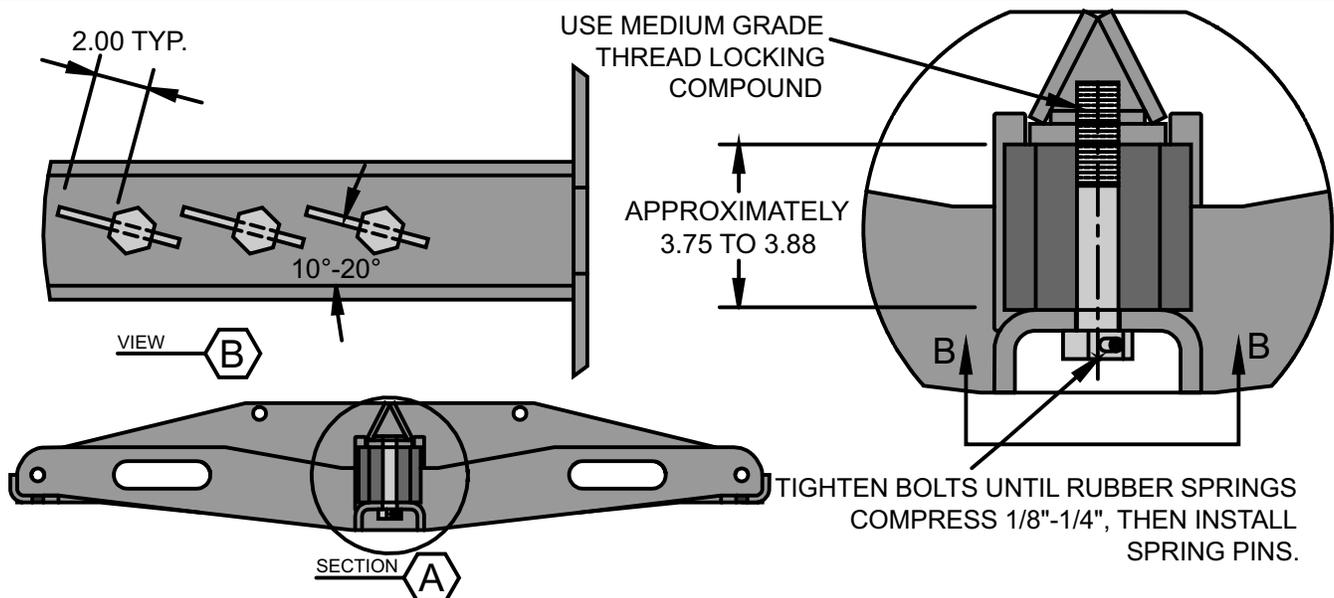


### Section IV - Replacing Lift Rolls

- 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 OD 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 lead-in or trailing edge of the rails.
- 4) Replace end clip and screw. Do not overtighten and strip the threads.

### Section V - Replacing Lift Roll Bracket

- 1) Remove bolts holding lift roll bracket to the TIS wing. These bolts are near C & D
- 2) If the lift roll is in good condition, take the roll out of the bracket and install it in the new bracket. (See replacing lift Rolls) Usually, if the bracket is damaged, the roll will also need to be replaced.
- 3) Place the lift roll bracket against the TIS wing and align the holes.
- 4) Install the bolts and snug them.
- 5) Adjust the lift rolls such that the OD of the lift roll is ¼ to ½ inch higher than the slider rails.
- 6) Tighten bolts.

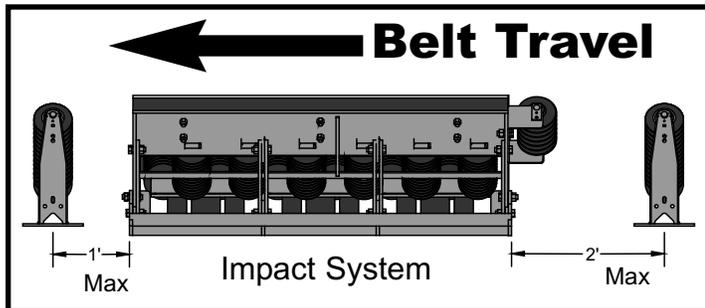


Part numbers for the Impact system rolls, rails, rubber springs, etc. are listed in our Idler Replacement Parts catalog.

*NOTE: The rolls in the impact system are on 9 inch centers, offset 4.5 inches from one side to the other. If 2 sections are bolted together (Configuration D on page 3) the roll spacing will be 15 inches between sections. For typical configurations of the Impact System, see page 3.*

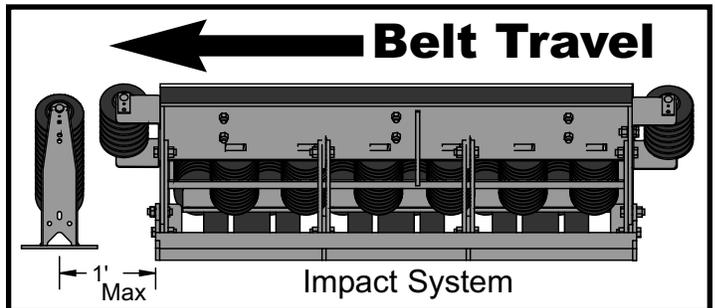
For other Operation & Maintenance manual(s), see our website at <http://www.ppipella.com>.

Shown below are common configurations for the Trougher Impact System. Your choice will depend upon your application and experience. Note: the belt is approaching the Impact System from the right.



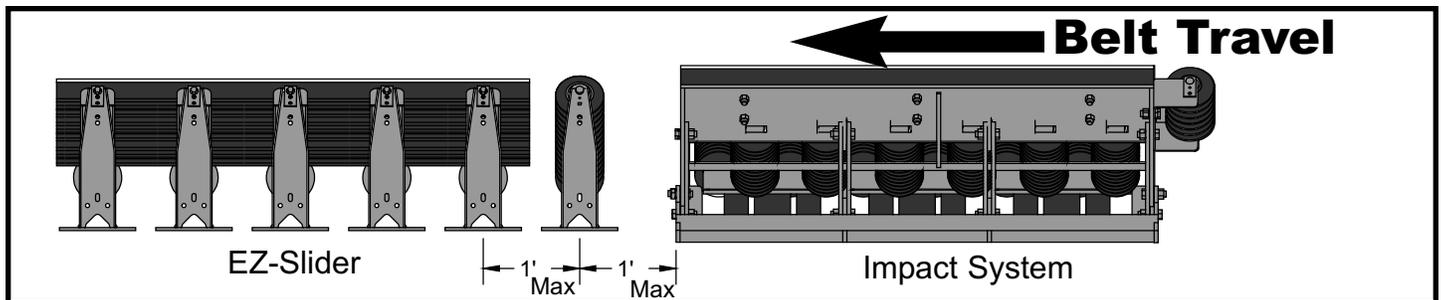
### Configuration A

This is one of the most common usages of the impact system. A troughing idler **MUST** be use in advance of the impact system (plus any transitional idlers) with a maximum distance of 2 feet as illustrated above. A troughing impact idler is to be used after the impact system. This idler should be located 1 foot maximum from the impact system. The purpose of this idler is to dampen any shock to the belt and idler for large lumps to “settle” onto the belt.



### Configuration B

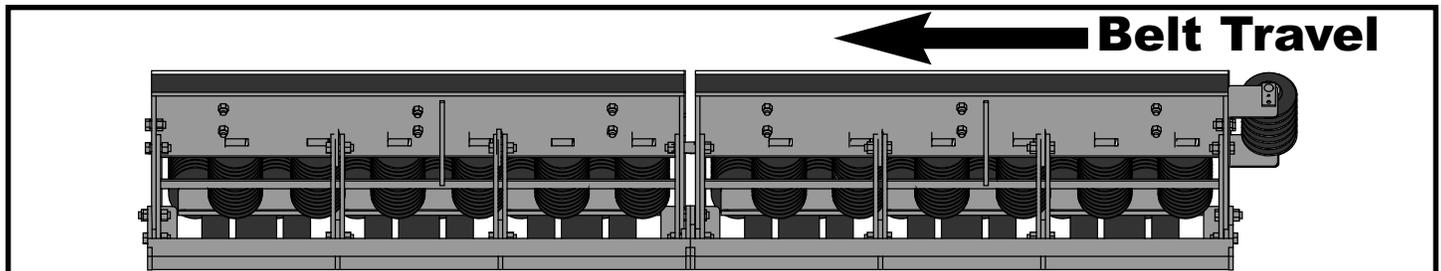
One of the most common options used is a lift kit at both ends of the impact system. While this is required for reversing belts, many customers will use this to prevent wear on the slider rails from the lead in and trailing edge. When this is done, it reduces belt wandering due to sliding over the slider rails. Since the slider rails do not move, they tend to cause belt wandering. The lift rolls will tend to act as guide rolls, reducing the wandering effects of the slider rails.



### Configuration C

The next common option is an EZ Slider in conjunction with an Impact System. It is suggested that a Troughing Impact Idler is used after the impact system to absorb shock from “settling” of large lumps. The maximum spacing between this impact idler and impact system or EZ Slider should be 1 foot.

The EZ Slider should have rubber disc rolls in the center position, as this will reduce friction and help “settling” of the load. The EZ Slider will help maintain skirtboard sealing, as the load “settles onto the belt. Always include 1 trougher (plus any transitional idlers) between the tail pulley and any impact system.



### Configuration D

For larger impact areas, 2 or more impact systems can be bolted together. For these situations, the lift roll kit will only be needed on the first impact system. This arrangement is often done with 2 foot impact systems (TISZ), when access space is tight.

It is also used on feeders from several hoppers, such as a mixing conveyor. While the normal roll spacing is 9 inches, it will be 15 inches between two impact systems. Always include 1 trougher (plus any transitional idlers) between the tail pulley and any impact system.