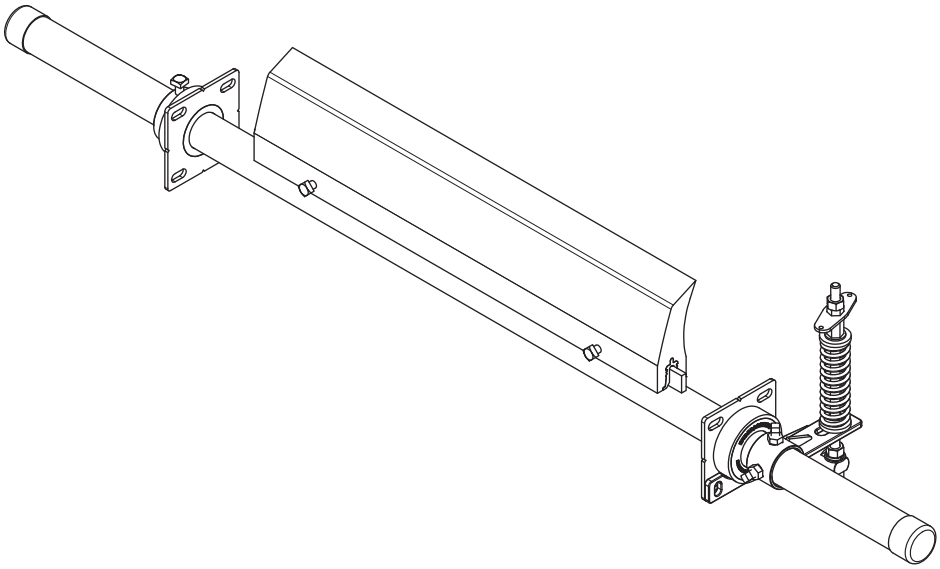
IT'S THE YEAR OF
INNOVATION
AT AMERICAN EAGLE
MANUFACTURING

AMERICAN EAGLE MANUFACTURING LLC



# E1SD
# INSTRUCTION MANUAL

UNI-BLADE™
PATENT NO. 12246927

FACILITY NAME

CONVEYOR NUMBER

DATE OF INSTALLATION

INSTALLED BY

# TABLE OF CONTENTS


Disclaimer/Safety page 3

- 3.1 Disclaimer
- 3.2 Safety

Installation Check List page 4

- 4.1 Confirmation of Cleaner Series and Size
- 4.2 Chute Installation
- 4.3 Non Chute Installation
- 4.4 Tools Required

Blade Location / Material Path page 5

Primary Cleaner Accessories page 6

- 6.1 Eagle Safety Inspection Access Door
- 6.2 Eagle Blade Access Plate
- 6.3 Universal Telescoping Mount
- 6.4 Eagle Mounting Plate

Replacement Parts List page 7/8

- 7 Single Tensioner
- 8 Dual Tensioner

Primary Cleaner Installation page 9/11

Maintenance / Troubleshooting page 12

- 12.1 Maintenance
- 12.2 Troubleshooting

# DISCLAIMER/SAFETY

## 3.1 Disclaimer

American Eagle Manufacturing LLC disclaims any liability for improper use or application of this product not in compliance with instructions and specifications contained herein or for any damages due to contamination of material as a result of users' failure to maintain and inspect equipment. Liability shall be limited to the repair or replacement of AEM Equipment shown to be defective by cause of manufacturing.

## 3.2 Safety

Adhere to all safety rules defined by government (OSHA/MSHA) 1910.147, owner/employer and site specific safety rules.

## - DANGER -

Lockout/Tagout procedures must be followed before any maintenance, service, repair, or installation of equipment begins on the conveyor. Failure to follow all safety rules can result in injury or death.


# INSTALLATION CHECK LIST

## 4.1 Confirmation of Cleaner Series and Size

A) Match recommended cleaner to pulley diameter

B) Confirm blade tip location. (see page 5)

C) Confirm blade width to material path (see page 5)

## 4.2 Chute installation

A) Choose location of tensioner (on left or right side of chute wall). Make this decision based on ease of maintenance of tensioner and blade replacement.

B) Pre-check any obstructions for proper location

C) Confirm adequate access to inside of chute. Chute should have access door or access panel for blade replacement and maintenance. (see page 6 for Eagle Safety Inspection Access Door and/or Eagle Blade Access Plate, if necessary)

D) Confirm Standard mounting tube length is adequate (see page 7 item 2)

## 4.3 Non-Chute installation

A) You will need to have a plan to install cleaner without a chute wall. This can be done by fabricating panels and welding to both sides of conveyor frame. We also offer two pre-manufactured solutions to this problem. (see page 6 for the Universal Telescoping Mount or the Eagle Mounting Plate, if necessary)

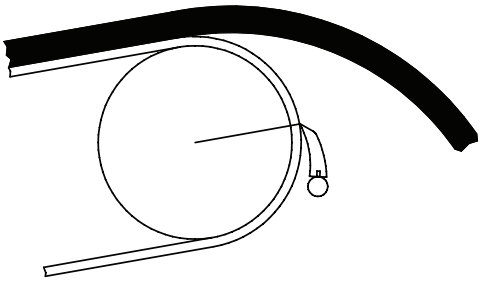
B) Pre-check any obstructions for proper location

## 4.4 Tools Required

Personal safety equipment as required by OSHA/MSHA and site specific guidelines.

Standard hand tools, cutting torch, welder, grinder, soap stone or marker and fire protection.

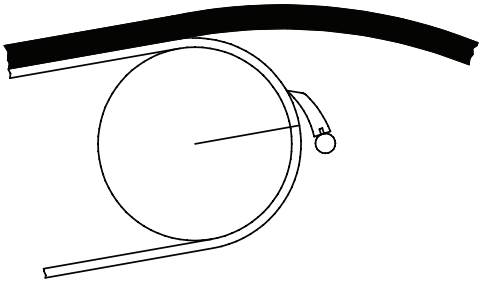
# BLADE LOCATION



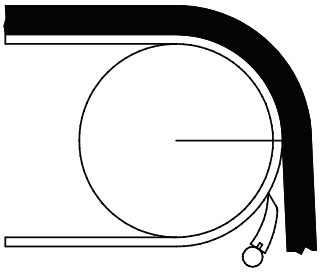
Selecting the blade-tip location is the first critical decision that will contribute to maintaining the life of your blade.

The blade should never be used as a ramp for material to slide over. The bulk of the material should gravity-fall over the face of the blade. Blade wear should occur at blade-tip, at point of contact with the belt, not the face of the blade.

**AVERAGE SPEED NORMALLY 300-350FPM**

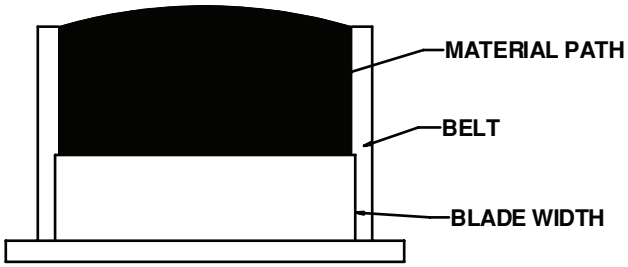


**BELT SPEEDS NORMALLY 400FPM**



**SLOW MOVING BELT SPEED NORMALLY 100F PM**

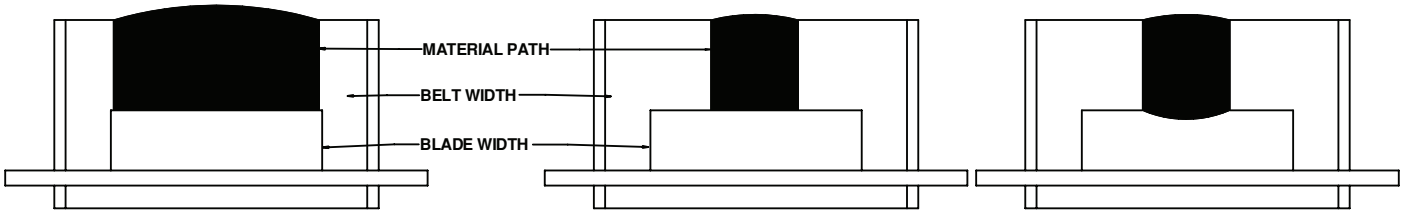
# MATERIAL PATH




**CORRECT**

The second critical determination for blade life is the blade width itself, which will also influence the cleanliness of your belt. You will need a blade width of -2 (standard) or -8, depending on the center path of the material as it travels the belt.

75% of all premature blade-failure is the result of improper blade width.

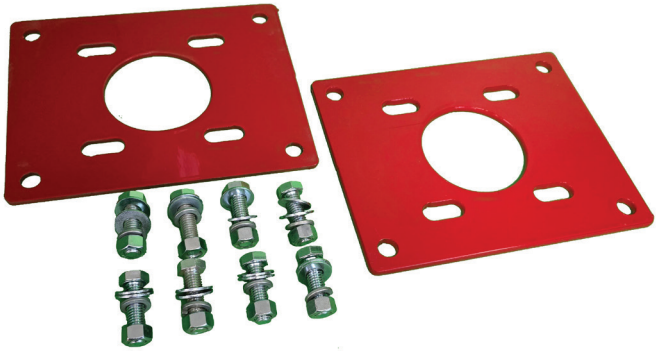



**CORRECT BLADE WIDTH RESULTS IN EVEN WEAR**

**BLADE DOESN'T MATCH MATERIAL PATH....**

**...RESULTING IN POOR BLADE WEAR**

# PRIMARY CLEANER
## INSTALLATION ACCESSORIES



### EAGLE MOUNTING PLATE SET W/HARDWARE

| Part Number |
| --- |
| ECMP-SET |

### EAGLE STAND-OFF BRACKET SET W/HARDWARE

E1/E4 Series Belt Cleaners

| Part Number |
| --- |
| ESOBE1E4-SET |

E5 Series Belt Cleaners

| Part Number |
| --- |
| ESOBE5-SET |

### EAGLE EXTENSION BRACKET KIT W/HARDWARE

E1/E4 Series Belt Cleaners

| Part Number |
| --- |
| EEBKIT-E1E4 |

E5 Series Belt Cleaners

| Part Number |
| --- |
| EEBKIT-E5 |

### EAGLE EXTENSION PIPE

E1/E4 Series Belt Cleaners

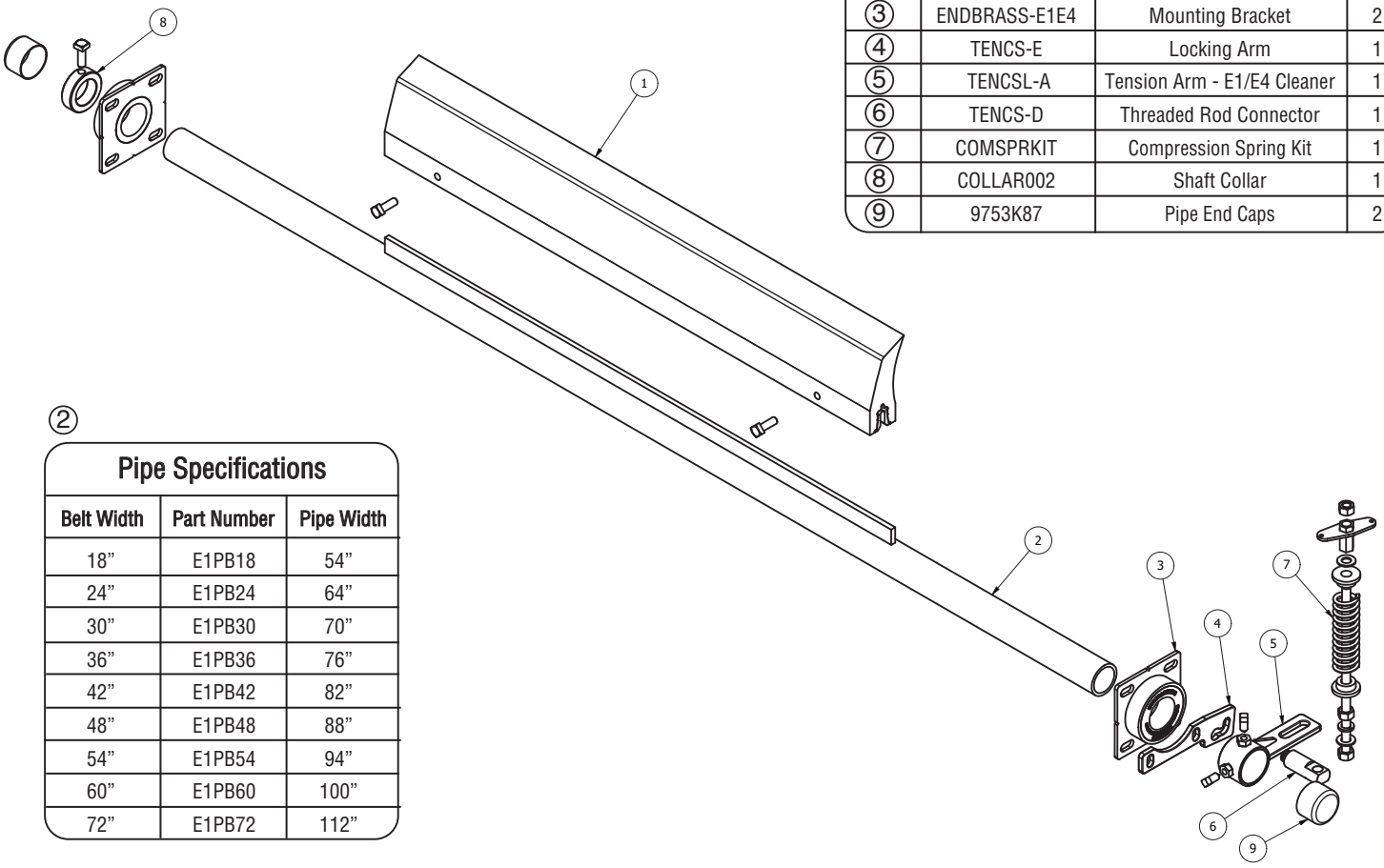
| Part Number |
| --- |
| EPEXT-E1E4 |

E5 Series Belt Cleaners

| Part Number |
| --- |
| EPEXT-E5 |

# E1SD SINGLE TENSIONER REPLACEMENT PARTS

| Parts List | | | |
|---|---|---|---|
| Num. | Part Number | Description | Qty. |
| ① | E1xxx | Blade | 1 |
| ② | E1PBxx | Mounting Pipe | 1 |
| ③ | ENDBRASS-E1E4 | Mounting Bracket | 2 |
| ④ | TENCS-E | Locking Arm | 1 |
| ⑤ | TENCSL-A | Tension Arm - E1/E4 Cleaner | 1 |
| ⑥ | TENCS-D | Threaded Rod Connector | 1 |
| ⑦ | COMSPRKIT | Compression Spring Kit | 1 |
| ⑧ | COLLAR002 | Shaft Collar | 1 |
| ⑨ | 9753K87 | Pipe End Caps | 2 |



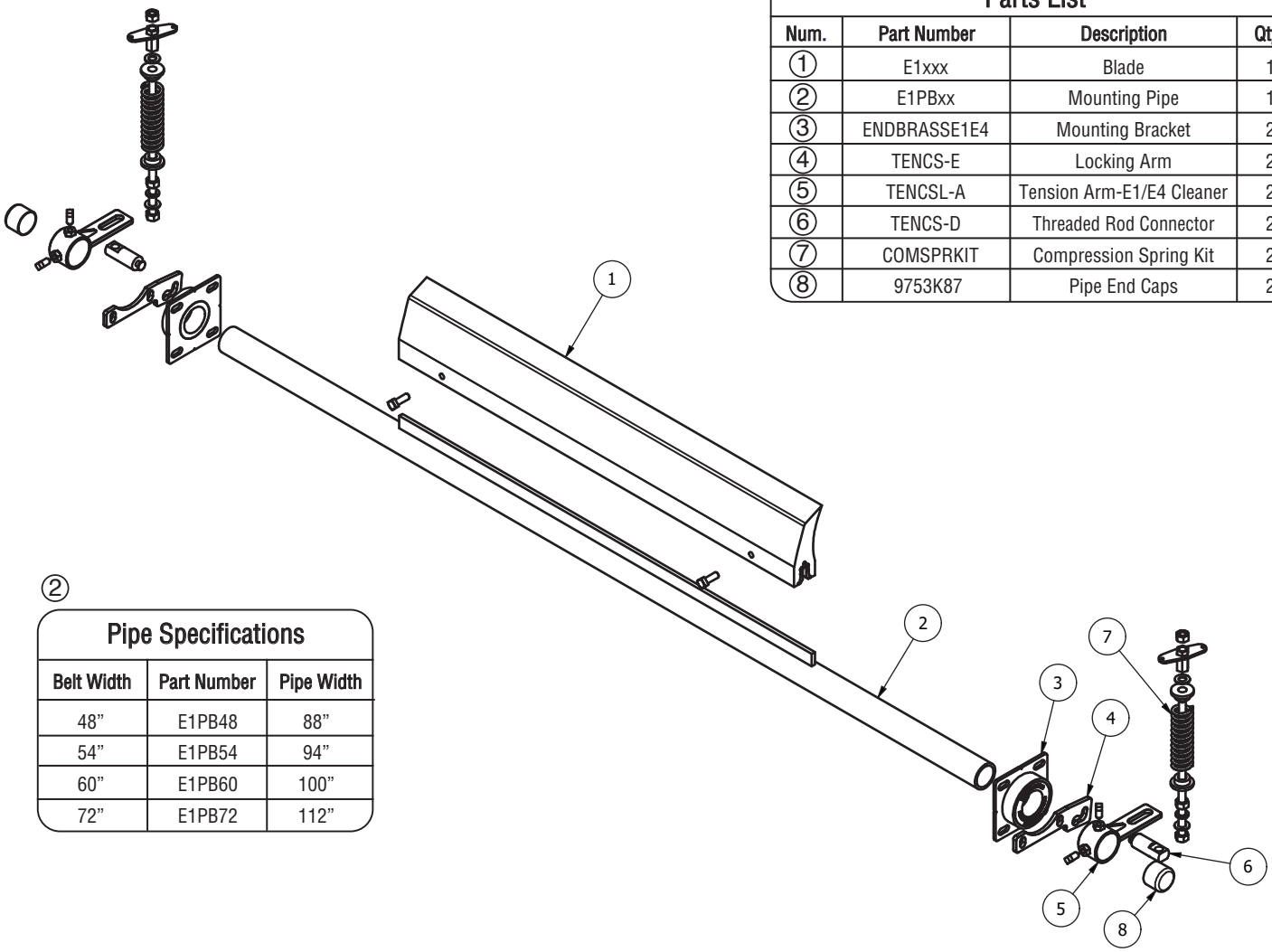

②

| Pipe Specifications | | |
|---|---|---|
| Belt Width | Part Number | Pipe Width |
| 18” | E1PB18 | 54” |
| 24” | E1PB24 | 64” |
| 30” | E1PB30 | 70” |
| 36” | E1PB36 | 76” |
| 42” | E1PB42 | 82” |
| 48” | E1PB48 | 88” |
| 54” | E1PB54 | 94” |
| 60” | E1PB60 | 100” |
| 72” | E1PB72 | 112” |

①

| Blade Specifications | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Belt Width | Blue Ev-R-Wear High Performance | | Orange Standard Economy Blade | | Green Chemical Resistant | | Red High Heat (Max. 275ºF) | | White FDA Compliant | |
| | -2” Belt Width | -8” Belt Width | -2” Belt Width | -8” Belt Width | -2” Belt Width | -8” Belt Width | -2” Belt Width | -8” Belt Width | -2” Belt Width | -8” Belt Width |
| 18” | E1M16 | E1M10 | E1U16 | E1U10 | E1C16 | E1C10 | E1H16 | E1H10 | E1W16 | E1W10 |
| 24” | E1M22 | E1M16 | E1U22 | E1U16 | E1C22 | E1C16 | E1H22 | E1H16 | E1W22 | E1W16 |
| 30” | E1M28 | E1M22 | E1U28 | E1U22 | E1C28 | E1C22 | E1H28 | E1H22 | E1W28 | E1W22 |
| 36” | E1M34 | E1M28 | E1U34 | E1U28 | E1C34 | E1C28 | E1H34 | E1H28 | E1W34 | E1W28 |
| 42” | E1M40 | E1M34 | E1U40 | E1U34 | E1C40 | E1C34 | E1H40 | E1H34 | E1W40 | E1W34 |
| 48” | E1M46 | E1M40 | E1U46 | E1U40 | E1C46 | E1C40 | E1H46 | E1H40 | E1W46 | E1W40 |
| 54” | E1M52 | E1M46 | E1U52 | E1U46 | E1C52 | E1C46 | E1H52 | E1H46 | E1W52 | E1W46 |
| 60” | E1M58 | E1M52 | E1U58 | E1U52 | E1C58 | E1C52 | E1H58 | E1H52 | E1W58 | E1W52 |
| 72” | E1M70 | E1M64 | E1U70 | E1U64 | E1C70 | E1C64 | E1H70 | E1H64 | E1W70 | E1W64 |

# E1SD DUAL TENSIONER REPLACEMENT PARTS



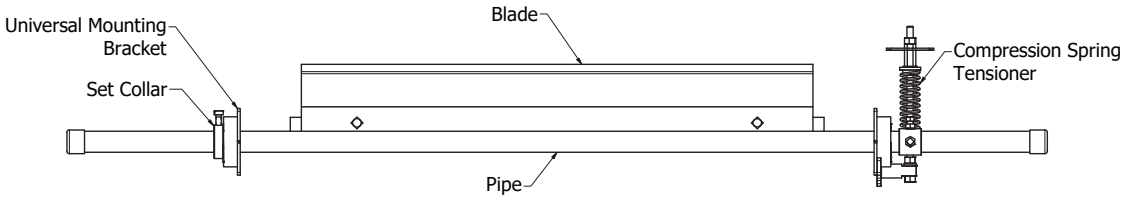

| Parts List | | | |
|---|---|---|---|
| Num. | Part Number | Description | Qty. |
| ① | E1xxx | Blade | 1 |
| ② | E1PBxx | Mounting Pipe | 1 |
| ③ | ENDBRASSE1E4 | Mounting Bracket | 2 |
| ④ | TENCS-E | Locking Arm | 2 |
| ⑤ | TENCSL-A | Tension Arm-E1/E4 Cleaner | 2 |
| ⑥ | TENCS-D | Threaded Rod Connector | 2 |
| ⑦ | COMSPRKIT | Compression Spring Kit | 2 |
| ⑧ | 9753K87 | Pipe End Caps | 2 |

②

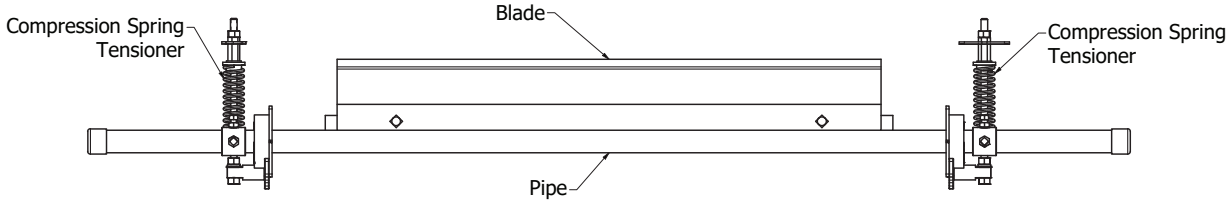
| Pipe Specifications | | |
|---|---|---|
| Belt Width | Part Number | Pipe Width |
| 48” | E1PB48 | 88” |
| 54” | E1PB54 | 94” |
| 60” | E1PB60 | 100” |
| 72” | E1PB72 | 112” |

①

| Blade Specifications | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Belt Width | Blue Ev-R-Wear High Performance | | Orange Standard Economy Blade | | Green Chemical Resistant | | Red High Heat (Max. 275ºF) | | White FDA Compliant | |
| | -2” Belt Width | -8” Belt Width | -2” Belt Width | -8” Belt Width | -2” Belt Width | -8” Belt Width | -2” Belt Width | -8” Belt Width | -2” Belt Width | -8” Belt Width |
| 18” | E1M16 | E1M10 | E1U16 | E1U10 | E1C16 | E1C10 | E1H16 | E1H10 | E1W16 | E1W10 |
| 24” | E1M22 | E1M16 | E1U22 | E1U16 | E1C22 | E1C16 | E1H22 | E1H16 | E1W22 | E1W16 |
| 30” | E1M28 | E1M22 | E1U28 | E1U22 | E1C28 | E1C22 | E1H28 | E1H22 | E1W28 | E1W22 |
| 36” | E1M34 | E1M28 | E1U34 | E1U28 | E1C34 | E1C28 | E1H34 | E1H28 | E1W34 | E1W28 |
| 42” | E1M40 | E1M34 | E1U40 | E1U34 | E1C40 | E1C34 | E1H40 | E1H34 | E1W40 | E1W34 |
| 48” | E1M46 | E1M40 | E1U46 | E1U40 | E1C46 | E1C40 | E1H46 | E1H40 | E1W46 | E1W40 |
| 54” | E1M52 | E1M46 | E1U52 | E1U46 | E1C52 | E1C46 | E1H52 | E1H46 | E1W52 | E1W46 |
| 60” | E1M58 | E1M52 | E1U58 | E1U52 | E1C58 | E1C52 | E1H58 | E1H52 | E1W58 | E1W52 |
| 72” | E1M70 | E1M64 | E1U70 | E1U64 | E1C70 | E1C64 | E1H70 | E1H64 | E1W70 | E1W64 |




## SINGLE TENSIONER ASSEMBLY



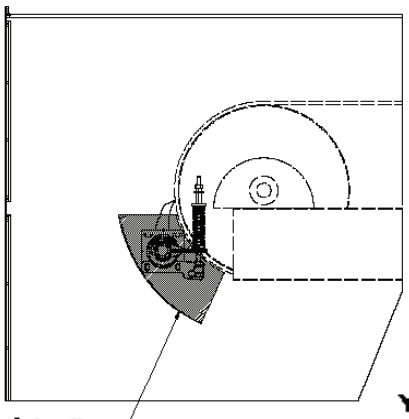

## DUAL TENSIONER ASSEMBLY

***IMPORTANT:** MAKE SURE CONVEYOR IS LOCKED OUT/TAGGED OUT BEFORE ANY WORK BEGINS.

### Step 1.

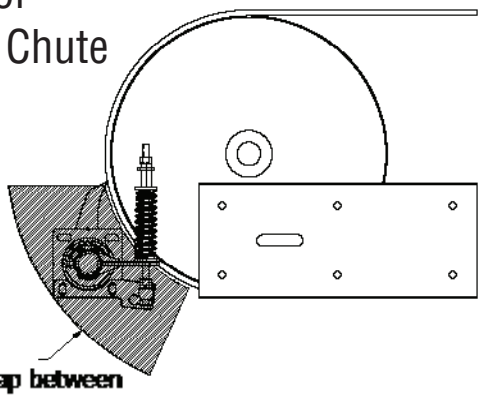
Inspect the conveyor head pulley. If there is a chute surrounding the head pulley continue to Step 2. A conveyor without a chute will require either mounting plates or a universal mounting bracket.

Conveyor with Chute



Keep area clear of all obstructions (i.e. hoses, lines, electrical wires) and any other mounted components

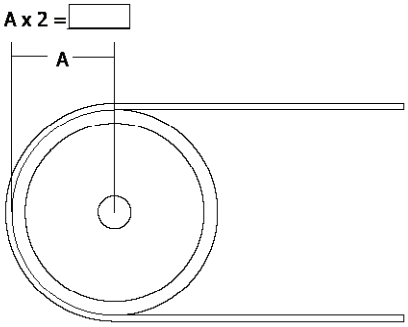
Conveyor without Chute



You will need to bridge the gap between conveyor and proper location needed for belt cleaner installation
*SEE PAGE 6 FOR OPTIONS

## Step 2.

Determine pulley diameter, measuring from the center of the shaft to pulley surface “A” dimension. Multiply “A” dimension x2 for pulley diameter. Using the Gap Chart and pulley diameter, determine “G” dimension. This is the distance from the center of the mounting pipe to the face of the belt.

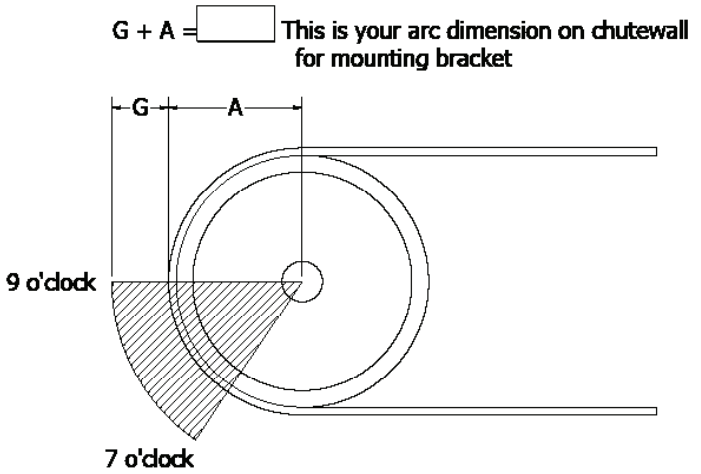



| Gap Dimension Chart | |
|---|---|
| PULLEY DIAMETER | GAP |
| 16” - 20” | 4” |
| 24” - 36” | 3-5/8” |
| 42” + | 3” |
| TOLERANCES + OR - 1/4” | |

Your Gap Dimension

## Step 3.

After determining the Gap “G” dimension transfer A + G dimensions to the chute wall in an arc from 7 o’clock to 9 o’clock. If working from inside the chute transfer “G” dimension from 7 o’clock to 9 o’clock on the chute wall.

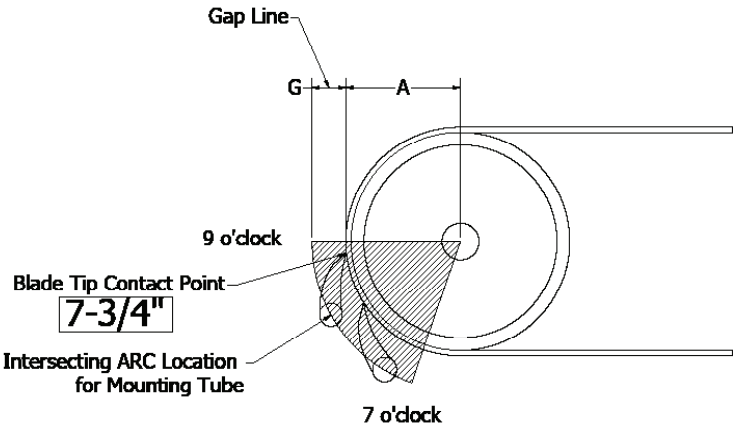



## Step 4.

Determine blade-tip contact point, usually between 9 o’clock and 7 o’clock.

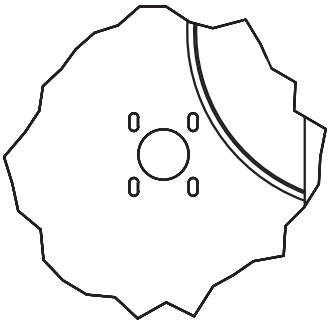
### NEVER PLACE THE BLADE IN THE MATERIAL PATH

After establishing the blade tip contact point, measure 7-3/4” and mark with soap stone or marker crossing an intersecting arc with the “G” dimension arc on the chute wall. This will be the center of the mounting pipe.

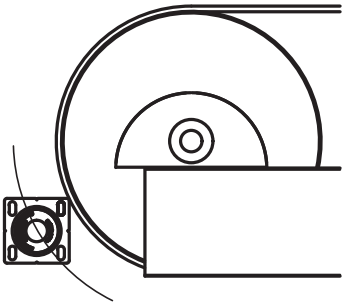


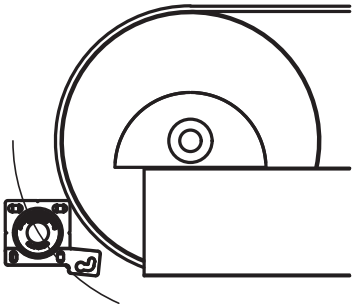
## Step 5.

Center mounting bracket over the intersecting arc dimensions on the chute wall with bolt slots vertical. Trace the bracket plate center and slots with soap stone or marker. Cut the center hole 3 ½" and bolt holes as marked. This allows adjustment of the mounting pipe.



DETAIL A
SCALE 1 / 8

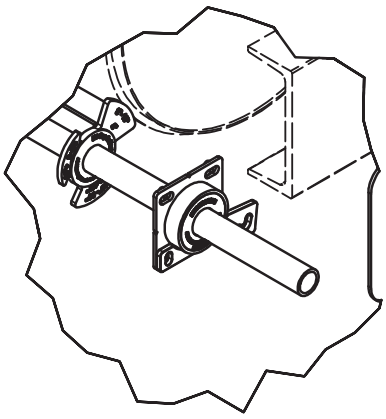




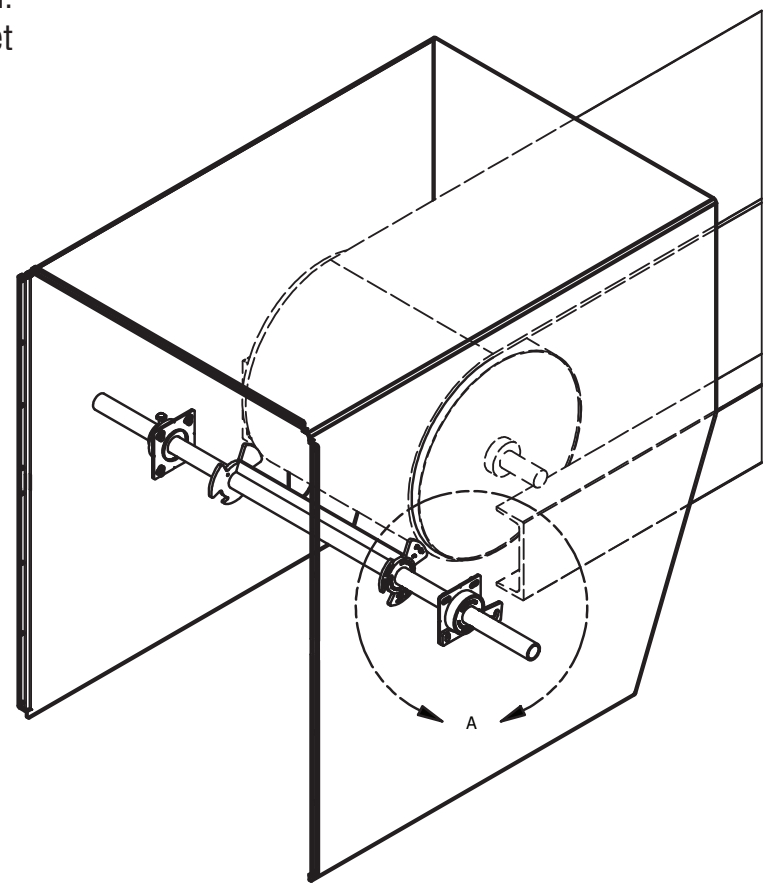
## Step 6.

Pass the mounting pipe through the access holes and install the mounting brackets to the chute wall. Facing the head pulley, install the mounting bracket and locking arm to the chute wall on either the left or right side as desired.

**NOTE: If installing a Dual Tensioner Assembly, install the locking arm on both mounting brackets.**



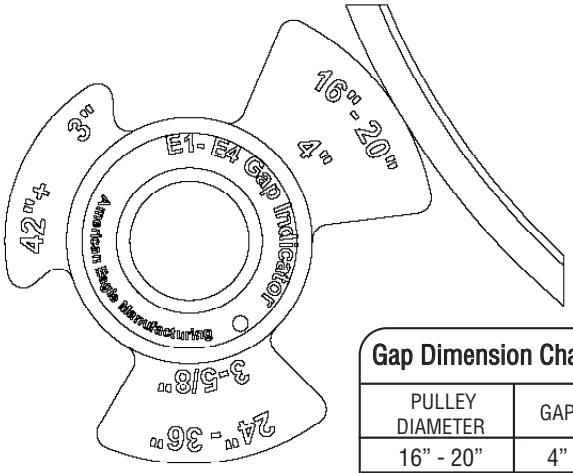
DETAIL A
SCALE 1 / 8



# IMPORTANT: INSTALL THE GAP INDICATORS ON THE MOUNTING PIPE BOTH LEFT AND RIGHT SIDE.

## Step 6 (Cont.)

Rotate to the correct “G” dimension marked on the gap indicator. Tighten mounting brackets finger tight. Place a level on the mounting pipe to check for level and square. Tighten all mounting bolts. Install the blade on the mounting pipe.




| Gap Dimension Chart | |
|---|---|
| PULLEY DIAMETER | GAP |
| 16” - 20” | 4” |
| 24” - 36” | 3-5/8” |
| 42” + | 3” |
| TOLERANCES + OR -1/4” | |

Your Gap Dimension

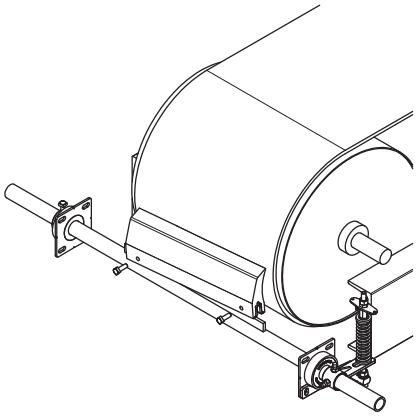
## Step 7.

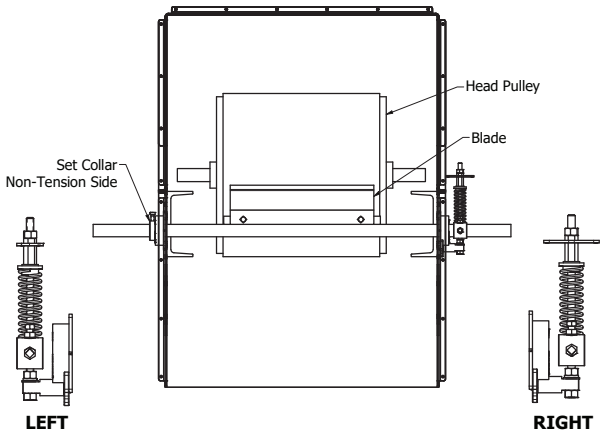
Install the blade on the mounting pipe. Center the blade on the head pulley and tighten the set screws on the blade.

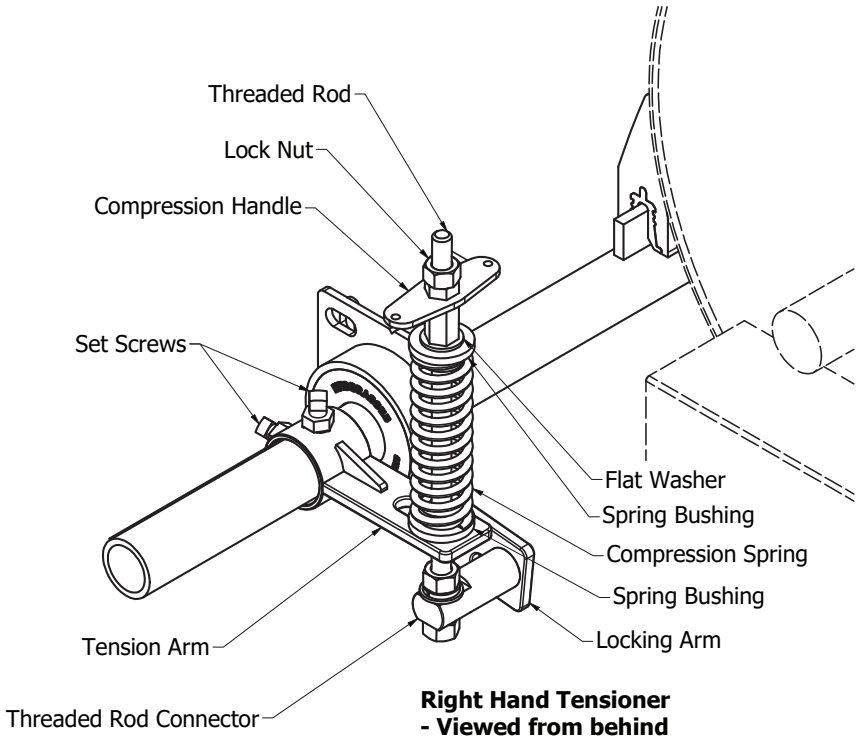
***IMPORTANT: DO NOT OVERTIGHTEN THE SET SCREWS! THIS WILL CAUSE THE THREADS TO STRIP OUT!**

Determine which side of conveyor to install compression spring tensioner. Install the set collar on the non-tension side.

**NOTE: If installing a Dual Tensioner Assembly, install the Locking Arm in place of the set collar.**



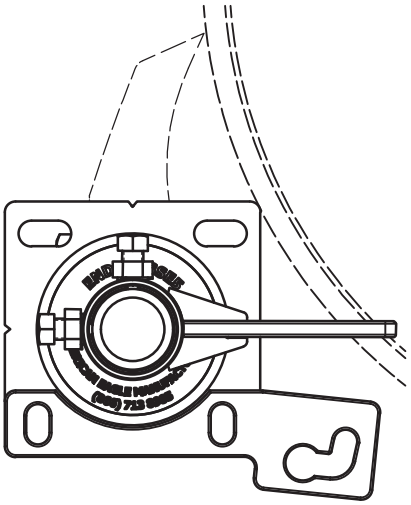




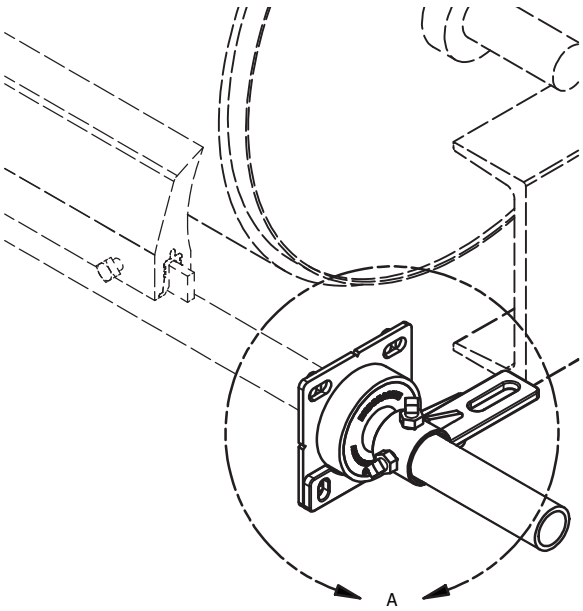

**Right Hand Tensioner**
**- Viewed from behind for clarity**
**- Left Hand Tensioner similar setup**

## Step 8.

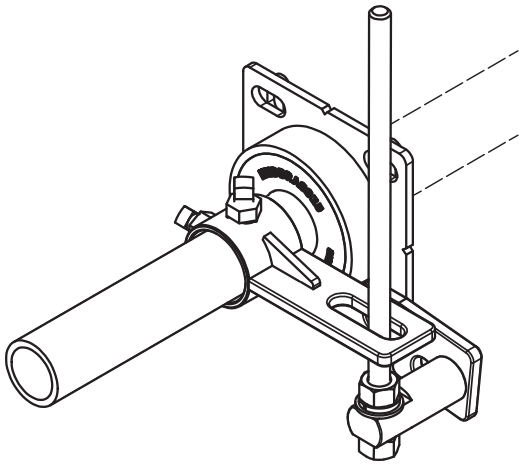
Rotate blade into operating position. Install tension arm and rotate until it is 90° to the mounting pipe. Tighten set screws.

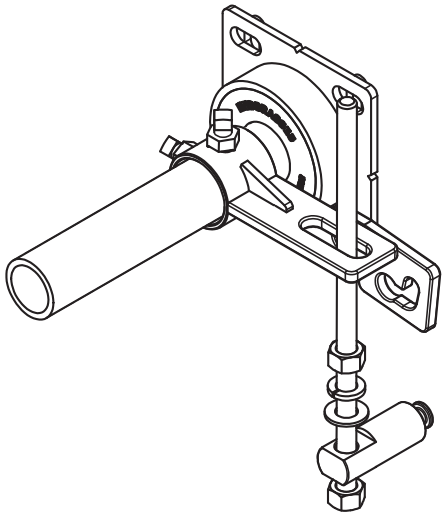


DETAIL A
SCALE 1 / 3

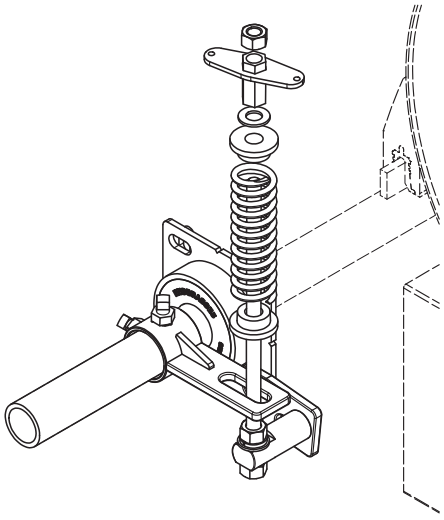


Assemble the threaded rod and connector as shown. Insert threaded rod into slot on tension arm. Lock the threaded rod connector into slot on the locking arm.





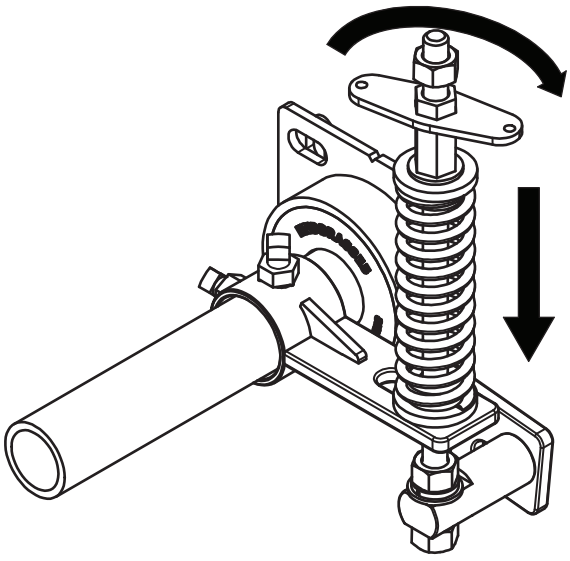
Install spring bushings, compression spring and hardware to the threaded rod.



## Step 9.

Set tension by rotating compression handle clockwise until the spring is set to the correct tension (see chart below). Secure the compression handle by tightening the lock nut.

**NOTE: If installing a Dual Tensioner Assembly, divide the # of Turns by 2 for each handle.**



**Tension Chart**

| BELT WIDTH | TENSION (FT-LBS.) | # OF TURNS |
|---|---|---|
| 24 | 34 | 3 |
| 30 | 40 | 4 |
| 36 | 46 | 5 |
| 42 | 52 | 6 |
| 48 | 58 | 7-1/2 |

## Step 10.

Trim the mounting pipe 3” from the tension or non-tension sides and install the yellow safety caps.

**NOTE: Display safety stickers on chute wall or other clearly visible area.**

## Step 11.

Test run the conveyor to check proper installation.

# MAINTENANCE

1) INSTALLATION INSPECTION
After the cleaner has been installed and run for several days, a visual inspection should be made to ensure proper cleaning. At this time make any needed adjustments. Recheck all fasteners on mounting. Routine inspections.

2) VISUAL INSPECTIONS ON A REGULAR BASIS EVERY FOUR WEEKS
Check for cleaner performance including tension and material build up on blade. Check belt for any damage areas or splice damage.

3) BLADE WEAR INSPECTIONS
Inspect that blade wear is even across blade (if center wear appears, change to a narrower blade. Blade should be only slightly larger than material path). Always check for correct tension settings.

# TROUBLESHOOTING

| | |
|---|---|
| INSUFFICIENT CLEANING | 1) Tension too low (set tension as listed in installation)<br>2) High blade wear (replace blade) |
| IRREGULAR BLADE WEAR | 1) Worn in center of the blade (install narrower blade covering material path)<br>2) Worn unevenly (check “G” dimension, level & square)<br>3) Check belt splices/clips and install new blade |
| VIBRATION, CHATTER | 1) Tension too high or too low (check and adjust tension as listed in installation instructions)<br>2) Blade worn changing angle (replace blade)<br>***Contact American Eagle to ensure correct blade is being used*** |
| CLEANER, BLADE FLIPPED | Blade flipped, pulled through. (Check installation “G” dimension noted on page 10) Replace blade. |


American Eagle Manufacturing LLC
1 866 713 8985
252 633 0603
New Bern, North Carolina 28562
AmericanEagleManufacturing.com