



Durt Hawg[®] DH2 Cleaner

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***Operator's Manual
M3619***

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 Durt Hawg® DH2 Cleaner is a heavy-duty cleaner designed for use in underground mines, aggregate plants, and other places where conditions are tough. 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 your 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, Illinois 60604.
- *Martin® Inspection Door Operator's Manual*, P/N M3891.
- *Martin® Spring and Air Tensioners Operator's Manual*, P/N M3263.
- *Martin® Twist Tensioner Operator's Manual*, P/N M3837.

Materials required

Only standard hand tools are required to install and service this equipment.

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.



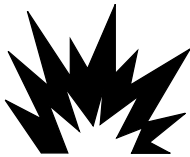
⚠ DANGER

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.



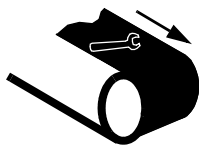
⚠ DANGER

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.



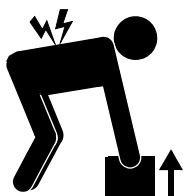
⚠ WARNING

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.

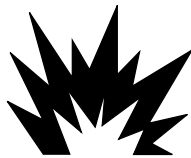
1. Inspect shipping container for damage. Report damage to delivery service immediately and fill out delivery service's claim form. Keep any damaged goods subject to examination.
2. Remove belt cleaner assembly from shipping container.
3. If anything is missing contact Martin Engineering or a representative.



⚠ DANGER

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

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.

Installing Belt Cleaner

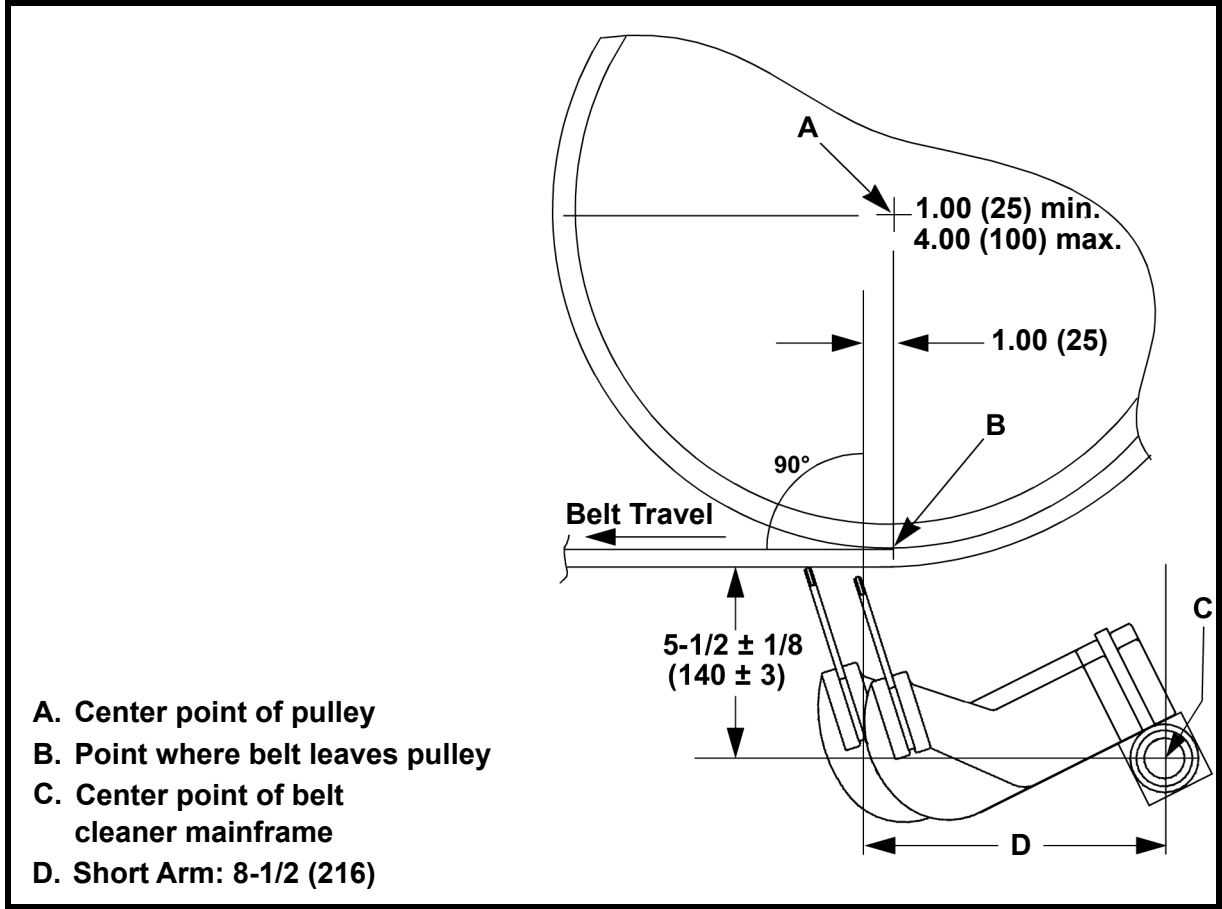


Figure 1. Belt Cleaner Mainframe Location

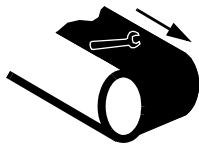
Finding center point of Secondary Cleaner mainframe

1. On operator side chute wall, draw horizontal and vertical center lines of pulley to find pulley center point (A). Make sure vertical center line is perpendicular to belt line.
2. Measure 1 in. (25 mm) past point where belt leaves pulley (B), and mark vertical line on chute wall perpendicular to belt line. (More than 4 in. [100 mm] requires a hold-down roller.)
3. Locate cleaner blades where this line crosses bottom (return side) of conveyor belt. If you cannot install cleaner at this point, install it as close to it as possible. If belt is not adequately supported where blade contacts belt, a belt support must be installed.
4. Measure vertically and horizontally as shown in Figure 1 and mark mainframe center point (C).
5. Repeat steps 1 through 4 for far side chute wall.
6. Refer to applicable tensioner manual for tensioner installation.
7. If using Martin® Inspection Door, install according to *Martin® Inspection Door Operator's Manual*, P/N M3891.

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, 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. Make sure all fasteners are tight. Tighten if necessary.
5. Make sure cleaner is not changing belt line. If it is, install belt support ahead of blade-to-belt contact point.
6. 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.)
7. If wear, material buildup, or some other problem exists, see “Troubleshooting.”

Maintenance



NOTE

Maintenance inspections should be performed weekly until a maintenance schedule can be determined. Certain applications and/or changing material conditions may require more frequent maintenance inspections.

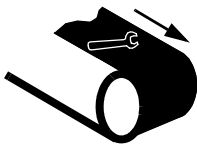
⚠ DANGER

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. Turn off and lockout / tagout / blockout / testout energy source according to ANSI standards (see “References”).
2. Remove any material from belt cleaner.
3. Make sure all fasteners are tight. Tighten if necessary.
4. Check blades for excessive wear. Allow 3 in. (76 mm) of wear on urethane, mild steel and stainless steel blades. Allow 1/2 in. (13 mm) of wear on tungsten carbide blades. If blades are worn past these limits (or to wear line on urethane blades), replace as follows:
 - a. Release tension on mainframe and remove belt cleaner assembly.
 - b. Use a hammer to remove worn blades from mainframe by pounding downward on bases of worn blades. Pound new blades onto mainframe after old blades have been removed.
 - c. Install belt cleaner assembly according to instructions in the appropriate operator’s manual.
 - d. Install tensioner assembly and adjust tension according to instructions in the appropriate operator’s manual.
5. Remove equipment from service if there is any indication it is not functioning properly. Call Martin Engineering or representative for assistance. Do NOT return equipment to operation until the cause of the problem has been identified and corrected.
6. Wipe all labels clean. If labels are not readable, contact Martin Engineering or representative for replacements.

⚠ 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.

Troubleshooting

Symptom	Corrective Action
Insufficient cleaning and carryback.	<ul style="list-style-type: none"> • 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
Secondary Cleaner blade tip is 1 in. (25 mm) past vertical center line of pulley.
Secondary Cleaner is not changing belt line.
Blades are centered on belt.

Part Numbers

This section provides product names and corresponding part numbers for Durt Hawg[®] DH2 Cleaners and related equipment. Please reference part numbers when ordering parts:

Durt Hawg[®] DH2 Cleaner

Durt Hawg[®] DH2 Cleaner Assembly: P/N 37144-XXXXX-X.

Recommended Tensioners

Belts 18 to 54 in. wide:

Martin[®] Spring Tensioner: P/N 38180.

Martin[®] Twist Tensioner: P/N 38850.

Martin[®] Twist Tensioner with Weldable Adapter Plate Kit:
P/N 38850-A.

Martin[®] Twist Tensioner with Adjustable “L” Bracket: P/N 38850-L.

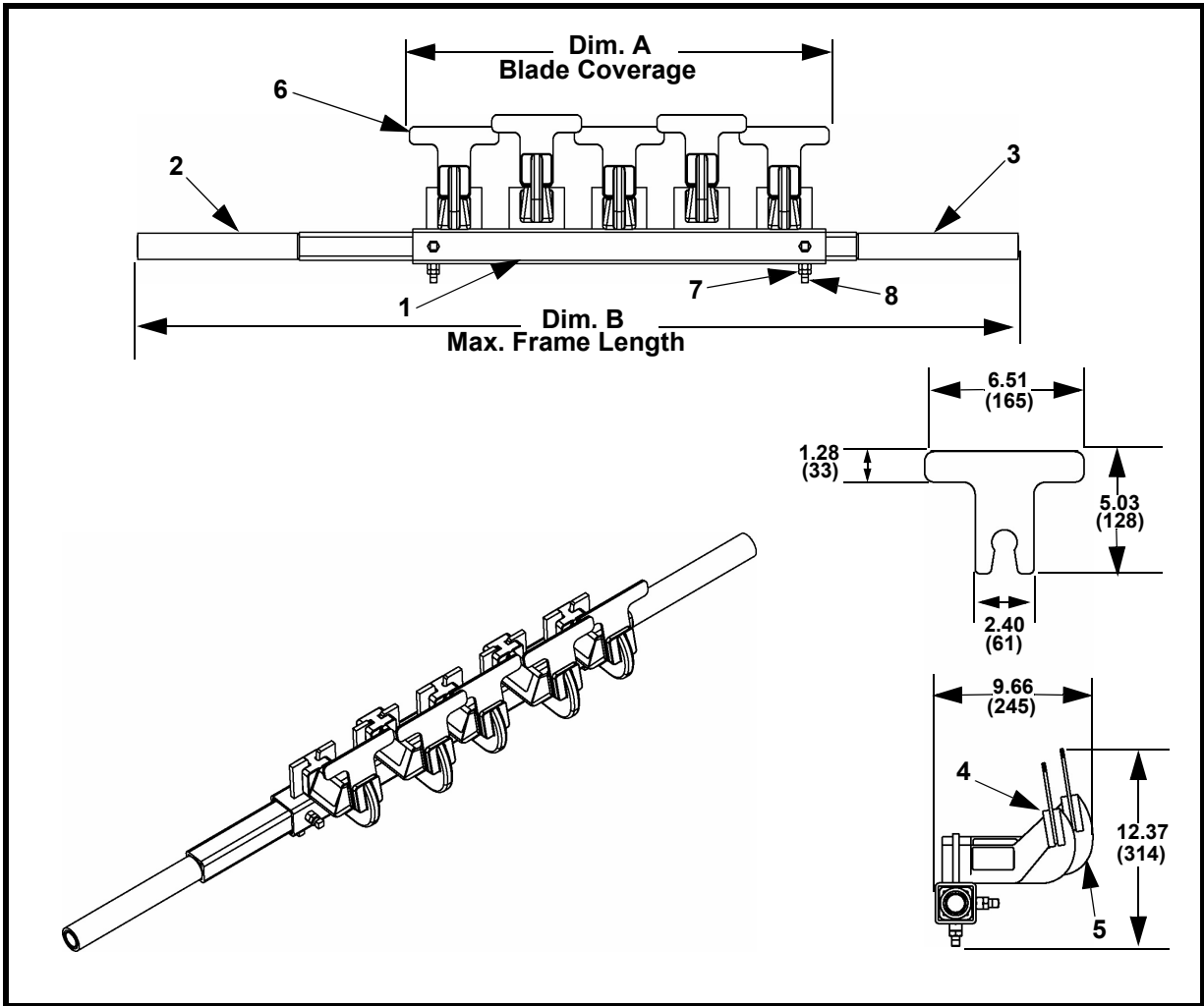
Belts 60 to 96 in. wide:

Dual Martin[®] Spring Tensioner: P/N 38180-2.

Dual Martin[®] Twist Tensioner: P/N 38850-2.

Martin[®] Twist Tensioner with Weldable Adapter Plate Kit:
P/N 38850-2A.

Dual Martin[®] Twist Tensioner with Adjustable “L” Bracket:
P/N 38850-2L.



Item	Description	Part No.	Qty.
1	Mainframe Weldment	Table I	1
2	Pipe End Tube	Table I	1
3	Pipe End Tube	Table I	Table I
4	Short Arm	Table I	Table I
5	Long Arm	Table I	Table I
6	Secondary Blade	Table I	Table I
7	Nut Hex 1/2 - 13 NC ZP	11771	4
8	Screw SHS 1/2 - 13 NC x 1-1/2 SS	33190	4
9 (NS)	Label Martin Products	38048	2
10 (NS)	Label Conveyor Products Warning	23395	2
11 (NS)	Operator's Manual	M3619	1
12 (NS)	Martin® Twist Tensioner Assembly	Table I	1
13 (NS)	Martin® Spring Tensioner Assembly	Table I	1

NS = Not Shown

Figure 2. Durt Hawg® DH2 Cleaner Assembly, P/N 37144-XXXXX-X

Table I. Durt Hawg® DH2 Cleaner Assembly Dimensions and Part Numbers (Page 1 of 2)

Part No.	Dim. A	Dim. B	Part No. Item 1	Part No. Item 2	Part No. Item 3	Part No. Item 12	Part No. Item 13
37144-18XXX-X	12.50 (318)	40 (1016)	37059-18	30354-01	30354-02	38850	38180
37144-24XXX-X	18.50 (470)	46 (1168)	37059-24	30354-02	30354-02	38850	38180
37144-30XXX-X	24.50 (622)	58 (1473)	37059-30	30354-02	30354-03	38850	38180
37144-36XXX-X	30.50 (775)	64 (1626)	37059-36	30354-02	30354-03	38850	38180
37144-42XXX-X	36.50 (927)	70 (1778)	37059-42	30354-02	30354-03	38850	38180
37144-48XXX-X	42.50 (1080)	76 (1930)	37059-48	30354-02	30354-03	38850	38180
37144-54XXX-X	48.50 (1232)	82 (2083)	37059-54	30354-02	30354-03	38850-2	38180-2
37144-60XXX-X	54.50 (1384)	94 (2388)	37059-60	30354-03	30354-03	38850-2	38180-2
37144-66XXX-X	60.50 (1537)	100 (2540)	37059-66	30354-03	30354-03	38850-2	38180-2
37144-72XXX-X	66.50 (1689)	106 (2692)	37059-72	30354-03	30354-03	38850-2	38180-2
37144-78XXX-X	72.50 (1842)	117 (2972)	37059-78	30354-06	--	38850-2	38180-2
37144-84XXX-X	78.50 (1994)	123 (3124)	37059-84	30354-04	--	38850-2	38180-2
37144-90XXX-X	84.50 (2146)	129 (3277)	37059-90	30354-15	--	38850-2	38180-2
37144-96XXX-X	90.50 (2299)	135 (3429)	37059-96	30354-05	--	38850-2	38180-2

Part Numbers

Part No.	Qty. Item 3	Qty. Item 4	Qty. Item 5	Qty. Item 6	Wt. lbs. w/o Tens.
37144-18XXX-X	1	1	1	2	36.7
37144-24XXX-X	1	2	1	3	46.5
37144-30XXX-X	1	2	2	4	59.4
37144-36XXX-X	1	3	2	5	66.3
37144-42XXX-X	1	3	3	6	73.4
37144-48XXX-X	1	4	3	7	80.3
37144-54XXX-X	1	4	4	8	87.4
37144-60XXX-X	1	5	4	9	100.1
37144-66XXX-X	1	5	5	10	107.2
37144-72XXX-X	1	6	5	11	114.1
37144-78XXX-X	0	6	6	12	132.3
37144-84XXX-X	0	7	6	13	141.5
37144-90XXX-X	0	7	7	14	151.2
37144-96XXX-X	0	8	7	15	160

Table I. Durt Hawg® DH2 Cleaner Assembly Dimensions and Part Numbers (Page 2 of 2)

Assembly Part No.	Part No. Item 4	Part No. Item 5	Part No. Item 6	Description Item 6
37144-XXS-X	29033-S	29033-L	35380-01	T Blade 304 SS
37144-XXSBR-X	29033-SBR	29033-LBR	35380-01	T Blade 304 SS
37144-XXSGR-X	29033-SGR	29033-LGR	35380-01	T Blade 304 SS
37144-XXM-X	29033-S	29033-L	30339	Blade Mild Steel
37144-XXMBR-X	29033-SBR	29033-LBR	30339	Blade Mild Steel
37144-XXMGR-X	29033-SGR	29033-LGR	30339	Blade Mild Steel
37144-XXT-X	29033-S	29033-L	34574	T Blade Tungsten Carbide
37144-XXTBR-X	29033-SBR	29033-LBR	34574	T Blade Tungsten Carbide
37144-XXTGR-X	29033-SGR	29033-LGR	34574	T Blade Tungsten Carbide

Note: All dimensions are given in inches (mm). All dimensions are for reference only. Long and Short Arms are to be staggered on mainframe as shown always starting with a short arm. First XX indicates belt width. Next XX indicates blade type/material. The next XX indicates arm color. The last X indicates Martin® Twist Tensioner (T) or Spring Tensioner (S). Leave blank for no tensioner. 2.00 (51) is the maximum distance the square portion of the end weldment can be extended outside the mainframe. Set screw must be tensioned on square tubing portion of pipe end weldment. P/N 23395 (2) will be shipped loose.

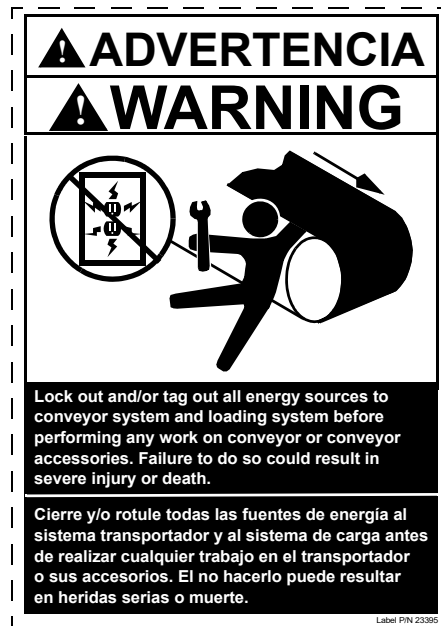
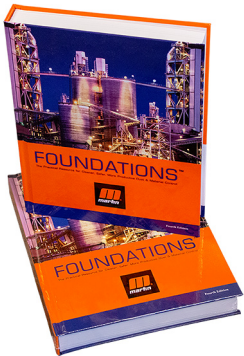


Figure 3. Martin® Conveyor Products Warning Label, P/N 23395

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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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