Installation Guide

ARGONICS ENGINEERED POLYURETHANE

S3MAX™

Conveyor Belt Cleaning System

PERFORMANCE SOLUTIONS! PROVEN

LIB-CP-S3M-03-01 Rev. 2

⚠WARNING

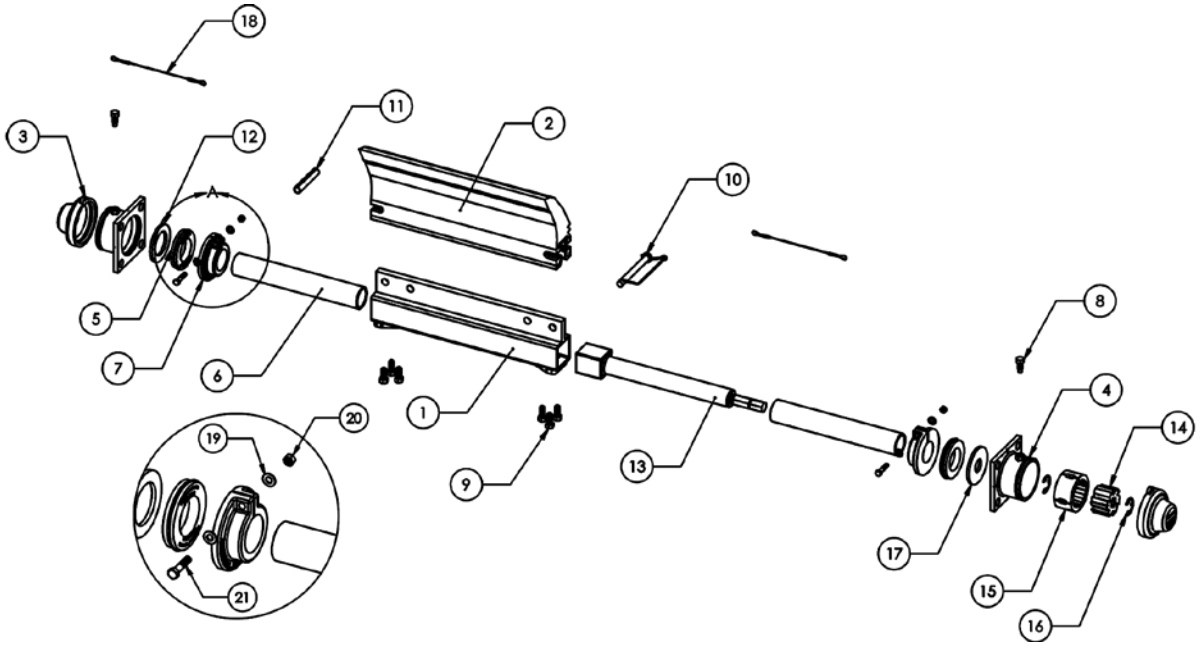
Always obey all applicable safety rules.
Be sure all power to the conveyor has been disconnected and controls are locked out.

Installation Tools Required

- Tape measure
- Cutting Torch or Hole Saw (3½")
- Level
- Scribe or Chalk
- Welder or Drill
- ½" End Wrench
- ¾" End Wrench
- 1" End Wrench or Crescent Wrench

Bolts, lock washers and nuts for mounting are not supplied

Safe Torque Ratchet System - Assembly Breakdown



Number	Part Number	Quantity	Description
1	CP-S3M-M"XX"A	1	Mainframe - see pricing on previous pages
2	CP-S3M-B"XX"-G83	1	Blade - see pricing on previous pages
3	CP-AR-52B-Y83	2	Standard Dust Cap
4	CP-AR-30R	2	Mounting Spool
5	CP-AR-23-RT-B93	2	Standard Inner Snap Seal
6	CP-AR-12B or	2	Stub End
	CP-AR-22B	2	Extended Stub End
7	CP-AR-LC5-G83	2	Standard Locking Collar
8	CP-AR-512540	2	Bolt, 1/2"-13 NC 1-1/4" Long, Grade 8 Step Down
9	CP-AR-5125S	6	Set Screw, 1/2"-13UNC X 1-1/4" Long SS
10	CP-SE2-P550	1	Safety Snap Pin, 5/8" X 5-1/2"
11	CP-AR-505	1	Spring Pin, 3/4" X 4-1/4"
12	CP-AR-41F-ST	1	Standard Spool Washer - Single Tensioner
13*	CP-AR-1-1375-E-B93 or	1	1" Perma-Torque Tensioner
	CP-AR-1-2075-E-B93	1	1" Extended Perma-Torque Tensioner
14*	CP-AR-22C-G83	1	Standard Inner Ratchet Catch
15*	CP-AR-32C-G83	1	Standard Outer Ratchet Catch
16*	CP-AR-98407A156	2	Retaining Ring
17*	CP-AR-41F	1	Standard Spool Washer
18	CP-AR-90312A720	2	Wire Rope Lanyard; 12" Long, 3/64" Wire
19	WASH-0.38-F-SAE-ZINC	4	3/8" Flat Washer, Zinc
20	NUT-016	2	Nut 3/8"-16UNC, Zinc
21	BOLT-0.38X1.75NC-ZC	2	Hex Bolt - 3/8"-16UNC 1-3/4" Long, Zinc

* Systems 46" and above come standard with dual tensioners and require double of each of the noted parts.

Note:
This S3Max primary belt cleaning system is designed to be used on conveyor pulleys of 24" in diameter and larger.

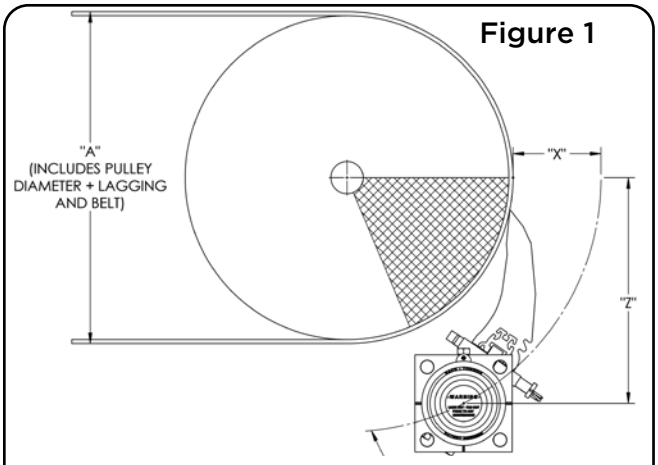
Step One: Calculations

NOTE: Shaded areas in Figures 1 and 1a represent acceptable mounting locations.

Dimension Table - Table 1		
Outside Diameter*	X	Z
24" - 27"	4 3/4"	12 3/4"
28" - 31"	4 1/2"	12 3/4"
32" & Larger	4 1/4"	12 3/4"

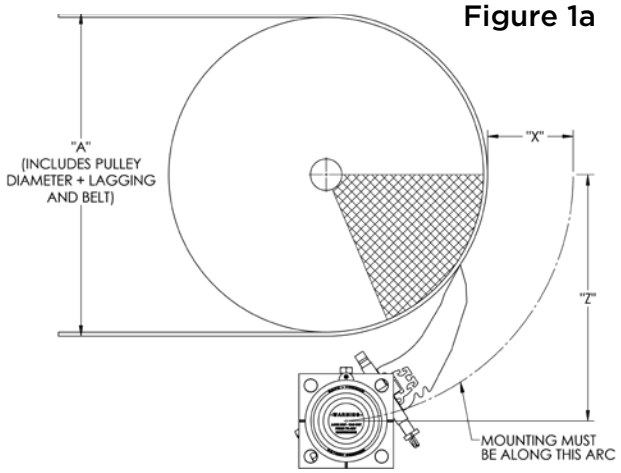
*Includes lagging and belt thickness.

Figure 1



NOTE: Z dimension shown at 12 3/4".

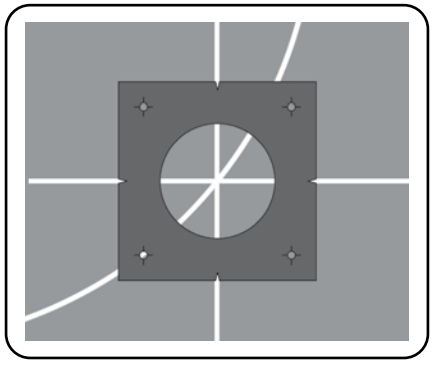
Figure 1a



NOTE: Z dimension shown at 14".

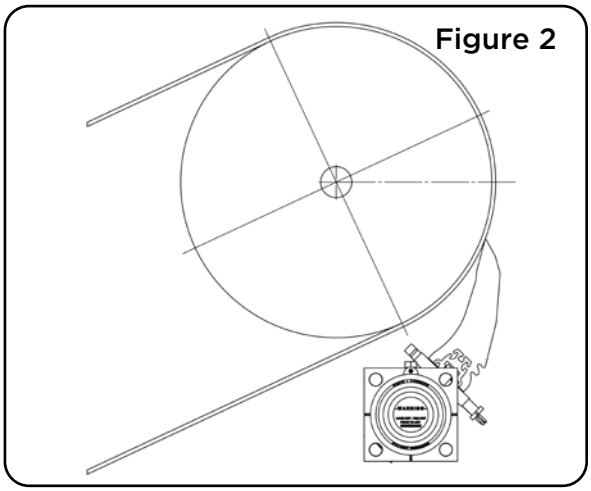
Step Two: Layout

After you have determined the mounting location for your belt cleaning system, align the template (see page 11 of this guide) with your bisected horizontal and vertical lines on the mounting structure wall and transfer the center hole, bolt holes and perimeter of the template to the chute wall using your scribe.



Inclined belt mounting position

Figure 2



ATTENTION: Tip of blade is below horizontal axis.

Repeat the layout procedure on the opposite mounting structure.
For single tensioner, follow instructions on page 4. For dual tensioner, turn to page 6.

INSTALLATION - Single Tensioner

Step Three (A): Mounting systems equipped with a single tensioner

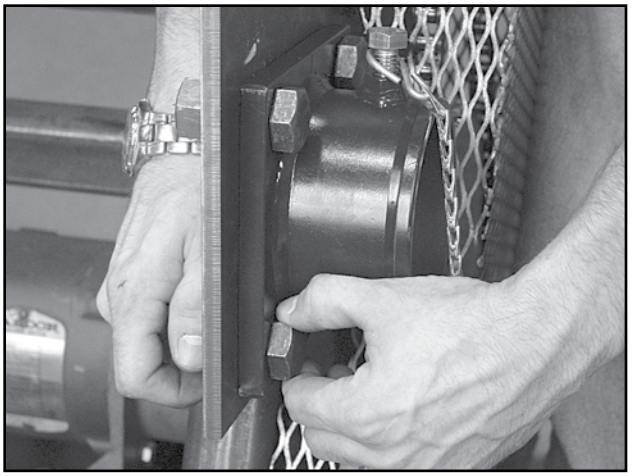
Cut the tensioner hole which was scribed on the mounting structure (your finished hole should be approx. 3½" in diameter).

NOTES:

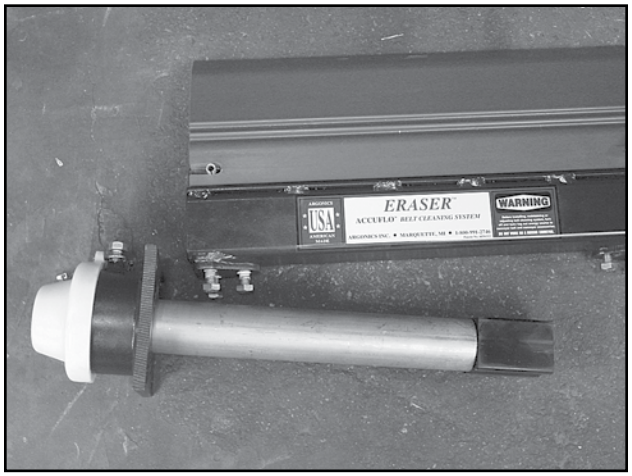
• For Bolt In Only - Using the bolt circles that you scribed as a guide, drill four 13/16" diameter holes to accept ½" or ¾" diameter grade 8 bolts.

Single tensioner S3Max systems are shipped with the tensioner on the left side, facing the head pulley. If you need to mount your tensioner on the right side please refer to tensioner assembly instructions on page 9.

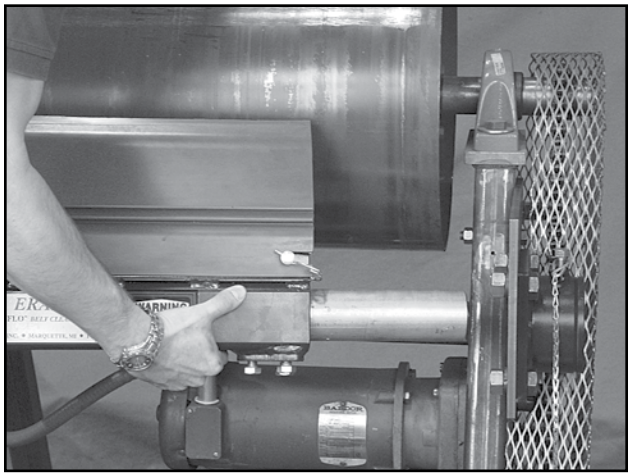
Remove the urethane locking collars from the stub ends.



Remove the mounting spool from the non-tensioner side of the system. Line up the spool with the holes in the chute wall, then bolt it into place using four ½" or ¾" grade 8 bolts and lock washers. You can also choose to stitch weld on the flat sides of the mounting spool.

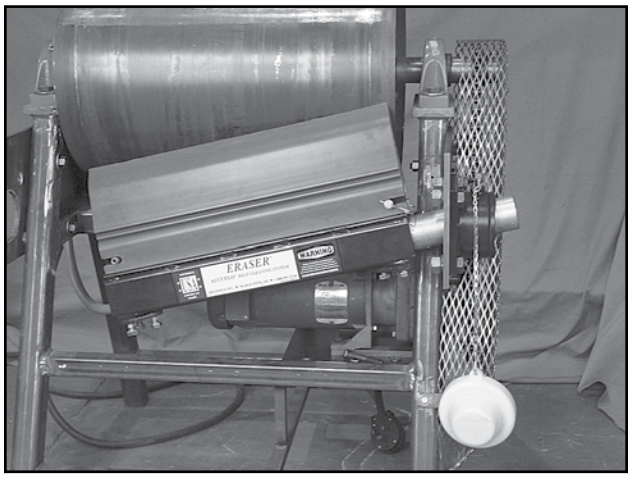


Using a ½" end wrench, loosen the three setscrews located on the bottom of each end of the mainframe. Remove the entire tension cartridge from the left side of the mainframe.

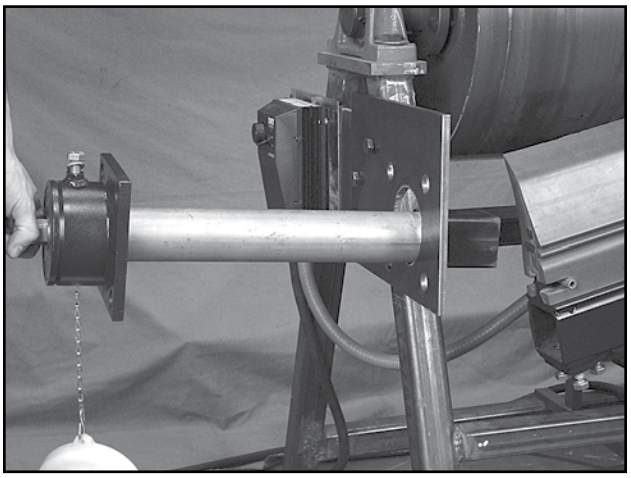


Lift the mainframe into position. Insert the stub end into the mounting spool on the non-tensioner side.

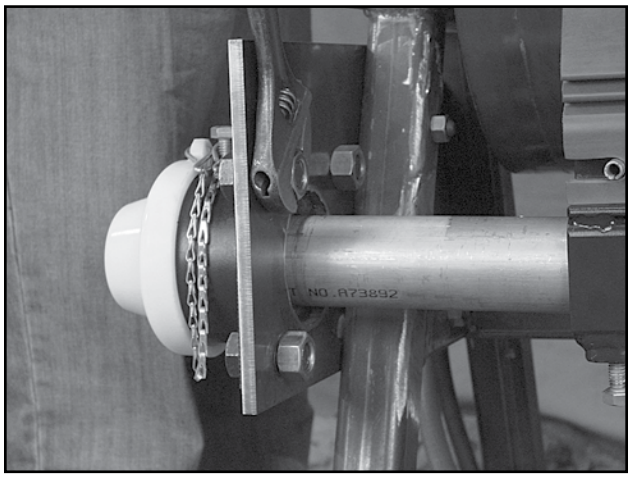
INSTALLATION - Single Tensioner



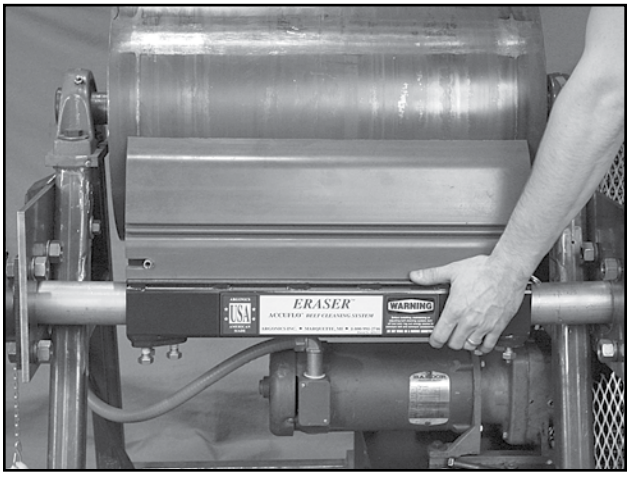
Temporarily retighten the three setscrews to hold the mainframe in place. Then carefully lower to let system hang in place.



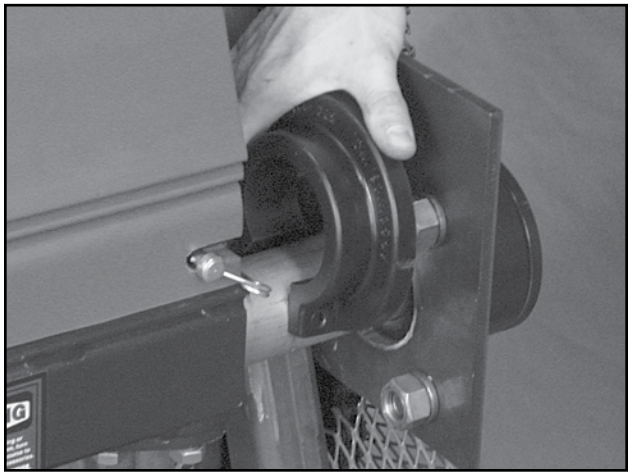
On the other side of the chute, slide the tensioner cartridge through the chute wall and insert it into the mainframe.



Temporarily retighten the setscrew on tensioner side to stabilize system. Bolt or stitch weld the mounting spool on the tensioner cartridge to the chute wall.



Loosen the setscrews and center the mainframe and blade to the belt. Tighten the setscrews to secure the stub ends.



Install the urethane locking collars by sliding them over the stub end, snugging them to the chute wall. Tighten the bolts to secure.

IMPORTANT

At the top point of the mounting spool, the inner ratchet catch must always point away from the load pulley.

PROCEED TO TENSIONING INSTRUCTIONS ON PAGE 8

INSTALLATION - Dual Tensioner

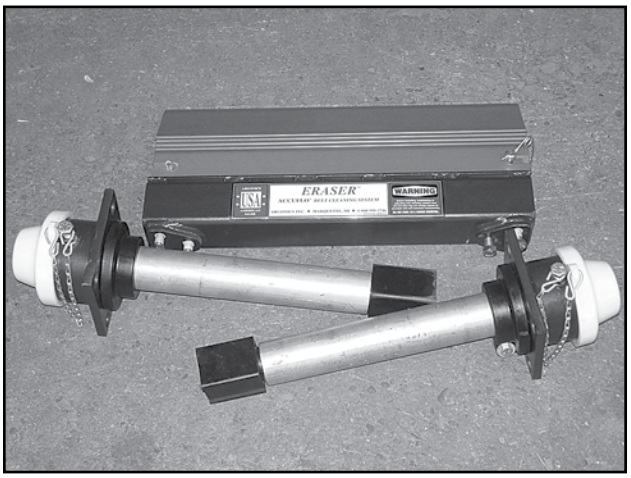
Step Three (B): Mounting systems equipped with a dual tensioner

Cut the tensioner holes which were scribed on the mounting structure (your finished holes should be approx. 3½" in diameter).

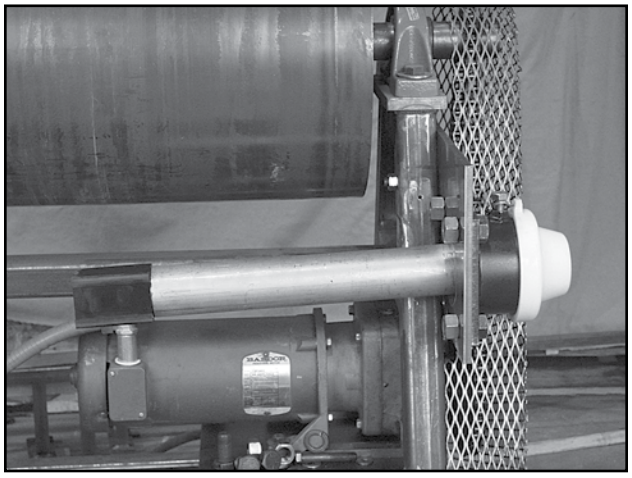
NOTES:

• For Bolt In Only - Using the bolt circles that you scribed as a guide, drill four 13/16" diameter holes to accept ½" or ¾" diameter grade 8 bolts per mounting spool.

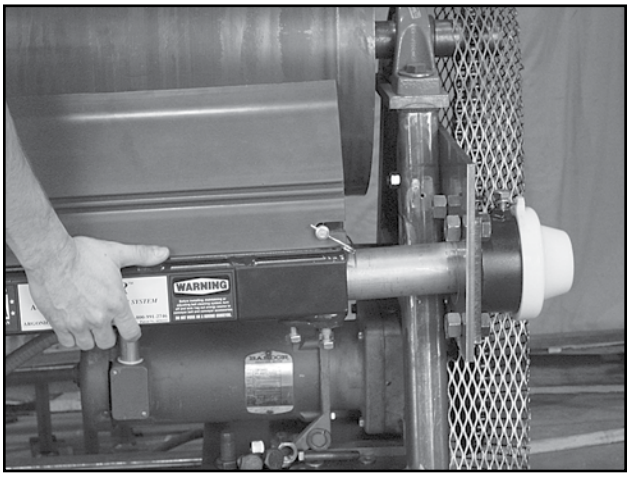
Remove the urethane locking collars from the stub ends.



Remove both tension cartridges from the mainframe.

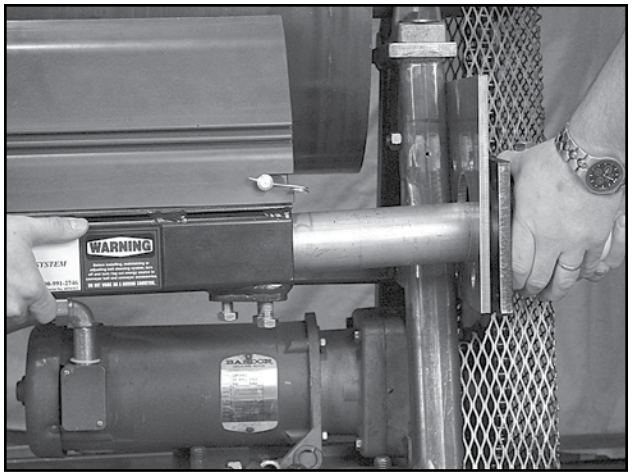


If there is room, slide the first tensioner cartridge through the chute wall and line up the mounting spool with the template that was transferred to the chute wall. Now bolt or weld into place.

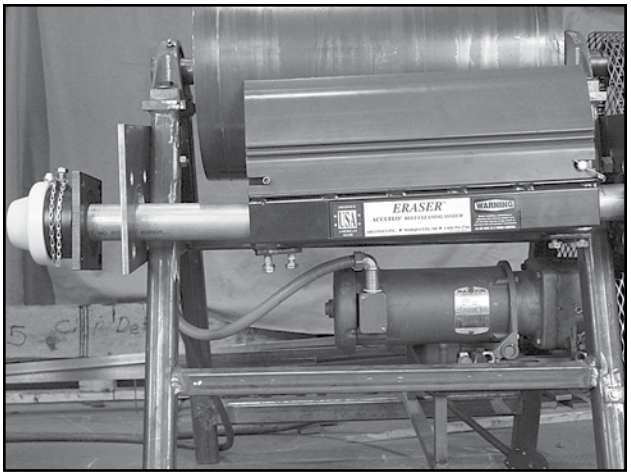


Lift the mainframe into position. Slide the mainframe onto the cartridge, then temporarily retighten the three setscrews on the tensioner side to stabilize system.

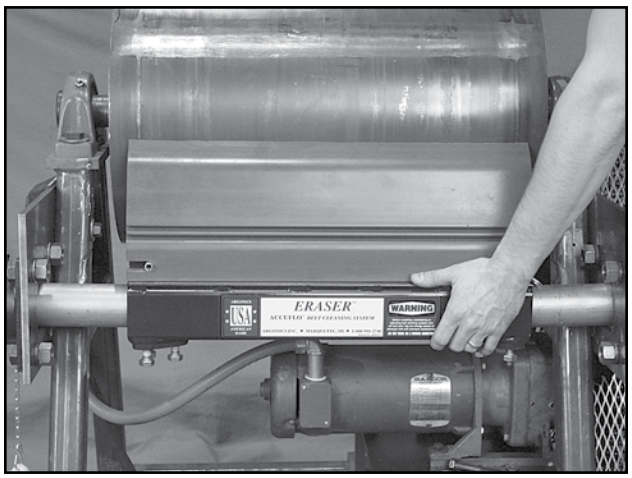
INSTALLATION - Dual Tensioner



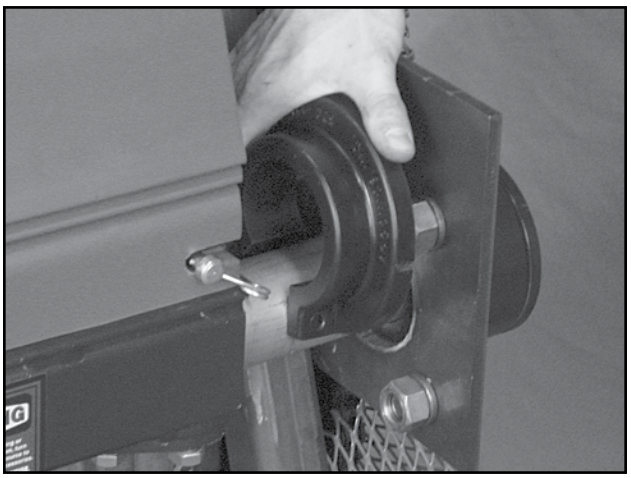
If there is not a lot of room between the chute walls, hold the mainframe in place and slide the tension cartridge into the mainframe. Bolt or weld the mounting spool into position and tighten the setscrews.



Slide the second tensioner cartridge through the chute wall and insert into mainframe. Temporarily retighten the setscrew on tensioner side to stabilize system. Bolt or stitch weld the mounting spool on the tensioner cartridge to the chute wall.



Loosen the setscrews and center the mainframe and blade to the belt. Tighten the setscrews to secure the stub ends.



Install the urethane locking collars by sliding them over the stub end, snugging them to the chute wall. Tighten the bolts to secure.

IMPORTANT

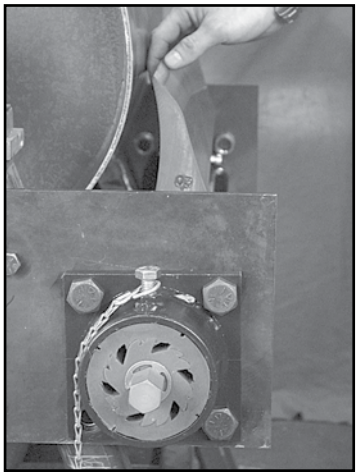
At the top point of the mounting spool, the inner ratchet catch must always point away from the load pulley.

PROCEED TO TENSIONING INSTRUCTIONS ON PAGE 8

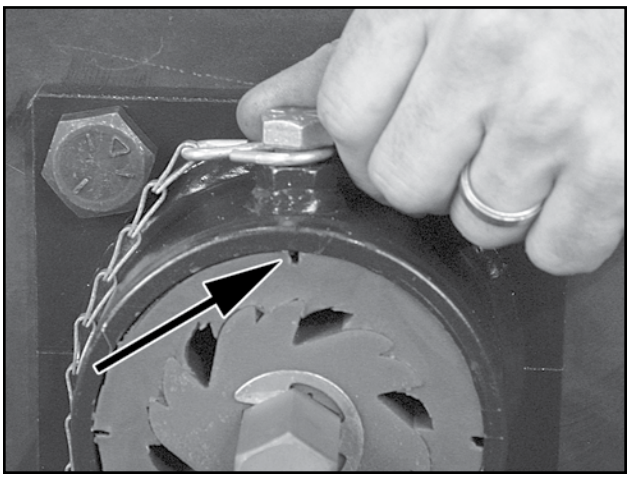
INSTALLATION - Tensioning

Step Four: Tensioning

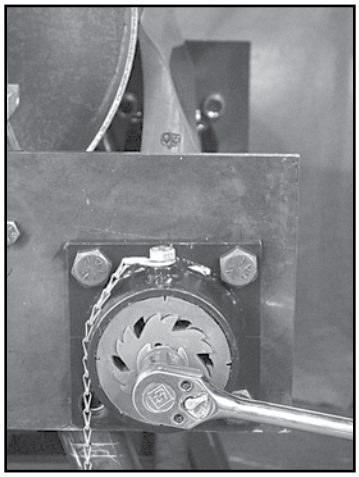
The S3Max system is equipped with our patented internal Perma-Torque tensioner and our Safe Torque ratchet system. The Perma-Torque is an adjustable elastomeric tensioner. The tensioner may be adjusted from a recommended minimum of 20 foot-pounds of force to a maximum of 80 foot-pounds. Exceeding tensioning of 24 clicks or 480° of rotation could damage the tensioner as well as the Safe Torque ratchet system. Four (4) clicks, or 90° of rotation is recommended for most applications.



To tension, first position the alignment notch on the outer ratchet catch with the mounting spool set screw. Grab the blade and rotate to align the ratchet notch.



When notch is aligned, tighten the setscrew. (Arrow indicates proper notch position.)



Use a 1" socket wrench on the exposed tensioner hex rod and turn the tensioner up and towards the pulley until the blade makes contact with the belt. Start tensioning by counting the clicks until you have reached the desired rotation. Four (4) clicks or 90° of rotation is the factory recommended setting. Repeat the same number of clicks on the opposite side for a dual tensioner system. Re-attach the dust cap(s).

Guideline for tensioning belt cleaning systems

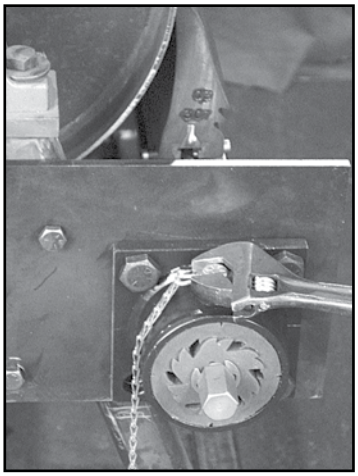
Blade width (mm)	Blade width (in)	No. of clicks	Lbs of force	
250-700	10-26	4	50	Single Tensioner
725-1150	28-44	5	60	
1175-1750	46-68	4	50	Dual Tensioner
1775-2700	70-106	5	60	
2725-3000	108-120	6	70	

Do Not Overtension

Overtensioning will result in increased blade wear

WATCH THE TENSIONING VIDEO

Releasing Tension



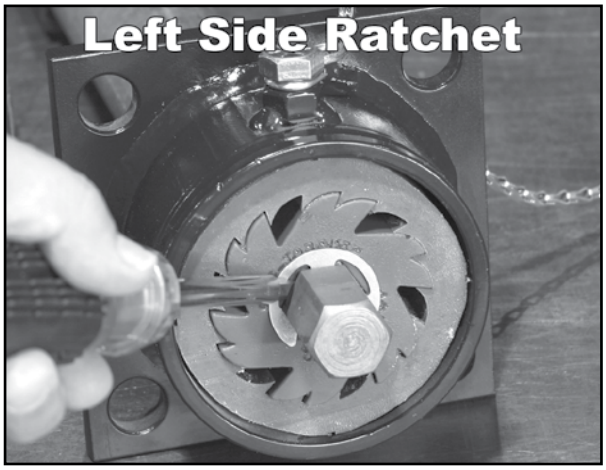
When you need to release tension, just loosen the mounting spool set screw. You will see the outer ratchet rotate as the tension is released.

Installation of your Argonics S3Max belt cleaning system is now complete.
Maintenance or re-tensioning should not be required throughout the life of the blade.

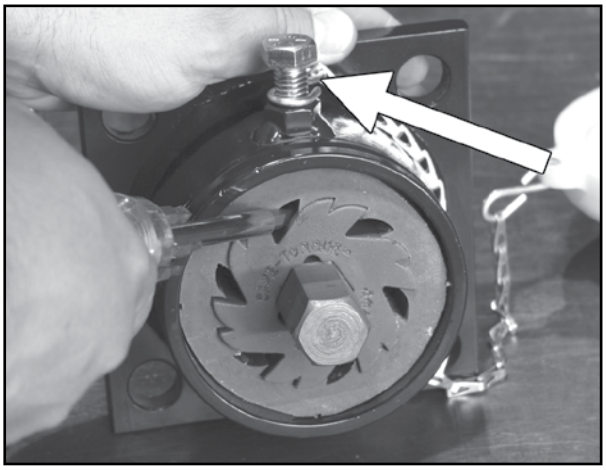
INSTALLATION - Left to Right Tensioner Conversion

Tensioner Conversion Instructions

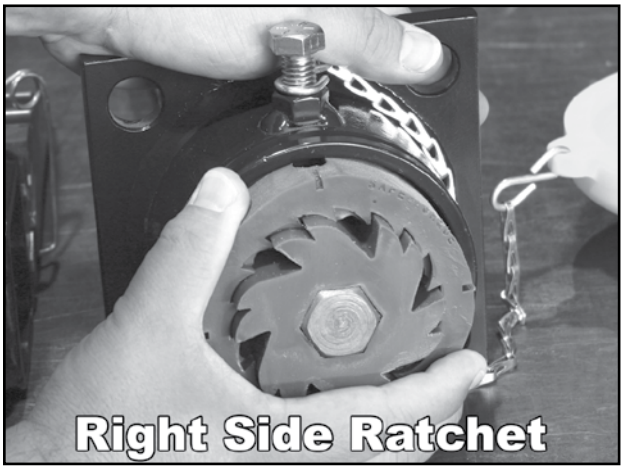
To mount a single tensioned S3Max system with the tensioner on the right side instead of the left side, you will need to switch the entire tensioning spool to the other side of the mainframe, as well as the direction that the ratchet gears are oriented. It is recommended that you perform this conversion on the ground before the system is mounted.



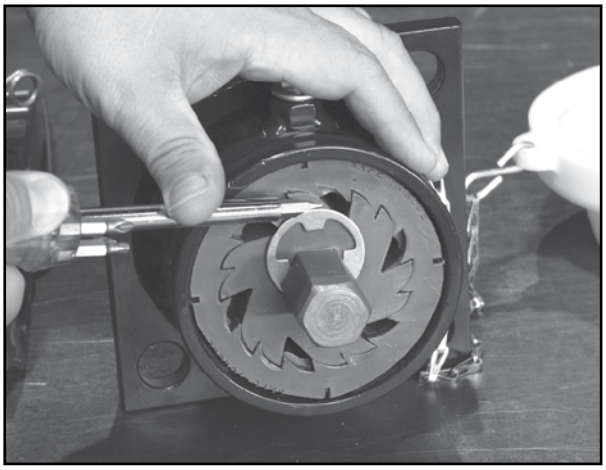
Remove the retainer clip from the hex rod using a flat blade screwdriver. Be sure not to lose the retainer clip.



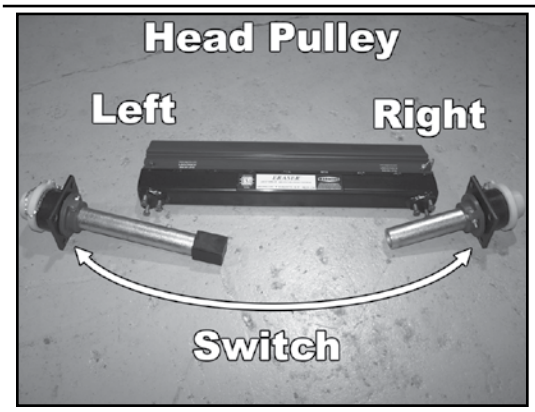
Unscrew the setscrew at the top of the mounting spool and remove both the inner ratchet and outer catch. Make sure you note what direction the gears are pointing.



Flip both the inner ratchet and outer catch so the gear teeth are pointed in the opposite direction and slide both back onto the hex rod.



Align the outer catch notch to the top of the mounting spool, tighten the set screw and then re-insert the retaining clip to the outer groove of the hex rod.



Your S3Max system comes with the tensioner mounted on the left. You will need to switch the entire mounting spool assembly to the right side of the mainframe.

IMPORTANT

At the top point of the mounting spool, the inner ratchet catch must always point away from your conveyor load pulley.

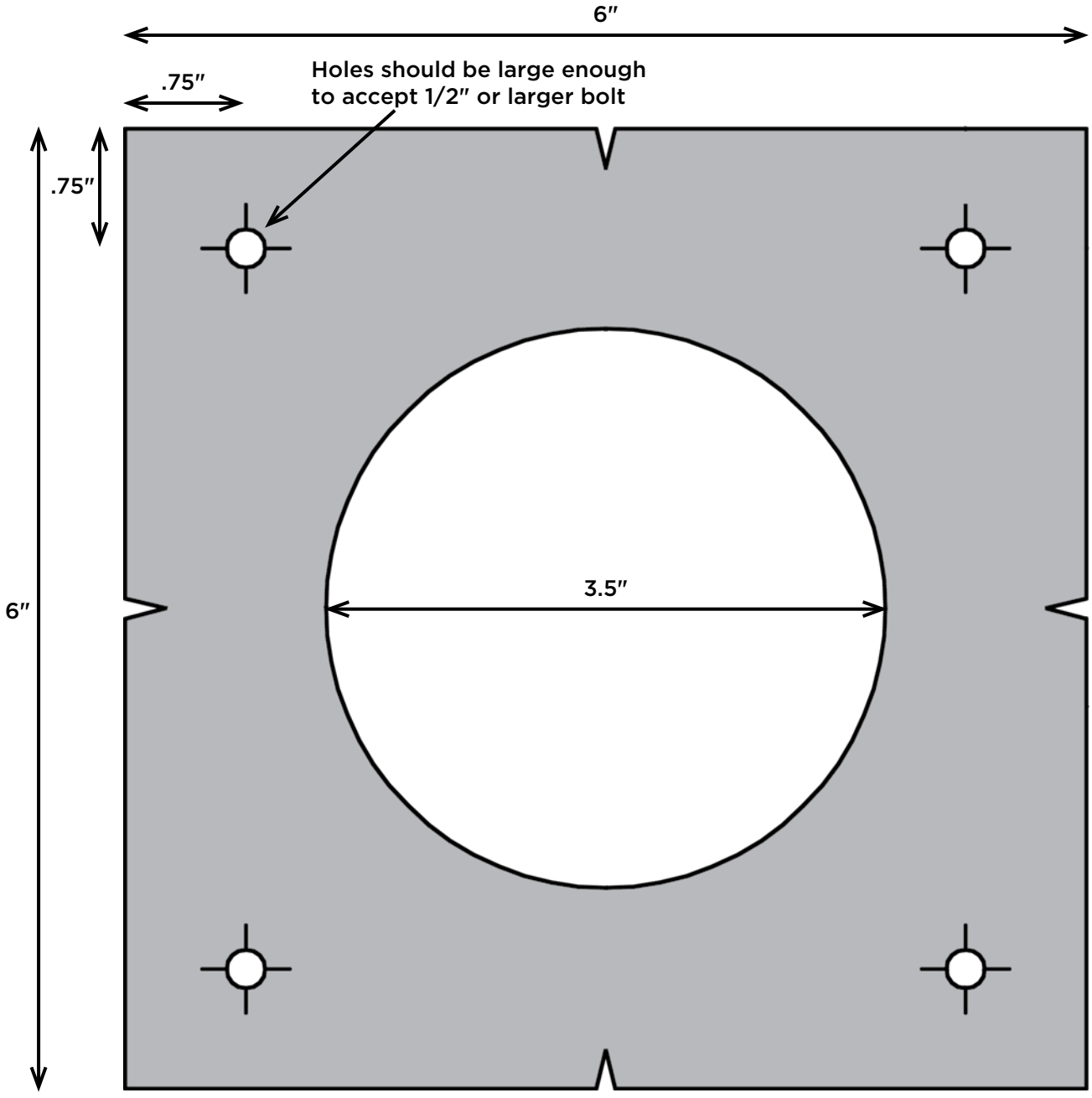
Continue following the installation instructions located on page 4.

TROUBLESHOOTING GUIDE

Problem	Probable Cause	Suggested Solutions
Excessive Blade Wear	Cleaner under/over tensioned	Adjust to correct tension
	Cleaner installed in wrong location	Ensure the "Z" dimension is correct and adjust if necessary
	Wrong urethane for material	Consult Argonics or your distributor for proper urethane selection
	Mechanical splice damaging blade	Repair, skive or replace splice
	Damaged belt	Fix damaged area or replace belt
Wear on center of blade (smiley effect)	Blade wider than material path	Replace with shorter blade (just outside material path)
	Wrong urethane for material	Consult Argonics or your distributor for proper urethane selection
Unusual wear or damage to blade	Mechanical splice damaging blade	Repair, skive or replace splice
	Belt damaged or ripped	Repair or replace belt
	Cleaner installed in wrong location	Ensure the "Z" dimension is correct and adjust if necessary
Vibration or noise	Cleaner installed in wrong location	Ensure the "Z" dimension is correct and adjust if necessary
	Cleaner running on empty belt	Use a spray pole to lubricate belt when running dry
	Cleaner under/over tensioned	Adjust to correct tension
	Cleaner not securely fastened	Check and tighten all bolts and nuts
	Cleaner not square to head pulley	Ensure the "Z" dimension is correct and adjust if necessary
	Material buildup in chute	Clean up buildup on cleaner and in chute
Poor Cleaning Performance	Cleaner under/over tensioned	Adjust to correct tension
	Cleaner installed in wrong location	Ensure the "Z" dimension is correct and adjust if necessary
	Urethane blade worn or damaged	Install new blade
Blade pushed away from pulley	Cleaner tension set too low	Increase tension, add a second tensioner if system only has one
	Sticky material is overpowering cleaner	Ensure that set screw is seated in the notch of the outer ratchet catch (see page 8 of install guide)
		Add a second tensioner if a single tensioned system
		Replace with shorter blade (just outside material path), use a harder urethane and increase tension of system
		Replace with larger size cleaner
	Cleaner not set up correctly	Ensure the "Z" dimension is correct and equal on both sides
Blade flipping through	Cleaner installed too far away from pulley	Ensure the "Z" dimension is correct and adjust if necessary
	Cleaner too small for pulley	Replace with larger size cleaner

MOUNTING TEMPLATE

Transfer the drawing below to cardboard, and use as your mounting spool template.



Template is drawn to actual size.

OTHER QUALITY PRODUCTS FROM ARGONICS

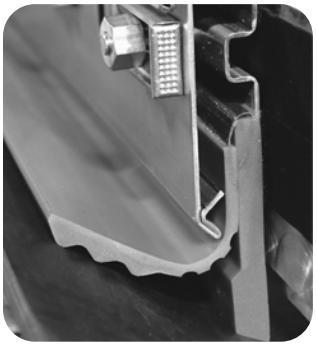
THE MOST RELIABLE AND COST-EFFECTIVE SKIRTING AVAILABLE

MADE WITH KRYPTANE® POLYURETHANE

Argonics formulates unique proprietary Kryptane polyurethane materials tailored to meet the demands of your wear application, whether it be sliding or impact abrasion, sticking or corrosion.

BENEFITS OF ARGONICS POLYURETHANE SKIRTING:

- 6 - 10 times the wear life over rubber
- 60% lower coefficient of friction compared to rubber, which reduces drag on conveyor motor
- Will not groove your conveyor belt when installed correctly



FOLD-N-SEAL™

If you're looking for a quality multi-sealing conveyor skirting solution that isn't hard on your budget, look no further: Fold-n-Seal is your answer.

Fold-n-Seal gives you the best of both worlds: material and dust containment in one unique solution. The primary seal keeps the material where it should be – on the belt. The secondary seal keeps dust and particulate material under control.

SNAP-LOC™ DUST SEAL

Snap-Loc is the gold standard for dust containment skirting. This straight-forward, no-nonsense design for dust control snaps into standard unistrut railing that can be bolted or welded into place.

Snap-Loc Dust Seal is engineered to create a perfect seal that follows the contours and low spots of the belt between trough rollers. No additional adjustments are needed for the life of the seal, saving you in both cost and hours of maintenance.

LOAD ZONE CONTAINMENT SKIRTING

Designed to do one thing and do it well: contain material at the transfer points on your belt line. The extra-rugged reinforced design with ¼" steel means that our Containment Skirting is extremely effective in reducing spillage, resulting in reduced clean-up labor.

Containment skirting is available with either a flat or 20° beveled edge, and in 60" and 96" lengths. Varying heights and thicknesses available.

ARGONICS
ENGINEERED POLYURETHANE
520 9th Street • Gwinn, MI 49841
906.226.9747 800.991.2746 f: 906.226.9779
www.argonics.com

PERFORMANCE SOLUTIONS! PROVEN