



CleanScrape® Secondary Cleaner STS™

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***Operator's Manual
M4133***

Important

MARTIN ENGINEERING HEREBY DISCLAIMS ANY LIABILITY FOR: DAMAGE DUE TO CONTAMINATION OF THE MATERIAL; USER'S FAILURE TO INSPECT, MAINTAIN AND TAKE REASONABLE CARE OF THE EQUIPMENT; INJURIES OR DAMAGE RESULTING FROM USE OR APPLICATION OF THIS PRODUCT CONTRARY TO INSTRUCTIONS AND SPECIFICATIONS CONTAINED HEREIN. MARTIN ENGINEERING'S LIABILITY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF EQUIPMENT SHOWN TO BE DEFECTIVE.

Observe all safety rules given herein along with owner and Government standards and regulations. Know and understand lockout/tagout procedures as defined by American National Standards Institute (ANSI) z244.1-1982, *American National Standard for Personnel Protection - Lockout/Tagout of Energy Sources - Minimum Safety Requirements* and Occupational Safety and Health Administration (OSHA) Federal Register, Part IV, 29 CFR Part 1910, *Control of Hazardous Energy Source (Lockout/Tagout); Final Rule*.

The following symbols may be used in this manual:



Danger: Immediate hazards that will result in severe personal injury or death.



Warning: Hazards or unsafe practices that could result in personal injury.



Caution: Hazards or unsafe practices that could result in product or property damages.



Important: Instructions that must be followed to ensure proper installation/operation of equipment.



Note: General statements to assist the reader.

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Introduction

General

To introduce product back into the product flow, a Pre-Cleaner is installed on the face of the head pulley. On a dual cleaner system, the Secondary Cleaner is installed immediately following the Pre-Cleaner to remove stubborn material left on the conveyor belt. If a Pre-Cleaner cannot be used because of space limitations, the Secondary Cleaner is installed alone. If the material-handling process or product could be affected by contamination from the use of these belt cleaners, the user is responsible for taking the necessary steps to prevent contamination. Consult Martin Engineering or a representative for alternate belt cleaners or belt cleaner locations to use where contamination may be an issue.

Installations without chutework

These procedures were written for equipment that is being installed on enclosed pulley chutework. If the pulley is not enclosed, the equipment should be installed using the best available field resources and methods to ensure that the critical dimensions are followed for proper installation.

Belt cleaner inspection access

If the belt cleaner is installed on enclosed pulley chutework, a Martin[®] Inspection Door should be installed. Martin[®] Inspection Doors are available from Martin Engineering or a representative.

References

The following documents are referenced in this manual:

- American National Standards Institute (ANSI) z244.1-1982, *American National Standard for Personnel Protection - Lockout/Tagout of Energy Sources - Minimum Safety Requirements*, American National Standards Institute Inc., 1430 Broadway, New York, NY 10018.
- Federal Register, Volume 54, Number 169, Part IV, 29 CFR Part 1910, *Control of Hazardous Energy Source (Lockout/Tagout); Final Rule*, Department of Labor, Occupational Safety and Health Administration (OSHA), 32nd Floor, Room 3244, 230 South Dearborn Street, Chicago, IL 60604.

Safety

All safety rules defined in the above documents and all owner/employer safety rules must be strictly followed when working on the belt cleaner.



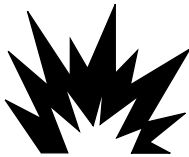
⚠ DANGER

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 belt cleaner, 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.



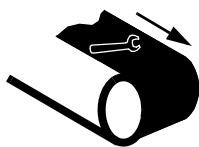
⚠ DANGER

If this equipment will be installed in an enclosed area, test the gas level or dust content before using a cutting torch or welding. Using a torch or welding in an area with gas or dust may cause an explosion resulting in serious injury or death.



⚠ WARNING

Before using a cutting torch or welding the chute wall, cover the conveyor belt with a fire retardant cover. Failure to do so can allow the belt to catch fire.



⚠ WARNING

Remove all tools from the installation area and conveyor belt before turning on the conveyor. Failure to do so can cause serious injury to personnel or damage to the belt and conveyor.



⚠ WARNING

Mainframe with blade can be heavy and may require two people to lift. Attempting to lift the belt cleaner without assistance could result in injury.

Before Installing Belt Cleaner

IMPORTANT

The delivery service is responsible for damage occurring in transit. Martin Engineering CANNOT enter claims for damages. Contact your transportation agent for more information.

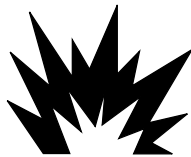
1. Inspect shipping container for damage. Report damage to delivery service immediately and fill out delivery service's claim form. Keep any damaged goods subject to examination.
2. Remove belt cleaner assembly from shipping container.
3. If anything is missing contact Martin Engineering or a representative.



WARNING

Before installing equipment, 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.

4. Turn off and lock out/tag out energy source according to ANSI standards (see "References").



DANGER

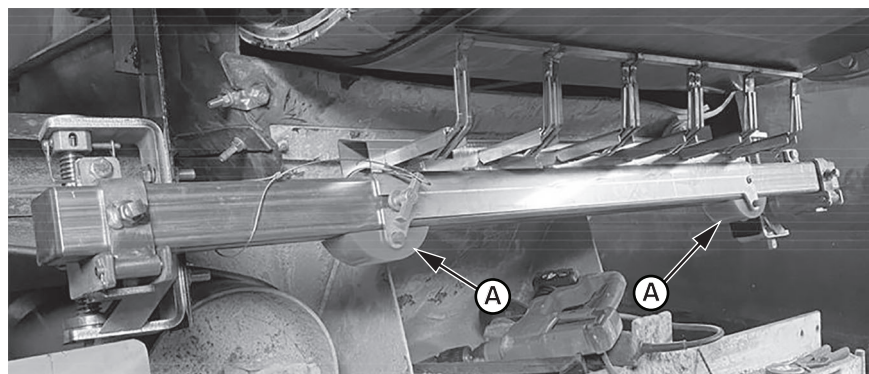
If this equipment will be installed in an enclosed area, test the gas level or dust content before using a cutting torch or welding. Using a torch or welding in an area with gas or dust may cause an explosion resulting in serious injury or death.

5. If using a cutting torch or welding, test atmosphere for gas level or dust content. Cover conveyor belt with fire retardant cover.

IMPORTANT

Center the belt cleaner blades to clean an area narrower than the conveyor belt width. This allows for side-to-side movement of the belt and prevents damage to the belt edge.

Urethane pucks (A) are for shipping purposes only and should be removed prior to belt cleaner installation.



Installing Belt Cleaner Assembly

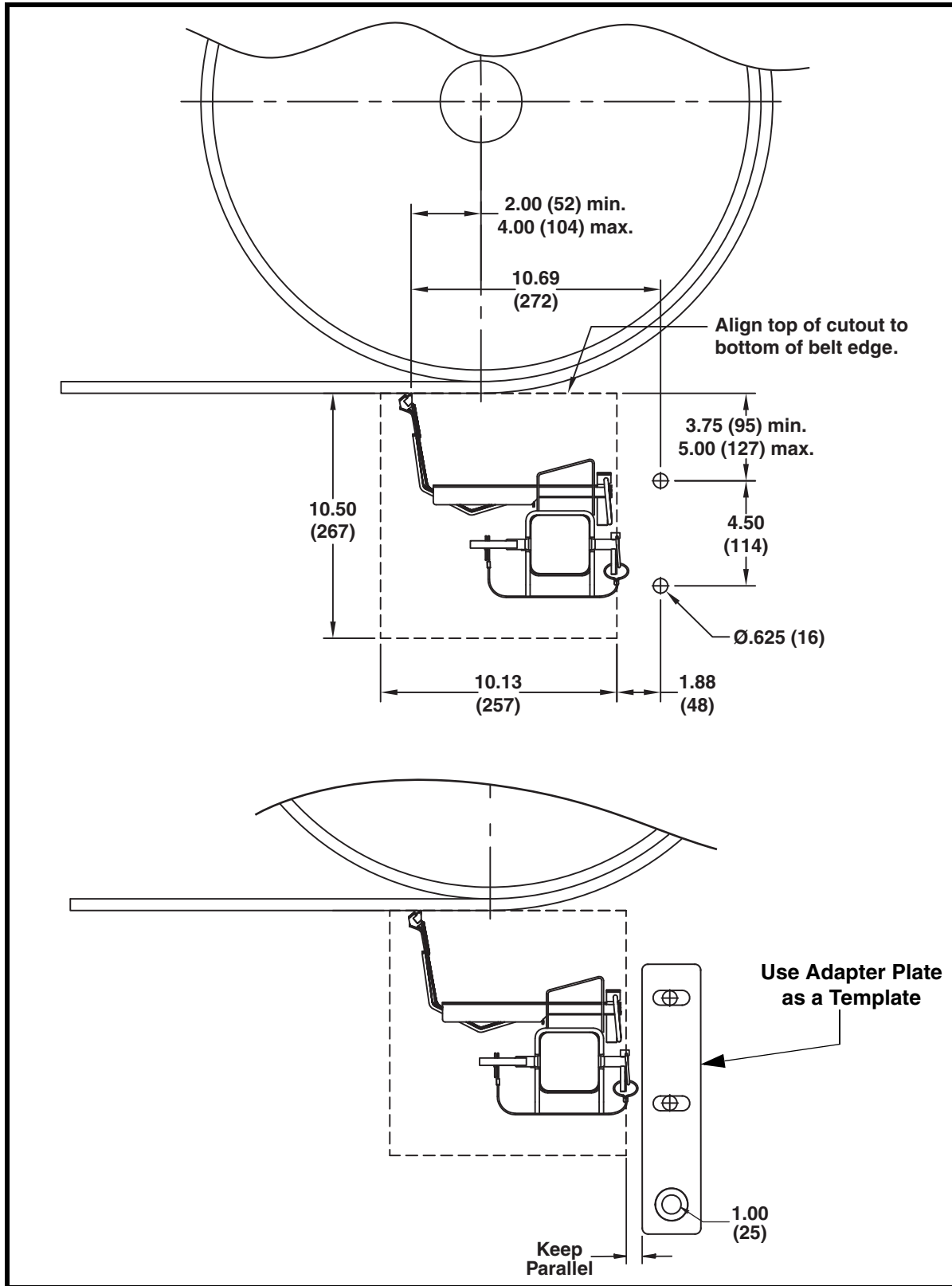


Figure 1. Mounting Location

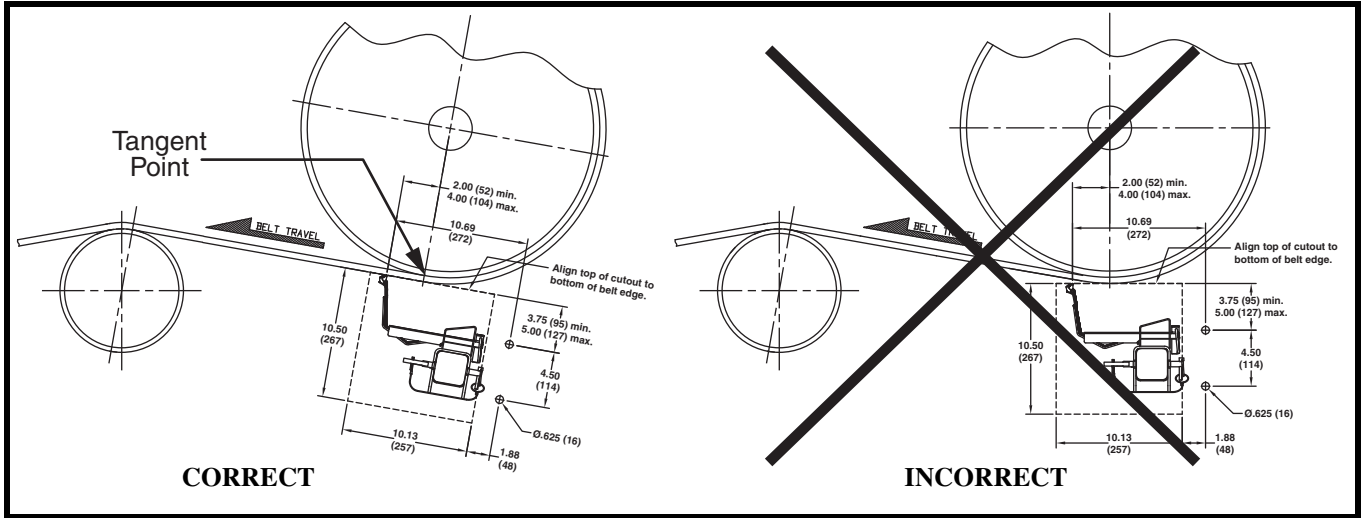


Figure 2. Tangent Point

IMPORTANT

Belt cleaner mounting location must be marked using a line perpendicular to the belt line at the tangent point (point where the belt leaves the head pulley), see Figure 2. **DO NOT** use the vertical centerline of the head pulley.

NOTE

Solid backing of the blade is essential to ensure proper operation and efficient cleaning. Install the cleaner adjacent to the head pulley or a flat pressure roller to obtain best cleaning results.

NOTE

For installation on enclosed head pulley chutework, draw all dimension lines on chute wall. In applications where head pulley is not enclosed, use the best available field resources and/or methods to ensure that these critical dimensions are followed for a proper installation.

Marking chute cutouts

1. Mark the chute cutout and mount hole locations as shown in Figure 1. Repeat on both sides of chute, ensuring cutouts are accurately aligned with each other.
2. At the selected mounting position, cut the cleaner access slots and drill the mount holes in each side of the chute. Dress and de-burr the holes and cutouts.

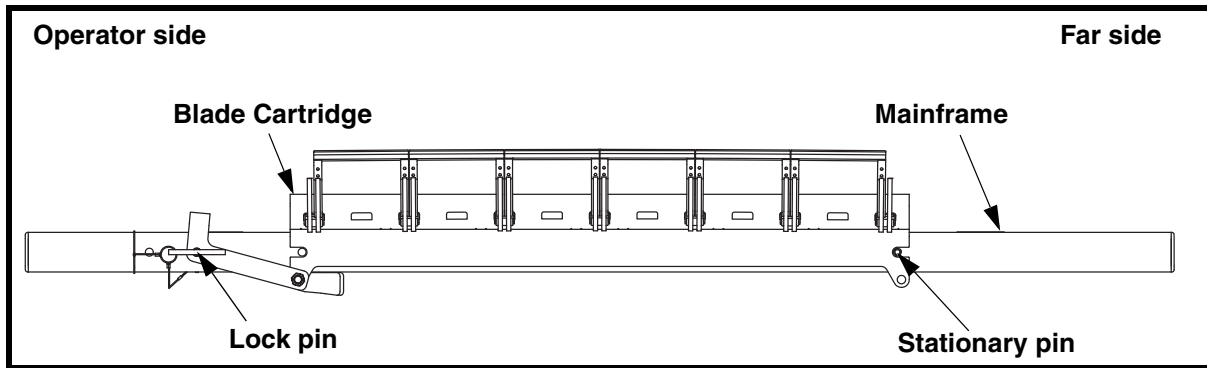


Figure 3. Removing Blade Cartridge

Removing blade cartridge

1. Remove lock pin from operator side of mainframe and blade cartridge.
2. Pull blade cartridge away from stationary pin on far side of mainframe and remove from mainframe. Make sure lock pin remains attached to mainframe.

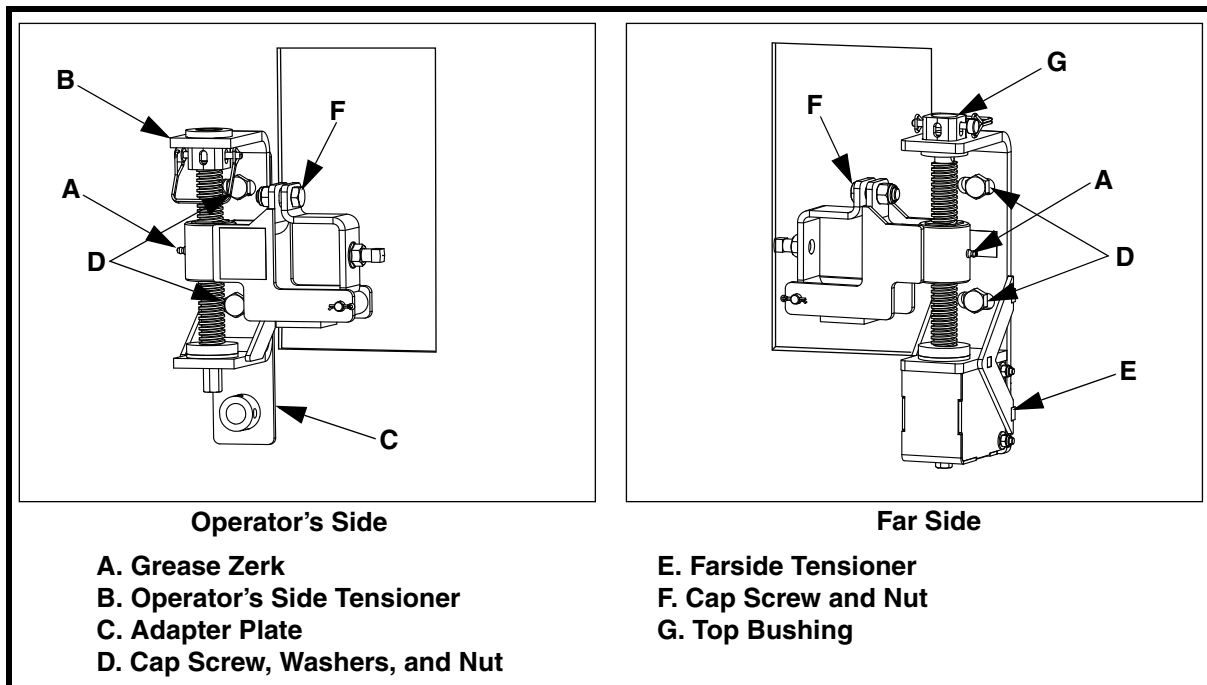


Figure 4. Installing Tensioners

Installing tensioner

1. Insert grease gun onto each grease fitting (A) and add grease to both tensioners until grease comes out around threaded rod.
2. Mount operator's side tensioner (B) and adapter plate (C) to the operator's side chute wall using cap screws, washers, and nuts (D).
3. Mount far side tensioner (E) to the far side chute wall using cap screws, washers, and nuts (D).

NOTE

Top bushing (G) must be installed upside down on far side tensioner (as shown) to allow tensioner to be adjusted from operator's side.

4. Remove cap screws and nuts (F) from tensioners.

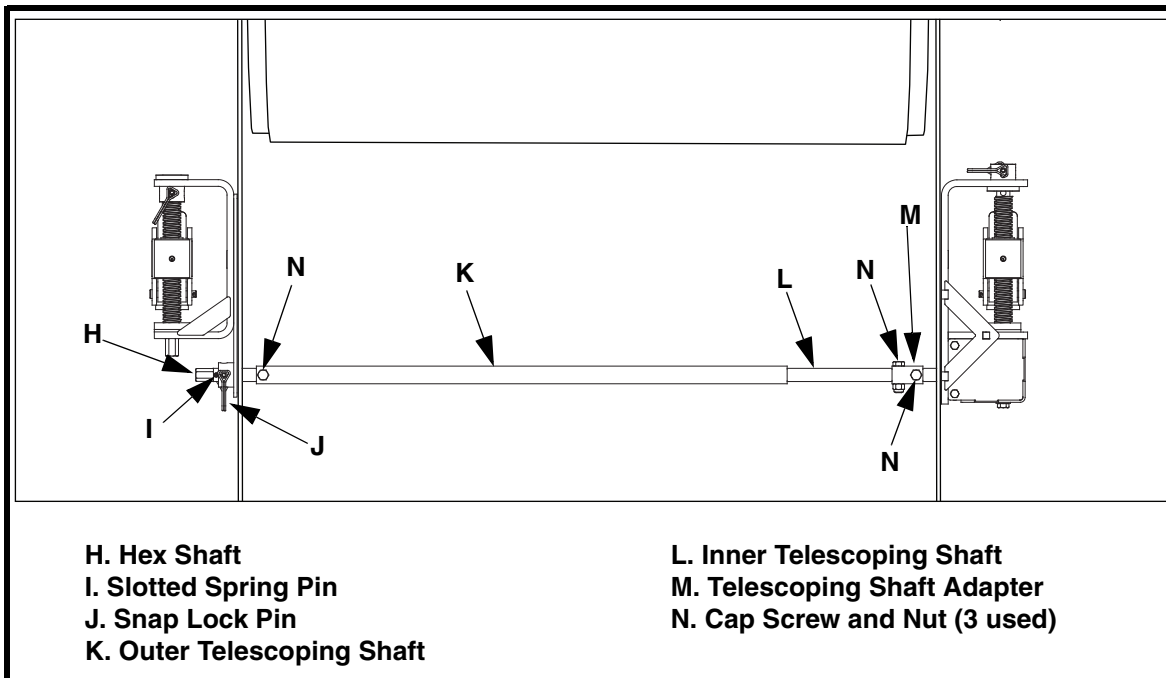


Figure 5. Installing Telescoping Shaft

5. Install hex shaft (H) into adapter plate.
6. Slide inner telescoping shaft (L) into outer telescoping shaft (K).
7. Attach telescoping shaft adapter (M) to far side tensioner shaft using cap screw and nut (N).
8. Attach telescoping shafts to shaft adapter (M) and hex shaft (H) using cap screws and nuts (N).

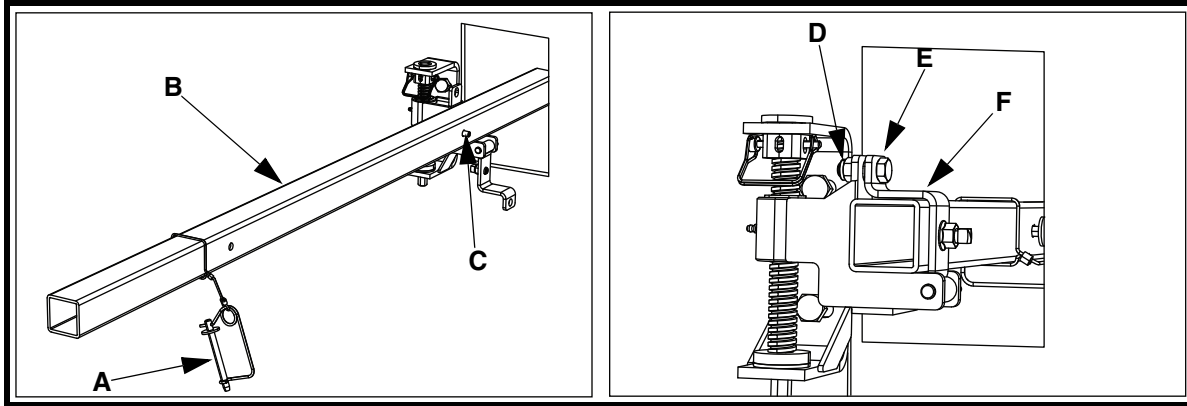


Figure 6. Installing Mainframe

Installing belt cleaner

1. Slide mainframe (B) through chute wall cutouts and into position on tensioners. Make sure roll pin (C) is located on far side of mainframe and lanyard for pin (A) is on operator side of mainframe.
2. Rotate hinge clamp (F) into position and install cap screw (D) and nut (E). Hand tighten nut.
3. Repeat step 2 on far side tensioner.

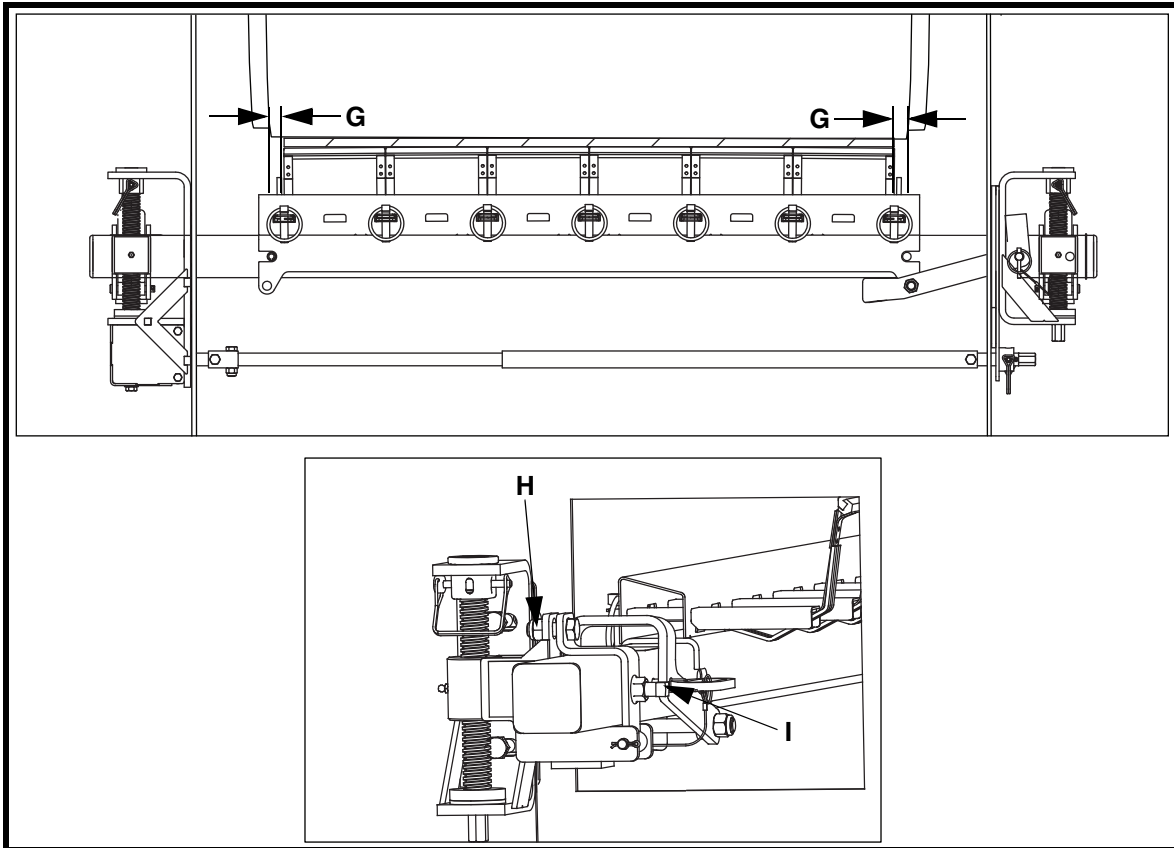


Figure 7. Centering Blades on Belt

***Tensioning
belt cleaner***

4. Slide blade cartridge onto mainframe with blade positioned as shown in Figure 1. Push far side end of blade against stationary pin until it locks.
5. Insert lock pin in mainframe and cartridge.
6. Make sure blades are centered on belt and mainframe is parallel to belt.
7. Tighten nut (H) and set screw (I).
8. Repeat step 7 on far side tensioner.

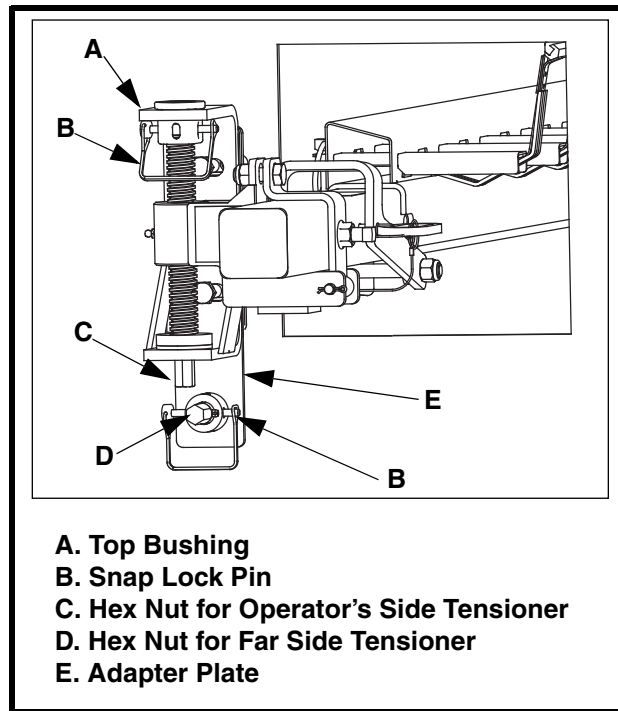


Figure 8. Tensioning Belt Cleaner

IMPORTANT

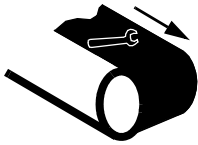
Hex nuts (C and D) must be turned evenly to prevent tensioners from binding.

1. Remove snap lock pins (B).
2. Turn hex nuts (C and D) until center blade contacts belt.
3. Once center blade contacts belt, turn each nut 1 full turn.
4. Align holes on threaded rod with holes in top bushing (A) and insert snap lock pin (B).
5. Align holes on hex shaft with holes in adapter plate (E) and insert snap lock pin (B).

After Installing Belt Cleaner



1. Thoroughly wipe chute wall clean above tensioner.
2. Place Conveyor Products Warning Label (P/N 23395) on outside chute wall visible to belt cleaner operator.



⚠ 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.



⚠ DANGER

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.

3. Turn on conveyor belt for 1 hour, then turn off.



⚠ 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.

4. Make sure all fasteners are tight. Tighten if necessary.
5. Make sure cleaner is not changing belt line. If it is, install belt support ahead of blade-to-belt contact point (Secondary Cleaner).
6. Inspect belt cleaner for the following:
 - Wear. (A small amount of “break-in” wear may be found. This will stop once blades wear to conveyor belt contour.)
 - Material buildup. (No material between blades and return side of conveyor belt should be found.)
7. If wear, material buildup, or some other problem exists, see “Troubleshooting.”

IMPORTANT

Read entire section before beginning work.

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.

1. Remove any material from belt cleaner.
2. Make sure all fasteners are tight. Tighten if necessary.
3. Check tension on cleaner. Re-tension if necessary.
4. Wipe all labels clean. If labels are not readable, contact Martin Engineering or a representative for replacements.
5. Check blades for excessive wear. Replace if necessary.
6. Remove equipment from service if there is any indication it is not functioning properly. Call Martin Engineering or a representative for assistance. Do NOT return equipment to operation until the cause of the problem has been identified and corrected.

⚠ WARNING

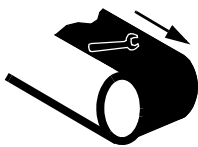
Failure to remove tools from installation area and conveyor belt before turning on energy source can cause serious injury to personnel and damage to belt.

7. Remove all tools from maintenance area.

⚠ DANGER

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.

8. Start conveyor belt.



Troubleshooting

Symptom	Corrective Action
Insufficient cleaning and carryback.	<ul style="list-style-type: none"> • Tension of cleaner on belt is set too low or too high. Increase or decrease tensioner setting. • Blades are worn. Check blades and replace if necessary.
Noise or vibration.	Tension is not sufficient or is set too high. Correct tension as necessary. If this does not correct problem, contact Martin Engineering or representative.
High blade wear rate.	Tension of cleaner on belt is set too high. Reduce tensioner setting.
Unusual wear or damage to blades.	Check belt splice(s) and repair as necessary.
Bent or broken mainframe or support frame due to blade slipping through.	If blades are worn to or past the wear line, replace blades. If blades are not worn, check mainframe location.
Corrosion or chemical degradation.	Cleaner may not match application. Contact Martin Engineering or representative.

NOTE

Conveyor equipment such as conveyor belt cleaners are subject to a wide variety of bulk materials characteristics and often have to perform under extreme operating or environmental conditions. It is not possible to predict all circumstances that may require troubleshooting. Contact Martin Engineering or a representative if you are experiencing problems other than those listed in the “Troubleshooting” chart above. Do not return the equipment to operation until the problem has been identified and corrected.

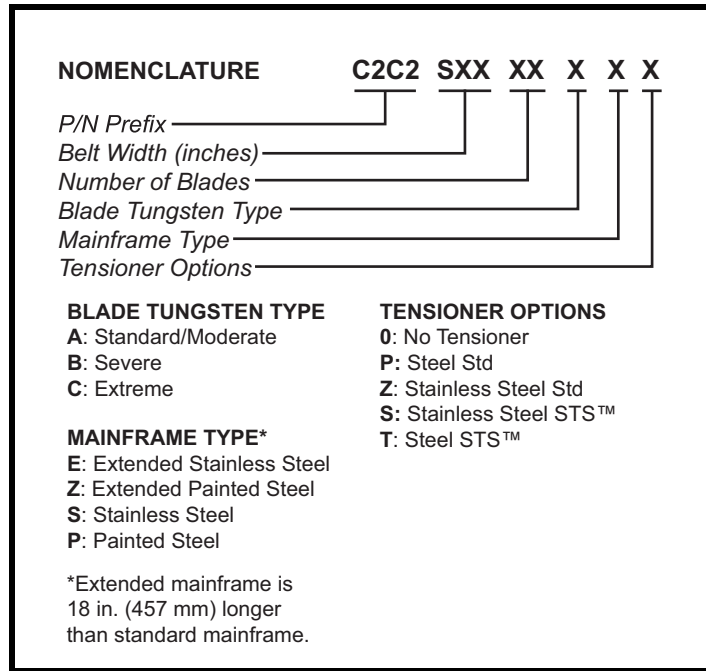
Installation checklist

If after taking the corrective actions suggested under “Troubleshooting” you are still experiencing problems, check for the following:

Installation Checklist
✓ Pre-Cleaner mainframe is proper distance from belt surface on both ends of mainframe.
✓ Pre-Cleaner blade tip is at or below horizontal center line of pulley and does not lie in path of material flow.
✓ Secondary Cleaner blade tip is 2 in. (51 mm) past belt and pulley tangent point.
✓ Secondary Cleaner is not changing belt line.
✓ Blades are centered on belt.

Part Numbers

This section provides product names and corresponding part numbers for CleanScrape® Secondary Cleaner STS™ and related equipment. Please reference part numbers when ordering parts:



Martin® Tensioners

Martin® SQC2S™ Square Mainframe Tensioners: P/N 38664-DXXSS.

Martin® SQC2S™ Square Mainframe Tensioners: P/N 38664-XX.

Miscellaneous

Martin® Heavy-Duty Hanger Mount Assembly: P/N 34233-HD. Used to mount Martin® SQC2S™ Tensioners onto stringer instead of onto chute wall.

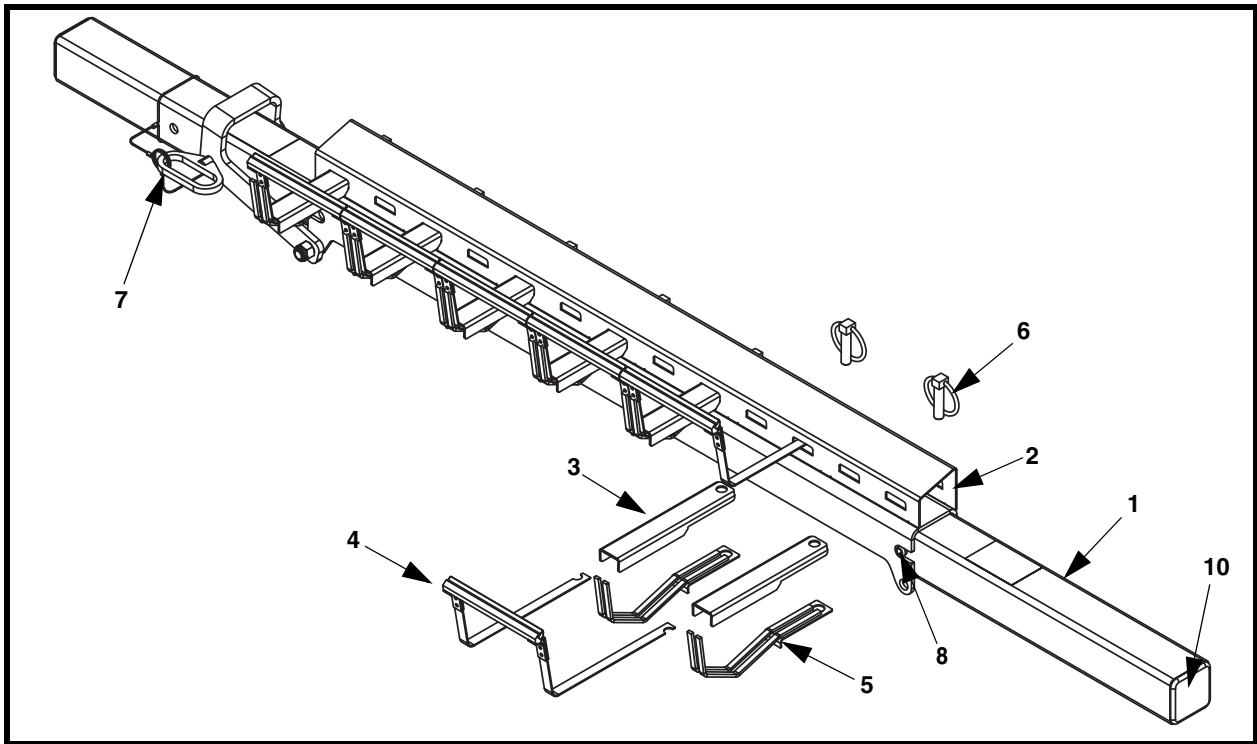


Figure 9. CleanScrape® Secondary Cleaner STS™, P/N C2C2SXXXXXXXX

Item	Description	Part Number	Qty
1	Mainframe	Table I	1
2	Cartridge Weldment	Table I	1
3	Spring Arm Cover Weldment	C2CP1003S	Table I
4	Blade Arm Assembly	C2CBX	Table I
5	Spring Arm Weldment	C2CP1006S	Table I
6	Pin Locking Lynch 7/16	SUS10011S	Table I
7	Cartridge Handle (Short)	C2CP10021SS	1
8	Pin Slotted Spring 1/2 x 3 SS	SUS10007S	1
9	Pull Pin Long 304 SS	C2CP1022S	1
10	Washer Nylon 1/2	35688	2
11	Screw HHC 1/2-13NC x 4-1/2 SS	36101	1
12	Nut Hex Elastic Lock 1/2-13NC SS	SO03938-02	1
13	Label Martin Product	38048	2
14	Plug	34896-02	2
15	Cartridge Handle (Long)	C2CP10021LX	1
16	Tensioner Assembly with Farside Adjustment	Table II	1
17	Manual Operator's	M4133	1

Table I. CleanScrape® Secondary Cleaner STS™ Assembly Part Numbers and Quantities

Part No.	P/N Item 1	P/N Item 2	Qty Item 4	Qty Items 3, 5, 6
C2C2S1802XXXX	C2CPMS18X	C2CP1015S03S	2	3
C2C2S1803XXXX	C2CPMS18X	C2CP1015S03S	3	4
C2C2S2403XXXX	C2CPMS24X	C2CP1015S04S	3	4
C2C2S2404XXXX	C2CPMS24X	C2CP1015S04S	4	5
C2C2S3004XXXX	C2CPMS30X	C2CP1015S05S	4	5
C2C2S3005XXXX	C2CPMS30X	C2CP1015S05S	5	6
C2C2S3605XXXX	C2CPMS36X	C2CP1015S06S	5	6
C2C2S3606XXXX	C2CPMS36X	C2CP1015S06S	6	7
C2C2S4206XXXX	C2CPMS42X	C2CP1015S07S	6	7
C2C2S4207XXXX	C2CPMS42X	C2CP1015S07S	7	8
C2C2S4807XXXX	C2CPMS48X	C2CP1015S08S	7	8
C2C2S4808XXXX	C2CPMS48X	C2CP1015S08S	8	9
C2C2S5408XXXX	C2CPMS54X	C2CP1015S09S	8	9
C2C2S5409XXXX	C2CPMS54X	C2CP1015S09S	9	10
C2C2S6009XXXX	C2CPMS60X	C2CP1015S10S	9	10
C2C2S6010XXXX	C2CPMS60X	C2CP1015S10S	10	11
C2C2S6610XXXX	C2CPMS66X	C2CP1015S11S	10	11
C2C2S6611XXXX	C2CPMS66X	C2CP1015S11S	11	12
C2C2S7211XXXX	C2CPMS72X	C2CP1015S12S	11	12
C2C2S7212XXXX	C2CPMS72X	C2CP1015S12S	12	13
C2C2S7812XXXX	C2CPMS78X	C2CP1015S13S	12	13
C2C2S7813XXXX	C2CPMS78X	C2CP1015S13S	13	14
C2C2S8413XXXX	C2CPMS84X	C2CP1015S14S	13	14
C2C2S8414XXXX	C2CPMS84X	C2CP1015S14S	14	15
C2C2S9014XXXX	C2CPMS90X	C2CP1015S15S	14	15
C2C2S9015XXXX	C2CPMS90X	C2CP1015S15S	15	16
C2C2S9615XXXX	C2CPMS96X	C2CP1015S16S	15	16
C2C2S9616XXXX	C2CPMS96X	C2CP1015S16S	16	17

Part Numbers

Table II. CleanScrape® Secondary Cleaner STS™ Tensioner Part Numbers

Belt Width	Farside Tensioner	Standard Tensioner
S18–S30	38664-D01XX	38664-XX
S36–S56	38664-D02XX	38664-XX
S60–S90	38664-D03XX	38664-XX
S96	38664-D04XX	38664-XX

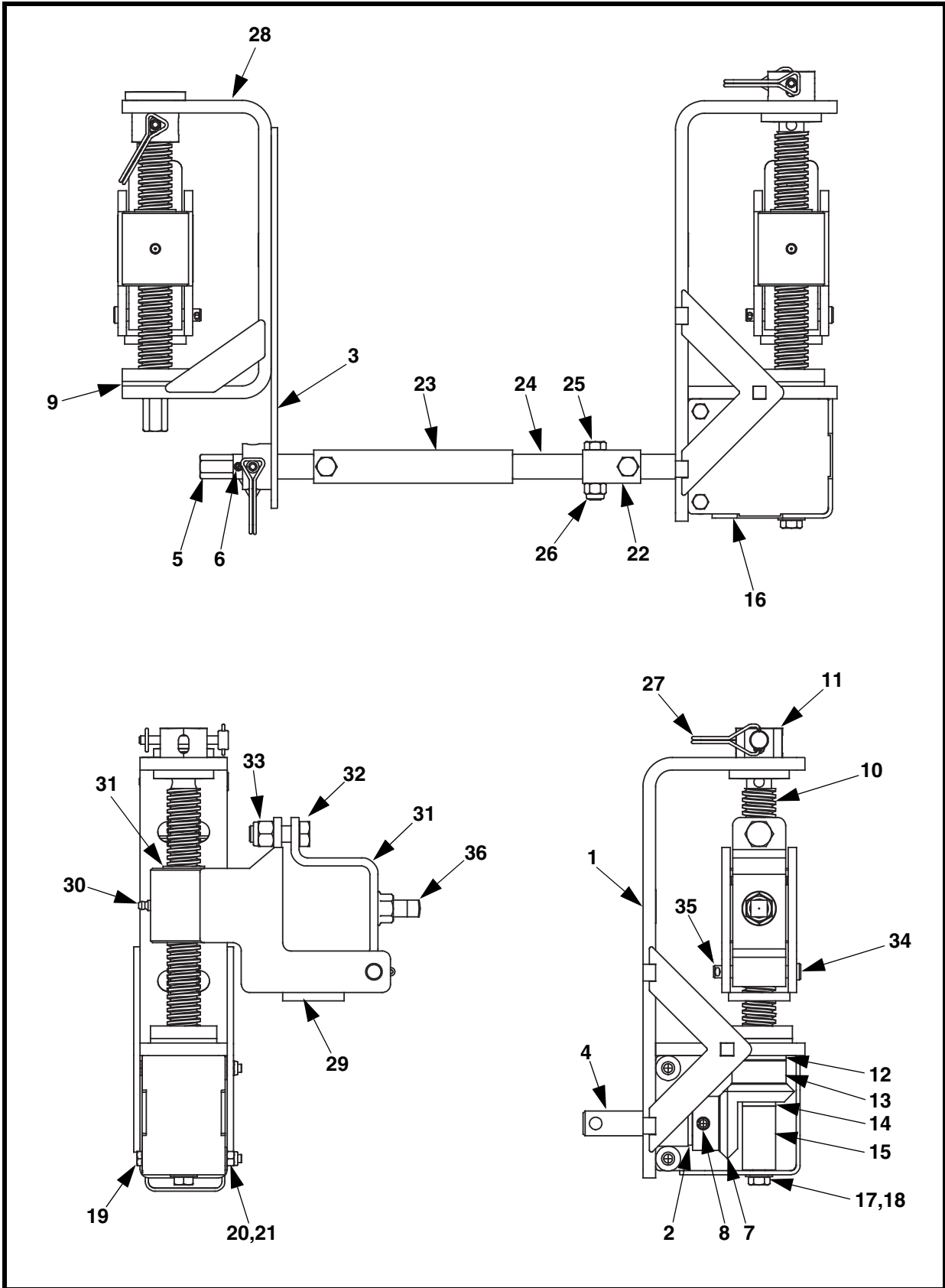


Figure 10. Martin® Farside Tension Adjuster Assembly, P/N 38664-DXXSS

Item	Description	Part Number	Qty
1	Mount Weldment	38854S	1
2	Bearing Flanged .75 x 1.00 x 1.31	38862	1
3	Adapter Plate Weldment	38855-S	1
4	Gear Shaft	38857	1
5	Hex Shaft	38859-H	1
6	Pin Slotted Spring 1/4 x 1-1/8 SS	38578-SS	1
7	Bevel Gear	38856-DS	1
8	Pin Slotted Spring 3/8 x 1-3/4 SS	SUS10010S	1
9	Snap Lock Pin 1/4 x 2-1/4 ZP	35674-S	2
10	Tensioning Rod	35682-316SS	2
11	Top Bushing	35683-S	2
12	Washer Thrust 1.00 x 1.63 x .13	38863	1
13	Bevel Gear with Hex	38856-HS	1
14	Bearing Flanged .505 x .752 x 1.00	38864	1
15	Gear Support Post	38858-PS	1
16	Gear Box Weldment	38858-WS	1
17	Washer Compression 3/8 SS	28565	1
18	Screw HHC 3/8-16NC x 3/4 SS	30233	1
19	Screw HHC 1/4-20NC x 3 SS	38951-316SS	2
20	Washer Compression 1/4	27251	2
21	Nut Hex Elastic Lock 1/4-20NC SS	26389	2
22	Telescoping Tube Adapter	38859-AS	1
23	Telescoping Outer Shaft	Table III	1
24	Telescoping Inner Shaft	Table III	1
25	Screw HHC 3/8-16NC x 1-1/2 SS	SP03938-13	3
26	Nut Hex Elastic 3/8-16NC SS	16204	3
27	Snap Lock Pin 1/4 x 2-1/2 SS	32772	3
28	Mount Bracket Weldment	35672-SS	1
29	Tension Arm Assembly	38663-SS	2
30	Fitting Grease	39499	2
31	Hinge Clamp Weldment	38661-SS	2

Item	Description	Part Number	Qty
32	Screw HHC 1/2-13NC x 1-1/2 SS	11763-SS	2
33	Nut Hex Elastic 1/2-13NC SS	SP03938-02	2
34	Pin Clevis 3/8 x 2-1/2 SS	35687-SS	2
35	Pin Cotter 1/8 x 3/4 SS	31297	2
36	Screw SHS 1/2-13NC x 1 SS	22763-03	2
37 (NS)	Label Martin Product	32238	2
38 (NS)	Label Tensioning	SQC2-10002	4
39 (NS)	Mounting Hardware Kit	35283-SS	1
40 (NS)	Label Conveyor Products Warning	23395	2
41 (NS)	Manual Operators	M4133	1
42 (NS)	Tensioner Offset Mount Kit	38975-S	1

Figure 10. Martin® Farside Tension Adjuster Assembly, P/N 38664-DXXSS

Table III. Martin® Farside Tension Adjuster Assembly Part Numbers

Assembly Part No.	P/N Item 23	P/N Item 24
38664-D01SS	38859-29S	38859-29IS
38664-D02SS	38859-47S	38859-47IS
38664-D03SS	38859-65S	38859-65IS
38664-D04SS	38859-77S	38859-77IS

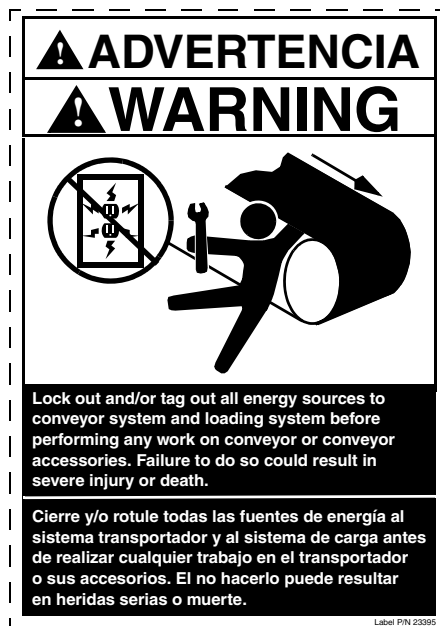


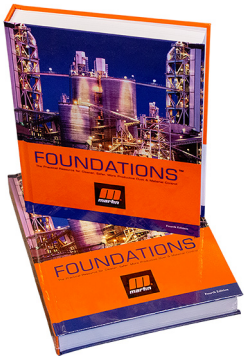
Figure 11. Conveyor Products Warning Label, P/N 23395



Figure 12. Martin[®] SQC2S[™] Tensioning Label, P/N SQC2-10002

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Expanding upon the book, our Foundations™ Training Program addresses the design and development of more productive belt conveyors, and is offered in three customizable seminars. Attendees gain a better understanding of conveyor safety and performance, helping to justify upgrade investments and increase profitability.



Martin Engineering USA

One Martin Place
Neponset, IL 61345-9766 USA
800 544 2947 or 309 852 2384
Fax 800 814 1553
www.martin-eng.com

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