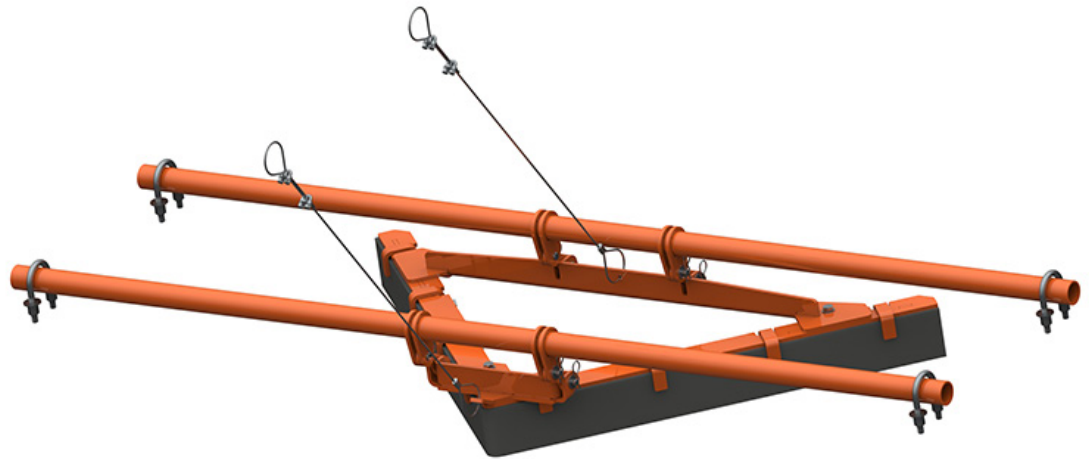


martin®

Martin® ***VPlow***

[Go to Martin® VPlow web page](#)



Operator's Manual
M3939

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.

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Introduction

General

The Martin® VPlow floats on the inside surface of a conveyor belt to effectively remove stray material in light- to moderate-duty applications. The self-adjusting design provides effective cleaning in all states of blade wear.

The Martin® VPlow fits belts from 18 to 120 in. (400 to 3000 mm) wide. Specifications are shown in Table I.

Table I. Martin® VPlow Specifications

Cleaning Edge Material	80-Durometer Rubber
	90-Durometer Urethane
Blade Dimensions	1 x 4 in. (25 x 102 mm)
Operating Temperature	-20 to 160°F (-29 to 71°C)

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.

Safety

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

Materials required

Only standard hand tools are needed to install this equipment.

Before Installing VPlow

IMPORTANT

Read entire section before beginning work.

1. Inspect the shipping container for damage. Report damage to the delivery service. Fill out the damage report and return it to Martin Engineering.
2. Remove the Martin® VPlow from the shipping container. Equipment in the container should include the following:
 - Martin® VPlow Assembly.
 - Conveyor Products Warning Label, P/N 23395.
 - Flying Objects Warning Label, P/N 38227.
3. If anything is missing or damaged, contact Martin Engineering or representative. Fill out the warranty card and return it to Martin Engineering.



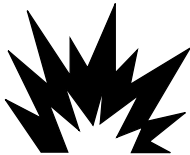
⚠ WARNING

Before installing equipment, turn off and lockout / tagout / blockout / testout all energy sources to conveyor and conveyor accessories.

4. Turn off and lockout / tagout / blockout / testout energy source according to ANSI standards (see “References”).

⚠ WARNING

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



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

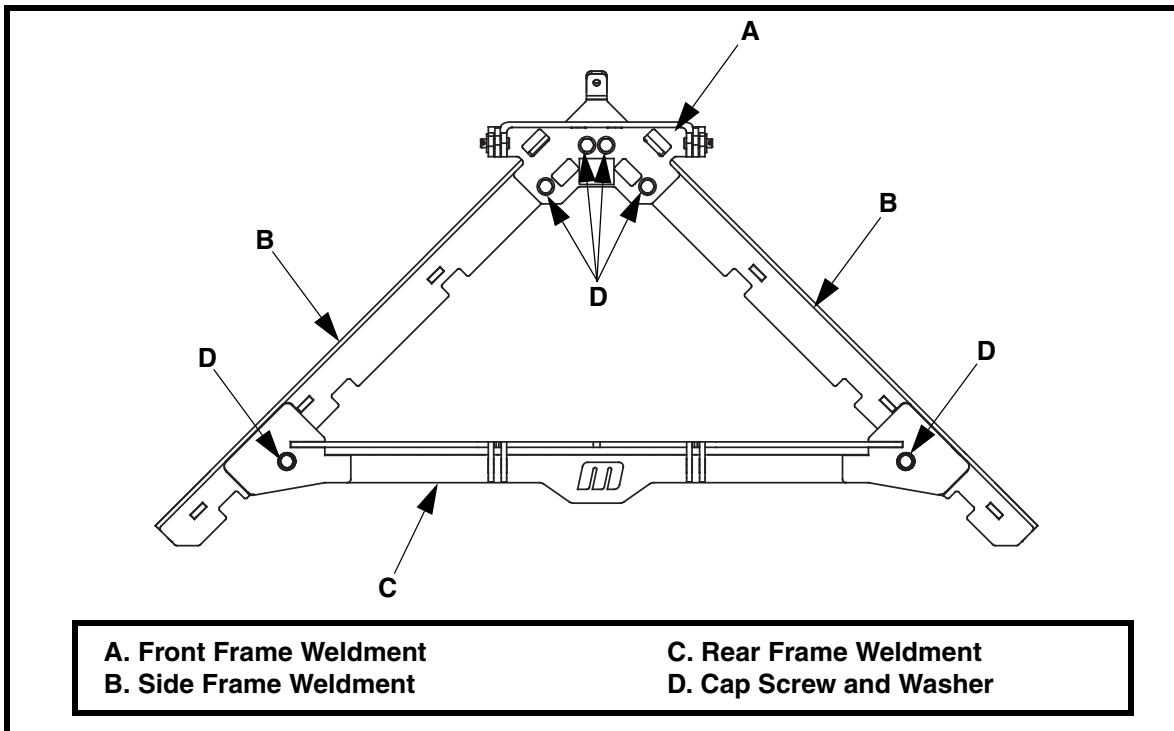


Figure 1. Assembling VPlow

1. Fasten front frame weldment (A), side frame weldments (B), and rear frame weldment (C) together using cap screws and washers (D).
2. Place the vplow on the return side of the belt before the tail pulley with the “V” pointing away from the tail pulley.

NOTE

Do not place a return idler directly under the plow. The idler may change the belt line and cause a portion of the blade to not contact the belt.

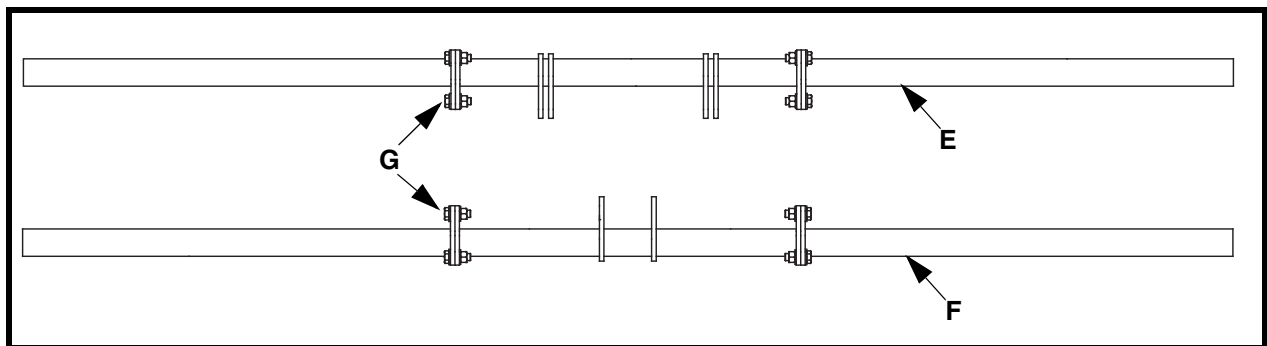


Figure 2. Assembling Compact Hanger Bars

3. If assembly is equipped with compact hanger bars, assemble front and rear hanger bars (E and F) using cap screw, washers, and nuts (G).

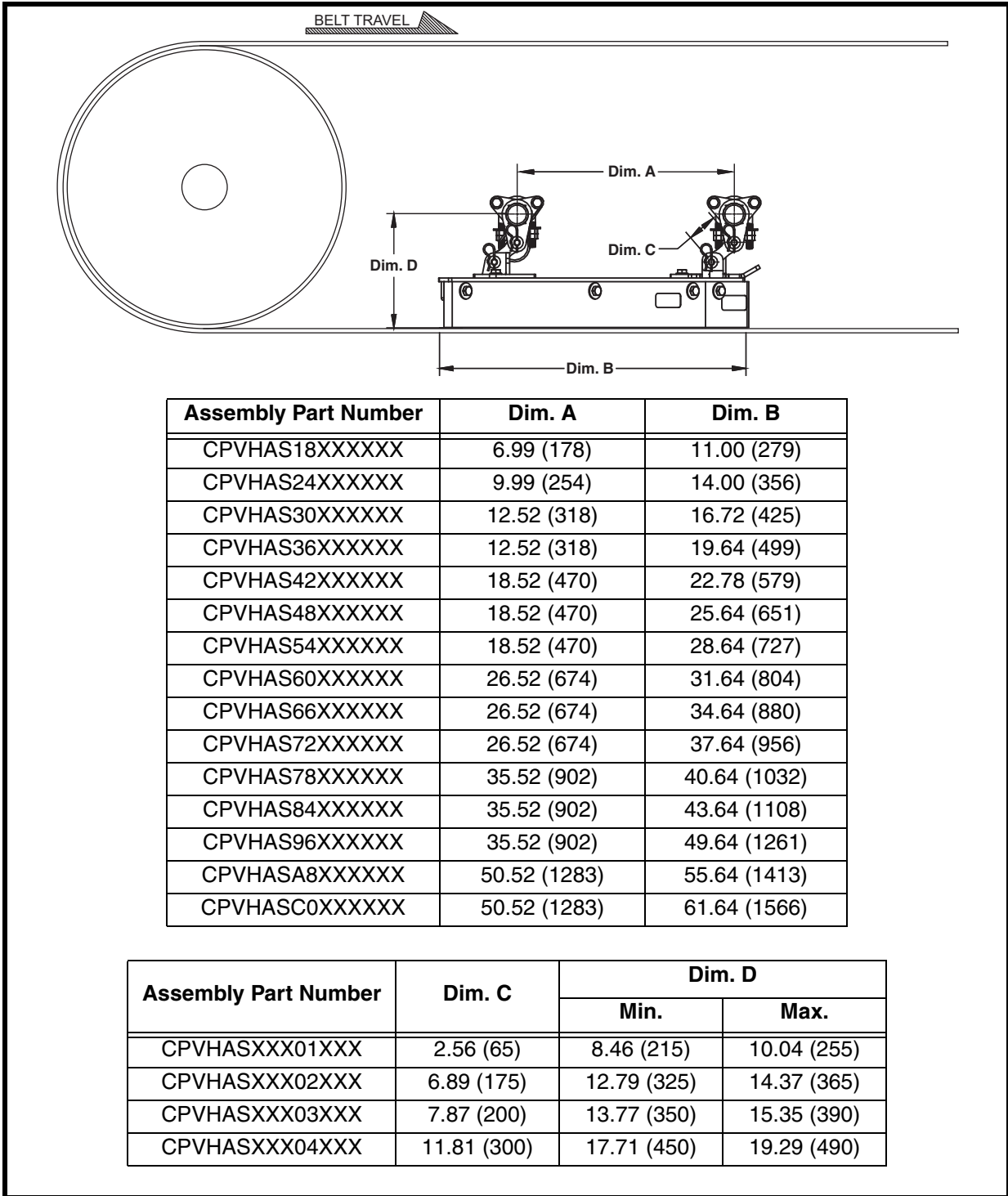


Figure 3. Locating VPlow on Belt

4. Place the vplow on the return side of the belt before the tail pulley with the “V” pointing away from the tail pulley.

NOTE

Do not place a return idler directly under the plow. The idler may change the belt line and cause a portion of the blade to not contact the belt.

5. Locate the hanger bars according to and Figure 3. Mark the location of the hanger bars on the stringers.
6. Determine how to mount the hanger bars:
 - a. If the stringers can accommodate the hanger bars in the proper position, hanger bars can be mounted directly to the stringers. See Figure 4.

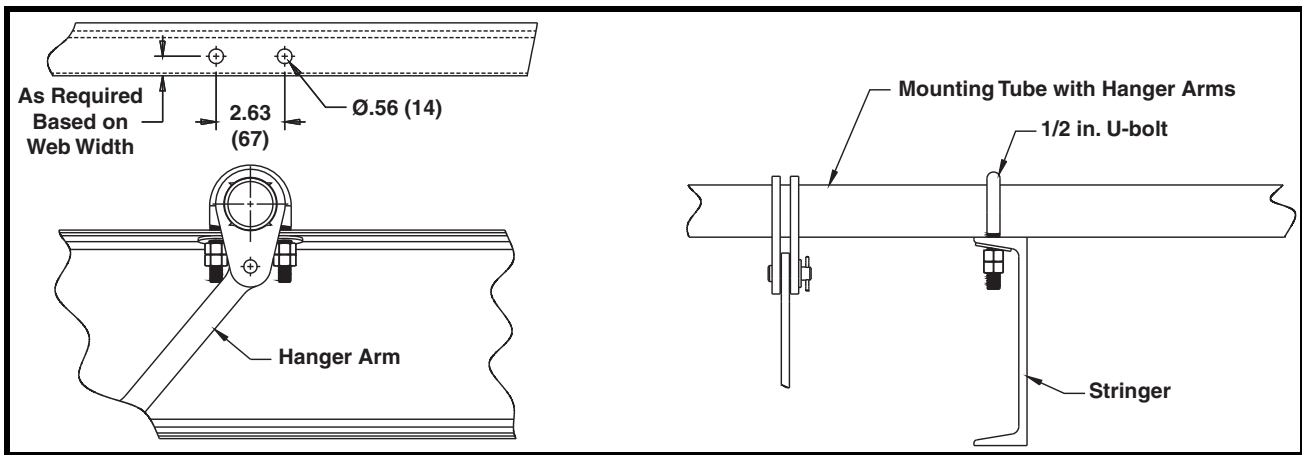


Figure 4. Installing Mounting Tubes

Installing mounting tubes

1. Bolt hanger bars to the stringers as follows:
 - (1) Drill or cut two 9/16-in. (14-mm) holes for the mounting screws for each adapter flange.
 - (2) Remove burrs and sharp edges.
 - (3) Install each hanger bar onto the stringer with two u-bolts, flat washers, and hex nuts. Hand tighten only.

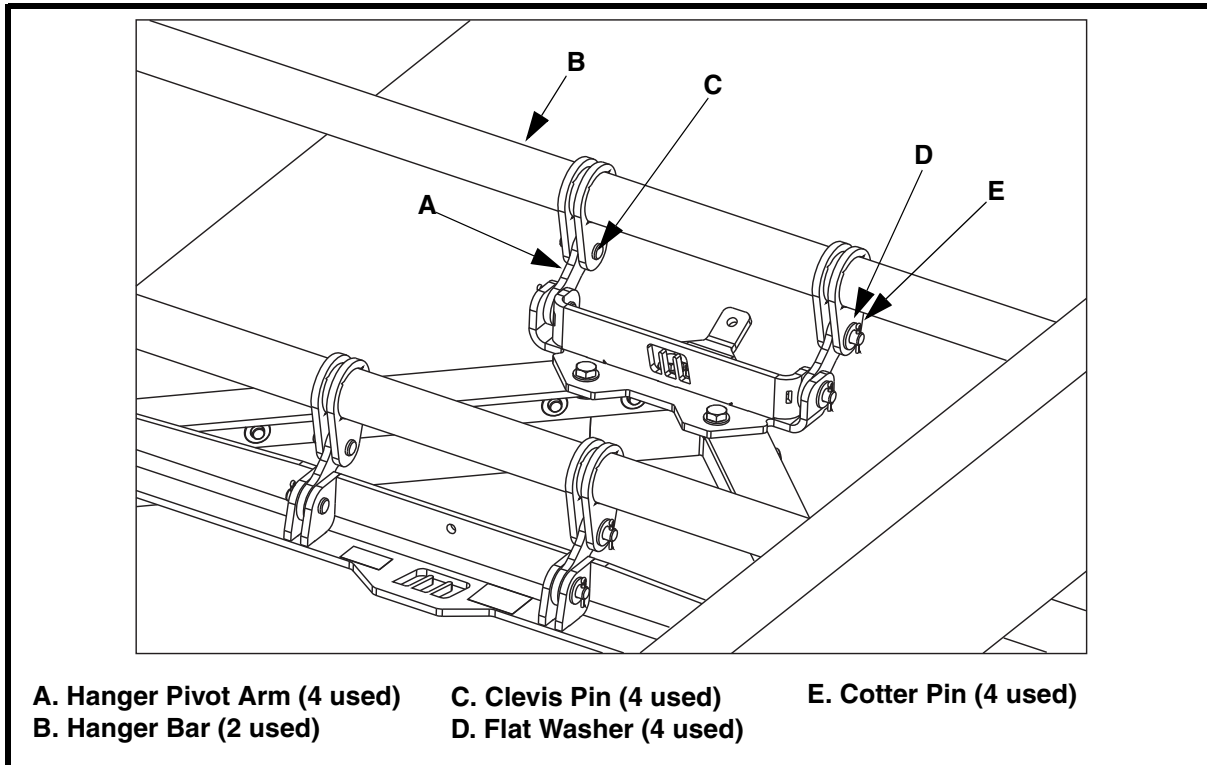


Figure 5. Hanger Pivot Arm Installation

Installing VPlow

1. Attach each hanger pivot arm (A) to the hanger bar (B) with a clevis pin (C), flat washer (D) and cotter pin (E).
2. Center vplow on belt and tighten all nuts on u-bolts that attach hanger bars to adapter plates or stringers.
3. Make sure vplow frame does not contact belt.

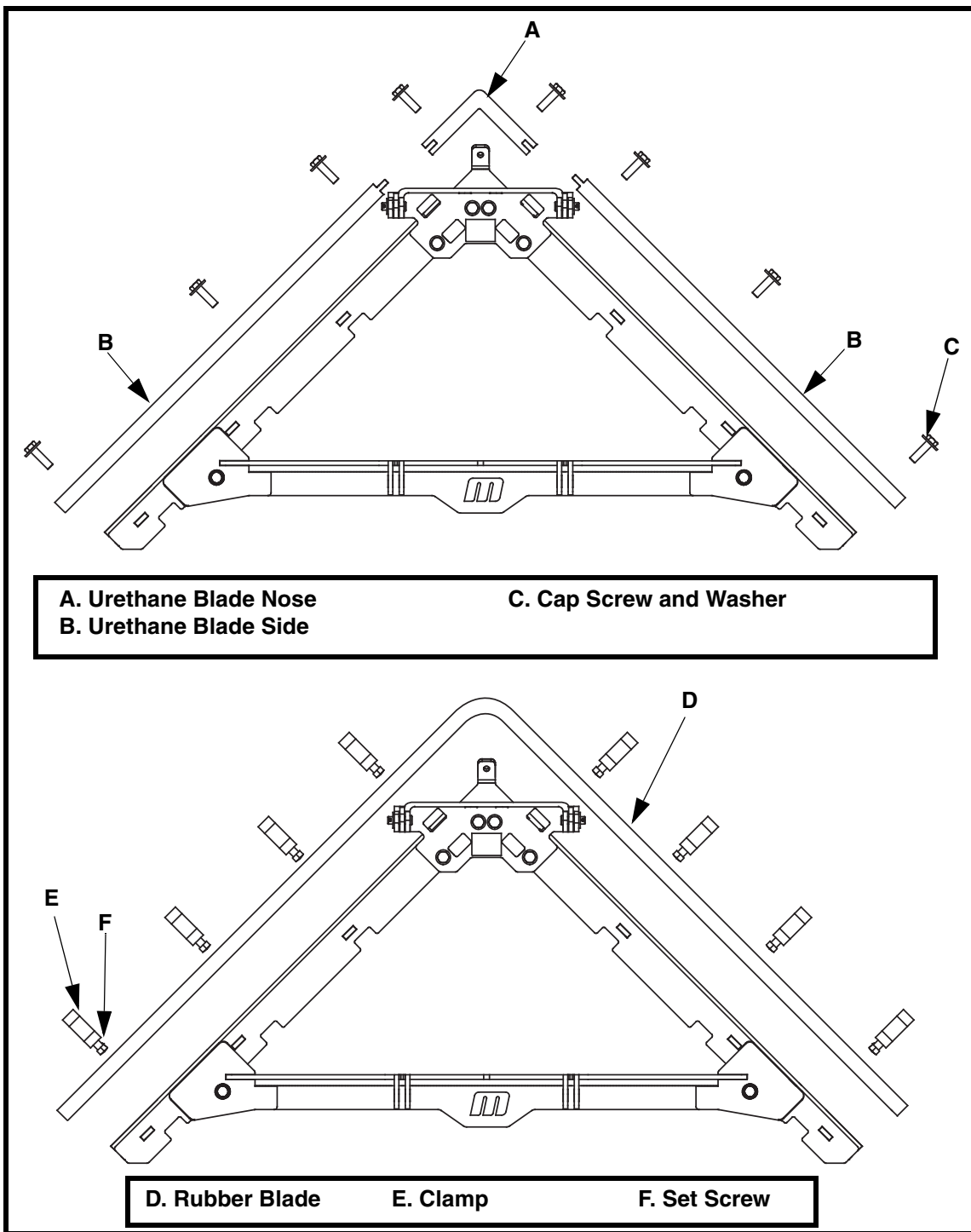


Figure 6. Installing Blade

4. Attach blade to vplow as follows:
 - a. For vplows with urethane blades:
 - (1) Attach nose blade (A) and side blades (B) to vplow using cap screws and washers (C).
 - b. For vplows with a rubber blade:
 - (1) Attach blade (D) to vplow using clamps (E) and set screws (F).

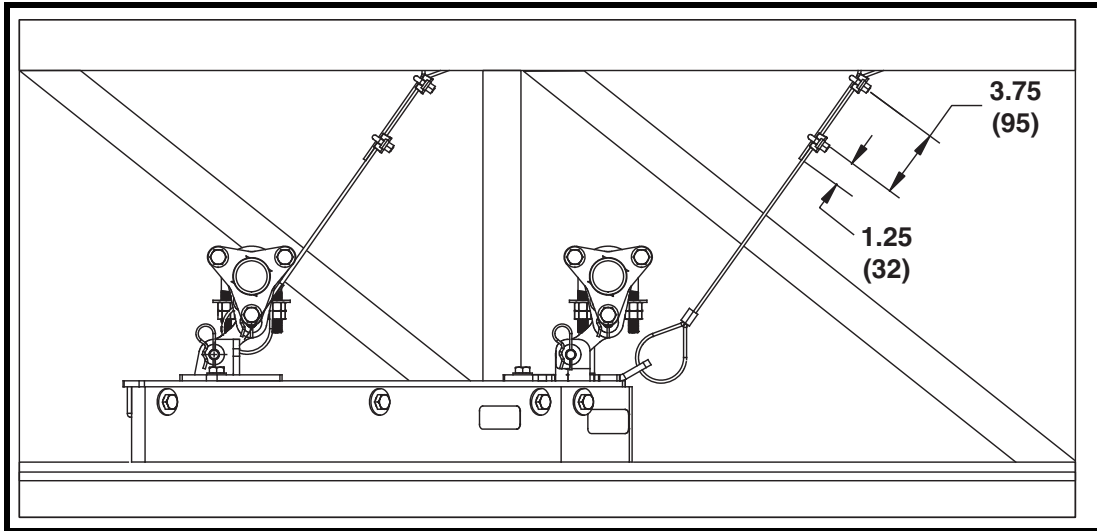


Figure 7. Restraining Cable Installation

⚠ CAUTION

Restraining cables must be installed to prevent the plow from being carried into the pulley if the mount brackets should fail. Failure to install restraining cables could severely damage the plow, pulley, and belt. Do not install restraining cables on stringers that are between the plow and tail pulley.

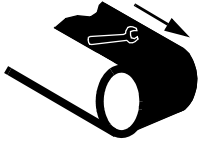
5. Attach a restraining cable from vplow to the conveyor stringers far enough from the tail pulley to prevent vplow from contacting tail pulley in case of equipment failure. Make sure vplow is located according to chart in Figure 1. Leave no more than 2 in. (51 mm) of slack in cable.

After Installing VPlow

IMPORTANT

Read entire section before beginning work.

1. Thoroughly wipe the outside chute wall clean above the vplow on the operator side of the chute. Place a Conveyor Products Warning Label (P/N 23395) and a Flying Objects Warning Label (P/N 38227) on the chute wall visible to the belt 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.

2. Remove all tools and the fire-retardant cover from the installation area and conveyor 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 the conveyor belt for 1 hour.



WARNING

Before adjusting vplow, turn off and lockout / tagout / blockout / testout all energy sources to conveyor belt and conveyor accessories.

4. After 1 hour of operation, turn off and lockout / tagout / blockout / testout energy source according to ANSI standards (see “References”).
5. Make sure all fasteners are tight. Tighten if necessary.
6. Inspect the vplow for wear. (A small amount of “break-in” wear may be found. This will stop once the blade wears to the conveyor belt contour.)
7. Make sure the plow is pushing material off the edge of the belt efficiently, leaving minimal material on the belt.
8. Repeat step 2.

Monthly Maintenance

IMPORTANT

Read entire section before beginning work.



WARNING

Before servicing vplow, turn off and lockout / tagout / blockout / testout all energy sources to conveyor belt and conveyor accessories.

1. Turn off and lockout / tagout / blockout / testout energy source according to ANSI standards (see “References”).
2. Make sure all fasteners are tight. Tighten if necessary.
3. Check the cleaning edge for wear. If it is worn almost to the frame weldment, replace as follows (see Figure 6):
 - a. For vplows with urethane blades:
 - (1) Remove cap screws, washers, and spacers (C).
 - (2) Remove worn side blades (B) and nose blade (A).
 - (3) Attach new nose blade (A) and side blades (B) to vplow using cap screws and washers (C).
 - b. For vplows with a rubber blade:
 - (1) Loosen set screws (C) and remove clamps (B).
 - (2) Remove worn blade (A)
 - (3) Attach new blade (A) to vplow using clamps (B) and set screws (C).
4. Check the restraining cable for wear. Make sure the cable is securely attached to the stringers.
5. Wipe all labels clean. If the labels are not readable, contact Martin Engineering or your representative for replacements.

WARNING

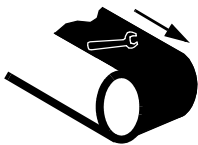
Failure to remove tools from installation area and conveyor belt before turning on energy source can cause serious injury to personnel and damage to belt.

6. Remove all tools from the 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.

7. Start the conveyor belt.



Part Numbers

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

Martin® VPlow Assembly

For belts 18 & 24 in. wide: P/N CPVHASXXXXXXXXX. See Figure 8.

For belts 30 to 120 in. wide: P/N CPVHASXXXXXXXXX. See Figure 9.

NOMENCLATURE — CPVHAS XX X XX X X X

1 2 3 4 5 6 7

- | | |
|---|--|
| <p>1. Part Number Prefix</p> <p>2. The first XX indicates belt width.
XX = indicates inches (18–96 inches)
A8 = 108 inches
C0 = 120 inches</p> <p>3. The next X indicates blade type:
R = Rubber Blade
O = Orange Urethane Blade
B = Brown Urethane Blade
G = Green Urethane Blade</p> <p>4. The next XX indicates front hanger arm:
01 = 2.56 inch
02 = 6.89 inch
03 = 7.87 inch
04 = 11.81 inch</p> | <p>5. The next X indicates hanger pipes:
S = Standard 1 piece
C = Compact 3 piece</p> <p>6. The next X indicates material:
T = Painted Mild Steel
S = 304 Stainless Steel
F = 316 Stainless Steel</p> <p>7. The next X indicates assembly options:
A = Assembled
U = Unassembled</p> |
|---|--|

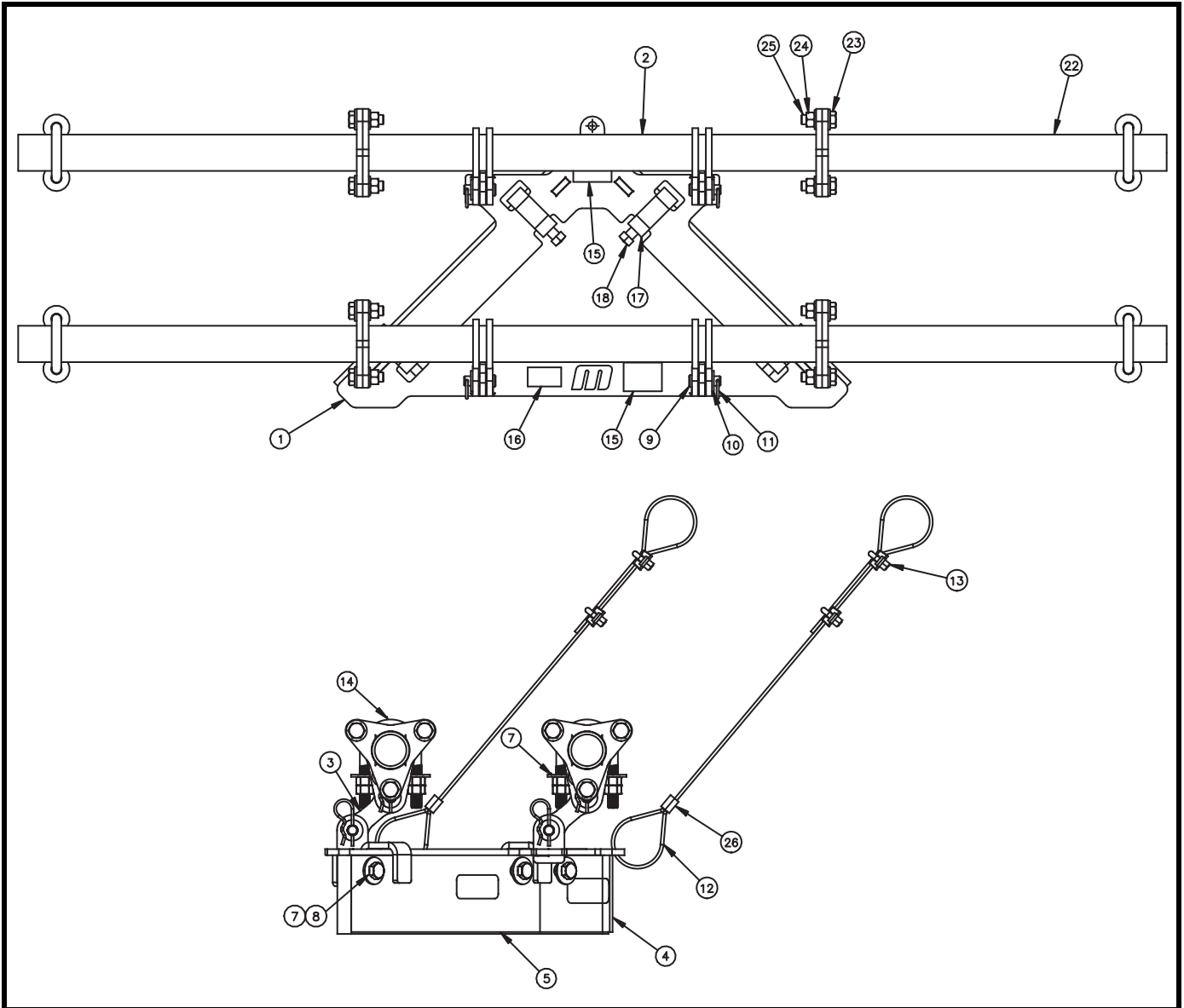


Figure 8. Martin® VPlow Assembly, P/N CPVHASXXXXXXXX (18 & 24-in. belts)

Item	Description	Part No.*	Qty
1	Frame Weldment	Table II	1
2	Center Hanger Tube Weldment	CPVTP1004001T	2
3	Hanger Arm	Table V	4
4	Urethane Blade Nose	Table III	Table IV
5	Urethane Blade Side	Table III	Table IV
6	Rubber Blade	Table IV	Table IV
7	Washer Flat 1/2 Wide ZP	17328	Table IV
8	Screw HHC 1/2-13NC x 1-3/4 ZP	23478	Table IV
9	Pin Clevis 1/2 x 1-1/2 ZP	30689	8
10	Washer Flat 1/2 Narrow ZP	31010	8
11	Pin Cotter 1/8 x 2.38 ZP	16578	8
12	Wire Rope 5/32 SS	100349	8
13	U-Bolt Wire Rope Clamp 3/16	32264-02	4
14	U-Bolt Extended LG F/2" Pipe 1/2-13NC	39071	4
15 (NS)	Label Pinch Point	30528	2
16 (NS)	Label Martin Products	32238	1
17	Rubber Blade Clamp	39496	Table IV
18	Screw SHS 1/2=13NC x 1-1/2 SS	33190	Table IV
19 (NS)	Label Flying Objects Warning	38227	2
20 (NS)	Label Conveyor Products Warning	23395	2
21 (NS)	Operator's Manual	M3939	1
22	End Hanger Bar	Table II	4
23	Screw HHC 1/2-13NC x 1-1/2 ZP	11763	12
24	Washer Compression 1/2	11750	12
25	Nut Hex 1/2-13NC ZP	11771	12
26	Clip Cable 5/32	23481-01	2

*Contact Martin Engineering for part numbers used in stainless steel assemblies.

Figure 8. Martin® VPlow Assembly, P/N CPVHASXXXXXXXX (18 & 24-in. belts)

Table II. Martin® VPlow Item Part Numbers

Assembly Part No.	Item 1 Part No.	Item 22 Part No.
CPVHASXXXXXXXX	CPVHP10008S18X	CPVTP1005001X
CPVHASXXXXXXXX	CPVHP10008S24X	CPVTP1005002X

Table III. Martin® VPlow Urethane Blade Colors

Assembly Part No.	Item 4 Part No.	Item 5 Part No.	Blade Color
CPVHASXXOXXXXX	CPVHB001O	CPVHBSXXO	Orange
CPVHASXXBXXXXX	CPVHB001B	CPVHBSXXB	Brown
CPVHASXXGXXXXX	CPVHB001G	CPVHBSXXG	Green

Table IV. Martin® VPlow Blade Part Numbers and Quantities

Assembly Part No.	Item 5 Part No.	Item 6 Part No.	Item 4 Qty	Item 5 Qty	Item 6 Qty	Item 7 Qty	Item 8 Qty	Items 17 & 18 Qty
CPVHAS18RXXXXX	—	CPVHSB18R	0	0	1	0	8	4
CPVHAS18XXXXXX	CPVHBS18X	—	1	2	0	6	14	0
CPVHAS24RXXXXX	—	CPVHSB24R	0	0	1	0	8	4
CPVHAS24XXXXXX	CPVHBS24X	—	1	2	0	6	14	0

Table V. Martin® VPlow Hanger Arms

Assembly Part No.	Item 3 Part No.	Hanger Arm Length in. (mm)
CPVHASXXX01XXX	CPVTP1002201X	2.56 (65)
CPVHASXXX02XXX	CPVTP1002202X	6.89 (175)
CPVHASXXX03XXX	CPVTP1002203X	7.87 (200)
CPVHASXXX04XXX	CPVTP1002204X	11.81 (300)

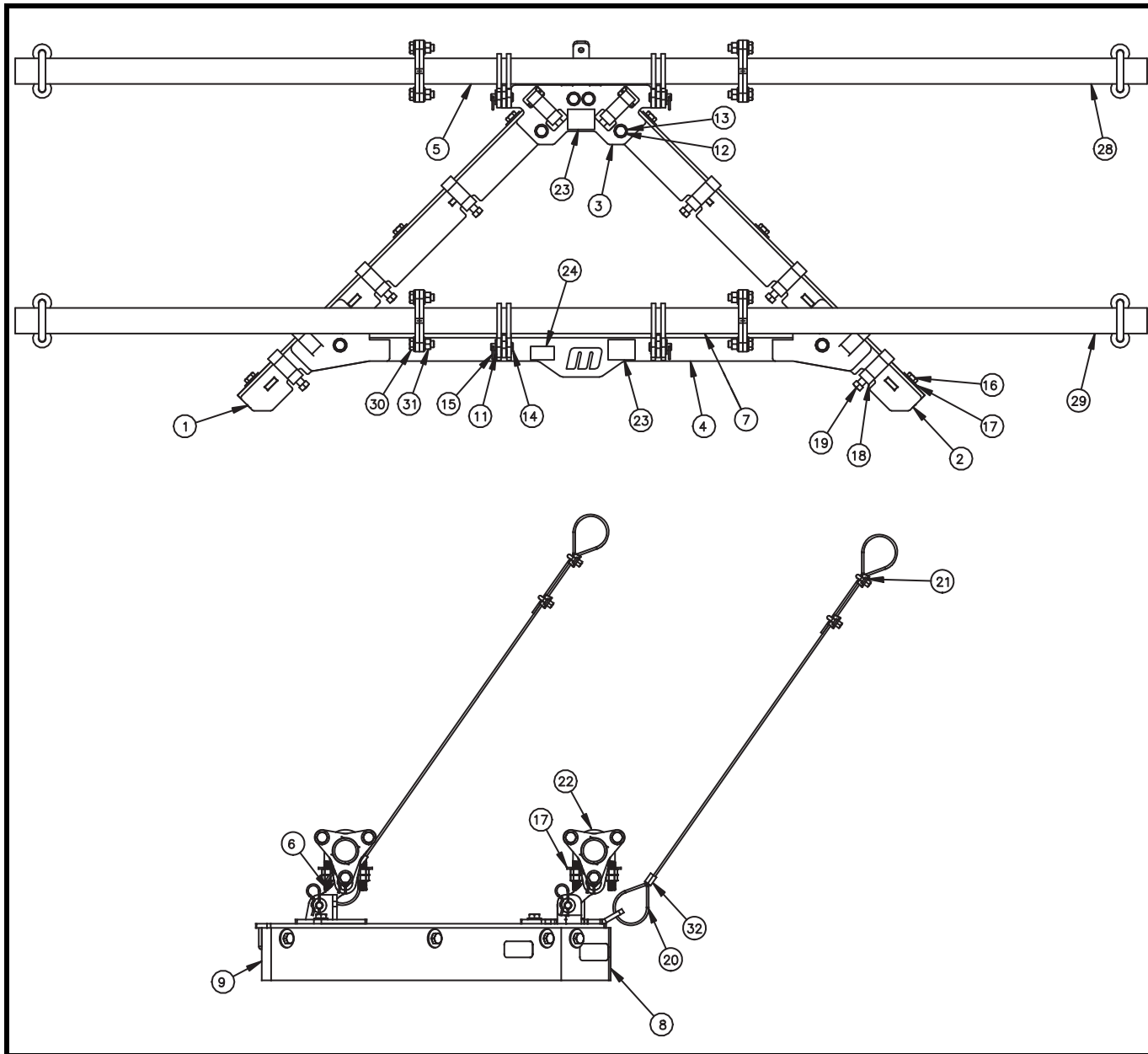


Figure 9. Martin® VPlow Assembly, P/N CPVHASXXXXXXXX (30–120-in. belts)

Item	Description	Part No.*	Qty
1	Left Frame Weldment	CPVHP100001SXXLX	1
2	Right Frame Weldment	CPVHP100001SXXRX	1
3	Front Frame Weldment	CPVHP10005T	1
4	Frame Crossbar Weldment	Table VI	1
5	Hanger Tube Weldment	CPVTP10030SXXX	Table VI
6	Hanger Arm	Table VIII	Table VI
7	Rear Hanger Tube Weldment	Table VI	Table VI
8	Urethane Blade Nose	Table VII	Table IX
9	Urethane Blade Side	Table VII	Table IX
10 (NS)	Rubber Blade 1.00 x 4.00	Table IX	Table IX
11	Washer Flat 1/2 Narrow ZP	31010	Table VI
12	Screw HHC 1/2-13NC x 1 ZP	13842	6
13	Washer Compression 1/2	11750	6
14	Pin Clevis 1/2 x 1-1/2 ZP	30689	Table VI
15	Pin Cotter 1/8 x 1 Ext Prong ZP	16578	Table VI
16	Screw HHC 1/2-13NC x 1-3/4 ZP	23478	Table IX
17	Washer Flat 1/2 Wide ZP	17328	Table IX
18	Rubber Blade Clamp	39496	Table IX
19	Screw SHS 1/2-13NC x 1-1/2 SS	33190	Table IX
20	Wire Rope 5/32 SS	100349	Table VI
21	U-Bolt Wire Rope Clamp 3/16	32264-02	4
22	U-Bolt Extended LG F/2" Pipe 1/2-13NC	39071	4
23 (NS)	Label Pinch Point	30528	2
24 (NS)	Label Martin Products	32238	1
25 (NS)	Label Flying Objects Warning	38227	2
26 (NS)	Label Conveyor Products Warning	23395	2
27 (NS)	Operator's Manual	M3939	1
28	End Hanger Bar	Table VI	2
29	End Rear Hanger Bar	Table VI	2
30	Screw HHC 1/2-13NC x 1-1/2 ZP	23478	12
31	Nut Hex 1/2-13NC ZP	11771	12
32	Clip Cable 5/32	23481-01	Table VI

*Contact Martin Engineering for part numbers used in stainless steel assemblies.

Figure 9. Martin® VPlow Assembly, P/N CPVHASXXXXXXXXXX (30–120-in. belts)

Table VI. Martin® VPlow Item Part Numbers and Quantities

Assembly Part No.	Item 4 Part No.	Item 5 Part No.	Item 7 Part No.
CPVHAS30XXXXXX	CPVHP1001001X	CPVHP1004001X	CPVHP1004001X
CPVHAS36XXXXXX	CPVHP1001001X	CPVHP1004001X	CPVHP1004001X
CPVHAS42XXXXXX	CPVHP1001002X	CPVHP1004001X	CPVHP1004001X
CPVHAS48XXXXXX	CPVHP1001002X	CPVHP1004001X	CPVHP1004001X
CPVHAS54XXXXXX	CPVHP1001002X	CPVHP1004002X	CPVHP1004002X
CPVHAS60XXXXXX	CPVHP1001003X	CPVHP1004002X	CPVHP1004002X
CPVHAS66XXXXXX	CPVHP1001003X	CPVHP1004002X	CPVHP1004002X
CPVHAS72XXXXXX	CPVHP1001003X	CPVHP1004002X	CPVHP1004002X
CPVHAS78XXXXXX	CPVHP1001004X	CPVHP1004002X	CPVHP1004301X
CPVHAS84XXXXXX	CPVHP1001004X	CPVHP1004003X	CPVHP1004301X
CPVHAS96XXXXXX	CPVHP1001004X	CPVHP1004003X	CPVHP1004301X
CPVHASA8XXXXXX	CPVHP1001005X	CPVHP1004003X	CPVHP1004302X
CPVHASC0XXXXXX	CPVHP1001005X	CPVHP1004003X	CPVHP1004302X

Assembly Part No.	Item 28 Part No.	Item 29 Part No.	Item 5 Qty	Item 6 Qty	Item 7 Qty	Items 11,14,15 Qty	Item 20 Qty	Item 32 Qty
CPVHAS30XXXXXX	CPVTP1005003X	CPVTP1005003X	2	4	0	8	8	2
CPVHAS36XXXXXX	CPVTP1005004X	CPVTP1005004X	2	4	0	8	8	2
CPVHAS42XXXXXX	CPVTP1005005X	CPVTP1005005X	2	4	0	8	8	2
CPVHAS48XXXXXX	CPVTP1005006X	CPVTP1005006X	2	4	0	8	10	2
CPVHAS54XXXXXX	CPVTP1005005X	CPVTP1005005X	2	4	0	8	10	2
CPVHAS60XXXXXX	CPVTP1005006X	CPVTP1005006X	2	4	0	8	10	2
CPVHAS66XXXXXX	CPVTP1005007X	CPVTP1005007X	2	4	0	8	12	2
CPVHAS72XXXXXX	CPVTP1005008X	CPVTP1005008X	2	4	0	8	12	2
CPVHAS78XXXXXX	CPVTP1005009X	CPVTP1005006X	1	6	1	12	18	3
CPVHAS84XXXXXX	CPVTP1005008X	CPVTP1005007X	1	6	1	12	18	3
CPVHAS96XXXXXX	CPVTP1005010X	CPVTP1005009X	1	6	1	12	21	3
CPVHASA8XXXXXX	CPVTP1005012X	CPVTP1005006X	1	6	1	12	24	3
CPVHASC0XXXXXX	CPVTP1005014X	CPVTP1005008X	1	6	1	12	30	3

Table VII. Martin® VPlow Urethane Blade Colors

Assembly Part No.	Item 8 Part No.	Item 9 Part No.	Blade Color
CPVHASXXOXXXXX	CPVHB001O	CPVHBSXXO	Orange
CPVHASXXBXXXXX	CPVHB001B	CPVHBSXXB	Brown
CPVHASXXGXXXXX	CPVHB001G	CPVHBSXXG	Green

Table VIII. Martin® VPlow Hanger Arms

Assembly Part No.	Item 6 Part No.	Hanger Arm Length in. (mm)
CPVHASXXX01XXX	CPVTP1002201X	2.56 (65)
CPVHASXXX02XXX	CPVTP1002202X	6.89 (175)
CPVHASXXX03XXX	CPVTP1002203X	7.87 (200)
CPVHASXXX04XXX	CPVTP1002204X	11.81 (300)

Table IX. Martin® VPlow Blade Part Numbers and Quantities

Assembly Part No.	Item 9 Part No.	Item 10 Part No.	Item 8 Qty	Item 9 Qty	Item 10 Qty	Item 16 Qty	Item 17 Qty	Items 18 & 19 Qty
CPVHAS30RXXXXXX	—	CPVHBS30X	0	0	1	0	8	6
CPVHAS30XXXXXXX	CPVHBS30X	—	1	2	0	6	14	0
CPVHAS36RXXXXXX	—	CPVHBS36X	0	0	1	0	8	6
CPVHAS36XXXXXXX	CPVHBS36X	—	1	2	0	8	16	0
CPVHAS42RXXXXXX	—	CPVHBS42X	0	0	1	0	8	8
CPVHAS42XXXXXXX	CPVHBS42X	—	1	2	0	8	16	0
CPVHAS48RXXXXXX	—	CPVHBS48X	0	0	1	0	8	8
CPVHAS48XXXXXXX	CPVHBS48X	—	1	2	0	8	16	0
CPVHAS54RXXXXXX	—	CPVHBS54X	0	0	1	0	8	10
CPVHAS54XXXXXXX	CPVHBS54X	—	1	2	0	10	18	0
CPVHAS60RXXXXXX	—	CPVHBS60X	0	0	1	0	8	10
CPVHAS60XXXXXXX	CPVHBS60X	—	1	2	0	10	18	0
CPVHAS66RXXXXXX	—	CPVHBS66X	0	0	1	0	8	12
CPVHAS66XXXXXXX	CPVHBS66X	—	1	2	0	12	20	0
CPVHAS72RXXXXXX	—	CPVHBS72X	0	0	1	0	8	12
CPVHAS72XXXXXXX	CPVHBS72X	—	1	2	0	12	20	0
CPVHAS78RXXXXXX	—	CPVHBS78X	0	0	1	0	8	14
CPVHAS78XXXXXXX	CPVHBS78X	—	1	2	0	12	20	0
CPVHAS84RXXXXXX	—	CPVHBS84X	0	0	1	0	8	14
CPVHAS84XXXXXXX	CPVHBS84X	—	1	2	0	14	22	0
CPVHAS96RXXXXXX	—	CPVHBS96X	0	0	1	0	8	18
CPVHAS96XXXXXXX	CPVHBS96X	—	1	2	0	14	22	0
CPVHASA8RXXXXXX	—	CPVHBSA8X	0	0	1	0	8	18
CPVHASA8XXXXXXX	CPVHBSA8X	—	1	2	0	16	24	0
CPVHASC0RXXXXXX	—	CPVHBSC0X	0	0	1	0	8	20
CPVHASC0XXXXXXX	CPVHBSC0X	—	1	2	0	18	26	0

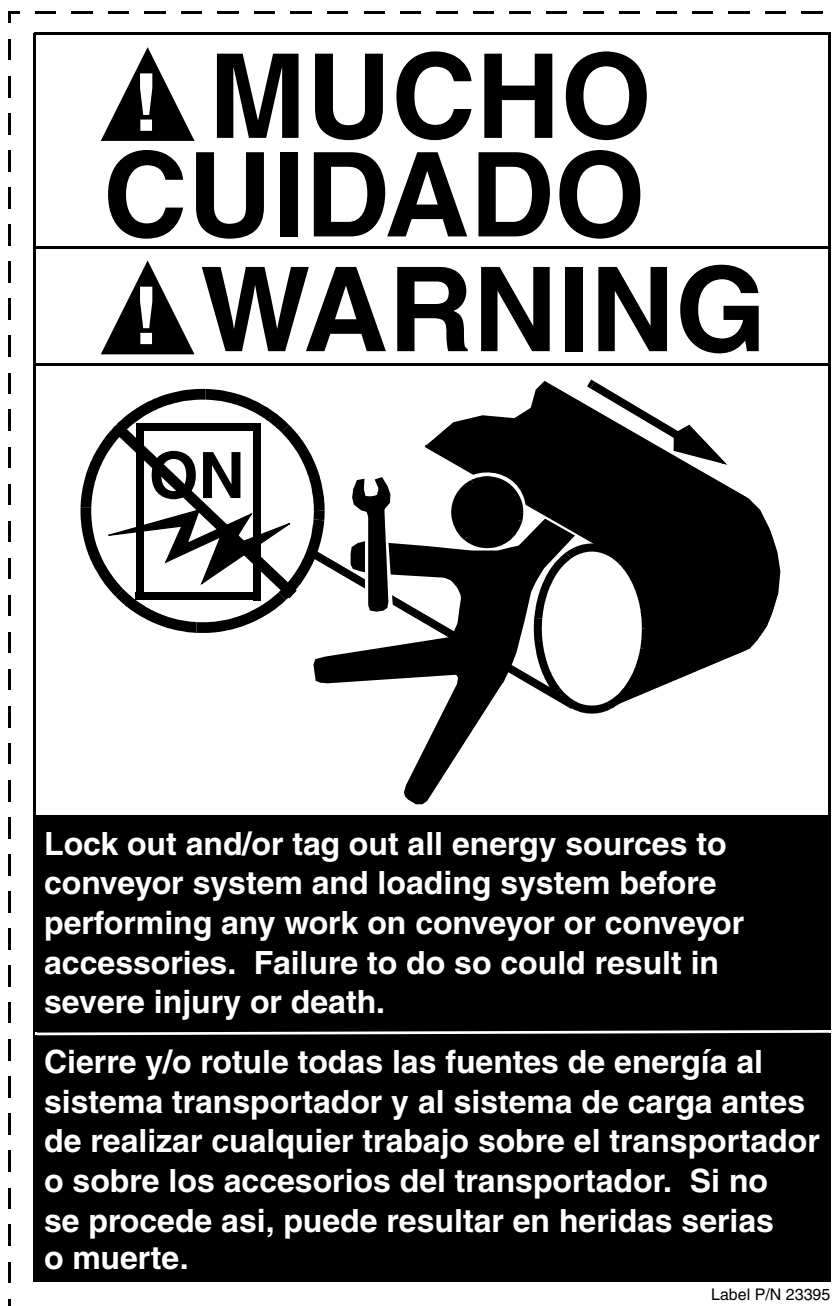


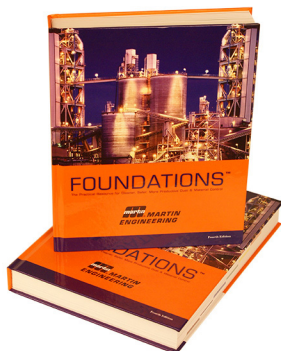
Figure 10. Conveyor Products Warning Label, P/N 23395



Figure 11. Flying Objects Warning Label, P/N 38227

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