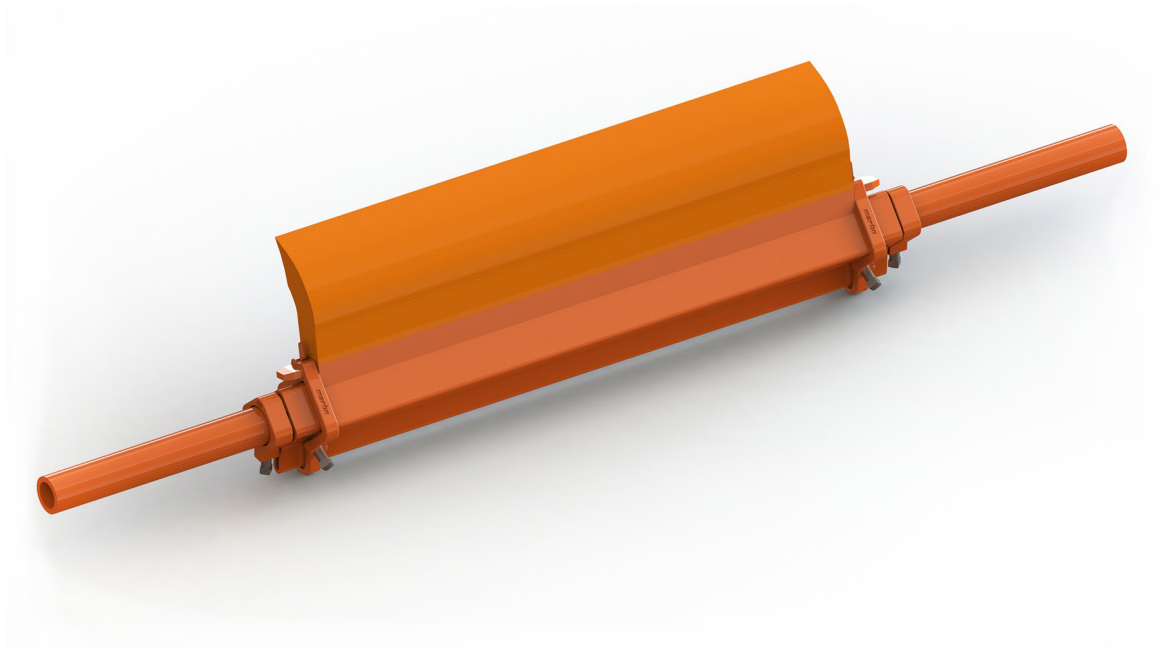




# ***Martin® HD QB1™ Cleaner***

[Go to Martin® HD QB1™ Cleaner web page](#)



***Operator's Manual  
M4101***

## 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.

# Table of Contents

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Section	Page
List of Figures . . . . .	ii
List of Tables . . . . .	ii
Introduction . . . . .	1
General . . . . .	1
Installations without chutework . . . . .	1
Belt cleaner inspection access . . . . .	1
Belt cleaner blades . . . . .	1
References . . . . .	1
Materials required . . . . .	1
Urethane shelf life . . . . .	2
Safety . . . . .	3
Before Installing Belt Cleaner . . . . .	4
Installing Belt Cleaner and Tensioner . . . . .	7
Locating belt cleaner mainframe . . . . .	7
Removing blade . . . . .	8
Installing torque tubes . . . . .	8
Installing tensioner . . . . .	9
Checking mainframe location . . . . .	9
Installing blade . . . . .	9
After Installing Belt Cleaner . . . . .	10
Weekly Maintenance . . . . .	11
Troubleshooting . . . . .	12
Part Numbers . . . . .	13
Appendix A. Martin <sup>®</sup> HD QB1 <sup>™</sup> Cleaner Assembly with Martin <sup>®</sup> Twist Tensioner Assembly . . . . .	A-1

## **List of Figures**

<b>Figure</b>	<b>Title</b>	<b>Page</b>
1	Belt Cleaner Mounting Locations . . . . .	5
2	Chute Width Requirements . . . . .	6
3	Belt Cleaner Mainframe Location & Chute Wall Cutouts. . . . .	7
4	Removing and Installing Blade . . . . .	8
5	Torque Tube Installation . . . . .	8
6	Mainframe Locating Tabs . . . . .	9
7	Centering Cleaner on Belt . . . . .	9
8	Martin <sup>®</sup> HD QB1 <sup>™</sup> Cleaner Assembly, P/N C1QHASXXSXXXXRX. . . . .	14
9	Martin <sup>®</sup> Conveyor Products Warning Label, P/N 23395. . . . .	16

## **List of Tables**

<b>Table</b>	<b>Title</b>	<b>Page</b>
I	Martin <sup>®</sup> HD QB1 <sup>™</sup> Cleaner Blade Colors, Materials and Specifications. . . . .	2
II	Urethane Shelf Life . . . . .	2
III	Part Numbers and Dimensions for Martin <sup>®</sup> HD QB1 <sup>™</sup> Cleaner Assembly . . . . .	15

# Introduction

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## ***General***

The Martin® HD QB1™ Cleaner combines effective removal of carryback with a long-lasting, one-piece blade. To introduce product back into the product flow, the Martin® HD QB1™ Cleaner is installed on the face of the head pulley. On a dual-cleaner system, a 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, Secondary Cleaners can be installed alone. Multiple Pre-Cleaners and/or Secondary Cleaners may be required to clean the belt. 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, at least one Martin® Inspection Door should be installed. Martin® Inspection Doors are available from Martin Engineering or a representative.

## ***Belt cleaner blades***

Martin® HD QB1™ Cleaner Blades are available in five different materials (see Table I for specifications). Only standard (orange) Martin® HD QB1™ Cleaner Blades are made of materials that meet Mine Safety and Health Administration (MSHA) requirements under “Interim Fire and Toxicity Criteria for Products Taken Into Underground Mines,” March 22, 1977 (MSHA acceptance number MSHA-IC-95/1, MSHA-IC-95/7).

## ***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
- *Martin® Twist Tensioner Operator Manual*, P/N M3837
- *Martin® Spring and Air Tensioners Operator Manual*, P/N M3263

## ***Materials required***

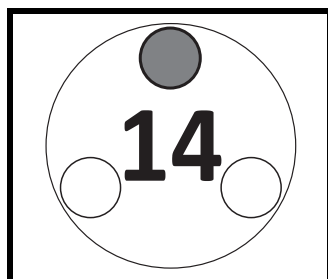
Installation of this equipment requires the use of standard hand tools, grinder, welder, and cutting torch.

Table I. Martin® HD QB1™ Cleaner Blade Colors, Materials and Specifications

URETHANE SELECTION	APPLICATION DESCRIPTION	TYPICAL MATERIALS	CONTINUOUS TEMPERATURE
Orange	<b>Standard Martin® Urethane</b> 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)	<b>Chemical-Resistant Urethane</b> Improves resistance to chemicals; reduced absorption of water in high-moisture environments.	Limestone	-40° to 160°F (-40° to 71°C)
Green (GR)	<b>High-Temperature Urethane</b> For exposure to intermittent temperatures up to 350°F (177°C).	Clinker	-40° to 300°F (-40° to 149°C)
Clear (CL)	<b>Low-Rigidity Urethane</b> For dry products such as sand and gravel.	Gravel, Dry Sand	-20° to 160°F (-29° to 71°C)
Navy Blue (NB)	<b>Low-Adhesion Urethane</b> 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

## 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. Failure to do so could result in serious injury or death.



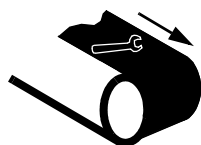
### **⚠ DANGER**

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 confined space procedures.



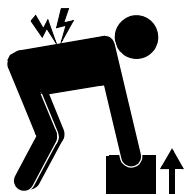
### **⚠ WARNING**

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

## Before Installing Belt Cleaner

### IMPORTANT

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

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



### ⚠ 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. 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 (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 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.

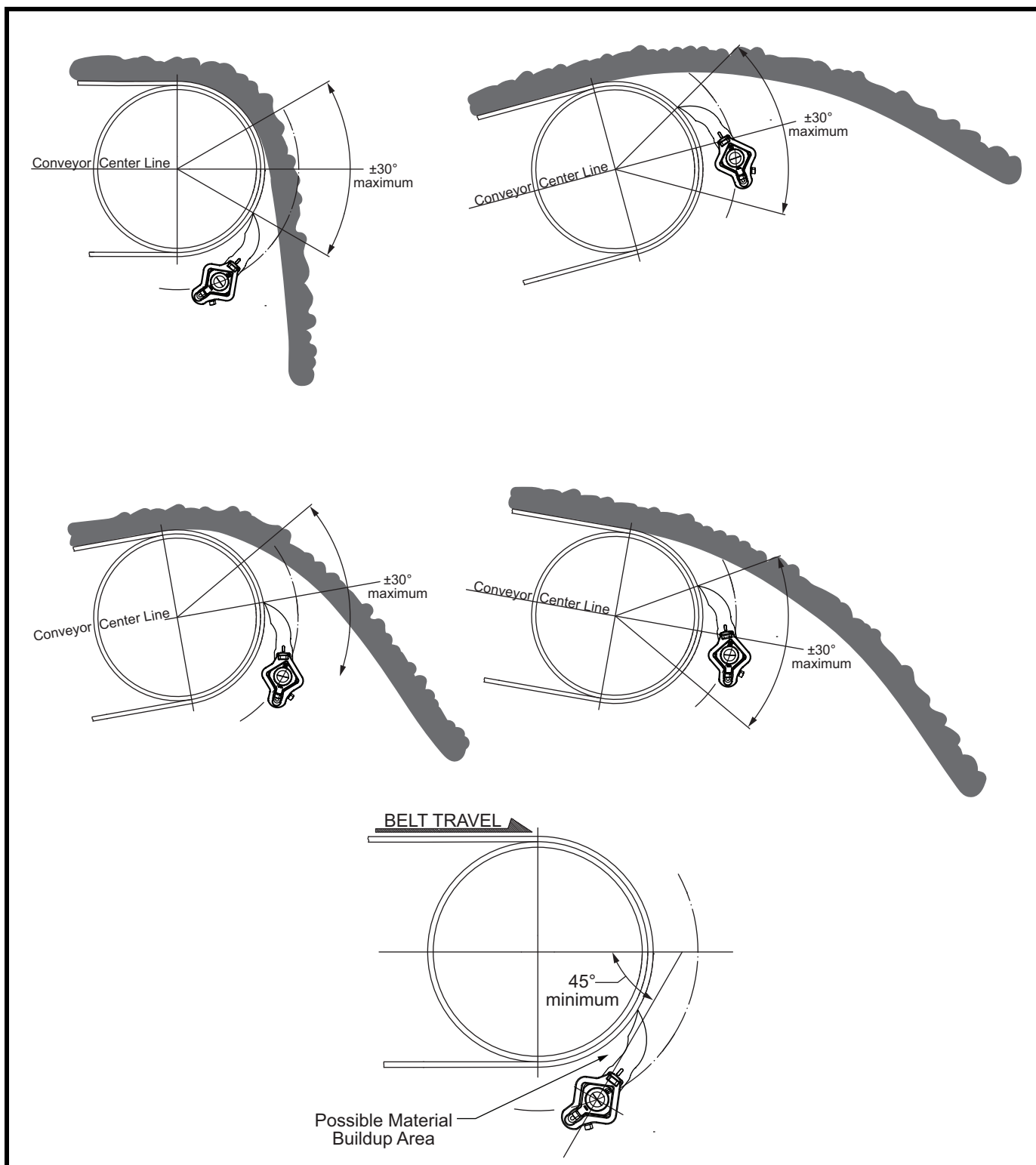
### IMPORTANT

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.

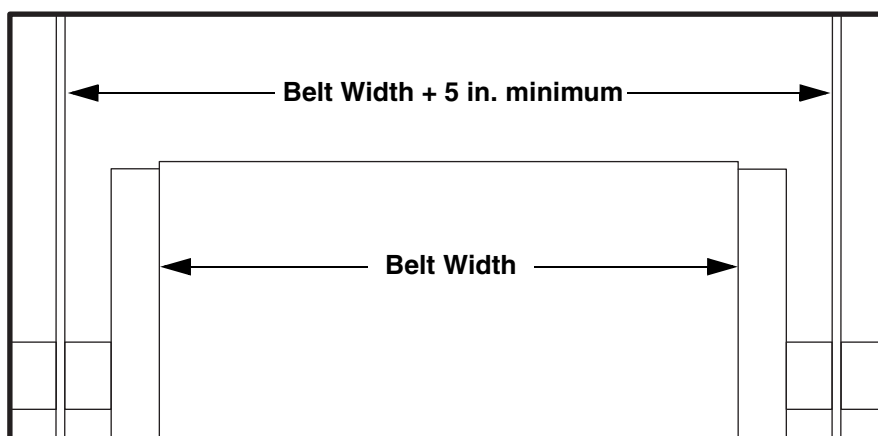
### NOTE

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.")





**Figure 1. Belt Cleaner Mounting Locations**



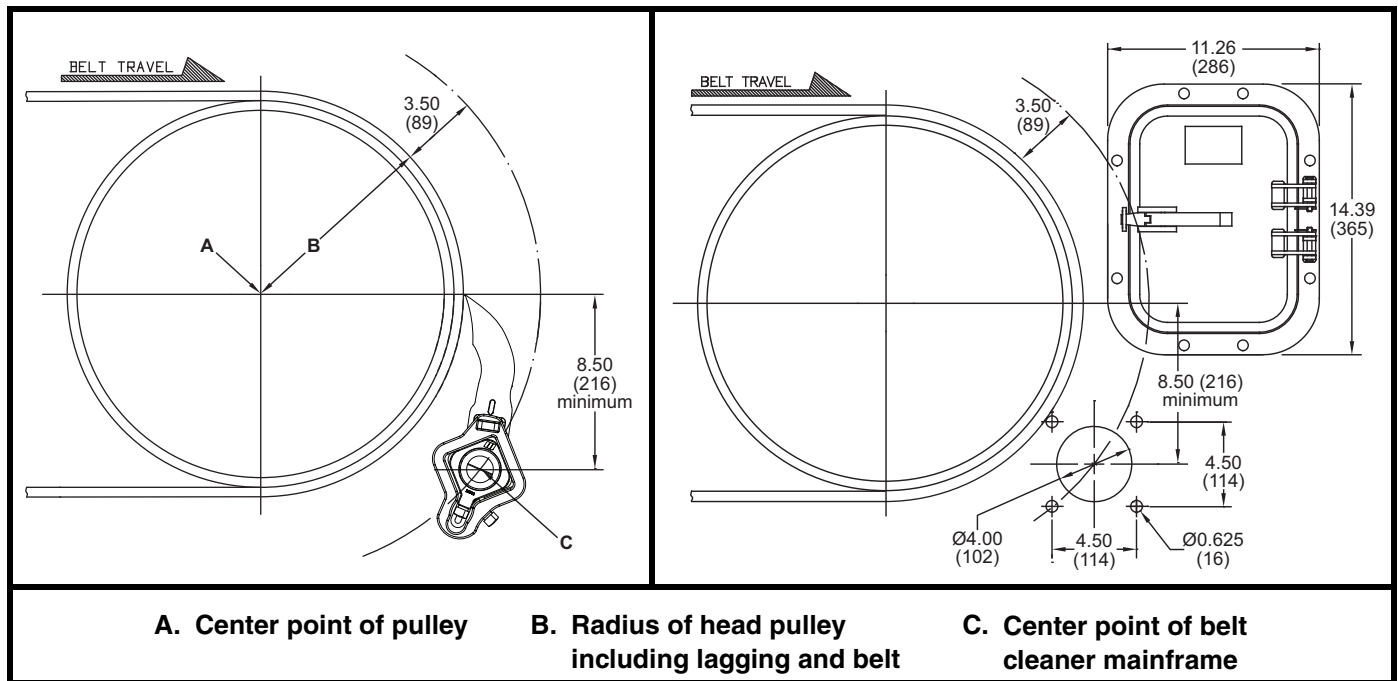
**Figure 2. Chute Width Requirements**

## IMPORTANT

**Inside chute width must be a minimum of belt width plus 5 inches to insure there is adequate space to install cleaner and tensioner. If chute width is too narrow either the tensioner will need to be spaced off of the chute wall or the mainframe can be cut down. The mainframe can only be cut down if the blade is belt width minus 6 or 8 inches.**

6. Inspect belt cleaner mounting area for possible obstructions that could interfere with proper mounting. Refer to following guidelines:
  - a. The cleaner can be mounted anywhere on the arc from +30 degrees to -30 degrees from a center line parallel to the belt line as long as:
    - (1) The blade is not in the direct flow of discharging material causing premature blade wear.
    - (2) The diameter of the pulley is big enough that the blade does not trap or hold material between the inside of the blade and the belt.
    - (3) There is at least the equivalent of a 45 degree angle between the blade and belt to prevent material buildup in this space.
  - b. Lack of service is the main cause of poor belt cleaning performance. Follow CEMA guidelines for access:
    - (1) Clearance for service outside the chute must be at least equal to the belt width.
    - (2) Cleaners must have service platforms. CEMA recommends cleaners be mounted at least 24 in. (600 mm) above the work platform.
    - (3) If the belt width is 54 in. (1400 mm) or larger consider access doors on both sides of the chute.
  - c. Refer to “Installing Belt Cleaner and Tensioner” and “Part Numbers” sections of this manual for specific mounting and cleaner dimensions.

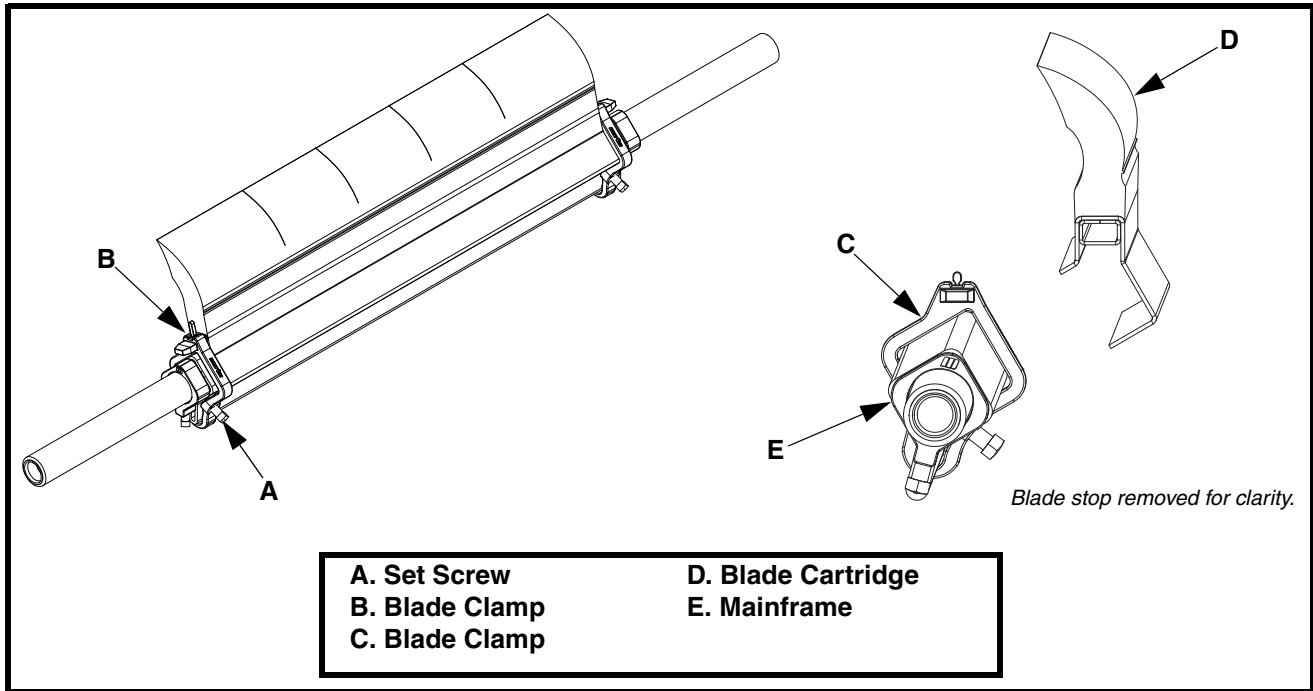
# Installing Belt Cleaner and Tensioner



**Figure 3. Belt Cleaner Mainframe Location & Chute Wall Cutouts**

## *Locating belt cleaner mainframe*

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 3.50 in. (89 mm).
3. Starting from center point (A), measure the total distance calculated in step 2 ( $B + 3.50$ ) and draw an arc on chute wall.
4. Measure down from pulley's horizontal centerline the distance shown in Figure 3 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. Make sure mainframe and blade do not lie in path of material unloading from conveyor belt.
6. Repeat steps 1 through 5 for far side chute wall.
7. Drill or cut holes for tensioner mounting plates on chute walls as follows:
  - a. If bolting tensioner mounting plates to chute walls, do the following:
    - (1) Drill or cut one 4-in. hole for mainframe and four 5/8-in. holes for screws in both operator side and far side chute walls. Remove burrs and sharp edges.
  - b. If welding tensioner mounting plates to chute walls, do the following:
    - (1) Drill or cut one 4-in. hole for mainframe in both operator side and far side chute walls. Remove burrs and sharp edges.
8. If using Martin® Inspection Door, cut access door opening and mounting holes according to *Martin® Inspection Door Operator's Manual*, P/N M3891.



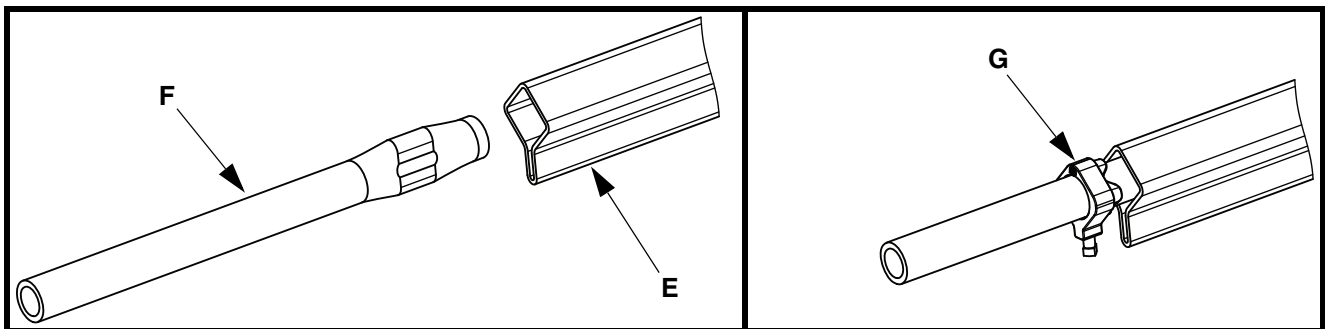
**Figure 4. Removing and Installing Blade**

## *Removing blade*

### **NOTE**

**Blade clamps should remain captive to mainframe assembly during blade removal and installation.**

1. Loosen set screws (A) from operator side of mainframe (E).
2. Disengage blade clamp (B) from blade cartridge (D).
3. Pull blade cartridge away from blade clamp (C) and remove from mainframe.



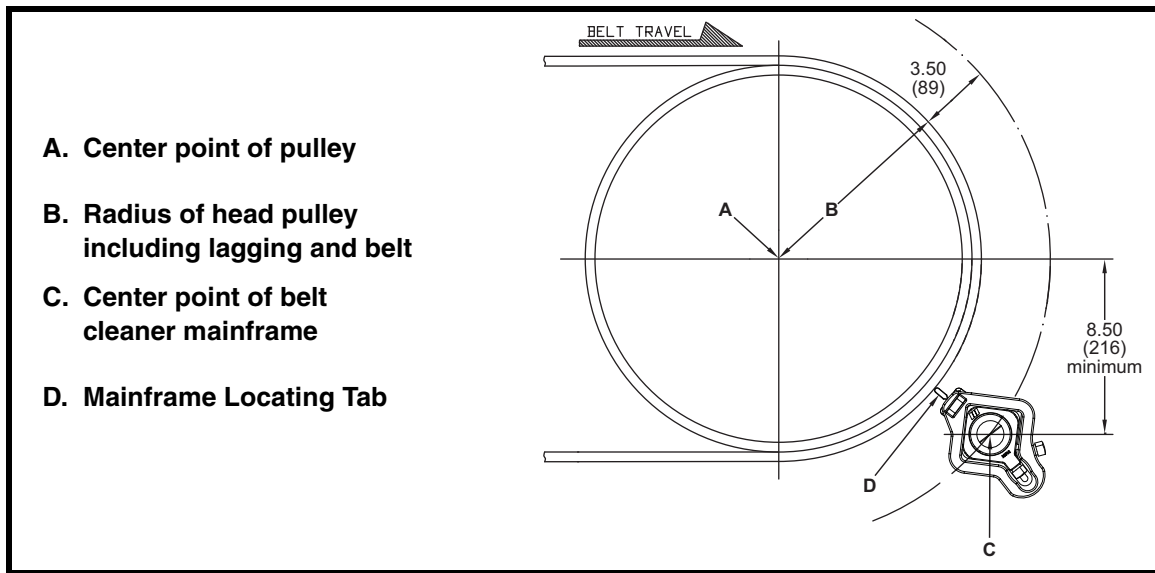
**Figure 5. Torque Tube Installation**

## *Installing torque tubes*

1. Insert torque tube (F) into mainframe (E).
2. Slide torque tube collar (G) onto torque tube.
3. Align collar (G) with mainframe. Tap collar into mainframe with hammer until collar is fully engaged in mainframe.

## Installing tensioner

1. Install tensioner according to applicable tensioner's manual.
2. If using Martin® Inspection Door, install according to *Martin® Inspection Door Operator's Manual*, P/N M3891.



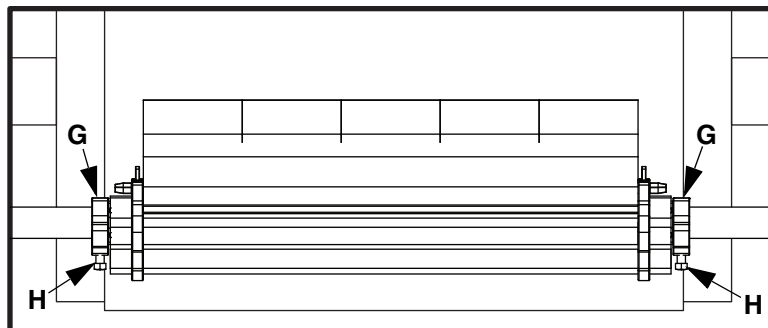
**Figure 6. Mainframe Locating Tabs**

## Checking mainframe location

1. Rotate mainframe and locating tabs (D) to verify mounting location. There should be less than 1/16 in. between tip of locating tab and belt.
2. If necessary, adjust mainframe location.
3. After verifying mainframe location, bend and remove tabs (D) from blade stops.

## Installing blade

1. See Figure 4. Position blade on mainframe with blade curve facing conveyor belt. Push far side end of blade into blade stop (C) until it locks.
2. Push blade cartridge (D) onto mainframe (E) until it is fully seated.
3. Install blade stop (B).
4. Tighten set screws (A) to 20 ft-lbs (27.1 Nm).



**Figure 7. Centering Cleaner on Belt**

5. Make sure blades are centered on belt and mainframe is parallel to belt.
6. Tighten set screws (H) on torque tube collars (G) to 40 ft-lbs (54.2 Nm).
7. Tension belt cleaner according to applicable tensioner's manual.

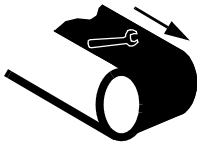
## After Installing Belt Cleaner



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](http://www.cemanet.org).

### **⚠ 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.



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

### **⚠ 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. Failure to do so could result in serious injury or death.



- a. Make sure all fasteners are tight. Tighten if necessary.
- b. Inspect belt cleaner for the following:
  - (1) Wear. (A small amount of “break-in” wear may be found. This will stop once blades wear to conveyor belt contour.)
  - (2) Material buildup. (No material between blades and return side of conveyor belt should be found.)
- c. If wear, material buildup, or some other problem exists, see “Troubleshooting.”

## IMPORTANT

Read entire section before beginning work.

## NOTE

Maintenance inspection should be performed no less than weekly. Some applications may require more frequent maintenance inspections.



## ⚠ DANGER

Before installing, servicing, or adjusting the belt cleaner, 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.

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

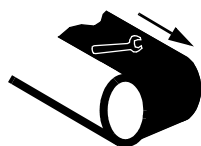
Failure to remove tools from maintenance area and conveyor belt before turning on energy source can cause serious injury to personnel and damage to belt.

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



## **Troubleshooting**

<b>Symptom</b>	<b>Corrective Action</b>
Insufficient cleaning and carryback.	<ul style="list-style-type: none"> <li>• Tension of cleaner on belt is set too low or too high. Increase or decrease tensioner setting.</li> <li>• Blades are worn. Check blades and replace if necessary.</li> </ul>
Blade wears only in the center.	<ul style="list-style-type: none"> <li>• Use a segmented style blade for crown pulleys.</li> <li>• Consider narrowing the blade width to clean the middle of the belt.</li> </ul>
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 a 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:

<b>Installation Checklist</b>
✓ Pre-Cleaner mainframe is proper distance from belt surface on both ends of mainframe and parallel to the pulley shaft.
✓ Pre-Cleaner blade tip 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® HD QB1™ Cleaner and related equipment. Please reference part numbers when ordering parts:

## Martin® HD QB1™ Cleaner

**Martin® HD QB1™ Cleaner Assembly:**  
P/N C1QHASXXSXXXXRX. See Figure 8.

NOMENCLATURE	C1QHA	-	SXX	SXX	X	X	R	X
P/N 5-Digit Prefix								
Belt Width (inches)								
Blade Width (inches)								
Urethane Color								
Solid/Segmented								
Mainframe								
Tensioner								

**BLADE LENGTH**  
000: No Blade  
SA0: 100 Inches  
SA2: 102 Inches  
SA4: 104 Inches  
SA8: 108 Inches

**URETHANE COLOR**  
0: No Blade  
B: Brown  
T: Tan  
G: Green  
N: Navy Blue  
O: Orange

**SOLID/SEGMENTED**  
0: Segmented Blade / No Blade  
1: Solid Blade

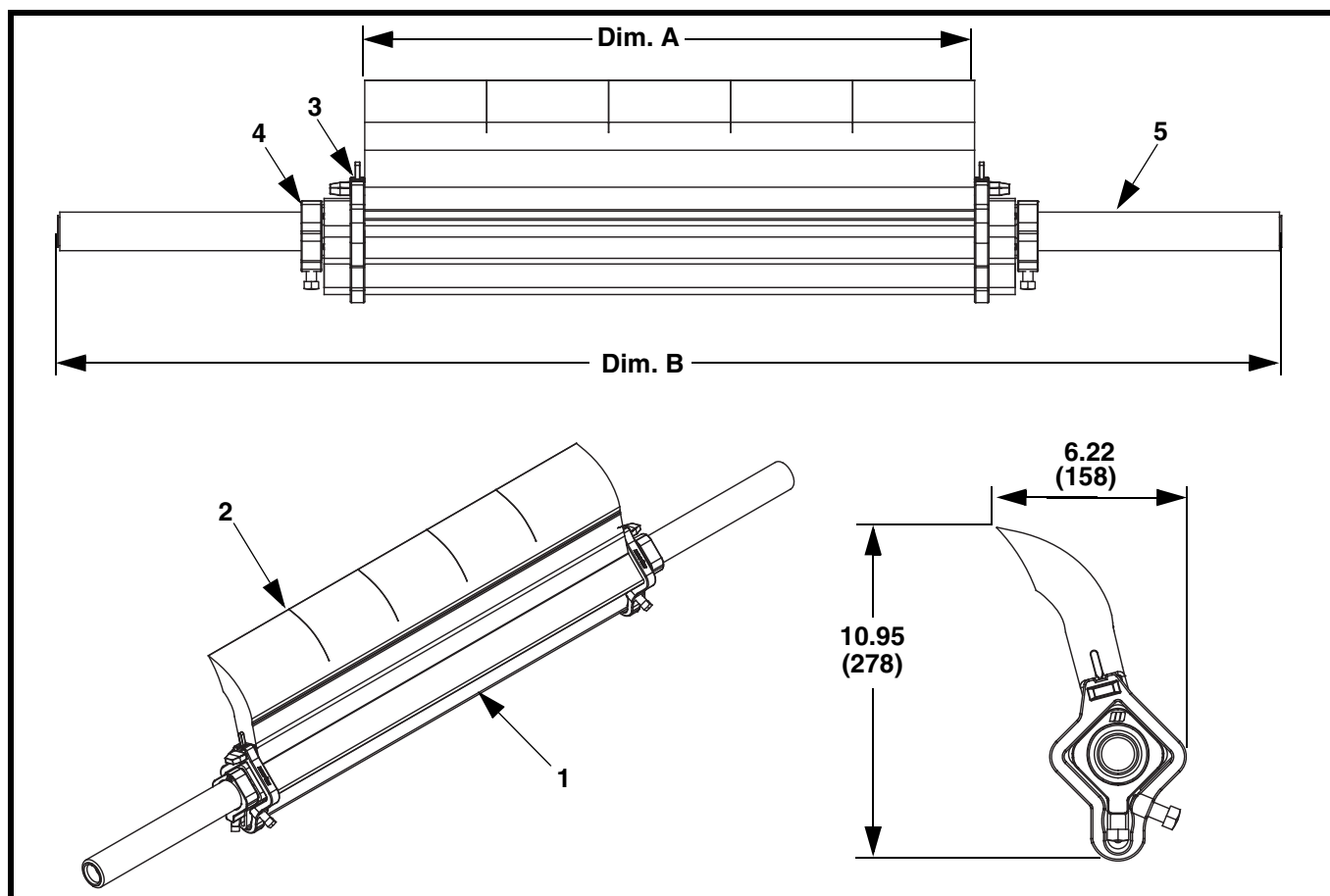
**TENSIONER**  
T: Martin® Twist Tensioner  
S: Martin® Spring Tensioner

## Recommended Tensioners

- Belts 18 to 48 in. wide:
- Martin® Twist Tensioner: P/N 38850.
  - Martin® Twist Tensioner with “L” Bracket: P/N 38850-L.
  - Martin® Spring Tensioner: P/N 38180
- Belts 54 to 96 in. wide:
- Dual Martin® Twist Tensioners: P/N 38850-2.
  - Dual Martin® Twist Tensioners with “L” Bracket: P/N 38850-2L.
  - Dual Martin® Spring Tensioners: P/N 38180-2

## Operator’s manuals

- Martin® Spring and Air Tensioners Operator’s Manual: P/N M3263.
- Martin® Twist Tensioner Operator’s Manual: P/N M3837.
- Martin® Inspection Door Operator’s Manual: P/N M3891.



**Figure 8. Martin® HD QB1™ Cleaner Assembly, P/N C1QHASXXSXXXXRX**

Item	Description	Part No.	Qty.
1	Mainframe	Table III	1
2	Blade	Table III	1
3	Blade Retainer with Set Screw	C1QHRIT	2
4	Torque Tube Collar with Set Screw	C1QACIT	2
5	Torque Tube	Table III	2
6 (NS)	Label Martin® Products	38048	2
7 (NS)	Label Conveyor Products Warning	23395	2
8 (NS)	Manual Operator's	M4101	1
9 (NS)	Martin® Twist Tensioner Assembly	38850/38850-2	1
	Martin® Spring Tensioner Assembly	38180/38180-2	1

NS = Not Shown

**Table III. Part Numbers and Dimensions for Martin® HD QB1™ Cleaner Assembly**

Standard Assembly Part No.	Dim. A in. (mm)	Dim. B in. (mm)	Item No. 1	Item No. 2	Item No. 5
C1QHAS18S10XXRX	10 (254)	34 (864)	C1QAMRS16	C1QHBS10XX	C1QATTS16
C1QHAS18S12XXRX	12 (305)	34 (864)	C1QAMRS16	C1QHBS12XX	C1QATTS16
C1QHAS18S14XXRX	14 (356)	34 (864)	C1QAMRS16	C1QHBS14XX	C1QATTS16
C1QHAS24S16XXRX	16 (406)	46 (1168)	C1QAMRS22	C1QHBS16XX	C1QATTS19
C1QHAS24S18XXRX	18 (457)	46 (1168)	C1QAMRS22	C1QHBS18XX	C1QATTS19
C1QHAS24S20XXRX	20 (508)	46 (1168)	C1QAMRS22	C1QHBS20XX	C1QATTS19
C1QHAS30S22XXRX	22 (559)	52 (1321)	C1QAMRS28	C1QHBS22XX	C1QATTS19
C1QHAS30S24XXRX	24 (610)	52 (1321)	C1QAMRS28	C1QHBS24XX	C1QATTS19
C1QHAS30S26XXRX	26 (660)	52 (1321)	C1QAMRS28	C1QHBS26XX	C1QATTS19
C1QHAS36S28XXRX	28 (711)	60 (1524)	C1QAMRS34	C1QHBS28XX	C1QATTS24
C1QHAS36S30XXRX	30 (762)	60 (1524)	C1QAMRS34	C1QHBS30XX	C1QATTS24
C1QHAS36S32XXRX	32 (813)	60 (1524)	C1QAMRS34	C1QHBS32XX	C1QATTS24
C1QHAS42S34XXRX	34 (864)	72 (1829)	C1QAMRS40	C1QHBS34XX	C1QATTS24
C1QHAS42S36XXRX	36 (914)	72 (1829)	C1QAMRS40	C1QHBS36XX	C1QATTS24
C1QHAS42S38XXRX	38 (965)	72 (1829)	C1QAMRS40	C1QHBS38XX	C1QATTS24
C1QHAS48S40XXRX	40 (1016)	78 (1981)	C1QAMRS46	C1QHBS40XX	C1QATTS24
C1QHAS48S42XXRX	42 (1067)	78 (1981)	C1QAMRS46	C1QHBS42XX	C1QATTS24
C1QHAS48S44XXRX	44 (1118)	78 (1981)	C1QAMRS46	C1QHBS44XX	C1QATTS24
C1QHAS54S46XXRX	46 (1168)	84 (2134)	C1QAMRS52	C1QHBS46XX	C1QATTS24
C1QHAS54S48XXRX	48 (1219)	84 (2134)	C1QAMRS52	C1QHBS48XX	C1QATTS24
C1QHAS54S50XXRX	50 (1270)	84 (2134)	C1QAMRS52	C1QHBS50XX	C1QATTS24
C1QHAS60S52XXRX	52 (1321)	90 (2286)	C1QAMRS58	C1QHBS52XX	C1QATTS30
C1QHAS60S54XXRX	54 (1372)	90 (2286)	C1QAMRS58	C1QHBS54XX	C1QATTS30
C1QHAS60S56XXRX	56 (1422)	90 (2286)	C1QAMRS58	C1QHBS56XX	C1QATTS30
C1QHAS66S58XXRX	58 (1473)	96 (2438)	C1QAMRS64	C1QHBS58XX	C1QATTS30
C1QHAS66S60XXRX	60 (1524)	96 (2438)	C1QAMRS64	C1QHBS60XX	C1QATTS30
C1QHAS66S62XXRX	62 (1575)	96 (2438)	C1QAMRS64	C1QHBS62XX	C1QATTS30
C1QHAS72S64XXRX	64 (1626)	102 (2591)	C1QAMRS70	C1QHBS64XX	C1QATTS30
C1QHAS72S66XXRX	66 (1676)	102 (2591)	C1QAMRS70	C1QHBS66XX	C1QATTS30
C1QHAS72S68XXRX	68 (1727)	102 (2591)	C1QAMRS70	C1QHBS68XX	C1QATTS30
C1QHAS78S70XXRX	70 (1778)	108 (2743)	C1QAMRS76	C1QHBS70XX	C1QATTS42
C1QHAS78S72XXRX	72 (1829)	108 (2743)	C1QAMRS76	C1QHBS72XX	C1QATTS42
C1QHAS78S74XXRX	74 (1879)	108 (2743)	C1QAMRS76	C1QHBS74XX	C1QATTS42
C1QHAS84S76XXRX	76 (1930)	114 (2896)	C1QAMRS82	C1QHBS76XX	C1QATTS42
C1QHAS84S78XXRX	78 (1981)	114 (2896)	C1QAMRS82	C1QHBS78XX	C1QATTS42
C1QHAS84S80XXRX	80 (2032)	114 (2896)	C1QAMRS82	C1QHBS80XX	C1QATTS42
C1QHAS90S82XXRX	82 (2083)	120 (3048)	C1QAMRS88	C1QHBS82XX	C1QATTS42
C1QHAS90S84XXRX	84 (2134)	120 (3048)	C1QAMRS88	C1QHBS84XX	C1QATTS42
C1QHAS90S86XXRX	86 (2184)	120 (3048)	C1QAMRS88	C1QHBS86XX	C1QATTS42
C1QHAS96S88XXRX	88 (2235)	126 (3200)	C1QAMRS94	C1QHBS88XX	C1QATTS42
C1QHAS96S90XXRX	90 (2286)	126 (3200)	C1QAMRS94	C1QHBS90XX	C1QATTS42
C1QHAS96S92XXRX	92 (2337)	126 (3200)	C1QAMRS94	C1QHBS92XX	C1QATTS42
C1QHASA2S94XXRX	94 (2388)	132 (3734)	C1QAMRSA0	C1QHBS94XX	C1QATTS42
C1QHASA2S96XXRX	96 (2438)	132 (3734)	C1QAMRSA0	C1QHBS96XX	C1QATTS42
C1QHASA2S98XXRX	98 (2489)	132 (3734)	C1QAMRSA0	C1QHBS98XX	C1QATTS42
C1QHASA8SA0XXRX	100 (2540)	138 (3505)	C1QAMRSA6	C1QHBSA0XX	C1QATTS42
C1QHASA8SA2XXRX	102 (2591)	138 (3505)	C1QAMRSA6	C1QHBSA2XX	C1QATTS42
C1QHASA8SA4XXRX	104 (2642)	138 (3505)	C1QAMRSA6	C1QHBSA4XX	C1QATTS42

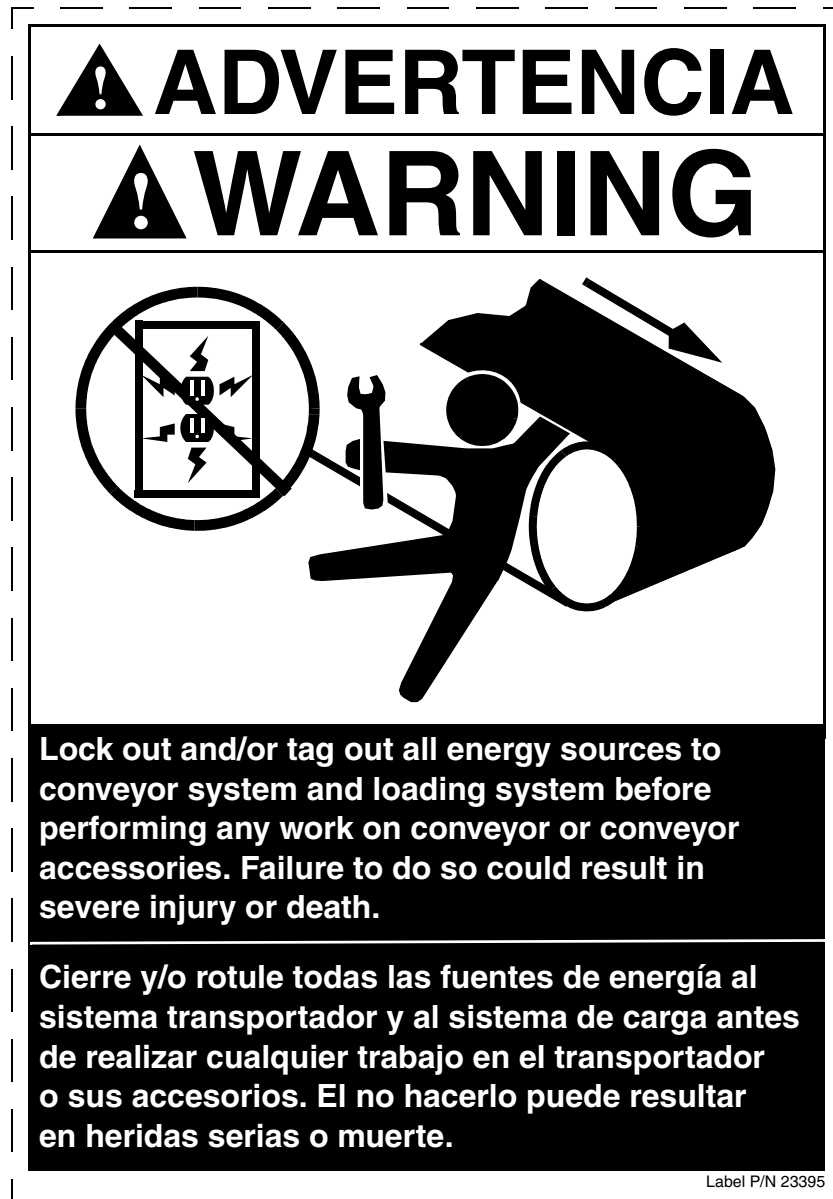
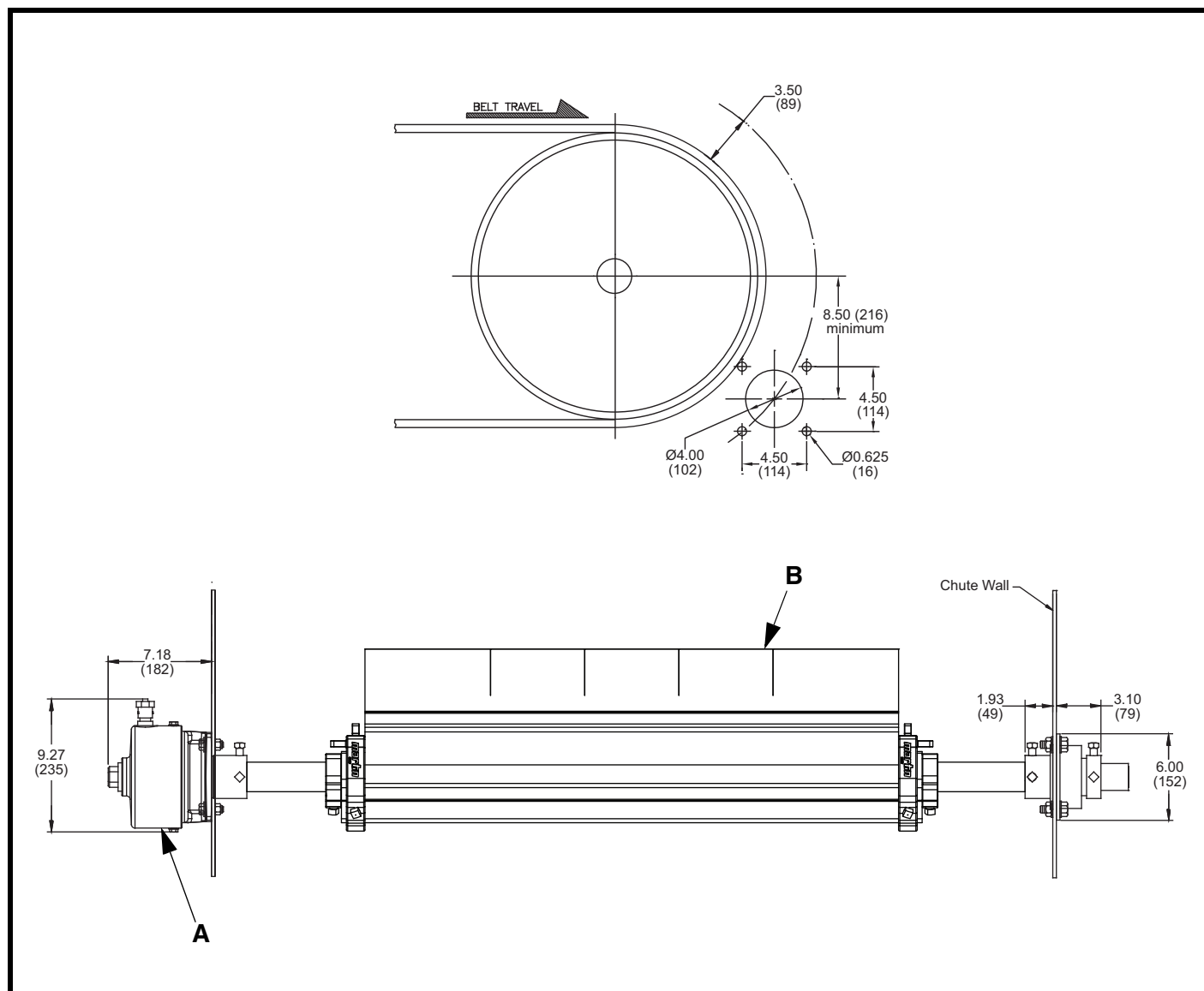


Figure 9. Martin® Conveyor Products Warning Label, P/N 23395

# Appendix

## Martin® HD QB1™ Cleaner Assembly with Martin® Twist Tensioner Assembly



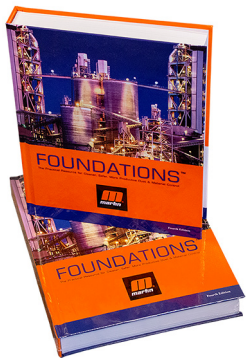
**A. Martin® Twist Tensioner Assembly, P/N 38850**

**B. Martin® HD QB1™ Cleaner Assembly, P/N C1QHASXXSXXXXRX**



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## **Martin Engineering USA**

One Martin Place  
Neponset, IL 61345-9766 USA  
800 544 2947 or 309 852 2384  
Fax 800 814 1553  
[www.martin-eng.com](http://www.martin-eng.com)

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