Champion Floor Chain Feeding Systems

Manual No. 10-00-0763 01-2022

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.**

Champion®

Floor Chain Feeding Systems

Installation, Operation and Parts Replacement Guide

ONE-LINE and TWO-LINE INDEPENDENT DIRECT 'MPF' DRIVES
For single drive systems, select one drive for each feeder circuit.
For dual drive systems, select two drives for each feeder circuit.

60 Hz Mpf Drives	
Part Number	**Description**
86-00-4339	DR UNIT, MPF FDR, 56C-FACE, 120FPM, 1.5HP, 115/208-230V, 1PH, 60Hz
86-00-4335	DR UNIT, MPF FDR, 56C-FACE, 120FPM,1HP, 115/208-230V, 1PH, 60Hz
86-02-4551	DR UNIT, MPF FDR, 56C-FACE, 90 FPM, 1HP, 115/208-230V, 1PH, 60Hz,W/C
86-02-4552	DR UNIT, MPF FDR, 56C-FACE, 90 FPM, 1.5HP, 115/208-230V, 1PH, 60Hz, W
86-00-4328	DR UNIT, MPF FDR, 56C-FACE, 40 FPM, ¾ HP, 115/208-230V, 1PH, 60Hz
86-00-4320	DR UNIT, MPF FDR, 56C-FACE, 40 FPM, 1HP, 208-230/460V, 3PH, 60Hz, 3P
86-00-4334	DR UNIT, MPF FDR, 56C-FACE, 80 FPM, 1HP, 115/208-230V, 1PH, 60Hz,35x
86-00-4338	DR UNIT, MPF FDR, 56C-FACE, 80 FPM, 1.5HP, 115/208-230V, 1PH, 60Hz
86-00-4332	DR UNIT, MPF FDR, 56C-FACE, 40 FPM, 1HP, 115/208-230V, 1PH, 60Hz
86-00-4329	DR UNIT, MPF FDR, 56C-FACE, 60 FPM, ¾ HP, 115/208-230V, 1PH, 60Hz
86-00-4333	DR UNIT, MPF FDR, 56C-FACE, 60 FPM, 1HP, 115/208-230V, 1PH, 60Hz, 35x
86-00-4327	DR UNIT, MPF FDR, 56C-FACE, INVERT DUTY, 120FPM, 1.5HP, 208-230/46
86-00-4321	DR UNIT, MPF FDR, 56C-FACE, 60FPM, 1HP, 208-230/460V, 3PH, 60Hz
86-00-4337	DR UNIT, MPF FDR, 56C-FACE, 60FPM, 1.5HP, 115/208-230V, 1PH, 60Hz
86-00-4325	DR UNIT, MPF FDR, 56C-FACE, 60 FPM, 1.5HP, 208-230/460V, 3PH, 60Hz

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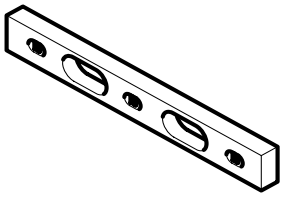
Tools Required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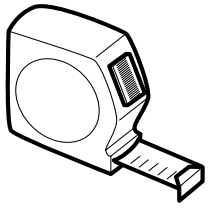
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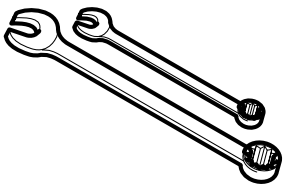
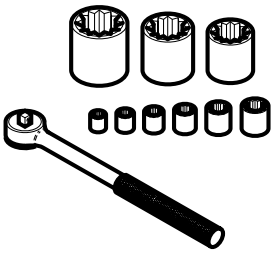
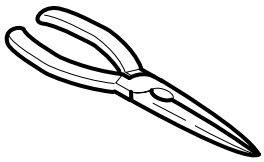
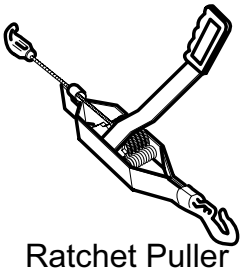
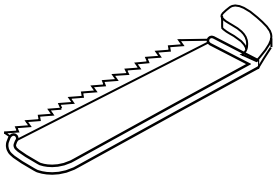
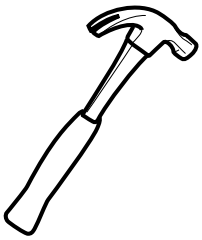

Wrenches

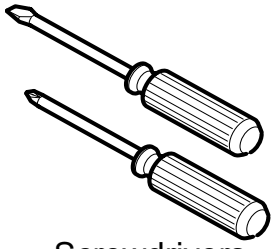

Socket Set

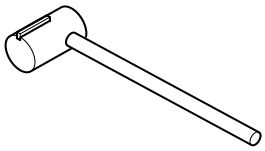

Needle Nosed Pliers

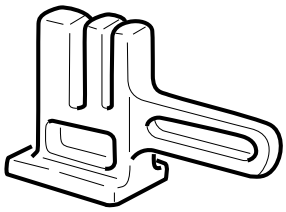

Ratchet Puller

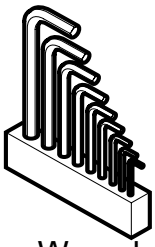

Hacksaw


Hammer


Screwdrivers

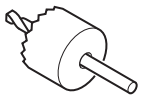

Hub Turning Tool

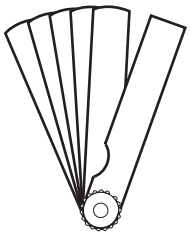

Chain Tool


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.


2-1/4 in. Hole Saw


Feeler Guage

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.

1 System Overview and Preparation for Installation

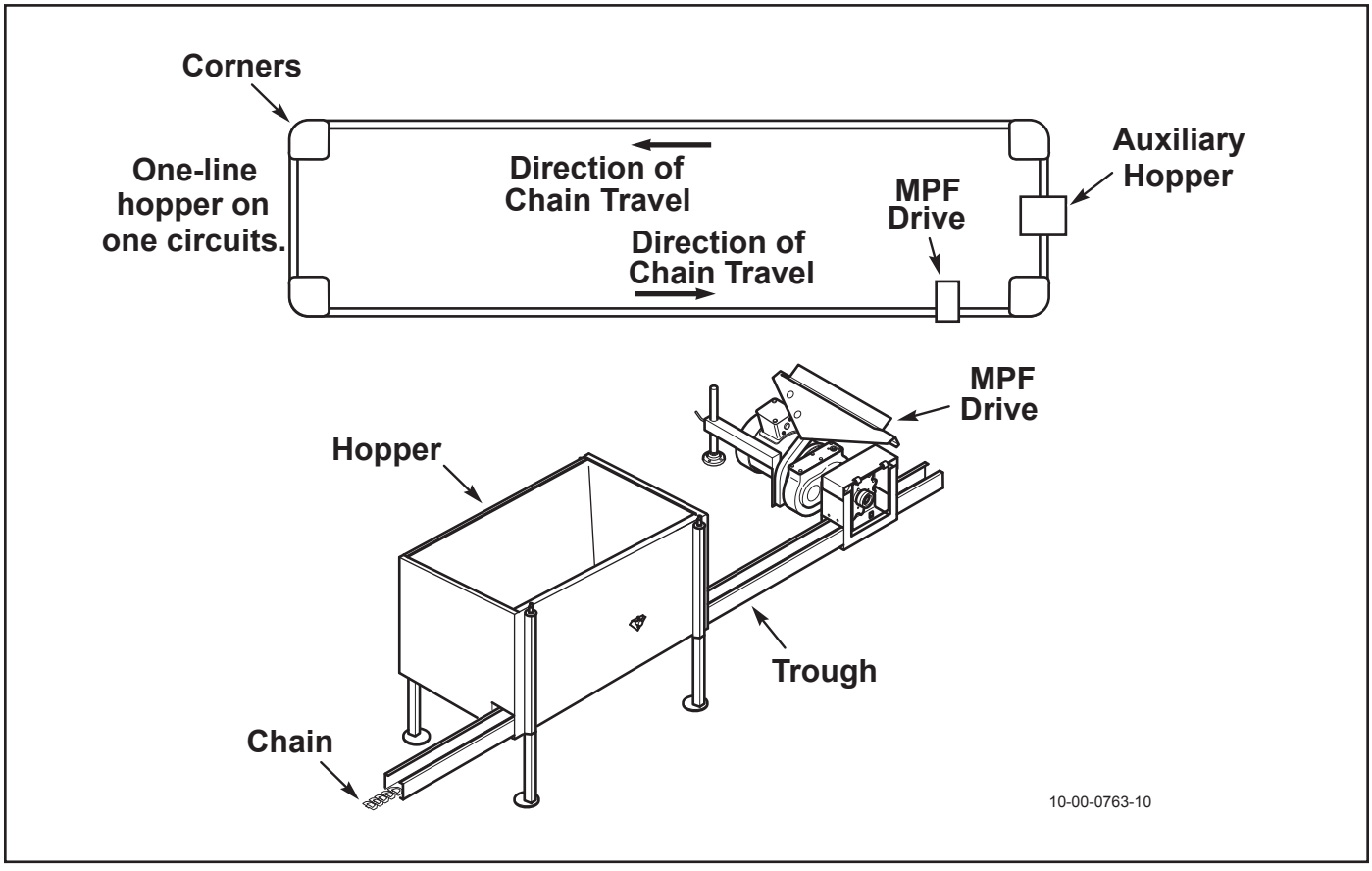
The Big Dutchman Floor Chain Feeder System consists of five basic components:

- Hoppers
- Trough
- Chain
- Corners
- Grille (optional)

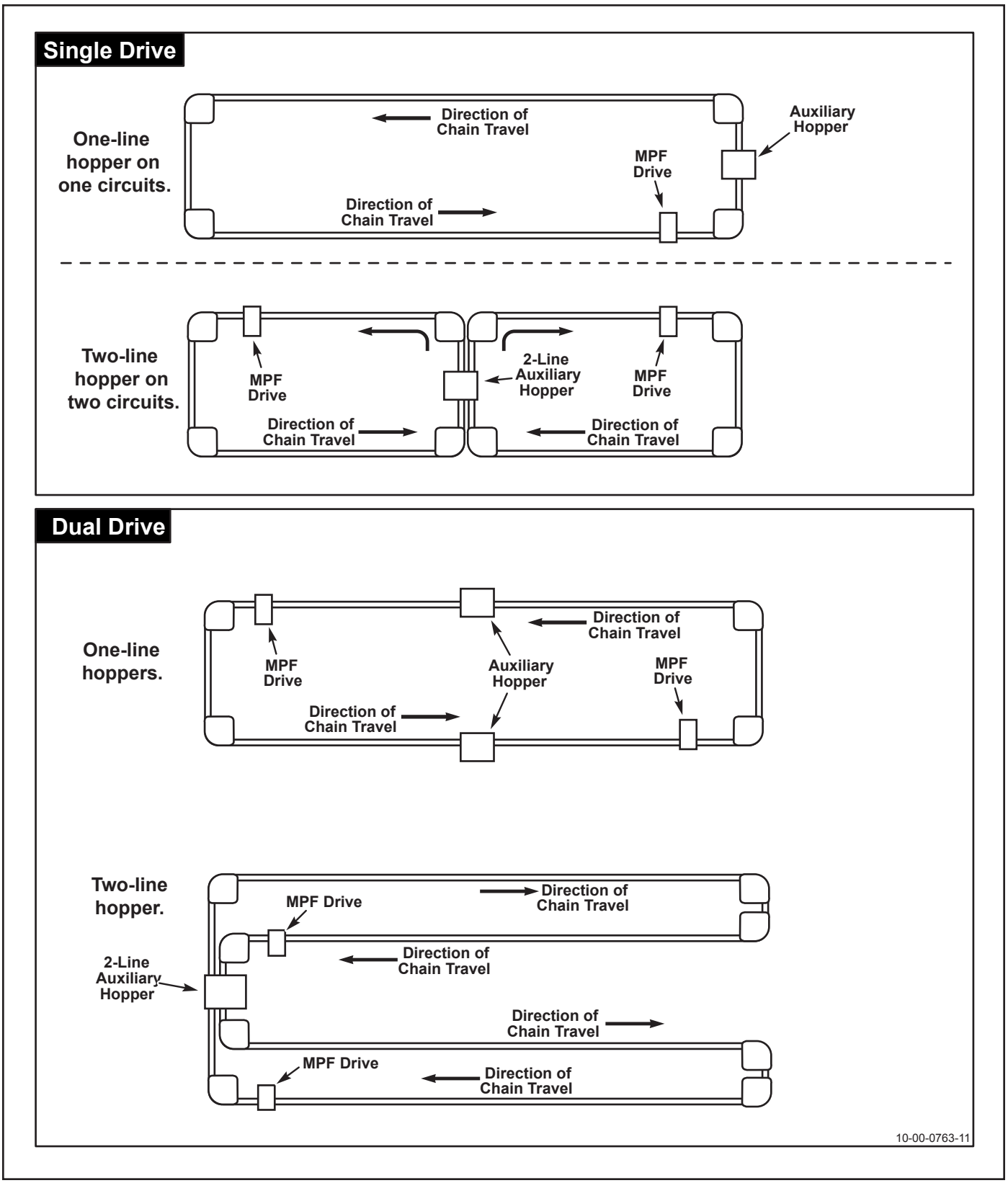
When locating the hoppers, make sure to maintain access to the motor and drive components.

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.



Component Identification (one-line, one-way shown)



Typical Chain Feeder Layout Configurations

2 Motor Application Charts

SINGLE LINE DRIVE MOTOR SELECTION TABLE							
	Total chain length per circuit						
Speed	under 400ft 122 m	400-500 ft 122-152 m	500-600 ft 152-183 m	600-700 ft 183-213 m	700-800 ft 213-244 m	800-900 ft 244-274 m	900-1200 ft 274-366 m
60 fpm	3/4 hp	3/4 hp	1 hp	1 hp	1 hp	1hp	
120 fpm	1-1/2 hp	1-1/2 hp	1-1/2 hp				

2 LINE DRIVE MOTOR SELECTION TABLE							
	Total chain length per circuit						
Speed	under 600ft. 183 m	600-700 ft 183-213 m	700-800 ft 213-244 m	800-900 ft 244-274 m	900-1000 ft 274-305 m	1000-1100 ft 305-335 m	1100-1200 ft 335-366 m
60 fpm			3/4 hp	3/4 hp	3/4 hp	3/4 hp	3/4 hp
120 fpm	3/4 hp	3/4 hp	1-hp	1-hp	1-hp	1-hp	1-1/2 hp

3 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.

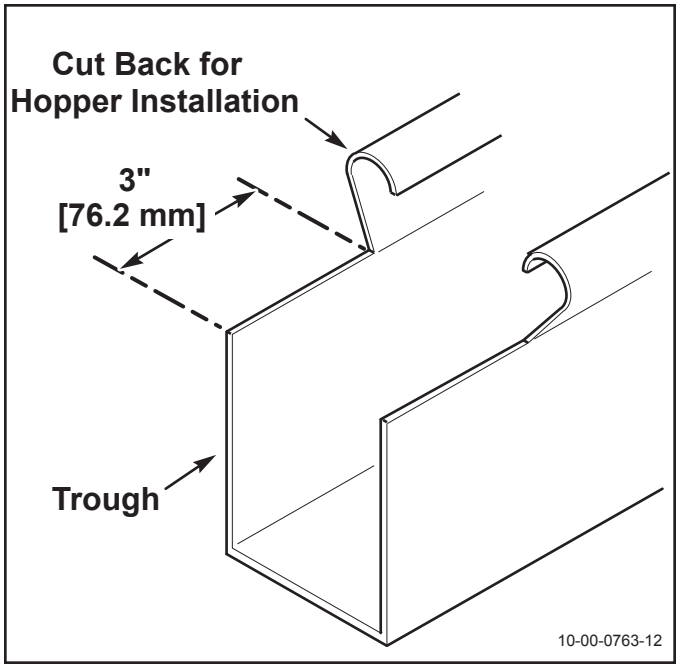
Note: When installing trough, gently compress the sides until the trough can be inserted into the coupling or hopper.

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.

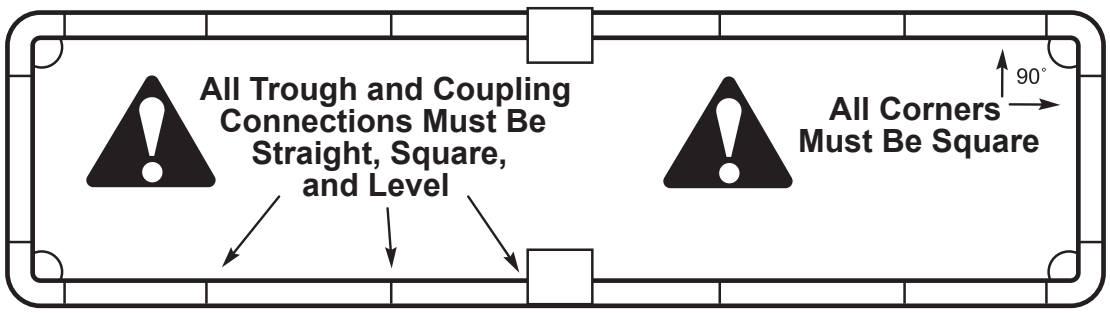
4 Add a coupler at the opposite end of the first trough and continue trough and coupler installation until reaching the first corner.

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



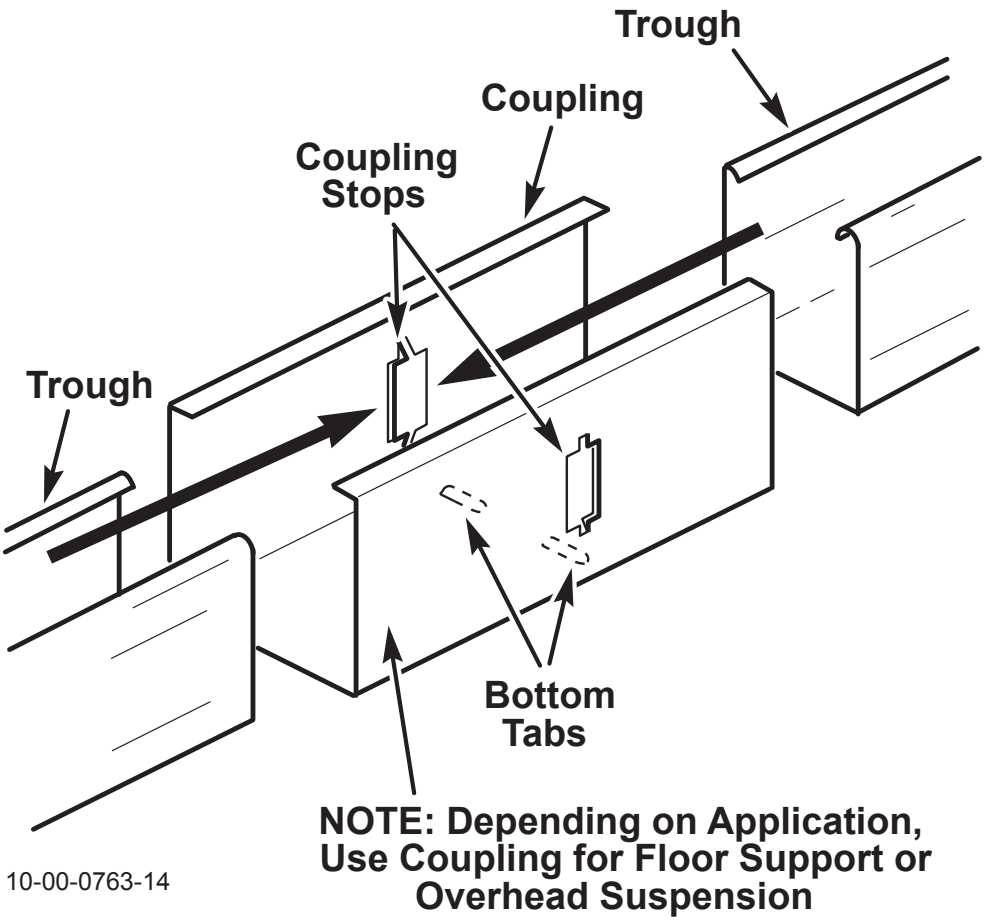
System Setup Requirements

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.

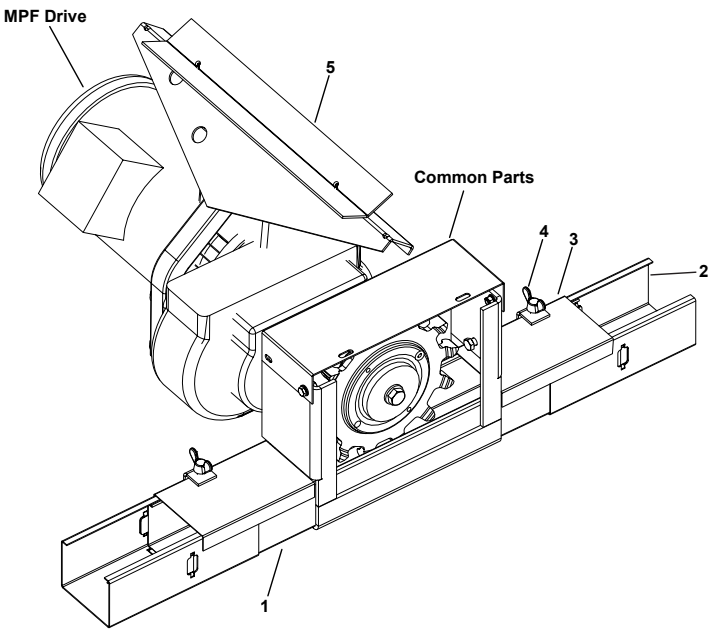


Trough and Coupler Assembly

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 (found on Pg. 13).

9 Install the trough into the last auxiliary coupler and into the return opening of the hopper. When using an auxiliary hopper, locate the drive unit on the opposite side of the circuit and directly across from the drive hopper.

Installing the Drive Unit Trough



Option 1:

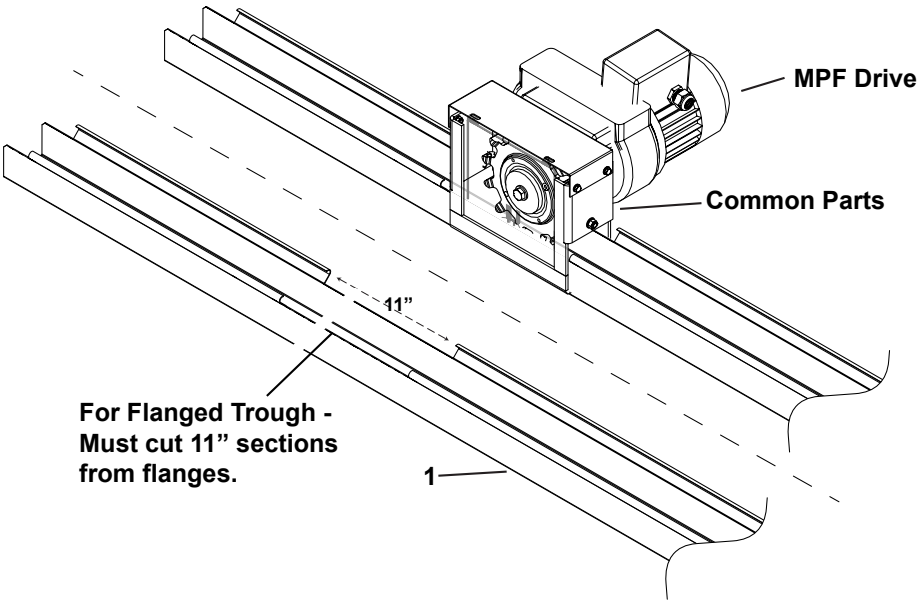
Use MPF Trough Kit (86-01-6998) and connect the trough into the supplied trough couplings (pictured at right).

86-01-6998 - TROUGH KIT W/ SUSP. KIT, FOR MPF,W/(1)23”REG TRGH,(2)COUPLER

Pos.	Article No.	Description
1	86-01-9051	TROUGH,REG,23”
2	86-00-2156	COUPLING,8”,F/REGULAR TROUGH
3	86-01-7835	COVER,F/REG TROUGH,6” LENGTH
4	15-11-0031	Clamp Zn MCZ f/cover of feed trough
5	15-00-0332	SUSPENSION KIT MPF FLOOR

Option 2:

Use existing flanged trough and trim the flanges from an 11” section. Slide trough through the common parts until the 11” trimmed section is inside the body of the common parts (pictured below).



Pos.	Article No.	Description
1	15-20-5009	TROUGH,M/W,10’NOMINAL SIZE 119.81”

Installing the Clean-Out Cover

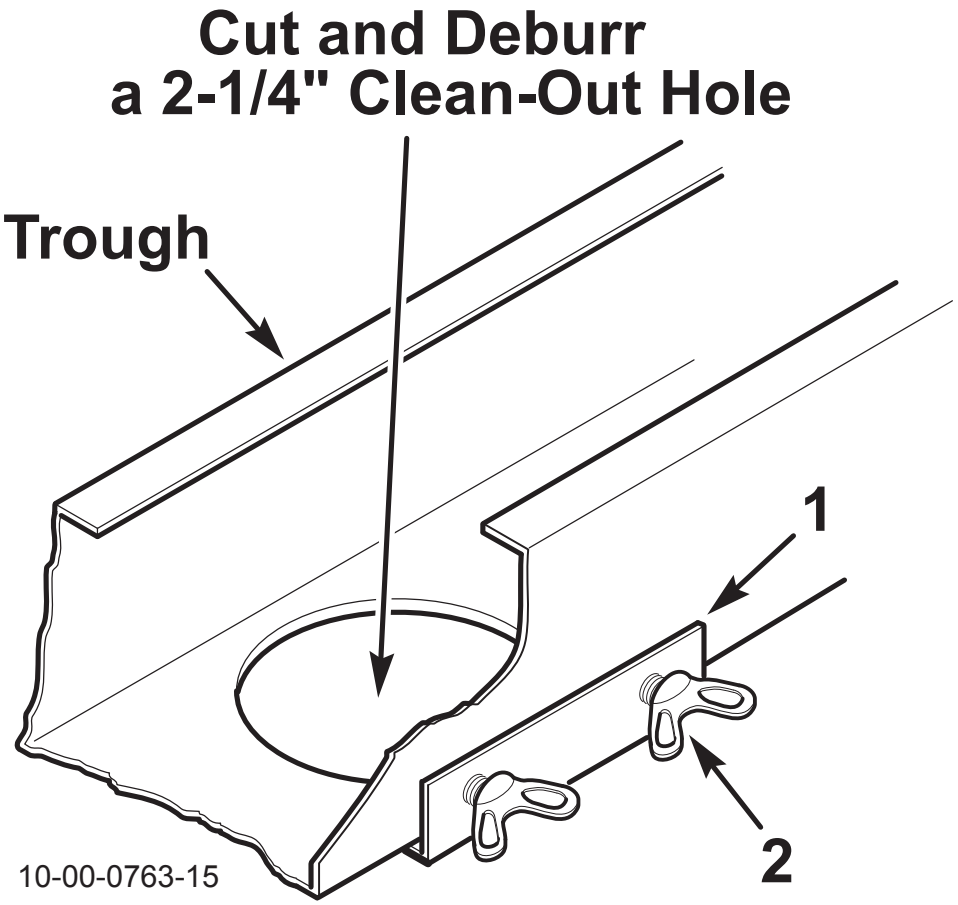
Note: The clean-out cover must be located near the end of the circuit and just before the hopper intake.

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.



Clean-Out Installation

4 Installing the Feeder Chain

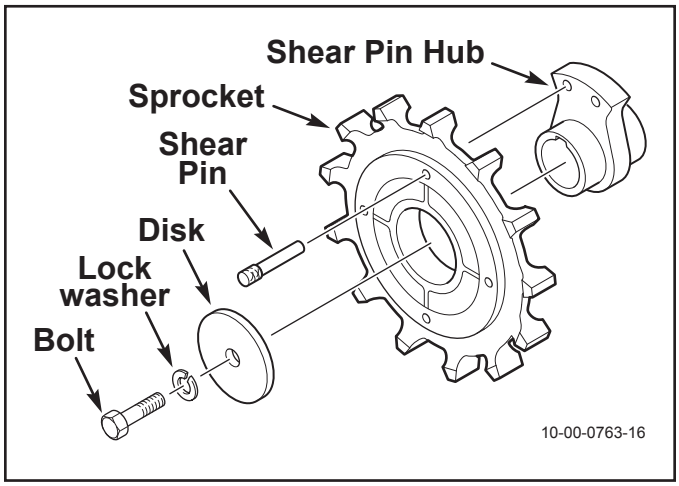
1 Remove the drive sprocket guard from the drive hopper.

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.

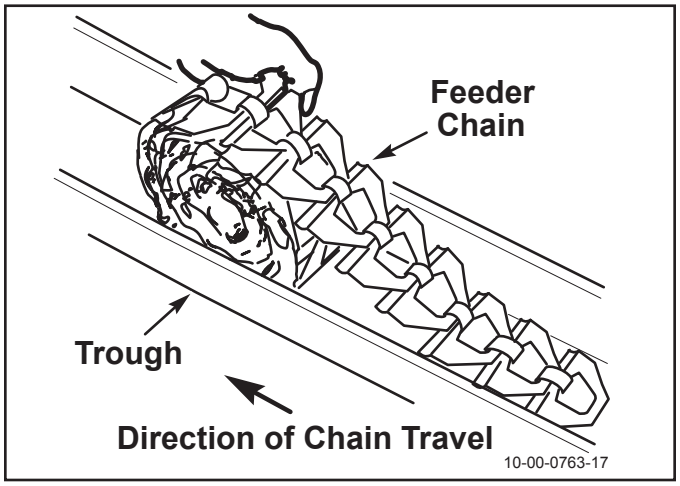
Note: Removal of the shear pin allows the drive sprocket to turn freely during chain installation.

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

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.

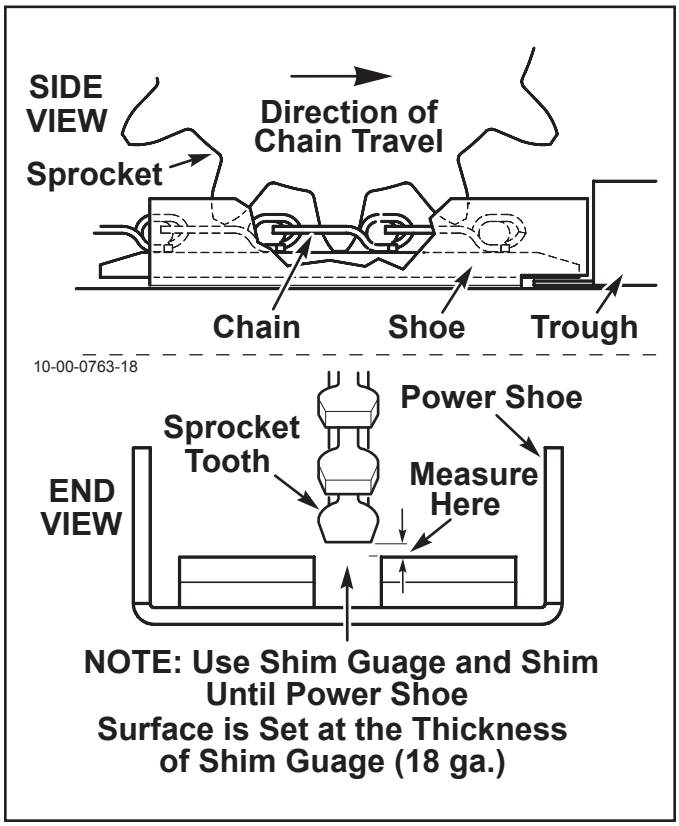
8 Set the next bundle in the trough and unroll.

Using the Chain Tool

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

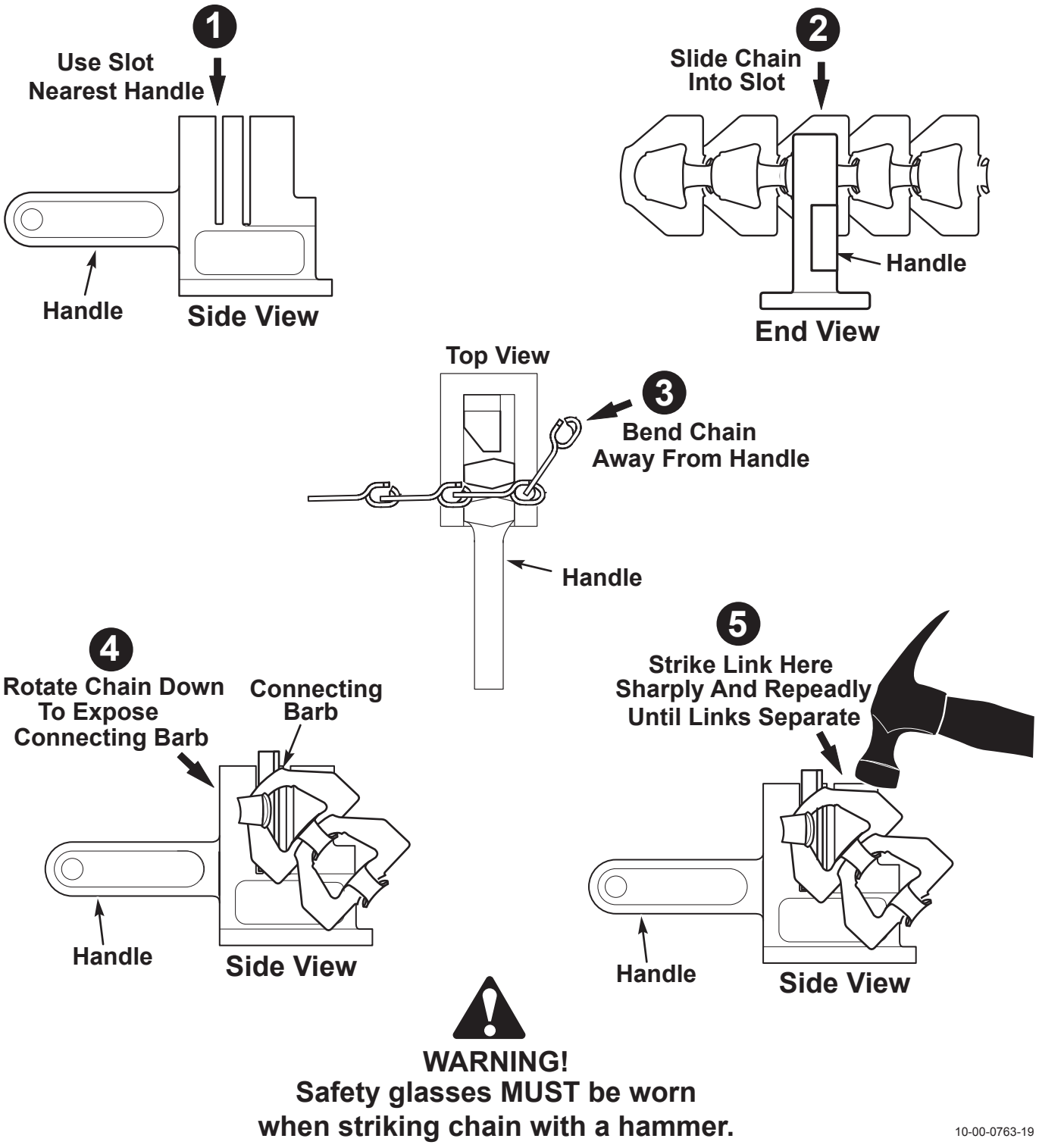
Note: Before installing chain for the first time, practice joining and separating the links, with the chain tool and a hammer. Use a chain tool to join each section of chain as it is installed.

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

5 Separating Chain



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

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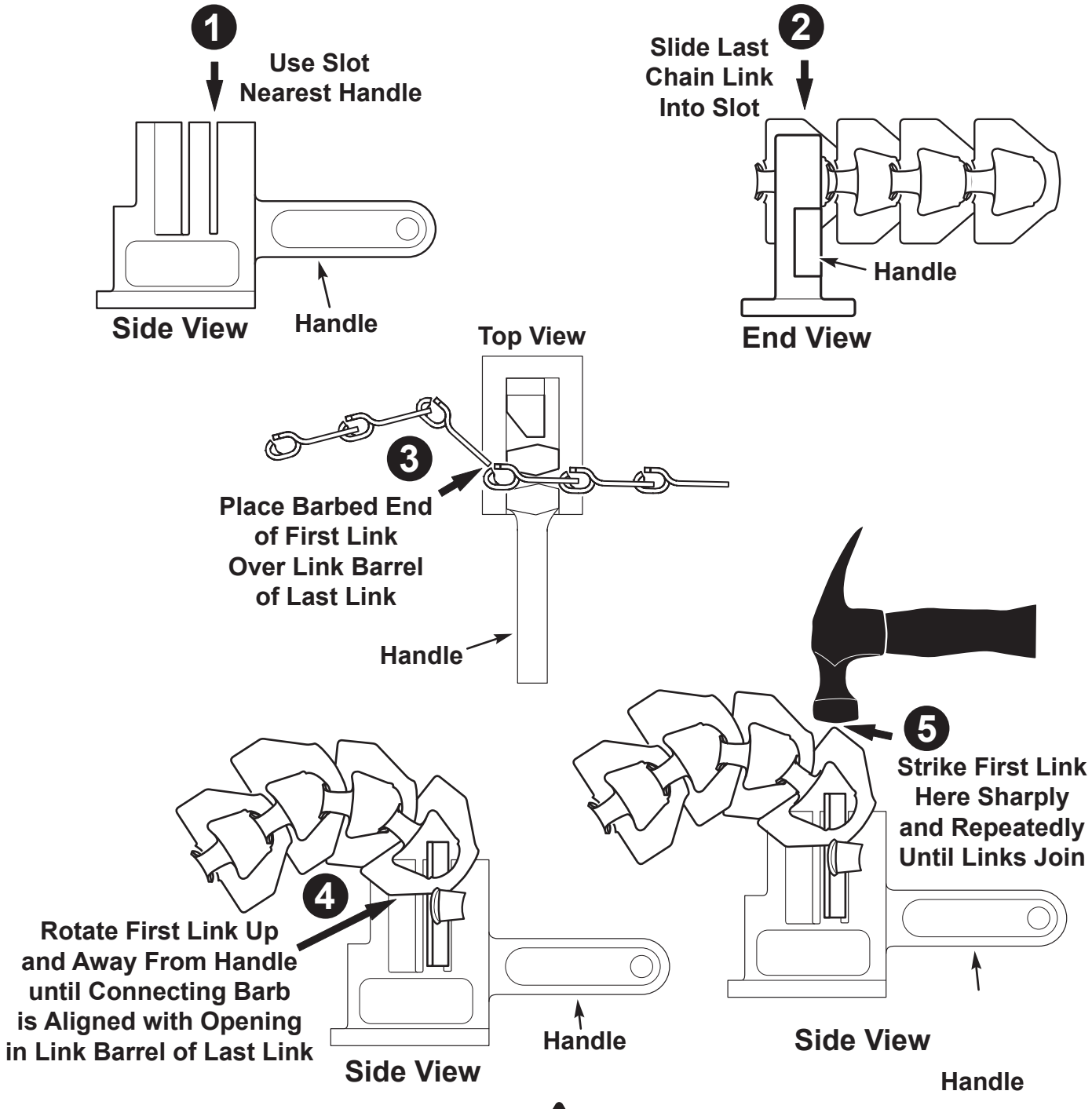
6 Separating Chain



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

10-00-0763-20

7 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 x 2 = 1200 x .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.

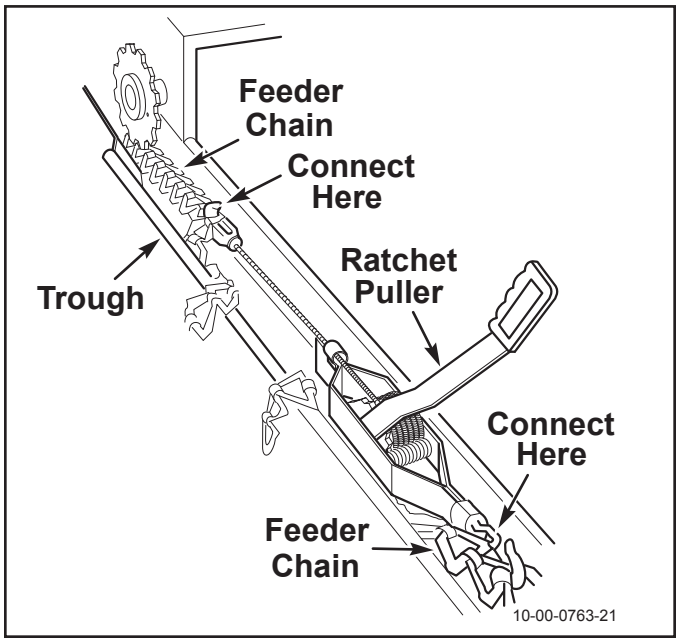
8 Remove the chain tool and release ratchet puller .

9 Reinstall the shear pin in the yoke sprocket assembly.

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

10-00-0763-22



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.

8 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.

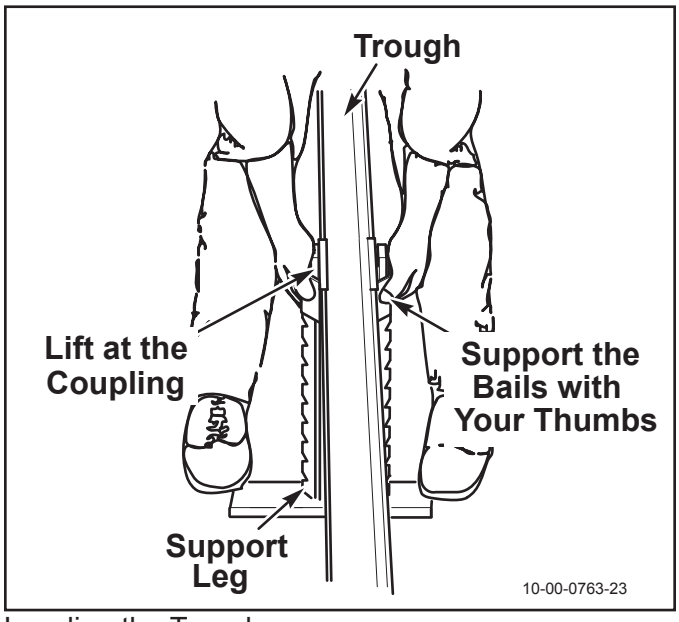
2 With both hands, lift the trough at a coupling/leg assembly. Lift just enough to relieve tension on the wire bails.

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

9 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 grease level at the fill plug. Grease should just be visible, do not overfill.

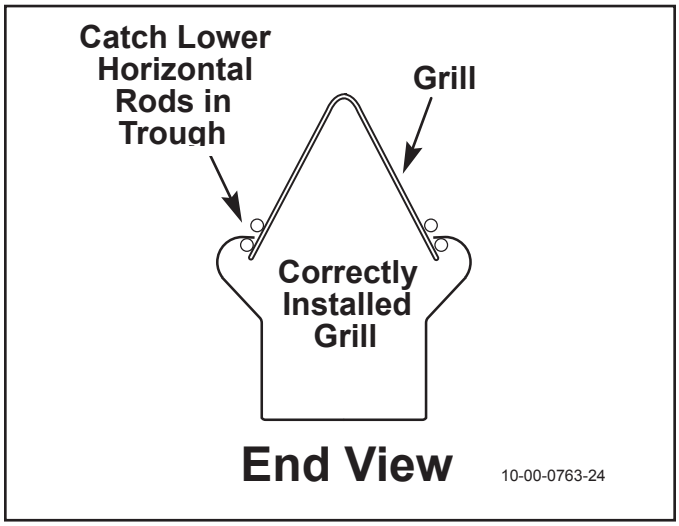
3 Check the shear pin, sprocket, and yoke. Make sure that the:

- 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.



Grille Installation

10 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.

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.

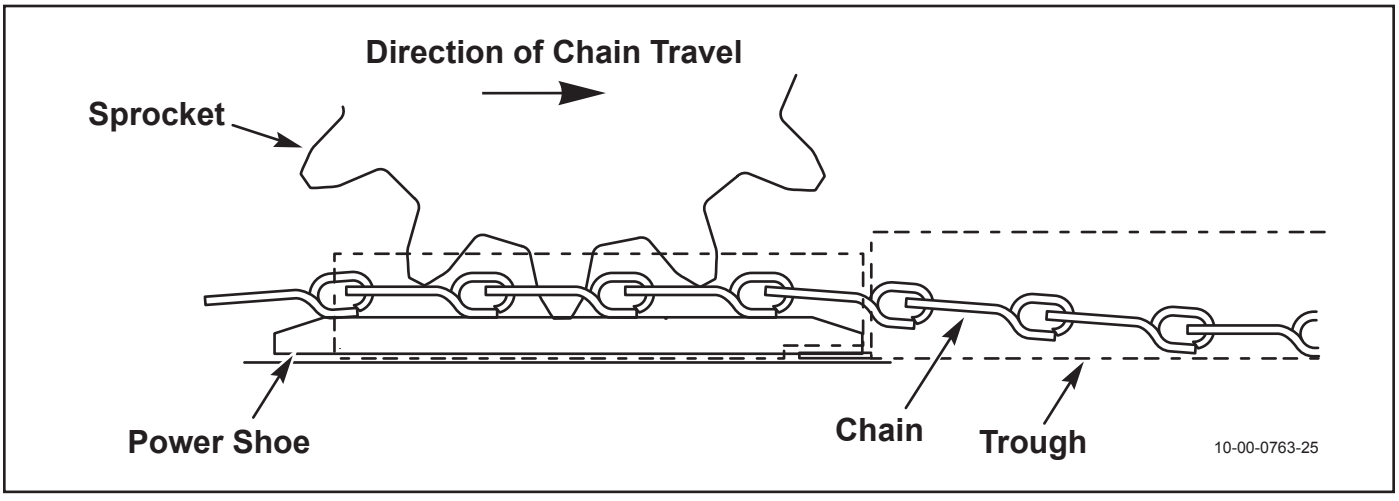
5 Set the feed level slide about 1/8 inch [0.32 cm] above the link barrel of the chain and run the system until the feed is evenly distributed.

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.



Checking the Chain “Bubble”

11 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(s) 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.

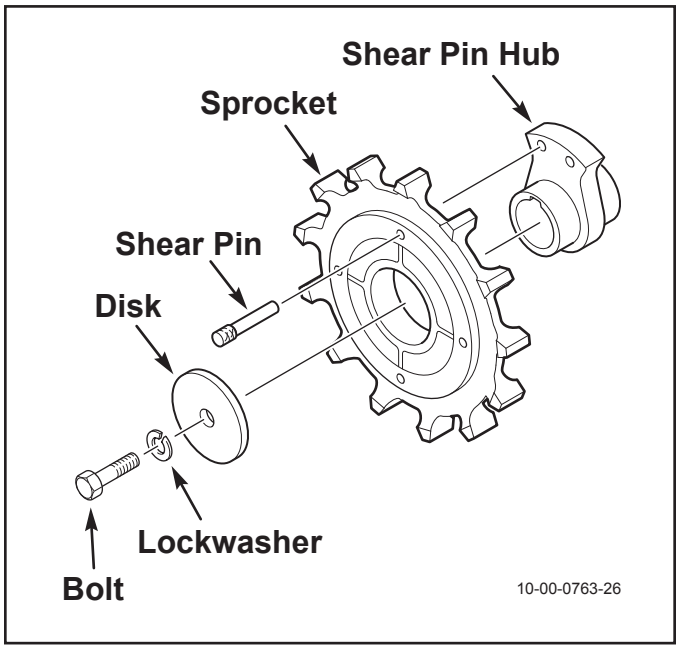
Caution: Be sure to remove all pieces of the broken shear pin. Severe damage to the system can result if broken pieces become lodged in drive sprockets or corners.

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 level or below the bottom of the sprocket teeth by the thickness of the power shoe gauge, or check with a feeler gauge (18ga.).

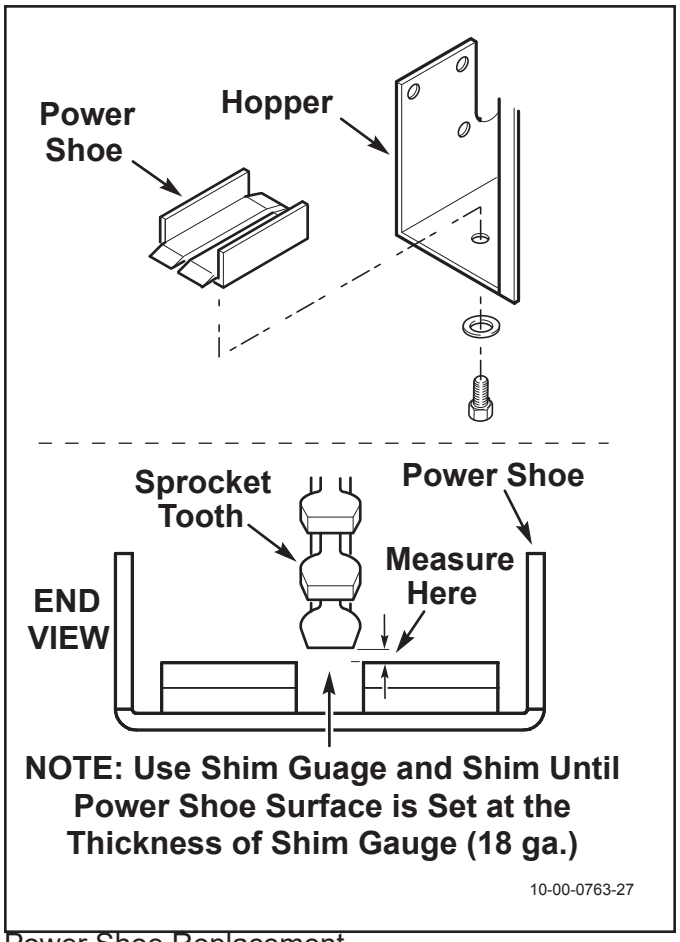
8 Insert the 3/8” bolt and washer from the bottom of the drive hopper body and into the power shoe and tighten.

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

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.

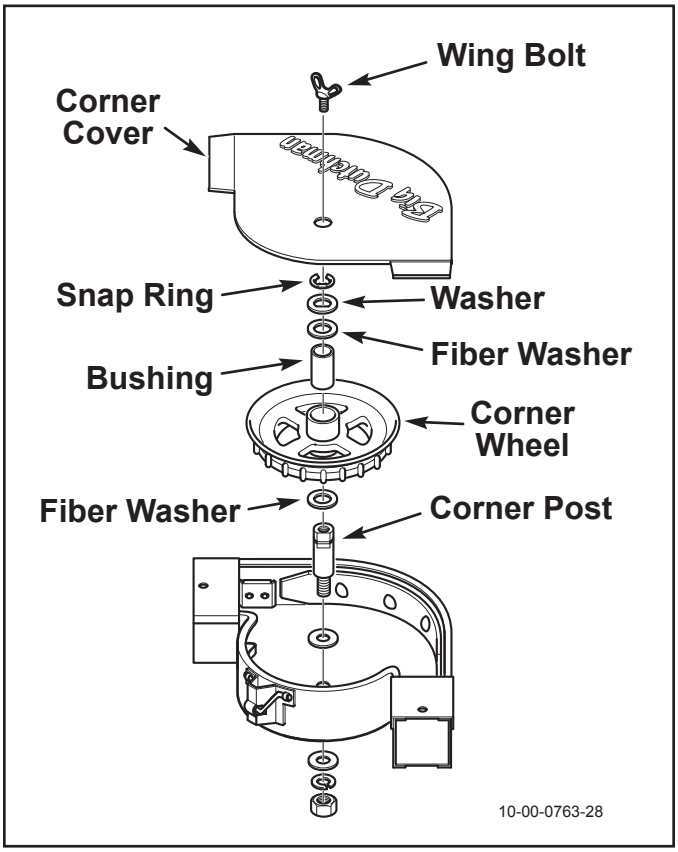
When bushing replacement is required, proceed as follows:

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 (15-10-9068).
7 If bushing is worn, 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

12 Lubrication and Maintenance Procedures

The following lubrication procedures detail required and suggested periodic maintenance.

Corner Wheel Lubrication (Brass Bushing Only)

(Do Not Lube Plastic Bushings)

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.

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.

13 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 grease 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

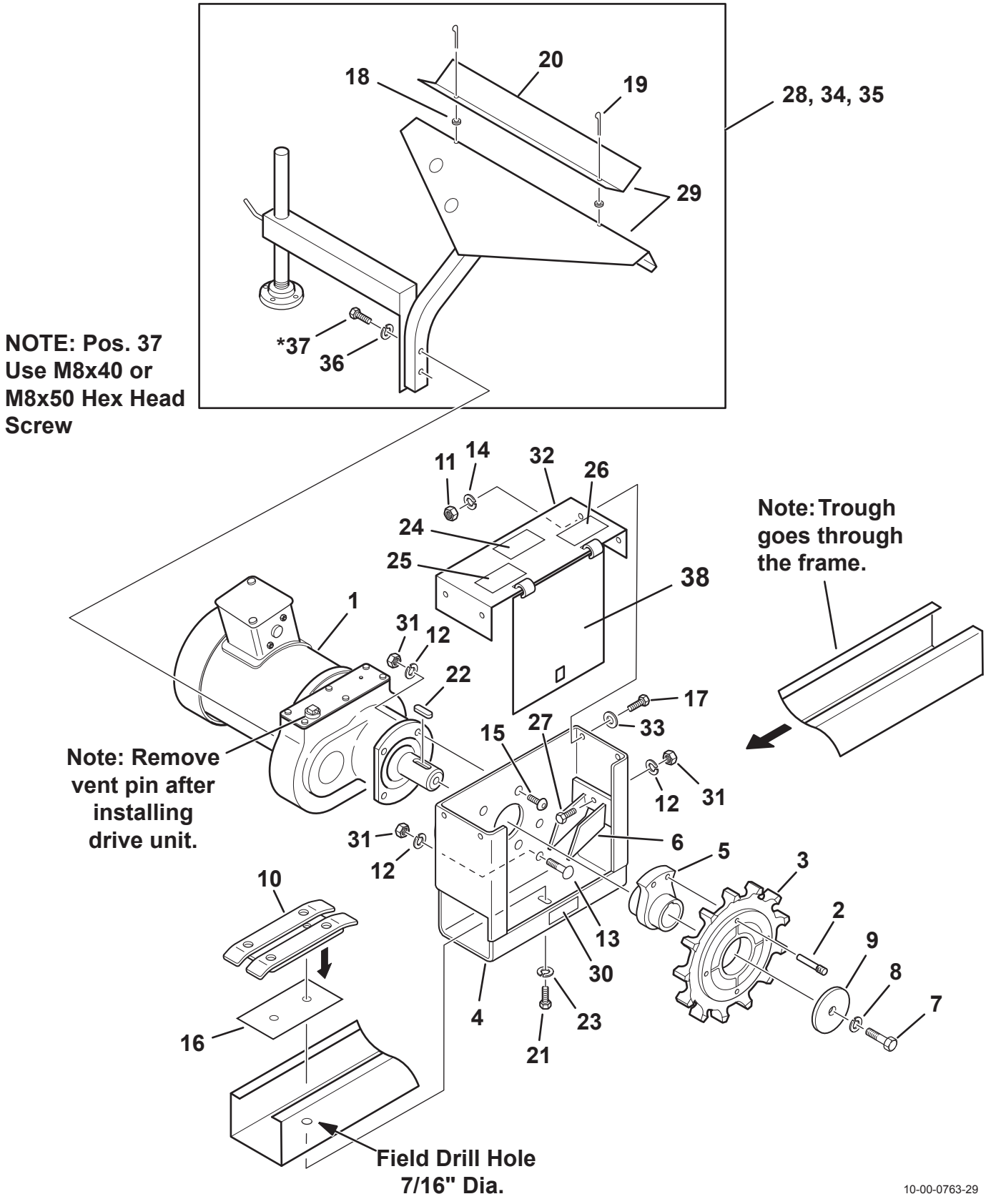
Possible Cause: Too much feed in the trough.

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.

14 Parts Replacement-MPF Drive



Item	Qty	Part No.	Description
1		N/A	Motor
2	1	10-00-0469	Shear Pin
3	1	10-00-9543	Sprocket
4	1	86-00-2113	Frame, Feeder. for MPF Drive
5	1	86-00-2112	Shear Pin Hub
6	1	10-93-3153	Blank Holder for chain
7	1	99-10-1274	Hex Bolt, M12 x 30mm
8	1	99-50-1205	Lockwasher, M12
9	1	86-00-2111	Disk
10	1	38-91-3025	Power Shoe
11	4	99-10-1045	Hex Nut, M6
12	6	99-50-1063	Lockwasher, M8
13	1	99-10-3812	Carriage Bolt, M8 x 25mm
14	4	99-20-1070	Lockwasher, M6
15	4	86-00-4152	Screw, M8-1.25x30 Flat Hex Soc countersunk Cap,DIN 7991 BN21
16	1	38-91-3028	Shim, Power shoe, MPF
17	4	99-10-1067	Bolt, M6 x 16mm
18	2	15-00-0303	Bushing
19	2	99-50-1375	Cotter Pin
20	1	10-00-0569	Anti-Perch Shield
21	1	86-00-4001	Bolt, 3/8-16x50 hex grade 2
22	1	99-50-1149	Key, 10 x 8 x 50
23	1	99-20-0353	Washer, Lock 3/8 split ZP
24	1	00-00-0440	Decal, Big Dutchman
25	1	00-00-1186	Decal, Mainswitch “OFF”
26	1	00-00-1184	Decal
27	1	99-10-1038	Hex head screw M8 x 20 DIN 933 8.8 galv
28	4	15-00-0325	Flipper Assembly
29	1	15-00-0332	Suspension Kit
30	1	10-04-2045	Decal, Direction of Chain
31	6	99-10-1040	Nut, M8
32	1	10-04-3008	Guard Assembly, MPF
33	4	99-50-1147	Washer B 6,4 DIN 125 galv
34	1	15-00-0324	BRKT,, SPNSN/FLIPR,FLR MPF WLD, painted BD Blue
35	1	15-00-0327	Leg Assembly and Bracket
36		99-20-0111	Lockwasher, 5/16”
***37**		99-10-1085	Hexagon head screw M 8x 40 DIN 933 8.8 galv
		99-10-1259	Hexagon head screw M 8x 50 DIN 933 8.8 galv
38	1	10-93-3173	Protecting Cover Hinged-type MPF 1-line cpl.

15 Assembly of the Motor and Gearbox Steps

⚠	**WARNING!** Improper assembly of the motor and gear reducer will damage the parts and void the warranty. **Read and fully understand this information before you assemble these parts.** Then follow the assembly of motor and gearbox steps on these pages.

Assembly of motor and gearbox steps

1 **Correct installation and "fitting"of the key is critical.**

The key must be able to be seated completely and slide in the keyway slot of the motor and the gear reducer. Do this dry. Lightly file the key on all four sides, if necessary. See drawing one.

Note: the maximum allowed length of the key is 1-3/8". Cut the key down if it is too long.

Also, thoroughly clean out the keyslot area of the gear reducer and the motor shaft.

Insert the key ***into the Gearbox*** with anti-sieze grease lightly applied to the key and gearbox keyway area, and entire gearbox bore that the motor shaft goes into.

2 Then carefully attach the motor and gear reducer. With correct alignment, the motor and gearbox will "slip-fit" together completely.

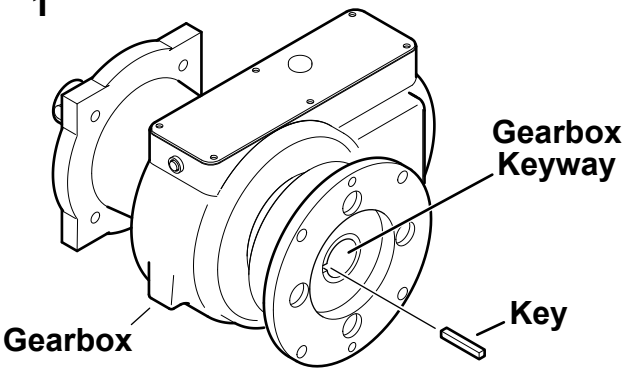
Note: if the motor and gearbox does not slip completely together easily, the key has moved and the procedure will fail. Take the assembly apart and re-align. **DO NOT FORCE THE ASSEMBLY TOGETHER!**

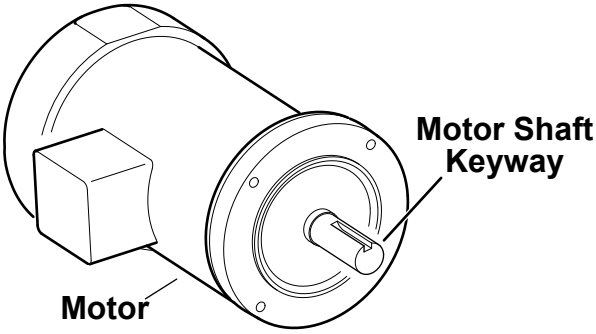
3 Install the bolts attaching the motor and gear box, ***after the motor and gear reducer are assembled together.*** Tighten the bolts crosswise equally.

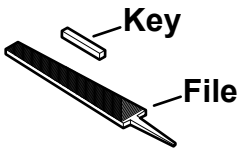
⚠	The manufacturer recommends that optimal assembly of the motor and gearbox is done with the parts positioned vertically on a workbench. See facing page. Horizontal field assembly is more difficult to achieve for a proper alignment. **The installer should ask for additional help to fit these parts together to prevent damaging the gear reducer parts.**

Fit the Key

1

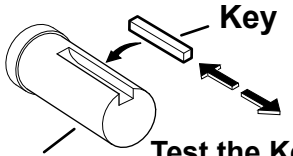






Carefully file the Key if necessary to remove any burrs on the key.

Note: the maximum length for the Key is 1-3/8". Cut the Key down to length if it is too long.

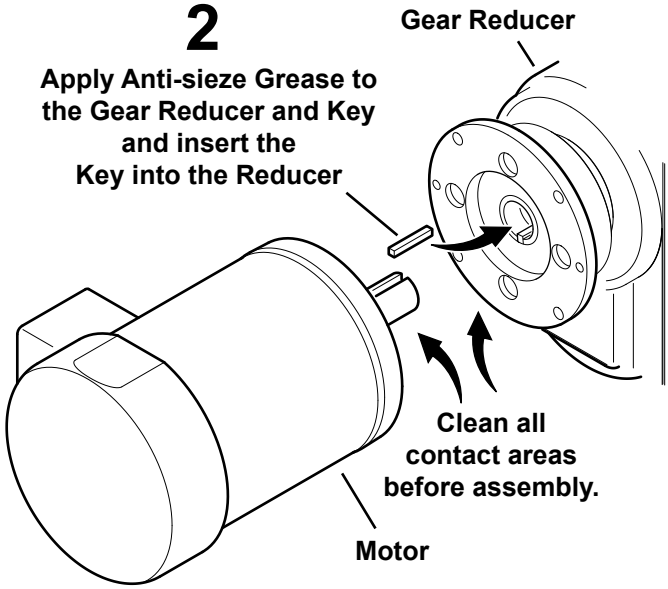


Test the Key fit on both items to ensure the Key is seated correctly, otherwise binding will occur during fitment causing failure.

10-00-0763-30

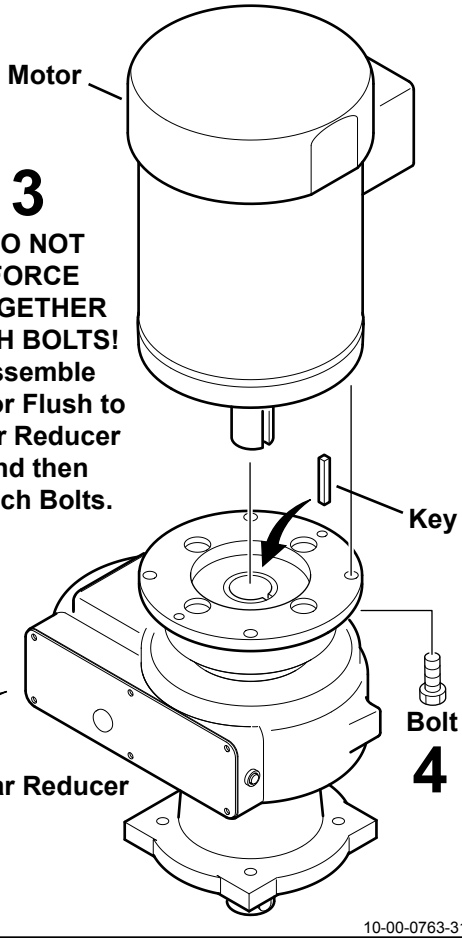
2

Apply Anti-sieze Grease to the Gear Reducer and Key and insert the Key into the Reducer



3

DO NOT FORCE TOGETHER WITH BOLTS! Assemble Motor Flush to Gear Reducer and then attach Bolts.



4

For Optimal Assembly Manufacturer Recommends A Vertical Bench Assembly as shown here

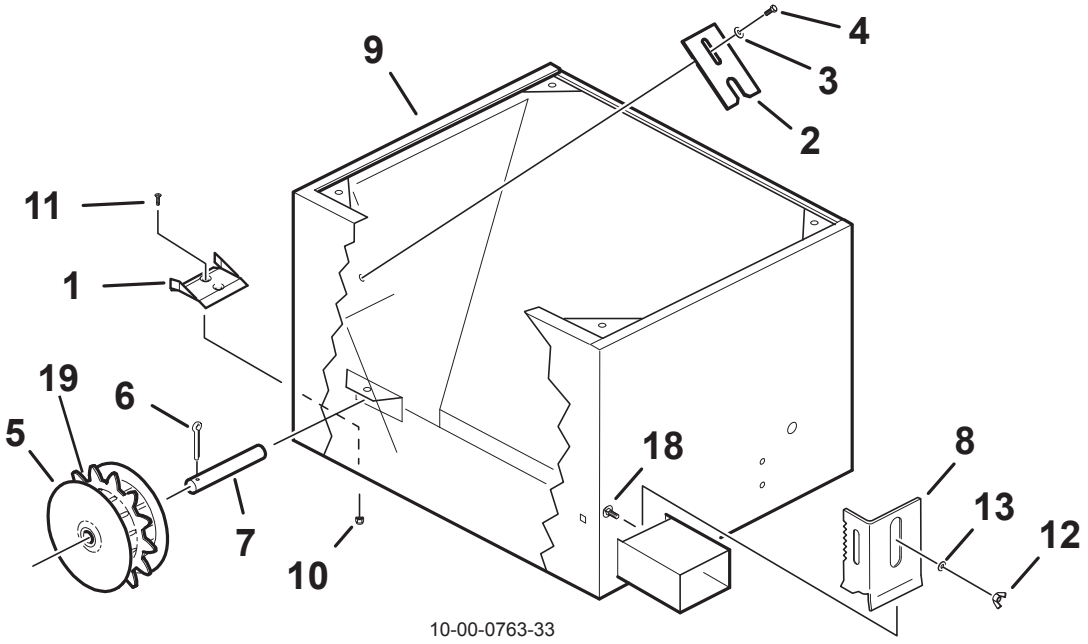
For Horizontal Installment ASK FOR HELP

10-00-0763-31

16 1-Line "Welded" Auxiliary Systems Replacement Parts

60lb Hopper Body

10-01-5100 HPR,AUX,1-LN,60#,BIGD WIDE CHAIN



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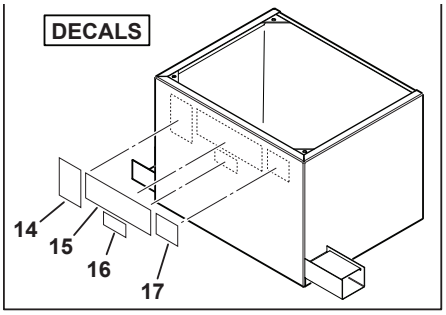
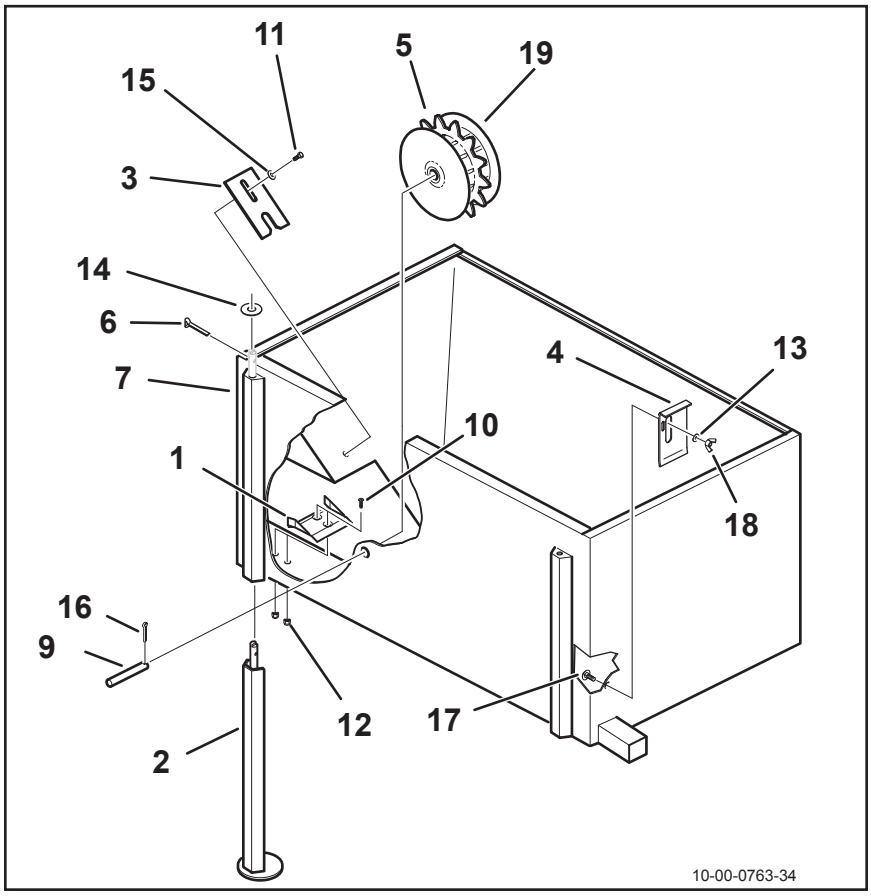


Item	Part No.	Description
1	**10-00-0135**	Chain Guide
2	**10-04-1005**	Slide, F/Feed Return Wheel
3	**99-21-0003**	Washer, 1/4"
4	**99-10-0206**	Bolt, 1/4-20 x 1/2"
5	**10-00-0197**	Wheel, Feed Return, Champ
6	**99-50-0868**	Cotter Pin, 1/8 x 1-1/4"
7	**86-00-2099**	shaft,f.feeder/intake whl hop
8	**86-00-2610**	Galv. Feed Gate
9	**10-01-1001**	Aux. Hopper Body, 1-Line
10	**99-20-0134**	Nut, 1/4-20 Hex Lock, Nylock
11	**99-10-1133**	Screw, 1/4-20 x .63 Flat Allen
12	**99-20-0041**	Nut, 5/16-18 Wing Nut
13	**99-20-0111**	WASHER,5/16 .FLAT ,ZP

Item	Part No.	Description
14	**00-00-0060**	Decal, Patent 2.5 x 3
15	**00-00-0442**	Decal, BIG D 11.00" X 3.00"
16	**00-00-0222**	Decal,caution,eng/span this unit may start automatically at any time
17	**00-00-0289**	DECAL,DIR OF CHAIN
18	**99-10-1520**	bolt,5/16-18x.75 crg short neck zinc grade 5
19	**99-10-0582**	Screw, Set 15/16-18x.25 Alen

400lb Hopper Body

10-01-5121 HPR,AUX,1-LN,400#,W/LEG BIG D



Item	Part No.	Description
1	**10-00-0135**	Chain Guide
2	**10-00-0148**	Leg assy, with Threads
3	**10-04-1005**	Slide, F/Feed Return Wheel
4	**10-00-0196**	Slide, Feed, 1 Line
5	**10-00-0197**	Wheel, Feed Return, Champ
6	**99-50-1375**	Cotter Pin, 1/8 x 3/4”
7	**10-01-1000**	Body, Hopper
8	**10-00-0337**	Shoe, Power, Reg, Champ Chain
9	**86-00-2099**	Shaft, F/Feeder Intake
10	**99-10-1133**	Screw, 1/4-20 x .63 Flat Allen

Item	Part No.	Description
11	**99-10-0206**	Bolt, 1/4-20 x 1/2”
12	**99-20-0134**	Nut, 1/4-20 Hex Lock, Nylock
13	**99-20-0111**	Washer, 5/16”
14	**99-20-0128**	Washer, 1/2”
15	**99-21-0003**	Washer, 1/4”
16	**99-50-0868**	Cotter Pin, 1/8 x 1-1/4”
17	**99-10-1520**	Bolt, 5/16-18 x 3/4”
18	**99-20-0041**	Nut, 5/16-18 Wing Nut
19	**99-10-0582**	Screw, Set 15/16-18x.25 Alen

Hopper Extension Kit (Optional) for “Welded” Bodies

The Hopper Extension Kits are designed to adapt to the Breeder Feeder, Speed Feeding System. The Hopper Extension will hold approximately 250 pounds of feed.

Hopper Extension Kit Installation:

1-Line Feeder Installation:

Step 1. Mount the Hopper Support Angles to the Chain Feeder Hopper as shown, with the ends of the Support Angles under the top lip of the Hopper. Square Clamp Washers are not required on the 1-Line Feeder. Note: Each Eye Bolt has an inverted kep nut mounted before installation.

DO NOT TIGHTEN THE ASSEMBLY UNTIL ALL COMPONENTS ARE MOUNTED IN PLACE!
This will allow adjustment for correct fits without forcing the parts.

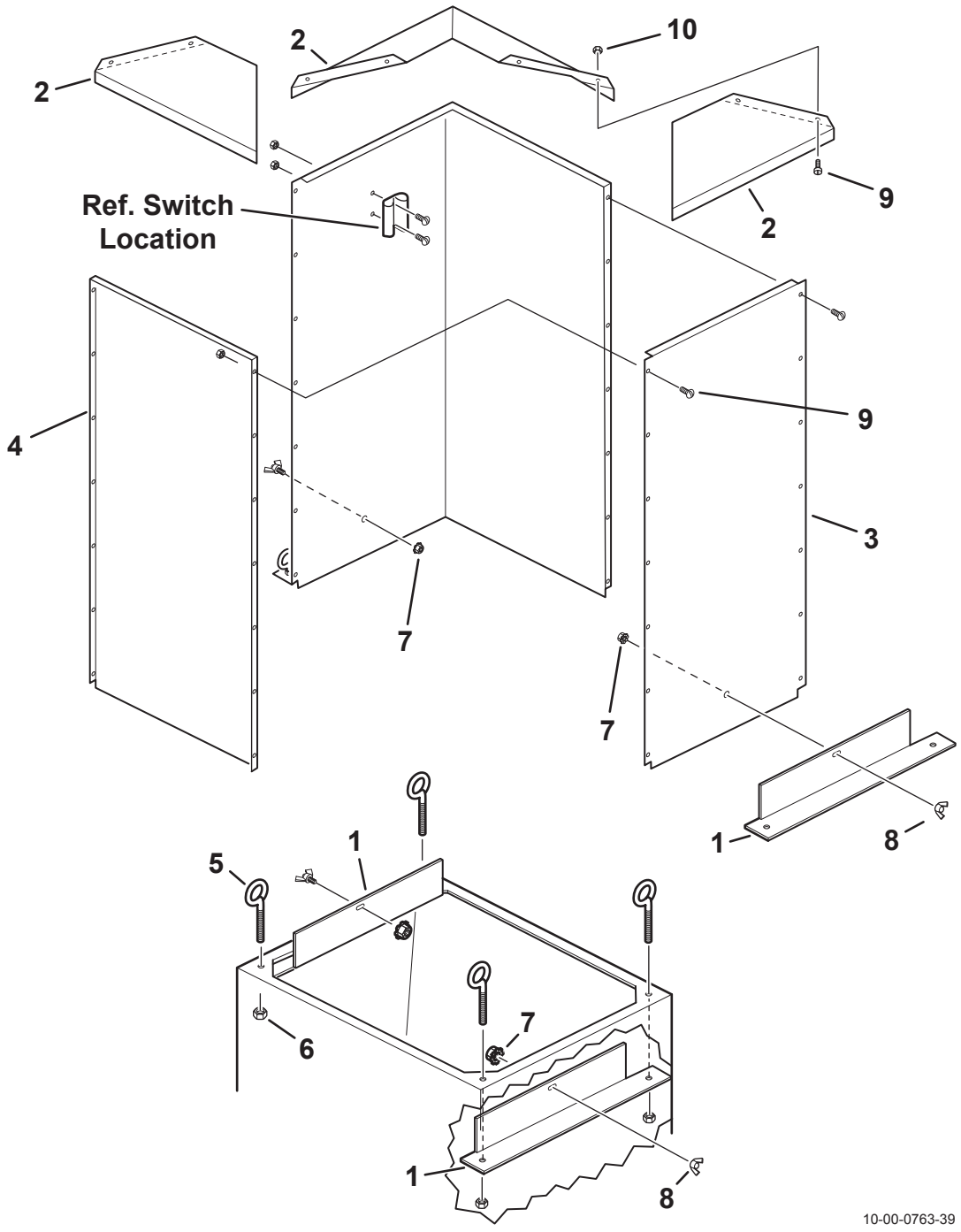
Step 2. Assemble the Extension Kit as shown on the following pages. The assembly of the basic hopper will require, two Flat Side Panels, two Flanged Side Panels, #10-24 Slot Headed Machine Screws and #10-24 Kep Nuts. Add the two Tinnerman Nut Retainers for the Thumb Screws to the bottom of the extension at the square holes on each side panel (see drawing). Install the Hopper Extension Assembly to the Chain Feeder, between the two Support Angles as shown. Use the Thumb screw and Tinnerman Nut Retainers to anchor the Angles to the extension.

Step 3. Assemble the Extension top as shown. Use the remainder of the nuts and bolts for this assembly. The top will set onto the basic extension body. The drop tube from the fill system, will enter through the top opening.

10-01-1002 Hopper Extension Kit, 1-Line Chain Feeder			
Item	**Quantities**	**Part No**	**Description**
1	2	**10-01-1003**	Support Angle, Hopper-1 Line, 16-3/4 in.
2	4	**10-01-1004**	Roof Panel
3	2	**10-01-1005**	Side Panel, Flat
4	2	**10-01-1006**	Side Panel, Flanged
5	4	**99-50-0094**	Eye Bolt, .38-16 x 2.5 in., ,88 ID Eye
6	8	**99-20-0097**	Kep Nut, .38-16
7	2	**99-20-0224**	Retainer Nut, “Tinnerman”, .25-20
8	2	**99-10-0110**	Thumb Screw, .25-20 x 1/2 in.
9	36	**99-10-0118**	Machine Screw, Slot Truss Hd. 10-24 x .38
10	36	**99-20-0089**	Kep Nut, 10-24

WARNING: BE CAREFUL WHEN HANDLING SHEET METAL PARTS AS THE SHEARED EDGES MAY BE SHARP. A STURDY PAIR OF GLOVES IS RECOMMENDED.

Hopper Extension Kit



Components of the 1-Line Feed Hopper is shown above.

17 1 Line & 2 Line “Galvanized” Auxiliary Systems (Mini-Modular)

Feed Hopper MPF Mini Modular

The modular feed hoppers consist of three components: Front funnel, chain module and end plate.

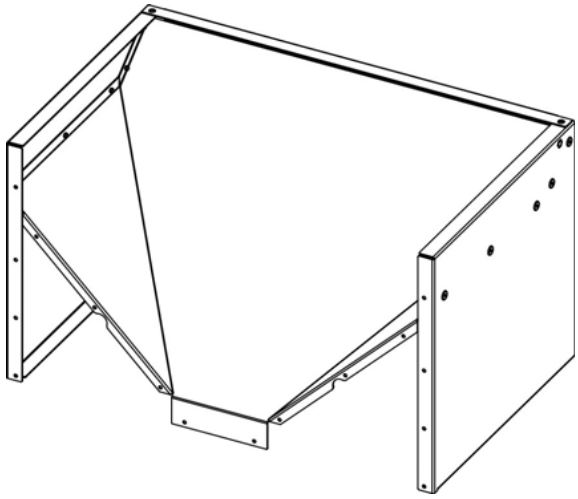
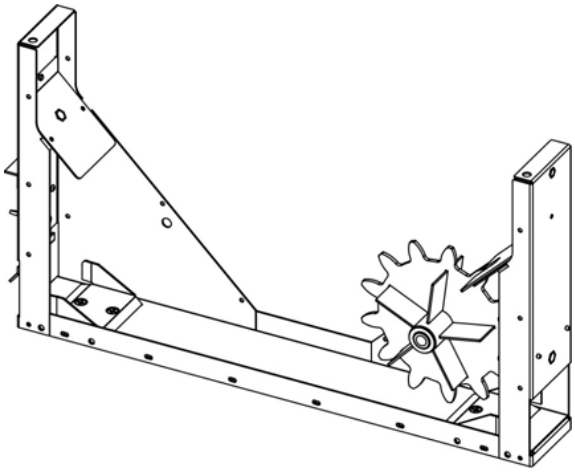
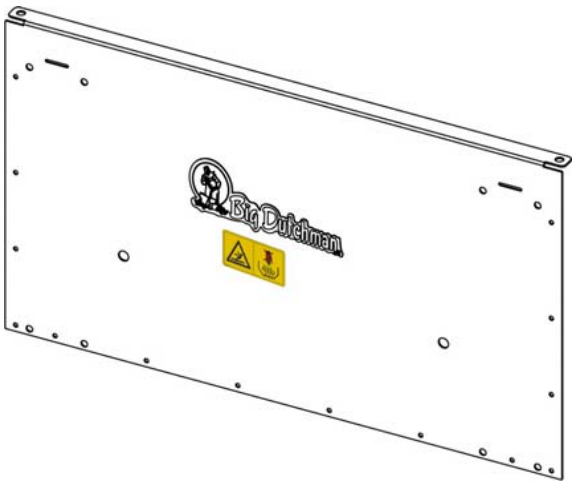
The modular feed hoppers are available in the following versions:

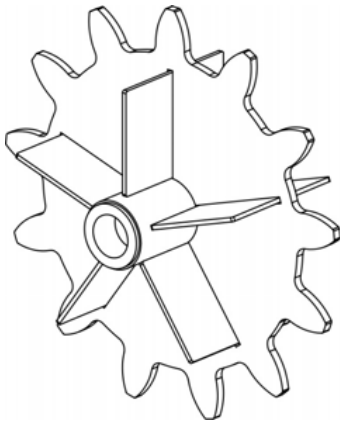
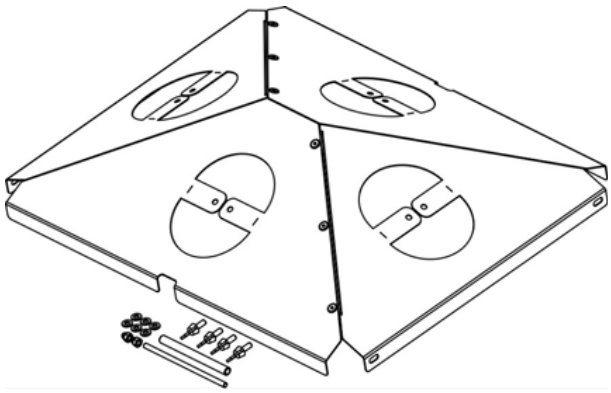
	MPF Mini Modular			
	1L	2L	3L	4L
Feed Volume lbs.	70lbs (50L)	100lbs (70L)	130lbs (90L)	150lbs (110L)
Standing	X			
Suspended	X			

Advantages at a glance:

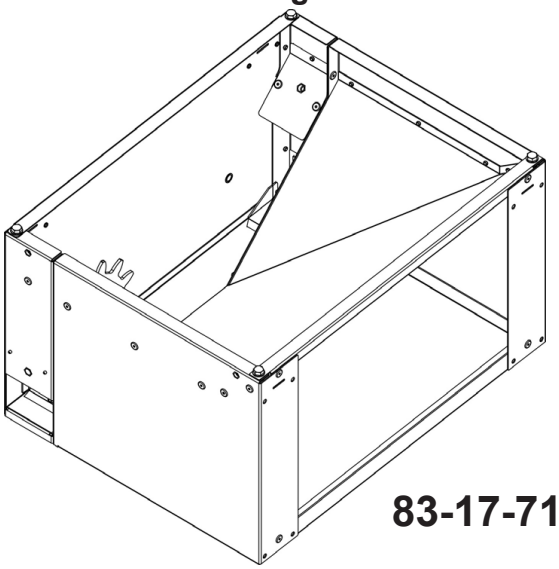
- Improved corrosion protection thanks to utilization of galvanized sheets metal instead of powder coating.
- Design without cavities allows for an excellent cleaning.
- The running direction can be changed easily by switching the position of the add-on parts.
- The modular feed hoppers MPF are riveted and not welded as the previous models. This simplifies possibly necessary modification works.

Componets of Modular Feed Hoppers

	**Front funnel** The symmetrically designed front funnel is the base module of each type of feed hopper. This module includes infeed bevels on both sides so that a subsequent change of the feed running direction can be carried out on site without the installation of an additional sloped sheet. Thanks to the integral design of the sloped sheets the accessibility during the cleaning process is improved.
	**Chain module** The number of chain modules varies depending on the number of feed lines per hopper corresponding to the application purpose. In case that one feed hopper has to feed two lines, two chain modules are installed. In case of three lines three chain modules and so on.
	**End plate** The end plate is used to edge the feed hopper at the side and is fixed to each last chain module of the feed hopper.

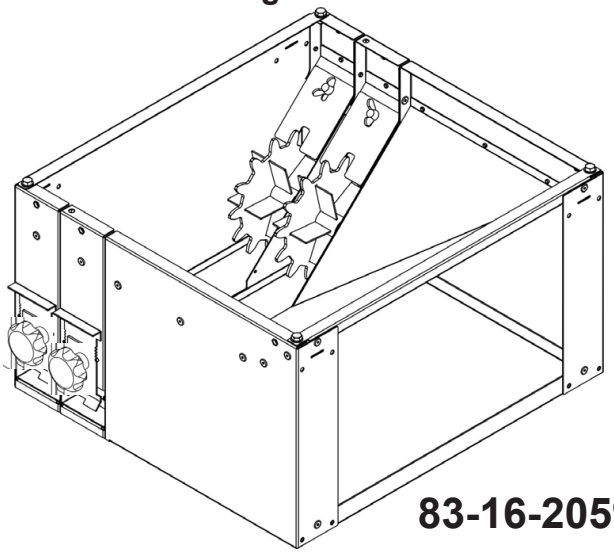
	**Feed return intake wheel** The sprocket in the return wheel which is in contact with the feed chain consists of an abrasion-resistant steel which is particularly used for constructions with increased wear. Due to the symmetric design of the wheel there is no preferred running direction - the wheel can turn in both directions. The welded assemblies are powder coated for corrosion protection.
	**Cover** The covers of the modular feed hoppers are each made of two identical sheet metal halves which are riveted together. The pre-punched and/or pre-lasered, oval sections in the sheet metal cover can be used for the fixation of the FlexVey downpipes on site. The covers are screwed to the hopper by means of wing nuts.

Feed Hopper MPF Mini Modular 50L 1 Line 1 Direction Without Legs



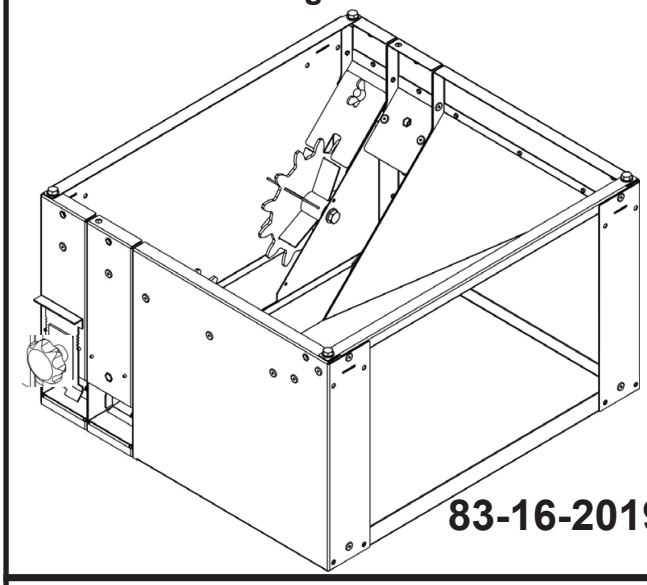
83-17-7105

Feed Hopper MPF Mini Modular 70L 2 Lines 1 Direction w/o Legs



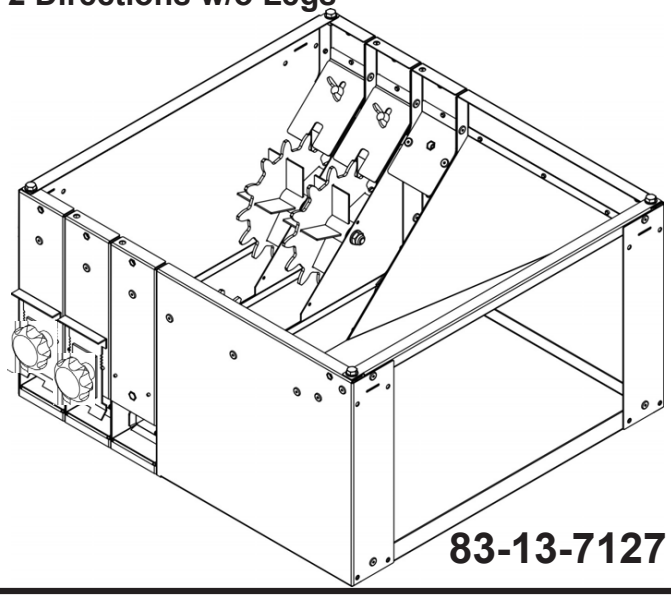
83-16-2059

Feed Hopper MPF Mini Modular 70L 2 Lines 2 Directions w/o Legs



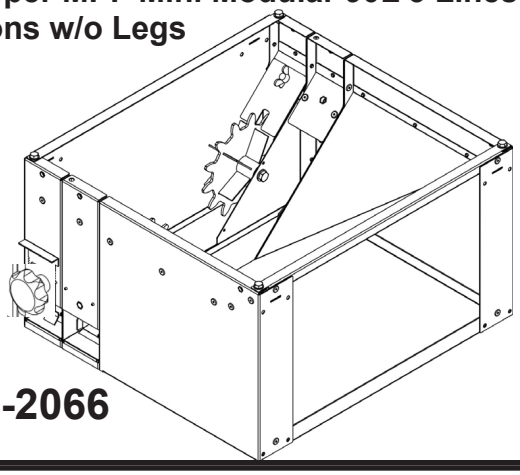
83-16-2019

Feed Hopper MPF Mini Modular 90L 3 Lines 2 Directions w/o Legs



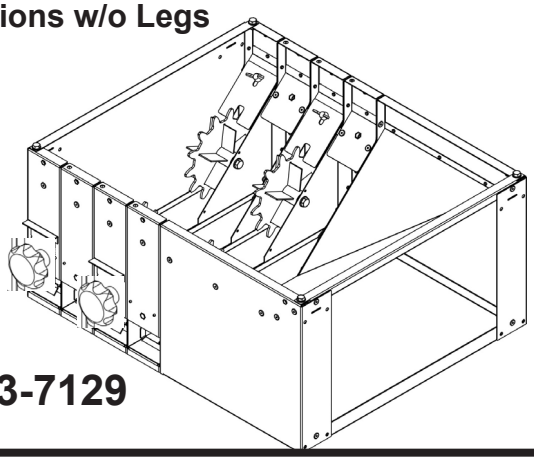
83-13-7127

Feed Hopper MPF Mini Modular 90L 3 Lines 3 Directions w/o Legs



83-16-2066

Feed Hopper MPF Mini Modular 110L 4 Lines 4 Directions w/o Legs

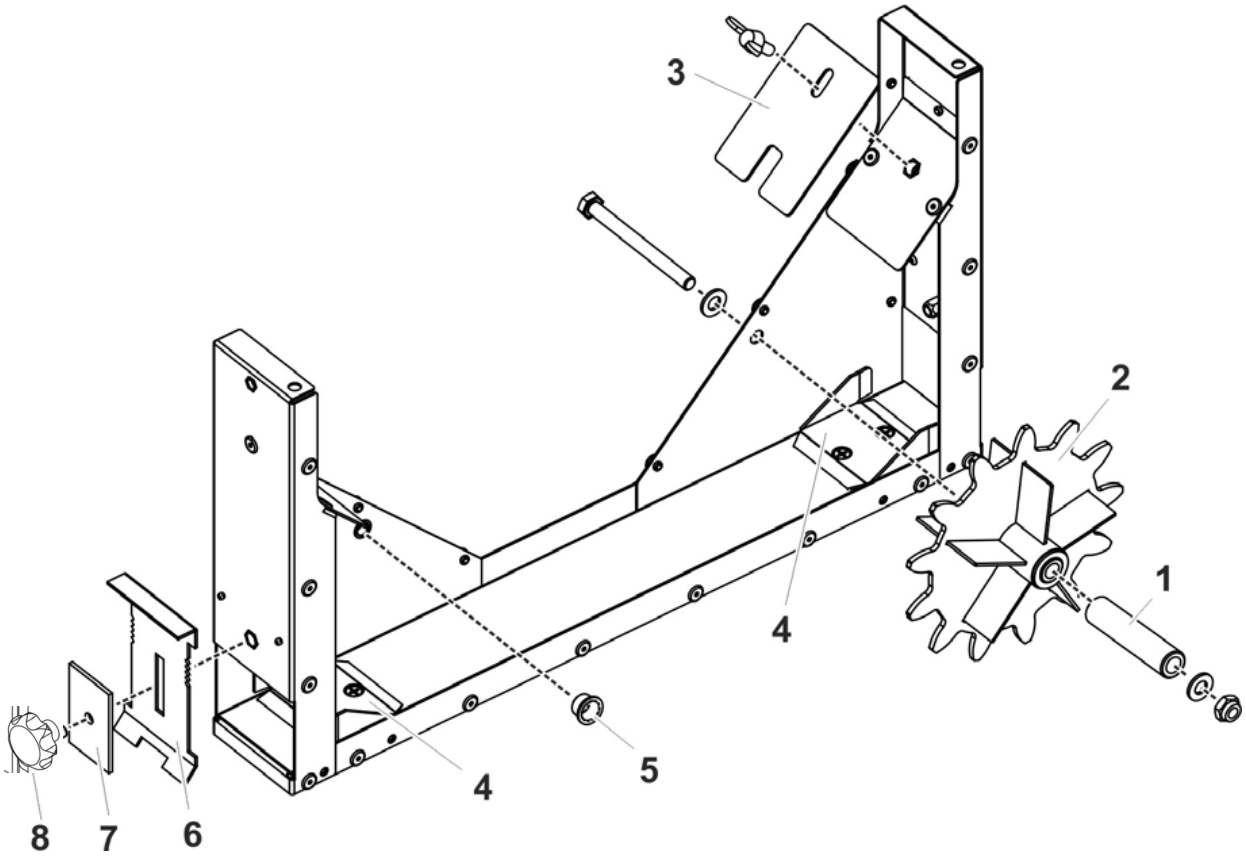


83-13-7129

Installing Trough to Feed Hopper

1. Loosen screws and chain guides(Item 4 below).
2. Push feed trough **BELOW** the chain guides.
3. Fix the feed trough to the chain guide rail by retightening the screws at the chain guide.

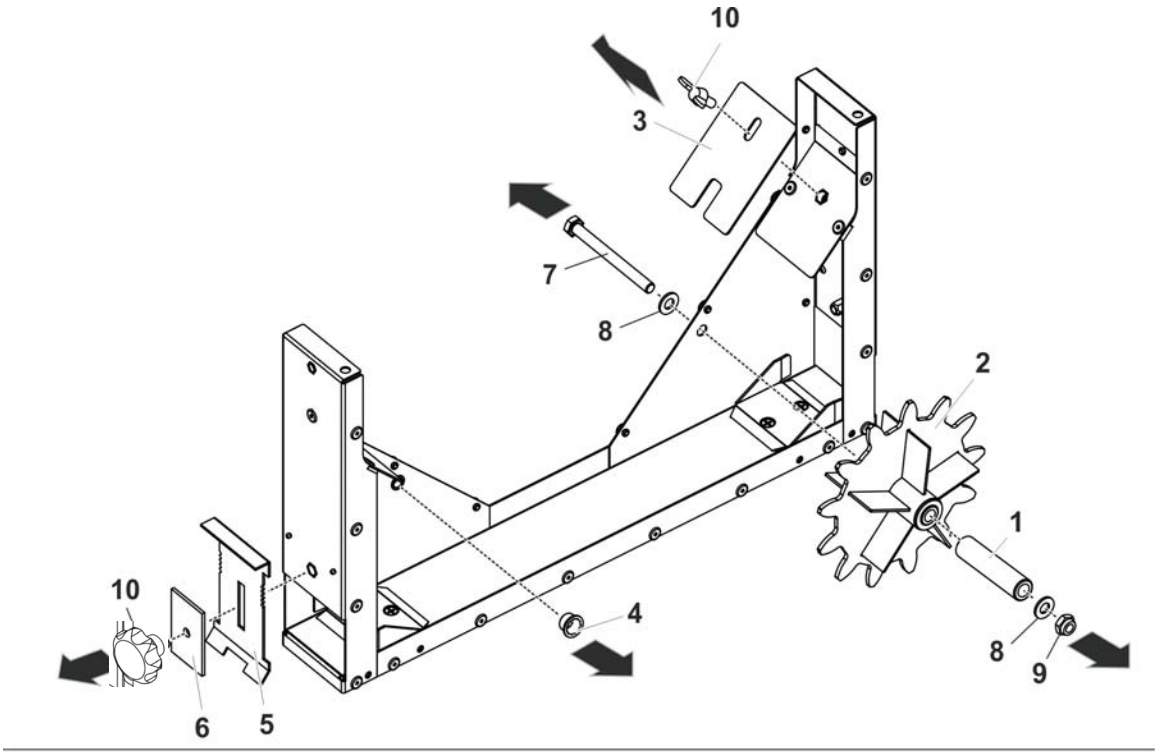
Spare Parts for Modular Feed Hopper

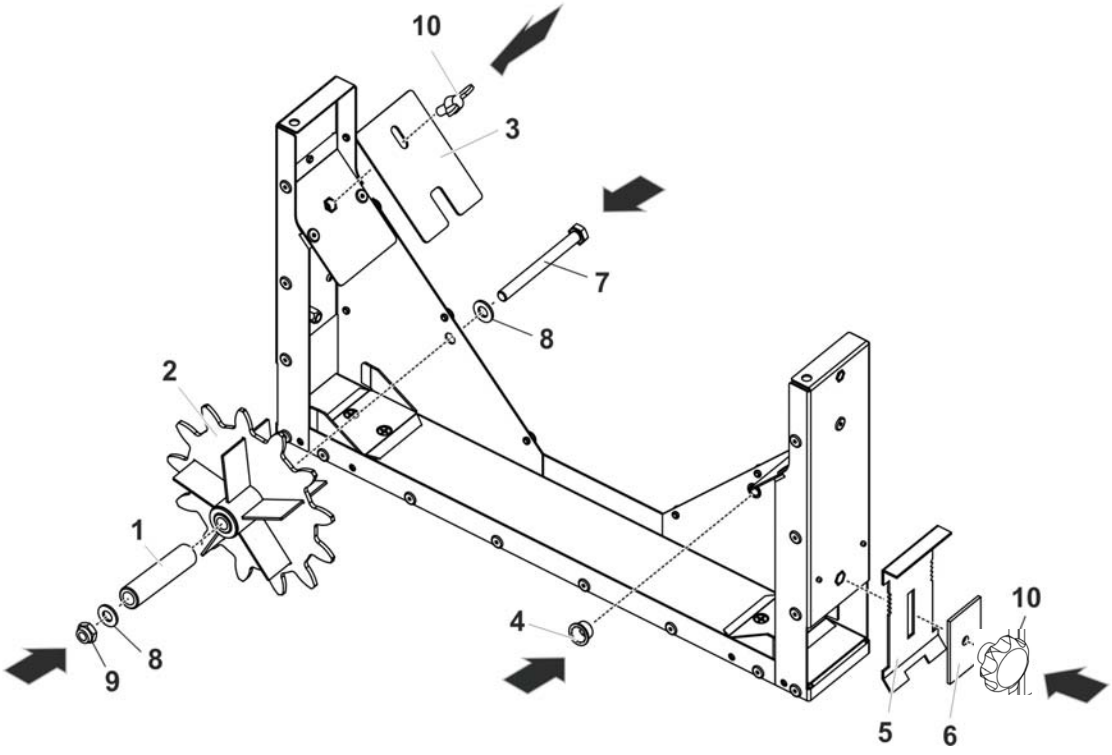


Item	Part No.	Description
1	**83-16-8568**	Space Tube Axis Return wheel for feed hopper MPF modular
2	**83-16-6675**	Return Wheel cpl. for feed hopper series MPF modular
3	**83-13-7110**	Feed level Regulator for return wheel feed hopper series MPF modular
4	**10-00-0135**	Chain guide for freurn feed intake hopper HS
5	**83-14-7709**	Tapered Plug henke H400/C106 D14
6	**38-91-3692**	Feed Level Slide Zn MCZ for hopper MPF modular and feed column
7	**38-91-3693**	Pressure Plate for feed level slide
8	**83-08-9174**	Star Knob Black M8 x 20 plast/galv.

Change of Direction in MPF Feed Hopper Modular

The change of direction is carried out by converting the feed level slide (5), feed level regulator (3) and return wheel including axis (1+2).

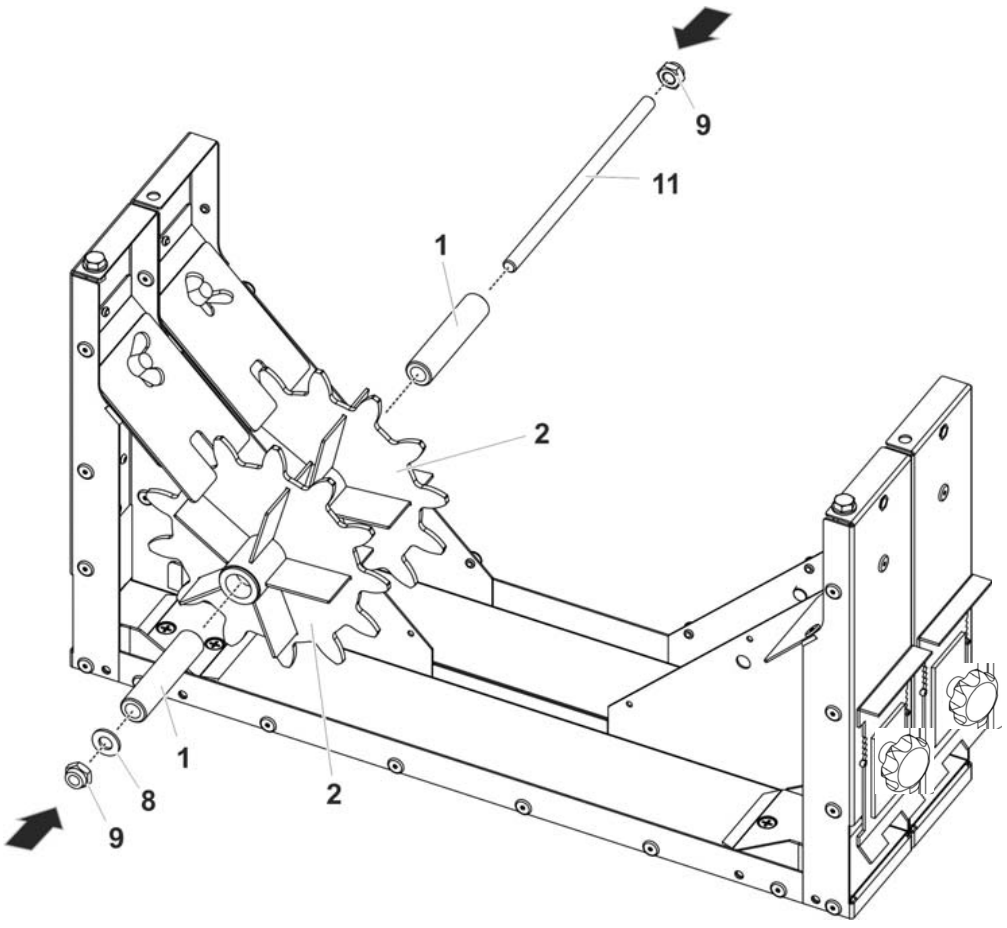




Pos.	Part No.	Description
1	**83-16-8568**	Space Tube Axis Return wheel for feed hopper MPF Mini Modular
2	**83-16-6775**	Wheel Return Feed Intake cpl. for feed hopper series MPF modular
3	**83-13-7110**	Feed Level regulator for return wheel feed hopper series MPF modular
4	**83-14-7709**	Tapered plug Henke H400/C106 D14
5	**38-91-3692**	Feed Level Slide Zn MCZ for hopper MPF modular and feed column
6	**38-91-3693**	Pressure Plate for feed level slide
7	**99-10-1533**	Hexagon Head Screw M10 x 110 DIN 931 8.8 galv.
8	**99-50-1090**	Washer B 10.5 DIN 125 galv.
9	**99-20-1029**	Hexagon Nut M10 galv. DIN934-8
10	**83-08-9174**	Star Knob black M8 x 20 plast/galv
11	**86-00-1625**	Rod threaded M10x210mm DIN 976 galv

NOTICE!

Use an additional threaded rod (11) when converting a feed hopper type 2 lines - 2 directions to a hopper 2 lines - 1 direction. Fix the threaded rod with a nut (9) and washer (8). See the following illustration.



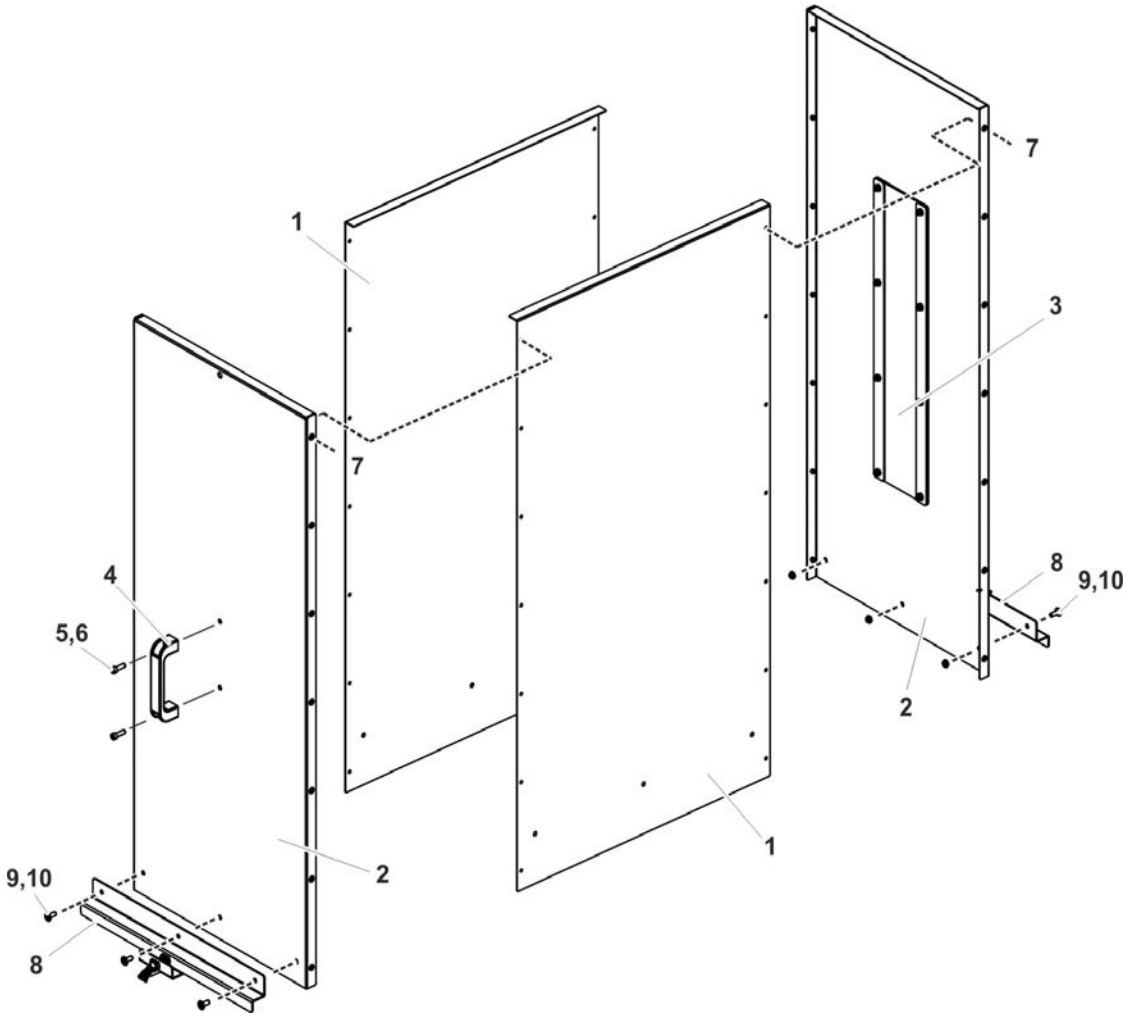
Extension Columns for Feed Hoppers

MPF mini modular

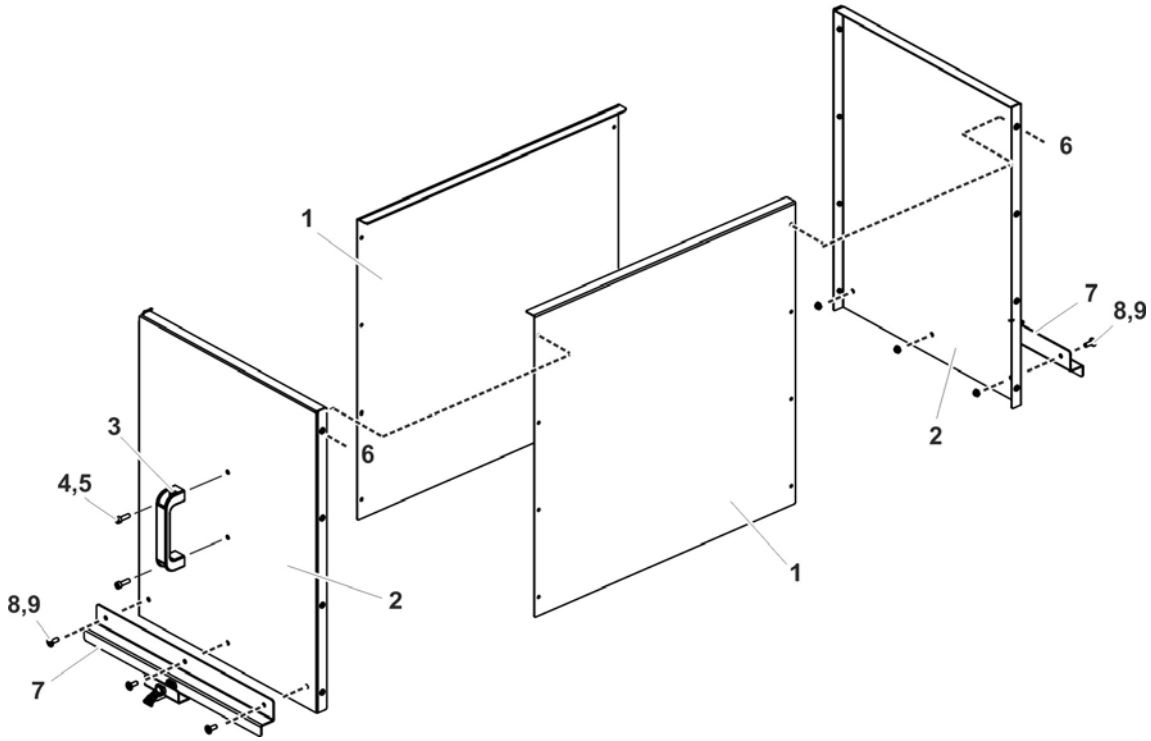
Part No.	Description
83-50-1239	Extension Column 240L (340lbs) V20 for hopper MPF mini modular 1-line
83-50-1249	Extension Column 240L (340lbs) V20 for hopper MPF mini modular 2-line
83-50-1252	Extension Column 240L (340lbs) V20 for hopper MPF mini modular 3-line
83-50-1255	Extension Column 240L (340lbs) V20 for hopper MPF mini modular 4-line

Part No.	Description
83-52-5285	Extension Column 120L (170lbs) V20 for hopper MPF mini modular 1-line
83-52-5288	Extension Column 120L (170lbs) V20 for hopper MPF mini modular 2-line
83-52-5289	Extension Column 120L (170lbs) V20 for hopper MPF mini modular 3-line
83-52-5290	Extension Column 120L (170lbs) V20 for hopper MPF mini modular 4-line

Extension Columns Mini Modular



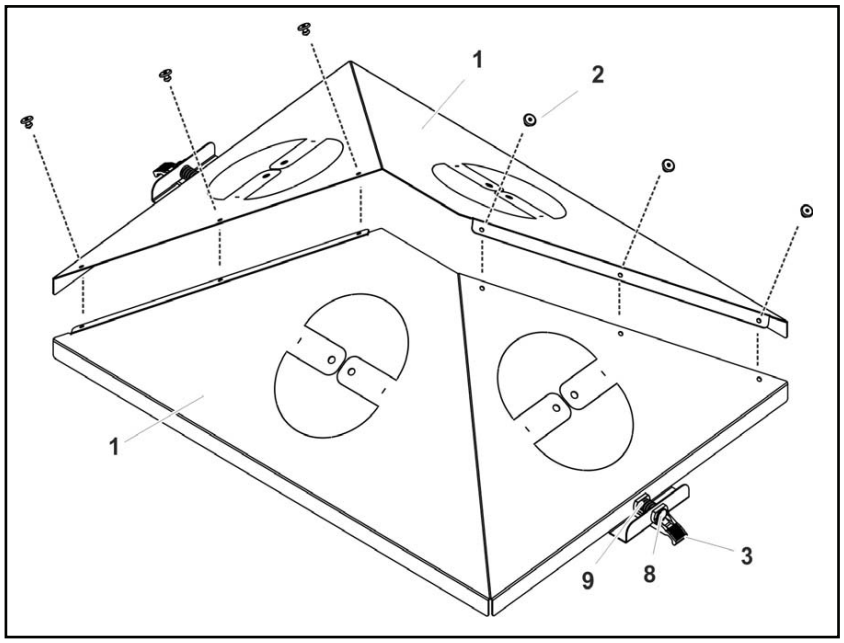
Item	Part No.	Description
	83-50-1239	Extension Column 240L V20 for hopper MPF mini modular 1-line
	83-50-1249	Extension Column 240L V20 for hopper MPF mini modular 2-line
	83-50-1252	Extension Column 240L V20 for hopper MPF mini modular 3-line
	83-50-1255	Extension Column 240L V20 for hopper MPF mini modular 4-line
1		Front cover for extension column MPF mini
2		Side wall for extension column MPF mini
3		Control Window
4		Handle
5	**99-10-3985**	Hexagon Socket countersunk Head Screw M6 x 16 DIN 7991 galv. 8.8
6	**99-20-1043**	Self-locking counter nut M6 galv. DIN 985-6
7	**87-19-0439**	Blind Rivet 4.0 x 10
8		Frame Profile
9	**99-10-4071**	Pan Head screw M6 x 16 ISO 7380-2 HExagon socket with flange galv. 10.9
10	**99-20-1043**	Self-locking counternut M6 galv. DIN 985-6

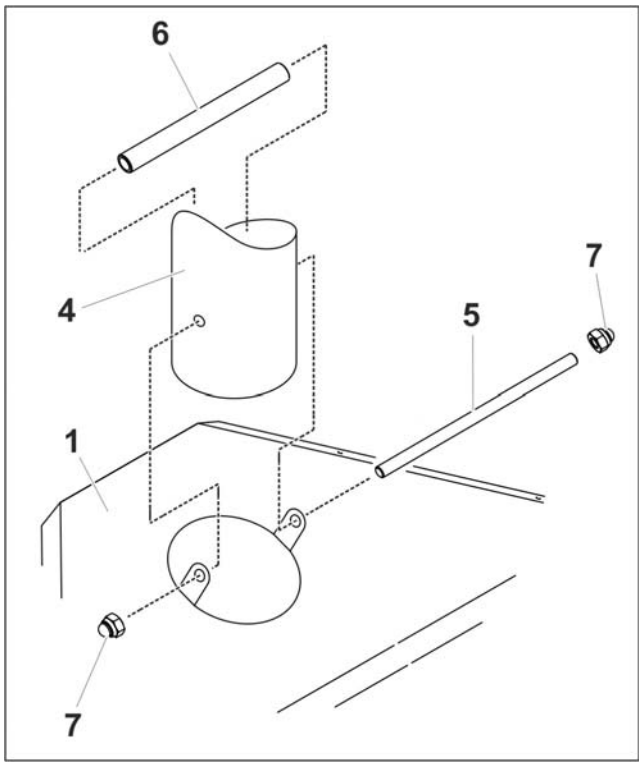


Item	Part No.	Description
	83-50-1239	Extension Column 240L V20 for hopper MPF mini modular 1-line
	83-50-1249	Extension Column 240L V20 for hopper MPF mini modular 2-line
	83-50-1252	Extension Column 240L V20 for hopper MPF mini modular 3-line
	83-50-1255	Extension Column 240L V20 for hopper MPF mini modular 4-line
1		Front cover for extension column MPF mini
2		Side wall for extension column MPF mini
3		Control Window
4		Handle
5	**99-10-3985**	Hexagon Socket countersunk Head Screw M6 x 16 DIN 7991 galv. 8.8
6	**99-20-1043**	Self-locking counter nut M6 galv. DIN 985-6
7	**87-19-0439**	Blind Rivet 4.0 x 10
8		Frame Profile
9	**99-10-4071**	Pan Head screw M6 x 16 ISO 7380-2 HExagon socket with flange galv. 10.9
10	**99-20-1043**	Self-locking counternut M6 galv. DIN 985-6

Covers For Feed Hopper

Part No.	Description
83-50-3360	Cover V20 for extension column MPF mini modular/MaleChain
83-50-1643	Cover V20 for hopper RPM/MPF mini modular 1-line
83-50-1723	Cover V20 for hopper RPM/MPF mini modular 2-line
83-50-1799	Cover V20 for hopper MPF mini modular 3-line
83-50-2072	Cover V20 for hopper MPF mini modular 4-line



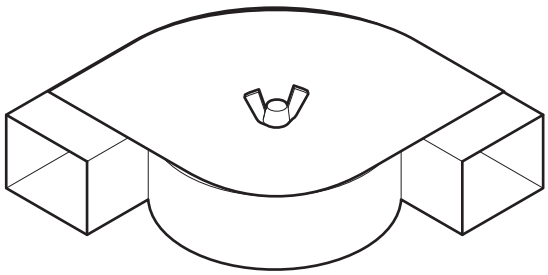


Item	Part No.	Description
1		Metal Sheet for cover plate feed hopper mini modular
2	**99-10-4131**	Blind rivet alu/steel flat round head 4.0 x 8 K12
3	**83-04-9324**	Fastener for pivoting floor AMX150 transit
4		Pipe for feed supply
5	**83-15-0514**	Treaded rod M6 x 140 galv.
6	**83-14-8077**	Spacer tube hinge for cover MPF mini modular 1 line 1 direction
7	**83-07-1948**	Safety bolt head 13mm AMX 150 transit
8	**37-96-9523**	Compression Spring VD-190B SST AMX150transit

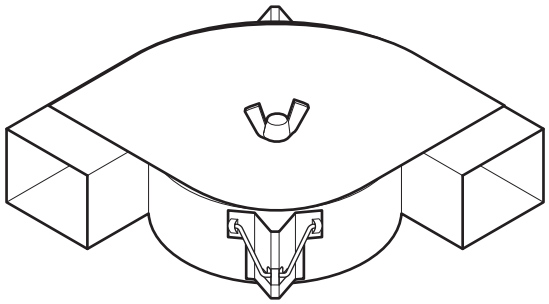
18 90° Champion Corner-Parts Replacement

See the following pages for the parts listed below:	
Floor Feeding Corners with Delrin Bushing:	
With Bail:	**15-10-5172**
With Leg:	**15-10-5171**
With Bronze Bushing:	
With Bail:	**15-10-5057**
With Leg:	**15-10-5001**
With Bronze Bushing:	
With Bail:	**15-10-5064**
With Leg:	**15-10-5060**

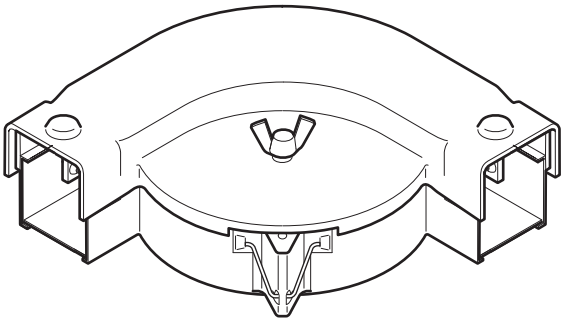
90 Degree Corner



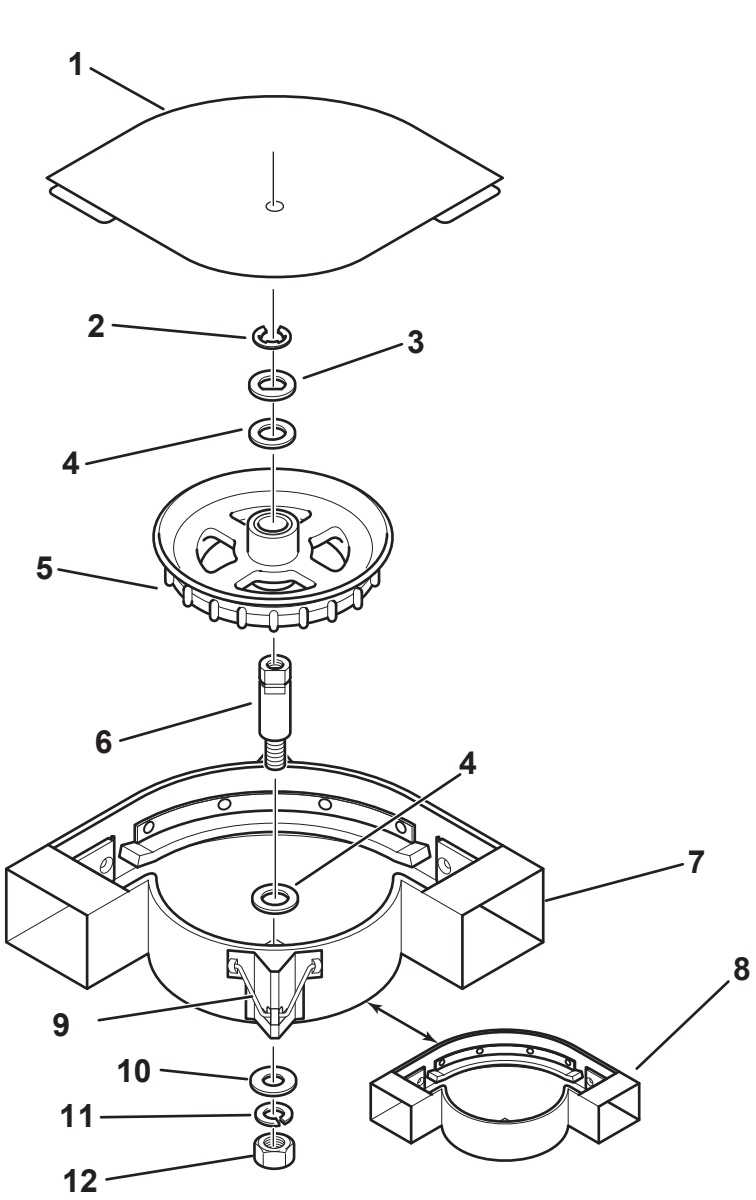
Floor Feeding Cover

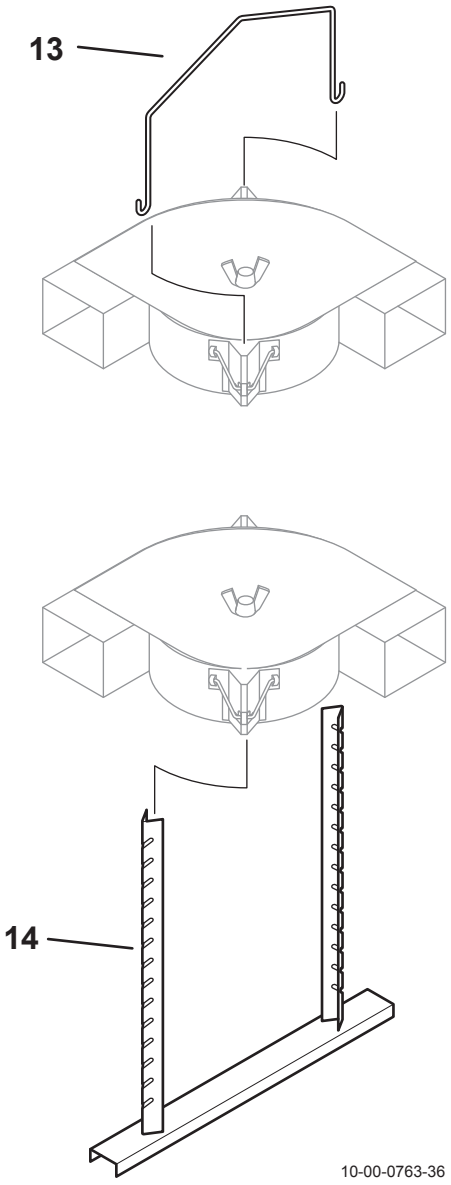


Floor Feeding Cover Hi-Top



19 Champion Chain 90° Corner

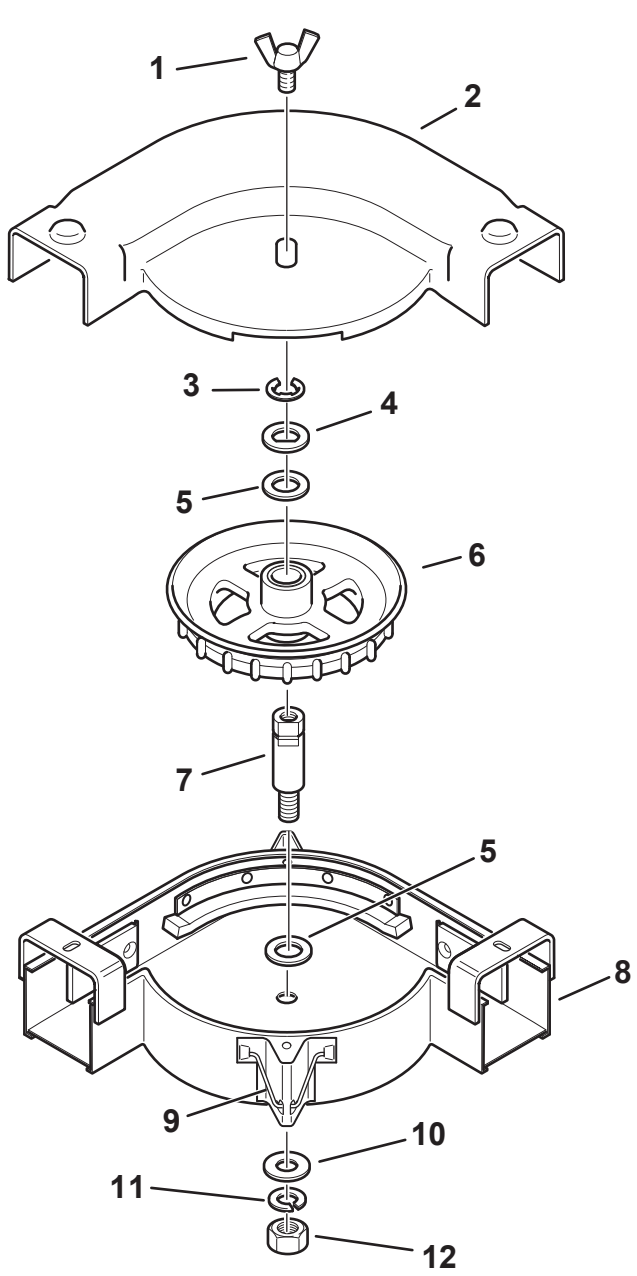


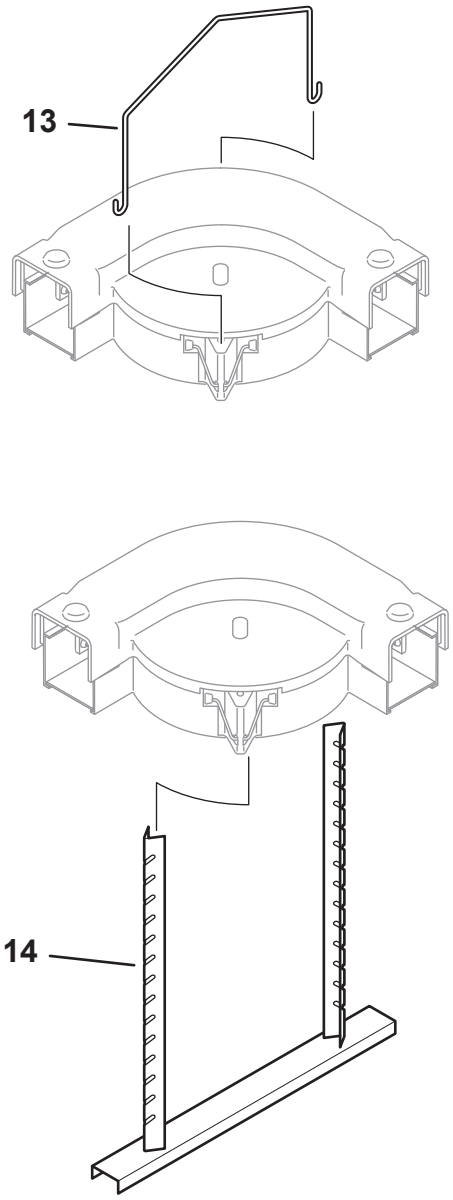


Item	Part No.	Description
1	**83-00-4430**	Corner Cover
2	**86-00-0255**	Snap Ring
3	**15-00-9010**	Washer
4	**99-20-0093**	Fiber Washer
5	**15-10-5167**	Corner Wheel w/Delrin Bushing
5	**86-00-0176**	Corner Wheel w/Bronze Bushing

Item	Part No.	Description
6	**15-00-9011**	Corner Post
7	**15-10-9206**	Cage Feeding Corner Body
8	**15-10-9106**	Floor Feeding Corner Body
9	**15-00-0204**	Leg Clip F/Floor Feeding
10	**99-20-0128**	Washer, 1/2”
11	**99-20-0090**	Lock Washer, 1/2”
12	**99-20-0105**	Hex Nut, 1/2-13
13	**15-10-9109**	Bail for Corner
14	**15-10-9041**	Leg for Corner

20 Champion Chain 90° Hi-Top Corner





10-00-0763-37

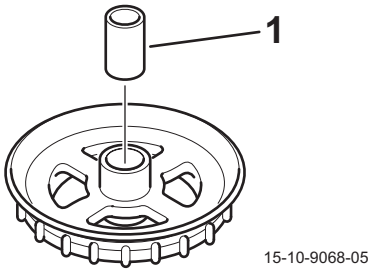
Item	Part No.	Description
1	**99-10-0093**	Wing Bolt, 3/8-16 x 1/2”
2	**15-10-5062**	High Top Corner Cover
3	**86-00-0255**	Snap Ring
4	**15-00-9010**	Washer
5	**99-20-0093**	Fiber Washer
6	**86-00-0176**	Corner Wheel w/Bronze Bushing
7	**15-00-9011**	Corner Post

Item	Part No.	Description
8	**15-10-5175**	Hi Top Corner Body
9	**15-00-0204**	Leg Clip
10	**99-20-0128**	Washer, 1/2”
11	**99-20-0090**	Lock Washer, 1/2”
12	**99-20-0105**	Hex Nut, 1/2-13
13	**15-10-9109**	Bail for Corner
14	**15-10-9041**	Leg for Corner

21 Champion Corner Miscellaneous Corner Parts

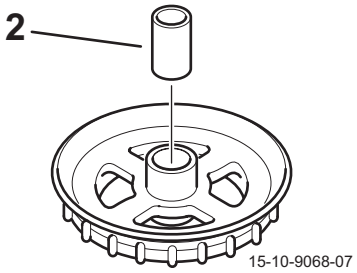
Corner Wheel Assembly W/Bronze Bushing

Part No. 86-00-0176



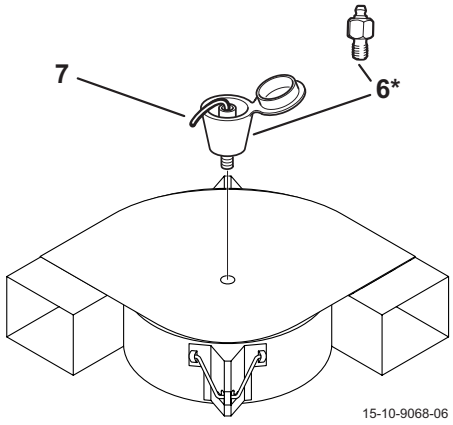
Corner Wheel Assembly W/Delrin Bushing

Part No. 15-10-5167



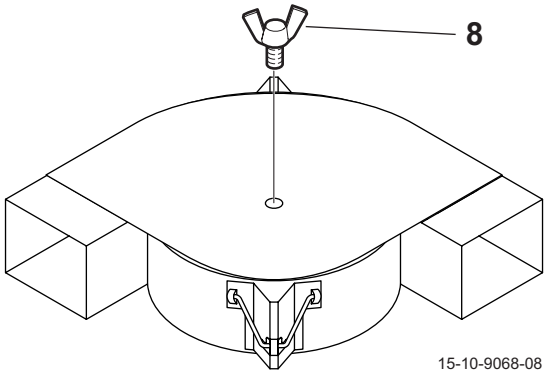
Grease Fitting OR Oil Cup Used ONLY With Corner Wheel Assembly W/Bronze Bushing

Part No. 86-00-0176

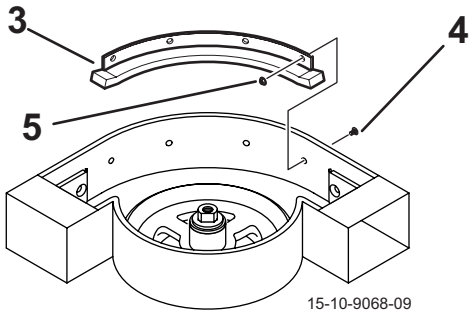


Delrin Bushing CANNOT Be Used With Oil or Grease Cup

Part No. 15-10-5167

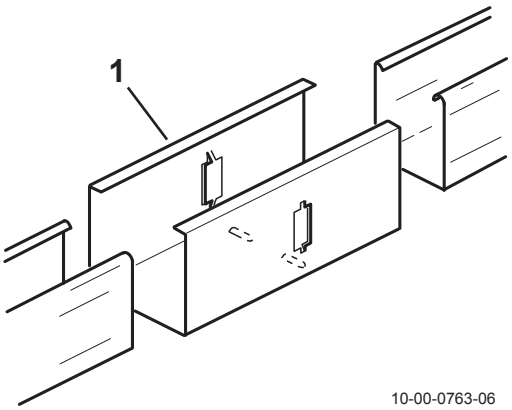


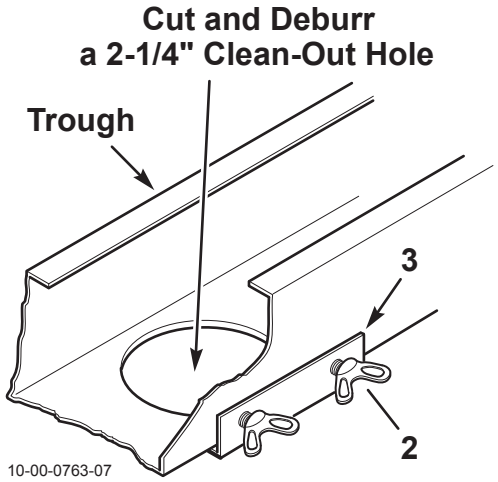
Heavy Duty Hold Down Rail Replacement Kit



Item	Part No.	Description
1	15-00-0022	Bronze Bushing
2	10-93-3218	Delrin Bushing
3	86-01-3837	RAIL,HOLD DOWN,F/BD88 90D CORNER,PAINTED
4	99-10-0206	BOLT,1/4-20X.50 HEX HD. GRD 2,ZP
5	99-20-0394	Hex Flange Nut, 1/4-20
6	*Grease Fitting Or Oil Cup To Be Used With Corner Wheel Assembly W/Bronze Bushing	
	15-00-9147	GREASE FTG FOR CORNER POST ASSY.3/8-16 THREAD
	15-00-0198	Oil Cup
7	15-00-0199	Wick
8	99-10-0093	Wing Bolt, 3/8-16 x 1/2 in.

22 Miscellaneous Trough Parts





Item	Part No.	Description
1	**15-22-5004**	COUPLING,TROUGH,REG,3-1/2” (sold by pc,ship75/box)
2	**99-10-0110**	BOLT,1/4-20X.50 WING/ TYPE D ZINC
3	**10-00-0063**	COVER,CLEANOUT,ONLY,4” F/REGULAR TROUGH W/CHAMPION CHAIN

23 Troubleshooting

Fault	Cause	Remedy
Shear pins break	Feed chain may be too loose	Correct feed tension
	Feed trough is not correctly placed under the guide shoe, thus, the feed chain gets stuck under the feed trough	Assemble feed trough with guide shoe anew and align it
	Some part of the machine is blocked by foreign matter.	Remove foreign matter
	Feed chain gets stuck at trough coupler or corner	Align trough coupler or corner.
	Feed chain gets stuck between the reversible toothed drive wheel and the guide shoe	Align reversible toothed drive wheel and guide shoe, 0.5 to 1 mm space gap.
	Guide shoe is worn and feed chain gets stuck.	Replace guide shoe
	Corner wheels do not operate	Check corners
Feed return does not work	Too high feed level, too much feed in the trough	Adjust feed level at the feed level slide of the MPF feed hopper.
	The MPF drive runs longer than necessary for the feeding procedure. This overfills the feed trough.	Adjust feeding duration anew.
	Feed return wheel runs too tightly	Refill oil (sewing machine oil or HD 10/HD 20 oil)
Feed jam in the corners	Feed level in the feed trough is too high	Adjust feed level at the feed level slide of the MPF feed hopper
	Water in feed, feed jams in the corners	Remove wet and swollen feed from the feeding line

Fault	Cause	Remedy
Excessive heat generation at gear motor	Not properly lubricated	Check quantity and type of gear oil. Change oil, if necessary.
	Feed chain tension too high or too low	Correct feed chain tension.
Corner wheels do not operate.	Feed chain tension too high or too low	Check and correct feed chain tension
	Foreign matter jams under the corner wheels	Check corners for foreign matter and remove foreign matter
Motor does not start	Fuse is blown	Replace fuse
	Protective motor switch has reacted	Correctly adjust protective motor switch
	Protective motor switch does not switch	Check control of protective motor switch and correctly adjust it.
Motor starts tightly	Planned for triangle connection 380 V, but switched as star 220 V.	Correctly adjust switching.
	Tension or frequency strongly vary when switching on	Care for better electricity circumstances
Motor gets too hot	Motor is switched in a triangle instead of a star as planned	Correct switching
	Cooling air quantity too small, cooling air paths obstructed	Care for unobstructed intake and outlet of cooling air

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