PARTS AND SERVICE MANUAL MECHANICAL DRIVE TRUCK MOUNT MODEL: MP





BARRON & BROTHERS INTERNATIONAL

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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. Hagter 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 <u>Barron & Brothers International</u> 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!



WARNING!

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.

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.



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



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.



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. Open feed gate to desired spread rate (reference chart on side of hopper).
- 3. Check to make certain that no one is within 50 feet of the spinners. Engage PTO, which in turn engages the conveyor and PTO drive spinners.
- 4. Begin road testing spreader.

Note: Gearboxes have been filled with <u>90-weight oil</u> 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.



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, and 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.



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. Set the feed gate opening to obtain the desired yield.
- 6. Engage the PTO
- 7. 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 criteria including:

- 1. Spinner speed.
- 2. Point of delivery of material to the spinner discs.
- 3. The condition of the fins on the spinner discs (i.e. damaged, bent, broken, rusted, dirty, etc.)
- 4. Material flow characteristics.
- 5. Material weight per cubic foot (density.)
- 6. Rate of delivery of material.
- 7. Balance between deliveries to both spinners.
- 8. Cleanliness of the fins and the discs themselves.
- 9. Level of spreader.
- 10. 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 amount of material being applied is controlled by the speed of the bed chain and height of the gate opening. Travel speed will also alter the application rate. For example, more material will be applied when driving at 5 mph than at 6 mph unless the bed chain speed or gate height is increased.

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. The less the material weighs per cubic foot the more volume it will take. The swath width must also be considered. If nothing else changes except the swath width, then the narrower the swath the heavier the rate.

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:

<u>Weight of 5 gallons of material (lbs.)</u> \times <u>1.5</u> = <u>Weight per cubic foot (lbs)</u>



PREVENTATIVE MAINTENANCE

- 1. The chain conveyor 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 the same time. If the chain conveyor is too slack, the drawing on page 13 will show how to correct this. When tightening the chain conveyor, make sure the conveyor roller is perpendicular to both chains when finished. For help with the proper conveyor chain tension, refer to page 14.
- 2. Tension on the jump chain at the conveyor drive to the spinners should be checked at least every 100 operating hours. If there is more than 3/8 inches of slack in the chain, it should be tightened. The drawing on page 12 will show how this is done.
- 3. On all new units, after 100 hours of operation all gear boxes should be drained to remove any metal particles from the break in of the unit. Replace with any grade of 90 weight gear oil. Then, after every 150 operating hours, the oil level in all gear boxes should be checked. Oil replacement should not be necessary. Add same grade used in step 4, 90 weight gear oil as needed.
- 4. Every 150 operating hours, check for seal leakage on all gearboxes. If there is leakage, replace the seal.
- 5. Lubrication is critical to the longevity of life to all moving parts. On a daily basis all bearings, universal joints, chains and any grease fittings should be lubricated. There are many lubrication points on this unit. By understanding the drawings in this manual, learning all lubrication points will be easier.
- 6. Every 100 operating hours, all bearings, universal joints, sprockets and chains should be checked for wear. If wear is found on any part it should be replaced. Once wear starts on moving parts, friction will cause them to wear more quickly. Ignoring worn parts can lead to unnecessary downtime. It can also lead to additional breakage of other parts on the unit.
- If you intend to spread lime, be sure that your unit has been outfitted for spreading lime. OUR STANDARD UNIT <u>IS NOT</u> OUTFITTED FOR SPREADING LIME, and doing so may cause unnecessary damage to your unit.
- 8. During the operating season, one should check the bolts on the spinners daily. If left unchecked and one breaks or comes off during operation, it can cause great bodily harm and destroy the spinner.
- 9. Check the air pressure as well as tread wear on the tires. Proper pressure is 35 p.s.i. max. The tire manufacturer has rated the tires for a max. of 25 m.p.h. Do not exceed this speed, doing so may cause damage to the tread and/or body.
- 10. Every 500 operating hours, inspect ALL welds and seams on the unit.
- 11. Every 100 hours, check for wear on the P.T.O. input shaft. If wear is found on the shaft or the shaft key replace the worn part.
- 12. DO NOT overload the unit, this may cause serious damage!

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- 13. Every 50 hours, grease the door slides, and rack gears on the slide door of the unit.
- 14. Every 100 operating hours, check the input shaft and coupling of the P.T.O. at the transmission of your truck. If there is any wear showing, replace the worn part. It is a good idea to uncouple these pieces to better inspect their condition.

If it is found that neglecting to do, or not performing correctly any of these maintenance recommendations has caused or contributed to a malfunction, your warranty will be void thereafter under negligence, or improper repair. (see Warranty)

SPINNER DRIVE CHAIN ADJUSTMENT

To adjust spinner drive chain tension, loosen idler sprocket positioning bolt. Push idler sprocket into chain. Allow approximately ³/₄" of deflection in the chain. Make sure positioning bolt is tightened properly.





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.



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, 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, nor should you 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 below. 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.





TOO LOOSE



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.

MECH TRUCK. C/L



TROUBLESHOOTING

Problem: Conveyor will not run

Solution: Make sure the P.T.O. is engaged. Check the transfer shaft and the universal joints for slippage. Check the P.T.O. input shaft and universal joint for slippage. Check the P.T.O. output shaft on your transmission.

Problem: Conveyor is running but fans will not.

Solution: Check the jump chain at the reducer and cross over to the fans. Check the input reducer to make sure it is putting out.

Problem: Only one fan will run. Solution: Check the universal joints for slippage. Check the reducer. Check the fan to see if it is hung up.

Problem: Conveyor chain is making a grinding noise. Solution: Check the tension in the belt. Check for objects in the path of the chain.

Problem: Grinding noises in the reducer. Solution: Repair or replace reducer.

Problem: Noises coming from a bearing. Solution: Replace bearing.

Problem: Noises coming from a universal joint. Solution: Lubricate joint, if noise is still present, replace joint.

Problem: Wear on the sides of the chain conveyor. Solution: Check the tracking of the chain conveyor. Make sure idler shaft is perpendicular to the chain conveyer.

Problem: Too much wear on the bottom of the body. Solution: Check tension of the chain conveyor. Look for anything caught under the chain conveyer.

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.



CONVEYOR DRIVE







POWER DRIVE AND ASSEMBLY



PARTS LIST

<u>ITEM</u>	<u>QTY</u>	PART #	DESCRIPTION		
1	1		Chain Conveyor Drive Reducer (Gearbox)		
2	2	UCF211-32	Conveyor Flange Bearing (Drive)		
3	2	UCF208-24	Conveyor Flange Bearing (Idler)		
4	2		Chain Sprocket (Drive)		
5	2	AG2417	Chain Sprocket (Idler)		
6	1		Drive Roller		
7	1		Idler Roller		
8	1		Conveyor Chain (Standard)		
9	1	183010282	Jack Shaft Universal Joint		
10	1	60BS20-1025	Spinner Jump Sprocket (For Superior Gearbox)		
11	1	PTF-71-3L	Input Spinner Reducer (left hand drive)		
12	1	PTF-71-2L	Output Spinner Reducer (left hand drive)		
13	1	PTF-71-3R	Input Spinner Reducer (right hand drive)		
14	1	PTF-71-2R	Output Spinner Reducer (right hand drive)		
15	1	C78H	Cross-Over Hex Shaft		
16	1	60BS20-1225	Spinner Drive Sprocket		
17	1	AG2417	Spinner Idler Sprocket		
18	1	5016-125	Spinner Chain Coupling Sprocket		
19	2	183010282	Spinner Universal Joints		
20	2	UCP207-20	Jump Pillow Block Bearing		
21	1	60-1BLK	Jump Chain		
22	1	C78H	Transfer-Drop Hex Shaft		
23	1	293020162	Transfer-Drop Universal Joint		
24	4	UCP205-16	Transfer-Drop Pillow Block Bearing		
25	1	C1RCR	Transfer Shaft (1")		
26	1	293020162	Transfer - Input Universal Joint		
27	1	C78H	P.T.O. Input Shaft		
28	1	183020182	P.T.O. Input Universal Joint		



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. Item 17 Spinner Idler sprocket
- 2. Item 21 Jump Chain
- **3.** Item 2 -- Conveyor Flange Bearing (drive)
- **4.** Item 3 -- Conveyor Flange Bearing (idler)
- 5. Item 24 Pillow Block Bearing (This bearing is used in many locations on this unit. Recommended Qty: 2)
- 6. Item 20 Jump Pillow Block Bearing

It is also a good idea to purchase a set of shaft keys. They are small and very easy to lose when working on your unit. They are important because your unit will not operate without them.









100-1001-5 & 100-2002-5 Oskaloosa

(Heavy Duty 50:1 Upgrade Option)
Part #

		1007-002-2	# 8 Input cap with Hole
1002022-5	Right Hand 50:1 Gearcase	1008-001-1	#9 Input Cap Gasket
100-1021-5	Left Hand 50:1 Gearcase	1009-001-1	#10 Bearing Race, Input
		1010-001-1	#11 Bearing Cone, Input
Part #		1012-001-1	#12 Bearing Race, Output
1001-001-2	# 1 Housing	1013-001-1	#13 Bearing Cone, Output
1002-001-2	# 2 Side Cover (Output)	1015-001-1	#14 Oil Seal, Input
1003-001-1	#3 Side Cover Gasket	1016-001-1	#15 Oil Seal, Output
1004-001-1	#4 Worm Gear 50:1 Left Hand & Shaft	1018-001-1	#16 Pipe Plug (1/2")
1004-002-1	#4 Worm Gear 50:1 Right Hand & Shaft	1019-001-1	#17 Pipe Plug, Square Steel (1/8")
1005-001-1	#5 Bronze Ring Gear 50:1 Left Hand	1020-001-1	#18 Solid Iron Plug , Square Head (1/2")
1005-002-1	#5 Bronze Ring Gear 50:1 Right Hand	0506-010-1	#19 Cap Screw (3/8" -16X 1-1/4")
1006-001-2	#6 Ring Gear Center Hub	0506-921-1	#20 Lock Washer (3/8")



1007-001-2

#7 Input Cap without Hole