

Operator's Manual

Model HLP/HTP

Hydraulic Power Broom



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Please have your **SERIAL NUMBER** ready when contacting your authorized dealer for replacement parts or service information.

SERIAL NUMBER:

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WARNING

You must read, understand and comply with all the safety and operating instructions in this manual before attempting to set-up and operate your power broom.

Failure to comply with the safety and operating instructions can result in loss of machine control, serious personal injury to you and/or bystanders, and risk of equipment and property damage. The triangle  in the text signifies important cautions or warnings which must be followed.



Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of the unit, sever personal injury or death to you, or bystanders, or damage to property or equipment. The triangle  in the text signifies important cautions or warnings which must be followed.

GENERAL OPERATION

- Read, understand and follow all instructions in the manual and on the unit before starting.
- Only allow responsible adults who are familiar with the instructions, to operate the unit (local regulations can restrict operator age).
- Clear the area of object such as rocks, toys, wore, etc., which could be picked up and thrown.
- Be sure the area is clear of other people. Stop unit if anyone enters the area.
- Always look down and behind before and while traveling in reverse.
- Be aware of broom discharge direction and do not point it at anyone. Do not point the discharge at glass enclosures, automobiles, or windows.
- Disengage all clutches and PTO's before starting engine.
- Never leave running unattended. Always disengage the broom and traction controls and stop engine.
- Operate only in daylight or good artificial light.
- Do not operate the unit while under the influence of drugs or alcohol.
- Watch for traffic when operating near or crossing roadways.
- Use extra care when loading or unloading the unit into a trailer or truck.
- Keep in mind the operator is responsible for accidents occurring to other people or property.
- Data indicates that operators, age 60 years and above, are involved in a large percentage of power equipment-related injuries. These operators should evaluate their ability to operate the unit safely enough to protect themselves and others from injury.
- All operators should seek and obtain professional and practical instruction.
- Always wear substantial footwear and appropriate clothing. Wear footwear that improves traction on slippery slopes. DO NOT wear long scarves or loose clothing that could become entangled in moving parts.
- Before using, always visually check that hardware is present, in-tact and secure. Replace worn or damages parts.
- Never operate the machine with defective guards, or without safety protective devices in place.
- Stop engine before: refueling, removing the broom assembly, or making adjustments.
- Follow the manufacturer's recommendations for wheel weights or counter weights.
- Adjust leveling and pattern adjustments before operating.
- Do not touch power broom parts which may be hot from operation. Allow such parts to cool before attempting to service the unit.

SERVICE AND MAINTENANCE

- Maintain and replace safety and instruction labels as necessary.
- Never run a unit in an enclosed area.
- Keep nuts and bolts tight and keep equipment in good condition
- Never tamper with safety devices. Check their proper operation regularly and make necessary repairs if they are not functioning properly.
- Keep unit free of debris and build-up. Clean up any oil spillage.
- Stop and inspect equipment if you strike an object. Repair, if necessary, before restarting.
- Never make adjustments or repairs with the engine running unless specified otherwise in the engine manufacture's manual.
- Components are subject to wear, damage, and deterioration. Frequently check components and replace with the manufacturer's recommended parts, when necessary.
- Check control operation frequently. Adjust and service as necessary.
- Use only factory authorized parts when making repairs.
- Always comply with factory specifications on al settings and adjustments.
- Only authorized service locations should be utilized for major service and repair requirements.
- Never attempt to make your own repairs on this unit unless you have been properly trained. Improper service procedures can result in hazardous operation, equipment damage and voiding the manufacturer' warranty.

Safety Decals

DECALS

This unit has been designed and manufactured to protect you with the safety and reliability you would expect from an industry leader in pavement maintenance equipment.

Although reading this manual and safety instructions it contains will provide you with the necessary basic knowledge to operate this equipment safely and effectively, we have placed several safety labels on the unit to remind you of this important information while you are operating your unit.

All WARNING, CAUTION, and instructional messages on your unit should be carefully read and obeyed. Personal bodily injury can result when these instructions are not followed. The information is for your safety and it is important.

The safety decals below are on your unit.

If any of these labels are lost or damaged, replace them at once. See you local dealer for replacements.

These labels are easily applied and will act as a constant visual reminder to you, and others who may use the equipment, to follow the safety instructions necessary for safe, effective operation.

⚠ CAUTION

Read Operator's Manual before using broom. If operating instructions are missing, contact the M-B Co. for your free replacement.

- Before operating broom make sure all guards and broom are installed properly.
- Wear eye protection when operating broom.
- Do not operate broom near any objects that can be damaged by thrown debris. Be sure no by-standers are near broom during operation.
- The polypropylene brush segments can melt or burn. Do not subject to excessive heat or flame.
- Do not allow riders on broom.
- Stop power source, lower broom to the ground, set parking brake, and remove ignition key before servicing or adjusting.
- Do not operate broom on any roof or other elevated surface.

390-118351

⚠ DANGER



To prevent serious injury or death from pinching:

- Keep all persons and objects clear while any part of this machine is in motion.

390-118353

⚠ DANGER

To prevent serious injury or death from falling:

- Do not operate broom on any roof or elevated surface.

390-118348

⚠ DANGER

To prevent serious injury or death:

- Do not allow any riders

390-118349

Identification Numbers

IDENTIFICATION NUMBERS

When contacting your authorized dealer for replacement parts, service or information you **MUST** have these numbers.

Record your model name/number, manufacturer's identification numbers in the space provided for easy access. These numbers can be found in the location shown.

Model Description Name/Number:	
Date Purchased :	Serial #:

	M-B COMPANIES INC
	CHILTON & NEW HOLSTEIN
	WISCONSIN U S A
	SERIAL NUMBER
	<input type="text"/>



Serial # Plate

Setup and Adjustments

SETUP

Proper setup and leveling of your power broom will increase the life of the brush and produces more efficient movement of material. Visually inspect the adjustments on the broom before each operating session and measure the adjustments once every 10 hours.

The following procedures must be followed in the prescribed order in order to be effective.

Once the broom has been properly adjusted, a short operation period is recommended for break-in; approximately 15 minutes. After this break-in period repeat the leveling procedure to ensure that it is correct. Mounting instructions can be found either in an installation pamphlet or in the back of this manual.

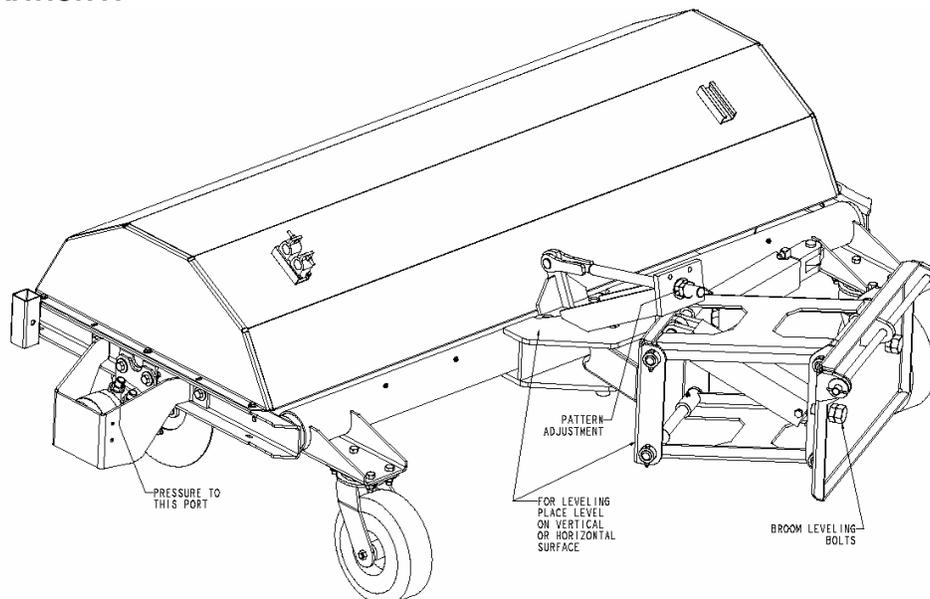
LEVELING

- After the broom is mounted to the tractor, loader, mower, or skid-steer, park the unit on a flat level surface; preferably concrete or asphalt.
- If mounting to a skid-steer, lower the arms all the way down and tilt the quick-attach all the way back.
- If mounting to a loader, tilt the bucket cylinders all the way back and lower the arms until the horizontal mounting shaft is 18" from the ground. If there is a way to set this location on the loader hydraulics, do so at this time.
- If mounting to a mower, set the down limit location so that the horizontal mounting shaft is as close to 18" as it can be. Because of the constrained spaces on some mowers it may be necessary that the shaft is higher or lower.
- *Note* - occasionally the horizontal mounting shaft is replaced by pins or bolts based on mounting.
- Swing the broom so that it is horizontal and tighten the pattern adjustment nuts all the way down. (See Illustration A)
- Adjust the swing frame so that it are level by adjusting the bolts in or out on the back of the swing frame. (Refer to Illustration A) Adjust both bolts evenly to maintain an even load on the mounting frame and the arms. Check to see that the frame is level by placing a small torpedo level vertically on the swing frame or horizontally on the pivot frame.
- Recheck for level after any other adjustments, including pattern adjustment. If the broom is still level continue to Pattern Adjustment. If not, re-start the process of leveling.

PATTERN ADJUSTMENT

- After the broom has been leveled, the last adjustment is to set the brush pattern. This adjustment is located at the top of the broom. (Refer to Illustration A)
- With the unit set-up on a flat level surface adjust the nuts on the top of the anchor so that the broom has approximately 3" of contact from the front-most contact point to the rear-most contact point. Loosening the nuts will create more pattern.
- Once this adjustment is set, it can be confirmed by running the unit for about 30 seconds in the down position while stationary. Stop the broom and back the unit away. The 'cleaned' portion of the surface should be 2"-4".

ILLUSTRATION A



General Operation

PRE-STARTUP CHECKS

- 1) Visually inspect equipment and hardware to ensure that all parts are secure and all hardware is tightened and secure.
- 2) Check for oil leaks and loose hose connections.
- 3) Inspect the broom adjustments to ensure that the broom is level and that there is proper brush pattern.
- 4) Inspect the bristle length to determine if replacement segments are needed.

OPERATION

- Sweep at a speed that is appropriate for the conditions and location.
- For heavy material such as gravel or stones, drive more slowly with high broom speed. For lighter material, drive faster with lower broom speed.
- It may be necessary to increase broom pattern under some conditions. If the surface being swept is uneven and causes the broom to leave upswept patches, increase the pattern to compensate.
- If the material being swept is dried-on or difficult to remove such as mud or ice, it may be necessary to drive extremely slow to allow the broom to "scrub" the surface.

STORAGE

- Always store the broom in a supported position with the bristles off the ground. If the bristles are stored in a deformed position for extended periods of time the broom will become severely out of balance.
- Store the broom in a location out of the sun and weather to prevent premature failure of plastic bristles. Bristles can become brittle when subjected to sunlight or repeated temperature changes.
- Disconnect all electrical connections between the broom and tractor for extended storage to prevent battery drain.
- Properly clean the unit before storage and remove dirt, debris, salt, etc. to extend paint life.
- If the unit is power-washed, all lubrication points should be greased before storage.



Warning

Oil escaping under pressure can puncture the skin and cause serious injury. Do not touch any hydraulic components until the tractor engine has been turned off and hydraulics disconnected. Before startup, check for loose hydraulic connections.

Maintenance

MAINTENANCE SCHEDULE

- Check adjustments – every 10 hours
- Grease bearings – every 10 hours
- Grease pivot points – every 50 hours
- Check and refill oil level – every 50 hours
- Replace oil filter – every 250 hours
- Replace hydraulic oil – annually
- Replace brush filler – as needed
- *Note* – Maintenance pertaining to oil and oil filter only refers to the independent hydraulic systems provided by M-B.

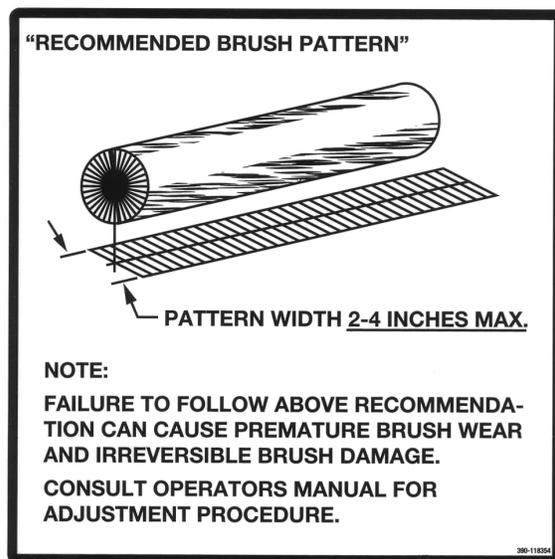
LUBRICATION

Grease bearings and pivot points per the maintenance schedule using Chevron Ultra Duty II, Grade 2; or equivalent high-temp grease. There are minimum of (8) grease points on the unit;; (4) at the swing arms, (2) at the pivot points and (2) on the bearings.

Use **Chevron Rykon MV or Dexron-III/Mercon ATF or equivalent** for M-B supplied independent hydraulic systems. If the oil is supplied by the prime mover, use the prime mover manufacturer's recommended fluid.

DECALS

The following informational decals are on your unit. All grease points on the unit are indicated by the 'GREASE' decal.



FILLER REPLACEMENT

CORE REMOVAL

- Lower broom until brush contacts the ground via hydraulic lift cylinder or mechanical head anchor.
- Remove bolts attaching motor guard to the brush frame. Remove guard and set aside.
- Remove (2) ½" bolts attaching motor mount plate to the brush frame. Slide motor out of mating splined hub. Let motor hang on hoses.
- Remove hardware holding pillow block bearing to bottom of brush frame. Complete steps 2 thru 4 on both ends of core.
- Slide core out the front of broom.



BRUSH REMOVAL

- Remove (3) ½" bolts attaching splined hub to end of core. Remove hub and set aside.
- Remove (3) or (4) bolts attaching wafer retainer plate (end disc) to end of core. Set retainer and hardware aside.
- Slide spent filler and spacers off core and discard.



BRUSH INSTALLATION

- Stand core in upright position and begin filling the core by sliding an individual segment and spacer down the full length of the core starting with a poly segment. Note the location of the drive pin on the inside ring of each segment. Be sure to rotate each segment so the position of the pin is on a different side of the core with each segment being installed. This will help to insure proper balance on the core.
- Continue stacking the core in a segment-spacer, segment-spacer configuration until it is full ending with a segment. Always start and finish with a poly segment.
- The last segment should actually extend beyond the end of the core (Minimum ½") so when the end disc is installed it compresses the filler onto the core when the bolts are tightened.
- Install end disc to the end of the core and secure with original bolts.
- Reinstall splined hub and bearing.



CORE INSTALLATION

- Position refilled core in front of the broom head. Lift the broom head high enough to place the filled core back into its original position. Once in place, lower broom head down onto the pillow block bearing at each end of the core.
- Reverse steps 2 – 4 from core removal section to complete reinstallation. Note: Apply grease or anti-seize to splines before installing hydraulic motors.
- Before placing machine back into service, adjust and test for proper amount of brush pattern. Excessive brush pattern can cause brush failure or premature wear.



Troubleshooting

Trouble	Possible Cause	Remedy
Broom does not rotate	<ol style="list-style-type: none"> 1) No hydraulic pressure/flow 2) Hoses disconnected 3) Hoses bent or kinked 4) Pressure relieving to low 5) Electric valve not functioning 	<ol style="list-style-type: none"> a) Check tractor operation b) Connect hoses and fittings c) Remove sharp bends and kinks d) Adjust relief valve e) Check electrical connections
Bristles wearing unevenly	<ol style="list-style-type: none"> 1) Swing arms out of adjustment 2) Broom head not level 3) Pattern adjustment not set 	<ol style="list-style-type: none"> a) Adjust using bolts on rear b) Adjust using leveling bolt c) Adjust on head anchor
Broom sweeping poorly	<ol style="list-style-type: none"> a) Material is 'caked-on' or frozen b) Uneven sweeping surface c) Material is too heavy d) Broom rotating too slowly e) Tractor moving too fast f) Pattern adjustment not set 	<ol style="list-style-type: none"> a) Slow down and 'scrub' surface b) Increase pattern to compensate c) Slow down tractor speed d) Increase engine speed e) Slow down tractor speed f) Adjust at head anchor
Broom does not lift or angle	<ol style="list-style-type: none"> 1) No hydraulic pressure/flow 2) Electric valve not functioning 3) System backpressure 	<ol style="list-style-type: none"> a) Check tractor operation b) Check electrical connections c) Check tractor manual
Pump making noise	<ol style="list-style-type: none"> 1) Pump intake blocked 2) Shaft seal leaking 	<ol style="list-style-type: none"> a) Check inlet lines for obstructions b) Check and repair as necessary

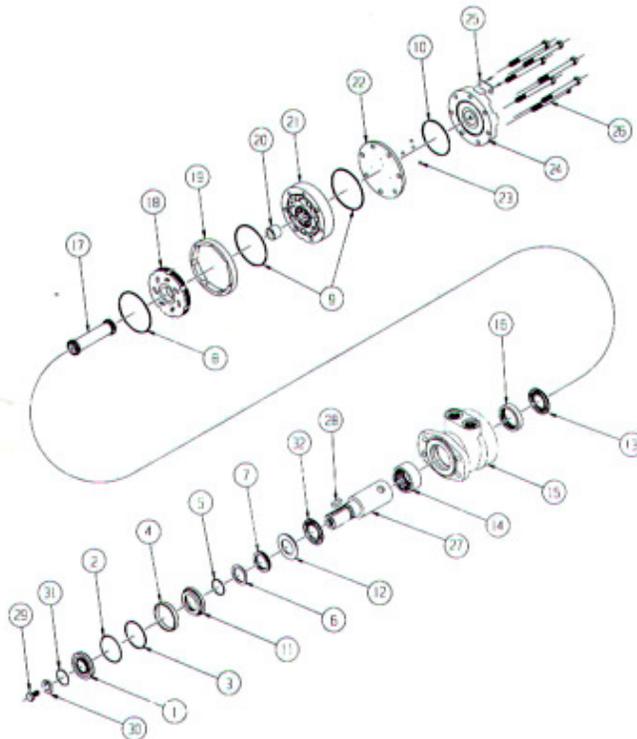
Parts List

Parts List

STANDARD MOTOR PARTS (201-75209)

Item	Description	Part Number	Quantity
1	Dust Seal		1
2	Split Wire Ring		1
3	Metal Backup Shim		1
4	High Pressure Seal		1
5	Metal Backup Shim		1
6	Polyamide Seal		1
7	Shaft Seal		1
8	Rear Housing Seal		1
9	Body Seals		2
10	Endcover Seal		1
11	Seal Carrier		1
12	Thrust Washer		1
13	Rear Thrust Bearing	201-92027	1
14	Front Housing Bearing	201-92129	1
15	Housing (Includes #14 & #16)	201-92022	1
16	Rear Housing Bearing	201-92130	1
17	Driveline Link	201-92029	1
18	Reverse Manifold	201-92031	1
19	Manifold Boot	201-92038	1
20	Driveline Spacer		1
21	Freeturn Rotor	201-92032	1
22	Balance Plate	201-92034	1
23	Steel Ball	201-92033	4
24	Endcover	201-92035	1
26	Bolt Set	201-92036	1
27	Shaft	201-92028	1
32	Front Thrust Bearing		1

Items 1-12 are available as a kit
Part# 201-92039



*Note-Motor shaft shown with keyway, actual shaft has a spline.

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