



OPERATION AND MAINTENANCE

INSTRUCTIONS

MODEL 570/571 LOSS-IN-WEIGHT FEEDER/BATCHER

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PROPRIETARY NOTE

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MERRICK LOSS-IN-WEIGHT FEEDERS

SAFETY

PLEASE READ AND FAMILIARIZE YOURSELF WITH ALL SECTIONS OF THIS MANUAL BEFORE PROCEEDING WITH INSTALLATION, OPERATION OR MAINTENANCE OF THE EQUIPMENT DESCRIBED HEREIN. THE MERRICK MODEL 570/571 LOSS-IN-WEIGHT FEEDER/BATCHER IS AN EXTREMELY SENSITIVE AND PRECISE WEIGHING DEVICE THAT CAN EASILY BE DAMAGED BY IMPROPER HANDLING OR OPERATION.

MERRICK manufactures units in a range of sizes. The following precautions are basic to all machinery and the principles apply to all MERRICK equipment, although the sizes differ.

No unusual hazards are associated with MERRICK equipment and controls. However, all machinery with electric drives and controls and moving parts requires the observance of basic precautions. Some of these principles bear repeating.

AS A GENERAL RULE:

1. OBSERVE ALL STANDARD PRECAUTIONS WHICH PERTAIN TO MOVING MACHINERY.
2. OBSERVE ALL STANDARD PRECAUTIONS WHICH PERTAIN TO ELECTRIC DRIVES AND ELECTRICAL CONTROLS.
3. PAY PARTICULAR ATTENTION TO THE SPECIAL "CAUTIONS" AND "NOTES" WHICH OCCUR THROUGHOUT THIS MANUAL.

MECHANICAL PRECAUTIONS:

1. When working on MERRICK equipment (whether for installation, cleaning, maintenance or lubrication) take positive steps to close off all infeeds and discharges. This is to prevent material from falling on personnel.
2. Use canvas tarpaulins to protect openings and to keep tools and loose parts from falling into machinery.
3. Take positive steps to prevent machinery from being started while personnel are at work. Main Disconnect Switches should be opened. MERRICK recommends that the boxes be padlocked by maintenance personnel who keep the keys in their possession while at work. Or remove fuses in the Main Disconnect Box and hang signs which indicate personnel are at work.

4. Do not attempt to remove chain guards and other protective elements of the equipment while machinery is being operated.
5. When work must be performed on machinery in motion, caution personnel to remove all loose clothing and jewelry such as rings, identification bracelets, etc.
6. Whenever possible do not allow personnel to work alone. There should be other people available to stop a machine in the event of a mishap and to summon help.
7. Always stop machinery before opening doors or inspection ports.
8. Heavy components such as pulleys and motors must be cribbed or braced from below, or lashed from above to prevent them from falling. When dismantling equipment, use good rigging procedures.
9. Stop machinery immediately in the event of unusual vibration, erratic operation, or runaway and uncontrollable motor speed.
10. Personnel working on machines should wear safety goggles, hard hats, steel-toe shoes and heavy gloves.

ELECTRICAL PRECAUTIONS:

1. Before undertaking work on the electrical control or drive systems, open Main Disconnect Switches and lock boxes. Or remove the fuses in the Main Disconnect and attach a sign to the box indicating that work is in progress.
2. Verify that all necessary grounds called for in the wiring diagrams are in place and are solid. Do not disable or disconnect grounding.
3. When working in live areas (high voltage) always keep one hand clear of the machine, cabinet and other conductors to avoid the possibility of shock from one arm across the chest to the other.
4. Never impair the function of a fuse.
5. Never undertake electrical work when the floor is wet or flooded.

IF PERSONNEL ARE IN DOUBT ABOUT A PROCEDURE, CALL MERRICK INDUSTRIES, CUSTOMER SUPPORT DEPARTMENT.

STORAGE

MECHANICAL EQUIPMENT - STORED ON RECEIPT FROM FACTORY:

A. **Storage up to 30 Days:** Keep all equipment dry and store well above the ground. A warehouse is preferred. No other special precautions apply.

B. **Storage 1 to 12 Months:**

1. Grease-lubricate Gear Boxes: No special requirements.
2. Oil-lubricated Gear Boxes: Fill the Gear Box completely with recommended lubricant and plug the Breathers.

OR

Fill the Gear Boxes to operating level with a rust-preventative oil (NP-20 or equivalent). Plug the Breathers. At approximately one-month intervals, rotate the Input Shaft a sufficient number of times to insure that all internal components remain coated with oil.

3. Coat the Chain and Sprockets liberally with a heavy-consistency grease and inspect or renew covering every six months. Belt driven units require no special precautions.
4. Protect the Shafts and other exposed ferrous metal parts with a heavy-consistency grease and inspect or renew coating every six months.
5. Remove tension from belt drive if so equipped.
6. Install adequate amounts of desiccant in Feeders. A minimum of five pounds is recommended. The more, the better.
7. Locate the Suspension in the raised (shipping) position, utilizing the red shipping bracket provided with the feeder.

C. **Storage Longer Than 12 Months:**

(Observe all of the above plus these additional precautions).

1. Change oil in Gear Boxes yearly.

MECHANICAL EQUIPMENT - STORAGE FOLLOWING USE:

(Observe all of the instructions for storage prior to use plus these additional instructions):

A. Empty the machine completely of conveyed material.

- B. Neutralize units. Flush all surfaces with clean water and dry thoroughly. Use caution around the Load Cell; do not spray directly.
- C. Remove rust as necessary. Touch-up all painted surfaces where necessary to cover all bare metal surfaces.

MECHANICAL OPERATION AFTER STORAGE:

- A. Grease-lubricated Gear Boxes: Add half of the recommended quantity of new grease as shown in Lubrication Section of this Manual.
- B. Oil-lubricated Gear Boxes:
 - 1. Drain the rust-preventative or operating oil completely.
 - 2. Flush unit with recommended operating oil as shown in the Lubrication Section of this manual.
 - 3. When flushed clear, fill the unit to the proper oil level with recommended lubricating oil.
- C. Re-grease all (non-sealed) bearings.
- D. Remove desiccant.

ELECTRICAL EQUIPMENT - STORED ON RECEIPT FROM FACTORY:

- A. **Storage up to 6 Months:** Keep all equipment dry and well above the ground. A warehouse is preferred. If the equipment has been in transit for two months or longer, replace the factory-supplied desiccant before storing. The use of Evaporative Corrosion-Inhibitors is recommended but not required.
- B. **Storage Longer Than 6 Months:**
 - 1. In a heated warehouse with temperatures ABOVE FREEZING.
 - a. All equipment must be kept dry. Vaporizing Corrosion-Inhibitors MUST be used inside all electrical enclosures and panels.
 - b. Replace all desiccants in the spring and fall, when the humidity is low.
 - c. Operate all electrical and electronic equipment at least once a year for a minimum of two to three hours, preferably during a low humidity season. Operate all switches at least ten times. Operate transformers and motors at least once a year and allow them to rise 20 degrees C (36 degrees F)

above the ambient temperature. It is preferable to do this in the low humidity season.

2. In a warehouse with temperatures BELOW FREEZING.
 - a. Prior to storage, remove all pen and ink elements from Recording Instruments, and thoroughly clean all inking mechanisms.
 - b. Operate all electrical and electronic equipment for a minimum of two to three hours, preferably during a low humidity season. Operate all switches at least ten times. Operate transformers and motors at least once a year and allow them to rise 20 degrees C (36 degrees F) above ambient temperature. It is preferable to do this during a low humidity season.
3. Outside Storage IS NOT RECOMMENDED. If it is unavoidable, then damage from dampness must be prevented. The use of Vaporizing Corrosion Inhibitors and Desiccants affords some protection. Equipment must be operated periodically as above.

ELECTRICAL EQUIPMENT - STORAGE FOLLOWING USE:

- A. Clean all equipment and enclosures thoroughly inside and out.
- B. Remove rust as necessary. Touch up all painted surfaces as necessary to cover all bare metal surfaces.
- C. Observe instructions for storage and care of electrical equipment prior to use.
- D. Keep panels dry with anti-condensation heaters if possible.

ELECTRICAL EQUIPMENT - OPERATION AFTER STORAGE:

General Instructions:

- A. When equipment has been stored at either high humidity and/or low temperatures, DO NOT APPLY POWER until the equipment has been allowed to stand at ambient conditions for a minimum of three hours.
- B. Remove all packing and protective materials.
- C. Remove all desiccants. Vaporizing Corrosion-Inhibitors may be left in the equipment only if this is permitted by local fire regulations.

INSTALLATION

THE MERRICK MODEL 570/571 LOSS-IN-WEIGHT FEEDER/BATCHER IS AN EXTREMELY SENSITIVE AND PRECISE WEIGHING DEVICE THAT CAN BE EASILY DAMAGED BY IMPROPER HANDLING OR OPERATION. PLEASE FOLLOW ALL INSTRUCTIONS CONTAINED IN THIS MANUAL CAREFULLY. IF YOU HAVE ANY QUESTIONS PLEASE CONSULT THE MERRICK CUSTOMER SUPPORT DEPARTMENT AT (904) 265-3611.

UN-CRATING FEEDER

Do not push, pull or lift the feeder from any part of the Hopper.

IMPORTANT: Feeder should only be lifted by the Tubular Frame. DO NOT LIFT BY EYES ON COVER.

IMPROPER HANDLING CAN DESTROY THE LOAD CELL(S) AND/OR FLEXURES, WHICH WOULD NOT BE COVERED BY WARRANTY.

MECHANICAL INSTALLATION

Study the customer assembly drawings that have been provided in the Section 10 of this manual before starting installation. Basic principles for installation of machinery must be observed.

NOTE: During shipment the Load Cell is protected by red shipping brackets that support the Weigh Hopper and relieve the load and/or impact. These shipping brackets must be left in place during installation and removed only when the machine is ready to be started up and placed in operation.

The Loss-In-Weight machine must be properly supported and positioned plumb and on level flooring or on a platform free from significant movement or vibration. The standard Model 570 or 571 is typically equipped with vibration isolation mounting pads at the four corners of the base. These vibration isolators are adjustable to allow for compensation for minor irregularities in the floor support. A precision bubble level is installed adjacent to the load cell mount. Use this instrument to level the Model 570/571.

Any loads such as Storage Hoppers or Bins must not be imposed on the machine or its supports. Connections to the machine should be made in such a way that no torque or twist is imposed.

Use flexible connections to connect any automatic fill devices or discharge spouts to the feeder.

Field wiring connections should be made only at the connection boxes provided, never make field wiring connections at any point on the floating frame of the feeder.

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CAUTION: Never weld on the loss-in-weight machine without taking proper precautions as severe damage to the load cell and/or electronics could result. Contact the Merrick Customer Support Department prior to any such activity.

AGITATORS

If an Agitator is supplied with the feeder, the Drive will be assembled to the feeder cover and shipped loose. The Agitator Blade will also be shipped loose.

TO INSTALL AGITATOR

A. Feeder without extension hoppers.

1. Install Agitator shaft in from bottom of reducer and install key in key way. Tighten set screws on key.
2. Remove the Discharge device (see Basic Assembly Drawing in Section 10).
3. Set Agitator on top of feeder, install band clamp to cover, positioning cover in the correct orientation per the assembly drawings. Lifting eyes have been provided on the cover to attach shackles of clevis pins (See agitator assembly drawing in Section 10).
4. Loosen set screws in reducer, (holding Agitator shaft) and position the bottom of the Agitator blade 1/16" to 1/8" from the bottom of the Spool piece (the device which holds the discharge device). Tighten set screws when correct space is achieved.
5. Reinstall the Discharge device.
6. Connect the electrical cable to the Agitator motor, the leads are pre-labeled to ensure proper connection.

B. Feeder with extension hopper(s).

1. The Agitator drive and extension shaft will be shipped assembled to the feeder cover. The Agitator will be shipped loose. Install Agitator shaft in extension shaft coupling, taking care to align the key way, the two shafts should butt up inside the coupling, tighten set screws in coupling.

DO NOT ADJUST THE POSITION OF THE COUPLING ON THE EXTENSION SHAFT.

2. Follow steps 2 through 6 above to complete the Agitator installation.

NOTE: The extension shaft was preset at the factory to the correct depth, therefore no adjustment should be required at step 4.

DISCHARGE DEVICE REMOVAL

(SEE BASIC ASSEMBLY DRAWING IN SECTION 10)

The Discharge device is comprised of the Discharge Housing, Spout, Auger, Bearing Housing, and Driver Sprocket.

1. Ensure that the feeder is empty and that power to the drive is locked out.
2. Remove belt guard cover by unscrewing the black plastic knob at the rear of the belt guard.
3. Apply downward pressure to the belt tensioner to loosen the belt. Remove belt.
4. Remove the back plate located behind the discharge device, by loosening the black plastic knob pressed against the plate.
5. Holding the discharge housing firmly, release the clamps on either side of the housing that connect to the spool piece. Remove the discharge housing by pulling down.

DISCHARGE DEVICE DIS-ASSEMBLY

1. Holding the Spout, release the clamps on either side of the Discharge housing, remove the spout.
2. Holding the driven sprocket, turn the Auger clockwise then pull Auger out of Discharge housing.
3. The bearing housing may be removed by releasing the clips on either side of the Discharge housing.

BELT TENSIONING (MODEL E1-E3)

The timing belt drive is factory preset to provide proper belt tension. To take-off the belt, merely depress the elastic preloaded tensioner and remove the belt. **Do not loosen the tensioner bolt** to remove the belt. If the belt is replaced and retensioning is required, adjust the elastic tensioner to 10 degrees on the scale at the base of the tensioner. If the belt slips under load, apply just enough additional tension to prevent slippage. **Do not over tension.** Under no circumstance should the tensioner be adjusted to over the 20 degree mark. Over tension can cause belt breakage and bearing failure. A slipping belt usually indicates a frozen auger due to mechanical failure or material plugged in the discharge device.

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BELT TENSIONING (MODEL E4)

The model E4 does not have an elastomer tensioner. Tensioner sprocket should be adjusted to remove all slack.

ELECTRICAL INSTALLATION

Study the customer connection drawing that has been provided in the rear of this manual. Proper precautions and principles of electrical installation must be followed to ensure a safe and reliable operating piece of equipment.

Follow instructions on the connection drawings for wire size and type. Improper wiring could cause un-reliable operation due to electrical noise, ground-loops, etc.

For information regarding The Micro-Processor Controller please see Section 5 of this manual.

START UP PROCEDURE

1. Before starting make sure all connections are correct and machine is level.
2. (a) If the Discharge device was removed for Agitator installation, re-install Discharge device, belt and belt guard.
(b) Check for correct rotation of the discharge device, counter-clockwise when viewed from the drive end. Reverse armature leads (A1 - A2) if incorrect.
3. Check for correct rotation of the Agitator, counter-clockwise when viewed from the top of the feeder. Reverse armature leads (A1 - A2) if incorrect.
4. Remove the RED shipping bracket and store on the feeder in the location shown on the Basic Assembly Drawing (Section 10).
5. Adjust the overload stop bolt to 0.021" as shown on the Basic Assembly Drawing (Section 10).

The machine is now ready to be put into service.

GENERAL MECHANICAL

Merrick Industries, Inc. manufactures a wide variety of equipment in the Series 570. Although all share some similarities the differences are worth noting and should help you understand your particular machine or machines as well as help you use this Instruction Manual. A brief description of the various models and configurations follows. In addition, at the end of this manual you will find cross-sectional drawings showing typical models with labels to help you identify the significant parts of the equipment.

MODEL 570 LOSS-IN-WEIGHT FEEDER

The Merrick Model 570 Loss-In-Weight Feeder is a precision gravimetric weighing device designed to accurately and dependably meter dry material into a process or other end use in a continuous but variable manner. A Merrick Loss-In-Weight Feeder is capable of very high rate accuracy and is available in a variety of sizes to cover a wide range of feedrates from very low to moderately high.

To begin normal operation, the weigh hopper is first filled with a sufficient amount of material for several minutes of continuous feeding. Note that this amount of material and the capacity of the weigh hopper is predetermined by the factory and it is dependent on the required accuracy at the desired minimum feedrate.

As the Feeder begins to deliver material, the microprocessor controller keeps track of the weight in the hopper as it decreases, and constantly compares it to the theoretical weight at the desired feedrate at a given instant of time. If the actual weight is too great as compared to the target weight the discharge device (normally a metering screw or helix) is caused to slow down and conversely, to speed up if the actual weight is too small. In this way, the Merrick Model 570 Loss-In- Weight Feeder is capable of maintaining the desired gravimetric feedrate regardless of changes in material bulk density, changes in the volumetric efficiency of the discharge device, or slight drifting of the speed control device.

As the material is fed from the weigh hopper, eventually it will reach a point where it should be re-filled (this is called the "Heel" point). At this time the microprocessor sends an output, either to your automatic refilling device, or in the case of manual re-filling, to a signal light to indicate to an operator that it is time to put more material into the weigh hopper. This output is held on until the microprocessor senses (by weight) that enough material has been put into the hopper to continue with weighing. While the filling process is going on, and until the hopper is filled back to the appropriate level (called the "Fill" point) and the weight is stabilized, the microprocessor causes the discharge device to run at the speed at which it was last feeding while under gravimetric control. In this way the process may continue during the few seconds normally necessary for refilling. This process of refilling the hopper frequently with a

relatively small amount of material each time ensures the maximum overall accuracy in your application.

The Model 570 Feeder is available in several different sizes, based on hopper capacity, and also in two basic mechanical configurations. The Model designation 570-E1 thru E3 corresponds to the machines equipped with a single load cell weigh suspension. This allows very small weight deviations to be measured and is normally necessary when delivering material at very low feedrates.

The Model designation 570-E4 is applied to those machines that are equipped with a 3 load cell weigh suspension.

MODEL 571 LOSS-IN-WEIGHT BATCHER

In addition to the Feeder configurations described above, there is another, fundamentally different application for a "Loss-In-Weight" machine and therefore another control scheme. As described above, the purpose of the Model 570 is to deliver a continuous rate of material to the process. There is another application that is also very common, and frequently confused with feeder applications.

Often, the process requires that very accurate batches of material are to be regularly dispensed in a timely manner but not necessarily at a precise rate. The Merrick Loss-In-Weight machines that serve this function are called "Batchers" and are designated as Model 571. In a typical batching application, a signal from the process control system is received by the Model 571 microprocessor that commands it to deliver a preset batch. To accomplish this, the microprocessor first checks that the weigh hopper contains sufficient material for the amount to be batched out; then starts the material discharge device at it's maximum output capacity and batches out approximately 95 - 98 % of the desired weight. At this point the microprocessor slows the discharge device down to a very low rate (sometimes called "dribble feed") to "top off" the desired batch. This coarse feed/fine feed system of batching allows very repeatable and very accurate batches to be delivered.

The Model 571 Batcher is also available in both the single load cell design (Model 571-E1 thru E3), and the 3 load cell weigh suspension (Model 571-E4). Additional detailed information on the different control systems will be found in Section 5 of this manual.

REMEMBER: All Merrick Loss-In-Weight Feeders and Batchers are highly precision and therefore very sensitive weighing devices. Particular care in the installation and operation of the equipment is essential to obtaining good service and optimal accuracy.

WEIGH SUSPENSION

MODEL 570/571-E1 THRU E3

Both the Model 570-E1 thru E3 Loss-In-Weight Feeder and the Model 571-E1 thru E3 Loss-In-Weight Batcher utilize the same unique parallelogram weigh suspension. The virtue of this design is that there are no moving parts, pivots, bearings, etc. in the weigh mechanism. The parallelogram concept assures that the exact load that is imposed by the weigh hopper is transferred directly to the load cell without alteration by lever ratios or other mechanical contrivances.

The parallelogram mechanism consists of a very few parts. The rear pedestal is fixed to the machine frame and provides the mounting base for the strain gauge load cell weight transducer. The load cell provides a low level DC voltage that is proportional to the load applied when the load cell is excited by a constant DC voltage source. The front pedestal is the floating portion of the weigh suspension. It provides the mounting attachment for the weigh hopper and also the means to transfer the hopper load to the load cell. The front pedestal is constrained to movement only in the vertical direction by means of the upper and lower flexure plates. In this way, it is impossible for side loads from any direction to adversely affect the load cell signal or otherwise cause weighing inaccuracies.

CAUTION: The load cells are protected during shipment by means of a red shipping bracket that relieves the load on the load cells and prevents damage from jarring or slight impact. Do not remove the red bracket until the machine installation is complete and the unit is ready for startup. Retain the red brackets for later use.

On the Model 570/571 E1 thru E3 machines the red shipping bracket is positioned near the load end of the load cell between the mechanical overload stop bolt and the parallelogram frame. See the diagram in section 10 for help in locating this bracket.

MODEL 570-E4

The Model 570-E4 Feeder and the Model 571-E4 Batcher utilize a 3 load cell weigh suspension design wherein the entire gross load (weigh hopper, drive, net hopper contents, etc.) is supported by the load cells. The simplicity of this design ensures maximum reliability and accuracy at moderate to high feedrate requirements.

CAUTION: The load cells are protected during shipment by means of red shipping bolts that relieve the load on the load cells and prevent damage from jarring or slight impact. Do not remove the red bolts until the machine installation is complete and the unit is ready for startup. Retain the red bolts for later use by lowering the weigh

hopper onto the load cells until there is approx. 1/4" clearance between the shipping bolt and the hopper support.

See the diagram in section 10 for help in locating these bolts.

MECHANICAL DRIVE COMPONENTS

HELIX DRIVE

The following describes the standard drive arrangement for Merrick Loss-In-Weight machines. If your machine differs from this description, you will find special drawings and/or instructions in the Appendices to this Manual.

MODEL 570-E1 thru E4

Loss-In-Weight feeders require a variable speed drive to allow the control system to continuously vary the volumetric rate of the machine in order to maintain gravimetric control of the feedrate. For the Helix drive Merrick utilizes a DC drive motor controlled by an SCR (Silicon Controlled Rectifier) variable speed control that responds to the control signal transmitted from the microprocessor controller.

The drive motor is typically direct coupled to a separate gear reducer and then connected to the helix by a timing belt arrangement.

MODEL 571-E1 thru E4

Loss-In-Weight Batchers do not necessarily require variable speed drives, because the microprocessor is not controlling the gravimetric rate. However, in order to dispense accurate batches from the weigh hopper a two speed drive is frequently used. In this type of arrangement the high speed is used as a "coarse" feed and typically 90-98 % of the desired batch weight is delivered at this speed. At the low speed cut-off point, the controller switches to low speed and "fine" feeds (also called "dribble" feed) until the final desired weight is achieved.

In order to provide maximum flexibility for control of the batch parameters, frequently a DC/SCR drive is again used and two potentiometers are provided for selection of the two speeds. Once set via the pots, the controller switches between the two speed settings at the proper batch weight cut-off points.

THESE CUT-OFF POINTS ARE SET IN THE MICROPROCESSOR CONTROLLER AND CAN BE CHANGED BY THE USER. PLEASE SEE SECTION 5 OF THIS MANUAL FOR ASSISTANCE IN SETTING AND CHANGING THESE SETTINGS.

AGITATORS

Occasionally some materials cannot be fed from a Model 570 or Model 571 without some degree of flow enhancement. This might be the case for semi-sticky materials, or materials with a high inherent shear strength. Materials such as this will bridge or arch in the weigh hopper and starve the helix discharge device.

In this case an agitator can be used to promote flow. The agitator is a separately driven mechanical "stirrer" that is driven through the material in the weigh hopper in such a way as to keep the material from bridging or arching and make it possible for the discharge device to extract it from the weigh hopper in a consistent manner. The agitator rotates on a vertical shaft and is driven by a separate motor and variable speed controller.

The control system is designed such that the agitator is always paced by the speed of the discharge device as it is running, but the ratio of the agitator speed to the helix, for instance, is adjustable. In this way, the agitator action is tunable to the characteristics of the particular material to be fed.

TROUBLESHOOTING GUIDE

ITEM	PROBLEM	PROBABLE CAUSE
1	DRIVE BELT BREAKS	BELT TENSION TOO HIGH. REPOSITION ELASTIC TENSIONER TO MINIMIZE BELT TENSION. NOTE: BELT RATED FOR 300LB MAXIMUM TENSION.
2	IDLER SPROCKET BEARING FAILS	BELT TENSION TOO HIGH. REPOSITION ELASTIC TENSIONER TO MINIMIZE BELT TENSION.
3	EXCESSIVE BELT WEAR	DRIVEN AND DRIVER SPROCKETS NOT ALIGNED IN SAME PLANE.
4	DRIVE SYSTEM SQUEAKS	IDLER SPROCKET TOUCHING TENSIONER ARM OR RETAINING CLIP OR BELT TENSION TOO HIGH.
5	MATERIAL (PRODUCT) DISCHARGES FROM BOTTOM OF BEARING HOUSING	SEALS HAVE FAILED. REMOVE BEARING HOUSING AND AUGER. INSPECT SEALS AND REPLACE AS REQUIRED.
6	DISCHARGE AUGER WILL NOT TURN	CHECK TO SEE IF BELT IS BROKEN. IF NOT BROKEN REMOVE BELT AND ROTATE DISCHARGE SPROCKET TO SEE IF AUGER IS FREE TO TURN. IF AUGER IS FREE TO TURN, CHECK INPUT AND OUTPUT TO MOTOR SPEED CONTROLLER. IF AUGER IS NOT FREE TO TURN, CHECK TO INSURE FOREIGN MATERIAL IS NOT WEDGED IN AUGER. CHECK TO INSURE BEARINGS ARE NOT SEIZED.
7	AGITATOR WILL NOT TURN	CHECK INPUT AND OUTPUT OF MOTOR SPEED CONTROLLER.

DISCHARGE DEVICE STANDARD AUGERS

DISCHARGE TYPE	AVAILABLE			STD *	
	TWIN SCREW DIA	TUBE SIZE	SPOUT ID	SPOUT LENGTH	
MT08	0.75	0.8	0.8	6	
MT15	1.5	1.6	1.6	6	
MT20	2.0	2.1	2.1	6	
MT25	2.5	2.6	2.6	12	
MT30	3.0	3.1	3.1	12	

DISCHARGE TYPE	AVAILABLE			STD*	
	SINGLE SCREW DIA	TUBE SIZE	SPOUT ID	SPOUT LENGTH	
M1	0.5	1.125	0.56	6	
	0.75	1.125	0.82	6	
	1.0	1.125	1.125	6	
M2	1.5	2.25	1.7	6	
	2.0	2.25	2.25		
M3	2.5	3.25	2.75	6	
	3.0	3.25	3.25	6	
M4	3.5	4.38	3.88	12	
	4.0	4.38	4.38	12	
M6	5.0	6.5	5.5	12	
	6.0	6.5	6.5	12	

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***CHECK WITH MERRICK FOR AVAILABILITY OF SPOUTS LONGER THAN NOTED.**

DISCHARGE DEVICES AND AUGERS
SERIES 570

AUGER DRIVE BEARING ASSEMBLY LUBRICATION INSTRUCTIONS

SINGLE AUGER BEARING ASSEMBLY

Each single auger bearing assembly has two sealed for life ball bearings. No lubrication is required.

TWIN AUGER BEARING ASSEMBLY

Twin auger bearing assemblies have an oil reservoir. The fill plug is on the side of the bearing housing. The assembly is factory lubricated prior to shipment. For continuous operation, replace lubricant once per year with 2-3 ounces of Jax Magna-Plate 44-0 lubricant. Teflon tape on the fill plug is recommended to prevent leakage.

AUGER SEALS

Each bearing assembly, single or twin screw, utilizes a single seal on the auger drive shaft to separate the feed material from the bearing assembly. If the seal fails, material will spill out of a discharge slot in the bearing housing before it can contact the bearings. The seal can be removed for cleaning, however, care must be used in re-installing the seals to prevent o-ring damage. Always lubricate the shaft before installing a seal.

The seal Merrick utilizes is proprietary and is designed to run in a dry environment and requires no lubrication.

Exception: The MT08 (.075" dia augers) twin screw, utilizes two lip seals to separate the auger from the bearing assembly. The lip seals are made from Nylon. If these seals fail, material will spill out of a discharge slot in the bearing housing before it can contact the bearings.