

martin®

Martin®
Tracker™ HD



Operator's Manual
M4187

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® Tracker™ HD automatically senses and continuously corrects belt tracking. A light touch of the belt against the guide rollers creates precision correction. The patented tie rod aligner translates the action of the steering bars to the training idlers. The upper guide unit is used on the carrying side of the belt and the lower guide unit is used on the return side.

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 this equipment.

Materials required

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

Before Installing Belt Tracking System

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 all damaged goods subject to examination.
2. Remove Martin® Tracker™ HD from shipping container. Equipment in container should include the following:
 - Martin® Tracker™ HD (upper or lower guide unit).
 - Two Conveyor Products Warning Labels, P/N 23395.
 - Two Pinch Point Warning Labels, P/N 30528.
 - *Martin® Tracker™ HD* Operator's Manual, P/N M4187.
3. If anything is missing, contact Martin Engineering or a representative.
4. Make sure belt is centered on conveyor.



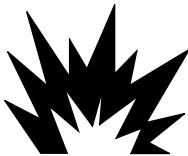
WARNING

Before installing equipment, turn off and lock out/tag out energy source to conveyor and conveyor accessories.

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

WARNING

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



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

Installing Belt Tracking System

Installing Lower Unit

1. Locate Lower Guide Unit approximately three times the belt width before the point where belt adjustment is needed or before any major pulley. If installing multiple units, allow 70 to 150 ft (21 to 50 m) between units depending on the severity of mistracking.

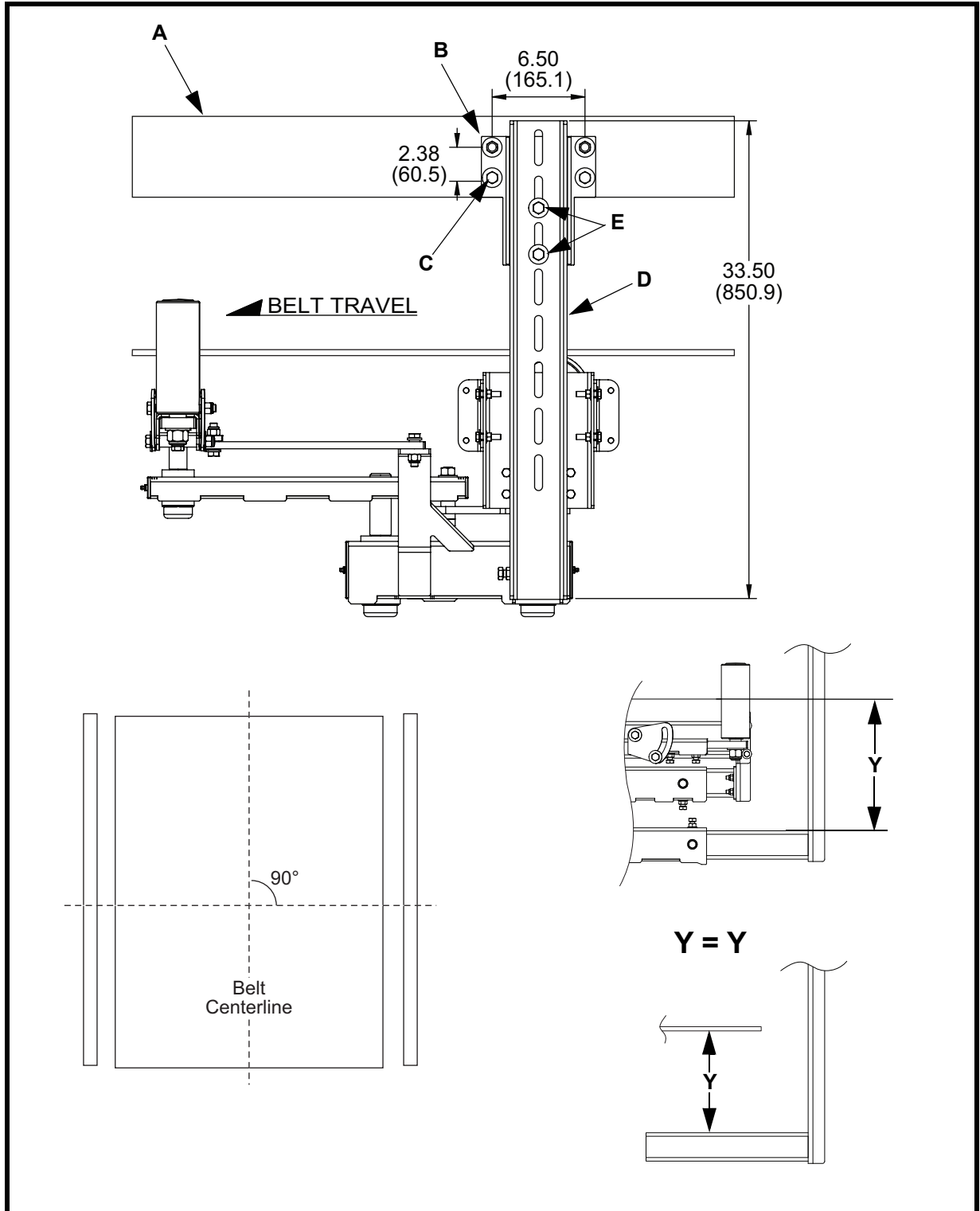


Figure 1. Mounting Dimensions–Martin® Tracker™ HD (Lower Unit)

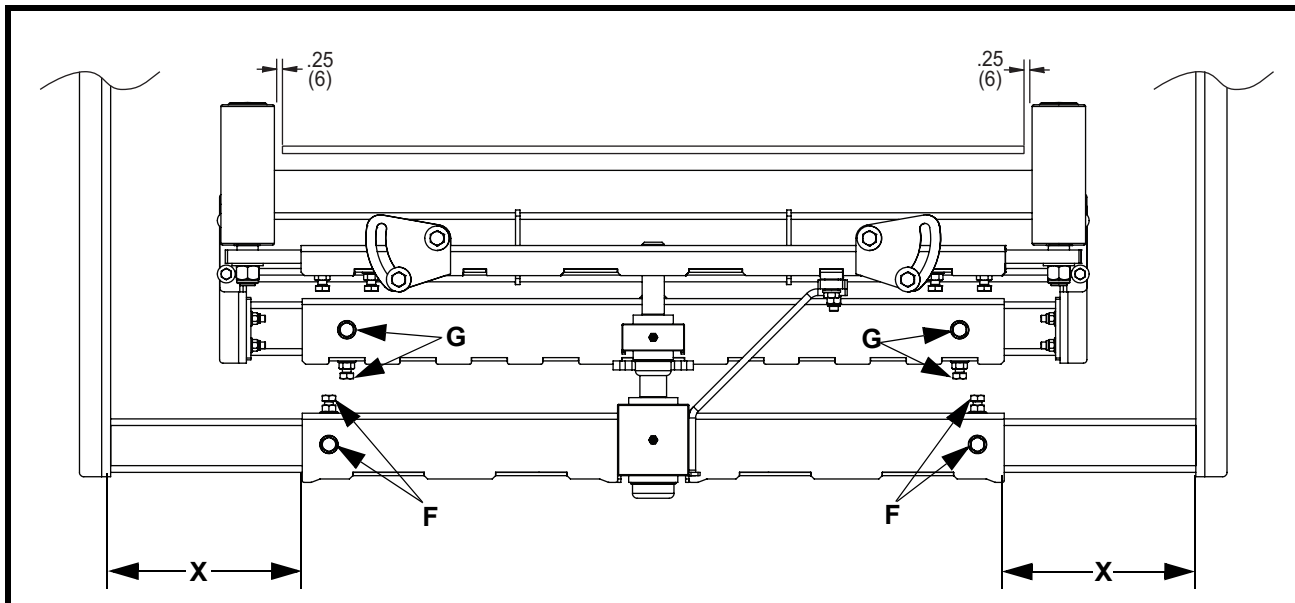


Figure 2. Mounting Dimensions—Martin® Tracker™ HD (Lower Unit)

NOTE

Martin Engineering recommends bolting rather than welding mounting brackets to stringers for easier accessibility and maintenance.

2. Mark location of mounting brackets (B) on stringers (A). See Figures 1 and 2 for mounting dimensions. Make sure telescoping tube mounting holes are accessible from both sides.
3. Bolt or weld mounting brackets to stringers as follows:
 - a. If bolting, drill or cut 9/16-in. holes in stringers through mounting holes in brackets (B). Install cap screw, flat washers compression washer, and nut (C) in each hole to secure mounting brackets to stringers.
 - b. If welding, clean stringer of rust and dirt. Then weld mounting brackets (B) to stringers.
4. Mount telescoping tube (D) on far side stringer using cap screws, flat washers, compression washers, and nuts (E).
5. Slide Martin® Tracker™ HD assembly onto far side telescoping tube.
6. Slide operator side telescoping tube into Martin® Tracker™ HD assembly and fasten to bracket (B) using cap screws, flat washers, compression washers, and nuts (E).
7. Center assembly on belt and tighten telescoping tube set screws (F).
8. Raise entire assembly up into belt 1 inch and tighten mounting bolts (E).
9. Position each sensing roll 1/4 inch from belt and tighten set screws (G).
10. Adjust telescoping tubes so return idler firmly contacts belt. Fine tune position of unit by sliding it up or down before tightening hardware.

Installing upper unit

1. Locate upper guide unit beyond the loading point or three to four times the belt width before the point where belt needs adjustment. If installing multiple units, allow 70 to 150 ft. (21 to 50 m) between units depending on the severity of mistracking.
2. Remove belt (if possible) to provide work room.
3. Remove troughing idler.
4. Bolt or weld existing troughing idler onto Martin[®] Tracker[™] HD Upper Unit.

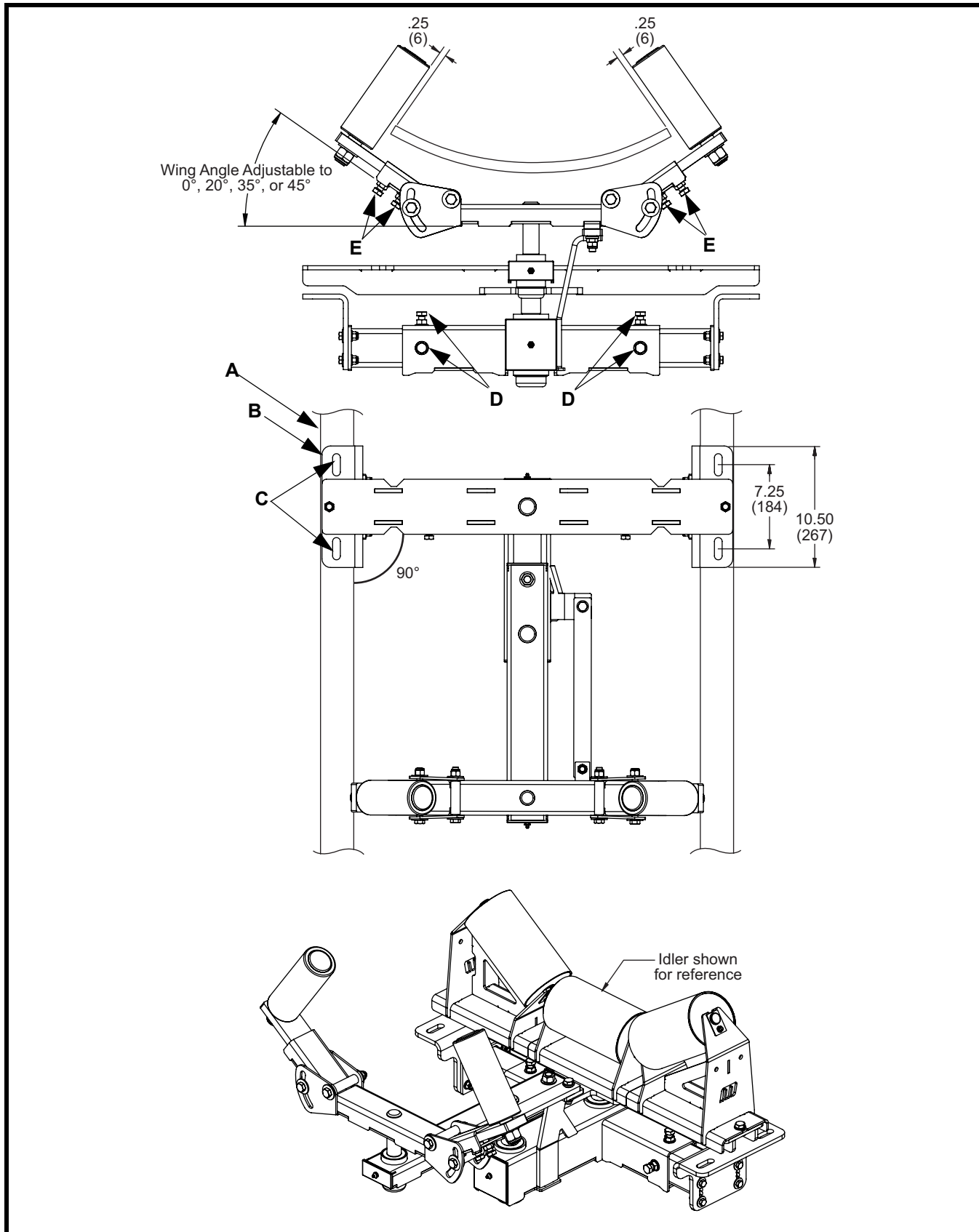


Figure 3. Mounting Dimensions—Martin® Tracker™ HD (Upper Unit)

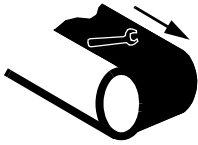
5. Mark location of support arms (B) on stringers (A). See Figure 3 for mounting dimensions.
6. Drill or cut 9/16-in. holes in stringers through mounting holes in brackets.
7. Mount support arms (B) on farside stringer using cap screws, flat washers, compression washers, and nuts (C).
8. Slide Martin[®] Tracker[™] HD assembly onto support arms.
9. Slide operator side support arms into Martin[®] Tracker[™] HD assembly and fasten to mounting brackets using cap screws, flat washers, compression washers, and nuts (C).
10. Center assembly on belt and tighten support arm set screws (D).
11. Position each sensing roll 1/4 inch from belt and tighten set screws (E).

After Installing Belt Tracking System

IMPORTANT

Read entire section before beginning work.

1. Thoroughly wipe chute or stringers clean above Martin® Tracker™ HD on both sides of belt. Place Martin® Conveyor Products Warning Labels (P/N 23395) on chute or stringers visible to Martin® Tracker™ HD 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 fire retardant cover from 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 conveyor belt and observe belt tracking.



WARNING

Before adjusting Martin® Tracker™ HD, turn off and lock out/tag out energy source to conveyor and conveyor accessories.

4. Allow belt to run through at least ten revolutions. Then turn off and lock out/tag out energy source according to ANSI standards (see “References”).
5. Make sure all fasteners are tight. Tighten if necessary.
6. If necessary, adjust Martin® Tracker™ HD cross section to fine tune belt tracking.
 - a. Loosen set screws securing telescoping tubes.
 - b. Slide cross section in the direction belt needs to move.
 - c. Retighten set screws.

Part Numbers

This section provides part numbers for the Martin® Tracker™ HD Systems. Please reference part numbers when ordering parts.

**Martin®
Tracker™ HD
Upper
Assemblies**

	CTMHUS XX X X X X
P/N Prefix	_____
Belt Width	_____
Material	_____
Grease Kit	_____
TMI2 Trough Angle	_____
Roll Diameter	_____

MATERIAL	TMI2 TROUGH ANGLE
T: Mild Steel	N: Without TMI2 Assembly
S: 304 Stainless Steel	2: 20° TMI2 Assembly
	3: 35° TMI2 Assembly
	4: 45° TMI2 Assembly
GREASE KIT	TMI2 ROLL DIAMETER
N: Without Grease Kit	N: Without TMI2 Roll
G: With Grease Kit	5: CEMA D5 Roll
	6: CEMA D6 Roll

**Martin® Tracker™
HD Lower
Assemblies
Martin®
Return Roll**

	NOMENCLATURE CTMHLS XX X X X X
P/N Prefix	_____
Belt Width	_____
Material	_____
Grease Kit	_____
Return Roll	_____
Return Roll Guard	_____

MATERIAL	RETURN ROLL
T: Mild Steel	N: Without Return Roll
S: 304 Stainless Steel	R: With Return Roll
GREASE KIT	RETURN ROLL GUARD
N: Without Grease Kit	N: Without Return Roll Guard
G: With Grease Kit	Z: With Return Roll Guard

**Martin® Guide Roll
Repair Kits**

Martin Engineering M4187-12/23

Rubber Lagged Return Roll: P/N TRLRLD5-XX
(XX indicates belt width. Rolls contain 1/4" rubber lagging.)

P/N CTMP035XX (Includes Arm, Bearings, and Roller)

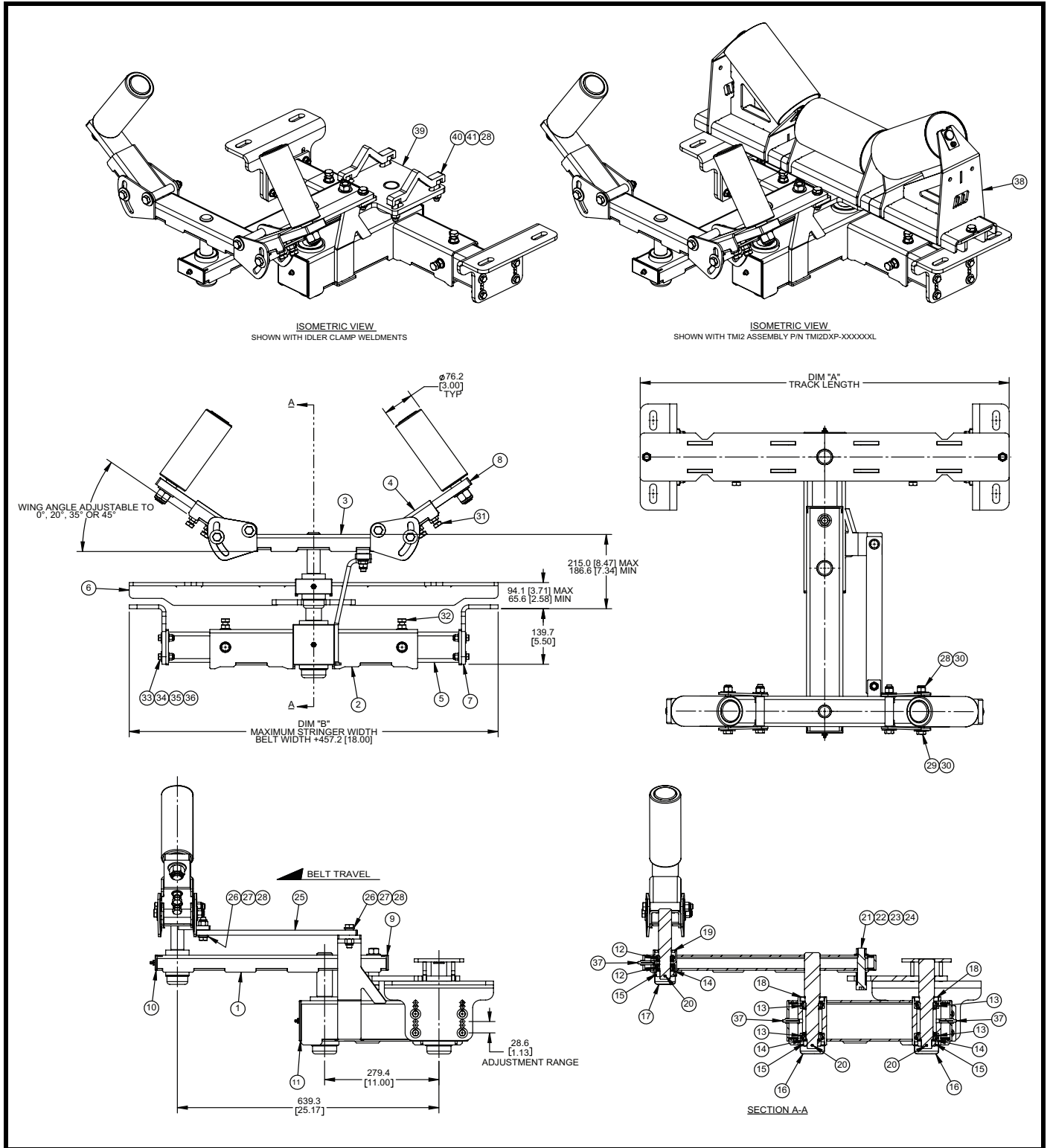


Figure 4. Martin® Tracker™ HD, P/N CTMHUSXXXXXX (Sheet 1 of 2)

Item	Description	Part No.	Qty
1	Torque Arm Weldment	CTMP009T	1
2	T-Body Weldment	Table I	1
3	Cradle Weldment	Table I	1
4	Cradle Wing Weldment	Table I	2
5	Telescoping Tube Weldment	Table I	2
6	Pivot Weldment	Table I	1
7	Mounting Bracket	CTMP030T	2
8	Guide Roll Arm Assembly	Table I	2
9	Finishing Plug	CTMP037	1
10	Finishing Plug with Hole	CTMP037H	1
11	Finishing Plug with Hole	CTMP038H	2
12	Bearing Tapered Roller	38505-01	2
13	Bearing Tapered Roller	38505-02	4
14	Spindle Washer Plain	38513	3
15	Spindle Nut	38514	3
16	Grease Cap	38515-H	2
17	Grease Cap	38515-S	1
18	Grease Seal Internal	38516-H	2
19	Grease Seal Internal	38516-S	1
20	Pin Cotter 1/8 x 1-3/4 ZP	14210	3
21	Screw SH Shoulder 3/8 x 2-3/4	37267	1
22	Torque Arm Bushing	37268	1
23	Washer Compression 5/8	11752	1

Item	Description	Part No.	Qty
24	Nut Hex 5/8-11NC	11772	1
25	Parallel Stay HD 15.56	37415-02	1
26	Bearing Sleeve Flange	38423	2
27	Screw HHC 1/2-13NC x 2	14196	2
28	Nut Hex Elastic Lock 1/2-13NC	18577	Tbl II
29	Screw HHC 1/2-13NC x 4-1/2	35170	4
30	Washer Flat 1/2 Wide	17328	8
31	Screw HHC 1/2-13NC x 1-1/4	13835	4
32	Screw HHC 1/2-13NC x 1	13842	4
33	Screw HHC 3/8-16NC x 1-1/4	12215	8
34	Washer Flat 3/8 Wide	18007	8
35	Washer Compression 3/8	11747	8
36	Nut Elastic Lock 3/8-16NC	14201	8
37	Grease Fitting	38517	3
38	TMI2 Assembly	Table I	Tbl II
39	Pivot Plate Weldment	CTMP034T	Tbl II
40	Idler Clamp Weldment	39364	Tbl II
41	Washer Compression 1/2	11750	Tbl II
42	Remote Grease Kit	Table I	Tbl II
43	Label Kit	34772	1
44	Mounting Hardware Kit	35283	1
45	Operator's Manual	M4187	1

Figure 4. Martin[®] Tracker[™] HD, P/N CTMHUSXXXXXX (Sheet 2 of 2)

Table I. Part Numbers for Martin[®] Tracker[™] HD Upper Unit

Assembly P/N	Belt Width in. (mm)	Dim. A in. (mm)	Dim. B in. (mm)	Item 2 P/N	Item 3 P/N	Item 4 P/N	Item 5 P/N
CTMHUS24XXXX	24 (600)	35.50 (902)	42 (1067)	CTMP010AX	CTMP018BX	CTMP021AX	CTMP022AX
CTMHUS30XXXX	30 (750)	41.50 (1054)	48 (1219)	CTMP010BX	CTMP018BX	CTMP021AX	CTMP022AX
CTMHUS36XXXX	36 (900)	47.50 (1207)	54 (1372)	CTMP010CX	CTMP018CX	CTMP021BX	CTMP022BX
CTMHUS42XXXX	42 (1050)	53.50 (1359)	60 (1524)	CTMP010DX	CTMP018DX	CTMP021BX	CTMP022CX
CTMHUS48XXXX	48 (1200)	59.50 (1511)	66 (1676)	CTMP010DX	CTMP018DX	CTMP021CX	CTMP022EX
CTMHUS54XXXX	54 (1350)	65.50 (1664)	72 (1829)	CTMP010DX	CTMP018DX	CTMP021CX	CTMP022EX
CTMHUS60XXXX	60 (1500)	71.50 (1816)	78 (1981)	CTMP010EX	CTMP018EX	CTMP021CX	CTMP022FX
CTMHUS72XXXX	72 (1800)	83.50 (2121)	90 (2286)	CTMP010EX	CTMP018FX	CTMP021CX	CTMP022GX

Table I. Part Numbers for Martin® Tracker™ HD Upper Unit

Assembly P/N	Item 6 P/N	Item 8 P/N	Item 38 P/N	Item 42 P/N	Weight lbs (kg)
CTMHUS24XXXX	CTMP025S24X	CTMP035AX	TMI2DXP-24XXXXXL	38550-1	429 (195)
CTMHUS30XXXX	CTMP025S30X	CTMP035BX	TMI2DXP-30XXXXXL	38550-1	480 (218)
CTMHUS36XXXX	CTMP025S36X	CTMP035BX	TMI2DXP-36XXXXXL	38550-1	531 (241)
CTMHUS42XXXX	CTMP025S42X	CTMP035BX	TMI2DXP-42XXXXXL	38550-1	596 (270)
CTMHUS48XXXX	CTMP025S48X	CTMP035CX	TMI2DXP-48XXXXXL	38550-1	644 (292)
CTMHUS54XXXX	CTMP025S54X	CTMP035CX	TMI2DXP-54XXXXXL	38550-2	681 (309)
CTMHUS60XXXX	CTMP025S60X	CTMP035CX	TMI2DXP-60XXXXXL	38550-2	736 (334)
CTMHUS72XXXX	CTMP025S72X	CTMP035DX	TMI2DXP-72XXXXXL	38550-2	810 (368)

Table II. Part Numbers and Quantities for Martin® Tracker™ HD Upper Unit

Assembly P/N	Item 38 P/N	Item 28 Qty	Item 38 Qty	Item 39 Qty	Item 40 Qty	Item 41 Qty
CTMHUSXXXXNX	—	10	0	1	2	4
CTMHUSXXXX2X	TMI2DXP-XX20XXXL	6	1	0	0	0
CTMHUSXXXX3X	TMI2DXP-XX35XXXL	6	1	0	0	0
CTMHUSXXXX4X	TMI2DXP-XX45XXXL	6	1	0	0	0

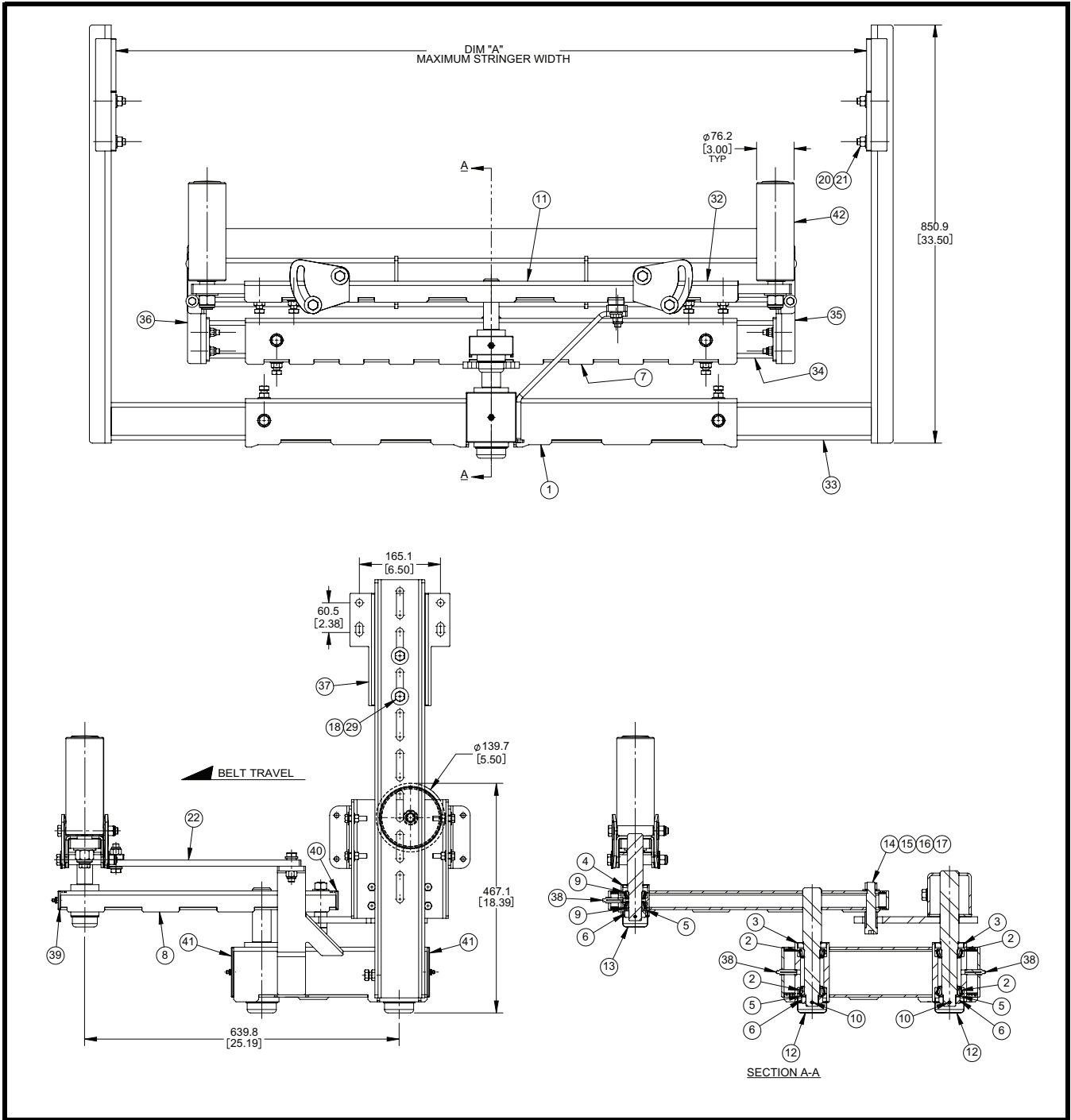


Figure 5. Martin® Tracker™ HD, P/N CTMHLXXXXXX (Sheet 1 of 2)

Item	Description	Part No.	Qty	Item	Description	Part No.	Qty
1	T-Body Weldment	Table III	1	25	Screw HHC 1/2-13NC x 4-1/2	35170	4
2	Bearing Tapered Roller	38505-02	4	26	Screw HHC 1/2-13NC x 1-1/4	13835	4
3	Grease Seal	38516-H	2	27	Screw HHC 1/2-13NC x 1	13842	8
4	Grease Seal	38516-S	1	28	Screw HHC 3/8-16NC x 1-1/4	12215	8
5	Spindle Washer Plain	38513	3	29	Screw HHC 1/2-13NC x 1-1/2	11763	4
6	Spindle Nut	38514	3	30	Nut Hex Elastic 1/2-13NC	18577	6
7	Pivot Plate Weldment	Table III	1	31	Nut Hex Elastic 3/8-16NC	14201	8
8	Torque Arm Weldment	CTMP009T	1	32	Cradle Wing Weldment	Table III	2
9	Bearing Tapered Roller	38505-01	2	33	Telescoping Tube Weldment	Table III	2
10	Pin Cotter 1/8 x 1-3/4 ZP	14210	3	34	Telescoping Tube Weldment	Table III	2
11	Cradle Weldment	Table III	1	35	Telescoping Tube Upright - Right	CTMP039ART	1
12	Grease Cap	38515-H	2	36	Telescoping Tube Upright - Left	CTMP039ALT	1
13	Grease Cap	38515-S	1	37	Hanger Plate Weldment	37396-02	2
14	Screw SH Shoulder 3/8 x 2-3/4	37267	1	38	Grease Fitting Straight	38517	3
15	Torque Arm Bushing	37268	1	39	Finishing Plug with Hole	CTMP037H	1
16	Washer Compression 5/8	11752	1	40	Finishing Plug	CTMP037	1
17	Nut Hex 5/8-11NC	11772	1	41	Finishing Plug with Hole	CTMP038H	2
18	Washer Flat 1/2 Wide	17328	12	42	Guide Roll Arm Assembly	Table III	2
19	Washer Compression 3/8	11747	8	43	Roller Guard Kit	Table III	Tbl IV
20	Washer Compression 1/2	11750	4	44	Return Roll with Rubber Lagging	Table III	Tbl IV
21	Nut Hex 1/2-13NC	11771	4	45	Remote Grease Kit	Table III	Tbl IV
22	Parallel Stay HD 15.56	37415-02	1	46	Operator's Manual	M4187	1
23	Bearing Sleeve Flange	38423	2	47	Label Kit	34772	1
24	Screw HHC 1/2-13NC x 2	14196	2	48	Mounting Hardware Kit	34498	1

Figure 5. Martin® Tracker™ HD, P/N CTMHLSXXXXXX (Sheet 2 of 2)

Table III. Part Numbers for Martin® Tracker™ HD Lower Unit

Assembly P/N	Belt Width in. (mm)	Dim. A in. (mm)	Item 1 P/N	Item 7 P/N	Item 11 P/N	Item 32 P/N	Item 33 P/N
CTMHLS24XXXX	24 (600)	42.13 (1070)	CTMP010AX	CTMP014BX	CTMP018BX	CTMP021AX	CTMP023AX
CTMHLS30XXXX	30 (750)	48.13 (1222)	CTMP010BX	CTMP014BX	CTMP018BX	CTMP021AX	CTMP023AX
CTMHLS36XXXX	36 (900)	54.13 (1375)	CTMP010CX	CTMP014CX	CTMP018CX	CTMP021BX	CTMP023BX
CTMHLS42XXXX	42 (1050)	60.13 (1527)	CTMP010DX	CTMP014DX	CTMP018DX	CTMP021BX	CTMP023CX
CTMHLS48XXXX	48 (1200)	66.13 (1680)	CTMP010DX	CTMP014DX	CTMP018DX	CTMP021CX	CTMP023CX
CTMHLS54XXXX	54 (1350)	72.13 (1832)	CTMP010DX	CTMP014DX	CTMP018DX	CTMP021CX	CTMP023CX
CTMHLS60XXXX	60 (1500)	78.13 (1984)	CTMP010EX	CTMP014EX	CTMP018EX	CTMP021CX	CTMP023DX
CTMHLS72XXXX	72 (1800)	90.13 (2289)	CTMP010EX	CTMP014EX	CTMP018FX	CTMP021CX	CTMP023DX

Table III. Part Numbers for Martin® Tracker™ HD Lower Unit

Assembly P/N	Item 34 P/N	Item 42 P/N	Item 43 P/N	Item 44 P/N	Item 45 P/N	Weight lbs (kg)
CTMHUS24XXXX	CTMP022AX	CTMP035BX	CTMP031S24XH	TRLRLD5-24	38550-1	221 (100)
CTMHUS30XXXX	CTMP022AX	CTMP035BX	CTMP031S30XH	TRLRLD5-30	38550-1	227 (103)
CTMHUS36XXXX	CTMP022BX	CTMP035CX	CTMP031S36XH	TRLRLD5-36	38550-1	245 (111)
CTMHUS42XXXX	CTMP022BX	CTMP035CX	CTMP031S42XH	TRLRLD5-42	38550-1	269 (122)
CTMHUS48XXXX	CTMP022DX	CTMP035CX	CTMP031S48XH	TRLRLD5-48	38550-1	275 (125)
CTMHUS54XXXX	CTMP022DX	CTMP035DX	CTMP031S54XH	TRLRLD5-54	38550-2	281 (127)
CTMHUS60XXXX	CTMP022FX	CTMP035DX	CTMP031S60XH	TRLRLD5-60	38550-2	315 (143)
CTMHUS72XXXX	CTMP022FX	CTMP035EX	CTMP031S72XH	TRLRLD5-72	38550-2	321 (146)

Table IV. Quantities for Martin® Tracker™ HD Lower Unit

Assembly P/N	Item 43 Qty	Item 44 Qty	Item 45 Qty
CTMHLSXXXNNN	0	0	0
CTMHLSXXXGXX	0	0	1
CTMHLSXXXXRX	0	1	0
CTMHLSXXXXXZ	1	0	0

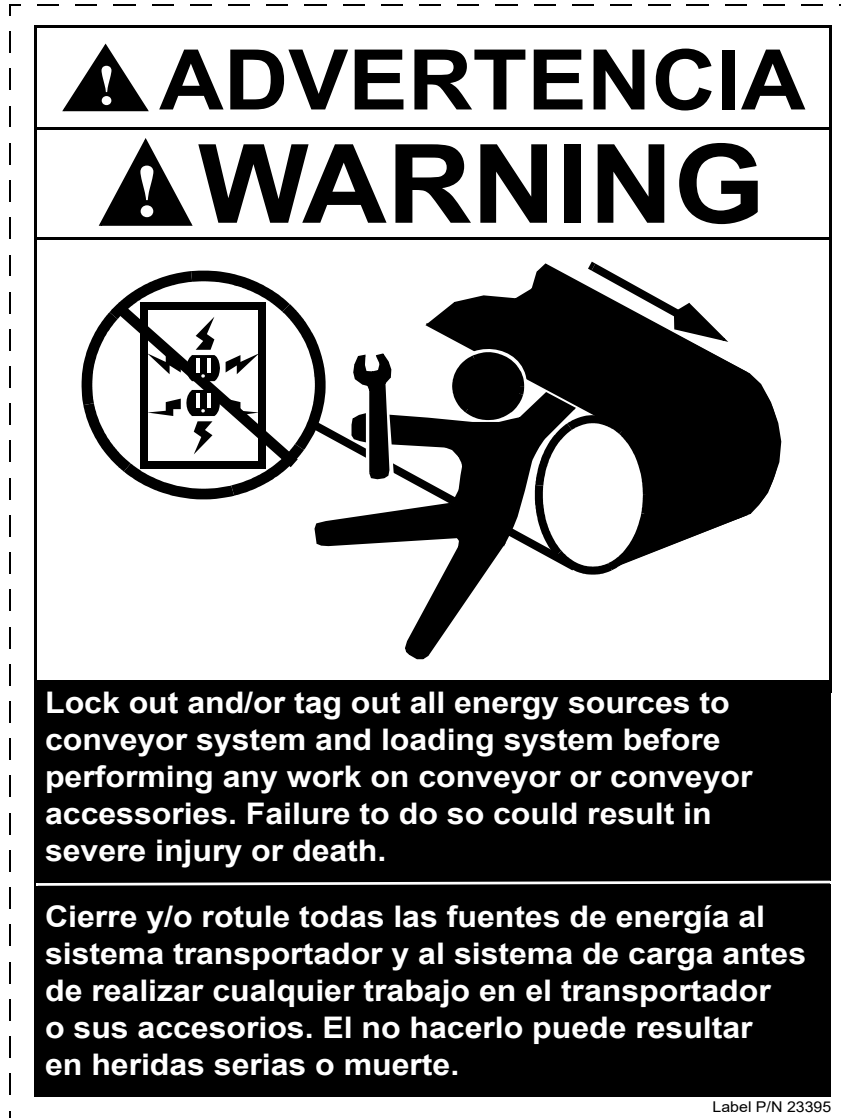


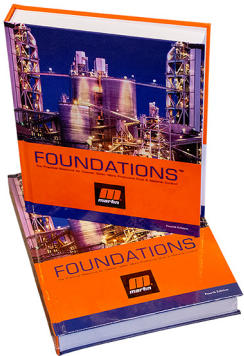
Figure 6. Conveyor Products Warning Label, P/N 23395



Figure 7. Pinch Point Warning Label, P/N 30528

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Problem Solved™ ***GUARANTEED!***



For nearly 30 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.



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