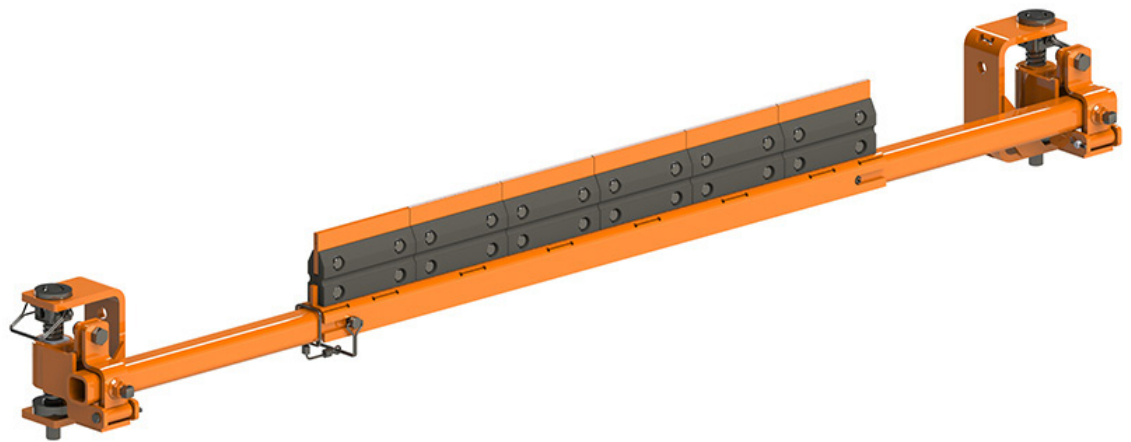




***Martin® SQC2S™
Reduced Mini Cleaner &
Tensioners***



***Operator's Manual
M4078***

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.
- *Martin[®] Inspection Door Operator's Manual*, P/N M3891

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.



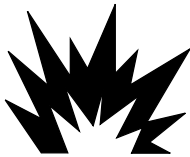
⚠ DANGER

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.



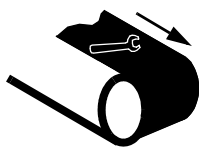
⚠ DANGER

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 and Tensioners

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.

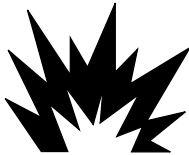
1. Inspect shipping container for damage. Report damage to delivery service immediately and fill out delivery service's claim form. Keep any damaged goods subject to examination.
2. Remove belt cleaner and tensioner assemblies from shipping container.
3. If anything is missing contact Martin Engineering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

Installing Belt Cleaner and Tensioners

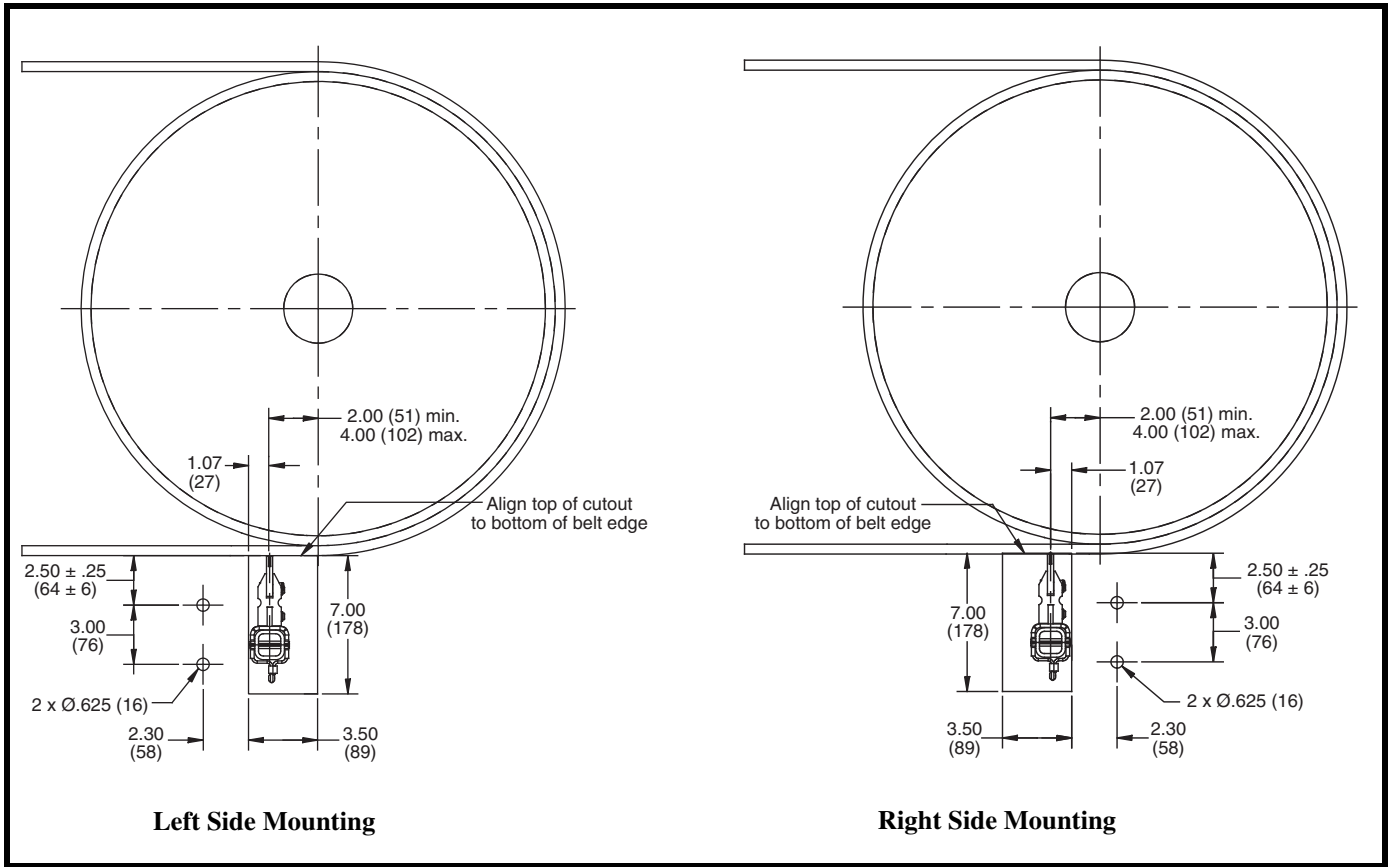


Figure 1. Mounting Locations

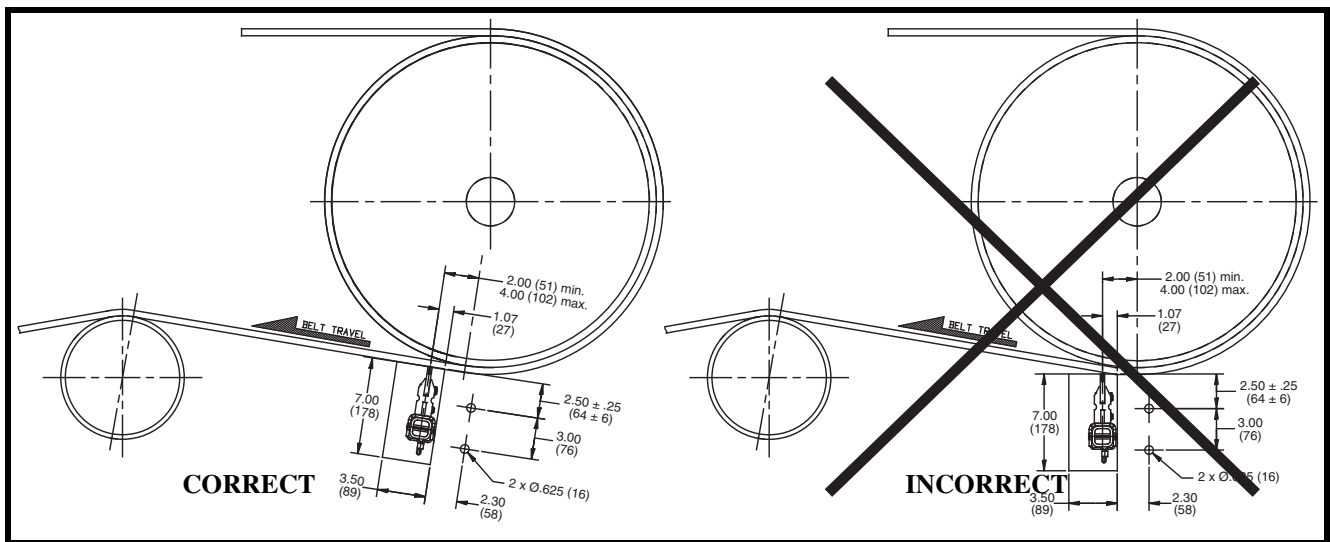


Figure 2. Tangent Point

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

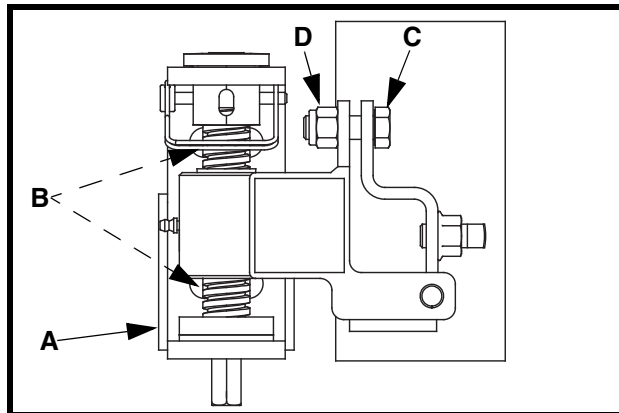
Solid backing of the blade is essential to ensure proper operation and efficient cleaning. Install the cleaner adjacent to the head pulley or a flat pressure roller to obtain best cleaning results.

NOTE

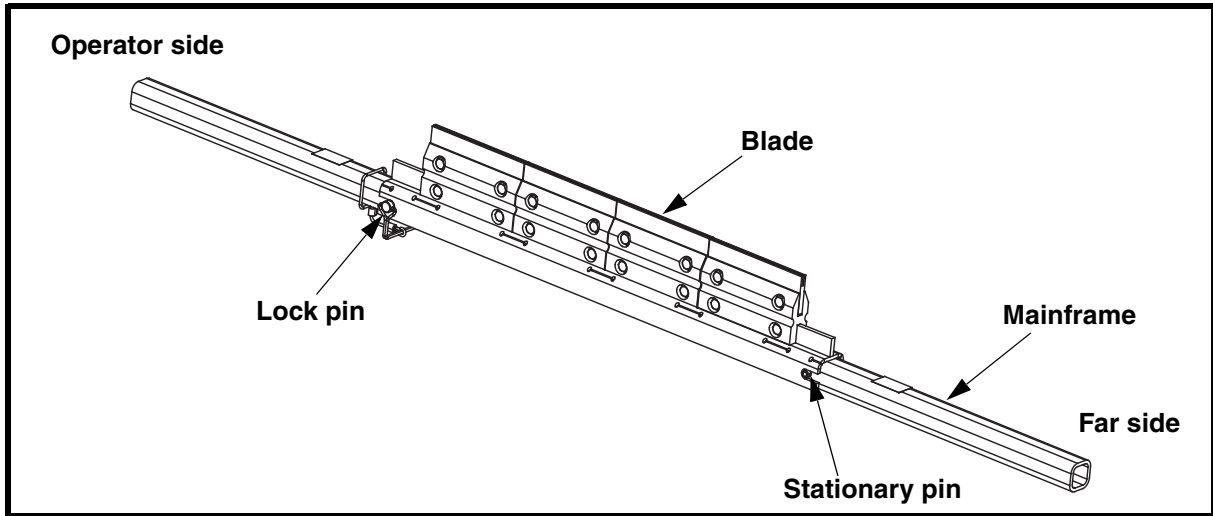
For installation on enclosed head pulley chutework, draw all dimension lines on chute wall. In applications where head pulley is not enclosed, use the best available field resources and/or methods to ensure that these critical dimensions are followed for a proper installation.

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.

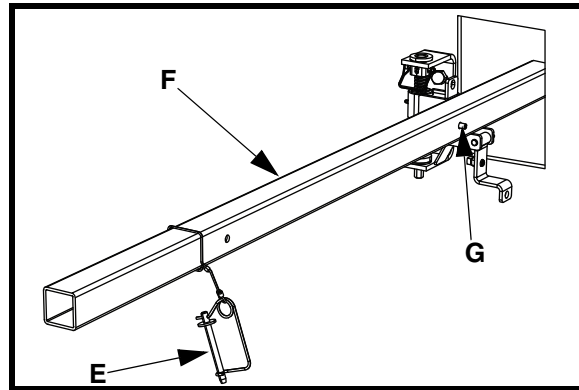
Installing tensioners

1. Mount bracket (A) to the chute wall using cap screws, washers, and nuts (B).
2. Remove cap screw (C) and nut (D) from tensioner.
3. Repeat steps 2–4 for tensioner bracket on opposite chute wall.

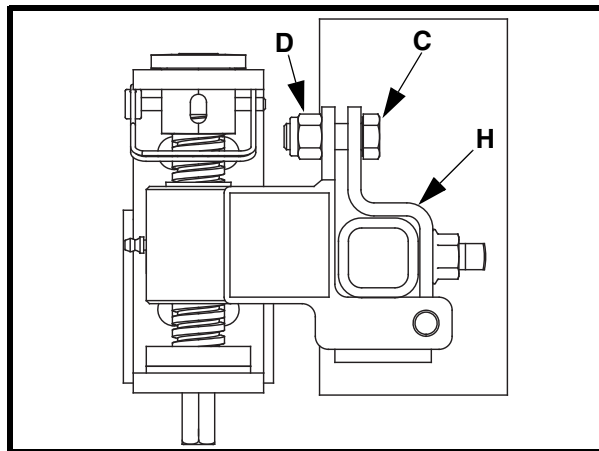


Installing belt cleaner

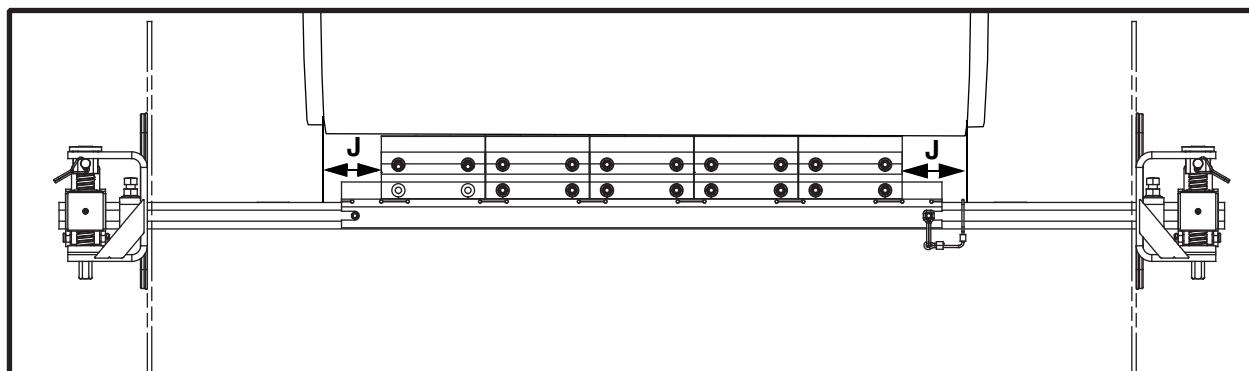
1. Remove lock pin from operator side of mainframe and blade.
2. Pull blade away from stationary pin on far side of mainframe and remove from mainframe. Make sure lock pin remains attached to mainframe.



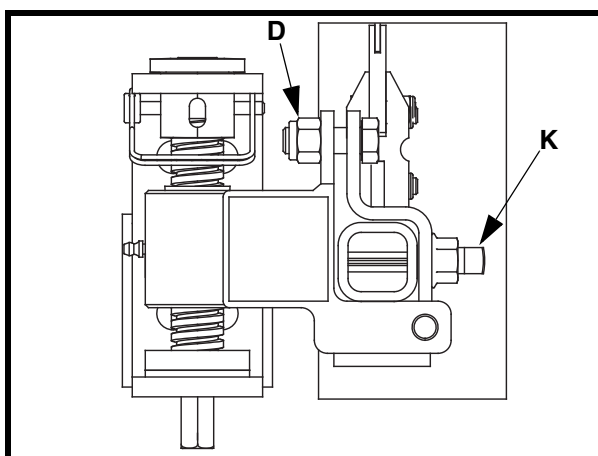
3. Slide mainframe (F) through chute wall cutouts and into position on tensioners. Make sure roll pin (G) is located on farside of mainframe and lanyard for pin (E) is on operator side of mainframe.



4. Rotate hinge clamp (H) into position and install cap screw (C) and nut (D). Hand tighten nut.
5. Repeat step 3 on farside tensioner.



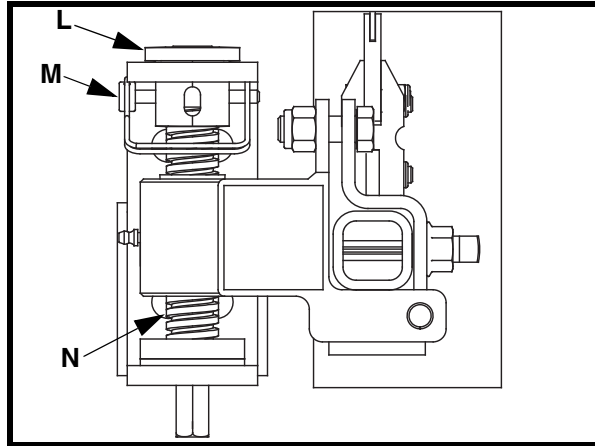
6. Slide blade cartridge onto mainframe with blade positioned as shown in Figure 1. Push far side end of blade against stationary pin until it locks.
7. Insert lock pin in mainframe and cartridge.
8. Make sure blades are centered on belt and mainframe is parallel to belt.



9. Tighten nut (D) and set screw (K).

Tensioning belt cleaner

1. Tension belt cleaner according to blade type used.
 - a. For cleaners with rubber buffer:
 - (1) Turn hex nut on threaded rod until blade cartridge makes contact evenly across the belt.
 - (2) Once all blades contact, turn 1/2 to 1 full turn.
 - b. For cleaners with urethane buffers:
 - (1) Turn hex nut on threaded rod until blade cartridge makes contact evenly across the belt.
 - (2) Once all blades contact, turn 2 full turns.

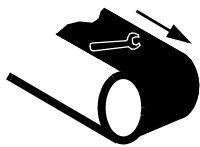


2. Align holes on threaded rod (N) with holes in top bushing (L) and insert pin (M).
3. If using Martin[®] Inspection Door, install according to *Martin[®] Inspection Door Operator's Manual*, P/N M3891.

After Installing Belt Cleaner and Tensioners



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.”

Weekly Maintenance

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

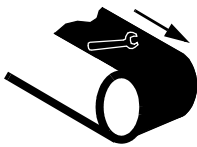
Failure to remove tools from installation area and conveyor belt before turning on energy source can cause serious injury to personnel and damage to belt.

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, blade urethane may not match application. 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.	Blade urethane 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:

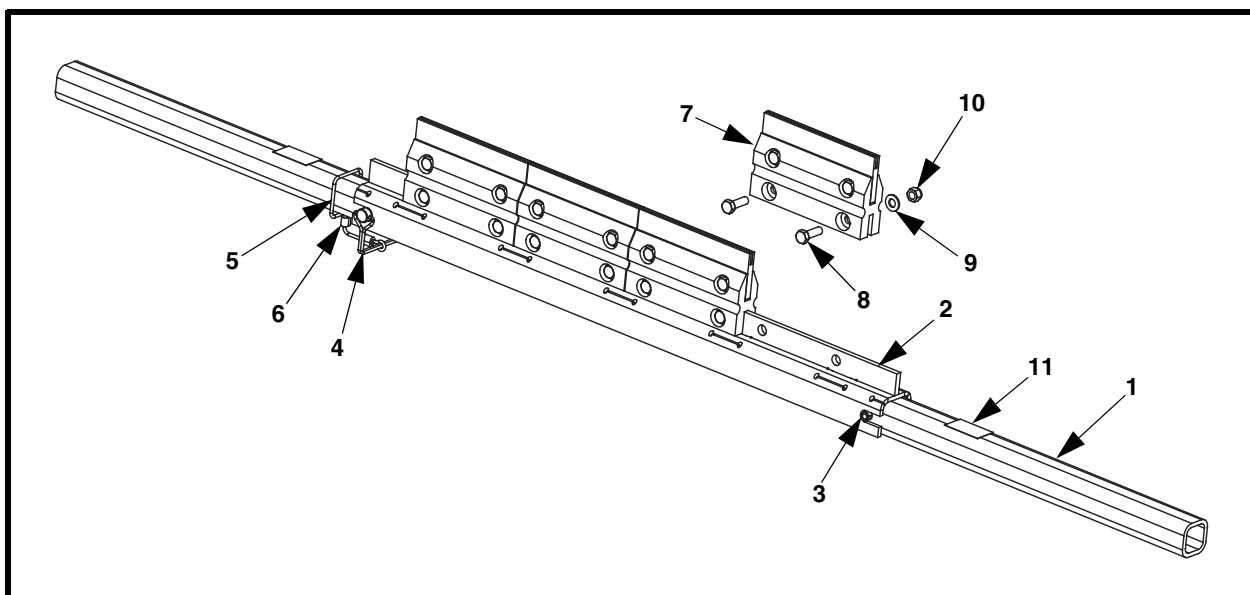
Installation Checklist
✓ Pre-Cleaner mainframe is proper distance from belt surface on both ends of mainframe.
✓ Pre-Cleaner blade tip is at or below horizontal center line of pulley and does not lie in path of material flow.
✓ Secondary Cleaner blade tip is 2 in. (51 mm) past vertical center line of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

Part Numbers

NOMENCLATURE **SQC2RM-XX X XX XX X X X**

Belt Width (inches) _____
Blade Type _____
Belt Cleaning Width (inches) _____
Blade Buffer Type _____
Mainframe Option _____
Tensioner Option _____
Additional Options _____

<p>BLADE TYPE C: Corrosion Resistant with Tungsten Carbide Tips R: General Applications and Reversing Belts–Tungsten Carbide Ø: No Blades</p> <p>BLADE CLEANING WIDTH Full belt width or Approx. 6 inches less belt width.</p> <p>BLADE BUFFER TYPE MR: Molded Rubber ØØ: No Buffers</p>	<p>MAINFRAME OPTIONS P: Painted S: Stainless Steel</p> <p>TENSIONER OPTIONS T: Tensioner S: Stainless Steel Tensioner Ø: No Tensioner</p> <p>ADDITIONAL OPTIONS Ø: None D: Dust-Tight Steel Cover Door S: Stainless Steel Cover Door</p>
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**Figure 3. Martin[®] SQC2S[™] Reduced Mini Cleaner Assembly,
P/N SQC2RM-XXXXXXXXXX**

Item	Description	Part Number	Qty
1	Mainframe	39443-XX*	1
2	Mini Extrusion	39442-XXX**	1
3	Pin Spring 3/8 x 2 ZP	32314	1
4	Pin Wire Lock 5/16 x 2-3/4	36143	1
5	Rope Wire 1/8 SS	100107	2 ft
6	Cable Clip for 1/8 Dia. Cable	23481	2
7	Blade Assembly	Table II	Table I
8	Screw HHC 5/16-18NC x 1 SS	36052	Table I
9	Washer Flat 5/16 Narrow SS	37724	Table I
10	Nut Hex Elastic Lock 5/16-18NC SS	33015	Table I
11	Label Martin Products	32238	2
12 (NS)	Tensioner Assembly	39448	1
13 (NS)	Manual Operator's	M4078	1
14 (NS)	Split Dust-Tight Door Assembly	38014-SQCSR	1

* XX indicates belt width (available in full belt width or belt width less 6 in.).

**First XX indicates belt width (available in full belt width or belt width less 6 in.). Last X indicates cartridge length: belt width less 2 in. (Blank) or full belt width (F).

Table I. Martin® SQC2S™ Reduced Mini Cleaner Assembly Part Numbers and Quantities

Part No.	Qty Item 7	Qty Items 8-10
SQC2RM-XXX12XXXXXX	2	4
SQC2RM-XXX18XXXXXX	3	6
SQC2RM-XXX24XXXXXX	4	8
SQC2RM-XXX30XXXXXX	5	10
SQC2RM-XXX35XXXXXX	6	12
SQC2RM-XXX41XXXXXX	7	14
SQC2RM-XXX47XXXXXX	8	16
SQC2RM-XXX53XXXXXX	9	18
SQC2RM-XXX59XXXXXX	10	20
SQC2RM-XXX65XXXXXX	11	22
SQC2RM-XXX71XXXXXX	12	24

Table II. Martin® SQC2S™ Reduced Mini Cleaner Assembly Blade Chart

Part No.	P/N Item 7	Color	General Application
SQC2RM-XXCXXXXXXXXX	SCM-MRC	—	Corrosion-Resistant with Tungsten Carbide Tips
SQC2RM-XXRXXXXXXXXX	SCM-MRR	ORANGE	General Conditions Reversing Belt with Clips

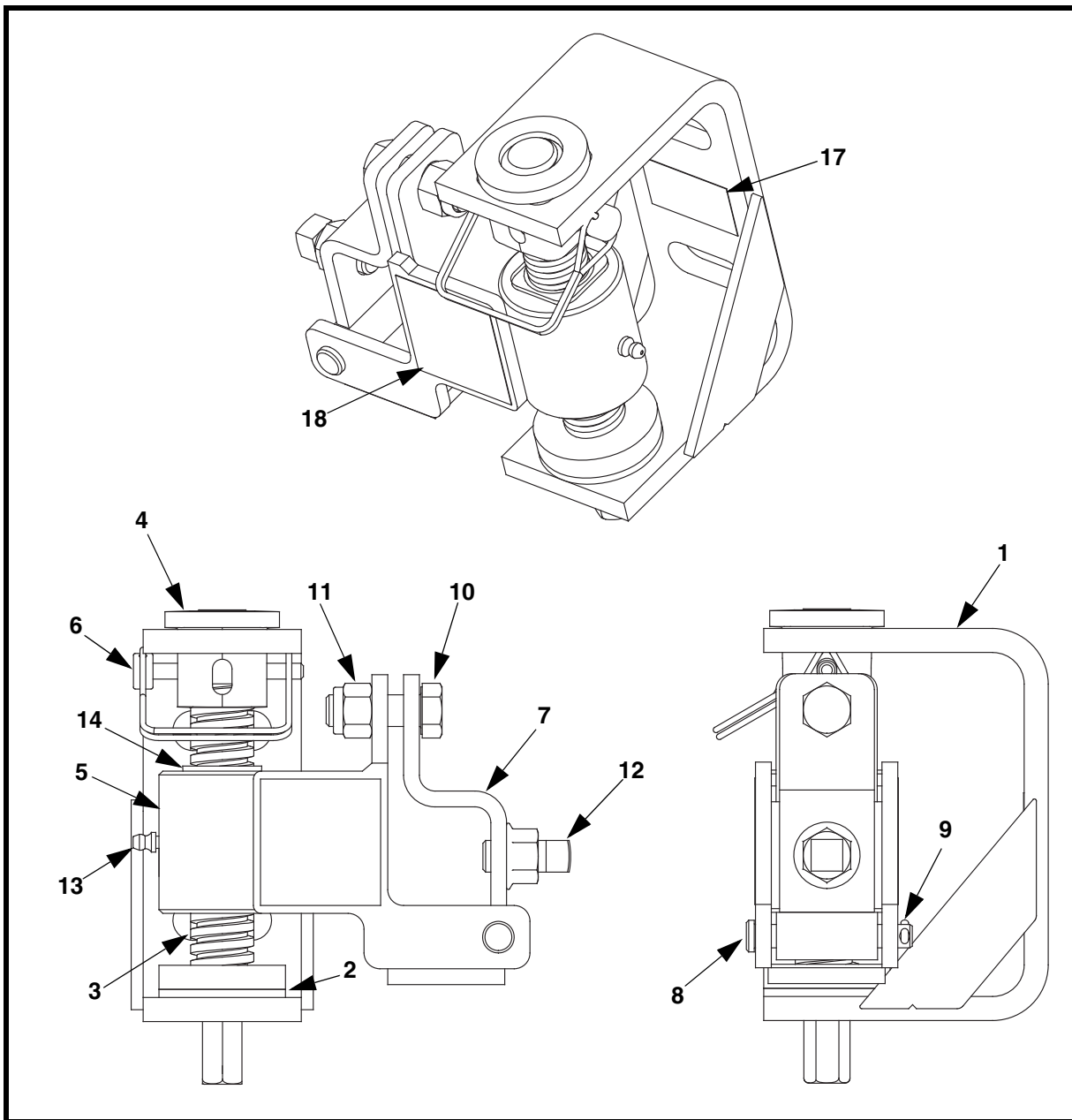


Figure 4. Martin® Square Mainframe Tensioner Assembly, P/N 39448

Item	Description	Part Number	Qty
1	Mount Bracket Weldment	39445	2
2	Bottom Bushing	35674	2
3	Tensioning Rod	39444	2
4	Top Bushing	35683-C	2
5	Tensioner Arm Assembly	39446	2
6	Pin Wire Lock 1/4 x 2.25 ZP	35685	2
7	Hinge Clamp Weldment	39447	2
8	Pin Clevis 3/8 x 2-1/2 ZP	35687	2
9	Pin Cotter 1/8 x 3/4 SS	31297	2
10	Screw HHC 1/2-13NC x 1-1/2 ZP	11763	2
11	Nut Hex Elastic Lock 1/2-13NC ZP	18577	2
12	Screw SHS 1/2-13NC x 1 SS	22763-03	2
13	Fitting Grease 3/16	38584	2
14	Pivot Block Insert	35684	2
15 (NS)	Mounting Hardware	35283	1
16 (NS)	Label Conveyor Products Warning	23395	2
17	Label Martin Products	32238	2
18	Label Tensioning	SQC2-10002	4

Figure 4. Martin[®] Square Mainframe Tensioner Assembly, P/N 39448

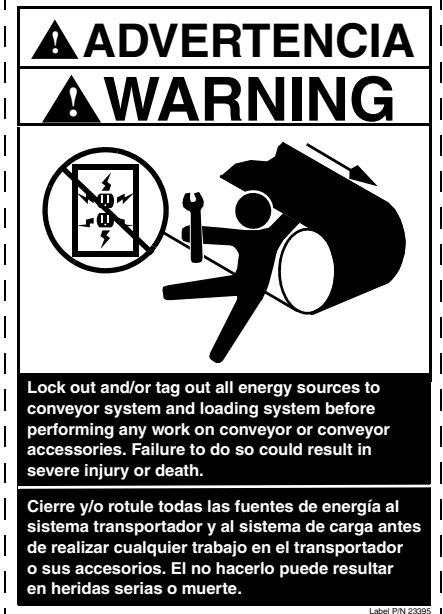


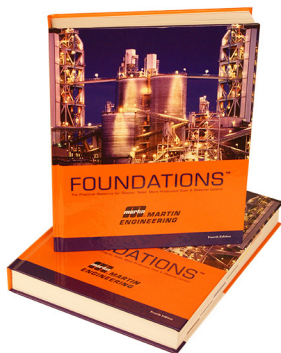
Figure 5. Conveyor Products Warning Label, P/N 23395



Figure 6. Martin® SQC2S™ Tensioning Label, P/N SQC2-10002

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Problem Solved™ GUARANTEED!



For nearly 20 years, Martin Engineering's Foundations™ Books have taught industry personnel to operate and maintain clean and safe belt conveyors. The Foundations™ Book, fourth edition, focuses on improving belt conveyors by controlling fugitive material. "The Practical Resource for Total Dust and Material Control," is a 576-page hard cover volume that provides information of value to industries where the efficient handling of bulk materials is a key to productivity and profitability.

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 Australia Pty Ltd.
20 Ern Harley Dr - Burleigh Heads, QLD, 4220 - Australia
1300 627 364
www.martin-eng.com.au

