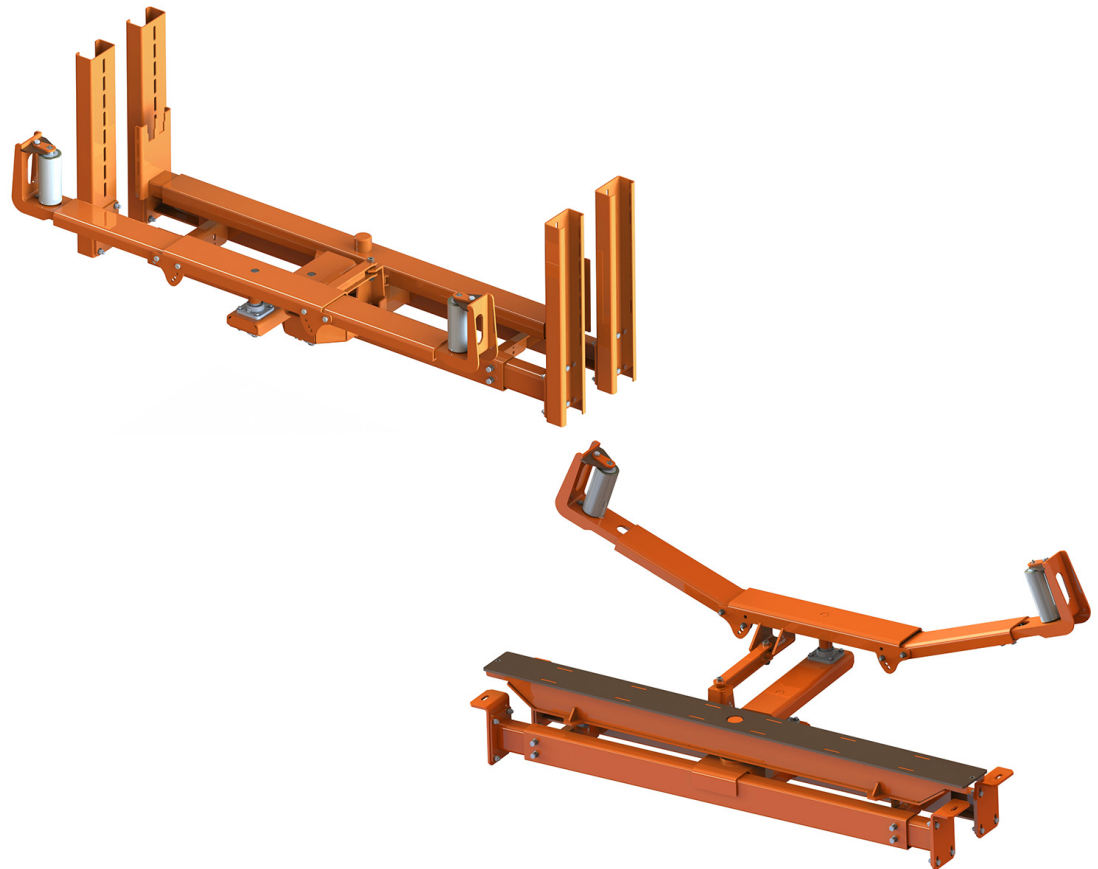




# **Martin® Tracker™ Monster**

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***Operator's Manual  
M4157***

## 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

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## ***General***

The Martin® Tracker™ 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 any damaged goods subject to examination.
2. Remove Martin® Tracker™ Monster from shipping container. Equipment in container should include the following:
  - Martin® Tracker™ Monster (upper or lower guide unit).
  - Conveyor Products Warning Labels, P/N 23395.
  - Pinch Point Warning Labels, P/N 30528.
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

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## *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.
2. Remove existing return idler. Set aside for later use.

### **IMPORTANT**

**For belts 60 to 96 in. (1800 to 2400 mm) wide, min. 24 in. (610 mm) clearance between belt line and any obstruction below is required. Contact Martin Engineering for installation instructions for clearances less than those specified above.**

3. Assemble existing return idler roller into Martin<sup>®</sup> Tracker<sup>™</sup> Monster Lower Unit.
4. Center roller on Martin<sup>®</sup> Tracker<sup>™</sup> and secure with four set screws.

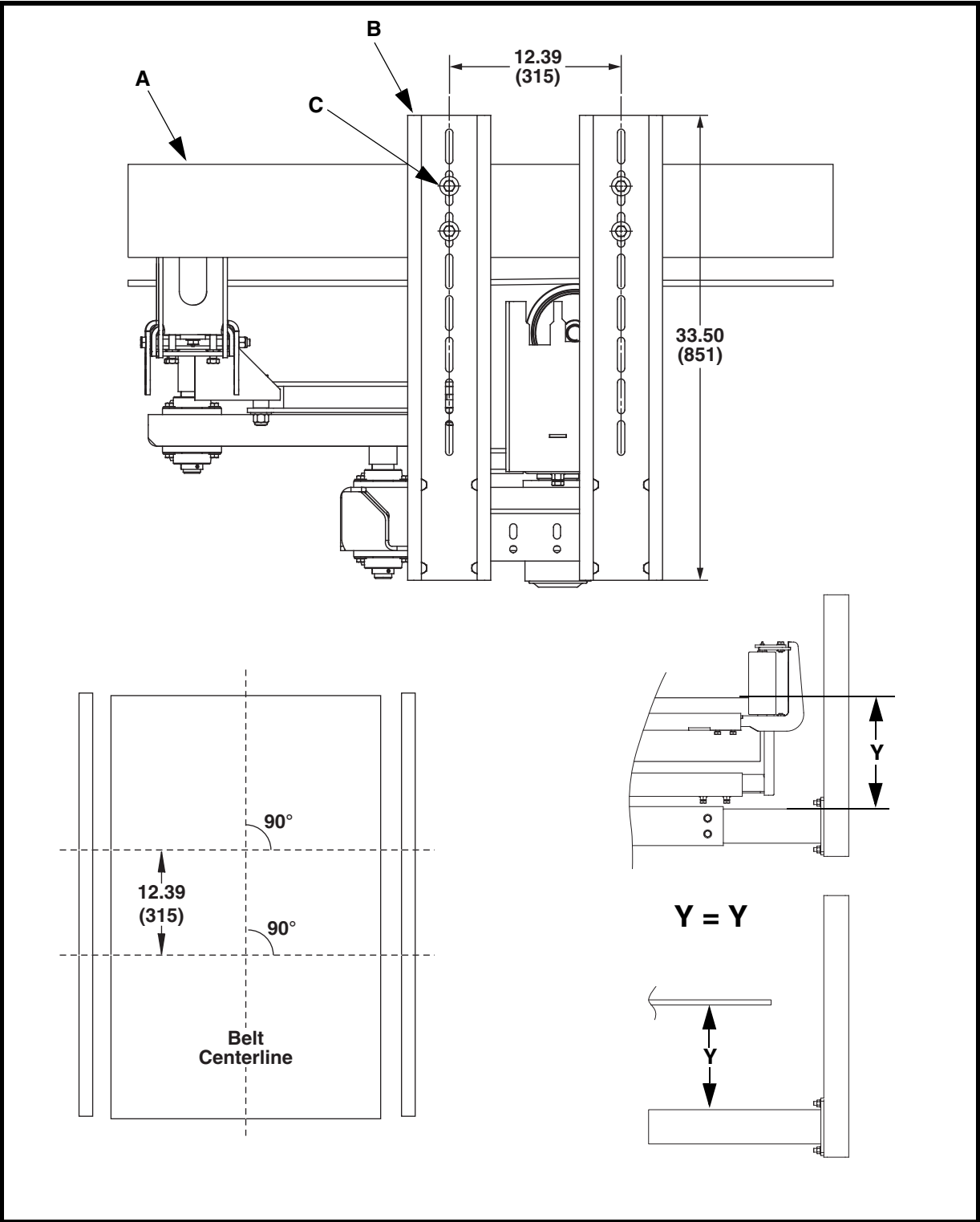
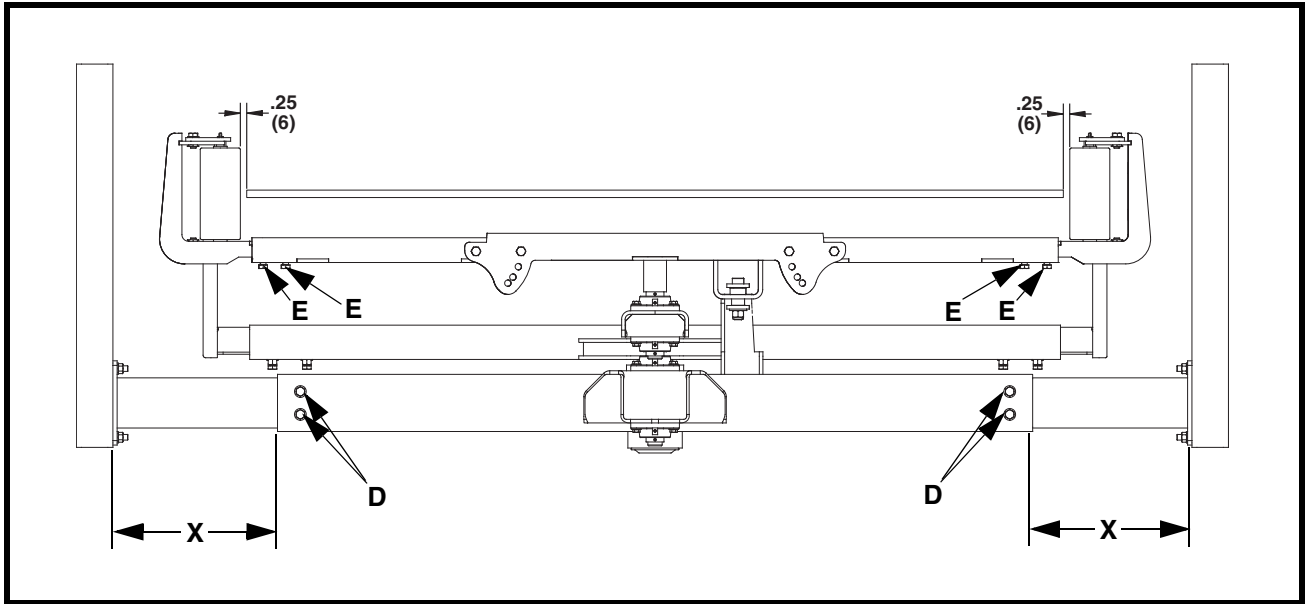


Figure 1. Mounting Dimensions–Martin® Tracker™ Monster (Lower Unit)



**Figure 2. Mounting Dimensions–Martin® Tracker™ Monster (Lower Unit)**

### NOTE

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

5. Mark location of telescoping tubes (B) on stringers (A). See Figures 1 and 2 for mounting dimensions. Make sure telescoping tube mounting holes are accessible from both sides.
6. 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. Install cap screw, flat washers compression washer, and nut in each hole to secure mounting brackets to stringers.
  - b. If welding, clean stringer of rust and dirt. Then weld mounting brackets to stringers.
7. Mount telescoping tubes (B) on farside stringer using cap screws, flat washers, compression washers, and nuts (C).
8. Slide Martin® Tracker™ assembly onto telescoping tubes.
9. Slide operator side telescoping tubes into Martin® Tracker™ assembly and fasten to stringer using cap screws, flat washers, compression washers, and nuts (C).
10. Center assembly on belt and tighten telescoping tube set screws (D).
11. Raise entire assembly up into belt 1 inch and tighten mounting bolts (C).
12. Position each sensing roll 1/4 inch from belt and tighten set screws (E).
13. 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<sup>®</sup> Tracker<sup>™</sup> Monster Upper Unit.

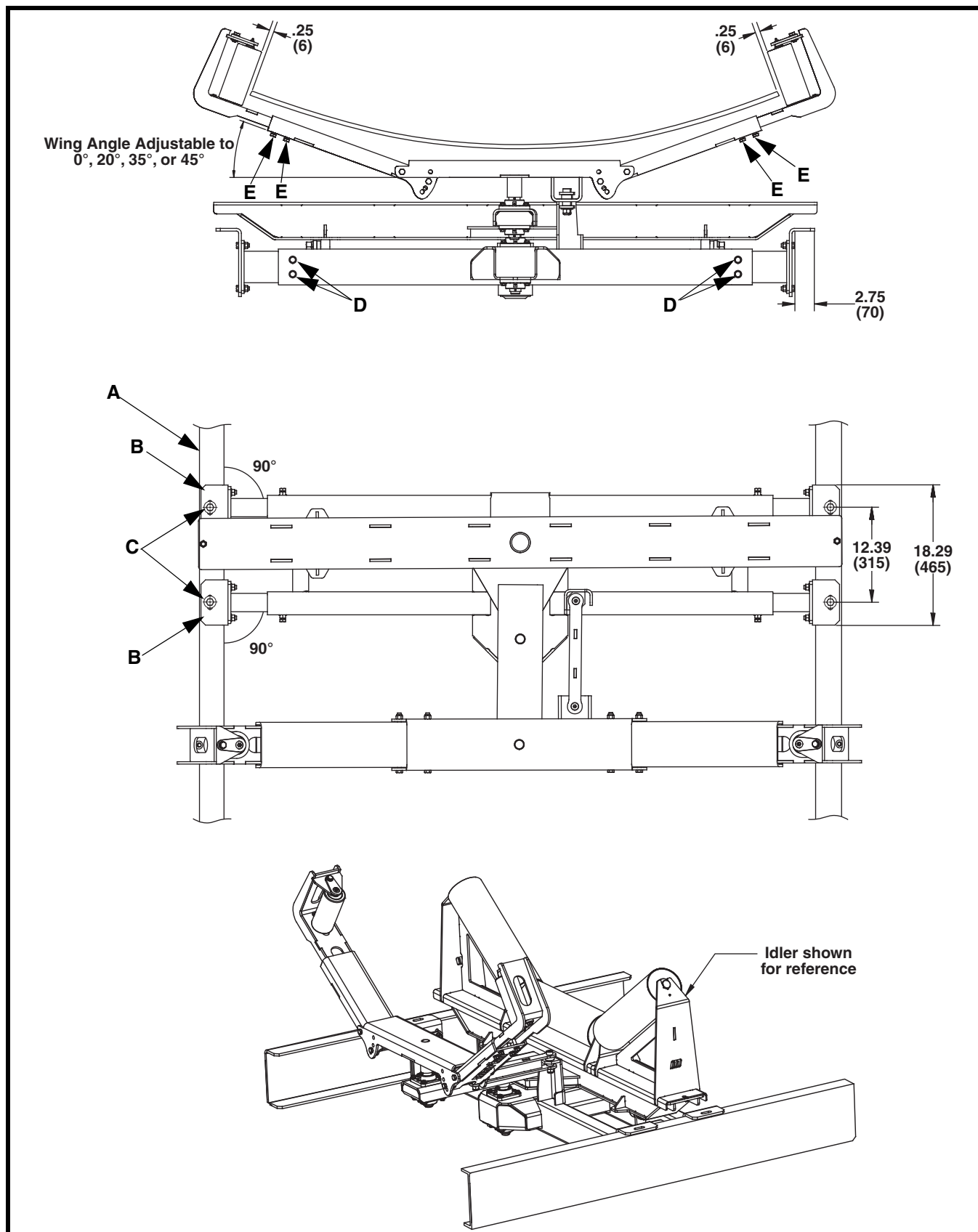


Figure 3. Mounting Dimensions–Martin® Tracker™ Monster (Upper Unit)

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<sup>®</sup> Tracker<sup>™</sup> assembly onto support arms.
9. Slide operator side support arms into Martin<sup>®</sup> Tracker<sup>™</sup> Reversing 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™ on both sides of belt. Place Martin® Conveyor Products Warning Labels (P/N 23395) on chute or stringers visible to Martin® Tracker™ 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

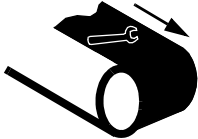
Do not touch or go near conveyor belt or conveyor accessories when conveyor belt is running. Body or clothing can get caught and pull body into conveyor belt, causing severe injury or death.

3. Turn on conveyor belt and observe belt tracking.

### ⚠ WARNING

Before adjusting Martin® Tracker™, 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™ 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

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

### *Martin® Tracker™ Assemblies*

**Martin® Tracker™ Monster Lower Unit Assemblies:** P/N TKR-XXLM

**Martin® Tracker™ Monster Upper Unit Assemblies:** P/N TKR-XXUM

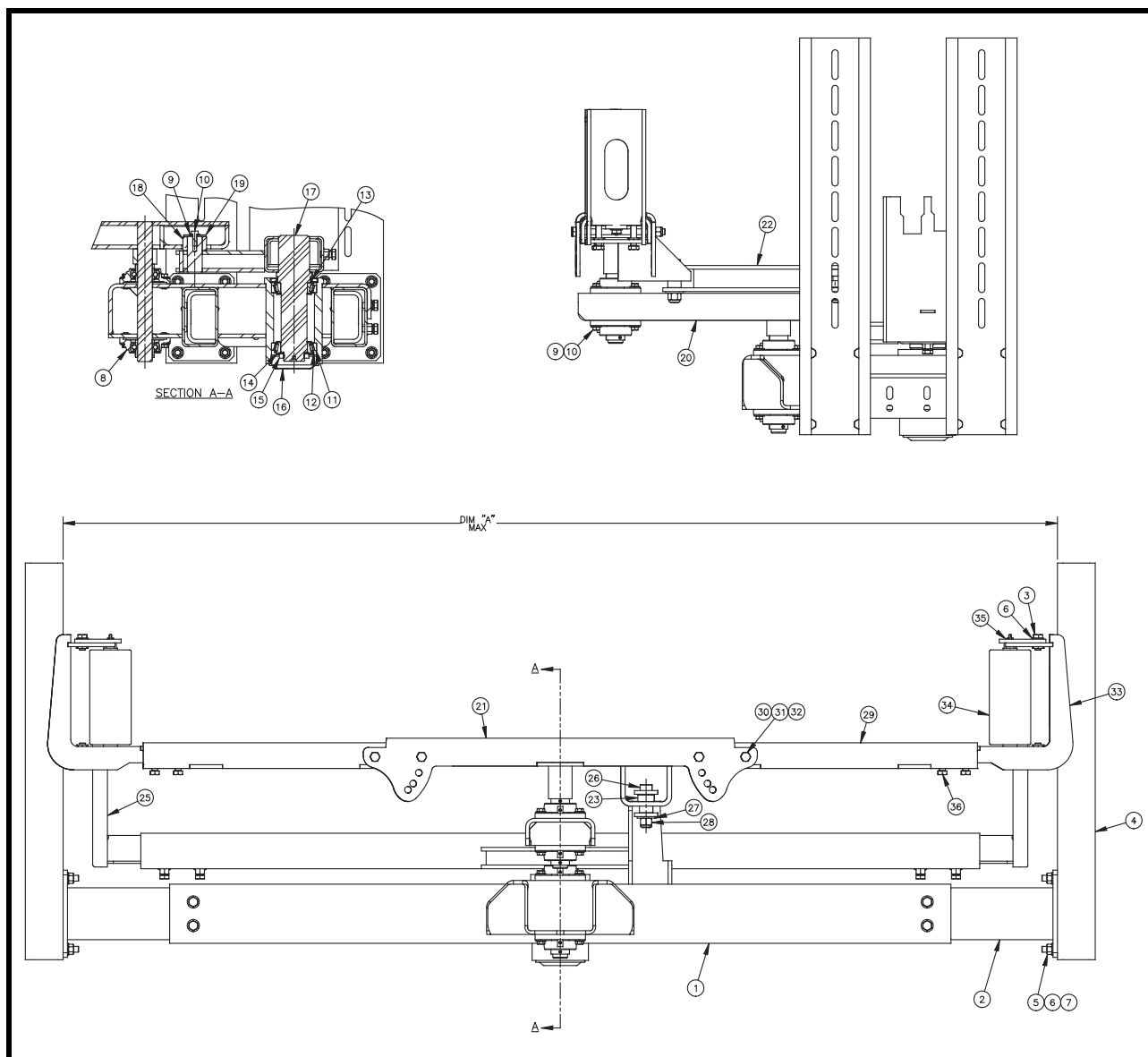
### *Martin® Idlers*

**Martin® Trac-Mount™ Idlers:** P/N TMI2EXPXXXXXX

### *Martin® Return Roll*

**Rubber Lagged Return Roll:** P/N TRLRLXX-XX

(First X indicates CEMA classification; second X indicates roll diameter; last XX indicates belt width.)

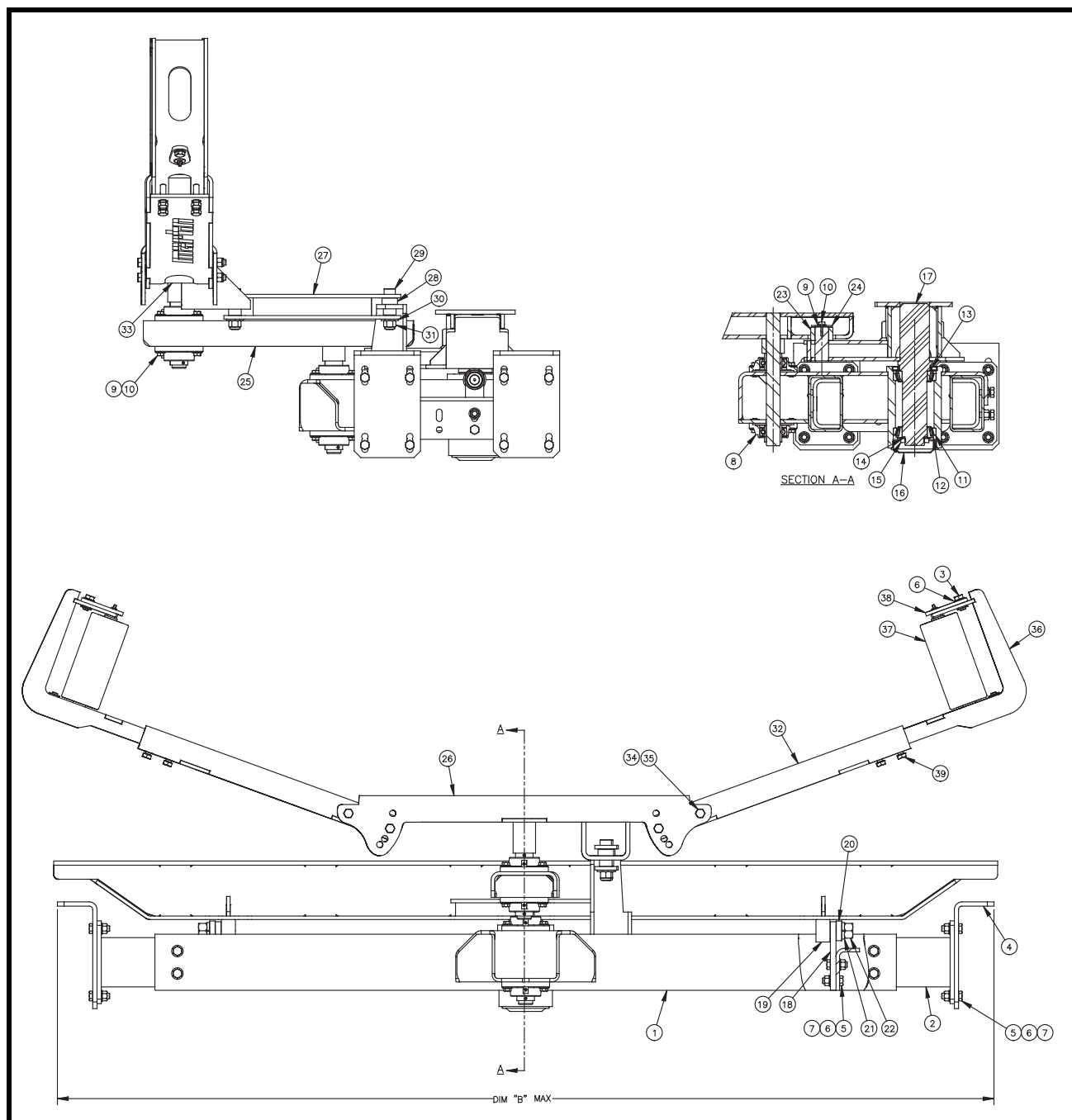


**Figure 4. Martin® Tracker™ Monster Lower Unit, P/N TKR-XXLM**

Item	Description	Part No.	Qty
1	Main Body Weldment	TKR-XXM-1100*	1
2	Mount Leg	TKR-M-1200	4
3	Screw HHC 1/2-13NC x 1 ZP	13842	20
4	Vertical Support Arm	37292	4
5	Screw HHC 1/2-13NC x 1-1/2 ZP	11763	16
6	Washer Compression 1/2	11750	20
7	Nut Hex 1/2-13NC ZP	11771	16
8	Pillow Block 1.250 Bore	TKR-M-UCF206-20	4
9	Washer Compression 3/8	11747	17

Item	Description	Part No.	Qty
10	Screw HHC 3/8-16NC x 1 ZP	11746-02	17
11	Pivot Bearing Race	TKR-M-TIM382A	2
12	Pivot Bearing	TKR-M-TIM387A	2
13	Shaft Seal 4.00 OD	TKR-M-27539	1
14	Spindle Washer with Tang	TKR-M-168600	1
15	Spindle Nut 1-3/4 -12NF	TKR-M-165400	1
16	Grease Cap 3.882 OD	TKR-M-F001603	1
17	Lower Member	TKR-XXLM-2100*	1
18	Transfer Bushing	TKR-M-0001	1
19	Retaining Washer	TKR-M-0005	1
20	Transfer Arm	TKR-M-3000	1
21	Sensing Pivot	TKR-XXM-4100*	1
22	Link Arm	TKR-M-6000	1
23	Link Arm Bottom Bush	TKR-M-0002	2
24	Idler Arm Weldment - Right	TKR-LM-2200R	1
25	Idler Arm Weldment - Left	TKR-LM-2200L	1
26	Screw SH Shoulder 3/4 x 2-1/4	39371	2
27	Washer Flat 3/4	16223	2
28	Nut Hex Elastic Lock 5/8-11NC ZP	22624	2
29	Adjusting Arm	TKR-XXM-4200*	2
30	Spacer Bushing	TKR-M-4301	2
31	Screw HHC 1/2-13NC x 7-1/2 ZP	33475	4
32	Nut Hex Elastic Lock 5/8-11NC ZP	18577	4
33	Sensing Arm	TKR-M-5100	2
34	Guide Roll Assembly	TKR-M-7000	2
35	Idler Retainer	TKR-M-5001	4
36	Screw HHC 1/2-13NC x 1-3/4 ZP	36228	8
37 (NS)	Label Kit	34772	1
38 (NS)	Mounting Hardware Kit	34498	1
39 (NS)	Operator's Manual	M4157	1

\*XX indicates belt width.  
NS = Not Shown

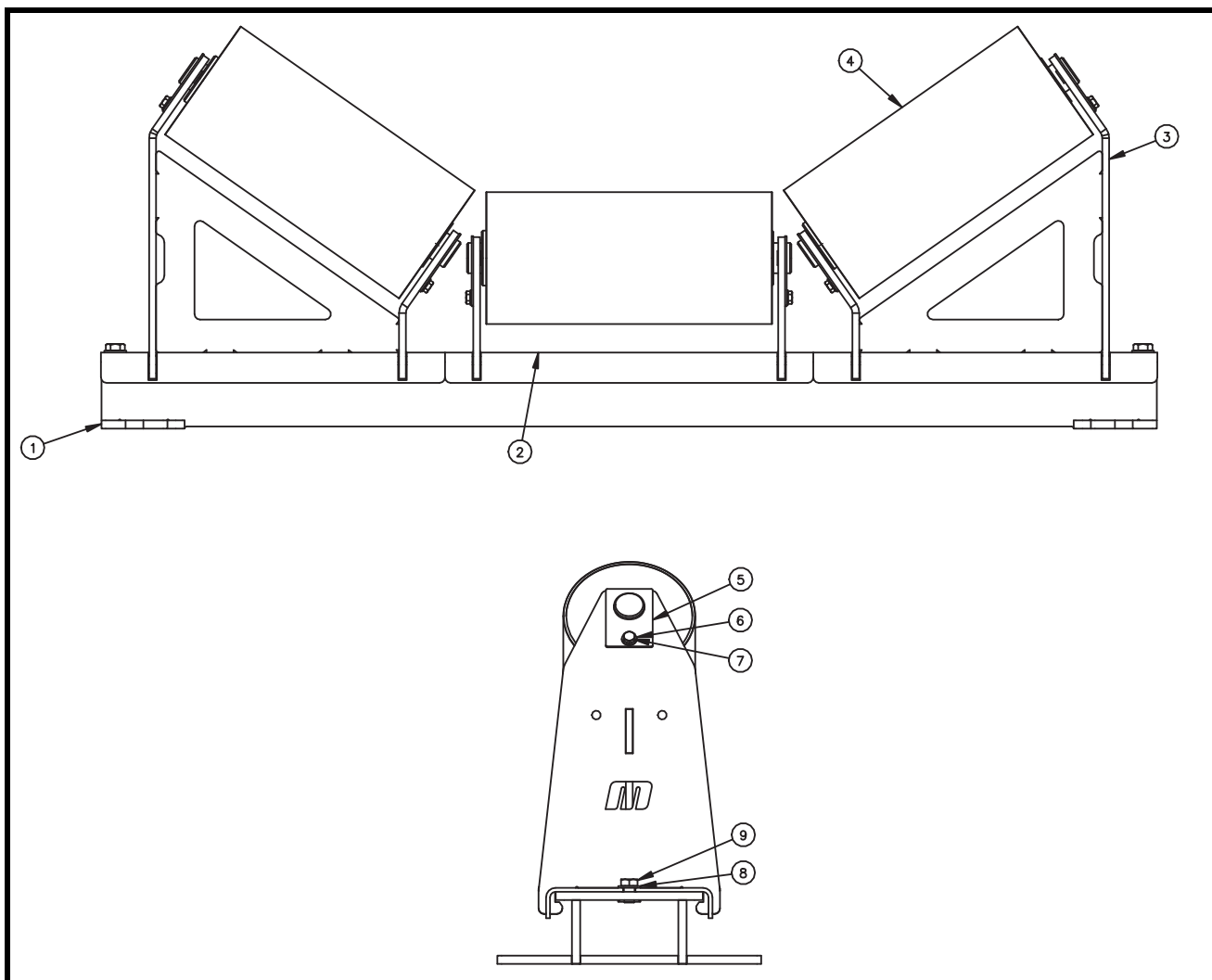


**Figure 5. Martin® Tracker™ Monster Upper Unit, P/N TKR-XXUM**

Item	Description	Part No.	Qty
1	Main Body Weldment	TKR-XXM-1100*	1
2	Mount Leg	TKR-M-1200	4
3	Screw HHC 1/2-13NC x 1 ZP	13842	12
4	Mounting Bracket	TKR-M-0001	4
5	Screw HHC 1/2-13NC x 1-1/2 ZP	11763	20
6	Washer Compression 1/2	11750	24

Item	Description	Part No.	Qty
7	Nut Hex 1/2-13NC ZP	11771	20
8	Pillow Block 1.250 Bore	TKR-M-UCF206-20	4
9	Washer Compression 3/8	11747	17
10	Screw HHC 3/8-16NC x 1 ZP	11746-02	17
11	Pivot Bearing Race	TKR-M-TIM382A	2
12	Pivot Bearing	TKR-M-TIM387A	2
13	Shaft Seal 4.00 OD	TKR-M-27539	1
14	Spindle Washer with Tang	TKR-M-168600	1
15	Spindle Nut 1-3/4 -12NF	TKR-M-165400	1
16	Grease Cap 3.882 OD	TKR-M-F001603	1
17	Lower Member	TKR-XXUM-2000*	1
18	Side Support	TKR-M-0004	2
19	Cam Follower 2.00 OD 7/8-14NF	TKR-M-CF2SB	2
20	Side Support Bushing	TKR-M-0003	2
21	Washer Lock Helical Spring 7/8 ZP	29824	2
22	Nut Hex 7/8-14NF ZP	39370	2
23	Transfer Bushing	TKR-M-0001	1
24	Retaining Washer	TKR-M-0005	1
25	Transfer Arm	TKR-M-3000	1
26	Sensing Pivot	TKR-XXM-4100*	1
27	Link Arm	TKR-M-6000	1
28	Link Arm Bottom Bushing	TKR-M-0002	2
29	Screw SH Shoulder 3/4 x 2-1/4	39371	2
30	Washer Flat 3/4	16223	2
31	Nut Hex Elastic Lock 5/8-11NC ZP	22624	2
32	Adjusting Arm	TKR-XXM4200*	2
33	Spacer Bushing	TKR-M-4301	2
34	Screw HHC 1/2-13NC x 7-1/2 ZP	33475	4
35	Nut Hex Elastic Lock 1/2-13NC ZP	18577	4
36	Sensing Arm	TKR-M-5100	2
37	Guide Roll Assembly	TKR-M-7000	2
38	Idler Retainer	TKR-M-5001	4
39	Screw HHC 1/2-13NC x 1-3/4 ZP	36228	8
40 (NS)	Label Kit	34772	1
41 (NS)	Mounting Hardware Kit	34498	1
42 (NS)	Operator's Manual	M4157	1

\*XX indicates belt width.  
NS = Not Shown



**Figure 6. Martin® Trac-Mount™ Idlers, P/N TMI2EXP-XXXXXX**

Item	Description	Part No.
1	Track Weldment	TMI2-TW-EXXX
2	Center Sleeve Weldment	TMI2-CW-EXXP
3	Wing Sleeve Weldment	TMI2-WW-EXXXXXXP
4	Roll	TMIREX-XXXX
5	Tie Tab	TMI-TT-138P2
6	Washer Compression 5/16	11452
7	Screw HHC 5/16-18NC x 1/2 ZP	39450
8	Washer Compression 1/2	11750
9	Screw HHC 1/2-13NC x 3/4 ZP	17080
10 (NS)	Mounting Hardware	35283

NS = Not Shown

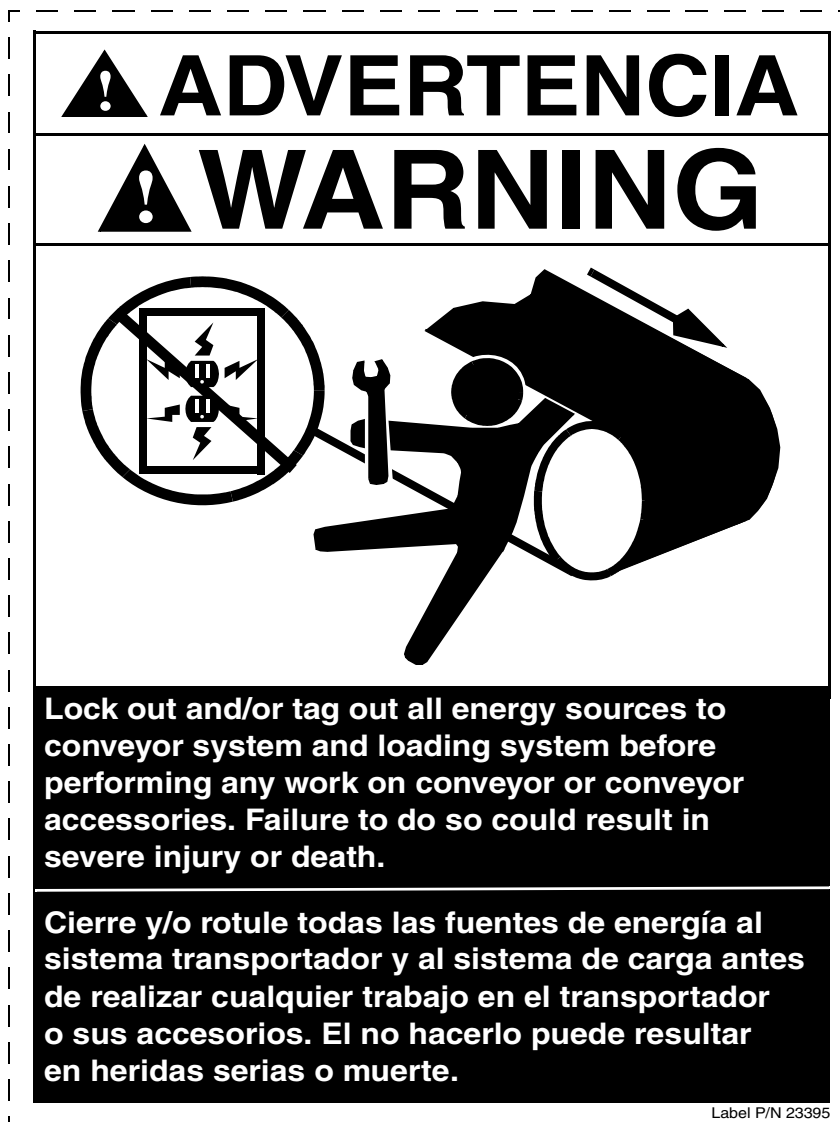


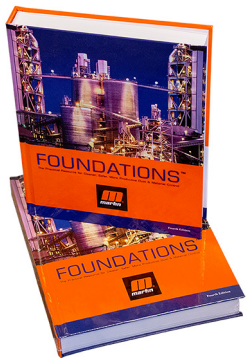
Figure 7. Conveyor Products Warning Label, P/N 23395



Figure 8. Pinch Point Warning Label, P/N 30528

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*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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