



Martin[®] Modular Slider Cradle

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Operator's Manual
M3786

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® Modular Slider Cradle holds conveyor belts in a stable, sag-free position to allow effective sealing. By minimizing belt vibration and sag, the Martin® Modular Slider Cradle reduces escaping material and risk of damage to the belt and conveyor accessories. Martin® Modular Slider Cradle bars provide a low-friction, self-lubricating surface for conveyor belts to skim over without heat buildup or undue wear on the belt surface or bars (see specifications in Table I). The Martin® Modular Slider Cradle is not intended to absorb impact.

Martin® Modular Slider Cradles are recommended for moderate- to severe-duty belts from 36- to 60-in. (1000- to 1600-mm) wide. Cradles are not recommended for conveyors operating at speeds over 700 fpm (3.5 m/s) or that are less than 50 ft (15 m) in length. To improve belt support on short conveyors or high-speed belts, contact Martin Engineering.

The Martin® Modular Slider Cradle conforms to CEMA Standard No. 502-1980 Bulk Material Conveyor Troughing and Return Specifications (CEMA Class D6).

Table I. Martin® Modular Slider Cradle Bar Specifications

Bar construction	UHMW polyethylene
Bar dimensions	2.9-in. (72-mm) high 5.0-in. (127-mm) wide 48-in. (1220-mm) long
Coefficient of friction	0.5
Specific gravity	0.94
Tensile strength	6800 lb at 73°F (23°C)
Hardness	62 (Shore D)
Service temperature	-20 to 140°F (-29 to 60°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® Modular Slider Cradle.

Materials required

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

Before Installing Slider Cradle

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[®] Modular Slider Cradle from shipping container. Equipment in container should include the following:
 - Martin[®] Modular Slider Cradle Assembly.
 - Two Conveyor Products Warning Labels, P/N 23395.
3. If anything is missing, contact Martin Engineering or representative.



WARNING

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

4. 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.

5. If using a cutting torch or welding, test atmosphere for gas level or dust content. Cover conveyor belt with fire-retardant cover.
6. If not already present, install an impact idler 1 in. (25 mm) ahead of and 1 in. (25 mm) behind cradle's location. Make sure idlers are straight and centered under conveyor belt.
7. Remove any unnecessary idlers.

Installing Slider Cradle

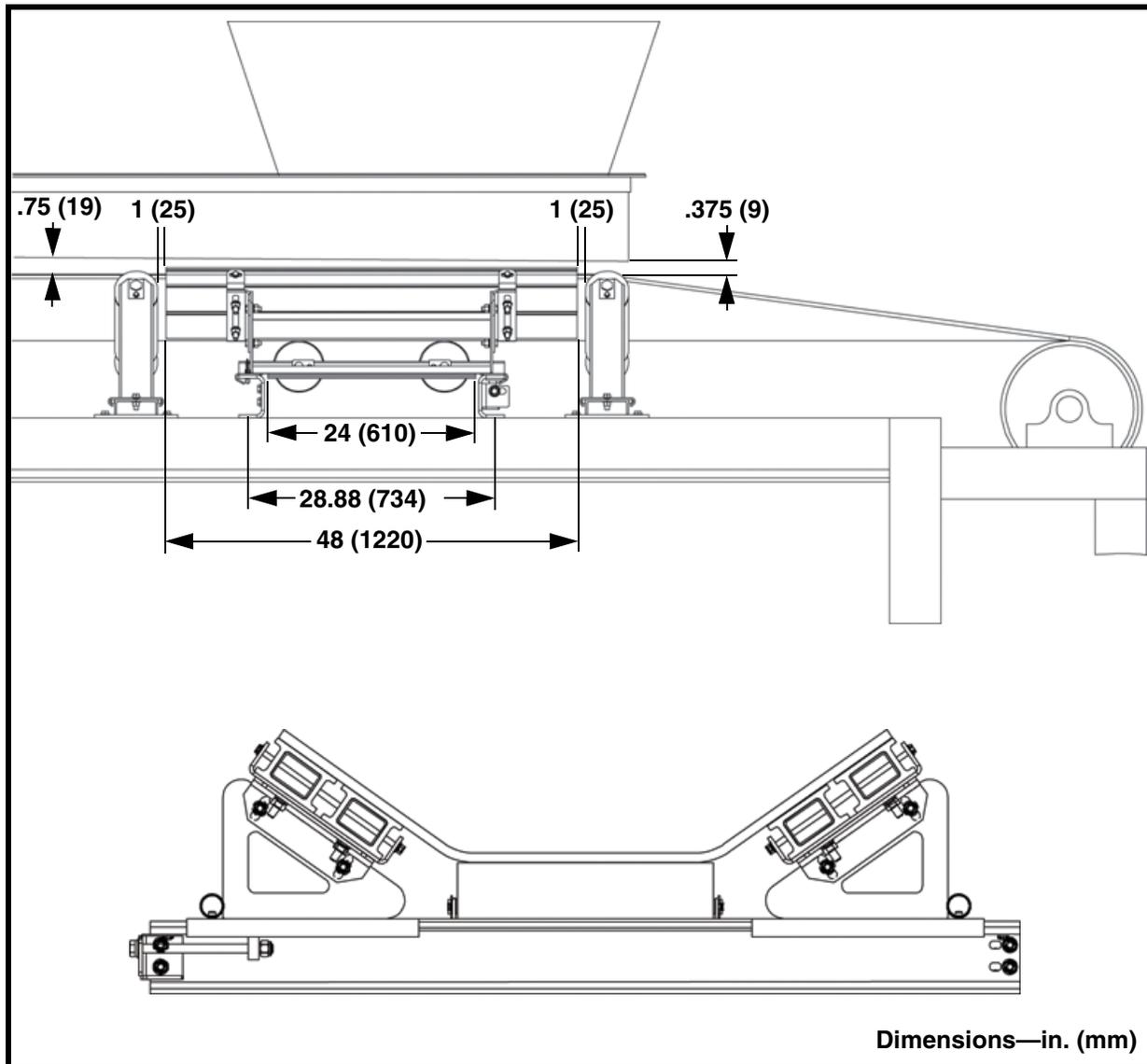
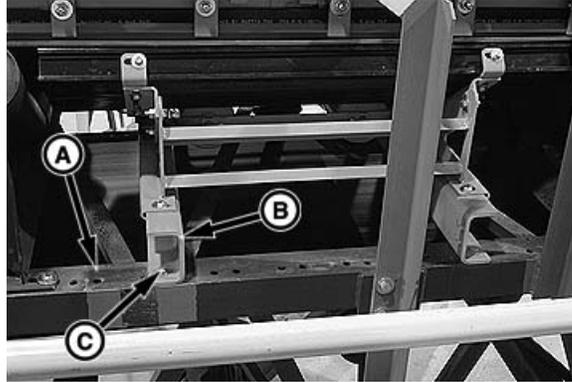


Figure 1. Measuring for Slider Cradle

1. See Figure 1. The distance between top of belt and bottom of wear liners must increase over length of transfer point. If necessary, modify chute walls and/or wear liners.
2. Mark center of loading point on stringer both sides of belt.
3. Install an idler 1 in. (25 mm) before and 1 in. (25 mm) after cradle.

Installation on Standard Stringer



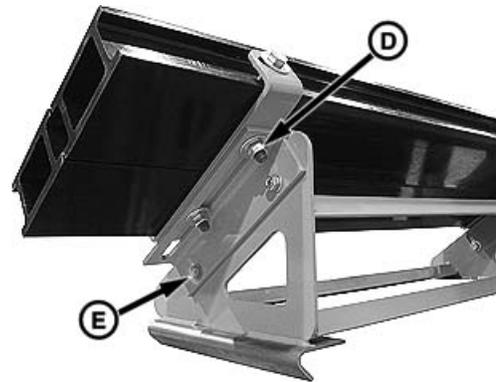
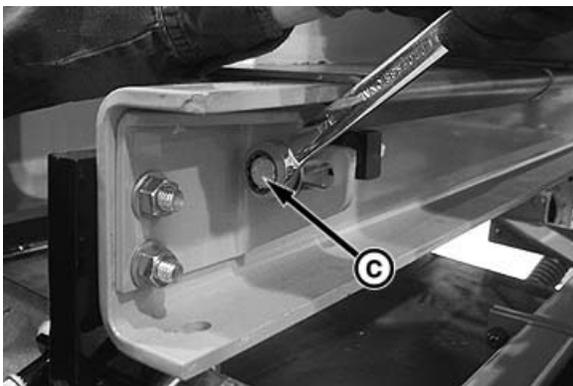
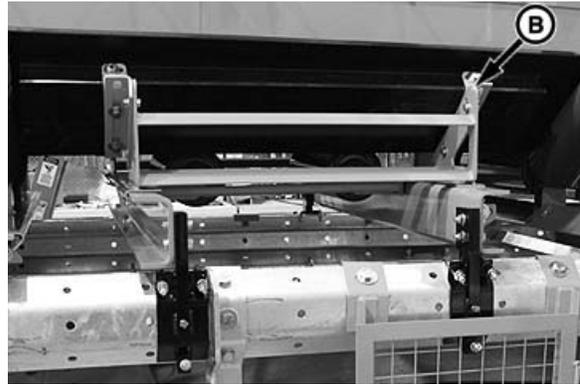
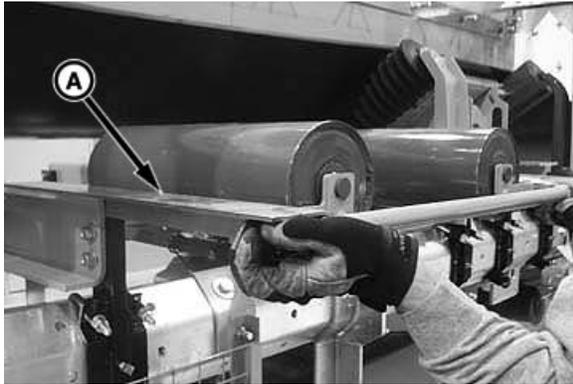
1. Measure 10-9/16 in. (268 mm) from edge of idler roll and mark location as center of first cross support.
2. Measure 28-7/8 in. (734 mm) from first mark and mark location as center of second cross support.
3. Repeat procedure on opposite side of conveyor.
4. Position cross supports on stringer according to locations marked in steps 1 and 2.
5. Make sure cross supports are perpendicular to belt and centered below belt, or bars will wear unevenly and maintenance will be difficult.

NOTE

Martin Engineering recommends bolting rather than welding cross supports to stringers for easier accessibility and maintenance.

6. Bolt or weld cross supports (B) to stringers (A) as follows:
 - a. If bolting, drill or cut 9/16-in. holes in stringers through mounting holes in feet of cross supports. Install cap screw, flat washer, compression washer, and nut (C) in each hole to secure cross supports to stringers.
 - b. If welding, clean stringer of rust and dirt. Then stitch weld cross supports to stringers.

Installing Slider Bars and Rolls



- A. Center Roll Assembly**
- B. Wing Weldment (2 used)**
- C. Cap Screw**

- D. Washer and Nut (8 used)**
- E. Cap Screw, Washers, and Nut (8 used)**

1. Slide center roll assembly (A) onto cross supports. Position assembly under center of belt.
2. Slide wing weldment (B) with bars onto cross supports until weldment contacts center roll assembly. Install wing weldment on opposite side.
3. Center cradle under belt.
4. Tighten cap screw (C) on lock mechanism to lock cradle in place.
5. Make sure there is 1 in. of clearance between end of bar and idler.
6. Loosen nuts (D and E) and position the slider bars so that they are supporting conveyor belt below chute wall and skirting.
7. Tighten all cap screws and nuts.

After Installing Slider Cradle

IMPORTANT

Read entire section before beginning work.

1. Thoroughly wipe outside chute walls clean above Slider Cradle on both sides of chute. Place a Conveyor Products Warning Label (P/N 23395) on each chute wall visible to 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 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 for one hour.



WARNING

Before adjusting Martin® Modular Slider Cradle, turn off and lock out/tag out energy source to conveyor belt and conveyor accessories.

4. After one hour of operation, 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. Inspect cradle for wear. (A small amount of break-in wear may be found. This will stop once bars wear to conveyor belt contour.)
7. If excessive wear, uneven wear, or some other problem exists, see “Troubleshooting/Installation Checklist.”
8. If necessary, adjust height of slider bars.

Weekly Maintenance



IMPORTANT

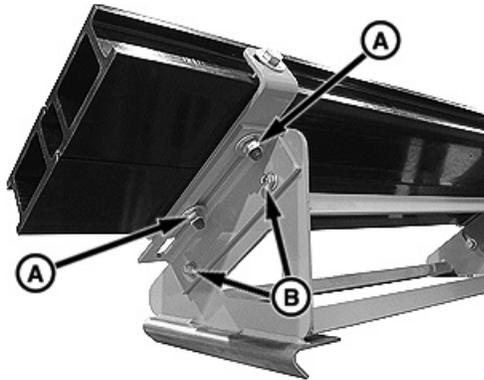
Read entire section before beginning work.

WARNING

Before servicing Slider Cradle, turn off and lock out/tag out energy source to conveyor belt and conveyor accessories.

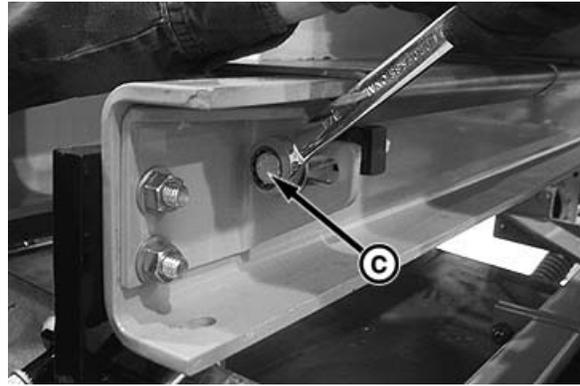
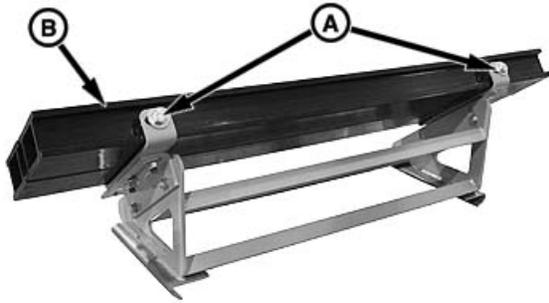
Adjusting for Wear

1. Turn off and lock out/tag out energy source according to ANSI standards (see “References”).
2. Make sure all fasteners are tight. Tighten if necessary.



3. Check slider bars for wear. If bar is not contacting belt, but has more than 1/16 in. (2 mm) of material left at slider bar, adjust bar height as follows:
 - a. Loosen nuts (A and B).
 - b. Move bar and attaching components until proper bar-to-belt contact occurs.
 - c. Tighten nuts.

Turning Bars Over



1. Loosen cap screw (C) and remove wing weldments.
2. Remove cap screws and nuts (A) on both wing weldments.
3. Remove bars (B) and turn upside down.
4. Reinstall bars and tighten all bolts.

▲ 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.

5. 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.

6. Start conveyor belt.



Troubleshooting/Installation Checklist

Troubleshooting

If you are experiencing problems with Martin® Modular Slider Cradle, see below.

Symptom	Corrective Action
High slider bar wear	Bar is above idler height or is not parallel to belt travel. Adjust bar height or position.
Uneven slider bar wear	Bar is not parallel to belt travel or is under impact. Inspect loading area and divert impact or relocate cradle.

Installation Checklist

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

Installation Checklist
- Two cross supports are positioned according to Figure 1.
- Two support rollers are used for belts 36- through 60-in. (1000- through 1600-mm) wide and are centered under belt.
- Slider bars contact belt and follow contour of belt.
- Ends of slider bars are 1 in. (25 mm) from face of idlers.

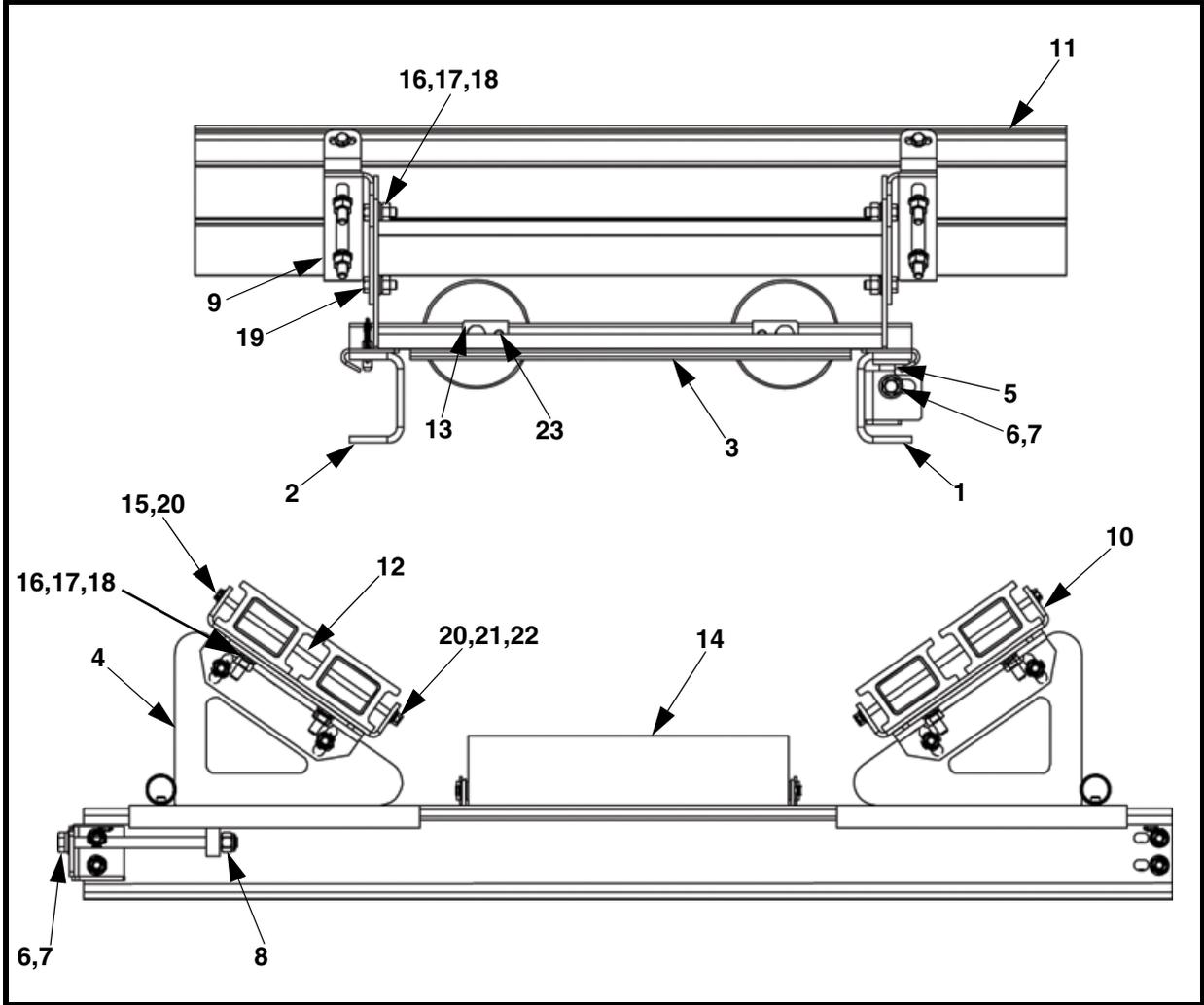


Figure 2. Martin® Modular Slider Cradle, P/N UCGS-XXXXXXXXAS

Item	Description	Part No.	Qty
1	Cross Support Assembly	UC-001500-XX*	1
2	Formed "C" Channel	UC-001501-XX*	1
3	Center Roll Weldment	UC-002010-XX*	1
4	Wing Weldment	UC-002020-XXXX**	2
5	Locking Weldment	UC-002540-XX*	1
6	Washer Flat 5/8 Narrow	16814	1
7	Draw Bolt 5/8-11NC SS	UC-001504	1
8	Nut Elastic Lock 5/8-11NC ZP	22624	1
9	Formed Angle	UC-002041-0X	4
10	Bar Holder Weldment	UC-002050-0X	4
11	UHMW Bar	Table II	Table II
12	Spacer	UC-002043	Table II
13	Tie Tab	UC-002001	Table II
14	Roll	TMIRD6-XXSP*	Table II
15	Screw HHC 3/8-16NC ZP	UC-002060-0X	4
16	Washer Flat 1/2 Narrow ZP	31010	Table II
17	Washer Split Lock 1/2 ZP	17329	Table II
18	Nut Hex 1/2-13NC Gr 5 ZP	36739	Table II
19	Screw HHC 1/2-13NC x 1-1/2 Gr 5 ZP	11763	8
20	Washer Flat 3/8 Wide ZP	18007	8
21	Washer Split Lock 3/8 ZP	11978	4
22	Nut Hex 3/8-16NC Gr 5 ZP	11770	4
23	Screw Tapping HWH 1/4-20NC x 3/8 ZP	38608	Table II
24 (NS)	Hardware Kit	UC-002070-S	1
25 (NS)	Label Kit	34769	1
26 (NS)	Operator's Manual	M3786	1
27 (NS)	Spacer	Table II	Table II
28 (NS)	UCGS SS Bar Support Bracket	Table II	Table II

NS = Not Shown

*XX indicates belt width.

**First XX indicates belt width. Next XX indicates trough angle.

Figure 2. Martin® Modular Slider Cradle, P/N UCGS-XXXXXXXXAS

Table II. Martin® Modular Slider Cradle Part Numbers and Quantities

Part No.	P/N Item 11	Qty Item 27	P/N Item 14
UCGS-XXXXXXPXXX	UC-002040	0	—
UCGS-XXXXXXUXXX	—	0	—
UCGS-XXXXXXCXXX	37502-C	8	UC-002044

Part No.	P/N Item 14	Qty Item 13	Qty Item 14	Qty Item 23
UCGS-XXXXX6XXXX	TMIRD6-XXSP	4	2	4
UCGS-XXXXXFXXXX	—	4	2	4
UCGS-XXXXXNXXXX	—	0	0	0

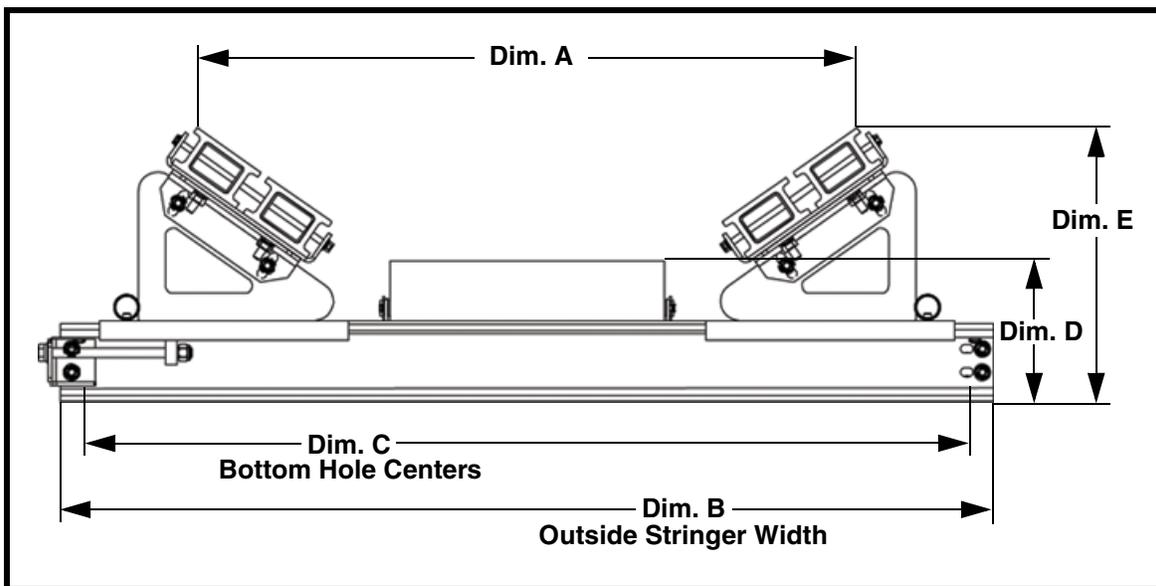


Figure 3. Martin® Modular Slider Cradle Dimensions

Part No.	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E
UCGS-24S20XXXAS	24.20 (615)	36.00 (914)	33.00 (838)	8.50 (216)	11.40 (290)
UCGS-24S35XXXAS	18.85 (479)	36.00 (914)	33.00 (838)	8.50 (216)	11.90 (302)
UCGS-24S45XXXAS	18.18 (457)	36.00 (914)	33.00 (838)	8.50 (216)	12.95 (329)
UCGS-30S20XXXAS	27.19 (691)	42.00 (1067)	39.00 (991)	8.50 (216)	11.40 (290)
UCGS-30S35XXXAS	23.01 (584)	42.00 (1067)	39.00 (991)	8.50 (216)	12.64 (321)
UCGS-30S45XXXAS	21.17 (538)	42.00 (1067)	39.00 (991)	8.50 (216)	13.39 (340)
UCGS-36S20XXXAS	29.69 (754)	48.00 (1219)	45.00 (1143)	8.50 (216)	11.39 (289)
UCGS-36S35XXXAS	27.35 (695)	48.00 (1219)	45.00 (1143)	8.50 (216)	13.34 (339)
UCGS-36S45XXXAS	25.03 (636)	48.00 (1219)	45.00 (1143)	8.50 (216)	14.28 (363)
UCGS-42S20XXXAS	40.68 (1033)	54.00 (1372)	51.00 (1295)	9.00 (229)	13.49 (343)
UCGS-42S35XXXAS	37.15 (944)	54.00 (1372)	51.00 (1295)	9.00 (229)	16.51 (419)
UCGS-42S45XXXAS	33.84 (860)	54.00 (1372)	51.00 (1295)	9.00 (229)	18.06 (459)
UCGS-48S20XXXAS	46.43 (1179)	60.00 (1524)	57.00 (1448)	9.00 (229)	14.14 (359)
UCGS-48S35XXXAS	32.41 (823)	60.00 (1524)	57.00 (1448)	9.00 (229)	17.59 (447)
UCGS-48S45XXXAS	38.73 (984)	60.00 (1524)	57.00 (1448)	9.00 (229)	19.38 (492)
UCGS-54S20XXXAS	52.19 (1326)	66.00 (1676)	63.00 (1600)	9.25 (235)	15.07 (383)
UCGS-54S35XXXAS	47.66 (1211)	66.00 (1676)	63.00 (1600)	9.25 (235)	18.84 (479)
UCGS-54S45XXXAS	43.47 (1104)	66.00 (1676)	63.00 (1600)	9.25 (235)	21.14 (537)
UCGS-60S20XXXAS	58.05 (1474)	72.00 (1829)	69.00 (1753)	9.25 (235)	15.61 (396)
UCGS-60S35XXXAS	53.04 (1347)	72.00 (1829)	69.00 (1753)	9.25 (235)	19.98 (507)
UCGS-60S45XXXAS	48.35 (1228)	72.00 (1829)	69.00 (1753)	9.25 (235)	22.47 (571)
UCGS-72S20XXXAS	68.27 (1734)	84.00 (2134)	81.00 (2057)	9.50 (241)	17.16 (436)
UCGS-72S35XXXAS	63.01 (1600)	84.00 (2134)	81.00 (2057)	9.50 (241)	22.43 (570)
UCGS-72S45XXXAS	57.91 (1471)	84.00 (2134)	81.00 (2057)	9.50 (241)	25.45 (646)

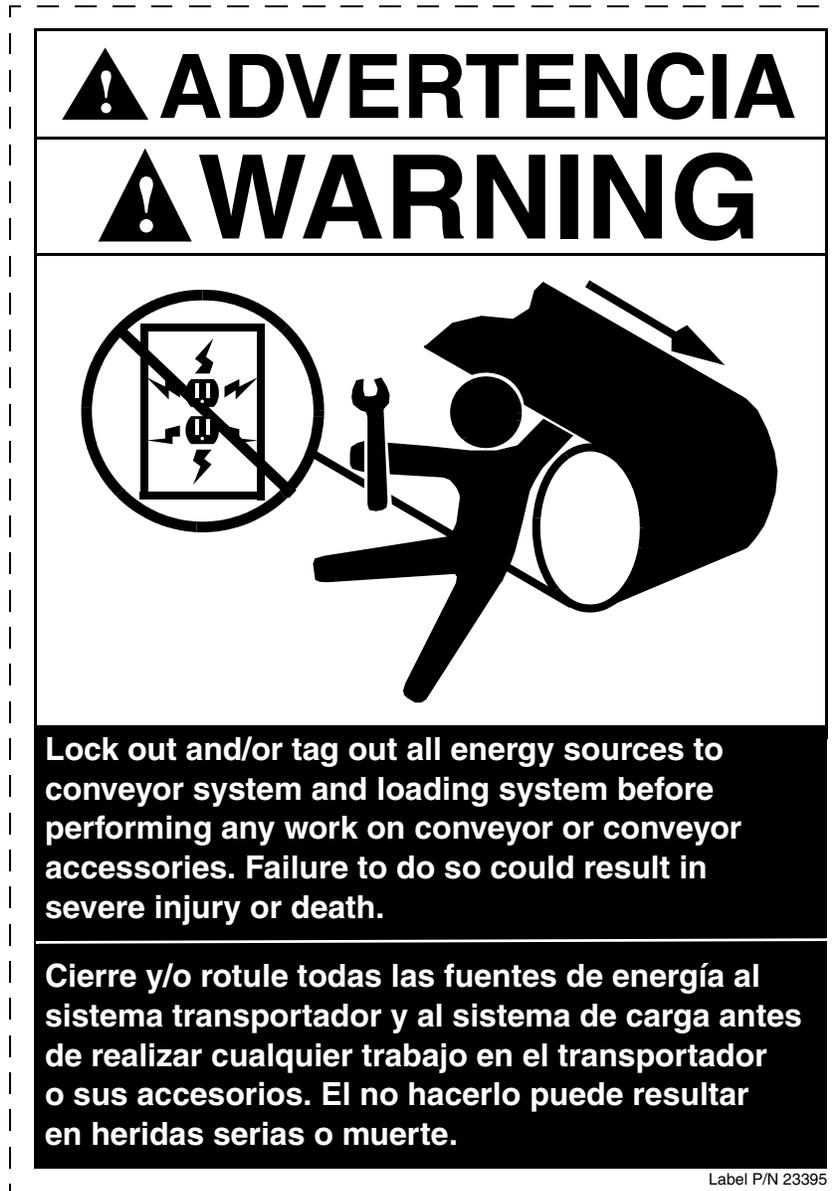
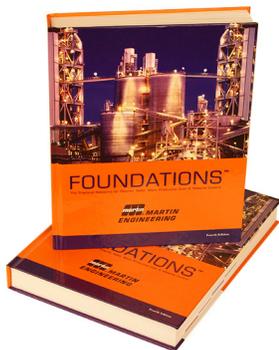


Figure 4. Conveyor Products Warning Label, P/N 23395

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Problem Solved™ ***GUARANTEED!***



For nearly 20 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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