

NBR60

**M-B NBR60 Model 5' Rotary Broom
Fits Exmark Navigator / Toro 8000 Series**



OPERATOR'S MANUAL

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INTRODUCTION

OPERATOR'S MANUAL

You must read, understand and comply with all the safety and operating instructions in this manual and tractor 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.

IDENTIFICATION NUMBERS

When contacting your authorized dealer for information, replacement parts or service, you **MUST** have the serial number of your unit.

Record the serial number in the space provided. The serial number plate/decal can be found in the location shown in Figure 1.

Model Name/Number:	
Date Purchased:	Serial #:

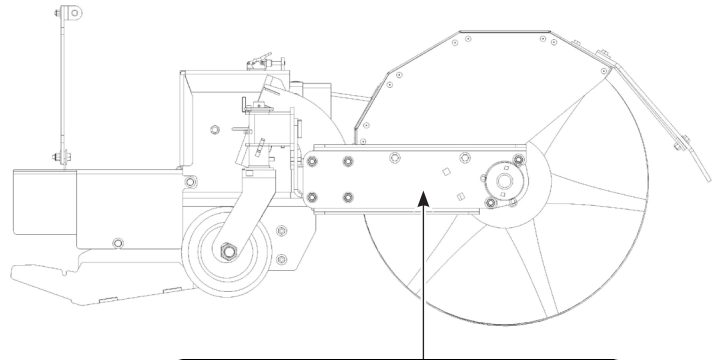


Figure 1

SAFETY

SAFETY ALERTS

Signal words and alert symbols notify of important safety precautions.

DANGER!



Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

WARNING!



Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

CAUTION!



Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury.

SAFETY AND INSTRUCTIONAL DECALS

- Keep all safety signs legible. Remove all grease dirt and debris from safety signs and instructional labels.
- Replace all worn, damaged, or missing safety signs.
- When replacement components are installed, be sure that current safety signs are affixed to the replaced components.
- If an attachment or accessory has been installed, make sure current safety signs are visible.
- New safety signs may be obtained from M-B Companies, Inc.
- Safety signs may be affixed by peeling off the backing to expose the adhesive surface. Apply only to a clean dry surface. Smooth to remove any air bubbles.
- Familiarize yourself with the following safety signs and instruction labels. They are critical to the safe operation of your M-B commercial equipment.



1. Warning - stay away from moving parts; keep all guards in place.



1. Grease



1. Thrown object hazard - Do Not operate when people and pets are in the area.
2. Warning - Entanglement hazard - Stay clear of rotating broom.



1. Warning - Read the Operator's Manual. Do Not operate this machine unless you are trained. Stay away from moving parts; keep all guards in place.
2. Thrown object hazard - Do Not operate when people and pets are in the area; pick up objects that could be thrown by broom.
3. Warning - Wear hearing protection.
4. Warning - Entanglement hazard - stay clear of rotating broom.
5. Warning - Do Not carry passengers.
6. Warning - Do Not operate on slopes greater than 15 degrees. Use extreme caution when operating on slopes; operate across slopes not up and down. Broom bristles will melt or burn - keep away from extreme heat or flame. Do Not operate on any roof or other elevated surface.

PRE-START GUIDELINES

- Install any covers or guards which may have been removed for shipping purposes.
- Before starting equipment, walk around equipment, making a visual inspection that all safety devices are properly installed and secured.
- Check that all hardware, fasteners, hydraulic fittings, etc. are in good condition and properly fastened. Replace any damaged items with proper replacements.
- Personnel who are not required to be in the work area should be kept away. Never start the equipment unless you are absolutely certain that everyone in the area is clear of the machine and aware it is being started.
- Follow the manufacturer's recommended start-up procedure.
- Do not modify broom.

SAFETY

OPERATION GUIDELINES

Read, understand and follow all instructions in the manual and on the unit before starting.

NOTE: All reference to left, right, front or rear are given from the operator position and facing forward.

- To avoid serious injury or death, do not modify equipment. Any modifications made to equipment can be dangerous and can void equipment warranty.
- Never defeat a safety device to make a task easier-keep all guards in place.
- Always wear proper apparel when operating equipment; safety glasses, face shield or goggles, ear protection, and dust mask. Always wear substantial footwear and appropriate clothing. DO NOT wear long scarves, loose clothing or jewelry that could become entangled in moving parts. Tie hair back.
- Never operate equipment with covers or guards removed. Rotating parts can cause severe injury. Keep hands, feet, hair, jewelry and clothing away from all moving parts.
- Only allow responsible adults who are familiar with the instructions, to operate the unit (local regulations can restrict operator age).
- Clear the area of objects such as rocks, toys, wire, etc., which could be picked up and thrown.
- Be aware of surroundings. Be sure the area is clear of other people, bystanders or pets. Stop unit if anyone enters the area.
- Always look down and behind before and while traveling in reverse.
- Be aware of discharge direction and do not point discharge at anyone. Do not point the discharge at glass enclosures, automobiles, or windows.
- Always stand clear of the discharge area when operating this unit.
- Disengage all clutches and PTOs before starting engine. Be sure all drives are in neutral and parking brake is engaged before starting engine.
- Never leave a running machine unattended. Always disengage the attachment and traction controls, lower the attachment, set the park brake, stop the engine and remove the ignition key before leaving the machine.
- Operate only in daylight or good artificial light.
- Never carry passengers.
- Do not operate the unit while under the influence of drugs, alcohol or other medication.
- Watch for traffic when operating near or crossing roadways.
- Use extra care when loading or unloading the unit onto a trailer or truck.
- Keep in mind the operator is responsible for accidents occurring to other people or property.
- All operators should seek and obtain professional and practical instruction.
- Abnormal Vibrations are a warning of trouble. Striking a foreign object can damage unit. Stop unit and engine. Wait for all moving parts to stop. Inspect unit and make any necessary repairs before restart.
- Never place your hands or any part of your body or clothing inside or near any moving part while unit is running.
- Stop engine before: refueling, cleaning, making adjustments or removing the attachment assembly.
- Follow the recommendations for wheel weights or counter weights as stated in **Setup and Adjustments** section of this manual.
- Make any adjustments before operating unit.

- Do not touch parts which may be hot from operation. Allow such parts to cool before attempting to service the unit.
- Before using, always visually check that hardware is present, intact and secure. Replace worn or damaged parts.
- Never operate the machine with damaged guards, or without safety protective devices in place.
- Original purchaser of this unit was instructed by the seller on safe and proper operation. If unit is to be used by someone other than original purchaser; loaned, rented or sold, ALWAYS provide this manual and any needed safety training before operation.
- The Operator must understand the functions and parameters of all controls and how to operate, as well as how to STOP in an Emergency.

CLEARING A CLOGGED BROOM

WARNING!

The rotating broom could cause serious injury. Always use caution when cleaning the broom.



To clear the broom:

- Park the machine on level ground. Stop engine, wait for all moving parts to stop, and remove the spark plug wire(s).
- Sharp objects can become entangled in bristles. Use gloves and caution when cleaning out the broom of foreign objects; not bare hands.

SLOPE OPERATION

Use Extreme caution when operating and/or turning on slopes as loss of traction and/or tip-over could occur. The operator is responsible for safe operation on slopes.

DANGER!

Operating on wet surfaces or steep slopes can cause sliding and loss of control. Loss of control may result in serious injury, death or drowning.



- Do Not operate near drop-offs or near water.
- Reduce speed and use extreme caution on slopes.
- Avoid sudden turns or rapid speed changes.
- Do Not operate on slopes greater than 15 degrees.
- When feasible, avoid operating the equipment in wet grass.
- Progressively greater care is needed as the slope increases.
- Remove or mark obstacles such as rocks, tree limbs, etc. from work area.
- Watch for ditches, holes, rocks, dips and rises that change the operating angle, as rough terrain could overturn the machine.
- Tire chains are highly recommended when operating at or below freezing temperatures.

MAINTENANCE GUIDELINES

- Maintain or replace safety and instruction decals/labels as necessary.

SAFETY

- 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.
- Never make adjustments or repairs with the engine running unless specified otherwise in the engine manufacturer'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 all 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's warranty.
- Stop engine on tractor and set parking brake before performing any adjustments on the machinery.
- Follow specific engine manufacturer's recommended service intervals for dirty/dusty environments.

SETUP AND ADJUSTMENTS

SETUP

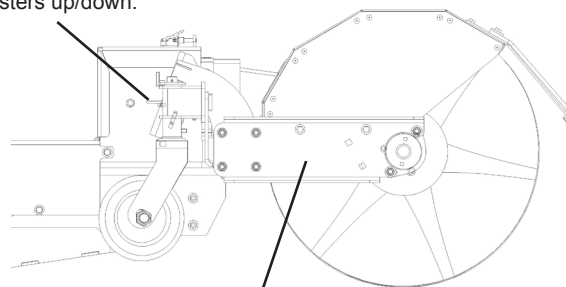
Proper setup of your power broom will increase the life of the brush and produces more efficient movement of material. Visually inspect the adjustments on the broom before each operating session and check for adjustments once every 10 hours.

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

It is recommended to use 100-150 pounds of weight to the rear of unit to keep the rear caster wheel securely in contact with the ground. Use sandbags placed in grass hopper or combine with Toro/Exmark weight kit supplied with other attachments.

Once the broom has been properly adjusted, a short operation period is recommended for break-in; approximately 15 minutes. After this break-in period check set-up to ensure it is correct. Mounting instructions can be found in the tractor instruction manual.

Pull pin to adjust the casters up/down.



Side Arm

Figure 2

PATTERN ADJUSTMENT

1. After the broom is mounted to the tractor or mower, park the unit on a flat level surface; preferably concrete or asphalt.
2. The next adjustment is to set the brush pattern. This adjustment is controlled by the height of the casters and their contact with the ground.
3. Adjust height of broom until it touches the ground with 2"-4" of brush pattern as shown in Figure 2-A.
4. Lower casters until they touch the ground and secure caster pin in place. See Figure 3.
5. To change the pattern width, raise the broom and remove the pin. Then lower the caster by one hole and replace the pin. This will make the pattern smaller. Lower the broom and measure the pattern. Repeat moving the caster up or down as needed.
6. Once this adjustment is set, it can be confirmed by running the unit for about 30 seconds in the down position while stationary. Raise and stop the broom and back the unit away. The 'cleaned' portion of the surface should be 2-4".

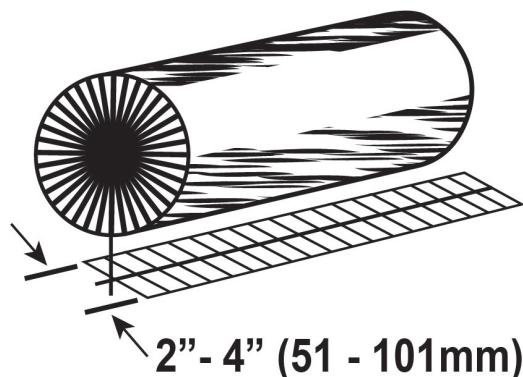


Figure 2-A

BROOM PIVOT

1. After the broom is mounted to the tractor or mower, and the pattern adjustment is complete, the operator can set the broom pivot direction. This will direct where the debris is swept.
2. Operator will sit on unit with feet on foot pedals.
3. To pivot broom right, rock release pedal forward with right foot, and firmly press large left foot pedal to push left side of broom forward.
4. To pivot broom left, rock release pedal forward with left foot, and firmly press large right foot pedal to push right side of broom forward.
5. To bring the broom back to center, use feet to adjust as stated above and bring broom to center position.

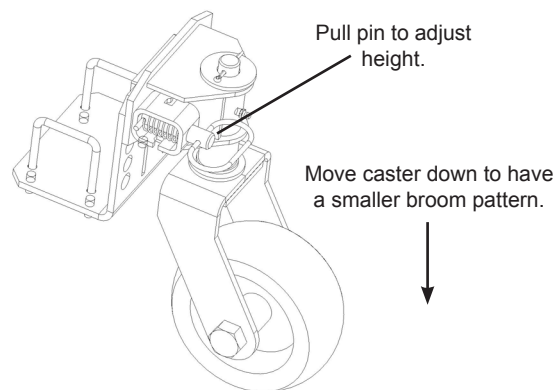


Figure 3

OPERATION

PRE-STARTUP CHECKS

IMPORTANT!

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.

1. Visually inspect equipment and hardware to ensure that all parts are secure and all hardware is tightened and secure.
2. Inspect the broom adjustments to ensure that the broom is level and that there is a proper brush pattern. Refer to the **Setup and Adjustment** section of this manual.
3. Inspect the bristle length to determine if replacement segments are needed.

OPERATION

IMPORTANT!

Tractor must be at low idle to engage or disengage the broom.

- 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 unswept 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.
- 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.

MAINTENANCE

MAINTENANCE SCHEDULE

Maintenance Required	Service Interval	Notes
Lubricate spline shaft for drive line	Annually	Use Automotive Lithium Grease
Lubricate sleeve in hitch attachment	Annually	Use Automotive Lithium Grease
Lubricate pivot and friction points	10 Hours	Use 10W Oil
Grease axles and caster pivot	Semi-Annually	Use Automotive Lithium Grease
Grease Universal Joints	10 Hours	Use Automotive Lithium Grease
Change oil in gear case	Annually or as needed	Use 500mL of PAO 460 oil. Never add to existing oil. Always drain, flush, and refill

LUBRICATION

NOTE: Grease points are noted with an applicable decal.



Lubricate bearings and pivot points per the MAINTENANCE SCHEDULE using Chevron Ultra Duty II, Grade 2; or equivalent high-temp grease.

IMPORTANT!

It is very important that grease fittings on the broom shaft are lubricated regularly. If broom rusts to shaft, damage to worm gear may occur if shear pins do not break. To prevent wheels rusting to axles, it is also necessary to remove the wheels and grease the axles regularly.

1. Apply medium weight (10W) oil to points.
2. Remove wheels. Grease axles and caster pivot once each year.
3. Grease broom drive universal joints.
4. Grease broom pivot pin.

Generally, all moving metal parts should be oiled where contact is made with other parts.

BUSHING REPLACEMENT

The pivot joint between the hitch mount and the broom head uses two flanged bushings. These bushings will need to be replaced when the joint becomes loose.

WARNING!



Support the broom head and the hitch mount when removing the pivot bolt. Proper support will reduce unexpected movement of the broom head and hitch mount.

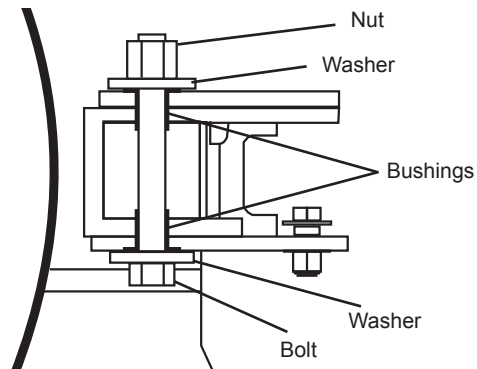


Figure 4

To replace the bushings:

1. Support the hitch mount with a lifting device. The broom head should be held using the casters. Place jack stands under the frame.
2. Remove the nut and washer from the pivot bolt. The bolt may be loose and drop out of the bushings.

NOTE: The bushings should hold the joint together if the hitch is supported. Remove one bushing and replace it before removing the second bushing.

3. The bushings are pressed in place. Remove the bolt. Press or pry out one of the bushings. Insert a new bushing (do not lubricate) and press it into position.
4. Remove the second bushing and replace it.
5. Inspect the pivot bolt and replace it if needed. Insert the bolt with a washer from the bottom. Add the top washer and nut then tighten ≤ 150 foot pounds.
6. Remove support stands.

MAINTENANCE

SHEAR BOLT REPLACEMENT

DANGER!



Do not go near the broom when the engine is running. Do not run the engine with any cover or guard removed.

Under most circumstances, if the broom strikes an object which could cause damage to the unit, the shear bolt(s) will break. This protects the gear box and other parts from damage. The shear bolt(s) are located on the broom shaft.

See Figure 5 Shear Bolt Replacement.

To replace the shear bolts:

1. Tap out the broken bolt(s) with a pin punch.

IMPORTANT!

Do NOT replace shear bolts with anything other than the correct grade replacement shear bolt. Use of a harder shear bolt will lead to damaged equipment.

2. Install new shear bolt(s) and secure with nut.

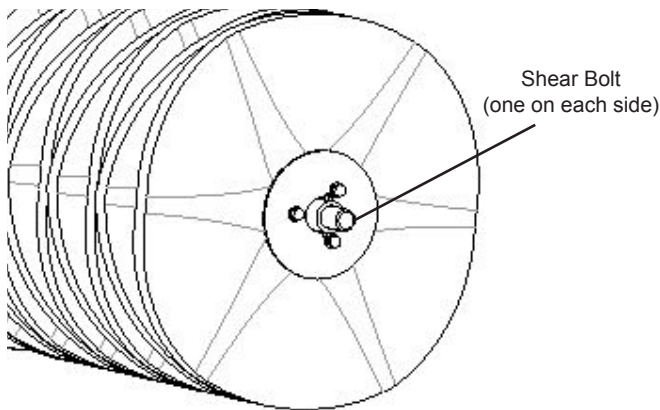


Figure 5 Shear Bolt Replacement

BRUSH SEGMENT REPLACEMENT

1. Remove bolts from broom bearings at both ends of the support shaft (Figure 6 Brush Removal).

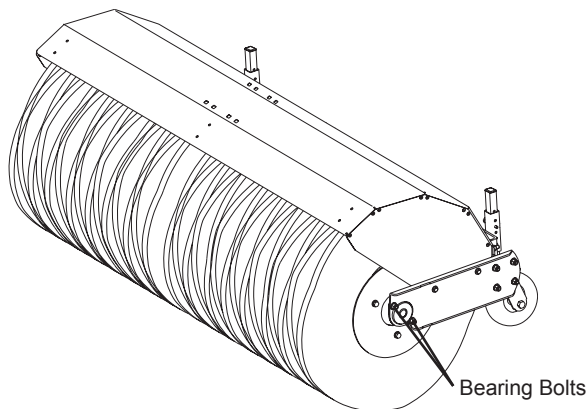
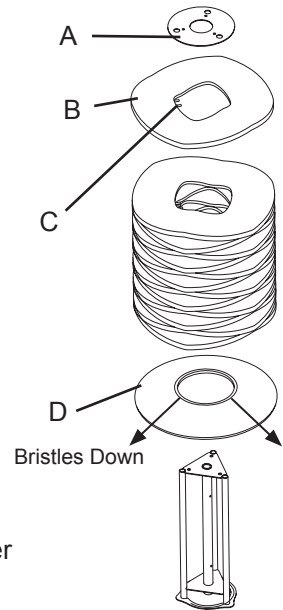
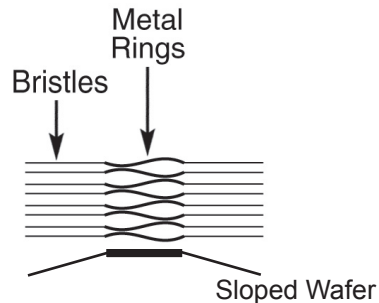


Figure 6 Brush Removal

2. Loosen bearing setscrews and slide bearings outward off the shaft.

3. Remove the shear bolt. Pull the core assembly off of the gearbox shaft.
4. Stand broom assembly on one end. (See Figure 7 Brush Assembly)

Positioned Hill to Hill and Valley to Valley



A. End Plate

B. Brush Wafer

C. Engagement Fingers

D. Sloped Wafer

Figure 7 Brush Assembly

5. Remove the three bolts from the end plate (See A, Figure 7 Brush Assembly).
6. Remove used broom segments.
7. Install new broom segments. The sloped segment must go on first, so that it is on the gear box side of the core assembly. Position the remaining segment cores to provide hill to hill and valley to valley contact.

NOTE: Align segment engagement fingers (C, Figure 7 Brush Assembly) on alternating support shafts. This will evenly spread rotating force through the drive system.

8. Reinstall broom assembly.

IMPORTANT!

Fully tighten the bearing setscrews before operating the power broom, add Loctite to set screws.

MAINTENANCE

BELT REPLACEMENT

See Figure 8.

1. Turn off the engine and wait for all moving parts to stop.
Remove key.
2. Release the latch on the guard. Swing the top open.
3. Loosen the fasteners on the two belt guides. Swing the guides away from the pulley.
4. Remove PTO from lower shaft to replace belt.
5. Pull the idler pulley away from the belt.
6. Remove the belt.
7. Reverse the procedure to install the new belt. Be sure there are no twists and the belt is properly seated in the pulleys.
8. Adjust the belt guides so there is 1/8 inch (3 mm) clearance to the belt. Tighten the fasteners.
9. Replace and lock the guard.

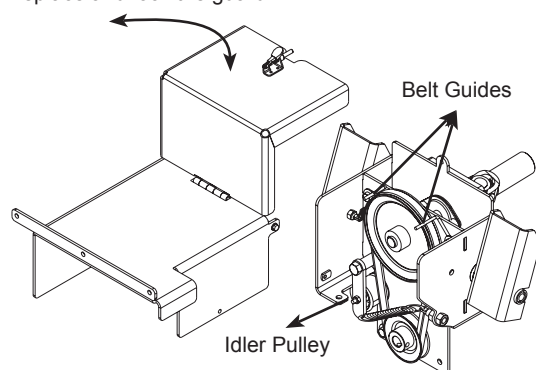


Figure 8

TROUBLESHOOTING

Trouble	Possible Cause	Remedy
Broom does not rotate.	<ol style="list-style-type: none"> 1. PTO not engaged. 2. PTO not connected. 3. Shear bolt broken. 4. Belt Broken 	<ol style="list-style-type: none"> 1. Engage PTO. 2. Connect PTO. 3. Replace shear bolt. 4. Replace Belt
Brushes wearing very quickly.	<ol style="list-style-type: none"> 1. Brush pattern too wide. 	<ol style="list-style-type: none"> 1. Adjust brush pattern to be 2-4" wide. Refer to the Setup and Adjustments section of this manual.
Broom bounces during sweeping.	<ol style="list-style-type: none"> 1. Travel speed too fast and/or brush speed too slow. 2. Caster placement 3. Brushes end of life 	<ol style="list-style-type: none"> 1. Adjust to find correct ground and brush speed for surface. 2. Adjust casters to compensate 3. Replace brush wafers
Broom sweeping poorly - surface area not being cleared.	<ol style="list-style-type: none"> 1. Material is 'caked-on' or frozen. 2. Uneven sweeping surface. 3. Material is too heavy. 4. Broom rotating too slowly. 5. Prime mover moving too fast. 6. Pattern adjustment incorrectly set. 	<ol style="list-style-type: none"> 1. Slow down and 'scrub' surface. 2. Adjust pattern to compensate. 3. Slow down prime mover speed. 4. Increase engine speed (rpm). 5. Slow down prime mover speed. 6. Adjust at caster wheel.
Broom producing excessive vibration.	<ol style="list-style-type: none"> 1. Broom stored incorrectly. 2. Bearings worn out or improperly greased. 3. Material caked on or debris wrapped in brush. 4. Wafers may be at end of life. 5. Loose parts or broom damaged. 	<ol style="list-style-type: none"> 1. Replace wafers. 2. Replace bearings as necessary. 3. Inspect brush for build-up; wash and remove debris. 4. Replace brush wafers. 5. Inspect broom for loose hardware and tighten if necessary. 6. If vibration continues see your dealer.
Broom removing excessive turf.	<ol style="list-style-type: none"> 1. Broom set too low. 2. Brush assembly includes grey wire wafers. 3. Uneven terrain. 	<ol style="list-style-type: none"> 1. Verify pattern adjustment procedure has been set. 2. Use only yellow poly wafers in broom assembly. 3. Install optional turf caster kit.

SPECIFICATIONS

Model:	NBR60
Brush Width:	55 inches
Brush Drive:	PTO Shaft (Brush On/Off from tractor controls.)
Brush Speed:	200 RPM
Brush Filament:	Poly (polypropylene) - standard
Swing Method:	Manual (20° left/right)
Casters:	360° rotation of 6.25 x 3 solid tires
Broom Hood:	Covers 140° of brush circumference
Weight	Broom with Coupler = 320 lbs
Options:	Turf Caster Assemblies

SERVICE PARTS

Part Number	Description
600-132224	Flangette Bearing 3/4"
249-92003	Paint, Spray, Black
249-92005	Primer, Spray
600-132225	Flangette Bearing 1-1/8"
100-92126	6.25 x 3 Caster Wheel
907-168368	Brush Filler Kit
311-12000	Shear Bolt, HHCS .25 - 20 UNC x 2
603-190386	Bushing, Flanged
504-190912	Belt Ax-30
420-190837	PTO Guard Assembly
430-190654	Caster Assembly
430-190757	Turf Caster Assembly

Please have your serial number (S/N) ready when contacting M-B Co. or an Authorized Dealer for replacement parts or service information.

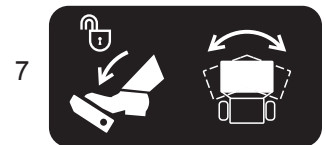
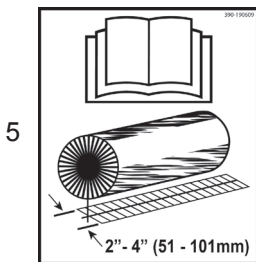
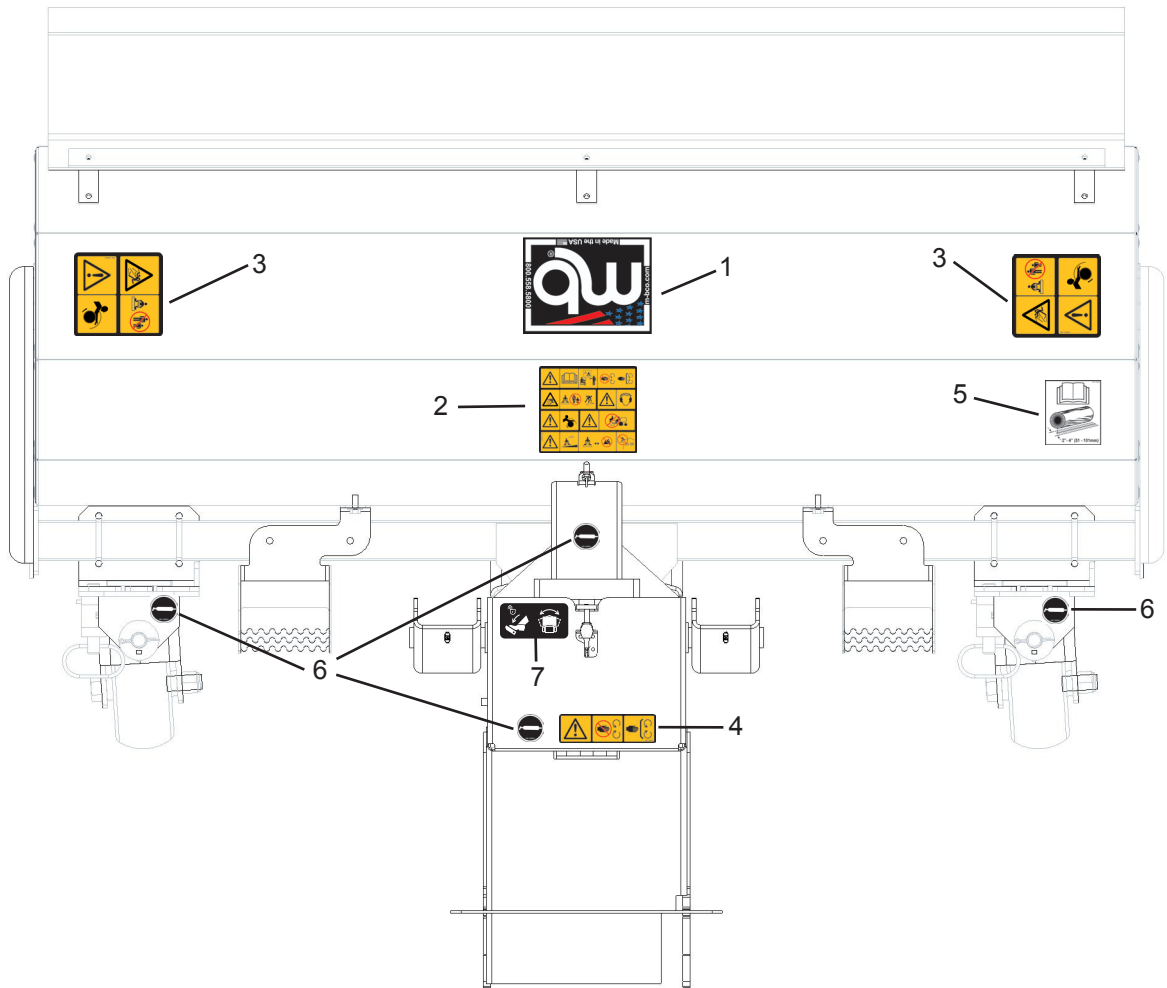
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New Holstein, WI 53061-0200

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Phone: 800-558-5800
FAX: Main 920-898-4588
Attachments 920-898-1085
Brush Dept. 920-898-1082



PARTS LISTS

DECALS



PARTS LISTS

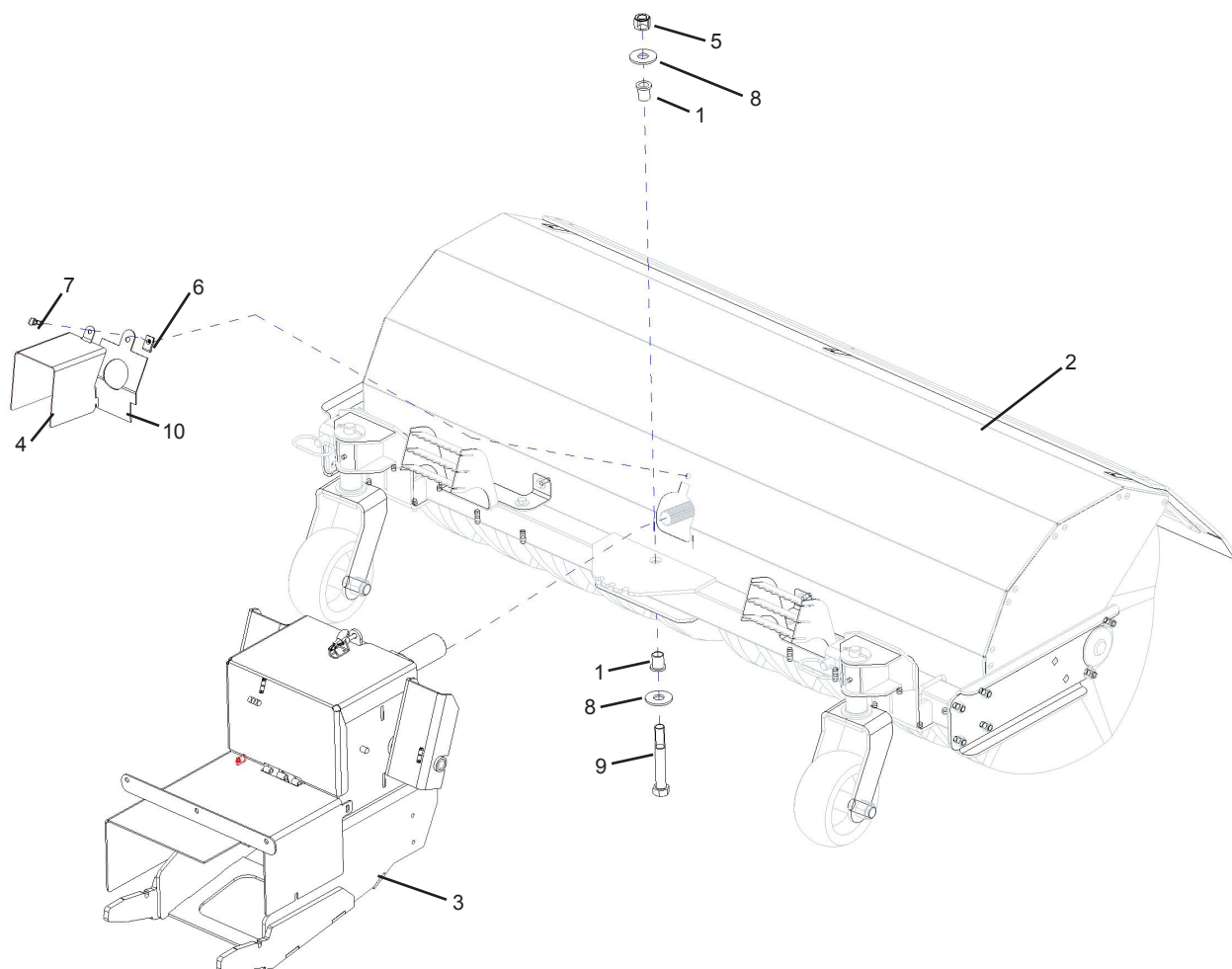
DECALS

Item	Description	Part Number
1	Decal M-B 2014 USA	390-190610
2	Decal International Warning Block	390-190601
3	Decal International Fly Obj/Entangle	390-190602
4	Decal International Danger Guard	390-190603
5	Decal International Brush Pattern	390-190609
6	Decal International Grease	390-190604
7	Decal International Pivot	390-191206



PARTS LISTS

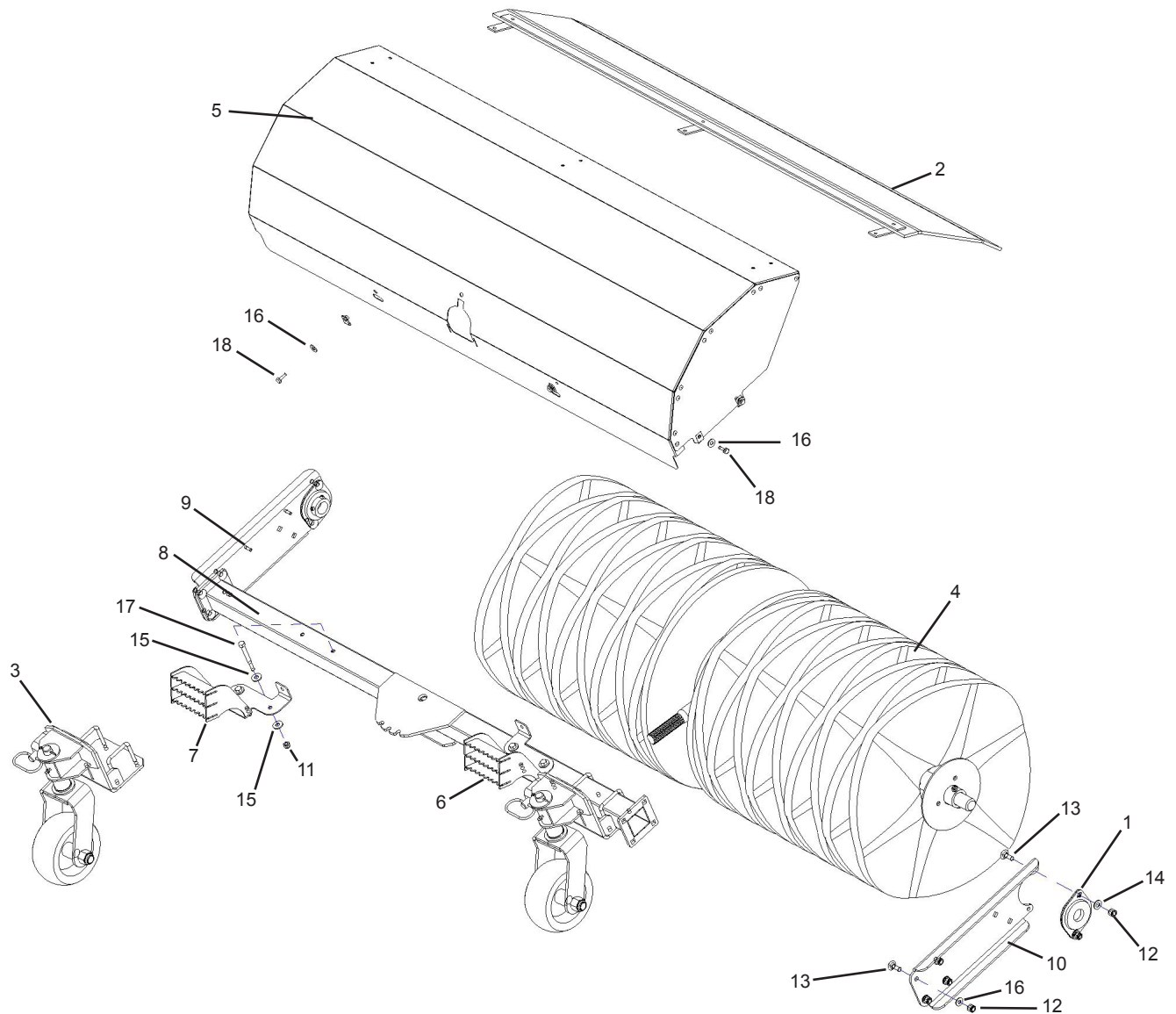
HITCH MOUNTING



Item	Description	Part Number	Qty
1	BUSHING FLANGED	603-190386	2
2	BROOM, 5', 20" CORE NBR60	430-97935	1
3	HITCH MOUNT	430-97868	1
4	GUARD, PTO, NBR60	401-190518	1
5	NUT, HEX, ESNA, 5/8-11-UNC	371-81421	1
6	NUT, 1/4-20 CLIP-ON, TAPPED HOLE	371-169215	1
7	SCREW, THUMB 1/4-20 0.750	370-176400	1
8	WASHER, FLAT -5/8 STD ZINC PL	341-70000	2
9	HHCS .625-11 UNC X 4.500	311-74500	1
10	RUBBER DEFLECTOR NBR60 PTO GUARD	101-190993	1

PARTS LISTS

HEAD ASSEMBLY

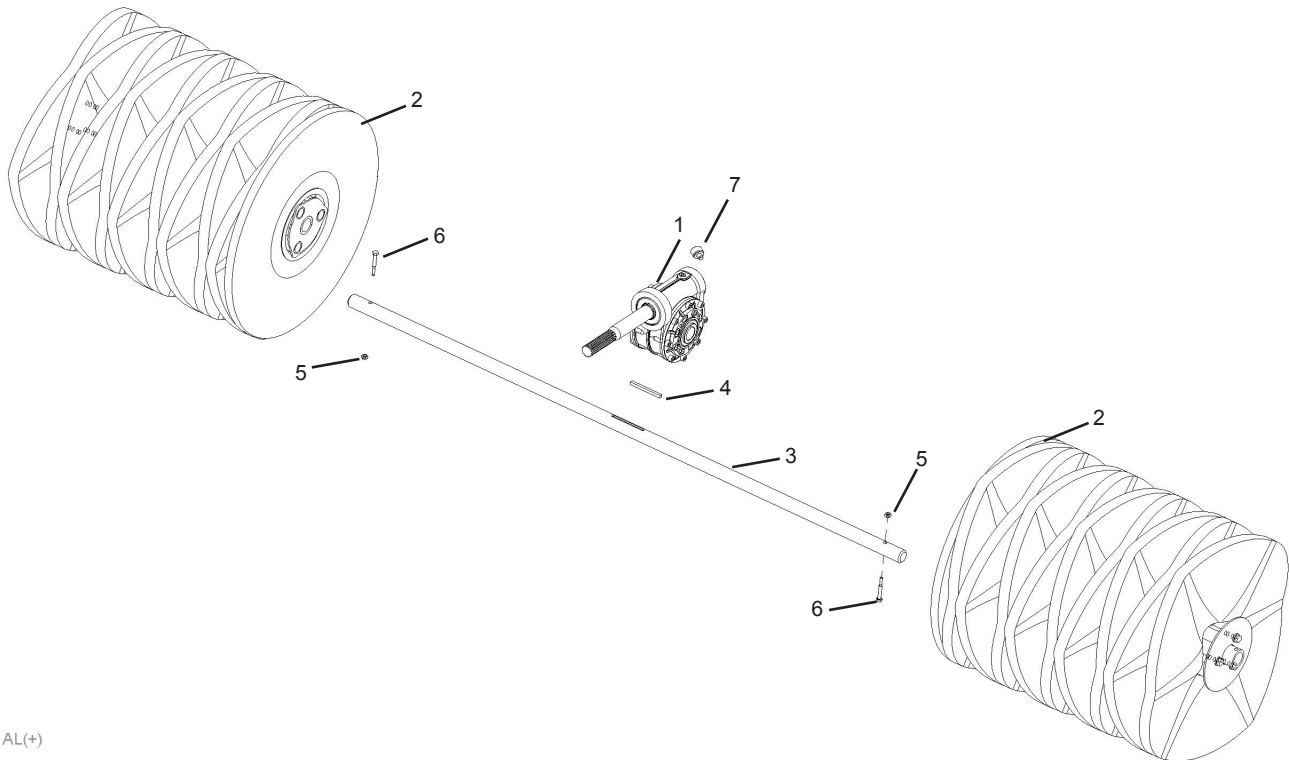


Item	Description	Part Number	Qty
1	BEARING, 1 1/8" FLANGETTE	600-132225	2
2	DEFLECTOR	430-96468	1
3	CASTER ASSEMBLY	430-190654	2
4	CORE ASSY, NBR60	420-190899	1
5	HOOD, 5', 20" CORE	420-190531	1
6	FOOT PAD, BOLT ON, RH	410-190907	1
7	FOOT PAD, BOLT-ON, LH	410-190905	1
8	FRAME, WELDMENT	410-190263	1
9	PLATE ARM, LH 20" CORE BOLT-ON	401-190528	1
10	PLATE ARM, RH 20" CORE BOLT-ON	401-190527	1
11	NUT, HEX, ESNA, 5/16-18-UNC	371-81620	4
12	NUT, HEX, ESNA, 3/8-16 UNC	371-81297	12
13	CARRIAGE BOLT 3/8-16 UNC X 1	370-92047	12

Item	Description	Part Number	Qty
14	WASHER, SAE 3/8	343-30000	4
15	WASHER, FLAT -5/16 STD ZINC PL	341-20000	8
16	WASHER, FLAT -1/4 STD ZINC PL	341-10000	12
17	HHCS .31-18 UNC X 3.000	311-23000	6
18	HHCS .25-20 UNC X 0.750	311-10750	6

PARTS LISTS

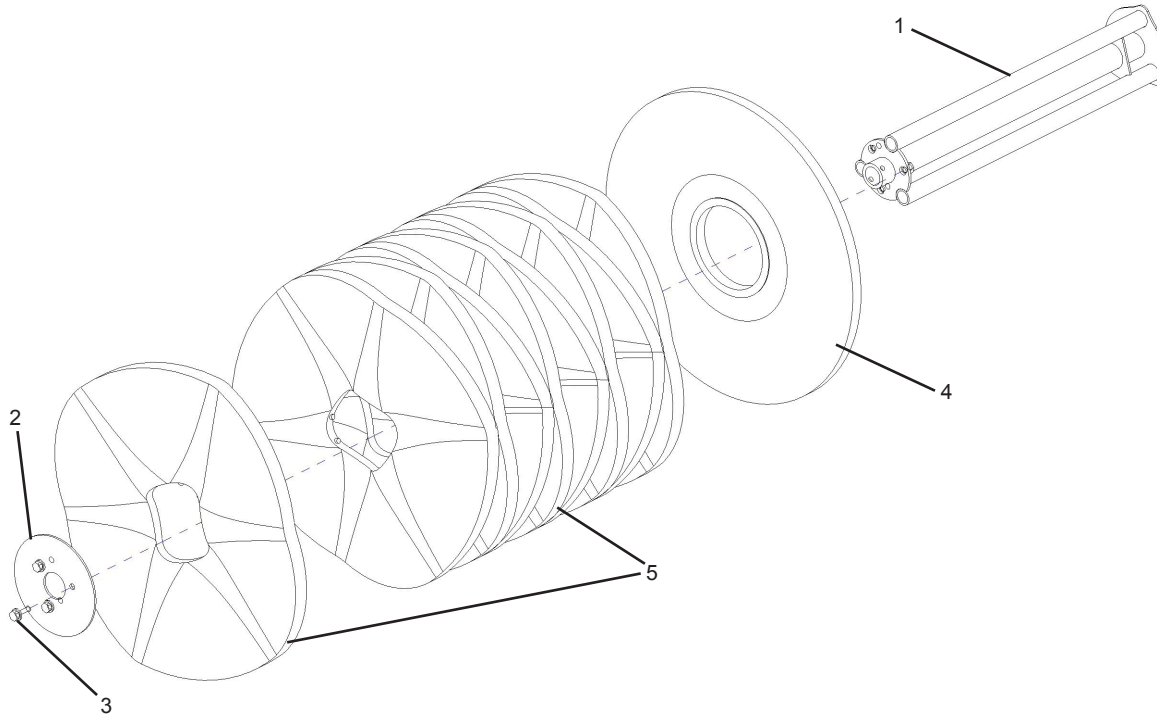
CORE ASSEMBLY



Item	Description	Part Number	Qty
1	GEARBOX 8.25:1 MODIFIED	501-190588	1
2	CORE ASSEMBLY 5' 20"	430-97934	2
3	SHAFT, CORE, NBR60	401-190898	1
4	KEY, SQUARE .25 X .25 X 3 LG	386-140951	1
5	NUT, HEX, UNC, 1/4-20	361-10000	2
6	HHCS .25-20 UNC X 2.000	311-12000	2
7	Vent, Breather 1/4 NPT	209-169979	1

PARTS LISTS

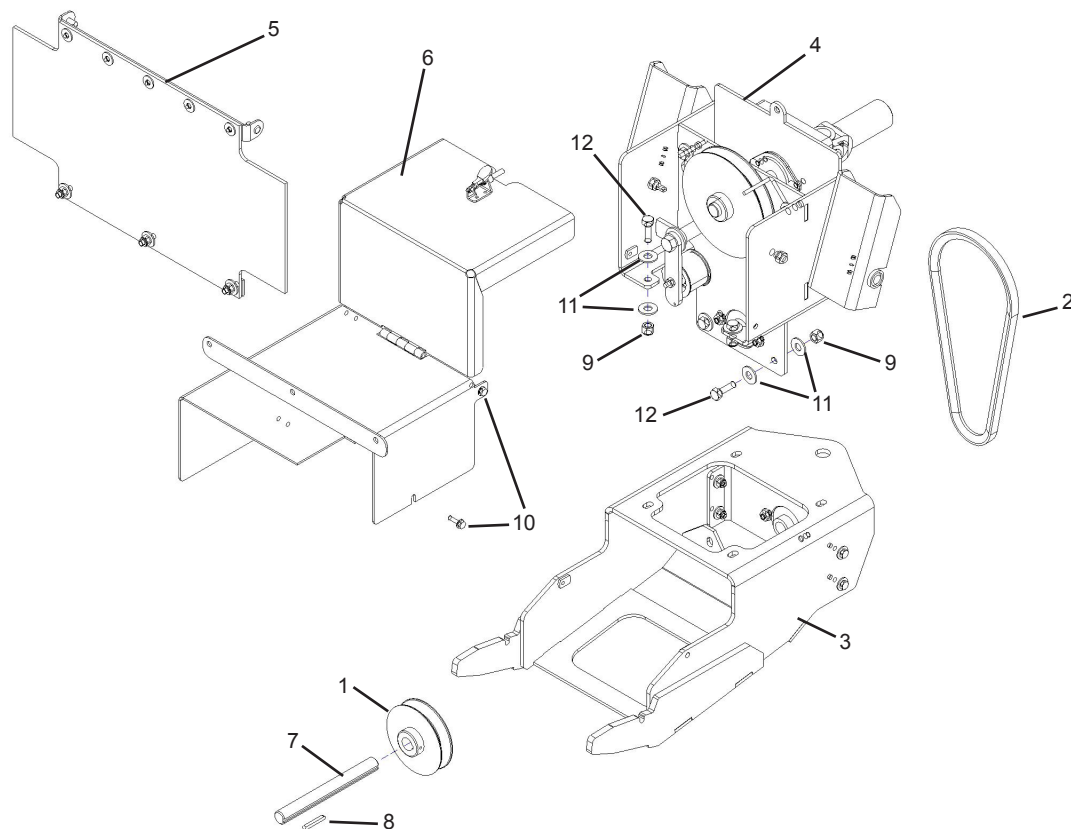
CORE ASSEMBLY



Item	Description	Part Number	Qty
1	CORE, 5" RING, 20" DIA	410-190524	1
2	PLATE END RETAINER 20" CORE	401-190526	1
3	HHCS, SERRATED FLANGE 3/8-16 X 1 PLATED	370-126977	3
4	WAFER 20" X 5" POLY SLOPED	101-168304	1
5	SEGMENT, POLY, 20" X 5" CONVOLUTED	101-137134	15

PARTS LISTS

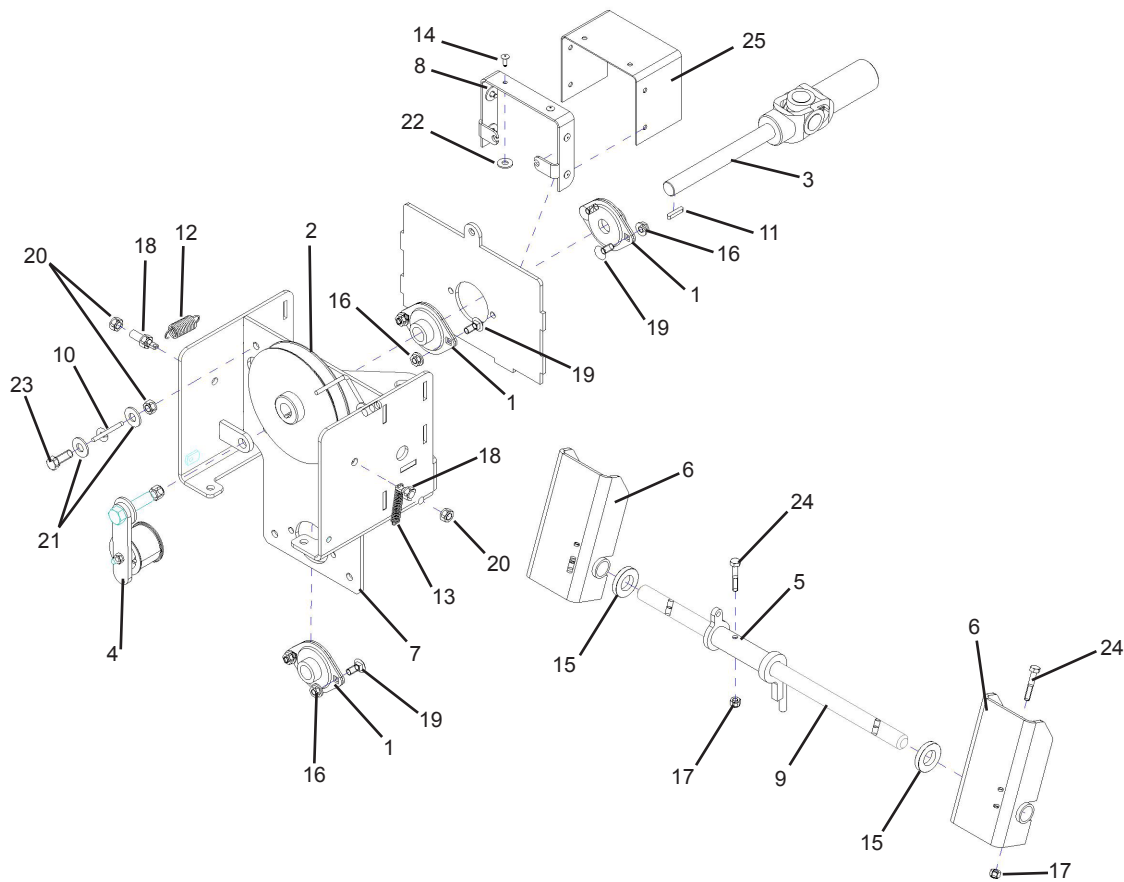
HITCH MOUNT



Item	Description	Part Number	Qty
1	PULLEY 4" OD X .85, 3/4 BORE	505-190908	1
2	V-BELT COG, 1/2" x 31"	504-190912	1
3	HITCH MOUNT LOWER	430-97870	1
4	HITCH MOUNT UPPER	430-97869	1
5	RUBBER FLAP PTO GUARD ASSY	420-190837	1
6	GUARD HINGED	410-190405	1
7	SHAFT, JACK NBR-60 MOUNT	401-176001	1
8	KEY, ROUND END .1875 X 1.5	386-92029	1
9	NUT, HEX, ESNA, 3/8-16 UNC	371-81297	6
10	SCREW, THREAD FORMING 1/4-20 X 3/4	370-113615	4
11	WASHER, FLAT -3/8 STD ZINC PL	341-30000	12
12	HHCS 3/8-16 UNC X 1.125	311-31125	6

PARTS LISTS

UPPER HITCH

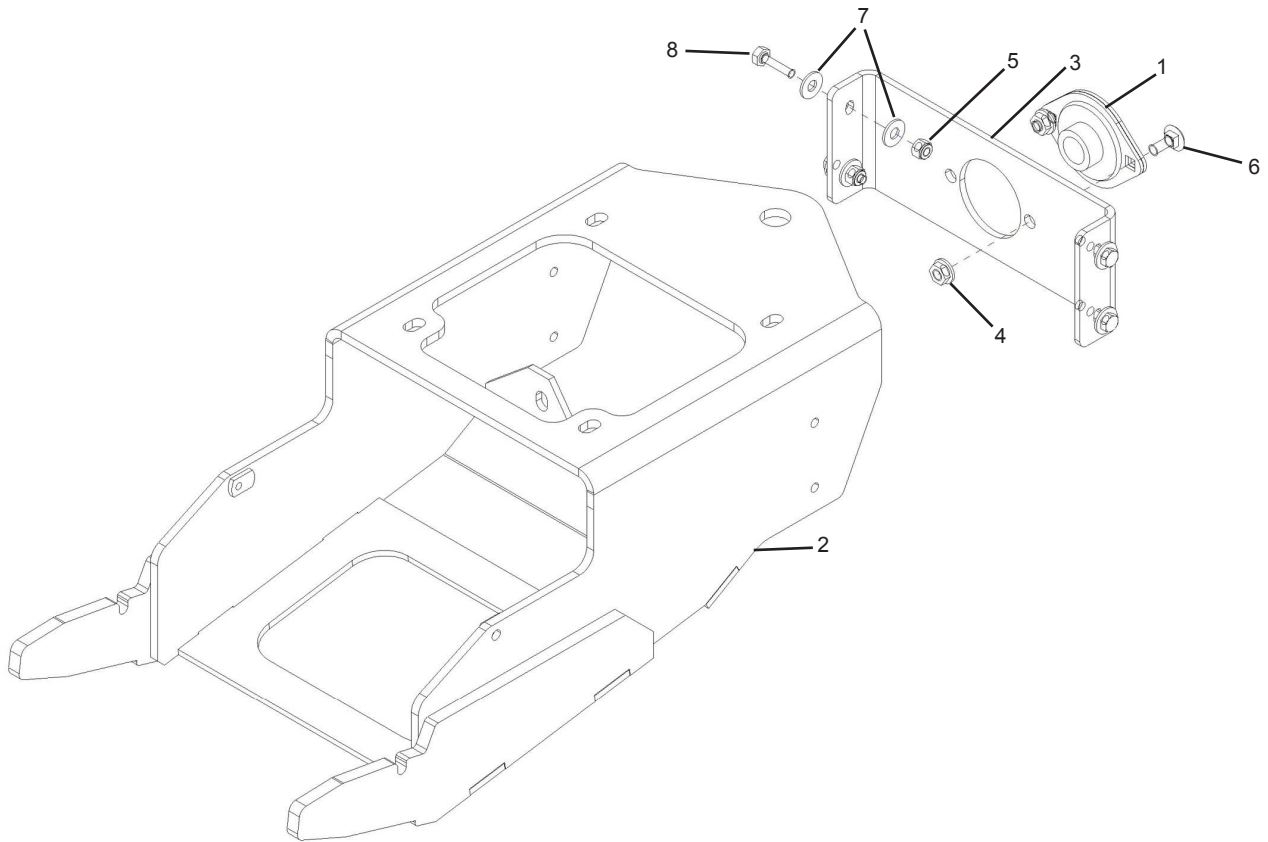


Item	Description	Part Number	Qty
1	BEARING, 3/4" FLANGETTE	600-132224	3
2	PULLEY 6" OD X .85, 3/4 BORE	505-190909	1
3	DRIVELINE, SERIES 07 3/4 KEYD X 1-15 SPLN	502-129543	1
4	TENSIONER ASSEMBLY	430-97882	1
5	BAR PIVOT II	410-190355	1
6	PEDAL, PIN RELEASE	410-190354	2
7	HITCH MOUNT UPPER	410-190261	1
8	GUARD END PTO	401-190539	1
9	BAR PEDAL PIVOT	401-190281	1
10	BELT FINGER	387-190404	2
11	KEY, ROUND END .1875 X 1	386-91174	1
12	SPRING EXTENSION 2 INCH X .750 DIA	382-190816	1
13	SPRING EXTENSION 2.5 LG X .375 DIA	382-190519	1
14	RIVET, 3/16 POP ALUMINUM	380-169217	6
15	WASHER .813ID X 1.5OD X .25 THK	372-190322	2

16	NUT, FLANGED 5/16-18 PLATED LOCKING	371-92059	6
17	NUT, HEX, ESNA, 1/4-20 NC	371-81299	3
18	SPRING ANCHOR STUD 3/8-16	370-190347	2
19	CARRIAGE BOLT 5/16-18 UNC X .75	370-126976	6
20	NUT, HEX, UNC, 3/8-16	361-30000	6
21	WASHER, FLAT -3/8 STD ZINC PL	341-30000	4
22	WASHER, FLAT -1/4 STD ZINC PL	341-10000	6
23	HHCS 3/8-16 UNC X 1.000	311-31000	2
24	HHCS .25-20 UNC X 1.500	311-11500	3
25	RUBBER GUARD, GUARD END, PTO	101-190992	1

PARTS LISTS

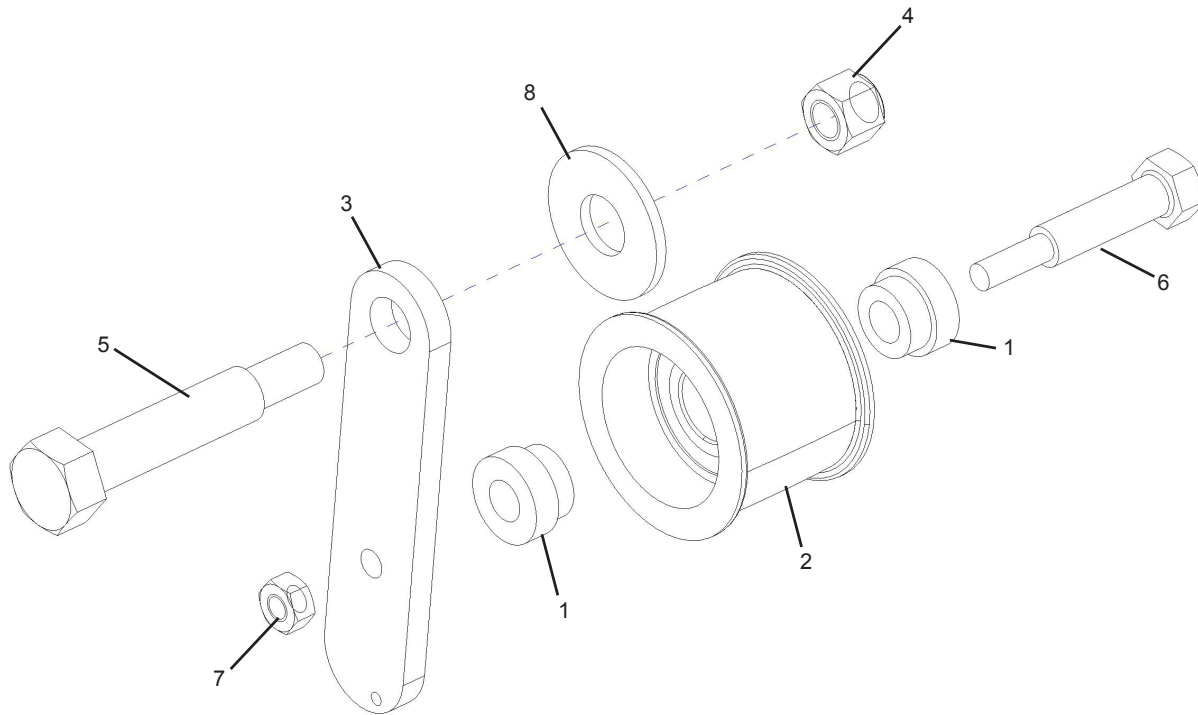
LOWER HITCH



Item	Description	Part Number	Qty
1	BEARING, 3/4" FLANGETTE	600-132224	1
2	HITCH MOUNT LOWER	410-190260	1
3	BRACKET BACK MOUNT LOWER HITCH	401-190276	1
4	NUT, FLANGED 5/16-18 PLATED LOCKING	371-92059	2
5	NUT, HEX, ESNA, 1/4-20 NC	371-81299	4
6	CARRIAGE BOLT 5/16-18 UNC X .75	370-126976	2
7	WASHER, FLAT -1/4 STD ZINC PL	341-10000	8
8	HHCS .25-20 UNC X 1.000	311-11000	4

PARTS LISTS

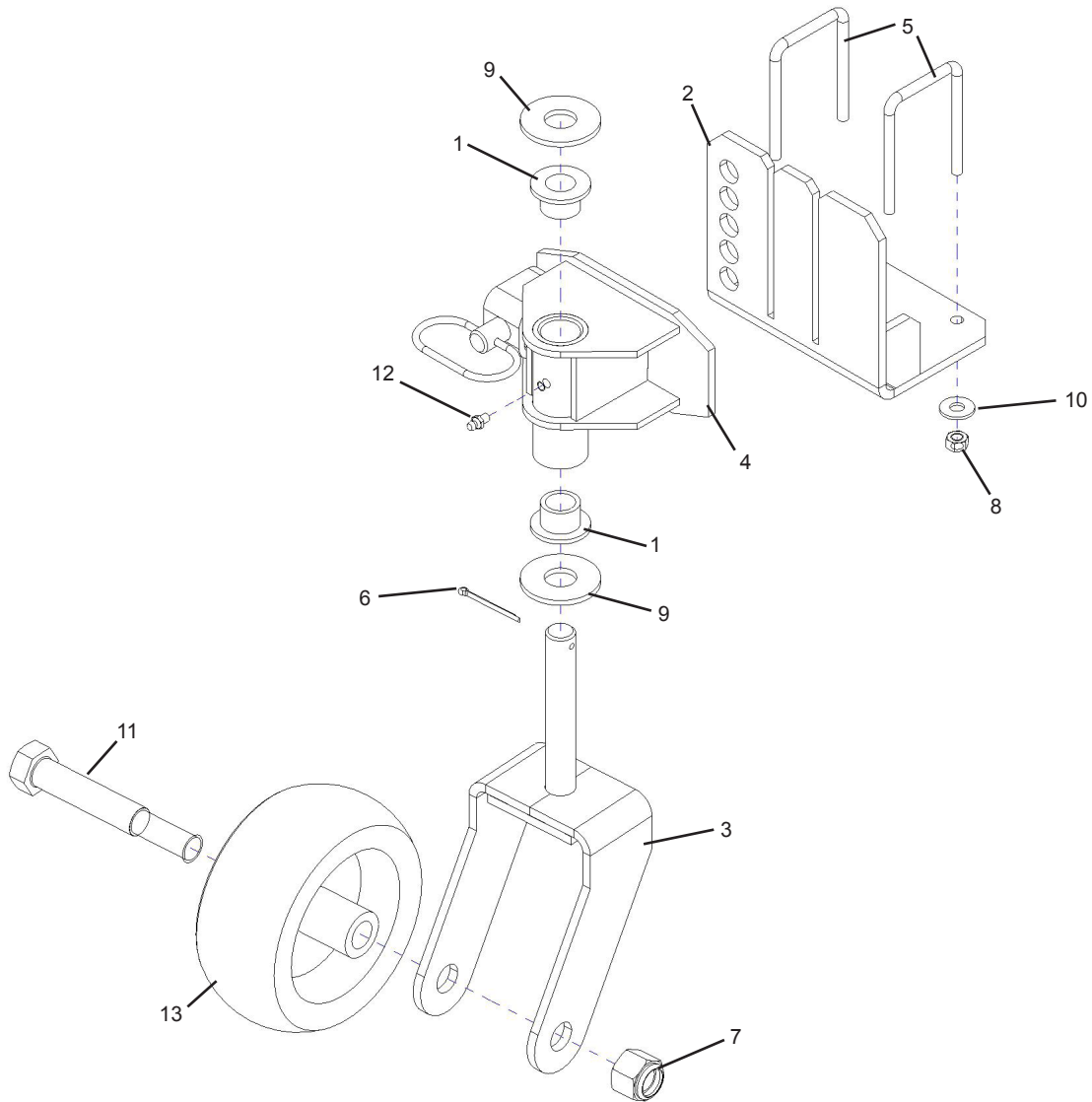
TENSIONER



Item	Description	Part Number	Qty
1	CLEVIS ADAPTER PULLEY 3/8 BORE	505-190384	2
2	PULLEY FLAT 2.07 OD X 1.54 WIDE	505-190346	1
3	PIVOT ARM	401-190342	1
4	NUT, HEX, ESNA, 3/8-16 UNC	371-81297	1
5	HEX HEAD SHOULDER BOLT 2.000	370-190349	1
6	HEX HEAD SHOULDER BOLT 1.313	370-190348	1
7	NUT, HEX, UNC, 1/4-20	361-10000	1
8	WASHER, FLAT -1/2 STD ZINC PL	341-50000	1

PARTS LISTS

CASTER ASSEMBLY

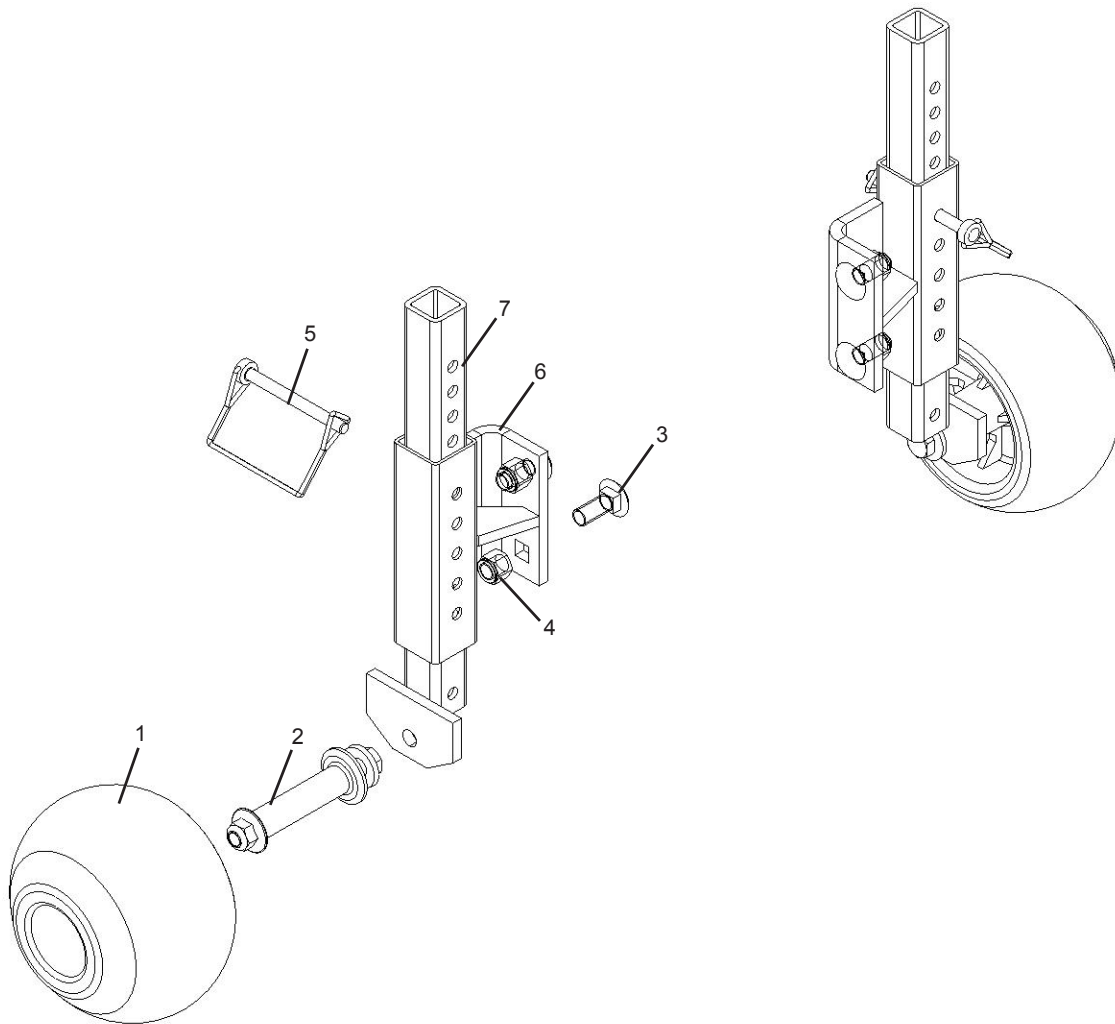


Item	Description	Part Number	Qty
1	BEARING,OILITE FLANGE 0.75 B 1.00 OD X.75	603-160294	2
2	WELD, PLATE HEIGHT ADJUSTING	410-190990	1
3	WELDMENT, CASTER FORK	410-190695	1
4	CASTER MOUNT ADJUSTABLE	410-190655	1
5	U-BOLT, SQUARE 5/16-18 X 2 X 3	387-138279	2
6	PIN, COTTER	380-81380	1
7	ESNA NUT, 3/4-10	371-169534	1
8	NUT, HEX, UNC, 5/16-18	361-20000	4
9	WASHER, FLAT -3/4 STD ZINC PL	341-80000	2
10	WASHER, FLAT -5/16 STD ZINC PL	341-20000	4

Item	Description	Part Number	Qty
11	HHCS .75-10 UNC X 5.000	311-85000	1
12	GREASE ZERK 1/4-28	206-72100	1
13	6.25 X 3 CASTER WHEEL .75 I.D. BRG RUB.ST	100-92126	1

PARTS LISTS

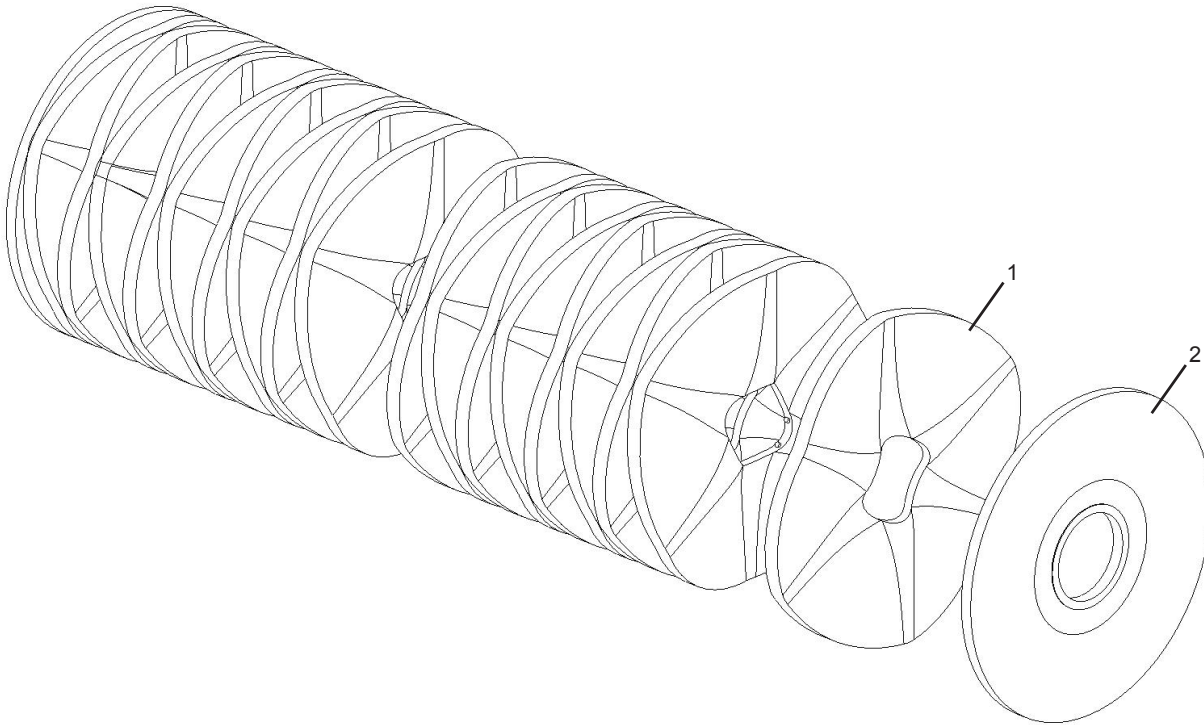
TURF CASTER ASSEMBLY 420-190757



Item	Description	Part Number	Qty
1	WHEEL, ANTI-SCALP 5X2.75	100-190873	2
2	HARDWARE KIT, ANTI-SCALP WHEEL	370-190874	2
3	CARRIAGE BOLT 3/8-16 UNC X 1	370-92047	4
4	NUT, HEX, ESNA, 3/8-16 UNC	371-81297	4
5	PIN, WIRE LOCK 1/4 X 2-1/4	380-172458	2
6	CASTER BRACKET	410-190754	2
7	CASTER STEM, TURF OPTION	410-190755	2

PARTS LISTS

BRUSH FILLER REPLACEMENT KIT (5' NBR-60) 907-168368



Item	Description	Part Number	Qty
1	SEGMENT, POLY, 20" X 5' CONVULUTED	101-137134	30
2	WAFER 20" X 5" POLY SLOPED	101-168304	2



M-B Companies, Inc

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Attachments
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New Holstein, WI 53014
800.558.5800

Multi-Service Vehicle
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800.558.5800

Pavement Marking-East
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Montgomery, PA 17752
888.323.2900

Pavement Marking-West
2490 Ewald Avenue SE
Salem, OR 97302
800.253.2909

Replacement Brushes
1217 E Chestnut Street
Chilton, WI 53014
800.558.5800

Warranty/Product Registration

A Warranty Registration Form must be submitted online to make warranty effective.

Warranty Start Date:

All claims must be submitted using the proper form and emailed to mbattachments@m-bco.com. To be eligible for warranty payment the product must be registered with M-B Companies via

www.m-bco.com/attachments/warranty

M-B Companies, Inc. reserves the right to decline any claim that does not meet above requirements. Pre-Approval Required Prior To ANY Work Being Performed.

LIMITED WARRANTY

Limited Warranty: Subject to the limitations set forth herein, M-B Companies, Inc. ("M-B") warrants its products to be free from defects in material and workmanship for a period of twelve (12) months from the date of delivery of the product to its original owner, except that the warranty is twelve (12) months solely for the following products: Truck Mounted Pavement Marking Equipment, Airport Snow Removal Products, Attachment Products, Brushes, MSV Multi-Service Vehicles. Parts shall have a ninety (90) day warranty. This warranty is not transferable without the written consent of M-B.

Notice: M-B's obligations under this Limited Warranty are conditioned on M-B receiving, within the warranty period, written notice from Buyer specifying the nature of any alleged defect and requesting corrective action by Seller.

Remedies: M-B, at its option, will repair or replace, or provide a credit to Buyer for, defective warranted items. If requested by M-B, products or parts for which a warranty claim is made shall be returned, transportation prepaid, to M-B's factory. Buyer shall not return any product for repair, replacement or credit without M-B's advance written consent.

Other Manufacturer's Warranty: On products furnished by M-B, but manufactured by any other manufacturer, the warranty of said manufacturer, if any, will be assigned to Buyer, if the said warranty is assignable. However, M-B does not represent or guarantee that such manufacturer will comply with any of the terms of the warranty of such manufacturer.

Exclusions: Any improper use, operation beyond capacity, or substitution of parts not approved by M-B, or alteration or repair by others in such a manner as in M-B's judgment materially and/or adversely affects the product shall void this warranty. This warranty does not apply to defects caused by damage or unreasonable use while in the possession of the owner, including but not limited to: failure to provide reasonable and necessary maintenance, normal wear, routine tune ups or adjustments, improper handling or accidents, operation at speed or load conditions contrary to published specifications, improper or insufficient lubrication, or improper storage.

Seller manufactures power brooms that mount to many makes and models of equipment. Seller attempts to ensure that the mounting frames fit correctly. However, the large number of tractor models, types and options currently available, compounded by frequent manufacturer design changes, may prevent Seller from supplying a frame that fits every unit correctly. Therefore, unless Buyer supplies drawing which detail the attachment points on the specific unit to which the broom will be mounted, Seller will not be responsible for the fit of the mounting frame.

The batteries, tires, rubber material, brushes and material normally consumed in operation, and major components such as engines, air compressors, and hydraulic pumps and motors are excluded from this warranty but may be covered to the extent of any warranty received by M-B from its supplier if permitted by the terms of such warranty.

Limitations of liability: M-B shall not be liable for any incidental, consequential, punitive or special damages of any kind, including, but not limited to, consequential labor costs or transportation charges in connection with the repair or replacement of defective parts, or lost time profits or expense which may have accrued because of said defect.

M-B disclaims all other warranties, whether express or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. This warranty is exclusive remedy of buyer. This warranty cannot be extended, broadened or changed in any respect except in writing by an authorized officer of M-B.

Notwithstanding anything in this warranty is to the contrary, in no event shall M-B's total liability hereunder exceed the purchased price of the particular product



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