

EXCALIBUR[®] BELT CLEANER

INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS



SAFETY FIRST

Important Safety Notice

Always observe the basic rules of safety when working with any conveyor system. To avoid injury and equipment damage, be sure that all controls to the conveyor are locked out and the power source is disconnected at all times during installation.

WARNING

Please completely read and understand these instructions before attempting the installation of an Excalibur belt cleaning system. Failure to do so could lead to serious injury and equipment damage. Ensure that all controls and power sources to the conveyor system are properly disconnected and locked out while installing, adjusting or maintaining the Excalibur belt cleaning system. Never attempt any installation, adjustment, or service procedure while the conveyor is in operation.

Ensure that all required safety equipment is on hand, such as a fire extinguisher and first-aid kit before proceeding. Those who use and maintain the Excalibur belt cleaning system must be properly trained in its proper use, know of its dangers, and read and understand this entire manual before attempting to install, operate, or service this device. Failure to observe all instructions could result in serious injury. It is the owner's responsibility that the owner and each operator read and be familiar with this manual.

CAUTION:

All stainless steel threaded parts must be kept well lubricated. Stainless threads easily “gall” (strip-out) when poorly lubricated. The stainless steel mounting hardware supplied with the system has not been pre-lubricated at the factory. You must apply an appropriate anti-seize or lubricant before tightening.

All parts should be cleaned and sanitized in compliance with your facility policies prior to installation and use.

WARNING:

Please contact the engineering department at ASGCO® “Complete Conveyor Solutions” at 1.800.344.4000 if you have further questions or are unsure of these procedures.



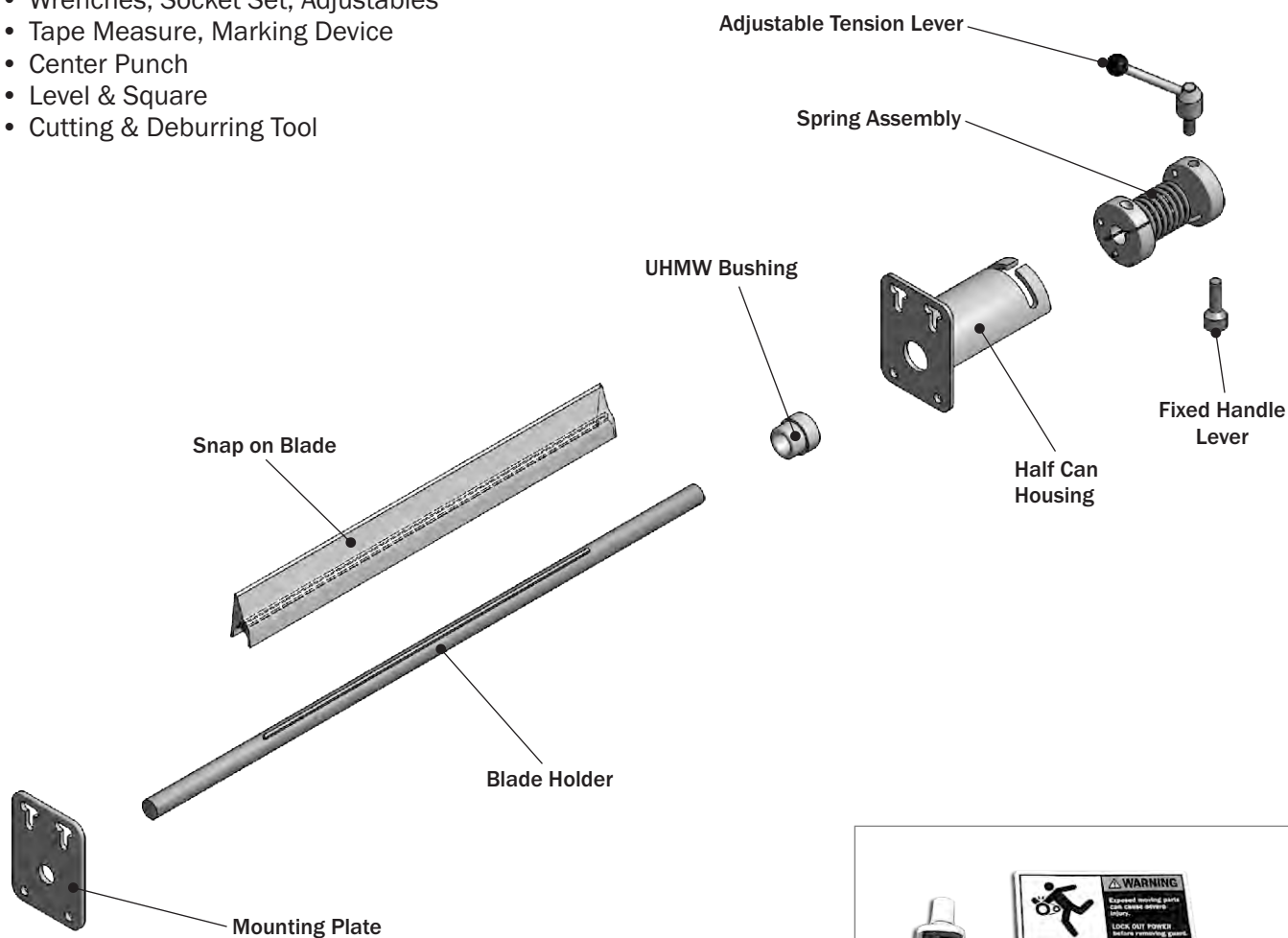
EXCALIBUR® COMPONENTS

STEP 1:

Identify and become familiar with all parts. Ensure all parts have been included. Most all are pre-assembled on the system. Ensure that all parts have been included with your partially pre-assembled system.

REQUIRED TOOLS:

- Drill and Bits: 7/16" + 7/8" + 1-1/4"
- Wrenches, Socket Set, Adjustables
- Tape Measure, Marking Device
- Center Punch
- Level & Square
- Cutting & Deburring Tool



Mounting Kit Bags

- ASGCO® Silicone Sealant
- Safety Label
- Allen Key
- (2) Bags of Hardware:
(Each bag includes 4 bolts,
4 nuts & 8 washers)

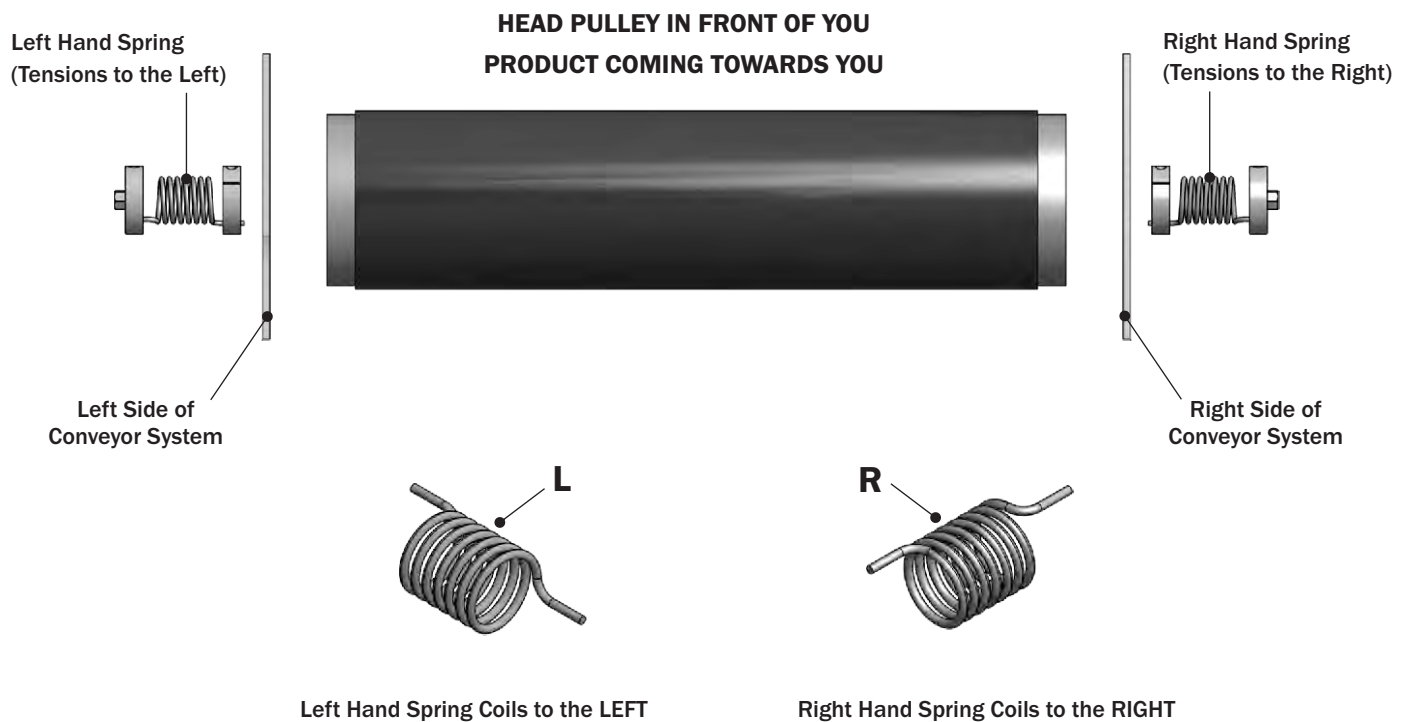


EXCALIBUR® INSTALLATION

STEP 1A:

Depending on what you have ordered, you may have a left or right hand spring assembly. Make sure that you install the spring assembly on the proper side.

72" belt width and above will have both a left and a right hand spring. The left spring coils to the left and the right spring coils to the right..



EXCALIBUR® INSTALLATION

Note #1:

If the conveyor's outer frame width exceeds 54-1/2" you will need to purchase a Long Span Blade Holder. (Shown below)

If the conveyor's outer frame width exceeds 110" then a reinforced Long Span Blade Holder will need to be purchased. (Not shown)



LONG SPAN BLADE HOLDER FOR FRAMES GREATER THAN 54-1/2" WIDE

Note #2

Not recommended to be installed on a 1 inch diameter head pulley for the Primary Position.

Note #3

For applications that are prone to having lump like material build-up between the conveyor belt and the head pulley, avoid the Primary installation. Lumps cause the Excalibur® to have intermittent contact with the belt.

Note #4

For Excalibur® blade lengths 72" and greater, a Dual Tensioning System is provided. (One for each end) The Mounting Plate is eliminated in this circumstance,

Parts include 2 each of the following :

- Springs (Right & Left Hand)
- Half Can Housings
- Adjustable Tension Levers
- Fixed Handle Levers
- UHMW Bushings
- Mounting Kit Bags

EXCALIBUR® INSTALLATION

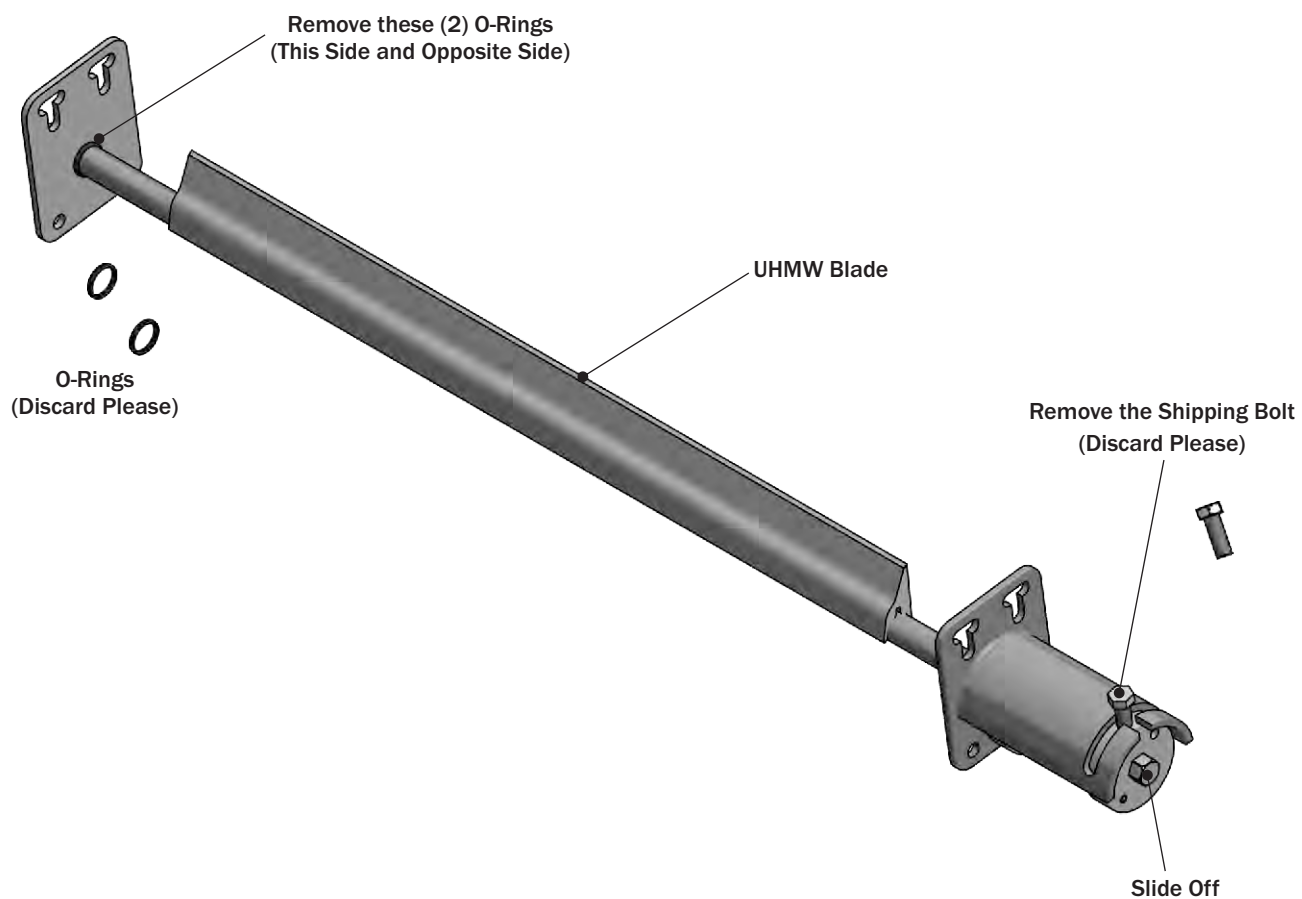
STEP 1B:

BEFORE INSTALLATION:

Remove and discard the O-Rings and the nylon shipping bolt.

Remove the UHMW Blade.

Slide off the Spring Assembly.



EXCALIBUR® INSTALLATION

Step #2:

SELECTING THE PRIMARY ORIENTATION:



When the Excalibur® is mounted on the Head Pulley, this is referred to as the **Primary Orientation**. This will aid in dislodging fugitive material from the belt and is very effective.

On some conveyors, lack of space at the Head Pulley may result in the need to position the Excalibur® at a **Secondary Location**.

EXCALIBUR® INSTALLATION

STEP 3: Primary Position and Determining the Critical “N” Dimension

The blade tip should be positioned at the 7 to 9 o'clock region (shown) or the 3 to 5 o'clock region (opposite end not shown). The “N” Dimension is from the center of the Blade Holder to the top cover of the conveyor belt. Look up the “N” Dimension from one of the 3 Blade Tables based on the Excalibur® purchased. Do this for both sides of the conveyor.

Table 1A: N-Dimension Table
(for Standard Blade Holder)

PULLEY DIAMETER	N-DIMENSION		PULLEY DIAMETER	N-DIMENSION
<1"	Consult ASGCO		3"	1-1/8"
1"	1-7/16"		4"	1"
1-1/4"	1-3/8"		5"	1"
1-1/2"	1-5/16"		6"	15/16"
1-3/4"	1-1/4"		7"	7/8"
2"	1-1/4"		8+"	7/8"

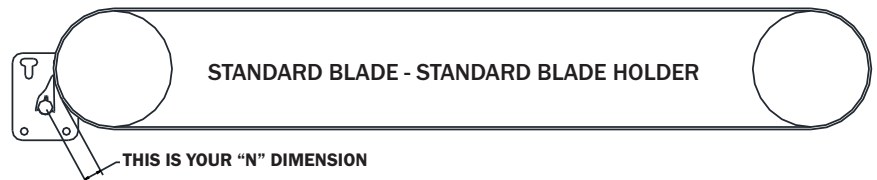


Table 1B: N-Dimension Table
(for Long Neck Blade Holder)

PULLEY DIAMETER	N-DIMENSION		PULLEY DIAMETER	N-DIMENSION
<1"	Consult ASGCO		3"	1-15/16"
1"	3-1/4"		4"	1-11/16"
1-1/4"	3-1/8"		5"	1-9/16"
1-1/2"	3"		6"	1-3/8"
1-3/4"	2-7/8"		7"	1-5/16"
2"	2-13/16"		8+"	1-3/16"

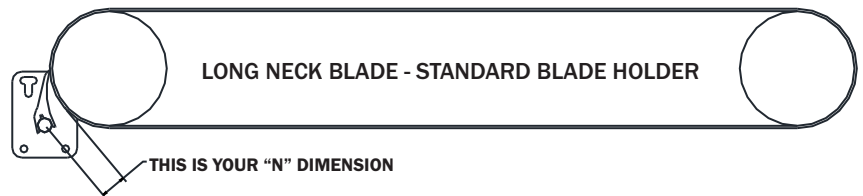
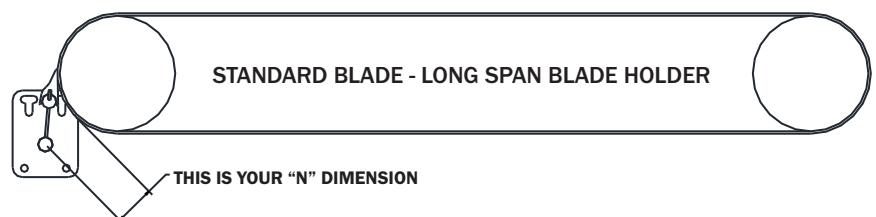


Table 1C: N-Dimension Table
(for Long Span Blade Holder)

PULLEY DIAMETER	N-DIMENSION		PULLEY DIAMETER	N-DIMENSION
<1"	Consult ASGCO		3"	2-5/8"
1"	3-1/4"		4"	2-7/16"
1-1/4"	3-1/8"		5"	2-3/8"
1-1/2"	3"		6"	2-1/8"
1-3/4"	2-7/8"		7"	2"
2"	2-7/8"		8+"	2"



EXCALIBUR® INSTALLATION

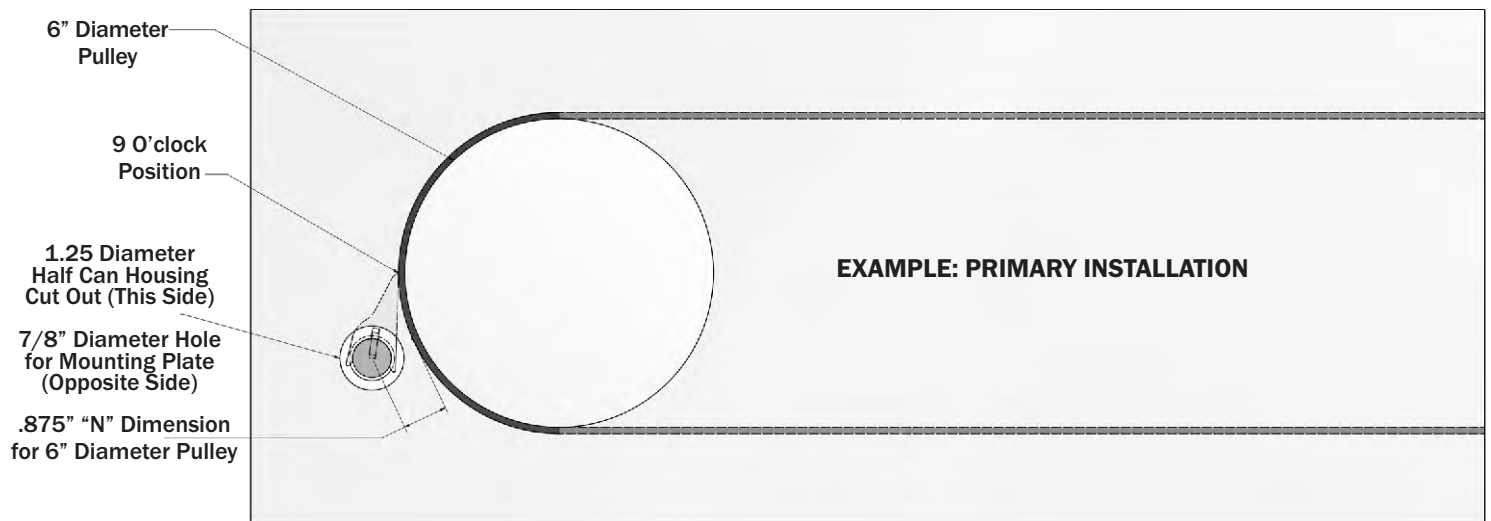
Example of Primary Orientation - Position - and “N” Dimension:

Determine all modifications to be made to the conveyors frame.

Fabricate and install plates, if necessary, to accommodate the Half Can Housing and Mounting Plate.

Provide through holes (Example) for the Blade Holder and Mounting Hardware (Included).

- 1-1/4" for the Half Can Housing (Tensioner & Side)
- 7/8" for the Mounting Plate (Opposite Side)



EXCALIBUR[®] INSTALLATION

Step #4: The Primary Installation Process

Determine the position (7 to 9 o'clock OR 3 to 5 o'clock)

Use a scribe (Pencil, Metal, Soap Stone, etc. or the end of a tape measure) to scribe your arc.

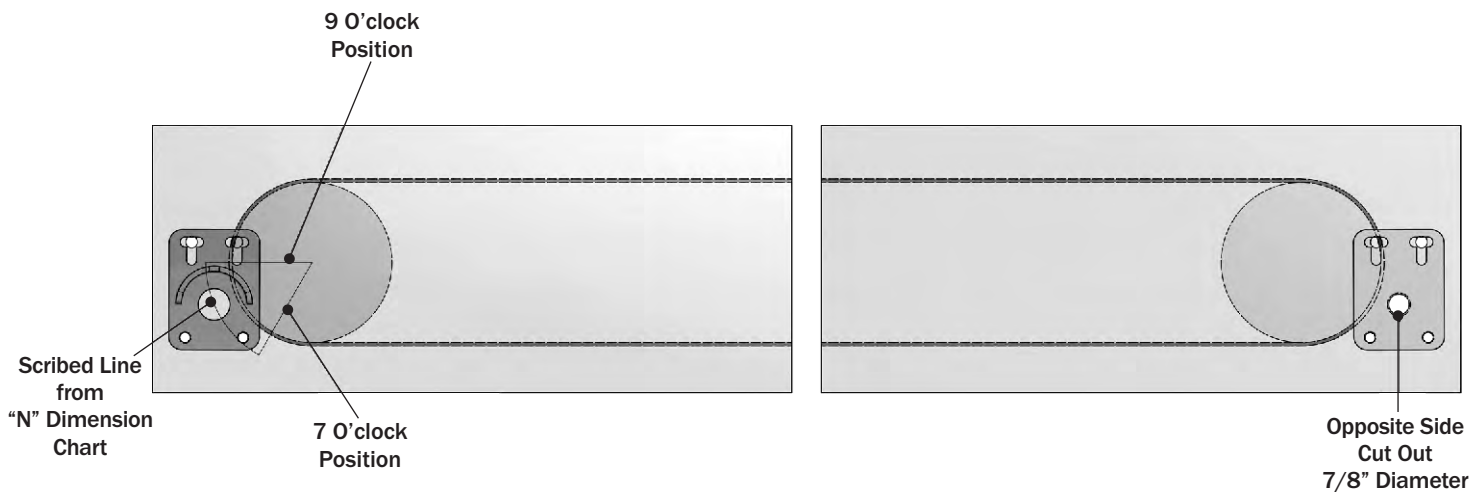
This arc is the distance away from the Pulley/Belt Line to where the center of the Blade Holder is to be.

This is referred to as the "N" Dimension (Based off the pulley diameter).

Cut out the (2) holes through the frame required for the Blade Holder to fit through.

- (1-1/4" for the Tensioner Side (Half Can Housing)
- 7/8" for the Mounting Plate (Opposite Side)

Now drill (4) holes for the Half Can Housing (use 7/16" bit) and (4) more for the Mounting Plate.



EXCALIBUR® INSTALLATION

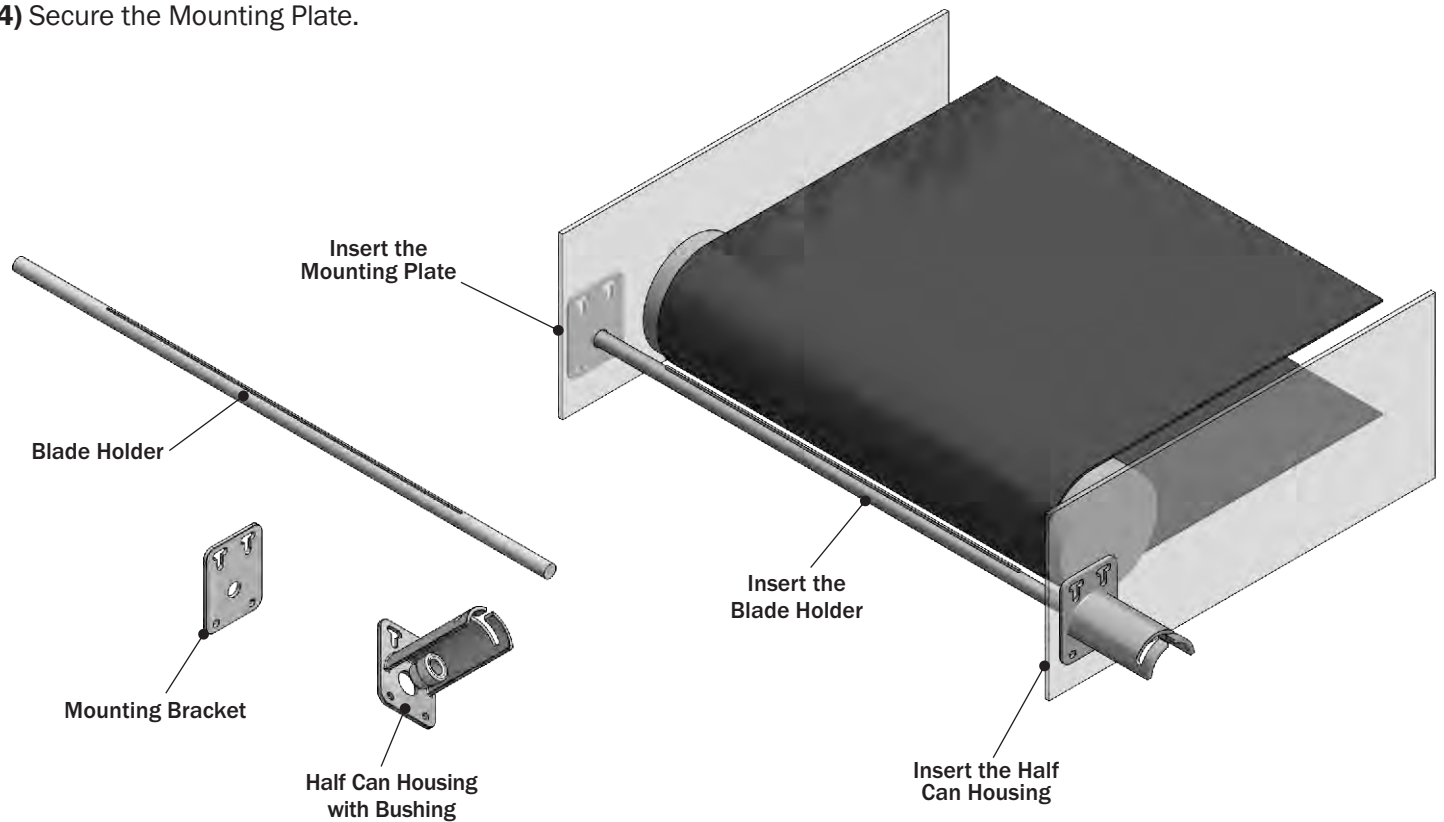
Step #5:

Insert the Blade Holder through the Holes. Put on the Mounting Plate. Then put on the Half Can Housing with the UHMW Bushing.

Center the Mounting Plate and Half Can Housing and Blade Holder through the cut outs.

OPTION: Before fastening, use the ASGCO® sealant between brackets and conveyor structure.

- (1) Re-Check the “N” Dimension.
- (2) Securely fasten the Half Can Housing.
- (3) Attach the Blade. Make sure the Blade Tip is level across the belt and that it touches the belt evenly.
- (4) Secure the Mounting Plate.

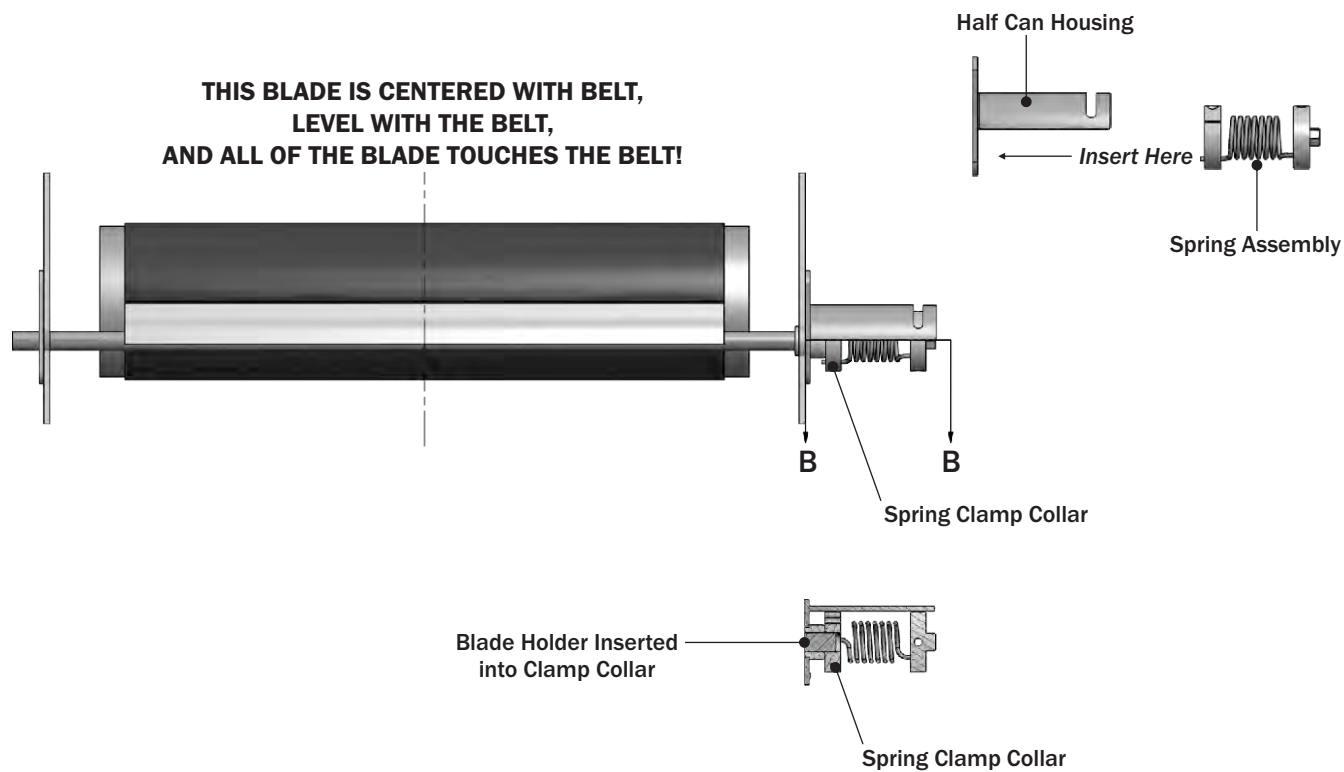


EXCALIBUR® INSTALLATION

Step #6:

Install the Spring Assembly into the Half Can Housing.

Make sure the Blade Holder fully extends to the Spring Clamp Collar.



EXCALIBUR® INSTALLATION

Step #7:

Install the “L” shaped Tension Lever and the Fixed Handle Lever.

Rotate the Tension Lever in the center of the slot and tighten.

Push the UHMW Blade against the conveyor belt.

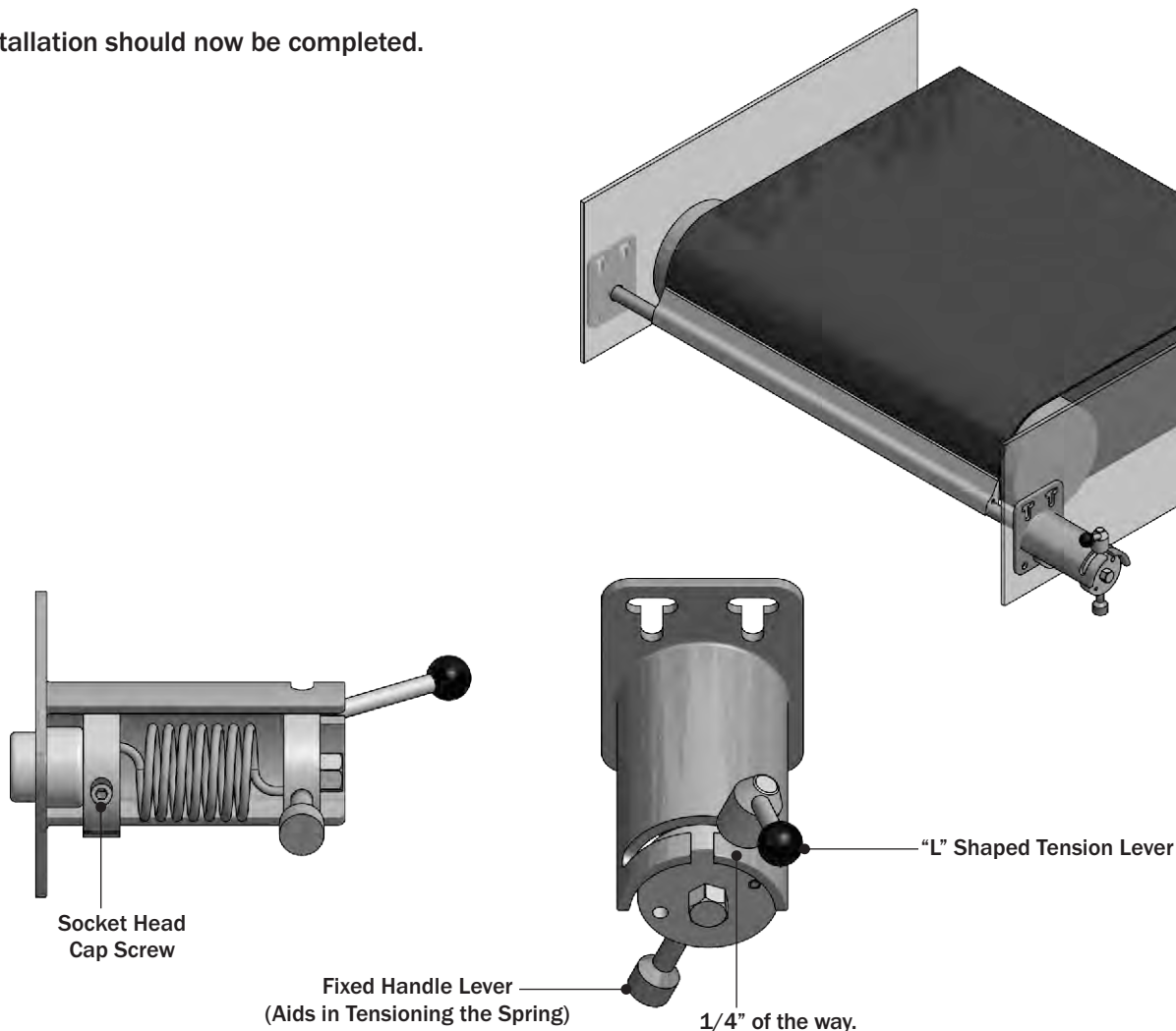
Securely tighten the Socket Head Cap Screw on the Spring Assembly with the supplied Allen Key.

TO TENSION THE CLEANER:

Loosen the tension lever and rotate it towards the belt. Approximately a 1/4 of the way to apply more spring force. This equates to 15 degrees or 15 pounds of force on the blade.

**Initial operation of the Excalibur® System should have very light tension. It is up to the user to determine the optimal blade tension.*

Installation should now be completed.



EXCALIBUR® INSTALLATION

Secondary Orientation Installation

It is desirable to place the Excalibur® a few inches after the Nip Point of the Head Pulley. (Tension Reasons)

ASGCO® recommends **AGAINST** placing the Blade Tip so that the belt is pinched between the idler roller and the UHMW Blade.

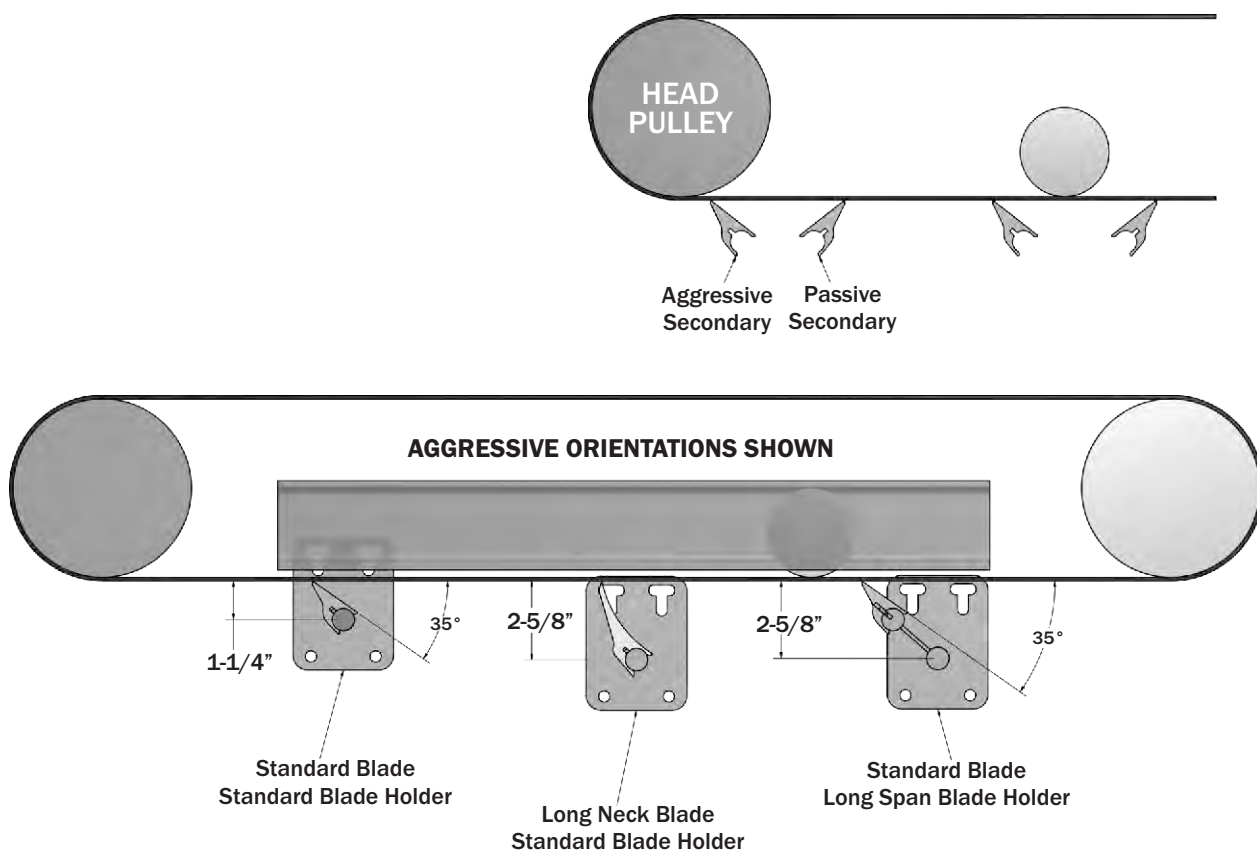
All procedures are the same as preparing for the Primary Installation except the position is Secondary and there is no "N" Dimension involved.

Please refer to all Step 1 Instructions.

The 1-1/4" and 2-5/8" are install heights for the Excalibur®'s show respectively.

Some circumstances will require extra metal to help secure the Mounting Plate and the Half Can Housing to the conveyors structure. (As shown in the Long Span Blade Holder)

Continue with installation starting from Step #5.



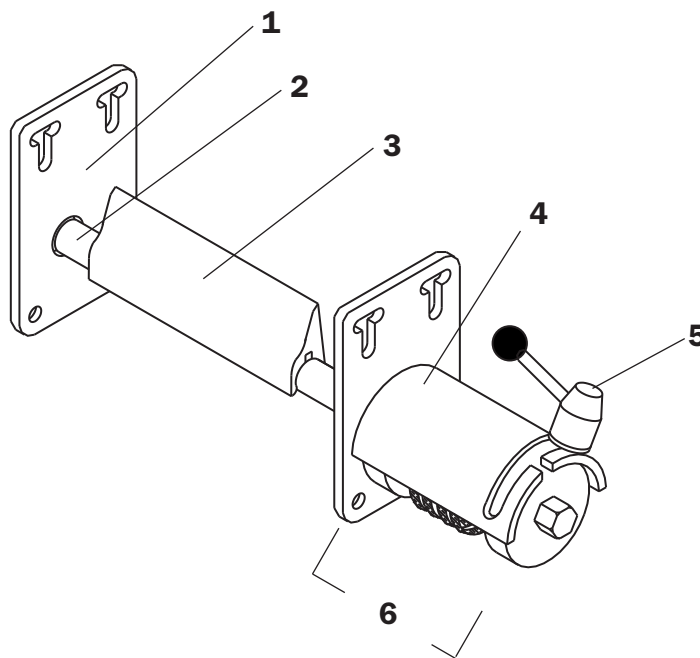
INFORMATION

Key	Description	Part Number
1	Mounting Plate	EXSC-MP01
2	Blade Holders	EXSC-BH[X]
3	Snap-On UHMW-PE Blades	EXSOB-UHMW-01-[X] [X]=Blade Type, [BW]=Blade Width
	Refurbishing Kit	M-EXSC-REFURB01
	Aluminum Extension Plates	M-EXSC-OPTAEP
	Aluminum "C" Mounting Plates	M-EXSC-OPTACP
4	Half Can Housing	EXSC-HCH01
	LD RH Spring Assembly	M-EXSC-SA-LDRH01
	LD LH Spring Assembly	M-EXSC-SA-HDLH01
	Springs for Dual Tensioners	M-EXSC-DS-01
	Add. Tensioning System	M-EXSC-DT-01

Call your ASGCO® Distributor for any questions or replacement parts

Components Diagram

1. Mounting Plate
2. Blade Holder
3. Snap-On Blade
4. Half Can Housing
5. Adjustable Tension Lever
6. Spring Assembly



WARRANTY

ASGCO® Manufacturing, Inc., warrants its products to be free from defects in material and workmanship under normal use and service, its obligation under this warranty being limited to replacement of any defective product, if returned by the purchaser, or refunding of the purchase price, at ASGCO®'s discretion. ASGCO® shall not

be liable for incidental or consequential damages and including, but not limited to, claims for down time, lost profits, and/or business overhead expenses. **THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND EXPRESSLY EXCLUDES ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.**

OPERATION & MAINTENANCE

Adjusting Blade Tension

To adjust the blade tension (i.e., the pressure of the blade against the belt), simply loosen the adjustable tension lever and rotate the lever along the slot in the half can housing. When the desired tension is achieved, firmly tighten the adjustable tension lever causing the spring tension to remain locked in place. Note that precise and repeatable tensioning can be achieved by applying a torque wrench to the hex head located at the end of the spring assembly.

The uniqueness of each application makes it nearly

impossible for guidelines to be provided regarding proper blade tensioning. As a general rule, we suggest initially applying the blade with very light pressure to the belt. The belt should be inspected frequently to ensure that no damage is occurring. Continue to inspect the belt and increase the blade tension until acceptable material removal efficiency is achieved. Check the belt regularly, including the splice, for excessive wear. Back off on the tension or remove the blade holder immediately if excessive wear or damage is observed.

Limiting Maximum Blade Tension

The Excalibur® Belt Cleaner has a built-in means of limiting the maximum applied tension. This technique may help prevent the accidental over-tensioning of the blade against the belt. This is accomplished by adjusting the spring's rotation on the blade holder in

such a manner that the adjustable tension lever bottoms along the slot at the maximum desired applied tension. Periodic adjustment may be required as the blade wears and conditions change.

Cleaning Operations

There are at least three methods of cleaning and sanitizing the Excalibur® Belt Cleaning System. The level and extent of this cleaning and the techniques used should be in compliance with your company's policies and any applicable legal or regulatory requirements.

IPC Cleaning Technique: The simplest way to clean the system using In-Place Cleaning techniques is to release the tension on the spring by loosening and rotating the Adjustable tension lever along the slot and then simply removing the blade by pushing up on one end of the blade with your fingers. The blade can be cleaned and/or sanitized using Out of Place cleaning techniques in accordance with your company's procedures. The remainder of the system can be cleaned and/or sanitized using In-Place Cleaning (mechanical) techniques, such as a high-pressure water wash, wipe down, or other technique in accordance with your company's procedures. When completed, the blade is "snapped" back onto the blade holder, tensioned, and ready to operate. This technique is often acceptable in bakery applications and most non-food applications. Note that hand tools are not required to perform this operation.

COP Cleaning Technique: For system using a standard blade holder (not a Long span Blade Holder), it is possible to side-extract the blade holder from the half-can housing. This is performed after removal of the scraper blade from the blade holder. Only the mounting plate and half can housing remain on the conveyor frame. For systems using long span blade holders or dual tensioners, the spring assembly will need be removed from one or both sides to facilitate removal of the blade holder. Clean Out-of-Place (COP) techniques are often acceptable for the Excalibur® when used in bakery and beef & poultry applications. Note that hand tools are not required to perform this operation when a standard blade holder is used.

Complete Disassembly Technique: For applications where stringent cleaning and sanitization requirements exist, the entire system can be rapidly disassembled with an Allen wrench (for removal of the spring assembly) and wrenches (for removal of the mounting plates). This technique is the same as the COP Cleaning Technique however the spring assembly is removed from the blade holder and the mounting plates are removed from the conveyor frame to facilitate access to all surfaces. Please remember: to prevent "galling", re-lubrication with a food grade anti-seize is necessary with the stainless steel hardware.

TROUBLE SHOOTING

PROBLEM	SOLUTION
Excess vibration of the scraper.	<p>Make certain all bolts are tight and the pin is securely engaged on the tensioner.</p> <p>Ensure the cleaners n-dimension is proper (See Table and Figure 1).</p>
Excess carryback.	<p>Check for excess build-up on the scraper.</p> <p>Check for proper Scraper tension. Put additional tension on cleaner.</p> <p>Check for non-uniform scraper wear.</p> <p>Check n-dimension.</p> <p>Clean the back-side of the belt cleaner.</p>
Check for wear on the cleaning tips.	<p>Check thickness of carry-back. If the cleaner must remove more than about 1/8" of material then an additional cleaner may be needed.</p>
Frozen material on scraper.	<p>Place heaters near scraper to melt frozen material. (Use caution not to burn belt or cleaner)</p>
Blade wearing in center	<p>BVW-6" BW-12 (Put a new blade on the concentrates cleaning in the center of the flow of the material.</p>
Blade wearing more on one side	<p>Check N-Dimension.</p>

EXCALIBUR IN OPERATION

