



Installation and Maintenance Manual

Model: RMDGV

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a TOYOTA ADVANCED LOGISTICS company

Contributions

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Revisions

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Term and Acronym Definitions

TERM/ACRONYM	DEFINITION
Carton or Case	Term for conveyable items generally contained in cardboard boxes.
CB	Carriage bolt
Discharge	The point where cartons, cases, or totes exit a conveyor or similar unit used in a material handling system.
Gravity Conveyor	Conveyor assembled entirely with unpowered rollers with the intent that cartons, cases, or totes move due to gravity or momentum.
Guide Rail	Mechanism used to maintain the desired position of conveyable cartons, cases, or totes on their respective conveying surface.
Infeed	The point where cartons, cases, or totes enter a conveyor or similar unit used in a material handling system.
Mark Number	A numeric or alphanumeric term used to uniquely identify a conveyor bed or collection of beds (of similar model type) within a material handling system.
Match	A mark made on mating conveyor assemblies to assist in identifying orientation and placement within a system.
OAW	Overall width of any given conveyor bed.
OD	Outer diameter of a circular, cylindrical, or arced body.
OSHA	Occupational Safety and Health Administration
PPE	Personal protective equipment
RMDGV	Roller Bed Medium Duty Gravity; Conveyor assembled with unpowered rollers with the intent that cartons, cases, or totes move due to gravity or momentum.
Side Cover	A PVC cover used to conceal and protect electrical components and wiring from foreign debris and moving obstacles.
Side Frame	Structural member used to support rotating components needed for conveyor beds.

Table of Contents

1 Introduction..... 6

2 OSHA and Safety 6

3 Model: RMDGV..... 7

4 Receiving..... 8

4.1 Mark Numbers 8

4.2 Skid Contents..... 8

4.3 Skid Documentation..... 9

5 Installation..... 10

6 Maintenance and Operation..... 11

6.1 Safety During Operation 11

6.2 Maintenance Schedule..... 11

 6.2.1 Mechanical Service 11

 6.2.2 Replacing Rollers 12

7 Standard Spare Parts 13

List of Figures

Figure 1: RMDGV General Arrangement Exploded View..... 7

Figure 2: Mark Number Stickers..... 8

Figure 3: Skid Sticker..... 9

Figure 4: Roller Removal 12

Figure 5: RMDGV Spares Exploded Views 13

List of Tables

Table 1: RMDGV Standard Spare Parts Table..... 13

Reference Documents

MANUFACTURER	MANUAL
Bastian Solutions	Side Cover and Guiderail Installation Manual
Bastian Solutions	Support Installation Manual

1 Introduction

Thank you for choosing Bastian Solutions conveyor. The following manual serves as a guide for installation, part replacement, and general maintenance for your material handling equipment. It is important to read the manual and follow any instructions as it provides important safety information for personnel and will maximize the longevity of the conveyor.

The information contained in this manual applies only to the products described. Uses, activities, or processes related to installing or maintaining the equipment that are not explicitly described in this manual are considered out of scope. Please contact Bastian Solutions for any questions or support that is not clearly addressed in this document. Bastian Solutions is not responsible for misuse of the equipment described in this manual or misuse of information in this manual. If you have any questions, contact Bastian Solutions Customer Service at ConveyorSupport@bastiansolutions.com.

2 OSHA and Safety

Bastian Solutions is not responsible for ensuring that conveyors used in a system abide by OSHA standards. Safety is of primary importance to our company, but as a product distributor we ask that system integrators and end users conform with all applicable OSHA standards. We encourage that all warnings in this manual are followed to avoid unnecessary risk.

3 **Model: RMDGV**

The Roller Medium Duty Gravity (RMDGV) Conveyor is designed for means of declined transportation, or easy manual movement of materials. RMDGV, also referred to as gravity conveyor is a non-powered conveyor that consists of rollers, side frames, and bed spacers.

The model shown in Figure 1 serves as a reference to become familiar with the components and terminology used in this manual. These terms will be used throughout the manual and are common among many of the other Bastian Solutions' conveyor product lines.

The model in Figure 1 shows a 5' RMDGV bed section. The RMDGV has 3" roller centers and contains (20) non-powered medium-duty rollers.

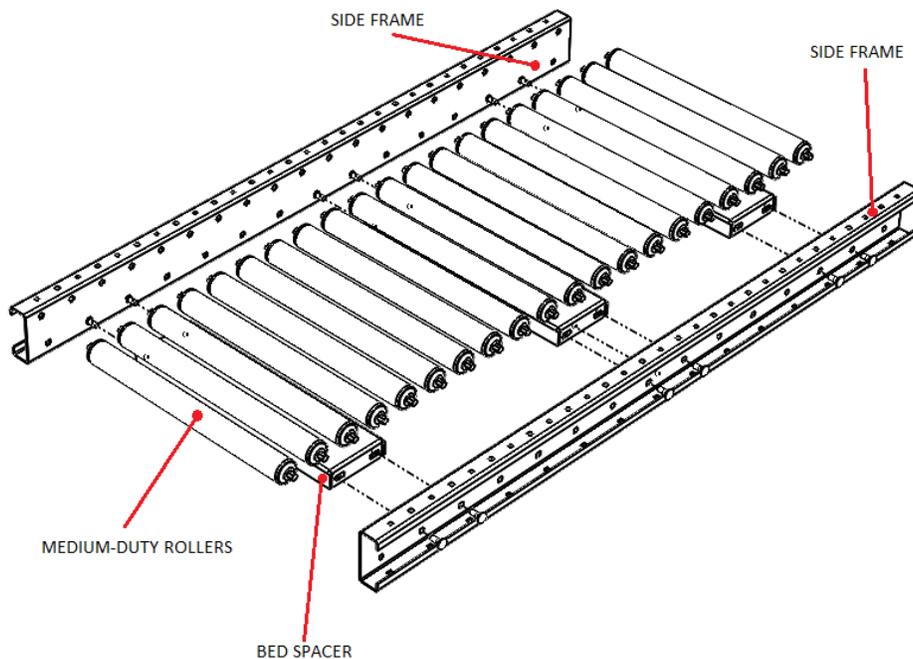


Figure 1: RMDGV General Arrangement Exploded View

4 Receiving

Upon delivery of any Bastian Solutions conveyor, please review and check the following:

- The quantity of items received against the Bill of Lading.
- Complete a visual inspection of equipment to determine any damage that may have occurred during shipping. If damage is present, document with pictures.
- Review Mark Number information and layout locations. More information can be found in subsection 4.1.

If there are any missing or damaged components contact your Bastian Solutions' conveyor representative with as much detail as possible. If you are unsure of your Bastian Solutions' conveyor representative, please contact Bastian Solutions Customer Service at ConveyorSupport@bastianolutions.com.

4.1 Mark Numbers

A mark number is a specific number given to a piece of equipment. A mark number is usually made up of a single product line (RZPDC, RLVDC, BZPDC, etc.) but can contain many bed section lengths. They can range from two inches to hundreds of feet. The mark number is used to help identify where the piece of equipment will go within the system layout.

Every bed section of conveyor will have (2) stickers. One sticker on the infeed end of the bed, and one sticker on the discharge end of the bed. Each sticker will contain the following information:

- Project Number and Name
- Model Type
- Mark Number
- Match
- Piece
- Flow

Figure 2 shows stickers that would appear on an RZPDC that has two bed sections.



Figure 2: Mark Number Stickers

The match field on the stickers is used to indicate if two bed sections are to be spliced to one another. As shown in Figure 2, the stickers where the two beds splice together both contain "Match: 1". The piece field defines the bed section number within the mark. The flow refers to the direction of product flow along the conveyor system.

4.2 Skid Contents

Skids will contain varying combinations of conveyor sections, support structures, accessories, and pertinent hardware. For protection of product integrity during shipping, accessories and supports may be delivered on separate but labeled skids.

4.3 Skid Documentation

All shipments will contain a Bill of Lading for the delivery company, a skid label, and a skid manifest. Skid labels have the contents of each shipped item located on the skid. Figure 3 shows a sample of a skid label. These stickers are placed on the surface of each skid.



Figure 3: Skid Sticker

5 Installation

The installation supervisor should have elevation and layout prints with detailed information regarding the placement of conveyor sections and support structures. This information is not the responsibility of Bastian Solutions to provide unless otherwise specified.

1. Clear the workspace around the portion of the layout selected for installation.
2. Measure out from a constrained origin to start placement of supports. It is recommended that snap chalk lines are used, or other methods of keeping a consistent line.
3. Use elevation layouts to determine the conveyor's top of conveying surface.
4. Place the support type that the layout designates. Each support type has a corresponding mark sticker.
5. Check the flow direction on the mark stickers to ensure that conveyors are mounted properly.
6. Place the conveyor onto the support structure and fasten it securely using the 3/8"-16 carriage bolts and wiz nuts provided. The recommended torque specification is 26ft-lbs.
7. Attach any guiderail or miscellaneous accessories. For information on guiderail installation, please reference the "Bastian Solutions Conveyor Side Cover and Guiderail Installation Manual"
8. Check that the height of the infeed and discharge ends are correct per the system layout.
9. Lag the supports to the floor (or other permanent fixture).



Refer to the "Bastian Solutions Conveyor Support Installation Manual" for more information on installing conveyor.

6 Maintenance and Operation

The longevity and proper functionality of Bastian Solutions conveyor is based upon standard operating practices and general maintenance of equipment. Setting up a regular maintenance schedule will help to ensure that products comply with the equipment's warranty.

6.1 Safety During Operation

The list below explains a series of recommended precautions that should be taken when personnel are near the equipment. This list is not intended to be the only precautions taken, but it serves as a guide of important steps to follow.

- Only fully trained employees should operate or perform maintenance on the conveyors.
- WARNING stickers should be replaced if worn or damaged.
- Ensure that all areas are clear of objects prior to loading and unloading.
- No personnel should ever ride, climb, step, sit on, or otherwise put body weight on the conveyor. Doing so puts both personnel and equipment at risk.
- Maintenance should be performed at regular intervals to assure the safety of operators and the longest life of components.

6.2 Maintenance Schedule

To prolong the life of the material handling equipment and reduce the risk of potential safety hazards, it is vital that a preventative maintenance program be set in place and followed. The following instructions will help identify key areas requiring maintenance.

6.2.1 Mechanical Service

- An auditory inspection of the equipment should be performed to identify any unusual noise that may indicate that there is a problem with the equipment.
- Check all nuts and bolts to ensure bolts remain tight.
- The recommended interval for maintenance is at least once every 6 months.

6.2.2 Replacing Rollers

1. Apply pressure on the end of the hex shaft using a small diameter punch or similar tool until the shaft clears the frame. Be careful NOT to apply a side load to the hex shaft. Refer to Figure 4.
2. Provide upward force on the roller body until the hex clears the frame. (A putty knife or other flat surface tool is recommended to be placed between the hex shaft and the inside of the frame. This will help protect the paint on the side frame.)
3. Place the new roller's hex shaft into the hex hole.
4. Use a putty knife or other flat surface tool to guide the hex shaft into the opposite hex hole.

Apply linear pressure

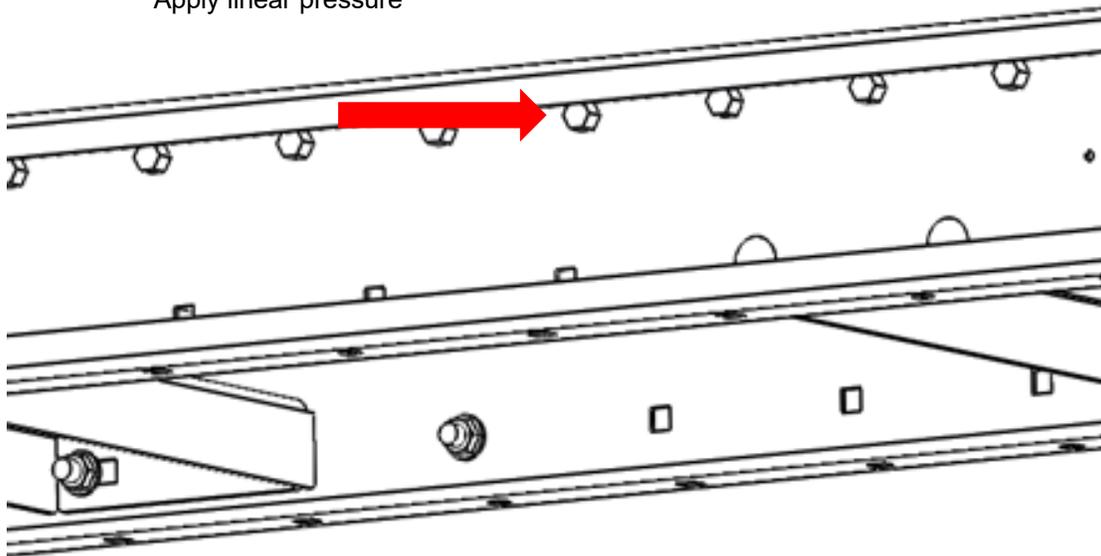


Figure 4: Roller Removal

7 Standard Spare Parts

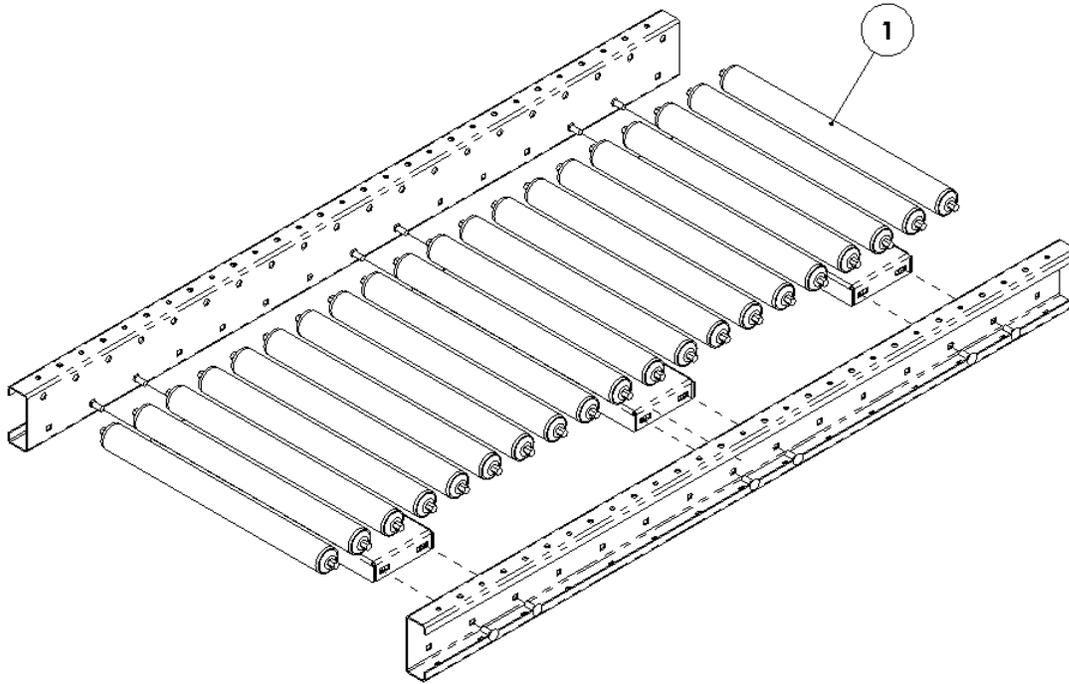


Figure 5: RMDGV Spares Exploded Views

Table 1: RMDGV Standard Spare Parts Table

REF. NO.	DESCRIPTION	COMMON CONFIGURATIONS
1	ROLLER	MEDIUM DUTY ROLLERS

Bastian Solutions Conveyor Installation and Maintenance Manual
Model: Bastian Solutions RMDGV Conveyor

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