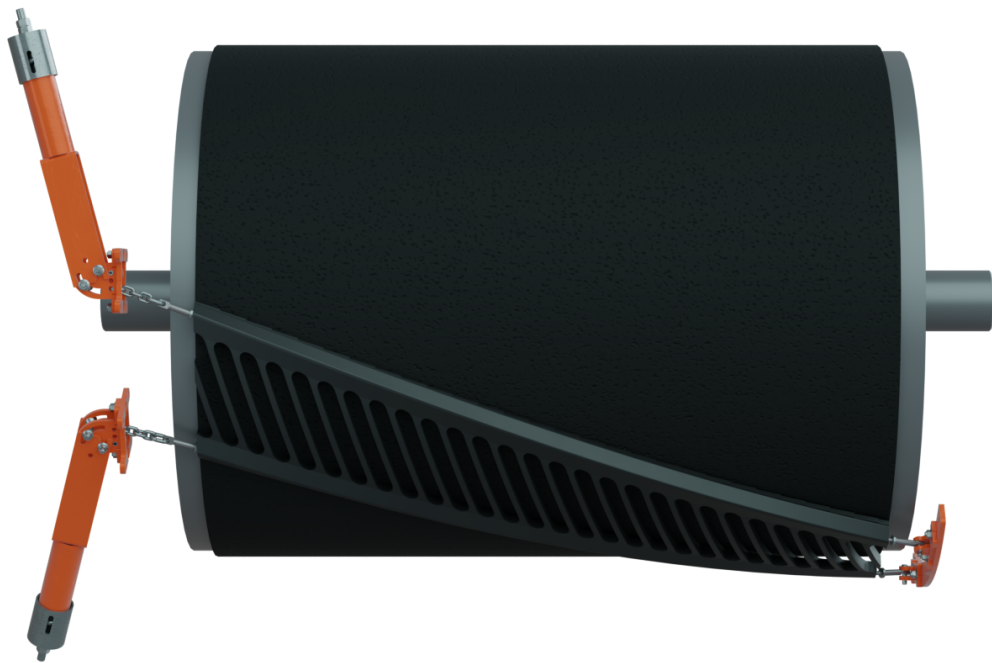




CleanScrape[®] Medium, Large & HD Cleaners

[Go to CleanScrape[®] Medium, Large & HD Cleaners web page.](#)



***Operator's Manual
M4033***

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 z244.1-2016 (R2020), *The Control of Hazardous Energy Lockout, Tagout And Alternative Methods* 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

The CleanScrape® is a Pre-Cleaner which is installed diagonally across the discharge pulley and forms a three dimensional curve. The cleaner has a matrix of tungsten carbide scrapers incorporated into the main rubber body during the vulcanization process. It is tensioned against the belt at an extremely low contact pressure. 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.

References

The following documents are referenced in this manual:

- American National Standards Institute ANSI/ASSP z244.1-2016 (R2020), *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 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

Materials required

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

Conveyor Requirements

NOTE

Prior to installation verify belt width to pulley size ratio is not greater than 3:1 and that application matches belt conditions listed in table.

Table I. CleanScrape® Conveyor Requirements

Size	Head Pulley Diameter		Belt Width	Maximum Belt Speed	
	Min.	Max.		Vulcanized Splice	Mechanical Splice
Medium	550 mm (22 in.)	900 (34 in.)	450-1800 mm (18-72 in.)	8.0 m/s (1500 Ft/Min)	4.0 m/s (800 Ft/Min)
Large	900 mm (36 in.)	1250 mm (50 in.)	900 - 2500 mm (36-96 in.)	8.0 m/s (1500 Ft/Min)	4.0 m/s (800 Ft/Min)
HD	800 mm (32 in.)	2000 mm (78 in.)	1000-3000 mm (42-120 in.)	8.0 m/s (1500 Ft/Min)	6.0 m/s (1200 Ft/Min)

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**

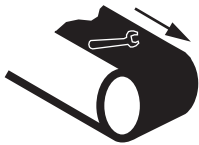
Before installing, servicing, or adjusting the belt cleaner, turn off and lockout / tagout / blockout / testout all energy sources to the conveyor and conveyor accessories according to ANSI standards or country specific safety standards (DIN, ISO, etc.). Failure to do so could result in serious injury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

Cleaner 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 from 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 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 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.

⚠ CAUTION

Ensure conveyor chute remains unplugged. A plugged conveyor chute may cause cleaner to damage belt.

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."

NOTE

The installation instructions in this manual are the preferred methods for the most common installations. Contact Martin Engineering for alternative installation options.

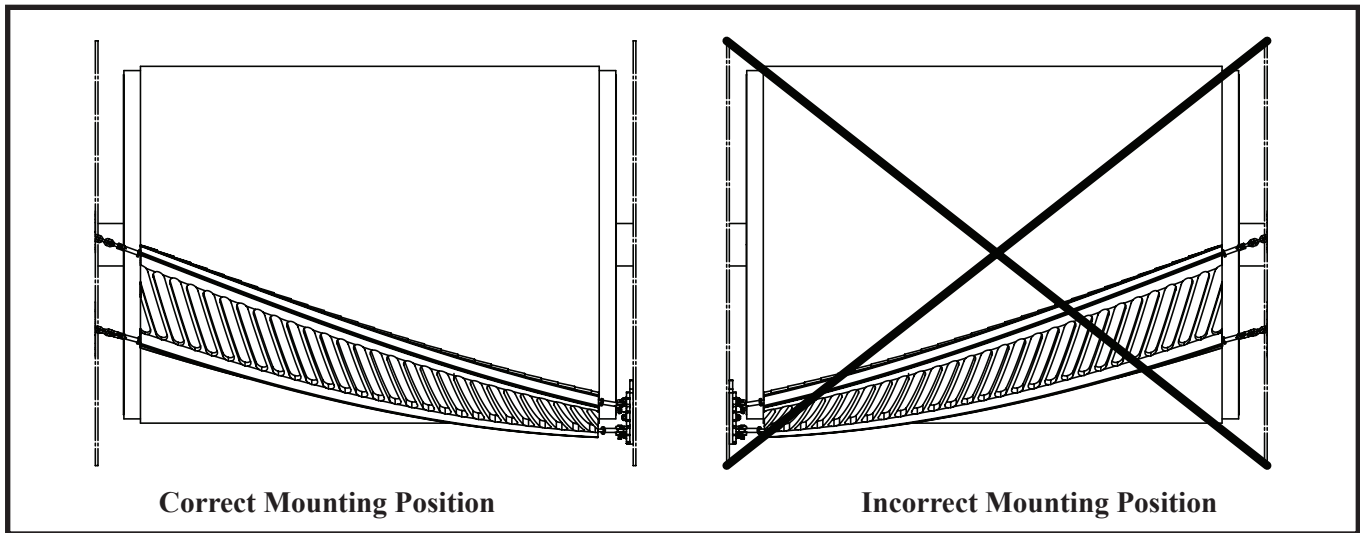


Figure 1. Belt Cleaner Mounting Orientation

IMPORTANT

The CleanScrape® carbide scrapers are molded into the rubber body of the cleaner at a slight angle creating a serrated cleaning edge. For effective cleaning, the cleaner can only be mounted in orientation shown.

6. Inspect belt cleaner mounting area for possible obstructions that could interfere with proper mounting. Refer to following guidelines:
 - a. Ensure cleaner does not lie in path of material unloading from conveyor belt.
 - b. The top side of the cleaner should be no less than the 2 o' clock position. Material could strike the back of the cleaner causing wear which will lead to premature failure.
 - c. The ideal installation angle is 17°–19°. Installation angles of 15°–21° are acceptable. Higher angles are normally utilized in cleaning material that tends to adhere to the belt, these higher angles lead to increased wear on the blade.
 - d. Belt width must not exceed a ratio of 3:1 to the head pulley diameter. For example, the maximum belt width for a conveyor with a 600 mm (24 in.) head pulley is 1800 mm (72 in.).
 - e. Chute walls must be strong enough to not flex as tension is applied to cleaner. If chute wall flexes inadequate tension may be applied to cleaner resulting in poor cleaning performance. Additional chute wall structure support may be added to prevent chute wall from flexing.
 - f. The distance between the cleaner and the chute wall should be minimized. Martin Engineering recommends keeping the distance to 125 mm (5 in.) maximum per side (see Figure 4). Excess chain or cable could result in vibration that could damage the belt or the cleaner. If necessary, build a sub-wall to support the tensioners in the proper position. Consult Martin Engineering for installation assistance if parameters fall outside of this range.

- g. For typical installations, start with the bottom rope in the 6 o'clock position and the top rope in the 3 o'clock position. The exact positioning of the top rope is a result of the installation angle.
 - h. For belts with low product flow, lower the top rope until cleaner is out of material path. Cleaner angle must be 15° or greater.
7. Lack of service can contribute to poor belt cleaning performance. Follow local 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. Cleaners should be mounted at least 600 mm (24 in.) above the work platform.
 - (3) If the belt width is 1400 mm (54 in.) or larger consider access doors on both sides of the chute.

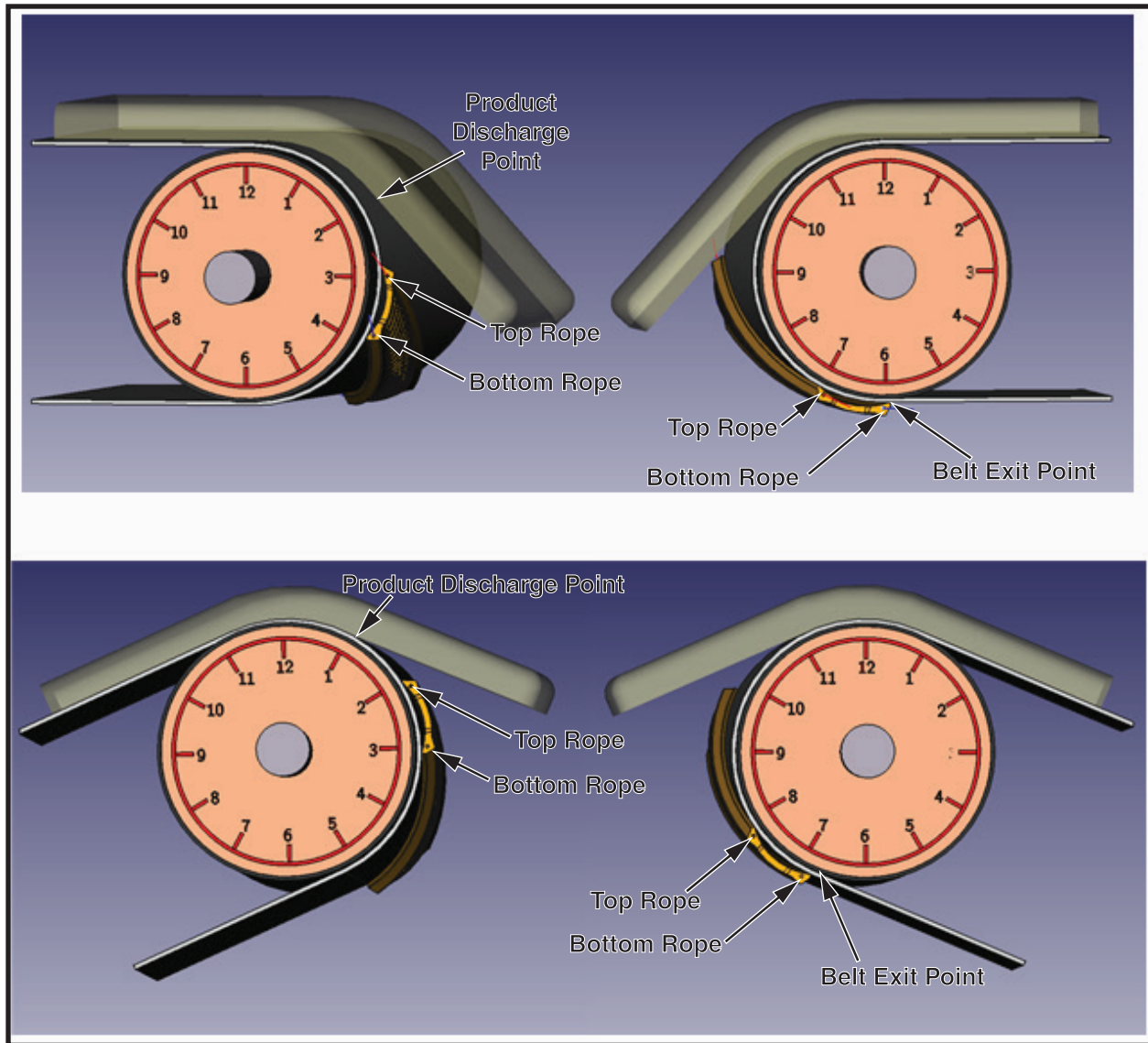


Figure 2. Typical Belt Cleaner Mounting Positions

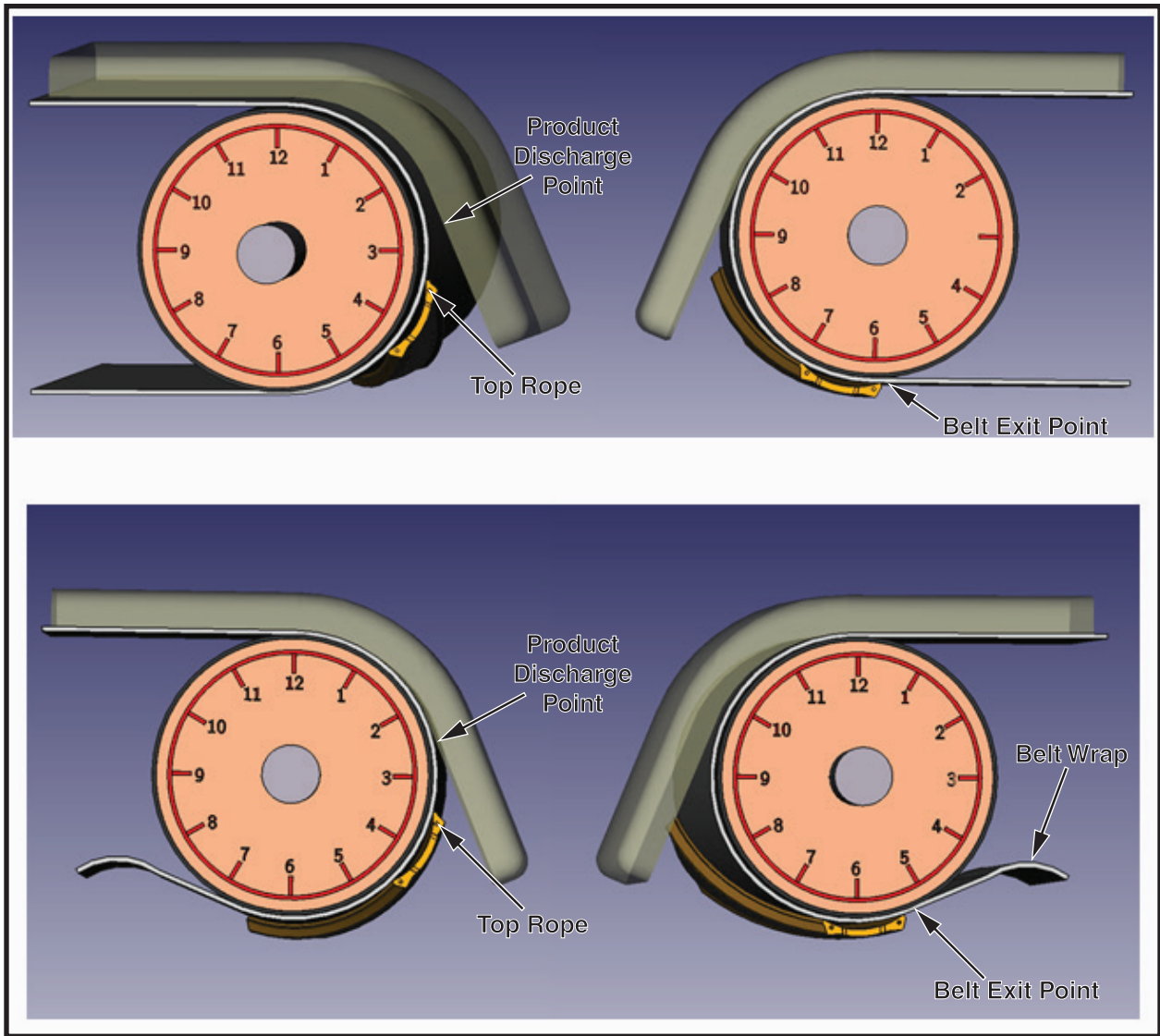


Figure 3. Low Product Flow Belt Cleaner Mounting Positions

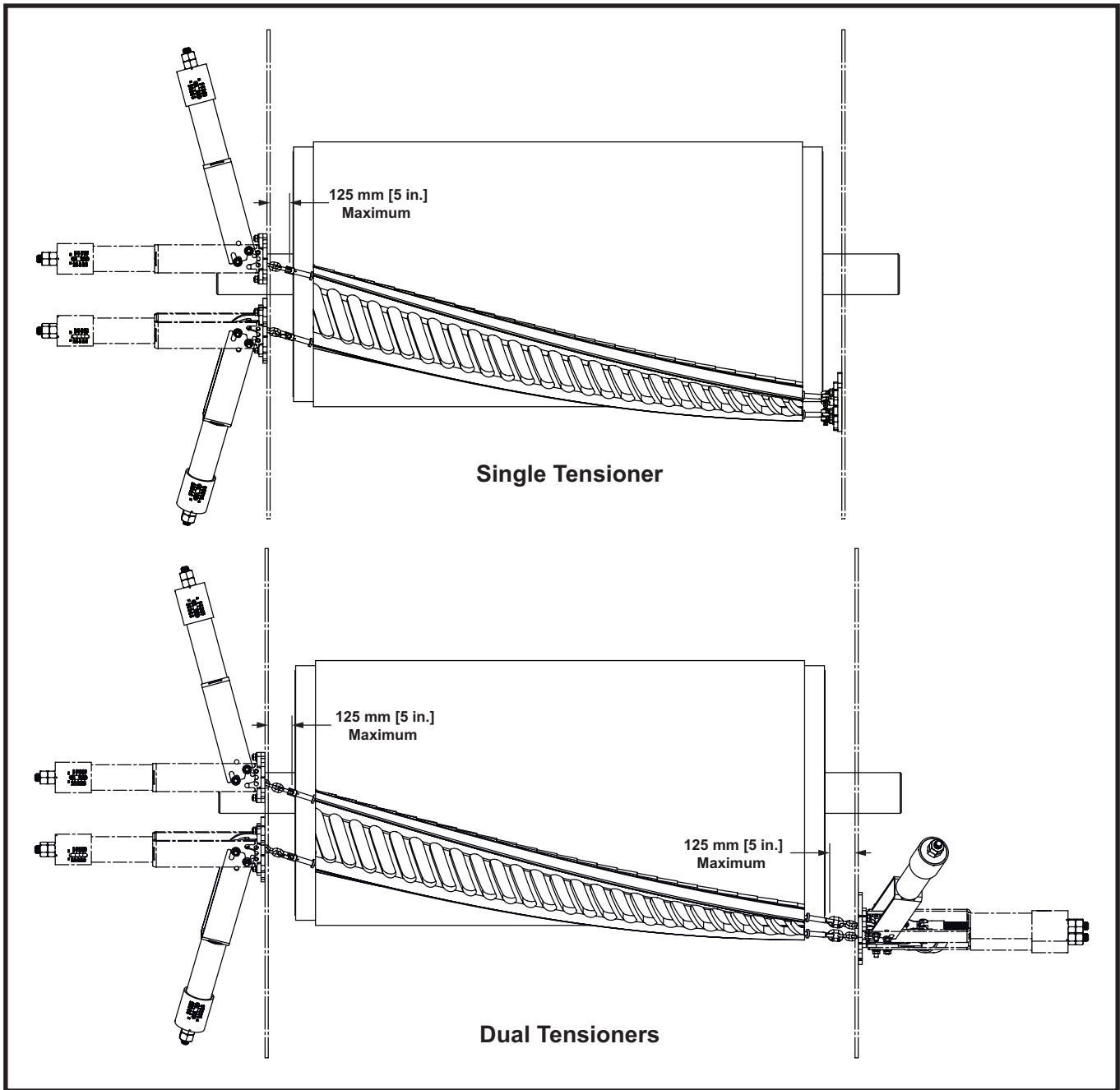


Figure 4. Installations with Wide Chute Walls

IMPORTANT

The maximum distance between chute wall and center of eyelet is 125 mm (5 in.). Excess free chain or cable causes too much vibration resulting in damage to cleaner and components. If necessary, build a sub wall to support the tensioners and/or install wide chute wall kit, see Figure 16.

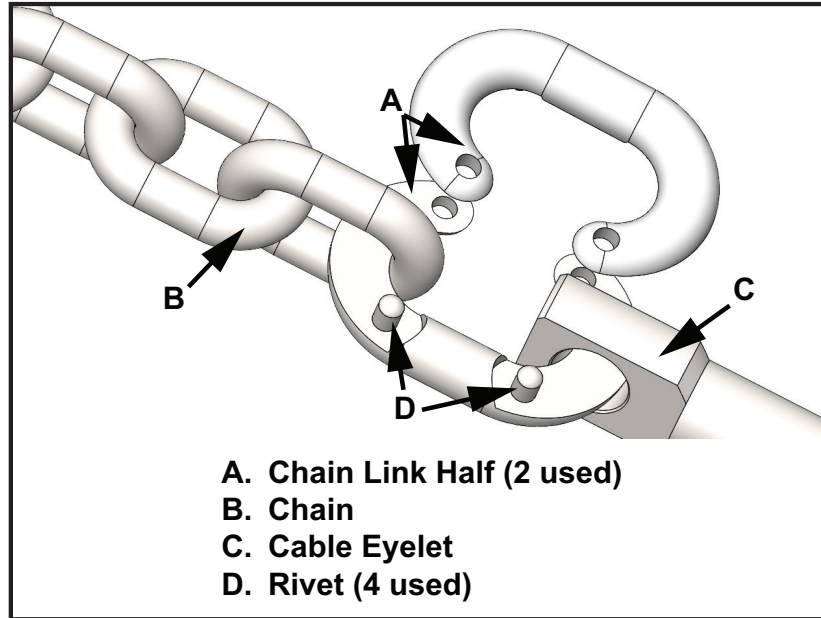


Figure 5. Installing Chains and Breakaway Links

NOTE

Installing Chains

The chute wall that the tensioners will be located on is referred to as the “operator side.” The other side of the chute is referred to as the “far side.”

NOTE

Chains must be installed on the same side the chute tensioners will be located on. Tensioners and chains can be installed on either side of cleaner with tensioner on top as preferred location, but cleaner orientation must be as shown in Figure 1.

1. Determine operator side of chute and cleaner.
2. Install supplied chains on operator side of cleaner as follows:
 - a. Install one half of chain link (A) onto chain (B) and cable eyelet (C).
 - b. Install second half of chain link onto first half.
 - c. Place link on solid surface andpeen rivets (D) to lock chain link halves together.
 - d. Repeat steps “a” through “c” for second chain.

Installing Belt Cleaner & Tensioners

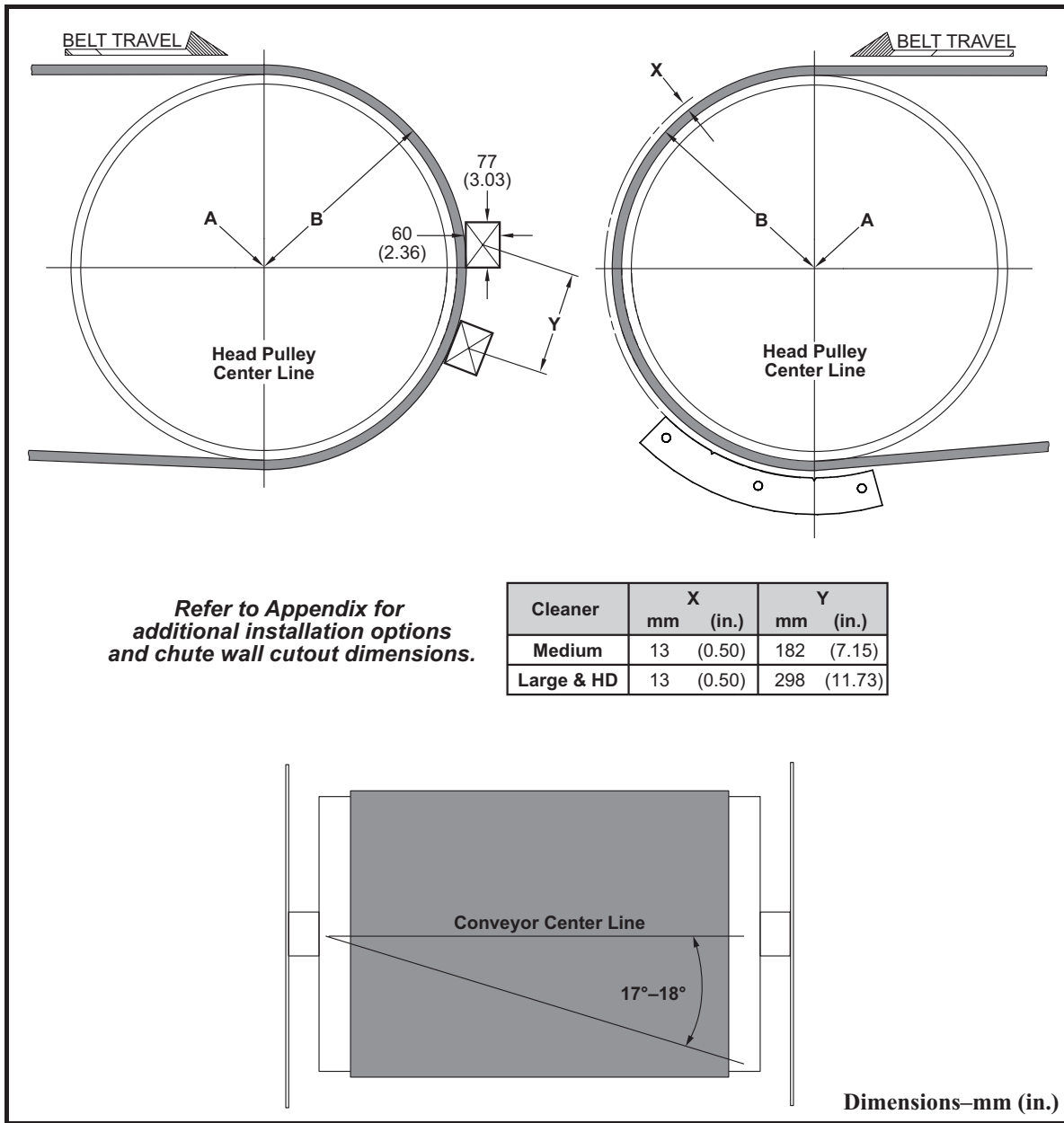


Figure 6. Belt Cleaner Location & Chute Wall Cutouts

Locating Belt Cleaner

1. On both sides 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 Figure 6.
3. On the far side chute, start from center point (A), measure the total distance calculated in step 2 (B + X), and draw an arc on chute wall.
4. On the operator side of chute, start from center point (A), draw an arc on chute wall with radius of (B).

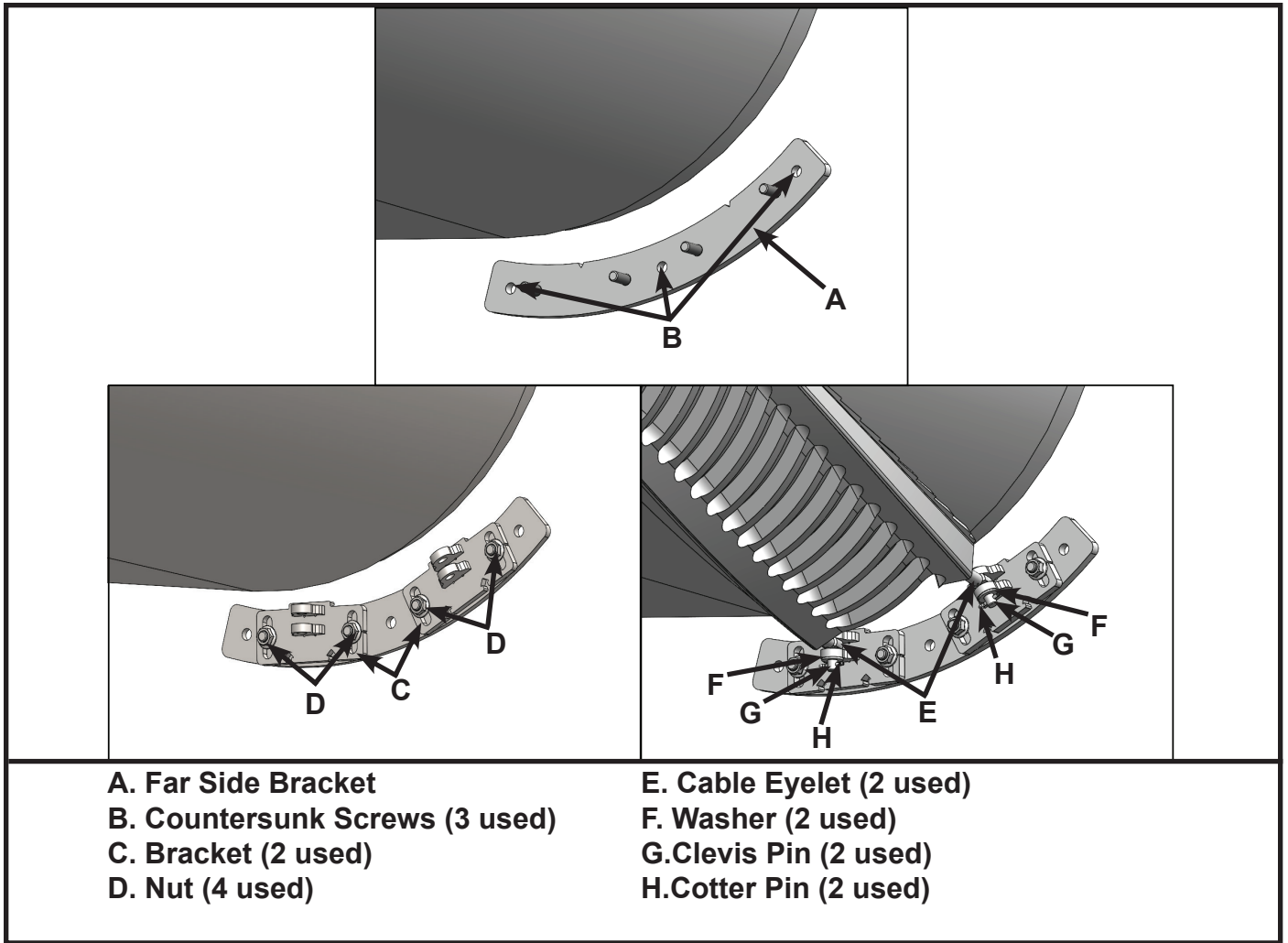


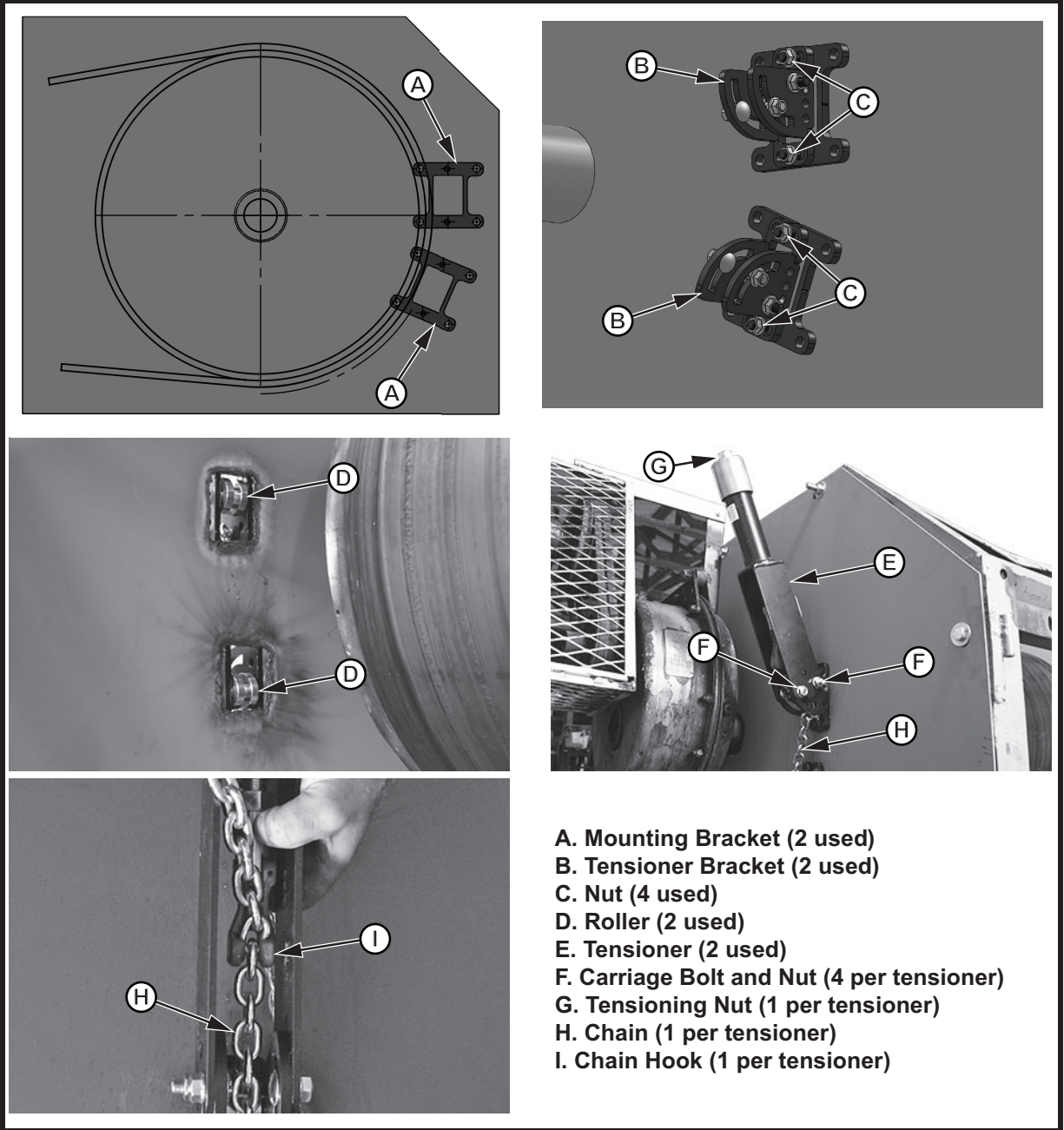
Figure 7. Installing Fixed Point Bracket

2. On the far side of chute:
 - a. Draw a centerline of the head pulley perpendicular to the conveyor belt line (see Figure 6). Rotate the bottom side mount back as far as possible in order to achieve at least 17° of belt wrap while not exceeding the belt exit (see Figures 2 & 3).
 - b. If bolting fixed point bracket to chute wall, do the following:
 - (1) Position fixed point bracket (A) on far side chute wall as shown in Figure 6 (centerline install is used as an example).
 - (2) Mark bracket hole locations.
 - (3) Drill or cut three 13 mm (1/2-in) holes for screws in far side chute wall.
 - (4) Mount fixed point bracket (A) to inside of far side chute wall using countersunk screws (B) and nuts.
 - c. If welding fixed point bracket to chute wall, do the following:
 - (1) Position fixed point bracket on far side chute wall as shown in Figure 6 (centerline install is used as an example).
 - (2) Weld bracket to chute wall. Weld completely around bracket. Do not skip weld.

NOTE

If wide chute wall adapter is required, see Figure 16. Wide chute wall adapter kit, P/N C1CP30000X. Bracket installation instructions are included in kit.

- d. Install brackets (C) using nuts (D). Hand tighten nuts (see Figure 7).
- e. Attach cleaner to far side bracket by inserting clevis pin (G) through eyelet (E) and bracket flange (C) then fastening with flat washer (F) and cotter pin (H) on opposite side as insertion side.



- A. Mounting Bracket (2 used)
- B. Tensioner Bracket (2 used)
- C. Nut (4 used)
- D. Roller (2 used)
- E. Tensioner (2 used)
- F. Carriage Bolt and Nut (4 per tensioner)
- G. Tensioning Nut (1 per tensioner)
- H. Chain (1 per tensioner)
- I. Chain Hook (1 per tensioner)

Figure 8. Installing Tensioners

6. On the operator side of chute:
 - a. Draw conveyor centerline parallel to the conveyor belt line.
 - b. Draw a line at 17° from bottom hole of bottom bracket to location of bottom hole on top bracket, or utilize a string or elastic band to locate proper angle. Attach string to bottom hole on bottom bracket and hold it to head pulley centerline at 6:00 o' clock position on opposite chute, check angle, adjust angle to stay below product discharge point (see Figures 2 & 3). Mark location for bottom hole of top side tensioner.
 - c. Position weld plate as shown in Figure 6. The bottom of the cutout should be the conveyor centerline. The edge of the cutout should be tangent to the belt edge. Mark chute wall cutout as shown in Figure 6.
 - d. Mark upper bracket chute wall cutout as shown in Figure 6. Dimension Y is equal to the distance between mount holes on far side bracket.
 - e. Cut holes in chute wall. Remove burrs and sharp edges.
 - f. Center mounting brackets (A) on cutouts and weld or bolt to chute wall (see Figure 8).
 - g. Mount tensioner brackets (B) onto mounting brackets (A) using nuts (C). Hand tighten nuts. Position top bracket with roller (D) in the upper position and bottom bracket with roller (D) in the lower position.
7. Mount tensioner (E) onto bracket using carriage bolts and nuts (F).
8. Position tensioner (E) in desired location free from obstructions and tighten nuts (F).
9. Loosen nut (G) to the end of the threaded rod.
10. Hold cleaner against head pulley. Make sure the eyelet is parallel to the surface of the belt.
11. Route chain (H) through chute wall and tensioner bracket (B).
12. Pull chain into hook (I).
13. Repeat steps 6-11 for remaining tensioner.
14. Ensure eyelets are parallel to belt (Figure 9).
15. Tighten tensioner nut (G) until center of cleaner is held firmly against head pulley.
16. Make sure each chain contacts roller in tensioner bracket (B) properly.

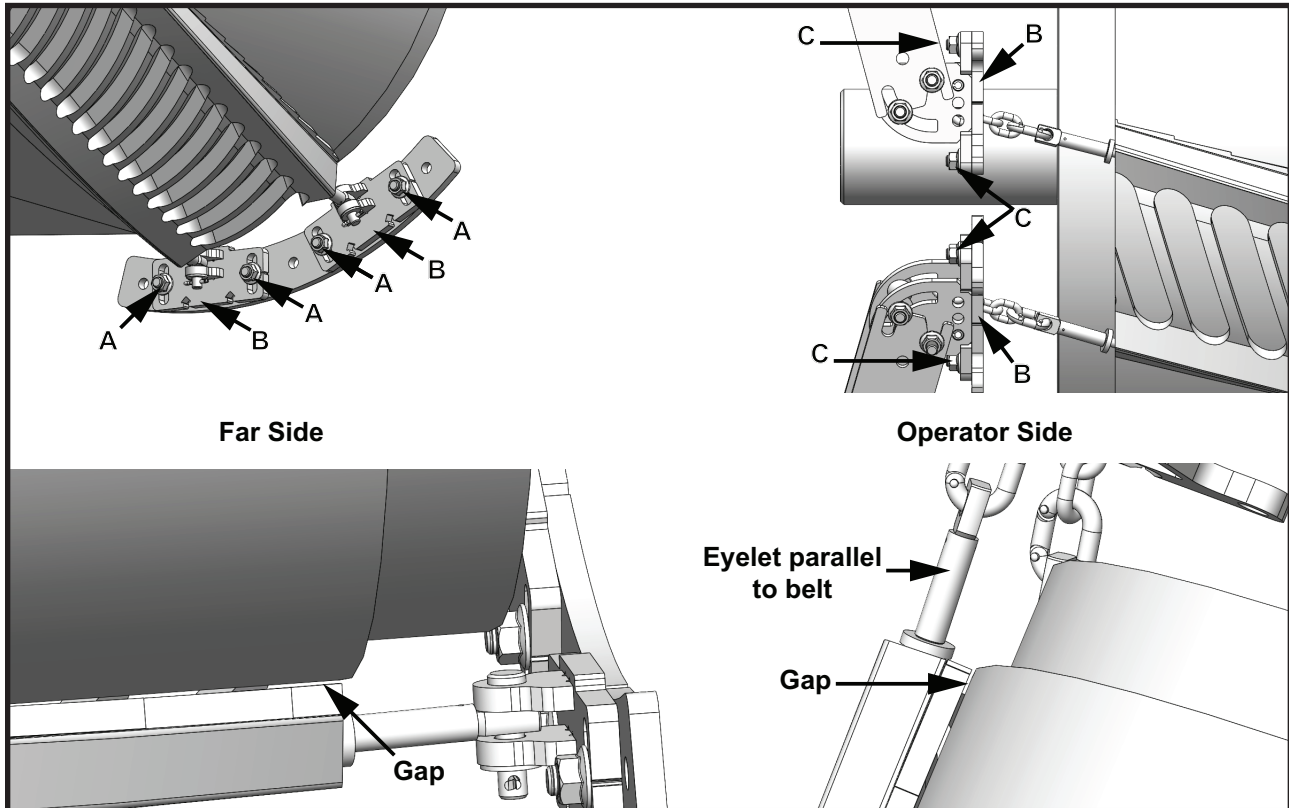


Figure 9. Positioning Cleaner

17. Tighten nuts (A).
18. Adjust brackets (B) on the operator side and far side, so outer two elements on each side are away from the belt. Increase the number of elements off the belt as necessary in order to ensure the mechanical splices will pass.
19. Tighten nuts (C) and countersunk screws.

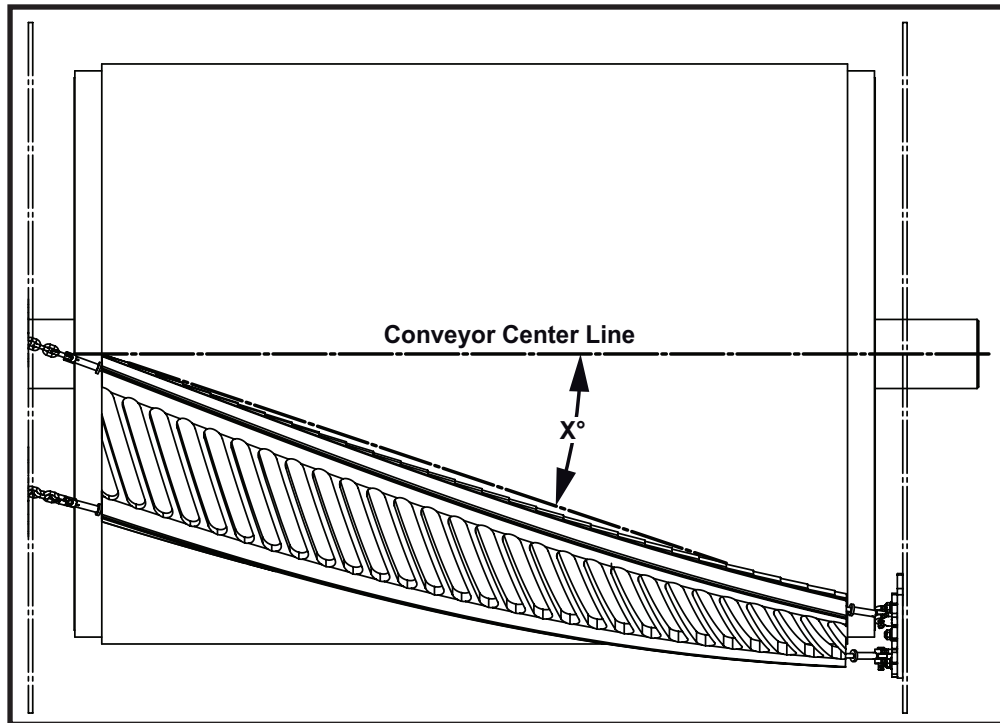


Figure 10. Measure Cleaner Angle

20. Measure angle of cleaner.
21. Determine tension required according to tensioning chart.
22. Tighten tensioners.
 - a. If threaded spindle is not long enough to achieve desired tension (see Figure 8):
 - (1) Insert screw driver through hole in the lower part of the tensioner and chain (H), to secure the chain.
 - (2) Loosen tensioning nut (G) to release tension.
 - (3) Reinstall chain in hook (I) as close to the screw driver as possible.
 - (4) Tighten tensioning nut until required tension is achieved.
23. Install and tighten jam nut against tensioning nut on each tensioner.
24. Make sure outer elements on cleaner are positioned as follows:
 - a. For vulcanized splice, outer 2 elements on each side should be approximately 3 mm (1/8-in.) away from belt on both the upper and lower ropes.
 - b. For mechanical splices, outer 3-4 elements on each side should be approximately 3-6 mm (1/8-1/4-in.) away from belt on both the upper and lower ropes. Increase the gap as necessary in order to ensure the mechanical splices will pass.
 - c. For reversing belts, ensure gap on both top and bottom sides are sufficient for splice passage while belt is traveling in either direction.
25. Make sure there is sufficient clearance between chute wall cutouts and chains. When running under heavy load, the blade will be pushed down. Any rubbing of the chain and/or safety link when the belt is running can cause breakages.
26. If using Martin® Inspection Door, cut access door opening and mounting holes according to Martin® Inspection Door Operator's Manual, P/N M3891.

Table II. Cleanscrape® Cleaner Tensioning Chart

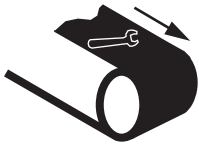
CSP Size	Belt Width		Upper Rope Force Required	Lower Rope Force Required*
	mm	(in.)		
Medium	600	24	1.50 kN	1.20 kN
	601-800	30	1.80 kN	1.50 kN
	801-900	36	1.90 kN	1.60 kN
	901-1000	42	2.00 kN	1.70 kN
	1001-1200	48	2.20 kN	1.90 kN
	1201-1400	54	2.80 kN	2.40 kN
	1401-1600	60	3.00 kN	2.50 kN
	1601-1700	66	3.25 kN	2.75 kN
	1701-1800	72	3.50 kN	3.00 kN
Large	800	30	1.80 kN	1.50 kN
	801-900	36	1.90 kN	1.60 kN
	901-1000	42	2.00 kN	1.70 kN
	1001-1200	48	2.20 kN	1.90 kN
	1201-1400	54	2.70 kN	2.30 kN
	1401-1600	60	2.90 kN	2.50 kN
	1601-1700	66	3.10 kN	2.65 kN
	1701-1800	72	3.30 kN	2.80 kN
	1801-2000	78	3.50 kN	3.00 kN
	2001-2150	84	3.75 kN	3.25 kN
	2151-2400	96	4.00 kN	3.50 kN
HD	1000	42	2.00 kN	1.70 kN
	1001-1200	48	2.20 kN	1.90 kN
	1201-1400	54	2.70 kN	2.30 kN
	1401-1600	60	2.90 kN	2.50 kN
	1601-1700	66	3.10 kN	2.65 kN
	1701-1800	72	3.30 kN	2.80 kN
	1801-2000	78	3.50 kN	3.00 kN
	2001-2150	84	3.75 kN	3.25 kN
	2151-2400	96	4.00 kN	3.50 kN
	2401-2600	102	4.50 kN	4.00 kN
	2601-2750	108	4.75 kN	4.35 kN
	2751-3000	120	5.00 kN	4.70 kN

*Lower rope should have 10% to 15% less force than upper rope

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.



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.



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. Start the conveyor belt. Observe belt cleaner operation for several revolutions of the belt. Properly shutdown belt and make appropriate adjustments. Return belt to service.
5. Run conveyor belt for one hour, adjust belt cleaner as necessary



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

- 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.”
- d. Monitor cleaner and after 7-10 days re-tension cleaner to overcome any eyehole bedding in.

Weekly Maintenance

IMPORTANT

Read entire section before beginning work.

NOTE

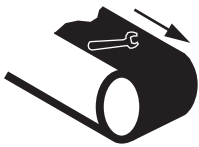
Maintenance inspection should be performed no less than weekly. Some applications may require more frequent maintenance inspections.



⚠ DANGER

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

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 blade if carbide metal wear is greater than 5 mm (3/16 in.).
6. Monitor cleaner and after 7-10 days re-tension cleaner to overcome any eyehole bedding-in.
7. Remove equipment from service if there is any indication it is not functioning properly. Call Martin Engineering or a representative for assistance. Do NOT return equipment to operation until the cause of the problem has been identified and corrected.



⚠ WARNING

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

8. 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.



9. 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.

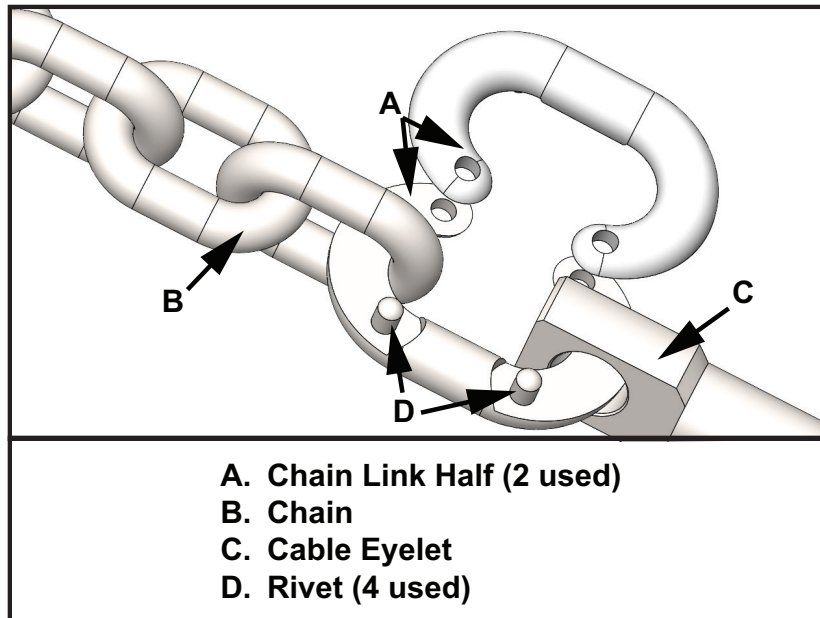


Figure 11. Replacing Breakaway Link

Replacing Breakaway Link

NOTE

The CleanScape® Cleaner is equipped with two breakaway links that are designed to let the operator side of the cleaner breakaway from the tensioners and fall away from the belt. The cleaner remains attached to the far side bracket to prevent damage to the cleaner or conveyor components.

1. If breakaway links break:
 - a. Inspect cleaner and conveyor to determine cause of breakage.
 - b. Install new links as follows:
 - (1) Install one half of chain link (A) onto chain (B) and cable eyelet (C).
 - (2) Install second half of chain link onto first half.
 - (3) Place link on solid surface andpeen rivets (D) to lock chain link halves together

WARNING

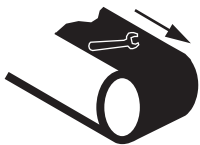
Failure to remove tools from maintenance area and conveyor belt before turning on energy source can cause serious injury to personnel and damage to belt.

- c. 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.

- d. 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, 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.

Symptom	Corrective Action
Insufficient cleaning and carryback.	Check to see that cleaner is contacting the belt across the front edge of the cleaner. Recheck mounting dimensions and adjust as necessary. Gradually increase tension in 5-10% increments, maintaining 15% less tension on bottom rope, until cleaning is sufficient. Ensure tensioner spring is not totally collapsed and watch for chute flex.
Belt is cleaner on one side than the other.	Check installation, ensure cleaner is properly mounted and make any adjustments. Cleaner is likely out on one side and needs to be moved closer to the belt, re-tension cleaner (see Figure 8).
Blade dancing or vibration.	Check installation, ensure cleaner is properly mounted and make any adjustments. Cleaner is likely out on one side and needs to be moved closer to the belt, re-tension cleaner as described above (see Figure 8). Check tension on tensioner gauge to be sure of proper tension. Reset tension according to tensioning charts. Ensure blade is installed at proper angle. Ensure cleaner is centered on the belt and excess cable or chain on either side of belt does not exceed 125 mm (5 in.). Ensure chute wall is not flexing. Increase support as necessary.
Cleaner is catching on mechanical splice.	Check that outer 3–4 elements are off the belt by at least 3–6 mm (1/8–1/4 in.) to allow for the splice to flow through the cleaner without catching. Increase gap as necessary to allow splice to pass (see figure 9).
Material builds up in gaps.	Remove any excess material and check to ensure cleaner is properly located. Ensure bottom rope is properly positioned, adjust bottom rope on bottom side away from conveyor slightly by rotating bottom bracket. This will increase gap and allow material to be discharged more easily. Add more tension. Increase difference between tension on top and bottom rope to 15%.

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 the following:

Installation Checklist
• Pre-Cleaner blade is proper distance from belt surface on both sides of headpulley.
• Pre-Cleaner blade tip does not lie in path of material flow.
• Blade is centered on belt.

Part Numbers

This section provides product names and corresponding part numbers for CleanScape® Cleaners and related equipment. Please reference part numbers when ordering parts:

CLEANSCRAPE® MEDIUM & LARGE CLEANER	NOMENCLATURE	C 1 C X X R XXX X XX																		
<p>GENERAL NOTES:</p> <p>1) Standard:</p> <ul style="list-style-type: none"> Stainless wire rope eyelet <p>TENSIONER SELECTION</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Size</th> <th>Belt Width mm (in.)</th> <th>Tensioner</th> </tr> </thead> <tbody> <tr> <td>M</td> <td>≤ 1400 mm (≤ 54")</td> <td>Single 4.2kN</td> </tr> <tr> <td>M</td> <td>≤ 1800 mm (≤ 72")</td> <td>Dual 4.2kN</td> </tr> <tr> <td>L</td> <td>≤ 1400 mm (≤ 54")</td> <td>Single 4.2kN</td> </tr> <tr> <td>L</td> <td>< 2000 mm (< 78")</td> <td>Dual 4.2kN</td> </tr> <tr> <td>L</td> <td>≥ 2000 mm (≥ 78")</td> <td>Dual 6.6kN</td> </tr> </tbody> </table> <p><i>For Assemblies with Ceramic Tiles: Add a "C" to the End of the Part Number.</i></p>	Size	Belt Width mm (in.)	Tensioner	M	≤ 1400 mm (≤ 54")	Single 4.2kN	M	≤ 1800 mm (≤ 72")	Dual 4.2kN	L	≤ 1400 mm (≤ 54")	Single 4.2kN	L	< 2000 mm (< 78")	Dual 4.2kN	L	≥ 2000 mm (≥ 78")	Dual 6.6kN	<p>1. Conveyor Products</p> <p>2. Primary Cleaner</p> <p>3. CleanScape</p> <p>4. Size M = Medium ; L = Large</p> <p>5. Assembly Type B = Blade Assembly, No Tensioner T = Blade Assembly, Standard Painted Steel Tensioner M = Blade Assembly, Standard Painted Tensioner, Mount Plates Painted Steel F = Blade Assembly with Stainless Steel Chain, No Tensioner S = Blade Assembly with Stainless Steel Chain, Stainless Steel Tensioner C = Blade Assembly with Stainless Steel Chain, Stainless Steel Tensioner, Mount Plates Stainless Steel</p> <p>6. Blade Body Material R = Rubber</p> <p>7-9. Width inch = S + 2 digits SA2: 102 inches SA8: 108 inches mm = 3 digits [BW / 10]</p> <p>10. Carbide A ; B ; C</p> <p>11-12. Number of Elements</p>	
Size	Belt Width mm (in.)	Tensioner																		
M	≤ 1400 mm (≤ 54")	Single 4.2kN																		
M	≤ 1800 mm (≤ 72")	Dual 4.2kN																		
L	≤ 1400 mm (≤ 54")	Single 4.2kN																		
L	< 2000 mm (< 78")	Dual 4.2kN																		
L	≥ 2000 mm (≥ 78")	Dual 6.6kN																		

CLEANSCRAPE® HD CLEANER	NOMENCLATURE	C 1 C H X R XXX X XX												
<p>GENERAL NOTES:</p> <p>1) Standard: H available only with carbide B</p> <p>2) Standard:</p> <ul style="list-style-type: none"> Stainless wire rope eyelet <p>TENSIONER SELECTION</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Size</th> <th>Belt Width mm (in.)</th> <th>Tensioner</th> </tr> </thead> <tbody> <tr> <td>H</td> <td>≤ 1400 mm (≤ 54")</td> <td>Single 4.2kN</td> </tr> <tr> <td>H</td> <td>< 2000 mm (> 78")</td> <td>Dual 4.2kN</td> </tr> <tr> <td>H</td> <td>≥ 2000 mm (≥ 78")</td> <td>Dual 6.6kN</td> </tr> </tbody> </table> <p><i>For Assemblies with Ceramic Tiles: Add a "C" to the End of the Part Number.</i></p>	Size	Belt Width mm (in.)	Tensioner	H	≤ 1400 mm (≤ 54")	Single 4.2kN	H	< 2000 mm (> 78")	Dual 4.2kN	H	≥ 2000 mm (≥ 78")	Dual 6.6kN	<p>1. Conveyor Products</p> <p>2. Primary Cleaner</p> <p>3. CleanScape</p> <p>4. Size H = Heavy Duty</p> <p>5. Assembly Type B = Blade Assembly, No Tensioner T = Blade Assembly, Tensioner Standard Painted Steel F = Blade Assembly with Stainless Steel Chain, No Tensioner S = Blade Assembly with Stainless Steel chain, Tensioner Stainless Steel</p> <p>6. Blade Body Material R = Rubber</p> <p>7-9. Width inch = S + 2 digits SA2: 102 inches SA8: 108 inches mm = 3 digits [BW / 10]</p> <p>10. Carbide B</p> <p>11-12. Number of Elements</p>	
Size	Belt Width mm (in.)	Tensioner												
H	≤ 1400 mm (≤ 54")	Single 4.2kN												
H	< 2000 mm (> 78")	Dual 4.2kN												
H	≥ 2000 mm (≥ 78")	Dual 6.6kN												

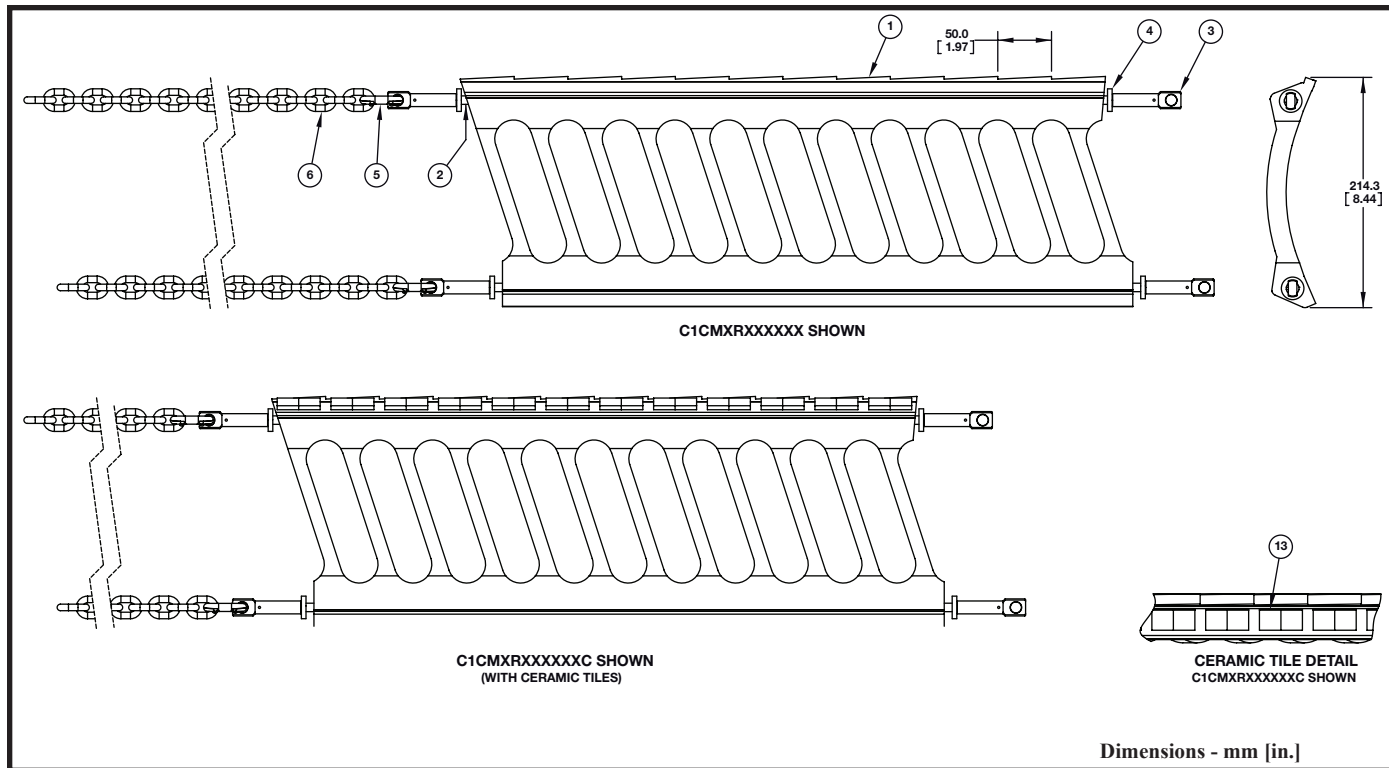


Figure 12. CleanScape® Medium Cleaner, P/N C1CMXRXXXXXX

Notes:

* **(1.)** Cut blade to length based on number of elements required.

** **(2.)** Cut cable to length. To get quantity of cable: Take number of elements x 0.1m (0.328 ft) then add 0.18m (0.59 ft). Cable quantity is for two cable assemblies.

*****(3.)** To get quantity of ceramic tiles. Take number of elements x 2. Grind and clean bonding surface before applying bonding adhesive. Apply bonding adhesive to the finished bonding surface. Once bonding adhesive is applied to bonding surface set ceramic tiles in place. Remove any excess bonding adhesive from blade.

Item	Qty.	Description	Part Number
1	*	Blade 50 mm LG element	Table III
2	**	Wire Rope 8 mm SS	Table V
3	4	Eyelet Wire Rope 8 mm SS	C1CP51014S
4	4	Washer Flat M8 Oversized 18-8 SS	SUS10129
5	Table V	Chain Safety Link 8 mm SS	C1CP51001S
6	Table V	Chain 6 mm	Table VI
(NS) 7	Table VII	Installation Kit	Table V
(NS) 8	2	Label Conveyor Products Warning	23395
(NS) 9	1	Manual Operator's	M4033
(NS) 10	Table VII	Adapter Kit for Wide Chute Wall	Table V
(NS) 11	1	CleanScape® Tag	39495
(NS) 12	1	Tie Nylon Cable	30916
13	***	Ceramic Tile 20 mm x 20 mm x 4 mm	C1CP51013B
(NS) 14	Table VI	Mount Plate Chutewall	Table VI

NS=Not Shown

Table III. Part Numbers for CleanScape® Medium Cleaner Blades

Part Number	P/N Item 1
C1CMXRXXXAXX	C1CBCMA
C1CMXRXXXBXX	C1CBCMB
C1CMXRXXXCXX	C1CBCMC

Table IV. Belt Widths for CleanScrape® Medium Cleaner

Part Number	Belt Width [in.]	Part Number	Belt Width [mm]
C1CMXRS18XXX	18	C1CMXR045XXX	450
C1CMXRS24XXX	24	C1CMXR050XXX	500
C1CMXRS30XXX	30	C1CMXR060XXX	600
C1CMXRS36XXX	36	C1CMXR075XXX	750
C1CMXRS42XXX	42	C1CMXR080XXX	800
C1CMXRS48XXX	48	C1CMXR090XXX	900
C1CMXRS54XXX	54	C1CMXR100XXX	1000
C1CMXRS60XXX	60	C1CMXR105XXX	1050
C1CMXRS66XXX	66	C1CMXR120XXX	1200
C1CMXRS72XXX	72	C1CMXR135XXX	1350
		C1CMXR140XXX	1400
		C1CMXR150XXX	1500
		C1CMXR160XXX	1600
		C1CMXR165XXX	1650
		C1CMXR180XXX	1800

Table V. Hardware Part Number & Quantity for CleanScrape® Medium Cleaner Blades

Number of Elements	P/N Item 2	Qty. Item 5	Qty. Item 6	P/N Item 7	P/N Item 10	Qty. Item 10
29 and below	C1CP51008S	2	1525 mm [5 ft]	C1CT4MX	C1CP30000X	1
30 Thru 39	C1CP1009S	4	3050 mm [10 ft]	C1CT4DX	----	0

Table VI. Chain Part Numbers for CleanScrape® Medium Cleaner Blades

Part Number	P/N Item 6
C1CMBRXXXXXX	C1CP51002T
C1CMTRXXXXXX	
C1CMMRXXXXXX	
C1CMFRXXXXXX	C1CP51002S
C1CMSRXXXXXX	
C1CMCRXXXXXX	

**Table VII. Installation & Chutewall Kit Part Number & Quantity
for CleanScrape® Medium Cleaner Blades**

Part Number	Qty. Item 7, 10	Qty. Item 14	P/N Item 14
C1CMBRXXXXXX	0	0	----
C1CMTRXXXXXX	1	0	----
C1CMMRXXXXXX	1	2	C1CMP42828T
C1CMFRXXXXXX	0	0	----
C1CMSRXXXXXX	1	0	----
C1CMCRXXXXXX	1	2	C1CMP42828F

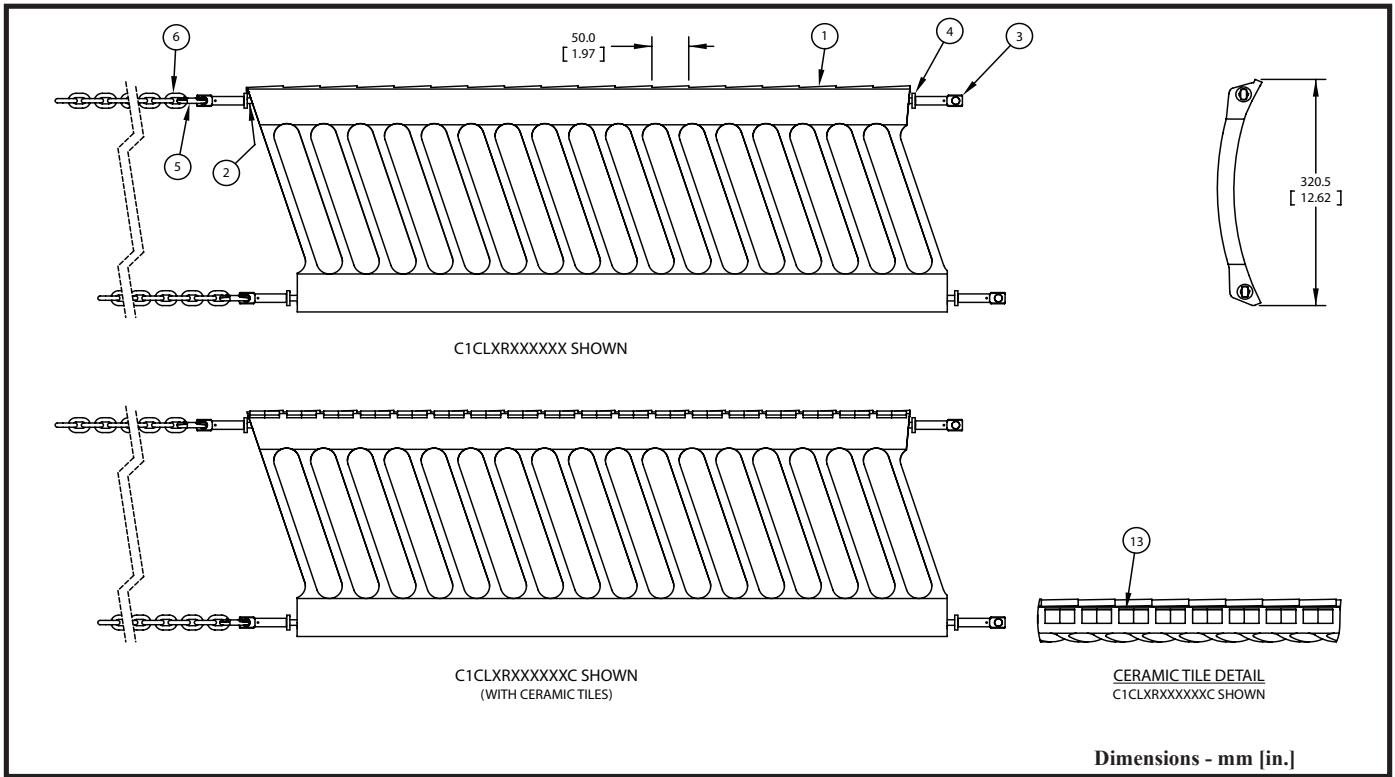


Figure 13. CleanScape® Large Cleaner, P/N C1CLXRXXXXXX

Notes:

* **(1.)** Cut blade to length based on number of elements required.

** **(2.)** Cut cable to length. To get quantity of cable: Take number of elements x 0.1m [0.328 ft] then add 0.18m [0.59 ft]. Cable quantity is for two cable assemblies.

*****(3.)** To get quantity of ceramic tiles. Take number of elements x 2. Grind and clean bonding surface before applying bonding adhesive. Apply bonding adhesive to the finished bonding surface. Once bonding adhesive is applied to bonding surface set ceramic tiles in place. Remove any excess bonding adhesive from blade.

Item	Qty.	Description	Part Number
1	*	Blade 50 mm LG element	Table VIII
2	**	Wire Rope 8 mm SS	Table X
3	4	Eyelet Wire Rope 8 mm SS	C1CP51014S
4	4	Washer Flat M8 Oversized 18-8 SS	SUS10129
5	Table X	Chain Safety Link 8 mm SS	C1CP51001S
6	Table X	Chain 6 mm	Table XI
(NS) 7	Table XII	Installation Kit	Table X
(NS) 8	2	Label Conveyor Products Warning	23395
(NS) 9	1	Manual Operator's	M4033
(NS) 10	Table XII	Adapter Kit for Wide Chute Wall	Table X
(NS) 11	1	CleanScape® Tag	39495
(NS) 12	1	Tie Nylon Cable	30916
13	***	Ceramic Tile 20 mm x 20 mm x 4 mm	C1CP51013B
(NS) 14	Table XII	Mount Plate Chutewall	Table XII

NS=Not Shown

Table VIII. Part Numbers for CleanScape® Large Cleaner Blades

Part Number	P/N Item 1
C1CLXRXXXAXX	C1CBCLA
C1CLXRXXXBXX	C1CBCLB
C1CLXRXXXCXX	C1CBCLC

Table IX. Belt Widths for CleanScrape® Large Cleaner

Part No.	Belt Width [in.]	Part No.	Belt Width [mm]
C1CLXRS30XXX	30	C1CLXR075XXX	750
C1CLXRS36XXX	36	C1CLXR080XXX	800
C1CLXRS42XXX	42	C1CLXR090XXX	900
C1CLXRS48XXX	48	C1CLXR100XXX	1000
C1CLXRS54XXX	54	C1CLXR100XXX	1050
C1CLXRS60XXX	60	C1CLXR120XXX	1200
C1CLXRS66XXX	66	C1CLXR135XXX	1350
C1CLXRS72XXX	72	C1CLXR140XXX	1400
C1CLXRS78XXX	78	C1CLXR150XXX	1500
C1CLXRS84XXX	84	C1CLXR160XXX	1600
C1CLXRS90XXX	90	C1CLXR165XXX	1650
C1CLXRS96XXX	96	C1CLXR180XXX	1800
		C1CLXR200XXX	2000
		C1CLXR210XXX	2100
		C1CLXR220XXX	2200
		C1CLXR225XXX	2250
		C1CLXR240XXX	2400
		C1CLXR260XXX	2600

Table X. Hardware Part Number & Quantity for CleanScrape® Large Cleaner Blades

Number of Elements	Part No. Item 2	Qty. Item 5	Qty. Item 6	P/N Item 7	P/N Item 10	Qty. Item 10
29 and Below	C1CP51008S	2	1525 mm [5 ft]	C1CT4LX [Single 4.2kN]	C1CP30000X	1
30 thru 39	C1CP51009S	4	3050 mm [10ft]	C1CT4DX [Dual 4.2kN]	-----	0
40 thru 52				C1CT6DX [Dual 6.6kN]	-----	0

Table XI. Chain Part Numbers for CleanScrape® Large Cleaner Blades

Part Number	P/N Item 6
C1CLBRXXXXXX	C1CP51002T
C1CLTRXXXXXX	
C1CLMRXXXXXX	
C1CLFRXXXXXX	C1CP51002S
C1CLSRXXXXXX	
C1CLCRXXXXXX	

Table XII. Installation & Chutewall Kit Part Number & Quantity for CleanScrape® Large Cleaner Blades

Part Number	Qty. Item 7, 10	Qty. Item 14	P/N Item 14
C1CLBRXXXXXX	0	0	----
C1CLTRXXXXXX	1	0	----
C1CLMRXXXXXX	1	2	C1CLP64036T
C1CLFRXXXXXX	0	0	----
C1CLSRXXXXXX	1	0	----
C1CLCRXXXXXX	1	2	C1CLP64036F

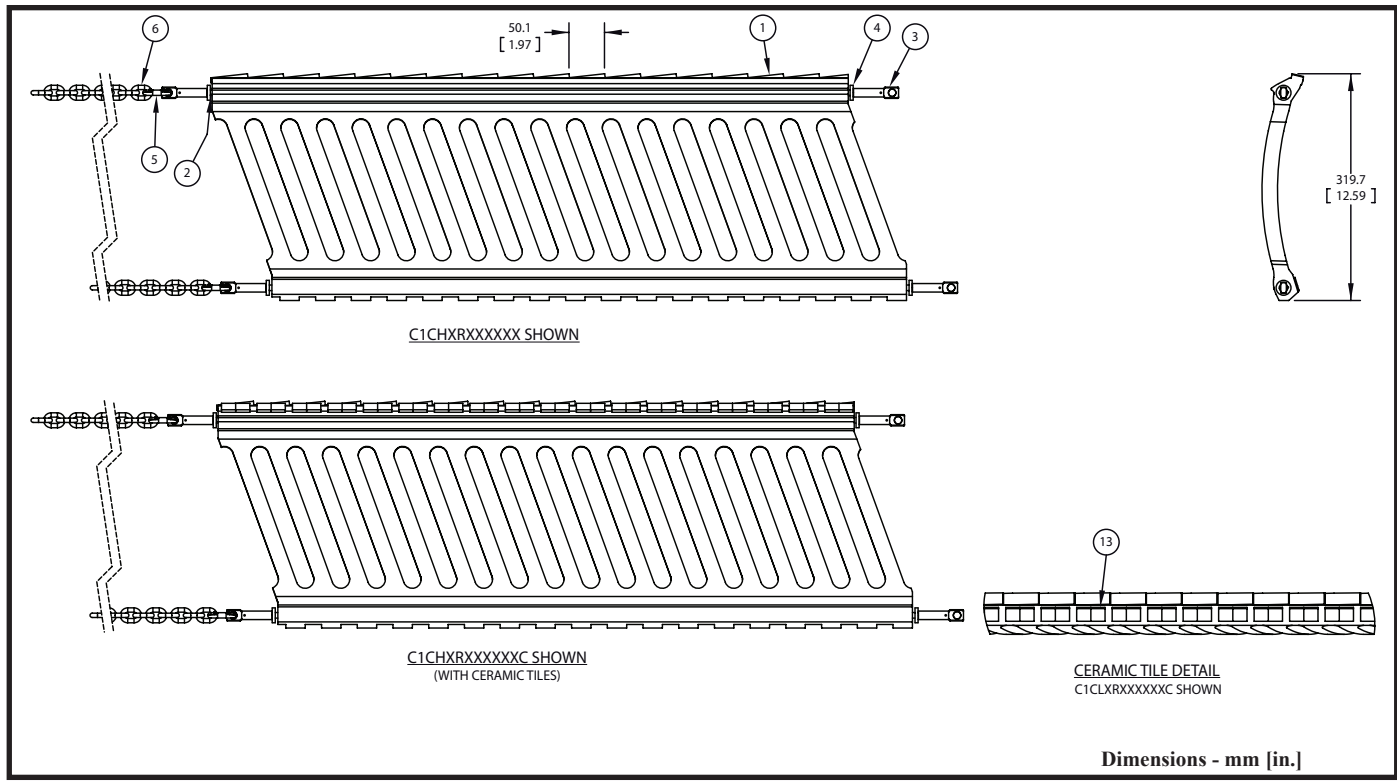


Figure 14. CleanScrape® HD Cleaner, P/N C1CHXRXXXXXX

Notes:

* **(1.)** Cut blade to length based on number of elements required.

** **(2.)** Cut cable to length. To get quantity of cable: Take number of elements x 0.1m [0.328 ft] then add 0.18m [0.59 ft]. Cable quantity is for two cable assemblies.

*****(3.)** To get quantity of ceramic tiles. Take number of elements x 2. Grind and clean bonding surface before applying bonding adhesive. Apply bonding adhesive to the finished bonding surface. Once bonding adhesive is applied to bonding surface set ceramic tiles in place. Remove any excess bonding adhesive from blade.

Item	Qty.	Description	Part Number
1	*	Cleanscrape Blade 50 mm HD Element	Table XI
2	**	Wire Rope 8 mm SS	Table XII
3	4	Eyelet Wire Rope 8 mm SS	C1CP51014S
4	4	Washer Flat M8 Oversized 18-8 SS	SUS10129
5	Table XII	Chain Safety Link 8 mm SS	C1CP51001S
6	Table XII	Chain 6 mm	Table XIII
7	Table XIV	Installation Kit	Table XII
8	2	Label Conveyor Products Warning	23395
9	1	Manual Operator's	M4033
10	Table XIV	Adapter Kit for Wide Chute Wall	Table XII
11	1	Cleanscrape Tag	39495
12	1	Tie Nylon Cable	30916
13	***	Ceramic Tile 20 mm x 20 mm x 4 mm	C1CP51013B

NS=Not Shown

Table XIII. Part Numbers for CleanScrape® HD Cleaner Blades

Number of Elements	Part No. Item 1
C1CHXRXXXBXX	C1CBCHB

Table XIV. Belt Widths for CleanScape® HD Cleaner

Part No.	Belt Width [in.]	Part No.	Belt Width [mm]
C1CHXRS42XXX	42	C1CHXR100XXX	1000
C1CHXRS48XXX	48	C1CHXR105XXX	1050
C1CHXRS54XXX	54	C1CHXR120XXX	1200
C1CHXRS60XXX	60	C1CHXR135XXX	1350
C1CHXRS66XXX	66	C1CHXR140XXX	1400
C1CHXRS72XXX	72	C1CHXR150XXX	1500
C1CHXRS78XXX	78	C1CHXR160XXX	1600
C1CHXRS84XXX	84	C1CHXR165XXX	1650
C1CHXRS90XXX	90	C1CHXR180XXX	1800
C1CHXRS96XXX	96	C1CHXR185XXX	1850
C1CHXRSA2XXX	102	C1CHXR200XXX	2000
C1CHXRSA8XXX	108	C1CHXR210XXX	2100
C1CHXRSC0XXX	120	C1CHXR220XXX	2200
		C1CHXR225XXX	2250
		C1CHXR240XXX	2400
		C1CHXR260XXX	2600
		C1CHXR280XXX	2800
		C1CHXR300XXX	3000

Table XV. Hardware Part Number & Quantity for CleanScape® HD Cleaner Blades

Number of Elements	Part No. Item 2	Qty. Item 5	Qty. Item 6	P/N Item 7	P/N Item 10	Qty. Item 10
13 thru 29	C1CP51008S	2	1525 mm [5 ft]	C1CT4LX [Single 4.2kN]	C1CP30000X	1
30 thru 39	C1CP51009S	4	3050 mm [10ft]	C1CT4DX [Dual 4.2kN]	-----	0
40 thru 61				C1CT6DX [Dual 6.6kN]	-----	0

Table XVI. Chain Part Numbers for CleanScape® HD Cleaner Blades

Part Number	P/N Item 6
C1CHBRXXXXXX	C1CP51002T
C1CHTRXXXXXX	
C1CHFRXXXXXX	C1CP51002S
C1CHSRXXXXXX	

**Table XVII. Installation & Chutewall Kit Part Number & Quantity
for CleanScrape® HD Cleaner Blades**

Part Number	Qty. Item 7, 10
C1CHBRXXXXXX	0
C1CHFRXXXXXX	0
C1CHTRXXXXXX	1
C1CHSRXXXXXX	1

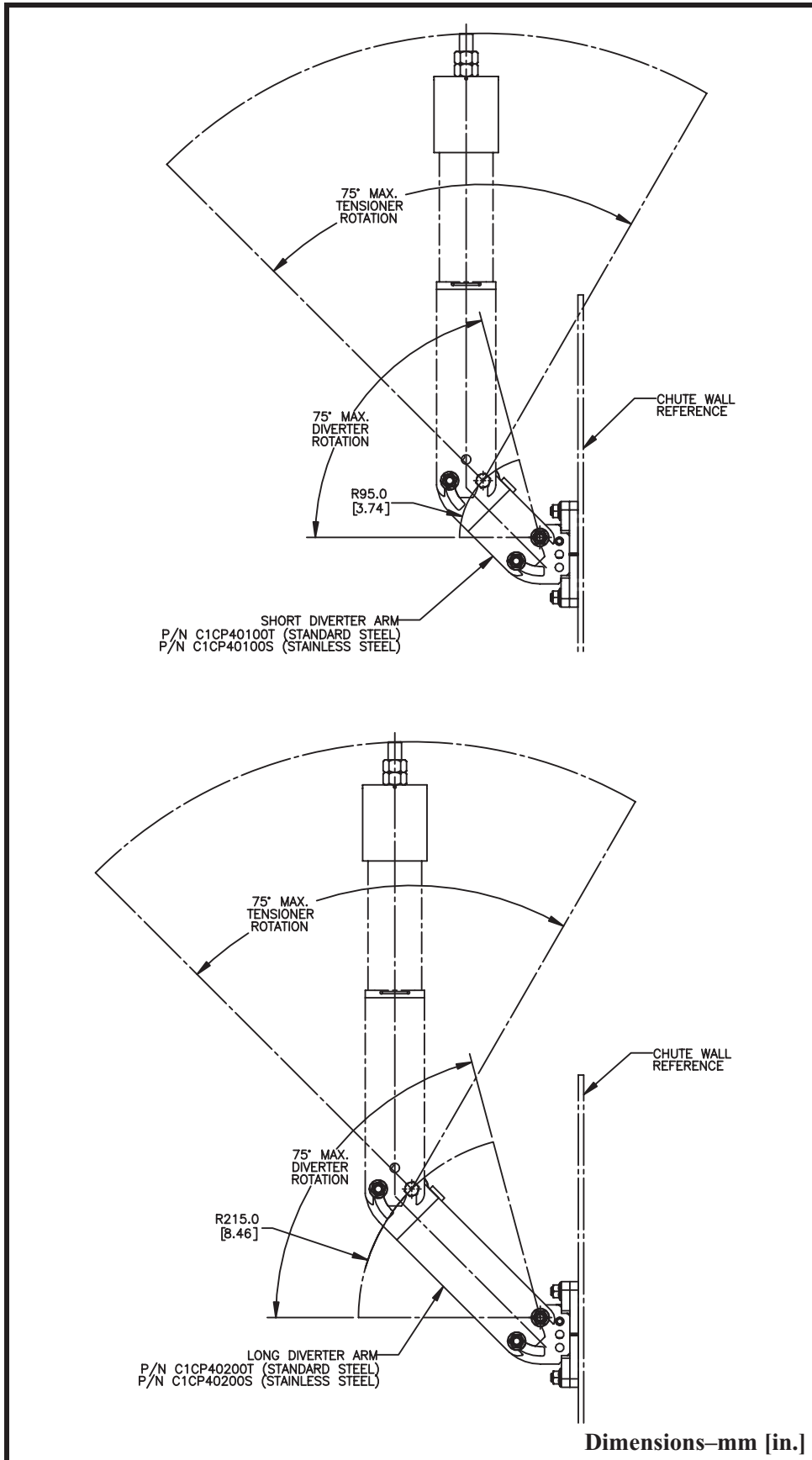


Figure 15. Optional Diverter Arms

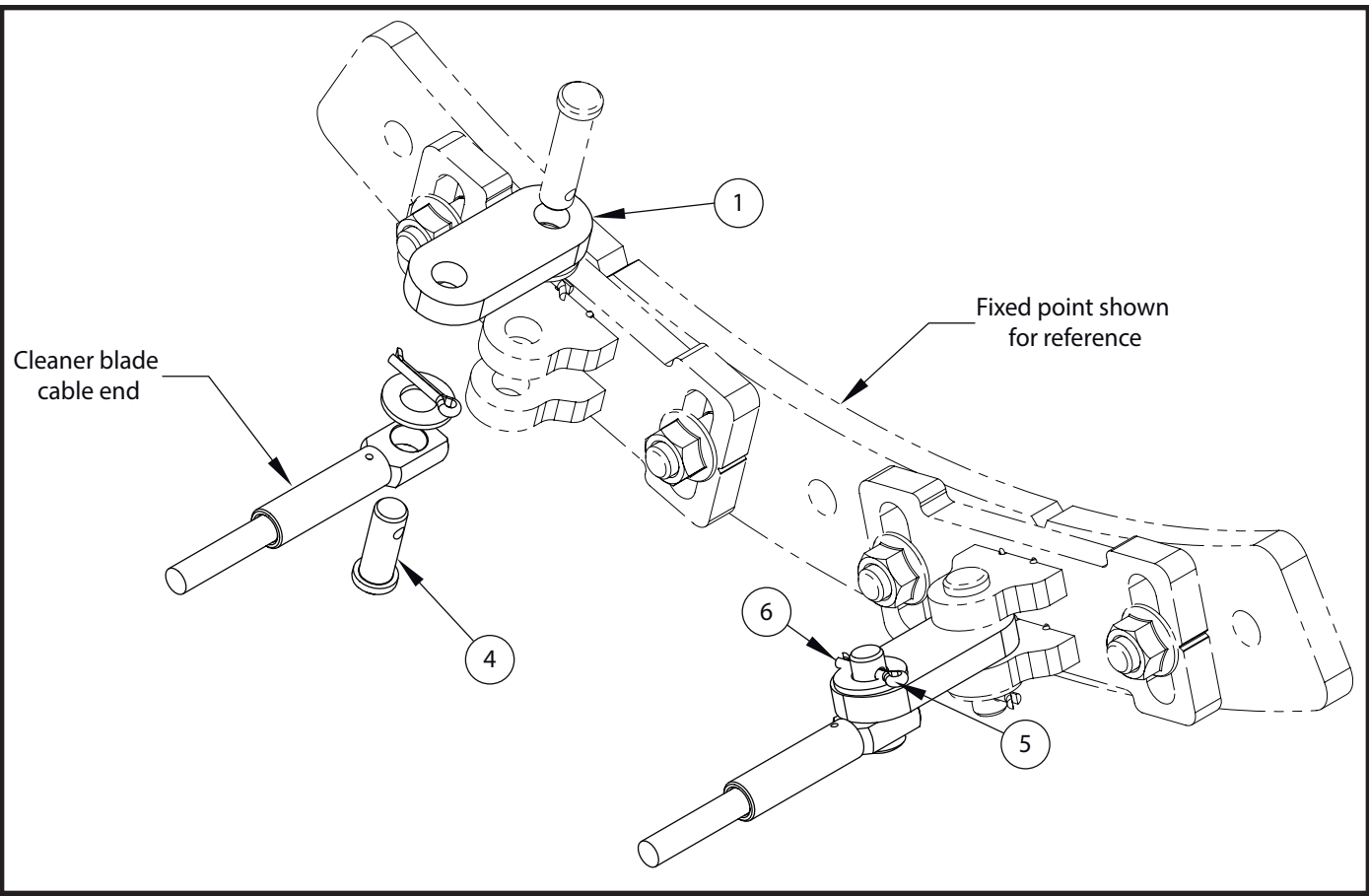


Figure 16. Wide Chute Wall Adapter Kit, P/N C1CP30000X*

Item	Qty.	Description	Part Number
1	2	40 mm Adapter Plate	C1CP30001S
(NS) 2	2	65 mm Adapter Plate	C1CP30002S
(NS) 3	2	90 mm Adapter Plate	C1CP30003S
4	2	Pin Clevis 3/8 x 1	Table XVIII
5	2	Washer Flat 3/8 Narrow SS	16206
6	2	Pin Cotter 1/8 x 3/4 SS	31297

NS=Not Shown

*X indicates material: Zinc Plated (T) or 316 Stainless Steel (S)

Table XVIII. Part Numbers for Wide Chute Wall Adpater Kit

Assembly Part No.	Part No. Item 4
C1CP30000S	SUS10200
C1CP30000T	SUS10198

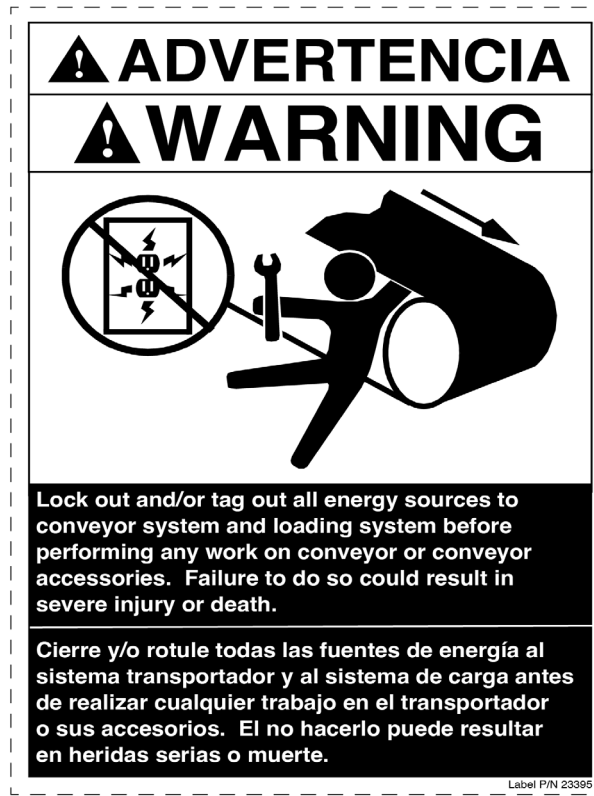
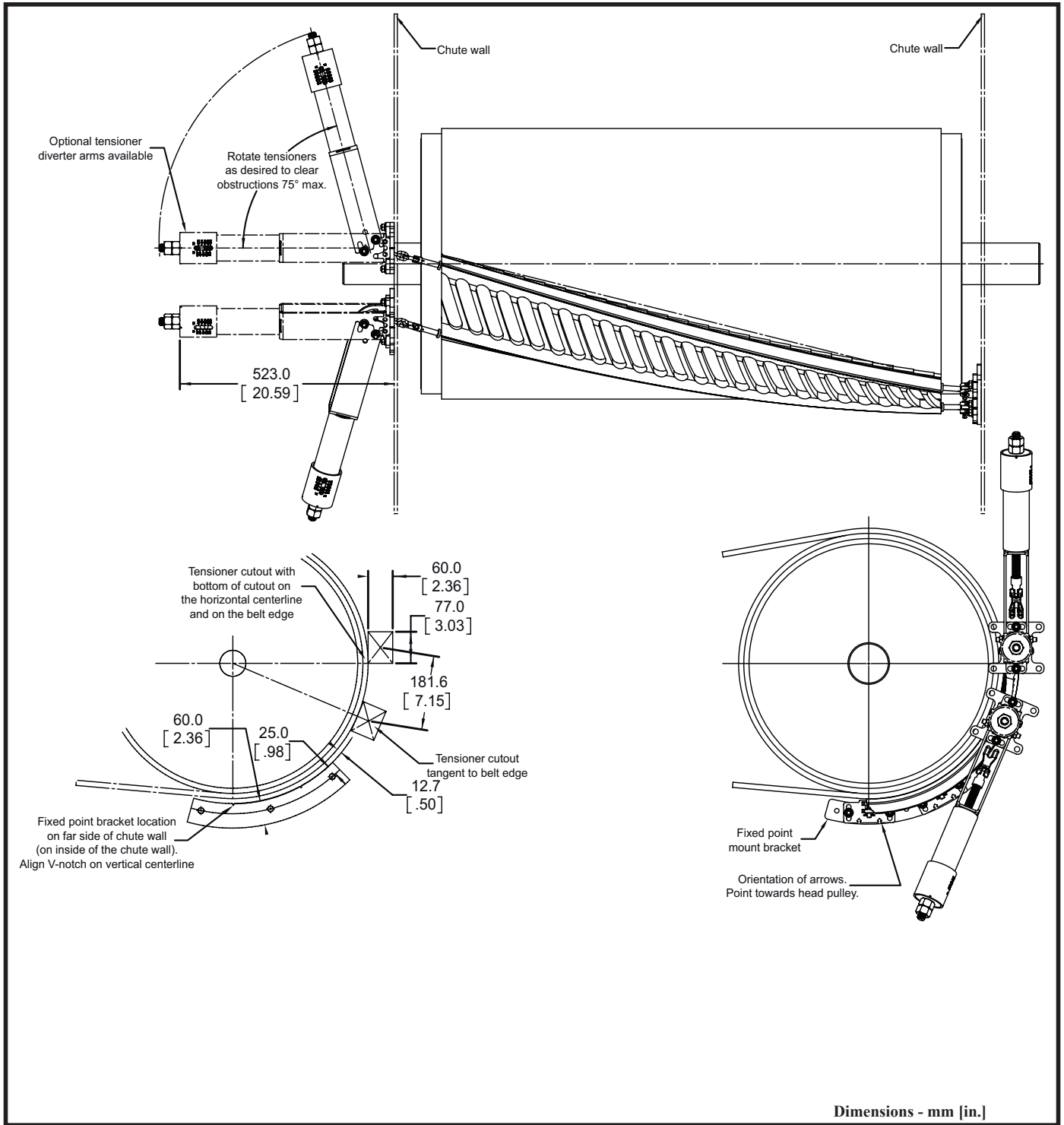


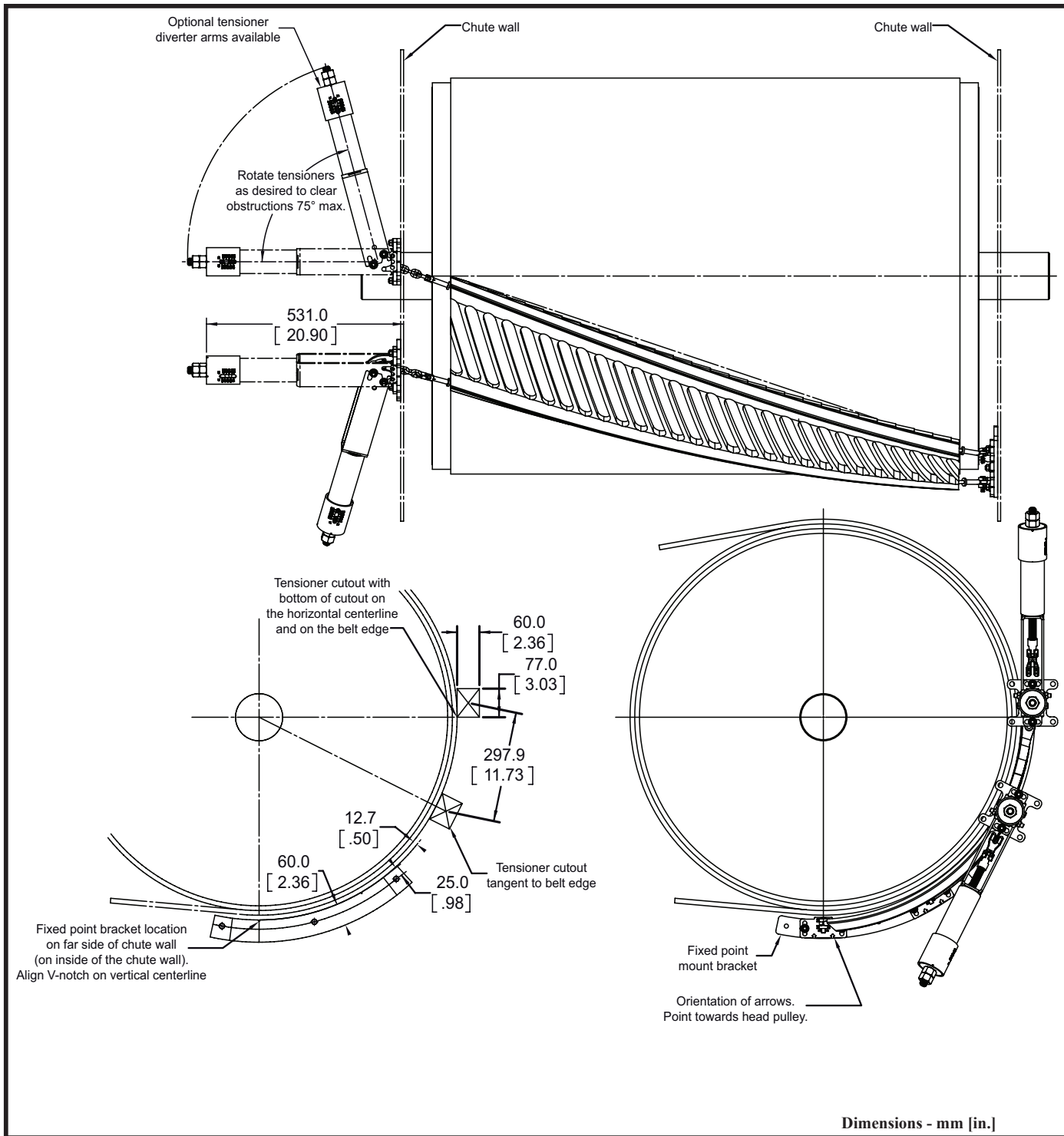
Figure 17. Martin® Conveyor Products Warning Label, P/N 23395

Appendix

CleanScrape® Cleaners Mounting Location Options

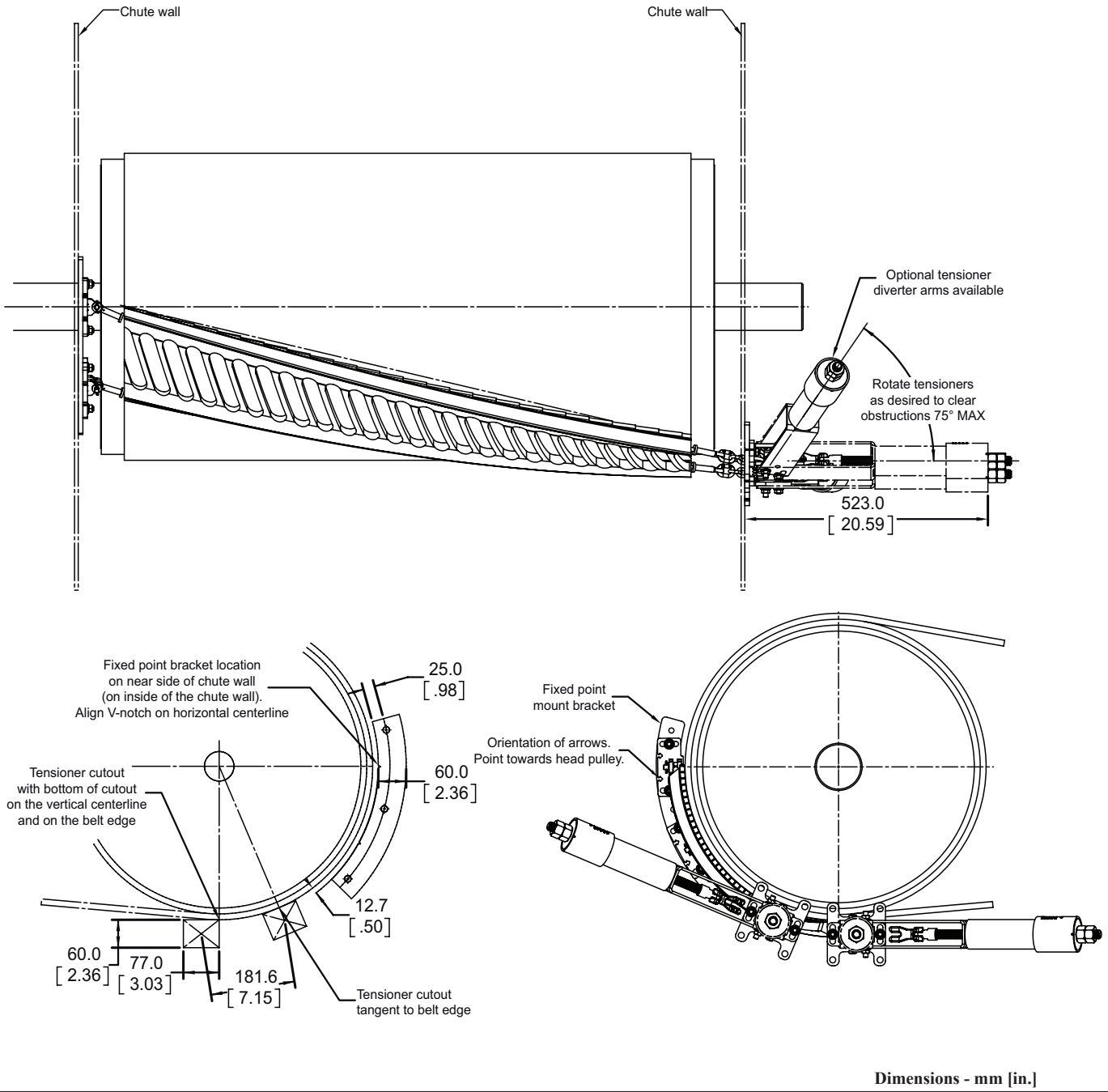


Preferred Mounting Location for CleanScape® Medium Cleaner



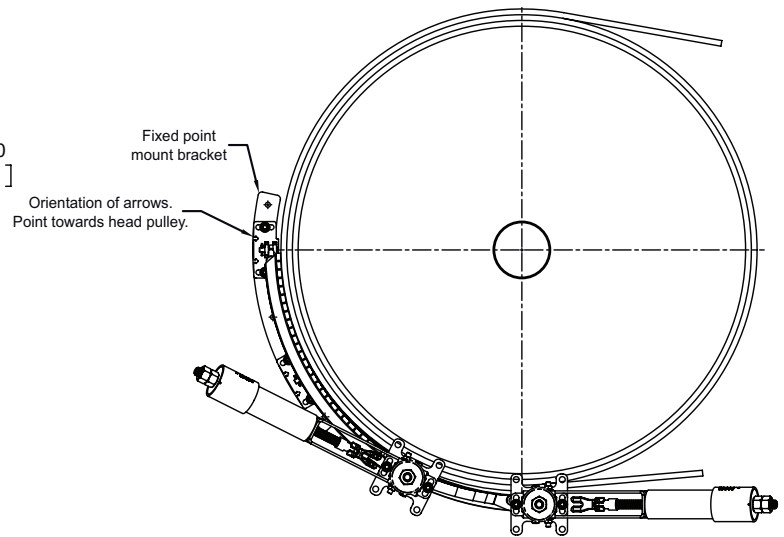
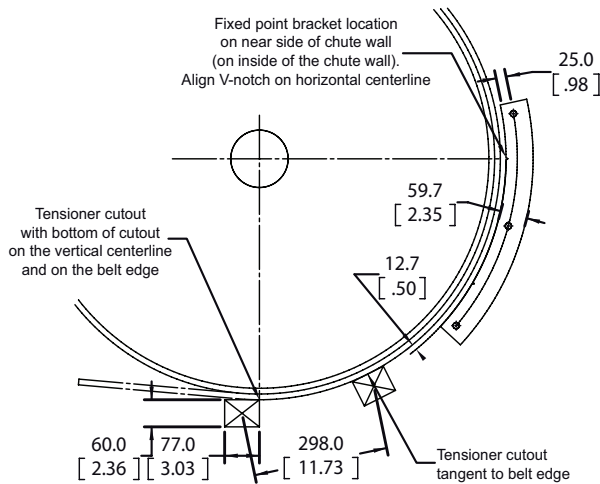
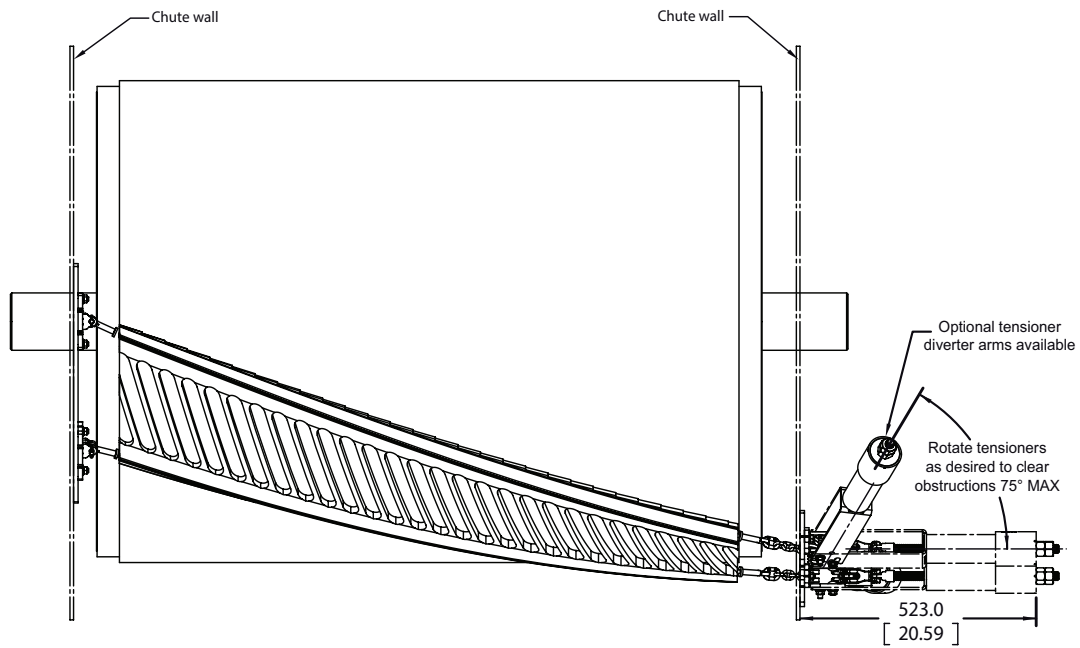
Preferred Mounting Location for CleanScape® Large and HD Cleaners

Cleaner assembly with tensioner at the bottom is not the preferred installation position.
Use only when no other options are available.



Bottom Side Tensioner Mounting for CleanScape® Medium Cleaners

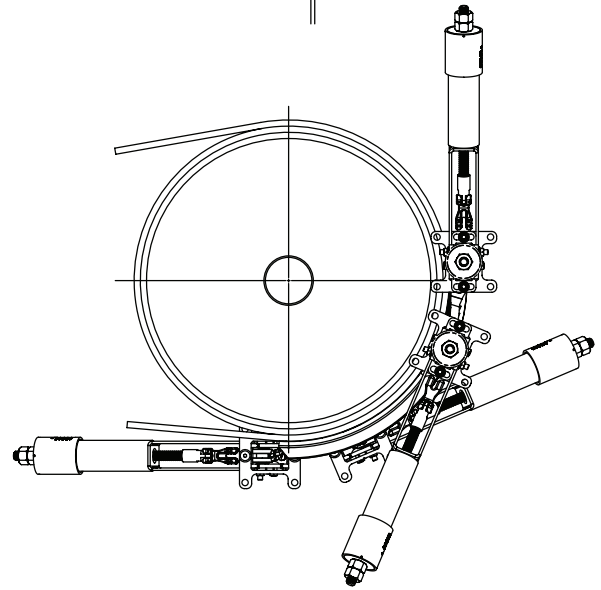
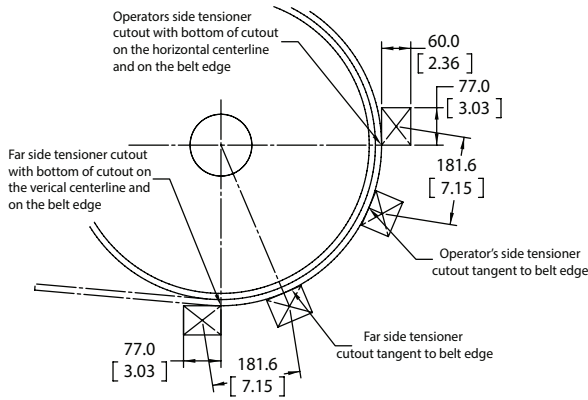
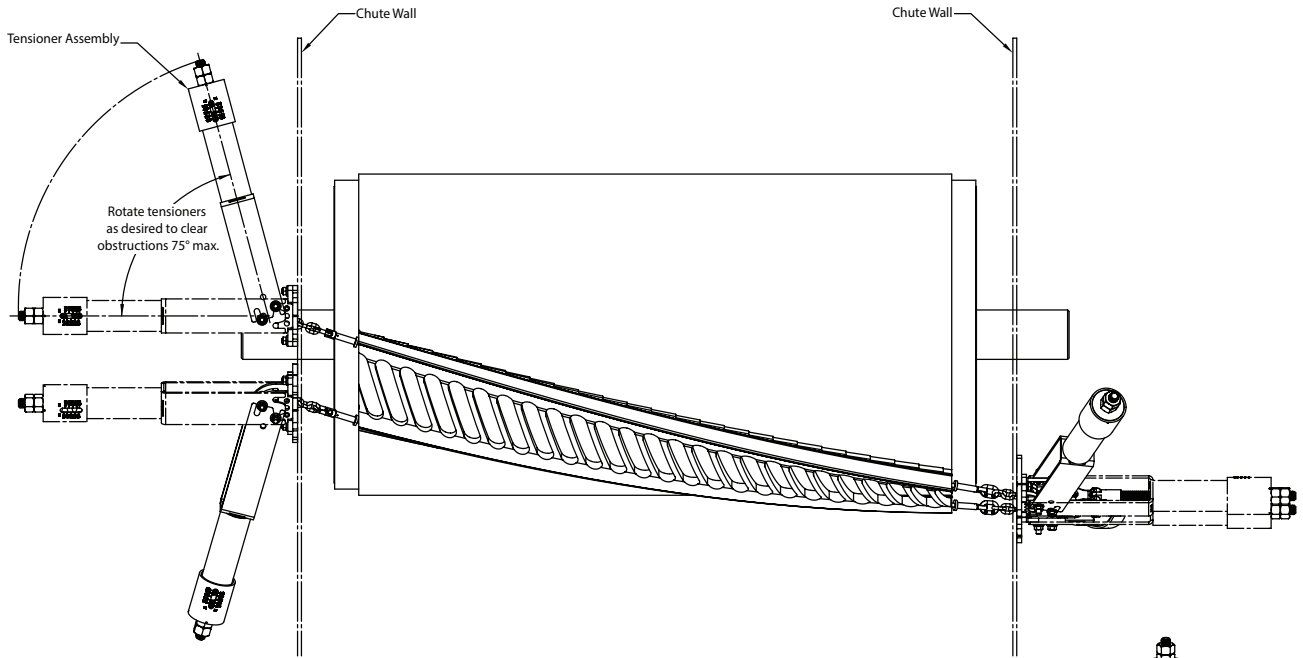
**Cleaner assembly with tensioner at the bottom is not the preferred installation position.
Use only when no other options are available.**



Dimensions - mm [in.]

Bottom Side Tensioner Mounting for CleanScape® Large and HD Cleaners

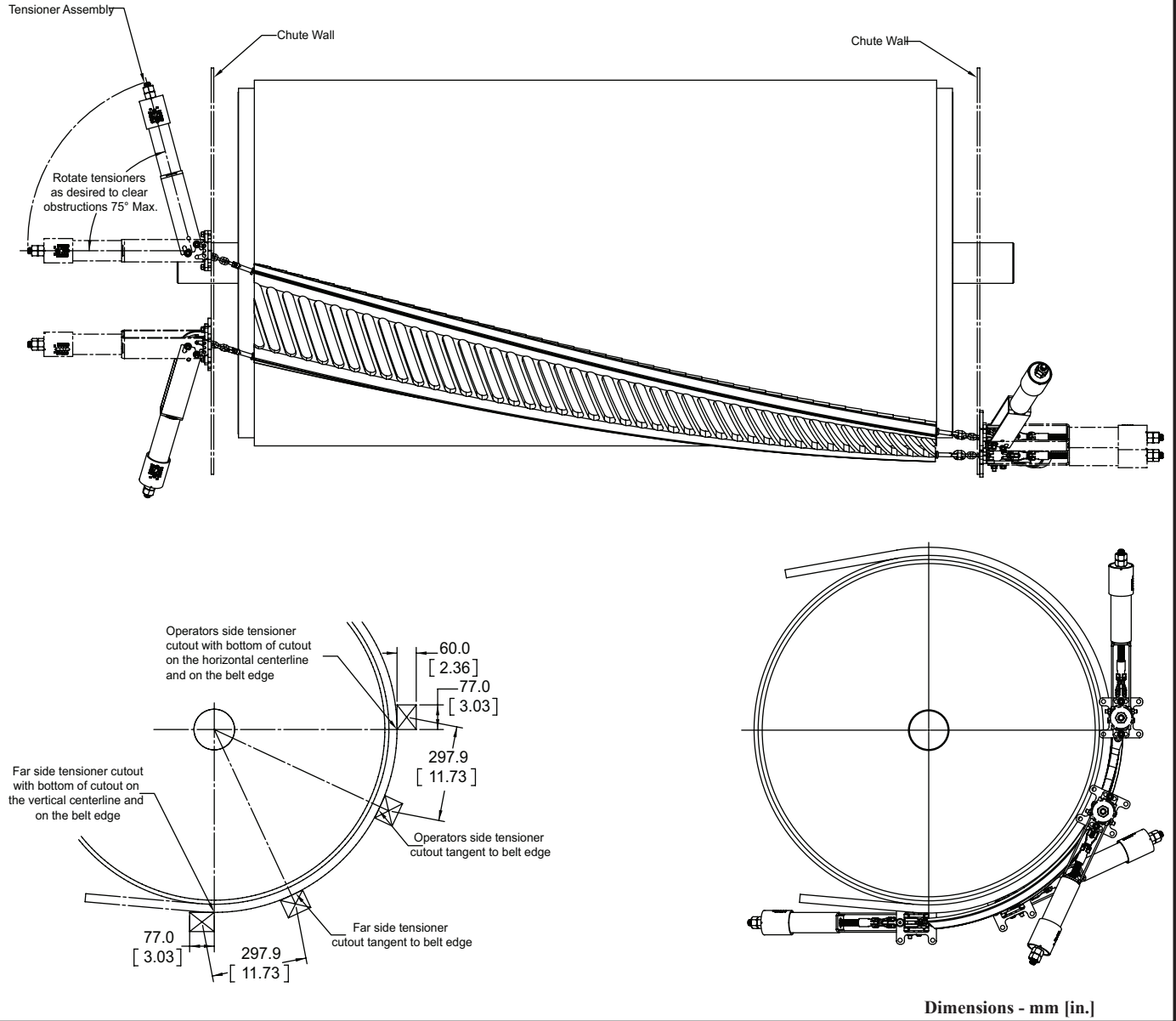
**This assembly does not use a fixed point bracket.
Two tensioners are installed on the operator side chute wall
and two tensioners are installed on the far side chute wall.**



Dimensions - mm [in.]

**Mounting Location for CleanScape® Medium Cleaner
Requiring Tensioners on Both Sides**

**This assembly does not use a fixed point bracket.
Two tensioners are installed on the operator side chute wall
and two tensioners are installed on the far side chute wall.**

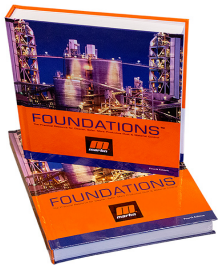


**Mounting Location for CleanScape® Large and HD Cleaners
Requiring Tensioners on Both Sides**

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



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