

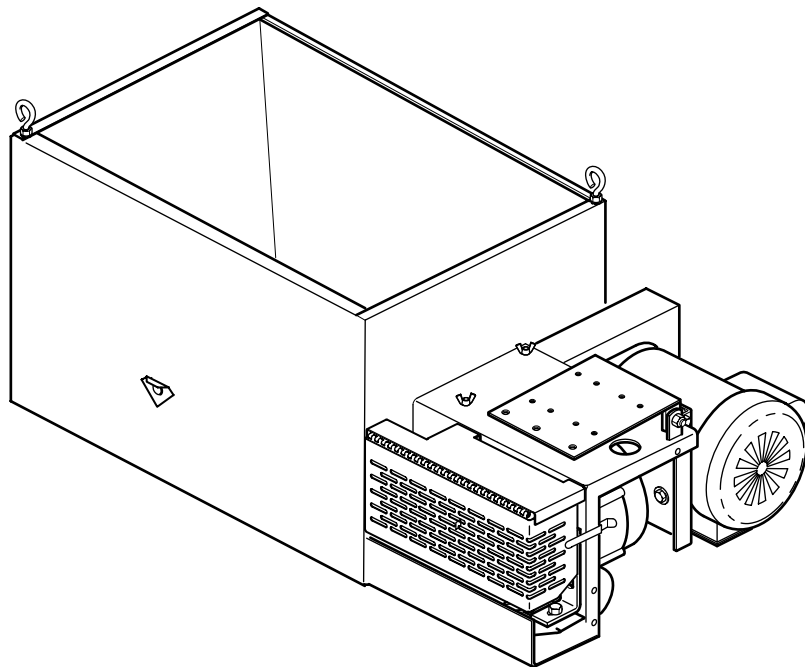
# Champion®

## Floor Chain Systems

### 60# Installation, Operation Guide & Parts Replacement

Instr. # 10-01-0001 04/11

For the Following models:	
10-01-0257	Less Motor, 90 FPM
10-01-5000	Belt Drive, 120 FPM/60Hz
10-01-5001	Less Motor, 120 FPM
10-01-5002	84 FPM/60Hz
10-01-5003	Less Motor, 90 FPM
10-01-5140	Belt Drive, 20/40 FPM
10-01-5160	Belt Drive, L/Motor & Reducer, 60 FPM
10-01-5161	L/Motor & Reducer, 60 FPM
10-01-5200	Direct Drive, 60/120 FPM
10-01-5201	Direct Drive, 44/88 FPM
10-01-7000	Belt Drive, 120 FPM/50Hz
10-01-7160	Less Motor, 60 FPM/50Hz



**Big Dutchman.**

# Warnings, Cautions and Notes



This manual contains **Notes, Warnings and Cautions** in addition to the assembly instructions.

Notes: Provide additional comments to help with installation and set up.

Cautions: Provide notification of situations that can cause damage to machinery and tools.

Warnings: Provide alerts to situations that can cause personal injury or death.

Please take the time to read and understand this manual before beginning assembly.

**CAREFULLY FOLLOW THE SAFETY AND OPERATING INSTRUCTIONS in this manual.**

Observe the following precautions when working on or near the floor feeder:

- Understand the limitations and hazards associated with operating this equipment before using.
- Wear appropriate eye protection when assembling and using this equipment .
- Do not wear loose clothing, jewelry, etc.
- Keep sleeves rolled above the elbows.
- Confine long hair.
- Always wear approved protective footwear.

**MAKE SURE ALL PERSONNEL UNDERSTAND THE POTENTIAL DANGER** to someone getting too close or trying to make repairs or adjustments while the machine is running. This equipment has several **AREAS WHERE INJURIES COULD OCCUR IF GUARDS OR COVERS ARE REMOVED.**

**KEEP ALL COVERS AND GUARDS IN PLACE WHILE EQUIPMENT IS IN OPERATION.**

Observe the following precautions when servicing the floor feeder:

- Do not remove guards except when performing maintenance.
- Do not operate the machine with guards or covers removed.
- When performing maintenance or repairs make sure the local control switch is **OFF** and the main power control panel is **OFF** and tagged “**DO NOT OPERATE.**”
- Make all adjustments with the power **OFF**.
- **NEVER** reach into the machine while the system is operating, keep hands out of the machine chain and belt areas. Keep all guards and covers in place when power is on.
- Work carefully and give the work you are doing your undivided attention. Do not look away, talk or play around. Careless acts can cause **SERIOUS INJURY.**

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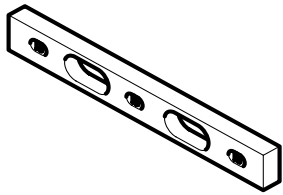
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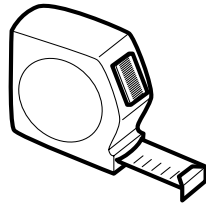
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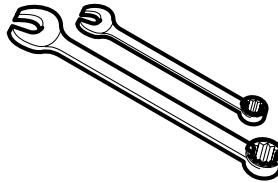
## Tools Required



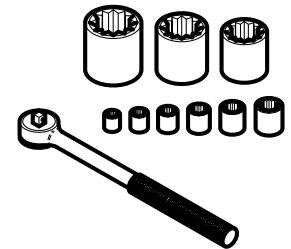
24" Level



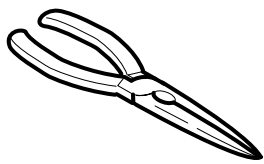
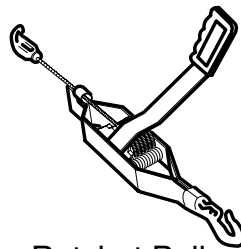
Tape Measure



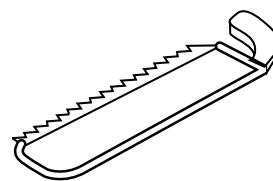
Wrenches



Socket Set

Needle Nosed  
Pliers

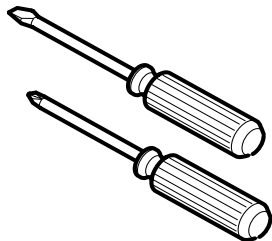
Ratchet Puller



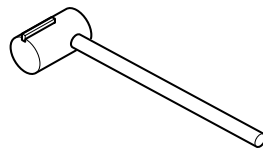
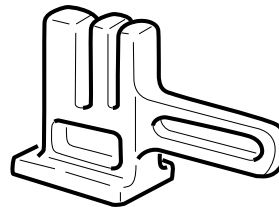
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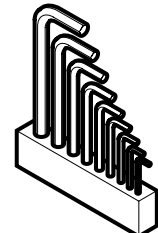
Hammer



Screwdrivers

Hub Turning  
Tool

Chain Tool



Hex Wrenches

## Introduction

It is important to plan ahead before beginning the installation of your Big Dutchman feeding system. The first step is to read this entire Installation manual. Taking time to read all of the information and instructions now may help you to avoid costly errors during the assembly and installation process.

Areas of special consideration are:

- When equipment arrives on location, store it in a protected location, away from dirt, moisture and weather.
- Determine what support system will be used (leg supports or overhead suspension) before starting the installation.
- The feed bins and fill systems should not be

installed until the position of the chain feed hoppers are determined.

- Plan your system by drawing the entire layout prior to assembly and installation of the system.
- Determine and set the drive unit height before installing the trough and legs.
- Position feeders for easy access during routine maintenance and repair. The operation and life expectancy of the feeder and system depend on proper installation and maintenance.
- Follow instructions for lubrication and cleaning.

# System Overview and Preparation for Installation

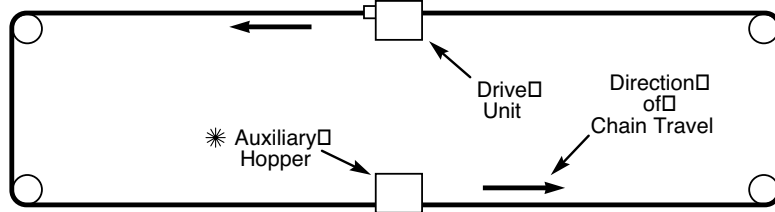
The Big Dutchman Floor Chain Feeder System consists of five basic components:

- Hoppers (Drive and Auxiliary)
- Trough
- Chain
- Corners
- Grille (optional)

Make sure to maintain the correct placement of drive hoppers within the system as shown. The layout on the next page shows the position of the auxiliary hopper when used.

**Note:** The first corner in the system should be placed no less than 10 feet [3.05 M] after the drive sprocket to allow the chain to level itself out before entering the corner.

When locating the hoppers, make sure to maintain access to the motor and drive components.



**Single Line Drive with Auxiliary Hopper (Typical)**

**SINGLE LINE DRIVE MOTOR SELECTION TABLE**  
 (To be used when drive is placed in center of house, otherwise use 2 line, 2 way drive motor selection.)

Single Circuit Length	33-42 ft per min.	50-60 ft per min.	67-84 ft per min.
1100 ft [330 M]	*Dual Drive	*Dual Drive	*Dual Drive
1000 ft [300 M]	1 hp	*Dual Drive	*Dual Drive
900 ft [270 M]	3/4 hp	*Dual Drive	*Dual Drive
800 ft [240 M]	3/4 hp	1 hp	*Dual Drive
700 ft [210 M]	3/4 hp	1 hp	1 1/2 hp
600 ft [180 M]	1/2 hp	3/4 hp	1 hp

\* NOTE: For Dual Drive Systems, replace Auxiliary Hopper with a Drive Hopper. See Chart for Applications. For Dual Drive, use a Direct Drive System Only.

Component Identification and Motor Selection Table

# Installing the Belt Drive Motor and Belts

Before removing the motor from the carton, make sure it is the correct size and specification for your system. Refer to the motor application chart.

**Note:** Motors on belt drive feeder units must rotate **counterclockwise** when viewed from the shaft end of the motor. Check rotation after wiring.

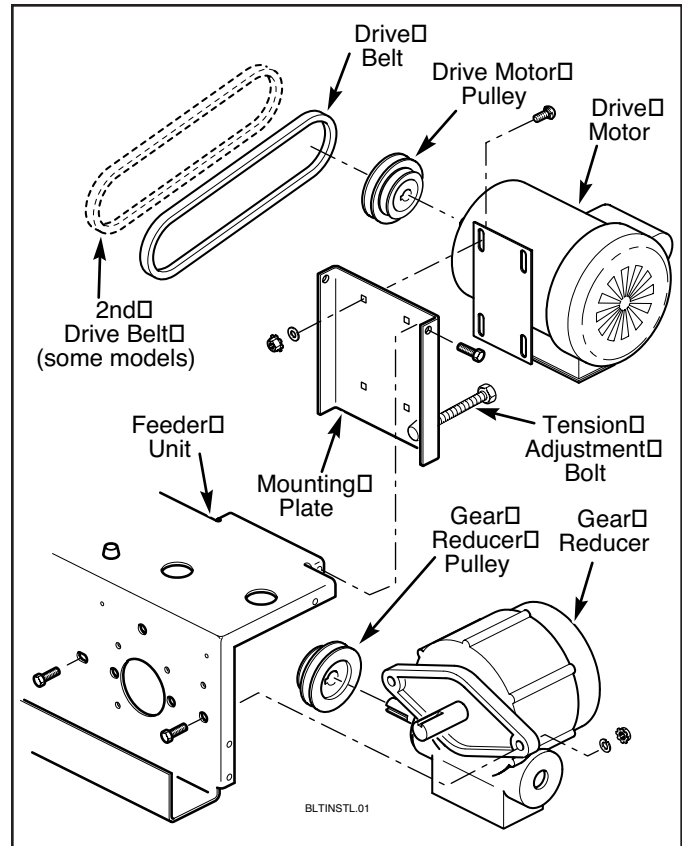
1. Attach the motor pulley to the motor shaft using the key and setscrews. Mount pulley with the hub toward the hopper body.
2. Attach the motor to the motor mount.

**Note:** Some fast feed units have a lower motor shaft height spacer. On these units, add the optional spacer to the hinge of the motor mount.

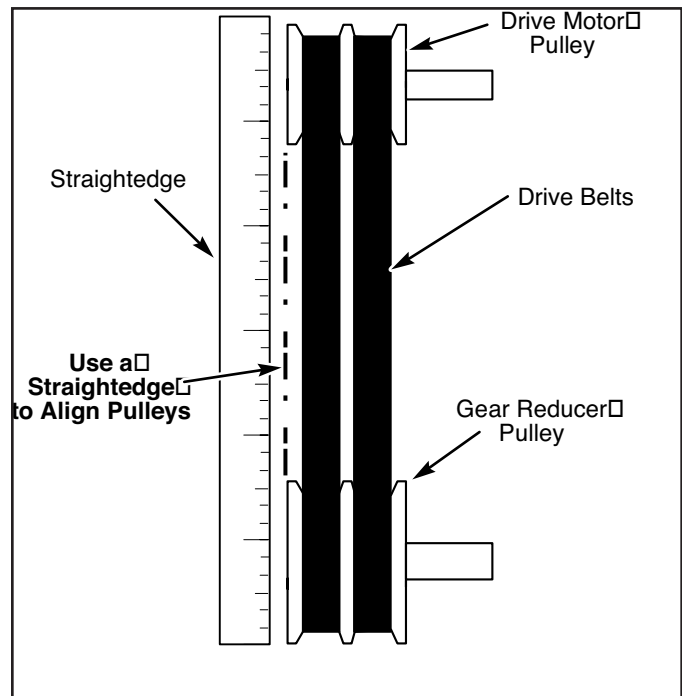
3. Attach the motor mount to the feeder unit. Do not tighten the bolts. Align the motor and gear reducer pulleys, as shown. Tighten the set screws.
4. Place the belts around each pulley.
5. Loosen the locknut on the tension adjustment bolt and turn the bolt until the belts are tight. Find a place midway between pulleys and try to deflect the belt. Proper belt tension will allow a very slight deflection.

**Caution:** Do not overtighten the belts. Damage to the belts and bearings in the motor and rear reducer may result.

6. Tighten all attaching hardware and the tension adjustment bolt locknut.
7. Check the oil level in the gear reducer.



Typical Belt Drive Motor Installation



Drive Belt Alignment

# Installing the Direct Drive Gear Reducer and Motor

Before removing the motor from the carton, make sure it is the correct size and specification for your system, refer to the motor application chart.

**Note: Motors on direct drive feeder units must rotate clockwise when viewed from the shaft end of the motor. Check rotation after wiring.**

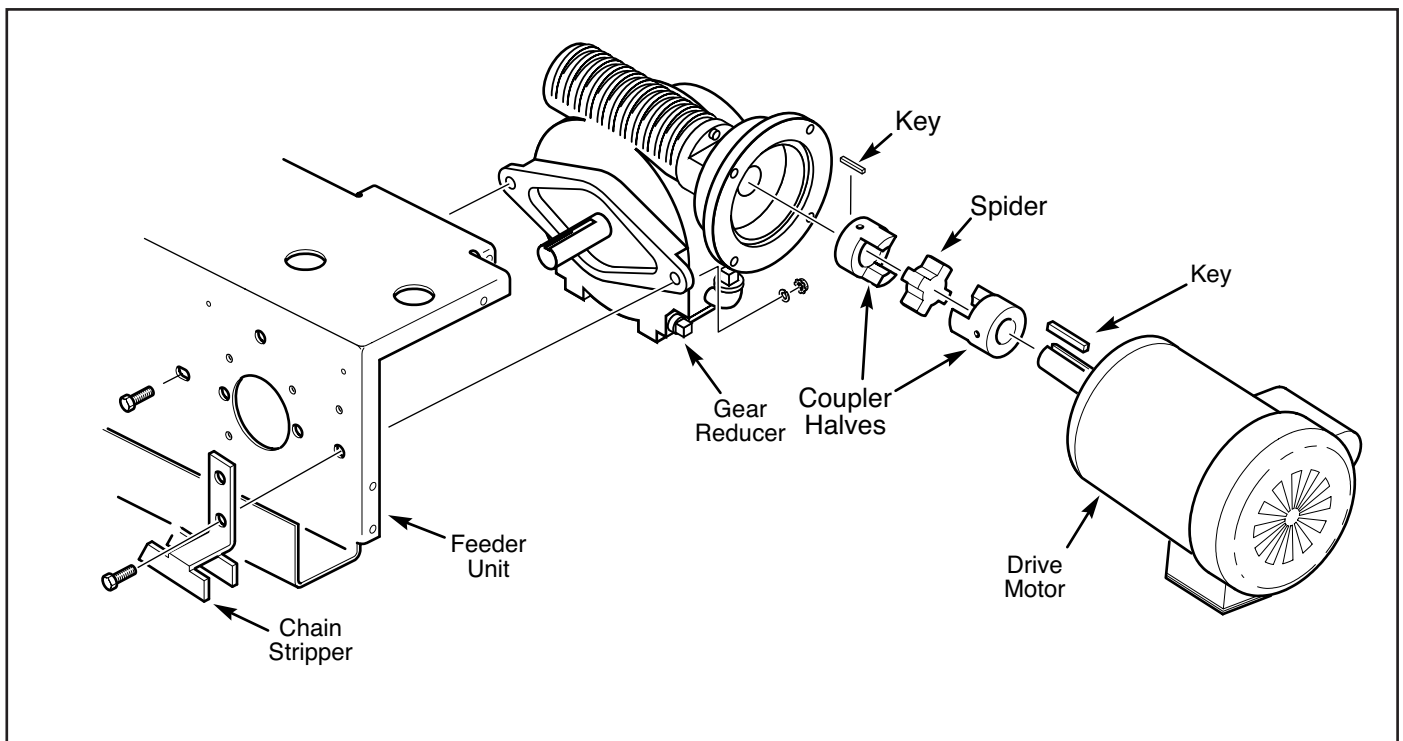
**Note:** A square key and power sleeve are required for assembly.

1. Install the square key and sleeve, with the setscrew end toward the motor, onto the motor shaft to the roll pin. Tighten the setscrew.
2. Install the motor with the open end of the sleeve toward the flange of the gear reducer.
  - Insert the sleeve into the flanged opening.
  - Align the key with the keyway shaft.

- Insert until the motor and gear flange can be joined. Do not use excessive force.
- Align the mounting holes of the motor and gear flange.

**Note:** If reducer and motor do not go together easily, lightly clean outer corner of keyway in the power sleeve with a flat file.

3. Insert the four mounting bolts with lock washers through the reducer flange into the motor flange. Hand start all bolts.
4. Tighten all bolts.
5. Attach the drive motor and gear assembly to the feeder unit.
6. **IMPORTANT!** Remove the small vent screw from the gear reducer before running the system. The vent screw is for shipping purposes only. Check the oil level in the gear reducer.



Typical Direct Drive Motor Installation

# Trough, Coupler and Corner Assembly

## System Support Assemblies

Floor feeder systems may be supported by either of two methods:

- **Floor Mounted Leg Supports**—Install a leg support at each coupling and corner during assembly. Level system after chain is installed.
- **Overhead Suspension System**—Refer to the suspension installation guide.

1. Distribute the trough sections, couplers and corners to their approximate positions around each circuit. See “System Overview and Preparation for Assembly” for typical layouts.

2. Insert the end of the first section of trough into the outgoing end of the drive hopper.

**Note:** When using trough with flared sides, trim flared sides to clear the hopper body, as shown.

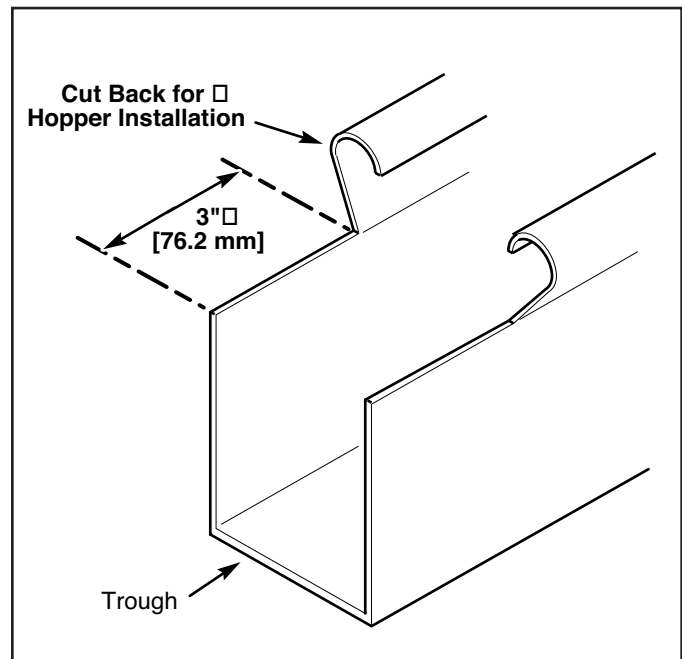
**Note:** When installing trough, gently compress the sides until the trough can be inserted into the coupling or hopper.

3. At all joints, make sure the trough is fully inserted and the ends are securely and evenly set against the trough stops with the trough edges behind the tabs in the couplers and under the lip of the power shoe in the drive hopper.

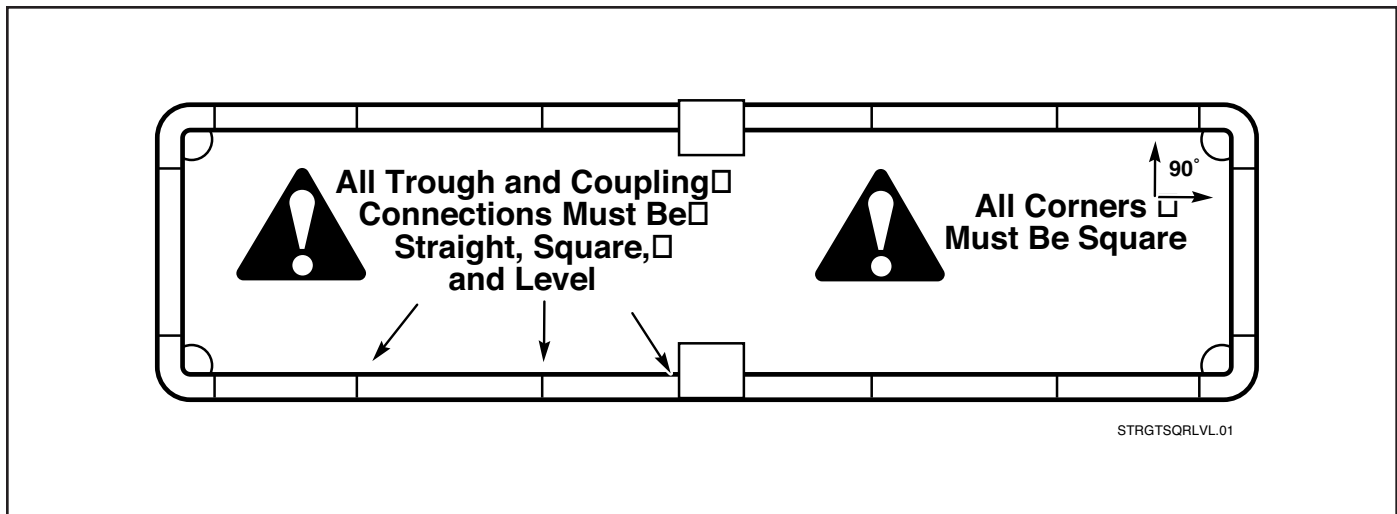
4. Add a coupler at the opposite end of the first trough and continue trough and coupler installation until reaching the first corner.

**Note:** If floor mounted leg supports are being used, install a leg support assembly at each coupling.

5. If the last section before the corner needs shortening, cut the trough to length. Trim flared trough.



Trimming Flared Trough



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**Note:** Use factory cut notches as a sample for correct dimensions. **Be sure to cut the ends of the trough squarely to allow proper installation at the corners.**

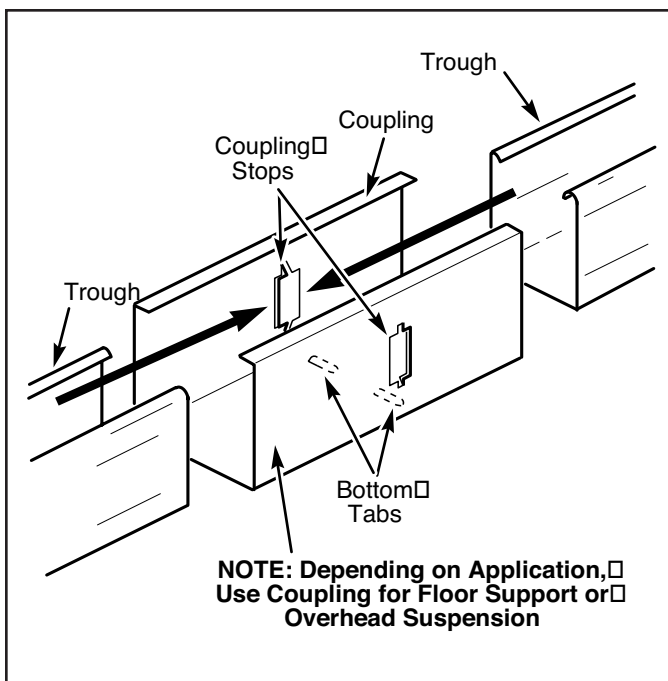
**Note:** If floor mounted leg supports are being used, install a leg support assembly at each corner.

6. Install the first corner onto the trough.
7. Continue to assemble troughs, couplers and corners around the circuit.
8. Punch a clean-out hole in the last section of trough just before the return opening to the hopper. Refer to clean-out instructions for hole and hole cover placement.
9. Install the trough into the last coupler and into the return opening of the hopper. When using an auxiliary hopper, locate the unit on the opposite side of the circuit and directly across from the drive hopper.

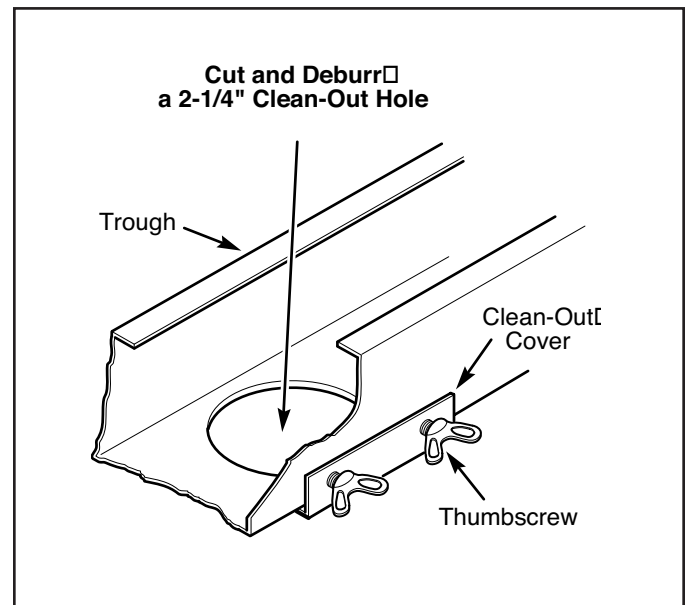
### Installing the Clean-Out Cover

**Note:** The clean-out cover must be located near the end of the circuit and just before the hopper intake.

1. Cut a hole 2-1/4" [5.7 cm] diameter centered in the bottom of the trough.
2. De-burr the edges of the hole.
3. Mount the hole cover to the bottom of the trough and over the hole.
4. Thread the two thumb screws into the cover flange and tighten.



Trough and Coupler Assembly



Clean-Out Installation

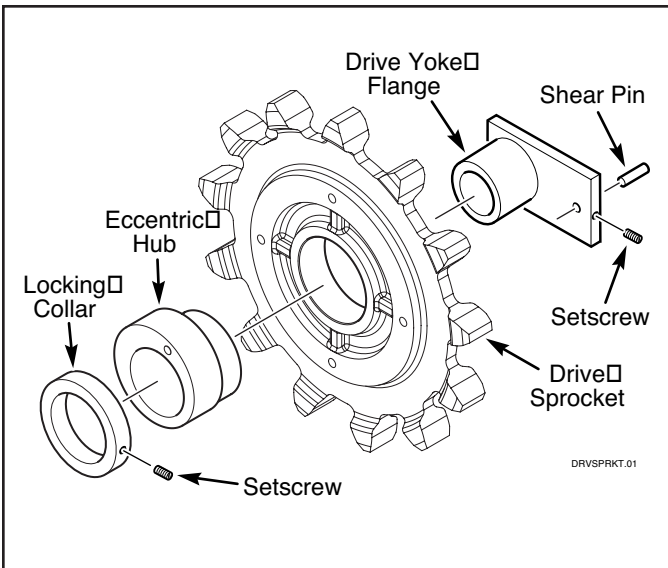
# Installing the Feeder Chain

1. Remove the drive sprocket guard from the drive hopper.
2. Loosen the setscrew in the top of the drive yoke flange and remove the shear pin. Keep the pin for replacement after chain installation.

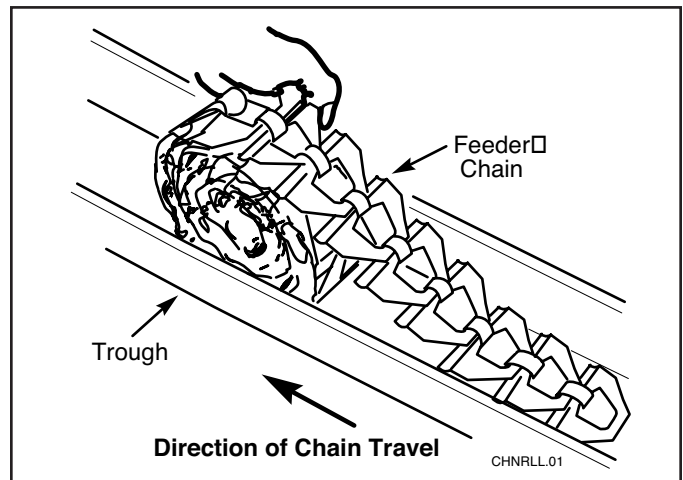
3. Place two chain bundles every 50' [15.24 M] around each circuit. Cut the retaining bands from each bundle as they are installed.

**Note:** Removal of the shear pin allows the drive sprocket to turn freely during chain installation.

**Caution:** Be sure to remove all dirt and debris from the trough before installing the chain. Dirt and debris will cause damage and premature system failure.



Shear Pin Removal



Chain Roll-Out

4. Roll out the first length of chain and insert the lead end of the chain through the return end of the feeder.
5. Run the chain under the feed intake wheel making sure the sprocket teeth engage the back edge of the chain loops.
6. Pull the chain through the feeder and under the feed slide to the drive sprocket.
7. Again, align the sprocket teeth with the chain and pull the chain through the power chamber until about 10' [3.05 M] of chain is through the chamber.
8. Set the next bundle in the trough and unroll.

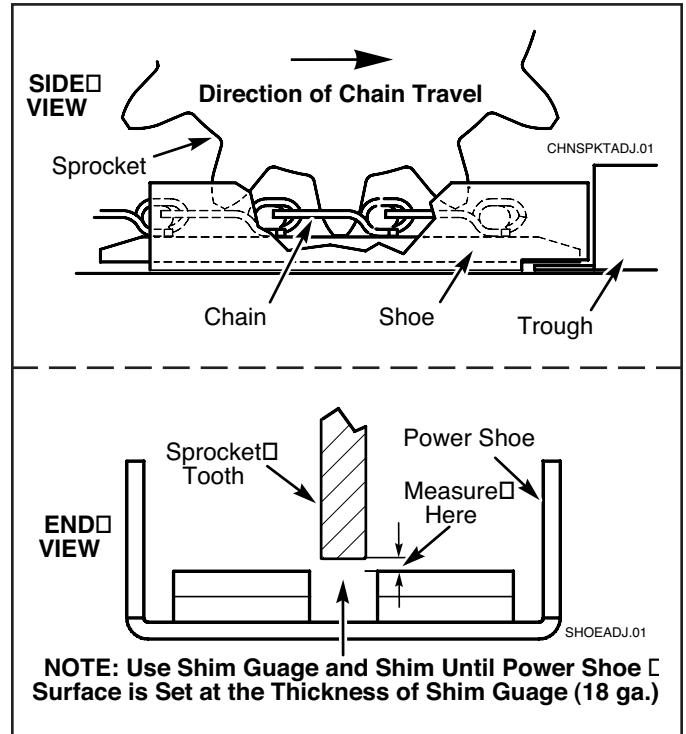
**Using the Chain Tool**

Use the Chain Tool to support the chain when joining and separating the chain links.

**Note:** Before installing chain for the first time, practice joining and separating the links, with the chain tool and a hammer. Use a chain tool to join each section of chain as it is installed.

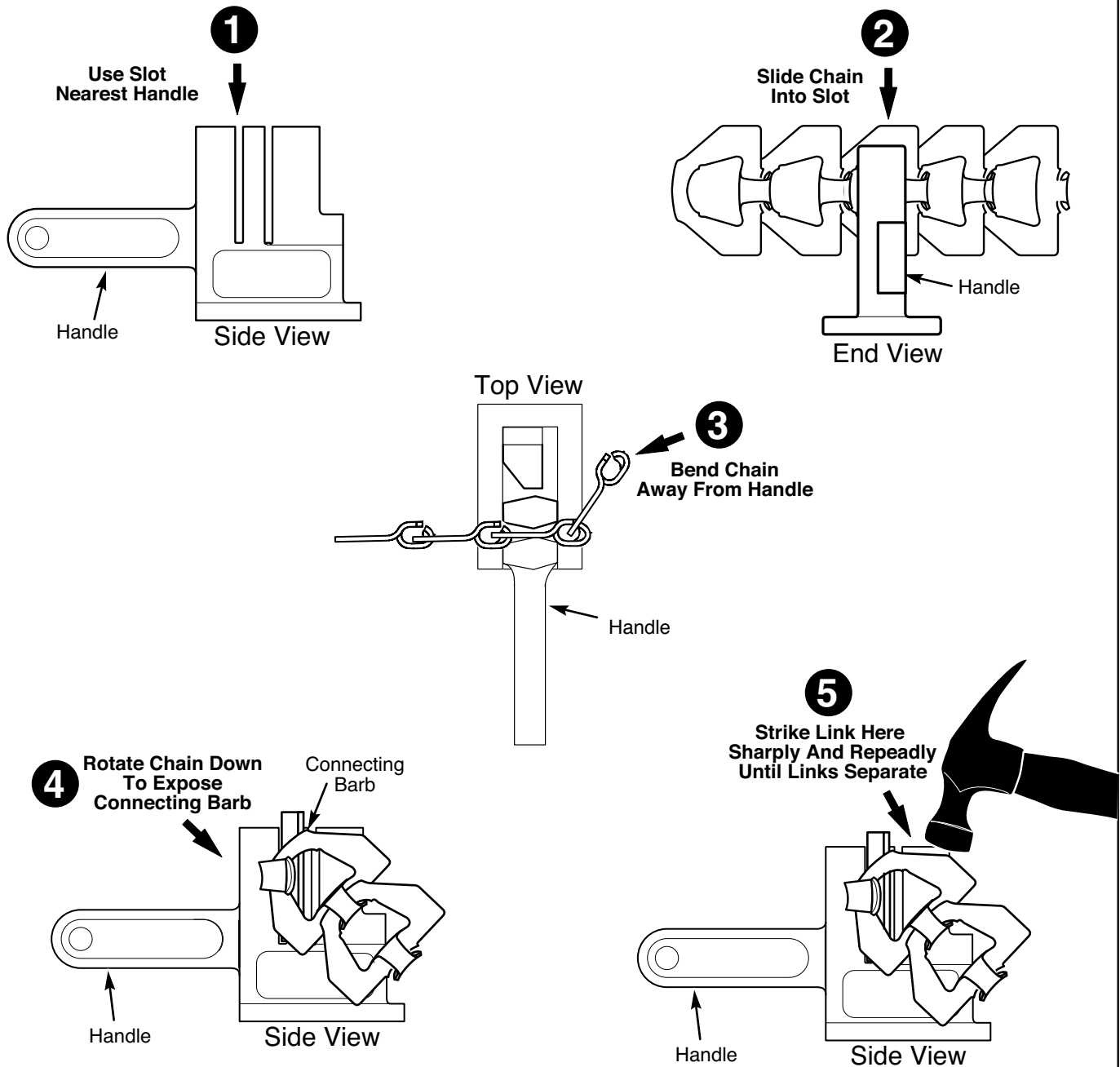


**Caution:** Chain must be installed with the leading edge down and the loop facing the direction of travel, as shown.



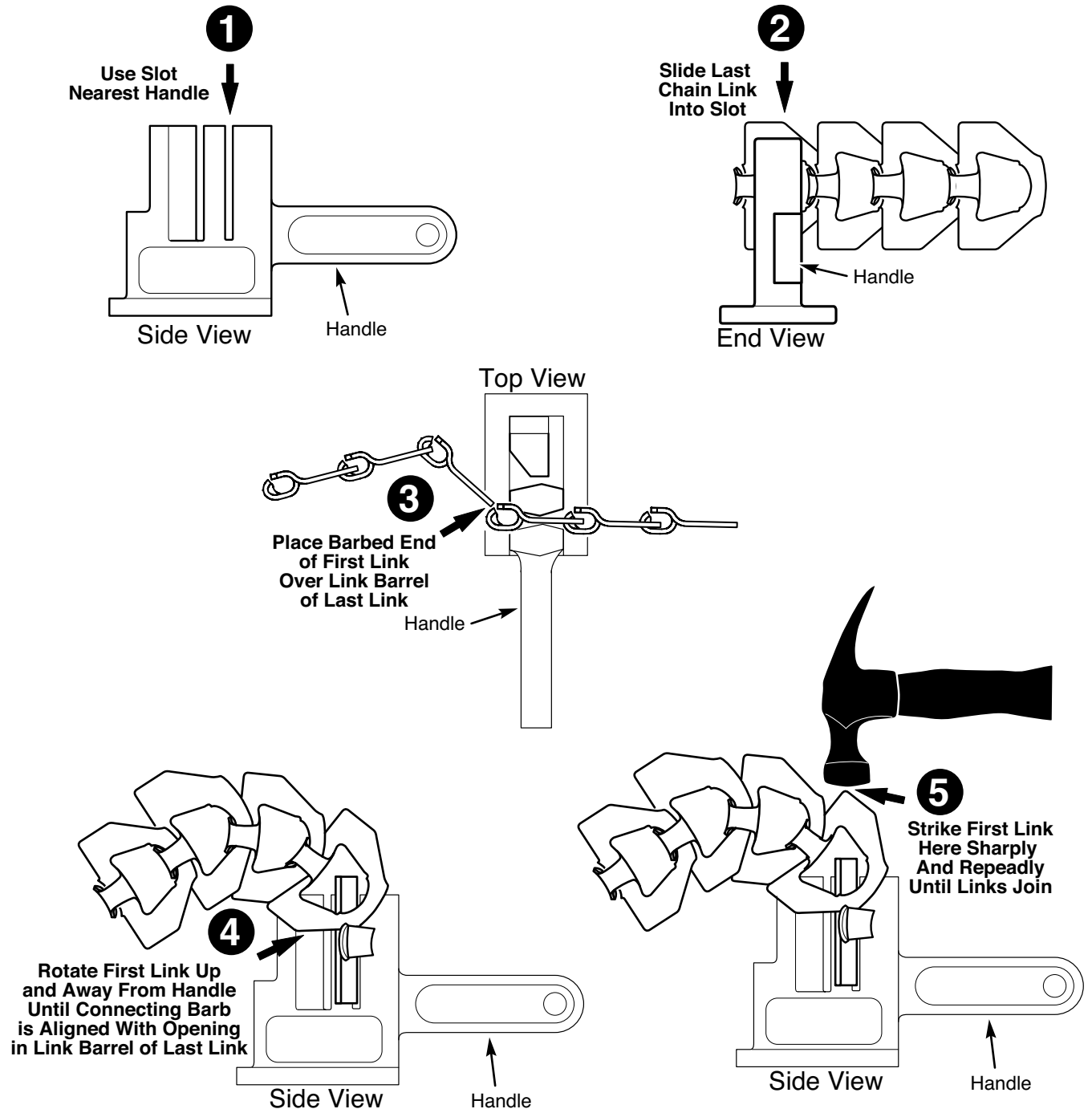
Sprocket and Power Shoe Adjustment

# Separating Chain



**WARNING! Safety glasses MUST be worn when striking chain with a hammer.**

# Joining Chain



**WARNING! Safety glasses MUST be worn when striking chain with a hammer.**

# Adjusting Chain Tension

**⚠ Caution:** After chain installation is complete, inspect the entire circuit. Make sure the chain is not kinked or twisted and it is lying flat with the flat edge down and the link barrel up. Make the final chain connection just ahead of the drive hopper.

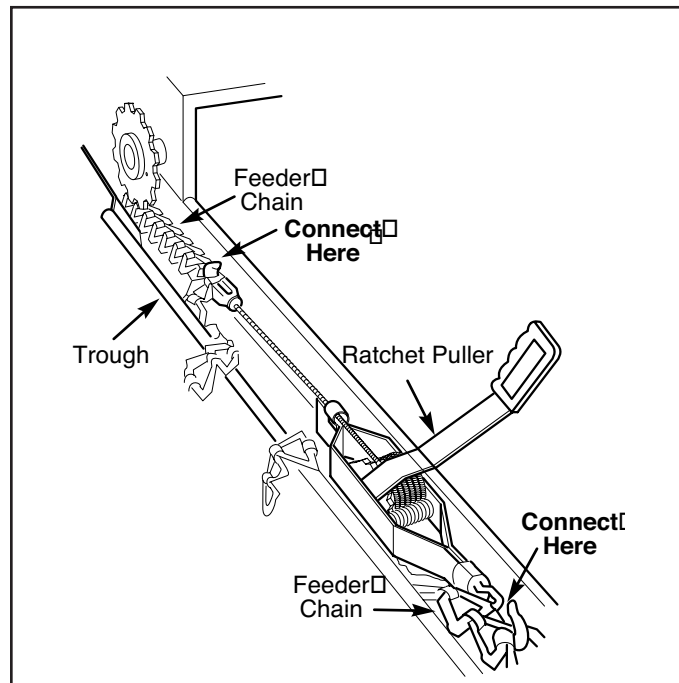
The recommended method for adjusting the chain tension requires the use of the chain tool to add and remove chain links.

1. Remove the shear pin from the yoke sprocket assembly.
2. Attach the ratchet puller to each end of the chain circuit.
3. Tighten the chain using the ratchet puller until the chain is equally taut throughout the circuit. This requires approximately 900# for a 1000' circuit.
4. Slowly release the ratchet puller. The chain is now in a 'relaxed' position.
5. Use the chain tension chart to determine how many links to remove. This is the number of links to remove from the point where the chain would naturally join in the relaxed position. Also, you can use the following formula to determine the length of the chain to remove. Length of the cage row times two, times .045, divided by the number of drives. For example, with a 600 foot cage row with 2 drives multiply  $600 \times 2 = 1200 \times .045 = 54$  in., divided by 2 = 27 in. This is a starting point. Check chain after feed is on chain and again once a week for the first two months. Make corrections as needed.
6. Remove the required number of links using the chain tool. Tighten the ratchet puller until the ends of the chain come together.
7. Join the end links with the chain tool.
8. Remove the chain tool and release ratchet puller .
9. Reinstall the shear pin in the yoke sprocket Before Start-up

CHAIN TENSION CHART		
Cage Row Length	Single Drive	Dual Drive
300 ft. [91M]	13 links	4 links
350 ft. [107M]	15 links	4 links
400 ft. [122M]	17 links	4 links
450 ft. [137M]	19 links	5 links
500 ft. [152M]	24 links	5 links
550 ft. [168M]	29 links	6 links
600 ft. [183M]	not recommended	6 links
650 ft. [198M]	not recommended	9 links

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Chain Tension Chart



Adjusting Chain Tension

**⚠ CAUTION:** Be absolutely sure the hooks of the ratchet puller are fully engaged in the chain before applying any tension. Use extreme care to safely tighten puller.

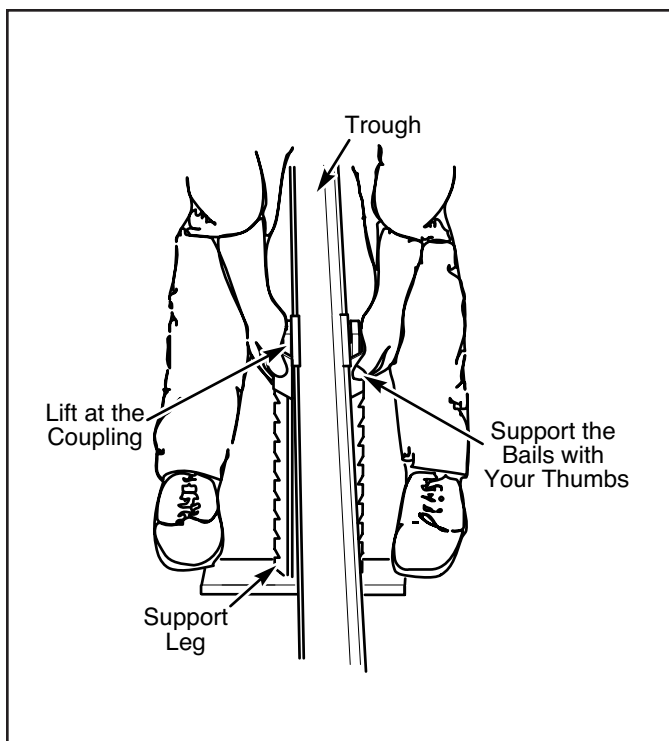
# Leveling the Leg Support System

Level the system after the chain is installed. The trough and corners can be raised and lowered easily as follows.

1. Stand over the trough as shown.
2. With both hands, lift the trough at a coupling/leg assembly. Lift just enough to relieve tension on the wire bails.
3. Raise the bails and adjust the trough to a level position
4. Press the bails into the notches on the support legs and lower the trough to lock in position.

**! Caution: Make sure the trough is level, straight, and square. The system will operate when not properly aligned however, excessive wear and early component failure will result.**

5. Level the drive hopper assembly by adjusting the legs up or down until even with rest of the system.



Leveling the Trough

# Before Start-up

1. **IMPORTANT!** Remove the small vent screw from the gear reducer before running the system. The vent screw is for shipping purposes only.
2. Check the oil level at the fill plug. Oil should just be visible, do not overfill. Use the correct type and viscosity oil for your rear reducer as specified in rear reducer manual.
3. Check the shear pin, sprocket, and yoke. Make sure that the:
  - Shear pin is properly fitted and visible from both ends.
  - Setscrew(s) is tight.
  - Yoke and sprocket are tightly mated with no gaps. Gaps and misalignment will cause shear pins to break prematurely.



**Caution: Big Dutchman shear pins are tested for proper shear strength. Do not use substitute shear pins.**

4. Check the entire feeder circuit again. Chain must be flat and facing in the right direction. Remove foreign objects. Trough runs must be square and level. Corners and hoppers must be square and level.
5. Complete the electrical installation and prepare the unit for test operation.




# Start-up Procedure

1. With the hopper empty, start and stop the system for short periods, checking for smooth operation. If anything is incorrect fix it before proceeding with the testing.

**Note:** Most starting problems occur at the corners. Make sure they are square and level. When initial testing is complete and all basic problems have been corrected, resume the start up procedures as follows.

2. Check the “Bubble” (tendency of chain to lift slightly just after drive sprocket). Chain tension is correct when the chain is just about to lift or bubble when running. When the motor first starts there may be a little larger bubble but it should settle down rather quickly. See drawing below.

 **Caution: Check the chain tension frequently during start-up.**

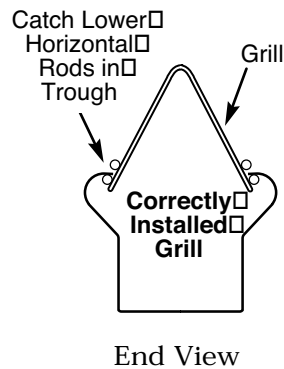
3. Make at least three additional test runs of twenty to twenty-five minutes each.
4. Check the entire system. If all is operating properly, install the corner covers and fill the hoppers approximately one-quarter full with feed.
5. Set the feed level slide about 1/8 inch [0.32 cm] above the link barrel of the chain and run the system until the feed is evenly distributed.

**Note:** When using an auxiliary feeder, set the feed level slides at the same positions in both feeders.

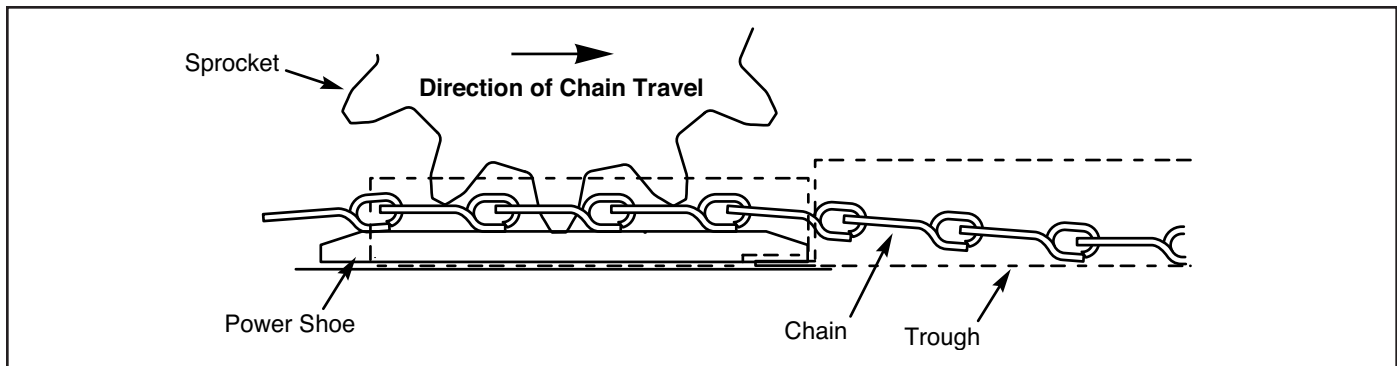
**Note:** The feed slide is mounted just behind the drive sprocket and can be adjusted up or down by loosening the wing bolt. After break-in, adjust to the feed level required and tighten in place.

6. After all test runs are completed and the system is operating properly, install the grille in the trough.

**Note:** The bottom edges of the grille have two line rods, the bottom rod goes under the trough lip and the top rod sets above the lip. See drawing below.



Grille Installation



Checking the Chain “Bubble”



# Repair Procedures

These repair procedures detail replacement of the following wear items.

- Shear Pins
- Power Shoes
- Drive Belts
- Corner Bushings

## Shear Pin Replacement

The shear pin(s) protects the feeder system components from damage caused by jams, component failure, and chain bunching. The shear pin is located on the drive sprocket and secured with a setscrew. If a shear pin breaks, the motor, belts, shaft, and shear pin hub will continue to operate but drive sprocket will not drive chain.

When shear pin replacement is required, proceed as follows:

**Warning:** Shut off and lock out all electrical power to the feeder system before service to prevent unexpected start up. Serious injury can result from start up during service.

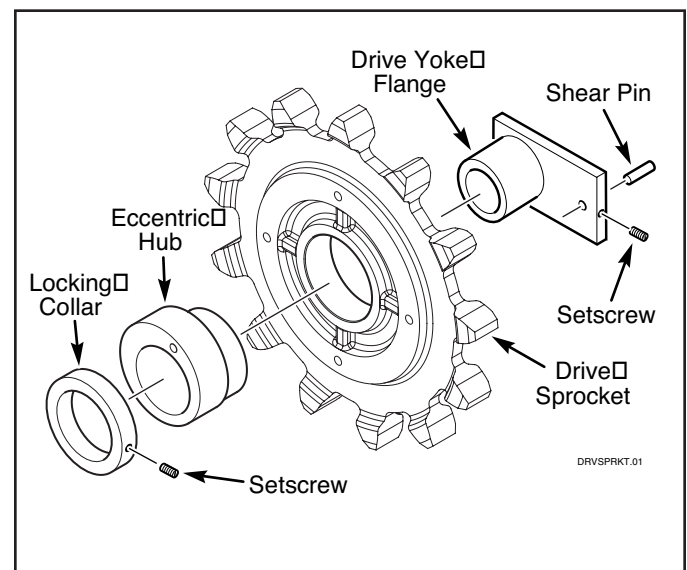
1. Locate and correct the problem(s) that caused the shear pin to break.
2. Remove covers and guards as required to access the drive sprocket and shear pin hub area.
3. Loosen the setscrew that secures the broken shear pin.
4. Remove all pieces of the broken shear pin.

**Caution:** Be sure to remove all pieces of the broken shear pin. Severe damage to the system can result if broken pieces become lodged in drive sprockets or corners.

5. Use the hub turning tool to rotate reducer shaft until one of the shear pin holes in the drive sprocket aligns with the shear pin hole in the shear pin hub.
6. Insert a new shear pin of the same material and size as the original and secure by tightening the setscrew.

**Note:** Big Dutchman shear pins are tested for proper shear strength. Do not use substitute shear pins.

7. Reinstall all covers and guards. Turn on electrical power and restart the system.



Shear Pin Replacement

## Power Shoe Replacement and Adjustment

The power shoe(s) set below the chain at the drive sprockets and hold the chain at the proper height for drive sprocket engagement. The power shoes also align the chain properly from side to side. Replace or adjust any power shoe that shows wear, damage, or allows poor chain to sprocket engagement.

When power shoe replacement is required, proceed as follows:

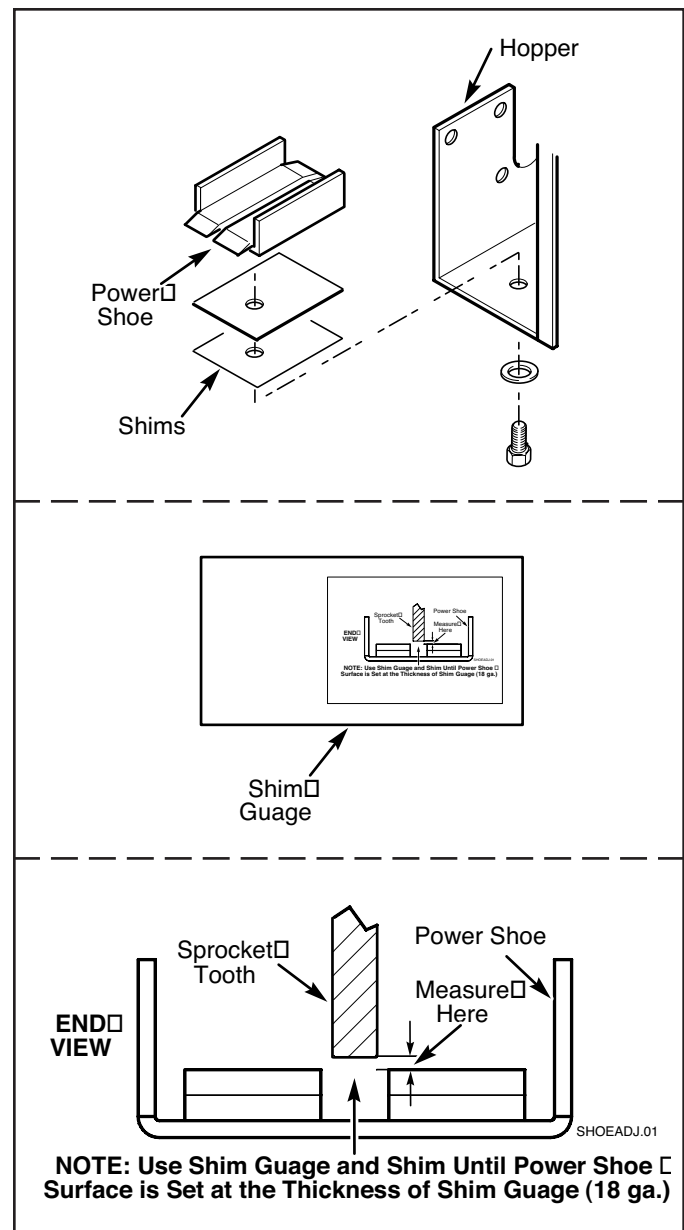
**Warning:** Shut off and lock out all electrical power to the feeder system before service to prevent unexpected start up. Serious injury can result from start up during service.

1. Remove covers and guards as required to access the power shoe area.
2. Clean away all feed and debris from the trough, power shoe, and chain near the drive sprocket.
3. Use a ratchet puller to separate the chain.
4. Remove the single 3/8" bolt and washer holding the power shoe. The bolt is located on the bottom side of the drive hopper body.
5. Install a new power shoe.
6. Adjust the power shoe from side to side until the notch in the power shoe is centered below the sprocket teeth as shown.
7. Check the height of power shoe. The chain surface of the power shoe must be below the bottom of the sprocket teeth by the thickness of the power shoe gauge (18ga.). Shim as required. Use the gauge provided to check the adjustment.
8. Insert the 3/8" bolt with washer from the bottom of the drive hopper body and into the power shoe and tighten.

**Note:** Make sure proper power shoe

alignment is maintained after tightening the bolt.

9. Use a ratchet puller and chain tool to reconnect the chain. Check tension.
10. Turn on electrical power and restart briefly. Check for proper operation. Start, stop, and check several times to make sure that all components are operating smoothly.
11. Reinstall all guards and covers.



Power Shoe Replacement

### Drive Belt Replacement and Adjustment (Belt Drive Units Only)

The drive belt(s) connect the motor pulley to the gear reducer pulley. Inspect the drive belts every 30 days, replace if worn or frayed. When belt replacement is required, proceed as follows:

**Warning:** Shut off and lock out all electrical power to the feeder system before service to prevent unexpected start up. Serious injury can result from start up during service.

**Note:** If the drive unit is equipped with more than one drive belt, always replace all drive belts at the same time. Running a new belt with old belts will cause premature failure of the new belt.

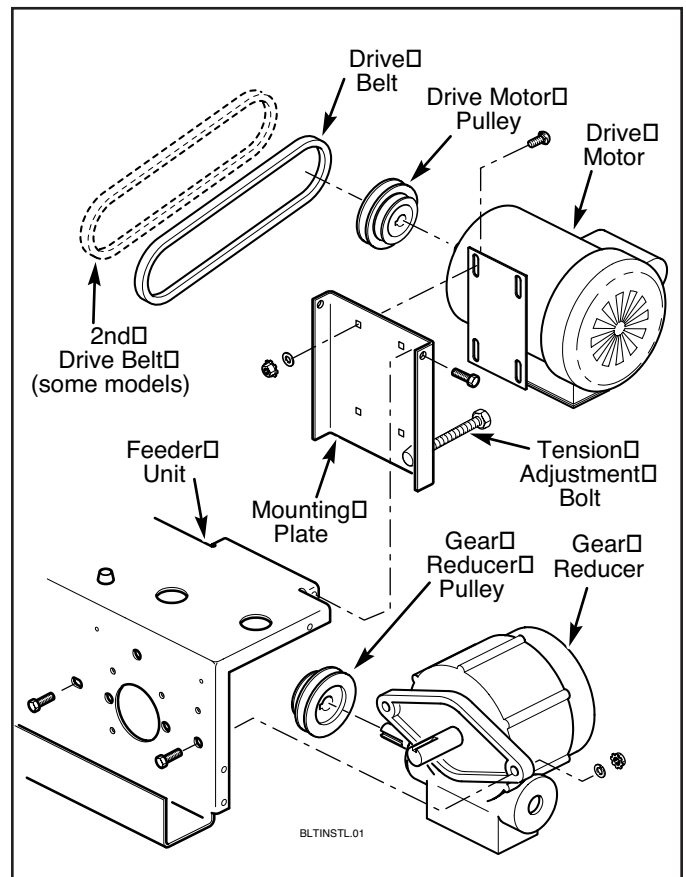
1. Remove the motor and belt covers to access the drive belt area.
2. Remove all pieces of the old belt.
3. Loosen the locknut on the tension adjustment bolt and back-off the bolt until the new belt(s) fit over the pulleys.
4. Attach new belt(s) to the motor and gear reducer pulleys.
5. Turn the tension adjustment bolt until the belts are tight.
6. Tighten the locknut while holding the tension adjustment bolt in position. Find a place midway between pulleys and try to deflect the belt. Proper belt tension will allow a very slight deflection.

**Caution:** Do not over tighten the belts. Over tightened belts can cause damage to the belts, bearings, motor, and rear reducer.

7. Turn on electrical power and check the belts under full load for slip.

**Warning:** Avoid all moving parts while checking the belts. Coming in contact with moving shafts, pulleys, belts, chains, or sprockets can cause serious injury.

8. Reinstall all belt and motor covers.



Drive Belt Replacement

### Corner Bushing Replacement

Corner bushings are located in the corner wheel of the corner unit. Check the corners every three months for looseness and wear. Replace corner bushings as required. Do not operate the floor feeder assembly with loose corner wheels.

When bushing replacement is required, proceed as follows:

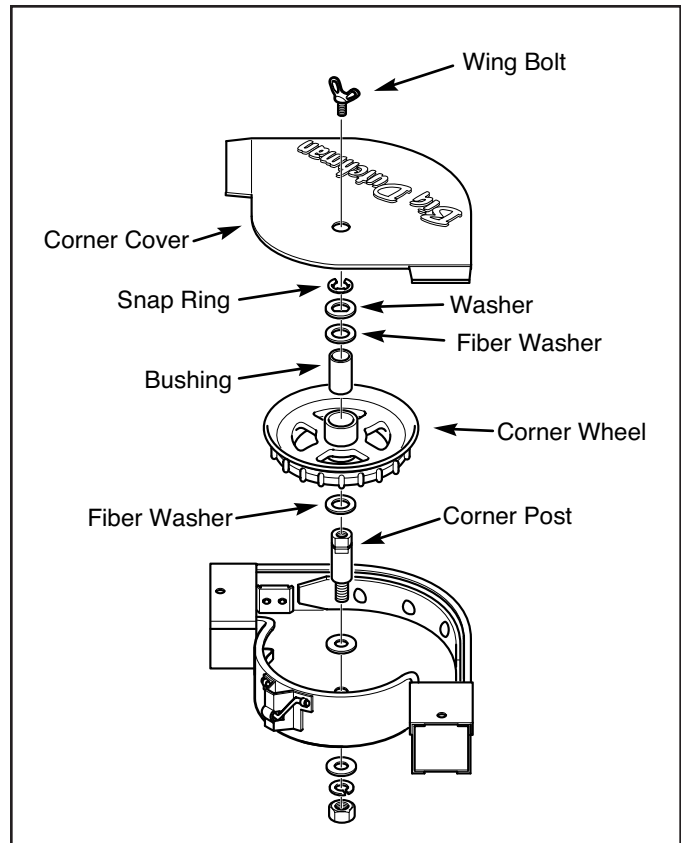
**Warning:** Shut off and lock out all electrical power to the feeder system before service to prevent unexpected start up. Serious injury can result from start up during service.

1. Remove setscrew and shear pin from drive sprocket.
2. Reduce chain tension on the corner to be repaired by separating the chain using a ratchet puller, chain tool and hammer.
3. Remove the wing bolt and corner cover.
4. Remove the snap ring from the corner post.
5. Remove the washer, fiber washer and corner wheel with bushing.
6. Check the corner post for excessive damage or wear. Replace the corner post if required. If the corner post is replaced, make sure that all parts are reinstalled at their original location. Refer to 90° Corner Manual.
7. Use a press to force the old bushing out of the corner wheel. Press the new bushing into the corner wheel.
8. Install the corner wheel onto the corner post with the lip up and the edge of the wheel against the feeder chain.
9. Install the fiber washer, flat washer, and snap ring onto the corner post.



**Note:** The fiber washers must be in position above and below the corner wheel. Do not operate the corner unit without fiber washers.

10. Install the cover and secure with the wing bolt.
11. Install the shear pin in the sprocket and secure with setscrew.
12. Release the ratchet puller.
13. Turn on electrical power and restart the system.



Corner Bushing Replacement

# Lubrication and Maintenance Procedures

The following lubrication procedures detail required and suggested periodic maintenance.

## Corner Wheel Lubrication

Add lubricant to the corner bushings every three months as follows:

1. Remove the wing bolt and corner cover.
2. Add light weight machine oil to the hollow center of the corner post. The bushing will absorb the oil.
3. Reinstall the cover and secure with the wing bolt.

## Return Wheel Lubrication

Add lubricant to the return wheel(s) every three months as follows:



**Warning: Shut off and lock out all electrical power to the feeder system before service to prevent unexpected start up.**

1. Remove feed from the hopper until the setscrew on the face of the return wheel(s) is accessible.
2. Turn on electrical power temporarily and jog the feeder system until the setscrew is positioned near the top of the return wheel.

**Shut off and lock out all electrical power.**

3. Remove the setscrew(s) on each return wheel and add approximately 1/2 teaspoon of #40 oil. Reinstall the setscrew and tighten.
4. Make sure the feed return slide is properly adjusted.
5. Turn on electrical power and restart the system.

## Sprocket Collar Inspection

The sprocket collar is attached to the power shaft by two setscrews.

Check the sprocket collar and hardware weekly.

Inspect:

1. Setscrew tightness.
2. Sprocket for excessive wear or damage
3. Sprocket collar for breaks, cracks, or damage.
4. Any loose or missing parts.

## Drive Motor Lubrication

The bearings/bushings on the drive motor of some units require slight lubrication every few months. Refer to the motor manufacturer specifications for type of lubricant and lubrication intervals.

# Troubleshooting

## CORNER WHEELS NOT TURNING

**Possible Cause:** Chain may be too loose and not making contact with wheel surface.

**Solution:** Tighten the chain by removing links.

**Possible Cause:** Foreign objects may be lodged in the corner.

**Solution:** Shut off power, back off the pressure on the chain by turning the drive belt by hand or breaking chain, then remove object.

**Possible Cause:** The wheel may need lubrication.

**Solution:** Add a few drops of #40 oil.

## GEAR REDUCER RUNS TOO HOT

**Possible Cause:** The gear reducer may be low on lubrication.

**Solution:** Check the oil level, add as required. Refer to lubrication specification chart for correct lubricant.

## SHEAR PINS BREAK OFTEN

**Possible Cause:** Jamming chain, bunched up because of too much slack causing jams at sprocket, under chain stripper or at corner.

**Solution:** Tighten chain by removing excess links.

**Possible Cause:** Foreign objects jammed in the system.

**Solution:** Shut off power, back off chain and remove object.

**Possible Cause:** Chain catching on trough edges or corners.

**Solution:** Straighten edges or replace trough. Make sure joint is properly fitted, level, and straight. Check the squareness of the system.

**Possible Cause:** Improper alignment of power shoe to sprocket.

**Solution:** If power shoe surface is damaged, replace it and check for correct spacing, add or remove shim(s) if required.

**Possible Cause:** Feed or foreign object jam at feed return wheel.

**Solution:** Shut off power remove feed from hopper and clear jammed object or feed from the unit.

**Possible Cause:** Chain is jamming under the corner wheels.

**Solution:** Check the engagement of the

corner post to the base. Check the bottom of the wheel to make sure it has not been broken or worn beyond repair. If so, replace it.

## INCONSISTENT MOTOR OPERATION

**Possible Cause:** Motor may be wired wrong.

**Solution:** Check the wiring diagram and specification plate for correct voltage and rewire if required.

**Possible Cause:** Motor is too small for the load.

**Solution:** Check the motor chart for correct size motor and replace if required.

**Possible Cause:** A voltage drop causing low power.

**Solution:** Initially the system should be wired by a licensed electrician who will use the correct size electrical wire for the installation. Have an electrician check your voltage and increase the service line to your motor if required.

## FEED NOT TAKEN BACK INTO HOPPER

**Possible Cause:** There may be too much feed coming out of the hoppers.

**Solution:** Lower the feed level slide.

**Possible Cause:** The feed return wheel may be clogged or improperly installed.

**Solution:** Shut off power, empty hopper and unclog the wheel, check the installation for misalignment, repair or replace.

## FEED BUILDS UP IN THE CORNERS

**Possible Cause:** Too much feed in the trough.

**Solution:** Adjust the feed level slide to restrict the feed flow.

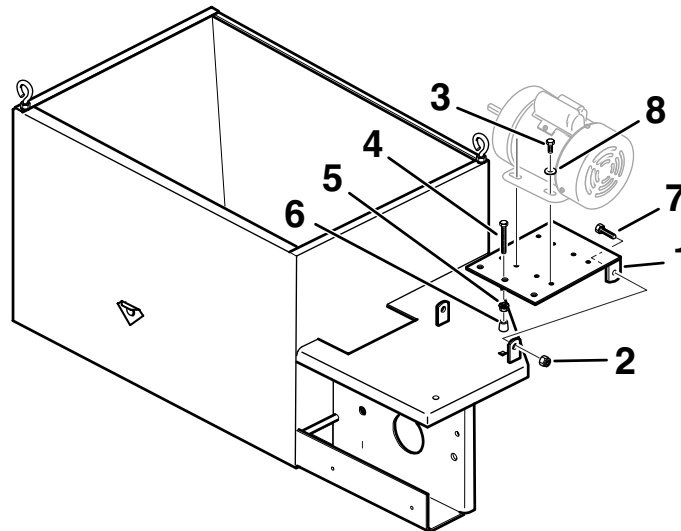
**Possible Cause:** Too much litter in the system, catching in corners.

**Solution:** Raise and adjust the height of the trough to the back height of the birds.

**Possible Cause:** Corner wheel not revolving.

**Solution:** Check lubrication and bearing and replace as required.

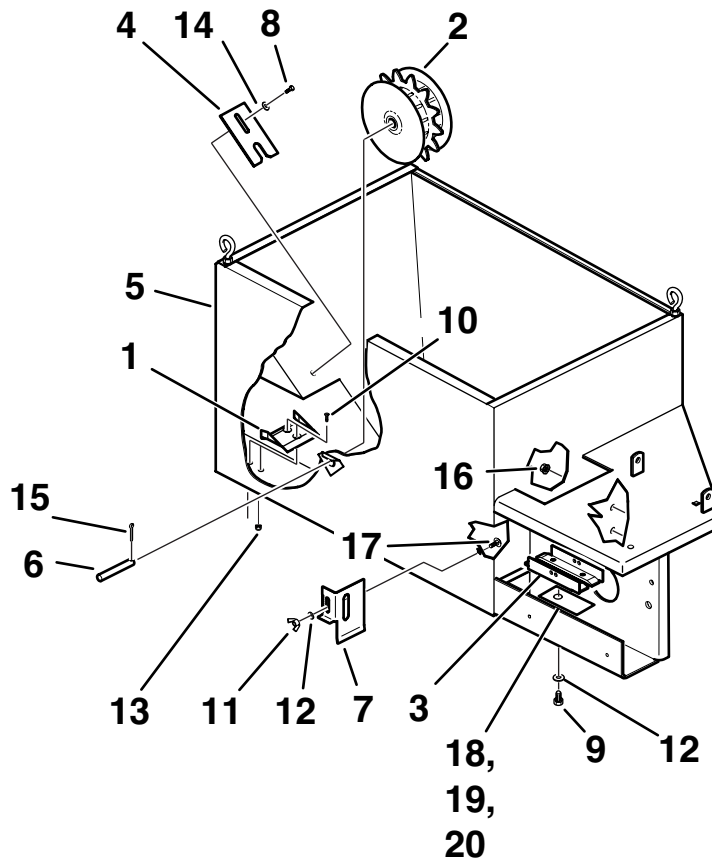
# Parts Replacement



For Belt Drive Only	
Part No.	Desc.
10-01-5140	20/40 fpm/60 Hz
10-01-5160	60 fpm/60 Hz
10-01-5000	120 fpm/60Hz

Item	Part No.	Description
1	86-00-2597	PLATE, MOUNT, MOTOR PAINTED BLUE
2	99-20-0178	Hex Lock Nut, 3/8-18
3	99-10-0098	Bolt, 5/16-18 x 1/2"
4	99-10-0220	Bolt, 3/8-16 x 2.0"
5	99-20-0097	Kep Nut, 3/8-16
6	99-50-9316	Rubber Cap
7	99-10-0096	Bolt, 3/8-16 x 1.0"
8	99-20-0111	Washer, 5/16"

# Parts Replacement

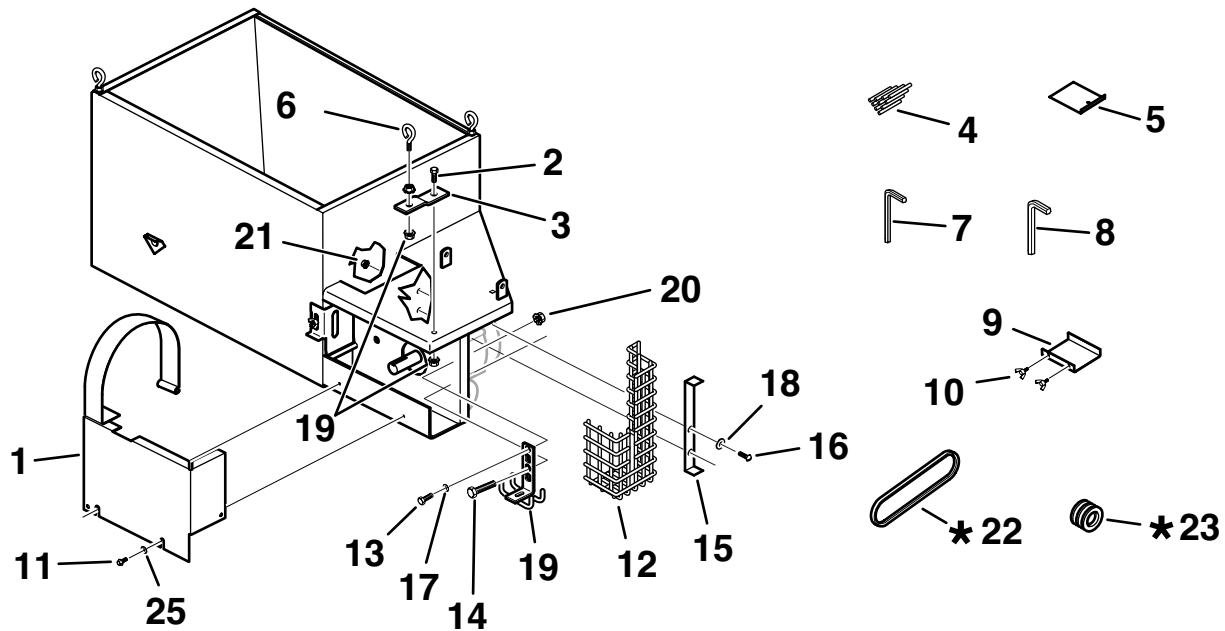


Item	Part No.	Description
1	10-00-0135	Chain Guide
2	10-00-0197	Feed Return Wheel
3	10-00-0337	Power Shoe
4	10-04-1005	Feed Return Wheel Slide
5	10-04-1010	Feeder Body
6	10-22-0006	Shaft
7	86-00-2610	Gate, Feed, Galv.
8	99-10-0261	Bolt, 1/4-20 x 5/8"
9	99-10-0261	Hex Bolt, 3/6-18 x 5/8"
10	99-10-1133	Screw, 1/4-20 x 5/8" Flat Head Allen
11	99-20-0041	Wing Nut, 5/16-18

Item	Part No.	Description
12	99-20-0111	Washer, 5/16"
13	99-20-0134	Hex Nut, 1/4-20
14	99-21-0003	Washer, 1/4"
15	99-50-0868	Cotter Pin, 1/8" x 1-1/4"
16	99-20-0047	Keystone Nut, 1/4-20
17	99-10-1520	Carriage Bolt, 5/16-18 x 3/4"
18	10-00-0622	Shim Plate, Power Shoe, 14 Ga.
19	10-00-0623	Shim Plate, Power Shoe, 18 Ga.
20	10-00-0624	Shim Plate, Power Shoe, 22 Ga.



# Parts Replacement

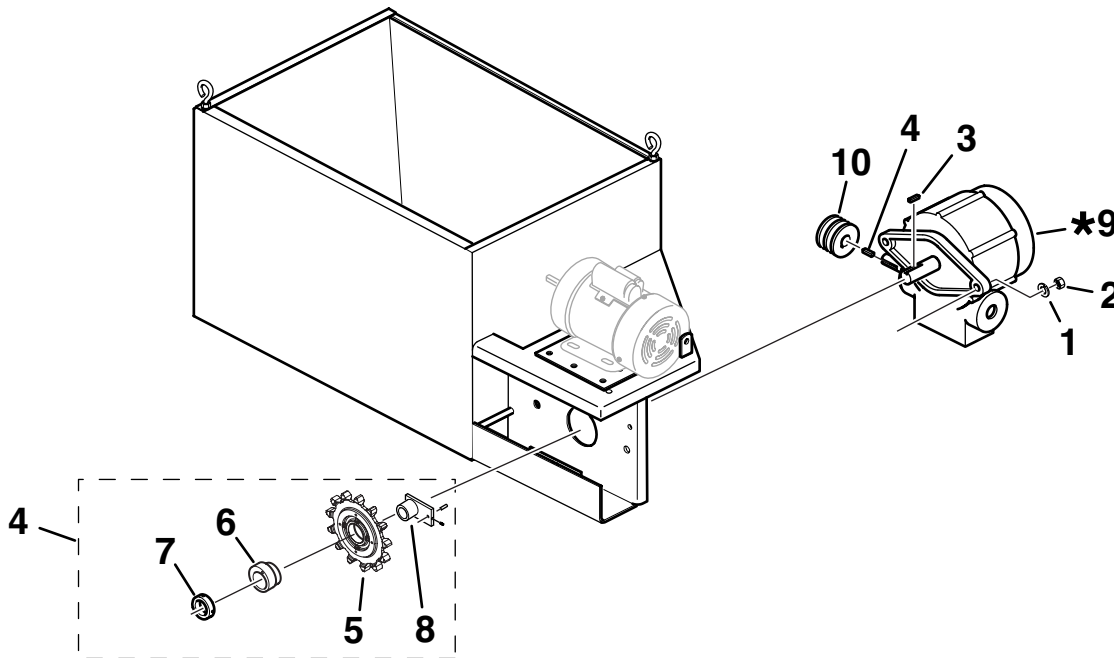


Model:	Desc.	*22 Belt	*23 .625" Bore Motor Sheave	*23 .87" Bore Motor Sheave	*23 1-1/2" Bore Motor Sheave
	20 fpm/60 Hz	99-50-0145	10-20-0004	N/A	N/A
10-01-5140	20/40 fpm/60 Hz	99-54-0001	99-53-0004	N/A	N/A
10-01-5160	60 fpm/60 Hz	99-54-0006	99-53-0010	N/A	N/A
	60 fpm/50 Hz	99-54-0005	99-53-0101	99-53-0102	N/A
10-01-5000	120 fpm/60 Hz	99-54-0044	99-53-0084	N/A	N/A
10-01-7000	120 fpm/50 Hz	99-50-1005	N/A	N/A	N/A

Item	Part No.	Description
1	86-00-2598	Guard, belt sprocket & painted orange
2	99-10-0098	Bolt, 3/8-16 x 1/2"
3	10-00-0008	Strap, Rack Hangar
4	10-00-0068	Shear Pin
5	10-00-0625	Baffle, Feed Guard
6	99-50-0091	Eye Bolt
7	99-50-0150	Allen Wrench, 1/8"
8	99-50-0152	Allen Wrench, 5/32
9	10-00-0063	Cover, Cleanout
10	99-10-0110	Bolt, 1/4-20 x 1/2"
11	99-10-1139	Bolt, 5/16-18 x 3/8"

Item	Part No.	Description
12	10-00-9576	Wire Belt Guard, Bottom
13	99-10-0283	Bolt, 5/16-18 x 1.0"
14	99-10-0733	Bolt, 1/2-13 x 2.0"
15	10-00-9578	Bracket, Bottom Belt
16	99-10-0373	Machine Screw, 1/4-20 x 1/2"
17	99-20-0111	Washer, 5/16"
18	99-21-0006	Washer, 1/4 x 1.0" O.D.
19	10-00-1025	Stripper, Chain, Universal
20	99-20-0100	Kep Nut, 5/16-18
21	99-20-0047	Kep Nut, 1/4-20

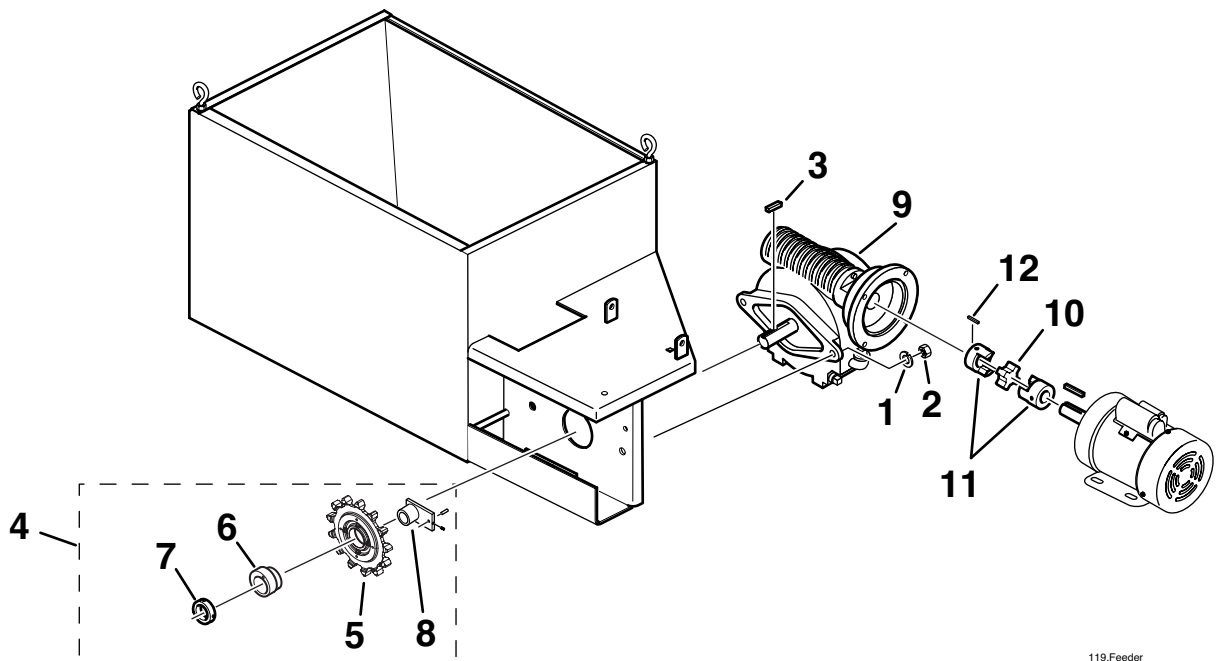
# Parts Replacement-Belt Drive



Item	Part No.	Description
1	99-20-0090	Washer, Split Lock 1/2"
2	99-20-0105	Hex Nut, 1/2-13
3	99-50-0019	Square Key, 1/4" x 1-7/8"
4	10-03-2027	Sprocket, Drive Assembly
5	10-00-9543	Drive-gear reversible
6	10-00-9544	Hub, F/Eccentric Sprocket
7	10-00-9061	Collar, F/Eccentric Hub
8	10-00-9600	Hub, Shear Pin Sprocket

Model	Desc.	*9 Reducer	10 Sheave
10-01-5140	20/40 fpm/60 Hz	10-00-0266	99-53-0005
10-01-5160	60 fpm/60 Hz	10-00-0284	99-53-0007
10-01-7160	60 fpm/50 Hz	10-00-0284	99-53-0007
10-01-7000	120 fpm/60 Hz	10-00-0371	99-53-0042
10-01-5001	120 fpm	10-00-0371	99-53-0042

# Parts Replacement-Direct Drive



119.Feeder

Item	Part No.	Description
1	99-20-0090	Washer, Split-Lock 1/2"
2	99-20-0105	Hex Nut, 1/2-13
3	99-50-0019	Square Key, 1/4" x 1-7/8"
4	10-03-2027	Sprocket, Drive Assembly
5	10-00-9543	Drive-gear reversible
6	10-00-9544	Hub, F/Eccentric Sprocket
7	10-00-9061	Collar, F/Eccentric Hub
8	10-00-9600	Hub, Shear Pin Sprocket
9	10-00-0376	Reducer
10	10-00-9662	Coupling, Spider
11	10-00-9661	Coupling Body, Gear Reducer
12	99-50-0338	Square Key, 3/16 x 3/4"

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## Big Dutchman, Inc. Limited Warranty

1. Big Dutchman warrants to the original purchaser that as to any product of its manufacture proving to be defective in material or workmanship under normal and intended use and service within one year from date of purchase thereof Big Dutchman will, at its option, (a) repair or replace such product free of charge, or (b) in lieu of repair or replacement, refund to the original purchaser the original purchase price less the reasonable value of the product's use to the original purchaser.
2. Any component parts that are not manufactured by Big Dutchman, such as electrical motors and controls, are excluded from this warranty, although such parts may be covered by separate warranties of the respective manufacturers. Copies of those other warranties, if any, may be obtained through Big Dutchman.
3. This warranty does not apply if all components of a system are not supplied by Big Dutchman, or if the product is not purchased from and installed by an authorized Big Dutchman distributor or company warehouse, or installed and operated in accordance with Big Dutchman specifications and instructions.
4. This warranty does not cover malfunctions or failures resulting from misuse, abuse, negligence, alterations, unauthorized or improper repairs, accident, damage while in transit, or lack of authorized or proper maintenance or installation. In addition, this warranty does not cover normal wear and tear or any problem with a product not caused by a defect in Big Dutchman materials or workmanship.
5. The obligations of Big Dutchman under this warranty do not include shipping charges, labor (whether for dismantling, installing, replacing or repairing), travel and subsistence allowance.
6. This warranty applies only to systems for the care of poultry and livestock. It does not apply to industrial or commercial installation. In addition, with respect to Big Dutchman's breeder nest system, Big Dutchman makes no warranty or guarantee that individual birds or any given population of birds will utilize the nests.
7. Warranty claims must be made in writing to Big Dutchman within 20 days of discovery and in accordance with Big Dutchman's published return-goods procedures, a copy of which may be obtained from Big Dutchman. For this warranty to apply, the product must be returned to a facility specified by Big Dutchman, freight prepaid and insured with proof of original purchase and date.
8. The acceptance by Big Dutchman of any product for repair, replacement or refund will not be deemed an admission by Big Dutchman that the product is defective or in violation of any warranty. Products that are replaced or for which a refund is issued become the property of Big Dutchman.
9. The rights and obligations of the purchaser under this warranty may neither be assigned nor delegated without the prior written permission of an authorized officer of Big Dutchman.
10. This warranty contains the entire warranty agreement between Big Dutchman and the purchaser, and the terms and conditions of this warranty supersede any and all other understandings, representations or proposals between Big Dutchman and the purchaser with respect to the matters covered by this warranty. This warranty shall not be modified by any custom or practice of the trade or of the parties, nor by any instances of Big Dutchman's waiver of or failure to enforce any of the provisions of this warranty.
11. This warranty may be modified or amended only in writing signed by both the purchaser and an authorized officer of Big Dutchman, and no other agent, employee, salesman, representative, dealer or distributor is authorized to make or to bind Big Dutchman to any representation, affirmation or warranty concerning the products in any manner whatsoever.
12. If Big Dutchman fails to fulfill its obligations in this warranty, or if Big Dutchman is determined to be liable to the purchaser or any other person for any reason related to any product covered by this warranty or the sale of that product, the maximum amount of damages, whether arising out of tort, contract, negligence or otherwise, recoverable from Big Dutchman by the purchaser shall be limited to the purchase price of the product with respect to which Big Dutchman's obligations or liability arises, less the reasonable value of the product's use to the purchaser.
13. THE OBLIGATIONS AND LIABILITIES OF BIG DUTCHMAN AND THE RIGHTS AND REMEDIES OF THE PURCHASER UNDER THIS WARRANTY ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, OBLIGATIONS, LIABILITIES, RIGHTS AND REMEDIES, EXPRESSED OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTY OF MERCHANTABILITY, THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED OR EXPRESSED WARRANTY ARISING FROM THE COURSE OF PERFORMANCE, COURSE OF DEALING OR USAGE OR TRADE. BIG DUTCHMAN SHALL HAVE NO OBLIGATION OR LIABILITY, WHETHER UNDER THIS WARRANTY OR OTHERWISE, FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, LOST PROFITS, REVENUE OR OTHER INCOME, LOSS OF USE, DAMAGES FOR INJURY TO PERSONS OR PROPERTY, OR ANY OTHER DAMAGES.
14. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to each purchaser. This warranty gives the purchaser specific legal rights, and the purchaser may have other rights that vary from state to state.



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