

6" & 8" POWER SWEEP AUGER

OWNER'S & OPERATOR'S MANUAL

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This manual also
includes CE Models



Hutchinson/Mayrath

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Hutchinson/Mayrath

A Division of **GLOBAL** Industries, Inc.

POLICIES AND PROCEDURES

- Prices:** Prices in effect at time of shipment will apply. Prices are subject to change without notice. All prices are F.O.B. Clay Center, Kansas. Orders shipped from locations other than Clay Center, Kansas will be subject to additional charges, such as back freight and/or additional freight.
- Service Charge:** A service charge will be assessed for all past due balances as permitted by state law not to exceed 1-1/2% per month.
- Minimum Order:** Processing and handling costs necessitate a minimum charge of \$15.00 net on all orders.
- Back Orders:** Back orders will be shipped as they become available. Contact Hutchinson/Mayrath Customer Service for alternative shipping options or if cancellation is desired.
- Damaged Goods:** It is the consignee's responsibility to check all shipments thoroughly upon receipt of goods. If any damage is discovered, it must be noted on the freight bill of lading before signing. The consignee must make necessary claims against the respective freight line. All damage claims must be submitted within 30 days of delivery receipt.
- Shortages:** All shortages must be noted at time of delivery. Shortages must be noted on the freight bill of lading before signing. Hutchinson/Mayrath must be advised of all concealed shortages upon discovery. Once notified of concealed shortages Hutchinson/Mayrath will advise corrective action to be taken.
- Return of Goods:** All returns must be approved by Hutchinson/Mayrath prior to shipment. All return requests will be issued a return authorization number. **NO RETURNS WILL BE ACCEPTED WITHOUT A RETURN AUTHORIZATION NUMBER AND PRIOR AUTHORIZATION FROM THE FACTORY.** All returns must be shipped prepaid. A 15% restocking charge will be applied to all returned merchandise. Custom Products may not be returned for credit. Only current products in new and salable condition may be returned. No safety devices may be returned for credit.
- Modifications:** It is the policy of Hutchinson/Mayrath to improve its product whenever possible and practical to do so. We reserve the right to make changes, improvements and modifications at any time without incurring the obligation to make such changes, improvements and modifications on any equipment sold previously.
- Limited Warranty:**
- (a) For a period of (1) year after receipt of goods by the original consumer buyer, Hutchinson/Mayrath will supply free of charge replacement parts for parts that prove defective in workmanship or material. Defective parts must be returned freight prepaid to a specified Hutchinson/Mayrath location. Only Hutchinson/Mayrath original repair parts may be used for warranty repairs.
 - (b) This limited warranty does not extend to parts designed to wear in normal operation and be replaced periodically; or to damage caused by negligence, accident, abuse or improper installation or operation.
 - (c) **GOODS NOT MANUFACTURED BY HUTCHINSON/MAYRATH CARRY ONLY THE MANUFACTURER'S WARRANTY.**
 - (d) **THIS UNDERTAKING IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**
- FAILURE TO FOLLOW THE INSTRUCTIONS CONTAINED IN THE OWNER'S & OPERATOR'S MANUALS AND THE ITEMS LISTED BELOW WILL RESULT IN THE VOIDING OF THIS LIMITED WARRANTY.**
- (1) Improper assembly, including failure to properly install all safety equipment.
 - (2) Improper installation.
 - (3) Unauthorized alternations of goods.
 - (4) Goods operated when obviously in need of repair.
 - (5) Use of unauthorized repair parts.
 - (6) Irresponsible operation.
 - (7) Used to handle materials other than free flowing, nonabrasive and dry materials, as intended.
 - (8) Damaged through abusive use or accident.
- Limitation of Liability:** BUYER AGREES THAT IN NO EVENT SHALL HUTCHINSON/MAYRATH HAVE LIABILITY FOR DIRECT DAMAGES THE EXCESS OF THE CONTRACT PRICE OF THE GOODS IN RESPECT OF WHICH CLAIM IS MADE. BUYER FURTHER AGREES THAT IN NO EVENT SHALL HUTCHINSON/MAYRATH ON ANY CLAIM OF ANY KIND HAVE LIABILITY FOR LOSS OF USE, LOSS OF PROFITS, OR FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

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6" & 8" POWER SWEEP

INTENDED USE

This product is intended to provide the mechanical means to remove the grain that remains in the bin or storage structure, after all grain that can be emptied through the center and intermediate wells has flowed out of the bin or storage structure.

This unit is designed to run at sweep auger speeds of 230 to 366 RPM's. The flight speed of the sweep auger should not be altered from the way it has been initially provided.

Allowable capacities in bushels per hour (*metric tons per hour*) is also a factor of auger speed as shown in the table on page 6. Flow of the material being augered, must be regulated into the bin wells so that it does not exceed the recommended capacity of the unload unit.

Any use other than specified in this paragraph is not recommended by the manufacturer.

GENERAL SAFETY STATEMENT

This manual was written with the safety of the operator and others who work with the equipment as our prime concern. The instructions presented will help the reader learn **SAFE** day to day work practices. We want you as our partner in safety.

It is your responsibility as an owner, operator or supervisor to know what specific safety requirements and precautions exist and to make these known to all other personnel working with the equipment or in the area, so that they too may safely perform their duties and avoid any potentially hazardous situations.

We suggest the implementation of a Safety Program for all personnel that includes, but is not limited to, the proper use of PPE (personal protective equipment), Fall Protection Systems and Lock Out-Tag Out procedures.

Avoid any alterations of the equipment. Such alterations may create a dangerous situation where serious injury or death may occur.

Please remember safety equipment provides important protection for persons around a grain handling system that is in operation. Be sure **ALL** safety shields and protection devices are installed and properly maintained. If any shields or guards are damaged or missing, contact your dealer to obtain the correct items.

SAFETY ALERT SYMBOL

The safety symbol shown is used throughout this manual to alert you to information about unsafe actions or situations, and will be followed by the word DANGER, WARNING, or CAUTION.

DANGER - Indicates immediate hazards that may result in severe injury or death. **WARNING** - Indicates unsafe actions or situations that may cause severe injury, death and/or major equipment or property damage. **CAUTION** - Indicates unsafe actions or situations that may cause injury, and/or minor property damage.

Watch this symbol - it points out important safety precautions. It means - **ATTENTION! Become alert! Your safety and the safety of others is involved!** Read the message that follows the symbol when a warning is given, be alert to the possibility of personal injury or death.

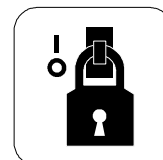


Operate Electric Motor(s) Properly

Do not operate electric motor equipped units until motor(s) are properly grounded.

Know how to "Shutdown and Lockout" the power source. Shutdown and lockout power source before performing any service, maintenance or adjustments to the unit.

Disconnect power on electrical driven units before resetting motor overloads.



Lockout / Tagout



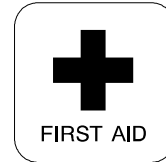
Electric Shock Hazard

Prepare for Emergencies

Keep emergency numbers for doctors, ambulance service, hospital and fire department near your telephone.

Keep a first-aid kit and fire extinguisher handy.

Be prepared if a fire starts



FIRST AID

First Aid Equipment



Fire Extinguisher

Follow Safety Instructions

Carefully read all safety messages in this manual and safety signs on your machine. Check to ensure all Safety Decals are present and in good condition.

If a decal cannot easily be read for any reason, or has been painted over, replace the decal immediately. Safety decals are offered free of charge, and can be ordered through your Hutchinson/Mayrath dealer or directly from the factory.

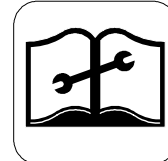
Learn how to operate the machine and how to use controls properly.

Keep your machinery in proper working condition. Understand service procedures before doing work. Never lubricate, service or adjust machine while it is in operation.

Keep work area clean, dry and free from of all debris and tools which may cause accidental tripping or falling.



Read and Understand Manual



Understand Service Procedures



Keep Work Area Clean

Wear Proper PPE (Personal Protective Equipment)

Some materials can create flying debris when they are filed, cut or drilled. Safety glasses should be worn at all times to protect your eyes from such debris.

Hearing protection should be worn when operating power tools or other power equipment that could be harmful to your hearing.

Gloves should be worn to protect your hands from sharp metal and plastic edges, as well as providing protection from the handling of heavy objects.

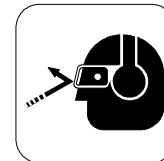
Wear steel toe boots to protect your feet from falling debris.

Wear a hard hat to help protect your head from falling objects as well as from accidental bumping.

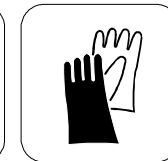
Use caution when working at elevations greater than four (4) feet (1.22 m) above the ground.

Use the appropriate fall protection equipment as set forth by OSHA guidelines and regulations.

A respirator may be needed to prevent breathing potentially toxic fumes and dust, especially when working within a grain bin or storage structure.



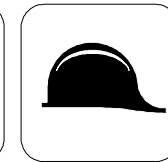
Eye & Hearing Protection



Gloves



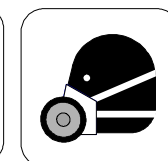
Steel Toe Boots



Hard Hat



Fall Protection

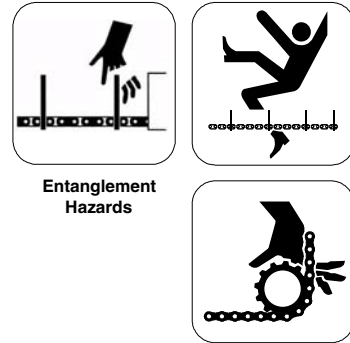


Respirator

SAFETY

Stay Clear of Moving Parts

Keep all shields, covers and safety devices in place at all times. Entanglement in moving chains, rotating impeller arms and sprockets will cause serious injury or death. Wear close fitted clothing. Keep hands, feet and clothing away from moving parts. Shutdown and lockout power source before making adjustments, cleaning or maintaining the equipment.



Entanglement Hazards

GRAIN BIN SAFETY

The Power Sweep Auger is generally designed to remove the grain that remains in the bin or storage structure, after all grain that can be emptied through the center and intermediate wells has flowed out.

Be aware of the dangers inherent in grain bins.

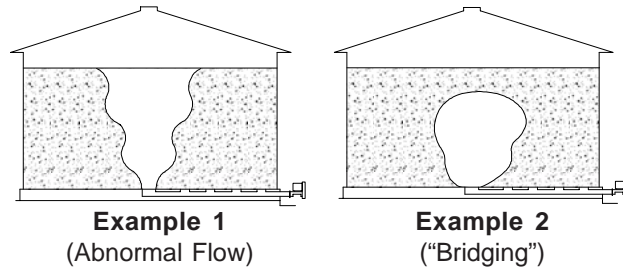
Consult the grain bin manufacturer's manual for information on the proper loading and unloading of the bins, structural stress analysis, adequate venting and important safety information.

⚠ DANGER

WARNING! Do Not enter the bin if the grain has "Bridged" or has not flowed normally out of the bin, See Example's 1 & 2. The grain may suddenly break loose and bury resulting in suffocation.

⚠ DANGER

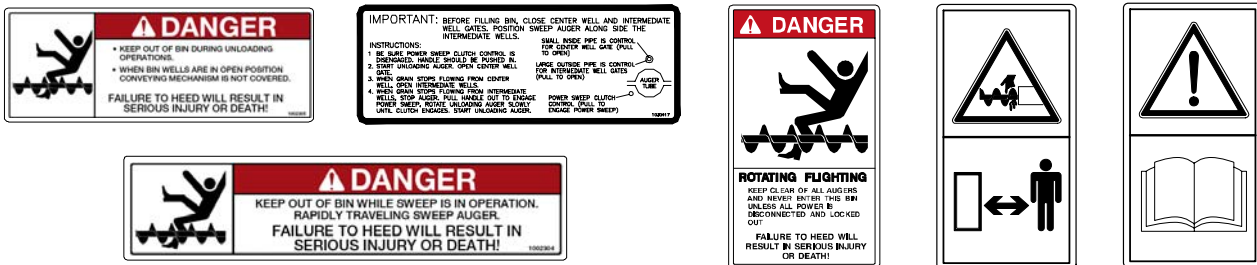
Do Not enter the bin unless all power driven equipment has been shut down and locked out. Never enter the bin unless monitored by another person.



SAFETY DECALS

Check to ensure all Safety Decals are present and in good condition. If a decal cannot easily be read for any reason, or has been painted over, replace the decal immediately. Safety decals are offered free of charge, and can be ordered through your Hutchinson/Mayrath dealer or directly from the factory.

Refer to the Parts List Section for decal Part No's. and location of decals on components.



OPERATOR QUALIFICATIONS



WARNING! Anyone who will operate or work around this machine shall first read this manual! This manual must be delivered with the equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

Operation of this equipment shall be limited to competent and experienced persons. In addition, anyone who will operate or work around a conveyor must use good common sense. In order to be qualified, he must also know and meet all other requirements, such as:

1. Some regulations specify that no one under the age of 16 may operate power machinery. This includes this conveyor. It is your responsibility to know what these regulations are in your area or situation.
2. Current OSHA regulations state in part: "At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in safe operation and servicing of all equipment with which the employee is, or will be involved." *
3. Unqualified persons are to stay out of the work area. See Page 9.
4. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine.
5. Persons operating, servicing or repairing equipment that requires above ground work shall be properly secured with the use of "fall protection" equipment as set forth by OSHA guidelines and regulations.

*Federal Occupational Safety & Health Standards for Agriculture Subpart D, Section 1928.57 (a) (6).

SIGN OFF SHEET

As a requirement of OSHA, it is necessary for the employer to train the employee in the safe operation and safety procedures with this conveyor. We include this sign off sheet for your convenience and personal record keeping.

<i>Training Sign-Off Sheet</i>		
Date	Employer Signature	Employee Signature

MACHINE INSPECTION

Our augers are well made and we are proud of our line of equipment. We would like you, as our customer, to do your part in using caution and good judgement in using our equipment, as well as any other machinery.

After delivery of your new auger/conveyor and/or completion of assembly and before each use, inspection of the machine is mandatory. The auger/conveyor should be frequently checked and serviced to operate freely. Use the assembly instructions in this manual as a reference to determine that the conveyor is assembled properly. This inspection should include, but not be limited to:

1. Check to see that all shields listed in the assembly instructions are in place, secured and functional.
2. Check all safety signs (decals) and replace any that are worn, missing or illegible. Safety signs may be obtained free of charge from your dealer or ordered from the factory.
3. Check **all** fasteners; nuts, bolts, set screws etc. for tightness.
4. Check oil level in gearboxes (See Lubrication section).

GENERAL AUGER INFORMATION

WARNING! Use caution when working in areas above the ground. Persons operating, servicing or repairing equipment that requires above ground work shall be properly secured with the use of "fall protection" equipment as set forth by OSHA guidelines and regulations.



Metal buildings, scaffolding and other types of work surfaces can become slippery, especially when surfaces are wet and/or oily. This can create hazardous working conditions. Use caution when working, climbing or walking on these surfaces.



- Inspect the sweep before adding power and know how to **shutdown** in an emergency (See Page 9).
- During operation of your auger, one person shall be in a position to monitor the operation.
- Visually inspect the auger periodically during operation, be aware of all adjustments and checks which should be performed.
- Obtain any needed replacement parts from your dealer and install **before** using the machine.

General Information (con't.)



WARNING! During initial start-up and break-in period, the operator shall be aware of any unusual vibrations or noises that would indicate a need for service or repair.



Keep all safety shields and devices in place. Keep hands, feet, and clothing away from moving parts.



The operator shall have a full view of the conveyor work area and check that all personnel are free from designated work areas before adding power.

- It is important to become familiar with the routine operating procedures before attempting start-up.

OPERATING CAPACITIES

Capacities of screw conveyors and augers can vary greatly under diverse conditions. Different materials, moisture content, amounts of foreign matter, methods of feeding and flight speed all play a role in the performance of the auger.

Maximum possible capacity will be less with high moisture grain (above 25%) than with dry grain. Twenty-five percent (25 %) moisture could cut capacity back by as much as forty percent (40%) under some conditions.

BREAK-IN INFORMATION

Any screw type auger when it is new or after it sits idle for a season should go through a "break-in" period. The hopper should be run at partial capacity until several hundred tons of grain have been augered to polish the flight and housing. Once this is accomplished, the hopper can be run at full capacity.

Never operate the hopper when empty for any length of time as excessive wear will result. If at all possible, do not stop or start the hopper under load, especially before the flight and housing have become well polished, as this may cause the auger to freeze-up.

IMPORTANT: BEFORE FILLING BIN

Before filling the bin or storage structure with grain, make sure all slide gates on all wells are closed.

Shutdown and lockout sweep power source.

Position the sweep auger along side the intermediate wells so that when the sweep is started, the wells will be in front of the sweep's direction of travel.

ELECTRIC DRIVE POWER REQUIREMENTS



WARNING! A main power disconnect switch that can be locked in only the “OFF” position shall be provided. This shall be locked whenever work is being done on the auger.

The reset and starting controls must be located so that the operator has full view of the entire operation.

Do Not enter the grain bin unless all power driven equipment has been shut down and locked out.



Make certain electric motor is grounded.

Disconnect power before resetting motor overloads.

Shut off power and lockout whenever cleaning or servicing the auger.

The horsepower recommendations are based on clean, dry shelled corn or wheat. High moisture grain, above 15% will require greater power (the maximum possible capacity will be less with high moisture grain than with dry grain).

Always use a motor with the required power recommended in the chart below. Use a 60 Hz motor that operates at 1750 RPM (50 Hz @ 1460 rpm's).

Electric motors and controls shall be installed by a qualified electrician and must meet the standards set by the National Electric Code and all local and state codes.

A magnetic starter should be used to protect your motor when starting or stopping. It should stop the motor in case of power interruption, conductor fault, low voltage, circuit interruption and/or motor overload. The motor should then be restarted manually.

The horsepower (*kw*) recommendations are based on clean, dry shelled corn or wheat. High moisture grain (above 15%) will require greater power.

The maximum possible capacity will be less with high moisture grain than with dry grain. Use the table below to determine size of motor required.

Bin Dia.	Horizontal Head		25 Degree Head		Vertical Head		Lowboy Head	
	6"	8"	6"	8"	6"	8"	6"	8"
15'	3 hp (2.2 kw)	3 hp (2.2 kw)	3 hp (2.2 kw)	5 hp (4 kw)	3 hp (2.2 kw)	5 hp (4 kw)	6" x 20'	8" x 20'
18'	3 hp (2.2 kw)	3 hp (2.2 kw)	3 hp (2.2 kw)	5 hp (4 kw)	3 hp (2.2 kw)	5 hp (4 kw)	5 hp (4 kw)	7.5 hp (5.5 kw)
21'	3 hp (2.2 kw)	5 hp (4 kw)	5 hp (4 kw)	5 hp (4 kw)	5 hp (4 kw)	7.5 hp (5.5 kw)	All Others Up to 36'	All Others Up to 36'
24'	3 hp (2.2 kw)	5 hp (4 kw)	5 hp (4 kw)	5 hp (4 kw)	5 hp (4 kw)	7.5 hp (5.5 kw)		
27'	5 hp (4 kw)	5 hp (4 kw)	5 hp (4 kw)	5 hp (4 kw)	5 hp (4 kw)	7.5 hp (5.5 kw)		
30'	5 hp (4 kw)	5 hp (4 kw)	5 hp (4 kw)	7.5 hp (5.5 kw)	7.5 hp (5.5 kw)	7.5 hp (5.5 kw)		
33'	5 hp (4 kw)	5 hp (4 kw)	5 hp (4 kw)	7.5 hp (5.5 kw)	7.5 hp (5.5 kw)	7.5 hp (5.5 kw)		
36'	5 hp (4 kw)	5 hp (4 kw)	5 hp (4 kw)	7.5 hp (5.5 kw)	7.5 hp (5.5 kw)	7.5 hp (5.5 kw)	7.5 hp (5.5 kw)	10 hp (7.5 kw)
39'	—	7.5 hp (5.5 kw)	—	10 hp (7.5 kw)	—	—	—	—
42'	—	7.5 hp (5.5 kw)	—	10 hp (7.5 kw)	—	—	—	—
48'	—	7.5 hp (5.5 kw)	—	10 hp (7.5 kw)	—	—	—	—

OPERATING PROCEDURES

FLIGHT SPEED INFORMATION

Proper auger flight speed is important for efficient operation of the Power Sweep.

1. If the flight speed is too fast, excessive wear will result.
2. If the flight speed is too slow and the auger flighting is permitted to “load-up”, high torque will be required to turn the auger flighting, this can result in damage to the auger. Use the well slide-gates to control the amount of grain fed into the unloading tube.

	Horizontal Head		25 Degree Head		Vertical Head		Lowboy Head	
	6"	8"	6"	8"	6"	8"	6"	8"
Motor Pulley Dia.*	3.5" O.D. (89 mm)	3.5" O.D. (89 mm)	3.5" O.D. (89 mm)	3.5" O.D. (89 mm)	4.5" O.D. (114 mm)	4.5" O.D. (114 mm)	3.5" O.D. (89 mm)	4.5" O.D. (114 mm)
Driven Pulley Dia.	12" O.D. (305 mm)	15" O.D. (381 mm)	12" O.D. (305 mm)	15" O.D. (381 mm)	12" O.D. (305 mm)	12" O.D. (305 mm)	12" O.D. (305 mm)	15" O.D. (381 mm)
Unloading Auger Speed	490 RPM	390 RPM	490 RPM	390 RPM	440 RPM	440 RPM	620 RPM	510 RPM
Sweep Auger Speed	290 RPM	230 RPM	290 RPM	230 RPM	260 RPM	260 RPM	366 RPM	301 RPM

* Motor pulleys are not furnished with auger.

START-UP INFORMATION



WARNING! Make certain everyone is clear before operating the equipment.

The operator shall be aware of any unusual vibrations or noises that would indicate the need for service or repair.

Keep all safety shields and devices in place.



Keep hands, feet and clothing away from moving parts.

The operator should have a full view of the entire auger work area and check that all personnel are clear of the designated work area before adding power.

Never attempt to control operation of the sweep auger by pushing on the operating sweep auger with shovels, brooms or other devices.



Do Not attempt to restrain movement of sweep auger by attaching ropes, bars or other devices to be held by an operator.

During the operation of the auger, one person shall be in a position to monitor the operation. Inspect the drive before adding power and know how to shutdown in an emergency (See Shutdown/Lockout). Visually inspect the auger periodically during operation.

Ensure all fasteners are tight, and that all guards are in place.

DESIGNATED WORK AREA



WARNING! Under no circumstances should persons not involved in the operation be allowed to trespass into the work area.



It shall be the duty of all operator's to see that children and/or other persons stay out of the work areas. Trespassing into the work area by anyone not involved in the actual operation, or trespassing into a hazard area by anyone shall result in immediate shutdown by the operator.



It shall be the responsibility of the operator's to see that the work area has secure footing, is clean and free of all debris and tools which might cause accidental tripping, falling or other injuries.



It shall also be their responsibility to keep the work area clean and orderly during the operation.



Use caution when working in areas above the ground. Persons operating, servicing or repairing equipment that requires above ground work shall be properly secured with the use of "fall protection" equipment as set forth by OSHA guidelines and regulations.



Metal buildings, scaffolding and other types of work surfaces can become slippery, especially when surfaces are wet and/or oily. This can create hazardous working conditions. Use caution when working, climbing or walking on these surfaces.



Do Not enter the grain bin unless all power driven equipment has been shutdown and locked out.

Before starting the auger, a designated work area should be established and properly marked.

These areas shall be marked off with colored nylon or plastic rope or banners hung as portable barriers to define the designated work area.

All operator's shall know how to **shutdown and lock-out the equipment in the event of an emergency.**

ELECTRIC DRIVE SHUTDOWN/LOCKOUT



WARNING! If the operator must leave the work area, or whenever servicing or adjusting, the auger/conveyor must be stopped and the power source turned off and locked out.



Precaution should be made to prevent anyone from operating the auger/conveyor when the operator is away from the work area.

Emergency Shutdown

Should the auger be immediately shutdown under load, stop the flow of grain into the auger by closing the well gates. **Disconnect and lockout the power source.**

Clear as much grain from the auger as you can.

When as much grain as possible has been cleared, reconnect the power source and clear the grain gradually (it may be necessary to start and stop the auger to gradually empty itself).

Never attempt to restart auger when full of grain. Starting the unit under load may result in damage to the unit, such damage is considered abuse and is not covered by warranty.

Normal Shutdown

Stop the flow of grain into the unload auger and let unit empty itself out before stopping. **Before the operator leaves the work area, the power source shall be locked out** (See "Lockout" below).

Intermittent Shutdown

When an auger is stopped and restarted under full load, it may result in damage to the auger and components. Therefore if intermittent operation is to be carried out, it is advisable to reduce the load level.


When kept from absolute filling, auger start-up is easier and operation more efficient.


Lockout

The power source for electric units shall have a main disconnect box that can be locked only in the "Off" position. That is what "shutdown and lockout" refers to - Shut off the main power source and **lock the handle or breaker switch in the "Off" position.**


OPERATING PROCEDURES

FULL LOAD OPERATION

 **WARNING!** Observe the work area restrictions.
Make certain everyone is clear of the area before operating the equipment.

 **Do Not enter the bin if the grain has “Bridged” or has not flowed normally out of the bin, See Fig’s. 1 and 2. The grain may suddenly break loose and bury resulting in suffocation.**

Do Not enter the bin unless all power driven equipment has been shutdown and locked-out.

 **Never enter the bin unless monitored by another person.**

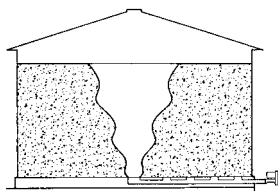


Fig. 1
(Abnormal Flow)

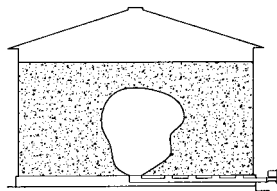
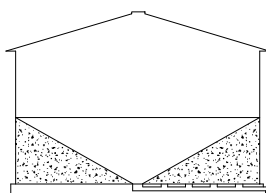


Fig. 2
 (“Bridging”)

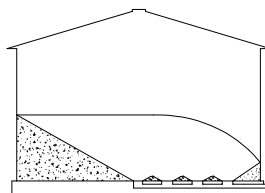
A sweep auger can be placed in the bin after all the grain has been removed that will gravity-flow through the center and intermediate bin wells.

The grain remaining in the bin should appear as shown in the illustrations below.

Intermediate wells should only be opened **after** grain has stopped flowing into the center well, and **before** the sweep auger is placed in the bin. **Shut down and lockout before installing the sweep auger.**



Grain Flow Through
Center Bin Well



Grain Flow Through
Intermediate Wells

To Start Auger Operation


1. Start the motor for the unload auger/conveyor before augering grain.
2. With unload auger operating, use the control handle on the outside of the bin and gradually open the center well gate until desired flow is established, it should not be necessary to open the gate more than 3” to 6” (76 to 152 mm) to acquire full load (Refer to Page 11 for control handle operation. The lynch pin should be removed so only the center well gate can be opened).

Do Not overload the auger. Starting the auger under load may result in damage to the auger.

3. When the natural gravity-flow of grain to the center well stops, close the center well gate and allow the unload auger to run until it cleans itself out.
4. Install the control handle lynch pin through the control pipes so it passes through both the center well and intermediate well control pipes.

Start the unload auger and gradually pull the control handle back opening the center well and intermediate well gates until desired flow is established, it should not be necessary to open the gates more than 2” to 4” (51 mm to 102 mm).

After all grain has been removed that will gravity-flow through the wells, close the well gates, let auger clean itself out then, **shut down and lockout power source.**

 **WARNING! Do Not enter the bin unless all power driven equipment has been shut down and locked out.**

5. The sweep auger can now be placed inside the bin. Moving the sweep auger requires manual lifting. Follow safety procedures to avoid injury. Wear appropriate PPE equipment.



6. Install the sweep auger in sub assemblies. Connect power source to sweep auger after installation into bin. **Electrical work shall be done by a qualified electrician and must meet all applicable standards set by the National Electrical Code and all state and local codes.**

FULL LOAD OPERATION (con't.)

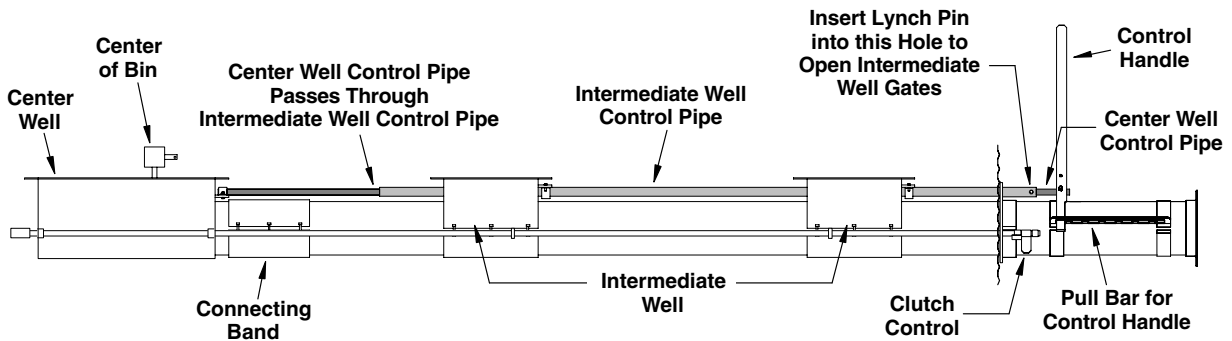
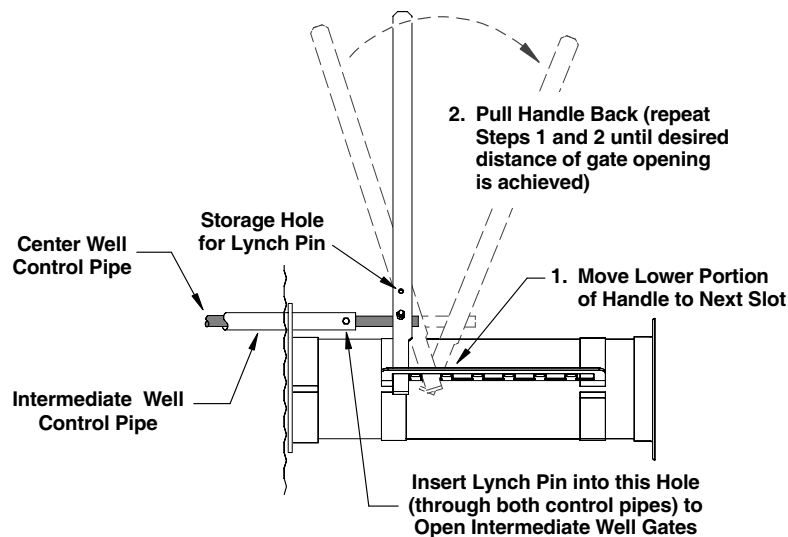


WARNING! Do Not enter the bin unless all power driven equipment has been shut down and locked out.

Rapidly traveling sweep auger. Keep out of bin when sweep auger is in operation.

The center well control pipe is run through the larger intermediate well control pipe. When opening just the center well gate, the lynch pin should be removed so only the center well control pipe is functional. When opening the intermediate well gates, the center well gate will also be opened. Align the holes in both control pipes and insert the lynch pin. This will allow the center well and the intermediate well gates to open.

To operate control handle when opening well gates, position the bottom portion of the handle into the next available slot in the pull bar. Pull handle back to slide gate(s) open. Repeat this procedure until well gates are opened to the desired distance. Use this same method for closing the well gates.



7. With electric power source to power sweep motor and unload auger shut down and locked out, open a belt drive guard and rotate the large sheave while pulling on the clutch control (the clutch control is the single pipe control at the lower left of the control handle, the pipe will move as the clutch is engaged). **Clear all personnel from inside the bin.**

Restore power and start the unload auger, the sweep auger will also start as the unload auger is started. Open the center well gate full open to readily receive grain from the sweep. The sweep auger will clear most grain after a few rotations. Refer to the Final Clean-Out Section on the following page (Page 12) for proper clean up. **Once grain has been cleared, shut down the sweep and the unloader and lockout the power source.**

OPERATING PROCEDURES

FINAL CLEANOUT

The following procedures are recommended for cleaning the floor of the bin after the sweep auger has removed as much grain as possible.

WARNING! Do Not enter the bin unless all power driven equipment has been shut down and locked out.

Keep out of bin while sweep auger is in operation. The sweep will move rapidly around the bin when the bin is nearly empty.

The intermediate well gates should be closed to prevent accidentally stepping into the well(s).

1. With the power source shut down and locked out, clean (scoop and sweep by hand) the outer area of the floor into a circular pile towards the center of the bin (See Fig. 3).

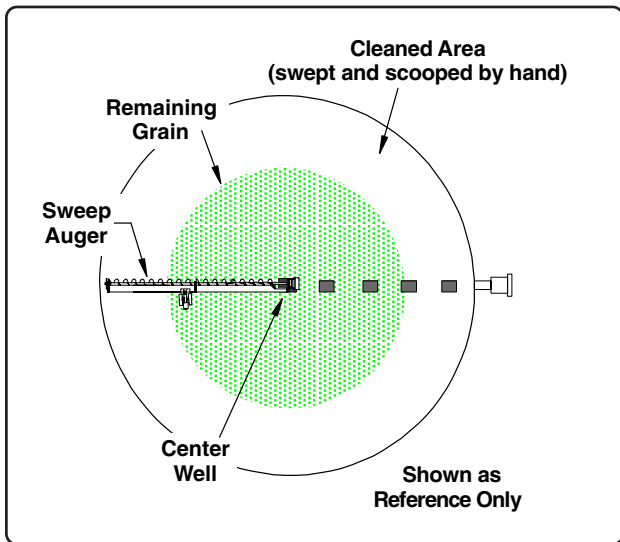


Fig. 3

2. Clear everyone out of the bin. After making sure everyone is outside the bin and clear of the equipment, restore power to unload auger and sweep. In a short time, the circular pile towards the center of the bin will have been reduced.

3. Shut down and lockout the power source to the unload auger and sweep auger. Clean (scoop and sweep by hand) the remaining floor area into a circular pile towards the center of the bin (See Fig. 4).
4. Clear everyone out of the making sure everyone is outside the bin and clear of the equipment. Restore the power source to the unload auger and sweep. In a few rotations the circular pile will have been reduced again. Repeat Steps 1 thru 4 until all grain has been removed from the bin.

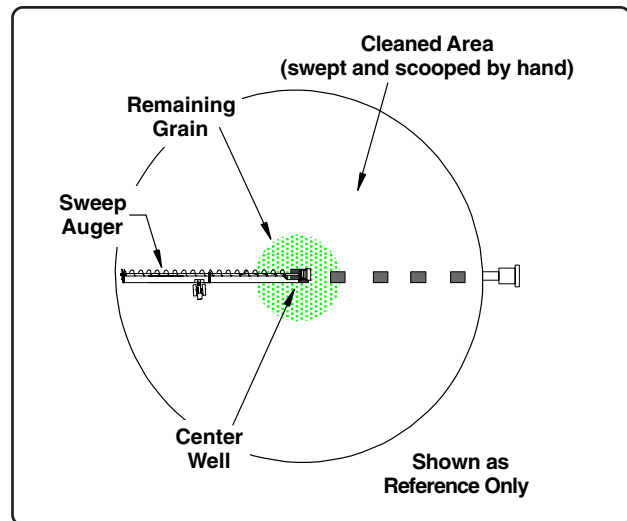


Fig. 4

GENERAL MAINTENANCE INFORMATION

 **WARNING!** Shut off power and lockout before attempting to adjust, service, clean or repair the auger or any of its components.

 Keep hands, feet and clothing away from moving parts.

 Make sure all safety devices, shields and guards are in place and functional. Immediately replace any that are damaged or missing.

 Never rely solely on mechanical or hydraulic jacks for support. Use jack stands or equivalent for support.

For economical and efficient operation of your auger, maintain regular and correct lubrication, maintenance and service schedules. Neglect leads to reduced efficiency, excessive wear and needless down time.

Any parts needing replacement should be replaced with parts of the same type and size. **Do Not modify or alter any of the auger components.**

SWEEP DRIVE WHEEL

During the assembly procedures for the sweep, it is necessary to pump approx. 2 oz. (59.15 ml) of a good quality SAE multi-purpose grease into the drive wheel assembly. Thereafter, add 2 to 3 pumps of grease to the drive wheel annually. It is important to keep the chain drive inside the wheel assembly properly greased.

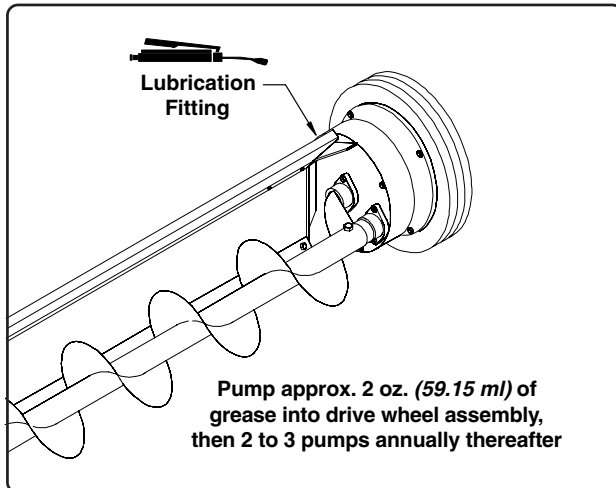


Fig. 5

GUARDS

Check the guards to see if they are properly adjusted and securely fastened. Guards should not contact any moving parts and should be kept in place during sweep auger operation.

Immediately replace any guard that has become worn or damaged.

Ensure all safety decals are legible, replace any that are worn or missing.

GEARBOX OIL LEVEL

Prior to assembly, remove the solid plug from the rear side of each gearbox and replace with the provided vent/fill plug. Check the oil level in the gearbox by removing the oil level check plug on the side of each gearbox, oil should be up to the plug level (See Fig. 6).

Use an SAE 90 weight multi-purpose gear oil when adding oil. To add oil, remove the level check plug from the side of the gearbox and remove the vent/fill plug.

Add oil until it begins to flow from the level check plug opening. Replace all plugs.

Capacity: approx. 10.5 oz. (.310 L) per gearbox

Oil level should be checked each time the unit is put into operation and at the start of each new season.

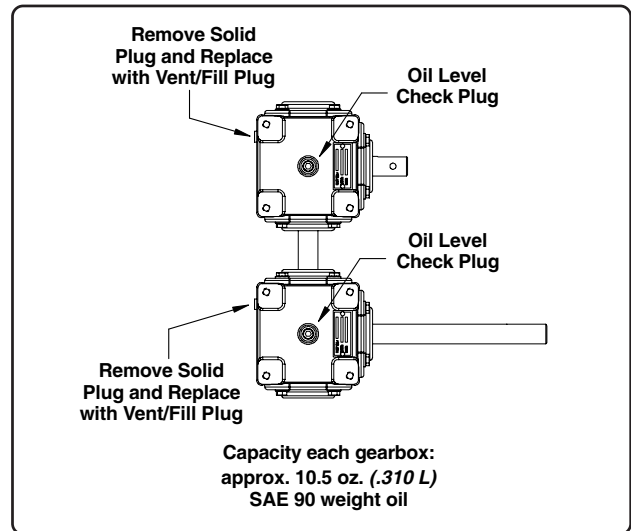


Fig. 6

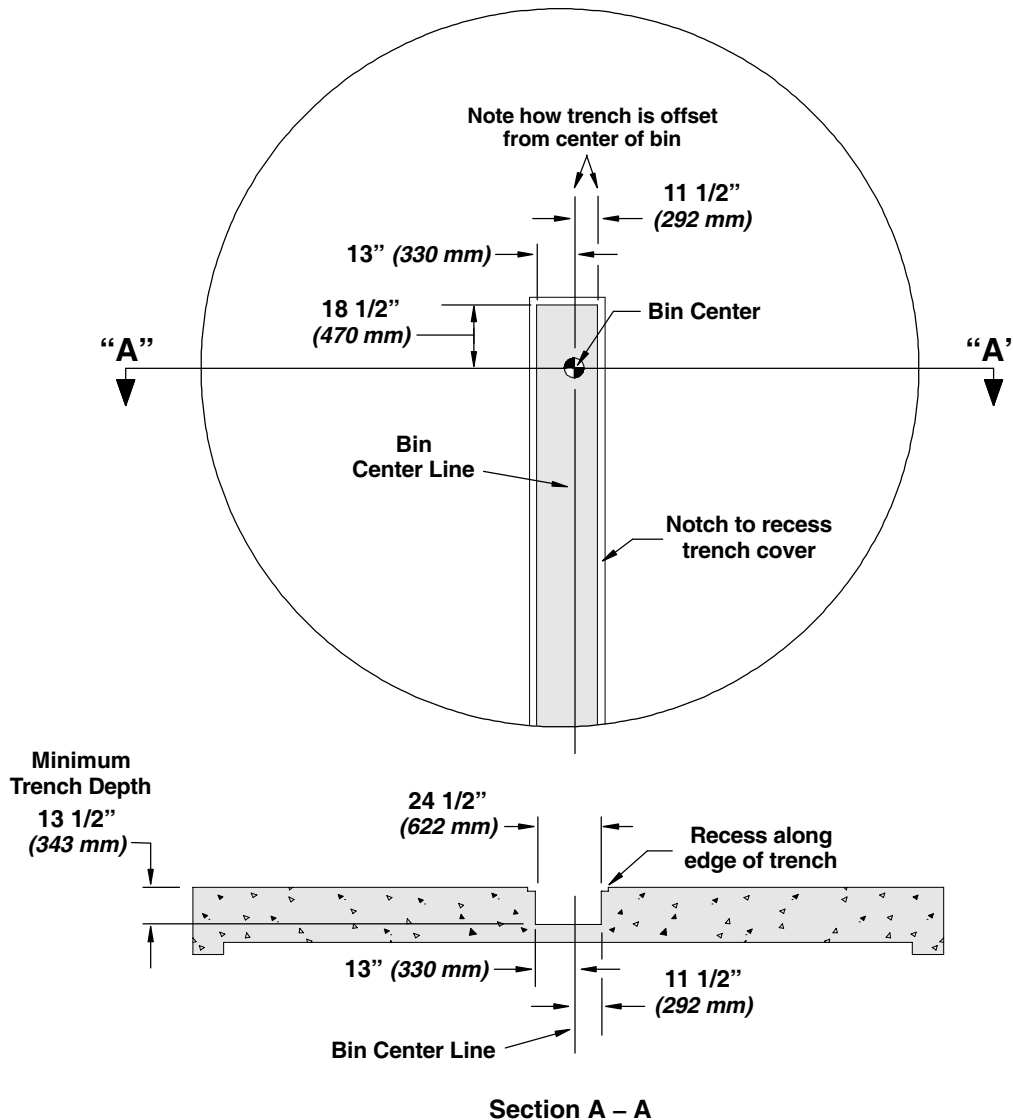
ASSEMBLY INSTRUCTIONS

CONCRETE TRENCH LAYOUT

Concrete should not be poured around the unloading auger components. For installation of augers into grain bins with concrete floors, a pre-formed trench should be made in the floor that will accept the auger, wells and controls. See illustration below for minimum trench dimensions and relative position of the trench to the center of the bin.

Note: The off-set design of the center well requires that the trench be off-set also, so that the vertical shaft between the gearboxes is located in the center of the bin.

A recess should be formed around the outer top of the trench for material used to cover the trench. The depth required for this recess depends on thickness of material used to cover the trench. One fourth inch (6 mm) thick steel plate is often used.



UNLOADING AUGER AND BIN WELLS

The illustration below shows the typical layout of the center and intermediate wells. The chart and illustration on Page 17 gives the appropriate dimensions for well location according to various bin diameters.

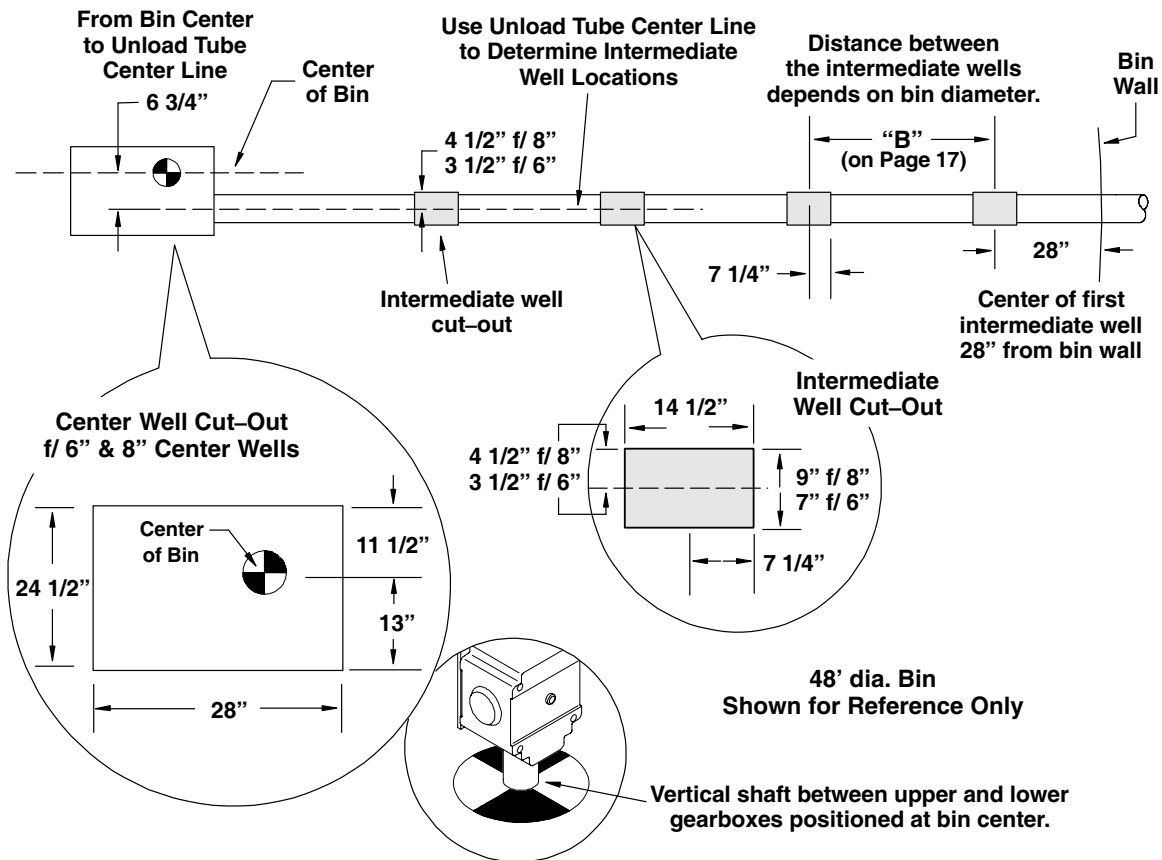
For bins with raised metal floors, it is necessary to cut openings in the floor for the center well and intermediate wells. Make sure the metal floor is at least 13" (330 mm) above the concrete base so there is space for the wells.

Supports should be placed beneath all bin wells so the flange of the well above the floor is not bearing the weight of the wells.

It will be convenient to complete assembly of the bin floor as the unloading auger is being installed for better access to components under the floor.

1. Locate the center of the bin and make a cut-out in the bin floor for the center well (See illustration below). When positioning the center bin well into place, locate the vertical shaft from the top gearbox at bin center. Place suitable supports under the center well to hold it in position.

Top View of Cut-Outs for Center and Intermediate Wells in Bin Floor



The distances between the bin wall, intermediate well(s) and the center well should all be equal. Different diameter bins may require more than one intermediate well. Refer to the chart on Page 17 for correct measurements.

Inches to millimeter equivalent:

3 1/2" .. (89 mm)	7"	(178 mm)	9"	(229 mm)	14 1/2" .. (368 mm)
4 1/2" .. (114 mm)	7 1/4" .. (184 mm)	11 1/2" .. (292 mm)	24 1/4" .. (622 mm)		
6"	(152 mm)	8"	(203 mm)	13"	(330 mm)
6 3/4" .. (171 mm)				28"	(711 mm)

ASSEMBLY INSTRUCTIONS

UNLOADING AUGER AND BIN WELLS (con't.)

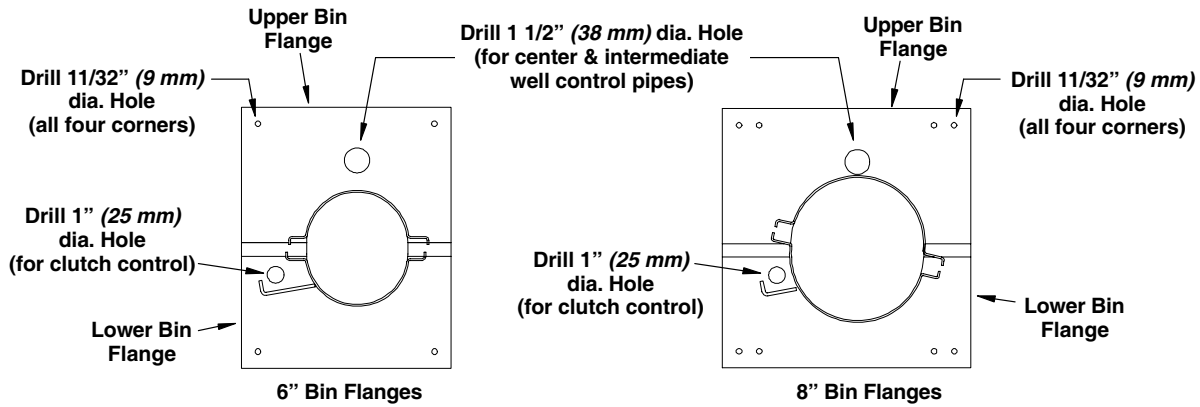
2. Use the bin flange as a template to locate and mark the opening's to be cut out of the bin wall for the unloading tube, the center and intermediate well control pipes, and the clutch control pipe (locate the unload tube opening the same distance below the floor as the auger tube connected to the center well). Mark each of the holes in all four corners for mounting the bin flanges.

After marking the appropriate locations, cut an opening in the bin wall for the unload tube.

Cut a 1 1/2" (38 mm) dia. hole for the center and intermediate well control pipes (See illustration below).

Cut a 1" (25 mm) dia. hole for the clutch control pipe (See illustration below).

Drill an 11/32" (9 mm) dia. hole at each of the four corner marks.

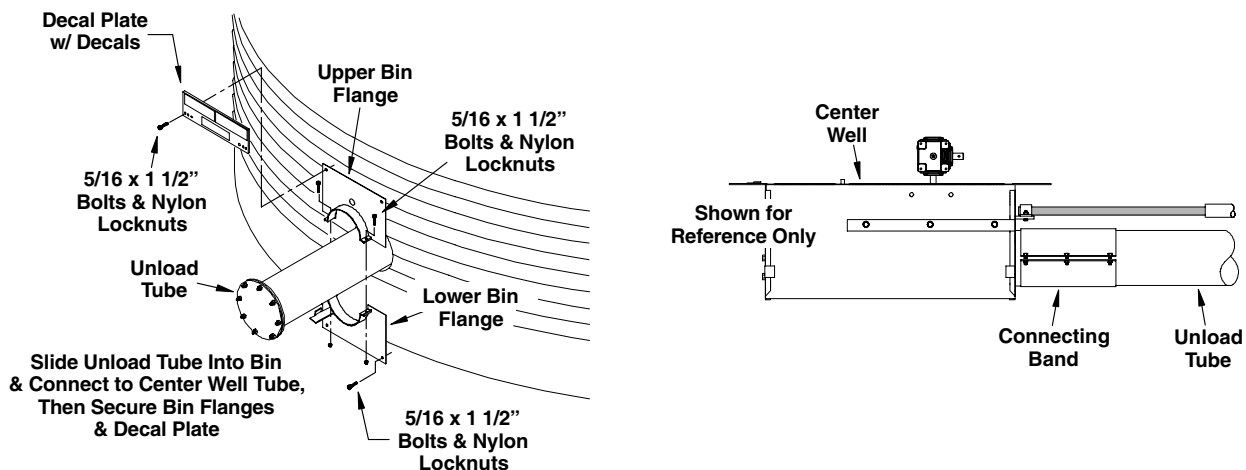


Use Bin Flanges as Templates to Mark Cutouts

3. Slide the unloading tube through the bin wall and align the end of the tube so it contacts the tube extension on the center well. Secure the tubes together using a 12" (305 mm) long connecting band, 5/16 x 1 1/2" bolts and locknuts (the unloading tube should be tight against the tube extending from the center well). **For weld-on wells, the tubing needs to be installed from the inside of the bin, and inserted through the opening cut in the bin wall.**

Attach the bin flange to the auger tube as shown in below. Loosely secure the bin upper and lower flanges together using two 5/16 x 1 1/2" bolts and locknuts (tighten only enough to allow the flange to slide on the tube).

Slide the flange against the bin wall and insert a 5/16 x 1 1/2" bolt through the two lower corners. Position the Decal Plate on the upper section of the bin flange and insert two 5/16 x 1 1/2" bolts through the plate, the flange and bin wall. Secure the four bolts using the locknuts provided.

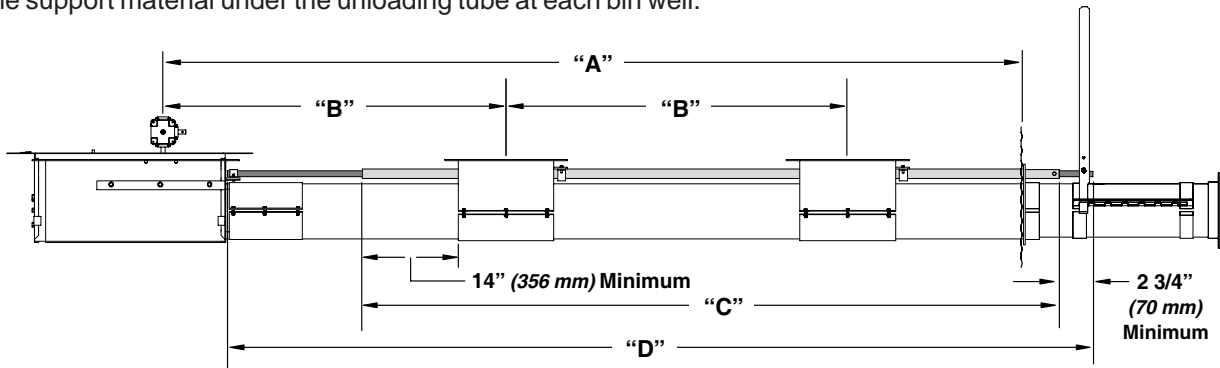


UNLOADING AUGER AND BIN WELLS (con't.)

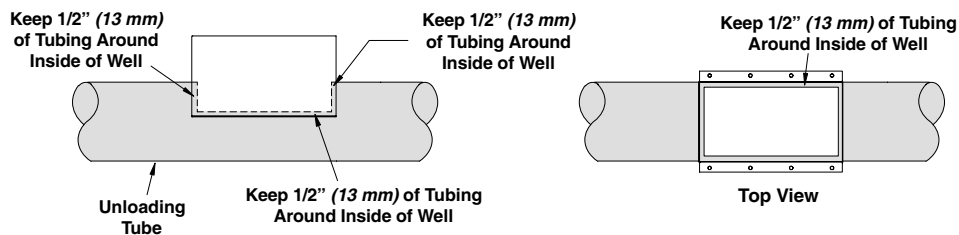
4. Locate the intermediate wells using the chart below to determine distance between the wells (**weld-on wells will already be properly positioned, the floor can then be installed around the bin wells**). Cut openings in the bin floor for the intermediate wells using the cut-out dimensions shown on Page 15. The number of wells depends on bin size.

After the bin floor openings have been cut, place the intermediate wells directly over the unloading tube. Mark the tube around the inside of the well leaving at least 1/2" (13 mm) of tube extending inside the well on all four sides (See illustration below). Cut the openings in the tube (**Do Not cut the openings with the unload flight in the tube, damage to the flight can occur**). Make sure the inside of the tube is smooth where the cuts are made and retrieve all pieces of the cut material from inside the tube.

Position the intermediate wells so the gate opens towards the bin wall and secure into place using the half bands (**make sure the intermediate wells are positioned so the gate opens toward the bin wall**). Place the support material under the unloading tube at each bin well.



**Intermediate Well Cut-Out
(Shown as Reference Only)**



Bin Dia.	Number of Intermediate Wells	Distance from Center of Bin to Wall (A)	Distance Between Wells (B)	Length of Int. Well Control Pipe (C)	Length of Center Well Control Pipe (D)	Length of Clutch Control Pipe (not shown)
15' (4.57 m)	1	7'-6" (2.29 m)	3'-9" (1.14 m)	5'-9" (1.75 m)	7'-0" (1.75 m)	10'-0" (3.05 m)
18' (5.49 m)	1	9'-0" (2.74 m)	4'-6" (1.37 m)	6'-6" (1.98 m)	8'-6" (1.98 m)	11'-6" (3.51 m)
21' (6.40 m)	2	10'-6" (3.20 m)	3'-6" (1.07 m)	9'-0" (2.74 m)	10'-0" (2.74 m)	13'-0" (3.96 m)
24' (7.32 m)	2	12'-0" (3.66 m)	4'-0" (1.22 m)	10'-0" (3.05 m)	11'-6" (3.05 m)	14'-6" (4.42 m)
27' (8.23 m)	2	13'-6" (4.11 m)	4'-6" (1.37 m)	11'-6" (3.35 m)	13'-0" (3.35 m)	16'-0" (4.88 m)
30' (9.14 m)	2	15'-0" (4.57 m)	5'-0" (1.52 m)	12'-0" (3.66 m)	14'-6" (3.66 m)	17'-6" (5.33 m)
33' (10.06 m)	3	16'-6" (5.03 m)	4'-1.5" (1.26 m)	14'-5" (4.39 m)	16'-6" (4.39 m)	19'-6" (5.94 m)
36' (10.97 m)	3	18'-0" (5.49 m)	4'-6" (1.37 m)	15'-6" (4.72 m)	17'-6" (4.72 m)	20'-6" (6.25 m)
39' (11.89 m)	3	19'-6" (5.94 m)	5'-0" (1.52 m)	16'-5" (5.00 m)	19'-0" (5.00 m)	22'-0" (6.71 m)
42' (12.80 m)	4	21'-0" (6.40 m)	4'-3" (1.30 m)	19'-0" (5.79 m)	20'-6" (5.79 m)	23'-6" (7.16 m)
48' (14.63 m)	4	24'-0" (7.32 m)	5'-2" (1.57 m)	21'-2" (6.45 m)	23'-6" (6.45 m)	26'-6" (8.08 m)

ASSEMBLY INSTRUCTIONS

UNLOADING AUGER AND BIN WELLS (con't.)

5. Once all wells have been properly positioned, installed, and supports have been placed beneath the wells, slide the "unloading flight" (**squared end towards center of bin**) into the unloading tube and connect it to the drive shaft on the center bin well's gearbox (**the flight will align itself with the tapered end of the drive shaft, although it may be necessary to rotate the flight a little in order to align the squared ends**).

6. **For band-on bin wells**, install intermediate well control pipe as detailed in the following. Shut the intermediate bin well gate(s).

Check the length of the 1 3/8" (38 mm) dia. control pipe for intermediate wells by sliding it into place passing through all intermediate wells (the control pipe should extend a minimum of 14" (356 mm) past the last well in the group, See Fig. 7 below). The control pipe has a predrilled hole at one end, this end will go to the outside of the bin.

Note: The hole at the end of the pipe will align with the hole in the center well control pipe on the outside of the bin. Before drilling the hole into the intermediate well pipe for placement of the dimple on the gate clamp (See Step 7), it is suggested to temporarily install the control handle and pull bar half bands to determine orientation of hole alignment when the center well pipe is connected to the control handle. Otherwise, a hole will need to be drilled through the center well pipe in order to connect the two pipes together. See control handle installation on Page 20.

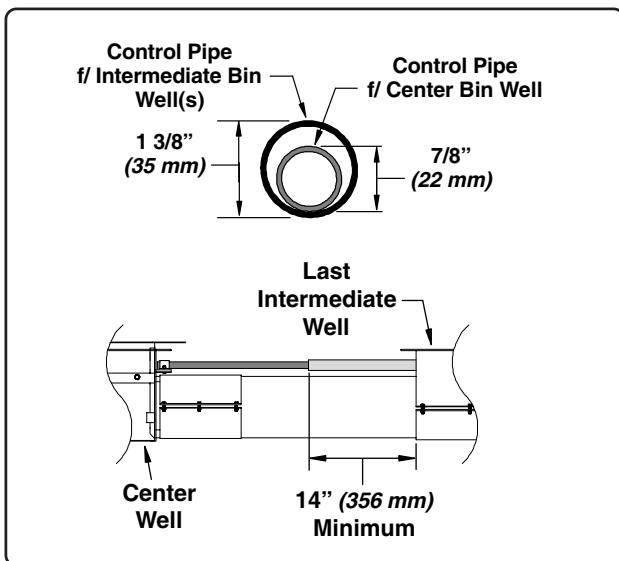


Fig. 7

7. Determine the location on the control pipe where the gate clamps will be fastened onto the well gate. Note the dimple on the gate clamp, drill a 3/8" (10 mm) dia. hole through one side of the 1 3/8" O.D. control pipe so when the clamp is attached to the gate, the dimple will fit into this hole.

Fasten the gate clamp to the control gate and control pipe. Secure using two (2) 5/16" x 1" long bolts, lock washers and nuts (See Fig. 8).

Secure two 5/16" x 1" bolts, lock washers and non-lock nuts into the two holes on the rear of the control gate. This is so the gate cannot be accidentally pulled completely out of the well.

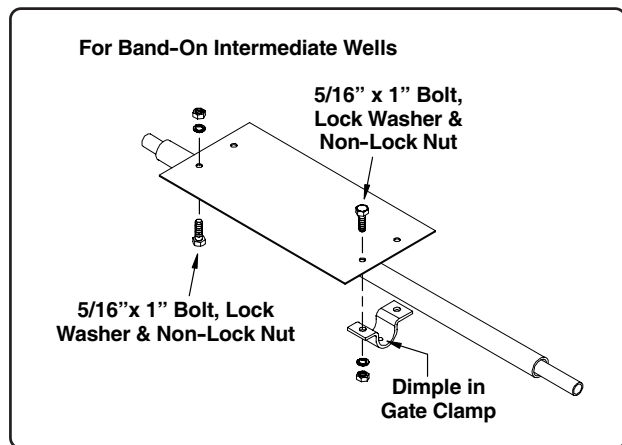


Fig. 8

8. **For weld-on bin wells**, install intermediate well control pipe as detailed in the following. Shut the intermediate bin well gate(s).

Check the length of the 1 3/8" (38 mm) dia. control pipe for intermediate wells by sliding it into place passing through all intermediate wells (the control pipe should extend a minimum of 14" (356 mm) past the last well in the group, See Fig. 7).

The control pipe should also have one end with a predrilled hole in it, this end will go to the outside of the bin.

9. After proper length has been determined, pull the control pipe back to the first well gate. Position a lock collar on the inside of the gate and slide the pipe through the collar and through the intermediate well (See Fig. 9).

Continue this procedure with the remaining wells until the end of the control pipe extends the minimum 14" (356 mm) past the last well.

UNLOADING AUGER AND BIN WELLS (con't.)

10. Now you can secure the lock collar(s) to the control pipe (a portion of the collar will be protruding through the cut-out in the gate as shown in Fig. 9).

Secure two 5/16" x 1" bolts, lock washers and non-lock nuts into the two holes on the rear of the control gate. This is so the gate cannot be accidentally pulled completely out of the well.

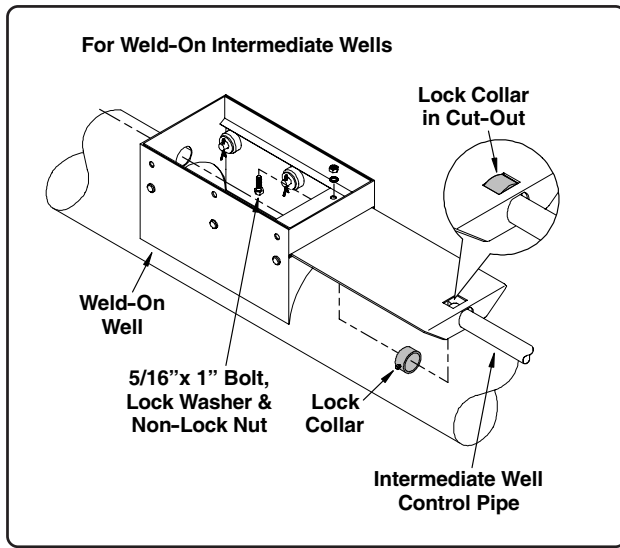


Fig. 9

11. Make sure the center well control gate is closed. Slide the 7/8" (22 mm) dia. control pipe through the larger intermediate well control pipe so it can be attached to the center well control gate (the control pipe should have one predrilled hole at one end, and three predrilled holes at the other, the end with one hole will go towards the center well).

In larger diameter bins, an extension will be used. This extension will have the three holes at one end with the other end tapped (inside threads) for attachment to the first control pipe coming from the center well.

Check the length of the center well control pipe on the outside of the bin. In order for the intermediate well pipe to be connected to the center well pipe, there needs to be a minimum of 2 3/4" (70 mm) of the center well pipe extending past the end of the intermediate well pipe (See Fig. 10).

12. Attach the control pipe to the control gate by sliding a 5/16" x 1 3/4" roll pin through the clamp and the predrilled hole in the control pipe. Fasten clamp to top side of control gate using two (2) 5/16" x 3/4" carriage bolts, flat washers, lock washers and nuts. Install the nuts so they secure the roll pin in place (See Fig. 10).

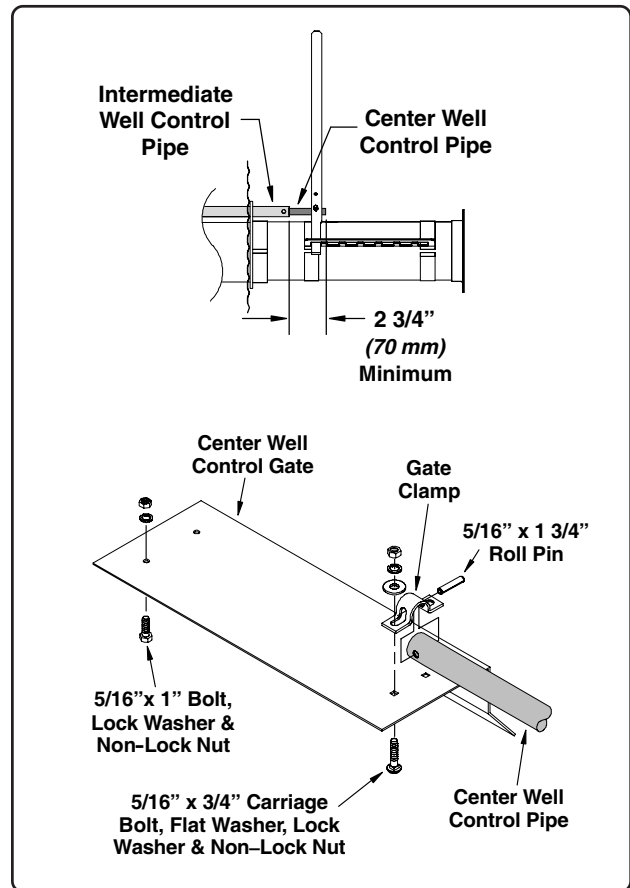


Fig. 10

13. Secure two 5/16" x 1" bolts, lock washers and non-lock nuts into the two holes at the rear of the control gate. This is to ensure the gate cannot be accidentally pulled completely out of the well (See Fig. 10).

ASSEMBLY INSTRUCTIONS

ASSEMBLE CONTROL HANDLE

1. On the outside of the bin, position the half-bands around the unload tube with the edge of the one closest to the bin wall approximately 4" (102 mm) from the wall (See illustration below).

Attach the "pull bar" to the top of the half-bands and loosely secure half-bands and pull bar using 5/16" x 1 1/2" bolts and nylon locknuts (insert bolts from the bottom).

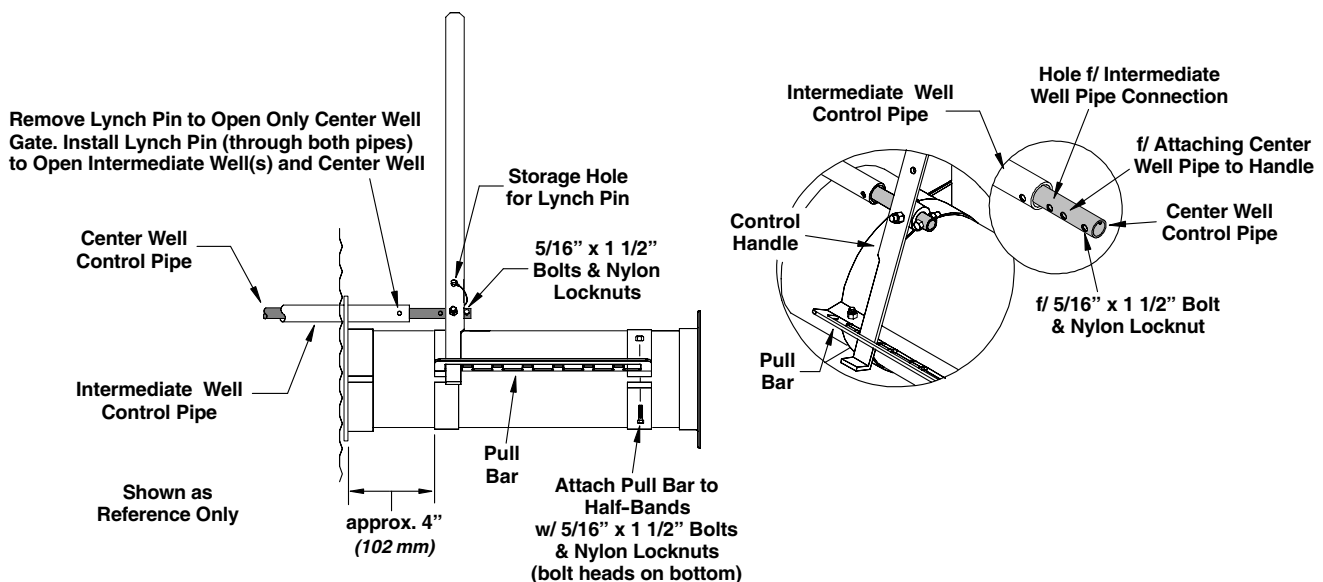
2. Install the handle into the pull bar inserting the bent end of the handle into the notched slot on the pull bar (the center well mount tube on the handle should be oriented so the center well control pipe can be inserted through the mount tube. Rotate the half-bands and pull bar so the center well control pipe can be inserted into the mount tube on the control handle (See illustration below). After the mount tube on the handle and center well pipe are properly aligned, tighten the bolts securing the half-bands and pull bar.

There are three (3) holes in the end of the center well pipe. The middle hole is used to attach the center well pipe to the mount tube on the handle using one 5/16" x 1 1/2" bolt and nylon locknut (**do not tighten completely the handle should be able to pivot some when moving it from slot-to-slot in the pull bar**).

The hole closest to the end of the pipe does not attach to anything, but insert a 5/16" x 1 1/2" bolt through it and secure with a nylon locknut. The hole nearest the bin is used for connecting the intermediate well pipe to the center well pipe using the lynch pin (this hole alignment was the reason for waiting to drill the hole for the dimple on the intermediate well pipe gate clamp).

If it is necessary to drill a hole for the lynch pin to pass through both pipes, make sure all intermediate well gates are closed. Use the handle to close the center well gate. Use the existing hole in the intermediate well pipe for a guide and drill a 3/8" (10 mm) dia. hole through the center well pipe. Check to ensure the lynch pin passes through both pipes.

Check well gate operation. Remove the lynch pin and pull handle back to open center well gate. To open gate farther if desired, pivot the handle so the bottom portion is in the next slot back and pull handle again. Close gate in the same manner reversing the sequence. With center well gate closed, insert the lynch pin through both pipes and open center well gate and intermediate well gate(s).



INSTALL CLUTCH CONTROL PIPE

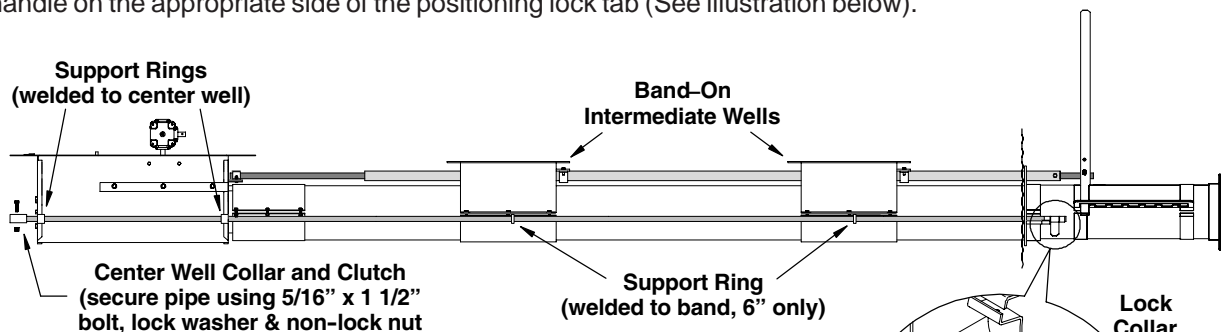
1. For **intermediate bin wells that are welded** to the unloading housing, bolt the clutch control pipe brackets to the well using two 5/16" x 3/4" bolts and nylon locknuts (See illustration below).

For **band-on intermediate wells**, the 6" wells already have a clutch guide support ring welded to the bottom half-band (ensure the half-bands are aligned the whole length of the unload auger housing). The 8" band-on wells use a clutch guide-bracket that is bolted onto the bottom half-band using the existing hardware on the half-band (the bracket can be attached to any one of the existing bolts, See illustration below).

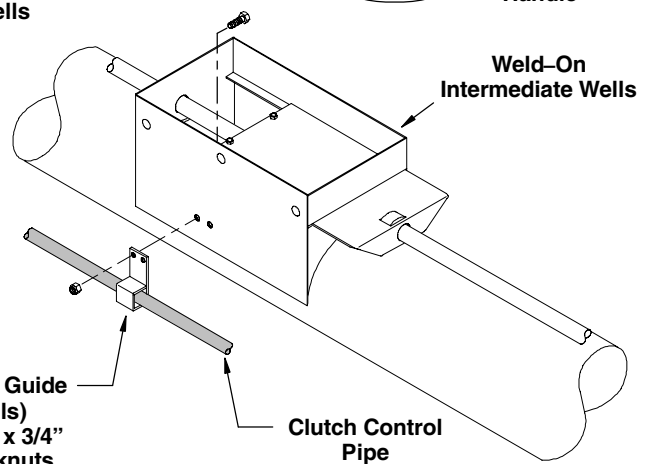
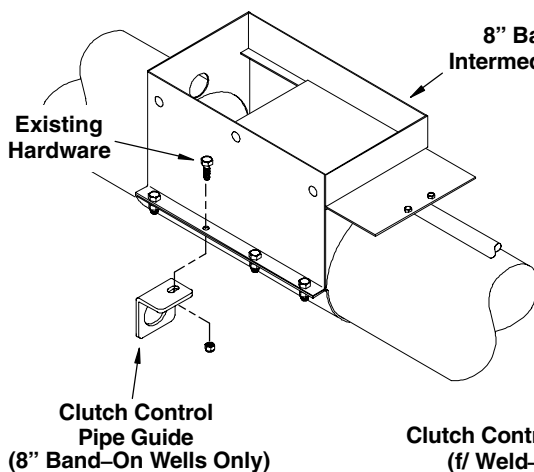
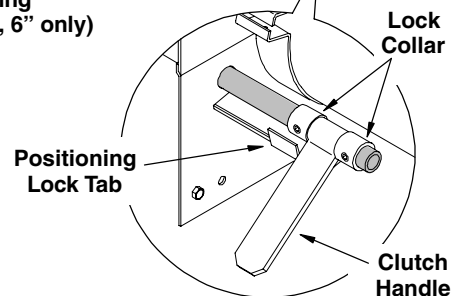
2. Slide the clutch control pipe through the bin flange and the support rings (or control guide-brackets) on the intermediate and center wells. Slide control pipe into the collar at the bottom rear of the center well. Bolt control pipe to the collar using a 5/16" x 1 1/2" bolt, lock washer and non-lock nut.

Attach the clutch handle to outer end of the clutch control rod by installing a lock collar on both sides of the handle (See illustration below). Pull **clutch control rod** to fully engage the clutch in the center well, then position the control handle on the **outside of the position lock tab** and tighten the lock collars on both sides of the handle.

Check operation of clutch by pulling the handle to engage the clutch and then pushing the handle to disengage. Control pipe should slide freely. Lock control pipe into the engaged or disengaged position by positioning the handle on the appropriate side of the positioning lock tab (See illustration below).



The 6" band-on wells already have the support ring welded to the lower back band. The 8" band-on wells need to have a clutch rod guide bracket attached to the lower band (use existing hardware to attach the rod guide as shown below).



The weld-on intermediate wells need the clutch control pipe guides bolted to the side of the intermediate wells (both 6" & 8" augers).

ASSEMBLY INSTRUCTIONS

INSTALL SWEEP FLIGHT & BACK SHIELD

The following instructions have a reference number in parenthesis (). This number refers to the item shown in the assembly illustration below.

1. Assemble the flight and shield to the sweep wheel (See illustration below). **Note: if there are three (3) sections of flights and shields, the shield that measures 86 1/4" long MUST be placed in the middle.**

Pump approximately 2 oz. (59.15 ml) of a good quality multi-purpose grease into the sweep wheel drive enclosure (See "Lubrication" Section on Page 13).

Apply an anti-seize compound to the sweep wheel stub. Slide the bushing (Ref. 2) onto the sweep wheel stub aligning the hole in the bushing with the slotted hole in the wheel stub.

Apply an anti-seize compound to the bushing. Slide the flight (Ref. 3) onto the bushing. Note the two holes at the end of the flight shaft, using the hole closest to the end of the flight, bolt the flight, bushing and wheel stub together using a 3/8" x 2 1/2" bolt and nylon locknut. Fasten the shield (Ref. 4) to the sweep wheel using four (4) 5/16" x 3/4" bolts, flat washers and nylon locknuts (the shield should attach to the inside of the mount plate attached to the sweep wheel).

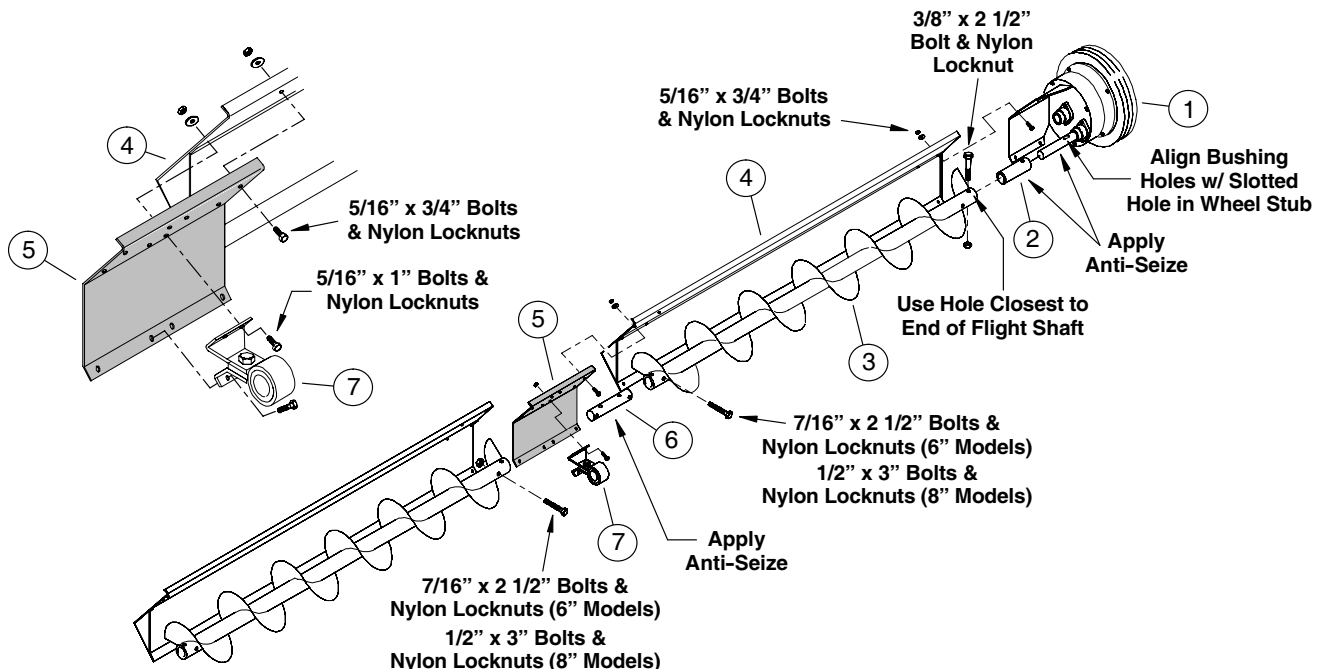
2. If your sweep has more than one section, bolt sections of shields and flights together as follows:
Apply anti-seize compound to one end of the flight stub (Ref. 6). Install the flight stub into the end of the flight previously attached to the sweep wheel. Secure using two (2) 7/16" x 2 1/2" bolts and nylon locknuts for 6" Power Sweeps, or two (2) 1/2" x 3" bolts and nylon locknuts for 8" Power Sweeps.

Slide the shield bearing hanger (Ref. 7) onto the flight stub. Apply anti-seize compound to the other end of the flight stub (Ref. 6) and bolt the next section of flight to the stub using two (2) 7/16" x 2 1/2" bolts and nylon locknuts for 6" Power Sweeps, or two (2) 1/2" x 3" bolts and nylon locknuts for 8" Power Sweeps.

Use four (4) 5/16 x 3/4" bolts, flat washers and nylon locknuts in the top and outside holes of the shield splice (Ref. 5) attaching it to the end of the shield previously bolted to the sweep wheel (the splice will mount to the flight side of the shield, the shields will be adjusted later in the assembly process, these bolts can be snug until adjustment of the shields has been made).

Place the next length of shield on top of the splice and align the mounting holes, secure the shield using four (4) 5/16" x 3/4" bolts, flat washers and nylon locknuts, see illustration below (these bolts can also be snug until shield adjustment is made).

Align the bearing hanger bracket (Ref. 7) with the mounting holes in the shield splice and secure using four (4) 5/16 x 1" bolts, flat washers and nylon locknuts.



INSTALL SWEEP FLIGHT & BACK SHIELD (con't.)

- Attach the sweep shields and flight to the center well gearbox as follows:

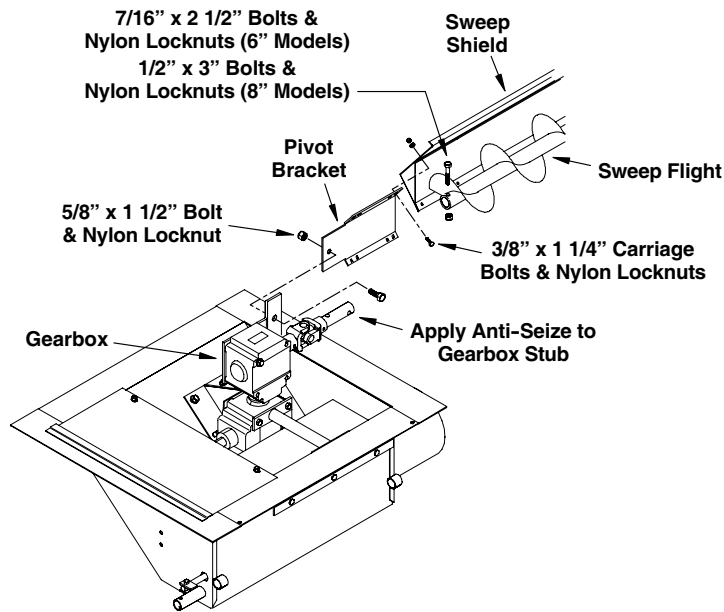
Install the sweep shield pivot bracket to the bracket mounted on the gearbox using one (1) 5/8 x 1 1/2" bolt and nylon locknut (the pivot bracket will mount to the outside of the gearbox bracket).

Apply an anti-seize compound to the gearbox stub. Align the end of the sweep flight with the stub on the gearbox and at the same time, position the sweep shield over the pivot bracket (the bracket will be positioned on the flight side of the sweep shield).

- Determine if adjustment is needed for the flight and shield to properly align with their respective mounting holes (the flight coupler at the sweep wheel end is slotted for adjustment, the pivot bracket has two sets of holes to assist with adjustment as well).

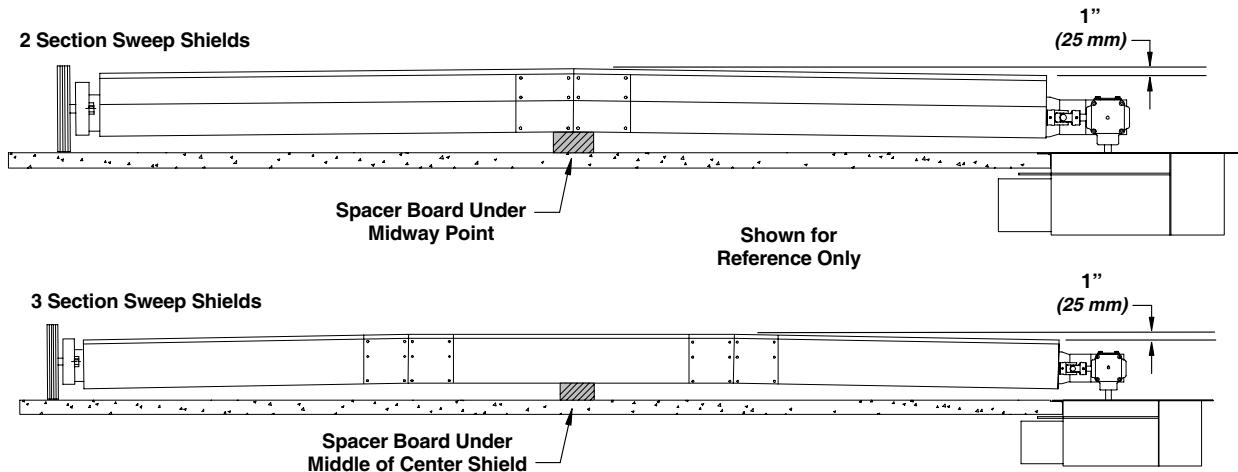
Bolt the sweep shield to the pivot bracket using four (4) 3/8" x 1 1/4" carriage bolts, flat washers and nylon locknuts as shown in the illustration below.

Bolt the sweep flight to the gearbox stub using two (2) 7/16" x 2 1/2" bolts and nylon locknuts for the 6" Power Sweeps, or 1/2" x 3" bolts and nylon locknuts for the 8" Power Sweeps.



- If your sweep has multiple sweep sections, it will be necessary to create a "crown" at the mid-way point of the shields. After sweep shields have been installed, loosen the bolts on all shield splices and the bolt securing the pivot bracket to the gearbox.

Place a spacer board under the shields at the mid-way point in order to achieve a 1" crown, then retighten the bolts (on 3 section sweep shields, the spacer board will be placed under the middle of the center shield, thus raising the entire length of the center shield to achieve the 1" crown).



TROUBLE SHOOTING

Auger Vibration...

Driving belt may be overtightened, putting head stub and drive shaft in a bind.

Low Capacity...

The unloading auger may not be getting enough grain. The bin well may have bridged over, restricting flow.

The center well gate may not be open enough.

Check auger speed. Speeds slower than the recommended speed will result in low capacity.

Plugs...

The unloading auger may be getting too much grain, causing "jamming" inside the housing. Close the center well gate appropriately to restrict flow.

The drive motor may be too small or wired improperly.

Assure the auger is free of foreign material, such as sacks, tarp corners, etc. A plug of the discharge end of the auger will cause an unload auger plug.

TROUBLE SHOOTING (con't.)

Sweep Flight and Back Shield

Not Moving...

Check clearance between back shield and bin floor for excessive drag. Adjust shield up to clear metal floor splices or cracks in concrete floors.

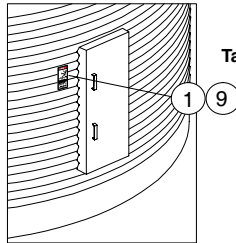
Check the sweep wheel. After extensive use, the wheel material may have worn down to where the diameter of the wheel is no longer large enough to move the sweep properly. Order replacement wheel or wheel parts from your dealer or the factory.

The grain may have gone out of condition due to moisture or insect activity and has become hard or caked. **Stop the sweep auger and lock out the power source before entering the bin to correct this or any other problem requiring bin entry.**

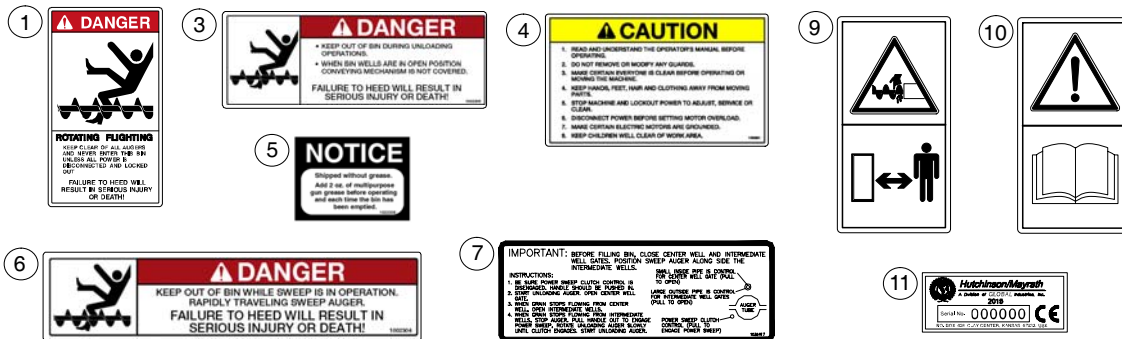
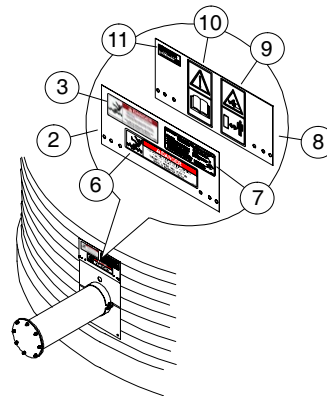
PARTS LIST TABLE of CONTENTS

Decals and Safety Signs P-1
Center Well Components P-2
Sweep Flight & Shield Components P-3
Unloading Tube Components P-4 to P-5
Bin Flange & Clutch Components P-6
Sweep Wheel P-7
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SAFETY DECALS & SIGNS



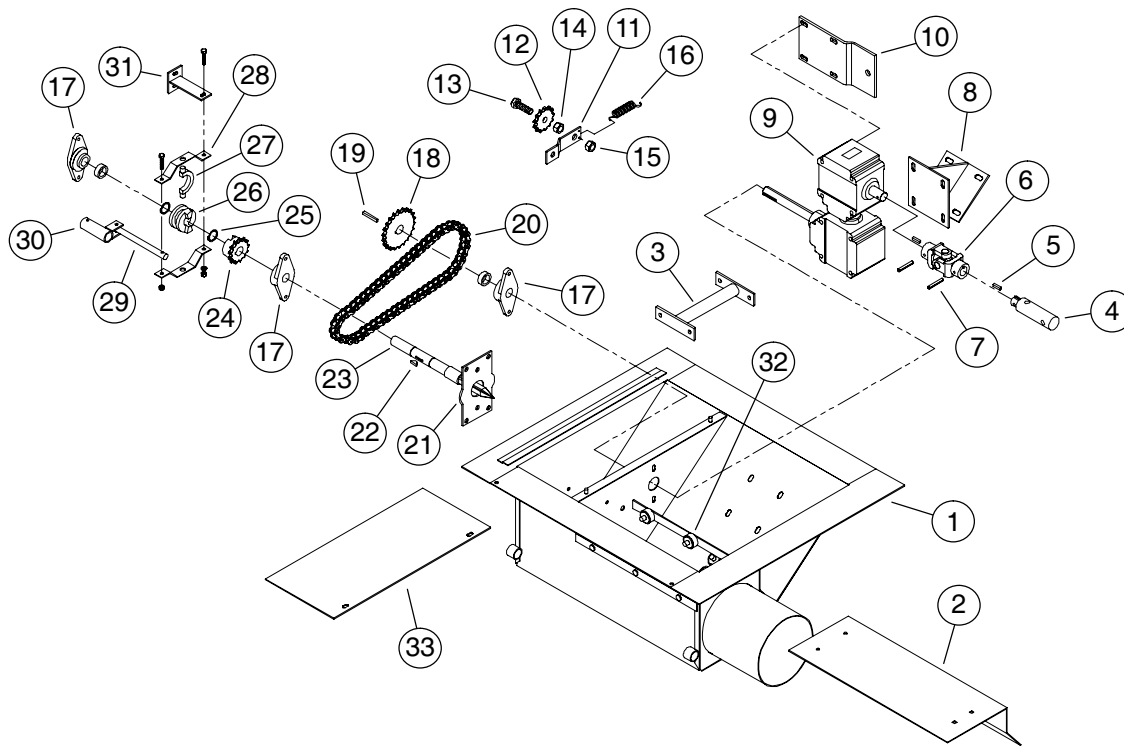
Item 9, CE Only
Takes the Place of Decal 1
on CE Models



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	1002303	Decal, Danger: Rotating Flight...	7	1030417	Decal, Important, Before Filling...
2	1030421	Plate, Decal	8	1030421CE	Plate, Decal f/ CE
3	1002305	Decal, Danger: Keep Out of Bin (unload operation)	9	1025077	CE Decal, Danger: Keep Away
4	1002301	Decal, Caution: General Operating...	10	1025080	CE Decal, Read Manual
5	1022306	Decal, Notice: Add Grease...	11	1025571	CE Serial Number Plate
6	1002304	Decal, Danger: Keep Out of Bin (rapidly traveling sweep auger)			

PARTS LIST

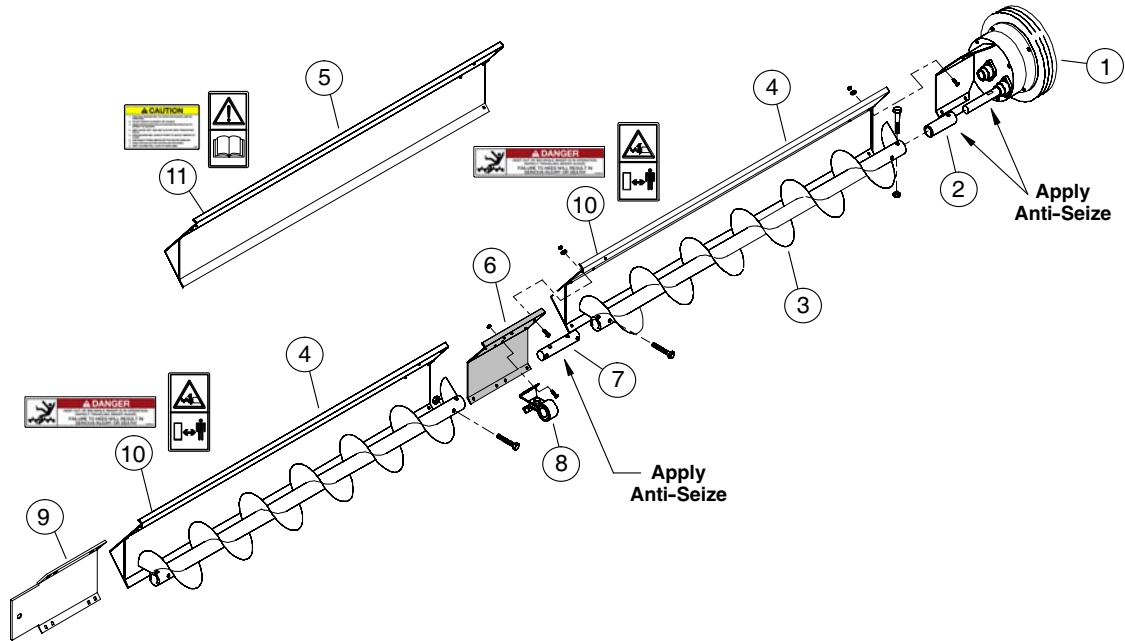
CENTER WELL COMPONENTS



All Items shown are used with both the 6" & 8" Models unless otherwise indicated.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	1030110	Power Well Weldment f/ 6" Models	17	6818D	Bearing, 2-Hole Flange, 1" Bore
(1)	1029970	Power Well Weldment f/ 8" Models	18	6331G	Sprocket, 22 tooth, #50 1" Bore
2	1030086	Slide Gate, 6" & 8" Models	19	8371C	Key, 1/4" sq. x 1 1/2" long
3	6095A1	Inside Mount Brkt. f/ Gearbox, 6" & 8"	20	1015291	Chain, #50, 44 pitch f/ 6" & 8"
4	1016644	Stub f/ U-Joint, f/ 6" Models	21	1030004	Plate, Bearing Mount
(4)	1016694	Stub f/ U-Joint, f/ 8" Models	22	8826G	Key, 1/4" sq. x 1 1/4" long
5	4020A1	Square Key, 1/4" x 1" long	23	1030005	Shaft, Clutch (1" dia. x 14 5/8")
6	1013677	Universal Joint, 1" to 1" (5" long)	24	6830P	Sprocket, f/ Clutch, 13 tooth #50 w/ 1" Bore (f/ 6" & 8")
7	6386C	Roll Pin, 5/16" x 2" long	25	420015	Retaining Ring (IRR 4100-100)
8	1014766	Gearbox Mounting Bracket f/ 6" & 8"	26	6812P	Clutch, Sliding Jaw
9	1015211-3	Double Gearbox Assembly	27	6828F	Clutch Yoke
10	1016619	Shield Bracket f/ Gearbox, 6" Models	28	6828P	Bracket, Clutch Yoke
(10)	1016617	Shield Bracket f/ Gearbox, 8" Models	29	6827P	Rod, Clutch Control (5/8" dia. x 6 5/8" long)
11	1005850	Arm, Idler Sprocket	30	61641	Clevis, Clutch Control
12	6821P	Sprocket, 13 tooth, #50 x 5/8" bore	31	6826P	Clutch Bracket Weldment
13	33244	Bolt, 5/8" x 2"	32	51867	Roller, 1 1/2" O.D. Nylon
14	D1170	Nut, 5/8-11 Non-Lock	33	553411	Door, Drive Cover
15	1005111	Nut, 5/8-11 Side Depress			
16	6823P	Spring, 5" long f/ Idler Sprocket			

SWEEP FLIGHT & SHIELD COMPONENTS



6" Components

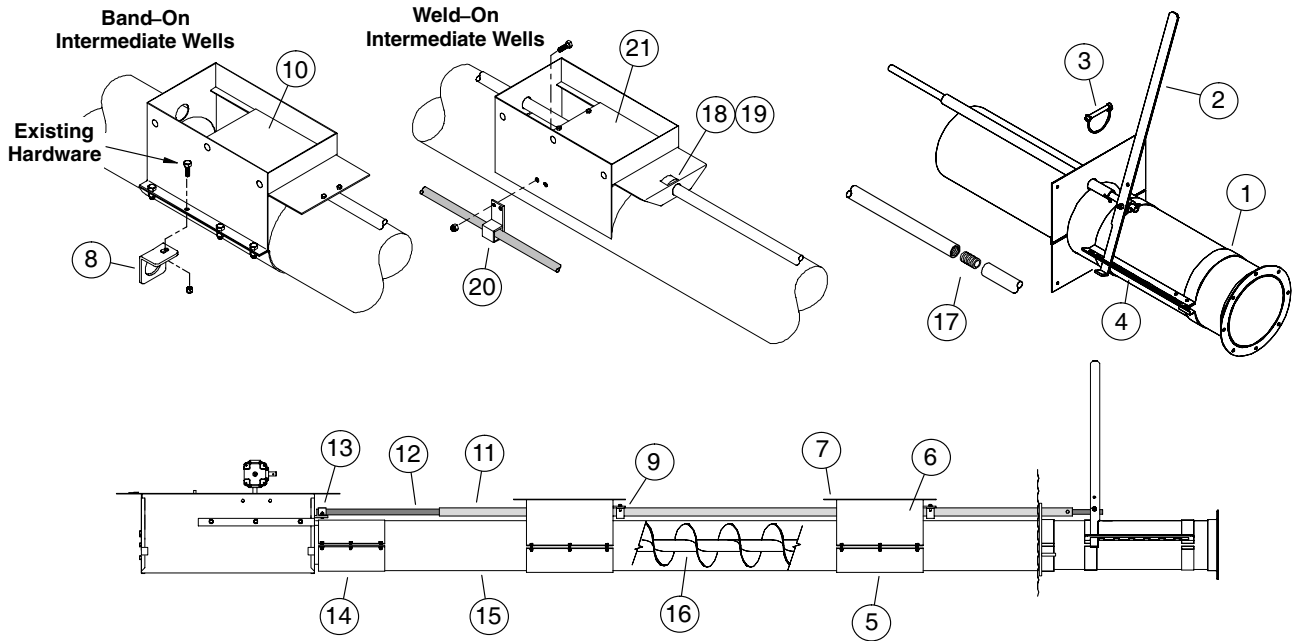
Ref. No.	Part No.	Description
1	1030225	Enclosed Sweep Wheel Assy.
2	1015481	Bushing, Sweep Wheel Flight
3	1016749	Flight, 4'-4" (1.32 m) long
(3)	1017692	Flight, 5'-6" (1.68 m) long
(3)	5262H	Flight, 5'-10" (1.78 m) long
(3)	1017696	Flight, 7'-0" (2.13 m) long
(3)	1016750	Flight, 7'-4" (2.24 m) long
(3)	1017701	Flight, 8'-6" (2.59 m) long
(3)	5265H	Flight, 8'-10" (2.69 m) long
4	1030195	Flight Shield, 53 1/8" (16.16 m)
(4)	1030196	Flight Shield, 67 1/8" (20.42 m)
(4)	1030197	Flight Shield, 71 1/8" (21.64 m)
(4)	1030198	Flight Shield, 85 1/8" (25.91 m)
(4)	1030200	Flight Shield, 89 1/8" (27.13 m)
(4)	1030201	Flight Shield, 103 1/8" (31.40 m)
(4)	1030202	Flight Shield, 107 1/8" (32.62 m)
5	1030199	Flight Shield, 86 1/4" (26.22 m)
6	1030222	Plate, Shield Splice
7	8393C	Stub, 1 1/4" x 11 1/2" (293 mm)
8	1030232	Shield Bearing Assembly
--	8379C	Bushing, 1 1/4" I.D. Bronze
9	1030221	Plate, Shield to Gearbox
10	1002304	Decal, Danger:Keep Out of Bin
(10)	1025077	CE Decal, Danger: Keep Away
11	1002301	Decal, Caution: General Operator
(11)	1025080	CE Decal, Read Manual

8" Components

Ref. No.	Part No.	Description
1	1030082	Enclosed Sweep Wheel Assy.
2	1015477	Bushing, Sweep Wheel Flight
3	1016708	Flight, 4'-4" (1.32 m) long
(3)	1017705	Flight, 5'-6" (1.68 m) long
(3)	1017607	Flight, 7'-0" (2.13 m) long
(3)	1017709	Flight, 8'-6" (2.59 m) long
(3)	5324H	Flight, 5'-10" (1.78 m) long
(3)	1016622	Flight, 7'-4" (2.24 m) long
(3)	5245H	Flight, 8'-10" (2.69 m) long
4	1030060	Flight Shield, 53 1/8" (16.16 m)
(4)	1030061	Flight Shield, 67 1/8" (20.42 m)
(4)	1030062	Flight Shield, 71 1/8" (21.64 m)
(4)	1030063	Flight Shield, 85 1/8" (25.91 m)
(4)	1030065	Flight Shield, 89 1/8" (27.13 m)
(4)	1030066	Flight Shield, 103 1/8" (31.40 m)
(4)	1030103	Flight Shield, 107 1/8" (32.62 m)
5	1030064	Flight Shield, 86 1/4" (26.22 m)
6	1030045	Plate, Shield Splice
7	1045D	Stub, 1 1/2" x 11 1/2" (293 mm)
8	1030096	Shield Bearing Assembly
--	1051D	Bushing, 1 1/2" I.D. Bronze
9	1030042	Plate, Shield to Gearbox
10	1002304	Decal, Danger:Keep Out of Bin
(10)	1025077	CE Decal, Danger: Keep Away
11	1002301	Decal, Caution: General Operator
(11)	1025080	CE Decal, Read Manual

PARTS LIST

UNLOADING TUBE COMPONENTS



All items shown are used with both the 6" & 8" Models unless otherwise indicated.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	5048A1	Half Band, 6" galv. x 2" wide	(11)	1016965	15'-6" (4.72 m) long
(1)	5033A1	Half Band, 8" galv. x 2" wide	(11)	1016730	16'-5" (5.00 m) long
2	1022410	Control Lever Handle	(11)	1016731	19'-0" (5.79 m) long
3	1016747	Lynch Pin	(11)	1016732	21'-2" (6.45 m) long
4	1022413	Bracket, Pull Bar	12	---	Control Rod, 7/8" (22 mm) O.D. f/ Center Well Gate
(5)	1014964	6" Back Band Wldmnt.	(12)	52155	7'-0" (2.13 m) long
5	8806D	8" Back Band Wldmnt.	(12)	52156	8'-6" (2.59 m) long
6	1030214	6" Intermediate Bin Well Wldmnt.	(12)	52157	10'-0" (3.05 m) long
(6)	1036366	8" Intermediate Bin Well Wldmnt.	(12)	52158	11'-6" (3.51 m) long
7	1015010	6" Top Flange	(12)	52159	13'-0" (3.96 m) long
(7)	1014743	8" Top Flange	(12)	52160	14'-6" (4.42 m) long
8	1037453	Clutch Bracket (8" band-on only)	(12)	52161	16'-0" (4.88 m) long
9	552406	Clamp f/ Intermediate Well Gate	(12)	54393	16'-6" (5.03 m) long
10	1030212	6" Intermediate Well Gate	(12)	52162	17'-6" (5.33 m) long
(10)	1030009	8" Intermediate Well Gate	(12)	52163	19'-0" (5.79 m) long
11	---	Control Rod, 1 3/8" (35 mm) O.D. f/ Intermediate Well Gate	(12)	54394	19'-6" (5.94 m) long
(11)	1016728	5'-9" (1.75 m) long	(12)	52164	20'-6" (6.25 m) long
(11)	1016960	6'-6" (1.98 m) long	(12)	53845	21'-0" (6.40 m) long
(11)	1016961	8'-5" (2.57 m) long	(12)	52165*	1'-0" (305 mm) long extension
(11)	1016729	10'-0" (3.05 m) long	(12)	52166*	2'-6" (762 mm) long extension
(11)	1016962	11'-0" (3.35 m) long	(12)	52167*	5'-6" (1.68 m) long extension
(11)	1016963	12'-0" (3.66 m) long			
(11)	1016964	14'-5" (4.39 m) long			

*Extensions are used with the 21'-0" Control Rod, Part No. 53845 and Require Connector 41089 (Item 17).

PARTS LIST

UNLOADING TUBE COMPONENTS (con't.)

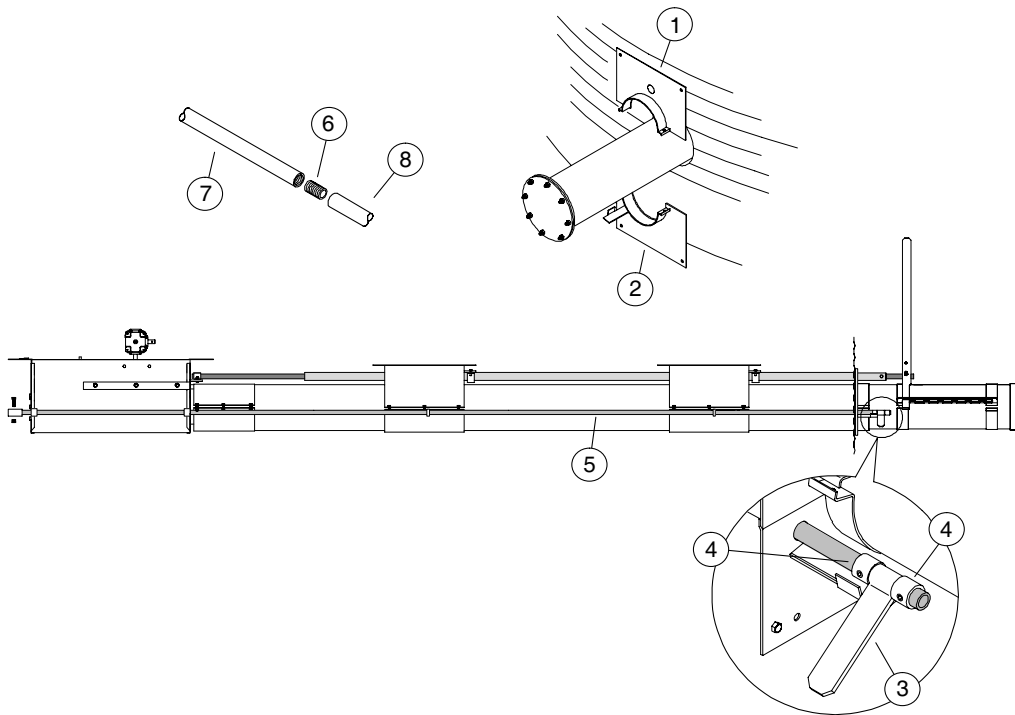
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
13	50471A1	Clamp f/ Center Well Gate			
14	6815P	6" Connecting band x 12" long	(15)	1030022	8" Unload Tube (con't.)
(14)	8815P	8" Connecting Band x 12" long	(15)	1030023	Unload Tube f/ 30' Bin, 15'-6" lg
15	---	6" Unloading Tube (Band-on Wells)	(15)	1030024	Unload Tube f/ 33' Bin, 17'-6" lg
(15)	6377A91	Unload Tube f/ 15' Bin, 8' lg	(15)	1030015	Unload Tube f/ 36' Bin, 18'-6" lg
(15)	6378A91	Unload Tube f/ 18' Bin, 10' lg	(15)	1030024	Unload Tube f/ 39' Bin, 20' lg
(15)	6379A91	Unload Tube f/ 21' Bin, 11' lg	(15)	1030025	Unload Tube f/ 42' Bin, 22' lg
(15)	6380A91	Unload Tube f/ 24' Bin, 12'-6" lg	(15)	1030026	Unload Tube f/ 48' Bin, 25' lg
(15)	6381A91	Unload Tube f/ 27' Bin, 14' lg	16	---	6" Unloading Flight
(15)	6382A91	Unload Tube f/ 30' Bin, 15'-6" lg	(16)	1030126	Unload Flight f/ 15' Bin, 10'-3/4" lg
(15)	12156	Unload Tube f/ 33' Bin, 17'-6" lg	(16)	1030127	Unload Flight f/ 18' Bin, 12'-3/4" lg
(15)	6384A91	Unload Tube f/ 36' Bin, 18'-6" lg	(16)	1030128	Unload Flight f/ 21' Bin, 13'-3/4" lg
(15)	1030176	Unload Tube f/ 39' Bin, 20'-0" lg	(16)	1030129	Unload Flight f/ 24' Bin, 14'-6 3/4" lg
(15)	1030177	Unload Tube f/ 42' Bin, 22'-0" lg	(16)	1030130	Unload Flight f/ 27' Bin, 16'-3/4" lg
(15)	1030178	Unload Tube f/ 48' Bin, 25'-0" lg	(16)	1030131	Unload Flight f/ 30' Bin, 17'-6 3/4" lg
15	---	8" Unloading Tube (Band-on Wells)	(16)	1030132	Unload Flight f/ 33' Bin, 19'-6 3/4" lg
(15)	6385A91	Unload Tube f/ 15' Bin, 8' lg	(16)	1030133	Unload Flight f/ 36' Bin, 20'-6 3/4" lg
(15)	6386A91	Unload Tube f/ 18' Bin, 10' lg	(16)	1030134	Unload Flight f/ 39' Bin, 22'-3/4" lg
(15)	6387A91	Unload Tube f/ 21' Bin, 11' lg	(16)	1030135	Unload Flight f/ 42' Bin, 24'-3/4" lg
(15)	6388A91	Unload Tube f/ 24' Bin, 12'-6" lg	(16)	1030136	Unload Flight f/ 48' Bin, 27'-3/4" lg
(15)	6389A91	Unload Tube f/ 27' Bin, 14' lg	16	---	8" Unloading Flight
(15)	6390A91	Unload Tube f/ 30' Bin, 15'-6" lg	(16)	1029974	Unload Flight f/ 15' Bin, 10'-3/4" lg
(15)	11826	Unload Tube f/ 33' Bin, 17'-6" lg	(16)	1029975	Unload Flight f/ 18' Bin, 12'-3/4" lg
(15)	6392A91	Unload Tube f/ 36' Bin, 18'-6" lg	(16)	1029976	Unload Flight f/ 21' Bin, 13'-3/4" lg
(15)	6942A91	Unload Tube f/ 39' Bin, 20' lg	(16)	1029977	Unload Flight f/ 24' Bin, 14'-6 3/4" lg
(15)	6393A91	Unload Tube f/ 42' Bin, 22' lg	(16)	1029978	Unload Flight f/ 27' Bin, 16'-3/4" lg
(15)	6394A91	Unload Tube f/ 48' Bin, 25' lg	(16)	1029979	Unload Flight f/ 30' Bin, 17'-6 3/4" lg
15	---	6" Unloading Tube (Weld-on Wells)	(16)	1029980	Unload Flight f/ 33' Bin, 19'-6 3/4" lg
(15)	1030137	Unload Tube f/ 15' Bin, 8' lg	(16)	1029981	Unload Flight f/ 36' Bin, 20'-6 3/4" lg
(15)	1030138	Unload Tube f/ 18' Bin, 10' lg	(16)	1029982	Unload Flight f/ 39' Bin, 22'-3/4" lg
(15)	1030139	Unload Tube f/ 21' Bin, 11' lg	(16)	1029983	Unload Flight f/ 42' Bin, 24'-3/4" lg
(15)	1030140	Unload Tube f/ 24' Bin, 12'-6" lg	(16)	1029984	Unload Flight f/ 48' Bin, 27'-3/4" lg
(15)	1030141	Unload Tube f/ 27' Bin, 14' lg	(17)	41089	Threaded Rod Connector
(15)	1030142	Unload Tube f/ 30' Bin, 15'-6" lg			Weld-On Intermediate Well Components
(15)	1030143	Unload Tube f/ 33' Bin, 17'-6" lg	18	1018220	Collar for Control Pipe
(15)	1030144	Unload Tube f/ 36' Bin, 18'-6" lg	19	1018221	Setscrew
(15)	1030145	Unload Tube f/ 39' Bin, 20'-0" lg	20	1018216	Clutch Control Guide
(15)	1030146	Unload Tube f/ 42' Bin, 22'-0" lg	21	1018507	6" Intermediate Well Gate
(15)	1030147	Unload Tube f/ 48' Bin, 25'-0" lg	(21)	1018218	8" Intermediate Well Gate
15	---	8" Unloading Tube (Weld-on Wells)			
(15)	1030017	Unload Tube f/ 15' Bin, 8' lg			
(15)	1030018	Unload Tube f/ 18' Bin, 10' lg			
(15)	1030019	Unload Tube f/ 21' Bin, 11' lg			
(15)	1030020	Unload Tube f/ 24' Bin, 12'-6" lg			
(15)	1030021	Unload Tube f/ 27' Bin, 14' lg			

Feet/Inches to meters equivalent:

8' (2.44 m)	10'-3/4" (3.07 m)
10' (3.05 m)	12'-3/4" (3.68 m)
11' (3.35 m)	13'-3/4" (3.98 m)
12'-6" . . (3.81 m)	14'-6 3/4" . . (4.44 m)
14' (4.27 m)	16'-3/4" (4.90 m)
15'-6" . . (4.72 m)	17'-6 3/4" . . (5.35 m)
17'-6" . . (5.33 m)	19'-6 3/4" . . (5.96 m)
18'-6" . . (5.64 m)	20'-6 3/4" . . (6.27 m)
20'-0" . . (6.10 m)	22'-3/4" (6.72 m)
22'-0" . . (6.71 m)	24'-3/4" (7.33 m)
25'-0" . . (7.62 m)	27'-3/4" (8.25 m)

PARTS LIST

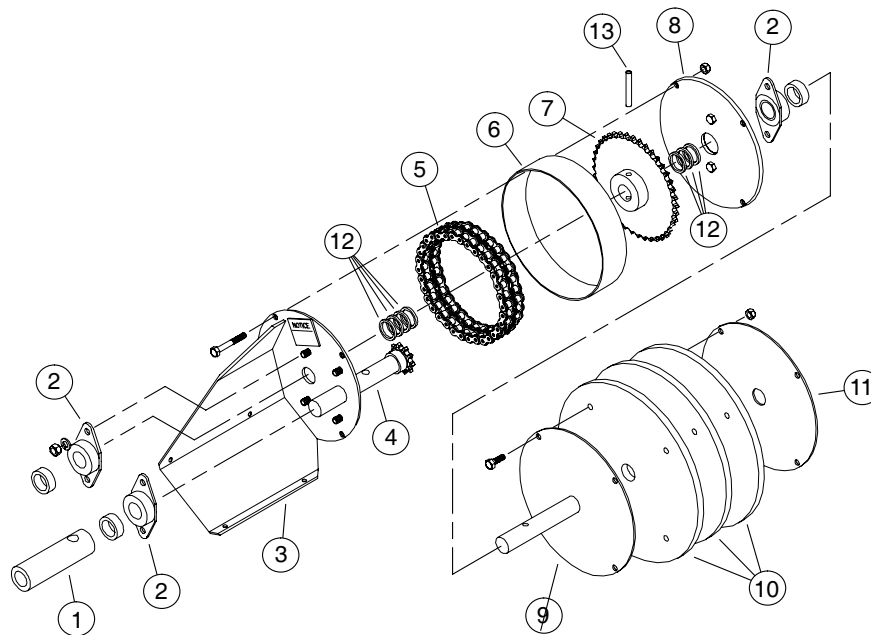
BIN FLANGE & CLUTCH CONTROL COMPONENTS



All Items shown are used for both the 6" & 8" Models unless otherwise noted.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	1030243	Flange, Upper Bin (f/ 6" Models)	(5)	---	Clutch Control Pipe (con't.)
(1)	1030241	Flange, Upper Bin (f/ 8" Models)	(5)	54394	19'-6" (5.94 m) long f/ 33' Bin
2	1030220	Flange, Lower Bin (f/ 6" Models)	(5)	52164	20'-6" (6.25 m) long f/ 36' Bin
(2)	1030095	Flange, Lower Bin (f/ 8" Models)	6	41089	Threaded Rod Connector
3	1023974	Handle, Control Pipe	7	53845	21'-0" (6.40 m) long f/ 39' - 48' Bins
4	1023968	Lock Collar f/ Control Pipe	8	---	Control Pipe Extensions
5	---	Clutch Control Pipe 7/8" (22 mm) O.D.	(8)	52165	1'-0" (3.05 m) long f/ 39' Bin
(5)	52157	10'-0" (3.05 m) long f/ 15' Bin	(8)	52166	2'-6" (762 mm) long f/ 42' Bin
(5)	52158	11'-6" (3.51 m) long f/ 18' Bin	(8)	52167	5'-6" (1.68 m) long f/ 48' Bin
(5)	52159	13'-0" (3.96 m) long f/ 21' Bin	(8)	1018861	8'-6" (2.59 m) long f/ 54' Bin
(5)	52160	14'-6" (4.42 m) long f/ 24' Bin	(8)	1018862	11'-6" (3.51 m) long f/ 60' Bin
(5)	52161	16'-0" (4.88 m) long f/ 27' Bin			
(5)	52162	17'-6" (5.33 m) long f/ 30' Bin			

4:1 RATIO SWEEP WHEEL COMPONENTS



Wheel f/ 6" Models

Ref. No.	Part No.	Description
1	1015481	Bushing, 1" I.D. x 1 1/4" O.D. 4 3/8" (111 mm) long
2	1015064	Bearing, 2-Hole Flange, 1" bore
3	1030224	Housing, Inner Drive
4	1015106	Sprocket/Shaft Weldment
5	1015105	Chain, #40 Roller (40 pitch)
6	1015051	Ring, Housing (w/ 1/4" NPT zerk)
7	1015059	Sprocket, #40, 40 tooth
8	1030078	Housing, Outer Drive
9	1030333	Plate, Inner Disk
10	1014370	Disk, Rubber, 11" (279 mm) O.D.
11	1015050	Plate, Outer Disk
12	035594	Washer, 1" nominal x 10 ga.
13	6383C	Pin, 5/16" x 2" Roll

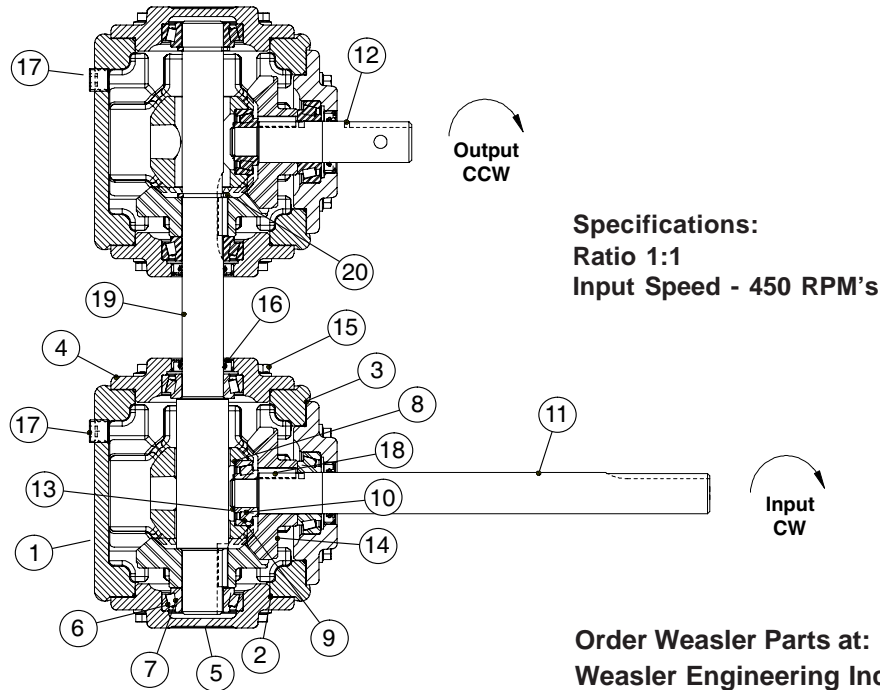
Wheel f/ 8" Models

Ref. No.	Part No.	Description
1	1015477	Bushing, 1" I.D. x 1 1/2" O.D. 4 3/8" (111 mm) long
2	1015064	Bearing, 2-Hole Flange, 1" bore
3	1030081	Housing, Inner Drive
4	1015106	Sprocket/Shaft Weldment
5	1015105	Chain, #40 Roller (40 pitch)
6	1015051	Ring, Housing (w/ 1/4" NPT zerk)
7	1015059	Sprocket, #40, 40 tooth
8	1030078	Housing, Outer Drive
9	1030077	Plate, Inner Disk
10	1017550	Disk, Rubber, 13" (330 mm) O.D.
11	1017546	Plate, Outer Disk
12	035594	Washer, 1" nominal x 10 ga.
13	6383C	Pin, 5/16" x 2" Roll

PARTS LIST

GEARBOX COMPONENTS

Complete Gearbox Assembly can be obtained by ordering: Part No. 1015211-3






Specifications:
Ratio 1:1
Input Speed - 450 RPM's

Order Weasler Parts at:
Weasler Engineering Inc.
P.O. Box 558
West Bend, WI 53095
Tel: +1.262.338.2161
Fax: +1.262.338.3709

Part No's. shown are Weasler Part No's.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	70-06072	Housing, Machined	11	09-70024	Shaft, Input
2	28-21000	O-Ring	12	09-70025	Shaft, Output
3	19-15203	Gasket Kit	13	24-15249	Retaining Ring
4	70-16041	End Cap, Machined	14	71-06047	Gear, 19 teeth, DP6
5	70-16039	End Cap, Machined	15	11-20439	Bolt, 5/16"-18 x 7/8" G5
6	12-20104	Bearing Cup (L44610)	16	28-11002	Seal (1.00 x 1.50 x .276)
7	12-20105	Bearing Cone (L44643)	17	11-81029	Pipe Plug, 1/4"-18 NPT
8	19-15201	Shim Kit	18	11-61015	Key, 1/4" sq. x 0.92" long
9	12-20106	Bearing Cup (LM11710)	19	09-70026	Cross Shaft
10	12-20107	Bearing Cone (LM11749)	20	24-15247	Retaining Ring

TORQUE CHART

General Torque Specification Table Use the Following Torques When Special Torques Are Not Given Note: These values apply to fasteners as received from supplier, dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly-disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.													
SAE Grade No.		SAE 2				SAE 5				SAE 8*			
Bolt head identification marks as per grade Note: Manufacturing marks will vary													
		Torque		Torque		Torque		Torque		Torque		Torque	
Bolt Size		Foot Pounds		Newton-Meters		Foot Pounds		Newton-Meters		Foot Pounds		Newton-Meters	
Inches	Millimeters	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	6.35	5	6	6.8	8.13	9	11	12.2	14.9	12	15	16.3	20.3
5/16	7.94	10	12	13.6	16.3	17	20.5	23.1	27.8	24	29	32.5	39.3
3/8	9.53	20	23	27.1	31.2	35	42	47.5	57.0	45	54	61.0	73.2
7/16	11.11	30	35	40.7	47.4	54	64	73.2	86.8	70	84	94.9	113.9
1/2	12.70	45	52	61.0	70.5	80	96	108.5	130.2	110	132	149.2	179.0
9/16	14.29	65	75	88.1	101.6	110	132	149.2	179.0	160	192	217.0	260.4
5/8	15.88	95	105	128.7	142.3	150	180	203.4	244.1	220	264	298.3	358.0
3/4	19.05	150	185	203.3	250.7	270	324	366.1	439.3	380	456	515.3	618.3
7/8	22.23	160	200	216.8	271.0	400	480	542.4	650.9	600	720	813.6	976.3
1	25.40	250	300	338.8	406.5	580	696	786.5	943.8	900	1080	1220.4	1464.5
1 1/8	25.58	----	----	----	----	800	880	1084.8	1193.3	1280	1440	1735.7	1952.6
1 1/4	31.75	----	----	----	----	1120	1240	1518.7	1681.4	1820	2000	2467.9	2712.0
1 3/8	34.93	----	----	----	----	1460	1680	1979.8	2278.1	2380	2720	3227.3	3688.3
1 1/2	38.10	----	----	----	----	1940	2200	2630.6	2983.2	3160	3560	4285.0	4827.4

*Thick nuts must be used with Grade 8 bolts



Hutchinson/Mayrath

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