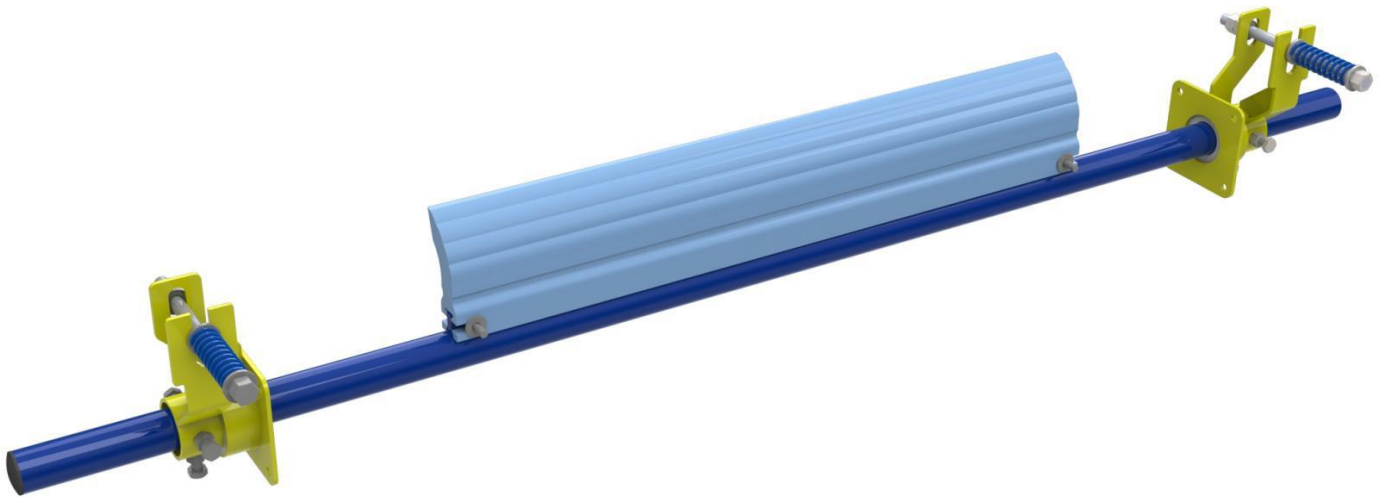




# Quarry Line BEP1-XXX-1U1E2

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## Installation Guide



**! IMPORTANT !****BENETECH, INC. HEREBY DISCLAIMS ANY LIABILITY FOR, BUT NOT LIMITED TO:**

- IMPROPER INSTALLATION OF EQUIPMENT
- IMPROPER SIZING OF EQUIPMENT
- DAMAGE DUE TO CONTAMINATION OF MATERIAL
- USER'S FAILURE TO INSPECT EQUIPMENT
- USER'S FAILURE TO MAINTAIN EQUIPMENT
- USER'S FAILURE TO TAKE REASONABLE CARE OF THE EQUIPMENT
- INJURIES OR DAMAGE RESULTING FROM USE OR APPLICATION OF THIS PRODUCT CONTRARY TO INSTRUCTIONS AND SPECIFICATIONS CONTAINED HEREIN.

**BENETECH, INC.'S LIABILITY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF EQUIPMENT SHOWN TO BE DEFECTIVE.****! SAFETY !**

Review and understand all safety rules given herein along with local and Governmental standards and regulations. Know and understand the American National Standards Institute (ANSI) z244.1-1982 lockout/tagout procedures, the American National Standard for Personnel Protection - Lockout/Tagout of Energy Sources - Minimum Safety Requirements and the Occupational Safety and Health Administration (OSHA) Federal Register, Part IV, 29 CFR Part 1910, Control of Hazardous Energy Source (Lockout/Tagout); Final Rule. Also observe all local and Governmental regulations concerning entry into confined spaces, welding, cutting, grinding, wash-down procedures and all Personal Protective Equipment (PPE) regulations.

*The following notations are used throughout in this manual.*

**! DANGER !**

**Danger:** Denotes immediate hazards that will result in severe personal injury or death.

**! WARNING !**

**Warning:** Denotes hazards or unsafe practices that could result in personal injury.

**! IMPORTANT !**

**Important:** Denotes instructions that must be followed for proper installation and/or operation of equipment.

**NOTE**

**Note:** Denotes general items to assist the reader/ installer/ operator.

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**Please pay close attention to all of these items and warnings.  
They have been included here for your safety and for ease of installation.**

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All safety rules defined in this document and all owner/employer as well as State and Federal safety rules must be strictly adhered to when working on/with this, or any, conveyor plow system.



**! DANGER !**

*Do not touch or go near the conveyor belt or conveyor accessories when the belt is running. Your body or clothing can get caught and you can be pulled into the conveyor, resulting in severe injury or death*

**! DANGER !**

*Before installing, servicing, or adjusting the plow, turn off AND lock out/tag out all energy sources to the conveyor and conveyor accessories according to ANSI standards. Failure to do so could result in serious injury or death.*

**! DANGER !**

*If this equipment is to be installed in an enclosed area, observe all confined space entry regulations and test the atmosphere for gas levels and dust content levels before using a cutting torch, welding equipment or electric hand tools. Using a torch, welding, grinding or drilling in an area with gas or dust may cause an explosion and/or fire resulting in serious injury or death.*

**! WARNING !**

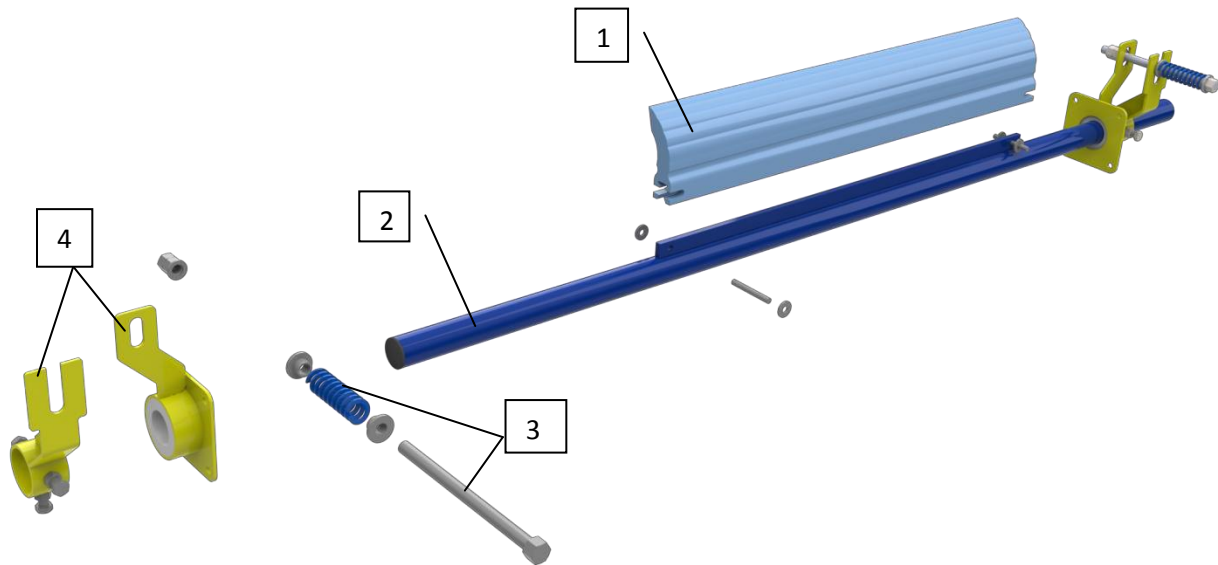
*Before using a cutting torch, welders, or grinding equipment, cover the conveyor belt with a fire retardant/resistant cover. Make sure a water source/fire hose is readily available AND OPERATIONAL. Failure to do so can allow the belt to catch fire.*

**! WARNING !**

*Conveyor plows are heavy and may require two people to lift. Attempting to lift the plow without assistance could result in injuries or damage to the equipment.*

# Provided Components

The parts listed below make up the *BEP1/1U1E2* assembly. The length and quantity of some parts may vary depending on the belt width application that your cleaner is intended for.



ITEM NO.	DESCRIPTION	QUANTITY
1	BLADE	1
2	POLE	1
3	THREADED ROD AND TENSION SPRING	2
4	TENSIONER BRACKET ASSEMBLY	2

## Before Installing the BEP1-XXX-1U1E2

1. Inspect ALL shipping containers for damage and correct number of items (skids, pallets, cartons, boxes, etc.) being delivered. Report damage and/or shortages to delivery service immediately and fill out delivery service's claim form. Keep ALL damaged goods for examination. Benetech Inc is NOT responsible for damage occurring during transit.
2. All Benetech Inc. BEP1's are shipped from our facilities partially assembled. Care should be taken while disassembling the units to ensure no parts are lost or damaged as the equipment is moved to its desired location. Dispose of shipping containers in an approved manner.
3. If any items are missing, IMMEDIATELY contact BENETECH, INC. or an authorized representative.
4. Gather tools. Minimum tools required for installation are:
  - Tape measure/ String
  - Torch/Hole Saw
  - Level/Straight Edge
  - Welder/Drill
  - Open/Box End Wrenches
  - Socket Set
  - Marker/Soapstone (Welders chalk)
5. If using a cutting torch or welding, test atmosphere for gas level or dust content. Cover conveyor belt with fire retardant cover. Verify locations of fire extinguishers and operational water hoses prior to begin cutting/welding operations.



### **! WARNING !**

***Before installing equipment, turn off AND lock out/tag out all energy sources to the conveyor and conveyor accessories according to ANSI standards and local plant regulations. Failure to do so could result in serious injury or death.***

***If equipment will be installed in an enclosed area, the atmosphere in the structure/area must be tested for gas levels and dust content levels before using a cutting torch, welding equipment, grinding equipment or electric powered tools. Using a cutting torch, welding, drilling or grinding in an area with gas or dust may cause an explosion.***

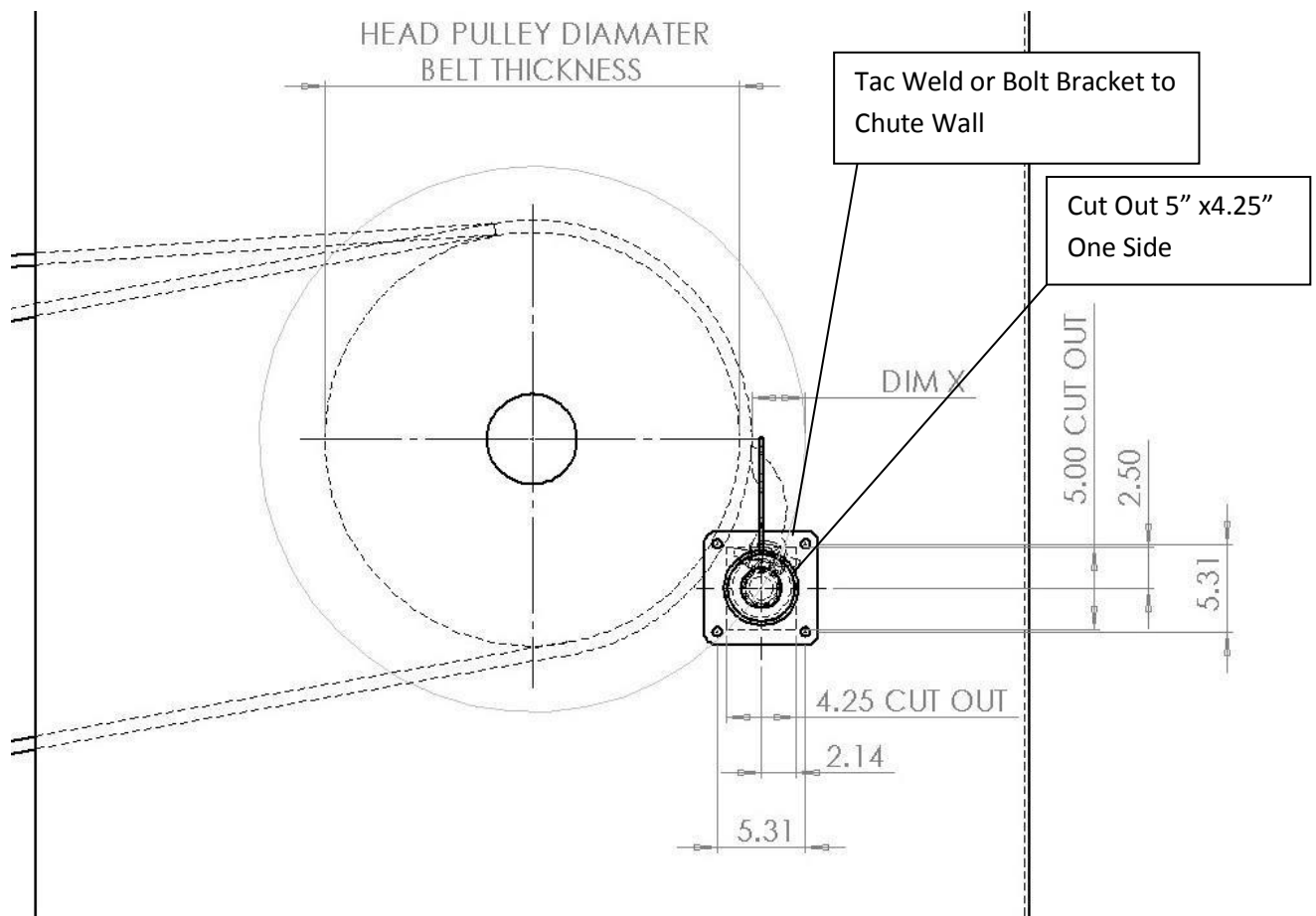
# Installation Overview

The *BEP1* is a primary belt cleaning blade designed to remove excess material that is stuck to the carry side of the belt. As a primary cleaner, it uses a soft durable polyurethane blade. The shape on the back of the blade allows the tip to stay sharp, maintaining efficiency through the life of the blade. This *BEP1/1U1E2* cleaner uses basic spring powered tensioners that are easy to adjust, maintain, and replace.

The *BEP1* should be mounted on the lower half of the head pulley where the belt is wrapped and taugted on the pulley surface.

In some instances, the cleaner may not fit in the position shown. Always locate the Blade as close to this position as possible, on the pulley, without placing it above the pulley center.

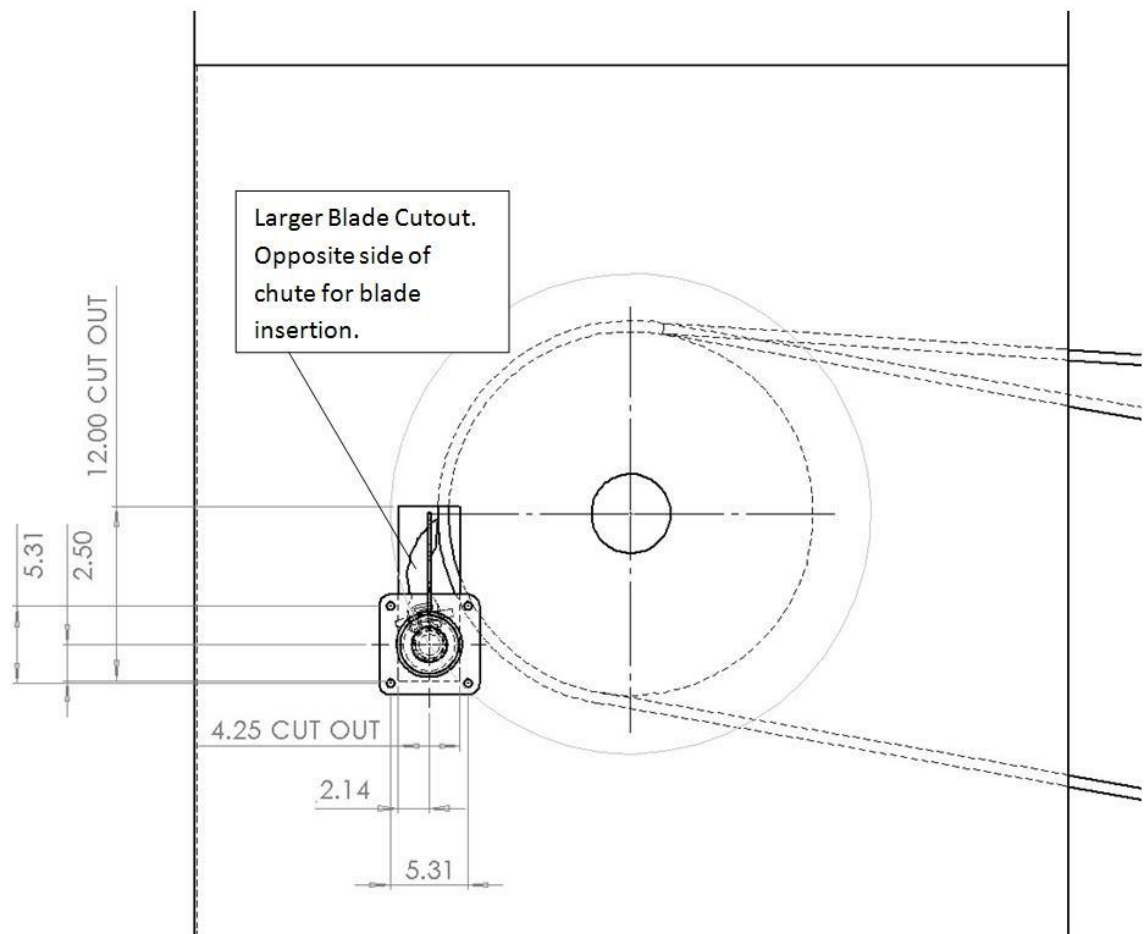
<b>"X" Dimension - Inches</b>
3.25"-3.5" (85mm-89mm)



# Installation Instructions

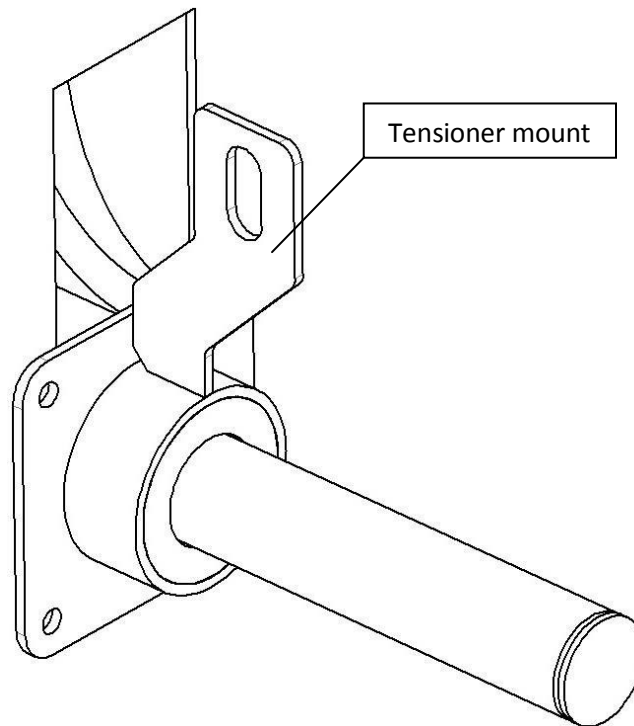
## Step 1. Locate blade position.

- a. As described on page 7, locate the mounting position for the *BEP1*. Make a 5"x4.5" cutout on one side of the chute.
- b. Tack weld or bolt the bracket to the chute in the determined location on ONE SIDE of the chute, over the 5"x4.5" cutout.
- c. On the opposite side, cut out the opening for the blade according to dimensions below using the pole as a point of reference. NOTE, if an inspection door is part of the installation this step is not required (or if the blade can be accessed/changed from another location or door in the chute). At this time, there should be a cutout on BOTH sides of the chute, adjacent from each other. Insert blade through to opposite side bracket.

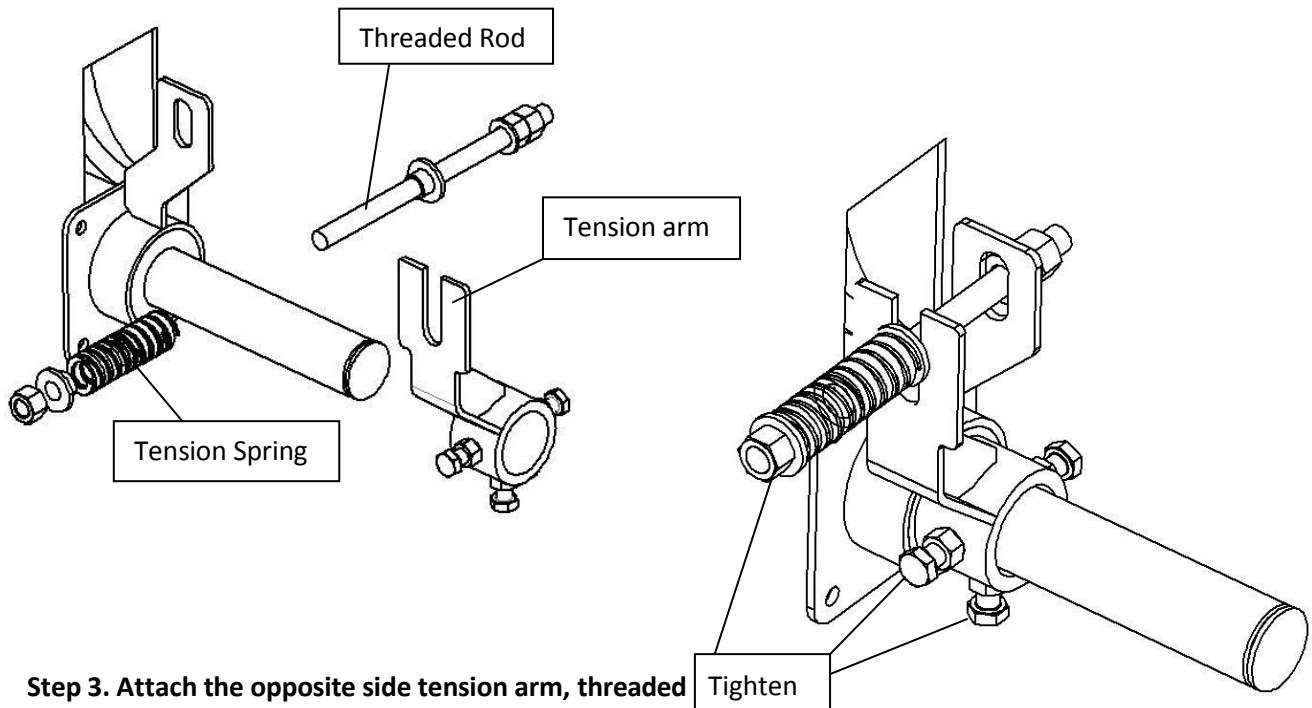




**Step 2. Tac weld or bolt bracket to chute.**

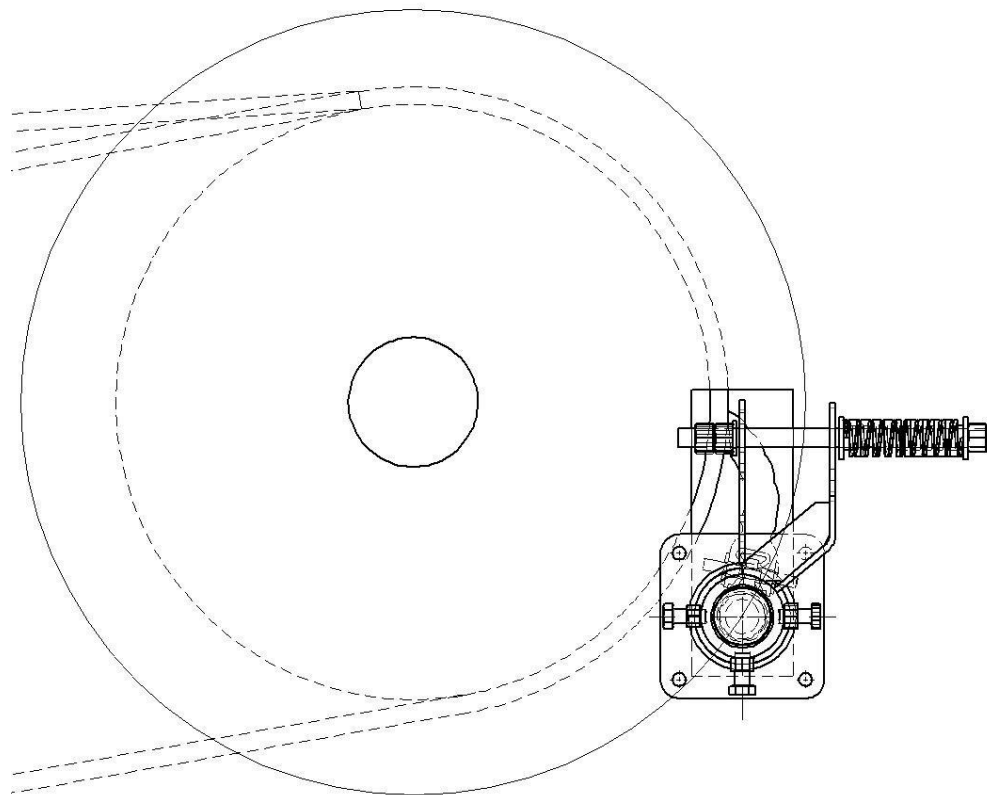
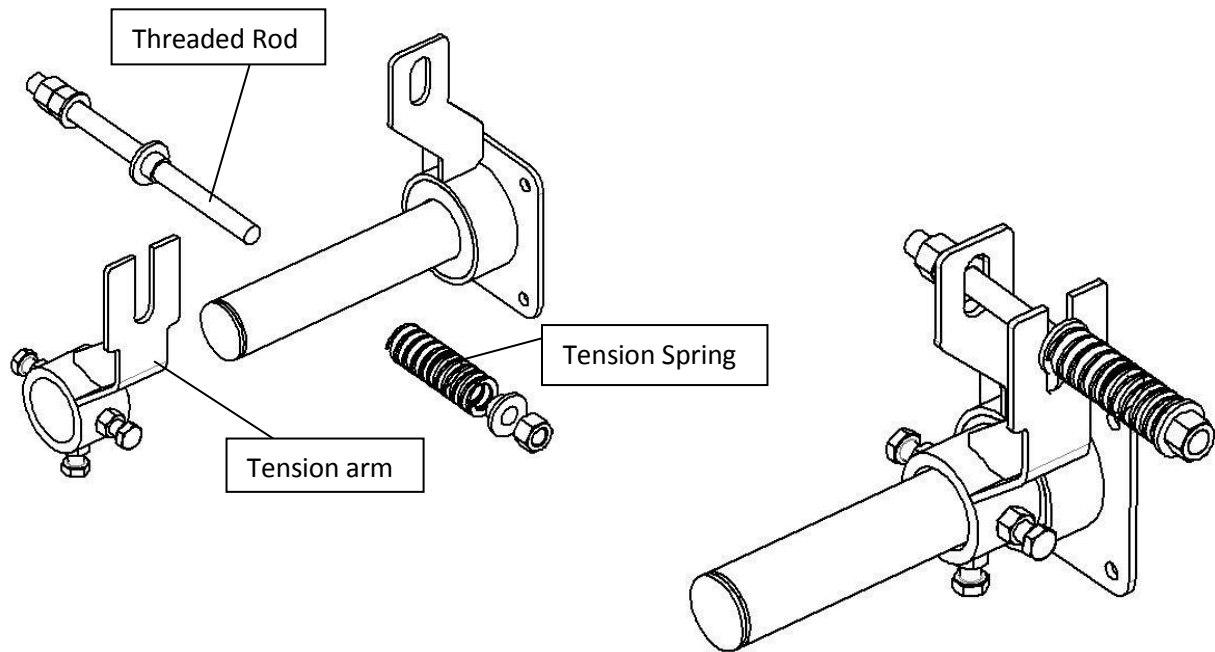


- a. Attach the tension arm, threaded rod, and tension spring. Tighten the arm to the pole. Spring should face the back of the head chute, away from the headpulley.



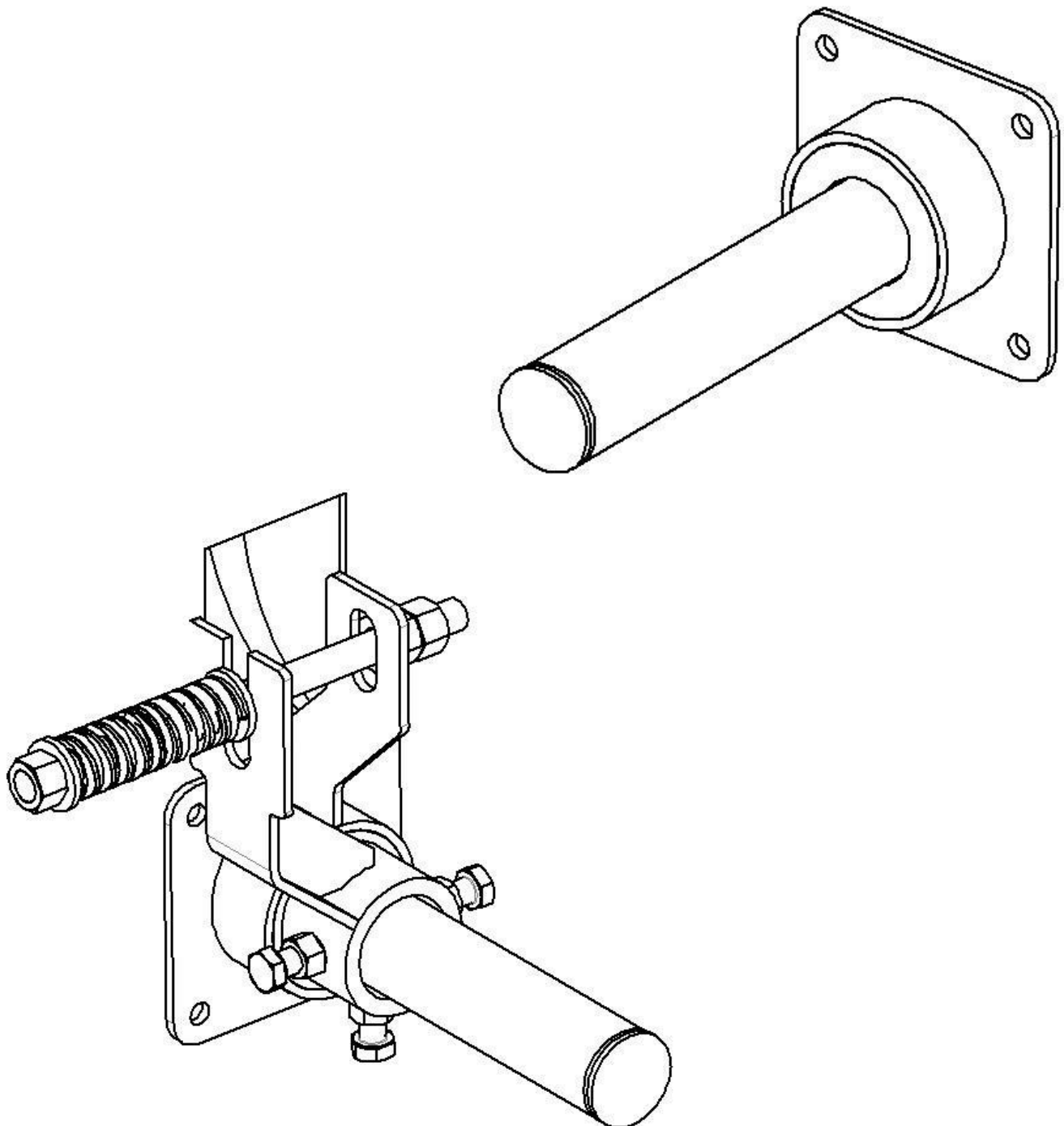
**Step 3. Attach the opposite side tension arm, threaded**

rod, and tension spring.



## Installation: 48" Wide Belts or Smaller

The Quarry Style BEP1 uses dual Spring Tensioners at belt widths 54" and above. For belts 48" and smaller, only one tensioner is used, and therefore only one (1) will be provided. It can be mounted on whichever side of the chute is most convenient during install. The non-tensioned side of the cleaner will be supported using a pole holder bracket that is mounted to the chute in the same manner as the tensioner would be.



# Spring Tension Settings

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## Uncompressed Spring Length (L0)

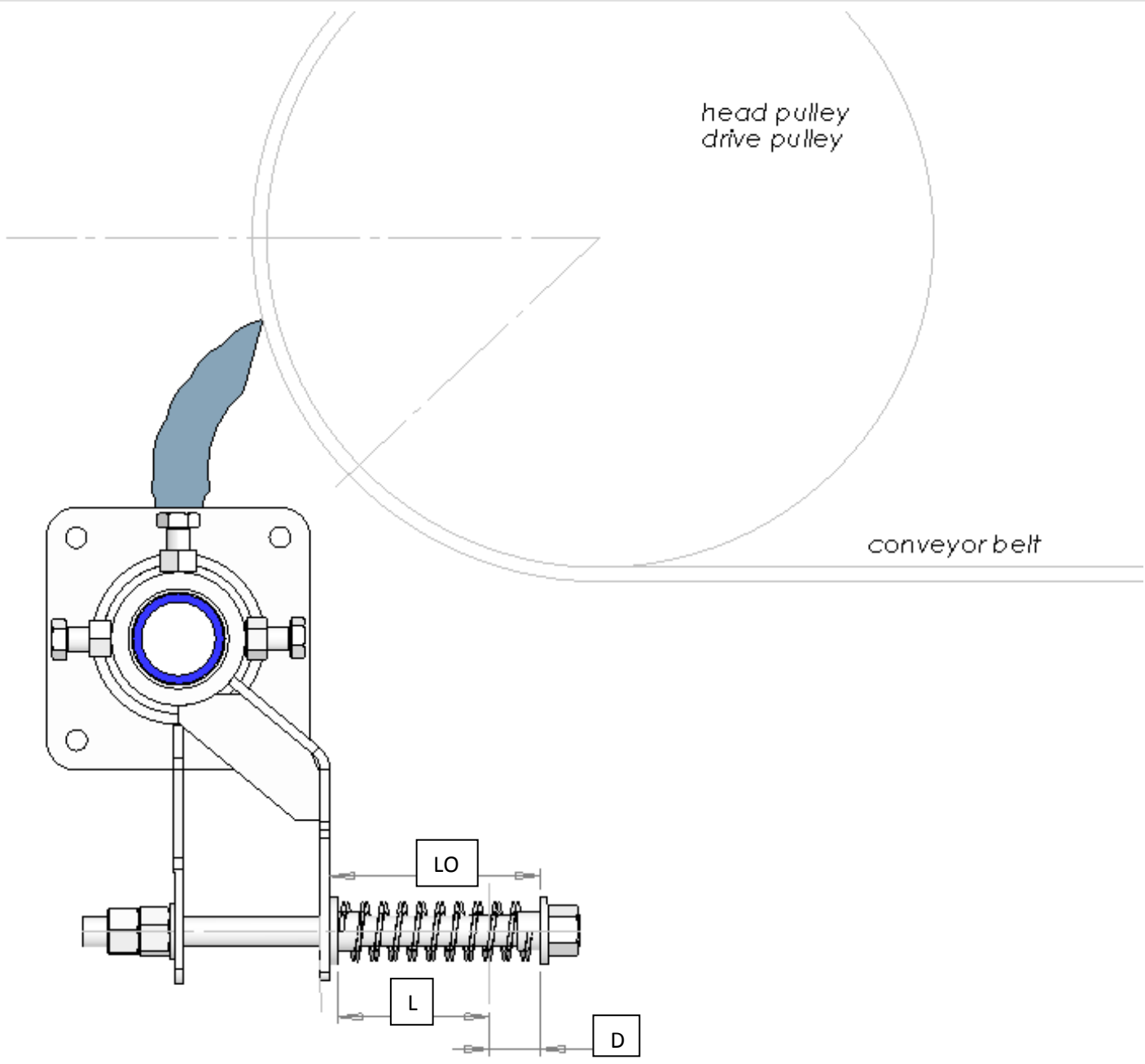
Lspring (inches) = 5.0

Belt Width (inches)	Blade Width (inches)	Single Tens d (in)	Dual Tens d (in)	Compressed Spring Length (L)	
				Single Tensioner (in)	Dual Tensioner (in)
12	10	0.25	0.13	4.75	4.87
18	16	0.40	0.21	4.60	4.79
24	22	0.55	0.28	4.45	4.72
30	28	0.70	0.36	4.30	4.64
36	34	0.85	0.44	4.15	4.56
42	40	1.00	0.51	4.00	4.49
48	46	1.15	0.59	3.85	4.41
54	52	n/a	0.67	n/a	4.33
60	58	n/a	0.74	n/a	4.26
72	70	n/a	0.90	n/a	4.10
84	82	n/a	1.05	n/a	3.95

## Uncompressed Spring Length (L0)

Lspring (mm) = 127

Belt Width (mm)	Blade Width (mm)	Single Tens d (mm)	Dual Tens d (mm)	Compressed Spring Length (L)	
				Single Tensioner (mm)	Dual Tensioner (mm)
300	254	6	3	121	124
450	406	10	5	117	122
600	559	14	7	113	120
750	711	18	9	109	118
900	864	22	11	105	116
1050	1016	25	13	102	114
1200	1168	29	15	98	112
1400	1321	n/a	17	n/a	110
1600	1473	n/a	19	n/a	108
1800	1778	n/a	23	n/a	104
2200	2083	n/a	27	n/a	100



**! WARNING !**

*Excessive tensioning can create premature wear of blades, damage to conveyor belt and excessive heat.*

**! DANGER !**

*Excessive heat created by excessive friction due to blades being improperly tensioned can create situations where fire and or explosions can occur*

**! WARNING !**

*Failure to remove tools from installation area and conveyor belt before turning on energy source can cause serious injury to personnel and damage to belt.*

**! WARNING !**

*Do not touch or go near conveyor belt or conveyor accessories when conveyor belt is running. Body or clothing can get caught and pull body into conveyor belt, causing severe injury or death.*

# Belt Cleaner Operation and Maintenance



- 1) Once installation is complete turn on conveyor belt for 1/2 hour, then turn off. Tighten all mounting nuts, bolts, etc. Check for belt condition and proper tensioner settings. Readjust if necessary.

## **! DANGER !**

**Before installing, servicing, or adjusting the belt cleaner/tensioner, turn off and lock out/tag out all energy sources to the conveyor and conveyor accessories according to ANSI standards. Failure to do so could result in serious injury or death.**



- 2) Periodic inspection and maintenance **MUST** be performed on a regular basis to ensure the equipment is functioning properly.
  - a. Inspect belt cleaner for proper wear pattern. A small amount of "run-in" wear is normal. This will stop once blades wear to conveyor belt contour. The blade should wear evenly during operation - if it doesn't adjust tension on one or both sides. If this does not correct the problem contact Benetech Inc.
  - b. If excess or uneven wear patterns appear, material builds up badly on blades or frame, or some other problem exists, consult a specialist or contact Benetech Inc for support.
  - c. During inspection remove any material build-up from BEP1 belt cleaner.
  - d. Make sure all hardware and fasteners for the mounting equipment and tensioners (if applicable) are tight.

- e. Check compression/rotation of rosta or spring tensioners. Re-tension if necessary. Note that as the blades wear out the tensioners will need to be adjusted
- f. Check blades for excessive wear. All Benetech Inc. blades come with a visible wear lines or patterns on the back of the blades indicating when scraper blades should be replaced. Replace blades when necessary.
- g. Remove equipment from service if there is any indication it is not functioning properly. Call BENETECH, INC. or a representative for assistance.

**! NOTE !**

**Maintenance inspection should be performed no less than weekly. Some applications may require more frequent maintenance inspections.**

**! DANGER !**

***Before installing, servicing, or adjusting the belt cleaner/ tensioner, turn off and lock out/tag out all energy sources to the conveyor and conveyor accessories according to ANSI standards. Failure to do so could result in serious injury or death.***

**! WARNING !**

***Failure to remove tools from installation area and conveyor belt before turning on energy source can cause serious injury to personnel and damage to belt.***

**! WARNING !**

***Do not touch or go near conveyor belt or conveyor accessories when conveyor belt is running. Body or clothing can get caught and pull body into conveyor belt, causing severe injury or death.***

