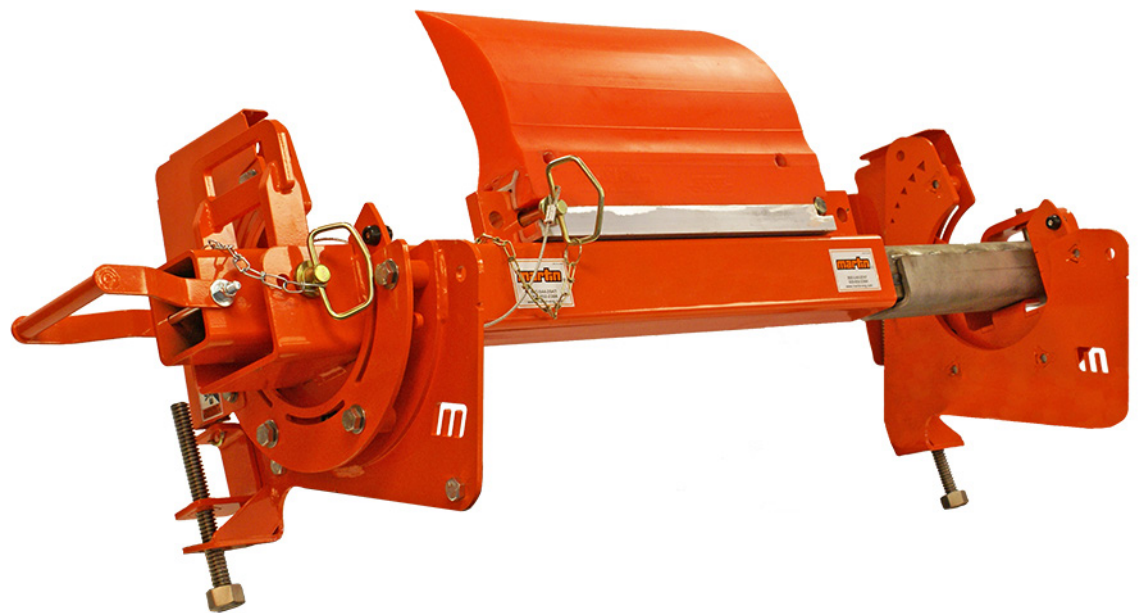


martin®

Martin® ***QC1***™
Cleaner XHD STS



Operator's Manual
M3987

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.



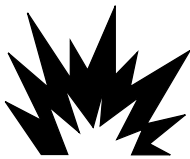
⚠ DANGER

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.



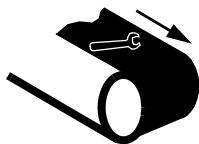
⚠ DANGER

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

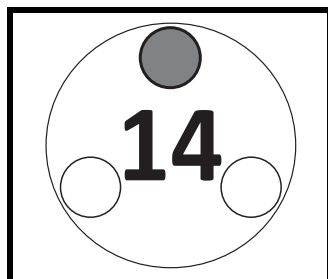
Mainframe with blade can be heavy and may require two people to lift. Attempting to lift the belt cleaner without assistance could result in injury.

Table I. Martin® QC1™ Cleaner XHD Blade Colors, Materials and Specifications

URETHANE SELECTION	APPLICATION DESCRIPTION	TYPICAL MATERIALS	CONTINUOUS TEMPERATURE
Orange	Standard Martin® Urethane Suitable for 80% or more of all belt cleaner applications, including abrasive conditions.	Bauxite, Coke, Coal, Overburden Refuse	-20° to 160°F (-29° to 71°C)
Brown (BR)	Chemical-Resistant Urethane Improves resistance to chemicals; reduced absorption of water in high-moisture environments.	Limestone	-40° to 160°F (-40° to 71°C)
Green (GR)	High-Temperature Urethane For exposure to intermittent temperatures up to 350°F (177°C).	Clinker	-40° to 300°F (-40° to 149°C)
Clear (CL)	Low-Rigidity Urethane For dry products such as sand and gravel.	Gravel, Dry Sand	-20° to 160°F (-29° to 71°C)
Navy Blue (NB)	Low-Adhesion Urethane For sticky or tacky materials.	Cement, Glass, Wood Chips	-20° to 160°F (-29° to 71°C)

IMPORTANT*Urethane shelf life*

Urethane put in service after exceeding its shelf life may wear differently and deteriorate quicker than normal urethane.

NOTE

Code Date is written near bottom of blade as mm/dd/yy-x. In addition to or in place of this date, you may see an imprinted date medallion similar to the example shown. In this example, “14” stands for the year 2014. The small circles represent the quarter of the year. If three circles are “punched” the blade was produced in the first quarter. If none of the circles are “punched” the blade was produced in the fourth quarter. If code date on your blade(s) is not legible or is missing, contact Martin Engineering or a representative.

Table II. Urethane Shelf Life

Blade Color	Shelf Life
Blue	1 Year from Code Date
Brown	2 Years from Code Date
Clear	1 Year from Code Date
Green	2 Years from Code Date
Orange	1 Year from Code Date

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

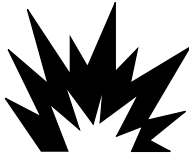
Before installing equipment, turn off and lock out/ tag out all energy sources to the conveyor and conveyor accessories according to ANSI standards. Failure to do so could result in serious injury or death.

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.

NOTE

The chute wall that the tensioner will be located on is referred to as the "operator side." The other side of the chute is referred to as the "far side." (If installing dual tensioners, side that is most accessible is "operator side.")

6. Determine which side of chute is easiest to access. Locate the tensioner on the most accessible chute wall.

Installing Belt Cleaner

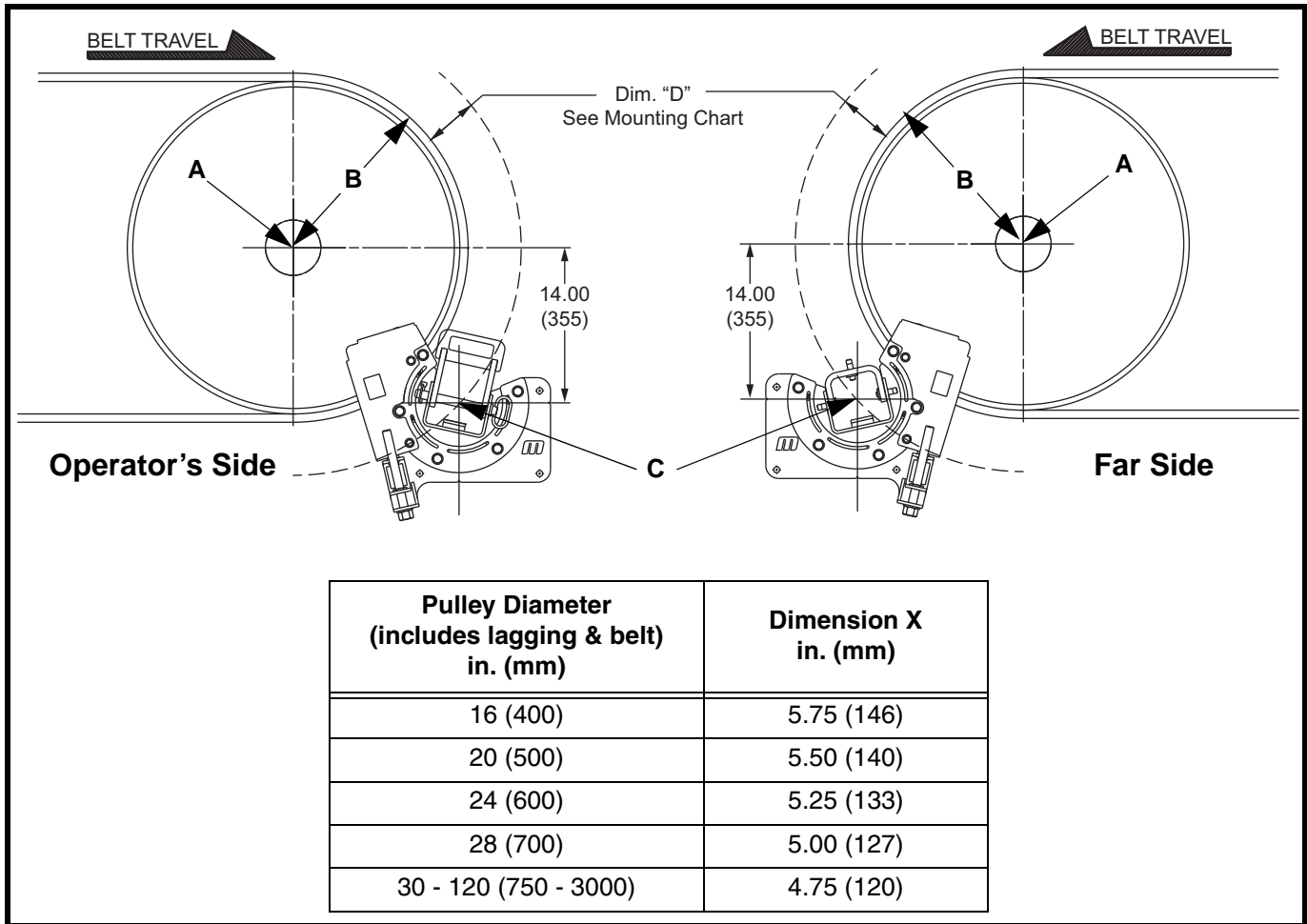


Figure 1. Belt Cleaner Location

Locating Cleaner Centerline

1. On operator side of chute, find pulley center point (A).
2. Measure radius of head pulley including lagging and belt thickness (B). To this dimension, add dimension X from table in Figure 1.
3. Starting from center point (A), measure the total distance calculated in step 2 (B + X) and draw an arc on chute wall.
4. Measure down from pulley's horizontal centerline the distance shown in Figure 1 and draw a horizontal line parallel to it. Locate center point of belt cleaner mainframe (C) where this line intersects the arc on the chute wall.
5. Position tensioner on chute wall and align notches in tensioner mount with belt cleaner mainframe centerlines.
6. Using the tensioner as a template mark mounting bolt holes.
7. Make sure mainframe and blades do not lie in path of material unloading from conveyor belt. Make sure blade tip is at or below horizontal center line.
8. Repeat steps 1 through 6 for far side of chute.

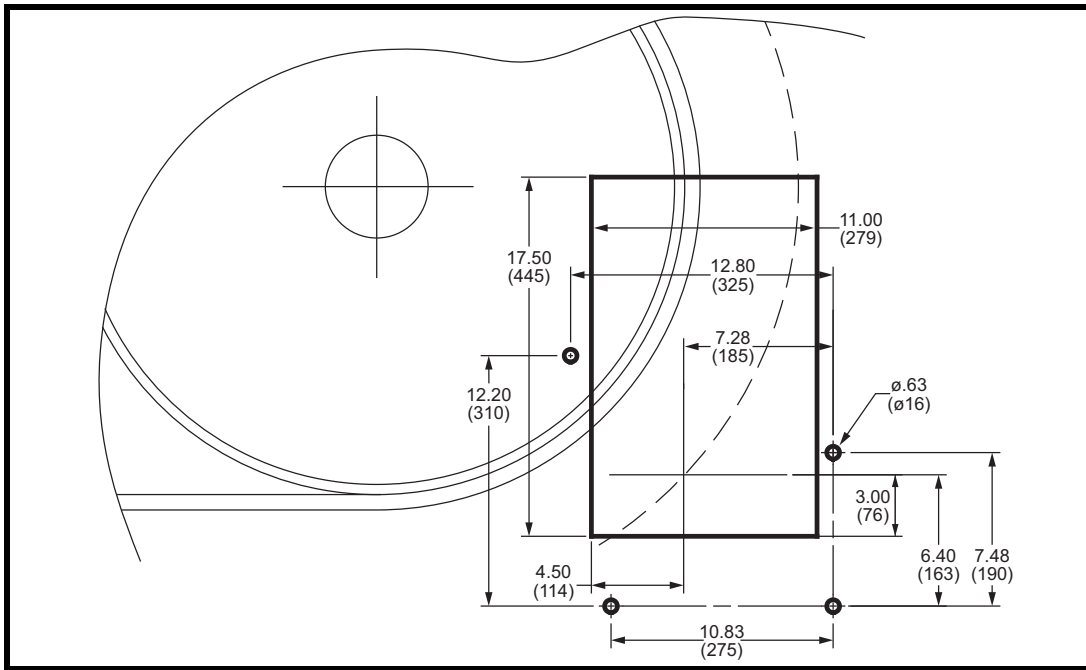


Figure 2. Operator Side Chute Cutout

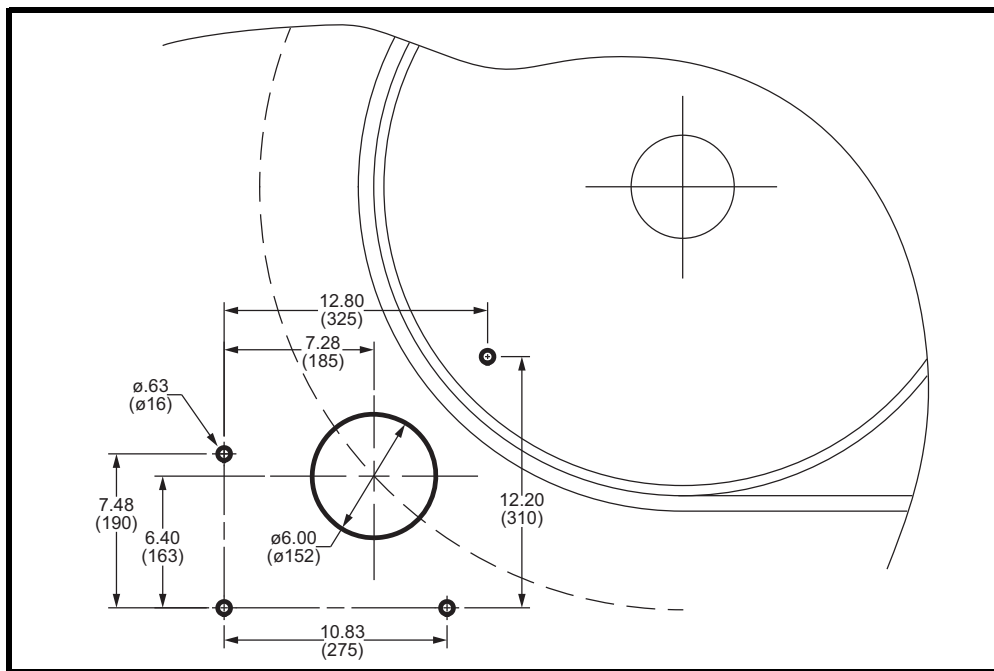


Figure 3. Far Side Chute Cutout

Marking Chute Cutouts

1. Using the previously marked lines, mark the operator side chute cutout and mount hole locations as shown in Figure 2. Mark the far side chute cutout and mount hole locations as shown in Figure 3.
2. At the selected mounting positions, cut the cleaner access slots and drill the mount holes in each side of the chute. Dress and de-burr the holes and cutouts.
3. Mount the tensioners to the chute.

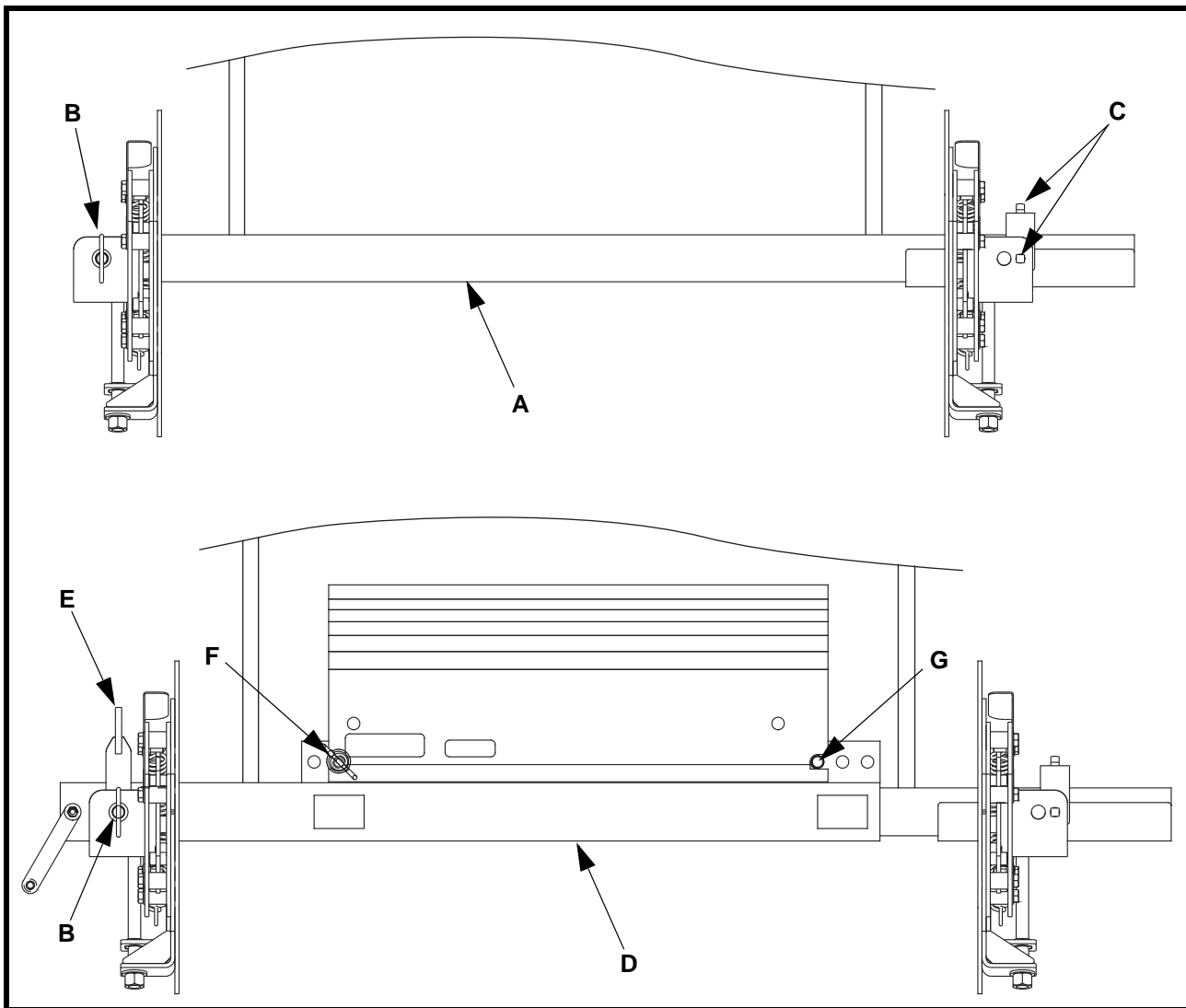


Figure 4. Installing Belt Cleaner

Installing Belt Cleaner

1. Install mandrel (A) into tensioners.
2. Insert pin (B) to hold mandrel in place.
3. Tighten set screws (C).
4. If necessary, cut excess mandrel from far side.
5. Remove pin (B).
6. Slide cartridge with blade (D) onto mandrel.
7. Install spacer (E). Insert pin (B) through operator side tensioner, spacer (E), cartridge (D) and mandrel (A).
8. Make sure blade is centered on belt and mainframe is parallel to belt.
9. If necessary, change location of pins (F and G) to center blade on belt.

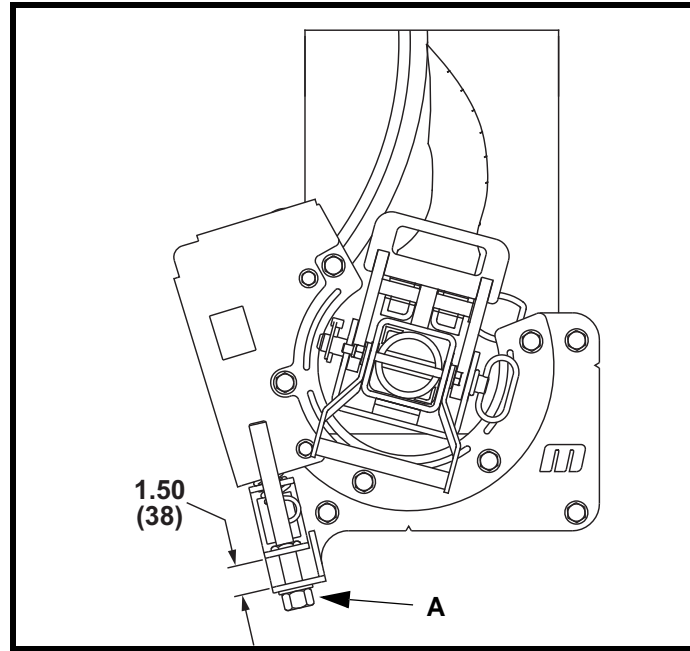


Figure 5. Adjusting Tensioner

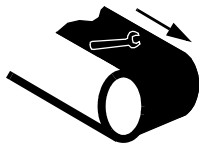
***Adjusting
Tensioner***

1. Tighten spring adjuster bolt (A) until gap is 1.50 in. (38 mm).
2. Repeat step 1 on far side tensioner.

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. 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.)
6. 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.

Blade Servicing

1. Undo tensioner and visually inspect blades.
 - a. If blades are clean and not excessively worn, re-tension cleaner.
 - b. If material buildup is still present or blades are worn excessively, proceed.

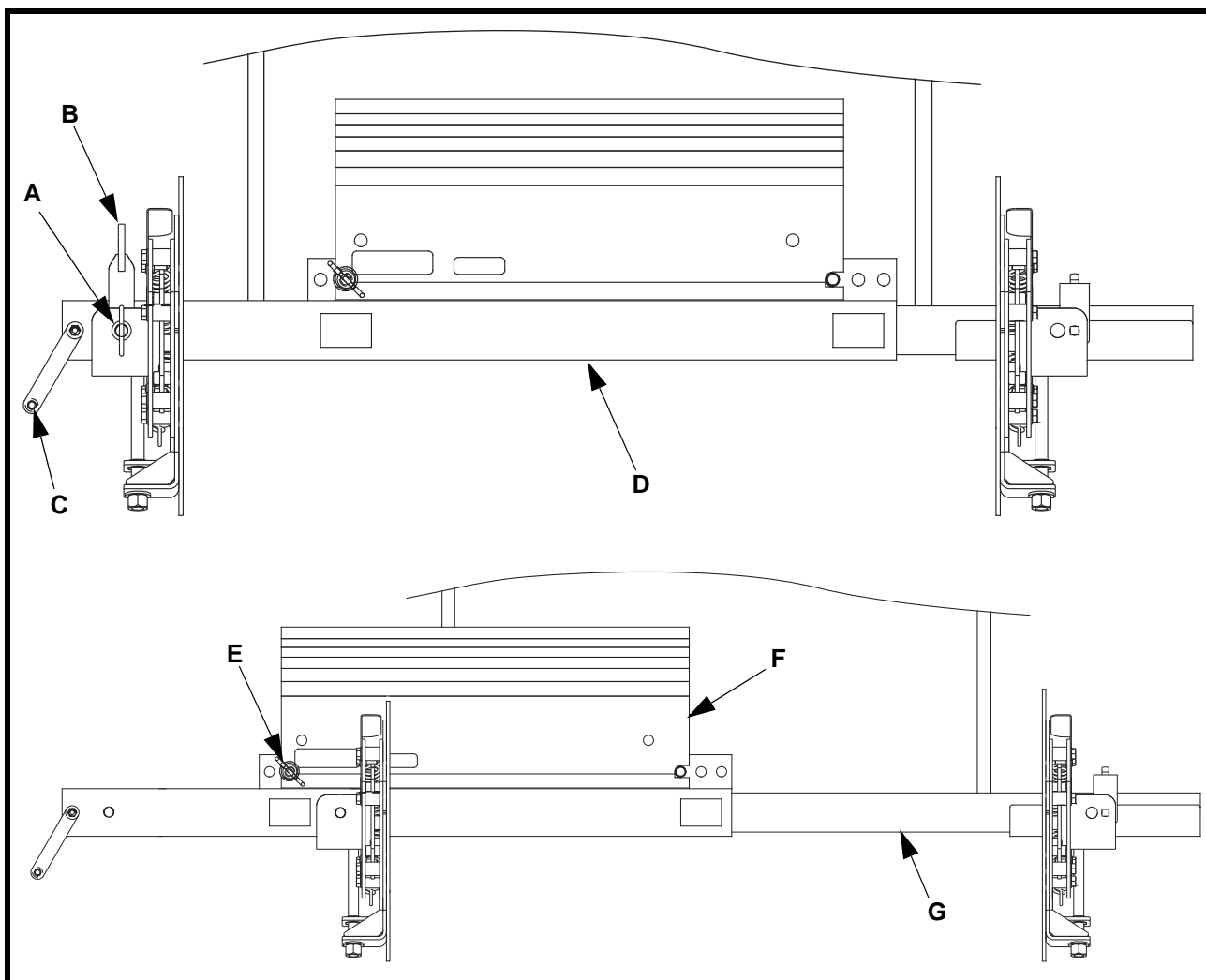
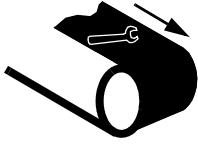


Figure 6. Blade Replacement

2. Release tension on each side of cleaner.
3. Remove pin (A) and spacer (B).
4. Using handle (C) pull cartridge (D) outside the chute just far enough to remove pin (E).
5. Remove blade (F).
6. Replace blade and install pin (E).
7. Slide cartridge (D) back into place.
8. Install spacer (B). Insert pin (A) through operator side tensioner, spacer (B), cartridge (D) and mandrel (G).
9. Re-tension the cleaner.



⚠ 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.

10. 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.

11. 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

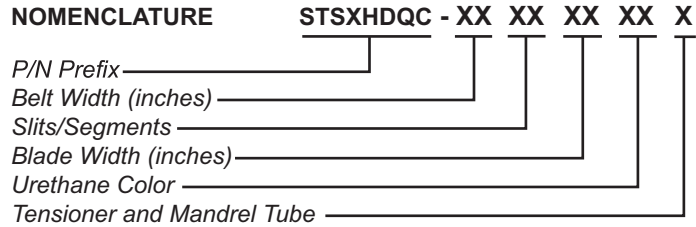
If after taking the corrective actions suggested under “Troubleshooting” you are still experiencing problems, check for the following:

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.
✓ Blades are centered on belt.

Part Numbers

This section provides product names and corresponding part numbers for Martin® QC1™ Cleaner XHD STS and related equipment. Please reference part numbers when ordering parts:

Martin® QC1™ Cleaner XHD STS



SLITS/SEGMENTS

- 11:** No slits or segments
- 10:** Segments only
- 01:** Slits only
- 00:** Slits & Segments

TENSIONER

- T:** Martin® STS Tensioner
- Blank:** No Tensioner or Mandrel Tube

URETHANE COLOR

- B1:** Black
- BR:** Brown
- CL:** Tan
- GR:** Green
- NB:** Navy Blue
- CY:** Yellow with Beads
- YL:** Yellow
- Blank:** Orange

Tensioners

Martin® STS Tensioner: P/N 39100

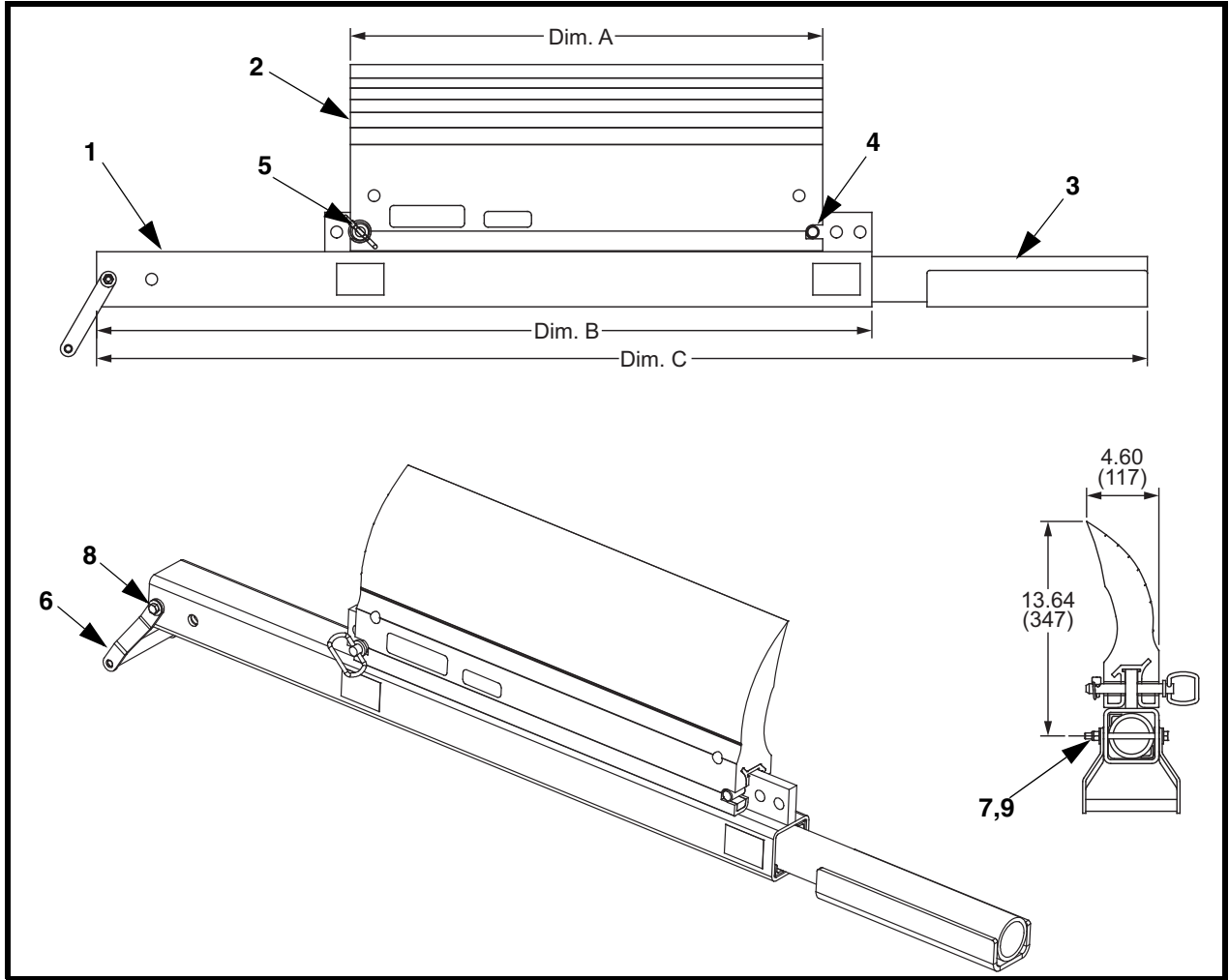


Figure 7. Martin® QC1™ Cleaner XHD STS Assembly, P/N STSXHDQC-XXXXXXXXXX

Item	Description	Part no.	Qty
1	Mainframe Weldment	39239-XX*	1
2	Blade	Table III	1
3	Mandrel Weldment	39241-XX*	1
4	Knurled Pin 3/4 Dia. ZP	36046	1
5	Pin Hitch 5/8 x 4 with Lynch Pin	36976	1
6	Handle Weldment	39242	1
7	Washer Flat 3/8 wide ZP	18007	2
8	Screw HHC 3/8-16NC x 5 ZP	30840	1
9	Nut Hex Elastic Lock 3/8-16NC ZP	14201	1
NS	Label Martin® Product	38048	2
NS	Spring Tensioner	39100	1
NS	Operator's Manual	M3987	1
NS	Label Conveyor Products Warning	23395	2

*XX indicates belt width.
NS = Not Shown

Table III. Martin® QC1™ Cleaner XHD STS Assembly Part Numbers

Part No.	Dim A Blade Length	Dim B Frame Length	Dim C Frame Length	Part No. Item 2
STXHDQC-24XX12XXX	12.00 (305)	37.25 (946)	54.75 (1391)	35897-18XXXX
STXHDQC-24XX18XXX	18.00 (457)	37.25 (946)	54.75 (1391)	35897-24XXXX
STXHDQC-30XX18XXX	18.00 (457)	43.25 (1099)	60.75 (1543)	35897-24XXXX
STXHDQC-30XX24XXX	24.00 (610)	43.25 (1099)	60.75 (1543)	35897-30XXXX
STXHDQC-36XX24XXX	24.00 (610)	49.25 (1251)	66.75 (1695)	35897-30XXXX
STXHDQC-36XX30XXX	30.00 (762)	49.25 (1251)	66.75 (1695)	35897-36XXXX
STXHDQC-42XX30XXX	30.00 (762)	55.25 (1403)	72.75 (1848)	35897-36XXXX
STXHDQC-42XX36XXX	36.00 (914)	55.25 (1403)	72.75 (1848)	35897-42XXXX
STXHDQC-48XX36XXX	36.00 (914)	61.25 (1556)	78.75 (2000)	35897-42XXXX
STXHDQC-48XX42XXX	42.00 (1067)	61.25 (1556)	78.75 (2000)	35897-48XXXX
STXHDQC-54XX42XXX	42.00 (1067)	67.25 (1708)	84.75 (2153)	35897-48XXXX
STXHDQC-54XX48XXX	48.00 (1219)	67.25 (1708)	84.75 (2153)	35897-54XXXX
STXHDQC-60XX48XXX	48.00 (1219)	73.25 (1861)	90.75 (2305)	35897-54XXXX
STXHDQC-60XX54XXX	54.00 (1372)	73.25 (1861)	90.75 (2305)	35897-60XXXX
STXHDQC-66XX54XXX	54.00 (1372)	79.25 (2013)	96.75 (2457)	35897-60XXXX
STXHDQC-66XX60XXX	60.00 (1524)	79.25 (2013)	96.75 (2457)	35897-66XXXX
STXHDQC-72XX60XXX	60.00 (1524)	85.25 (2165)	102.75 (2610)	35897-66XXXX
STXHDQC-72XX66XXX	66.00 (1676)	85.25 (2165)	102.75 (2610)	35897-72XXXX

Table IV. Martin® QC1™ Blade XHD

Assembly Part No.	Color
STXHDQC-XXXXXXX	Orange
STXHDQC-XXXXXXBRX	Brown
STXHDQC-XXXXXXB1X	Black
STXHDQC-XXXXXXCLX	Clear
STXHDQC-XXXXXXGRX	Green
STXHDQC-XXXXXXNBX	Navy Blue
STXHDQC-XXXXXXCYX	Yellow with Beads
STXHDQC-XXXXXXYLX	Yellow

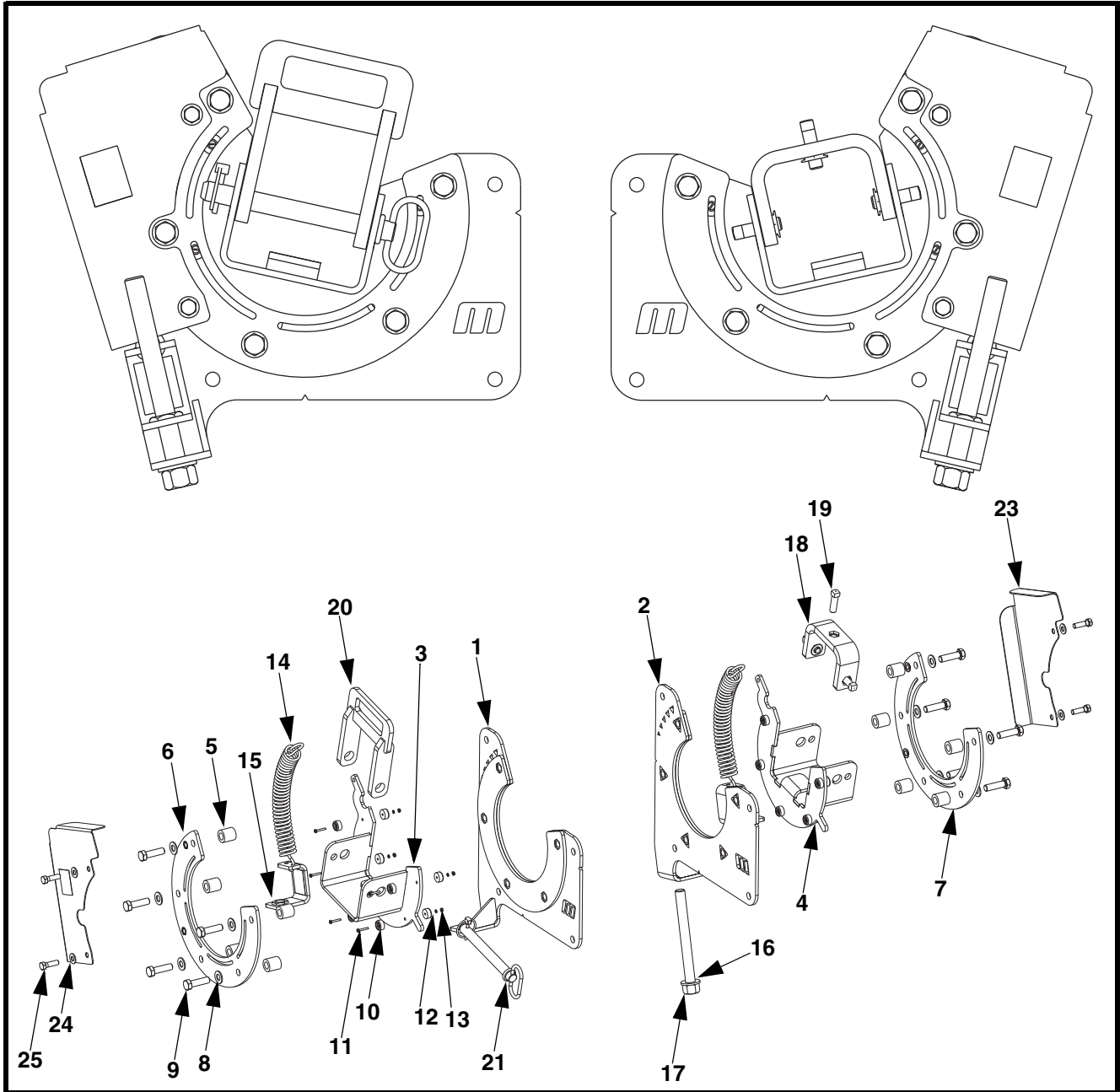


Figure 8. Martin® STS Tensioner, P/N 39100

Item	Description	Part no.	Qty
1	Operator Side Mount Weldment	39094-R	1
2	Far Side Mount Weldment	39094-L	1
3	Operator Side Saddle Pivot Weldment	39093-R	1
4	Far Side Saddle Pivot Weldment	39093-L	1
5	Spacer Tube	39097	10
6	Operator Side Outer Ring Weldment	39098-WR	1
7	Far Side Outer Ring Weldment	39098-WL	1
8	Washer Compression 1/2 SS	24310	10
9	Screw HHC 1/2-13NC x 1-3/4 SS	37878	10
10	Plastic Bumper	39092	20
11	Screw SPHM #6-32 x 7/8 SS	39136	10
12	Washer Lock Helical Spring #6 SS	39137	10
13	Nut Hex Undersized Mach #6-32 SS	39138	10
14	Extension Spring	39099	2
15	Spring Tension Plate	39091	2
16	Washer Flat 3/4 SS	16223	2
17	Spring Adjuster Weldment	39089	2
18	Far Side Strap Weldment	39090	1
19	Screw SHS 1/2-13NC x 1-1/2 SS	33190	3
20	Operator Side Cartridge Spacer	39134	1
21	Hitch Pin with Lynch Pin/Chain 1/2 x 5.75	38073	1
22	Operator Side Spring Guard	39133-R	1
23	Far Side Spring Guard	39133-L	1
24	Washer Compression 3/8 SS	28565	4
25	Screw HHC 3/8-16NC x 1/2 SS	31359	4
26 (NS)	Label Pinch Point	30528	4
27 (NS)	Label Conveyor Products Warning	23395	2
28 (NS)	Mounting Hardware	38228-SS	1
29 (NS)	Operator's Manual	M3987	1

Figure 8. Martin[®] STS Tensioner, P/N 39100

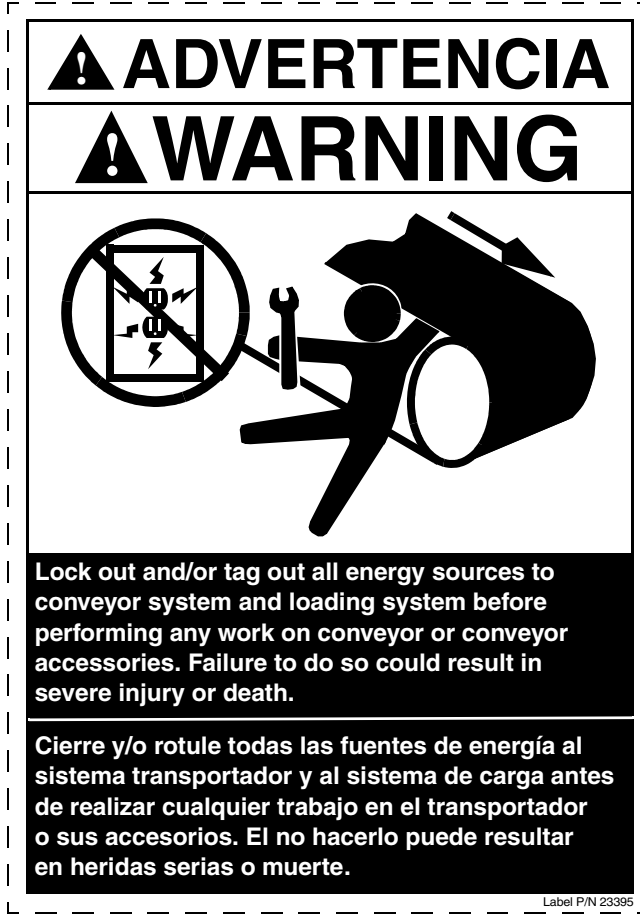


Figure 9. Martin® Conveyor Products Warning Label, P/N 23395



Figure 10. Martin® Pinch Point Warning Label, P/N 30528

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