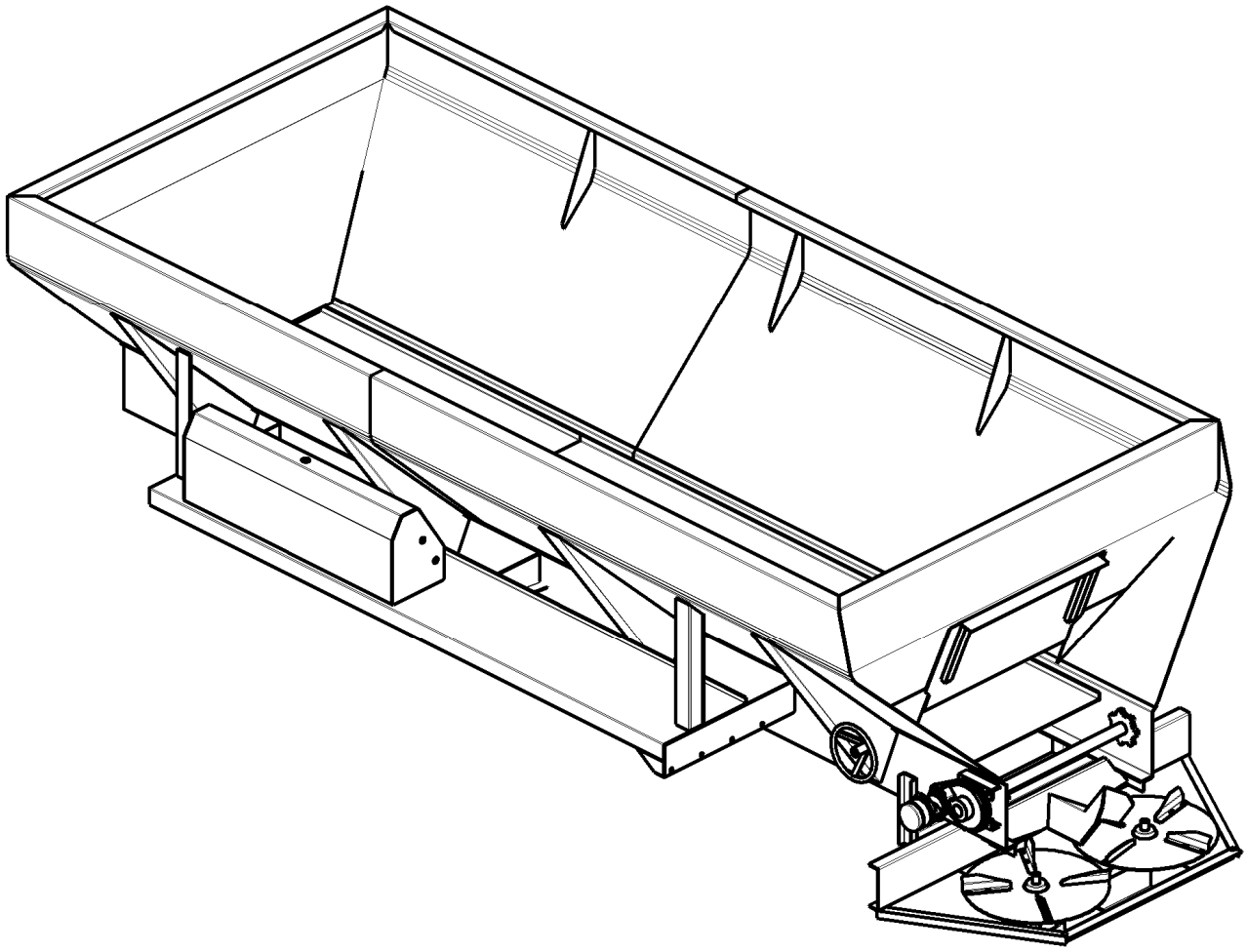
PARTS AND SERVICE MANUAL

HYDRAULIC DRIVE TRUCK MOUNT

MODEL: HP



SALFORD BBI

706-778-2767
800-282-3570

470 S. WAYSIDE ST.
P.O. BOX 630
CORNELIA, GA 30531

Table of Contents

TO OUR CUSTOMERS

The BBI team takes pride in producing superior spreaders that will provide many years of service. Components are selected for their proven performance record and availability. Our skilled employees give special attention to detail in design and assembly to make certain our equipment will meet or exceed your expectations.

Our parts department stands ready to serve you with replacement parts at affordable prices. We stock a large inventory to assure support for our customers, and take pride in offering "same day service" for those orders received before mid-afternoon.

At BBI, we provide quality service with a friendly atmosphere. Our dealers can offer service assistance, or we can be contacted directly. We strive to quickly provide solutions for your needs in order to minimize any downtime or delays.

At BBI we take safety very seriously. Great concern is given to reduce any potential safety issues, whether with equipment or in the work place. Our equipment is designed to minimize pinch points and provide guards where they do exist. Decals are placed on our equipment to identify and caution against areas of pinch points and hazardous moving parts. Please be sure that those who operate BBI equipment are properly trained. *Never conduct maintenance or repairs unless the equipment is fully disabled with the power source turned off. Never stand inside the unit while in operation or moving.* Our spreaders are designed to project materials from 30 to 90 feet, depending on the specific equipment; and *standing too close can result in injury. Please use extreme caution when operating all farm equipment.*

Thank you for choosing BBI spreading equipment. You will be glad you did.

Richard B. Hagler
President

"Spreaders That Work as Hard as You Do"

WARRANTY

Barron & Brothers International warrants all products manufactured by it to be free from defects in material and manufacturing at the time of shipment AND for an additional period of One Hundred Eighty (180) days, from the date invoiced to our direct customer or the dealer's customer AND provided the total period does not EXCEED One (1) Year from the date invoiced to the dealer. On parts manufactured by another vendor (i.e., motors, pumps, axles, etc.), the parts will be subject to the original manufacturer's warranty AFTER expiration of Barron & Brothers International's One Hundred Eighty Day (180) Warranty.

Barron & Brothers International's warranty SHALL BE VOID AND NOT APPLY to any product which has been subject to misuse (including but not limited to overloading), misapplication, neglect (including but not limited to improper maintenance), accident, improper installation of parts, modification of the unit, improper adjustment, or improper repair of the unit. All parts to be warranted by Barron & Brothers International must be returned to the factory for inspection and final disposition.

NOTE: THE PART ON QUESTION MUST BE RETURNED WITHIN 30 DAYS FOR CREDIT TO BE ISSUED!!

Barron & Brothers International's liability for its equipment, whether due to breach of warranty, negligence, strict liability, or otherwise, is LIMITED to providing a replacement part(s) in exchange for the defective part(s) AND Barron & Brothers International will not be liable for any injury, loss, damage, or expense, whether direct or consequential, including but not limited to loss of use, income, profit, or production, OR the increased cost of operation.

PARTS

Use only genuine Barron & Brothers International Parts!
Order them from the *Authorized Dealer* in your area.

When placing an order, please have available:

1. The pertinent model and serial number of the spreader.
2. The part name, part number, and the quantity required.
3. The correct street address to where the parts are to be shipped and the carrier if there is a preference.

Shipping Damage

Claims for shortages or errors must be made immediately upon receipt of goods. When broken or damaged goods are received, a full description of the damage must be made to the carrier agent on the freight bill. If this is insisted upon, full damage can always be collected from the transportation company. Please contact BBI as soon as possible after carrier is notified.

If your claims are not being handled by the transportation company to your satisfaction, please contact our Customer Service Department at 1-800-282-3570 for assistance.

SAFETY WARNINGS

Please read and understand this manual before operation.

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THAT OF OTHERS, FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN INJURY OR DEATH.

In this manual and on the safety signs placed on your spreader, the words " DANGER," WARNING," "CAUTION," and "IMPORTANT" are used to indicate the following:

DANGER!

Indicates an imminently hazardous situation that, if not avoided WILL result in death or serious injury. This signal word is to be limited to the most extreme situations and typically for machine components that, for functional purposes, cannot be guarded.

WARNING!

Indicates a potentially dangerous situation that, if not avoided, COULD result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION!

Indicates a potentially hazardous situation that, if not avoided, MAY result in minor or moderate injury. It may also be used to guard against unsafe practices.

IMPORTANT!

Is used for informational purposes in areas that may involve damage or deterioration of equipment and would generally not involve personal injury.

The need for personal safety cannot be stressed enough. At BBI we strongly urge you to make safety your top priority when operating any equipment. We firmly advise that anyone allowed to operate our equipment must be thoroughly trained and tested to prove that they understand the fundamentals for safe operation.

The following guidelines are intended to cover general usage and to assist you in avoiding accidents. There will be times when you will run into situations that are not covered in this section. At those times the best standard to use is common sense. If, at any time, you have a question concerning these guidelines, please call your authorized dealer or our factory at (800) 282-3570.

AVOID ACCIDENTS

Most accidents, whether they occur in industry, on the farm, at home, or on the highway, are caused by the failure of an individual to follow simple and fundamental safety rules and precautions. For this reason, most accidents can be prevented by recognizing the real cause and doing something about it before the accident occurs.

Regardless of the care used in the design and construction of any type of equipment, there are many conditions that cannot be completely safeguarded against without interfering with reasonable accessibility and efficient operation.

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT. THE COMPLETE OBSERVANCE OF ONE SIMPLE RULE WOULD PREVENT THOUSANDS OF SERIOUS INJURIES EACH YEAR. THAT RULE IS:

NEVER CLEAN, OIL, OR ADJUST A MACHINE WHILE IT IS UNDER POWER.

National Safety Council

CAUTION!

If the spreader is used to transport chemicals, check with your chemical supplier regarding the DOT (Department of Transportation) regulations.

SAFETY DECALS

DECAL MAINTENANCE INSTRUCTIONS

1. Keep safety decals and signs clean and legible at all times.
2. Replace safety decals and signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety Decals are available from your local dealer's Parts Department or our factory.

HAZARDS

1. Refrain from wearing loose fitting clothing on or around this piece of machinery. There are many places that loose clothing may become wrapped or pulled into devices.

2. Be aware of any moving parts on this machinery. Make sure that any person or persons on or around this piece of machinery are aware of the dangers as well. There are many places where injury may occur. Learn your unit and the dangers of it. Always use caution in the operation of this piece of machinery.

3. Be sure that any individuals operating this equipment are trained and are aware of the dangers of this equipment.

4. Check for rocks, sticks, or anything of solid mass that may cause bodily harm to you or damage your unit.

5. Never attempt to work on or repair this piece of equipment while it is running. The P.T.O. and/or any other power source must be completely disengaged while working on this unit.

6. Those working around this unit should remain at least 100 feet from it while it is in operation. The fans are able to propel objects at a high speed up to this distance.

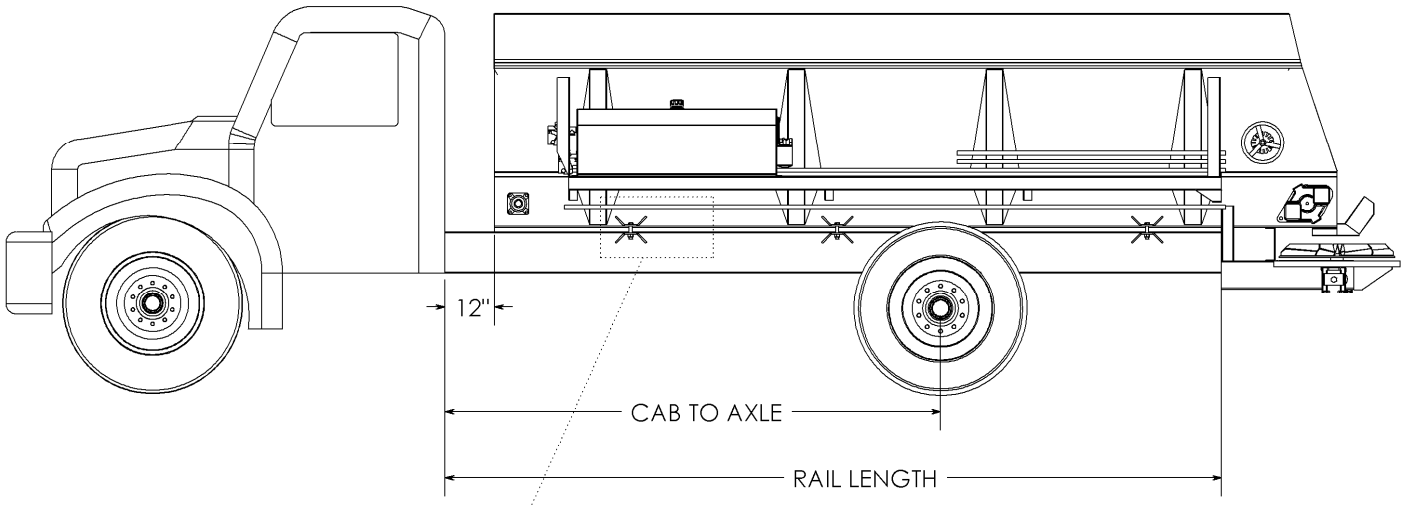
7. Use extreme caution while operating the driven portion of this unit. Its size may limit your field of vision.

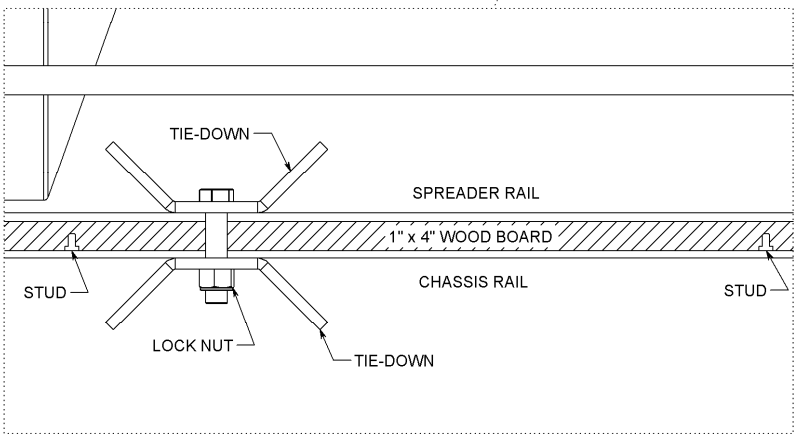
8. Never allow a leak of hydraulic fluid to persist. Hydraulic fluid is kept under very high pressure, and may cause serious injury if it hits the facial area, especially the eyes.

9. Shut down the entire system before checking hydraulic fluid level or adding fluid to the system.

INSTALLATION

Follow these guidelines to install your spreader.





RECOMMENDED TRUCK DIMENSIONS
(Allows for a 12" gap between spreader & cab)

Hopper	C-A	Rail
14'	105"	164"
16'	120"	188"
18'	136"	212"
20'	151"	236"
22'	166"	260"
24'	181"	284"
26'	196"	308"

Measurements are not for highway use.

Note: Keep in mind any obstructions behind the cab, such as, exhaust stacks, tool boxes, etc.

1. Check the chart above to ensure proper distance from the back of the Cab to the Center of the Axle (C-A), and the Length of the Chassis Rails.

2. Weld metal Studs to top of chassis rails to keep boards in place.

3. Lay 1" x 4" Wood Boards on top of chassis rails and hammer boards onto studs.

4. Set the Spreader on top of Truck Rails with boards secured in between rails of chassis and spreader; make sure spreader is centered from side to side on chassis.

5. Determine locations for Tie-Downs. BBI recommends at least two tie-downs per side in front of the axle and, depending on spreader length, one or more per side behind the axle.

6. Make sure spacing between the upper and lower tie-downs corresponds with the bolt length so that the nylon lock nut locks onto threads. Weld tie-downs to spreader and chassis, and bolt together.

Power Take-Offs & Hydraulic Pumps

Choosing the appropriate Power Take-Off (PTO) for your truck and for your spreader is CRUCIAL TO THE LIFE OF THE HYDRAULIC SYSTEM. Selecting the wrong PTO can damage your spreader and your vehicle's transmission.

Many important assembly options must be chosen specifically for your transmission and PTO application. The most critical option is the OUTPUT SHAFT SPEED PERCENTAGE. This is the percentage of your truck's engine RPM that the PTO will turn the hydraulic pump while operating your spreader.

When using a standard BBI pump supplied with your spreader, the PTO should

TURN THE INPUT SHAFT OF THE PUMP 1400 RPM.

For example:
If your truck's ENGINE TURNS **2000 RPM** at the speed you will be spreading, then you will need a **70%** PTO output shaft speed percentage to turn the PUMP **1400 RPM**.

Special hydraulic pumps are also available from BBI to accommodate a PTO that is moderately faster or slower than recommended.

INITIAL STARTUP

Check over entire unit to be sure all guards and fasteners are in place and fasteners are properly tightened.
NOTE: Stand clear of moving machinery. Do not load spreader with material until after initial startup.

1. Check to be sure that no loose parts or other material are in body, on conveyor or on spinner. Be sure to remove any loose pieces and ensure all guards are in place.
2. Check to make certain that no one is within 50 feet of the spinners.
3. Engage PTO, which in turn engages the pump for the conveyor and spinners.
4. Begin road testing spreader.

Note: Gearboxes have been filled with **90-weight oil** at the factory. However, the oil should be replaced after the first 50 hours break-in time. Thereafter, every season it should be drained and refilled. Notice the grease fitting for the top bearing. It must be greased twice per week during normal operations.

DO NOT check leaks with hands while system is operating, as high-pressure oil leaks can be dangerous! DO NOT check for leaks adjacent to moving parts while system is operating, as there may be danger of entanglement.

ROAD TEST

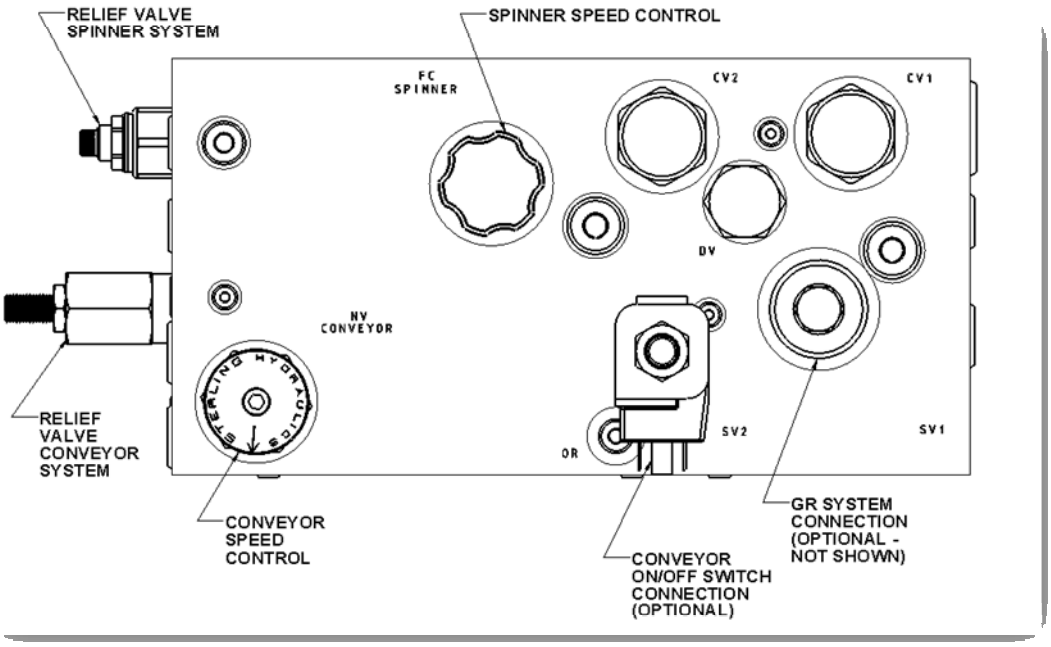
Prior to first use of the machine, prior to each spreading season, or following any major repair or overhaul, the machine should be road tested to verify that all systems and components are functioning properly. Road testing may be done on any suitable course that will allow the spreader to be driven at similar speeds used during spreading.

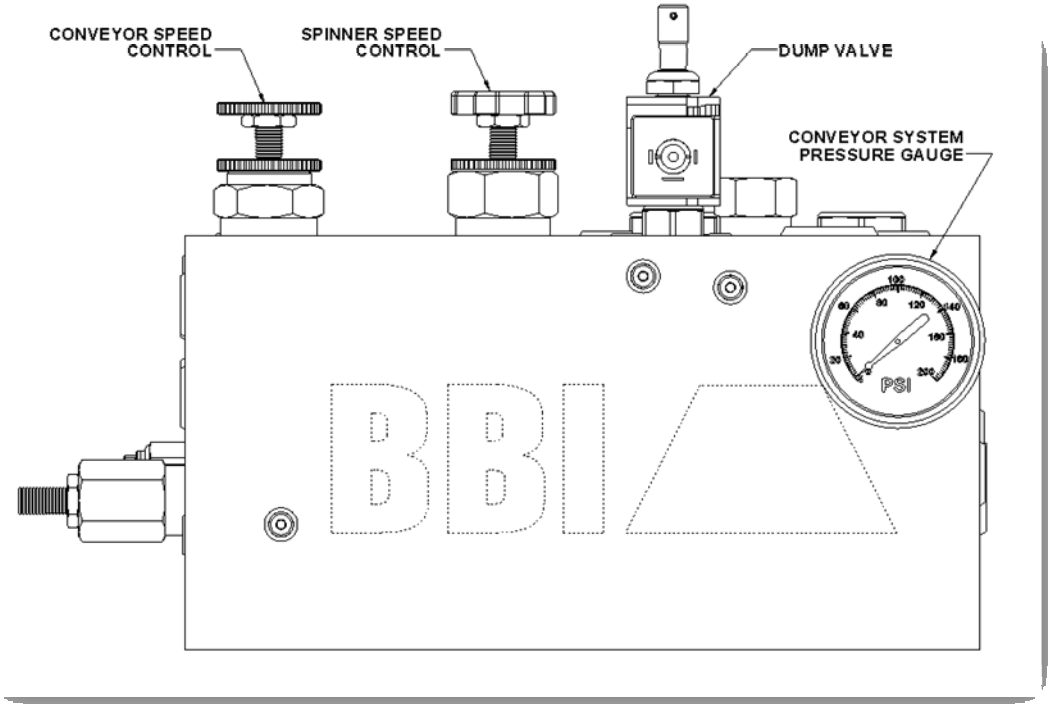
CAUTION!

To observe conveyor and spinner speeds while vehicle is in motion, proper safety precautions should be taken. These may include use of suitable mirrors clamped to permit observation by a safely seated observer, following the spreader in another vehicle at a safe distance or other suitable means. DO NOT stand in the body or on any part of the spreader, as there is danger of falling off vehicle or into moving machinery. Use great care while performing this test.

Controls (Binary Valve™)

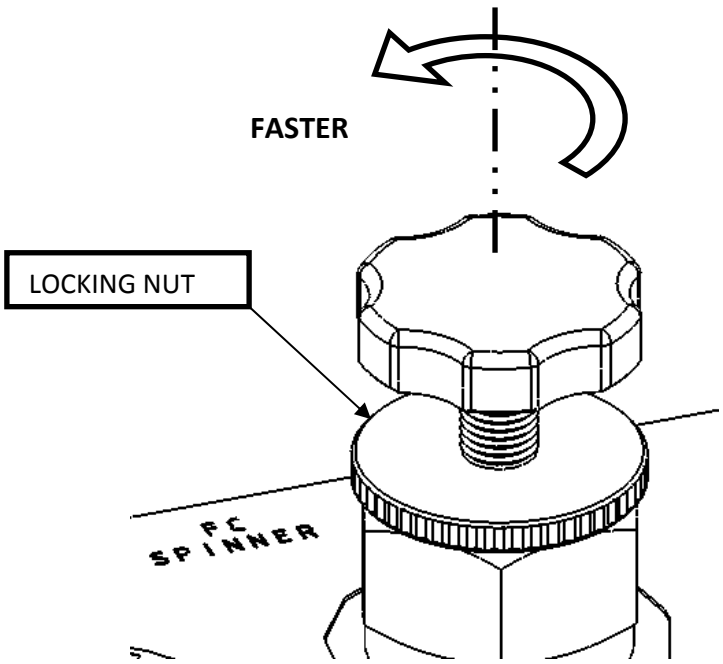
The Binary Valve™ controls the main functions of your spreader. It includes modular components that control the spinner system and the conveyor system.





Spinner Speed

The spinner speed control has an adjustable knob with a locking nut. Use the dial to set the speed of the spinners and the locking nut to secure it in place.

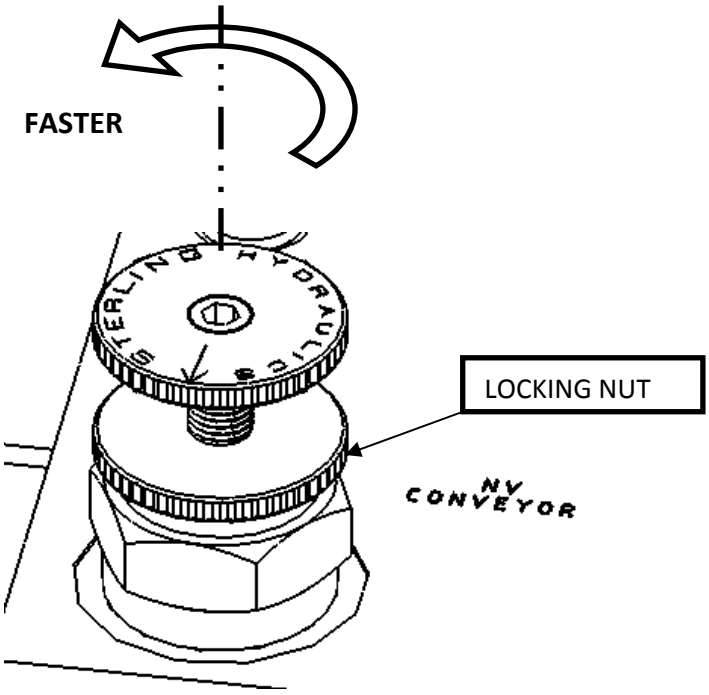


Conveyor Speed

Like the spinners, the speed of the conveyor is controlled by an adjustable knob. With this type of control, the conveyor will change speeds in relation to how fast the pump is being turned. Set the conveyor speed with the dial and then tighten the nut to lock it in position.

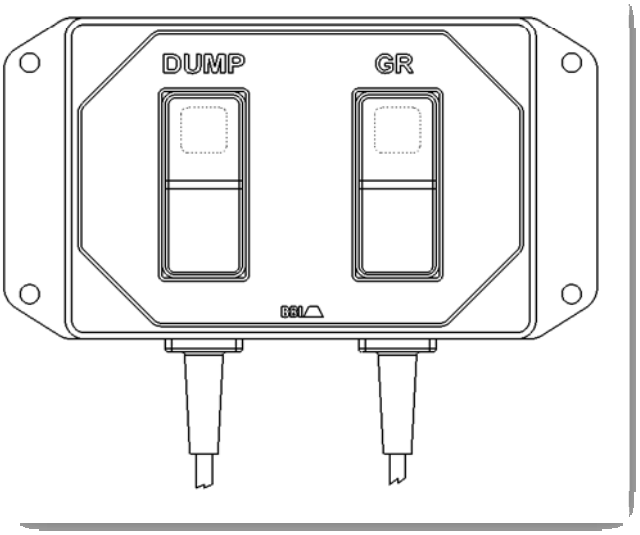
Electronic controls are available to accurately meter rates for precision applications.

For more information about conveyor speed please refer to the *Application Rate* section of this manual.



Dual Switch Box

A dual switch control box with a wiring harness is included to control the Dump Valve and GR System functions from the tractor.
The wiring harness has labels on the connections to help with proper installation. However, the spreader will still operate without these functions installed.



ON/OFF Dump Valve

The dump valve switch should be used to temporarily turn the conveyor ON/OFF while the spreader is loaded and in operation.
Power (12V) is sent to the solenoid valve causing the conveyor to stop.
The dump valve will not be used if an electronic controller is installed for rate control. The rate controller will be able to stop the conveyor.
Note: Even with the Dump Valve ON, the conveyor could still slowly creep when not loaded with material. Disengage the PTO to completely shut off power to the conveyor.

GR System

Higher application rates can be achieved by utilizing the GR System. This option enables the conveyor to have two speeds, "Normal" and "High." When the GR System is ON, the conveyor system is capable of doubling its speed.
This function is typically used for spreading light materials such as shavings. When spreading heavier material like poultry litter it may be necessary to get the load started in the "Normal" setting and then change to "High" after the conveyor has started moving.

GENERAL OPERATING PROCEDURES

To operate the spreader, the following sequence should be observed:

1. Be sure the unit has been serviced and is in good operating condition.
2. Disengage the PTO.
3. Fill the body with material to be spread.
4. Drive to the location where spreading is to be done.
5. Ensure hydraulic valves are set properly.
6. Set the feed gate opening to obtain the desired yield.
7. Engage the PTO
8. Drive at a speed that allows the engine to run at a proper RPM and maintain good control for the terrain.

ADJUSTING YOUR SPREADER

IMPORTANT!

Spinner assembly and material flow dividers have not been adjusted at the factory. Before spreading material, spread pattern tests must be conducted to properly adjust the spreader. THE MANUFACTURER OF THIS SPREADER WILL NOT BE LIABLE FOR MISAPPLIED MATERIAL DUE TO AN IMPROPERLY ADJUSTED SPREADER.

Material Distribution

The spread pattern is affected by a variety of conditions including:

1. Spinner speed.
2. Point of delivery of material to the spinner discs.
3. Spinner blade position.
4. The condition of the blades on the spinner discs (i.e. damaged, bent, broken, rusted, dirty, etc.)
5. Material flow characteristics.
6. Material weight per cubic foot (density.)
7. Rate of delivery of material.
8. Balance between deliveries to both spinners.
9. Cleanliness of the blades and the discs themselves.
10. Level of spreader.
11. Wind.

Because most of these characteristics will change with each load of material being spread, a certain amount of experience mixed with some testing will determine the adjustments needed to obtain the desired swath width and spread rate.

APPLICATION RATE

The rate, amount of material being applied, is controlled by the speed of the bed chain and height of the gate opening. Travel speed can also alter the application rate.

Other aspects that will affect the application rate include the material density and the width of the spread swath. When measuring rates using lbs. per acre, the material weight per cubic foot must be taken into account. As the density of the material decreases, the volume of material needed to produce the application rate increases. For example, if your material weighs 25 lbs/cu.ft. you will need to apply twice as much material compared to someone whose material weighs 50 lbs/cu.ft. The swath width must also be considered. If nothing else changes except the swath width, then the narrower the swath the heavier the rate will be.

When adjusting application rates, keep these principles in mind:

- **Bed chain increases = Rate increases**
- **Gate height increases = Rate increases**
- **Travel speed increases = Rate decreases**
- **Material density increases = Rate increases**
- **Swath width increases = Rate decreases**

To determine material weight per cubic foot use a density cup, or calculate by measuring five gallons of material and multiplying by 1.5:

Weight of 5 gallons of material (lbs.) × 1.5 = Weight per cubic foot (lbs)

BBI can create a rate chart customized for your spreader after it has been mounted on a truck or other chassis. If you provide us with the following information, we can produce a chart that will contain the discharge rate of the bed chain for every inch of gate opening.

1. Width of spread swath (How wide you are going to spread.)
2. Width of gate opening.
3. Type of conveyor chain (667X or 88K.)
4. Number of teeth on the rear roller sprockets.
5. Revolutions of the front roller when the truck travels one mile in the same gear that you will use to spread.

Automatic Rate Controllers **are available from your authorized BBI dealer.**

PREVENTIVE MAINTENANCE

1. The conveyor chain should be checked for wear at least every 500 operating hours. Once the chain starts to wear, it will wear quickly. The chain tension should be checked at this time as well. If the conveyor chain is too slack, refer to pages 14-15 for help on correcting this. When tightening the conveyor, make sure that the idler roller is perpendicular to both chains.

2. On all new units, after approximately 250 operating hours, the hydraulic system should be drained. This is to remove any wear-in particles from the hydraulic system due to the breaking-in of components. Replace the hydraulic oil with a good grade of 10 weight hydraulic oil.

3. Every 75 operating hours, the hydraulic oil level in your tank should be checked. Add a good grade of 10 weight hydraulic oil as needed.

4. Every 75 operating hours, all seals, connections, and fittings in the hydraulic system should be checked for leakage. Repair any leaks that are present as soon as possible.

5. Lubrication is critical to the longevity of all moving parts. All bearings, universal joints, and other moving parts should be lubricated on a daily basis.

6. Every 100 operating hours, all bearings and universal joints should be checked for wear. If wear is found on ANY part, it should be replaced. Once a moving part starts to wear, it will wear quickly due to vibrations and friction. Ignoring worn parts can lead to unnecessary down time. It may also cause other parts to be damaged.

7. If you intend to spread lime, make sure that your unit has been outfitted for this purpose. **OUR STANDARD UNIT IS NOT OUTFITTED FOR SPREADING LIME**. If you spread lime with a unit that is not outfitted for this purpose, serious damage can occur.

8. On a daily basis, check the bolts on the hub and bushing of the spinners and the bolts on the spinner blades to make sure they are tight. Great bodily injury or death can occur if spinner or blade comes off the unit.

9. Every 500 operating hours, make a visual inspection of the mounting of the spreader body to your truck. Also inspect all the welds and seams on the body of your unit.

10. Make sure that you know the exact capacity of your unit. **DO NOT over load your unit**. Always keep in mind that some materials vary in weight, therefore, material volume will vary as well.

11. Every 50 operating hours, lubricate the gate slides and rack gears on the gate.

12. Every 100 operating hours, check the input shaft and universal joint of the PTO at the transmission of your truck. If there is any wear showing, replace the part. Uncouple these parts so you can make a close visual inspection of their condition.

Spinner Gearbox

Check the oil level in the gear case monthly. The oil in a new unit should be drained at the end of the **first two weeks or 50 hours** and then thoroughly flushed with light oil. A good quality **90-weight oil** is used in BBI gearboxes. Refill the gear case with a recommended lubricant. After the initial change, the oil should be changed every 2,000 hrs. or annually, whichever is first. Notice the grease fitting for the top bearing. It needs grease twice per week during normal operations.

Conveyor Chain

Hose down the machine and remove any material build-up on the sprockets or under the chain. If material is allowed to build up, the chain may ride up and damage the chain and the body.

NOTE: If material builds up under the chain, the chain will ride on the material instead of the bottom panel. The more material allowed to build up, the closer the chain becomes to the chain shields. If the chain should catch a chain shield, it could permanently distort the chain, the chain shield, or the body. In the same manner, if the material is allowed to build up in the sprockets, the same sort of damage will occur. Do not remove material while the chain or spinners are running. Lubricate the conveyor chain at least once a week. Use a mixture of 75% fuel oil and 25% SAE 10 oil in a pressurized hand sprayer.

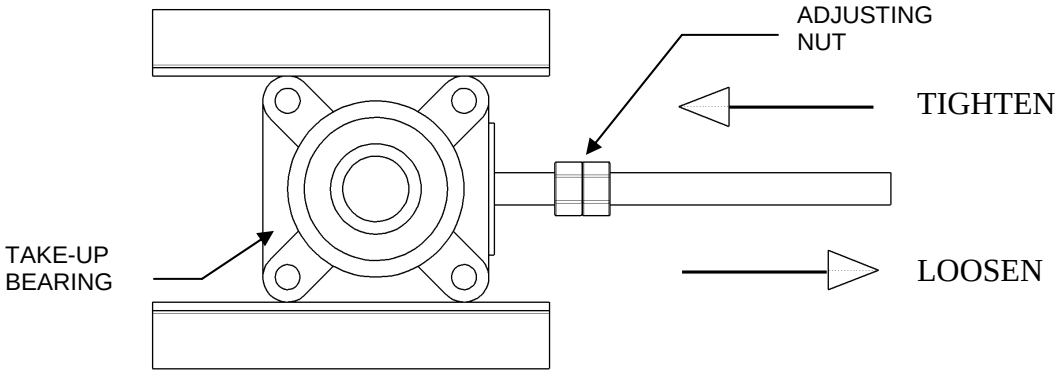
DANGER!

When the conveyor is running, stay out of the hopper and away from all moving parts, and never use tools on the conveyor while it is operating. To lubricate chain, shut down spinners, and run conveyor very slowly, spray the oil mixture between the links. Do this once a week after washing the machine, allow it to dry before lubricating.

Conveyor Chain Tension

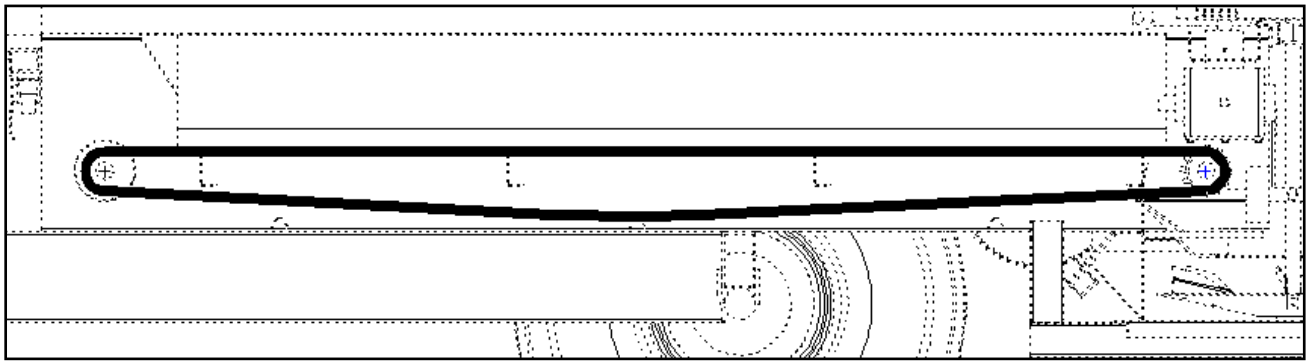
Conveyor chain tension is also a factor in chain and sprocket life. The proper chain tension is illustrated on the next page. The bottom of the chain should be tight enough to stay off of the first and last cross angles under the floor and should have enough slack to just touch the middle cross angles. Be sure the chain is tensioned equally on both sides. This adjustment is made on each side of the unit at the idler bearings located at the front of the unit.

Chains that are too tight will tend to stretch, causing excess sprocket wear and eventually breakage. Too much slack presents the possibility of the chain catching on sub-frame parts.

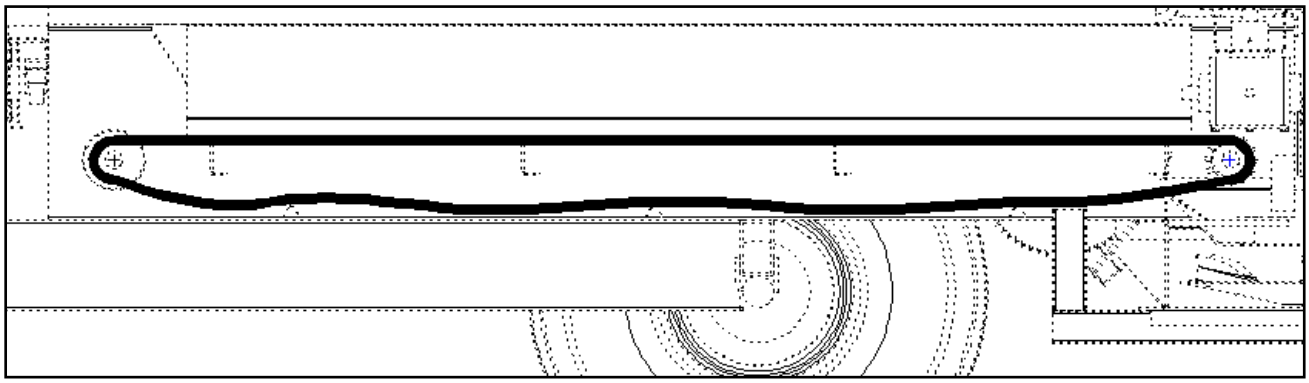


Conveyor Tension Adjustment

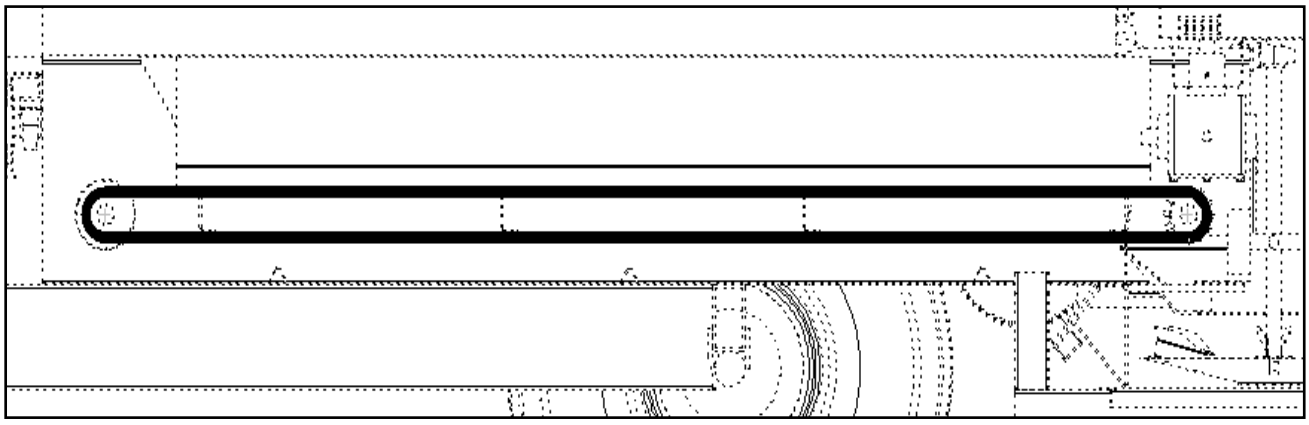
When adjusting the conveyor chain, allow the bottom side of the conveyor to touch the cross members of the chassis inside the conveyor return tunnel.



OPTIMUM CHAIN TENSION



TOO LOOSE



TOO TIGHT

Note: Conveyor Chain will stretch when first used. Chain must be checked for appropriate tension and properly adjusted to avoid damaging unit. After initial break in period stretching should be minimal.

TROUBLESHOOTING

PROBLEM: Conveyor will not run.
SOLUTION: Check conveyor speed control valve positioning. Check for obstruction in the path of the conveyor chain. Check for hydraulic leaks. Make sure the conveyor motor is putting out power. Make sure the conveyor side of the pump is working properly.

PROBLEM: Spinners will not run.
SOLUTION: Check spinner speed control valve positioning. Check for hydraulic leaks. Make sure the spinner motors are putting out power. Make sure the spinner side of the pump is working properly. Check to see if there is an obstruction underneath the spinners.

PROBLEM: Conveyor or spinners will not run.
SOLUTION: Check the position of the spinner and conveyor speed control valves. Check the entire hydraulic system for leaks. Check the PTO input for slippage or breakage. Check the output of the hydraulic pump.

PROBLEM: Hydraulic pump makes a high pitched noise.
SOLUTION: Check the oil level in the tank. If you have recently opened the hydraulic system, allow it to run for a little while without a load to purge any air in the lines. Check the output of the pump.

PROBLEM: The conveyor chain is making a grinding noise.
SOLUTION: Check the tension of the chain. Check for any obstruction in the path of the conveyor.

PROBLEM: Noise coming from the conveyor reducer (gearbox)
SOLUTION: Repair or replace the gearbox. Bad bearings is likely the problem.

PROBLEM: Noise coming from a bearing.
SOLUTION: Replace the bearing.

PROBLEM: Noise coming from a universal joint.
SOLUTION: Lubricate the joint. If noise still occurs, replace joint.

PROBLEM: Wear on the sides of the conveyor chain.
SOLUTION: Check the tracking of the chain. Make sure the idler roller is perpendicular to both sides of the conveyor.

PROBLEM: Too much wear on the conveyor bed.
SOLUTION: Check the tension of the conveyor chain. Look for anything that may be caught under the conveyor.

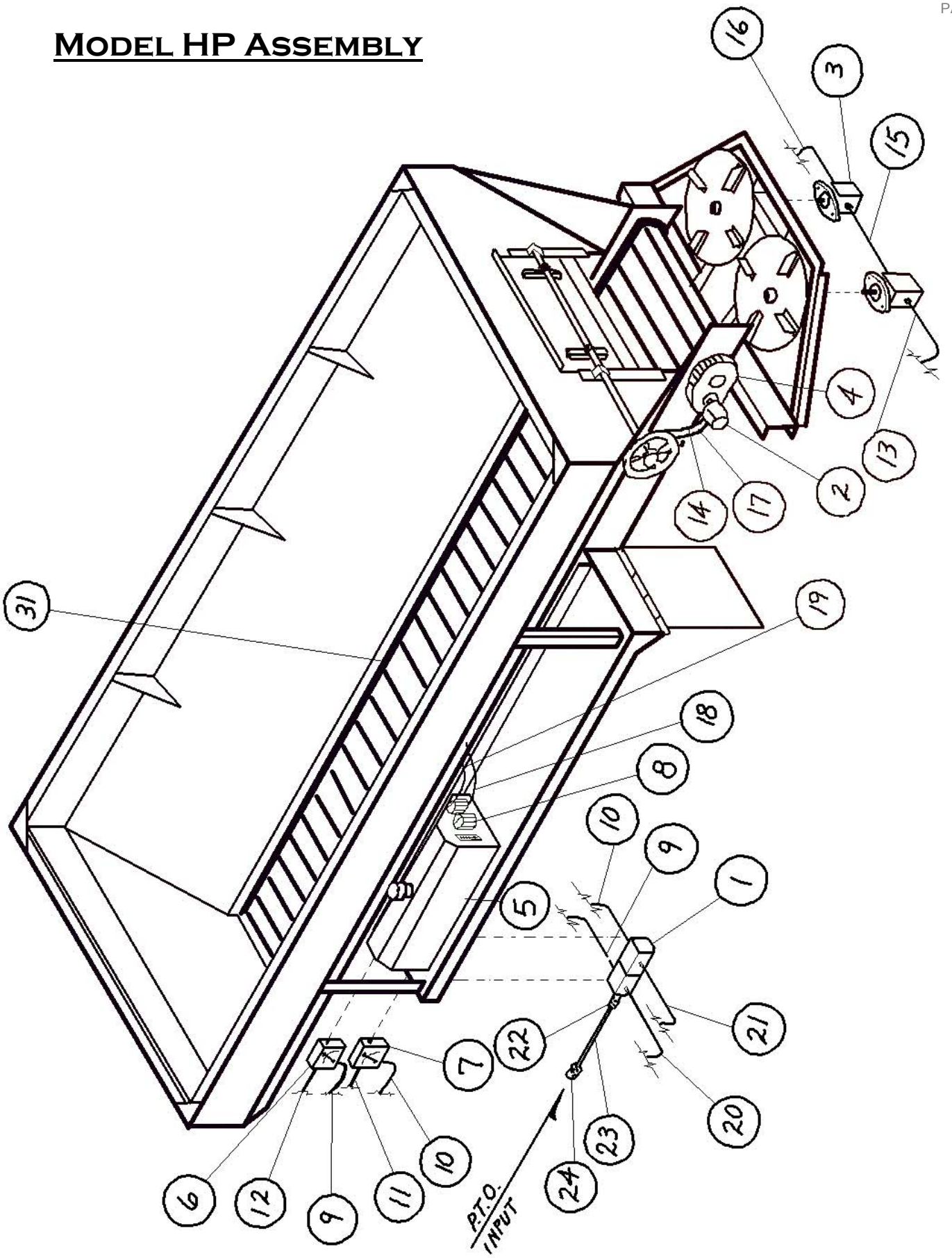
THE SPREADER OPERATOR IS #1

Many hours can be spent checking and adjusting a dry spreader, but all this work will be in vain unless a trained person operates the equipment.

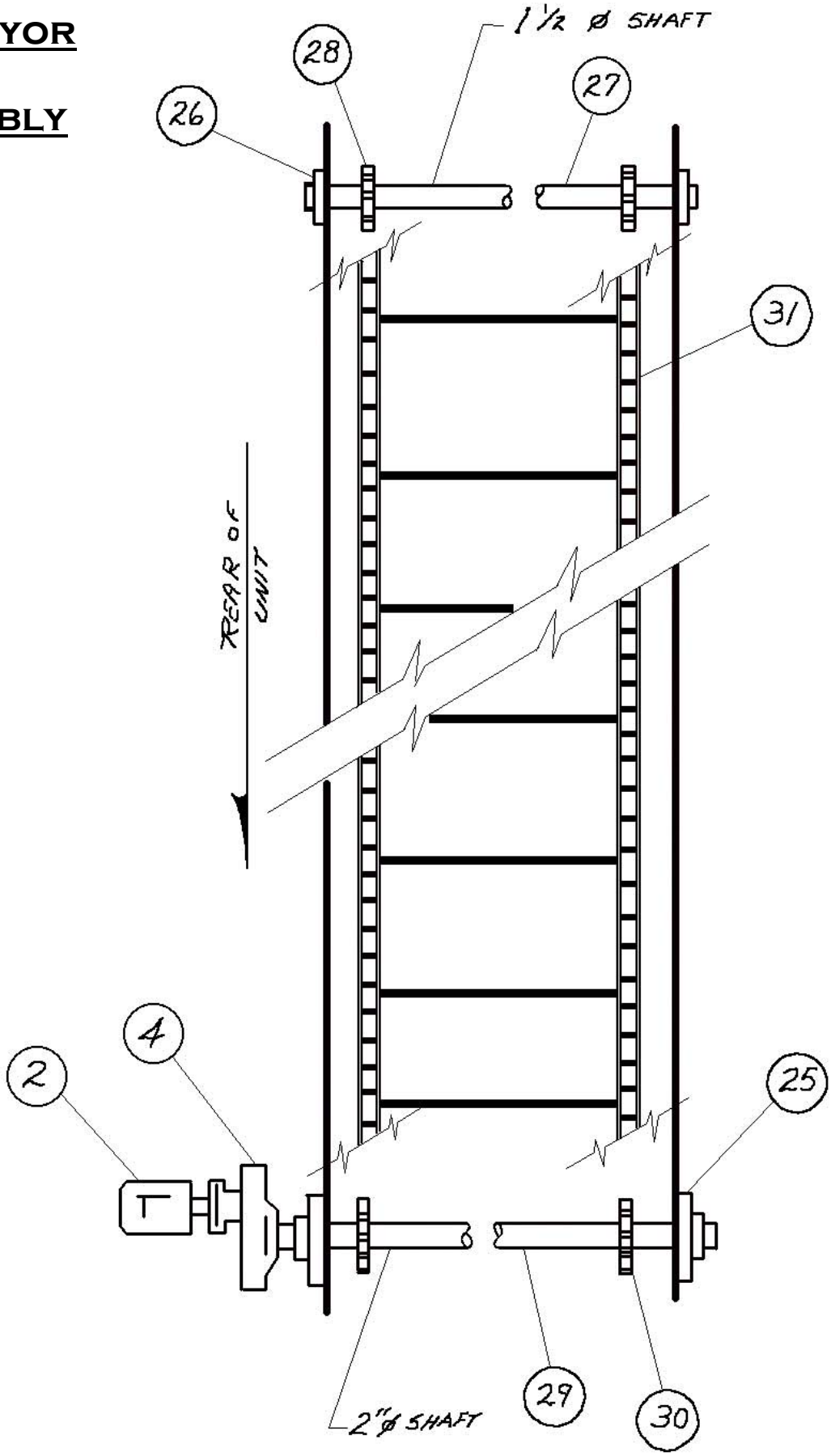
A good operator knows how to get the best out of his equipment. He knows the equipment's strong and weak points and operates it in a way to take advantage of its strong points and minimize its faults.

Accurate spacing of swaths is essential and requires careful driving. Swath spacing should be the same as the effective swath width. In addition to driving, operators should study this operator's manual, know how to calibrate for various materials and rates of application, and give particular attention to cleaning, adjusting, maintaining and repairing the spreader.

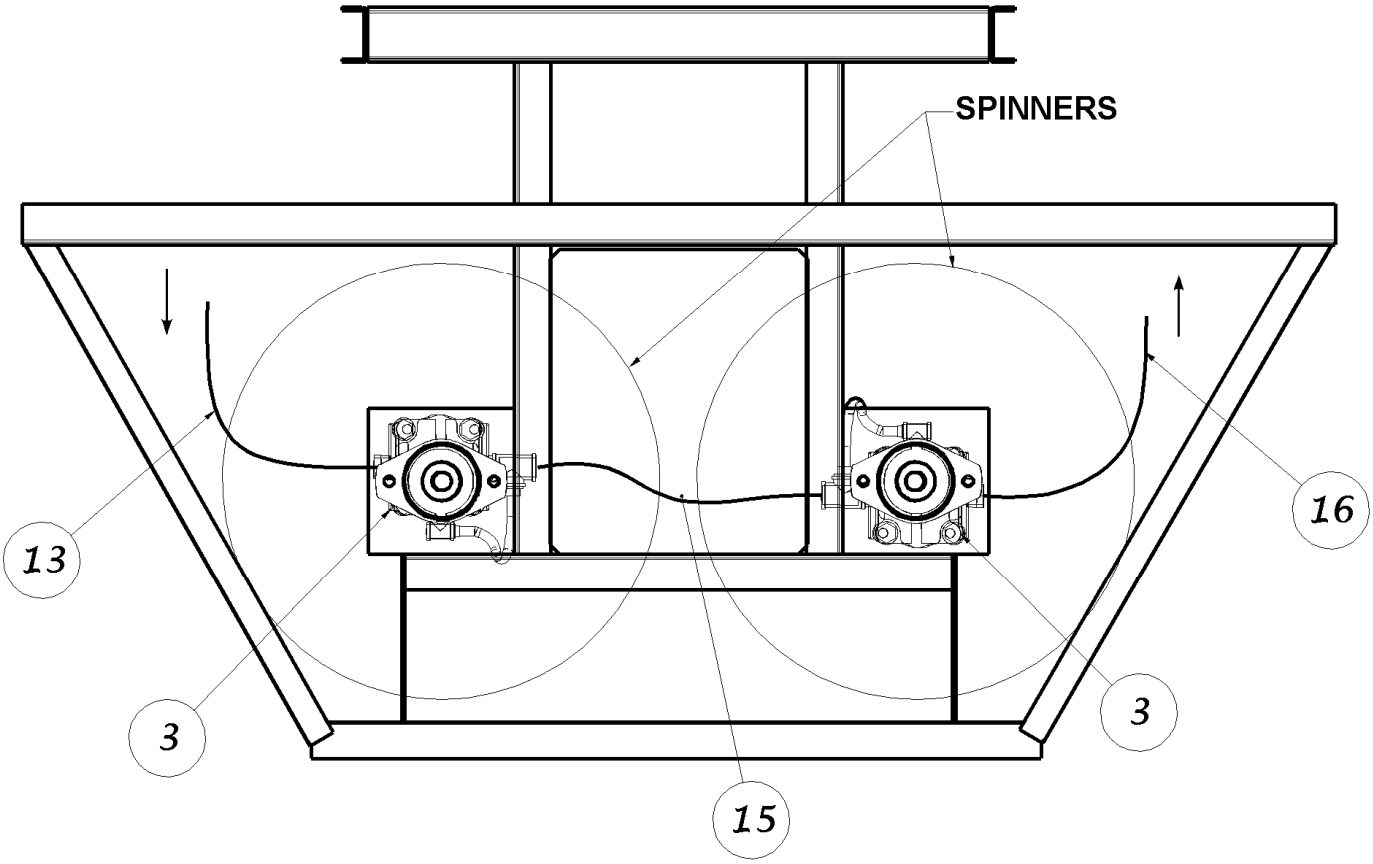
Model HP Assembly



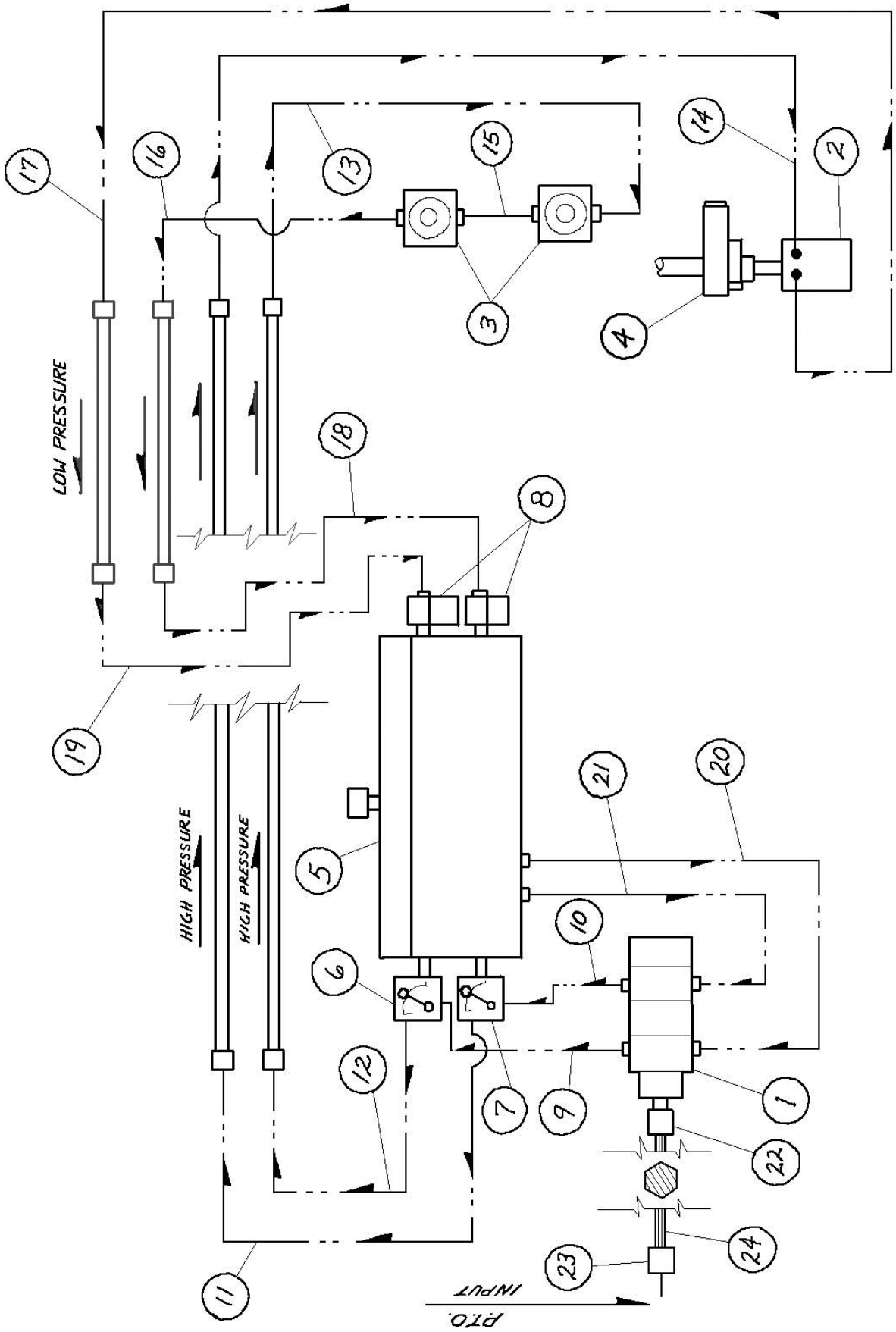
Conveyor Drive Assembly



Spinner Drive Assembly



Hydraulic Assembly



PARTS LIST

ITEM	QTY	PART#	DESCRIPTION
1	1		HYDRAULIC PUMP
2	1	RE18A	CONVEYOR DRIVE MOTOR (SINGLE)
2	1	RS12A	CONVEYOR DRIVE MOTOR (TANDEM)
3	2	30SM20	SPINNER DRIVE MOTOR
4	1	301075	CONVEYOR DRIVE REDUCER (SINGLE)
4	1	301033	CONVEYOR DRIVE REDUCER (TANDEM)
5	1	HTT40	HYDRAULIC TANK
6	1	704052A	SPINNER SPEED CONTROL VALVE
7	1	704052A	CONVEYOR SPEED CONTROL VALVE
8	2	702784A	HYDRAULIC OIL FILTER
9	1		PUMP / SPEED CONTROL HOSE (SPINNERS)
10	1		PUMP / SPEED CONTROL HOSE (CONVEYOR)
11	1		SPEED CONTROL / RIGID PIPE HOSE (CONVEYOR)
12	1		SPEED CONTROL / RIGID PIPE HOSE (SPINNERS)
13	1		RIGID PIPE / SPINNER MOTOR HOSE
14	1		RIGID PIPE / CONVEYOR MOTOR HOSE
15	1		SPINNER CROSS-OVER HOSE
16	1		SPINNER / RIGID PIPE HOSE
17	1		CONVEYOR / RIGID PIPE HOSE
18	1		RIGID PIPE / TANK RETURN HOSE (SPINNERS)
19	1		RIGID PIPE / TANK RETURN HOSE (CONVEYOR)
20	1	T70-125	TANK / PUMP SUCTION HOSE (SPINNERS)
21	1	T70-125	TANK / PUMP SUCTION HOSE (CONVEYOR)
22	1	123020162	P.T.O. / PUMP UNIVERSAL JOINT
23	1	183020282	P.T.O. INPUT UNIVERSAL JOINT
24	1	C78H	P.T.O. INPUT SHAFT
25	2	UCF211-32	FLANGE BEARING (DRIVE)
26	2	UCF208-24	FLANGE BEARING (IDLER)
27	1		IDLER ROLLER (FRONT)
28	2		DRIVE SPROCKET (IDLER)
29	1		DRIVE ROLLER (REAR)
30	2		DRIVE SPROCKET (DRIVE)
31	1		CONVEYOR CHAIN

Recommended Spare Parts

Recommended spare parts are not a required purchase, yet as the manufacturer of these units, we know which parts are most likely to need replacing. We recommend keeping these parts on hand in case needed so that you may repair your spreader in as short a time as possible, so that you may return to working order again.

1. Items 9-15 -- These are all of the high pressure hoses on your unit. They are the most suspect for failure due to the pressure they contain.

2. Item 8 -- Inline oil filter. (qty: 4) They should be replaced at least every 1500 operating hours.

3. Item 25 -- Flange bearing (drive) qty: 2

4. Item 26 -- Flange bearing (idler) qty: 2

It is a good idea to change the hydraulic oil in your system approximately every 3000 operating hours. Keep in mind that when you do so, you will most likely have air in your system. Simply allow the system to run without a load to purge the air out.