



Martin® P2 Secondary Belt Cleaner HD

[Go to Martin® P2 Secondary Belt Cleaner HD web page](#)



***Operator's Manual
M4228***

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) ANSI/ASSP z244.1-2024, *The Control of Hazardous Energy Lockout, Tagout And Alternative Methods and Occupational Safety* and Health Administration (OSHA) Federal Register, Title 29 Subtitle B Chapter XVII Subpart J 1910.147, *Control of Hazardous Energy Source (Lockout/Tagout)*; Final Rule.

The following symbols may be used in this manual:

DANGER

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

WARNING

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

CAUTION

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

IMPORTANT

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

NOTE

Note: General statements to assist the reader.

Table of Contents

Section	Page
List of Figures	ii
List of Tables	iii
Introduction	1
General	1
Installations without chute work	1
Belt cleaner inspection access	1
Belt cleaner tips	1
References	1
Materials required	1
Safety	2
Before Installing Belt Cleaner and Tensioner	3
Installing Belt Cleaner and Tensioner	4
Locating cleaner centerline	4
Marking chute cutouts	6
Bolt tensioner installation	8
Bolt tensioner mainframe installation	9
Bolt tensioner tip tension and adjustment	11
Bolt tensioner checking tip tension	12
Compression spring tensioner installation	13
Compression spring mainframe installation	14
Compression spring tip tension and adjustment	17
Compression spring checking tip tension	18
After Installing Belt Cleaner	19
Maintenance	20
Visual inspection	20
Physical inspection	20
Buffer / tip service instructions	21
Tip alignment	24
Re-installing mainframe	24
Set the tip tension	25
Checking tip tension	27
Troubleshooting	28
Part Numbers	29

List of Figures

Figure	Title	Page
1	Martin® P2 Secondary Belt Cleaner HD Mainframe Location	4
2	Martin® P2 Secondary Belt Cleaner HD Cleaner Tip Location Centerline	5
3	Martin® P2 Secondary Belt Cleaner HD Mainframe & Chute Cutout Location	6
4	Martin® P2 Secondary Belt Cleaner HD Chute Cutout Locations	7
5	Martin® P2 Secondary Belt Cleaner HD Operator Bolt Tensioner Mount Bracket Hardware	8
6	Martin® P2 Secondary Belt Cleaner HD Far Bolt Tensioner Mount Bracket Hardware	8
7	Martin® P2 Secondary Belt Cleaner HD Operator Bolt Tensioner Clamp Block Hardware	8
8	Martin® P2 Secondary Belt Cleaner HD Far Bolt Tensioner Clamp Block Hardware	9
9	Martin® P2 Secondary Belt Cleaner HD Operator Bolt Tensioner Mainframe Fitting	9
10	Martin® P2 Secondary Belt Cleaner HD Far Bolt Tensioner Mainframe Fitting	9
11	Martin® P2 Secondary Belt Cleaner HD Operator Bolt Tensioner Clamp Block Hardware with Mainframe	10
12	Martin® P2 Secondary Belt Cleaner HD Far Bolt Tensioner Clamp Block Hardware with Mainframe	10
13	Martin® P2 Secondary Belt Cleaner HD Bolt Tensioner Tip Angle Gauge For V-Tips	11
14	Martin® P2 Secondary Belt Cleaner HD Bolt Tensioner Adjustment Hardware	11
15	Martin® P2 Secondary Belt Cleaner HD Bolt Tensioner Pressure Roller Belt Flattening	12
16	Martin® P2 Secondary Belt Cleaner HD Bolt Tensioner Adjusting Bolt	12
17	Martin® P2 Secondary Belt Cleaner HD Checking Tip Tension	12
18	Martin® P2 Secondary Belt Cleaner HD Operator Compression Spring Tensioner Mount Bracket Hardware	13
19	Martin® P2 Secondary Belt Cleaner HD Far Compression Spring Tensioner Mount Bracket Hardware	13
20	Martin® P2 Secondary Belt Cleaner HD Operator Compression Spring Tensioner Clamp Block Hardware	13
21	Martin® P2 Secondary Belt Cleaner HD Far Compression Spring Tensioner Clamp Block Hardware	14
22	Martin® P2 Secondary Belt Cleaner HD Operator Side Compression Spring Tensioner Mainframe Fitting	14
23	Martin® P2 Secondary Belt Cleaner HD Far Compression Spring Tensioner Mainframe Fitting	14
24	Martin® P2 Secondary Belt Cleaner HD Operator Compression Spring Tensioner Clamp Block Hardware with Mainframe ..	15
25	Martin® P2 Secondary Belt Cleaner HD Far Compression Spring Tensioner Side Clamp Block Hardware with Mainframe ..	15
26	Martin® P2 Secondary Belt Cleaner HD Compression Spring Tensioner Clamp Block Hardware with Mainframe	16
27	Martin® P2 Secondary Belt Cleaner HD Compression Spring Tensioner Tip Angle Gauge For V-Tips	17
28	Martin® P2 Secondary Belt Cleaner HD Compression Spring Tensioner Adjustment Hardware	17
29	Martin® P2 Secondary Belt Cleaner HD Compression Spring Tensioner Pressure Roller Belt Flattening	18
30	Martin® P2 Secondary Belt Cleaner HD Compression Spring Tensioner Adjustment Hardware	18
31	Martin® P2 Secondary Belt Cleaner HD Checking Tip Tension	18
32	Martin® P2 Secondary Belt Cleaner HD Location Marker Location	21
33	Martin® P2 Secondary Belt Cleaner HD Tensioner Servicing	21
34	Martin® P2 Secondary Belt Cleaner HD Clamp Block Servicing	22
35	Martin® P2 Secondary Belt Cleaner HD Tip Grinding Locations	22
36	Martin® P2 Secondary Belt Cleaner HD Tip Grinding Locations	23
37	Martin® P2 Secondary Belt Cleaner HD Tip Alignment	24
38	Martin® P2 Secondary Belt Cleaner HD Reinstalling Mainframe	24
39	Martin® P2 Secondary Belt Cleaner HD Light Belt Contact	25

List of Figures (cont.)

Figure	Title	Page
40	Martin® P2 Secondary Belt Cleaner HD Tip Angle Roll Back	25
41	Martin® P2 Secondary Belt Cleaner HD Pressure Roller Belt Flattening	26
42	Martin® P2 Secondary Belt Cleaner HD Checking Tip Tension	27
43	Martin® P2 Secondary Belt Cleaner HD, P/N C2PH1SXXXXXXXXX	30
44	Conveyor Products Warning Label, P/N 23395	33

List of Tables

Table	Title	Page
I-A	Martin® P2 Secondary Belt Cleaner HD Mainframe Part Numbers and Quantities	31
I-B	Martin® P2 Secondary Belt Cleaner HD Extended Mainframe Part Numbers	31
II	Martin® P2 Secondary Belt Cleaner HD Buffer Part Number	31
III	Martin® P2 Secondary Belt Cleaner HD Buffer Part Number	32
IV	Martin® P2 Secondary Belt Cleaner HD Tensioner Part Numbers	32

Introduction

General

The P2 Secondary Belt Cleaner HD is a robust, durable, and highly effective cleaning system. Built with precision cast stainless steel components and abrasion resistant tungsten carbide tips, they deliver reliable performance while remaining amongst the most cost effective belt cleaning options available.

Designed for versatility, these cleaners are suitable for most material types. Tungsten carbide tipped secondary cleaners offer consistently high performance and are especially effective in removing abrasive materials from high speed conveyor belts.

However, only the C Tip option is recommended for conveyor belts equipped with mechanical fasteners.

Installations without chute work

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, at least one Martin® Inspection Door should be installed. Martin® Inspection Doors are available from Martin Engineering or a representative.

Belt cleaner tips

Martin® P2 Secondary Belt Cleaner HD Tips are available in V 10X3, V 15X5, and C 10X3 configurations.

References

The following documents are referenced in this manual:

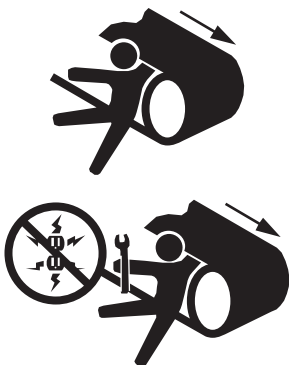
- American National Standards Institute ANSI/ASSP Z244.1-2024, *The Control of Hazardous Energy Lockout, Tagout and Alternative Methods* American National Standards Institute, Inc., 1180 6th Ave, 10th Floor New York, NY 10036.
- Federal Register, Title 29 Subtitle B Chapter XVII Subpart J 1910.147, *Control 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.

Materials required

Installation of this equipment requires the use of standard hand tools, grinder, welder, and cutting torch.

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 lockout / tagout / blockout / testout all energy sources to the conveyor and conveyor accessories according to ANSI standards or country specific safety standards (DIN, ISO, etc.). Failure to do so could result in serious injury or death.



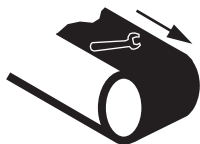
⚠ DANGER

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. Follow local and customer confined space procedures.



⚠ 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. Follow local and customer fire watch procedures



⚠ 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 tips 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 Tensioner

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.



⚠ DANGER

Before installing the belt cleaner, turn off and lockout / tagout / blockout / testout all energy sources to the conveyor and conveyor accessories according to ANSI standards or country specific safety standards (DIN, ISO, etc.). Failure to do so could result in serious injury or death.

4. Turn off and lockout / tagout / blockout / testout energy source according to ANSI standards or country specific safety standards (DIN, ISO, etc.) (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. Follow local and customer confined space procedures.

5. If using a cutting torch or welding, test atmosphere for gas level or dust content. Cover conveyor belt with fire retardant cover. Follow local fire watch procedures. Ensure fastener threads and belt are protected from weld splatter.

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 operator side tensioner on the most accessible chute wall and the far side tensioner on the other side of the chute.

Installing Belt Cleaner and Tensioner

IMPORTANT

Read entire section before beginning work

NOTE

For original equipment installation, where cleaner cutouts and brackets have been fabricated into the chute during construction, ignore steps 1 - 3.

NOTE

Solid backing of the tip 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. (Refer to Figure 1.)

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.

To install the belt cleaner, follow the procedures corresponding to the following steps:

Locating cleaner centerline

1. Inspect belt cleaner mounting area for possible obstructions that could interfere with proper mounting. (Refer to the Figure 1. for recommended dimensions.)

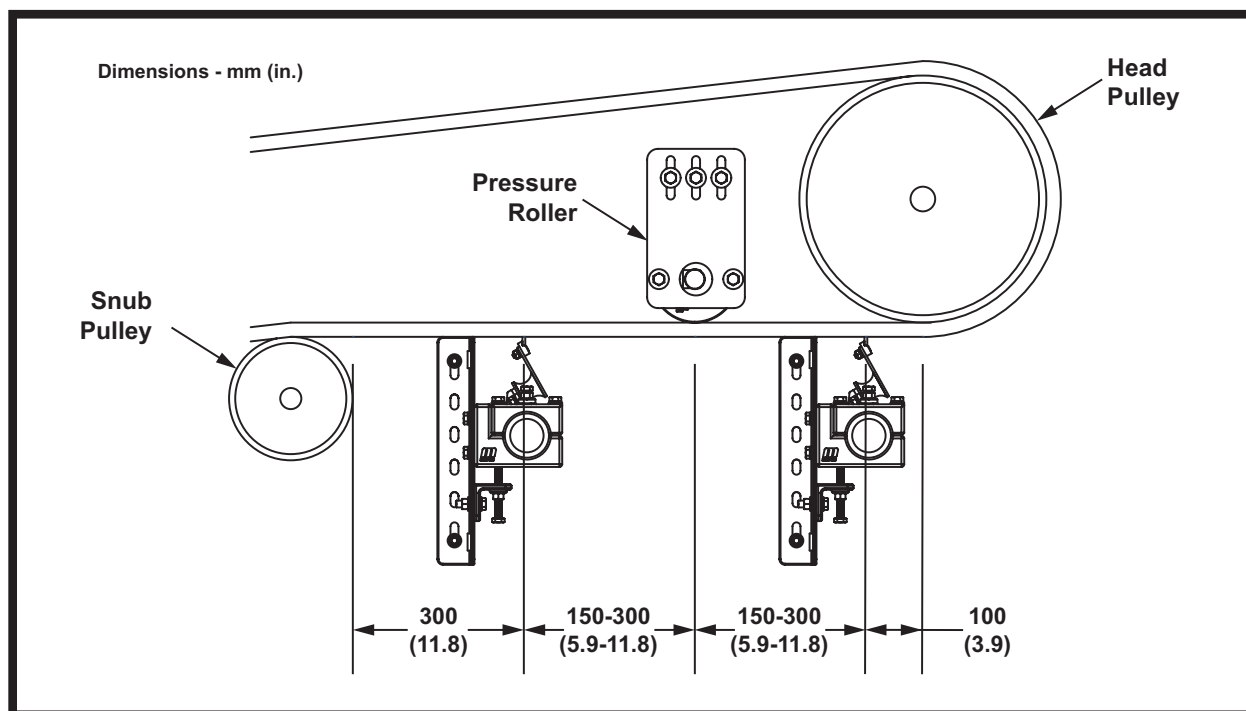


Figure 1. Martin® P2 Secondary Belt Cleaner HD Mainframe Location

- On the return side of the belt, locate the tangent point at which the belt leaves the head pulley. Measure a distance of 100 mm (3.9 in.) and draw a line perpendicular to the belt at this point. (Refer to Figure 2.)

NOTE

For installation below pressure rollers, mark the vertical line 150 - 300 mm (5.9 - 11.8 in.) from the centerline of the roller. (Refer to Figure 2.)

- This line represents the centerline of Martin® P2 Secondary Belt Cleaner HD and the cleaner mount brackets.

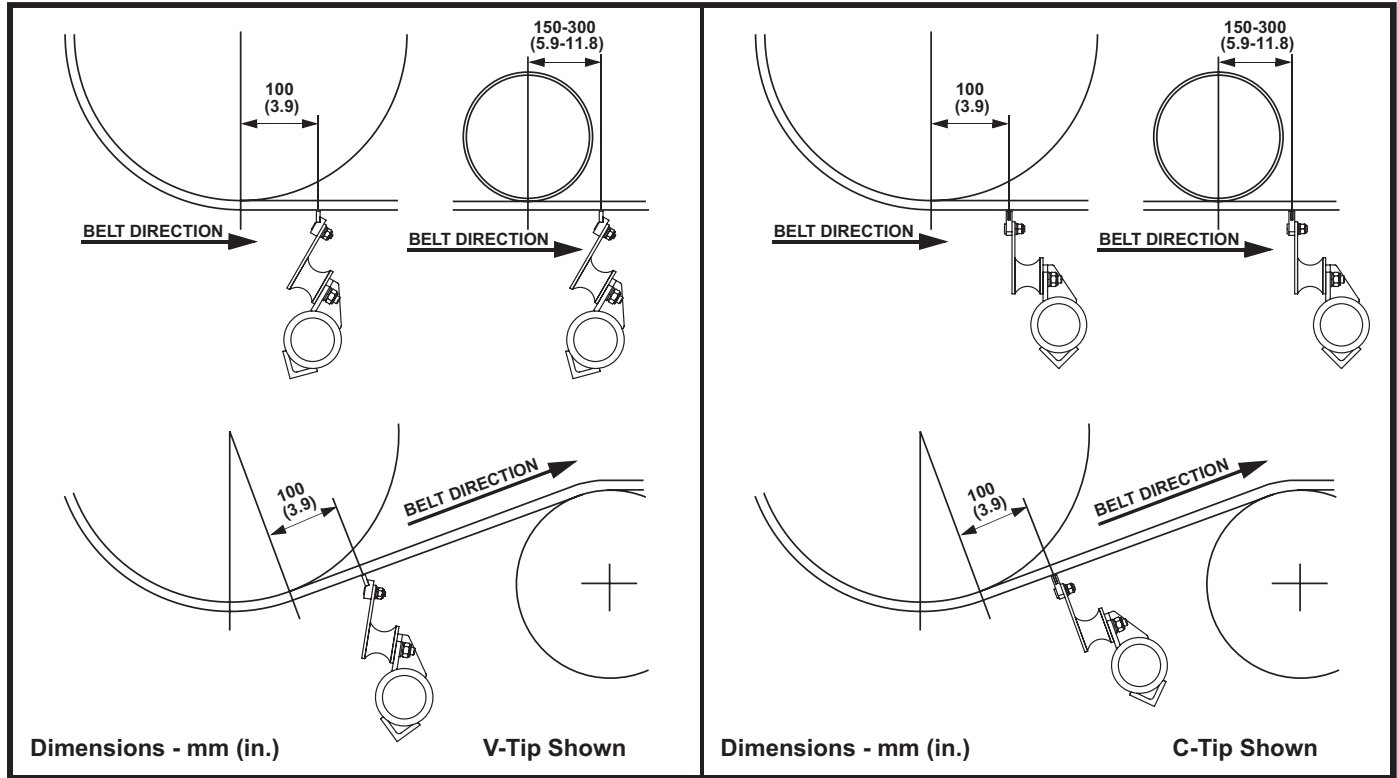


Figure 2. Martin® P2 Secondary Belt Cleaner HD Cleaner Tip Location Centerline

Marking chute cutouts

- Using the previously marked line as the centerline, mark the chute cutout and mount hole locations as shown in Figure 3. Repeat on both sides of chute, ensuring the cutouts are accurately aligned with each other.

NOTE

The location of the mounting holes differs according to tip type. Make sure that you are using correct dimensions and verify cleaner position and cleaner tip before proceeding. (Refer to Figure 3.)

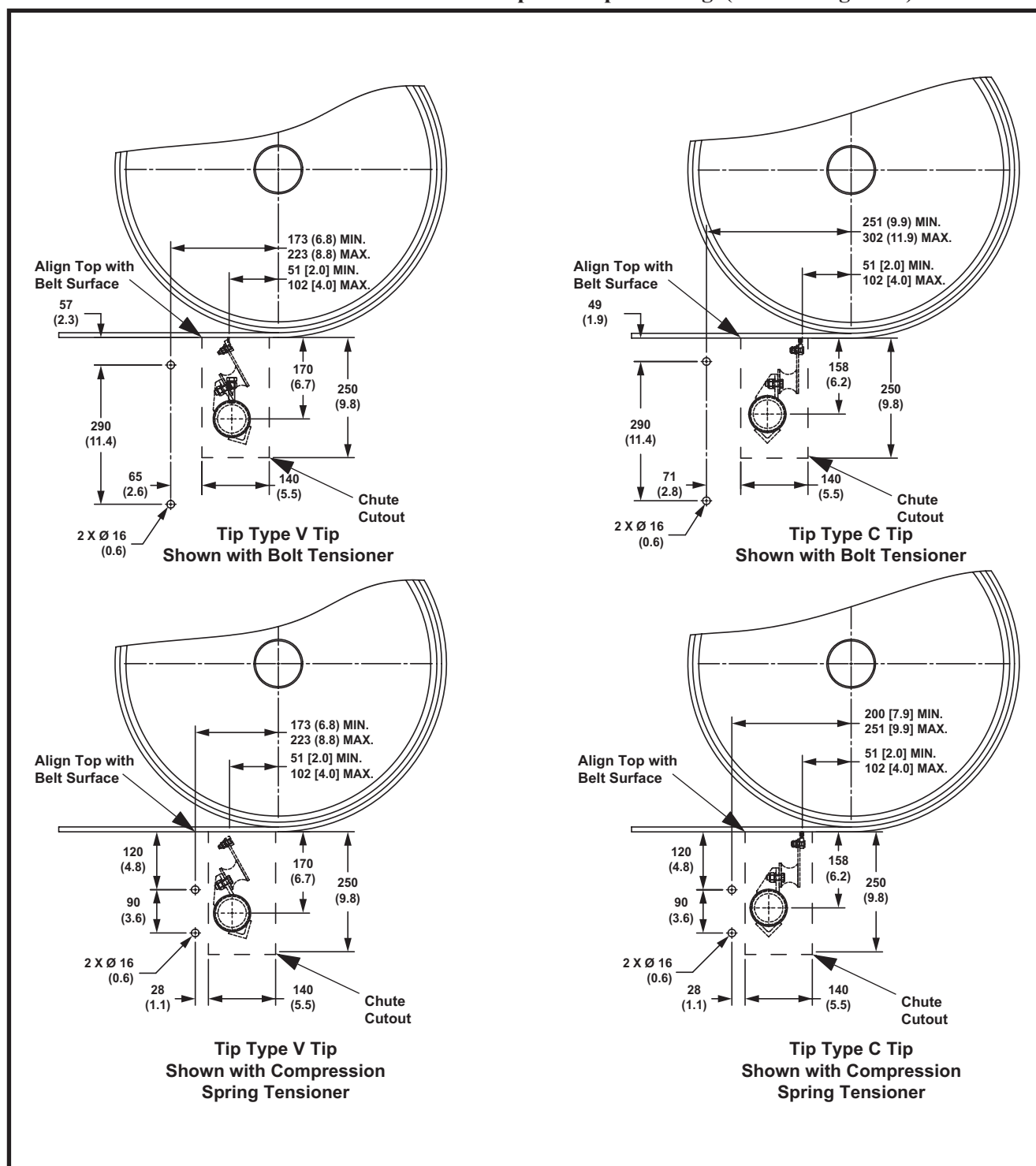


Figure 3. Martin® P2 Secondary Belt Cleaner HD Mainframe & Chute Cutout Location

5. 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. (Refer to Figure 4.)

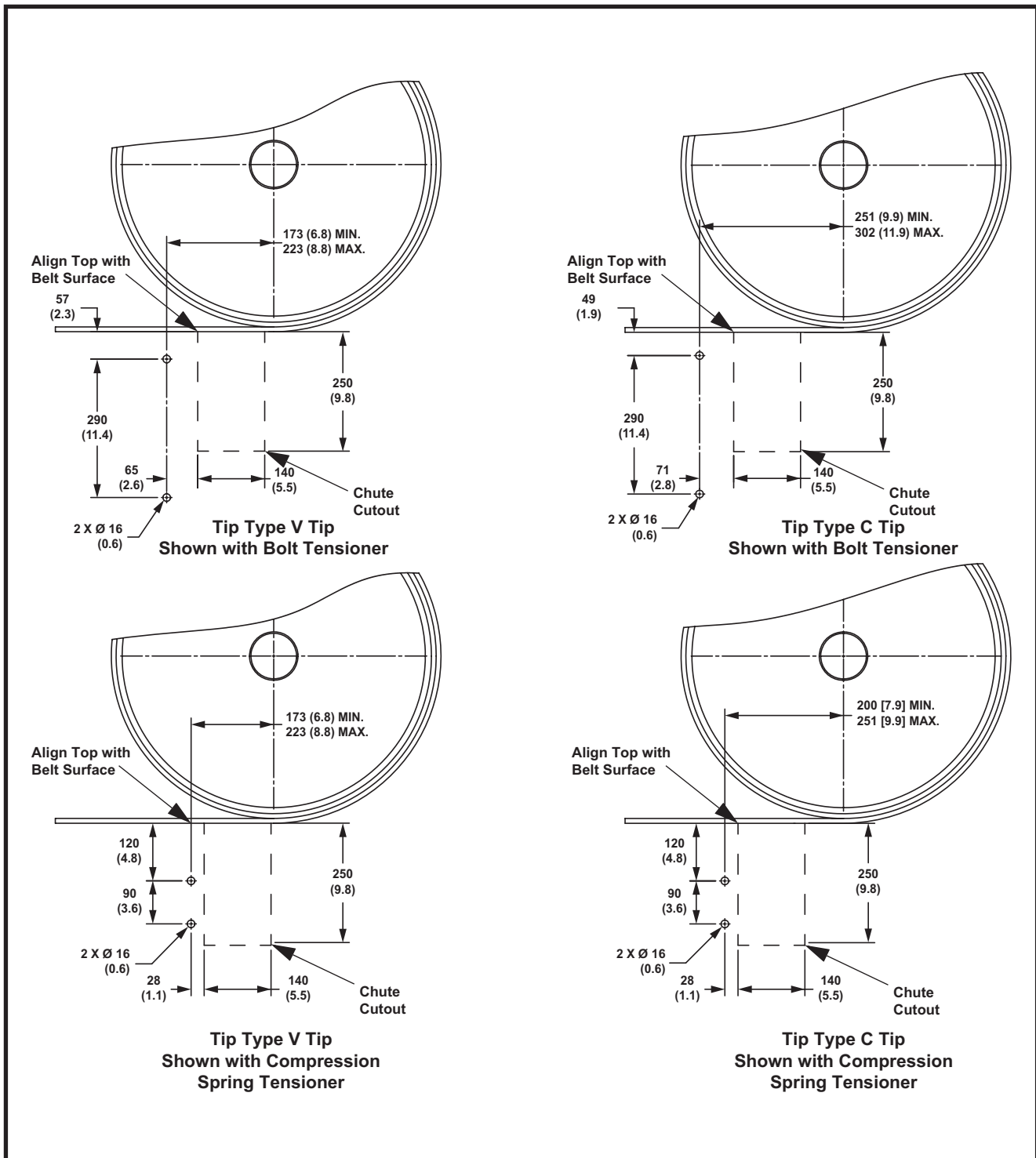


Figure 4. Martin® P2 Secondary Belt Cleaner HD Chute Cutout Locations

6. Proceed to the following section according to the tensioner being installed.
 - a. Proceed to *Bolt tensioner installation* step 1. if installing bolt tensioner option.
 - b. Proceed to *Compression spring tensioner installation* step 1. if installing compression spring tensioner option.

Bolt tensioner installation

1. Fit operator side mount bracket to the chute wall. Bolt mount to the chute wall. (Refer to Figure 5.)

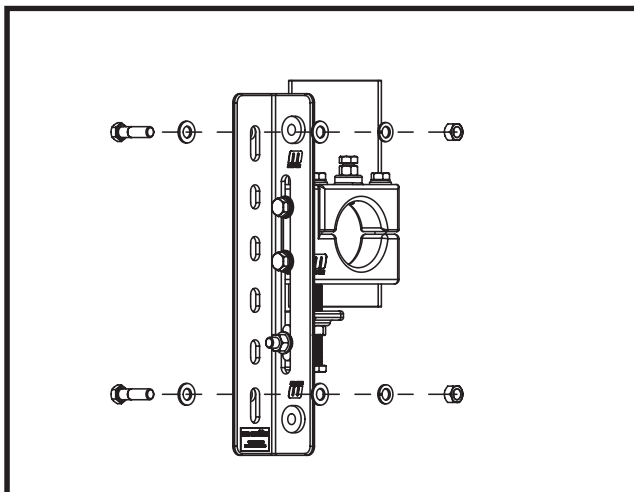


Figure 5. Martin® P2 Secondary Belt Cleaner HD Operator Bolt Tensioner Mount Bracket Hardware

2. Repeat for far side mount bracket. (Refer to Figure 6.)

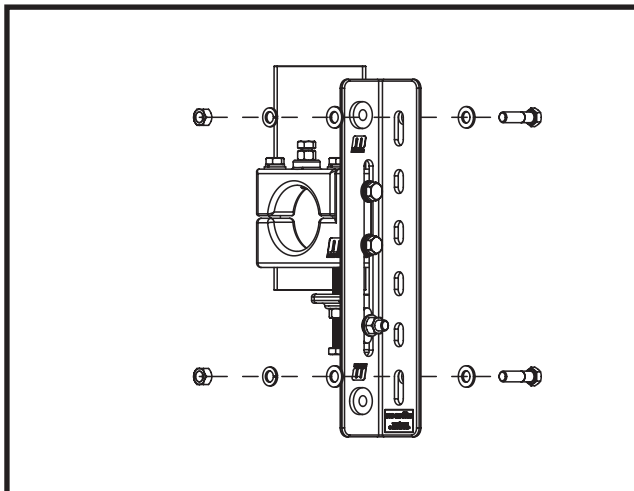


Figure 6. Martin® P2 Secondary Belt Cleaner HD Far Bolt Tensioner Mount Bracket Hardware

3. Remove the clamp block and clamp block hardware, placing in secure location for later re-installation. (Refer to Figure 7.)

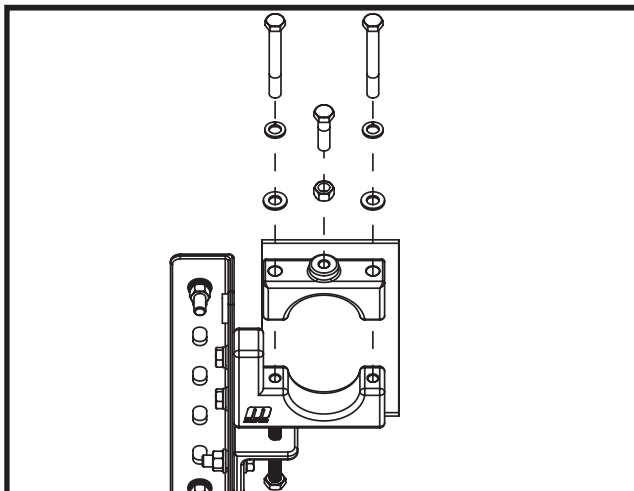


Figure 7. Martin® P2 Secondary Belt Cleaner HD Operator Bolt Tensioner Clamp Block Hardware

4. Repeat for far side Clamp Block. (Refer to Figure 8.)

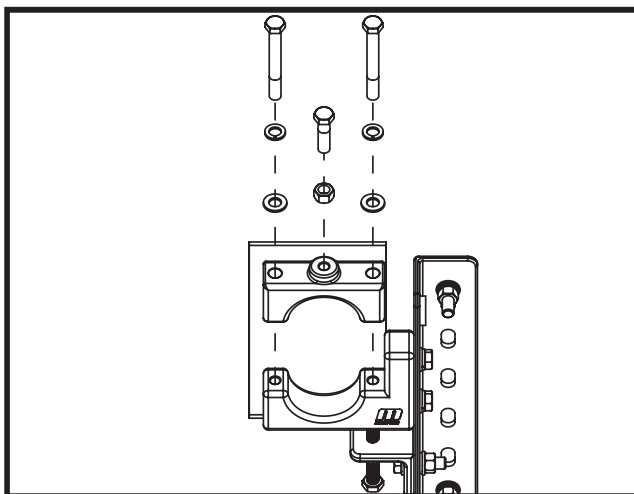


Figure 8. Martin® P2 Secondary Belt Cleaner HD Far Bolt Tensioner Clamp Block Hardware

5. Fit the mainframe mandrel to the mounts. Slide the mandrel onto one of the mount brackets, then through the cutouts and onto mount on the opposite side letting it rest. Tips are allowed to hang down. (Refer to Figure 9.)

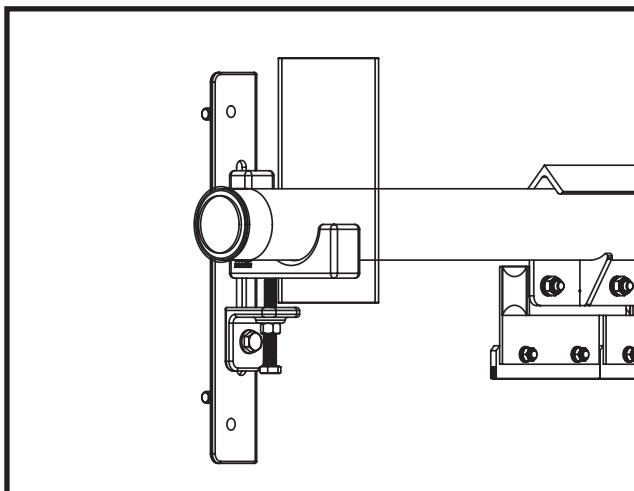


Figure 9. Martin® P2 Secondary Belt Cleaner HD Operator Bolt Tensioner Mainframe Fitting

6. Repeat for far side mainframe mandrel fitting. (Refer to Figure 10.)

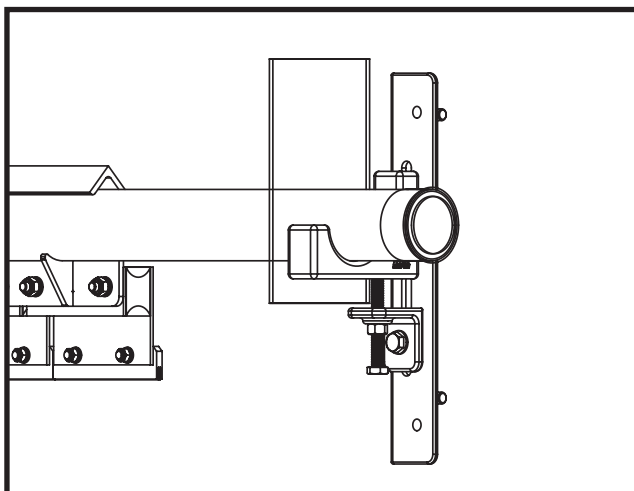
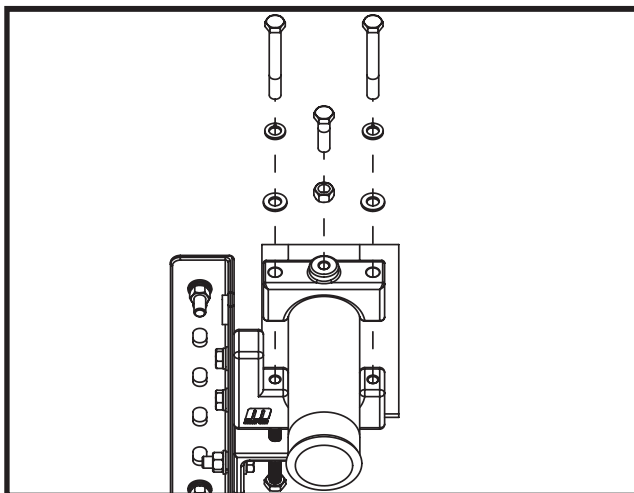


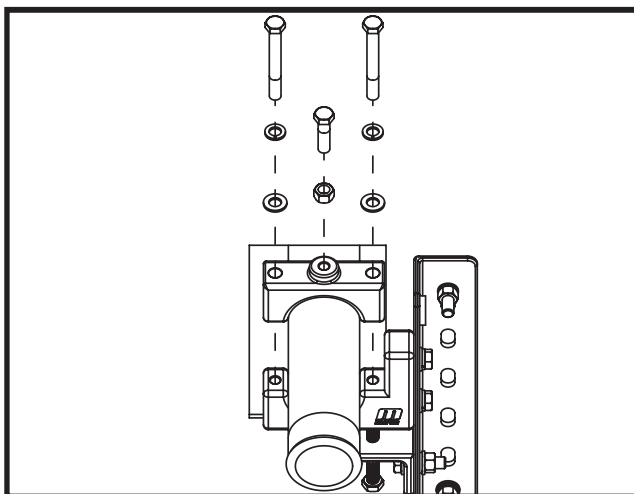
Figure 7. Martin® P2 Secondary Belt Cleaner HD Far Bolt Tensioner Mainframe Fitting

7. Reinstall the clamp block caps and bolts ensuring the mainframe lock bolts are loosened. Position the mainframe so the tips are centered on the belt and lightly tighten the clamp block bolts on both sides. Do not fully tighten. Tightening fully will prevent the mainframe from rotating in the clamp blocks preventing set up for correct tip attack angle. (Refer to Figure 11.)



**Figure 11. Martin® P2 Secondary Belt Cleaner HD
Operator Bolt Tensioner Clamp Block Hardware with Mainframe**

8. Repeat for far side clamp block. (Refer to Figure 12.)



**Figure 12. Martin® P2 Secondary Belt Cleaner HD
Far Bolt Tensioner Clamp Block Hardware with Mainframe**

NOTE

The mainframe mandrel will have excess length in most cases.
If required, this excess can be trimmed.

Bolt tensioner tip tension and adjustment

9. For V-Tips rotate the tips to the pre-set angle provided by the angle gauge supplied and tighten the clamp block bolts equally. Tighten the mainframe lock bolts. (Refer to Figure 13.)

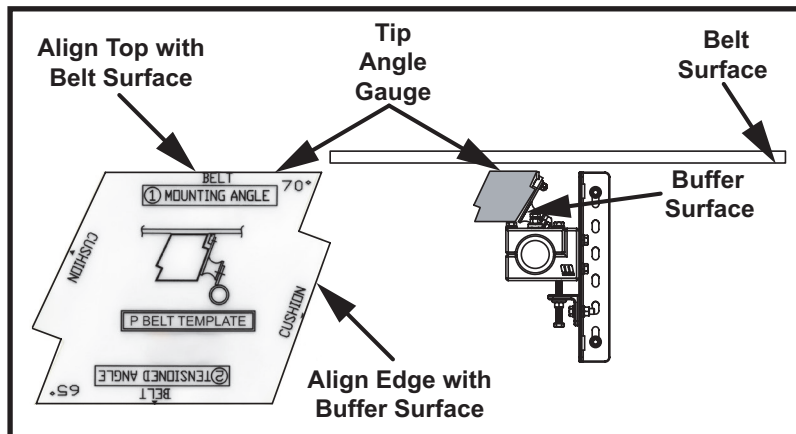


Figure 13. Martin® P2 Secondary Belt Cleaner HD Bolt Tensioner Tip Angle Gauge For V-Tips

NOTE

There should be no tip-to-belt contact while making this alignment. If contact occurs, lower the mainframe by loosening the clamp block lock bolts and winding down the adjuster bolts. (Refer to Figure 14.)

10. While all clamp block mounting bolts are slightly loosened, raise mainframe by rotating up the adjuster bolts on both sides until light contact is made between the tips and belt across the entire width of the cleaner. (Refer to Figure 14.)

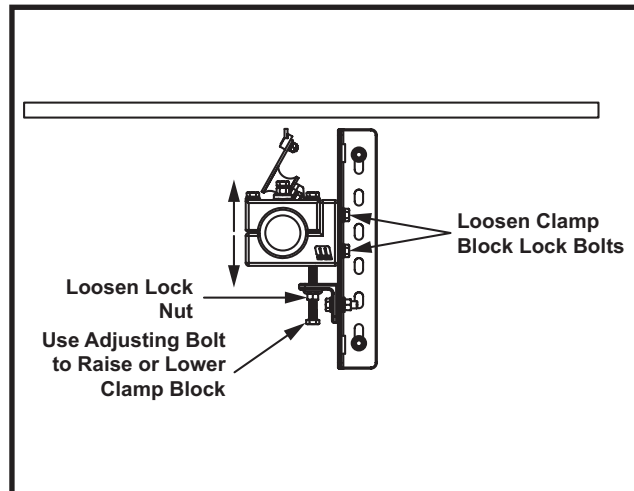


Figure 14. Martin® P2 Secondary Belt Cleaner HD Bolt Tensioner Adjustment Hardware

11. Tighten all clamp block lock bolts and mainframe lock blocks. Recheck that all fasteners are tightened properly.

NOTE

If the belt is cupped, do not over tension the blades to contact the belt. Pressure or stabilizing rollers should be installed to flatten the belt. (Refer to Figure 15.)

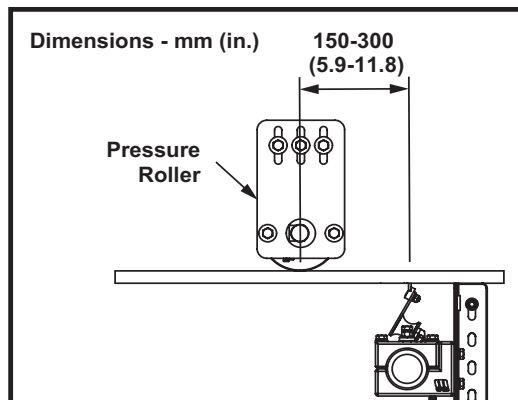


Figure 15. Martin® P2 Secondary Belt Cleaner HD Bolt Tensioner Pressure Roller Belt Flattening
Bolt tensioner checking tip tension

12. Pull back on the outside tip until the tip to belt contact is broken and release. If the cleaner is correctly tensioned the complete blade of the adjacent tip will be visible. If not, add (or reduce) tension by making 1/2 turn adjustments on the adjuster bolt until the adjacent tip is visible. (Refer to Figure 16 & 17.)

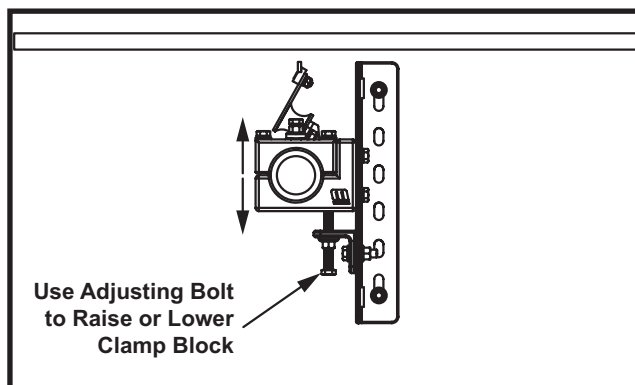


Figure 16. Martin® P2 Secondary Belt Cleaner HD Bolt Tensioner Adjusting Bolt

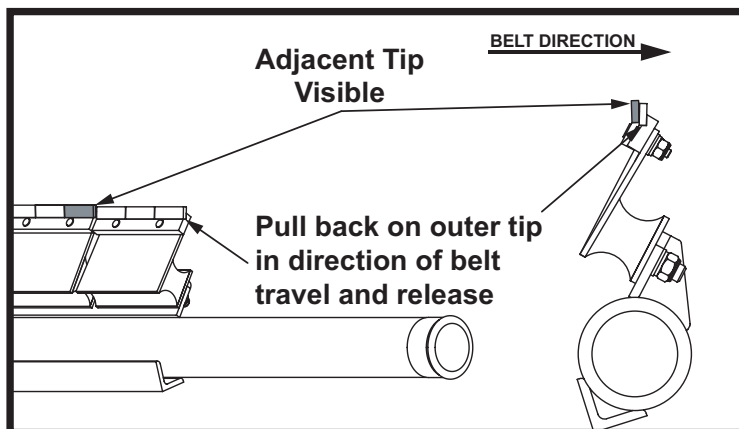
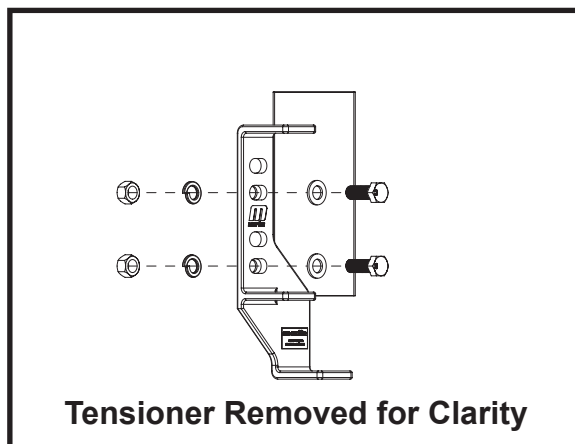


Figure 17. Martin® P2 Secondary Belt Cleaner HD Checking Tip Tension

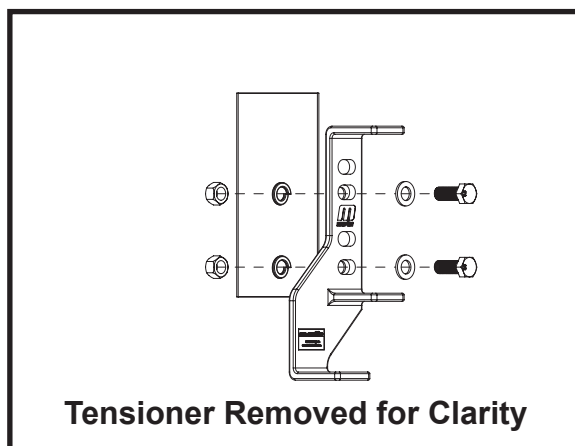
Compression spring tensioner installation

1. Fit operator side mount bracket to the chute wall. Bolt mount to the chute wall. (Refer to Figure 18.)



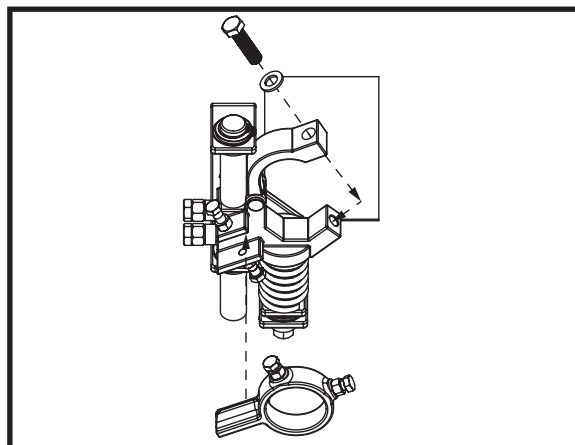
**Figure 18. Martin® P2 Secondary Belt Cleaner HD
Operator Compression Spring Tensioner Mount Bracket Hardware**

2. Repeat for far side mount bracket. (Refer to Figure 19.)



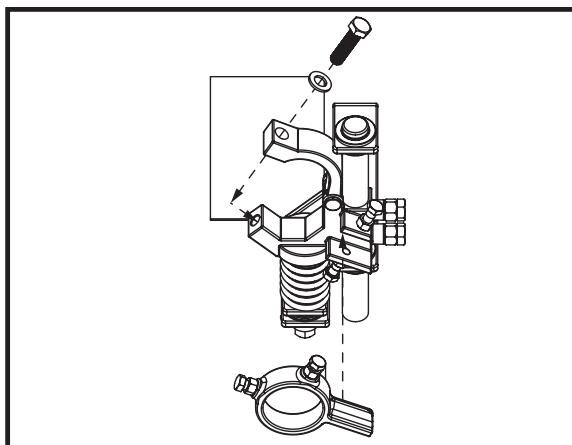
**Figure 19. Martin® P2 Secondary Belt Cleaner HD
Far Compression Spring Tensioner Mount Bracket Hardware**

3. Remove the clamp block and clamp block hardware, placing in secure location for later re-installation. (Refer to Figure 20.)



**Figure 20. Martin® P2 Secondary Belt Cleaner HD
Operator Compression Spring Tensioner Clamp Block Hardware**

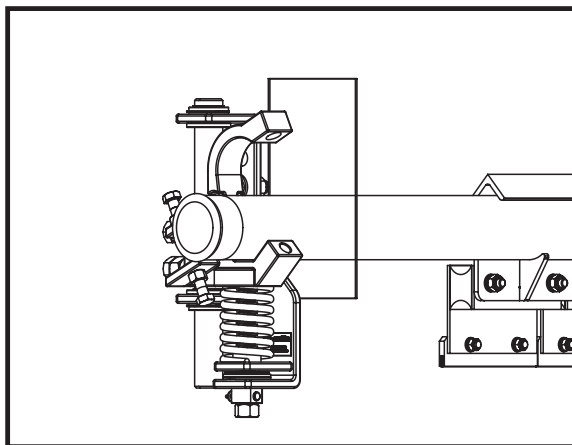
4. Repeat for far side Clamp Block. (Refer to Figure 21.)



**Figure 21. Martin® P2 Secondary Belt Cleaner HD
Far Compression Spring Tensioner Clamp Block Hardware**

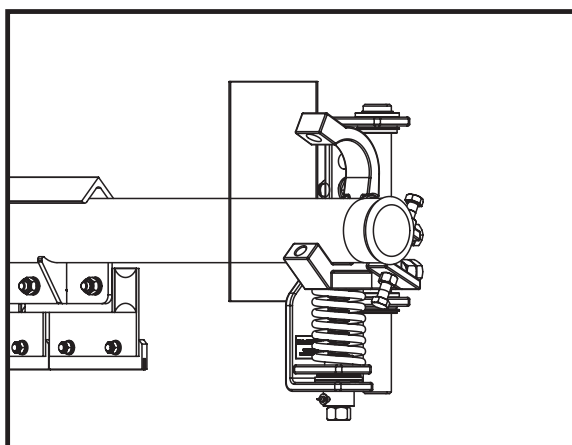
***Compression
spring mainframe
installation***

5. Fit the mainframe mandrel to the mounts. Slide the mandrel onto one of the mount brackets, then through the cutouts and onto mount on the opposite side letting it rest. Tips are allowed to hang down. (Refer to Figure 22.)



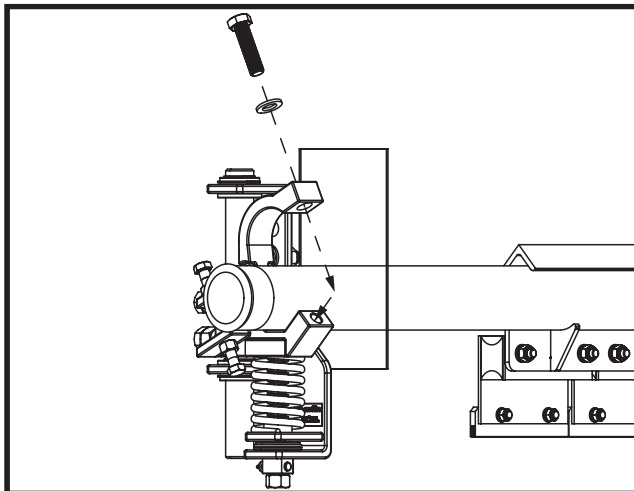
**Figure 22. Martin® P2 Secondary Belt Cleaner HD
Operator Side Compression Spring Tensioner Mainframe Fitting**

6. Repeat for far side mainframe mandrel fitting. (Refer to Figure 23.)



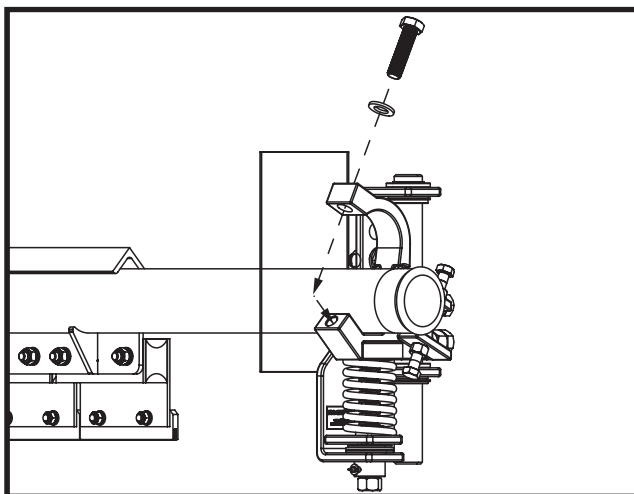
**Figure 23. Martin® P2 Secondary Belt Cleaner HD
Far Compression Spring Tensioner Mainframe Fitting**

7. Reinstall the clamp block caps and bolts ensuring the mainframe lock bolts are loosened. Position the mainframe so the tips are centered on the belt and lightly tighten the clamp block bolts on both sides. Do not fully tighten. Tightening fully will prevent the mainframe from rotating in the clamp blocks preventing set up for correct tip attack angle. (Refer to Figure 24.)



**Figure 24. Martin® P2 Secondary Belt Cleaner HD
Operator Compression Spring Tensioner Clamp Block Hardware with Mainframe**

8. Repeat for far side Clamp Block. (Refer to Figure 25.)

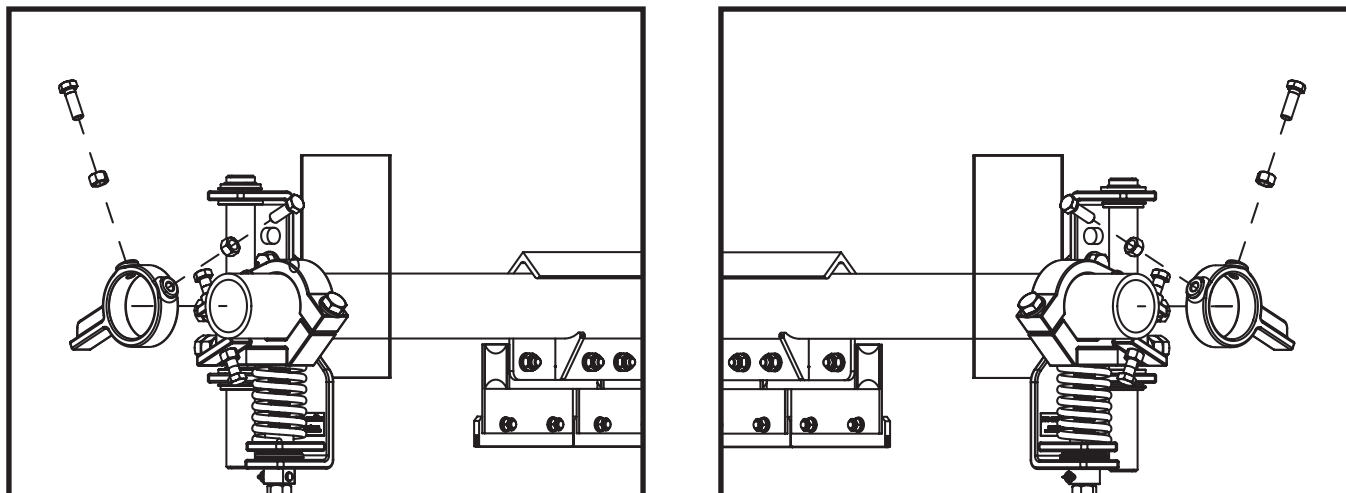


**Figure 9. Martin® P2 Secondary Belt Cleaner HD
Far Compression Spring Tensioner Side Clamp Block Hardware with Mainframe**

NOTE

The mainframe mandrel will have excess length in most cases.
If required, this excess can be trimmed.

9. Remove end caps from each end of mainframe. Re-install clamp blocks onto compression spring tensioners and mainframe. Do not fully tighten. Tightening fully will prevent the mainframe from rotating in the clamp blocks preventing set up for correct tip attack angle. Re-install end caps once clamp blocks are secured onto mainframe. (Refer to Figure 26.)



**Figure 26. Martin® P2 Secondary Belt Cleaner HD
Compression Spring Tensioner Clamp Block Hardware with Mainframe**

Compression Spring tip tension and adjustment

10. For V-Tips rotate the tips to the pre-set angle provided by the angle gauge supplied and tighten the clamp block bolts equally. Tighten the mainframe lock bolts. (Refer to Figure 13.)

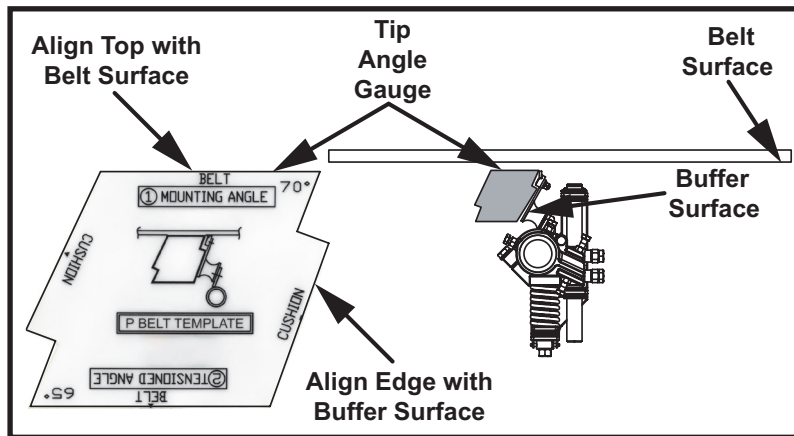


Figure 27. Martin® P2 Secondary Belt Cleaner HD Compression Spring Tensioner Tip Angle Gauge For V-Tips

NOTE

There should be no tip-to-belt contact while making this alignment. If contact occurs, lower the mainframe by loosening the clamp block lock bolts and winding down the adjuster bolts. (Refer to Figure 28.)

11. While all clamp block mounting bolts are slightly loosened, raise mainframe by rotating up the adjuster bolts on both sides until light contact is made between the tips and belt across the entire width of the cleaner. (Refer to Figure 28.)

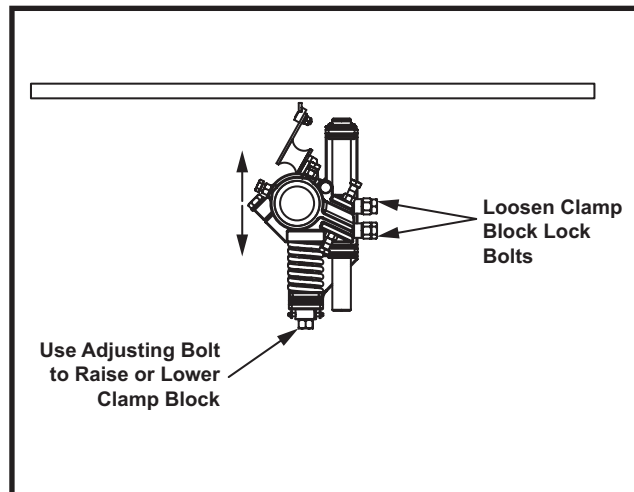
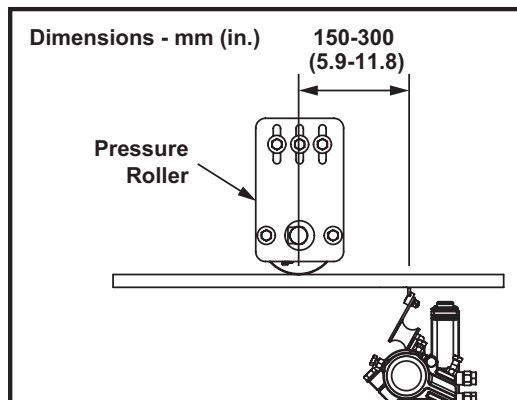


Figure 28. Martin® P2 Secondary Belt Cleaner HD Compression Spring Tensioner Adjustment Hardware

12. Tighten all clamp block lock bolts and mainframe lock blocks. Recheck that all fasteners are tightened properly.

NOTE

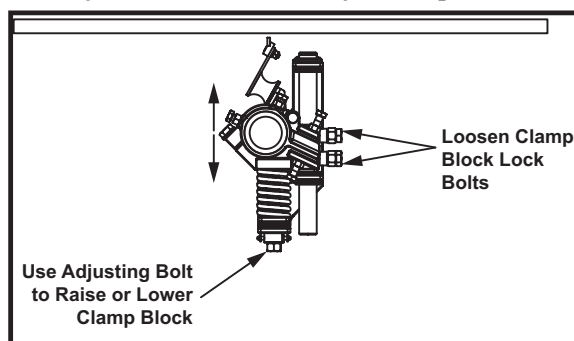
If the belt is cupped, do not over tension the blades to contact the belt. Pressure or stabilizing rollers should be installed to flatten the belt. (Refer to Figure 29.)



**Figure 29. Martin® P2 Secondary Belt Cleaner HD
Compression Spring Tensioner Pressure Roller Belt Flattening**

*Compression spring
checking tip
tension*

13. Pull back on the outside tip until the tip to belt contact is broken and release. If the cleaner is correctly tensioned the complete blade of the adjacent tip will be visible. If not, add (or reduce) tension by making 1/2 turn adjustments on the adjuster bolt until the adjacent tip is visible. (Refer to Figure 30 & 31.)



**Figure 30. Martin® P2 Secondary Belt Cleaner HD
Compression Spring Tensioner Adjustment Hardware**

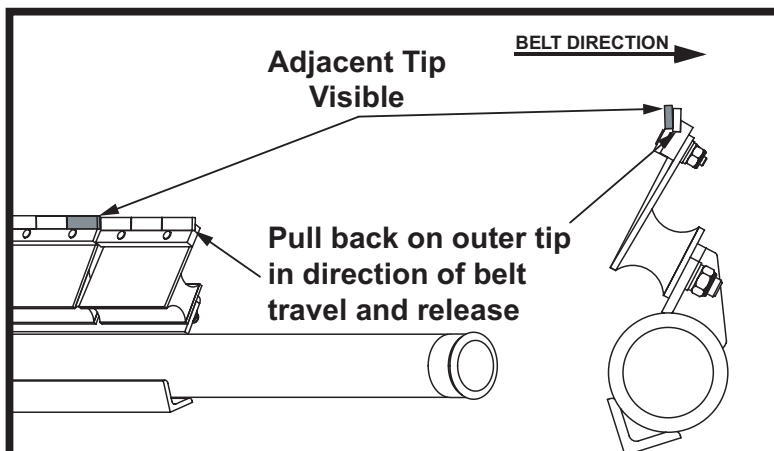
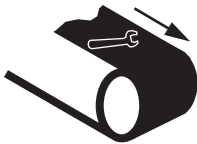


Figure 31. Martin® P2 Secondary Belt Cleaner HD Checking Tip Tension

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.
3. Additional safety labels are available from CEMA. For more information regarding CEMA safety labels visit www.cemanet.org.
4. Recheck that all fasteners are tightened properly.
5. Check the product contact area on the belt.



⚠ WARNING

Failure to remove tools and material 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.

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



⚠ DANGER

Before adjusting the belt cleaner or tensioner, turn off and lockout / tagout / blockout / testout all energy sources to the conveyor and conveyor accessories according to ANSI standards. Failure to do so could result in serious injury or death.

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

IMPORTANT

Read entire section before beginning work.

NOTE

Visual inspection should be performed no less than once every 4 weeks. Some applications may require more frequent visual inspections.

1. Visually inspect the belt and cleaner.
 - If cleaner is set for optimal tensioning.
 - If belt looks clean or if there are areas that are dirty.
 - If tips are worn out and need to be replaced.
 - If buffers have delamination between rubber and plates.
 - If there is damage to the tips or other cleaner components.
 - If fugitive material is built up on the cleaner or in the transfer area.
 - If there is cover damage to the belt.
 - If there is vibration or bouncing of the cleaner on the belt.
 - If a snub pulley is used, a check should be made for material build up on the pulley.
 - Significant signs of carryback.
 - Check water sprays if a spray cleaner is utilized.
2. If any of the above conditions exist, a decision should be made on when to stop the conveyor for cleaning maintenance.

Visual inspection

Physical inspection



NOTE

Physical inspection should be performed no less than once every 3 months. Some applications may require more frequent physical inspections.

! DANGER

Before inspecting the belt cleaner, tensioner, or belt turn off and lockout / tagout / blockout / testout all energy sources to the conveyor and conveyor accessories according to ANSI standards. Failure to do so could result in serious injury or death.

3. When the conveyor is not operating and properly locked out, a physical inspection of the product's performance should be undertaken.
 - Clean material build up off of the cleaner blade and mainframe.
 - Closely inspect the tips for wear and any damage and replace if needed.
 - Ensure full tip to belt contact.
 - Inspect the cleaner mainframe for damage.
 - Inspect all fasteners for tightness and wear. Tighten or replace as needed.
 - Replace any worn or damaged components.
 - Check the tension of the cleaner tips to the belt. Adjust the tension if necessary.
 - Check and clean water sprays if a spray cleaner is utilized.
 - When maintenance tasks are completed, test run the conveyor to ensure the cleaner is performing properly.
4. If any of the above conditions exist, a decision should be made on when to stop the conveyor for cleaning maintenance.



⚠ DANGER

Before servicing the belt cleaner, tensioner, or related components turn off and lockout / tagout / blockout / testout all energy sources to the conveyor and conveyor accessories according to ANSI standards. Failure to do so could result in serious injury or death.

Buffer / tip service instructions

5. To inspect buffers and tips, follow the steps:
 - a. Place location marks on the mounting bracket and the clamp block for quick positioning after tip replacement. (Refer to Figure 32.)

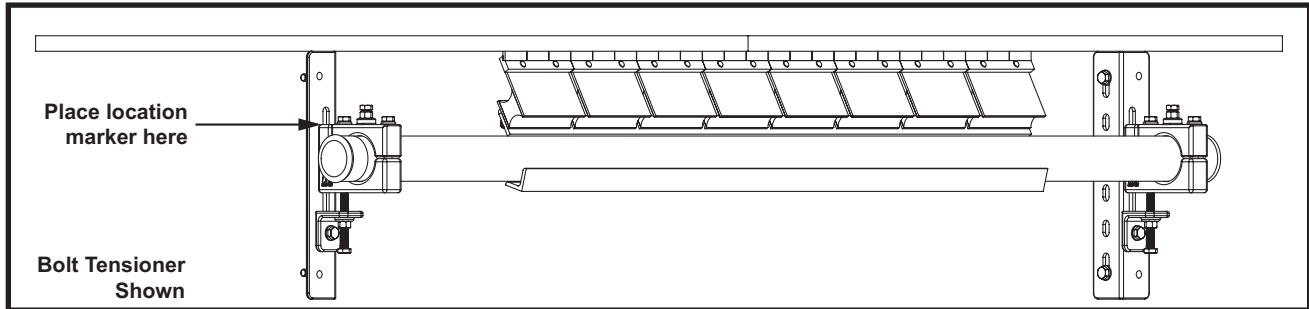


Figure 32. Martin® P2 Secondary Belt Cleaner HD Location Marker Location

- b. Loosen the clamp block lock bolts on both sides. (Refer to Figure 33.)
- c. Loosen the adjuster bolt lock nuts. (Refer to Figure 33.)
- d. Back off adjuster bolts and allow the mainframe to move down away from the belt releasing all tip tension. (Refer to Figure 33.)

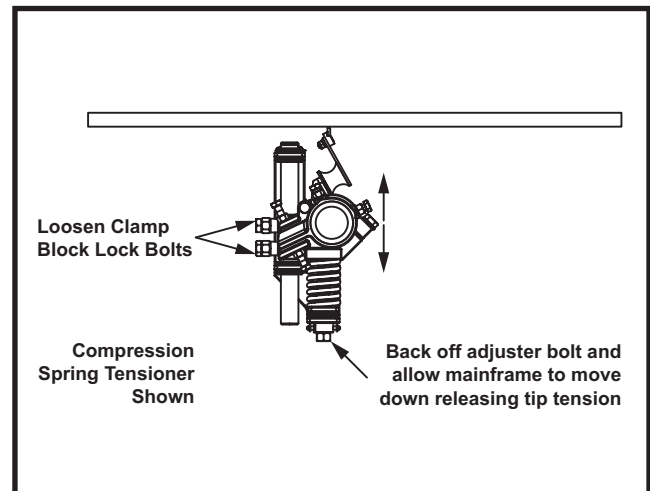
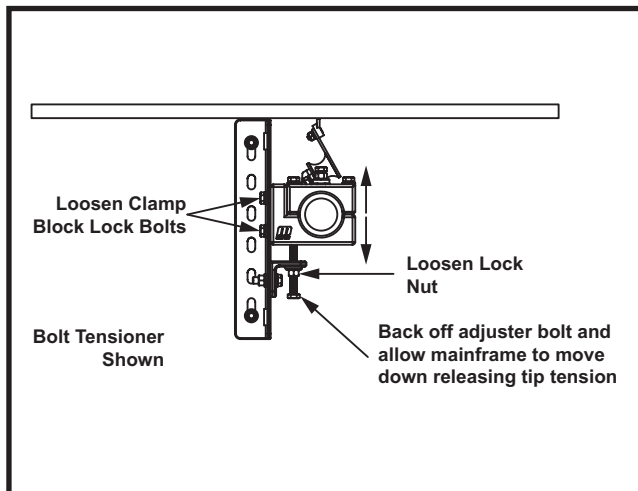


Figure 33. Martin® P2 Secondary Belt Cleaner HD Tensioner Servicing

- e. Remove the clamp block bolts and caps on each side. (Refer to Figure 34.)

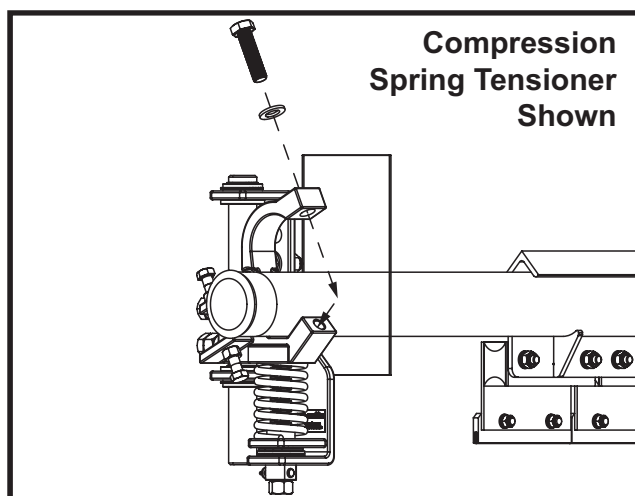
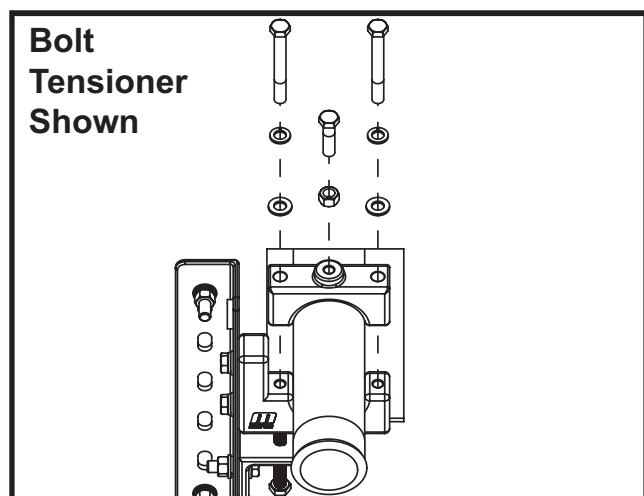
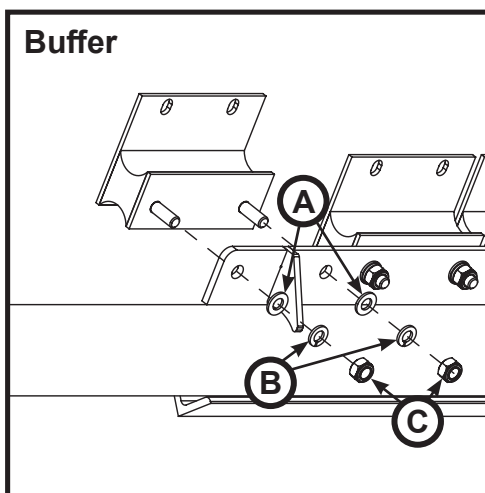
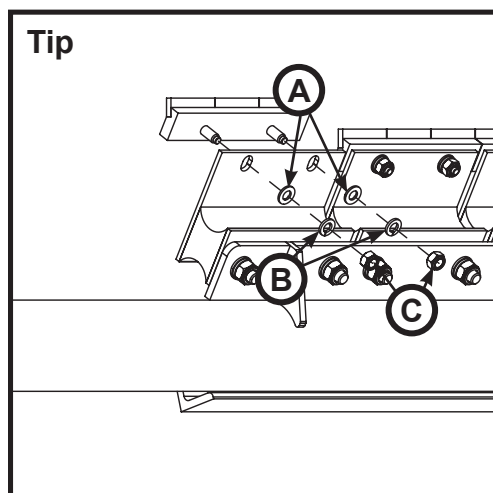


Figure 34. Martin® P2 Secondary Belt Cleaner HD Clamp Block Servicing

- f. Remove the cleaner and place in secure location to allow servicing of tips and buffers.
- g. Remove the nuts, flat washers and lock washers from the tips / buffers and remove worn items. (Refer to Figure 35.)



A = Flat Washer

B = Spring Washer

C = Nut

Ensure cleaner tips are torqued to a value of 40 N-m (30 ft-lbs) when tightening.

Figure 35. Martin® P2 Secondary Belt Cleaner HD Buffer & Tip Installation

- h. Fit new tips / buffers and install flat washers, lock washers, and nuts finger tight. Grind the outside corners of the last tip on each side of the cleaner into a 3 mm (0.12 in.) radius. (Refer to Figure 35 & 36.)

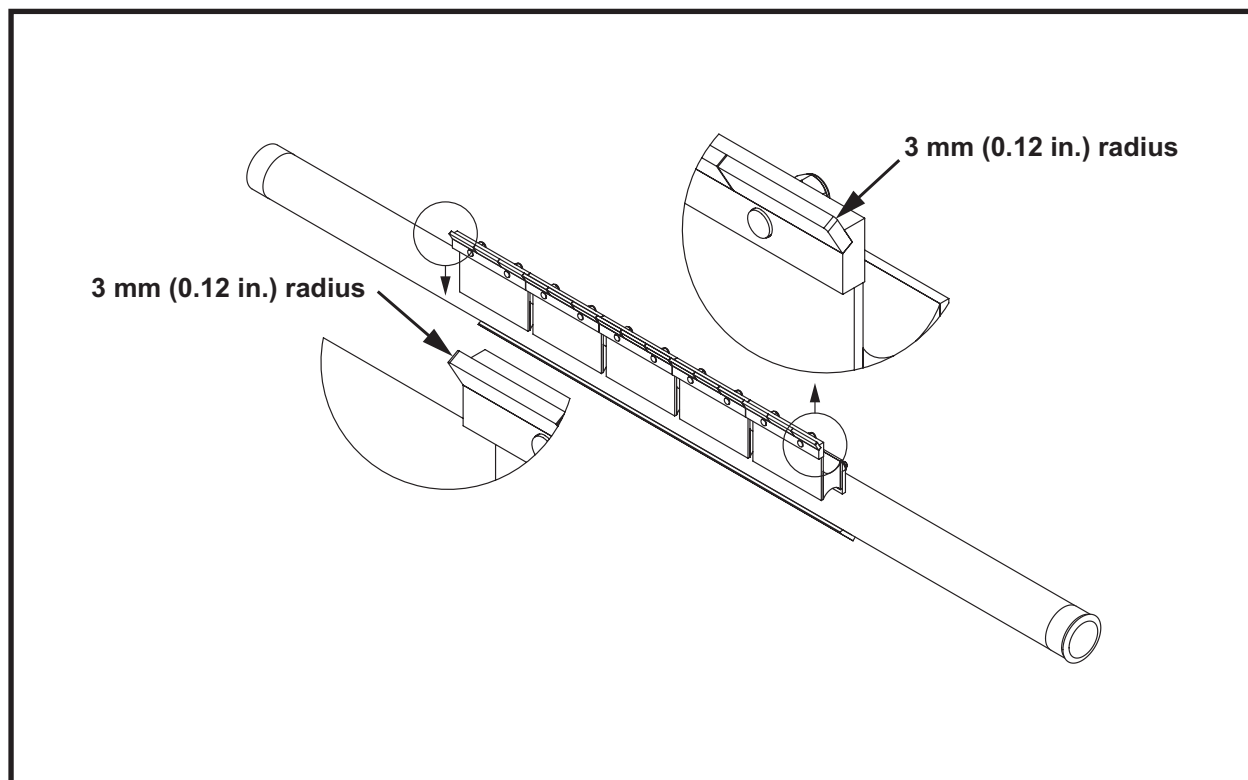


Figure 36. Martin® P2 Secondary Belt Cleaner HD Tip Grinding Locations

6. When replacing tips and buffers, ensure both correct flat and spring washers are utilized with the correct nuts to prevent possibility of tips coming loose. (Refer to Figure 35.)

Tip alignment

7. Position tips so there is no more than a 1 mm (0.7 in.) gap between them. Position a straight edge along the top surface of new blade tips. Working left to right, pull upward on each blade to align with the bottom of the straightedge and tighten the nuts. (Refer to Figure 37.)

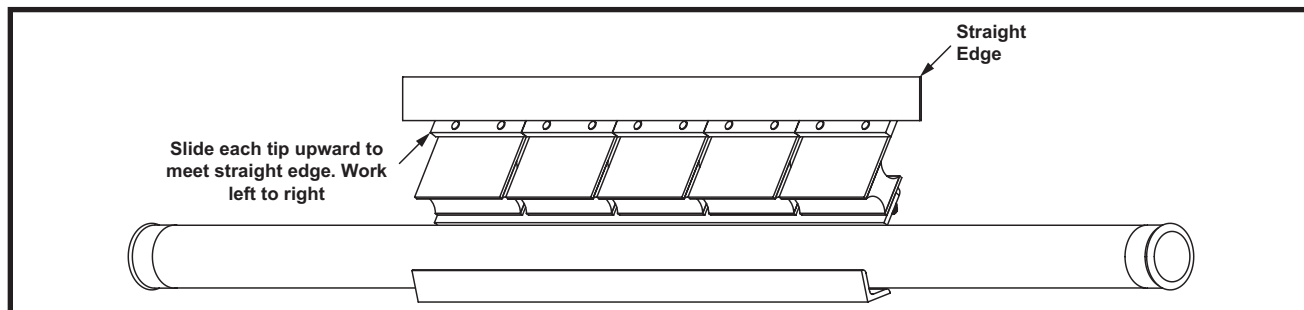


Figure 37. Martin® P2 Secondary Belt Cleaner HD Tip Alignment

Re-installing mainframe

8. Install the mainframe back into position on the tensioners. Re-install clamp block caps and bolts (Refer to Figure 38.)

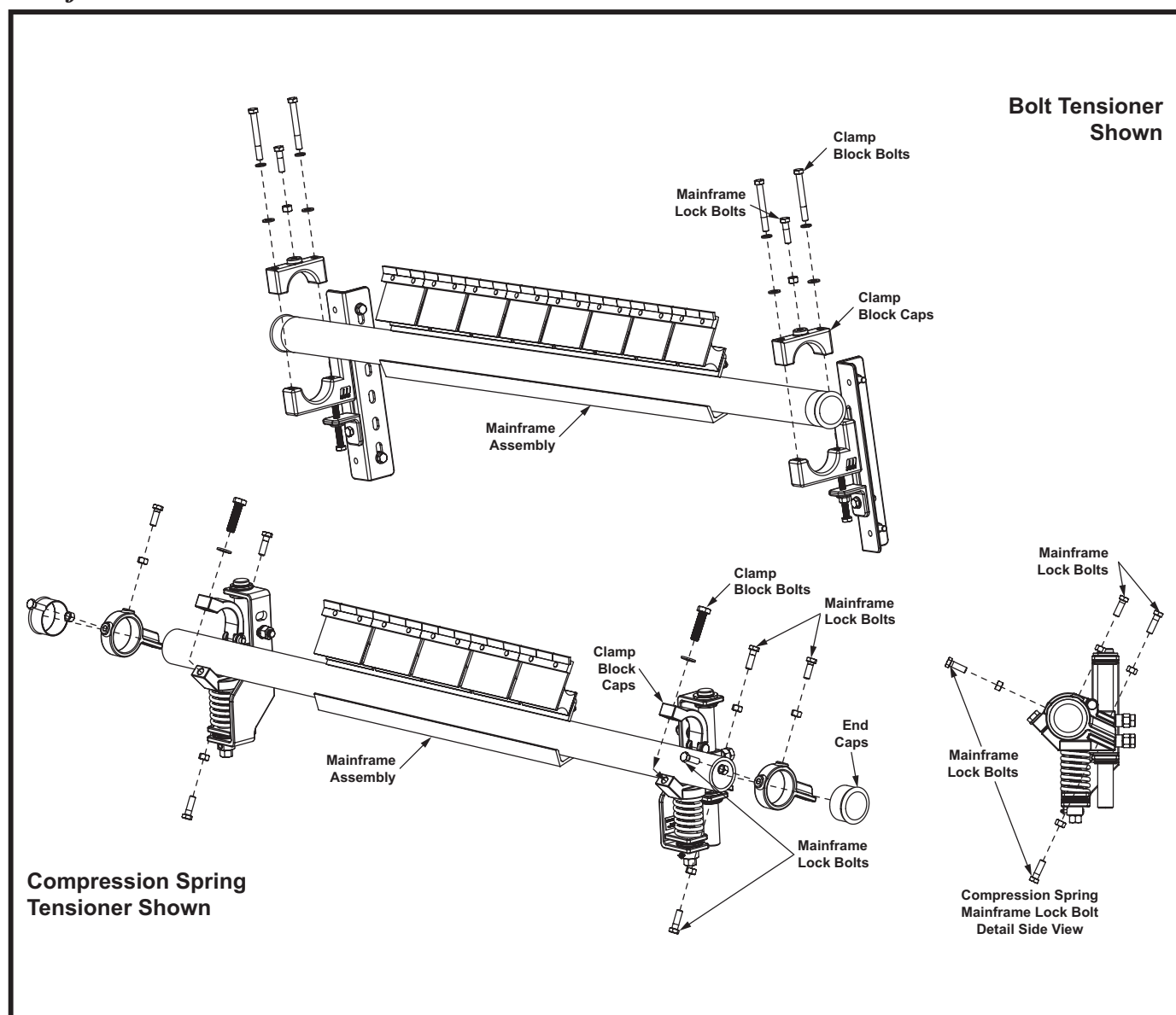


Figure 38. Martin® P2 Secondary Belt Cleaner HD Reinstalling Mainframe

Set the tip tension

9. While all clamp block mounting bolts are slightly loosened, raise mainframe by rotating up the adjuster bolts on both sides until light contact is made between the tips and belt across the entire width of the cleaner.
(Refer to Figure 39 & 40.) Give an additional 1 1/2 turns to both adjuster bolts and tighten the lock nuts. Tighten all clamp block lock bolts and mainframe lock blocks. Recheck that all fasteners are tightened properly.

NOTE

If the belt is cupped, do not over tension the blades to contact the belt. Pressure or stabilizing rollers should be installed to flatten the belt. (Refer to Figure 41.)

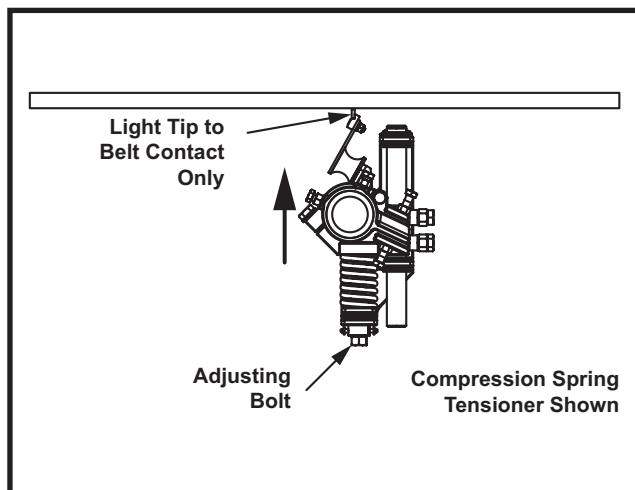
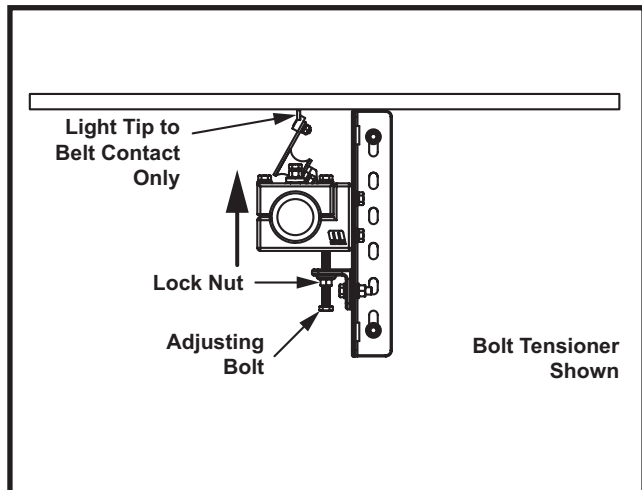


Figure 39. Martin® P2 Secondary Belt Cleaner HD Light Belt Contact

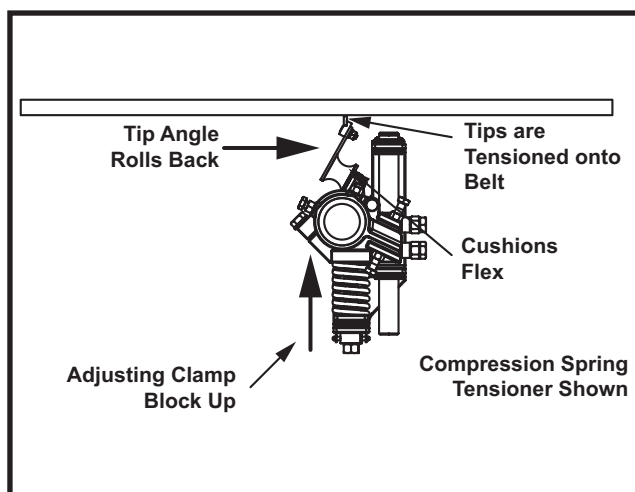
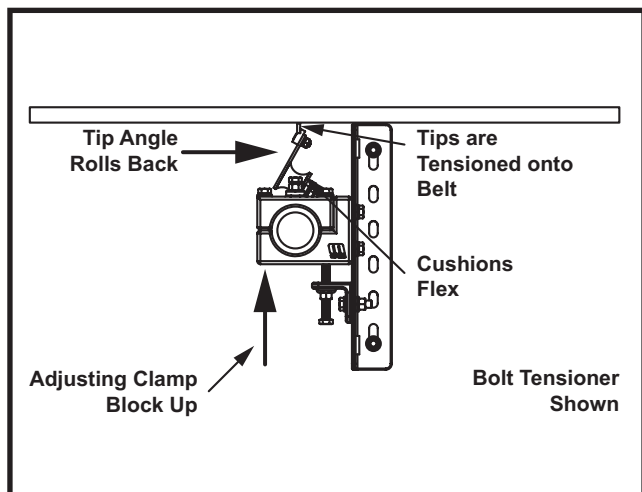


Figure 40. Martin® P2 Secondary Belt Cleaner HD Tip Angle Roll Back

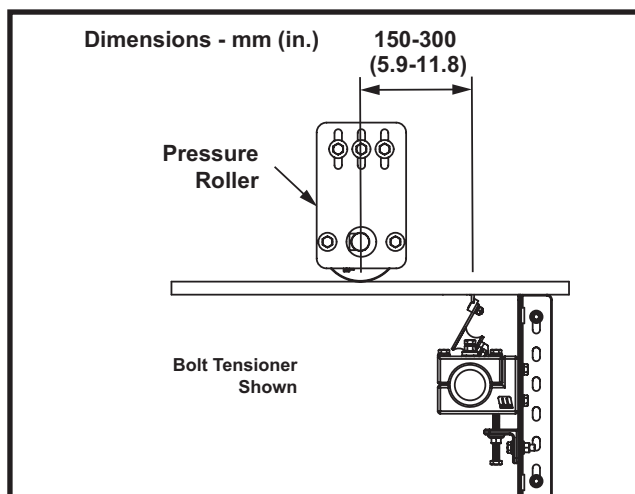


Figure 41. Martin® P2 Secondary Belt Cleaner HD Pressure Roller Belt Flattening

Checking tip tension

10. Pull back on the outside tip until the tip to belt contact is broken and release. If the cleaner is correctly tensioned the complete blade of the adjacent tip will be visible. If not, add (or reduce) tension by making 1/2 turn adjustments on the adjuster bolt until the adjacent tip is visible. (Refer to Figure 42.)

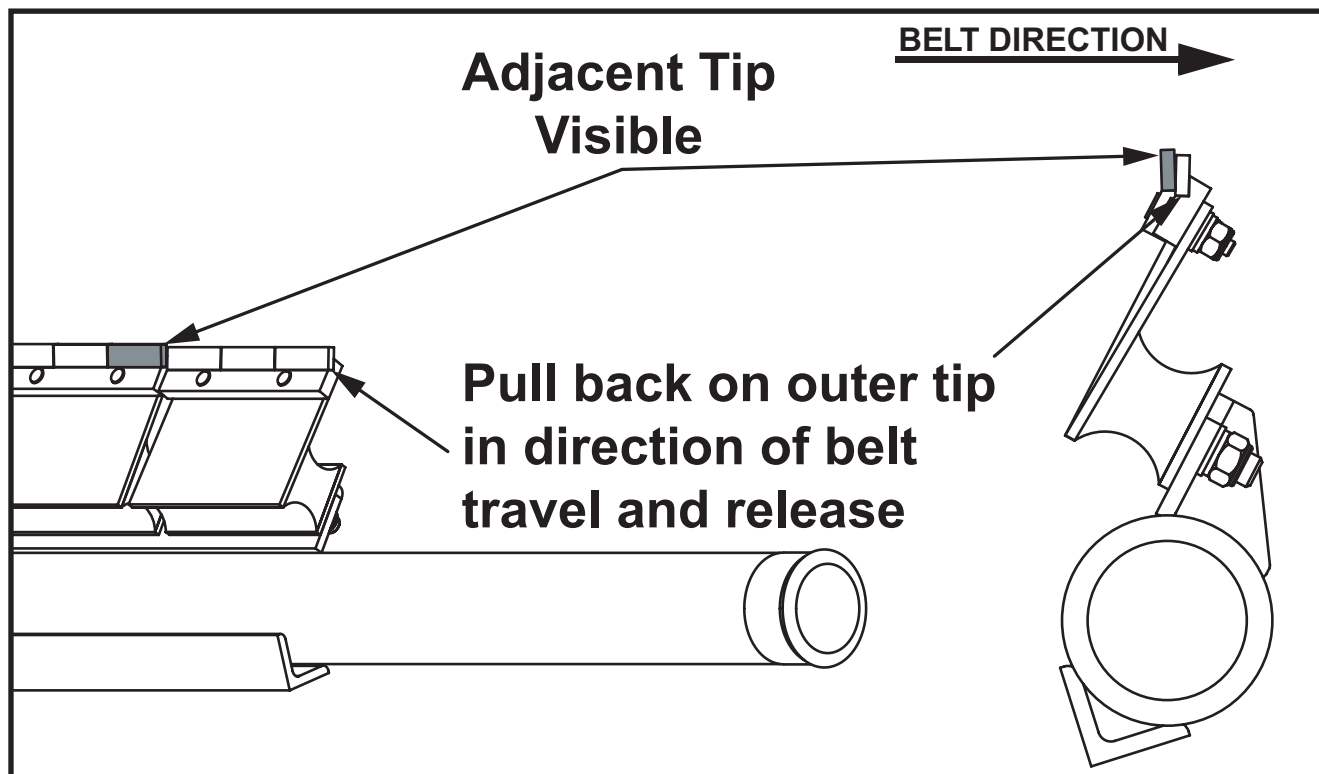


Figure 42. Martin® P2 Secondary Belt Cleaner HD Checking Tip Tension

11. Recheck that all fasteners are tightened properly.
12. Check the product contact area on the belt.

⚠ WARNING

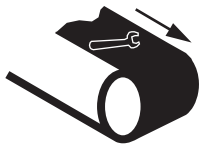
Failure to remove tools and material from maintenance area and conveyor belt before turning on energy source can cause serious injury to personnel and damage to belt.

13. 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.

14. Start conveyor belt. Observe belt cleaner operation for several revolutions of the belt. Service or adjust belt cleaner as necessary to ensure proper belt cleaner operation.



Troubleshooting



⚠ DANGER

Before installing, servicing, or adjusting the belt cleaner or tensioner, turn off and lockout / tagout / blockout / testout all energy sources to the conveyor and conveyor accessories according to ANSI standards. Failure to do so could result in serious injury or death.

Symptom	Possible Cause	Possible Solution
Vibration	Cleaner clamp or mounting bolts not set	Ensure all locking nuts are tight
	Cleaner not set up correctly	Ensure cleaner set up properly (check tip attack angle with gauge)
	Belt tension too high	Ensure cleaner can conform to belt, or consider an alternate secondary cleaner
	Belt Flap	Install Pressure or Stabilising Roller Kit
	Cleaner over tensioned	Ensure cleaner is correctly tensioned
	Cleaner under-tensioned	Ensure cleaner is correctly tensioned
Material build up on cleaner	Cleaner not set up correctly	Ensure cleaner set up properly (check tip angle with gauge)
	Build up in chute	Ensure cleaner is not located too close to back of chute, allowing build up
	Cleaner being overburdened	Install primary or additional secondary cleaner
	Excessive sticky material	Frequently clean unit of build-up. Introduce Spray Bar and Water Control Manifold
Damaged belt cover	Cleaner over-tensioned	Check cleaner is correctly tensioned
	Cleaner blade damaged	Check blades / tips for wear, damage and chips, replace where necessary
	Attack angle not correct	Ensure cleaner set up properly (check tip attack angle with gauge)
	Material build up in chute	Frequently clean unit of build up
Cleaner not conforming to belt	Cleaner not set up correctly	Ensure cleaner set up properly (check tip attack angle with gauge)
	Belt tension too high	Ensure cleaner can conform to belt, or replace with alternate secondary cleaner
	Belt flap	Install Pressure or Stabilising Roller Kit
	Cleaner cannot conform	Ensure cleaner can conform to belt, utilise high speed buffers, or replace with alternate secondary cleaner
	Wear profile in belt cover	Adjust tips to suit belt profile
Material passing cleaner	Cleaner not set up correctly	Ensure cleaner set up properly (check tip attack angle with gauge)
	Cleaner tension too low	Ensure cleaner is correctly tensioned
	Cleaner blades / tips worn or damaged	Check blades / tips for wear, damage and chips, replace where necessary
	Cleaner being overburdened	Install primary or additional secondary cleaner
	Belt Flap	Install Pressure or Stabilising Roller Kit
	Belt worn or grooved	Install Spray Bar and Water Control Manifold
	Cleaner cannot conform	Ensure cleaner can conform to belt, or replace with alternate secondary cleaner
	Wear profile in belt cover	Adjust tips to suit belt profile
Damage to mechanical fastener	Incorrect cleaner blade selection	Change tip type to accommodate fastener style
	Belt not skived correctly	Spot and redo fastener correctly, lowering the profile flush or below belt surface
	Tip attack angle incorrect	Reset with gauge
Missing material in belt center only	Capped Belt	Install Pressure or Stabilising Roller Kit and reset blade attack angle with gauge
	Cleaner tips worn/damaged	Check tips for wear, damage and chips, replace where necessary
Missing material on outer edges only	Capped Belt	Install Pressure or Stabilising Roller Kit and reset blade attack angle with gauge
	Cleaner tips worn/damaged	Check tips for wear, damage and chips, replace where necessary

NOTE

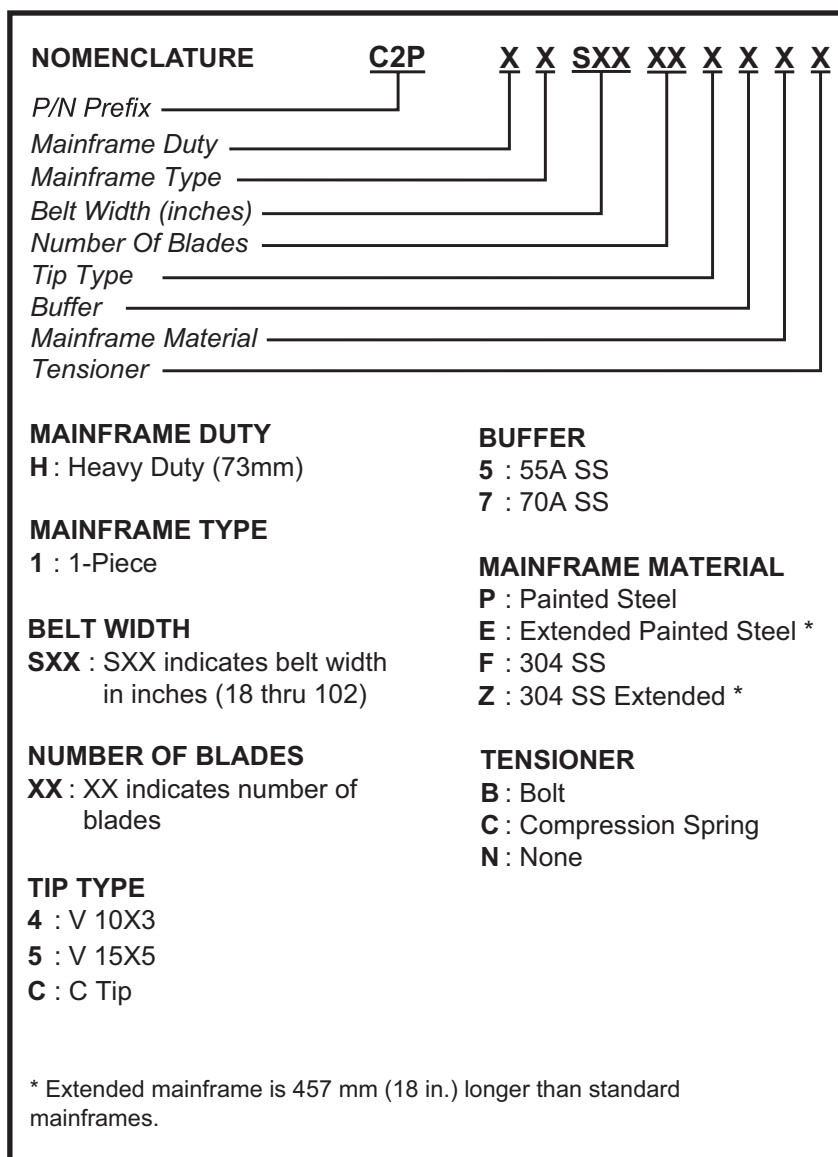
Conveyor equipment such as conveyor belt cleaners are subject to a wide variety of bulk materials characteristics and often have to perform under extreme operating or environmental conditions. It is not possible to predict all circumstances that may require troubleshooting. Contact Martin Engineering 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.

Part Numbers

This section provides product names and corresponding part numbers for Martin® P2 Secondary Belt Cleaner HD and related equipment. Please reference part numbers when ordering parts:

Martin® P2 Secondary Belt Cleaner HD

Martin® P2 Secondary Belt Cleaner HD:
P/N C2PH1SXXXXXXXXXX. See Figure 43.



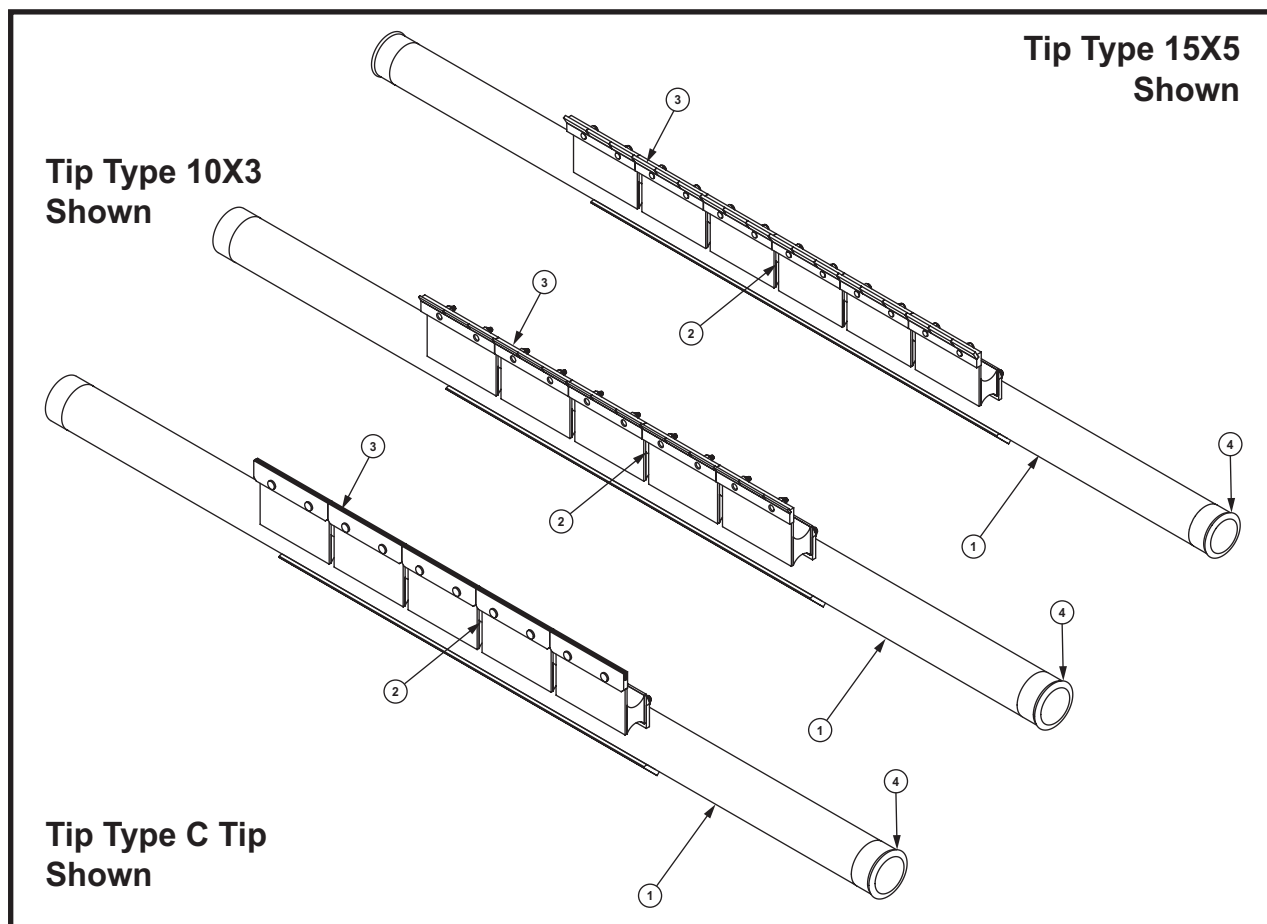


Figure 43. Martin® P2 Secondary Belt Cleaner HD, P/N C2PH1SXXXXXXX

Item	Description	Part No.	Qty
1	Mainframe Assembly	Table I-A or 1-B	1
2	Buffer Assembly	Table II	Table I
3	Tip Assembly	Table III	Table I
4	Vinyl Cap W/Flange 2 3/4 ID X .070 Wall X 1 1/2 Deep	SUS10142	2
(NS) 5	Label Martin Product	38048	2
(NS) 6	Label Conveyor Product Warning	23395	2
(NS) 7	Tensioner Assembly	Table IV	1
(NS) 8	Operator's Manual	M4228	1

NS = Not Shown

**Table I-A. Martin® P2 Secondary Belt Cleaner
HD Mainframe Part Numbers and Quantities**

Part Number	P/N Item 1	QTY 2, 3
C2PH1S1802XXXX	C2PH1MS1802X	2
C2PH1S1803XXXX	C2PH1MS1803X	3
C2PH1S2403XXXX	C2PH1MS2403X	3
C2PH1S2404XXXX	C2PH1MS2404X	4
C2PH1S3004XXXX	C2PH1MS3004X	4
C2PH1S3005XXXX	C2PH1MS3005X	5
C2PH1S3605XXXX	C2PH1MS3605X	5
C2PH1S3606XXXX	C2PH1MS3606X	6
C2PH1S4206XXXX	C2PH1MS4206X	6
C2PH1S4207XXXX	C2PH1MS4207X	7
C2PH1S4807XXXX	C2PH1MS4807X	7
C2PH1S4808XXXX	C2PH1MS4808X	8
C2PH1S5408XXXX	C2PH1MS5408X	8
C2PH1S5409XXXX	C2PH1MS5409X	9
C2PH1S6009XXXX	C2PH1MS6009X	9
C2PH1S6010XXXX	C2PH1MS6010X	10
C2PH1S6610XXXX	C2PH1MS6610X	10
C2PH1S6611XXXX	C2PH1MS6611X	11
C2PH1S7211XXXX	C2PH1MS7211X	11
C2PH1S7212XXXX	C2PH1MS7212X	12
C2PH1S7812XXXX	C2PH1MS7812X	12
C2PH1S7813XXXX	C2PH1MS7813X	13
C2PH1S8413XXXX	C2PH1MS8413X	13
C2PH1S8414XXXX	C2PH1MS8414X	14
C2PH1S9014XXXX	C2PH1MS9014X	14
C2PH1S9015XXXX	C2PH1MS9015X	15
C2PH1S9615XXXX	C2PH1MS9615X	15
C2PH1S9616XXXX	C2PH1MS9616X	16
C2PH1SA216XXXX	C2PH1MSA216X	16
C2PH1SA217XXXX	C2PH1MSA217X	17

**Table I-B. Martin® P2 Secondary Belt Cleaner
HD Extended Mainframe Part Numbers***

Part Number	P/N Item 1
C2PH1S1802XXEX	C2PH1MS1802X
C2PH1S1803XXEX	C2PH1MS1803X
C2PH1S2403XXEX	C2PH1MS2403X
C2PH1S2404XXEX	C2PH1MS2404X
C2PH1S3004XXEX	C2PH1MS3004X
C2PH1S3005XXEX	C2PH1MS3005X
C2PH1S3605XXEX	C2PH1MS3605X
C2PH1S3606XXEX	C2PH1MS3606X
C2PH1S4206XXEX	C2PH1MS4206X
C2PH1S4207XXEX	C2PH1MS4207X
C2PH1S4807XXEX	C2PH1MS4807X
C2PH1S4808XXEX	C2PH1MS4808X
C2PH1S5408XXEX	C2PH1MS5408X
C2PH1S5409XXEX	C2PH1MS5409X
C2PH1S6009XXEX	C2PH1MS6009X
C2PH1S6010XXEX	C2PH1MS6010X
C2PH1S6610XXEX	C2PH1MS6610X
C2PH1S6611XXEX	C2PH1MS6611X
C2PH1S7211XXEX	C2PH1MS7211X
C2PH1S7212XXEX	C2PH1MS7212X
C2PH1S7812XXEX	C2PH1MS7812X
C2PH1S7813XXEX	C2PH1MS7813X
C2PH1S8413XXEX	C2PH1MS8413X
C2PH1S8414XXEX	C2PH1MS8414X
C2PH1S9014XXEX	C2PH1MS9014X
C2PH1S9015XXEX	C2PH1MS9015X
C2PH1S9615XXEX	C2PH1MS9615X
C2PH1S9616XXEX	C2PH1MS9616X
C2PH1SA216XXEX	C2PH1MSA216X
C2PH1SA217XXEX	C2PH1MSA217X

*Use P/N C2PH1SXXXXXXXXZX for 304 SS Extended

Table II. Martin® P2 Secondary Belt Cleaner HD Buffer Part Number

Part Number	P/N Item 2
C2PH1SXXXXXX5XX	B14-C10-001
C2PH1SXXXXXX7XX	B14-C10-002

Table III. Martin® P2 Secondary Belt Cleaner HD Tip Part Numbers

Part Number	P/N Item 3
C2PH1SXXXX4XXX	B14-C10-003
C2PH1SXXXX5XXX	B14-C10-004
C2PH1SXXXXCXXX	C2PTC1T-1
C2PH1SXXXXFXXX	C2PTC1F-1

Table IV. Martin® P2 Secondary Belt Cleaner HD Tensioner Part Numbers

Part Number	P/N Item 7
C2PH1SXXXXXXXXB	B17-A10-003
C2PH1SXXXXXXXXS	B34-10-005

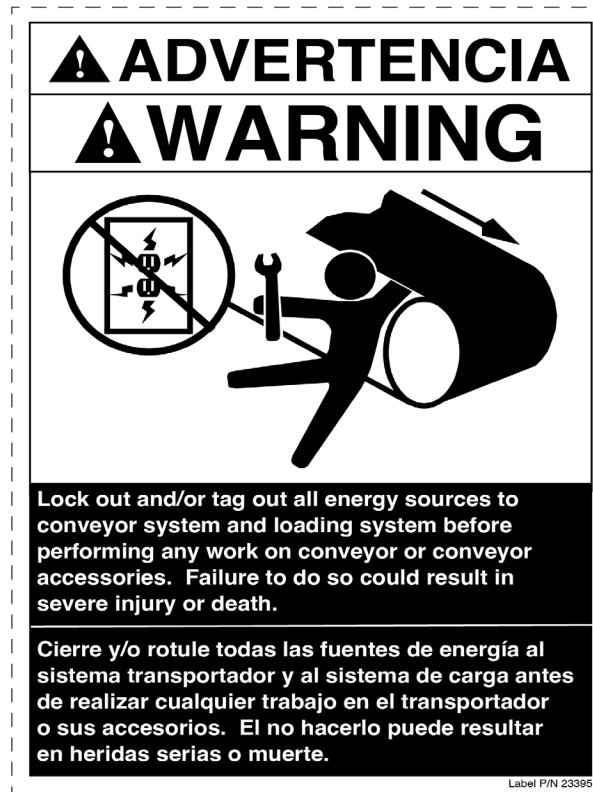
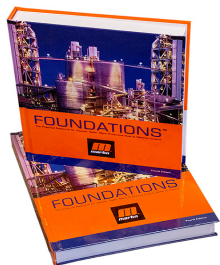


Figure 44. Conveyor Products Warning Label, P/N 23395

Any product, process, or technology described here may be the subject of intellectual property rights reserved by Martin Engineering Company. Trademarks or service marks designated with the ® symbol are registered with the U.S. Patent and Trademark Office and may be proprietary in one or more countries or regions. Other trademarks and service marks belonging to Martin Engineering Company in the United States and/or other countries or regions may be designated with the “TM” and “SM” symbols. Brands, trademarks, and names of other parties, who may or may not be affiliated with, connected to, or endorsed by Martin Engineering Company, are identified wherever possible.

Additional information regarding Martin Engineering Company’s intellectual property can be obtained at www.martin-eng.com/trademarks.

Problem Solved™ **GUARANTEED!**



For nearly 30 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 AUS
102 Christensen Road South
Stapylton, QLD 4210 AUS
1300 627 364
www.martin-eng.com.au

