



BETTCHER

AUTOMATIC BATTER-BREADING SYSTEM 115V, 115V CANADIAN & 230V

Operating Instructions & Spare Parts List



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Additional copies of this Operating Instruction is available by calling or writing the local representative or by contacting :

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The Information Provided In This Operating Instruction
Are Important To Your Health, Comfort, And Safety.
For Safe And Proper Operation, Read This Entire
Manual Before Using This Equipment.



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Original Instructions

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SECTION 1.0 Machine Specifications

The Bettcher® AUTOMATIC Batter-Breading SYSTEM is used to apply batter and breading materials to various food products.

The Bettcher® AUTOMATIC Batter-Breading SYSTEM has been tested and meets the requirements of the National Sanitation Foundation (NSF), Intertek (ETL), CE (Conformité Européenne), and bears the official markings of these agencies.

General Information

Machine Weight-Empty :	136 lb. (61.69 kg)
Overall Size :	21.66" High x 16.06" Wide x 54.70 Long (550.18 mm) x (407.99 mm) x (1389.39 mm)
Power Cord Length Approx. :	114" (2900 mm)
Conveyor Belt Speed (Nominal) :	21.3 Feet/Minute (6.49 Meters/Minute)
Conveyor Speed :	Batter 21.3 Feet/Minute (6.49 Meters/Minute) Breader 34.8 Feet/Minute (10.61 Meters/Minute)
Usable Conveyor Width :	5.25" (133.35 mm)
Power Requirements :	115V/1 Phase/60 Hz 2.40 amps 186.5 Watts

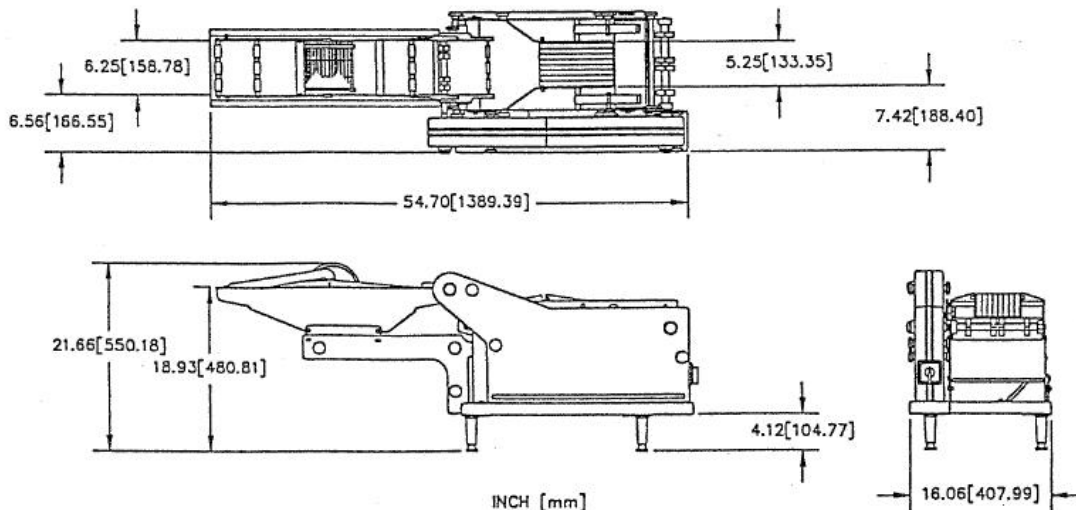


Figure 1
Machine Specifications

SECTION 2.0 Designated Use

2.1 Warning

Any use other than those for which the Bettcher® AUTOMATIC Batter-Breading SYSTEM has been designed and built may result in serious injury and/or machine damage.



The manufacturer assumes no liability for any unauthorized design changes, modifications, or use of parts not supplied by the manufacturer including changes in operating procedures made by the owner or any of his personnel.

2.2 Recommended Operation

The Bettcher® AUTOMATIC Batter-Breading SYSTEM was designed and built to uniformly apply batter and breading materials to a variety of food products. The arrangement of the batter and breader conveyors allows for the continuous processing of many different kinds and shapes of foods such as:

- Onion Rings
- Chicken Pieces
- Cheese Sticks
- Potato Wedges
- Sliced Zucchini
- Fish Fillets
- Mushrooms
- Many More ...

SECTION 3.0 Function

3.1 Machine Function

Liquid batter is poured into the batter container located on top of the machine and breading material is added to the breading container located at the bottom of the machine.

The product to be coated is placed in the feed area of the batter conveyor, immersed into the batter mixture, conveyed to the end of the batter conveyor and dropped into the feed area of the breading conveyor. The product is then coated and moved along through a narrow opening that forces breading over the top of the product. Tamper plates ensure that breading is applied by forcing the product flat. The breaded product is then moved along to the end of the breading conveyor where it drops off onto a work surface or into a container.

3.2 Safety Recommendations and Warnings



The information provided in these operating instructions is important to your health, comfort and safety. For safe and proper operation, read this entire manual before using this equipment.

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain this product. Protect yourself, others and equipment by observing all safety information. Failure to comply with instructions could result in personal injury and/or damage to the equipment. Any use in applications other than those for which the equipment was designed and built may result in equipment damage and/or serious injuries.

Retain this manual for future reference. Be thoroughly familiar with the controls and proper use of this equipment.

3.2 Safety Recommendations and Warnings (Continued)



DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury. (The signal word DANGER is in white letters on a safety red background)



WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury. (The signal word WARNING is in black letters on a safety orange background)



CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury. (The signal word CAUTION is in black letters on a safety yellow background)



NOTICE indicates information considered important, but not hazard-related (e.g. messages relating to property damage). (The signal word NOTICE is in italicized, white letters on a safety blue background)

The safety definitions provided comply with the American National Standard for Product Safety Information in Product Manuals, Instructions and Other Collateral Materials. (ANSI Z535.4-2011)

3.2 Safety Recommendations and Warnings (Continued)

SAFETY SYMBOLS:



The safety alert symbol indicates a potential personal injury hazard. It is not used for messages related to property damage. The safety alert symbol may be used alone or in conjunction with a signal word in a signal word panel



Danger of electrical shock



Danger of Hand Entanglement - Drive Chain



Read Operator's Manual

Symbols are harmonized with ANSI Z535.4 and ISO 3864-2 standards. Warning symbols are presented on a safety yellow background. Mandatory action symbols are presented on a safety blue background.

This technical manual is printed in black and white.

3.2 Safety Recommendations and Warnings (Continued)



Use only 3-Wire Extension Cords that have 3-Prong Grounding Plugs and 3-Pole Receptacles that accept the unit's Plug. Repair or replace damaged or worn cord immediately.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided! If it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

3.2 Safety Recommendations and Warnings (Continued)

WARNING

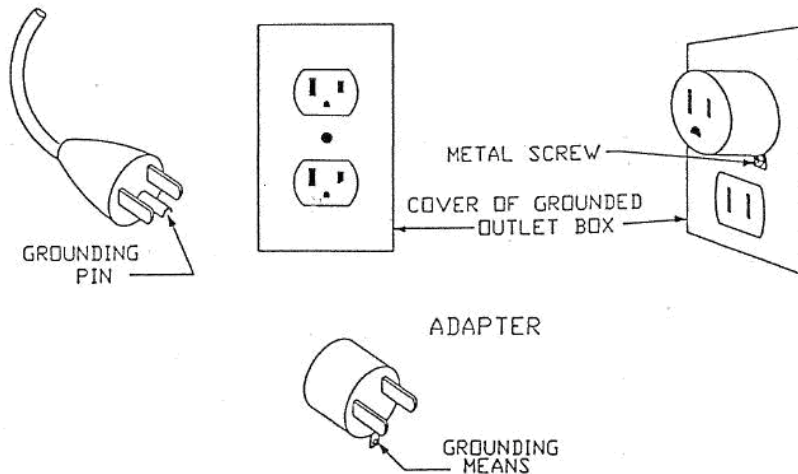


This tool is intended for use on a circuit that has an outlet and grounding plug that look like the ones illustrated below. A temporary adapter, which looks like the adapter illustrated below, may be used to connect this plug to a 2-pole receptacle if a properly grounded outlet is not available.

NOTE

In Canada, the use of a temporary plug adapter is not permitted by the Canadian electrical code.

- The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box.



* Note:
In Canada,
The Use Of A
Temporary Plug
Adapter Is Not
Permitted By
The Canadian
Electrical Code.

3.2 Safety Recommendations and Warnings (Continued)



The manufacturer assumes no liability for any unauthorized design changes, modifications, or use of parts not supplied by the manufacturer including changes in operating procedures made by the owner or any of his personnel.



Always turn off the machine, disconnect the power and allow the machine to completely stop before removing the frame covers, removing or installing the conveyors, and before performing any adjustments, disassembly, reassembly, troubleshooting or cleaning procedures.



To avoid risk of injury, keep fingers away from conveyor. Keep guards In Place And In Working Order. Keep children away from the machine. All visitors should be kept a safe distance away from the work area.



Keep work area clean. Cluttered areas and benches invite accidents.



Always wear safety glasses!

Avoid wearing loose clothing while operating this unit.

Avoid use of this machine in standing water.

Don't overreach.

Keep proper footing and balance at all times.

3.2 Safety Recommendations and Warnings (Continued)



Reduce the risk of unintentional starting by checking that the switch is in the OFF position before plugging in. Never leave the unit unattended with the motor running.

If at any time this machine does not appear to operate normally, or exhibits a marked change in performance, it should be immediately shut down, unplugged, and tagged as “Unsafe” until such time as proper repairs are made and the machine again operates normally.

Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect machine operation. Parts that are damaged should be properly and immediately repaired or replaced.

3.2 Safety Recommendations and Warnings (Continued)

 **CAUTION**

Use only replacement parts manufactured by Bettcher Industries, Inc. Use of substitute parts will void the warranty and may cause injury to operators and damage to equipment.

 **NOTICE**

Unused breading usually has some batter solution mixed in and can harden between uses. Attempting to start the automatic batter-breading system with hardened breading inside can cause serious mechanical damage to the machine and may void your warranty.

Loose or improperly aligned sprockets may cause severe damage to the belt and machine.

Installing and running the belt backwards may cause severe damage to the belt and machine.

Installing and running the belt outside the idler blocks may cause severe damage to the belt and machine.

Immediately repair bent wires in the wire belt. Replace the wire belt when it becomes damaged or broken. Continued use of a wire belt with damaged wires will cause additional serious damage to the wire belt and to other parts of the machine.

SECTION 4.0 Safety Features

The deflector swings in and releases the tension on the breader belt should an operator's fingers come between the moving belt and the bottom pan.

Removable covers/guards completely enclose the drive sprocket, chain and shaft mechanisms.

Control switch on the front of the machine allows for quick operator access.

SECTION 5.0 Ergonomics and Environment

5.1 Ergonomic Features

The Bettcher® AUTOMATIC Batter-Breading SYSTEM eliminates the manual application of breading and batter.

5.2 Noise Level

With normal use the Bettcher® AUTOMATIC Batter-Breading System's emission value is less than 70 dB (a).

SECTION 6.0 Unpacking, Assembly & Setup

6.1 Included With Your Machine

The following parts and assemblies are included with your Bettcher® AUTOMATIC Batter-Breading SYSTEM. Please check that delivery is complete and advise your local Bettcher Industries representative if it is not (see **Figures below**).

Unscrew the unit from the pallet and cut the plastic banding. Remove the following :

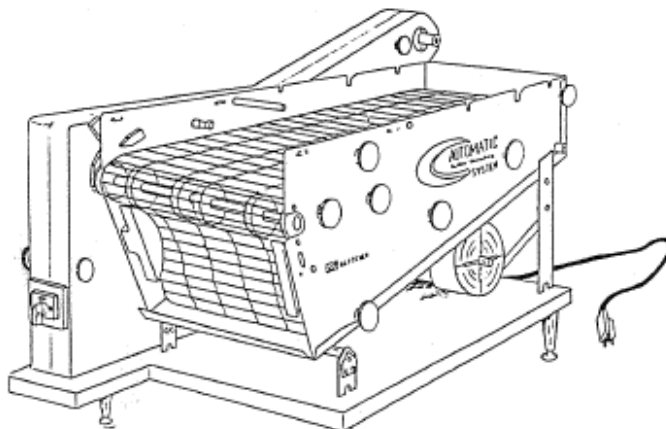


Figure 2A
Frame Assembly With
Attached Breeder Assembly

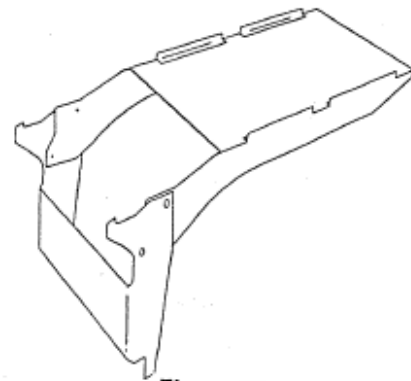


Figure 2B
Batter Conveyor Support Assembly

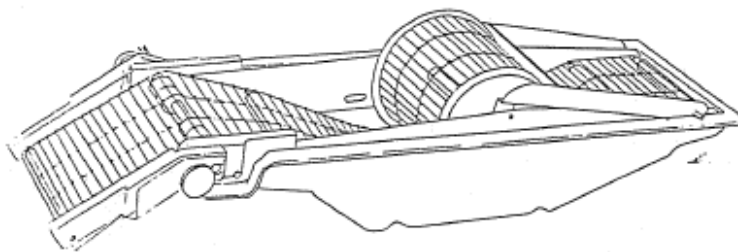
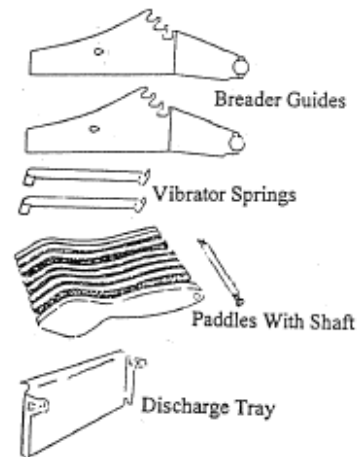


Figure 2C
Batter Tank & Conveyor Assembly With :
(1) Discharge Tray (2) Vibrator Springs
(2) Breeder Guides (8) Paddles With Shaft



6.2 Assembly & Setup

6.2.1 Frame (See Figure 3)

Place frame assembly on a suitable work surface and adjust legs/feet as required so that the machine sets level. Plug in power cord to electrical outlet. The centered position of the switch is “OFF”. Turn switch clockwise to “RUN” (forward) while loading and breading food products.

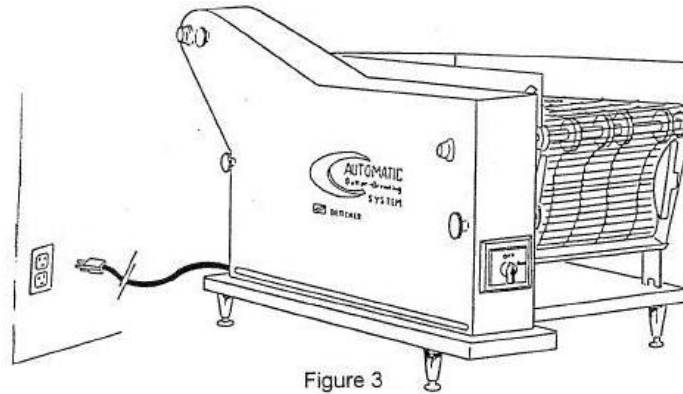


Figure 3

6.2.2 Batter Conveyor Support Assembly (See Figure 4)

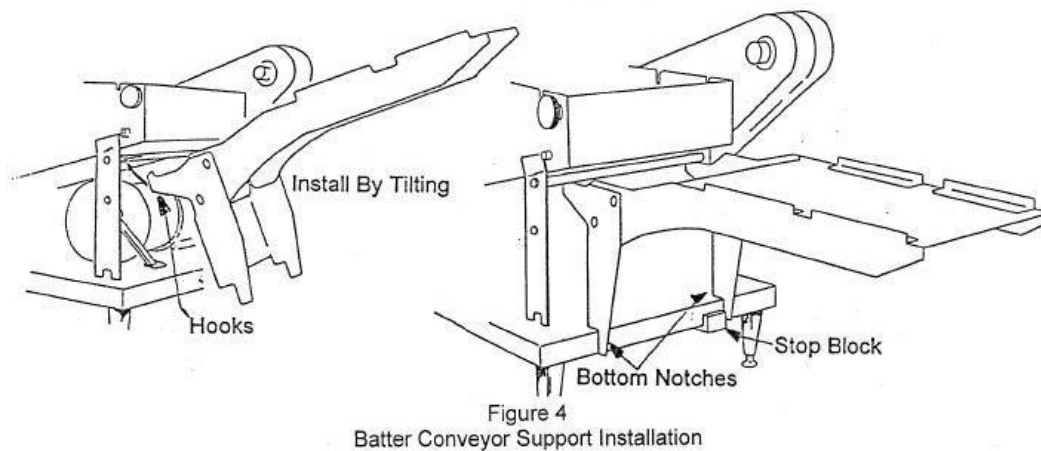


Figure 4

Batter Conveyor Support Installation

Install the Batter Conveyor Support Assembly onto the rear of the frame by tilting it and placing the side plate hooks under the frame's horizontal support rod. Rest the bottom notches on the rear frame edge next to the stop block as shown.

6.2.3 Breading Guide Installation (See Figure 5)

Install the breading guides with keyhole placement and secure each in place with a knob.

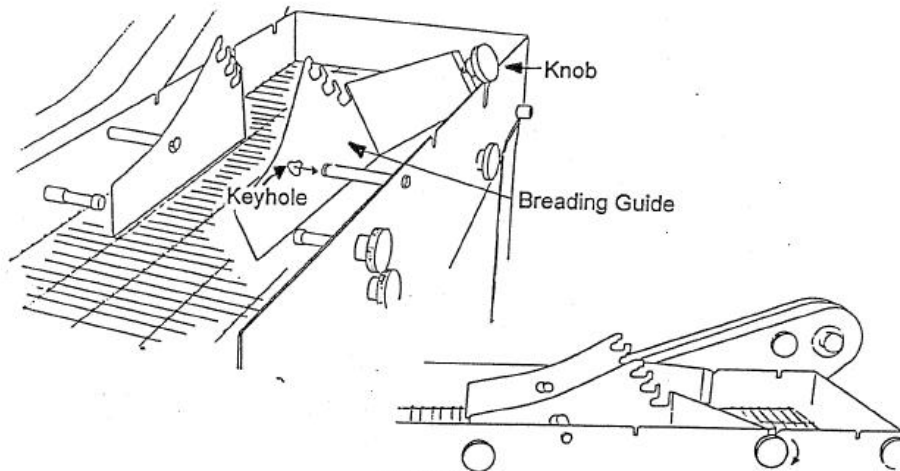


Figure 5
Breading Guides Installation

6.2.4 Tamper Paddles Installation (See Figure 6)

Align the tamper paddles and place the shaft through the holes in the paddles. Place the shaft ends into the cut-out of the breading guides as shown in **Figure 6**.

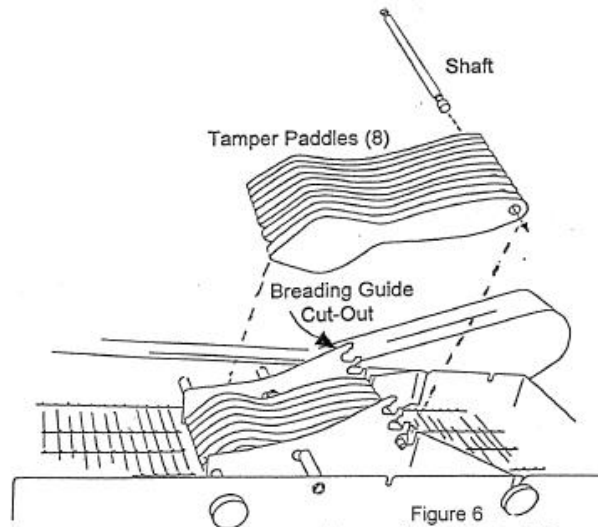


Figure 6
Tamper Paddles Installation

6.2.5 Belt Vibrator Springs Installation (See Figure 7)

Install the vibrator springs by hooking over the side guide support shaft and sliding under the vibrator adjustment shaft. Both vibrators should be installed but may not be required (depends on breading).

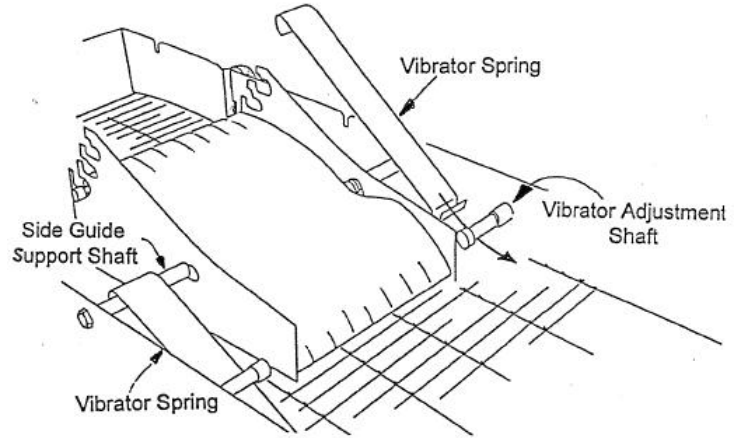


Figure 7
Belt Vibrator Spring Installation

6.2.6 Discharge Tray Installation (See Figure 8)

Install the discharge tray by placing it in the lower portion of the breader pan and rotating it up until the clips are engaged in the slots in the breader side plate.

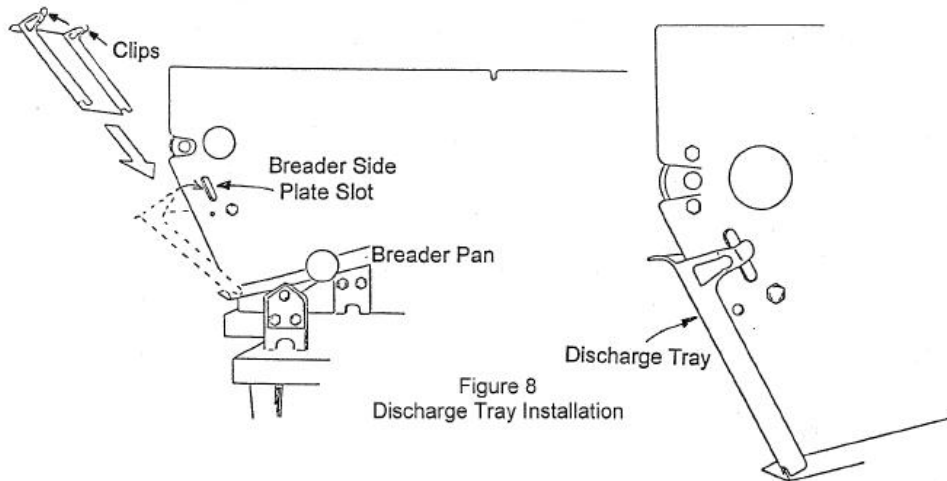


Figure 8
Discharge Tray Installation

6.2.7 Batter Conveyor (See Figure 9)

Place the complete batter conveyor onto the batter tank support tray. The batter conveyor will rest upon the batter tank support tray between the tabs.

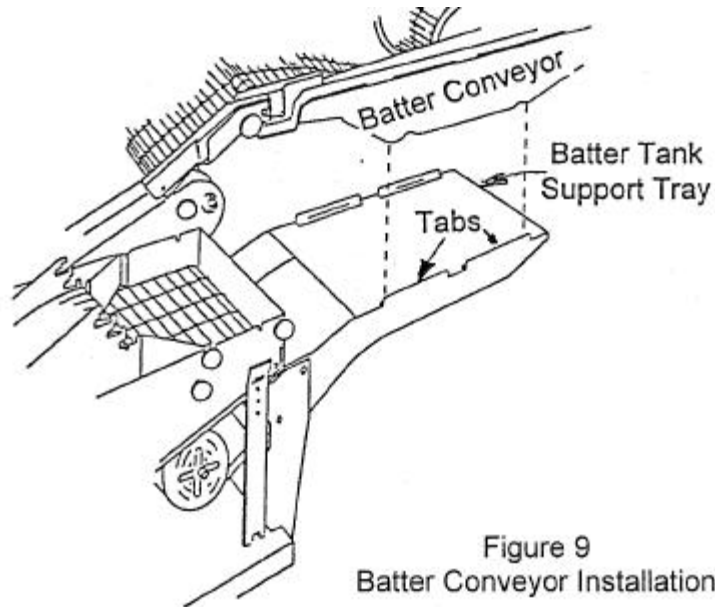


Figure 9
Batter Conveyor Installation

Align, rotate and engage the batter conveyor drive shaft slot with the rear drive shaft end inside the collar on the frame (see **Figure 10**).

NOTE - If the batter drive shaft and the rear frame drive shaft do not line up, check for proper assembly of the support assembly as described in **Section 6.2.2, Batter Conveyor Support Assembly**

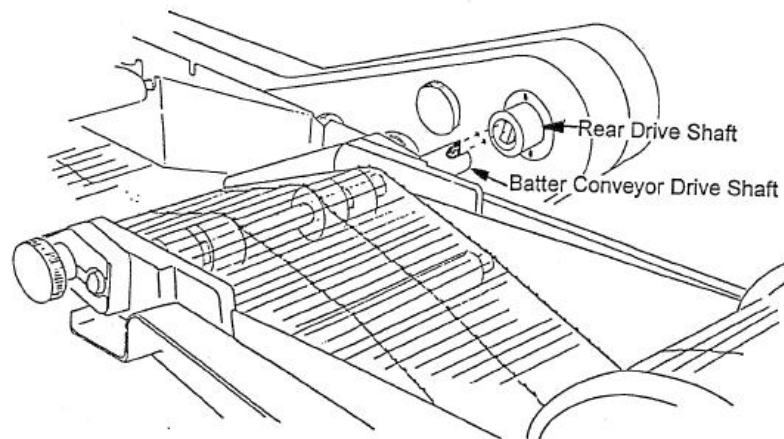


Figure 10
Batter Conveyor And Frame Engagement

SECTION 7.0 Installation

7.1 Work Station and Lighting

A work surface height of approximately 33” (83.82 cm) or less is recommended to permit the operator to view the product coverage and observe the levels of batter and breading in the conveyors.

A work surface size of at least 19” (48.26 cm) wide and 44” (111.76 cm) long is recommended to support the machine and permit placement of loading and collection pans at either end.

Adequate lighting should be provided to permit the operator to safely monitor the machine, view product quality and observe and maintain proper levels of batter and breading materials in the Bettcher® AUTOMATIC Batter-Breading SYSTEM.

7.2 Recommended Accessories - Not Furnished

A clean, long bristle or basting brush to help clean residual breading from under the belt and the corners of the breader conveyor.

A service cart, such as a plastic Rubbermaid flat shelf cart (44”L x 25-1/2”W x 33”H), to provide a portable work surface and storage for the Bettcher® AUTOMATIC Batter-Breading SYSTEM.

Food handling pans about 5” (12.7 cm) deep for collecting breaded product and emptying breading from the conveyor.

SECTION 8.0 Instructions for Operation

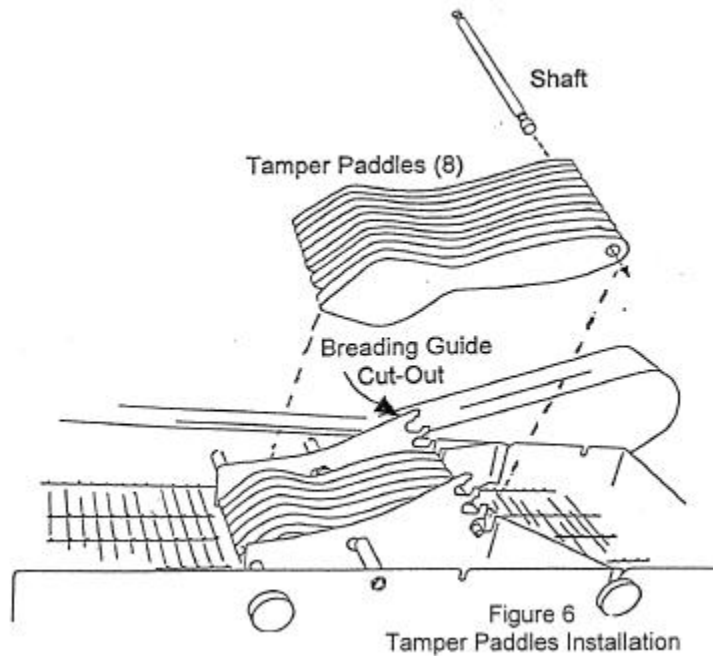
8.1 Filling & Refilling the Breader Conveyor

Turn switch clockwise to 'ON'. The breader conveyor is filled while it is on the frame and the unit is running. Set both vibrator adjustment shafts in a position so that they cause the belt to bounce a little. (Note: The bottom of the slot is the "tightest" and will cause more bouncing than the other positions). This "bouncing" will assist in moving the breading around for better product coverage and will also assist in shaking off the unused breading from the wire belt.

Pour breading onto the top of the moving wire belt. Ten to fifteen pounds of breading is required depending on the type of material. Refill with breading when product coverage becomes thin.

Reposition the vibrator adjustment shafts to re-circulate breading.

The (8) tamper paddles, (see **Figure 6**), apply pressure to the breading bed to help adhere breading to the product as it passes through. Some products may be better covered if one or two of these paddles are removed.



8.1 Filling & Refilling the Breader Conveyor (Continued)

Keep breading filled for complete coverage of the product. The depth of the breading bed under the product may be adjusted by varying the height of the batter conveyor's plow plate above the breader belt. (See **Figure 11**).

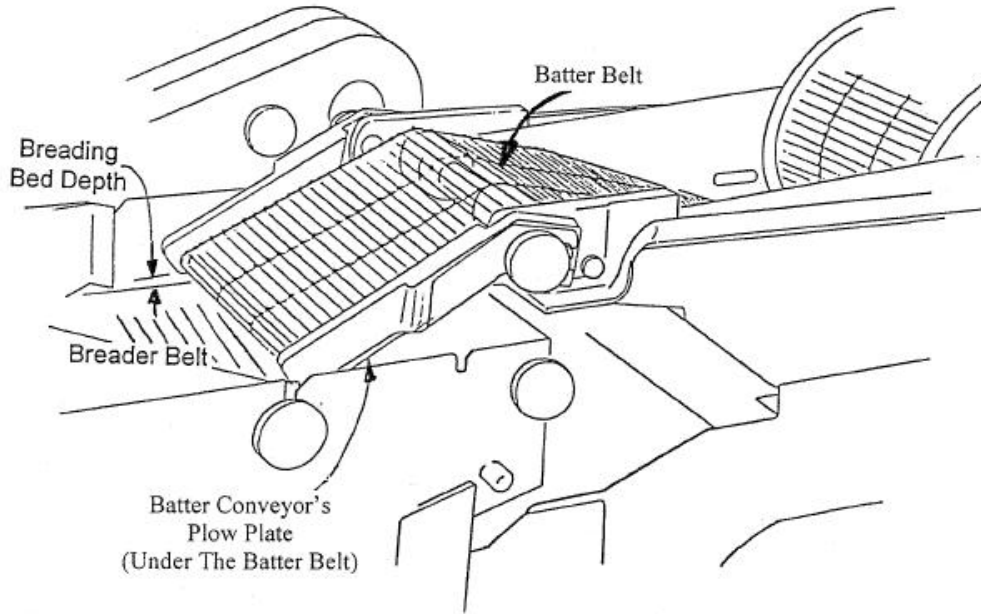


Figure 11
Breading Bed Depth

8.2 Filling and Refilling the Batter Conveyor

The batter conveyor and tank is filled while mounted on the machine.

Pour premixed batter material into the tank until it covers the batter level slots (see **Figure 12**) on the side plates. This requires about 6 quarts (5.68 liters).

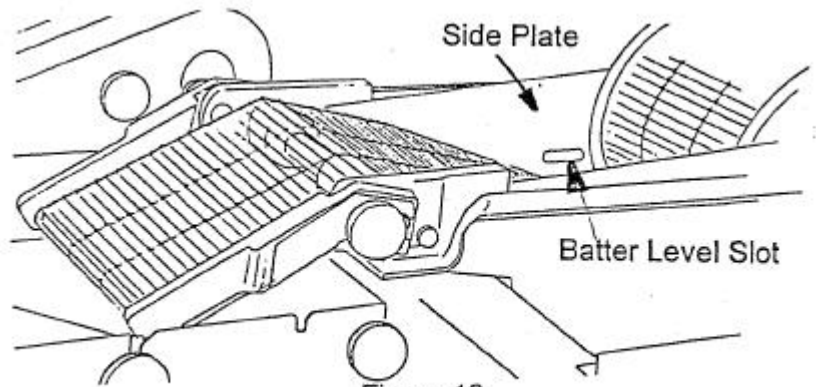


Figure 12
Filling The Batter Tank

Refill with batter liquid when level gets near the bottom of the slots or when coverage is not complete.

The space between the batter discharge roller and the edge of the plow plate can be adjusted so that product is properly released from the batter belt and moved onto the bed of breading. Flat, floppy products such as fish fillets, are best processed with the discharge roller down near the plow plate as shown in **Figure 13A** to help prevent flipping and bunching.

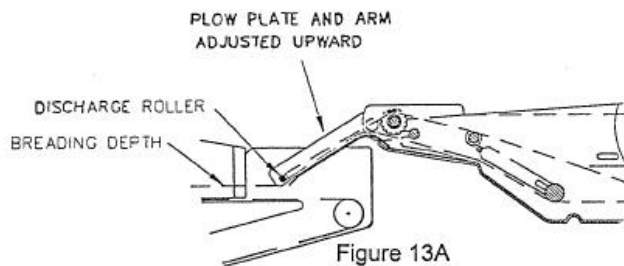


Figure 13A
Discharge Roller Down

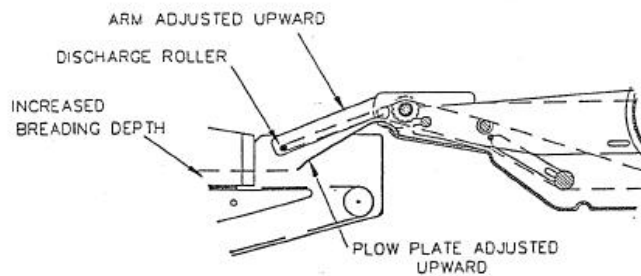


Figure 13B
Discharge Roller Up

Smaller pieces of sticky products, such as chicken, are best processed with this roller up and separated from the plow plate as shown in **Figure 13B** to allow the product to completely drop from the batter belt.

8.3 Unloading the Breader Conveyor

Place a suitable tub or pan at the discharge end of the breader conveyor. Remove the tamper paddles, vibrator springs, and discharge tray from the machine.

Turn the Bettcher® AUTOMATIC Batter-Breading SYSTEM 'ON' until most of the breading comes out. Turn power OFF. Unloading is completed by removing the breader conveyor and shaking it, open end down, over the tub. A dry, cleaning brush may be used to help remove breading from under the belt and from corners.

NOTICE

Unused breading usually has some batter solution mixed in and can harden between uses. Attempting to start the automatic batter-breading system with hardened breading inside can cause serious mechanical damage to the machine and may void your warranty.

The breader conveyor should be completely emptied and washed at the end of a day of use.

8.4 Emptying the Batter Conveyor and Tank

The batter tank and conveyor assembly must be removed together for the Bettcher® AUTOMATIC Batter-Breading SYSTEM to be emptied.

Pour the contents from the tank into a suitable container. The tank and conveyor assembly should be completely emptied and cleaned at the end of a day of use.

8.5 Fault Detection & Correction

PROBLEM	REMEDY
Machine Will Not Run	Check that the unit is plugged into a properly grounded outlet.
	Remove and empty breeder and batter conveyors and check that drive shafts turn freely.
	Check that the reset overload button on the motor is pushed in and attempt to restart. If reset button pops out again, clean motor fan shield to allow circulation of air to cool motor. If it still pops out, replace the gear motor.

Frame, Motor, and Drive Shafts

PROBLEM	REMEDY
Only Motor Runs, Shafts Do Not Turn	Remove covers and check for loose set screws in drive sprockets, broken drive chain or excessively worn sprockets.
	Replace broken drive chain and adjust as shown in Section 9.0 .
Gear Motor Leaks Oil	Replace gear motor.
Gear Motor Gets Too Hot	Clean motor fan shield.

Breeder Conveyor

PROBLEM	REMEDY
Shaft Will Not Move Or Turn Freely	Check for, and remove, hardened breeding jamming the mechanism.
Drive Shaft Skips	Check that latch is engaged into bearing slot. Place latch fully into slot.
	Check that knobs on tensioner shaft and breeder pan are tight. Tighten knobs.
	Clean motor fan shield.

8.5 Fault Detection & Correction (Continued)

Breader Conveyor
(Continued)

PROBLEM	REMEDY
Drive Shaft Skips (Continued)	Check that drive sprocket shaft has no more than .090"(.22 cm) end play. If so, check that tensioner arm is not pinched between the end of the shaft and the side plate. Loosen knobs and reposition the tensioner.
	Check that sprocket shaft shoulder has not worn into the face of the bearing that is farthest away from the latch permitting .090" end play or more. If it has, replace the worn bearing.
	Check that drive shaft ends are not severely worn and rounded. Replace both shafts and their bearings if one is worn.

NOTE:

It is not likely that the drive shaft skips because the drive chain inside the frame is loose. It is more likely due to the above.

PROBLEM	REMEDY
Belt Skips	Check that the conveyor is not overfilled with breading. Remove excess breading.
Too Much Breading Runs Off End Of Conveyor	Adjust the belt vibrators up or down as required.
Will Not Allow Product Through	Raise tamper paddle shaft up and into a higher cut-out position in the breader guide.
Will Not Cover The Product	Check that conveyor is adequately filled with breading and refill as required. Check for proper breading bed depth and adjust plow plate as required.
Makes Line Marks Appear On Product	Remove or add one or two tamper paddles.

8.5 Fault Detection & Correction (Continued)

Batter Tank and Conveyor

PROBLEM	REMEDY
Sprocket Shaft Will Not Turn	Check for drive shaft engagement.
Pulls Too Much Breading Into Batter Tank	Adjust the discharge roller a little further away from the plow plate. See Section 8.2, Figure 13B.
Pulls Product Back Into The Batter Tank	Adjust the discharge roller a little further away from the plow plate. See Section 8.2, Figure 13B.
Puts Too Much Batter Into The Breading	Check to see that the grooved plastic roller between the wire wheel and the sprocket shaft is properly installed.
Snags Product On Sides	Place product nearer the middle of the belt.
Does Not Cover The Product With Batter	Check that the batter tank is filled per Section 8.2. Remove the tensioner.
Product Will Not Pass Under The Wire Wheel	Remove the tensioner.
Wire Wheel Rubs and Squeaks Against The Side Plate	Flip the wire wheel over in its bracket and reinstall.
Drive Shaft Ends Do Not Align Properly Or Stay Engaged	Realign the batter tank support as described in Section 9, Batter Tank Support Adjustments.

8.5 Fault Detection & Correction (Continued)

Breeder Conveyor Wire Belt

PROBLEM	REMEDY
<p>Belt Skips</p> <p>*</p>	<p>Check that the wire belt guide blocks are adjusted up toward the sprockets lightly against the wire belt. Readjust as required as described in Section 9.1.5, Step #11.</p> <p>Check wire belt guide blocks for excessive wear to prevent them from being adjusted as described above. Blocks may be exchanged from side to side for longer wear. If this is not possible, replace guide blocks.</p>
<p>Wire Belt Does Not Move Smoothly Or Turn Freely</p> <div data-bbox="272 1297 766 1480" style="text-align: center;"> </div> <p style="text-align: center;">Figure 14 Wire Belt Installation Check</p>	<p>Check that the belt does not have too many spaces (links). There should be no more than 111 spaces, including splice clips. Remove links as necessary or replace wire belt.</p> <p>Check for hardened breeding jamming the mechanism. Remove hardened breeding.</p> <p>Check the wire belt for bent, snagged or broken wires. Straighten bent wires, replace belt.</p> <p>Check that the wire belt is installed properly. Smooth side of the belt must be outside. The ends of the wires must point backward and the belt must be routed as shown in Figure 14. Belt guide blocks must be outside the belt.</p>

8.5 Fault Detection & Correction (Continued)

Batter Tank and Conveyor Wire Belt

PROBLEM	REMEDY
Wire Belt Skips Over Sprockets	Check that tensioner is installed. Remove links from belt.
Wire Belt Will Not Move Or Turn Freely	Check wire belt for bent or broken wires. Repair or replace the wire belt.

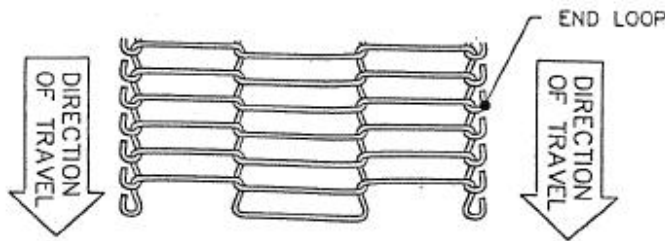


Figure 14
Wire Belt Installation Check

Check that the belt is installed properly. The smooth side must be outside, the ends of the wires must point backward and the belt must be routed as shown in Figure 14. End loops must face forward in the direction of belt travel. The plow plate must be outside and under the belt.

SECTION 9.0 Maintenance & Cleaning

9.1 Maintenance



To avoid personal injury, always disconnect the power cord before performing any adjustment, disassembly, reassembly, troubleshooting or cleaning procedures.

9.1.1 Batter Tank Support Adjustments

The batter tank support has been preset at the factory. Check the alignment to make sure the drive shaft and driven shaft are still in a straight line. If not, follow these instructions:

1. Loosen the guide sleeve by backing off the two (2) slotted screws that hold the guide sleeve in position over the drive shaft.
2. Slide the sleeve away from the joint for visual inspection.
3. Check the joint alignment while the drive cog is vertical (**see Figure 15**). If the shafts are aligned, the guide sleeve should slide freely over the joint.

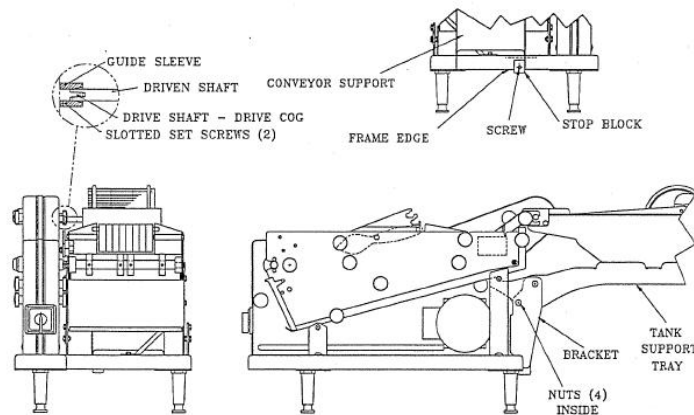


Figure 15
Batter Tank Support Adjustments

9.1.1 Batter Tank Support Adjustments (Continued)

- A. If the guide sleeve slides freely over the joint, the alignment is okay; slide the guide sleeve back in position and retighten.
 - B. If the guide sleeve does not slide freely over the joint, proceed with the following adjustments.
4. Loosen the (4) nuts holding the tank support tray in place.
 - A. If the batter conveyor driven shaft is low, raise the tray up.
 - B. If the batter conveyor driven shaft is high, lower the tray.
 5. Check to see if the guide sleeve slides freely over the joint. If not, repeat #4 above. When it does slide freely, tighten the (4) nuts then continue with the following adjustments.
 6. Loosen the screw that secures the stop block to the frame edge.
 7. Slide the entire batter tank and conveyor support assembly in until the ends of the drive shafts are fully engaged.
 8. Slide the stop block against the conveyor support as shown in **Figure 15** and retighten the stop block screw.

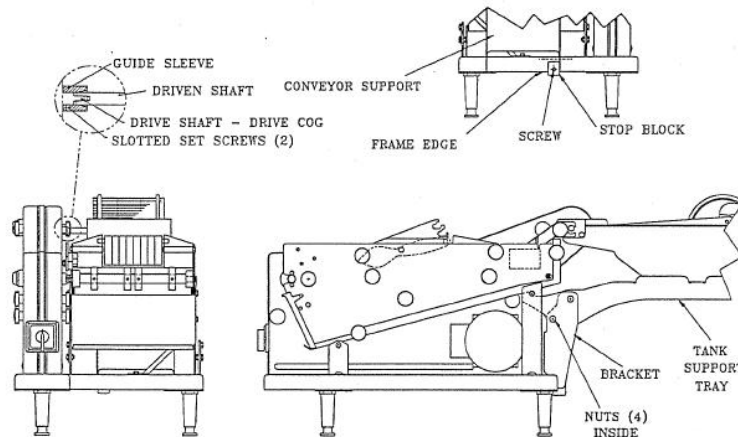


Figure 15
Batter Tank Support Adjustments

9.1.2 Batter Conveyor Wire Belt Removal and Installation

1. Remove the conveyor assembly from the batter tank. **(Figure 16)**
2. Flex the longer legs of the bracket to remove it from the side plate pegs. Flex the short legs of the bracket and lift the batter wheel assembly out.
3. To remove the wire belt from the batter wheel:
 - A. Remove the two O-rings on the outside of the wheel.
 - B. Push the two wheel sides and shaft through the wire belt.
4. To reinstall the wire belt on the batter wheel:
 - A. Place the two batter wheel sides on the shaft.
 - B. Push the sides and shaft through the wire belt until it is centered.
 - C. Slide one O-ring on each side about 5/16" from the edge of the wire belt.

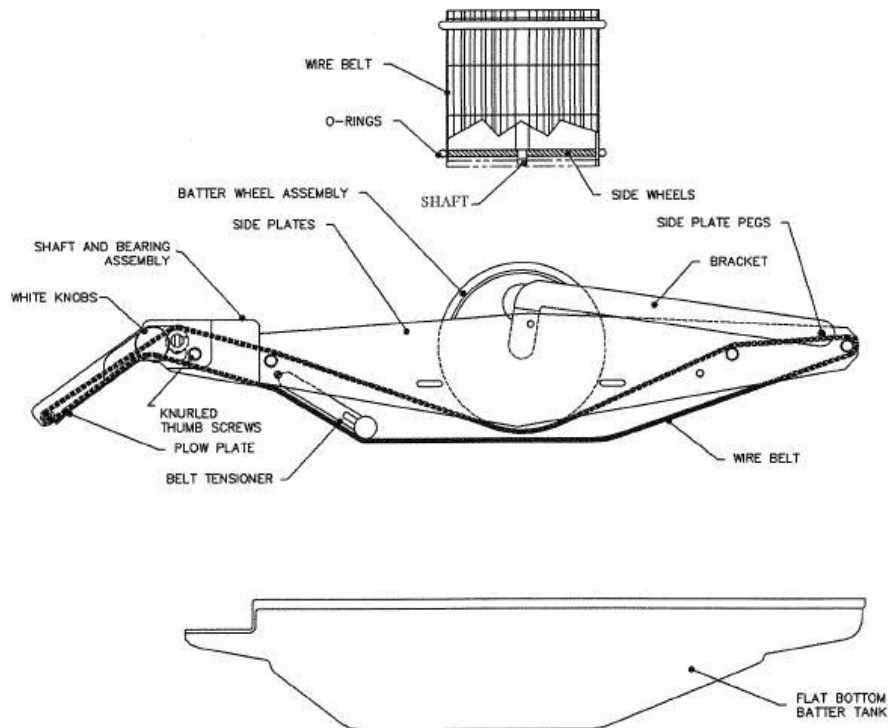


Figure 16
Conveyor Assembly Removal

9.1.2 Batter Conveyor Wire Belt Removal and Installation (Continued)

5. To remove the batter conveyor wire belt from the conveyor:
 - A. Remove the belt tensioner by flexing the tabs out of the holes in the side plates.
 - B. Loosen the two white knobs that secure the plow plate and remove the plow plate.
 - C. Loosen the two knurled thumb screws that secure the bearing plates and slide the shaft and bearing assembly off the end of the side plates and out from inside the belt.
 - D. Slip the wire belt over the conveyor side plates.

6. To reinstall the batter conveyor wire belt:
 - A. Slip the wire belt over the conveyor sides. Make sure that the smooth side of the belt is out and that the hooks on the wire belt are going in the direction shown in **Figure 17**.
 - B. Reinstall the shaft and bearing assembly, plow plate and belt tensioner.

7. Reinstall the batter wheel; make sure the hooks on the belt are going in the direction shown in **Figure 17**.

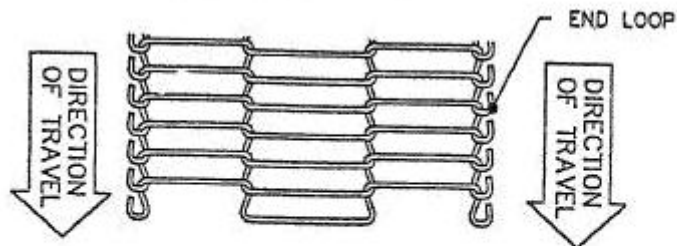


Figure 17
Batter Conveyor Wire Belt Installation

9.1.3 Batter Conveyor Bearings and Drive Shaft Replacement (Figure 18)

1. Remove the shaft and bearing assembly as described in **Section 9.1.2**.
2. Remove the knurled thumb screws and slide the bearing and arm assemblies off the shaft.
3. Separate the arms, bearings, discharge shaft, flush head screws and white knobs.
4. If only bearings need to be replaced, replace them with the offset pockets for the side plates to the inside and then reassemble the bearings and arm assemblies.
5. If only the shaft is to be replaced, loosen the two set screws in each sprocket and slide the sprockets off the shaft.
6. Slide the sprockets on the new shaft.
7. There are detents drilled in the shaft for one of the two set screws. Line up the set screw and the detent and tighten the set screw, then tighten the other set screw. Do this for all four sprockets.
8. Slide the bearing and arm assemblies on each end of the shaft with the offset pocket for the side plate to the inside.

9.1.3 Batter Conveyor Bearings and Drive Shaft Replacement (Figure 18)
(Continued)

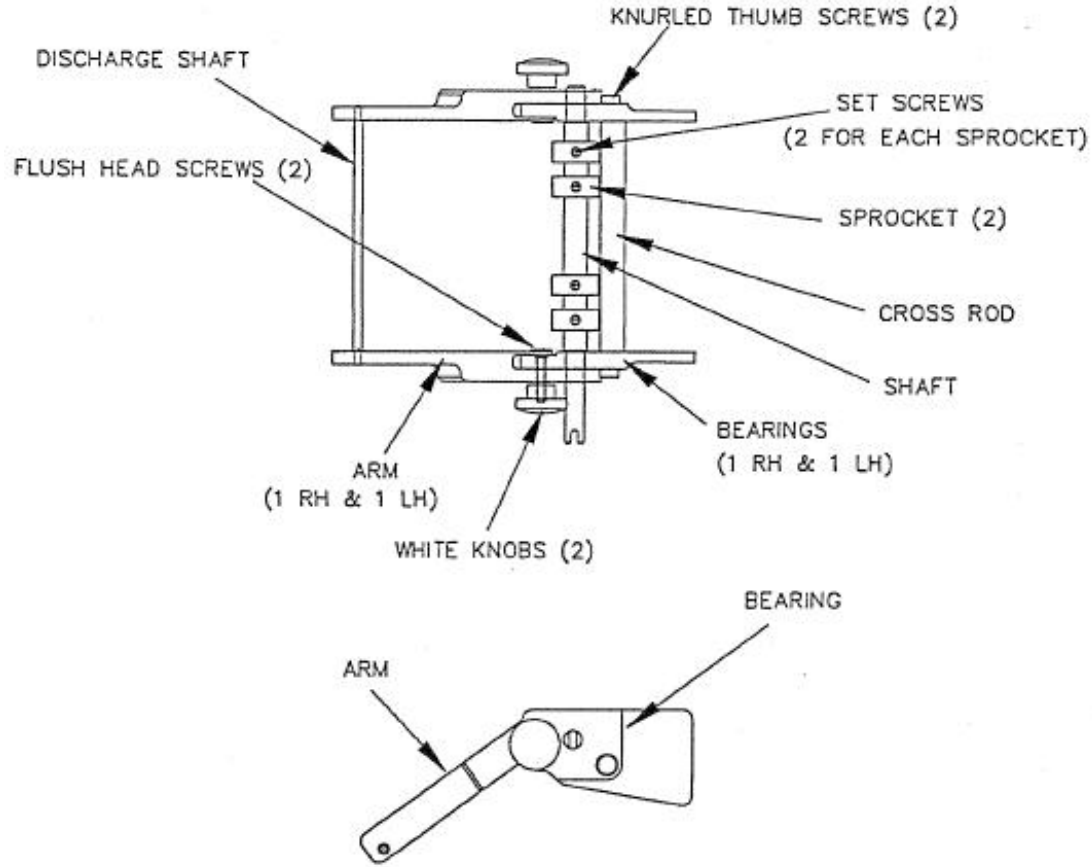


Figure 18
Batter Conveyor Bearings & Drive Shaft Replacement

9.1.3 Batter Conveyor Bearings and Drive Shaft Replacement (Continued)

9. Loosely install the thumb screws through the bearings and into the cross rod.
10. Assemble the shaft and bearing assembly inside the belt and onto the ends of the side plates. Tighten the knurled thumb screws.
11. Rotate the shaft by hand to check for binding.

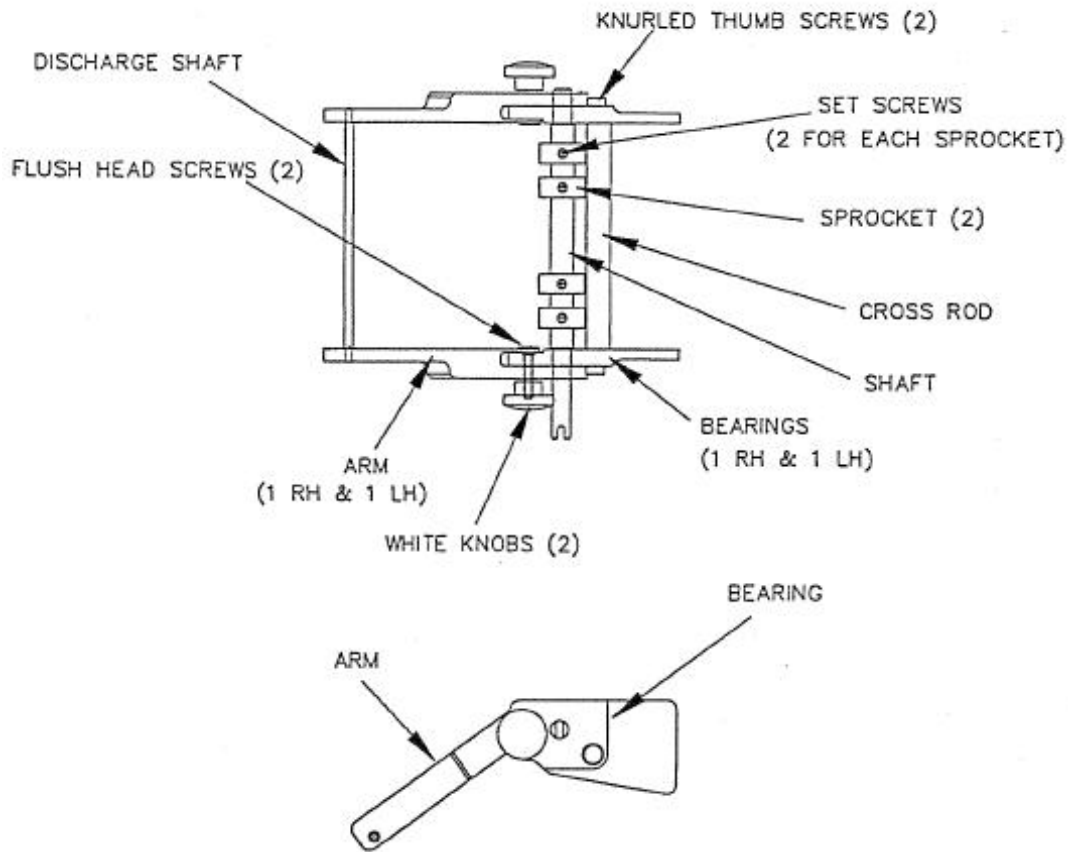


Figure 18
Batter Conveyor Bearings & Drive Shaft Replacement

9.1.4 Breeder Conveyor Wire Belt Removal and Installation (Figure 19 & 20)

NOTICE

Immediately repair bent wires in the wire belt. Replace the wire belt when it becomes damaged or broken. Continued use of a wire belt with damaged wires will cause additional serious damage to the wire belt and to other parts of the machine.

NOTE:

The Wire Belt May Be Removed and Installed From Either Side of the Conveyor Assembly

Removing the Wire Belt (See Figure 19):

1. Remove the breeder conveyor assembly from the machine frame.
2. Remove the vibrator springs (not shown), tamper paddles (or plate) and the discharge tray and lay the conveyor assembly on its side on a flat surface.
3. Loosen the 4 white knobs (2 on each side) that secure the bottom pan and remove the bottom pan.
4. Remove the 4 white knobs on top that secure the side plate to the center pan and the deflector shaft and remove the side plate.
5. Remove the wire belt but leave the sprocket shaft, deflector bar & shaft, and the rear support shaft in place.

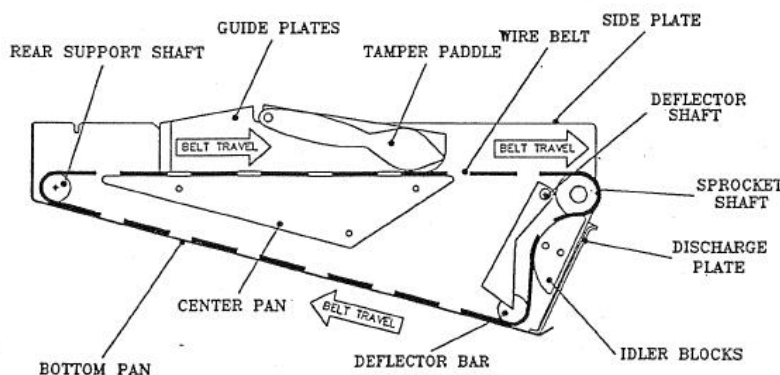


Figure 19
Removing The Wire Belt

9.1.4 Breader Conveyor Wire Belt Removal and Installation (Continued)

Installing the Wire Belt (See Figure 19):

1. Examine the sprocket shaft to see that all sprockets are tight and have no cracks. Replace any cracked sprockets. Align and tighten all sprockets as described.

NOTICE

Loose or improperly aligned sprockets may cause severe damage to the belt and machine.

Make sure that when installed, the end loops on the sides of the belt will be facing and moving as shown in **Figure 20**.

NOTICE

Installing and running the belt backwards may cause severe damage to the belt and machine.

2. Place the belt over the rear support shaft and over the sprocket shaft and between the idler block and the deflector bar and away from the discharge tray as shown in **Figure 19**. Make sure that the belt is not outside the idler blocks and not near the discharge tray.

Place the belt fully down over the shafts and between the guide plate and the center pan against the side plate. Assure that the wire belt is not pinched or tangled.

NOTICE

Installing and running the belt outside the idler blocks may cause severe damage to the belt and machine.

9.1.4 Breeder Conveyor Wire Belt Removal and Installation (Continued)

Installing The Wire Belt (Continued)(See Figure 19 & 20):

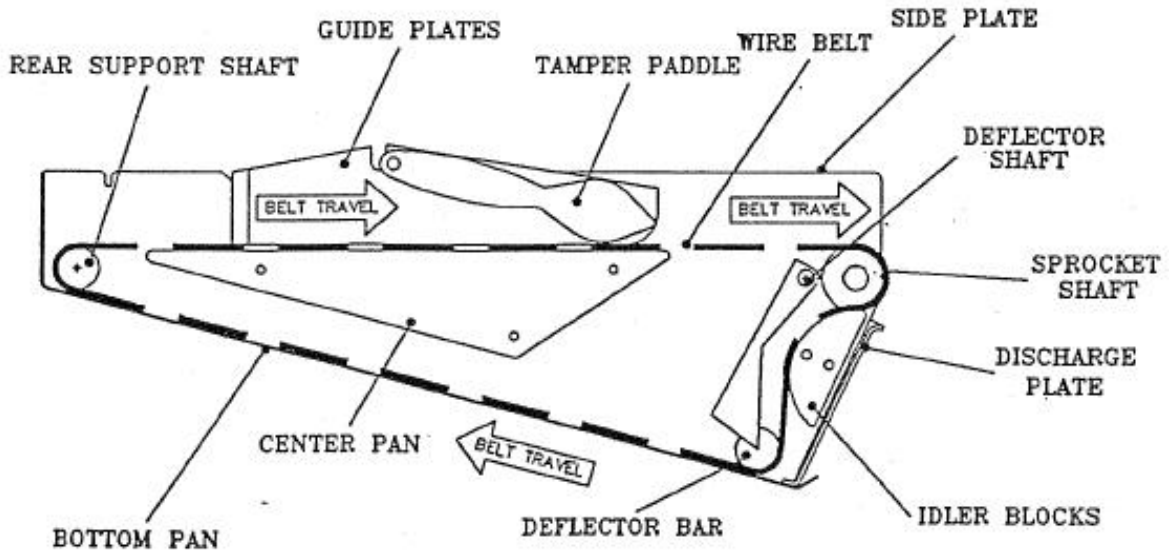


Figure 19
Removing The Wire Belt

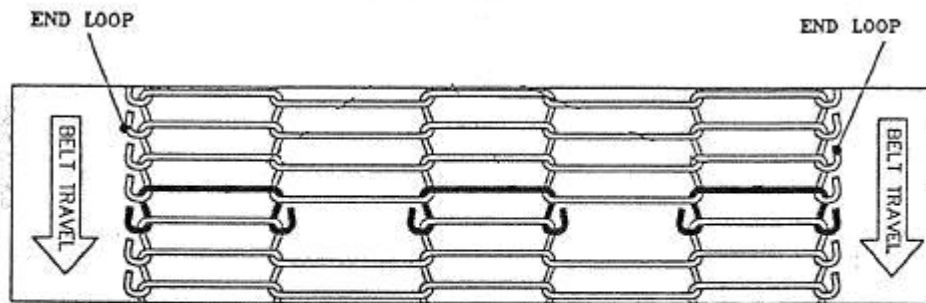


Figure 20
Wire Belt Installation

9.1.4 Breeder Conveyor Wire Belt Removal and Installation (Continued)

3. Place the side plate over the shaft ends and the threaded studs on the center pan. Replace and tighten the 4 white knobs.
4. Assure that the wire belt and shafts can run freely in the direction shown. Do not complete reassembly until the belt and shafts can run freely.
5. Replace the bottom pan and tighten the 4 white knobs. Assure that the bottom pan's edge slots are completely over the threaded studs and under the white knobs.
6. Place the breeder assembly onto the frame, engage the drive shaft and latch.
7. Replace the vibrator springs, tamper paddles (or plate), and discharge tray.

9.1.4 Breader Conveyor Wire Belt Removal and Installation (Continued)

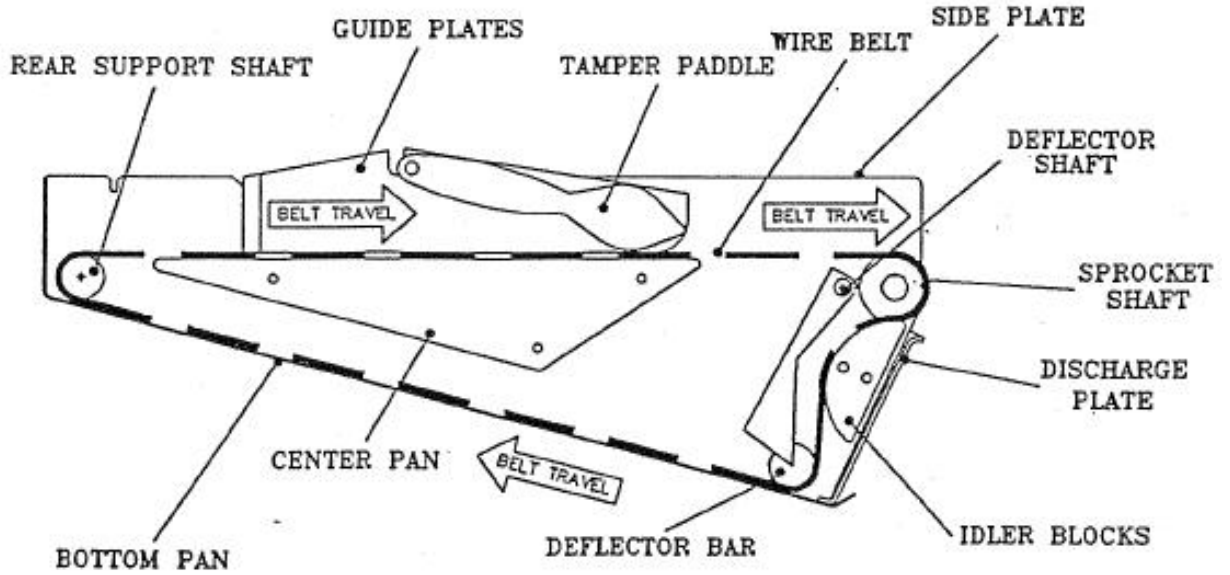


Figure 19
Removing The Wire Belt

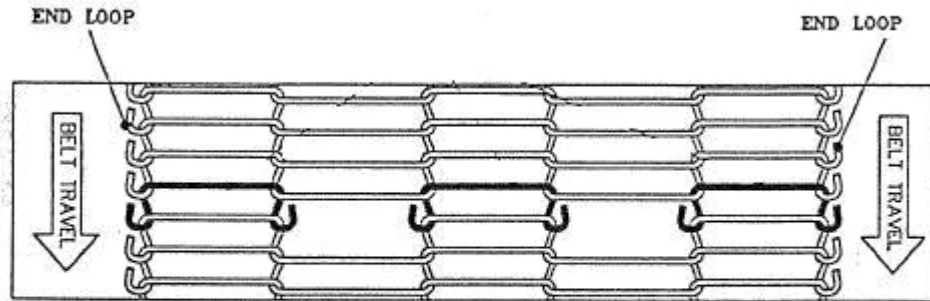


Figure 20
Wire Belt Installation

9.1.5 Breeder Conveyor Bearings and Drive Shaft Replacement (Figure 21)

1. Lift the breeder drive latch and remove the breeder assembly from the frame.
2. Remove the one screw holding each of the two idler blocks and remove the blocks.
3. Remove the two #10-32 screws from each of the bearings.
4. Slide the driven shaft, with the sprockets and bearings attached out from the slots in the side plates and from inside the wire belt.
5. Loosen the two set screws on each of the four sprockets and remove the sprockets.
6. Slide the sprockets onto the new driven shaft. Line up one set screw on each sprocket with the corresponding detent in the driven shaft and tighten this screw.
7. Tighten the other set screw on each sprocket.
8. Slide the new bearings onto the ends of the shaft.
9. Slide the shaft and bearing assembly under the wire belt and into the slots in the side plates.
10. Install the two #10-32 screws that retain each of the two bearings in place and tighten.
11. Install the two chain blocks. Adjust the idler blocks by raising them up and tilting the bottom end in as far as it will against the wire belt and then tighten the screws.
12. Put the breeder assembly back on the frame while making sure that the driven shaft is properly engaged and the drive latch is in place.

9.1.5 Breader Conveyor Bearings and Drive Shaft Replacement
(Continued)

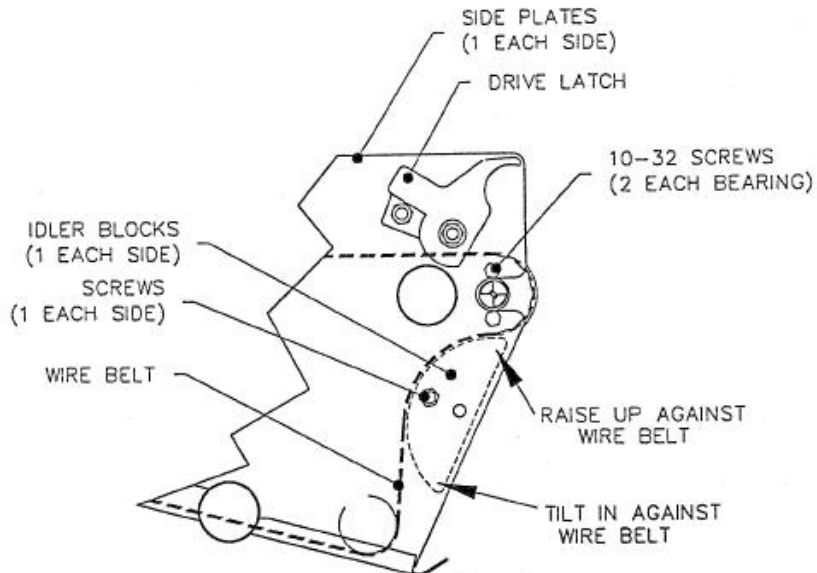
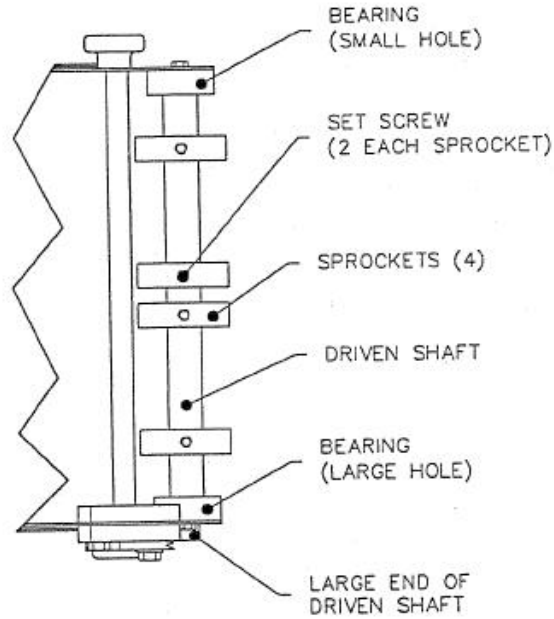


Figure 21
Breader Conveyor Bearings & Drive Shaft Replacement

9.1.6 Batter and Breader Drive Shaft Assembly Replacement/Service **(Figure 22)**

1. Unplug the power cord from the electrical outlet.
2. Remove the batter and breader conveyors, and drive guard covers.
3. Loosen the gear motor mounting screws (see **Section 9.1.8**) and raise the support gear motor so that the drive chain is loose.

9.1.6.1 Batter Drive Shaft Service (See Figure 22)

1. Prepare the machine as described above in **Section 9.1.6**.
2. Loosen the set screws and remove the guide bearing.
3. Loosen the drive sprocket set screws at least 5 turns and loosen the clamp collar.

NOTE:

Remove All Burrs From The Drive Shaft Ends Before
Attempting To Remove The Drive Shaft

4. If more parts than the drive shaft are to be replaced, skip to Step #6
5. If only the drive shaft is to be replaced, the new shaft may be used to push the old shaft out and then skip to Step #10.
6. Slip the drive shaft out and remove the clamp collar and drive sprocket.
7. Remove the flat head screws and bearings.
8. Install the new bearings and secure the flat head screws.
9. Reassemble the drive shaft assembly with new components. Assure that the drive sprocket is installed as shown in **Figure 22** and that the drive chain engages the other sprockets as shown in **Figure 23**.

9.1.6 Batter and Breader Drive Shaft Assembly Replacement/Service
(Continued)

(Figure 22 & 23)

9.1.6.1 Batter Drive Shaft Service (Continued) (See Figure 22)

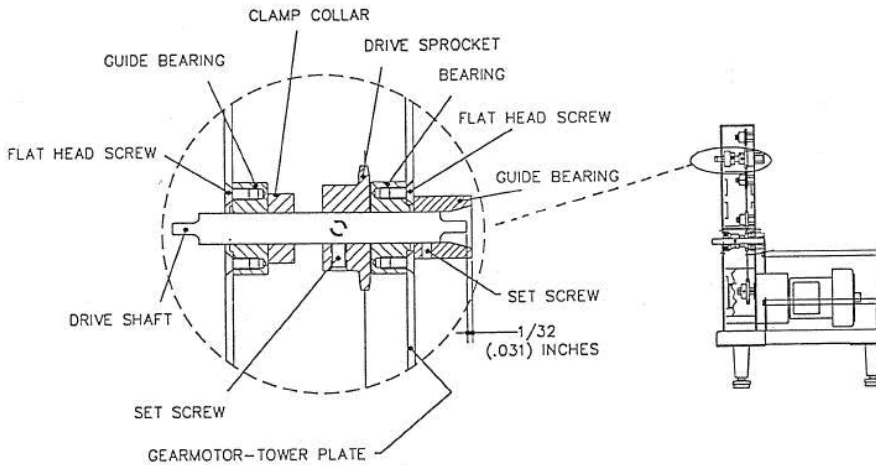


Figure 22
Batter Drive Shaft Assembly Replacement

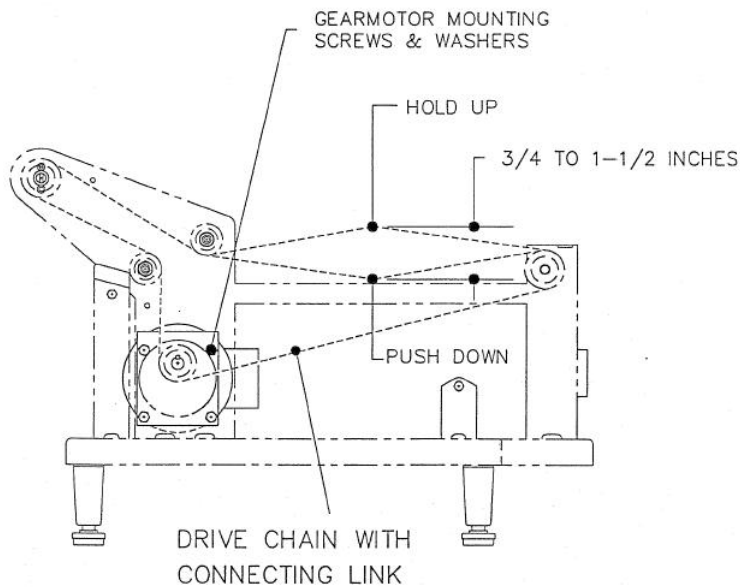


Figure 23
Drive Chain Replacement

9.1.6 Batter and Breader Drive Shaft Assembly Replacement/Service (Continued)

9.1.6.1 Batter Drive Shaft Service (Continued) (See Figure 22)

10. Tighten the clamp collar and drive sprocket set screws and guide bearing set screws after assuring that:
 - A. The clamp collar and drive sprocket are separated and held outward against the bearings (**see Figure 22**).
 - B. The guide bearing is held against the outside of the gear motor tower plate and the drive shaft is located 1/32 (.031) inch inward from the guide bearing's face (**see Figure 22**).
 - C. One of the drive sprocket's set screws is on the flat area of the drive shaft.
11. The shaft assembly and adjustment is correct if it can be turned by hand and the end play is zero to 1/64 (.015) inch maximum.
12. Adjust drive chain tension as described in **Section 9.1.7**.
13. Run the machine and observe the chain and shaft assemblies for smooth and quiet operation. If operation is not smooth and quiet, repeat Steps #9 through #12.
14. Reinstall guards and conveyors.

9.1.6 Batter and Breeder Drive Shaft Assembly Replacement/Service
(Continued)

9.1.6.1 Batter Drive Shaft Service (Continued) (See Figure 22)

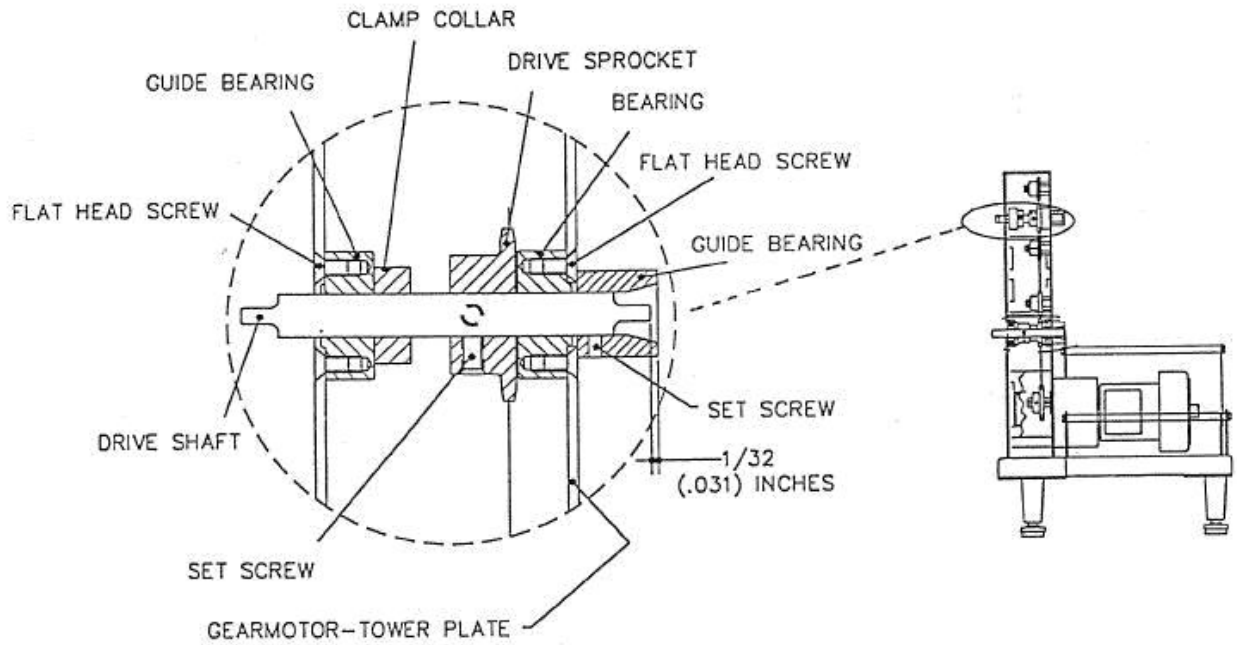


Figure 22
Batter Drive Shaft Assembly Replacement

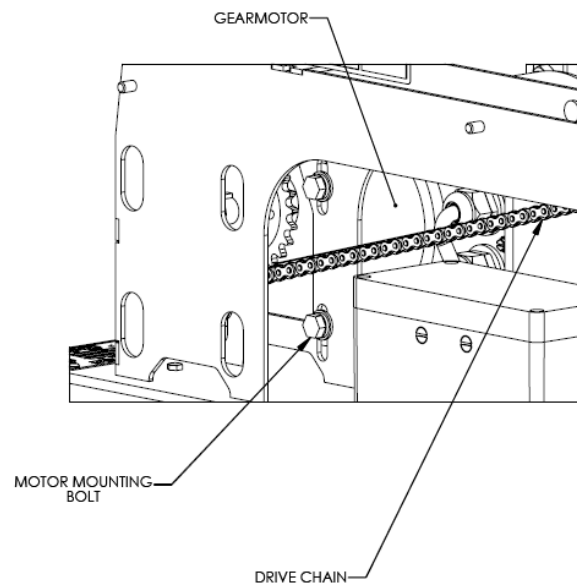
9.1.6 Batter and Breeder Drive Shaft Assembly Replacement/Service **(Continued)**

9.1.6.2 Breeder Drive Shaft Service

1. Disassemble the frame assembly by removing:

- Hand knobs
- Locking latches (remove by aligning the tabs with the grooves)
- Drive guard covers

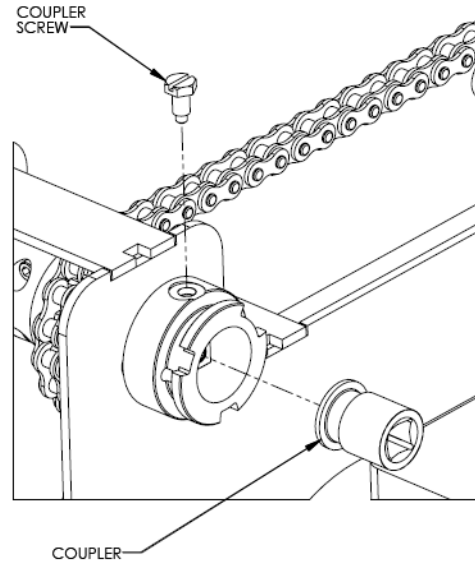
2. Loosen the 4 motor mounting bolts and lift up the gear motor to loosen the drive chain. Slightly tighten one motor mounting bolt to position the gear motor in the upper most position.



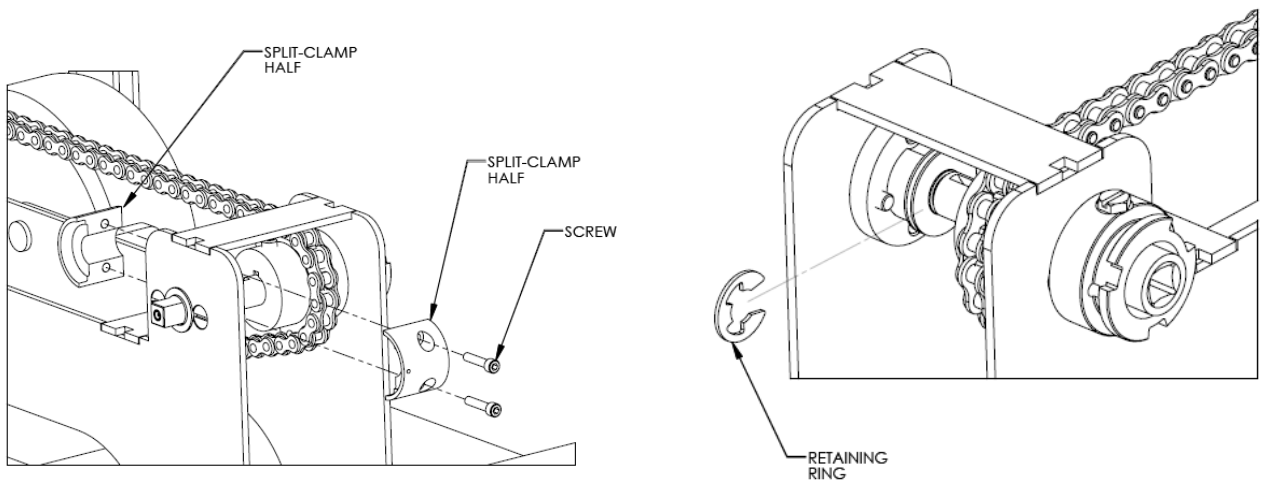
9.1.6 Batter and Breeder Drive Shaft Assembly Replacement/Service
(Continued)

9.1.6.2 Breeder Drive Shaft Service (Continued)

3. Using a 5/16" wrench or flat tip screw driver, remove the coupler screw from the locking housing and remove the coupler.



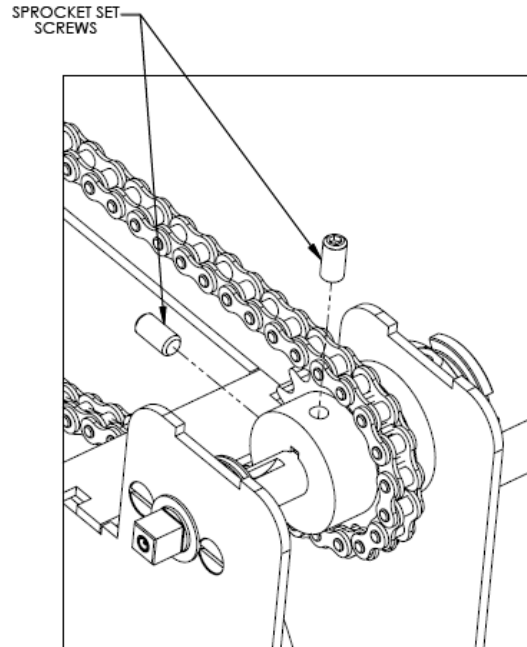
4. Using a 7/64" allen wrench, remove the 2 screws from the split clamp and remove both clamp halves. Remove the retaining ring underneath.



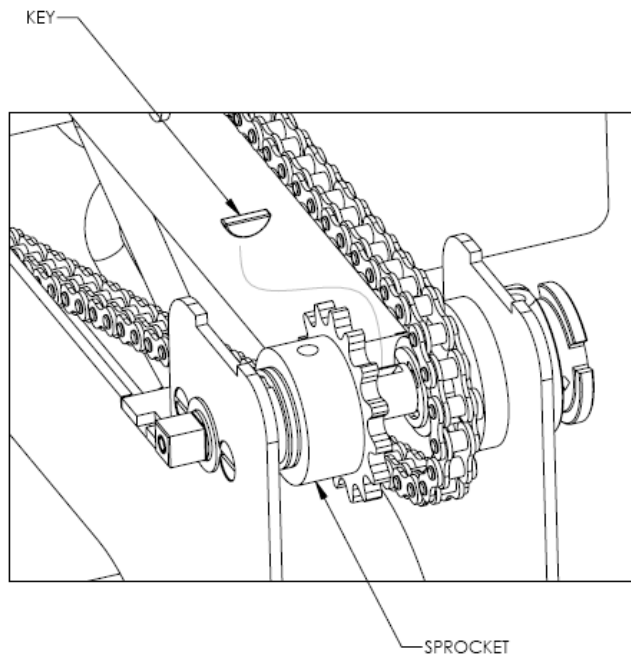
9.1.6 Batter and Breader Drive Shaft Assembly Replacement/Service
(Continued)

9.1.6.2 Breader Drive Shaft Service (Continued)

5. Using a 1/8" allen wrench, loosen the 2 sprocket set screws.



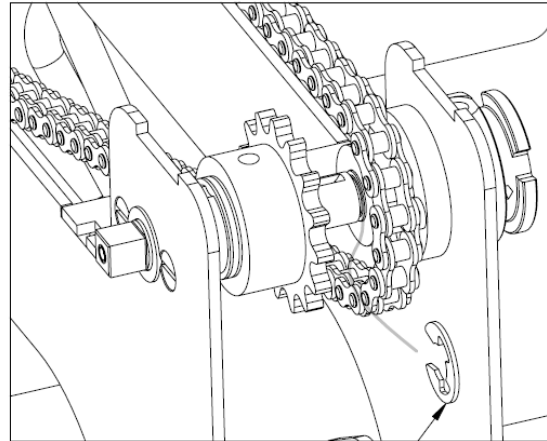
6. Slide the sprocket over to expose the sprocket key and remove the key.



9.1.6 Batter and Breeder Drive Shaft Assembly Replacement/Service
(Continued)

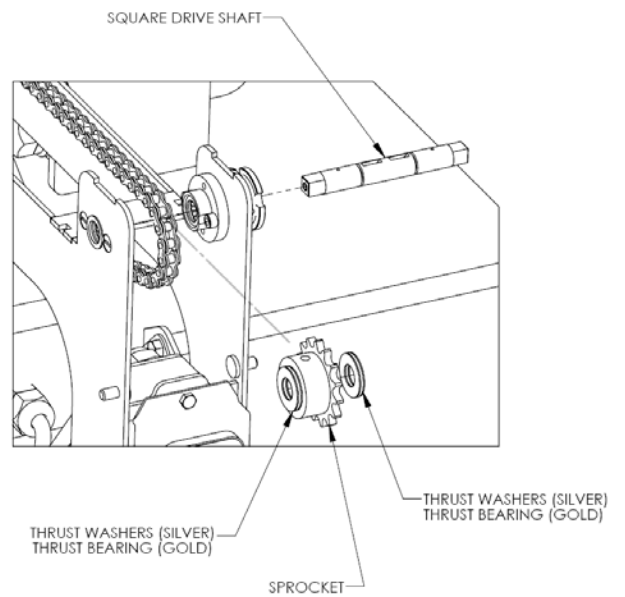
9.1.6.2 Breeder Drive Shaft Service (Continued)

7. Remove the retaining ring.



RETAINING
RING

8. Slide the drive shaft out of the bearing assemblies.



SQUARE DRIVE SHAFT

THRUST WASHERS (SILVER)
THRUST BEARING (GOLD)

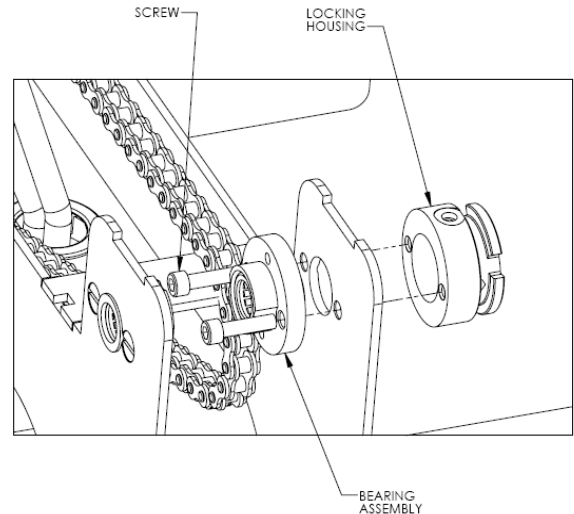
THRUST WASHERS (SILVER)
THRUST BEARING (GOLD)

SPROCKET

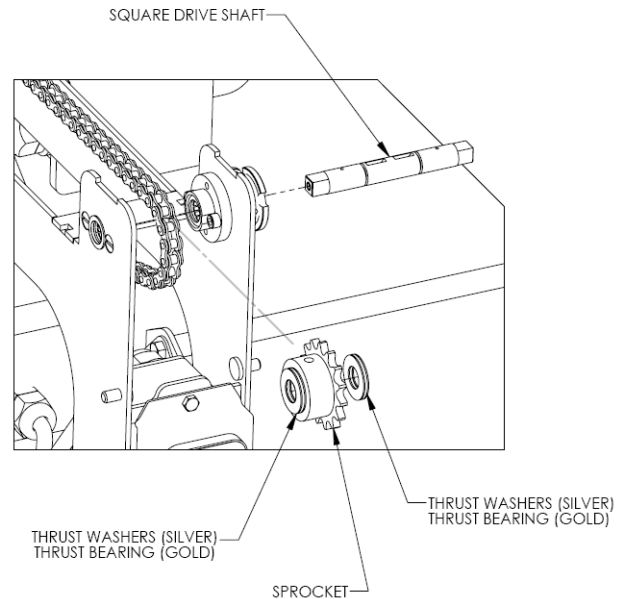
9.1.6 Batter and Breeder Drive Shaft Assembly Replacement/Service **(Continued)**

9.1.6.2 Breeder Drive Shaft Service (Continued)

9. Using a 5/32" allen wrench or standard flat tip screwdriver, remove the screws from the bearing assembly to remove the old bearings and locking housings.
10. Install the new bearing assemblies (and/or locking housings, if necessary). *Note: When installing the screws, use thread locker (Loctite 242 or equivalent).*



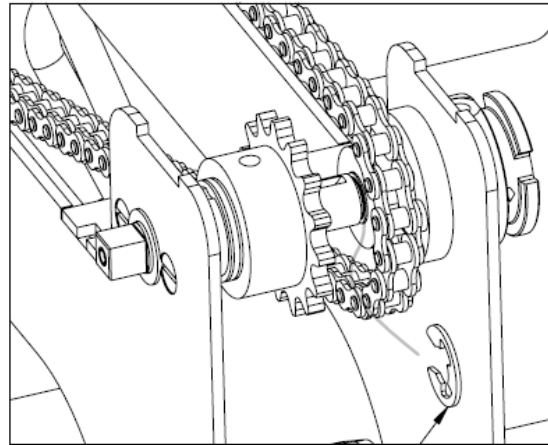
11. Insert the drive shaft into the locking housing and bearing.
12. While inserting the drive shaft, slip thrust washers (silver), thrust bearings (gold), spacer ring and sprocket over the exposed end of the shaft. **Note: Thrust bearings (Gold) should be located in between the thrust washers (Silver).*



9.1.6 Batter and Breader Drive Shaft Assembly Replacement/Service **(Continued)**

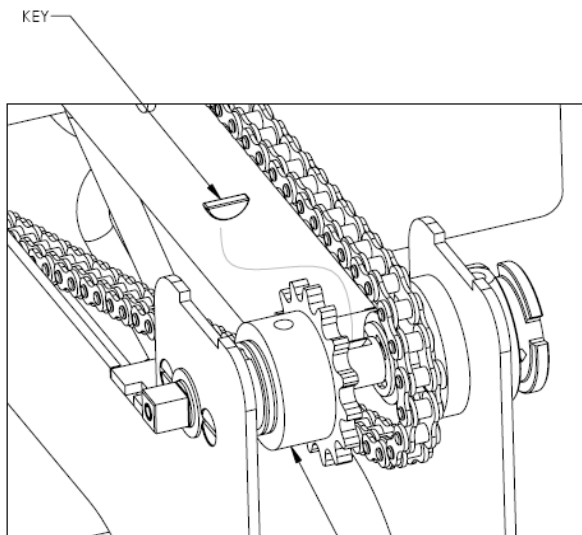
9.1.6.2 Breader Drive Shaft Service (Continued)

13. **Make sure the drive chain is correctly looped over the sprocket. Push the drive shaft through so that the retaining ring groove is visible. Install retaining ring.*



RETAINING
RING

14. Install the sprocket key into the **right** most key slot of the drive shaft.

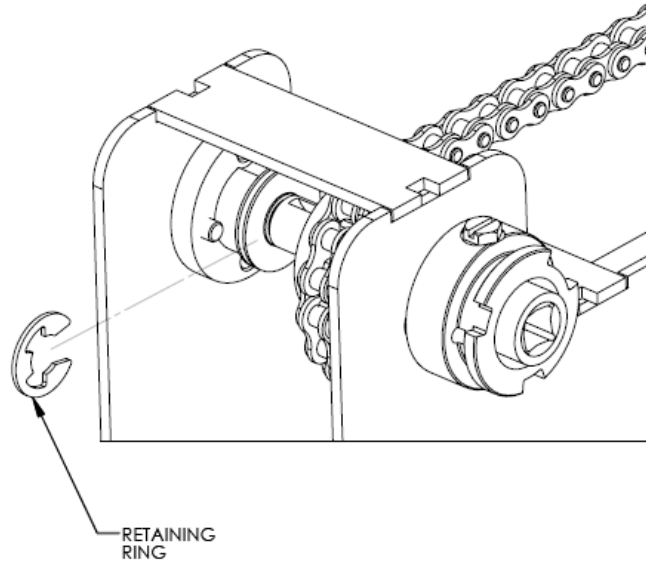


SPROCKET

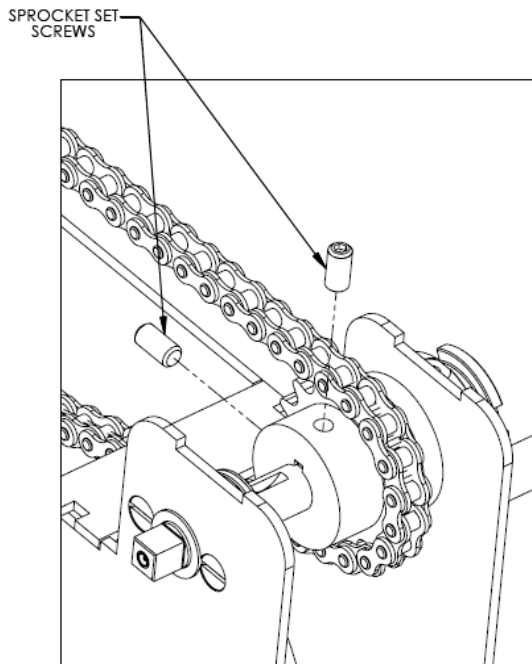
9.1.6 Batter and Breader Drive Shaft Assembly Replacement/Service
(Continued)

9.1.6.2 Breader Drive Shaft Service (Continued)

15. Slide the sprocket to the right over the key. Be sure that the thrust washers (silver) and the thrust bearing (gold) are properly installed. Install the retaining ring.



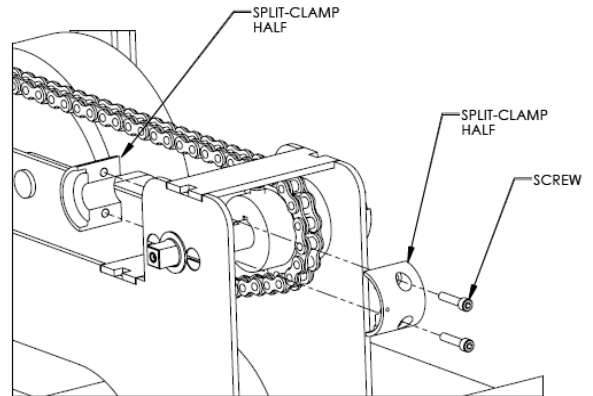
16. Make sure that the sprocket's keyway lines up with the key in the shaft. Tighten the set screws.



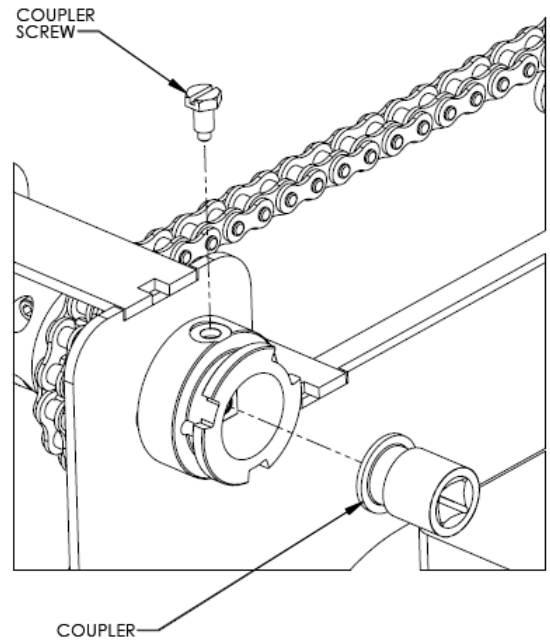
9.1.6 Batter and Breeder Drive Shaft Assembly Replacement/Service
(Continued)

9.1.6.2 Breeder Drive Shaft Service (Continued)

17. Install the split collar halves around the shaft. Slide the split collar against the retaining ring. Apply thread locker (Loctite 242 or equivalent) to the 2 screws. Tighten the screws, using a 5/64" allen wrench. Once assembled, the collar must rest against the retaining ring on the right side of the shaft. **Do not rest it against the sprocket.*



18. Reinstall coupler and coupler screw.

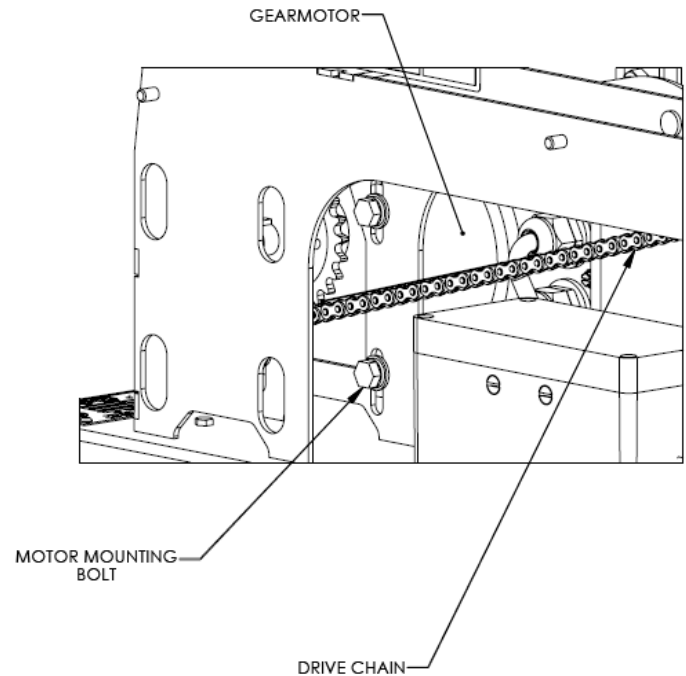


9.1.6 Batter and Breader Drive Shaft Assembly Replacement/Service
(Continued)

9.1.6.2 Breader Drive Shaft Service (Continued)

19. Ensure that the drive chain is routed around the sprockets as shown in the diagram.

20. Adjust the drive chain tension by allowing the weight of the motor to tension the drive chain. To avoid over tensioning the drive chain, make sure the drive chain deflection measures $\frac{3}{4}$ of an inch as shown. Tighten the 4 motor mounting bolts.

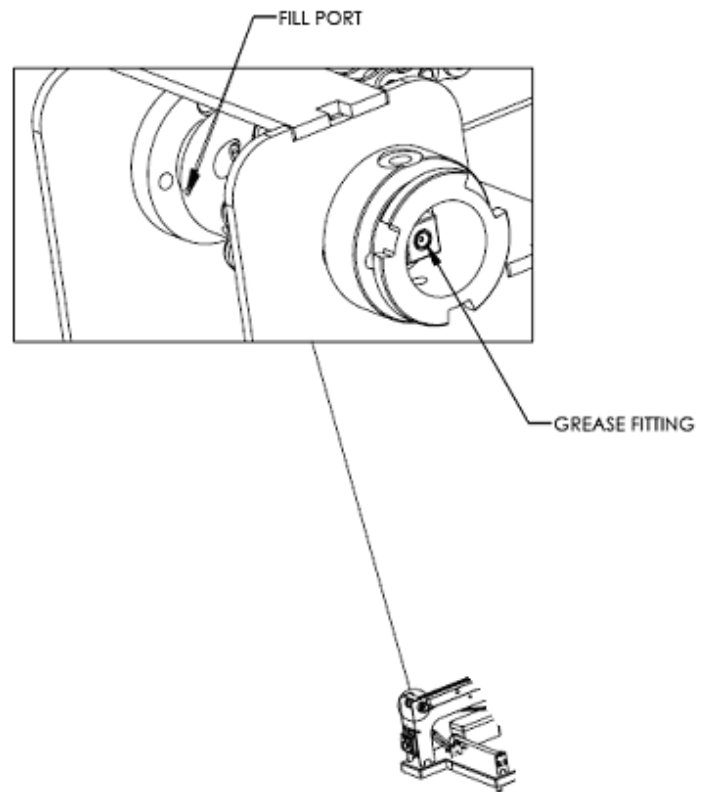


9.1.6 Batter and Breader Drive Shaft Assembly Replacement/Service
(Continued)

9.1.6.2 Breader Drive Shaft Service (Continued)

21. Verify the drive chain tension by pressing down on the chain as shown. Drive chain deflection should be $\frac{3}{4}$ of an inch (19mm).

22. Grease the breader drive shaft by using the grease gun (PN: 501417) to pump the grease into the fill ports in the spacer ring and split collar. Regrease the bearings by using the grease gun to pump the grease into the fittings located in both ends of the drive shaft. This should be done every six months.



23. Reinstall the drive guard covers, knobs and locking latches.

9.1.7 Drive Chain Replacement

1. Prepare the machine for drive chain replacement as described in **Section 9.1.6**.
2. Locate the drive chain connecting link (master link) and remove the retaining clip and slide the master link out.
3. Install the new drive chain around the sprockets as shown in **Figure 23** and connect the new connecting link.
4. Remove the support from the gear motor and allow its weight to tension the drive chain and retighten the gear motor mounting screws. Drive chain tension is correct when the difference in "Push Down" and "Hold Up" is as shown in **Figure 23**. **DO NOT OVER TIGHTEN THE DRIVE CHAIN.**
5. Run the machine about one minute and observe the operation of the sprockets and drive chain. Stop and unplug the machine and recheck the drive chain tension. If adjustment is necessary, repeat Step #4.
6. Reinstall the guards and conveyors.

9.1.7 Drive Chain Replacement (Continued)

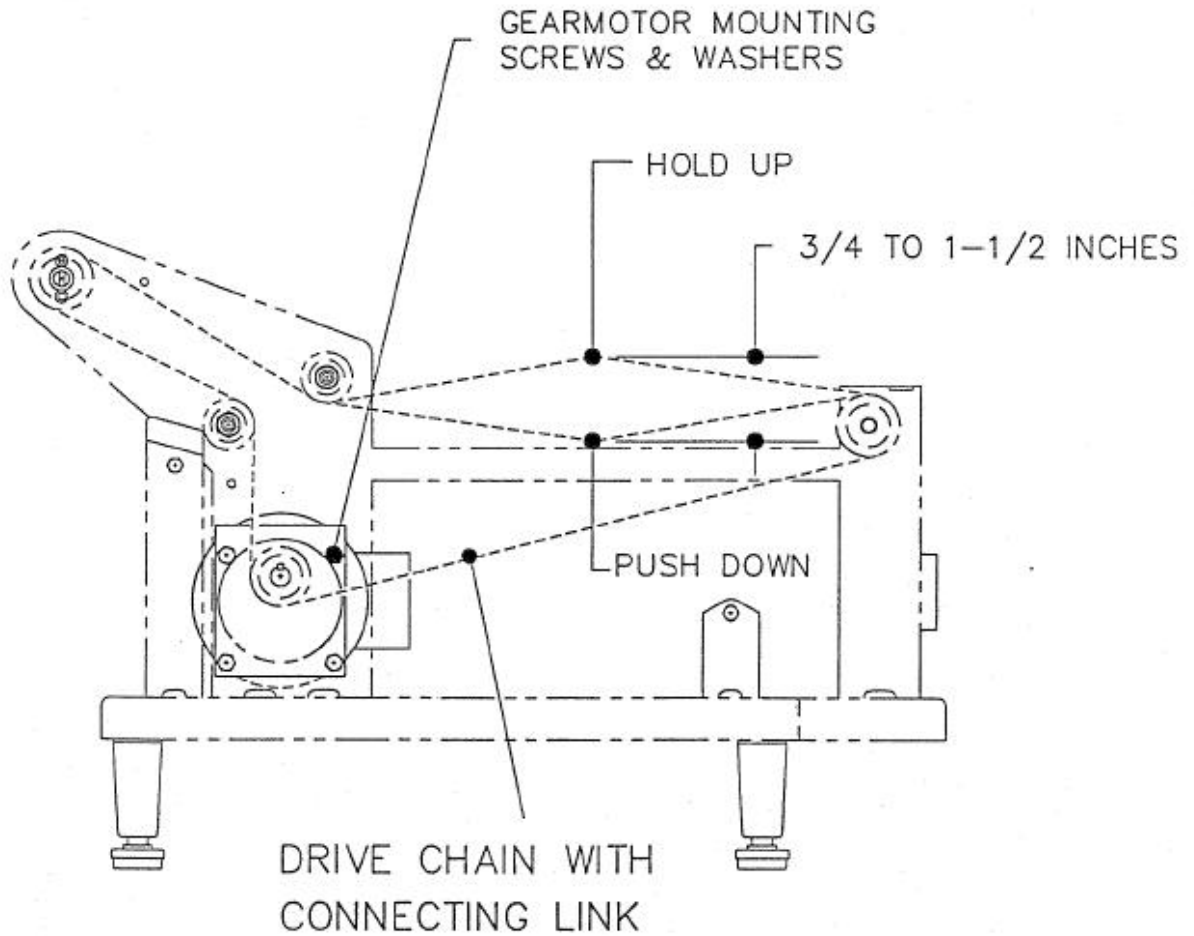


Figure 23
Drive Chain Replacement

9.1.8 Gear Motor Removal and Replacement (See Figure 24)



Always turn off the machine, disconnect the power and allow the machine to completely stop before removing the frame covers, removing or installing the conveyors, and before performing any adjustments, disassembly, reassembly, troubleshooting or cleaning procedures.



Do not attempt to lubricate or take apart the gear motor assembly.



Do not damage the fragile wires and connections on the components fastened to the junction box cover.

Gear Motor Removal (See Figure 24)

1. Unplug the power cord from the electrical outlet.
2. Remove the motor junction box cover by loosening the two screws on the sides of the box and pulling the cover out.
3. Remove the screw and washer securing the ground wire to the motor housing.
4. Remove the tape and wire nuts from the splices connecting the cable assembly wires to the motor.
5. Remove the lock nut from the connector and pull the connector and cable assembly from the junction box.

9.1.8 Gear Motor Removal and Replacement (Continued) (See Figure 24)

6. Remove the gear motor mounting screws and raise and remove the gear motor from the frame tower.
7. Drive sprocket may be removed from the gear motor shaft after loosening the set screws.

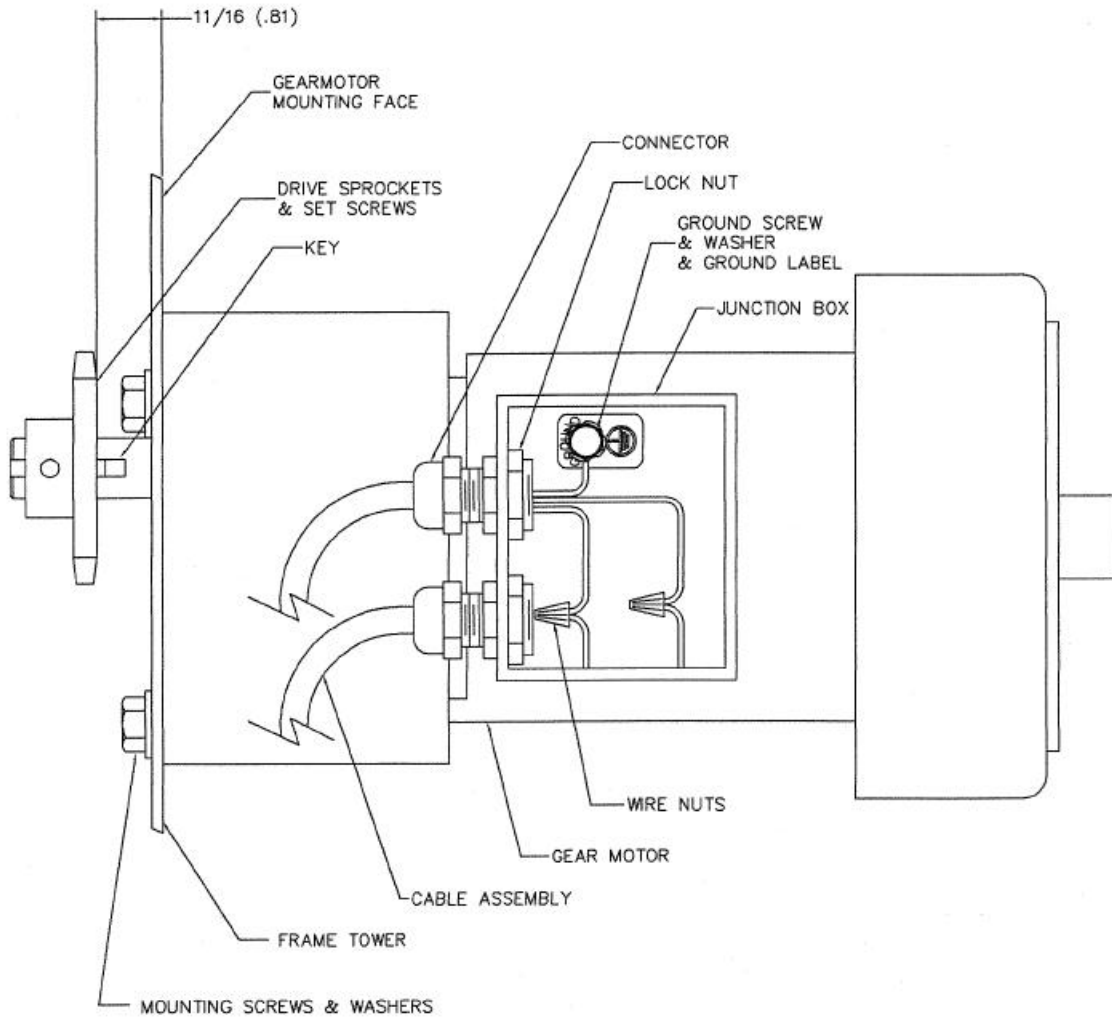


Figure 24
Gear Motor Removal And Replacement

9.1.8 Gear Motor Removal and Replacement (Continued) (See Figure 24)

Gear Motor Installation (See Figure 24)

1. Install the drive sprocket on to the gear motor shaft with the hub away from the gear motor and located as shown in **Figure 24**. Install the key and tighten the set screws.
2. Install the gear motor and sprocket assembly into the frame tower and secure loosely with mounting screws and washers.
3. Support the gear motor and engage the drive chain on to the drive sprocket.
4. Loosen the mounting screws and allow the weight of the gear motor to tension the chain and tighten the mounting screws.
5. Install the cable assembly and connector through the hole in the gear motor junction box and secure with a lock nut.
6. Fasten the ground wire to the motor housing inside the junction box with a screw and washer.
7. Splice the remaining cable assembly wires to the motor wires with screws and washers. Wrap each splice completely with at least 3 layers of approved electrical tape.
8. Install the junction box cover and secure with screws on the sides of the box.

9.1.8 Gear Motor Removal and Replacement (Continued) (See Figure 24)

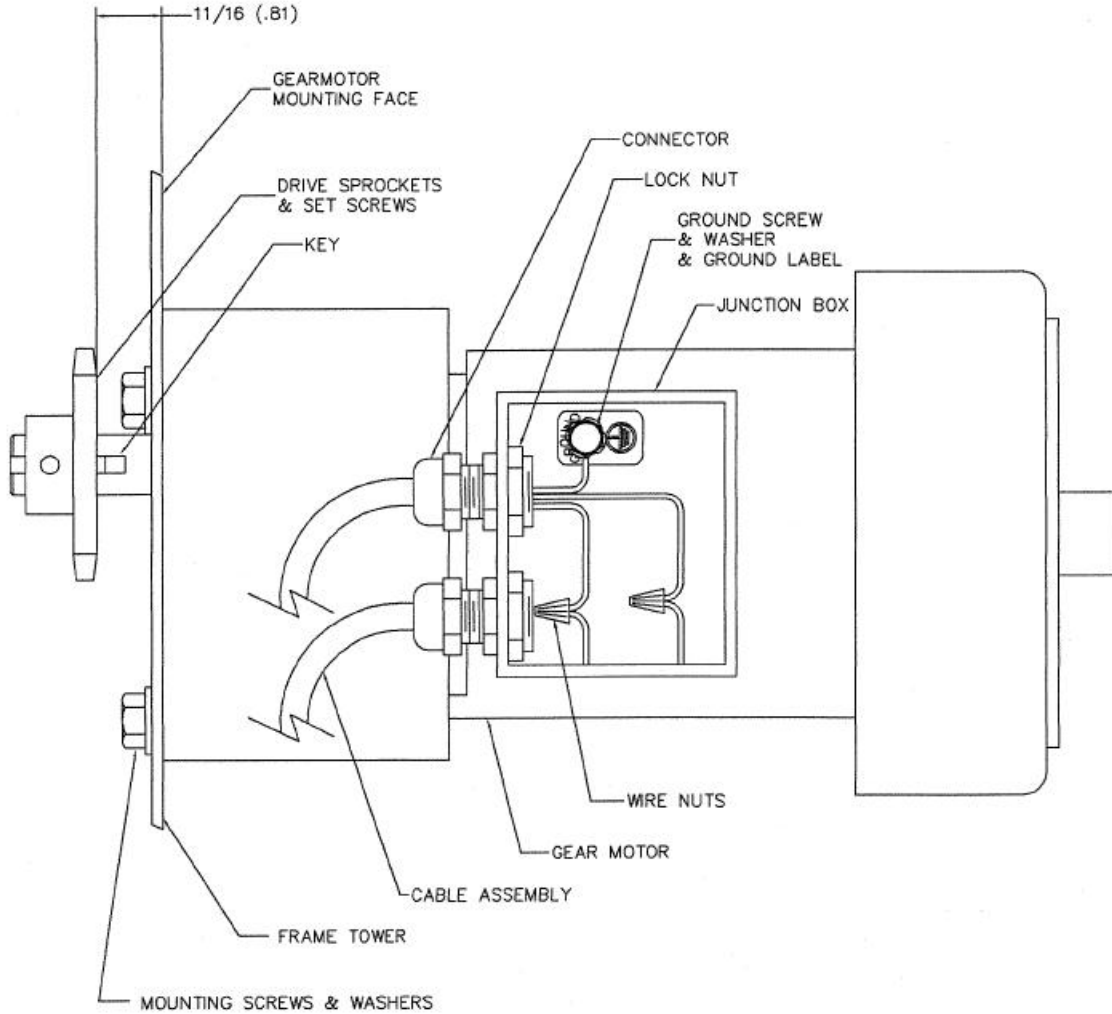


Figure 24
Gear Motor Removal And Replacement

9.2 Cleaning



Keep work area clean. Cluttered areas and benches invite accidents.



Always turn off the machine, disconnect the power and allow the machine to completely stop before removing the frame covers, removing or installing the conveyors, and before performing any adjustments, disassembly, reassembly, troubleshooting or cleaning procedures.

9.2.1 Frame, Gear Motor, and Drive Shafts

It is recommended that the frame assembly be wiped off with soap and water daily. Brush and remove any debris from the drive chain. Visibly check the chain for proper lubrication. If the chain appears dry, lubricate with food grade lubricant.

It is also recommended that the drive guard cover be cleaned daily with soap and water. The cover can be removed by removing the 3 knobs holding the cover in place.

NOTICE

Do not submerge the frame assembly as damage to the motor could result!

9.2.2 Breeder Conveyor

A dry cleaning brush may be used to help remove breading from under the belt and from corners. The breeder conveyor should be completely emptied and machined washed at the end of day of use.

The discharge tray, vibrator springs and tamper plates should be removed and machined washed daily.

9.2.3 Batter Conveyor

The batter tank and conveyor assembly should be completely emptied and cleaned at the end of a day of use. The tank should be washed by hand with hot soapy water while the conveyor assembly could be machined washed. The batter wheel assembly should be detached and also cleaned daily.

SECTION 10.0 Spare Parts List

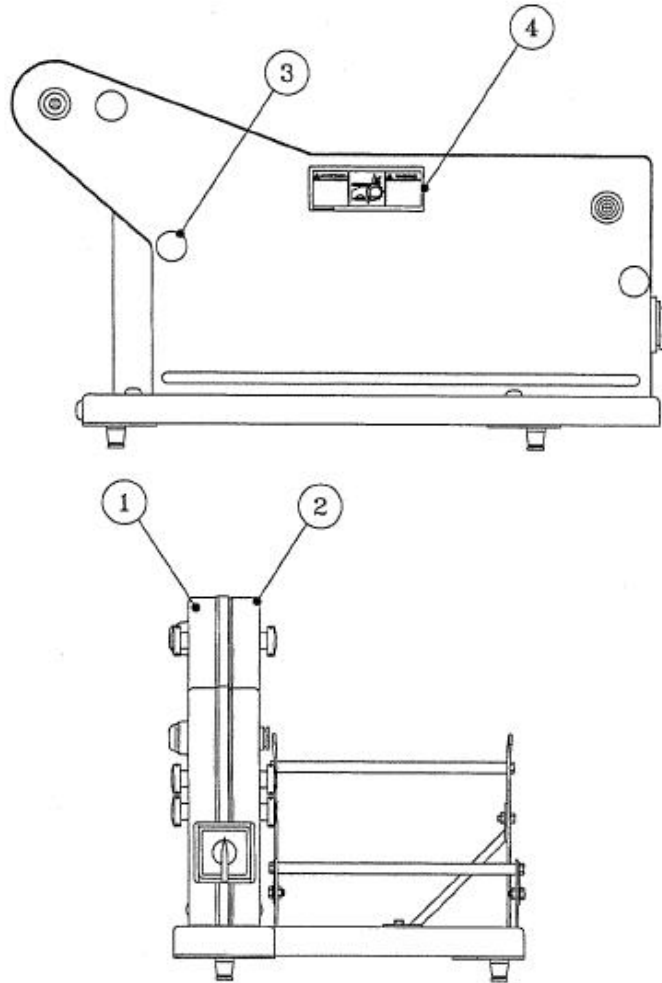
 **WARNING**

The manufacturer assumes no liability for any unauthorized design changes, modifications, or use of parts not supplied by the manufacturer including changes in operating procedures made by the owner or any of his personnel.

 **WARNING**

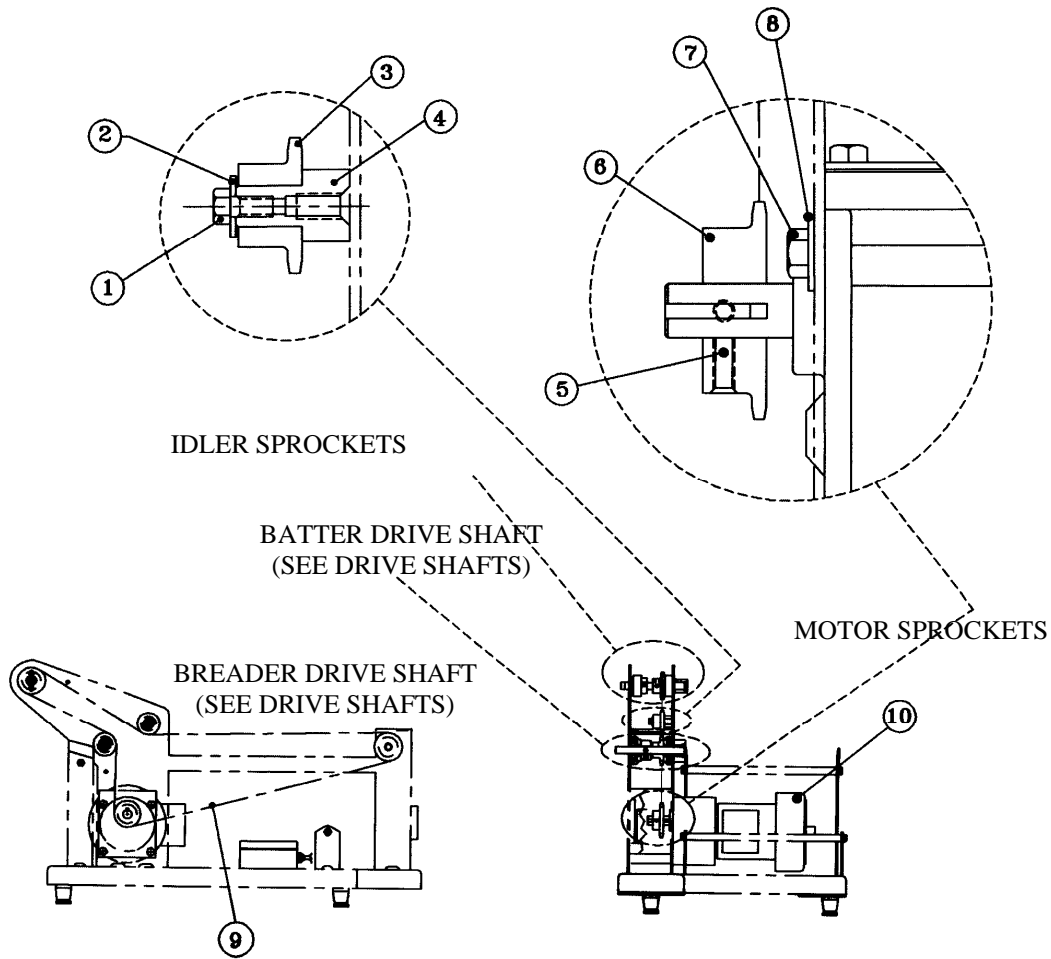
Bettcher Industries, Inc. proudly manufactures quality parts for your Bettcher equipment. For optimum performance of your Bettcher equipment, use only parts manufactured by Bettcher Industries.

10.1 Guards and Covers



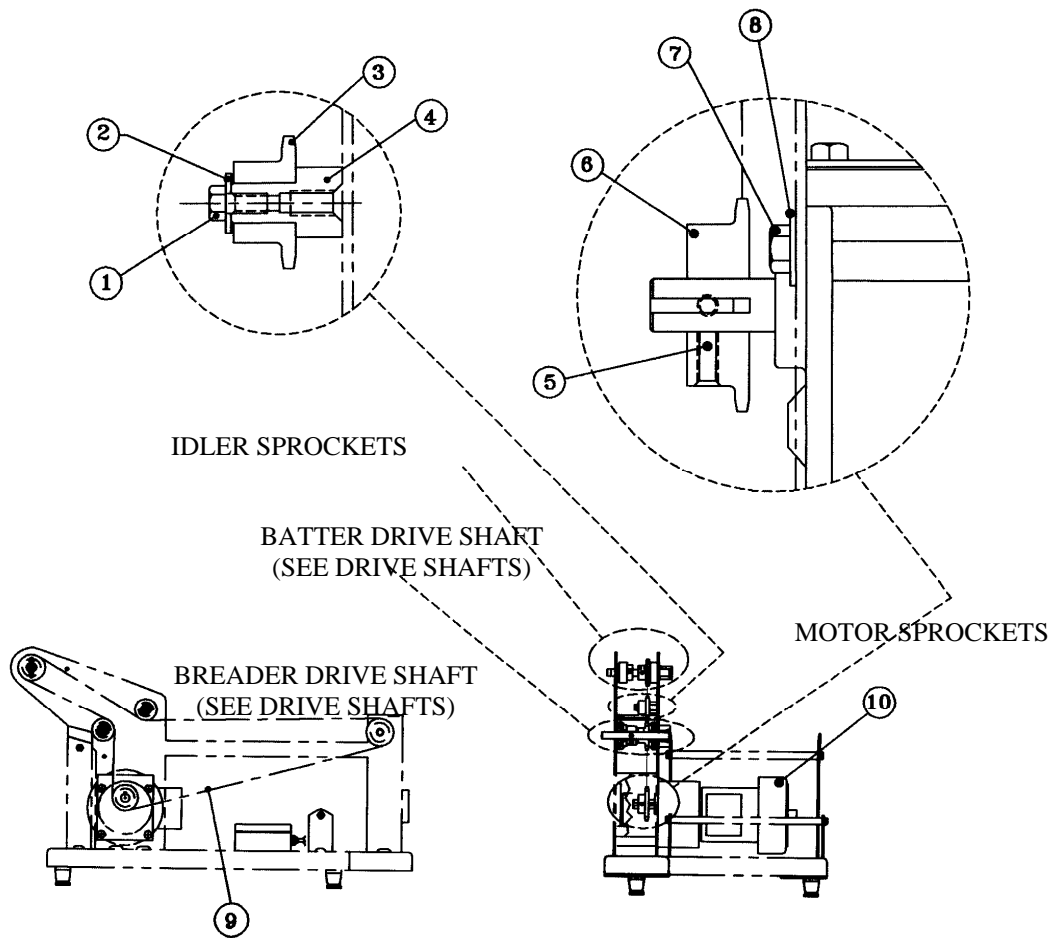
Item	Part Number	Description	Quantity Used
1	500532	GUARD, LEFT SIDE	1
2	500531	GUARD, RIGHT SIDE	1
3	122283	KNOB	6
4	500636	LABEL, CHAIN HAZARD	2

10.2 Motor and Chain 115V/60Hz/1PH



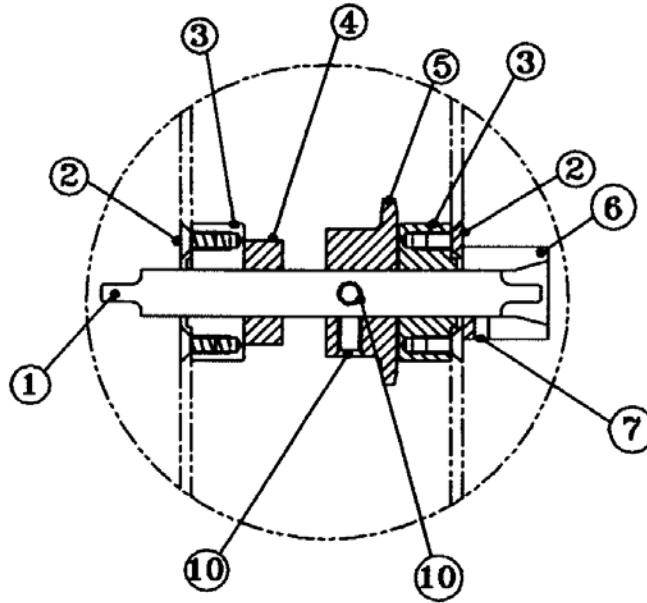
Item	Part Number	Description	Quantity Used
1	121419	SCREW, HEX, 1/4-20 x 1/2	2
2	120261	WASHER, FLAT, 1/4	2
3	125918	SPROCKET IDLER, 12 TEETH	2
4	500308	TAKE-UP	2
5	123108	SCREW, SET, 1/4-20 x 1/2	2
6	124924	SPROCKET, 23 TOOTH	1
7	120870	SCREW, HEX, 5/16-18 x 5/8	4
8	120258	WASHER, FLAT, 5/16	4
9	500556	CHAIN WITH CONNECTING LINK	1
10	500797	GEAR MOTOR & CAPACITOR ASSEMBLY	1
11	120223	LOCK WASHER 5/16 (NOT SHOWN) (USE WITH ITEMS 7&8)	4
		115V/230 VOLT	

10.3 Motor and Chain 230V/50Hz/1PH



Item	Part Number	Description	Quantity Used
1	121419	SCREW, HEX, 1/4-20 x 1/2	2
2	120261	WASHER, FLAT, 1/4	2
3	125918	SPROCKET IDLER, 12 TEETH	2
4	500308	TAKE-UP	2
5	123108	SCREW, SET, 1/4-20 x 1/2	2
6	125939	SPROCKET, 28 TOOTH	1
7	120870	SCREW, HEX, 5/16-18 x 5/8	4
8	120258	WASHER, FLAT, 5/16	4
9	500556	CHAIN WITH CONNECTING LINK	1
10	500797	GEAR MOTOR & CAPACITOR ASSEMBLY	1
11	120223	LOCK WASHER 5/16 (NOT SHOWN) (USE WITH ITEMS 7&8)	4
		115V/230 VOLT	

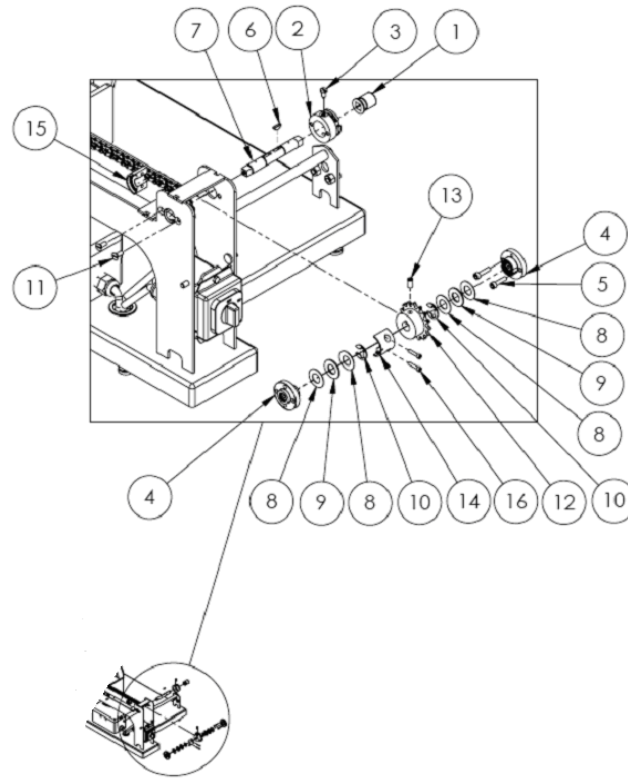
10.4 Drive Shaft - Batter Drive Shaft



BATTER DRIVE SHAFT

Item	Part Number	Description	Quantity Used
1	500315	SHAFT DRIVE	1
2	123233	SCREW 10-24 x 1/2 FHMS	4
3	500312	BEARING	2
4	122038	COLLAR SPLIT CLAMP	1
5	125920	SPROCKET, 15 TOOTH	2
6	500307	SLEEVE GUIDE	1
7	123131	SCREW, SET 1/4-20 x 1/4	2
10	123108	SCREW, SET, 1/4-20 x 1/2	6

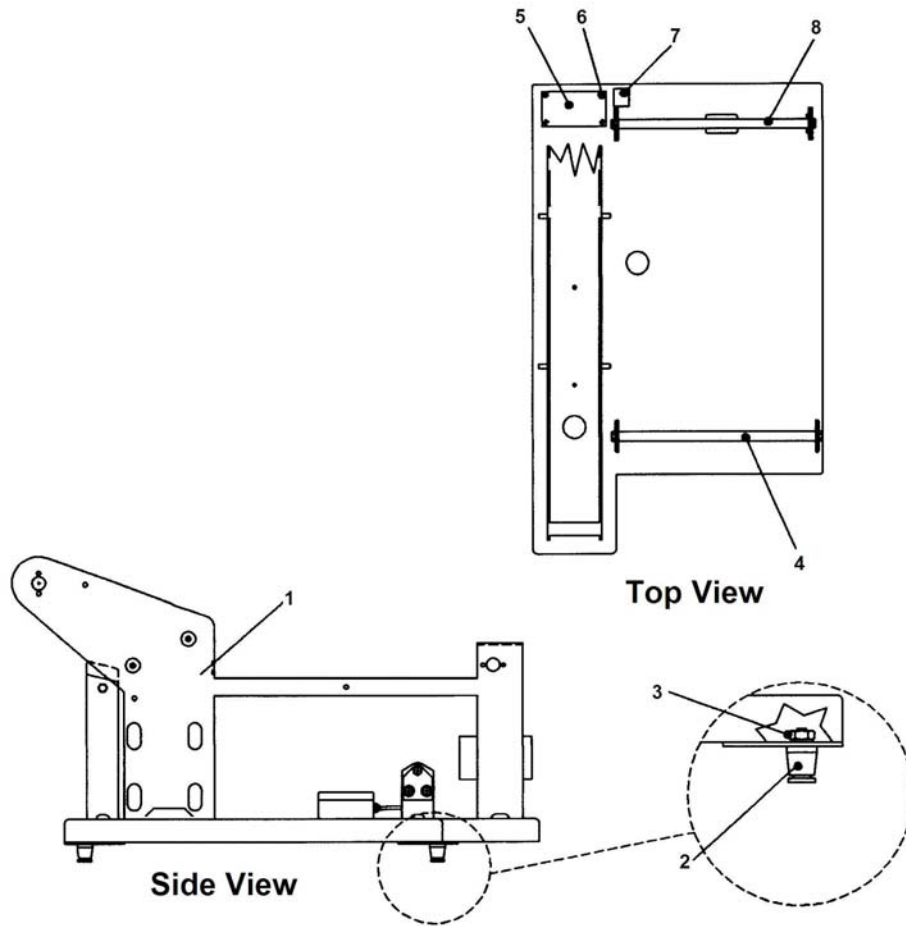
10.5 Drive Shaft - Breader Drive Shaft



BREADER DRIVE SHAFT

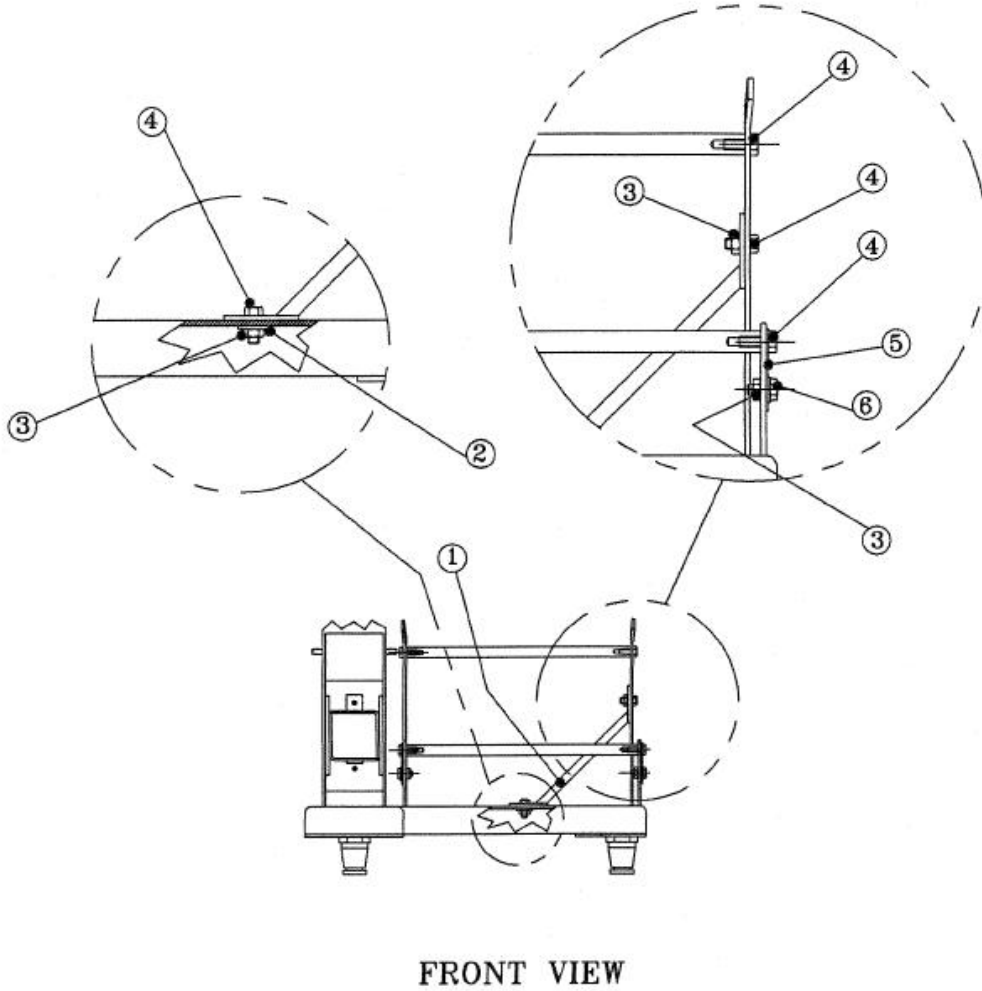
Item	Part Number	Description	Quantity Used
1	501345	DRIVE SHAFT COUPLING	1
2	501340	LOCKING HOUSING	1
3	501346	SCREW	1
4	501377	BEARING ASSEMBLY	2
5	122794	CAP SCREW, #10-24 X ¾	2
6	122605	WOODRUFF MACHINE KEY	1
7	501405	DRIVE SHAFT W/FITTINGS	1
8	501368	THRUSH WASHER (SILVER)	4
9	501367	THRUSH BEARING (GOLD)	2
10	122047	RETAINING RING	2
11	123242	SCREW 10-24 X 3/8	2
12	501344	MACHINED SPROCKET	1
13	123108	SPROCKET SET SCREW ¼-20 X ½	2
14	501407	SPLIT COLLAR, THRU HOLES	1
15	501406	SPLIT COLLAR, THREADED	1
16	501374	CAP SCREW, #6-32 X 5/8	2

10.6 Frame and Rods



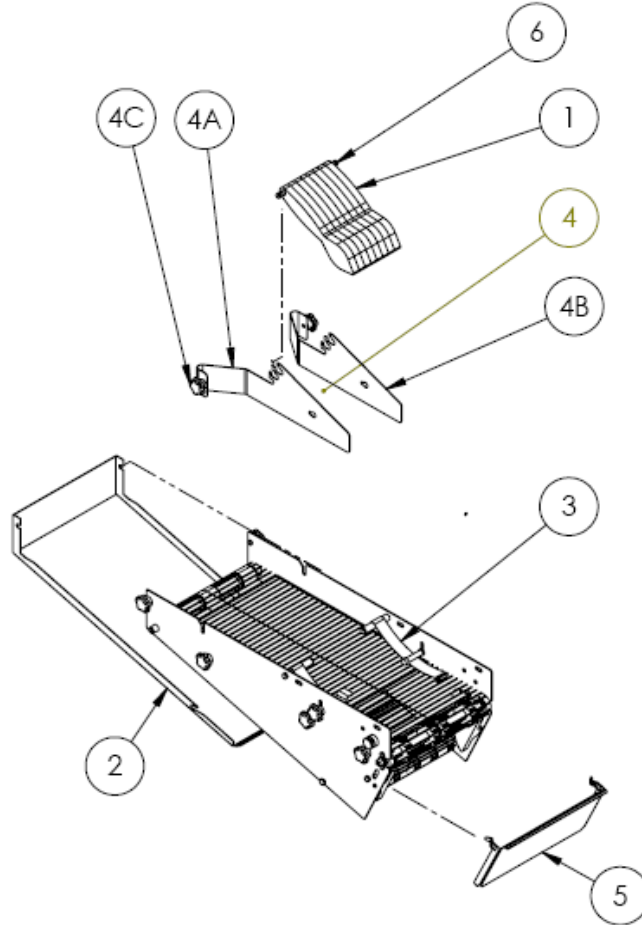
Item	Part Number	Description	Quantity Used
1	501487	FRAME WELDED ASSY	
--	--	AUTOMATIC BATTER BREEDING SYSTEM	1
2	500794	LEG ASSY, 1 INCH, HEAVY DUTY	4
3	500841	NUT, HEX ¼-20	4
4	500340	SHAFT SUPPORT FEED END	1
5	502030	PLATE SPECIFICATION	1
5	502031	PLATE SPECIFICATION (CANADA)	1
5	500559	PLATE SPECIFICATION (230V ONLY)	1
6	122231	RIVET, $\phi 1/8 \times 3/16$	4
7	100093	SEAL NSF	1
8	500309	SHAFT SUPPORT	1

10.7 Brace and Hardware



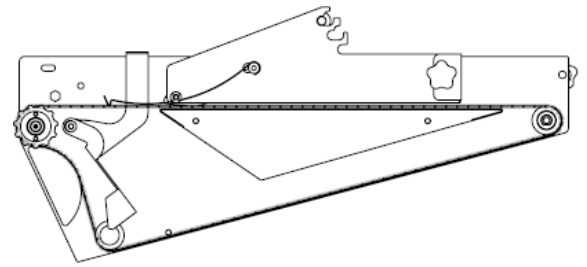
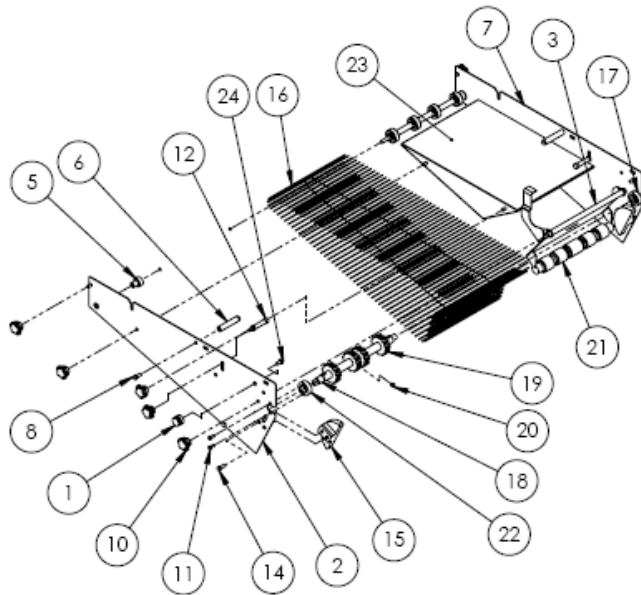
Item	Part Number	Description	Quantity Used
1	500437	BRACE, SOLID TOP	1
2	120261	WASHER 1/4	1
3	120304	NUT, ESNA 1/4-20	6
4	120587	SCREW, HEX 1/4-20 x 5/8	6
5	500377	PLATE ADJUSTABLE RETAINING	2
6	123234	SCREW, HEX WASHER 1/4-20 x 1/2	4

10.8 External Parts & Shafts - Breeder Conveyor



Item	Part Number	Description	Quantity Used
--	501489	BREADER COMPLETE RH, ENDLESS BELT, ABB	1
1	500522	PADDLE TAMPER	8
2	500658	PAN, BOTTOM WITH TOP FLANGE	1
3	500285	VIBRATOR SPRING	2
4	501033	GUIDE ASSEMBLY, SINGLE NOTCH	1
4a	500383	GUIDE, SINGLE NOTCH, LEFT HAND	1
4b	500384	GUIDE, SINGLE NOTCH, RIGHT HAND	1
4c	501475	KNOB, MOLDED	2
5	500686	DISCHARGE COVER	1
6	500527	SHAFT, PADDLE	1

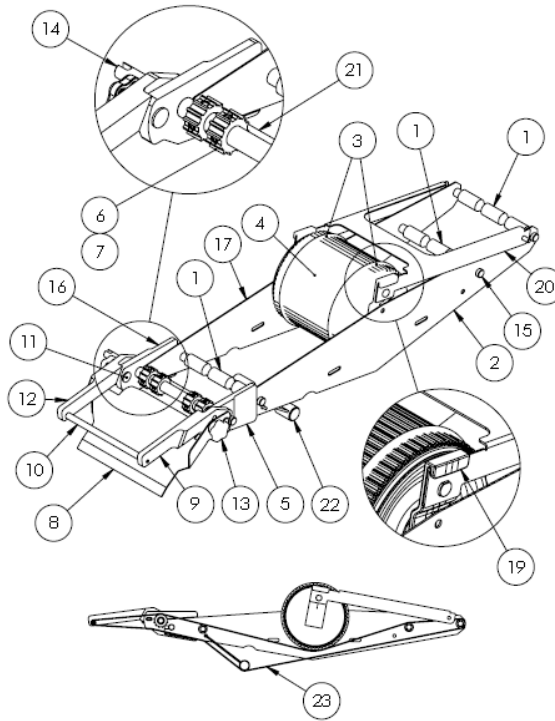
10.9 Internal Parts & Belt - Breader Conveyor



BREADER BELT PATH VIEW

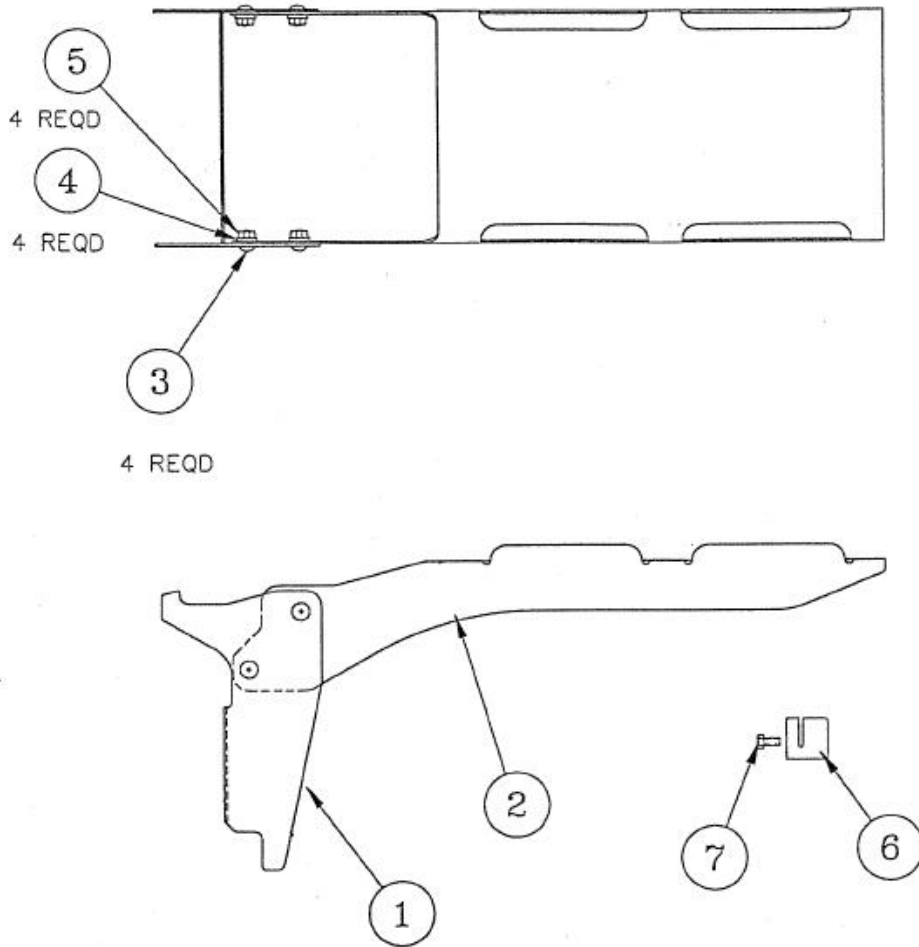
Item	Part Number	Description	Quantity Used
--	501490	BREADER ASSY, ABB, RH, ENDLESS	1
1	501016	SHAFT, LOCKING	1
2	500905	RAIL, LH	1
3	500327	SHAFT DEFLECTOR MOUNTING	1
4	501650	SHAFT, SUPPORT, ROTARY, J-CRUMB	1
5	500472	BEARING, (.281 ID)	2
6	500818	SHAFT, SIDE GUIDE SUPPORT	2
7	500678	RAIL, RH	1
8	120587	SCREW 1/4-20 X 5/8"	2
10	501475	KNOB, MOLDED	10
11	120785	SCREW #10-24 X 1/2"	4
12	500939	ANCHOR, VIBRATOR SPRING	2
14	120587	SCREW 1/4-20 X 5/8	2
15	500368	BLOCK CHAIN IDLER	2
16	501378	BELTING, ENDLESS BREADER 23.98"	1
17	501410	BEARING DRIVEN 1/2"	1
18	501347	SHAFT, DRIVEN	1
19	125916	SPROCKET 11-TOOTH	4
20	123113	SET SCREW, SLOTTED HEAD, 5/16-18 X 1/2	8
21	500657	DEFLECTOR FLAT, W/UNLOAD	1
22	501411	BEARING DRIVEN 5/8"	1
23	500863	PAN, BREADER, TRIANGLE	1
24	121419	SCREW, 1/4-20 X 1/2	1

10.10 Batter Conveyor



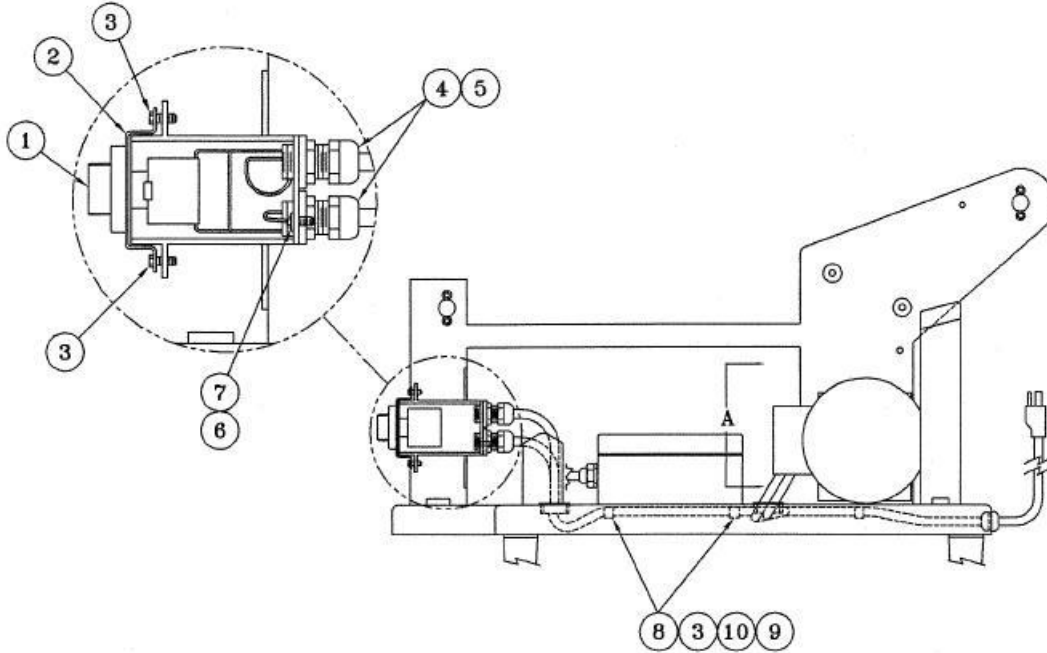
Item	Part Number	Description	Quantity Used
--	501491	BATTER ASSEMBLY COMPLETE	1
1	500287	ROD-CROSS	3
2	500575	SIDE PLATE, RIGHT	1
3	500303	O-RING	2
4	100726	WHEEL, BATTER	1
5	500590	BEARING, RIGHT	1
6	125915	SPROCKET, 12 TOOTH	4
7	123131	SET SCREW, 1/4-20 x 1/4	8
8	500538	PLATE, PLOW	1
9	500589	ARM, RIGHT	1
10	500545	ROLLER, FIXED	1
11	500577	SCREW, FLUSH HEAD	2
12	500602	ARM, LEFT	1
13	501475	KNOB, MOLDED	2
14	500537	SHAFT, DRIVE	1
15	122764	THUMBSCREW, KNURLED	8
16	500603	BEARING, LEFT	1
17	500574	SIDE PLATE, LEFT	1
19	100760	MOUNT, BATTER WHEEL	2
20	500573	BRACKET, BATTER WHEEL	1
21	500288	ROD	1
22	501318	TENSIONER	1
23	501541	BELT, ENDLESS	1
24	500692	TANK, FLAT BOTTOM BATTER (NOT SHOWN)	1

10.11 Batter Conveyor Support Tray Assembly



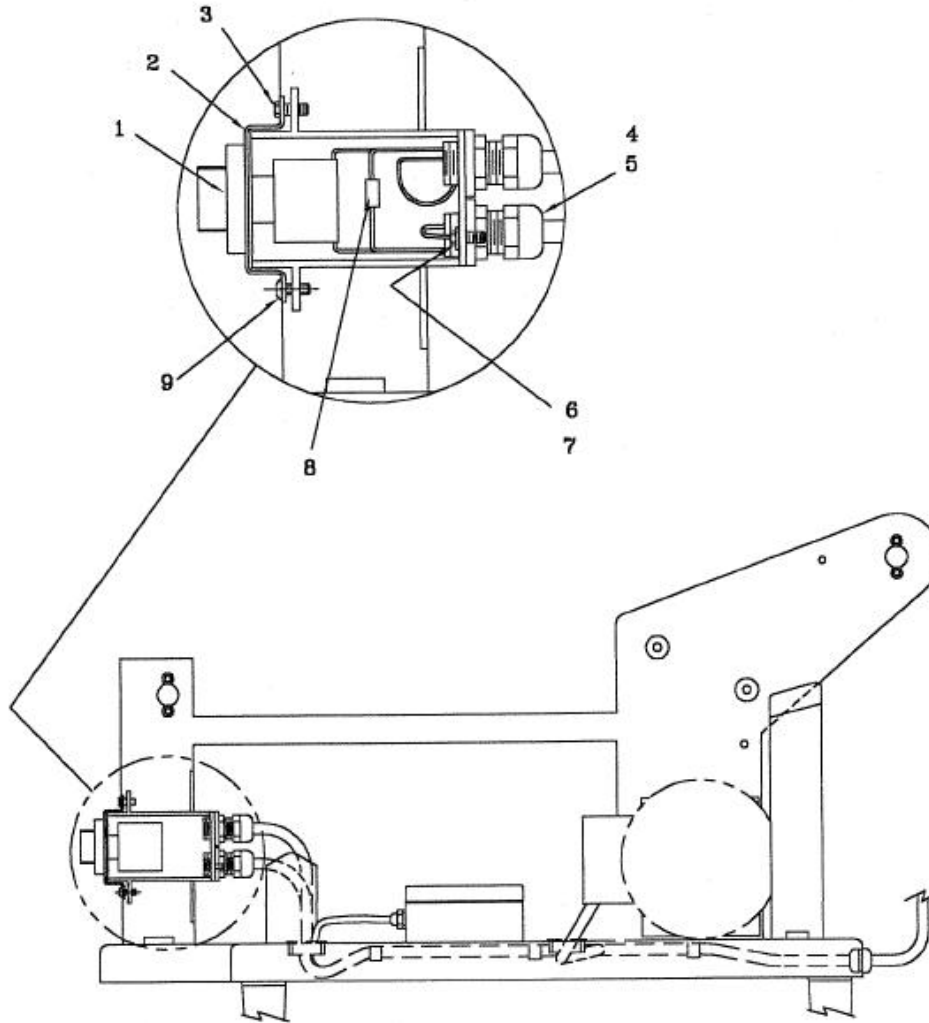
Item	Part Number	Description	Quantity Used
--	500610	BATTER CONVEYOR SUPPORT TRAY ASSY	1
1	500611	BRACKET, SUPPORT	1
2	500612	TRAY, SUPPORT	1
3	122774	SCREW, ROUND HEAD 1/4-20 x 1/2	4
4	120273	WASHER, FLAT	4
5	120304	NUT, 1/4-20	4
6	500614	BLOCK, STOP	1
7	121419	SCREW, HEX HEAD 1/4-20 x 1/2	1

10.12 Switch Box - 115v/60Hz/1PH



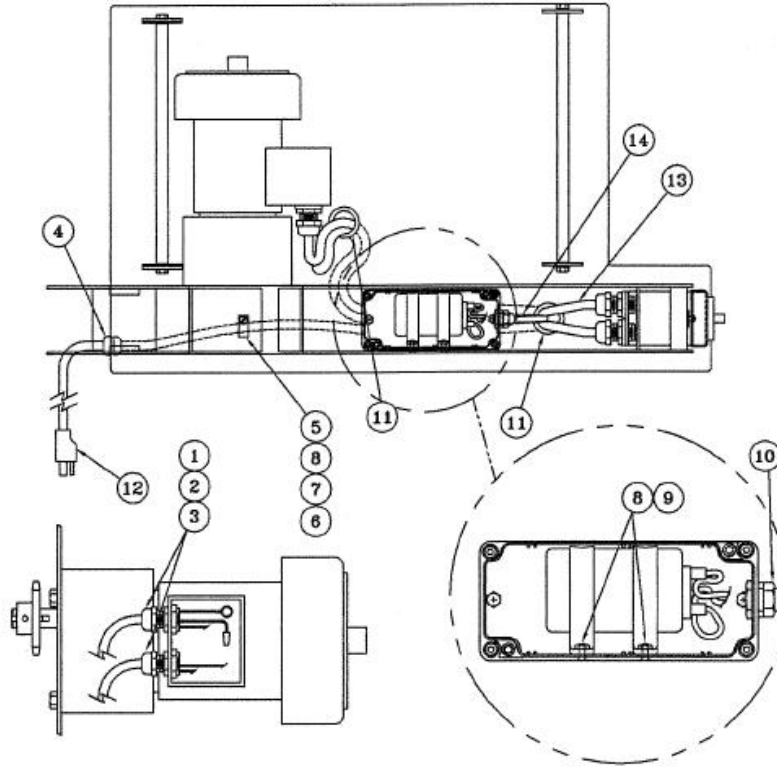
Item	Part Number	Description	Quantity Used
1	124750	SWITCH	1
2	500344	COVER ASSEMBLY	1
3	120784	SCREW, #10-24 x 5/8	2
4	105245	SEAL, 1/2 STRAIGHT	2
5	124751	CONNECTOR, 1/2 STRAIGHT	2
6	120232	WASHER, #10, EXTERNAL TOOTH	2
7	120760	SCREW, #10-24 x 3/8	2
8	123831	CLAMP CABLE 3/4	2
9	120281	WASHER	2
10	120330	NUT	2

10.13 Switch Box - 230v/50Hz/1PH



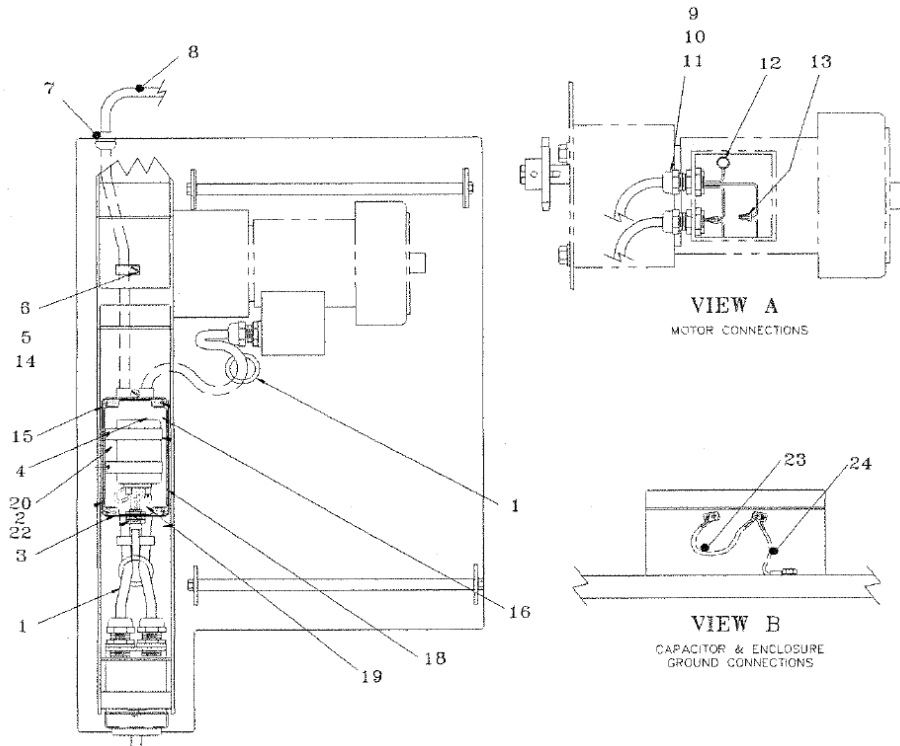
Item	Part Number	Description	Quantity Used
1	124848	SWITCH, 2-POSITION	1
2	500344	COVER	1
3	120784	SCREW, 10-24 x 5/8	1
4	105245	SEAL, 1/2 STRAIGHT	2
5	124751	CONNECTOR, 1/2 STRAIGHT	2
6	120232	WASHER, #10, EXT. TOOTH	2
7	120760	SCREW, 10-24 x 3/8	2
8	500725	PLATE, ESCUTCHEON, SWITCH	2

10.14 Power Cord and Cable - 115V/60Hz/1PH



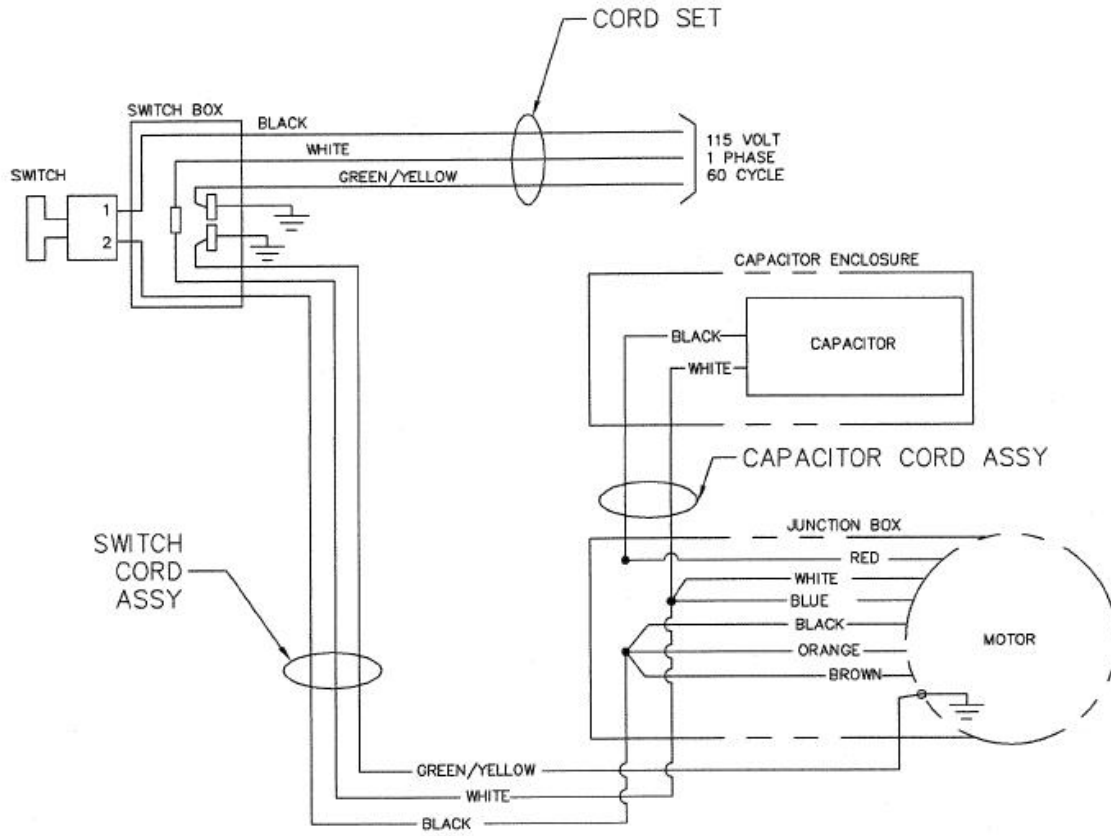
Item	Part Number	Description	Quantity Used
1	124751	CONNECTOR, 1/2 STRAIGHT	2
2	105245	SEAL, 1/2 STRAIGHT	2
3	122653	LOCK NUT, 1/2 CONDUIT	2
4	124746	BUSHING, STRAIN RELIEF	1
5	125078	CLAMP, 3/8 CABLE	3
6	120784	SCREW, #10-24 x 5/8	3
7	120281	WASHER, #10 PLAIN	1
8	120330	NUT #10-24	3
9	123219	SCREW, #10-24 x 5/8	2
10	123002	CONNECTOR STRAIGHT	1
11	124744	BUSHING, 1", SNAP	2
12	500760	CORD SET, 10 FT.	1
13	500761	CORD ASSY, MOTOR/SWITCH	1
14	500672	CORD ASSY. CAPACITOR	1

10.15 Power Cord and Cable - 230V/50Hz/1PH



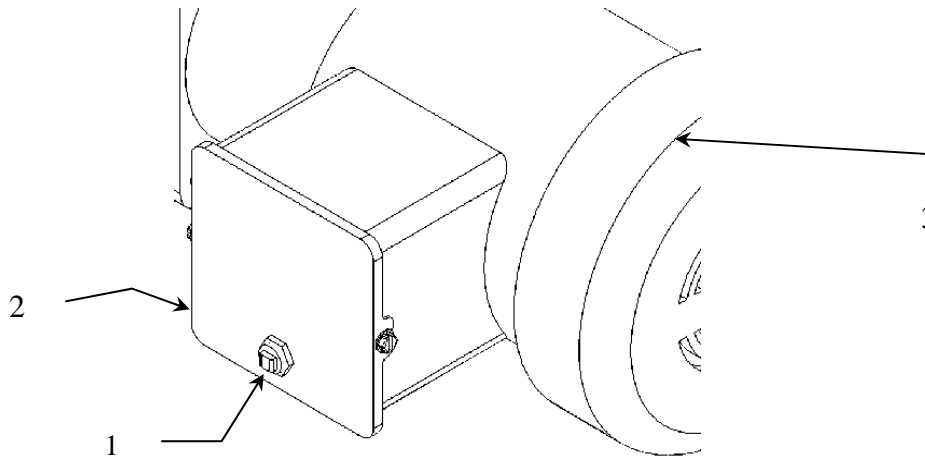
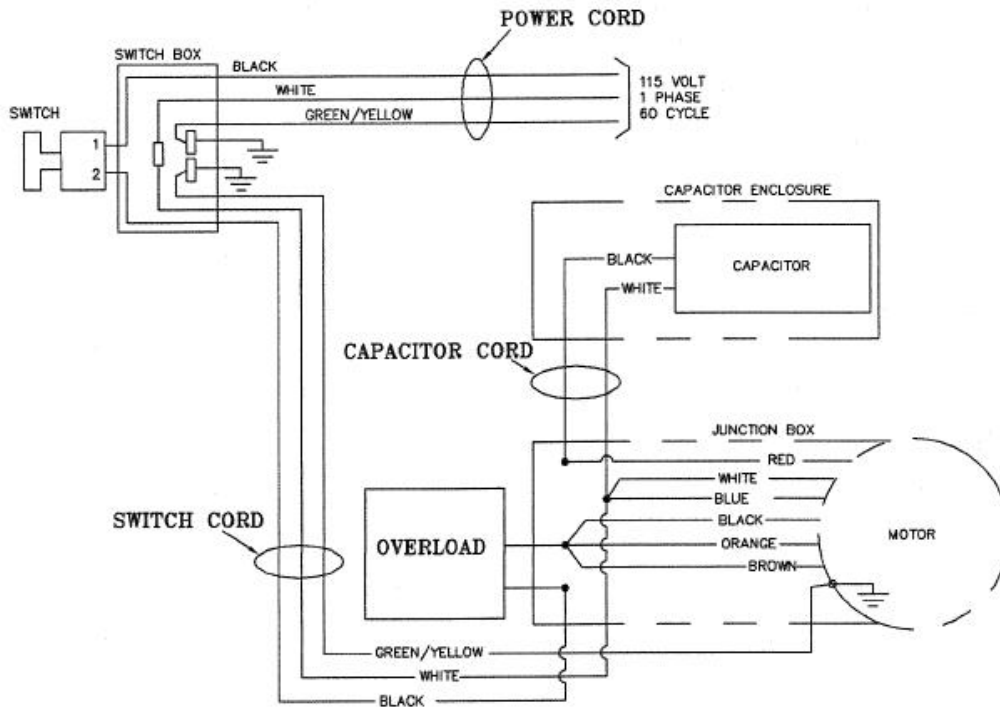
Item	Part Number	Description	Quantity Used
1	124744	BUSHING, 1", SNAP	2
2	123219	SCREW, FHMS 10-24 x 3/8	2
3	125078	CLAMP, 3/8 CABLE	1
4	500468	CORD ASSY, MOTOR/SWITCH	1
5	120281	WASHER, #10 PLAIN	3
6	120784	SCREW, 10-24 x 5/8	3
7	124746	BUSHING, STRAIN RELIEF	1
8	500469	CORD SET, 13 FT.	1
9	105245	SEAL, 1/2 STRAIGHT	2
10	122653	LOCK NUT, 1/2 CONDUIT	2
11	124751	CONNECTOR, 1/2 STRAIGHT	2
12	120232	WASHER, #10 EXT. TOOTH	1
13	124593	WIRE NUT	4
14	120330	NUT #10-24	4
15	500717	ENCLOSURE	1
16	501066	CAPACITOR	1
18	123831	CLAMP, CABLE 3/4 (NOT SHOWN)	2
19	123002	CONNECTOR	1
21	500672	CORD ASSEMBLY, CAPACITOR (NOT SHOWN)	1
23	500711	WIRE ASSEMBLY 3"	1
24	500712	WIRE ASSEMBLY 5"	1

10.16 Wiring Diagram 115V/60Hz/1PH



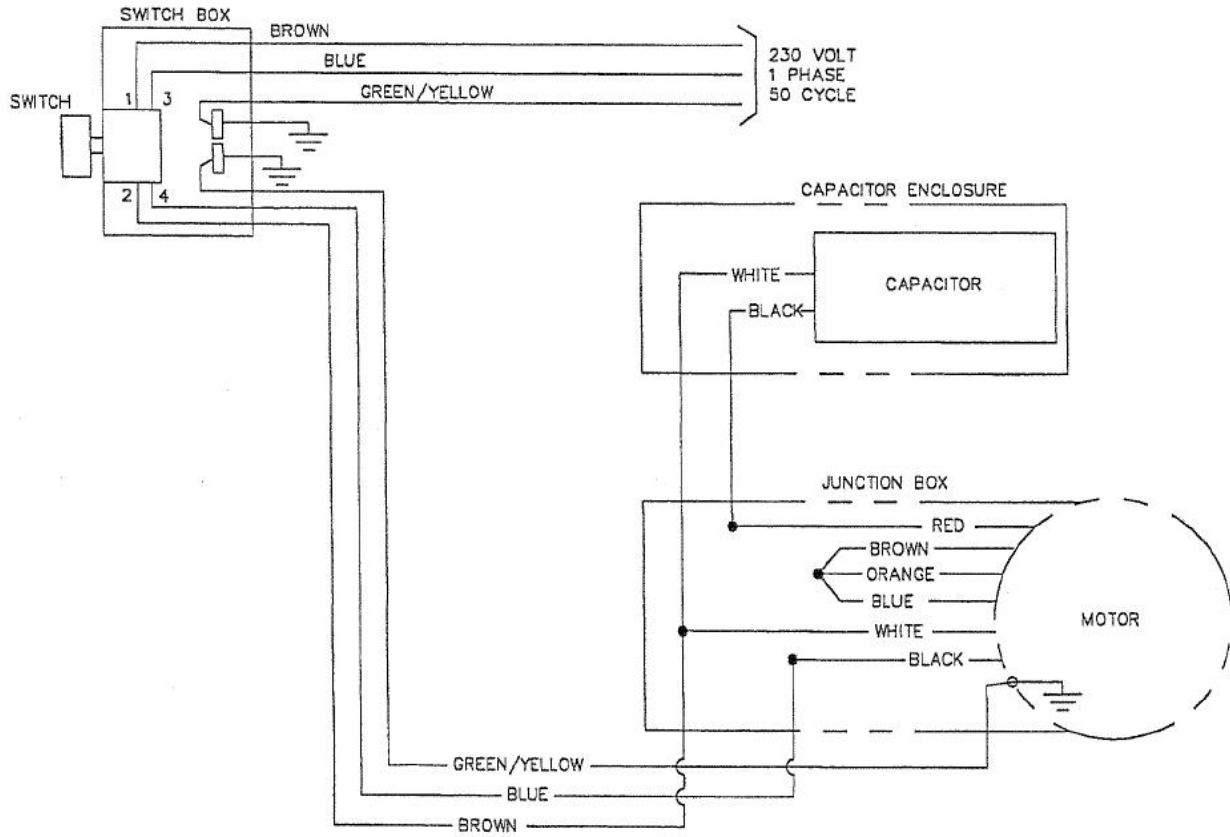
WIRING DIAGRAM
115V/60Hz/1PH

10.17 Wiring Diagram 115V (Canada Only)



Item	Part Number	Description	Quantity Used
1	500843	CIRCUIT BREAKER (OVER LOAD)	1
2	500847	COVER WITH HOLE	1
3	500846	GEARMOTOR ASSEMBLY W/CAPACITOR (CANADIAN ONLY)	1

10.18 Wiring Diagram 230V



WIRING DIAGRAM
230V/1PH/50hz

SECTION 11.0 About These Instructions

11.1 Document Identification

Copies of this Operating Instructions and Spare Parts List may be ordered by quoting the Document ID as listed below:

Document ID:	Manual #501521
Document Description:	Operating Instructions and Spare Parts List
For:	Bettcher® AUTOMATIC Batter-Breading SYSTEM
Re-Issued:	September 17, 2007

11.2 Software Duplication

This document has been created with Microsoft Word for Windows and set in Times New Roman, for A-size paper (8.5x11 inches).

For more information, contact your local Representative or:

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Administrative Assistant/Engineering Department
P.O. Box 336
Vermilion, Ohio 44089
USA

SECTION 12.0 Contact Addresses & Phone

For additional information, technical support and spare parts, contact your local Representative, Distributor, or Bettcher Representative at:

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Fax: +55 11 4083 2515