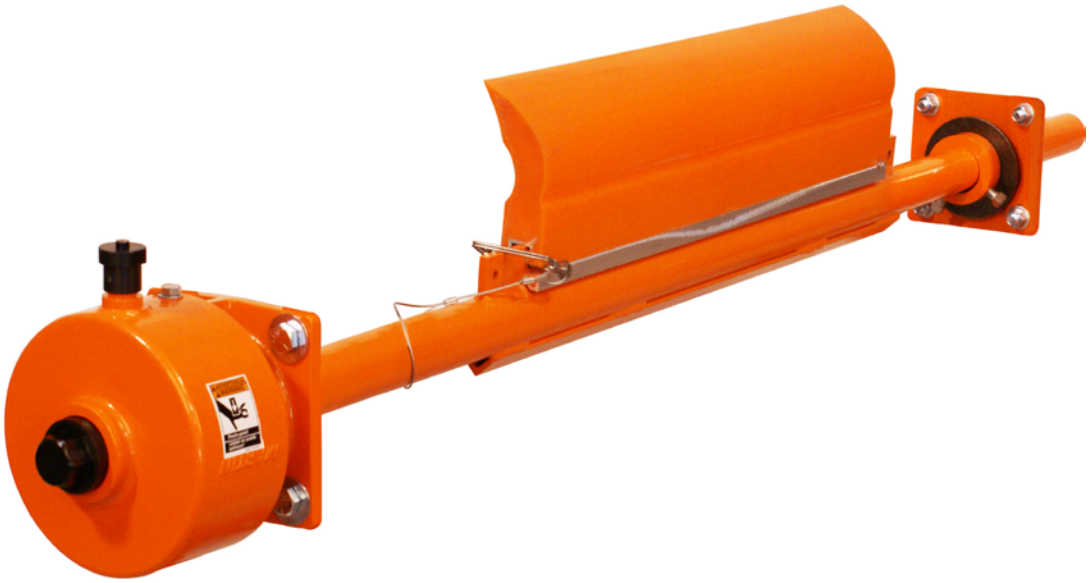
Martin®
PV Cleaner

Go to Martin® PV Cleaner web page



Operator's Manual
M3735

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

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

⚠ WARNING

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

⚠ CAUTION

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

IMPORTANT

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

NOTE

Note: General statements to assist the reader.

Table of Contents

List of Figures

List of Tables

Introduction

General

To introduce product back into the product flow, a Pre-Cleaner is installed on the face of the head pulley. On a dual cleaner system, the Secondary Cleaner is installed immediately following the Pre-Cleaner to remove stubborn material left on the conveyor belt. If a Pre-Cleaner cannot be used because of space limitations, the Secondary Cleaner is installed alone. If the material-handling process or product could be affected by contamination from the use of these belt cleaners, the user is responsible for taking the necessary steps to prevent contamination. Consult Martin Engineering or a representative for alternate belt cleaners or belt cleaner locations to use where contamination may be an issue.

Installations without chutework

These procedures were written for equipment that is being installed on enclosed pulley chutework. If the pulley is not enclosed, the equipment should be installed using the best available field resources and methods to ensure that the critical dimensions are followed for proper installation.

Belt cleaner inspection access

If the belt cleaner is installed on enclosed pulley chutework, a Martin® Inspection Door should be installed. Martin® Inspection Doors are available from Martin Engineering or a representative.

References

The following documents are referenced in this manual:

- American National Standards Institute (ANSI) z244.1-1982, *American National Standard for Personnel Protection - Lockout/Tagout of Energy Sources - Minimum Safety Requirements,* American National Standards Institute Inc., 1430 Broadway, New York, NY 10018.
- Federal Register, Volume 54, Number 169, Part IV, 29 CFR Part 1910, *Control of Hazardous Energy Source (Lockout/Tagout); Final Rule*, Department of Labor, Occupational Safety and Health Administration (OSHA), 32nd Floor, Room 3244, 230 South Dearborn Street, Chicago, IL 60604.

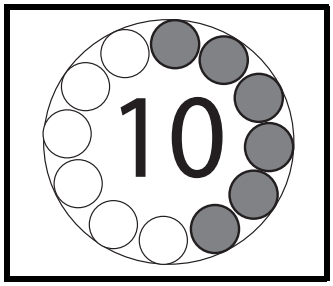
Table I. Martin® PV Cleaner Blade Colors, Materials and Specifications

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

Urethane shelf life

IMPORTANT

Urethane put in service after exceeding it's 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, "10" stands for the year 2010. The small circles represent the months of the year and are "punched" to indicate what month the blade was produced. 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
Maximizer (orange)	1 Year from Code Date
Orange (A-9)	1 Year from Code Date

Safety

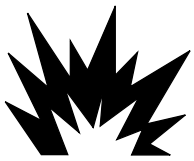
All safety rules defined in the above documents and all owner/employer safety rules must be strictly followed when working on the belt cleaner.

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

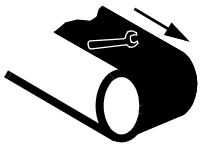


⚠ DANGER

If this equipment will be installed in an enclosed area, test the gas level or dust content before using a cutting torch or welding. Using a torch or welding in an area with gas or dust may cause an explosion resulting in serious injury or death.

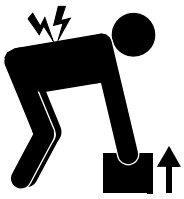
⚠ WARNING

Before using a cutting torch or welding the chute wall, cover the conveyor belt with a fire retardant cover. Failure to do so can allow the belt to catch fire.



⚠ WARNING

Remove all tools from the installation area and conveyor belt before turning on the conveyor. Failure to do so can cause serious injury to personnel or damage to the belt and conveyor.



⚠ WARNING

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

Before Installing Belt Cleaner

IMPORTANT

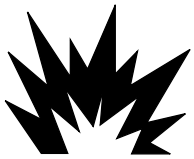
The delivery service is responsible for damage occurring in transit. Martin Engineering CANNOT enter claims for damages. Contact your transportation agent for more information.

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

4. Turn off and lock out/tag out energy source according to ANSI standards (see "References").



⚠ DANGER

If this equipment will be installed in an enclosed area, test the gas level or dust content before using a cutting torch or welding. Using a torch or welding in an area with gas or dust may cause an explosion resulting in serious injury or death.

5. If using a cutting torch or welding, test atmosphere for gas level or dust content. Cover conveyor belt with fire retardant cover.

IMPORTANT

Center the belt cleaner blades to clean an area narrower than the conveyor belt width. This allows for side-to-side movement of the belt and prevents damage to the belt edge.

NOTE

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

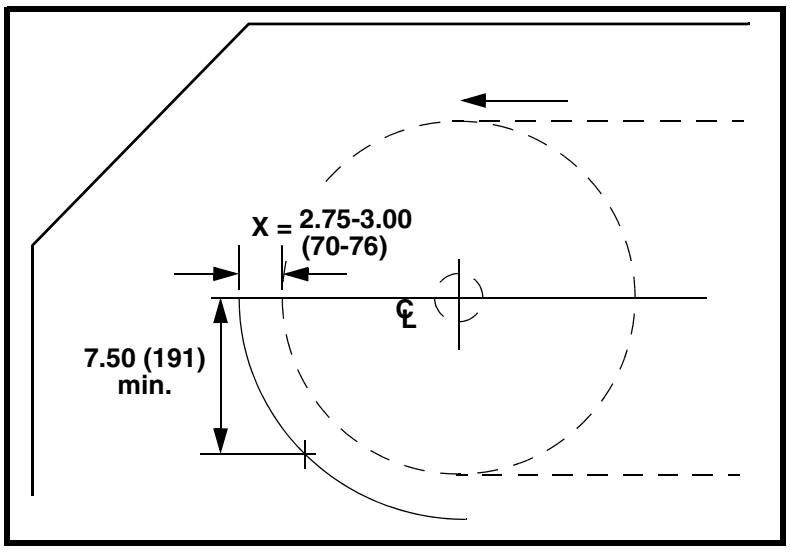
6. Determine which side of chute is easiest to access. Locate the tensioner on the most accessible chute wall.

Installation

Locating and cutting mounting holes

1

2



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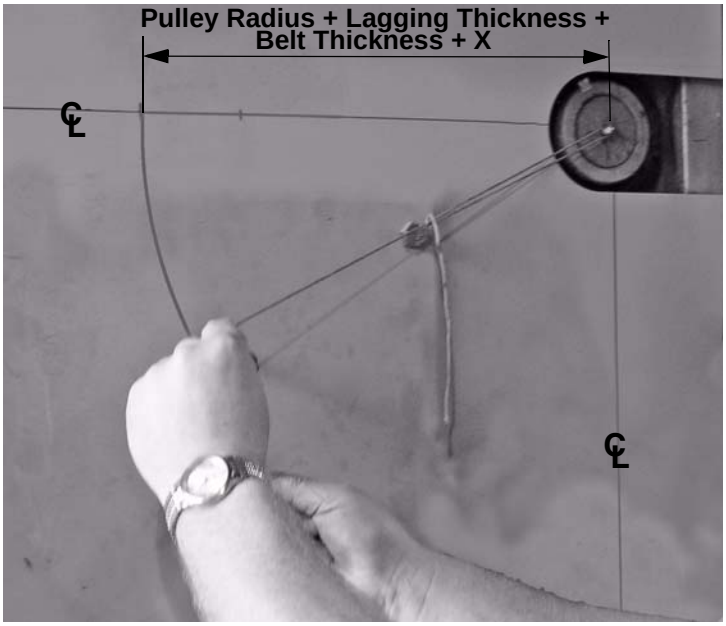
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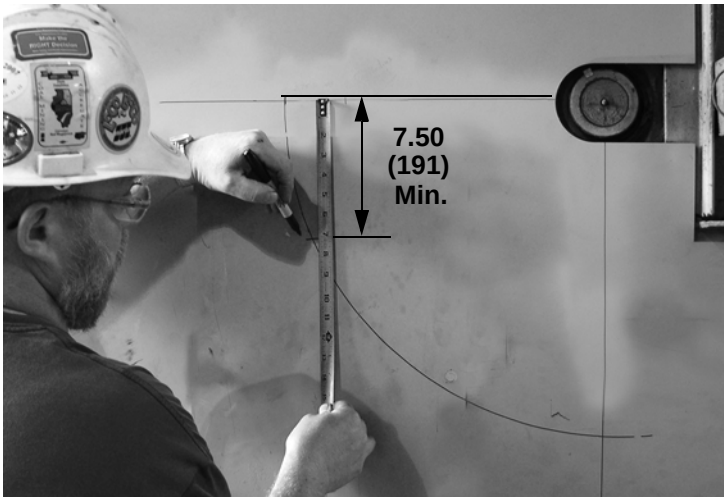
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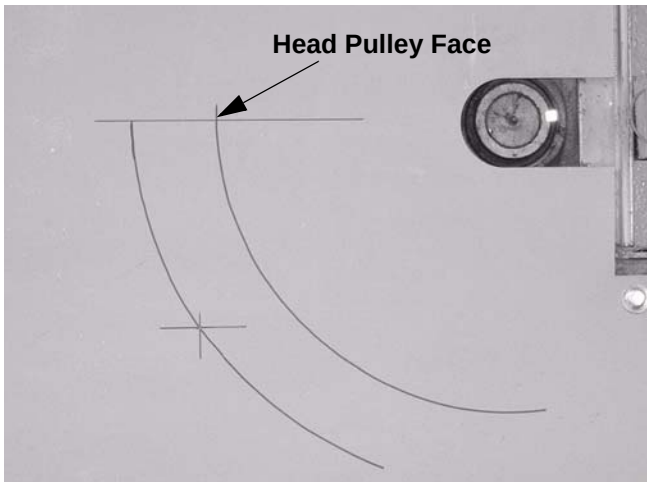


IMPORTANT

If mainframe is too long to fit inside chute for installation, cut one or both ends of mainframe.

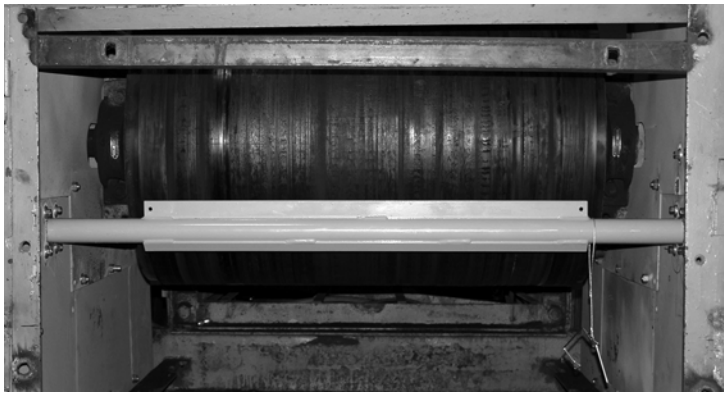
4 Repeat steps 2 and 3 on far side of chute.

NOTE

Refer to applicable tensioner manual for tensioner installation procedure.

Installing mainframe and blade

1



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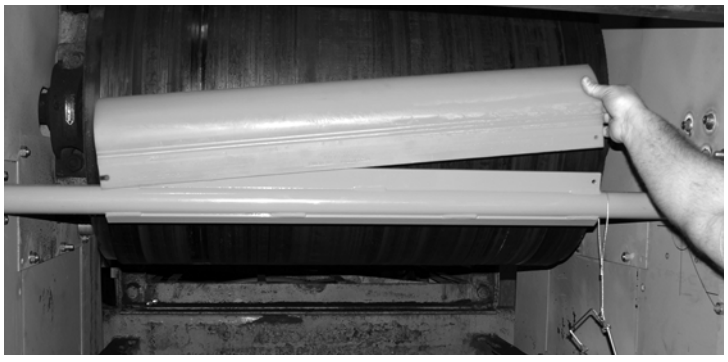
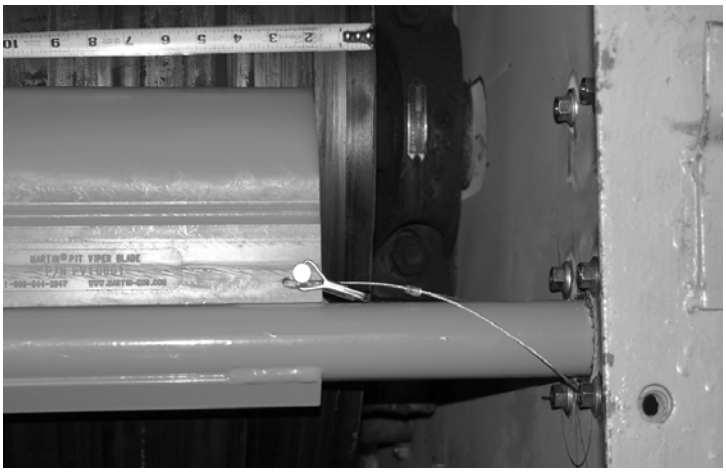


3

4 Center cleaner blade on pulley.

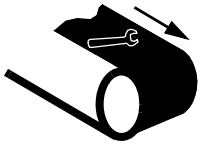


NOTE

Refer to applicable tensioner manual to complete installation and adjustment of tensioner.

After Installing Belt Cleaner

1. Thoroughly wipe chute wall clean above tensioner.
2. Place Conveyor Products Warning Label (P/N 23395) on outside chute wall visible to belt cleaner operator.



⚠WARNING

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

⚠ DANGER

Do not touch or go near conveyor belt or conveyor accessories when conveyor belt is running. Body or clothing can get caught and pull body into conveyor belt, causing severe injury or death.

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

⚠ DANGER

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

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

Weekly Maintenance

IMPORTANT

Read entire section before beginning work.

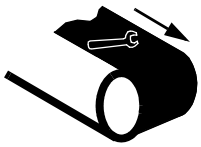
NOTE

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

⚠ DANGER

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

1. Remove any material from belt cleaner.
2. Make sure all fasteners are tight. Tighten if necessary.
3. Check tension on cleaner. Re-tension if necessary.
4. Wipe all labels clean. If labels are not readable, contact Martin Engineering or a representative for replacements.
5. Check blades for excessive wear. Replace if necessary.
6. Remove equipment from service if there is any indication it is not functioning properly. Call Martin Engineering or a representative for assistance. Do NOT return equipment to operation until the cause of the problem has been identified and corrected.



⚠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.

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.

Troubleshooting

Symptom	Corrective Action
Insufficient cleaning and carryback.	• Tension of cleaner on belt is set too low or too high. Increase or decrease tensioner setting. • Blades are worn. Check blades and replace if necessary.
Noise or vibration.	Tension is not sufficient or is set too high. Correct tension as necessary. If this does not correct problem, blade urethane may not match application. Contact Martin Engineering or representative.
High blade wear rate.	Tension of cleaner on belt is set too high. Reduce tensioner setting.
Unusual wear or damage to blades.	Check belt splice(s) and repair as necessary.
Bent or broken mainframe or support frame due to blade slipping through.	If blades are worn to or past the wear line, replace blades. If blades are not worn, check mainframe location.
Corrosion or chemical degradation.	Blade urethane may not match application. Contact Martin Engineering or representative.

NOTE

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

Installation checklist

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

Installation Checklist
✓ Pre-Cleaner mainframe is proper distance from belt surface on both ends of mainframe.
✓ Pre-Cleaner blade tip is at or below horizontal center line of pulley and does not lie in path of material flow.
✓ Blades are centered on belt.

Part Numbers

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

Martin® PV Cleaner and Blades

Martin® PV Cleaner Assembly: P/N PV1S-XXXXXXXXXX.

Martin® PV Cleaner Blade: P/N PV-XXXX(XX)XX.

Martin® Tensioners

Martin® Spring Cable Tensioner Assembly: P/N 37944.

Martin® Twist Tensioner Assembly: P/N 38850 or 38850-2X.

Martin® Cable Tensioner Adapter Mount Plate Kit: P/N 38100.

Operator's Manuals

Martin® Spring Cable Tensioner Operator's Manual: P/N M3734.

Martin® Twist Tensioner Operator's Manual: P/N M3837.

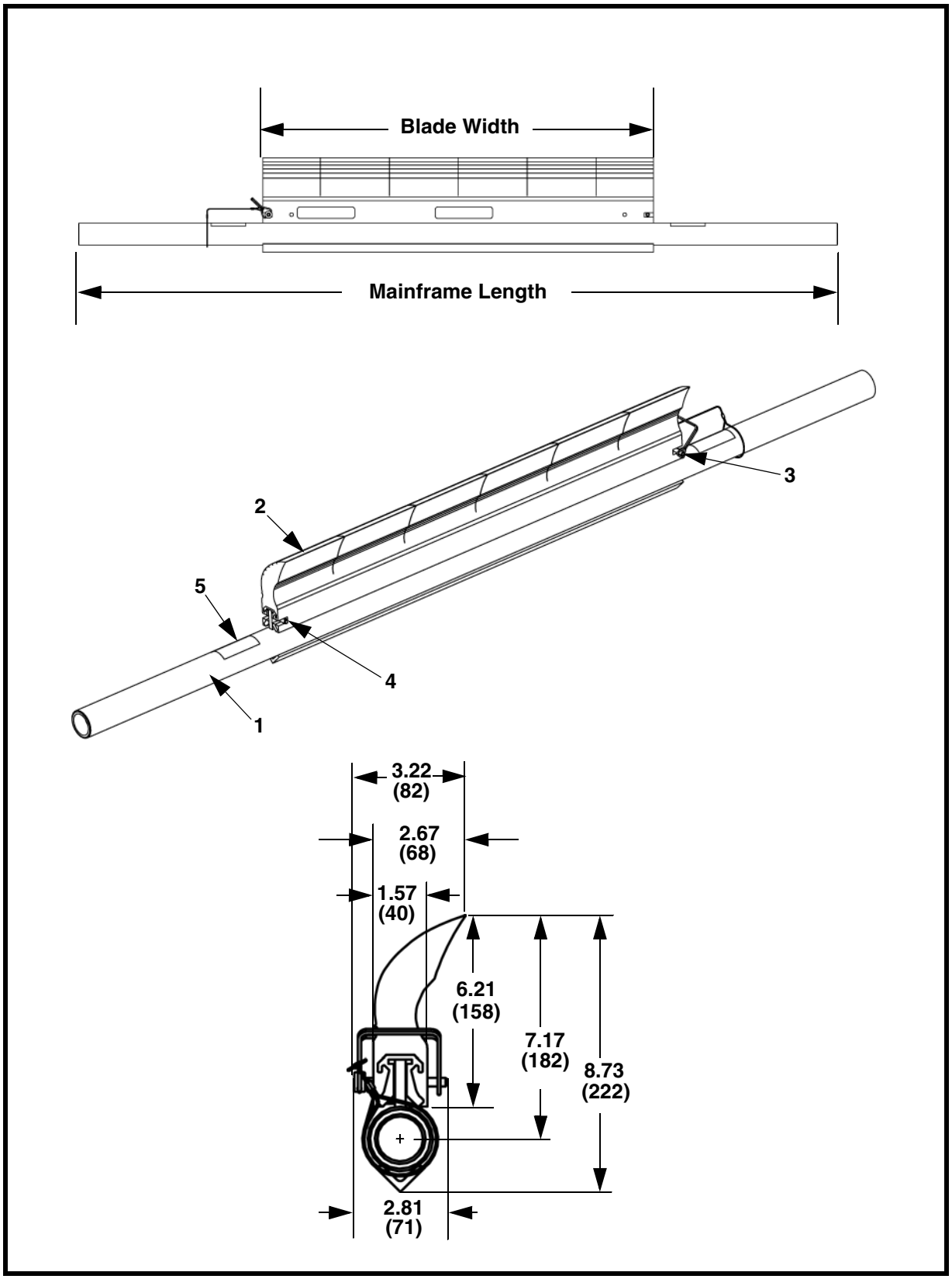


Figure 1. Martin® PV Cleaner Assembly, P/N PV1S-XXXXXXXXXX*

Item	Qty.	Description	Part Number
1	1	Mainframe Weldment	Table III
2	1	Blade	Table IV
3	1	Lock Pin Lanyard Assembly	38168
4	1	Pin Slotted Spring 5/16 x 2 ZP	32774
5	2	Label, Martin Products	38048
NS	2	Label, Conveyor Products Warning	23395
NS	1	Manual Operator's	M3735
NS	1	Spring Cable Tensioner Assembly	37944
NS	1	Martin® Twist Tensioner Assembly	Table III
NS	1	Spring Cable Tensioner Adapter Mount Plate Kit	38100

Figure 1. Martin® PV Cleaner Assembly, P/N PV1S-XXXXXXXXXX*

NS = Not Shown

* PV1S indicates a standard-duty pre-cleaner. First XX indicates belt width. XX indicates blade type: Slit and Segmented (00); Slit (01); Solid (11); Segmented (10). The next XX indicates the blade coverage: no blade (00). The next XX indicates blade urethane type: no blade (00); orange blade (OR); tan blade (CL); navy blue blade (NB). The next X indicates the mainframe type: no mainframe (0); standard painted mainframe (P). The last X indicates accessory options: no options (0); with spring cable tensioner 54-inch belts or less only (C); with Martin® Twist tensioner (T); with spring cable tensioner with mount plate adapter 18-inch–54-inch belts only (M).

Table III. Martin® PV Cleaner Assembly Part Numbers

Assembly Part Number	Blade Width in (mm)	Mainframe Length in (mm)	Part Number Item 1	Part Number Item 8	Weight (lbs) w/o Tensioners
PV1S-18XX12XXXX	12.00 (305)	48.00 (1219)	32756-18	38850	21.8
PV1S-18XX16XXXX	16.00 (406)	48.00 (1219)	32756-18	38850	23.1
PV1S-24XX18XXXX	18.00 (457)	54.00 (1372)	32756-24	38850	26.9
PV1S-24XX22XXXX	22.00 (559)	54.00 (1372)	32756-24	38850	28.1
PV1S-30XX24XXXX	24.00 (610)	60.00 (1524)	32756-30	38850	31.8
PV1S-30XX28XXXX	28.00 (711)	60.00 (1524)	32756-30	38850	33.1
PV1S-36XX30XXXX	30.00 (762)	66.00 (1676)	32756-36	38850	36.8
PV1S-36XX34XXXX	34.00 (864)	66.00 (1676)	32756-36	38850	38.1
PV1S-42XX36XXXX	36.00 (914)	72.00 (1829)	32756-42	38850	41.8
PV1S-42XX40XXXX	40.00 (1016)	72.00 (1829)	32756-42	38850	43.0
PV1S-48XX42XXXX	42.00 (1067)	78.00 (1981)	32756-48	38850	46.8
PV1S-48XX46XXXX	46.00 (1168)	78.00 (1981)	32756-48	38850	48.0
PV1S-54XX48XXXX	48.00 (1219)	84.00 (2134)	32756-54	38850-2X	51.7
PV1S-54XX52XXXX	52.00 (1321)	84.00 (2134)	32756-54	38850-2X	52.9
PV1S-60XX54XXXX	54.00 (1372)	90.00 (2286)	32756-60	38850-2X	56.7
PV1S-60XX58XXXX	58.00 (1473)	90.00 (2286)	32756-60	38850-2X	57.8
PV1S-72XX66XXXX	66.00 (1676)	102.00 (2591)	32756-72	38850-2X	66.7
PV1S-72XX70XXXX	70.00 (1778)	102.00 (2591)	32756-72	38850-2X	67.9

Table IV. Martin® PV Cleaner Blade Part Numbers

Assembly Part Number	Part Number Item 2	Blade Color
PV1S-XXXXXXBRXX	PV-XXXXXXBR	Brown
PV1S-XXXXXXCLXX	PV-XXXXXXCL	Tan
PV1S-XXXXXXGRXX	PV-XXXXXXGR	Green
PV1S-XXXXXXNBXX	PV-XXXXXXNB	Navy Blue
PV1S-XXXXXXORXX	PV-XXXXXXOR	Orange

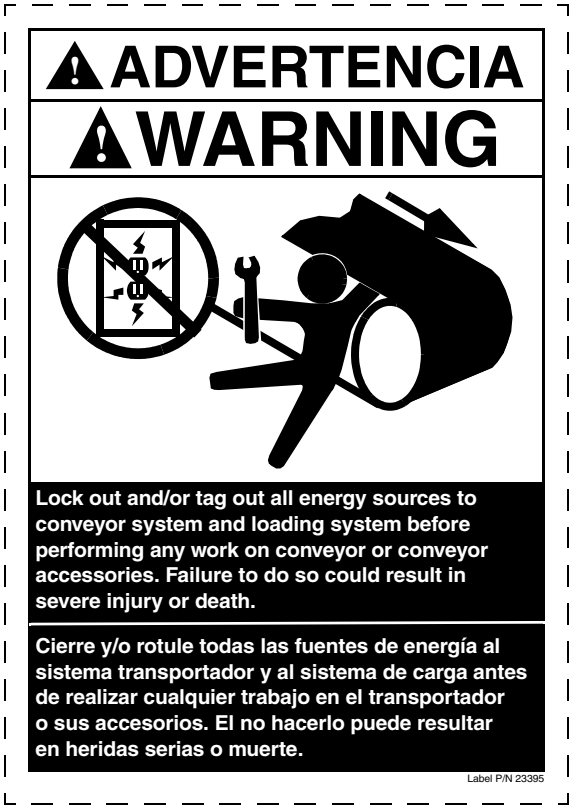


Figure 2. Conveyor Products Warning Label, P/N 23395

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Fax 800 814 1553
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Form No. M3735-08/13