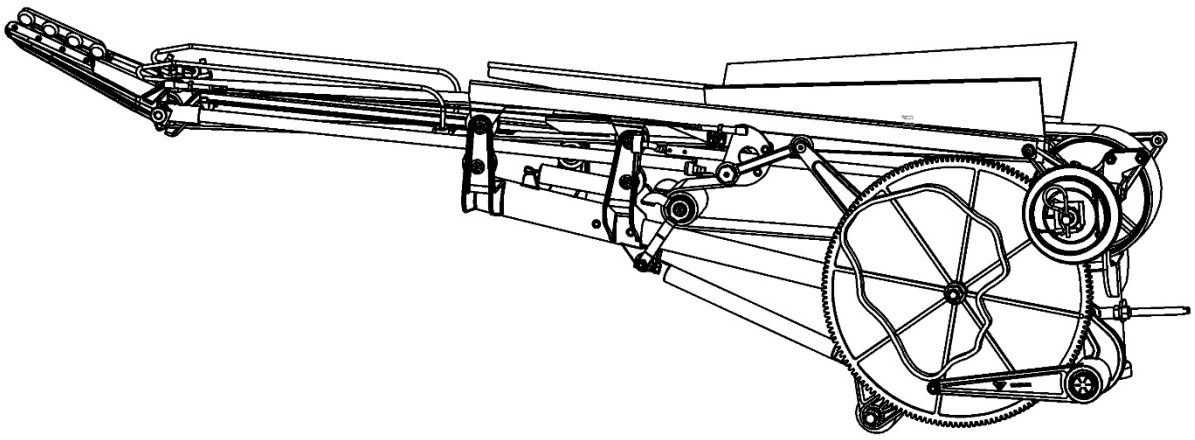
QUBICAAMF

PIN DISTRIBUTOR MANUAL

EDGE FREE FALL

Pinspotter Manual Supplement
Appendix B



These Original Instructions were written in English.

400-088-121-01 Rev. A
June 2022

ALL RIGHTS RESERVED

All rights to this manual including the diagrams, figures, and technical specifications are the property of QubicaAMF Worldwide, LLC. Reproduction or transmission of any of the material contained in this manual without the prior written permission of QubicaAMF Worldwide, LLC. is strictly prohibited. All of the product information in this manual was carefully prepared based on the latest information available and was believed to be correct at the time of printing. While every effort has been made to ensure accuracy, this publication may inadvertently contain typographical errors, inaccuracies, or errors of omission. QubicaAMF Worldwide, LLC cannot be held responsible for any claims resulting from these errors.

DOCUMENT UPDATES

This manual supersedes all previous versions of the Distributor Owner's Manual. QubicaAMF Worldwide, LLC. reserves the right to revise and/or update this manual at any time without obligation to notify any person or entity of such revision. The document number, revision level, and date below indicate the edition of this manual.

TRADEMARK NOTICES

QubicaAMF and the QubicaAMF logo are the registered trademarks of QubicaAMF Worldwide, LLC.

QubicaAMF TECHNICAL SUPPORT

(USA) 1-866-460-7263 option 3
(Europe – Middle East – Africa) +39 051 4192630

For more contact information, go to
https://www.qubicaamf.com/contact/find-your-closest-representatives

QubicaAMF Worldwide, LLC
8100 AMF Drive
Mechanicsville, Va. 23111

Copyright © 2022 QubicaAMF Worldwide, LLC
Document # 400-088-121-01 Rev. A
Issued Date: 06/10/2022

QubicaAMF
EDGE FREE FALL Pin Distributor Manual

400-088-121-01 Rev. A

Summary of Changes

Change No.	ECR No.
Rev. A	22-0001

List of Effective Pages

Page	Change No.	Effective Date
All	Revision A	6/10/2022

Appendix B. Pin Distributor Manual

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

Contents

Appendix B. Pin Distributor Manual 3
1. SAFETY 6
1.1. General Safety Guidelines and Symbols 6
1.2. Guards and Safety Precautions 8
2. INTRODUCTION 9
2.1. How To Use This Manual 9
3. DISTRIBUTOR OPERATION & ADJUSTMENTS 10
3.1. Distributor Operation 10
3.2. Distributor Belt Replacement 11
3.3. Vise Lacer Instructions 12
3.3.1. Identifying A Good Splice 13
3.4. Distributor Removal 14
3.5. Distributor Replacement 14
3.6. Distributor Cam Operation 15
3.7. Distributor Adjustments 16
3.8. Distributor Eccentric Roller Adjustments 17
3.9. Distributor Trip Lever 18
3.10. Trip Cable Adjustment 19
3.11. Distributor Balance Adjustment 20
3.12. Distributor Height Adjustment 20
4. LUBRICATION INSTRUCTIONS 21
4.1. Lubrication 21
4.2. Lubricant Symbols 21
4.3. Distributor Drive 22
4.4. Distributor Trip Levers and Clutch 23
4.5. Distributor - continued 24
5. PREVENTIVE MAINTENANCE 25
5.1. 25,000 Frame Maintenance 25
5.1.1. Servicing the Distributor Clutch Assembly 25
5.2. 100,000 Frame Maintenance 28
5.2.1. Cleaning the Distributor Assembly with a Water-Based Cleaner 28
5.2.2. Servicing the Distributor Drive Shaft Assembly 29

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

28.1. 500,000 Frame Maintenance 30
28.1.1. Servicing the Distributor Assembly 30
6. TROUBLESHOOTING 33
29.1. PROBLEM: Distributor does not feed pins at correct bin position. 33
29.2. PROBLEM: Pins feed into bin continuously at one bin position or too many pins in one bin location. 34
29.3. PROBLEM: Pins delivered head first to bin pockets. 35
29.4. PROBLEM: Distributor front end hits bin during pin feed 36
7. DRAWINGS AND PARTS LISTS 37
DISTRIBUTOR ASSEMBLY 1 38
CLUTCH & ARM ASSEMBLIES 38
DISTRIBUTOR ASSEMBLY 2 38
TRIP ROD ASSEMBLY 38
FRONT CARRIAGE ASSEMBLY 38
FRONT CASTING ASSEMBLY 38
REAR CASTING ASSEMBLY 38
MAIN CASTING & CARRIAGE SUPPORT 38
REAR BELT RUNNER ASSEMBLY 38
MAIN CASTING & SHAFT ASSEMBLY 38
MAIN CASTING & CARRIAGE SUPPORT 38
FRONT SUPPORT ASSEMBLY 38
DRIVE SHAFT ASSEMBLY 38

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

1. SAFETY

1.1. General Safety Guidelines and Symbols

QubicaAMF feels strongly about its commitment to safety. Proper service and repair are important to the safety of the mechanic as well as the safe, reliable operation of the pinspotters. Please read, understand, and follow all of the recommended safety procedures presented in this manual.

The service procedures recommended and described in this technical manual are effective methods of performing service and repair. Some of these procedures require the use of tools specially designed for this purpose.

- **Properly trained personnel should be present whenever maintenance is being performed on a pinspotter.**
- **No unauthorized personnel should be allowed in the pit area.**
- **Keep in mind that the QubicaAMF EDGE Freefall pinspotter performs a series of mechanical motions and electrical actions during each cycle, and that SEVERE BODILY INJURY OR DEATH could result should personnel enter the machine when power is on. When working in a pinspotter, it is recommended that power also be turned off on adjacent machines.**
- **Remember that safety must remain your first priority at all times.**
- **The sound pressure level (LpA) in the area of the control chassis (operator's station) during bowling activities is in excess of 80 dBA. Hearing protection is recommended.**
- **Safety goggles, ear protection, and steel-toed shoes are recommended whenever any work is being performed on a pinspotter.**
- **Wearing loose clothing or jewelry is NOT RECOMMENDED when operating or maintaining the machinery.**
- **It is acceptable to clear pin jams with a pin hook with the machine running from the crow's nest (See Section 2.3 Crow's Nest page 2-18 in the Safety Section of the main manual).**

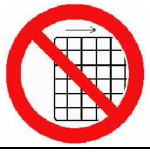
It is important to note that this manual contains various symbols and wording that provide information that must be carefully followed in order to reduce the risk of personal injury during service or repair, or that warn of the possibility that improper service or repair may damage the pinspotter or render it unsafe.

Additionally, the QubicaAMF EDGE Freefall pinspotter has a number of built-in features and components as well as various warning labels that are designed to minimize and warn against the risks associated with this equipment. Heed all warnings and do not defeat the safety features that come with your pinspotters. Never place the machine into service with any of the guards removed.
Some of the warning labels you may observe on the pinspotter or within this manual are shown on the following pages.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650
EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602
web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

Some of the warning labels you may observe on the pinspotter or within this manual are shown on the following pages.

	This symbol means STOP, DO NOT PROCEED, and is a warning that hazards could exist. It is often followed by other symbols.
	This symbol indicates a LOCKOUT/TAGOUT point for performing maintenance.
	This symbol warns the mechanic to unplug the motor before servicing.
	This symbol indicates that eye protection is required.
	This symbol is a warning against breaking a photo eye beam, which will cause the machine to cycle.
	This symbol states that a crushing hazard exists.
	This symbol denotes that an entanglement hazard associated with gears exists.
	This symbol warns that a falling hazard exists.
	This symbol states that use of a pin hook is required.
	This symbol denotes that the use of lane barriers is required.

	This symbol means that the mechanic should read, understand, and follow the technical manual before servicing the machine.
	This symbol reminds the user to remove main power from the machine prior to performing maintenance.
	This symbol indicates STOP! NO ACCESS FOR UNAUTHORIZED PERSONS. Service should be performed by authorized, trained personnel only.
	This symbol indicates that hearing protection is required.
	This symbol indicates that the machine may start or cycle automatically without warning.
	This symbol is a warning against operating the equipment with the guards removed.
	This symbol denotes that an entanglement hazard associated with belts and pulleys exists.
	This symbol warns that a tripping hazard exists.
	This symbol warns that use of a dust mask is required.
	Warning! Hazard exists; use caution. Failure to follow all safety guidelines in this manual may result in personal injury.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

The symbols on the previous page may be displayed as follows:

It is also important to understand that the use of these symbols and labels is not all-inclusive because it is impossible to warn of all the possible hazards and consequences that could result from failure to follow these instructions. Trained and competent bowling center mechanics are able to recognize and avoid potentially hazardous situations.

1.2. Guards and Safety Precautions

All safety guards must be in place before operating the machine. When maintenance is required, the following steps must be followed:

1. Place both sweeps of the pinspotter pair in the 1st Guard position.
2. **Disconnect the power plug** before working on the pinspotter.
3. **Lockout/Tagout (LOTO)** machines being worked on.
4. Use lane barriers when working in front of machine.
5. Remove guards only as required to perform the maintenance.
6. Once maintenance is complete, replace all guards before restoring power.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

2. INTRODUCTION

2.1. How To Use This Manual

This manual is provided for use by trained and authorized bowling center mechanics in conjunction with the adjustment, operation, and maintenance of Distributors installed in QubicaAMF EDGE Freefall pinspotters. The purpose of this manual supplement is to consolidate all of the applicable Distributor information into one easy-to-use document making finding the information you need simpler and faster when compared to having the information scattered throughout the pinspotter manual.

This manual does not cover initial installation of the Distributor but does cover removal and reinstallation of the unit for maintenance and adjustment. Refer to the drawings at the back of this manual for detailed views of the Distributor's construction.

There are six parts to this manual supplement: Safety, Introduction, Operation & Adjustment, Lubrication, Troubleshooting, and Drawings and Parts Lists.

- The Safety section provides information on precautions that should be taken when working in and around the Distributor, including examples of safety labels and symbols used on the pinspotter to indicate potential hazards.
- This Introduction Section outlines the manual.
- The Operation and Adjustment Section gives step-by-step instructions for setting up and adjusting the Distributor, as well as information related to the operation of the unit.
- The Lubrication Section provides drawings and information concerning the proper lubrication of the Distributor. Maintaining the Distributor in accordance with this section can help attain maximum component life and trouble-free operation.
- The Drawings and Parts Lists Section is designed to be an invaluable tool for identifying parts and part numbers for maintenance and repair of the unit.

This manual is intended to be a supplement to, and is included with, the QubicaAMF EDGE Freefall Pinspotter Manual Set.

Refer to the Safety Section of this manual before proceeding with Distributor maintenance.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

3. DISTRIBUTOR OPERATION & ADJUSTMENTS

3.1. Distributor Operation

1. The distributor transfers pins from the EDGE Freefall Performance Lift (lift) to the bin assembly. The distributor is driven by the back end motor through an adjustable clutch to its various positions. A large nylon cam gear (see Figure 3-1) serves a dual purpose:

- The outside of the gear contains a cam that moves the distributor left and right to the various bin locations.
- The inside of the gear has a cam that controls the telescoping action of the front portion of the distributor. Springs keep the cam followers against the cams.

When a pin reaches the top of the pin lift, it is deposited on the pan which orients it, bottom first, onto the distributor belt. As the pin reaches the end of the distributor, the weight of the pin causes the trip lever assembly to pivot downward depositing the pin in the bin. The pivot lever also causes the cam gear to index to the next bin position.

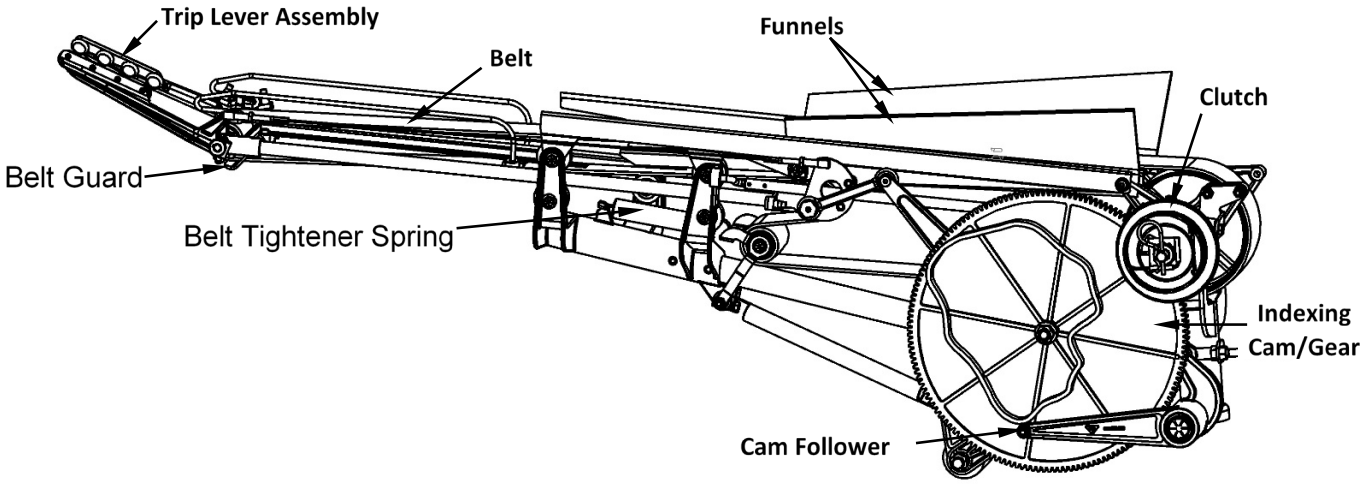


Figure 3-1 - Distributor Operation

Proper adjustment of all distributor components is essential for trouble-free operation. Excessively worn parts must also be replaced. Additionally, related assemblies must be correctly adjusted and installed. This includes the kickout springs and carrier rails. The condition of the distributor drive shaft, universal joint, and drive housing as well as a smooth operating pin lift are also important to trouble-free distributor operation. Also, the flight cups, orientor pan (O-pan), and funnels should be cleaned regularly to prevent pins from sticking.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650
EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602
web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

3.2. Distributor Belt Replacement

1. Remove the belt tightener spring (see Figure 3-1).

2. Locate the belt lacing and remove the pin. The distributor belt can now be removed from the distributor.

3. To increase the belt tension, cut off a little from one end of the belt. Belt tightener spring length will increase one-half of the amount cut off the belt. A belt that is a little too long or short can cause pin feeding problems, and the ideal length can vary a little from machine to machine. If replacing a worn belt that has otherwise performed well, make the new belt the same length as the old one.

4. Use the Clipper belt lacer part # 088-000-108 to install new clipper lacing on the belt in accordance with Section 3.3.

5. Thread the belt onto the distributor keeping one end on the belt runner about a foot behind the trip arm making sure to thread the belt through the belt guard. If necessary, use another distributor as a guide to belt layout. When threaded, bring the two ends together, interlock the lacing, and install the belt pin.

6. Reinstall the belt tightener spring.

7. Turn the machine on and verify proper operation. If the belt tracks off to one side, turn the machine off, disconnect the belt tightener spring from the distributor casting, and move the end of the spring that is attached to the tracking bracket one notch toward the side the belt was tracking. Reattach the other end of the spring.

8. Run the machine and make any necessary adjustments.

The new grooved distributor belt does not require skiving when used with the QAMF lacing, comes cut to length (116½" +1/4",-0" [2959 mm +6 mm, -0 mm]), and is pre-chamfered. All that is necessary is to add the lacing and install. It is always a good idea to verify the overall length needed and to fine-tune the length by trimming as needed before applying the lacing. The lacing will add approximately ¼ inch to the overall length.

The QubicaAMF XLi EDGE distributor uses the following belt components:

- **088-000-185, Distributor Belt, Laced**
- **088-000-186, Stainless Steel Belt Lacing, 18 Hooks**
- **088-000-187, Stainless Steel Belt Lacing, 19 Hooks**
- **088-000-176, Belt Lacing Pin**
- **088-000-108, Vise Lacer**

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

3.3. Vise Lacer Instructions

The Clipper belt lacer is provided to help the center mechanic manufacture replacement distributor belts. The optimum belt length can vary slightly from distributor to distributor. If possible, match the existing belt length. The belt lacing will add approximately 1/4 inch to the overall, installed belt length. One end of the belt should have lacing containing an odd number of individual hooks while the other end should have lacing with an even number of hooks (see Figure 3-7). To make a belt, proceed as follows:

1. Cut a section of belt material to the appropriate length (approximately 116½ - 116¾ inches). The approximate finished belt length is from 116¾ to 117 inches.

2. Place the open Clipper belt lacer (Figure 3-2) between the jaws of a vise. Remove the guide pin from the hole in the end of the lacer, if installed.

3. Place a set of lacing hooks in the lacer. Use an 18-hook set on the trailing (chamfered) end of the belt and a 19-hook set on the leading end (see Figure 3-7). Orient the lacing's hook retaining wire so that it will be embedded in the top of the belt when crimped. Insert the guide pin in the lacer.

Figure 3-2 - Lacer in Vice

4. Insert belt between hook points. For optimal splice, it is recommended to have the bottom side of belt facing the pressure plate.

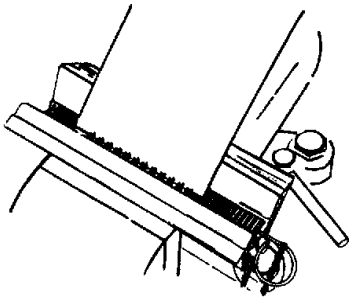


Figure 3-3 - Belt in Lacer

5. Close vise as tightly as possible, then release.

6. When complete, remove the lacer's guide pin, and lift the belt out of the lacer.

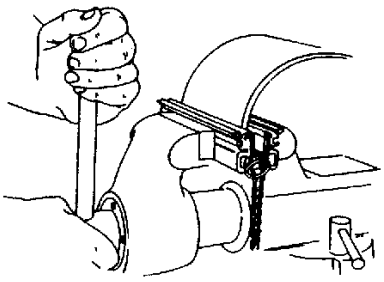


Figure 3-4 - Closing Vice

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650
EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602
web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

NOTE: If the belt is wider than the vise jaws, perform the following steps:

A. Align belt and lacer with edge of vise jaw.

B. Complete lacing step 5.

C. Slide tool so next section of the lacer is in contact with the vise jaws and complete step 5 again.

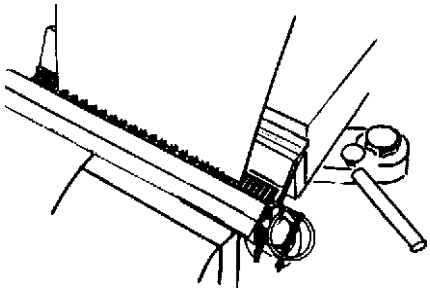


Figure 3-5 – Narrow Vice

3.3.1. Identifying A Good Splice

Often not enough emphasis is placed on the proper selection and installation of belt laces. Unfortunately, if improperly installed, the result can be detrimental — shortened splice life, added costs, and increased down-time; just to mention a few. Listed below are suggestions, which if followed, will increase your splice longevity.

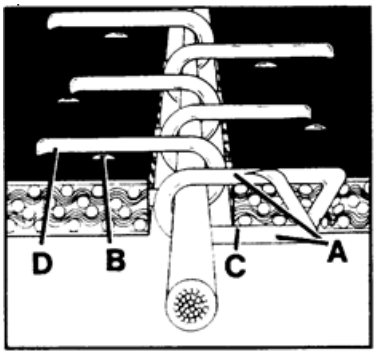


Figure 3-6 - Lace ID

Figure 3-7 - Lace Ends

What to look for:

1. Hook is properly sized and clinched when: (Figure 3-6)
   - **A**. Hook legs are parallel. Loop should not have a light bulb shape.
   - **B**. Hook points slightly penetrate opposite side of belt (.005 to .015 inches).
   - **C**. 1/3 - 1/2 of the wire diameter is embedded into the belt.
   - **D**. The “Knuckles” of the hook should not be higher than the legs when installed.
2. Leave 1/4 inch on each edge of belt unlaced. This guards against end hooks being pulled out.
3. Use one more hook on leading edge than on trailing edge (Figure 3-7).
4. Chamfer the trailing edge. (QubicaAMF’s grooved belts are already chamfered.)
5. Laces should be uniformly embedded across the entire width of the splice.
6. Edges of the belt should line up when the laced belt ends are connected.
7. Run fingernail across loops of splice. Loops should not move.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

3.4. Distributor Removal

1. Disconnect the drive shaft from the distributor at the universal joint and remove the drive shaft assembly.

2. Remove the lateral drive spring first and then the safety link spring from the base of the distributor (see Figure 3-8).

3. Remove the orientor pan and support bracket from the pin lift.

4. Lift the distributor assembly upward off the support post. Save the spacer between the support post and the distributor (if present) for reuse during distributor installation.

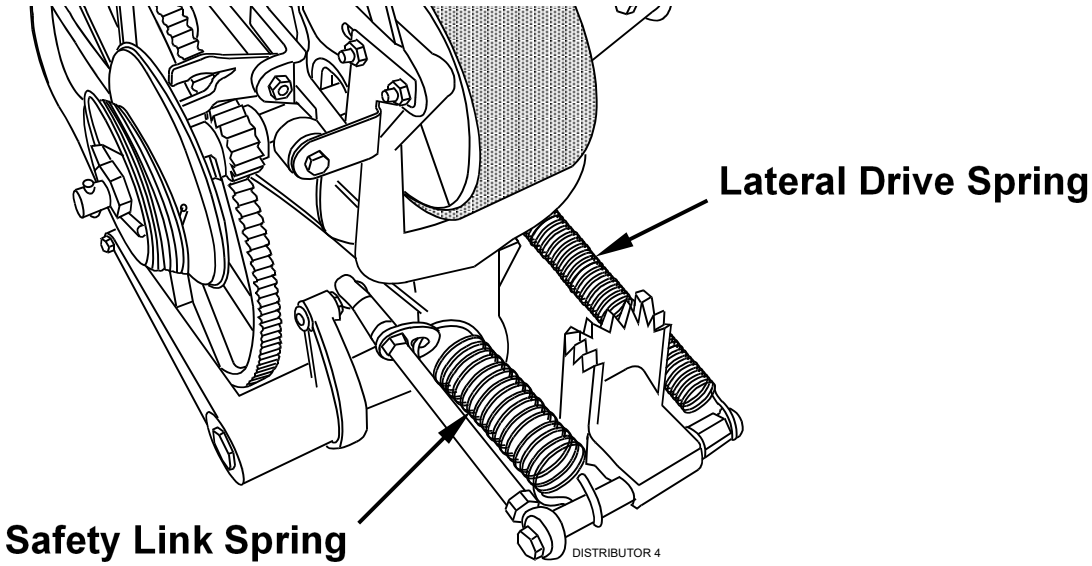


Figure 3-8 - Springs

3.5. Distributor Replacement

1. To replace the distributor assembly, follow the removal procedure in reverse order. Ensure that only one spacer is installed between the support post and the distributor.

2. Check the pinion and cam gear timing marks for correct alignment. The distributor must be at the #1 bin position when checking or adjusting. There is a raised bump on the large cam gear at the base of one of the valleys between the teeth, and a notched tooth on the pinion gear that must be opposite one another for correct timing. To realign, remove the clutch and pinion and reposition the cam gear so that the timing marks align when the pinion is reinstalled, then reinstall the clutch.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

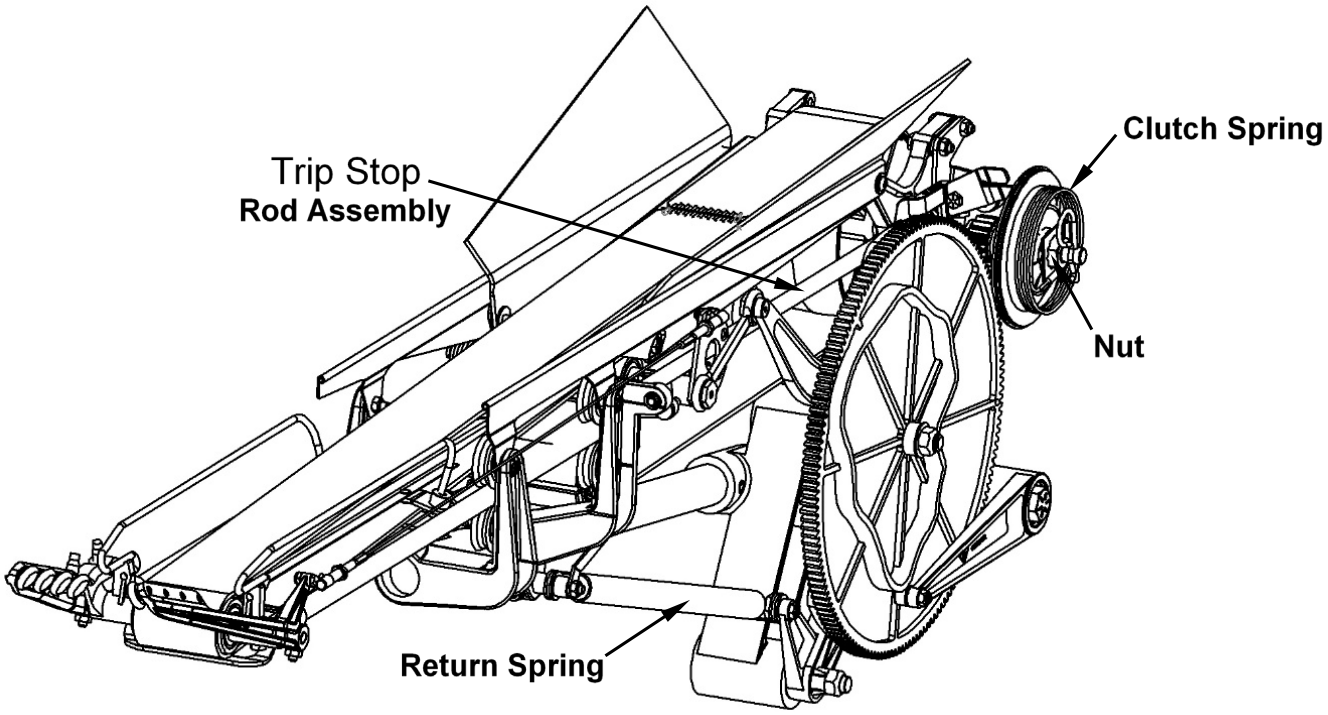


Figure 3-9 - Spring Tension

3. Set the clutch spring tension (Figure 3-9). With the clutch nut finger tight on the shaft, rotate the spring's adjusting clip in the counterclockwise direction until you just start to feel some spring tension. Continue rotating the clip an additional 3/4 turn, and then slide the clip onto the clutch nut. Power up the machine and feed pins.
   a. If the spring is not tensioned enough, the distributor will stall between the #6 and #10 positions. Add more tension to correct this condition, but not more than a total of one turn.
   b. If the distributor hesitates or fails to index, other than mentioned in the previous step, tension must be removed by reducing the spring tension.
   c. Adjust the spring tension one notch at a time and use the minimum tension that produces acceptable results.
4. The distributor should not touch any part of the pin elevator (lift) or Durabin during operation. If adjustment is necessary, add or remove spacer washers from the distributor mounting bolts.

3.6. Distributor Cam Operation

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650
EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602
web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

The indexing cam has a timing mark along its outer edge at the base of a valley between two teeth. This bump and a notched tooth on the pinion gear must be aligned for proper timing. (See section 3.5 item 2 for instructions on how to realign the cam and pinion gears.) A cam follower on the drive arm assembly traces a path along the cam on the outer face of the large indexing cam when the indexing cam is rotating. This action causes the distributor to pivot left and right as required to align the distributor with the bin pockets.

The inside cam of the indexing cam controls the telescoping of the distributor using cam sections and cam followers on the carriage drive arm assembly in a manner similar to the operation described in the previous paragraph. During operation, the distributor is forced inward by the action of the inner cam followers, and telescopes outward because of a combination of return spring tension and a moving belt's tendency to straighten out whenever the cam follower's linkage allows it to do so. The combination of the two actions described above results in a **pin feed sequence of 1, 3, 2, 4, 7, 8, 5, 6, 10, 9.**

3.7. Distributor Adjustments

1. Index the trip stop rod (Figure 3-9) to position the distributor at the #1 bin position.

2. Inspect the nylon cam gear and pinion gear to verify that the timing marks are aligned.

3. The distributor should be in line with the #1 and #5 bin positions. To adjust, loosen the jam nut on the rectangular support post end of the safety link rod (see Figure 3-10) and rotate the safety link rod to either increase or decrease the length of the rod to obtain the correct alignment. Tighten the jam nut.

4. Operate the machine and note the pin feed operation at the individual bin pockets. The rod length may have to be readjusted slightly to obtain accurate pin feed.

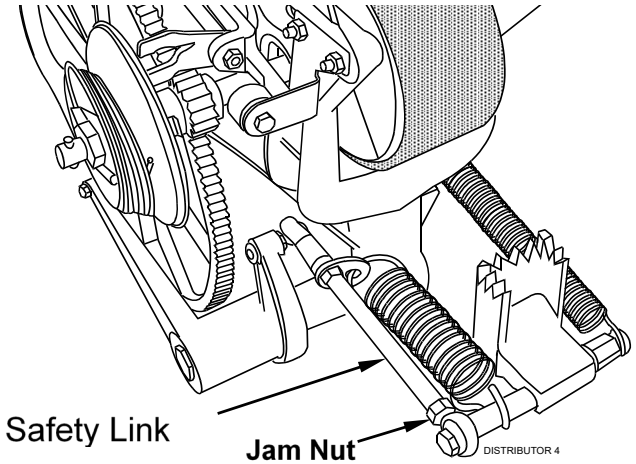


Figure 3-10 - Safety Link

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

3.8. Distributor Eccentric Roller Adjustments

1. Starting with the distributor at the #1 bin position and the back end drive motor turned off, telescope the distributor inward so that it is at its minimum length.

2. Position the lower front adjustable roller in its lowest position so that the distance between the roller and the carriage tube is at its maximum. (See Figure 3-11.)

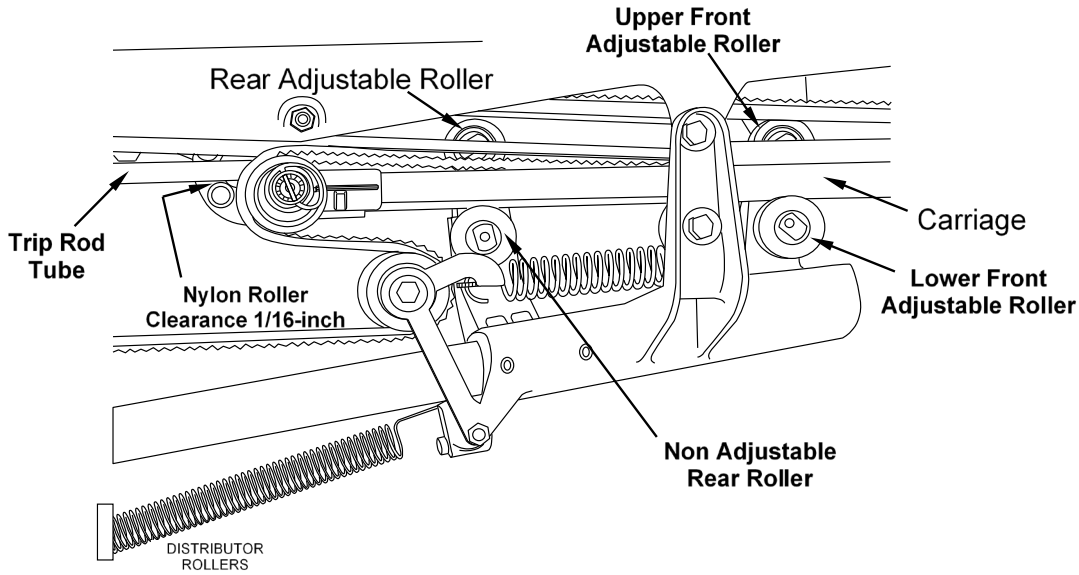


Figure 3-11 - Distributor Rollers

3. Bring the rear adjustable roller down until there is a noticeable drag against the carriage tube when you turn the roller. (Too much drag could prevent the distributor from extending.)

4. Adjust the upper front adjustable roller until the trip rod tube and carriage tubes are parallel to each other.

5. Position the lower front adjustable roller up until it just makes contact with the carriage tube.

6. Recheck the rear adjustable roller to ensure that it is not exerting too much pressure against the carriage tube. Adjust if necessary.

7. Adjust the length of the cable assembly (Figure 3-12) so that the clearance between the nylon rollers and the trip rod tube is approximately 1/16 inch (Figure 3-11) and is the same in all positions of the distributor.

8. Operate the distributor under power and observe. As necessary, fine-tune the rollers and trip cable.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650
EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602
web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

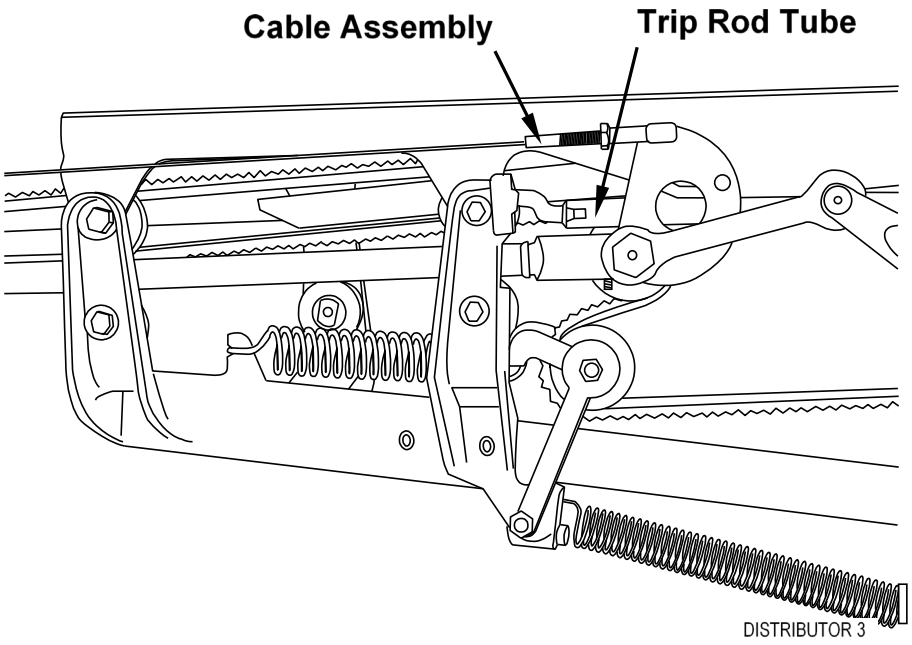


Figure 3-12 - Distributor Cable Assy

3.9. Distributor Trip Lever

1. Operate the distributor trip lever. Inspect for mechanical binds in the lever and associated linkage. Check that the rollers turn freely.

2. As a pin transfers from the distributor belt onto the trip lever, the weight of the pin causes the lever to pivot downward as the pin is deposited in the bin. Afterwards, the trip lever returns to the up position from the force of a spring located at the rear of the carriage tube (see Figure 3-13). This tripping and resetting action actuates the trip rod allowing the distributor to index to the next bin position. The spring tension is factory set for 1/2 turn. Too little spring tension (worn or damaged spring) would cause the trip lever to deflect too soon causing the distributor to index before the pin has cleared the trip lever resulting in misfed pins.

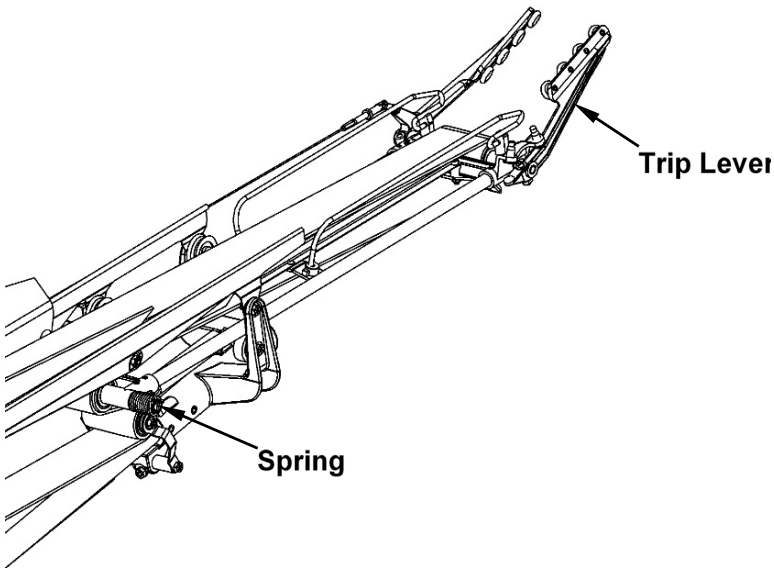


Figure 3-13 - Trip Lever

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650
EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602
web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

3.10. Trip Cable Adjustment

One end of the trip cable attaches to the trip lever on the end of the carriage, and the other end connects to the trip rocker arm weldment (the D-shape metal piece). Two nylon rollers on the inside of the trip rocker arm weldment straddle the trip rod, and when adjusted properly, should not touch the trip rod. This arrangement allows the distributor carriage to telescope in and out freely without actuating the trip rod. When a pin causes the trip lever to pivot, the cable transmits this action to the rocker arm weldment causing the nylon rollers to pivot actuating the trip rod, which in turn causes the indexing cam to move the distributor to the next bin position.

The spacing between the rollers and the trip rod should be approximately equal, and if the carriage adjustment is correct (see Section 3.8, *Distributor Eccentric Roller Adjustment*) the rollers should not contact the trip rod when the carriage is moved in and out along its range of travel.

To adjust the cable:

1. Loosen the jam nut on the end of the trip cable that is being adjusted.

2. Remove the cable connector from the ball stud.

3. To increase the gap between the lower roller and the trip rod, lengthen the cable (unscrew the connector). To decrease the gap, shorten the cable.

4. Reattach the cable to the ball stud.

5. Tighten the jam nut.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

3.11. Distributor Balance Adjustment

Distributor balance is checked by removing the drive shaft between the distributor and back end motor as well as the lateral and safety link springs, and positioning the distributor in line with, and extended to, the headpin bin pocket. The Distributor should remain at the head pin location, fully extended and should not fall to either the 7-pin or 10-pin side of the Durabin. If it does, the distributor mount must be adjusted until the distributor stays at the head pin location.

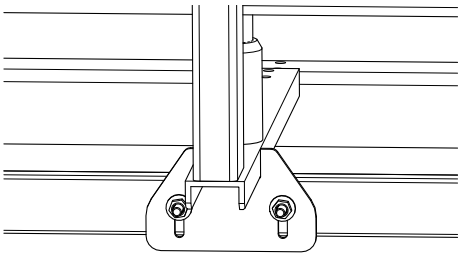


Figure 3-14 - Rear Dist Mount

To Adjust:

Note: Ensure that at least one side of the rear distributor mount (Figure 3-14) is always in contact (or as low as possible in the slot) with the rear distributor support bracket.

1. Loosen the nut and bolt on the rear distributor mount on the side to which the distributor falls.

2. While holding the distributor centered over the head pin, tap the upright section of the distributor mount until the distributor stays centered over the head pin pocket of the bin by itself.

3. Tighten the nut and bolt holding the rear distributor mount to the support bracket.

3.12. Distributor Height Adjustment

1. With the distributor fully retracted, the distributor's belt guard should be ¼ to ½ inch above the ridge that runs along the back of the Durabin. To adjust distributor height, add or remove washers from under the front distributor mount between the mount and the front support bracket.

2. If an adjustment is made, check the distributor balance as specified in the previous section.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

4. LUBRICATION INSTRUCTIONS

4.1. Lubrication

Lubrication is one of the most important items in the proper operation and maintenance of the distributor. Care must be taken to ensure that lubricants are applied correctly. Avoid excessive lubrication to minimize the possibility of transmitting lubricants to the bowler. Before lubricating exposed parts or surfaces, it is important that the old lubricant first be removed. It is also very important to clean the distributor as you lubricate.

This section is intended to show the points of lubrication, specify the correct quantity and type of lubricants to use, and indicate the frequency of lubrication for each part of the distributor that requires lubrication. Refer to Section 5, *Preventive Maintenance*, for specific instructions relating to distributor lubrication.

4.2. Lubricant Symbols

OILING: Items indicated by a number within a square [1] require oiling. Use SAE #10 oil as the lubricant.

GREASING: Items indicated by a number within a circle (1) require greasing. Use a multi-purpose grease (Bearing Guard #2) as the lubricant.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

4.3. Distributor Drive

Lubricate the distributor as part of preventive maintenance in accordance with the instructions in Section 4.0.

1 Trip support casting bearings (2 places): apply 2 drops of oil **every 25,000 frames.**

2 Disassemble, clean, and lubricate the pinion gear in conjunction with clutch maintenance **every 25,000 frames** (see section 3.4 and subsection 4.1). **Do NOT overlubricate** or oil could migrate into the clutch preventing it from operating properly.

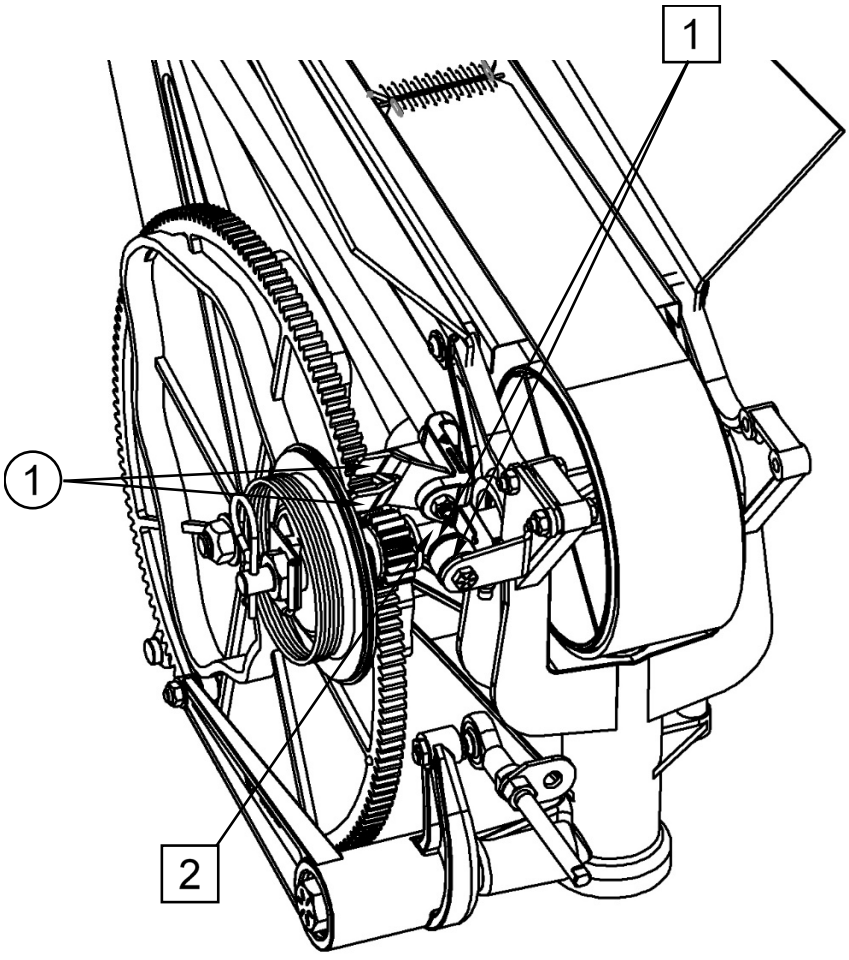


Figure 4-1 - Distributor Drive

① Stop blades (2 places): apply grease to the back surfaces every **25,000 frames.**

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

4.4. Distributor Trip Levers and Clutch

1 Trip lever rollers (8 places): apply 1 drop of oil **every 50,000 frames**.

2 Trip lever bushings (2 places): apply 1 drop of oil **every 25,000 frames**.

3 Distributor clutch assembly (1 place): disassemble, clean, lubricate the thrust washer, and adjust **every 25,000 frames** (see subsection 4.1).

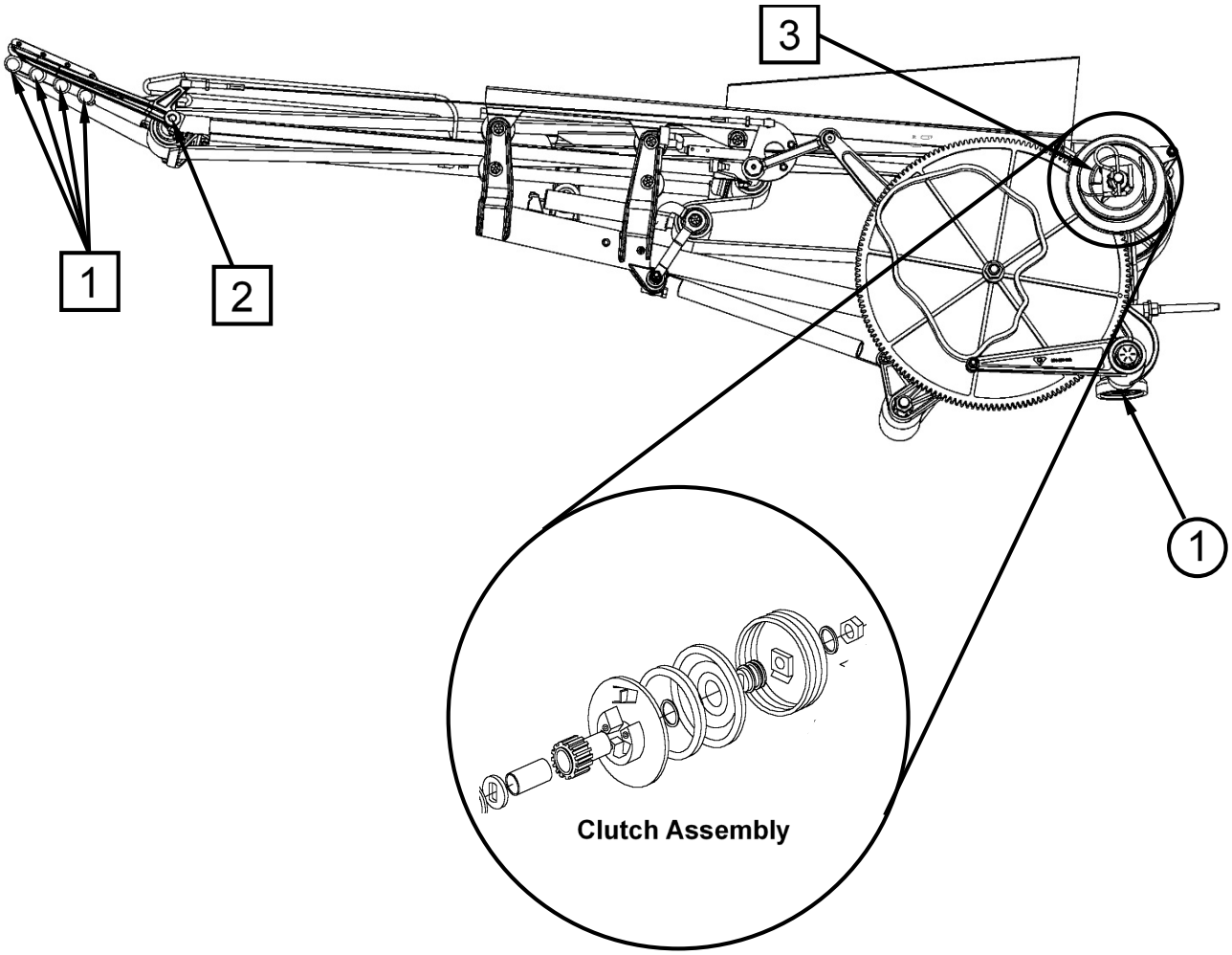


Figure 4-2 - Trip Levers and Clutch

(1) Distributor support bearings (2 places): remove distributor and grease bearings **every 100,000 frames**.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

4.5. Distributor - continued

1. Trip rod (front) (1 place): 1 drop of oil **every 25,000 frames**.
2. Trip rocker arm (2 places): apply 1 drop of oil to each side **every 25,000 frames**.
3. Roller tracking bracket (4 places): 1 drop of oil **every 25,000 frames**.

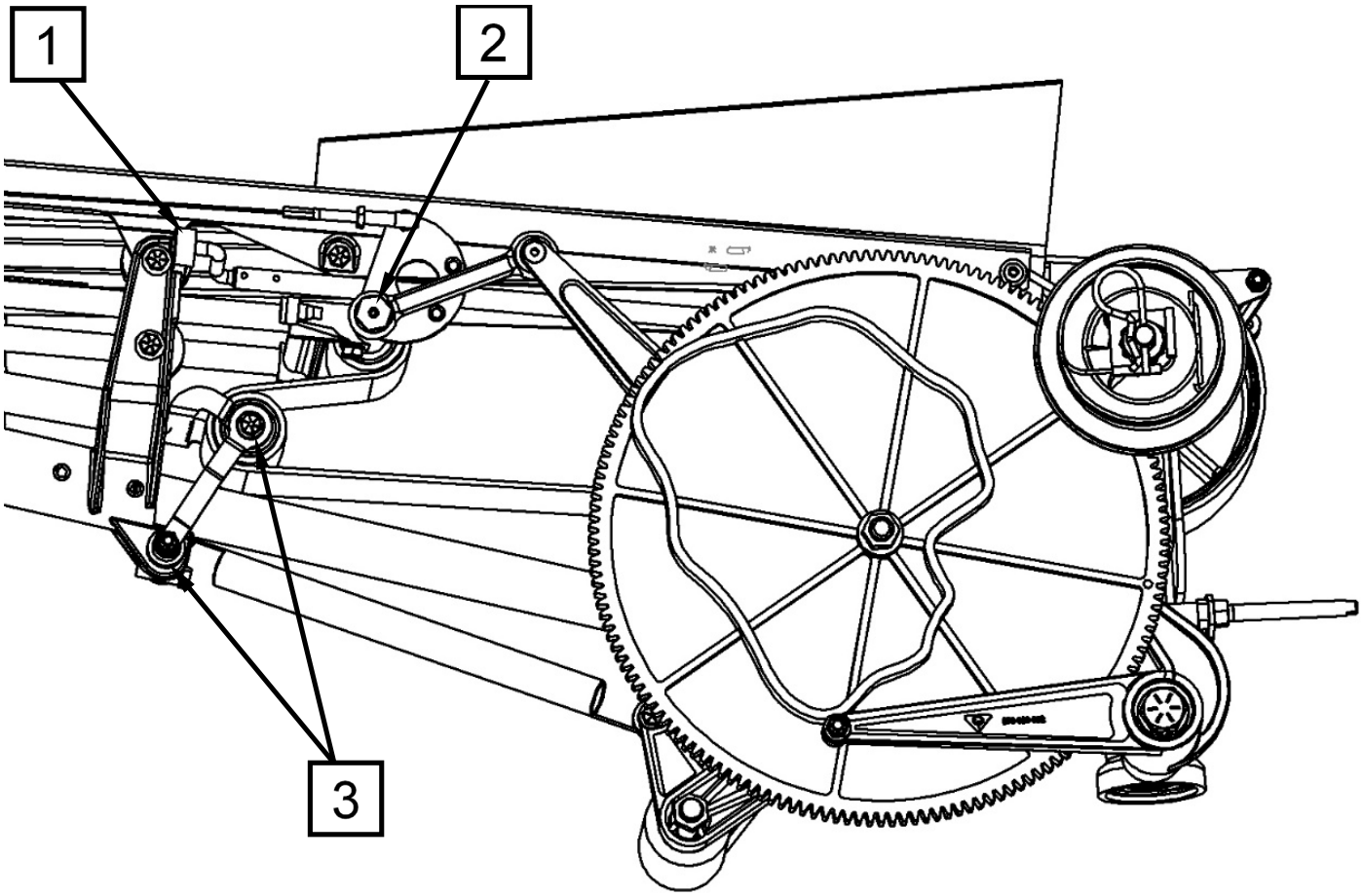


Figure 4-3 - Distributor - contrinued

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

5. PREVENTIVE MAINTENANCE

This section provides specific preventive maintenance instructions for servicing pinspotters on a frequency based on frame count. Repeat each maintenance item at every multiple of the indicated frame count. For example, a maintenance activity performed at 25,000 frames would be repeated at 50,000, 75,000, 100,000, 125,000, etc. A 100,000 frame maintenance activity is repeated at 200,000, 300,000, etc. Maintenance may need to be done more frequently based on the distributor's age, mechanical condition, and repair history.

5.1. 25,000 Frame Maintenance

5.1.1. Servicing the Distributor Clutch Assembly

1. At the system controller select the pinspotter to be serviced by pressing the EVEN/ODD button so the arrow is pointing toward that lane.
2. Place the pinspotter in mechanic mode by pressing MODE button.
3. Ensure distributor is at the 1 pin location of the durabin. If not, cycle the pinspotter until the needed pins index the distributor to the 1 pin location.
4. Turn off the backend switch.
5. Run the sweep to 1st guard position by pressing the sweep run button.
6. Switch off both circuit breakers.
7. Perform Lockout/Tagout (LOTO)
8. Deploy lane barriers on both lanes.
9. Remove the center guard.
10. Remove the pinion gear guard if desired.
11. If working on an odd lane, remove the velcro and pin securing the distributor driveshaft and remove the driveshaft.
12. Remove clutch tension spring.
13. Loosen the large nut by turning the spring around and use the center as a wrench to loosen the large nut. Turn counterclockwise.
14. Remove the large nut.
15. Remove the special washer from the distributor shaft.
16. Grasp the black clutch plate and turn it clockwise to unscrew it from the adjusting worm and remove from the distributor shaft.
17. Remove the adjusting worm.
18. Remove the second special washer.
19. Remove the friction disc.
20. Remove the gold clutch plate from the pinion gear.
21. Remove the pinion gear.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

22. Remove the distributor drive sleeve.
23. Clean all parts removed with a water based cleaner and dry.
24. Wipe old grease from the stop blade on the trip rod assembly.
25. Examine all parts for excessive wear or damage. Replace as needed.
26. Ensure that the distributor drive sleeve is longer than the pinion gear.
27. Apply a light film of #10 oil on the exterior of the distributor drive sleeve.
28. Do not apply oil to the interior of the sleeve.
29. Install the sleeve part way onto the distributor shaft.
30. Apply a light film of #10 oil on the side of the thrust washer that will contact the pinion gear.
31. Push the distributor drive sleeve against the thrust washer.
32. Install the pinion gear on the sleeve aligning the cut tooth with the raised bump on the indexing cam.
33. Apply grease to the back side of the stop blades on the trip rod assembly and to the front side stop on the gold clutch plate assembly.
34. Install the gold clutch plate engaging it onto the pinion gear. This surface must be free of oil and grease.
35. Install the friction disc. Surface must be free of oil and grease.
36. Install one of the two special washers against the gold clutch plate.
37. Install the adjusting worm onto distributor shaft against the special washer. The word 'OUT' on the worm must be facing away from the gold clutch plate.
38. Ensure the black clutch plate is free of oil and grease.
39. Install by screwing the black clutch plate counter-clockwise onto the adjusting worm. Leave the clutch plate loose until the large nut is installed and tightened.
40. Install the other special washer against the adjusting worm.
41. Install the large nut by screwing it clockwise onto the distributor shaft.
42. Tighten the large nut by using the center of the clutch tension spring as a wrench.
43. Don't overtighten.
44. Insert the straight end of the clutch tension spring into the 2 holes in the clutch plate.
45. Rotate the clutch plate counter-clockwise until the plate is tight, making sure that the friction disc is contained within the gold clutch plate edges.
46. Grasp the center part of the clutch tension spring and rotate it counter-clockwise 3/4 to 1 turn and engage center section onto the large nut.
47. If working on an odd lane, replace the driveshaft and the pin and velcro assembly
48. If removed earlier, replace the pinion gear guard.
49. Install the center guard.
50. Remove the lane barriers.
51. Remove LOTO.
52. At the system controller switch on both breakers.
53. Press the white e-stop RESET button.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

54. Press the TROUBLE CLEAR button. Beeper should beep 10 times and the error should clear.
55. Press the HOME button.
56. Run multiple cycles observing the operation of the distributor by pressing the CONTINUOUS CYCLE button.
57. Press CONTINUOUS CYCLE button to stop the continuous cycle.
58. Press the MODE button to place the pinspotter into standby mode.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

5.2. 100,000 Frame Maintenance

5.2.1. Cleaning the Distributor Assembly with a Water-Based Cleaner

1. At the system controller select the pinspotter to be serviced by pressing the EVEN/ODD button so the arrow is pointing toward that lane.
2. Place the pinspotter in Mechanic Mode by pressing MODE button.
3. Cycle the pinspotter to ensure there is a full set on the pin deck.
4. Press SWEEP RUN button running the sweep to 1st Guard.
5. Allow the durabin to fill so that the distributor is at the headpin position.
6. Switch off both breakers.
7. Perform lockout/tagout (LOTO).
8. Deploy lane barriers on both lanes.
9. Remove the edge lift center guard.
10. Remove the crow's nest side guard.
11. Wipe all surfaces of the distributor assembly with a cloth dampened with a water-based cleaner.
12. Clean the surface of all the distributor belt pulleys (rollers), removing the black buildup. Scraping of the pulley surface may be necessary.
13. Check for worn, grooved or flattened pulleys. Replace as needed.
14. Check for bent, worn, broken, or loose components and hardware. Tighten or replace as needed.
15. Lubricate the distributor following the instructions and drawings in Section 3 of the 400-088-121-xx manual.
16. Check and correct the following adjustments as required; distributor balance adjustment, timing marks on pinion gear and cam, centering adjustment, eccentric roller adjustment, trip cable adjustment, and trip lever spring tension. Refer to Section 2 of the 400-088-121-xx manual.
17. Wipe the o-pan and funnels with a vinyl dressing.
18. Apply power and cycle the pinspotter. Observe for correct distributor operation.
19. Install the crow's nest side guard.
20. Install the center guard.
21. Remove LOTO on lane being serviced.
22. Switch on breaker.
23. At the system controller, press the E-stop RESET button (white).
24. Press TROUBLE CLEAR button.
25. Press HOME button.
26. Press CONTINUOUS CYCLE button and observe for correct distributor operation.
27. Press CONTINUOUS CYCLE button to stop cycling.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650
EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602
web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

28. Switch off breaker.
29. Perform LOTO.
30. Remove the lane barriers.
31. Remove LOTO.
32. Switch on breakers.
33. Press TROUBLE CLEAR button.
34. Press MODE button to place pinspotter into standby mode.

5.2.2. Servicing the Distributor Drive Shaft Assembly

1. At the system controller select the pinspotter to be serviced by pressing the EVEN/ODD button so the arrow is pointing toward that lane.
2. Place the pinspotter in mechanic mode by pressing MODE button.
3. Press SWEEP RUN button to run the sweep to 1st guard.
4. Switch off both breakers.
5. Perform Lockout/Tagout (LOTO).
6. Deploy lane barriers on both lanes.
7. Remove the edge lift center guard.
8. Remove the distributor drive shaft assembly from the distributor and gearbox drive housing.
9. Wipe all the grease from the end of the distributor drive shaft that was within the drive housing.
10. Check the universal balls for wear and flat spots. Replace as needed.
11. Check that the correct washers and spacers are in place. Replace as needed.
12. Check that the ball bearing retainer is not bent or broken. Replace as needed.
13. Check that the dowel pin cannot be pushed out by finger pressure. Replace as needed. If the new dowel pin can be pushed out, the shaft needs to be replaced.
14. Check the universal joint for excessive play. Replace as needed.
15. Wipe all the grease from the drive housing.
16. Check that the drive housing and drive housing guard are tight on the gearbox shaft. Tighten as needed.
17. Check for wear and grooving on the drive housing where the balls of the distributor drive shaft ride. Replace as needed.
18. Apply a liberal amount of grease to the inside of the drive housing and to the balls, spacers, and washers of the distributor drive shaft assembly.
19. Install the distributor drive shaft on the gearbox and distributor. Install the velcro and pin to secure the drive shaft to the distributor.
20. On the odd pinspotter, with the distributor at the headpin location, check that the drive shaft does not bottom out in the gearbox drive housing. If it does, and there is room for adjustment of the housing on the shaft, then adjust the housing; otherwise, the tie plate

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650
EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602
web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

and PBL spring bracket nuts and bolts need to be loosened and the motor and gearbox assembly moved away from the distributor, and the nuts and bolts retightened.

21. On the odd and even pinspotters, index the distributor to the 7-pin and 10-pin locations. Check that the drive shaft balls don't extend past halfway off the open end of the drive housing while in the 7-pin and then the 10-pin position. Loosen the set screw in the drive housing and reposition if necessary. If an adjustment was made, recheck previous adjustment.
22. Install the center guard.
23. Remove LOTO.
24. Switch on breakers.
25. At the system controller press the E-stop RESET button (white).
26. Press TROUBLE CLEAR button.
27. Press HOME button.
28. Press MODE button to place pinspotter into standby mode.

28.1. 500,000 Frame Maintenance

28.1.1. Servicing the Distributor Assembly

For ease of disassembly, a fixture should be built to hold the Distributor while it is being worked on.

1. At system controller, select pinspotter to be serviced by pressing the EVEN/ODD button so arrow is pointing toward that lane.
2. Place pinspotter in mechanic mode by pressing MODE button.
3. Run sweep to 1st Guard position by pressing the SWEEP RUN button.
4. Press the EVEN/ODD button so arrow is pointing to opposite lane.
5. Place pinspotter in mechanic mode by pressing MODE button.
6. Run sweep to 1st guard position by pressing the SWEEP RUN button.
7. Ensure the distributor is at the 1 pin location.
8. Switch off breakers.
9. Perform LOTO.
10. Remove the center guard from the edge lift.
11. Deploy lane barriers on both lanes.
12. Remove the o-pan and support from the edge lift.
13. Remove the distributor drive shaft.
14. Remove the lateral and safety link springs.
15. Remove the crow's nest side guard and set it aside.
16. Step down into the pit to remove the distributor.
17. Remove the distributor from the pinspotter by collapsing the carriage and lifting from the distributor support post. Check the bottom bearing for the post spacer. Remove and place on support post.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650
EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602
web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

18. Place distributor onto a fixture for disassembly.
19. Clean all components and parts with a cloth dampened with a water-based cleaner.
20. Use light weight oil on all bushings and sleeve items when assembling.
21. Remove the Distributor Belt.
22. Remove the carriage assembly by removing the belt runner, eccentric rollers, and the connecting link.
23. Remove both pulleys from the carriage assembly by removing the trip arms, shaft, and tubes (both ends).
24. Check for binding or noisy bearings in the pulleys. Replace as needed.
25. Check the pulleys for grooving, loss of crown, bearings fitting too loosely and replace as needed. Clean off all dirt if reusing the pulleys.
26. Check for excessive wear on the shafts and bushings in the tubes. Replace as needed.
27. Check for cracked, broken, or worn eccentric and concentric rollers. Replace as needed.
28. Check for loose or missing hardware on the belt runner support. Replace as needed.
29. Check for bent carriage tubes and pin guides. Replace as needed.
30. Remove the tracking bracket, tube assembly, and pulley.
31. Check the tracking bracket and roller assembly links for cracks or bends. Replace as needed.
32. Check for binding or noisy bearings in the pulley. Replace as needed.
33. Check the pulleys for grooving, loss of crown, bearings fitting too loosely, and replace as needed. Clean off all dirt if reusing pulleys.
34. Check spacers and tube assembly bushings for excessive wear. Replace as needed.
35. Check the distributor cable for fraying and the ball joints for excessive wear. Replace as needed.
36. Check the belt guard for wear or damage. Replace as needed.
37. Check the rollers on the trip rocker arm weldment for wear (flat spots) and that they roll freely. Replace or lubricate as needed.
38. Reassemble the carriage assembly.
39. Remove the distributor clutch assembly. Reference 25,000 Servicing the Distributor Clutch Assembly page 25 for removal and installation instructions.
40. Remove the drive arm assembly.
41. Remove the index cam. Check the bearings on the index cam shaft for noise or binding. Replace as needed.
42. Check for noisy or binding bearings in the drive arm assembly. Replace as needed.
43. Check all three cam followers for excessive wear and that they roll freely. Replace as needed.
44. Check the index cam for cracks or missing teeth. Replace as needed.
45. Check the arm for cracks around the link attachment countersunk hole, and that the arm pivots freely. Replace the arm and/or bearings in the main casting as needed.
46. Remove the trip rod assembly.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

47. Check for excessive wear or bends on trip rod assembly. Replace as needed.
48. Check the stop blade for excessive wear. Replace as needed.
49. Check for a worn or missing bumper on the trip stop support bracket.
50. Check the straightness of the drive shaft. Replace as needed.
51. Check the bearings on the drive shaft for noise or binding. Replace as needed.
52. Reassemble the distributor.
53. Service the distributor clutch. 25,000 frame maintenance
54. Climb into the pit to install the distributor. Ensure that the post spacer is placed on the support post before installing.
55. Climb out of the pit and install the crow's nest side guard.
56. Install the lateral and safety link springs.
57. Perform the 100,000 frame operational check and adjustments to complete the installation and adjustments.
58. Replace the distributor drive shaft.
59. Install the o-pan and support.
60. Install the edge lift center guard.
61. Remove lane barriers
62. Remove LOTO.
63. At the system controller, switch on Breakers.
64. Press TROUBLE CLEAR button.
65. Press HOME button.
66. Press the EVEN/ODD button so the arrow is pointing toward the opposite lane.
67. Press TROUBLE CLEAR button.
68. Press HOME button.
69. Press CONTINUOUS CYCLE button and observe for correct distributor operation. Adjust as needed.
70. Press CONTINUOUS CYCLE button to stop cycling
71. Press MODE button to place pinspotter into standby mode.
72. Press the EVEN/ODD button so the arrow is pointing toward the opposite lane.
73. Press MODE button to place pinspotter into standby mode.

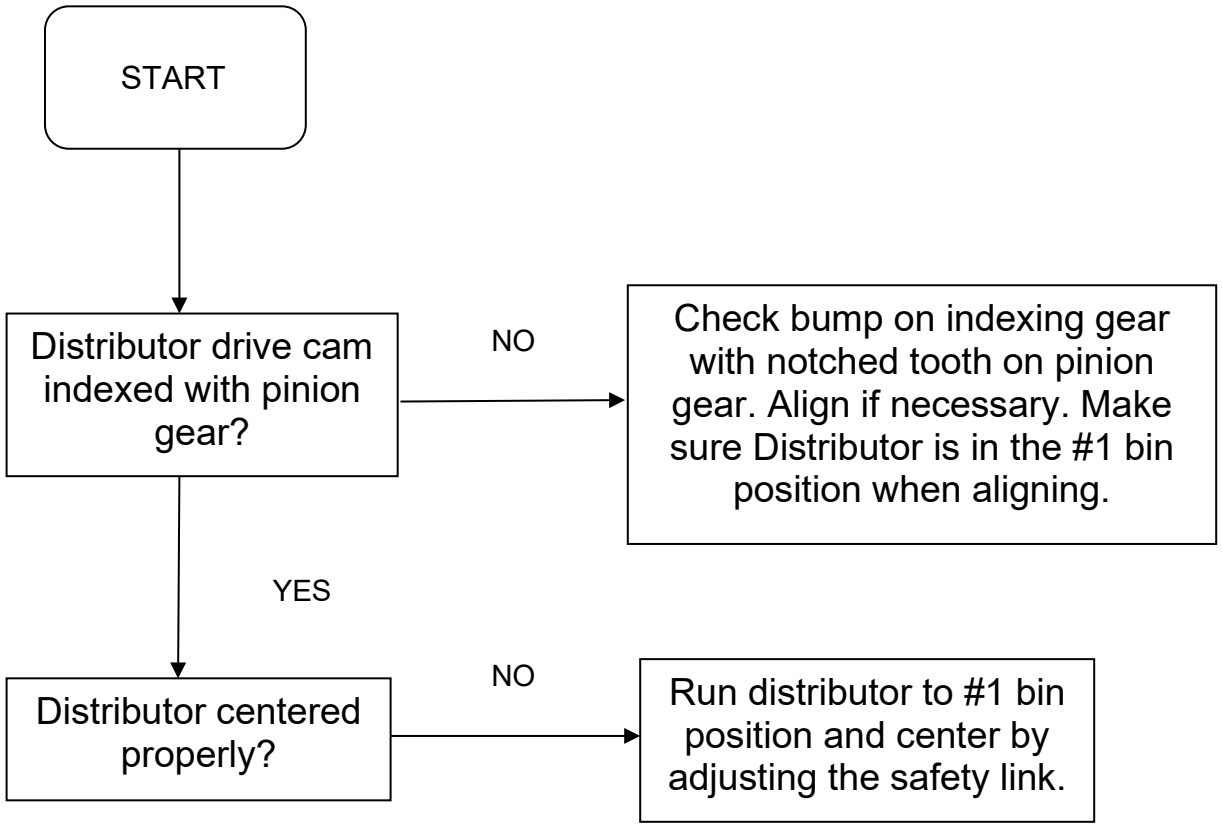
WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

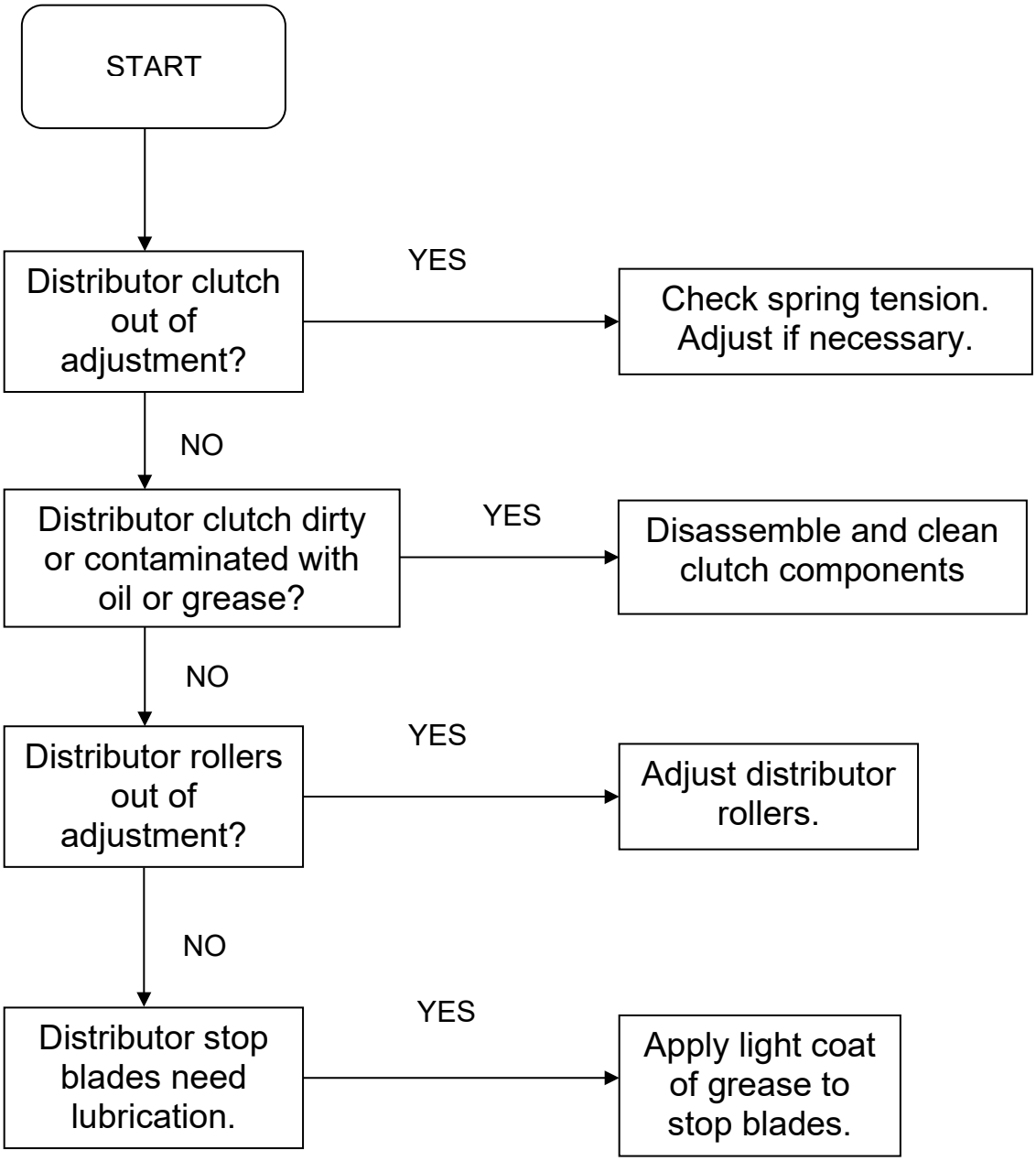
6. TROUBLESHOOTING

29.1. PROBLEM: Distributor does not feed pins at correct bin position.



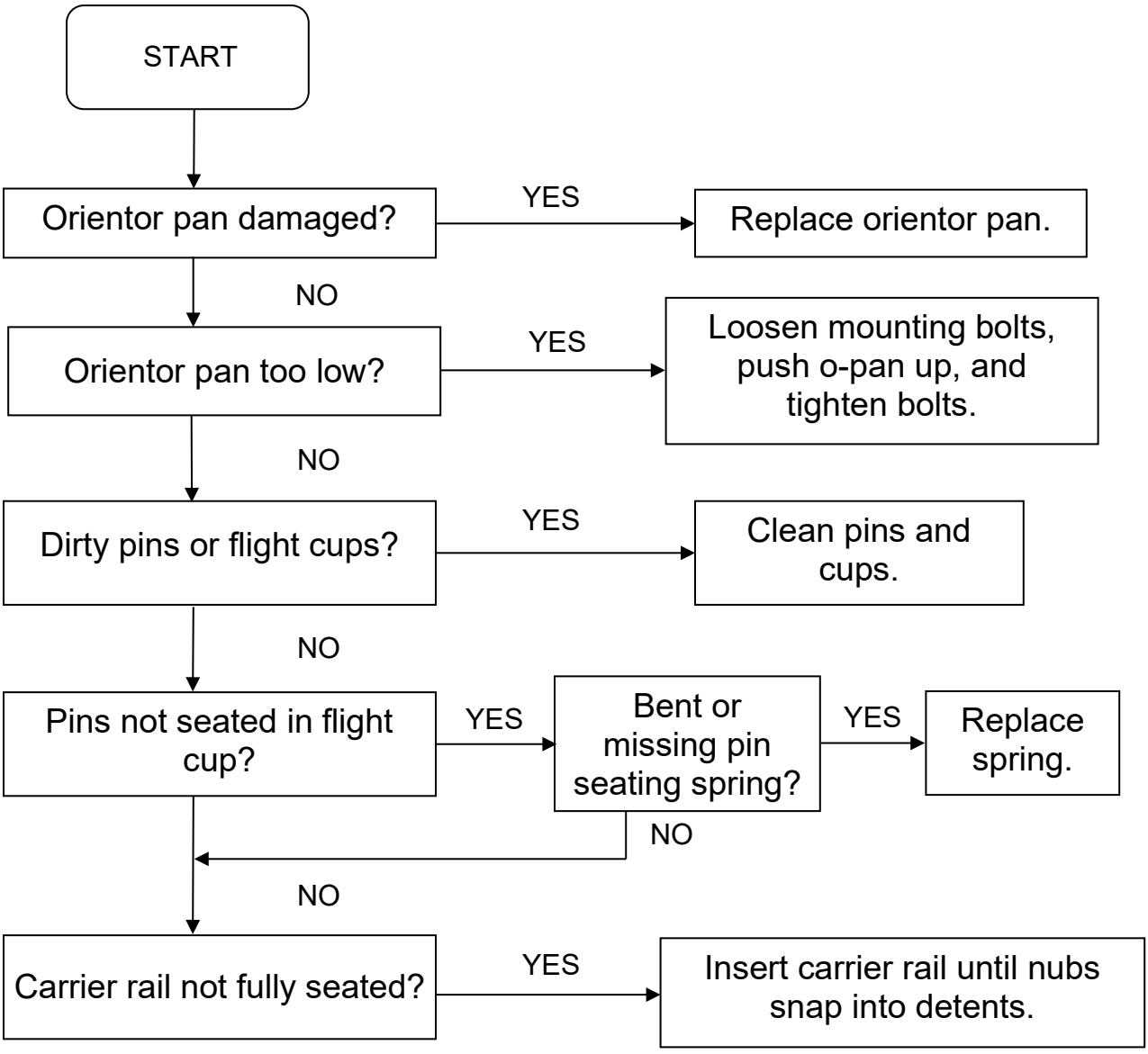
WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650
EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602
web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

29.2. PROBLEM: Pins feed into bin continuously at one bin position or too many pins in one bin location.



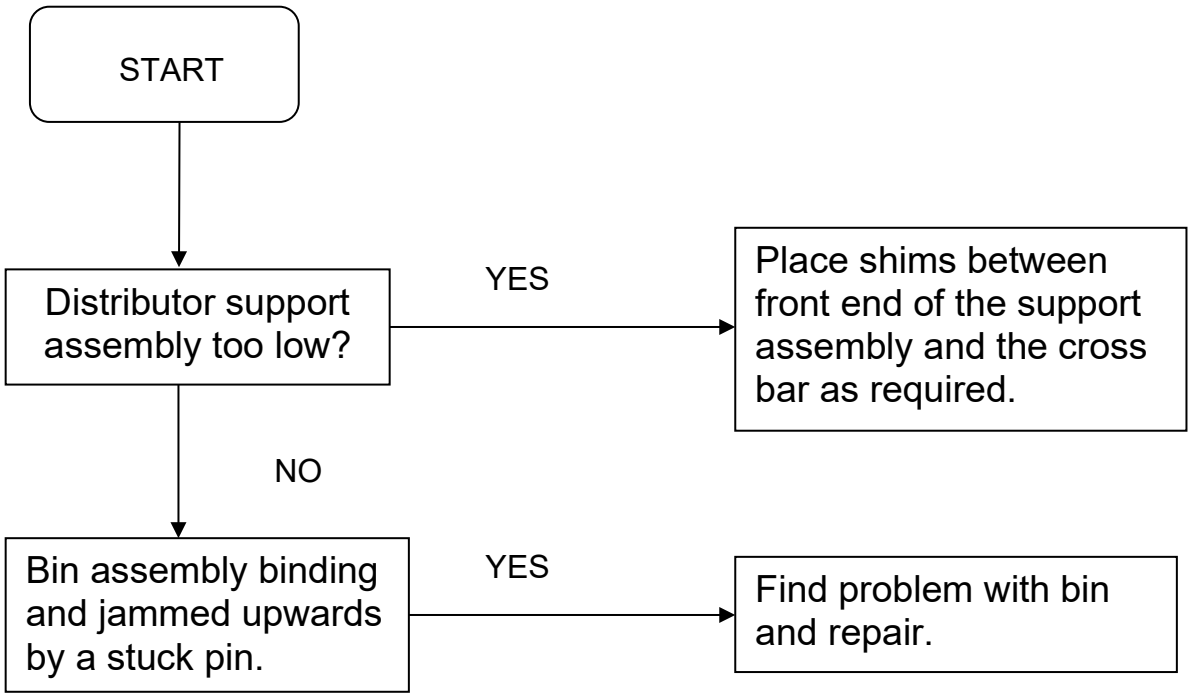
WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650
EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602
web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

29.3. PROBLEM: Pins delivered head first to bin pockets.



WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650
EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602
web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

29.4. PROBLEM: Distributor front end hits bin during pin feed.



WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

7. DRAWINGS AND PARTS LISTS

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

ORDER PARTS ONLINE

eshop.qubicaamf.com

BENEFITS

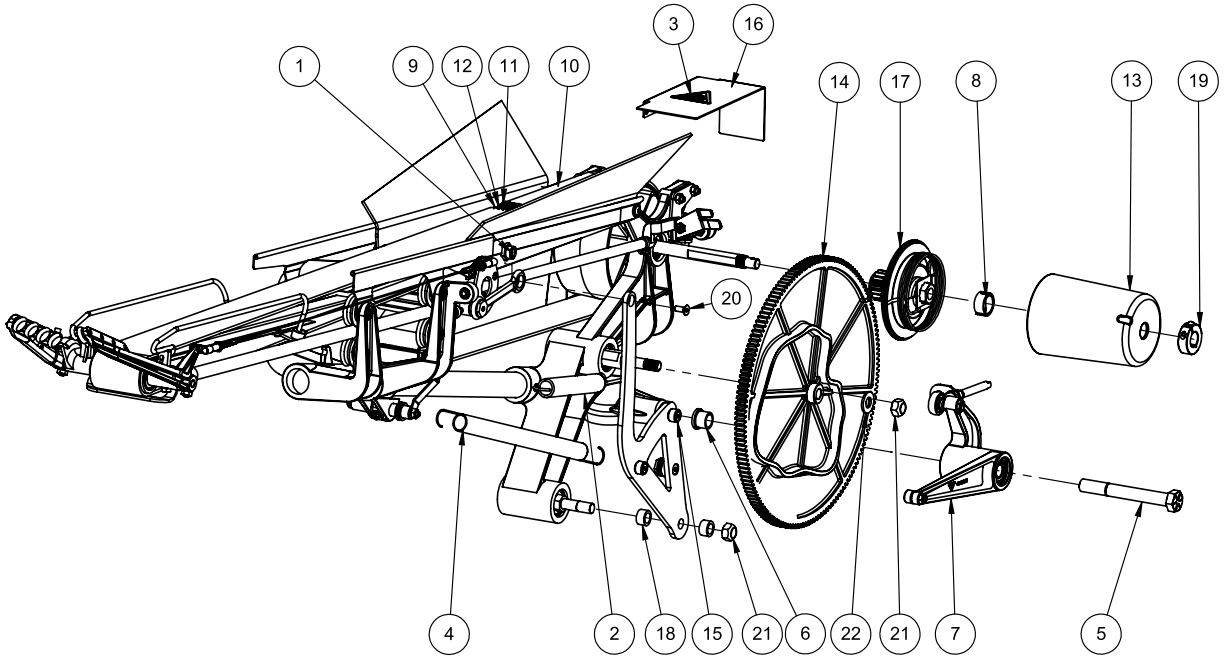
- Drill Down Menu by Machine Type
- Assembly Drawings with Hotspots
- Up-To-Date Cross-References
- Quick Order Form
- Thousands of High-Quality Photographs

QubicaAMF eShop
AMAZINGLY EASY

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com



Distributor Assembly, 088-005-100

Item	Part Number	Description
1	000-022-173	NUT, SPECIAL; ROLLER DRIVE ASM
2	000-026-031	SPRING, DIST BELT TENSIONER
3	051-070-084	DECAL, ENTANGLEMENT, GEARS
4	070-006-034	SPRING, LINEAR
5	070-006-048	HHCS 5/8-11 X 5.00 GR8
6	070-006-065	CLAMP, RACE
7	**070-006-839**	**DRIVE ARM ASM, DISTRIBUTOR**
8	088-000-156	DISTRIBUTOR DRIVE PIN ASM
9	088-000-176	DISTRIBUTOR BELT PIN
10	088-000-185	DISTRIBUTOR BELT, LACED
11	088-000-186	UX-1 DIST BELT LACING, 18 HKS

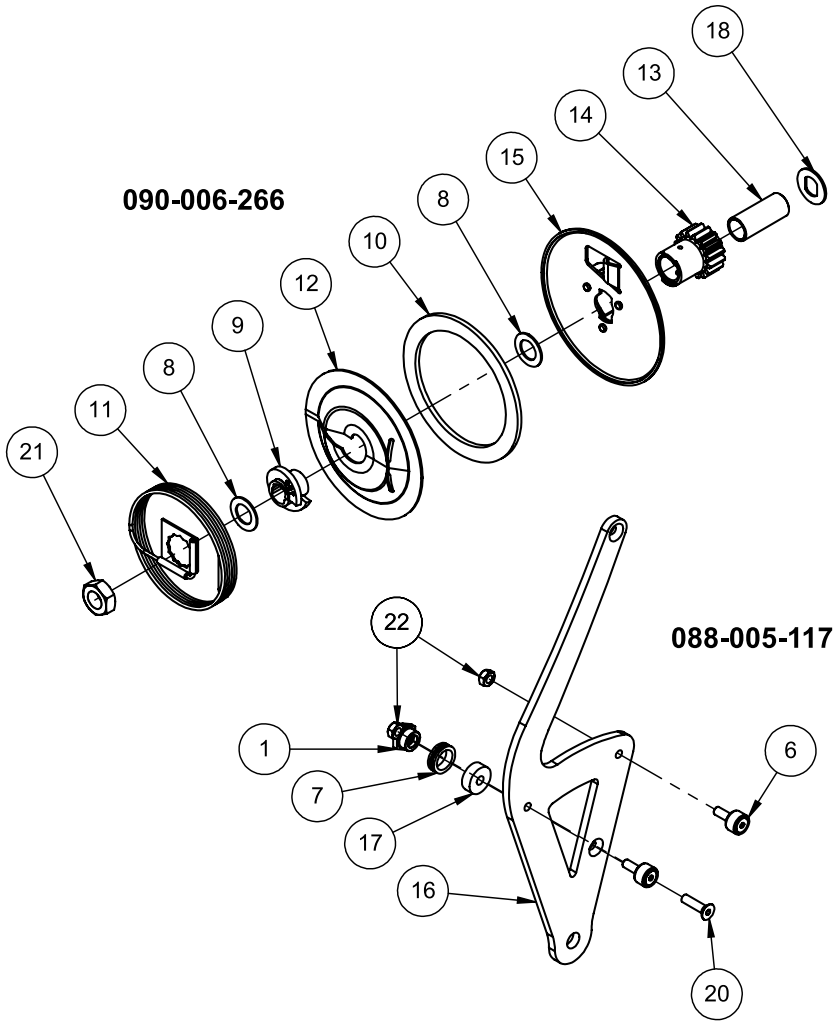
Item	Part Number	Description
12	088-000-187	UX-1, DIST BELT LACING, 19 HKS
13	088-001-879	GUARD, DIST DRIVE HOUSING
14	088-005-114	INDEX CAM II DIST
15	**088-005-117**	**CAM ARM II ASM**
16	088-501-738	GUARD, CLUTCH, DISTRIBUTOR
17	**090-006-266**	**CLUTCH ASM, DIST**
18	722-501-088	SFR 0.51 X 0.75 X 0.42 AL
19	785-501-742	CLLR 1PC 0.75 X 1/4-28 BO
20	808-849-100	FHSCS 1/4-20 X 0.63 BO
21	844-073-002	HLN 1/2-13 CAD STV
22	948-975-172	FW 0.53 X 1.06 X .10 NS

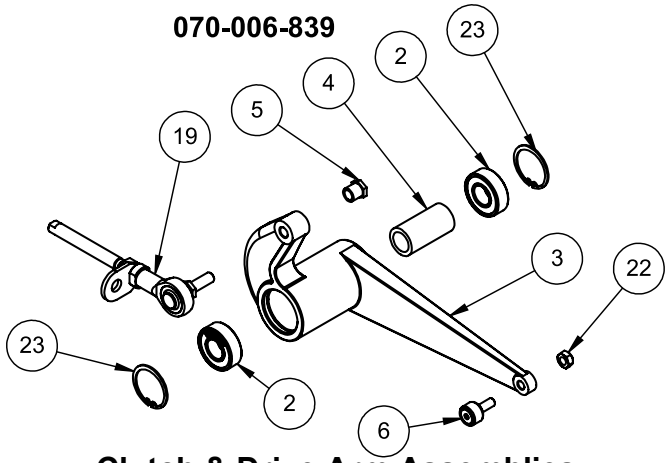
Bold items indicate that a detailed drawing for that assembly is shown on the following pages.

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com





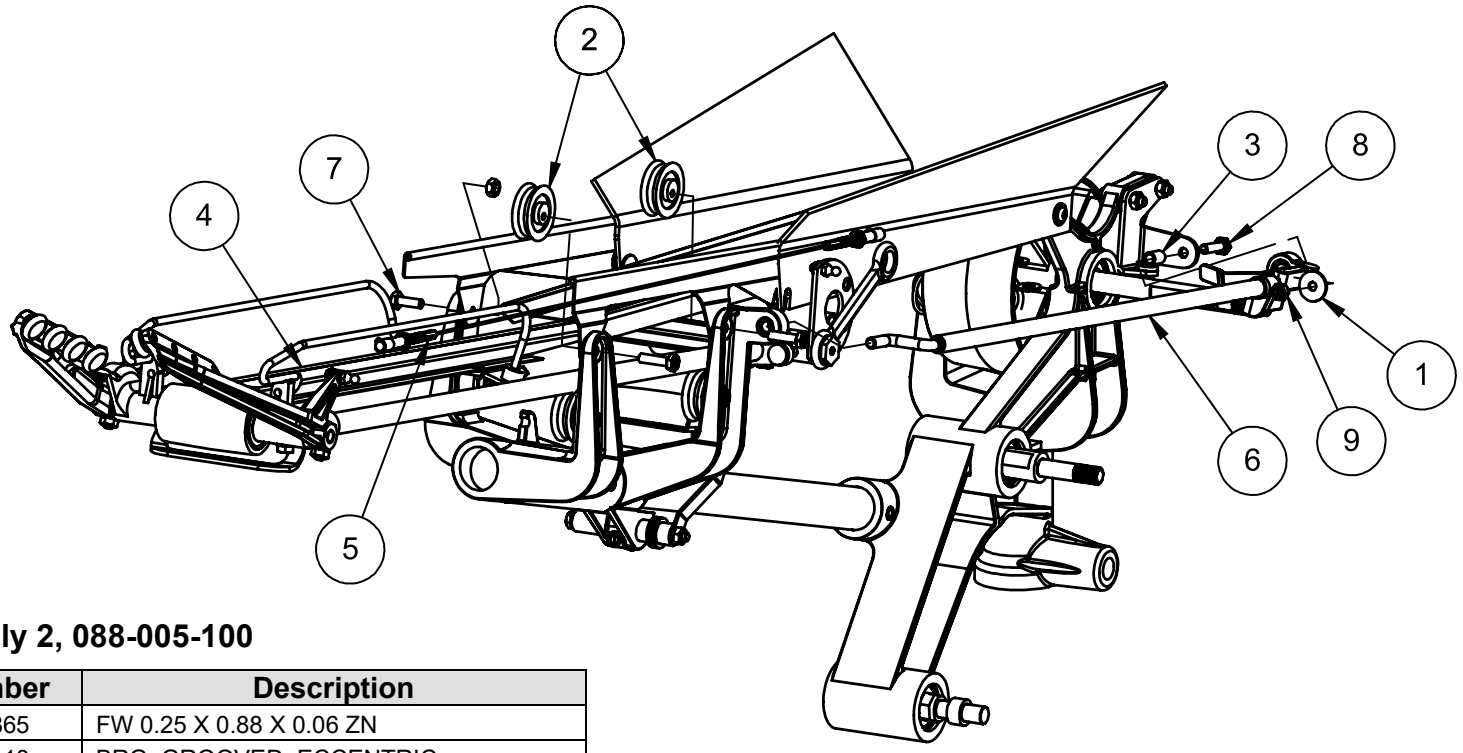
Clutch & Drive Arm Assemblies

Item	Part Number	Description
1	000-022-173	NUT, SPECIAL; ROLLER DRIVE ASM
2	000-024-679	BRG B2E .625X1.375X.433_99502H
3	070-006-052	DRIVE ARM; DIST
4	070-006-064	SFR 0.64 X 0.80 X 1.75 NS
5	070-006-069	NUT, SPECIAL; DIST
6	070-006-071	CAM FOLLOWER; DIST
7	070-006-111	SLEEVE, SPRING POST
8	070-006-121	FW 0.64 X 1.06 X 0.05 BO
9	070-006-125	WORM, ADJUSTING; DISTRIBUTOR
10	070-006-126	FRICTION DISC
11	070-006-128	SPRING ASSEMBLY
12	070-006-130	CLUTCH PLATE
13	070-006-676	SLEEVE, DIST DRIVE
14	070-006-686	PINION GEAR ASSEMBLY
15	088-000-192	CLUTCH ASSEMBLY
16	088-005-115	CAM II TELE-ARM
17	088-005-118	CAM II SPRING POST SPACER
18	088-005-119	WASHER-THRUST-DIST II
19	090-005-262	ROD LINK ASSEMBLY
20	808-849-160	FHSCS 1/4-20 X 1.00 BO
21	835-582-002	HFJN 5/8-18 ZN
22	844-050-002	HLN 1/4-28 CAD STV
23	000-022-173	Nut, Special, Roller Drive Assembly

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com



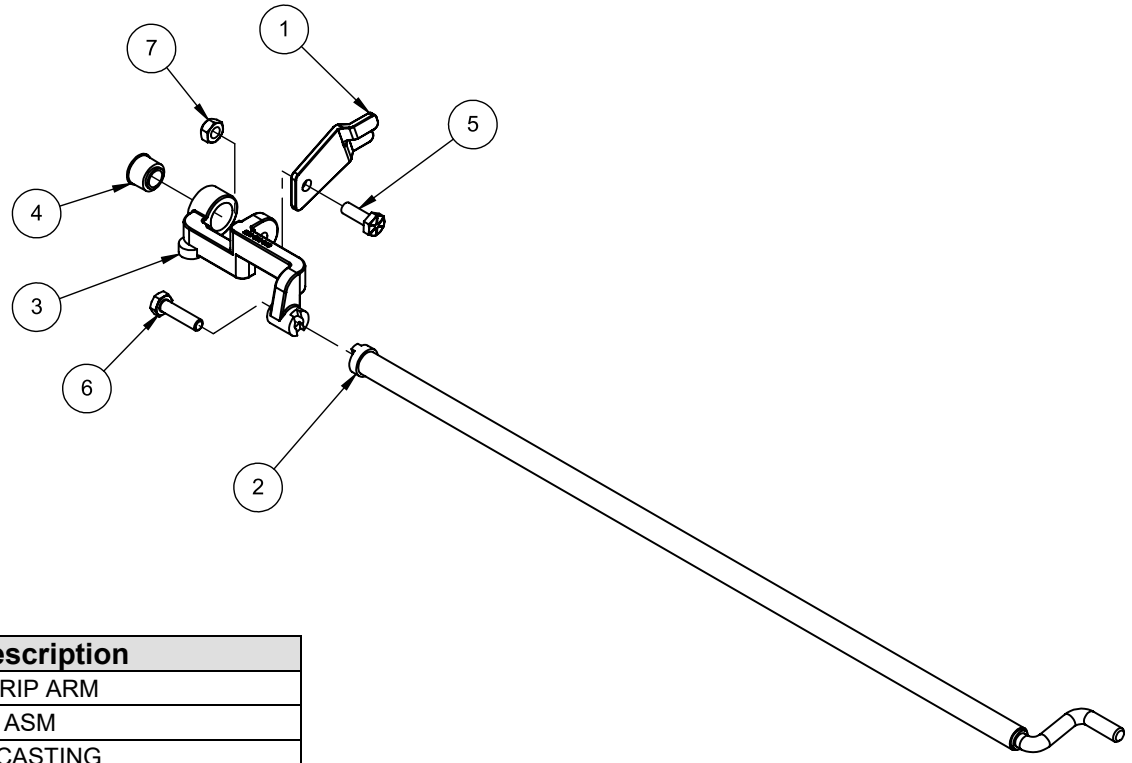
Distributor Assembly 2, 088-005-100

Item	Part Number	Description
1	000-026-865	FW 0.25 X 0.88 X 0.06 ZN
2	070-006-118	BRG, GROOVED, ECCENTRIC
3	070-006-685	PIVOT
4	**070-006-837**	**FRONT CARRIAGE ASM**
5	070-006-845	TRIP CABLE ASM, DIST
6	**090-006-668**	**TRIP ROD ASM**
7	809-849-125	HHCS 1/4-20 X 0.75 GR8 BO
8	809-849-165	HHCS 1/4-20 X 1.00 GR8 BO
9	844-049-002	HLN 1/4-20 CAD STV

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com



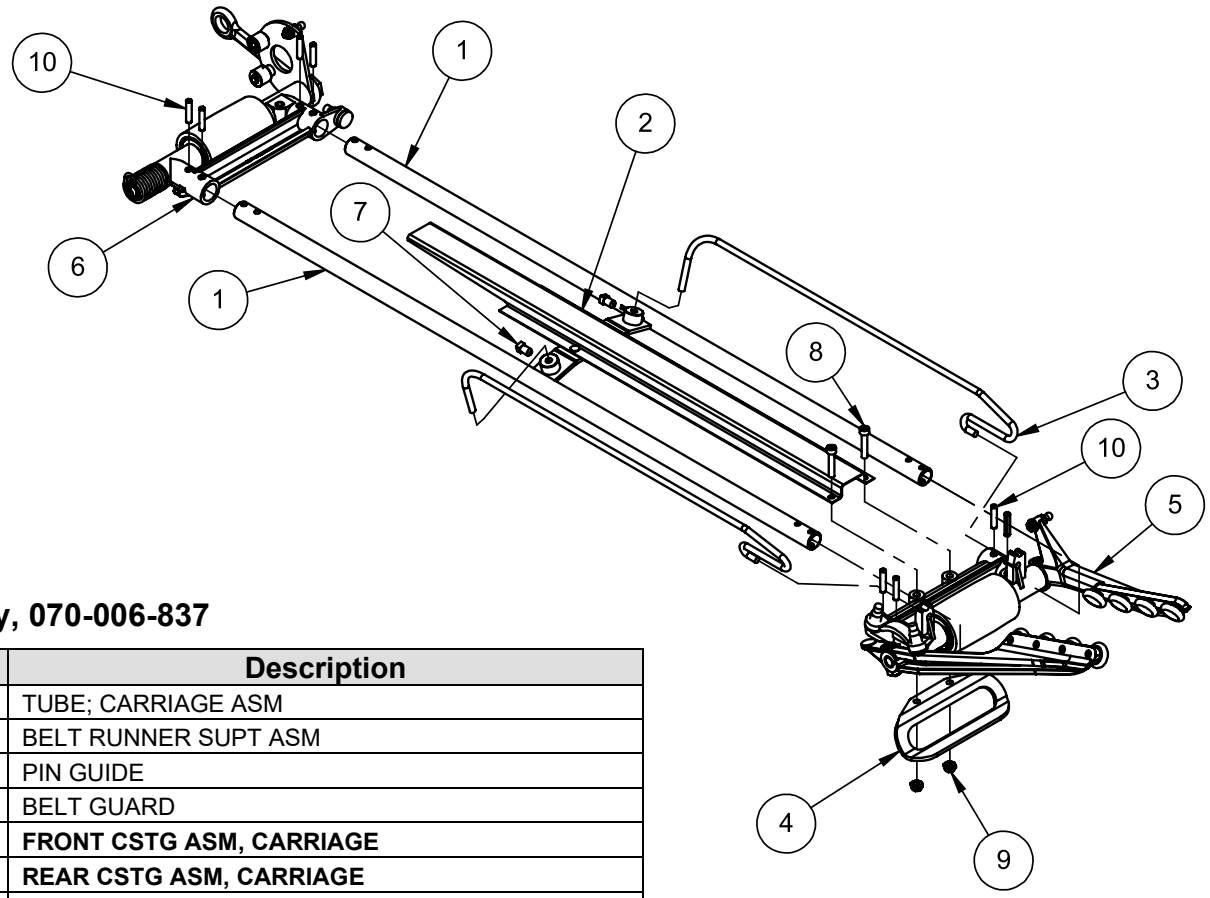
Trip Rod Assembly, 090-006-668

Item	Part Number	Description
1	070-006-691	STOP BLADES TRIP ARM
2	090-006-663	TRIP STOP ROD ASM
3	090-006-665	TRIP SUPPORT CASTING
4	701-712-097	BRG SPYRALIGN .38 X .61 X .43
5	809-849-125	HHCS 1/4-20 X 0.75 GR8 BO
6	809-849-165	HHCS 1/4-20 X 1.00 GR8 BO
7	844-049-002	HLN 1/4-20 CAD STV

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com



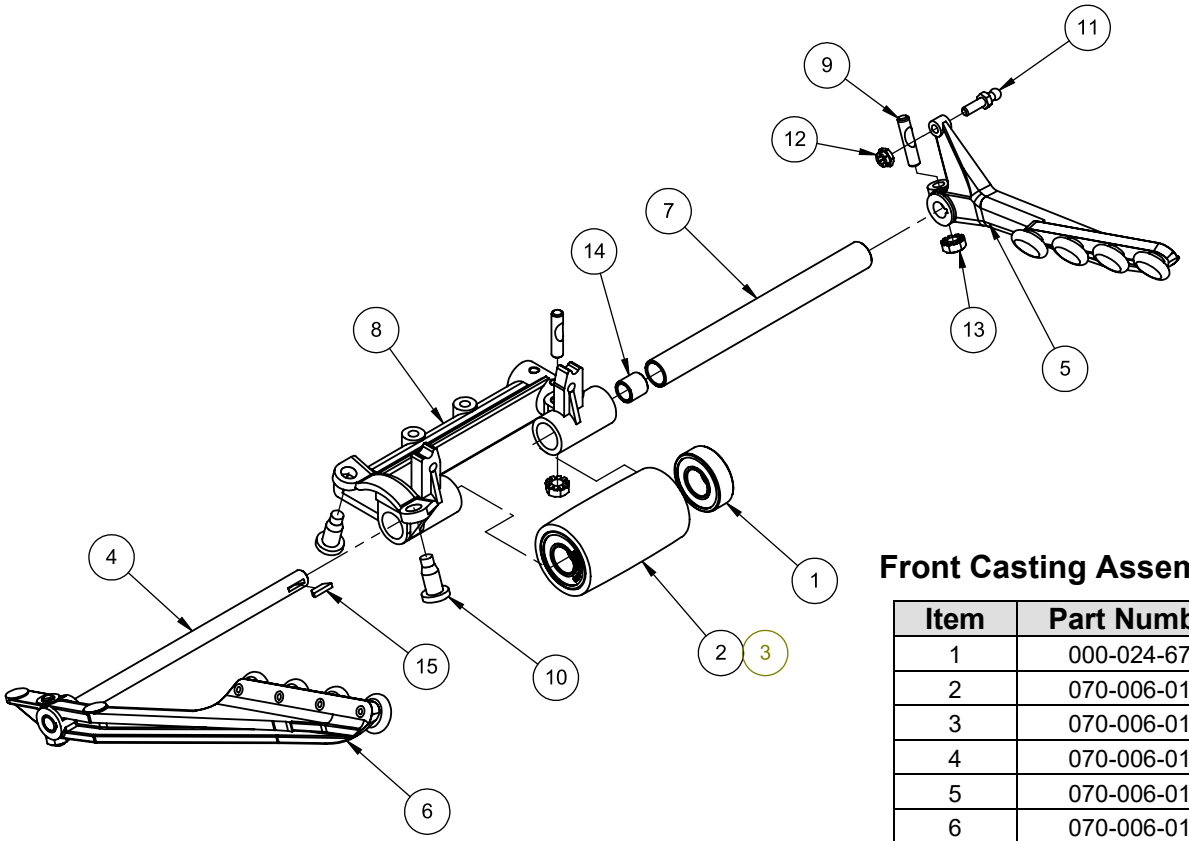
Front Carriage Assembly, 070-006-837

Item	Part Number	Description
1	070-006-004	TUBE; CARRIAGE ASM
2	070-006-009	BELT RUNNER SUPT ASM
3	070-006-013	PIN GUIDE
4	070-006-137	BELT GUARD
5	**070-006-832**	**FRONT CSTG ASM, CARRIAGE**
6	**070-006-833**	**REAR CSTG ASM, CARRIAGE**
7	806-249-060	QHSS 1/4-20 X 0.38 CUP BO
8	810-239-160	SHSCS 10-24 X 1.00 BO
9	840-039-002	HLN 10-24 FLX CAD L/T
10	913-437-140	PIN RL 0.19 X 0.88 NS

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com



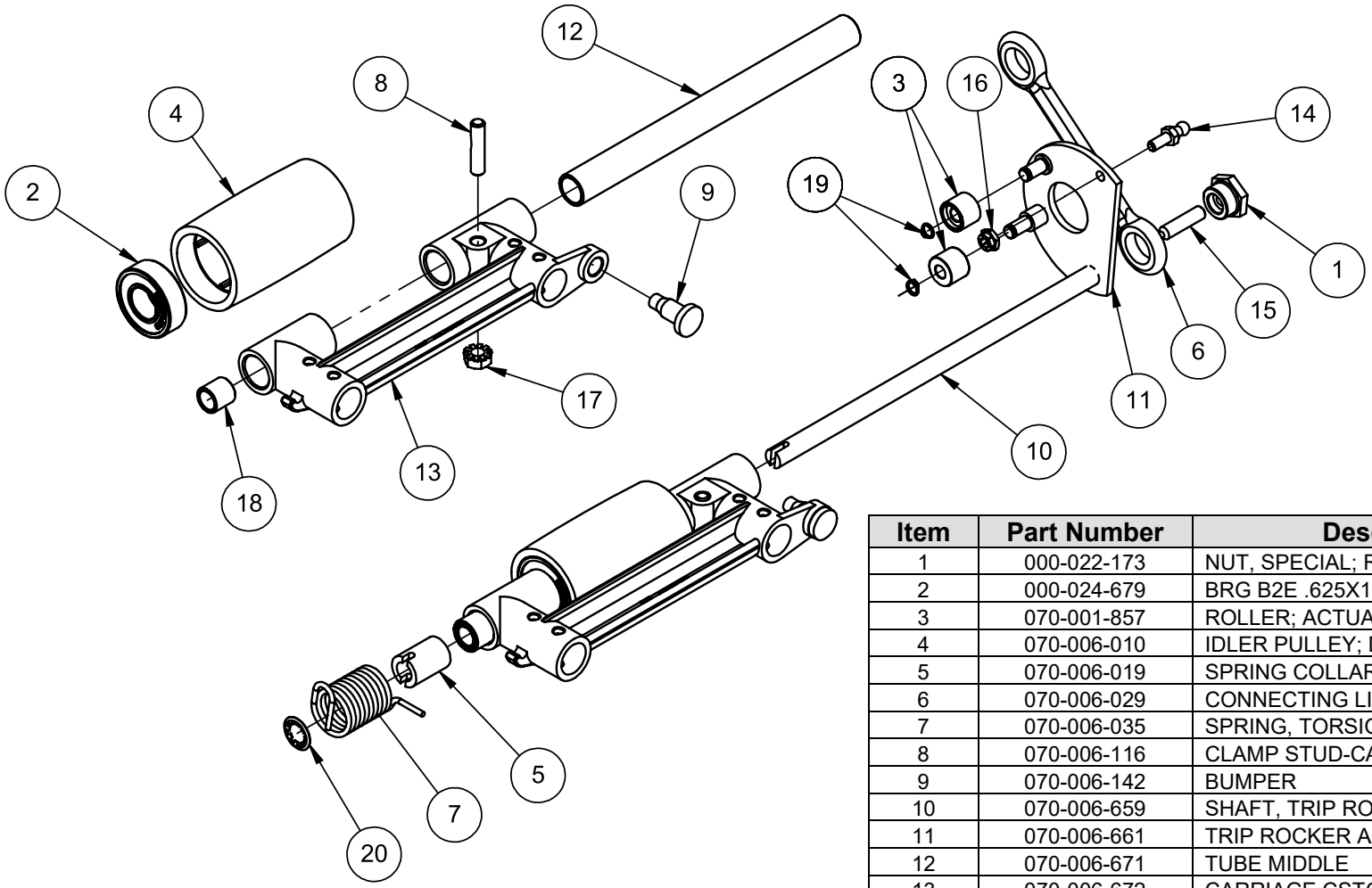
Front Casting Assembly, Carriage: 070-006-832

Item	Part Number	Description
1	000-024-679	BRG B2E .625X1.375X.433_99502H
2	070-006-010	IDLER PULLEY; DISTRIBUTOR
3	070-006-011	PULLEY ASSY (includes items 1 & 2)
4	070-006-014	SHAFT, TRIP ARM PIVOT
5	070-006-015	TRIP ARM ASSY, RH
6	070-006-016	TRIP ARM ASSY, LH
7	070-006-023	TUBE FRONT
8	070-006-055	CARRIAGE CASTING - FRONT
9	070-006-116	CLAMP STUD-CARRIAGE SUPPORT
10	070-006-142	BUMPER
11	090-004-111	STUD,BALL HD, #10-32 X .56
12	840-040-002	HLN 10-32 FLX CAD L/T
13	843-149-002	KN 1/4-20 ZN
14	900-106-081	BSH SV 0.38 X 0.50 X 0.50 BZ
15	907-000-100	KEY HP 0.09 X 0.50

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com

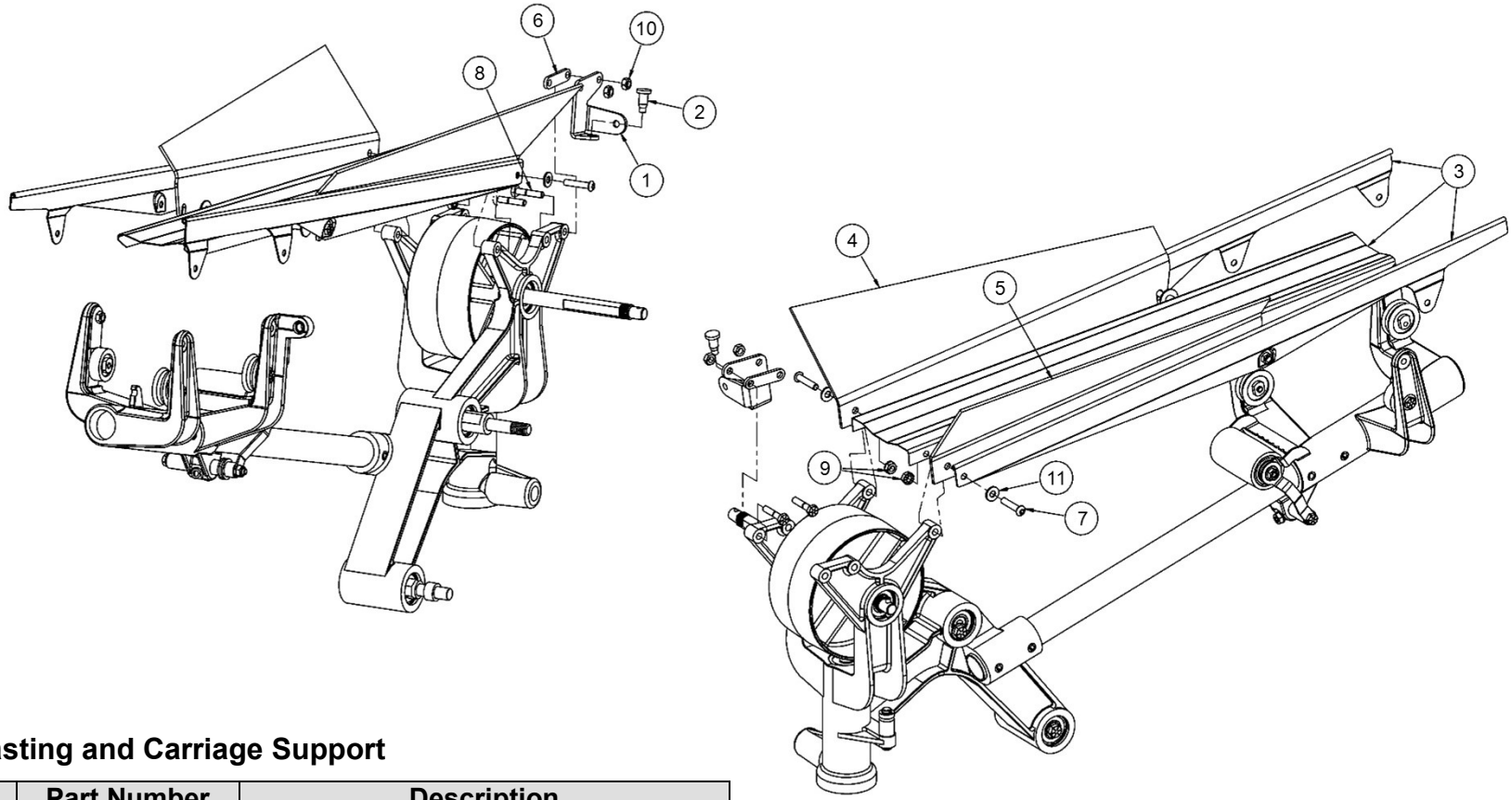


Item	Part Number	Description
1	000-022-173	NUT, SPECIAL; ROLLER DRIVE ASM
2	000-024-679	BRG B2E .625X1.375X.433_99502H
3	070-001-857	ROLLER; ACTUATOR ASY
4	070-006-010	IDLER PULLEY; DISTRIBUTOR
5	070-006-019	SPRING COLLAR, CARRIAGE ASM
6	070-006-029	CONNECTING LINK, CARRIAGE
7	070-006-035	SPRING, TORSION, TRIP ARMS
8	070-006-116	CLAMP STUD-CARRIAGE SUPPORT
9	070-006-142	BUMPER
10	070-006-659	SHAFT, TRIP ROCKER ARM
11	070-006-661	TRIP ROCKER ARM WELDMENT
12	070-006-671	TUBE MIDDLE
13	070-006-672	CARRIAGE CSTG REAR, DIST ASM
14	090-004-110	STUD,BALL HD, #10-32 X .44
15	807-249-160	SSS 1/4-20 X 1.00 CUP BO
16	840-040-002	HLN 10-32 FLX CAD L/T
17	843-149-002	KN 1/4-20 ZN
18	900-106-081	BSH SV 0.38 X 0.50 X 0.50 BZ
19	919-005-000	RNG SE 0.025 X 0.025 NS
20	919-006-800	RNG PE 0.375 X 0.042 NS RIN

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com



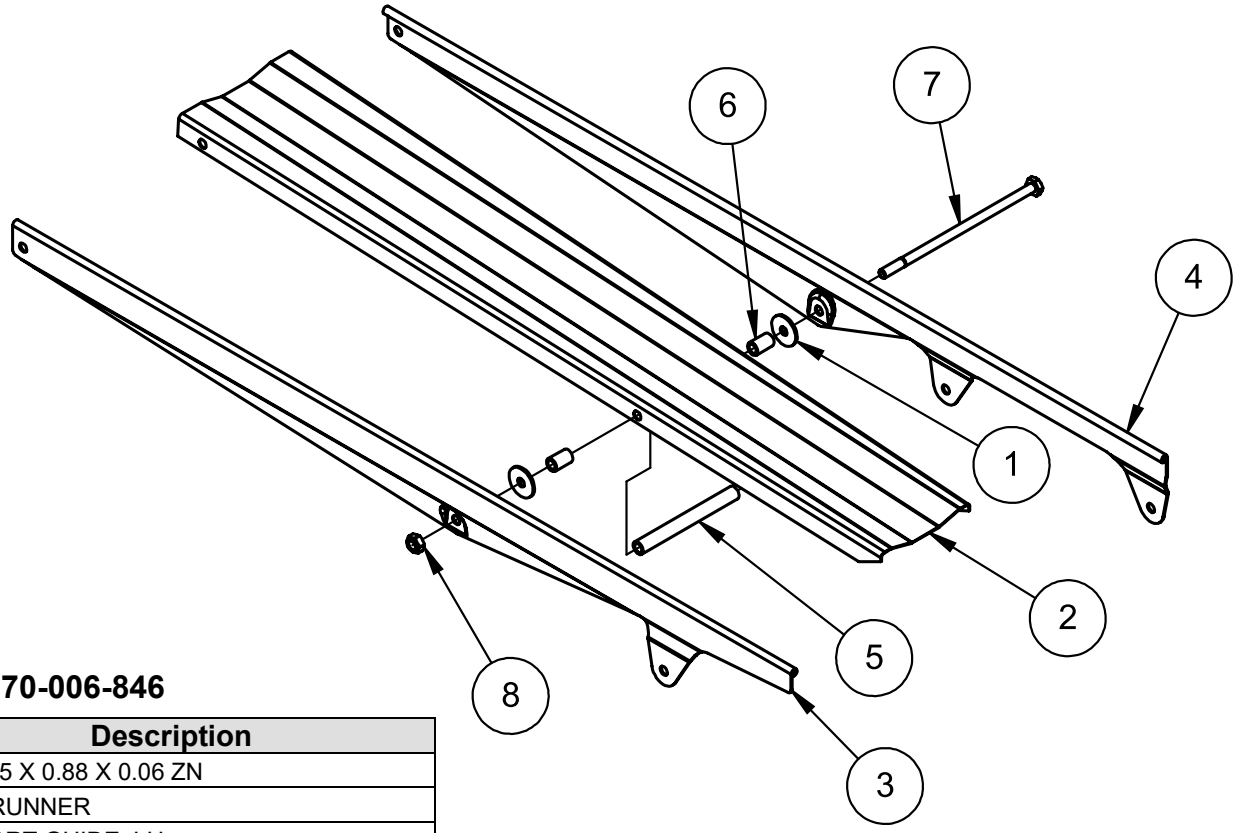
Main Casting and Carriage Support

Item	Part Number	Description
1	070-006-084	Trip Stop Support Bracket
2	070-006-142	Bumper
3	**070-006-846**	**Rear Belt Runner Assembly**
4	088-001-511	Distributor Funnel, 10-Pin Side
5	088-001-512	Distributor Funnel, 7-Pin Side
6	088-001-548	Trip Arm Spacer
7	808-549-200	Screw, Button Head, ¼-20 x 1¼
8	809-849-205	Screw, Hex, ¼-20 x 1¼,
9	843-149-002	Nut, Keps, ¼-20,
10	844-049-002	Nut, Stover Lock, ¼-20,
11	948-753-102	Washer, Flat, ¼

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com



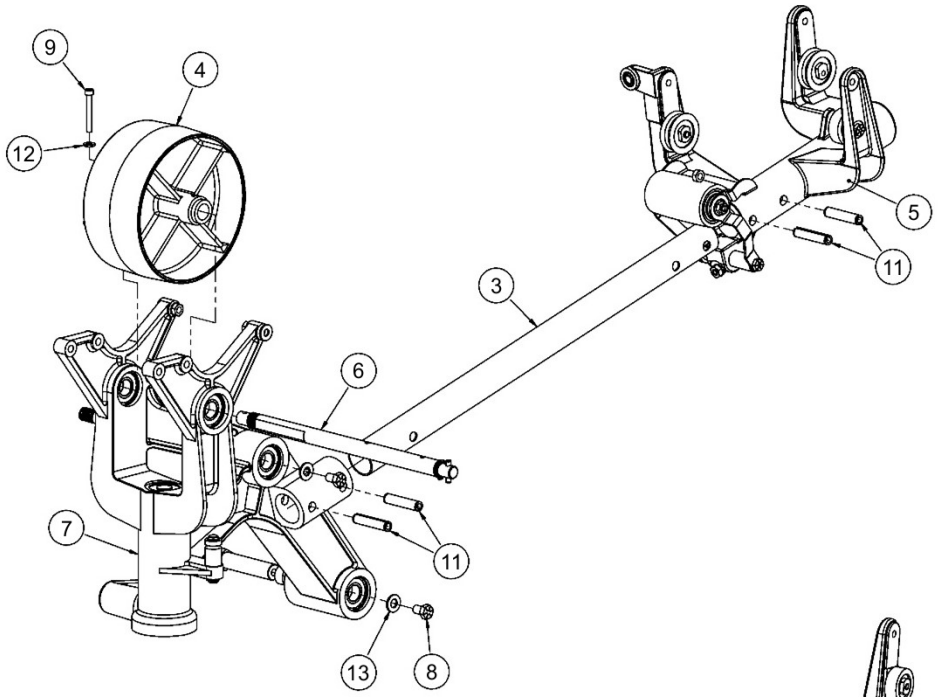
Rear Belt Runner Assembly, 070-006-846

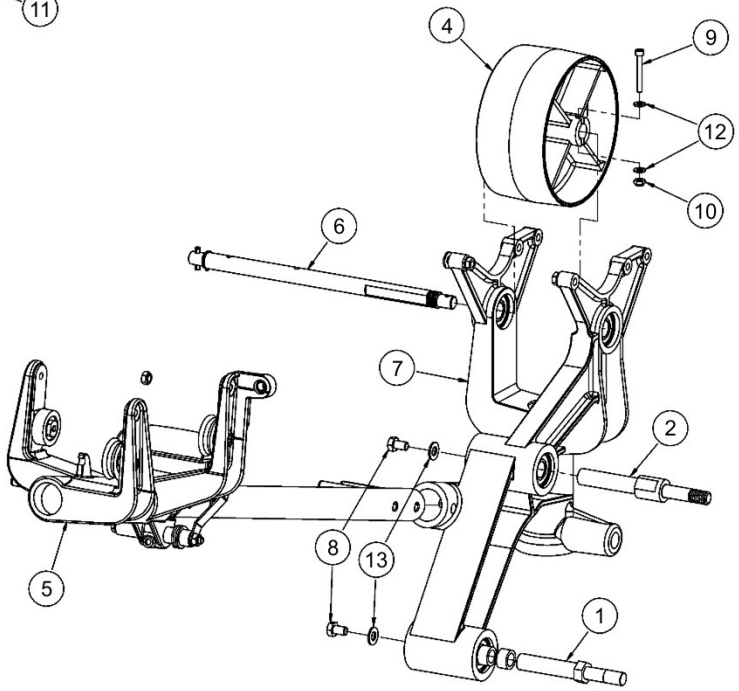
Item	Part Number	Description
1	000-026-865	FW 0.25 X 0.88 X 0.06 ZN
2	070-006-042	BELT RUNNER
3	070-006-103	SUPPORT GUIDE, LH
4	070-006-104	SUPPORT GUIDE, RH
5	070-006-139	SPACER, INNER-DIST.
6	088-001-578	SPACER, TSE OUTER DIST.
7	809-849-885	HHCS 1/4-20 X 5.50 GR8 BO
8	844-049-002	HLN 1/4-20 CAD STV

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com





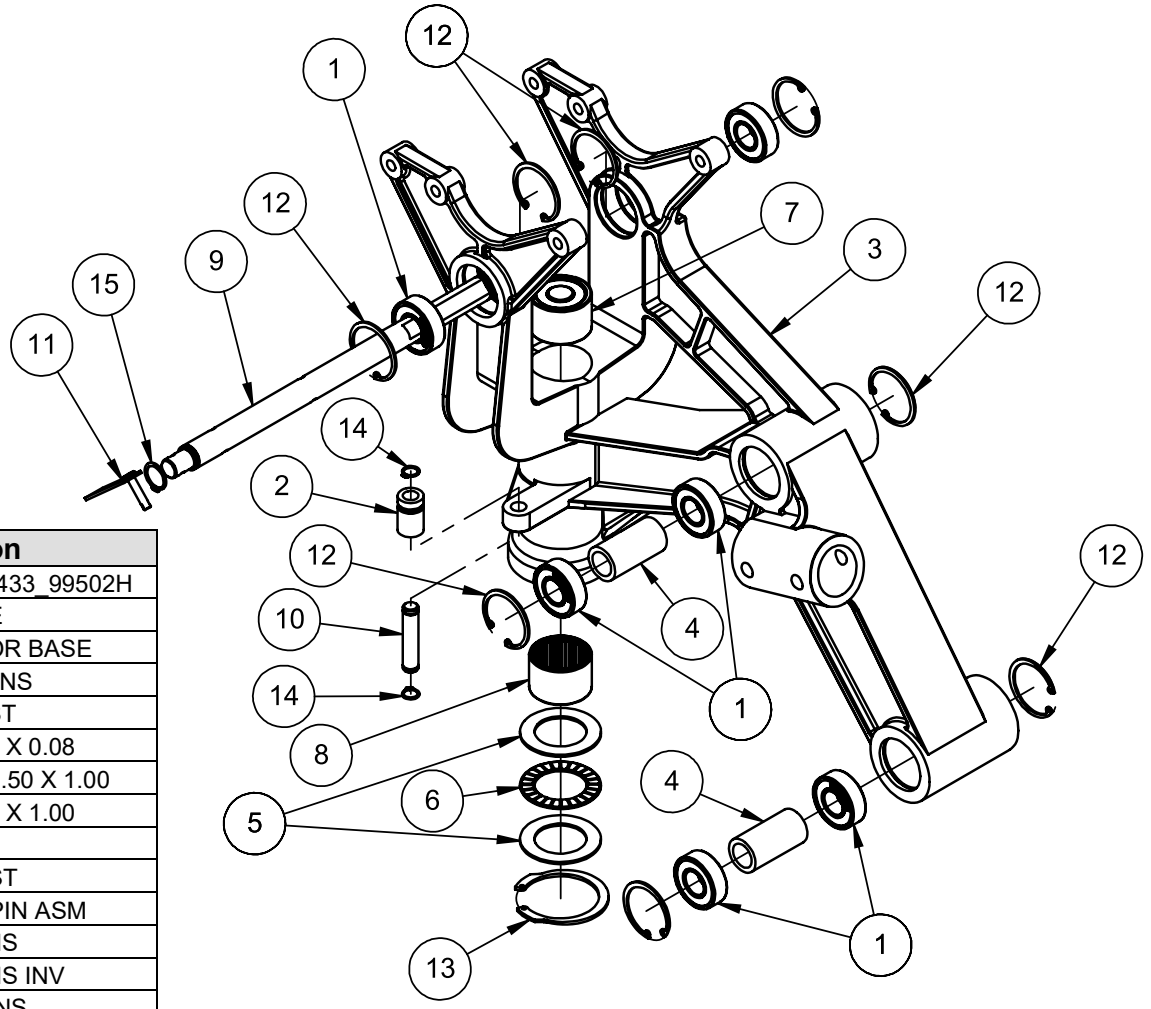
Main Casting & Shaft Assembly

Item	Part Number	Description
1	070-006-049	Arm Shaft
2	070-006-061	Cam Shaft
3	070-006-120	Carriage Support Tube
4	070-006-666	Belt Drive Pulley
5	**070-006-838**	**Front Support Assembly**
6	**070-006-841**	**Main Shaft Assembly**
7	**070-007-138**	**Main Casting Assembly**
8	809-857-080	Screw, Hex, 5/16-18 x ½
9	810-239-240	Screw, Socket Head, #10-24 x 1½
10	840-039-002	Nut, Flexloc, #10-24, Thin
11	913-464-280	Roll Pin, Steel, 3/8 x 1¾
12	948-745-082	Washer, Plain, #12 x 1/16 Thick
13	948-761-112	Washer, Flat, 5/16

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com



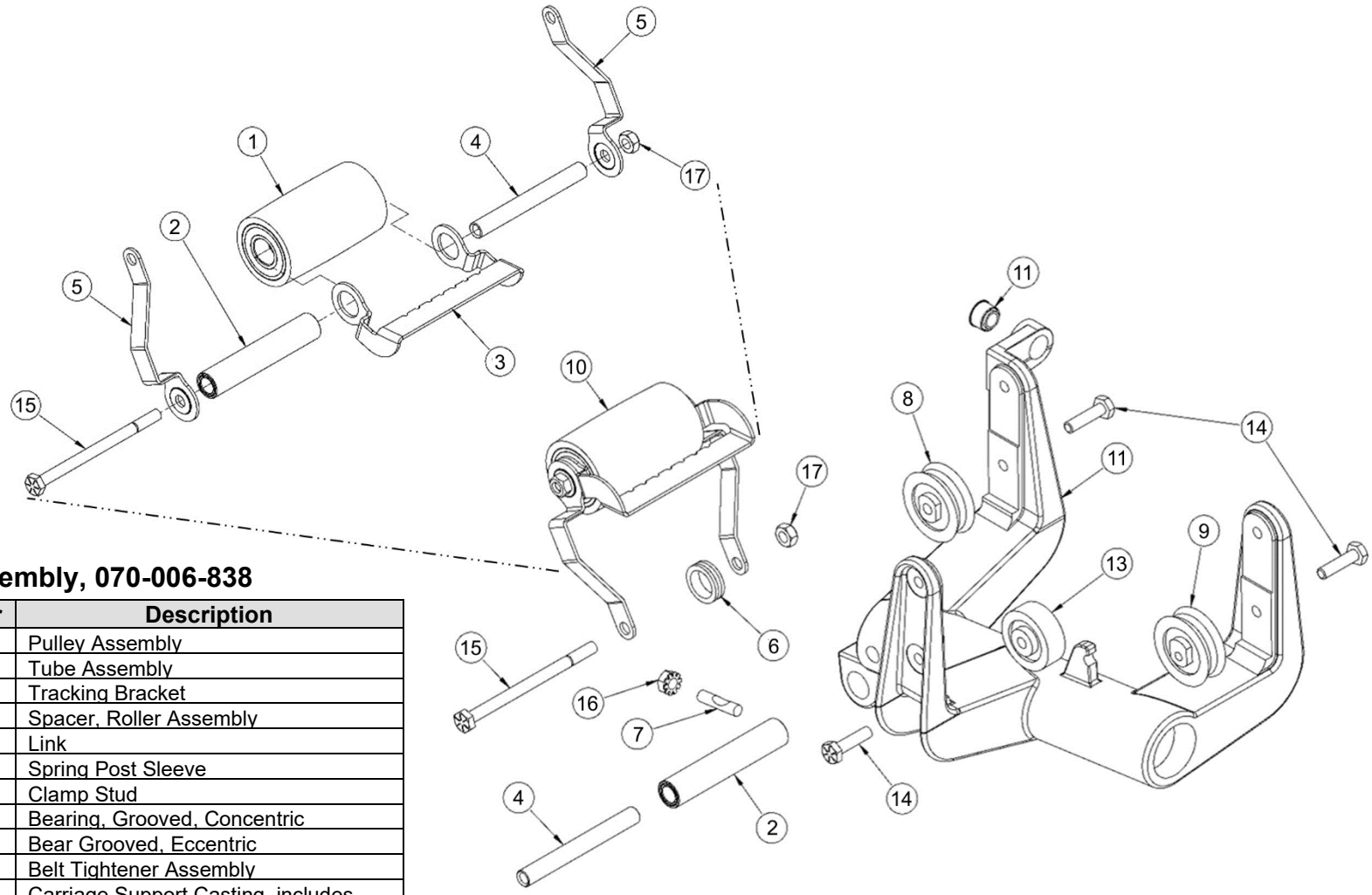
Main Casting Assembly, 070-007-138
Main Shaft Assembly, 070-006-841

Item	Part Number	Description
1	000-024-679	BRG B2E .625X1.375X.433_99502H
2	000-026-081	SPRING POST SLEEVE
3	070-006-053	CASTING, DISTRIBUTOR BASE
4	070-006-064	SFR 0.64 X 0.80 X 1.75 NS
5	070-006-073	WASHER THRUST, DIST
6	070-006-074	BRG R NDL 1.25 X 1.92 X 0.08
7	070-006-075	BRG RNDL CD 1.25 X 1.50 X 1.00
8	070-006-076	BRG R NDL 1.25 X 1.50 X 1.00
9	070-006-077	SHAFT-DRIVE-DIST
10	070-006-082	PIN, DIST SPRING POST
11	088-000-156	DISTRIBUTOR DRIVE PIN ASM
12	919-000-600	RNG SI 1.375 X 0.050 NS
13	919-004-200	RNG SI 2.625 X 0.093 NS INV
14	919-005-300	RNG SE 0.375 X 0.025 NS
15	919-005-600	RNG SE 0.625 X 0.035 NS

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com



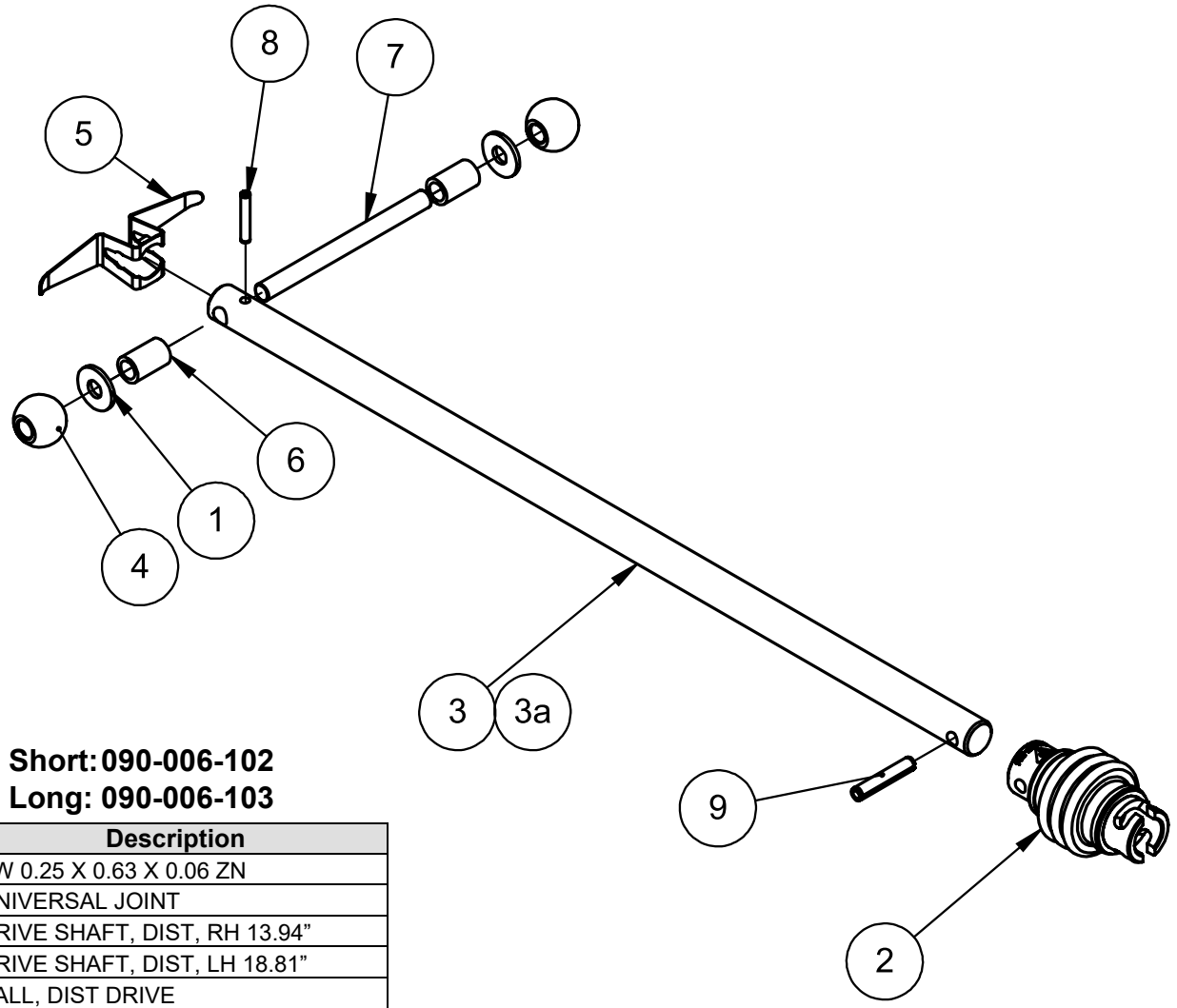
Front Support Assembly, 070-006-838

Item	Part Number	Description
1	070-006-011	Pulley Assembly
2	070-006-105	Tube Assembly
3	070-006-106	Tracking Bracket
4	070-006-108	Spacer, Roller Assembly
5	070-006-109	Link
6	070-006-111	Spring Post Sleeve
7	070-006-116	Clamp Stud
8	070-006-117	Bearing, Grooved, Concentric
9	070-006-118	Bear Grooved, Eccentric
10	070-006-160	Belt Tightener Assembly
11	070-006-688	Carriage Support Casting, includes
12	701-710-098	Spyralign Bearing, .313 Bore
13	701-849-124	Bearing, Threaded Bore
14	809-849-165	Screw, Hex, ¼-20 x 1
15	809-849-605	Screw, Hex, ¼-20 x 3-3/4
16	843-149-002	Nut, ¼-20, Keps
17	844-049-002	Nut, ¼-20, Stover Lock

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com



Drive Shaft Assembly, Short: 090-006-102
Drive Shaft Assembly, Long: 090-006-103

Item	Part Number	Description
1	000-029-073	FW 0.25 X 0.63 X 0.06 ZN
2	070-007-586	UNIVERSAL JOINT
3	090-002-018	DRIVE SHAFT, DIST, RH 13.94”
3a	090-002-017	DRIVE SHAFT, DIST, LH 18.81”
4	090-002-019	BALL, DIST DRIVE
5	090-002-034	BALL BEARING RETAINER
6	722-501-070	SFR 0.25 X 0.38 X 0.60 ZN
7	908-048-480	PIN DL 0.25 X 3.00 NS
8	913-423-120	PIN RL 0.13 X 0.75 NS
9	913-437-160	PIN RL 0.19 X 1.00 NS

WORLDWIDE HEADQUARTERS
8100 AMF Drive - Mechanicsville, Va 23111 - USA
Tel: (804) 730-4000 - Fax: (804) 559-8650

EUROPEAN HEADQUARTERS
Via della Croce Coperta, 15 - 40128 Bologna - Italy
Tel: +39 051.4192.611 - Fax: +39 051.4192.602

web: www.qubicaamf.com - email: info@qubicaamf.com - eshop: eshop.qubicaamf.com