

Model FT-15-RD Centrifugal Feeder

ANSI/Metric Installation & Maintenance Manual

Refer all servicing to qualified personnel.

This manual is intended for use by qualified mechanics and electricians who install or service the Hoppmann FT-15-RD Centrifugal Feeders.

Use this manual for the FT-15-RD ANSI or Metric style Centrifugal Feeders, cold rolled steel or stainless steel, single or dual drive systems, with serial numbers higher than 18306, or manufactured after October, 1996.

Do not use this manual for the following models: FT-15-1 or FT-15-AC.



Record your serial plate information here for future reference →

Model Number	Serial Number/Date

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Quick Start

About this Manual

Assumptions

This manual is written for qualified mechanics and electricians who install or service the Hoppmann FT-15-RD Centrifugal Feeders. All procedures in this manual should be performed by qualified personnel.

- References in this manual may not apply to your centrifugal feeder. In some cases, your direct supplier may have modified or replaced some of the standard components of the feeder on which these procedures are based. In such cases, you may need to slightly modify these procedures. If you are unsure which standard components of your FT-15-RD feeder (if any) have been changed, consult your direct supplier's documentation.

Models Covered

This manual covers all FT-15-RD models in ANSI or Metric, stainless steel, single or dual drive. If you are unsure which model you have, locate the inventory number on the serial plate of the feeder.

Caution Symbols & Messages

Caution symbols and messages in this manual call attention to hazardous voltages, moving parts and other hazardous conditions. Please understand what the different warning labels and indicators refer to and how to avoid possible injury and/or damage to personnel and equipment.



The exclamation point caution symbol denotes possible personal injury and/or damage to the equipment.



The lightning bolt caution symbol denotes possible personal injury and/or damage to the equipment from electrical hazards.

Equipment Improvements & Document Revisions Notice

Shibuya Hoppmann Corporation continually improves its products, and reserves the right to change or discontinue specifications and designs shown in this manual without notice and without incurring obligation. Shibuya Hoppmann Corporation has made every effort to verify the information contained in this manual, but reserves the right to correct any error at the time of the manual's next revision. 11.2013.

What to Do First

As-Built Documentation This manual does not contain as-built documentation. As-built documentation is provided by your direct supplier. If you purchased your tooled feeder directly from Shibuya Hoppmann, you will automatically receive this information in your System Operations Manual.

Tools You Will Need The FT-15-RD feeders are offered in both ANSI and metric versions. For maximum compatibility, ANSI units are classified as "soft ANSI" construction, meaning that metric threads and hardware are used throughout. Both metric and ANSI units require metric tools for repair or adjustment. If your direct supplier tooled your feeder with (SAE) hardware, you will need standard tools as well.



If the feeder has been tooled by your direct supplier, any part of the feeder that touches your product has been tooled for your product. Avoid making any adjustments to the tooling, moving the tooling could adversely affect the performance of your tooled feeder.

Terms and Definitions

<u>Term</u>	<u>Equivalent Term, Definition or Abbreviation</u>
Feeder	Centrifugal Feeder, Sorter, Bowl, Unscrambler, Orienter, Rotary
"FT"	Feeder Tangential
"-RD"	Rigid Disc
Tooling	Mechanical and optical devices used to help orient products in the feeder bowl. May include: sensors, height qualifiers, wipers, air jets, etc.

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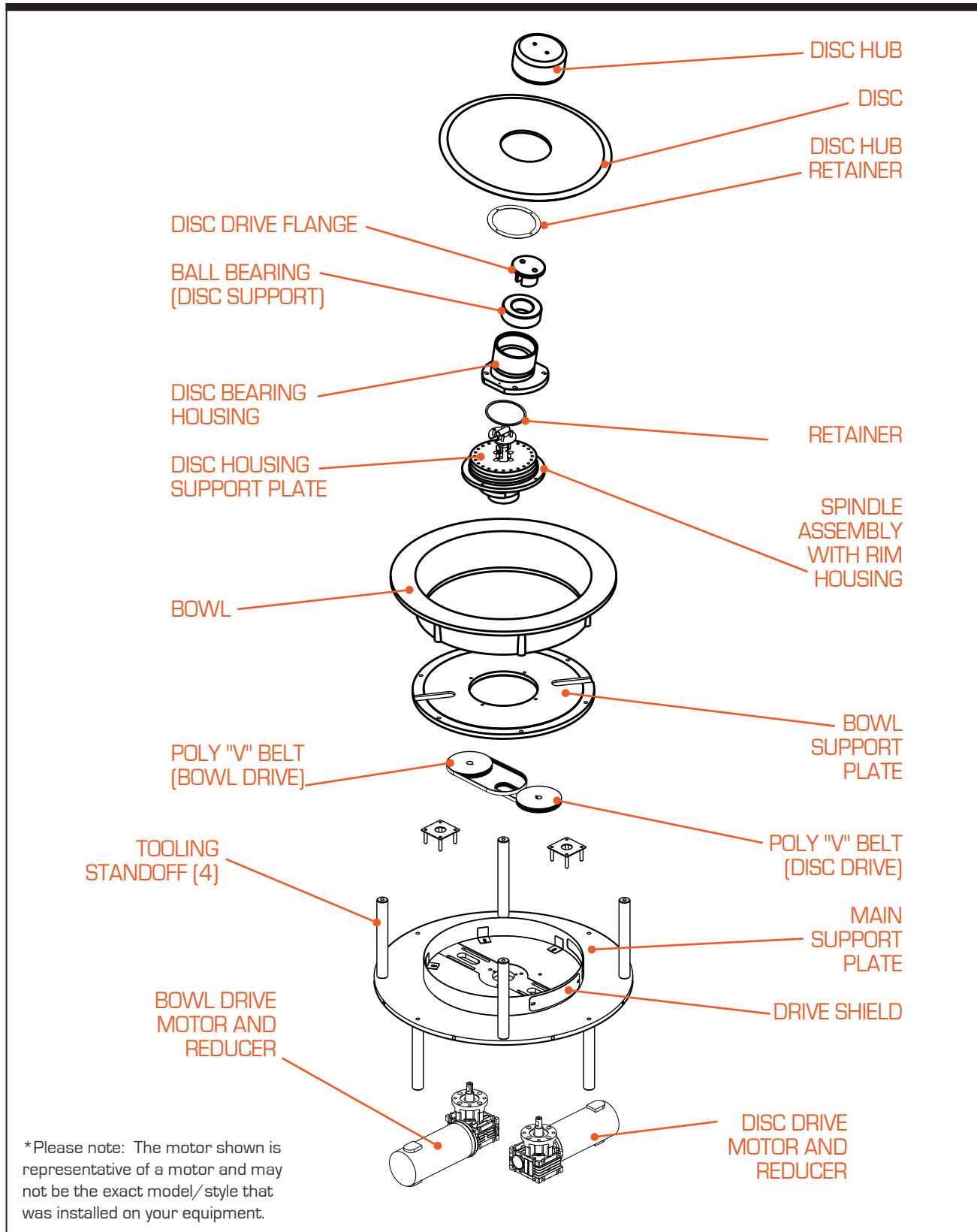


Figure 1-1. Typical FT-15-RD Dual Drive Feeder - Exploded View

Feeder Description & Specifications

1

Overview of the FT-15-RD

The Hoppmann FT-15-RD feeder is easy to use, easy to maintain and will easily handle your product quietly and rapidly. Each centrifugal feeder unscrambles, orients and feeds product. (Refer to Figure 1-1 for an exploded view of the FT-15-RD feeder).

Function The delivery rate varies depending on product characteristics. The feeder easily interfaces with Shibuya Hoppmann's prefeeders, accumulating conveyors and assembly equipment. (See to Figure 1-2 for the FT-15-RD product specifications.)

Operation **Step 1—The Feeder Accepts Your Product.** Every feeder accepts product from a separate bulk supply hopper or prefeeder. Product drops randomly, a few at a time, onto a rigid disc.

➔ It is recommended that you carefully meter product into the bowl a few parts at a time, rather than emptying, in bulk, directly into the feeder bowl. Once the feeder has received parts, it should start delivering singulated parts almost immediately.

Step 2—The Feeder Loads and Qualifies Your Product.

Product is metered into the bowl, dropping onto the rigid disc, and loaded onto the rim for singulation and qualification. The rim moves the product past mechanical, pneumatic and/or optical qualifiers. Improperly oriented product is rejected, and returned to the reservoir area of the bowl for recirculation.

Step 3—The Feeder Delivers Your Product. Next, product moves off the rim and out of the centrifugal feeders, in proper orientation, for delivery to downstream operations.

Specifications of the FT-15-RD

Standard Features The FT-15-RD is standard with all stainless steel exterior construction, a square tooling frame, an FDA approved ABS vacuum formed disc, and a Teflon® hard-coated finished aluminum bowl.

Optional Features The FT-15-RD feeder can be easily integrated with polycarbonate covers (safety covers), washdown motor(s), a dual motor drive system, and a variety of controllers and operating systems.

Specifications Please refer to the tables below for FT-15-RD specifications:

Performance Specifications	ANSI	Metric
Maximum Bowl Linear Speed (@ Rim ID) ¹	375 Ft/min	114 M/min
Vertical Bowl Runout (Maximum)	± 0.005"	± 0.127mm
Vertical Disc Runout (Maximum)	± 0.015"	± 0.381mm

Table 1-1. FT-15-RD Performance Specifications

Electrical Specifications	DC	AC
Motor Size	1/5hp	1/4hp
Motor Frame Size	IEC 63	IEC 63
Supply Voltage	90 Volts	230/460V
RPM	1800	1800
Power Usage	2.1 Amps	1 Amp

Table 1-2. FT-15-RD Electrical Specifications

¹ Maximum speed is not the operating speed. This is provided as a reference value only.

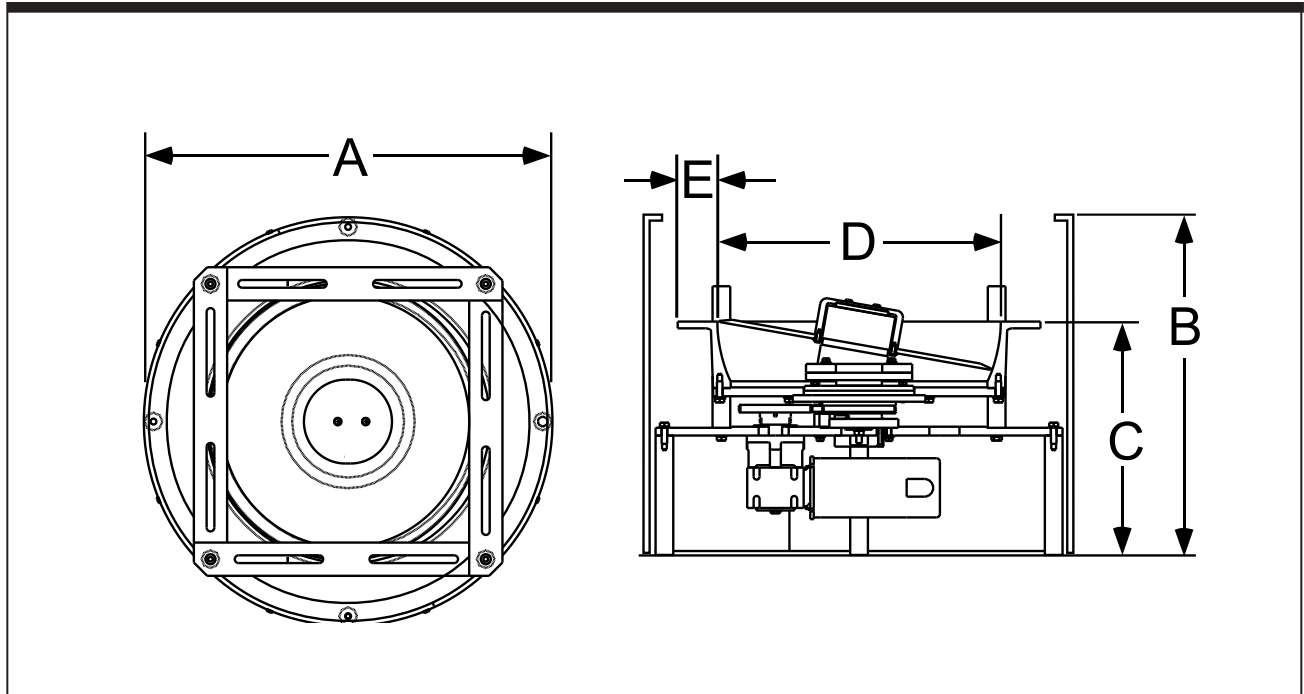


Figure 1-2. FT-15-RD Side and Top Views (Single Drive Shown)

Dimension Specifications		ANSI	Metric
A	Overall Diameter	24"	610mm
B	Overall Height	18" ± 1"	457 ± 25mm
C	Discharge Height	13" ± 1"	330 ± 25mm
D	Bowl Inner Diameter	16"	405mm
E	Rim Width	2.25"	57mm
F	Level Foot Adjustment (Height)	± 1.0"	± 25mm
Disc Diameter		15.795"	393mm
Disc-Bowl Gap		≈ 0.030"	≈ 0.762mm
Overall Weight (Untooled)		≈ 134 lbs.	≈ 61 kg

Table 1-3. FT-15-RD Dimension Specifications

Notes

Safety Precautions

2

Safety Precautions

Hoppmann Feeders are designed to be as safe as possible for operators. However, even well-built machines can be installed or operated in a hazardous manner. Safety precautions must be observed by users.



Turn Off Power and Air. Before performing maintenance on the machine, ensure that power and air cannot be accidentally turned back on. Padlock and clearly tag the main electrical and pneumatic disconnect(s) before adjusting or replacing changeover parts or performing maintenance. Lockout/tag-out procedures are covered in United States Code of Federal Regulation (CFR) Title 29 Part 1910.147, "The Control of Hazardous Energy."



Dress Appropriately! Reduce the risk of injury from moving parts by securing loose sleeves and other clothing. Do not wear loose jewelry or neckties near the feeder. Wear safety glasses or other protective eye wear when servicing the feeder.



Install Safety Guards! Make sure the feeder remains safe to operate. Be sure all safety guards have been installed before returning the feeder to normal operation. Safety guards on the Centrifugal Feeder include any guards (which protect the operator from the moving bowl spider, sprockets and chains). Before feeder operation, secure all safety covers. Most safety covers are electrically interlocked, and will prevent the machine operation if disengaged.



Avoid Moving Parts. Never place anything in the machine except the handled part(s) for which it was designed. Never put your hands, tools, or other objects into the machine.

Operating & Maintenance: Do's & Don'ts

Don't Give the Feeder Too Much Product. Do not overfill the feeder, because it may jam or lose rate. Bulk product should be metered into the feeder. Allow only enough product into the feeder to keep the line running at the required rate.

Don't Run the Feeder Too Fast. Do not run the bowl faster than the linear feet per minute recommended by your direct supplier. If you do, the orientation qualifiers can not do their job as efficiently, and the feeder may jam or lose rate.

Don't Adjust Air Jet Flow Controls. It is okay to adjust the main air regulator to its correct setting for your installation. However, air jets and their individual flow controls have all been carefully preset to work with your product; they should never need adjustment. If you move air jets or adjust their individual flow controls, the feeder may jam or lose rate.

Do Perform Preventive Maintenance. To keep the feeder running without unexpected repairs and resulting downtime, regularly perform the preventive maintenance procedures in Chapter 4.

Do Carefully Replace Any Tooling You Remove. To gain access for repairs, you may need to remove tooling. Because Shibuya Hoppmann and your dealer or OEM have no control over such activities, they can not be responsible for any tooling you remove.



Carefully document the position of any tooling before you begin. If you fail to replace all tooling exactly as it was, you may create difficult and time consuming problems.

Don't Operate the Feeder Near Flammable Gas, Vapor or Dust. Do not install a feeder in these conditions unless you install additional, approved explosion-proof or dust ignition-proof enclosures. Without such additional enclosures, normal sparking of the brushes inside the motor could ignite flammable gas, vapor or dust.

Do Replace Failed Bearings in the Spindle Assembly. The spindle assembly should only be taken apart to replace a failed bearing. Follow the procedures in Chapter 5 for bearing replacement.

Installation & Start-Up

3

Included in this Chapter

Follow, in order, each section of this chapter to install any fully tooled FT-15-RD feeder. For your convenience, Table 1-2 in Chapter 1, shows electrical specifications for your feeder and suggested wiring.

Unpacking, Inspection and Registration



Step 1— Inspect and Unpack the Crate. Remove packing materials from sensors, tooling and moving parts. Make a visual check to be sure parts have not come loose during shipping. If you find any concealed damage, call the shipping carrier and your direct supplier immediately. **Do not attempt to fix the problem yourself unless told to do so by your direct supplier.**

Step 2—Record Serial Numbers. For future reference and assistance in ordering parts, record on the front of this manual the feeder's model and serial number.

Physical Setup

You should refer to as-built drawings (not part of this manual) for electrical, pneumatic and equipment layout specifications.

Step 1—Position the Feeder. Place the feeder as shown on the equipment layout drawing provided by your direct supplier.

Step 2—Level the Feeder. Level the machine by adjusting the leveling feet. Tighten the locknuts on the leveling feet.

Step 3—Connect the Output Device. Check that product can move smoothly from the exit of the feeder to your output device (deadplate, conveyor, gravity track or powered rollers, for example). Check that product will not jam or lose their orientation as they move to the output device.

Step 4—Position the Prefeeder. Now place your bulk supply hopper, or prefeeder, into position. Follow the equipment layout drawing provided by your direct supplier, or the feeder may not operate correctly. [If you are providing and integrating a prefeeder, continue reading the step below.](#) [If your direct supplier is providing and integrating both your feeder and prefeeder, skip to Step 5.](#)

If you are supplying your own prefeeder, you are responsible for:

- ➔ Providing and installing the feeder's bowl level switch so it can control the flow of your prefeeder.
- ➔ Setting the timing delay for the feeder's bowl level switch.
- ➔ Correctly positioning the prefeeder. Generally, the prefeeder should discharge product to fall on the rigid disc, halfway between the center of the bowl and the outside diameter. Take a handful of product and drop them from the chute of your prefeeder into the feeder. [Avoid dropping product](#) so that it bounces up off the rigid disc onto the rim of the bowl, which could knock off product that are already loaded. You may need to position the prefeeder again, if necessary, once the feeder is running.

Step 5—Connect Electrical Supply and Air. Connect your feeder to electrical supply and compressed air (if applicable).

Starting the Feeder for the First Time

Step 1—Secure Safety Covers. Before turning on power and air, make sure safety covers are in place and that you are dressed appropriately for safety.

Step 2—Check for Rubbing Parts. Turn the feeder bowl by hand. In the unlikely event that you hear any unusual noises, discontinue immediately and check in and around the bowl for any foreign objects causing the noise (for example, check between the backup ring and the rim of the bowl.)

Step 3—Turn on Power and Air. Turn on the feeder's power. If applicable, turn on the feeder's main air regulator.

How to Set Proper Bowl and Disc Speed

Ask your direct supplier for the actual speed at which the bowl should rotate. For reliability, set the bowl to match that speed.

- ➔ You will need a hand-held tachometer (analog or digital) with a surface speed wheel indicator (see Figure 3-1).
- ➔ This procedure is performed with power on and the feeder operating. If your direct supplier has installed a cover over the bowl, you will need to open it before proceeding.

Step 1—Turn on Feeder. Turn on the feeder and run it without product.

Step 2—Set Bowl Speed. To set **bowl speed**, place hand-held tachometer (with surface speed indicator attachment) on the inner wall of the moving bowl, at its most upper inside diameter. Adjust bowl speed until bowl is moving at correct number of linear feet per minute (FPM).

- ➔ If you have only one drive motor installed (standard) you can ignore the rigid disc speed, which changes proportionally as the bowl speed changes.

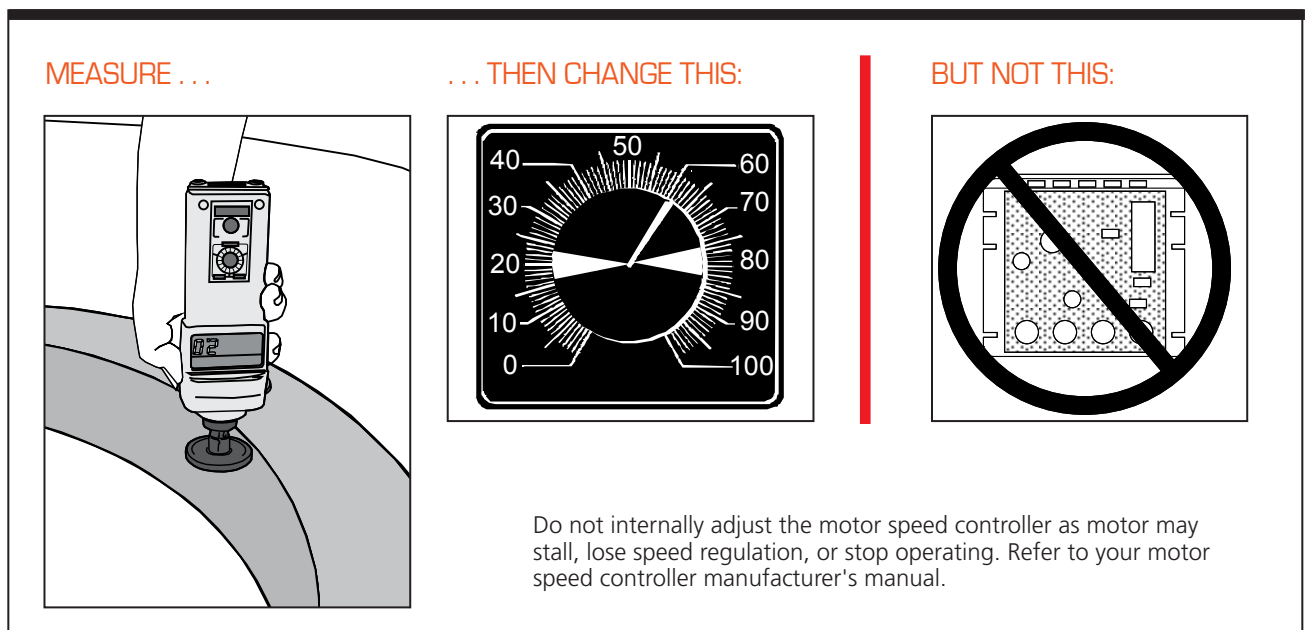


Figure 3-1. Measurement and Changes to Bowl Speed

- ➡ If your feeder has dual drive motors installed, after you complete the procedure to set the bowl speed (see previous step), measure the disc speed in RPM at the center of the disc using your hand held tachometer with the appropriate attachments.

Step 3—Record New Settings. Turn off the feeder. Mark dial plate with new setting and remove any old marks.

Running Product for the First Time

Step 1—Verify Changeover Setup. If your feeder is tooled to run multiple parts, ensure the feeder is set up for the product you want to run.

Step 2—Inspect Product at Exit. Inspect the exit of the feeder. If product is exiting the feeder properly oriented, at the required rate and without jamming, then installation is complete. Otherwise, continue with Step 3. Do not adjust the flow controls on air jets.

Step 3—Verify Prefeeder Speed. Normally this step is completed by your direct supplier. However, if you are separately providing and integrating the prefeeder, you will have to set the prefeeder's speed. To do this, turn the prefeeder's speed control all the way down, then turn on the feeder.

- ➡ Slowly (you may need to take several minutes) raise the prefeeder's speed control until enough parts exit the feeder to keep the line running at the required rate. **Excessive output may overload the feeder and reduce its output.**



General Tips

- ➡ After your feeder is set up and running, observe the flow of product at each transition point. Later, if a problem occurs, observe these transition points to help pinpoint the cause.
- ➡ Listen to the way the feeder sounds when it is running properly. If it suddenly sounds different, investigate why.

Preventive Maintenance

4

General Cleaning

Autoclavable Models

Models that are autoclavable have removable bowl and disc to be placed in an autoclave. All other components in the feeder, including the motor, are not rated for autoclave or washdown duty.

Food Grade Models

Foodgrade models are intended (and rated) for washdown duty.

Standard Models

The standard FT-15-RD Hoppmann™ Centrifugal Feeder is not intended for washdown use. To clean the outer frame, the rim of the bowl, the rigid disc or tooling, use mild, non-abrasive household cleaners. Cycle the machine as necessary so that all areas are cleaned. Next, use a clean cloth dampened only with water. Immediately wipe any damp surface with a dry cloth.

Clean Safety Covers

If your feeder has any attached polycarbonate safety covers, we suggest using a clean cloth, lightly dampened, to clean the material. While polycarbonate is extremely strong, it scratches easily, and can be fogged even by mild non-abrasive cleansers.

Tip

To minimize scratches on polycarbonate safety covers, use a mild automobile polish and/or a microfiber cloth or chamois cloth.



Avoid using abrasive cleansers, strong cleaning solutions or industrial solvents on the outer frame, the rim of the bowl, the rigid disc, tooling or safety covers, as they may be permanently damaged.

"Dusty" Applications

If your parts generate dust or particulate when handled, you'll need to clean the feeder as often as necessary. For such parts, remove the dust from the top surface of the rim of the bowl and the disc with a portable vacuum cleaner or dry compressed air.

Inspect/Replace Motor Brushes



The following procedure applies only to DC motors and should be performed only by qualified personnel.



Step 1—Gain Access. Before gaining access to the feeder motors, disconnect power and air. **Completely lock and tag out the feeder.** Remove feeder guards and covers as needed to gain access to the motor. Then remove the motor brush access covers.

Step 2—Clean the Motor. Clean the motor by blowing into the open access hole with compressed air.

Step 3—Replace Brushes. Lift the brush spring from the end of the brush (see Figure 4-1). Remove the brush connector, withdraw the brush and inspect the length. To prevent motor damage, brushes should be replaced when or before they reach a length of 0.575" (15 mm). New brush length is 1.03" (26 mm). Reverse procedure to replace brush. Replace motor access and feeder covers.

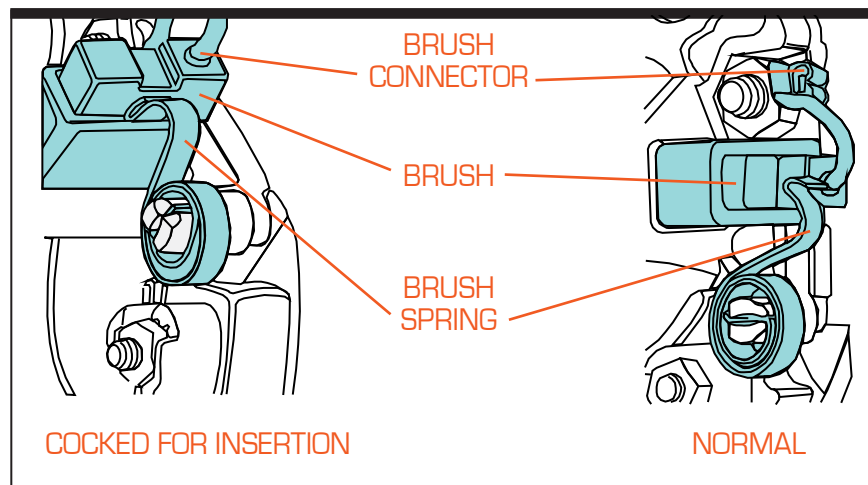


Figure 4-1. DC Motor Brushes with Gasketed Cover Removed

Reducer Seals Replacement

The speed reducer uses seals which may need to be replaced. Follow the steps below to replace the seals on the reducer:

Step 1—Remove the Worn Seal. Remove the worn seal without damaging the shaft surface of the seal bore. This can be done by drilling a .062 diameter hole in the seal casing (being careful not to drill into the bearing behind the seal). Screw a #10 sheet metal screw into the hole and pry out the seal.

Step 2—Clean the Seal Bore of Sealant. Make sure that the seal bore is free of debris and old sealing compound.

Step 3—Cover Keyways. Before installing the new seal, use electrical tape to cover any keyways on the shaft to prevent seal lip damage.

Step 4—Grease Seal Lips. Grease the seal lips with bearing grease, and apply a sealant to the seal bore.

Step 5—Replace Seal. Slide the seal into the shaft being careful not to fold the inner lip over on any shaft steps.

Step 6—Press Seal into Bore. Press the seal into its bore with a sleeve that presses on the seal casing, being careful to keep the seal square in its bore.

Notes

Repair and Troubleshooting

5

Refinishing, Replacing or Adjusting the Bowl

Before making substantial changes to your feeder (refinishing the bowl, removing or replacing the bowl, etc.), please check with your supplier or Shibuya Hoppmann Corporation. At times it may be necessary to remove parts of the system (tooling, air jets, safety covers, etc.), and you may need to document locations in order to put them back in their proper order for correct feeder function.

Replacing or Refinishing a Standard Bowl

If the standard bowl becomes damaged in a way that adversely affects the feeder performance the bowl may be refinished or replaced.

- ➔ Machining must be done in such a way that bowl runout is restored to original tolerances, or the feeder may not operate correctly.
- ➔ The inner wall of the bowl should not be machined because the slightly enlarged gap between the disc and the inner wall of the bowl may pinch or snap product. If the inner wall of the bowl is damaged in a way that interferes with orientation, you must replace the bowl. (Refer to Figure 5-1 on the following page for machinable bowl surfaces).
- ➔ Check that all covers are in place before running the feeder after refinishing or replacing the bowl.

Adjusting Belt Tension

The drive belt(s) should be inspected about once a year. To properly tension each belt, attach a spring tension gauge to the belt midway between the pulleys. It is recommended that belt tension be 0.07" (1.8mm) at 1.6 pounds (1Kg) for both belts.

Properly belt tension is important to the life of the bearings. If the belt is too tight, it puts too much load on the bearings, which can lead to early bearing failure. If the belt is too loose, either the bowl or disc may slip.

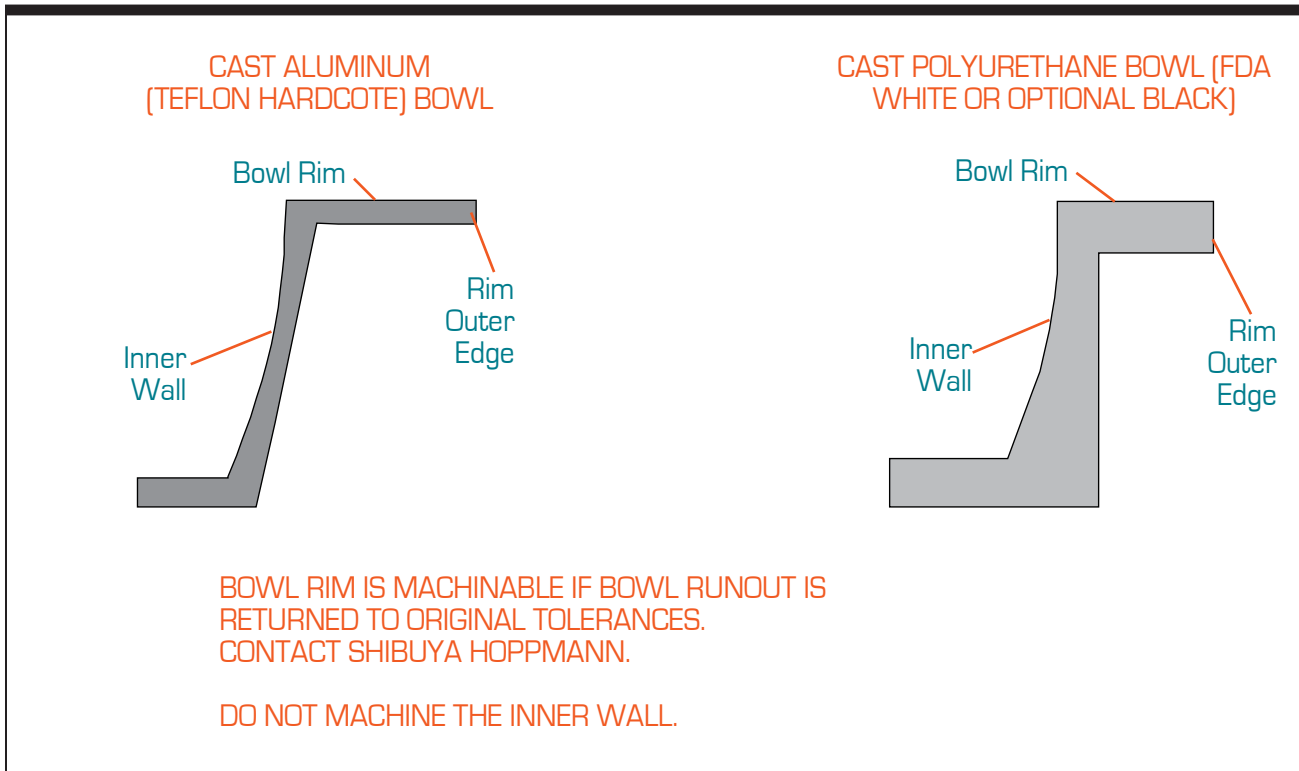


Figure 5-1. Machinable Bowl Surfaces

Dual Drives

This section applies to dual drive Hoppmann FT-15 feeders. This procedure explains how to adjust the disc drive or bowl drive belt on feeders with the dual drives.

Step 1—If Disc Drive Slips. If the *disc* drive slips, relocate the *disc* drive reducer.

➡ **Step 1A:** To identify the disc drive motor, *turn on only* the disc drive and look under the machine base plate. The disc drive motor is attached to the shaft that is rotating. Turn off the disc drive.

➡ **Step 1B:** Disconnect power and air (lock out and tag out the equipment). Loosen, *but do not remove*, the four hex nuts located on the reducer flange (the side that is attached to the spacer, mounted against the bottom side of the machine base plate).

- ➔ **Step 1C:** Move the complete motor/reducer/spacer assembly towards the outside of the machine base plate, until adequate tension is achieved. While holding the assembly in this position, tighten the four hex nuts on the reducer flange.
- ➔ **Step 1D:** Reconnect power and air. *Turn on only* the disc drive for a test run. If the disc is still slipping, start at step 1B again.

Step 2—If Bowl Drive Slips. If the *bowl* drive slips, relocate the *bowl* drive reducer.

- ➔ **Step 2A:** To identify the bowl drive motor, *turn on only* the bowl drive and look under the machine base plate. The bowl drive motor is attached to the shaft that is rotating. Turn off the bowl drive.
- ➔ **Step 2B:** Disconnect power and air (lock out and tag out the equipment). Loosen, *but do not remove*, the four hex nuts located on the reducer flange (the side that is attached to the spacer, mounted against the bottom side of the machine base plate).
- ➔ **Step 2C:** Move the complete motor/reducer/spacer assembly towards the outside of the machine base plate, until adequate tension is achieved. While holding the assembly in this position, tighten the four hex nuts on the reducer flange.
- ➔ **Step 2D:** Reconnect power and air. *Turn on only* the bowl drive for a test run. If the bowl is still slipping, start again at step 2B.

Major Bearing Replacement

Major bearings in the FT-15-RD feeders are the upper and lower bowl support bearings, the upper and lower disc shaft bearings, and the disc support bearings.

Major Bearing Replacement Cautions:

- ➔ Eliminate other possible problems before attempting bearing replacement, as substantial disassembly of the feeder is required. Carefully note position of any tooling you remove before you begin. Keep chains *clean and dry* after removal.

- ➔ Most major bearings in the feeders are pre-loaded to prevent play. To prevent binding or excessive free play in the bowl, ensure that all bearing housings and the bearings themselves are *clean and free of external grease*, dirt, nicks or burrs prior to reassembly. If you accidentally damage critical surfaces of the housings, you may need to replace the entire spindle assembly as a unit.
- ➔ Install only 100% identical replacement bearings. In the unlikely event that the bowl will not turn, or that there is play in the bowl when you are done, you may need to replace the spindle assembly as a unit, or contact Shibuya Hoppmann Corporation for assistance.
- ➔ To maintain accuracy and prevent play in the bowl, replace *both bearings of a pair at the same time*. Do not replace only one.
- ➔ Do not swap housings (such as the disc shaft spindle bearing housing) from one FT feeder to another, as critical surfaces may have been custom-machined for zero play in the bowl.
- ➔ Place a small amount of grease around housing bores before inserting new bearings. Replace any broken or worn hardware. Be sure to install all safety covers before operating the feeder.

If Product Jams: General Tips

Step 1—Inspect The Feeder. If product jams repeatedly, review the following:

- ➔ Is your prefeeder's delivery rate excessive? (The prefeeder should deliver only enough product to the feeder to keep the line running at the required rate.)
- ➔ Is the feeder's bowl speed set correctly?
- ➔ Is there a changeover procedure that was not followed correctly?
- ➔ Is the feeder's main air regulator set correctly?

Step 2—Inspect Your Product. After checking the feeder, check to see if your product has changed since the last batch:

- ➔ Are they larger? Smaller? A different shape? A different material? Different color? Different quality?

- ➔ If you are orienting freshly molded product, have you made a change in how they are released from the mold? (Are they hotter, drier or stickier, for example?)
- ➔ Finally, if your product has changed, or if you cannot isolate why your product is jamming, contact your direct supplier for assistance.

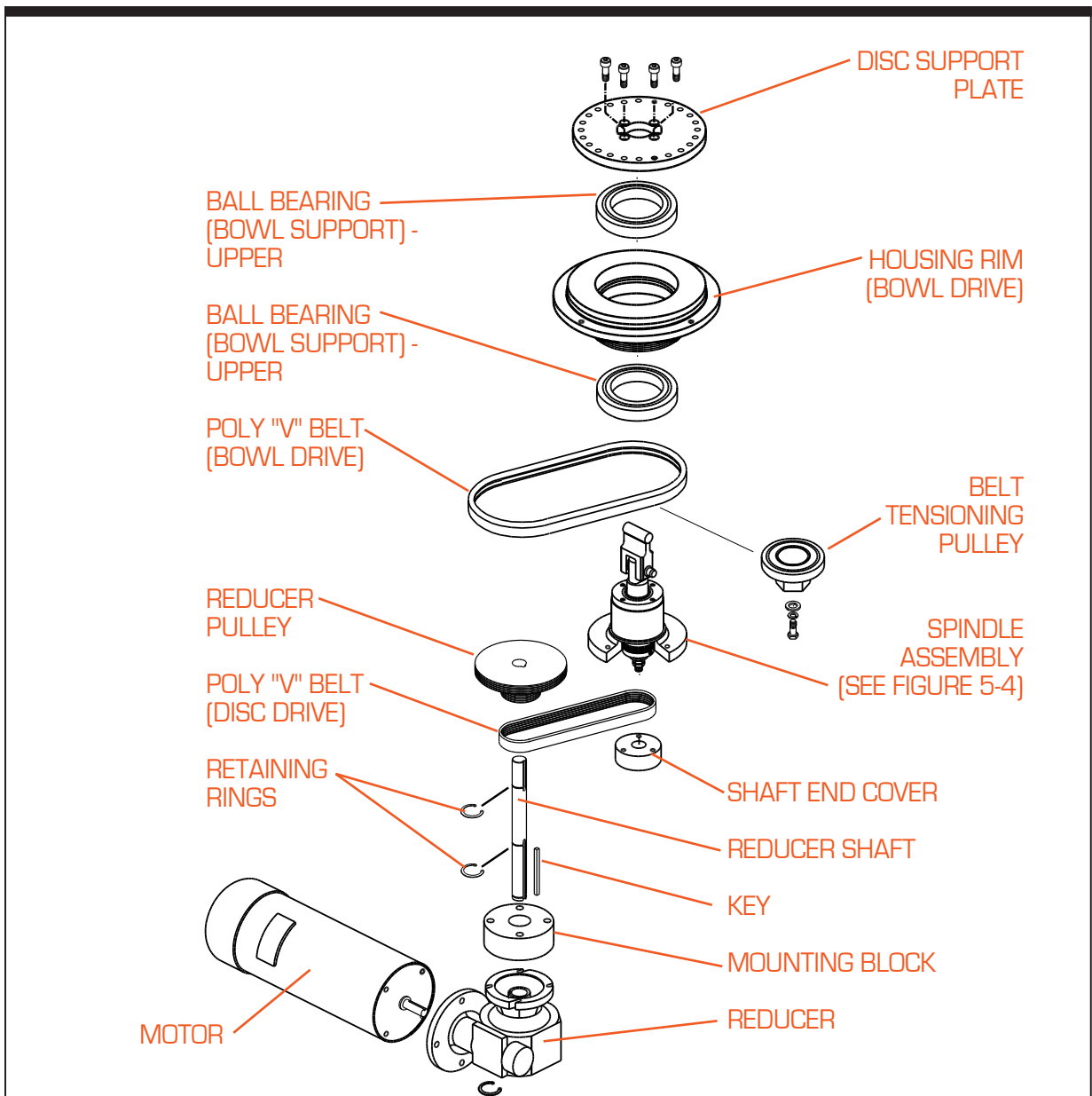


Figure 5-2. Typical FT-15-RD Single Drive Assembly

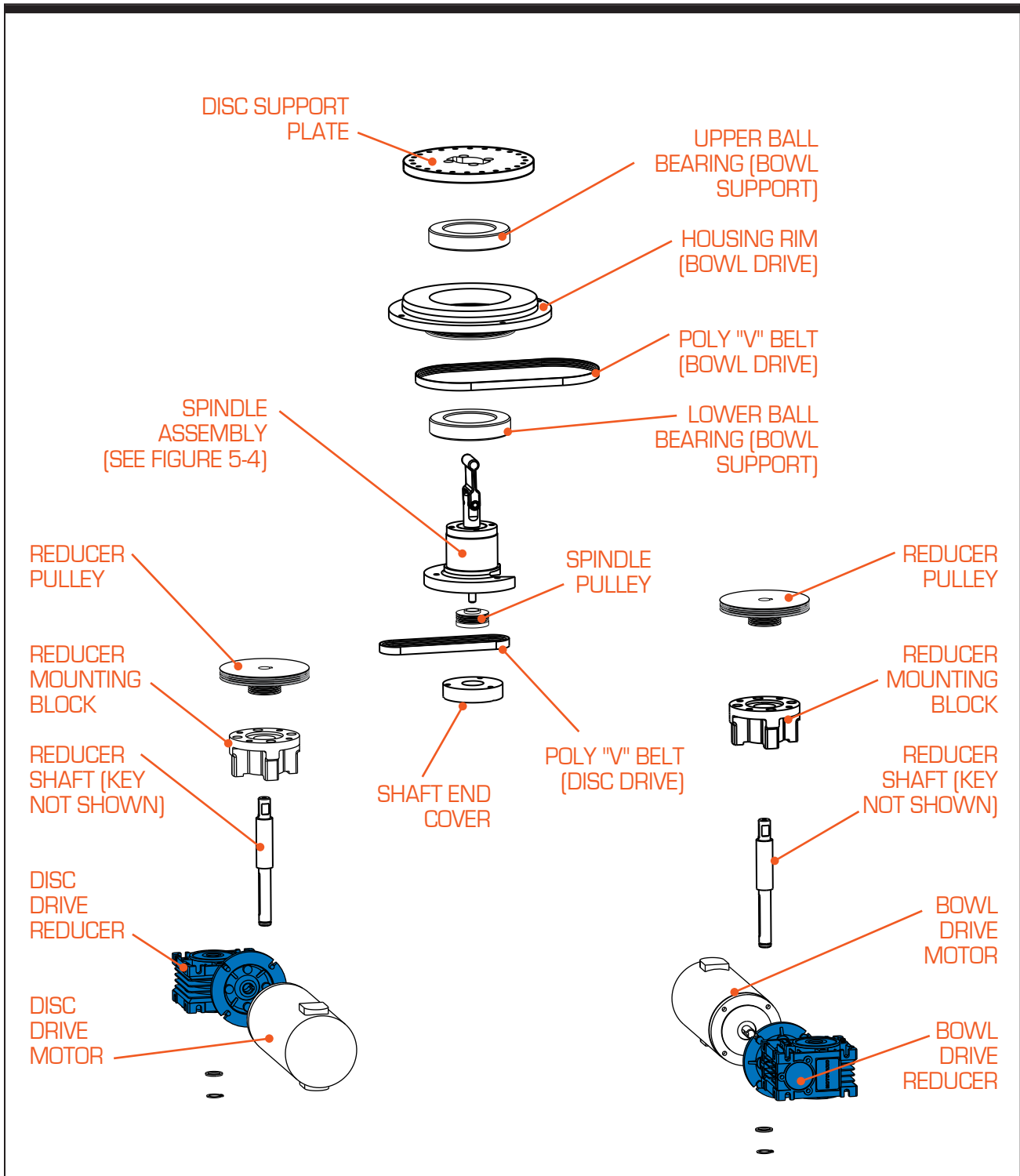


Figure 5-3. Typical FT-15-RD Dual Drive Assembly

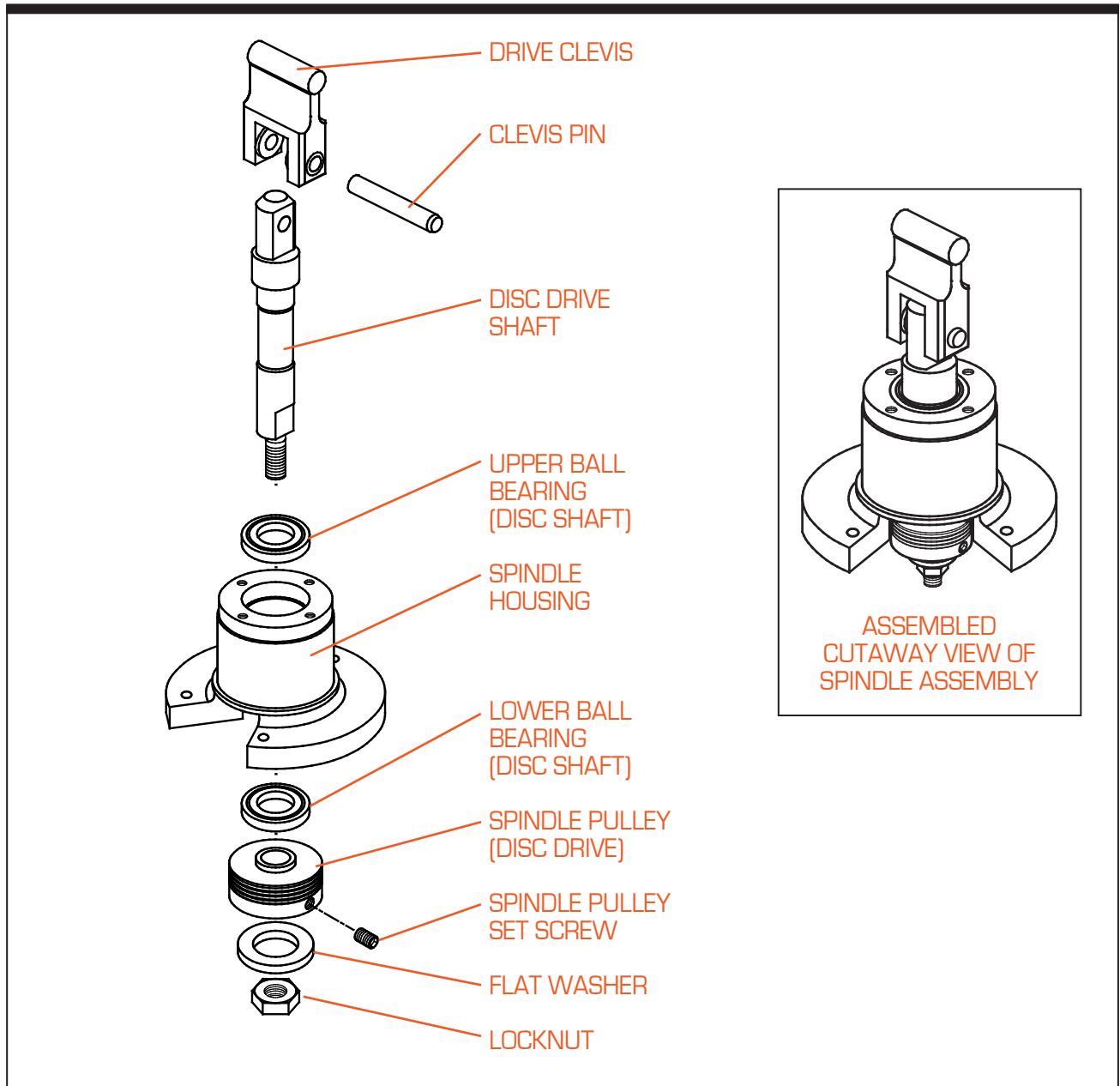


Figure 5-4. Spindle Assembly

Troubleshooting Charts

Refer to the troubleshooting charts on the following pages which detailing common problems and possible solutions.

Troubleshooting		
Problem	Possible Cause	Solution/Action
Feeder won't run at all.	Power is off, or the feeder has been disconnected.	Turn the power on or reconnect power to the feeder.
	Downstream machinery is completely full.	Clear downstream machinery.
	Motor speed controller internal setting changed or defective.	Check the setting and/or replace the motor speed controller and the horsepower resistor.
	Trim pot settings have changed.	Re-calibrate to the motor speed controller manufacturer's specifications.
	Motor is defective.	Replace the motor. Refer to the Replacement Parts in Chapter 6.
Feeder rim or disc does not turn.	Parts jammed in the feeder.	Disconnect power. Locate and remove the jammed part(s). Restart the feeder.
Rate is too low – Parts exit the feeder correctly.	Feeder is "starved" for parts.	Correctly set the prefeeder rate. Make sure there are sufficient parts in the prefeeder hopper.
	Feeder is overloaded.	Check the prefeeders speed. Check the prefeeder's time delay relay. Check the bowl level sensor in the feeder.
	Feeder rim speed is incorrect.	Check that the rim speed is set correctly.
Rim, bowl and/or disc jerks when moving.	Motor speed controller internal setting changed or defective.	Check the setting and/or replace the motor speed controller and the horsepower resistor.
	Trim pot settings have changed.	Re-calibrate to the motor speed controller manufacturer's specifications.
	The drive chain is too loose or too tight.	Adjust the drive chain tension. Refer to Chapter 4 for correct setting information.

Troubleshooting		
Problem	Possible Cause	Solution/Action
Rim and disc turn, but parts do not exit properly. Parts continue to jam in the feeder.	The motor speeds are incorrectly set.	Correctly set the rim speed and prefeeder rate.
	Air is not on to the feeder.	Make sure there are sufficient parts in the prefeeder hopper. Check the air pressure at the main air pressure regulator. Check to make certain the correct flow is set. Adjust as needed.
	Incorrect (wrong) parts are being run.	Verify that the feeder is correctly set up to run this specific part.
	Parts are different.	Check to make sure the feeder is tooled for this part. See if there are differences in the part (ie: stickier, hotter, etc.)
	Tooling or air jets need adjustment.	Refer to your Systems Operation manual or contact your direct supplier.
Cannot adjust the motor speed high enough.	Motor speed controller internal setting changed or defective.	Check the setting and/or replace the motor speed controller and the horsepower resistor.
	Trim pot settings have changed.	Re-calibrate to the motor speed controller manufacturer's specifications.
	The drive chain is too loose or too tight.	Adjust the drive chain tension. Refer to Chapter 4 for correct setting information.
Surface of the parts is scuffed up or dirty.	Particulate (dust, dirt, etc.) is in the feeder.	Clean the feeder (refer to Chapter 4, Preventive Maintenance, for routine cleaning).
	Parts are already scuffed.	Check upstream equipment.

Notes

Replacement Parts

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Replacement Parts

Replacement parts lists for the Hoppmann™ FT-15-RD Centrifugal Feeders are listed on the following pages. When ordering replacement parts, please reference the model name and number of your feeder located on the serial plate (see Figure 6-1). This helps in making sure you receive the correct replacement parts.

If you received a customized Shibuya Hoppmann system, please refer to your system's Operation Manual when ordering spares, as your system may have been altered.

Having the serial number in addition to the part number you wish to order will help us to accurately assist you in getting the correct parts. You may order your feeder's spare parts directly from Shibuya Hoppmann by email, phone or fax (see the contact information listed below).

Shibuya Hoppmann Spares and Service Department

- ➔ **Email:** Spares@Hoppmann.com
- ➔ **Phone:** 540.829.2564 (1.800.368.3582)
- ➔ **Fax:** 540.829.1726
- ➔ **Mail:** Shibuya Hoppmann Corporation
Attn: Spares Department
13129 Airpark Drive, Suite 120
Elkwood, Virginia 22718 USA
www.ShibuyaHoppmann.com

Shibuya Hoppmann™

SERIAL # _____ DATE _____

MODEL # _____

INVENTORY # _____

PROJECT NUMBER _____

www.shibuyahoppmann.com • (800) 368-3582

Figure 6-1. Sample Serial Plate (2013)

FT-15-RD Replacement Parts - Single DC Drive

Critical	Part Number	Description	Qty.
	BRNGBALL12	Ball Bearing, Radial	3
	BRNGBALL15	Ball Bearing, Radial	2
	BRNG000033	Double Row Ball Bearing, Angular	1
X	MOTRP.20HP	Motor, 1/5 hp, 90VDC	1
X	NMRV30M020	Speed Reducer, NMRV30, 20:1	1
X	BELTJ4V140	Belt, Poly "V", 14"	1
X	BELTJ4V220	Belt, Poly "V", 22"	1

FT-15-RD Replacement Parts - Single AC Drive

Critical	Part Number	Description	Qty.
	BRNGBALL12	Ball Bearing, Radial	3
	BRNGBALL15	Ball Bearing, Radial	2
	BRNG000033	Double Row Ball Bearing, Angular	1
X	MOTRMAC.25	Motor, .25hp, 220/380VAC, 3PH	1
X	NMRV30M020	Speed Reducer, NMRV30, 20:1	1
X	BELTJ4V140	Belt, Poly "V", 14"	1
X	BELTJ4V220	Belt, Poly "V", 22"	1

FT-15-RD Replacement Parts - Dual DC Drive

Critical	Part Number	Description	Qty.
	BRNGBALL12	Ball Bearing, Radial	3
	BRNGBALL15	Ball Bearing, Radial	2
	BRNG000033	Double Row Ball Bearing, Angular	1
X	MOTRP.20HP	Motor, 1/5 hp, 90VDC	2
X	NMRV30M020	Speed Reducer, NMRV30, 20:1	2
X	BELTJ4V140	Belt, Poly "V", 14"	1
X	BELTJ4V220	Belt, Poly "V", 22"	1

FT-15-RD Replacement Parts - Dual AC Drive

Critical	Part Number	Description	Qty.
	BRNGBALL12	Ball Bearing, Radial	3
	BRNGBALL15	Ball Bearing, Radial	2
	BRNG000033	Double Row Ball Bearing, Angular	1
X	MOTRMAC.25	Motor, .25hp, 220/380VAC, 3PH	2
X	NMRV30M020	Speed Reducer, NMRV30, 20:1	2
X	BELTJ4V140	Belt, Poly "V", 14"	1
X	BELTJ4V220	Belt, Poly "V", 22"	1

Notes

Warranty

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Warranty

Shibuya Hoppmann Corporation warrants that each item of its own manufacture delivered hereunder shall, at the time of delivery and for a period of twelve (12) months thereafter, be free from defects in materials or workmanship; and if any such item shall prove to be defective in material or workmanship under normal intended usage and maintenance during the warranty period, upon examination by Shibuya Hoppmann Corporation, then Shibuya Hoppmann Corporation shall repair or replace, at its sole option, such defective item at its own expense; provided, however, that the owner shall be required to ship such defective item, freight prepaid, to Shibuya Hoppmann Corporation's plant in Elkwood, Virginia. The warranty on components not manufactured by Shibuya Hoppmann Corporation, but a part of the feeder, is limited to the warranty provided by the original manufacturer of said components to the extent, and only to the extent, that such original manufacturer actually honors such warranty.

ALL WARRANTIES HEREUNDER ARE EXPRESSLY LIMITED TO THE REPAIR OR REPLACEMENT OF DEFECTIVE ITEMS AS SET FORTH HEREIN, AND IN NO EVENT SHALL SHIBUYA HOPPMANN CORPORATION BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES BY REASON OF ANY BREACH OF WARRANTY OR DEFECT IN MATERIAL OR WORKMANSHIP. SHIBUYA HOPPMANN CORPORATION SHALL NOT BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ITEMS WHICH HAVE BEEN SUBJECTED TO NEGLIGENCE, ACCIDENT OR IMPROPER USE, OR WHICH HAVE BEEN ALTERED BY OTHER THAN AUTHORIZED SHIBUYA HOPPMANN CORPORATION PERSONNEL.

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Shibuya Hoppmann offers a wide selection of products:

- ➔ Hoppmann Centrifugal Feeders™
- ➔ Prefeeders
- ➔ Continuous Motion Assembly Turrets
- ➔ Placement Systems
- ➔ Fillers and Cappers
- ➔ Conveyors
- ➔ Product Handling Equipment
- ➔ Aseptic Filling Systems
- ➔ Labelers
- ➔ Decontamination Equipment
- ➔ Intermittent Motion Assembly Systems
- ➔ Complete Integrated Product Lines

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