



CleanScrape[®] CSP-M & CSP-L Cleaners

[Go to CleanScrape[®] 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) 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

Section	Page
List of Figures	ii
List of Tables	ii
Introduction	1
General	1
Installations without chutework	1
Belt cleaner inspection access	1
References	1
Materials required	1
Safety	3
Before Installing Belt Cleaner	4
Installing chains	6
Installing Belt Cleaner and Tensioners	7
Locating belt cleaner	7
After Installing Belt Cleaner	13
Weekly Maintenance	14
Replacing breakaway link	15
Troubleshooting	16
Part Numbers	17
Appendix	A-1

List of Figures

Figure	Title	Page
1	Belt Cleaner Mounting Orientation	5
2	Installing Chains and Breakaway Links	6
3	Belt Cleaner Location and Chute Wall Cutouts.	7
4	Installing Fixed Point Bracket	8
5	Installing Tensioners	9
6	Positioning Cleaner	10
7	Measure Cleaner Angle	11
8	Replacing Breakaway Link	15
9	Martin® CleanScrape Assembly, P/N CSP-M-XXXXXX-XXX	18
10	Martin® CleanScrape Assembly, P/N CSP-L-XXXXXX-XXX	20
11	Optional Diverter Arms	22
12	Wide Chute Wall Adapter Kit, P/N 39369-KIT.	23
13	Martin® Conveyor Products Warning Label, P/N 23395	24

List of Tables

Table	Title	Page
I	Martin® CleanScrape Carbide Blade Selection	2
II	Martin® CleanScrape Conveyor Requirements	2
III	Part Numbers and Dimensions for Martin® CleanScrape Assembly, P/N CSP-M-XXXXXX-XXX	19
V	Part Numbers and Dimensions for Martin® CleanScrape Assembly, P/N CSP-L-XXXXXX-XXX.	21

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) 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

Materials required

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

Table I. CleanScrape® Carbide Blade Selection

CARBIDE SELECTION	APPLICATION DESCRIPTION	TYPICAL MATERIALS
TU01	Suitable for all less abrasive materials and low belt speeds. Applicable with mechanical belt splices.	Limestone, Salt, Sugar, Coal
TU02	Suitable for moderately abrasive materials and medium belt speeds. Applicable with mechanical belt splices.	Gravel, Clinker, Sandstone
TU03	Suitable for highly abrasive materials and high belt speeds. Do not use with mechanical belt splices.	Sand, Glass, Ore
TU04	Suitable for extremely abrasive materials and highest belt speeds. Do not use with mechanical belt splices.	Quartz Sand, Glass Ash, Ore
TU05	Suitable for conditions similar to TU01 and TU02 with chemical resistance. Applicable with mechanical belt splices.	

Belt Speed	Low Abrasive Material	Moderately Abrasive Material	Highly Abrasive Material	Extremely Abrasive Material	Chemical Resistance
0.5 m/s	TU01	TU01	TU02	TU03	TU05
1.0 m/s	TU01	TU01	TU02	TU03	TU05
1.5 m/s	TU01	TU02	TU02	TU03	TU05
2.0 m/s	TU01	TU02	TU02	TU03	TU05
2.5 m/s	TU01	TU02	TU02	TU03	TU05
3.0 m/s	TU01	TU02	TU02	TU03	TU05
3.5 m/s	TU02	TU02	TU02	TU03	TU05
4.0 m/s	TU02	TU02	TU02	TU03	TU05
4.5 m/s	TU02	TU02	TU03	TU03	
5.0 m/s	TU02	TU02	TU03	TU03	
5.5 m/s	TU02	TU03	TU03	TU03	
6.0 m/s	TU02	TU03	TU03	TU04	
6.5 m/s	TU03	TU03	TU03	TU04	
7.0 m/s	TU03	TU03	TU03	TU04	

Table II. CleanScrape® Conveyor Requirements

Cleaner Type	Head Pulley Diameter		Belt Width	Maximum Belt Speed	
	Min.	Max.		Vulcanized Splice	Mechanical Splice
CSP-M	22 in.	34 in.	18–72 in.	1500 Ft/Min	800 Ft/Min
CSP-L	35 in.	50 in.	36–96 in.	1500 Ft/Min	800 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.



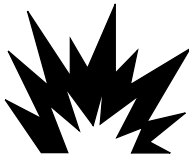
⚠ DANGER

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



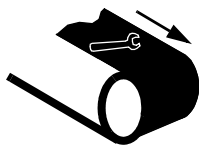
⚠ DANGER

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

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 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.

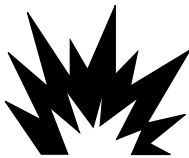


⚠ DANGER

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.

NOTE

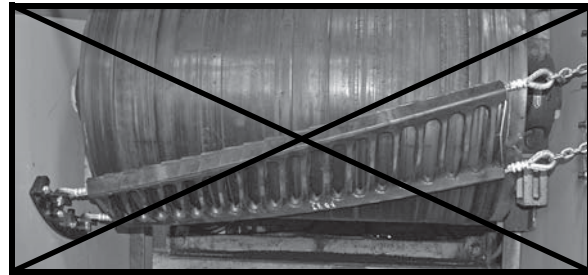
The chute wall that the tensioner will be located on is referred to as the "operator side." The other side of the chute is referred to as the "far side."

NOTE

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



Correct Mounting Position



Incorrect Mounting Position

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. Make sure cleaner does not lie in path of material unloading from conveyor belt.
 - b. The ideal installation angle is 14–17 degrees.
 - c. 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 24 in. head pulley is 72 in.
 - d. 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.
7. 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.

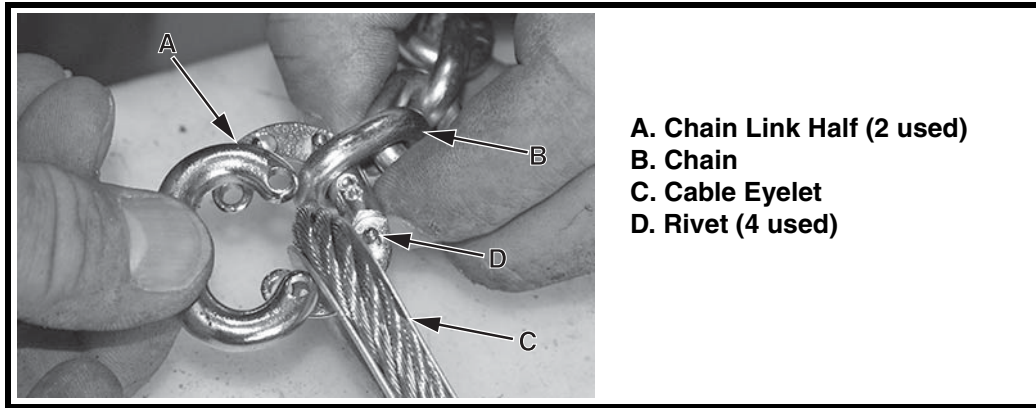


Figure 2. Installing Chains and Breakaway Links

Installing chains

NOTE

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 of chute tensioners will be located on. Tensioners and chains can be installed on either side of cleaner, 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 and peen rivets (D) to lock chain link halves together.
 - d. Repeat steps a–c for second chain.

Installing Belt Cleaner & Tensioners

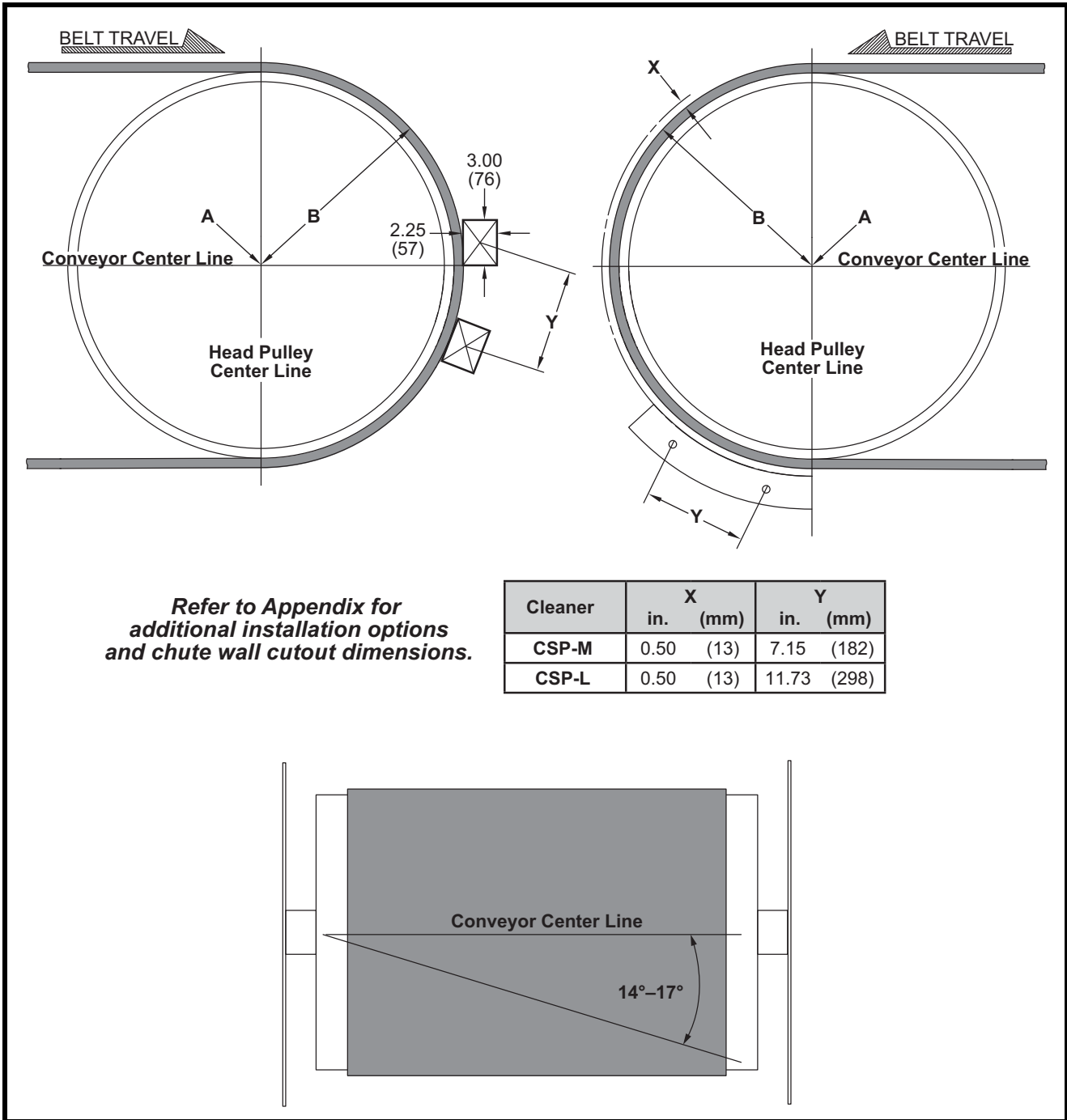


Figure 3. Belt Cleaner Location & Chute Wall Cutouts

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 3.
3. On the far side of 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 a radius of (B).

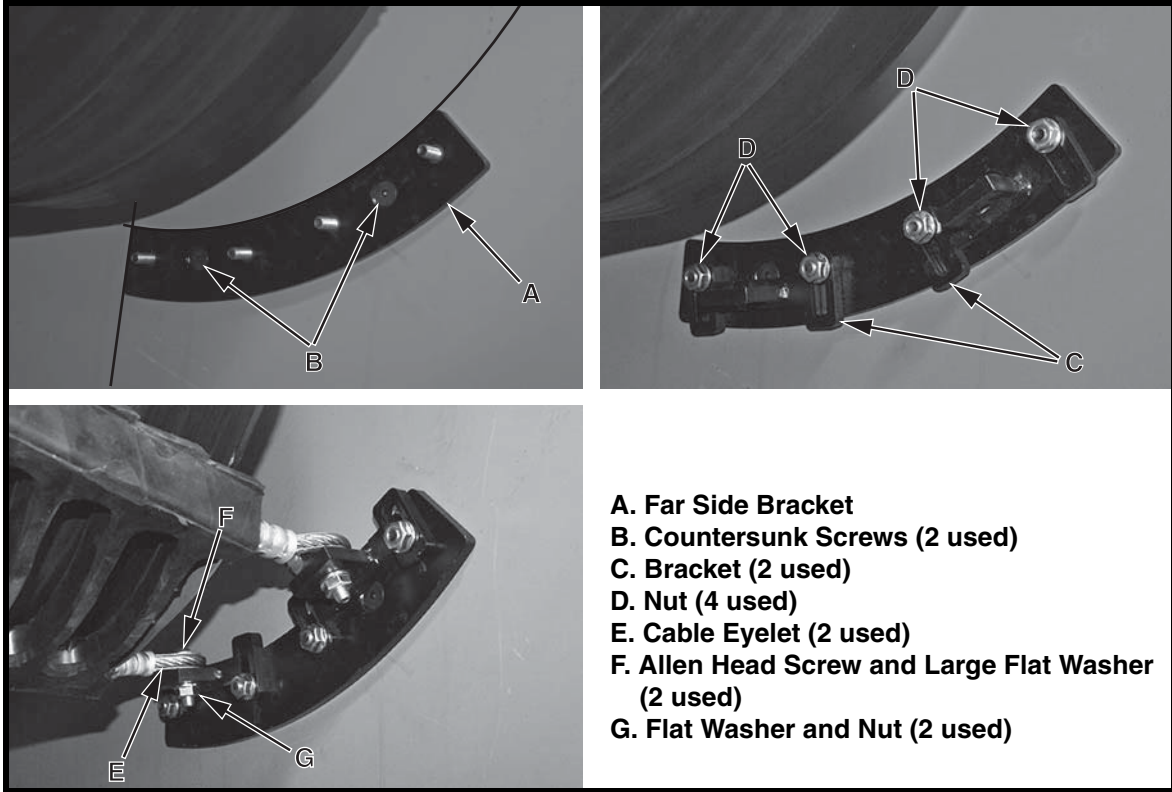


Figure 4. Installing Fixed Point Bracket

5. On the far side of chute:
 - a. Draw a centerline of the head pulley perpendicular to the conveyor belt line.
 - b. If bolting fixed point bracket to chute wall, do the following:
 - (1) Position fixed point bracket on far side chute wall as shown in Figure 3.
 - (2) Mark bracket hole locations.
 - (3) Drill or cut two 1/2-in. holes for screws in far side chute wall.
 - (4) Mount fixed point bracket 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 3.
 - (2) Weld bracket to chute wall. Weld completely around bracket. Do not skip weld.
 - d. Install brackets (C) using nuts (D). Hand tighten nuts.
 - e. Attach cleaner to far side bracket by inserting hex head screw and large flat washer (B) through cable hook (A) and fastening with flat washer and nut (C). Hand tighten nuts.

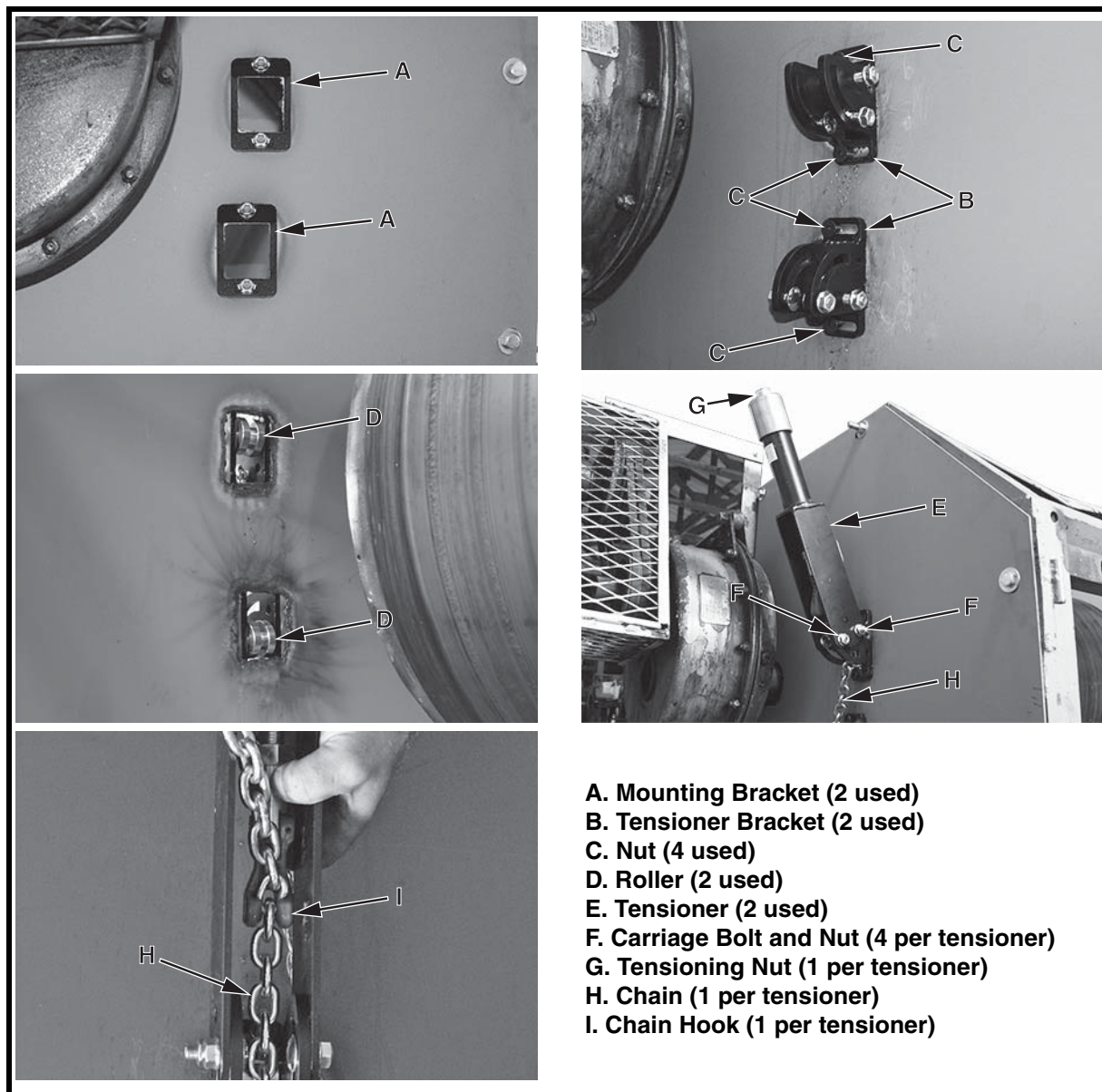


Figure 5. Installing Tensioners

6. On the operator side of chute:
 - a. Draw conveyor centerline parallel to the conveyor belt line.
 - b. Position weld plate as shown in Figure 3. 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. Refer to Appendix for CSP-S chute wall cutout location and dimensions.
 - c. Mark second chute wall cutout as shown in Figure 3. Dimension Y is equal to the distance between mount holes on far side bracket.
 - d. Cut holes in chute wall. Remove burrs and sharp edges.
 - e. Center mounting brackets (A) on cutouts and weld to chute wall.

- f. Mount tensioner brackets (B) onto mounting bracket 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 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.
11. Route chain (H) through chute wall and tensioner bracket.
12. Pull chain into hook (I).
13. Repeat steps 6–11 for remaining tensioner.
14. Tighten tensioner nut (G) until center of cleaner is held firmly against head pulley.

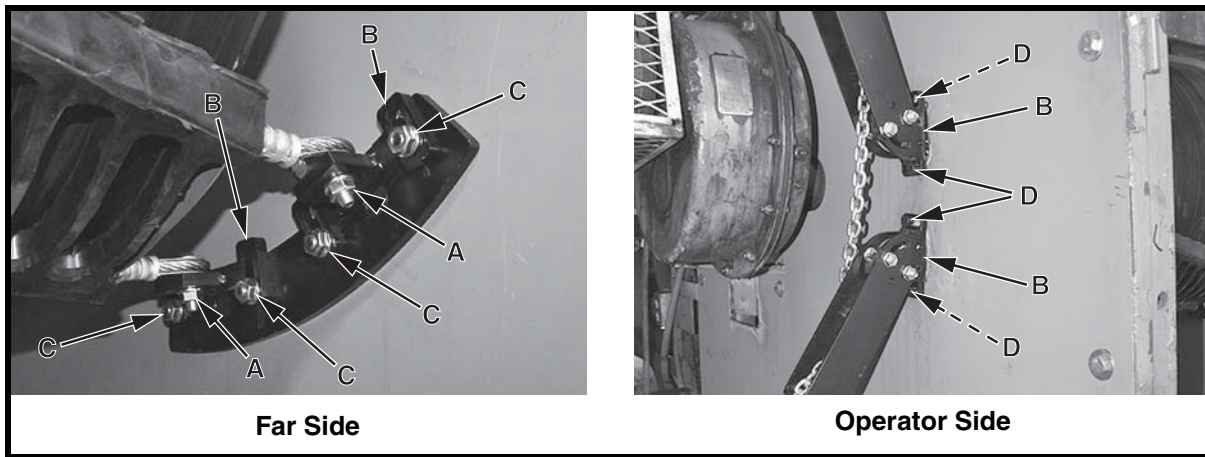


Figure 6. Positioning Cleaner

15. Tighten nuts (A).
16. Adjust brackets (B) on the operator side and far side, so outer two elements on each side are approximately 1/8-in. away from belt.
17. Tighten nuts (C) and countersunk screws and nuts (D).

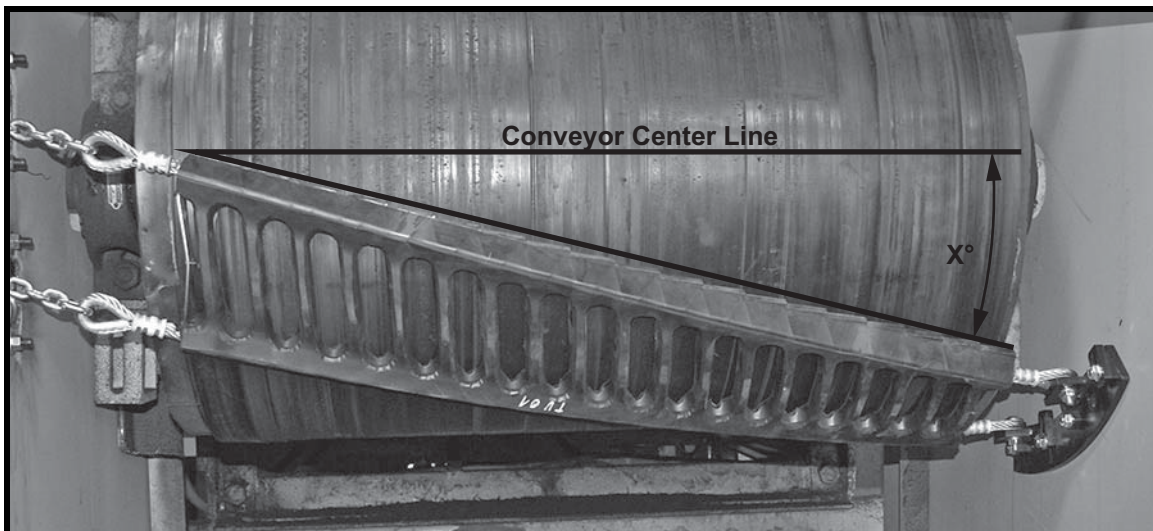


Figure 7. Measure Cleaner Angle

18. Measure angle of cleaner.
19. Determine tension required according to tensioning chart. Tensioning values shown are for cleaners mounted at 17°. If angle of cleaner is less than 17° tensioning force will need to be increased.
20. Tighten tensioners. Install and tighten jam nut against tensioning nut on each tensioner.
21. Make sure outer two elements on each side are approximately 1/8-in. away from belt.
22. If using Martin® Inspection Door, cut access door opening and mounting holes according to *Martin® Inspection Door Operator's Manual*, P/N M3891.

NOTE

The following charts are initial settings for cleaners installed at 17°. For cleaners installed at an angle greater than 17° force required will be less than shown. For cleaners installed at an angle less than 17° force required will be greater than shown.

CleanScrape® CSP-M Tensioning Chart

Head Pulley Diameter	Tensioner Type	Upper Rope Force Required	Lower Rope Force Required*
22 in.	2.8	1.60 KN	1.44 KN
26 in.	2.8	1.65 KN	1.49 KN
30 in.	2.8	1.75 KN	1.58 KN
33 in.	2.8	1.85 KN	1.67 KN
34 in.	2.8	2.10 KN	1.89 KN

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

CleanScrape® CSP-L Tensioning Chart

Head Pulley Diameter	Tensioner Type	Upper Rope Force Required	Lower Rope Force Required*
35 in.	2.8	2.60 KN	2.34 KN
39 in.	2.8	2.70 KN	2.43 KN
43 in.	4.2	3.00 KN	2.70 KN
47 in.	4.2	3.25 KN	2.93 KN
50 in.	4.2	3.60 KN	3.24 KN

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

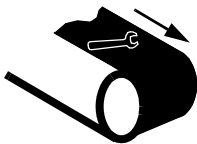
After Installing Belt Cleaner



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.

⚠ 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.”

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. 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 3/16 in.
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

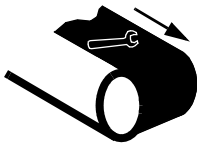
Failure to remove tools from maintenance area and conveyor belt before turning on energy source can cause serious injury to personnel and damage to belt.

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.



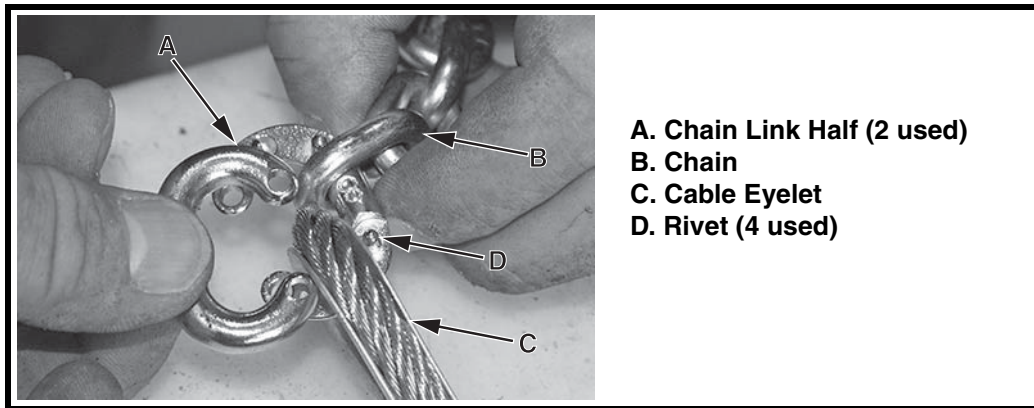


Figure 8. Replacing Breakaway Link

Replacing Breakaway Link

NOTE

The CleanScrape® 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, install new links 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 and peen rivets (D) to lock chain link halves together.

Troubleshooting

Symptom	Corrective Action
Insufficient cleaning and carryback.	Check to see that cleaner is contacting the belt across the front edge of the cleaner.
Belt is cleaner on one side than the other.	Adjust cleaner closer to the belt (see Figure 6).
Blade dancing or vibration.	Check tension on tensioner gauge to be sure of proper tension. Reset tension according to tensioning charts.
Cleaner is catching on mechanical splice.	Check that outer 2 elements are off the belt by up to a 1/8 in. to allow for the splice to flow through the cleaner without catching.

NOTE

Conveyor equipment such as conveyor belt cleaners are subject to a wide variety of bulk materials characteristics and often have to perform under extreme operating or environmental conditions. It is not possible to predict all circumstances that may require troubleshooting. Contact Martin Engineering or a representative if you are experiencing problems other than those listed in the “Troubleshooting” chart above. Do not return the equipment to operation until the problem has been identified and corrected.

Installation checklist

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

Installation Checklist
✓ Pre-Cleaner blade is proper distance from belt surface on both sides of head pulley.
✓ 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 CleanScrape[®] and related equipment. Please reference part numbers when ordering parts:

NOMENCLATURE	CSP	M	XX	XX	X	X	XXXX
P/N 5-Digit Prefix	_____						
Belt Width (inches)	_____		_____	_____	_____	_____	_____
No. of Elements in Blade	_____		_____	_____	_____	_____	_____
Blade Carbide Type*	_____		_____	_____	_____	_____	_____
Swage Sleeves	_____		_____	_____	_____	_____	_____
Installation Kit	_____		_____	_____	_____	_____	_____

*See Table I

SWAGE SLEEVES
C: Copper
Blank: Aluminum

INSTALLATION KIT
T28: 2.8 KN Steel Spring Tensioner
T28C: Stainless Steel 2.8 KN Spring Tensioner
T42: 4.2 KN Steel Spring Tensioner
T42C: Stainless Steel 4.2 KN Spring Tensioner

NOMENCLATURE	CSP	L	X	XX	XX	X	X	XXXX
P/N Prefix	_____							
Chain Size	_____		_____	_____	_____	_____	_____	_____
Belt Width (inches)	_____		_____	_____	_____	_____	_____	_____
No. of Elements in Blade	_____		_____	_____	_____	_____	_____	_____
Blade Carbide Type*	_____		_____	_____	_____	_____	_____	_____
Swage Sleeves	_____		_____	_____	_____	_____	_____	_____
Installation Kit	_____		_____	_____	_____	_____	_____	_____

*See Table I

CHAIN SIZE
6: 6mm Chain for 2.8 KN and 4.2 KN Tensioners
8: 8mm Chain for 6.6 KN Tensioners

SWAGE SLEEVES
C: Copper
Blank: Aluminum

INSTALLATION KIT
T28: 2.8 KN Steel Spring Tensioner
T28C: Stainless Steel 2.8 KN Spring Tensioner
T42: 4.2 KN Steel Spring Tensioner
T42C: Stainless Steel 4.2 KN Spring Tensioner
T66: 6.6 KN Steel Spring Tensioner
T66C: Stainless Steel 6.6 KN Spring Tensioner

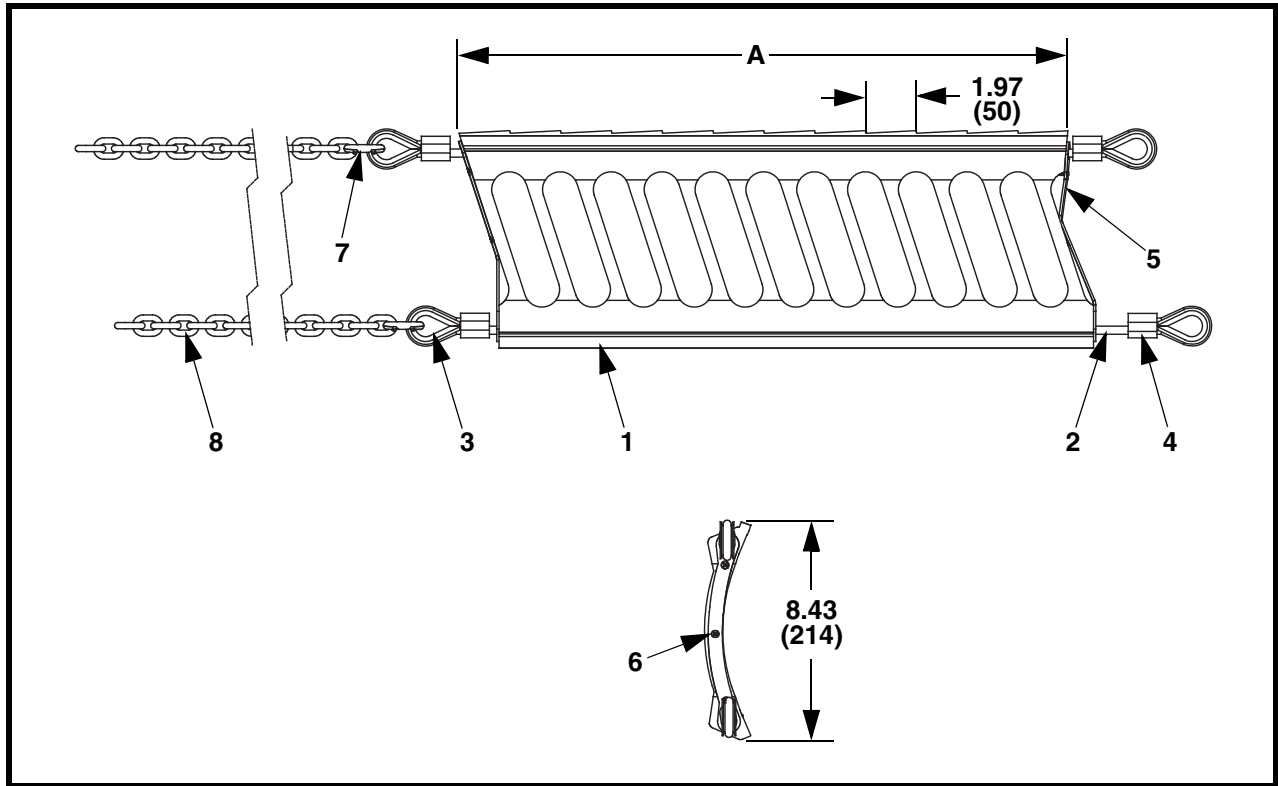


Figure 9. CleanScape® Assembly, P/N CSP-M-XXXXXX-XXXX

Item	Description	Part No.	Qty.
1	Blade 50mm LG Element	Table III	Tbl III
2	Wire Rope 8mm SS	CSP-040171	Tbl III
3	Wire Rope Thimble for 8mm Cable	CSP-031605	4
4	Swage Sleeve for 8mm Cable	Table III	4
5	End Link – Medium	CSP-038137	2
6	Screw Wood #6 x 3/4 316 SS	39367	6
7	Chain Safety Link 8mm SS	CSP-039119	2
8	Chain	CSP-042741	5.0
9 (NS)	Installation Kit	Table III	1
10 (NS)	Label Conveyor Products Warning	23395	2
11 (NS)	Operator's Manual	M4033	1

NS = Not Shown

**Table III. Part Numbers and Dimensions for CleanScrape® Assembly,
P/N CSP-M-XXXXXX-XXXX**

Assembly Part No.	Dim. A in. (mm)	Qty Item 1	Qty Item 2
CSP-M-1809XX-XXXX	17.63 (448)	9	5.0
CSP-M-2412XX-XXXX	23.53 (598)	12	6.0
CSP-M-3015XX-XXXX	29.44 (748)	15	7.0
CSP-M-3618XX-XXXX	35.34 (898)	18	8.0
CSP-M-4221XX-XXXX	41.25 (1048)	21	9.0
CSP-M-4824XX-XXXX	47.15 (1198)	24	10.0
CSP-M-5427XX-XXXX	53.06 (1348)	27	11.0
CSP-M-6030XX-XXXX	58.96 (1498)	30	12.0
CSP-M-6633XX-XXXX	64.87 (1648)	33	13.0
CSP-M-7236XX-XXXX	70.78 (1798)	36	14.0

Assembly Part No.	Part No. Item 1
CSP-M-XXXX1X-XXXX	CSP-M-TU01
CSP-M-XXXX2X-XXXX	CSP-M-TU02
CSP-M-XXXX3X-XXXX	CSP-M-TU03
CSP-M-XXXX4X-XXXX	CSP-M-TU04
CSP-M-XXXX5X-XXXX	CSP-M-TU05

Assembly Part No.	Part No. Item 4
CSP-M-XXXXX-XXXX	CSP-033365
CSP-M-XXXXXC-XXXX	CSP-041572

Assembly Part No.	Part No. Item 9
CSP-M-XXXXXX-T28	CSP-036705
CSP-M-XXXXXX-T28C	CSP-042975
CSP-M-XXXXXX-T42	CSP-100926
CSP-M-XXXXXX-T42C	CSP-042441

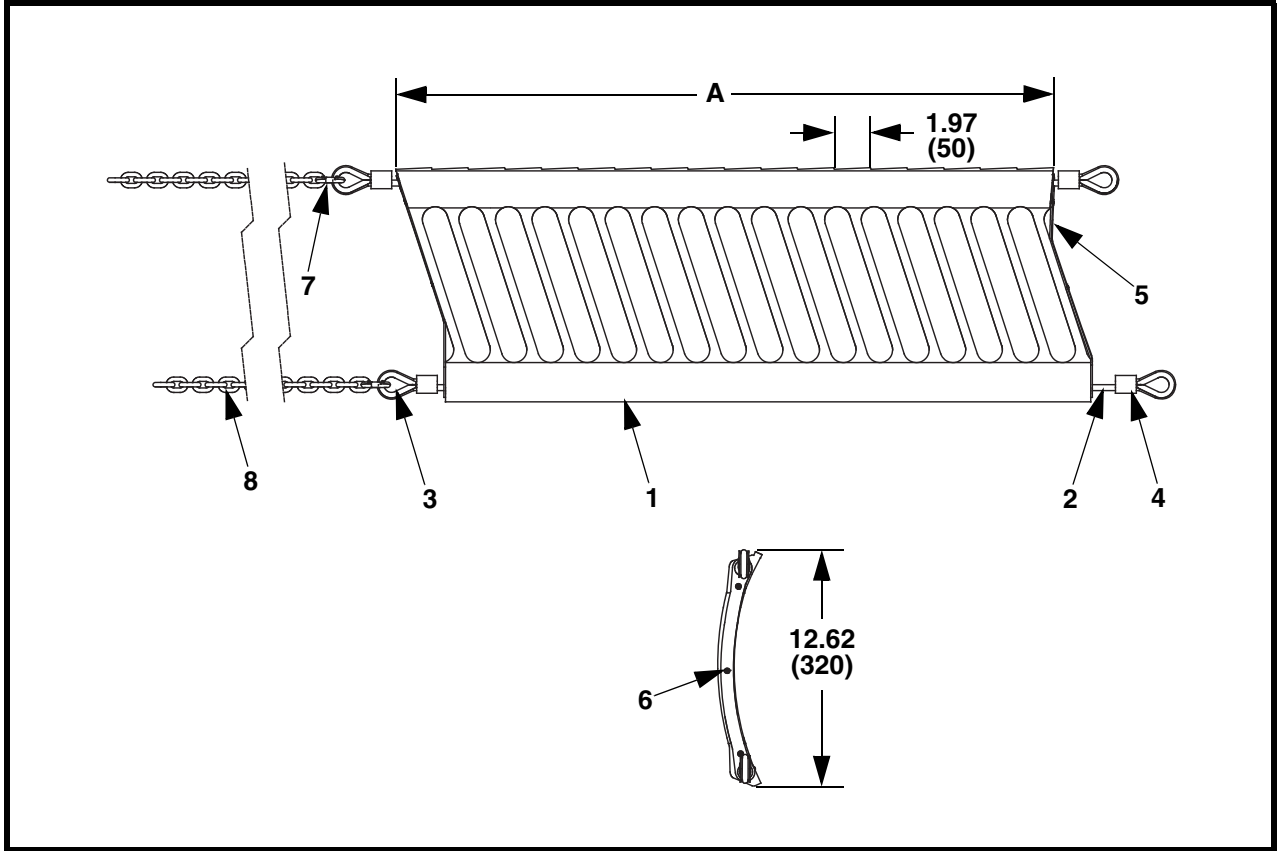


Figure 10. CleanScrape® Assembly, P/N CSP-LX-XXXXXX-XXXX

Item	Description	Part No.	Qty.
1	Blade 50mm LG Element	Table IV	Tbl IV
2	Wire Rope 8mm SS	CSP-040171	Tbl IV
3	Wire Rope Thimble for 8mm Cable	CSP-031605	4
4	Swage Sleeve for 8mm Cable	Table IV	4
5	End Link – Large	CSP-038138	2
6	Screw Wood #6 x 3/4 316 SS	39367	6
7	Chain Safety Link 8mm SS	Table IV	2
8	Chain	Table IV	5.0
9 (NS)	Installation Kit	Table IV	1
10 (NS)	Label Conveyor Products Warning	23395	2
11 (NS)	Operator's Manual	M4033	1

**Table IV. Part Numbers and Dimensions for CleanScrape® Assembly,
P/N CSP-LX-XXXXXX-XXXX**

Assembly Part No.	Dim. A in. (mm)	Qty Item 1	Qty Item 2
CSP-LX-3618XX-XXXX	35.34 (898)	18	8.0
CSP-LX-4221XX-XXXX	41.25 (1048)	21	9.0
CSP-LX-4824XX-XXXX	47.15 (1198)	24	10.0
CSP-LX-5427XX-XXXX	53.06 (1348)	27	11.0
CSP-LX-6030XX-XXXX	58.96 (1498)	30	12.0
CSP-LX-6633XX-XXXX	64.87 (1648)	33	13.0
CSP-LX-7236XX-XXXX	70.78 (1798)	36	14.0
CSP-LX-8442XX-XXXX	82.63 (2099)	42	16.0
CSP-LX-9648XX-XXXX	94.44 (2399)	48	18.0

Assembly Part No.	Part No. Item 1
CSP-LX-XXXX1X-XXXX	CSP-L-TU01
CSP-LX-XXXX2X-XXXX	CSP-L-TU02
CSP-LX-XXXX3X-XXXX	CSP-L-TU03
CSP-LX-XXXX4X-XXXX	CSP-L-TU04
CSP-LX-XXXX5X-XXXX	CSP-L-TU05

Assembly Part No.	Part No. Item 9
CSP-L6-XXXXXX-T28	CSP-042440
CSP-L6-XXXXXX-T28C	CSP-108003
CSP-L6-XXXXXX-T42	CSP-100799
CSP-L6-XXXXXX-T42C	CSP-107889
CSP-L8-XXXXXX-T66	CSP-108685
CSP-L8-XXXXXX-T66C	CSP-108722

Assembly Part No.	Part No. Item 4
CSP-LX-XXXXX-XXX	CSP-033365
CSP-LX-XXXXXC-XXX	CSP-041572

Assembly Part No.	Part No. Item 7	Part No. Item 8
CSP-L6-XXXXX-XXX	CSP-039119	CSP-042741
CSP-L8-XXXXX-XXX	CSP-101488	CSP-041655

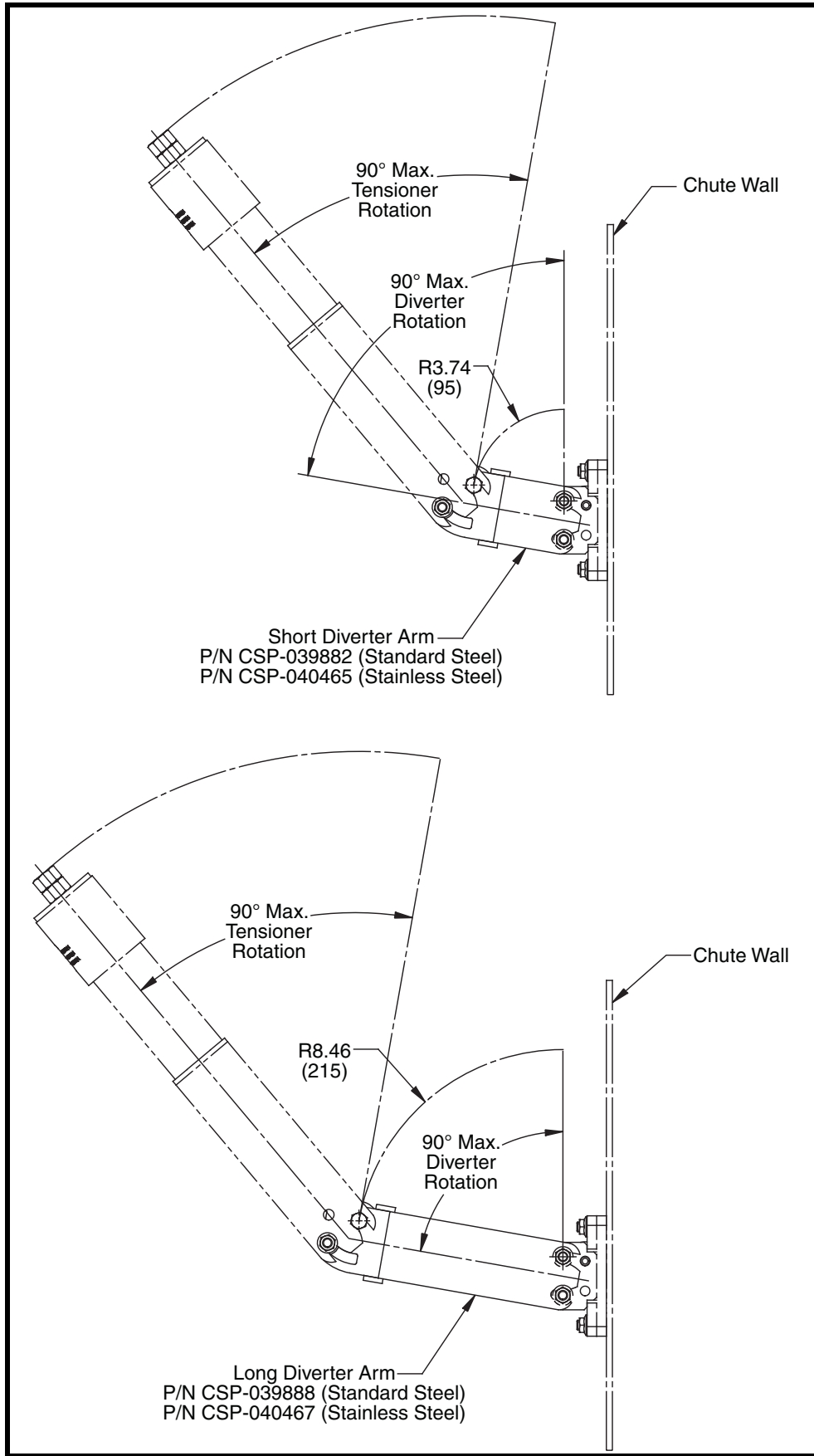


Figure 11. Optional Diverter Arms

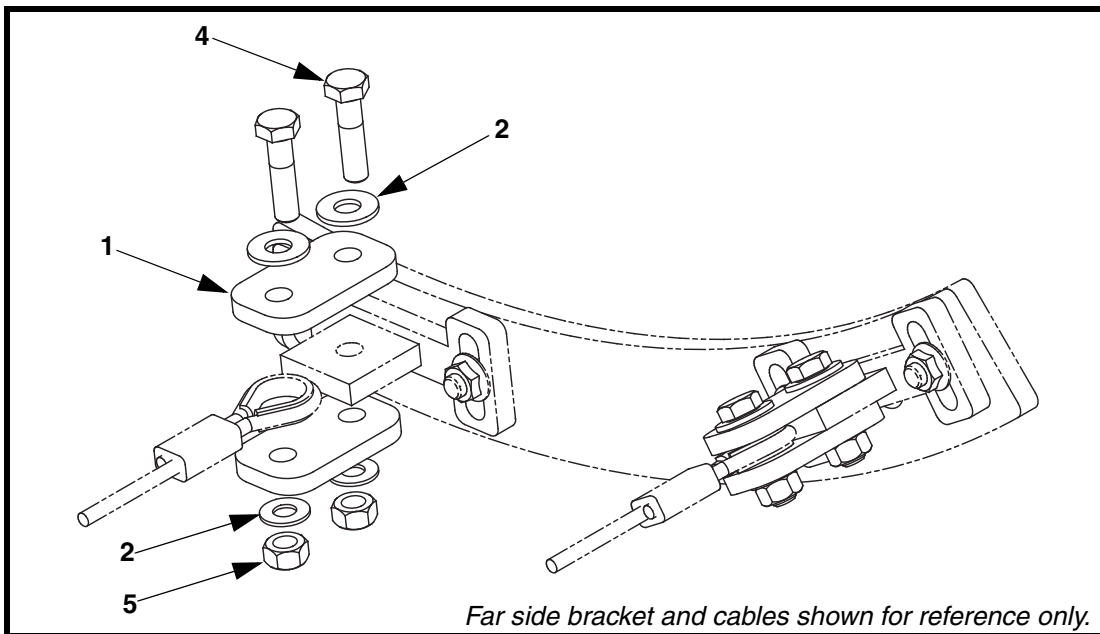


Figure 12. Wide Chute Wall Adapter Kit, P/N 39369-KIT

Item	Description	Part No.	Qty.
1	Adapter Plate	39369	4
2	Washer Flat 3/8 Wide ZP	18007	4
3	Washer Compression 3/8	11474	4
4	Screw HHC M10 x 1.5 x 40 CL 8.8 ZP	35324	4
5	Nut Hex M10 x 1.5 ZP	14139	4

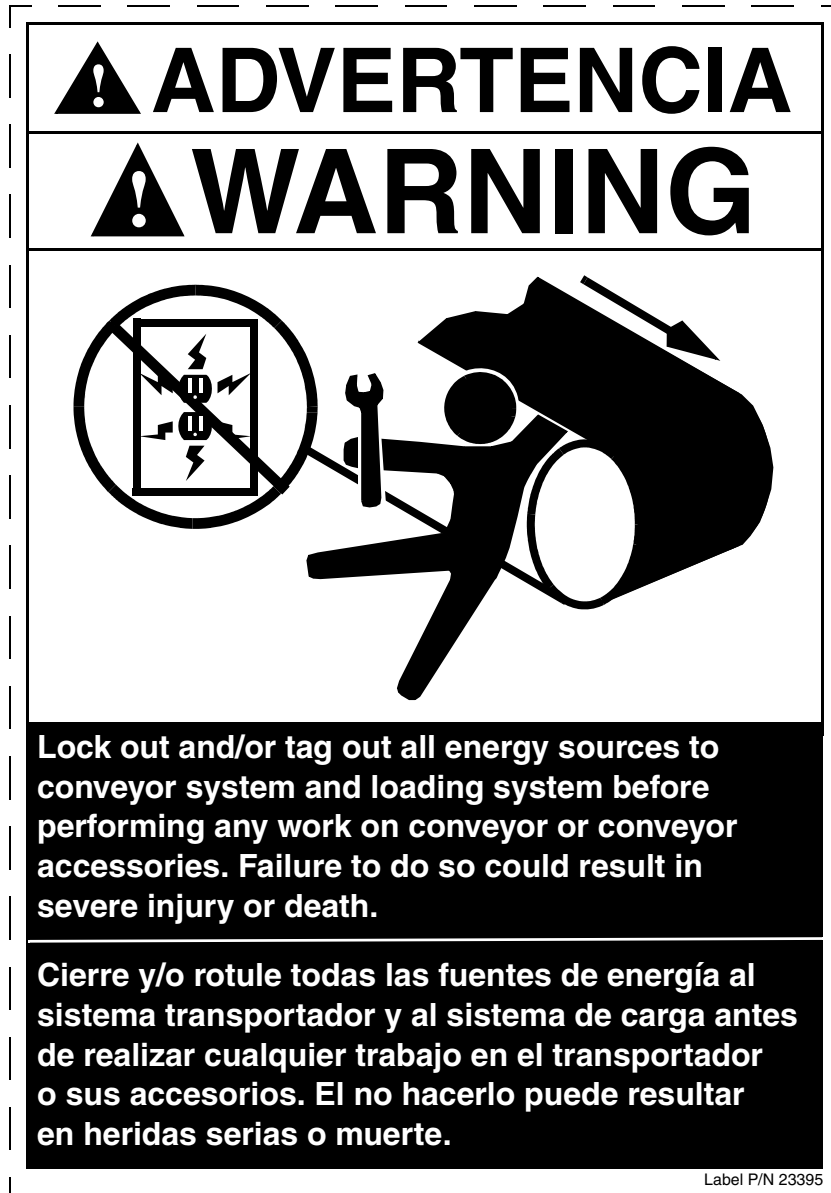
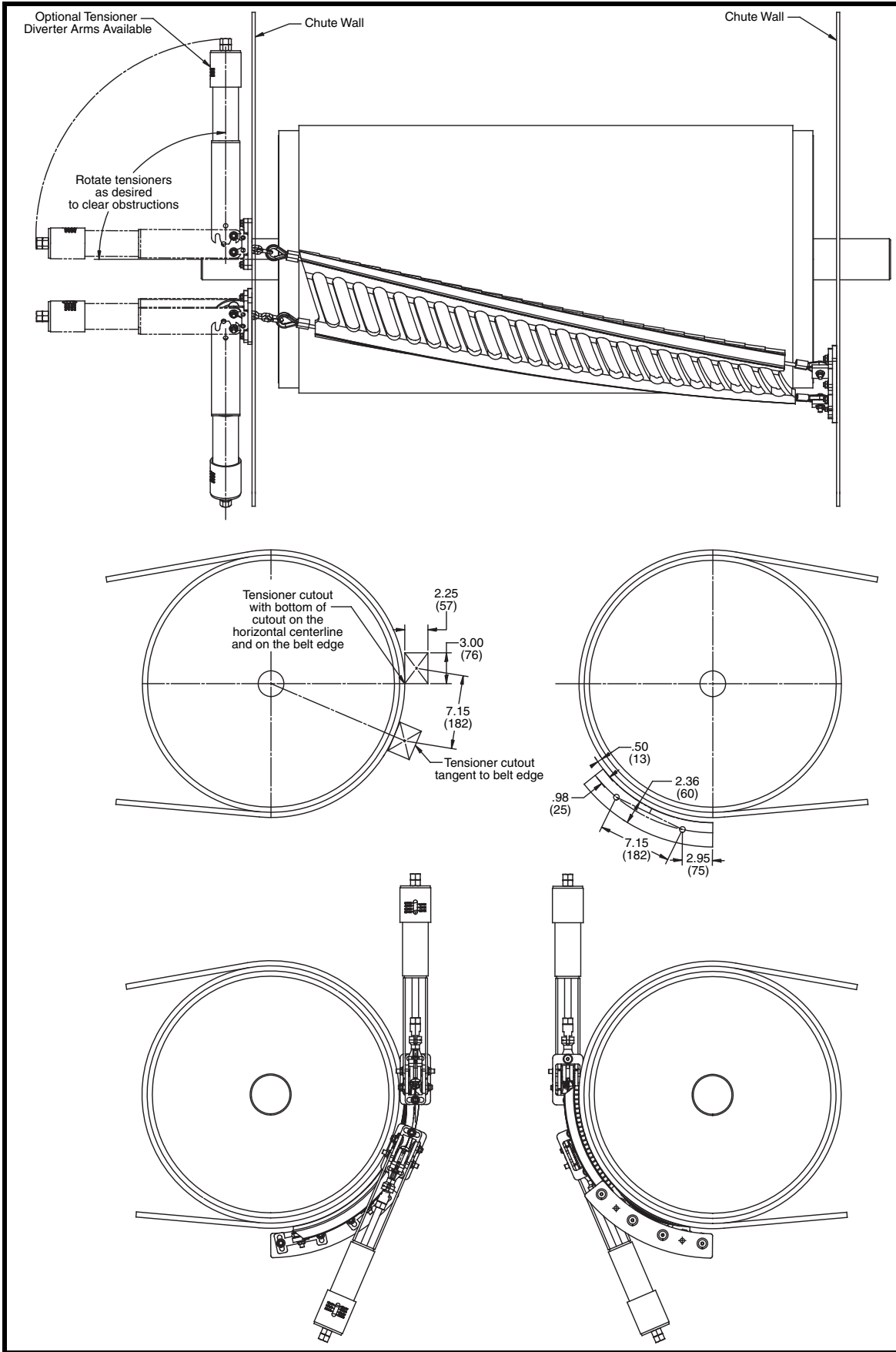


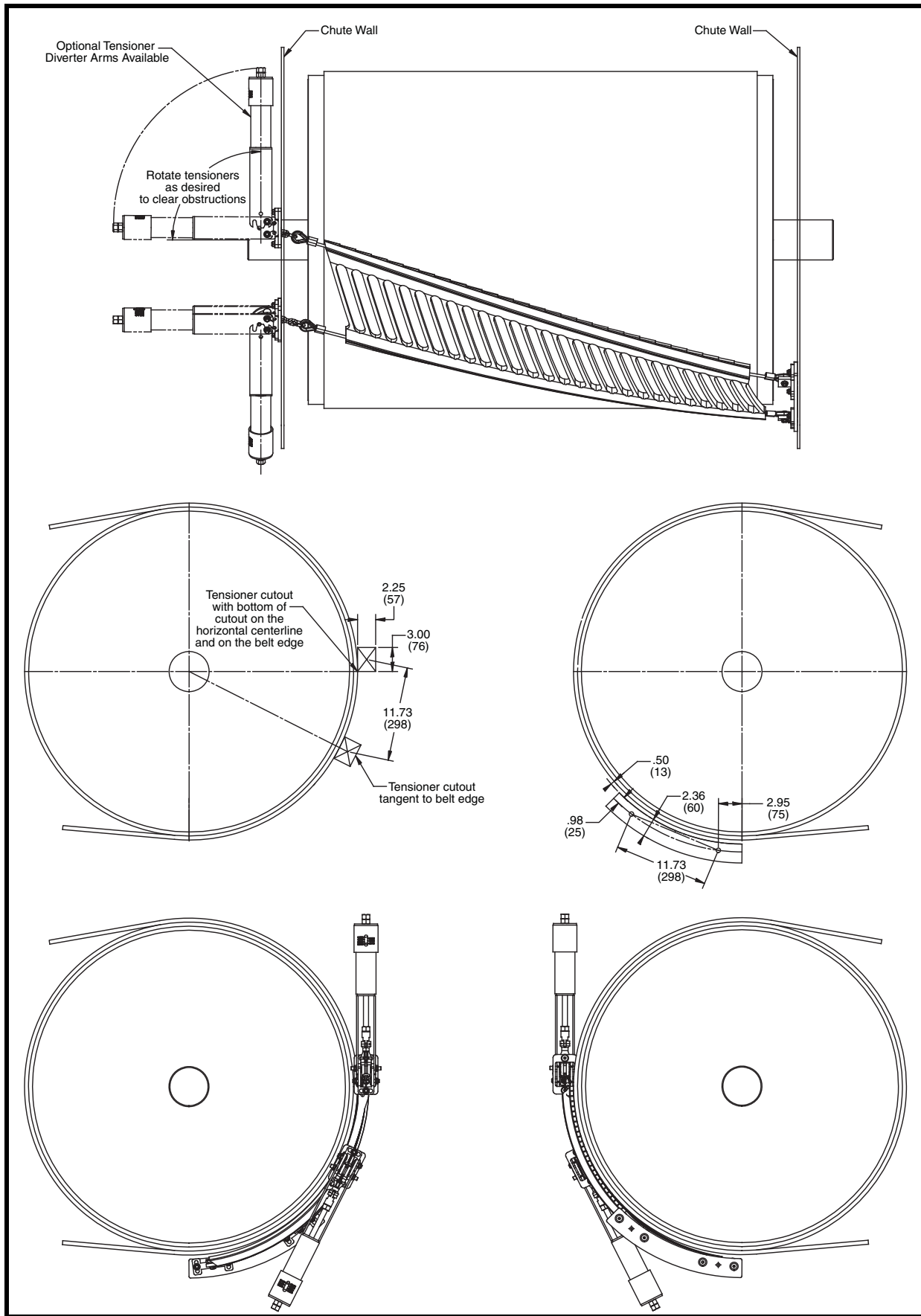
Figure 13. Martin® Conveyor Products Warning Label, P/N 23395

Appendix

CleanScrape[®] Cleaners Typical Mounting Locations

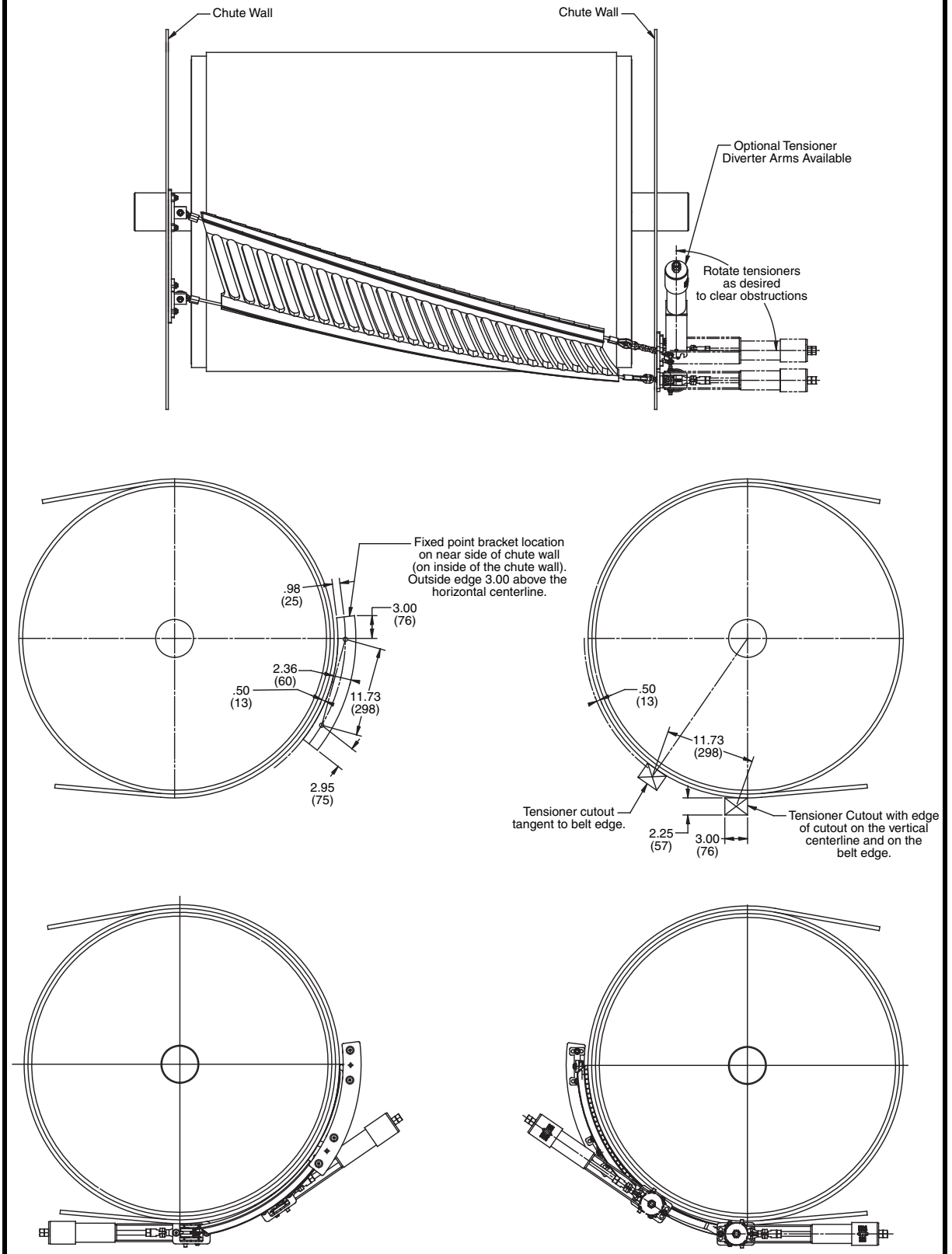


CleanScrape® Assembly, P/N CSP-MX-XXXXXX-XXXX



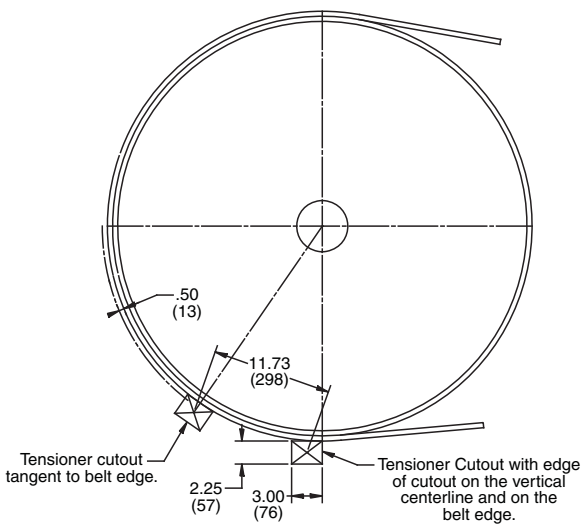
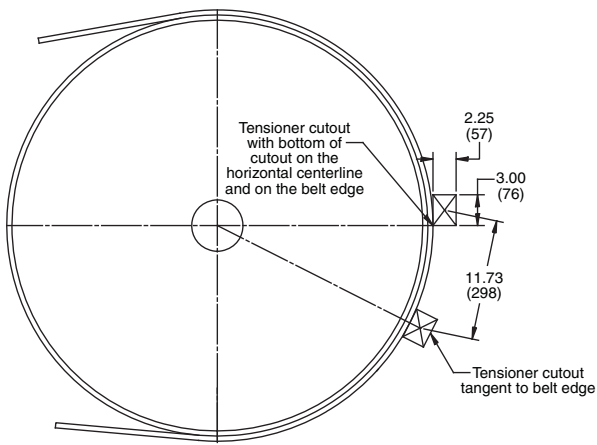
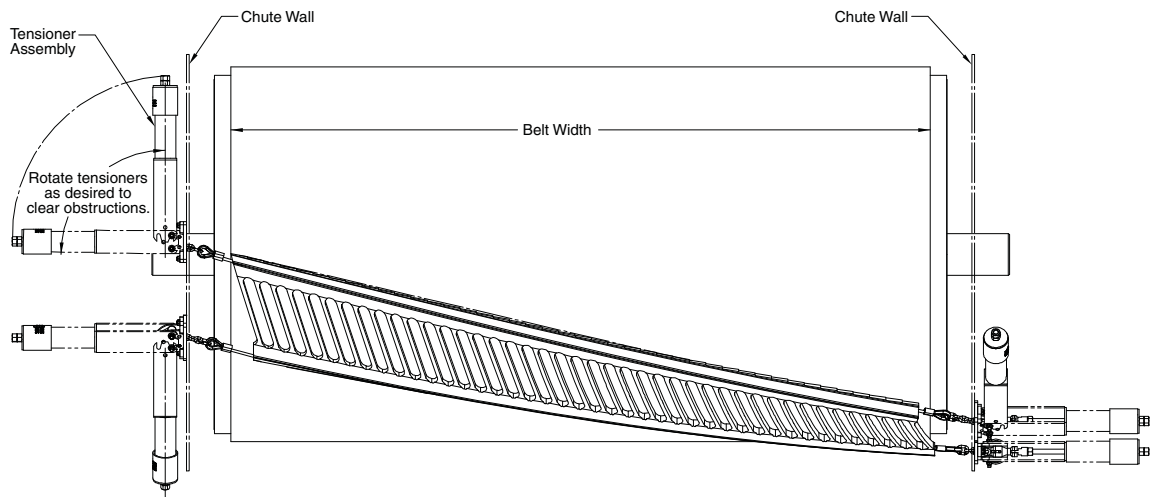
CleanScape® Assembly, P/N CSP-LX-XXXXXX-XXXX

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



CleanScape® Assembly, P/N CSP-LX-XXXXXX-XXXX

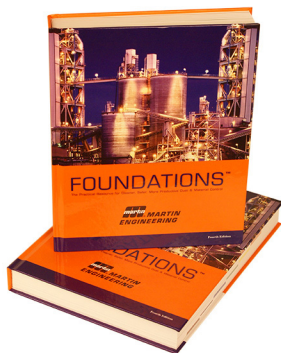
This assembly does not use a fixed point bracket.
Two tensioners are installed on the operator side chute wall
and two tensioners are installed on the far side chute wall.



CleanScape® Assembly, P/N CSP-LX-XXXXXX-XXXX with 6.6 KN Tensioners

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

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



Martin Engineering USA

One Martin Place
Neponset, IL 61345-9766 USA
800 544 2947 or 309 852 2384
Fax 800 814 1553
www.martin-eng.com

**COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
= ISO 9001:2008 =**