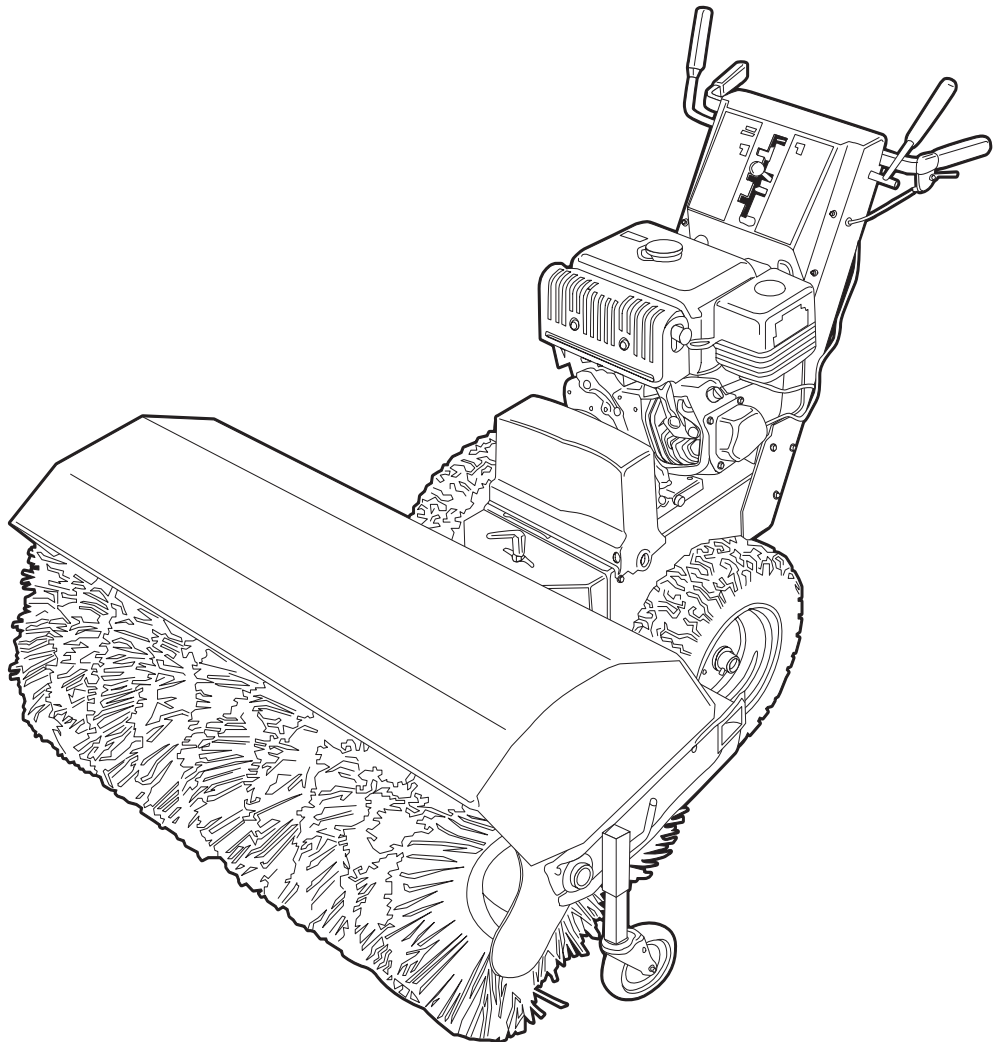




OPERATOR'S MANUAL



Model MCD-WB Walk Behind Power Broom

Serial No. 10-1638 and up
11/2004

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WARNING

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

Failure to comply with all 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.




WARNING

Engine exhaust from this product contains chemicals known, in certain quantities, to cause cancer, birth defects, or other reproductive harm.

Safety Rules & Information



Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of unit, severe personal injury or death to you, or bystanders, or damage to property or equipment. The triangle  in 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 objects such as rocks, toys, wire, 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 travelling in reverse.
- Be aware of the discharge direction and do not point it at anyone. Do not point the discharge at glass enclosures, automobiles, or windows.
- Disengage all clutches (release drive and broom control levers) before starting the engine.
- Never leave a running unit 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 alcohol or drugs.
- 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 all hardware is present, in-tact, and secure. Replace worn or damaged parts.
- Never operate the machine with defective guards, or without safety protective devices in place.
- Stop engine before: refuelling, removing the broom assembly, or making adjustments.
- Follow the manufacturer's recommendation for wheel weights or counterweights.
- Adjust support roller height to set proper ground contact pattern.
- Do not touch power broom parts which may be hot from operation. Allow such parts to cool before attempting to service the unit.

SLOPE OPERATION



WARNING

Never operate on slopes greater than 17.6 percent (10°) which is a rise of 3-1/2 feet (106 cm) vertically in 20 feet (607 cm) horizontally.

When operating on slopes use additional wheel weights or counterweights. See your dealer to determine which weights are available and appropriate for your unit.

Select slow ground speed before driving onto slope. Travel UP and DOWN the slope, never across the face, use caution when changing directions and DO NOT START OR STOP ON SLOPE.

Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. All slopes require extra caution. If you cannot back up the slope or if you feel uneasy on it, do not operate on it.

Do

- See your authorized dealer for recommendations counterweights to improve stability.
- Travel up and down slopes, not across.
- Remove obstacles such as large rocks, tree limbs, etc.
- Watch for holes, ruts, or bumps. Uneven terrain could overturn the unit. Snow can hide obstacles.
- Use slow speed. Tires may lose traction on slopes. Choose a low gear so that you will not have to stop or shift while on the slope.
- Keep all movement on the slopes slow and gradual. Do not make sudden changes in speed or direction.
- Always keep unit in gear especially when traveling downhill.

Do Not

- Do not start or stop on a slope. If tires lose traction, disengage the broom and proceed slowly straight down the slope.
- Do not turn on slopes unless necessary, and then, turn slowly and gradually downhill, if possible.
- Do not operate near drop-offs, ditches, or embankments. The unit could suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.
- Do not operate power broom on roof tops.
- Do not operate on wet surfaces. Reduced traction could cause sliding.
- Do not shift to neutral and coast down hills.

CHILDREN

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the unit and the operating activity. Never assume that children will remain where you last saw them.

- Keep children out of the area and under the watchful care of another responsible adult.
- Be alert and turn unit off if children enter the area.
- Before and during reverse operation, look behind and down for small children.
- Never allow children to operate the unit.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

EMISSIONS

- Engine exhaust from this product contains chemicals known, in certain quantities, to cause cancer, birth defects, or other reproductive harm.
- Look for the relevant Emissions Durability Period and Air Index information on the engine emissions label.

SERVICE AND MAINTENANCE

- Use extra care in handling gasoline and other fuels. They are flammable and vapors are explosive.
 - a) Use only an approved container.
 - b) Never remove gas cap or add fuel with the engine running. Allow engine to cool before refueling. Do not smoke.
 - c) Never refuel the unit indoors.
- If fuel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapors have dissipated.
- Replace all fuel tank caps and fuel container caps securely.
- Never fill containers inside a vehicle or on a truck bed with a plastic bed liner. Always place containers on the ground away from your vehicle before filling.
- Remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
- Keep nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
- If fuel is spilled on clothing, change clothing immediately.
- Maintain or 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 build-up. Clean up oil or fuel spillage.
- Stop and inspect the 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 manufacturer's manual.
- Components are subject to wear, damage, and deterioration. Frequently check components and replace with manufacturer's recommended parts, when necessary.
- Check control operation frequently. Adjust and service as required.
- Use only factory authorized replacement 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 major repairs on this unit unless you have been properly trained. Improper service procedures can result in hazardous operation, equipment damage and voiding of manufacturer's warranty.
- Do not change engine governor settings or over-speed the engine. Operating the engine at excessive speed can increase the hazard of personal injury.
- Disengage broom and traction, stop the engine, and disconnect the spark plug wire(s) before performing service work or if the unit vibrates abnormally. After striking an object, inspect the machine for damage and make repairs before restarting and operating the equipment.

Safety Rules

ANSI B71.3-1995 WARNINGS

Training

1. Read the operating and service instruction manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
2. Never allow children to operate the equipment. Never allow adults to operate the equipment without proper instruction.
3. Keep the area of operation clear of all persons, particularly small children and pets.
4. Exercise caution to avoid slipping or falling especially when operating in reverse.

Preparation

1. Thoroughly inspect the area where the equipment is to be used and remove all doormats, sleds, boards, wires, and other foreign objects.
2. Disengage all clutches and shift into neutral before starting engine (motor).
3. Do not operate the equipment without wearing adequate outer garments. Wear footwear that will improve footing on slippery surfaces.
4. Handle fuel with care; it is highly flammable.
 - (a) Use an approved fuel container.
 - (b) Never add fuel to a running engine or hot engine.
 - (c) Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
 - (d) Replace fuel cap securely and wipe up spilled fuel.
5. Never attempt to make any adjustments while the engine (motor) is running (except when specifically recommended by the manufacturer).
6. Let engine (motor) and machine adjust to outdoor temperatures before starting to clear snow.
7. Always wear safety glasses or eye shields during operation or while performing an adjustment or repair to protect eye from foreign objects that may be thrown from the machine.

Operation

1. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.
2. Exercise extreme caution when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.
3. After striking a foreign object, stop the engine (motor), remove the wire from the spark plug, disconnect the cord on electric motors, thoroughly inspect the power broom for any damage, and repair the damage before restarting and operating the power broom.
4. If the unit should start to vibrate abnormally, stop the engine (motor) and check immediately for the cause. Vibration is generally a warning of trouble.
5. Stop the engine (motor) whenever you leave the operating position, before making any repairs, adjustments, or inspections.

6. When cleaning, repairing, or inspecting make certain the broom and all moving parts have stopped. Disconnect the spark plug wire and keep the wire away from the plug to prevent accidental starting.
7. Do not run the engine indoors except for starting the engine or for transporting the power broom in or out of the building. Open the outside doors; exhaust fumes are dangerous.
8. Do not clear snow across the face of slopes. Exercise extreme caution when changing direction on slopes. Do not attempt to clear steep slopes.
9. Never operate the power broom without proper guards plates, or other safety protective devices in place.
10. Never operate the power broom near glass enclosures, automobiles, window wells, drop-offs, and the like without proper adjustment of the discharge angle. Keep children and pets away.
11. Do not overload the machine capacity by attempting to clear snow, sand or dirt at too fast a rate.
12. Never operate the machine at high transport speeds on slippery surfaces. Look behind and use care when backing.
13. Never direct discharge at bystanders or allow anyone in front of the unit.
14. Disengage power to the broom when power broom is transported or not in use.
15. Use only attachments and accessories approved by the manufacturer of the power broom (such as wheel weights, counterweights, cabs, and the like).
16. Never operate the power broom without good visibility or light. Always be sure of your footing, and keep a firm hold on the handles. Walk, never run.

Maintenance and Storage

1. Check shear bolts and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working condition.
2. Never store the machine with fuel in the fuel tank inside a building where ignition sources are present such as hot water and spacer heaters, clothes dryers, and the like. Allow the engine to cool before storing in any enclosure.
3. Always refer to the operator's guide instructions for important details if the power broom is to be stored for an extended period.
4. Maintain or replace safety and instruction labels as necessary.
5. Run the machine a few minutes after moving snow to prevent freeze-up of the broom assembly.
 - Always observe safe refueling and fuel handling practices when refueling the unit after transportation or storage.
 - Always follow the engine manual instructions for storage preparations before storing the unit for both short and long term periods.
 - Always follow the engine manual instructions for proper start-up procedures when returning the unit to service.

DECALS

This unit has been designed and manufactured to provide you with the safety and reliability you would expect from an industry leader in outdoor power 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.

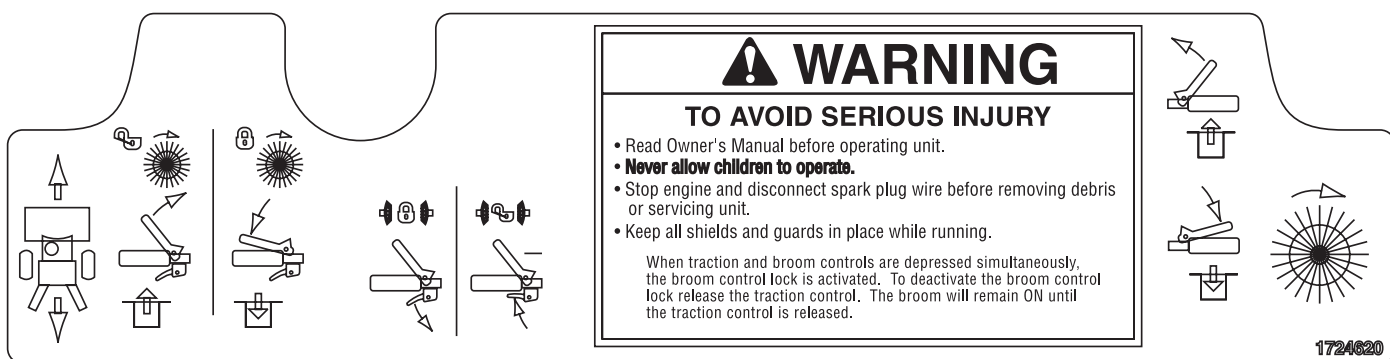
The safety decals below are on your unit.

If any of these decals are lost or damaged, replace them at once. See your 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.

NOTE: Engine operation and safety decals are supplied by the engine manufacturer.

DECALS



1724620



390-114599

Decals

Decal Kit 390-117958

FOR BEST PERFORMANCE
OF THIS POWER BROOM,
USE
M-B TOUGH BRUSH
REFILLS ONLY.

390-118352



⚠ WARNING

MOVING PART HAZARD
To prevent serious injury or death from moving parts:

- Close and secure guards and shields before starting.
- Keep hands, feet, hair and clothing away from moving parts.
- Disconnect and lockout power source before adjusting or servicing.
- Do not stand or climb on machine when operating.

390-118352

⚠ DANGER

To prevent serious injury or death:

- Do not allow any riders

390-118348

⚠ DANGER

To prevent serious injury or death from pinching:

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

390-118352

⚠ 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

ROTATING DRIVELINE HAZARD
To prevent serious injury or death from rotating driveline:

- Keep all guards in place when operating.
- Keep hands, feet, hair and clothing away from moving parts.

390-118350

"RECOMMENDED BRUSH PATTERN"

PATTERN WIDTH 2-4 INCHES MAX.

NOTE:
FAILURE TO FOLLOW ABOVE RECOMMENDATION CAN CAUSE PREMATURE BRUSH WEAR AND IRREVERSIBLE BRUSH DAMAGE. CONSULT OPERATORS MANUAL FOR ADJUSTMENT PROCEDURE.

390-118344

⚠ DANGER

To prevent serious injury or death from falling:

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

390-118348

SAFETY ICONS

WARNING: READ OPERATOR'S MANUAL.

Read and understand the Operator's Manual before using this machine.



DANGER: THROWN OBJECTS.

This machine is capable of throwing objects and debris. Keep bystanders away.



WARNING: DISMEMBERMENT.

This machine can amputate limbs. Keep bystanders and children away when engine is running.



DANGER: DISMEMBERMENT.

The broom can amputate limbs. Keep hands and feet away from rotating parts.



Identification Numbers

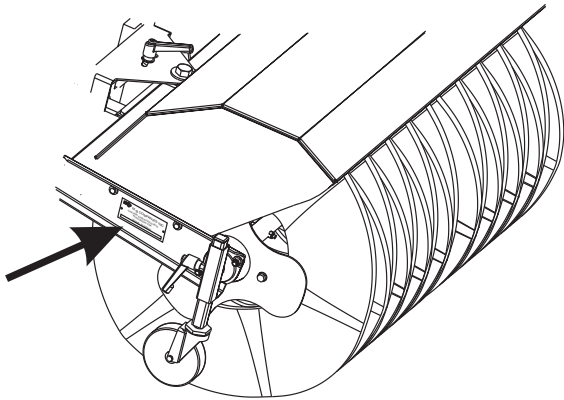
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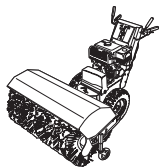
When contacting your authorized dealer for replacement parts, service, or information you **MUST** have these numbers.

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

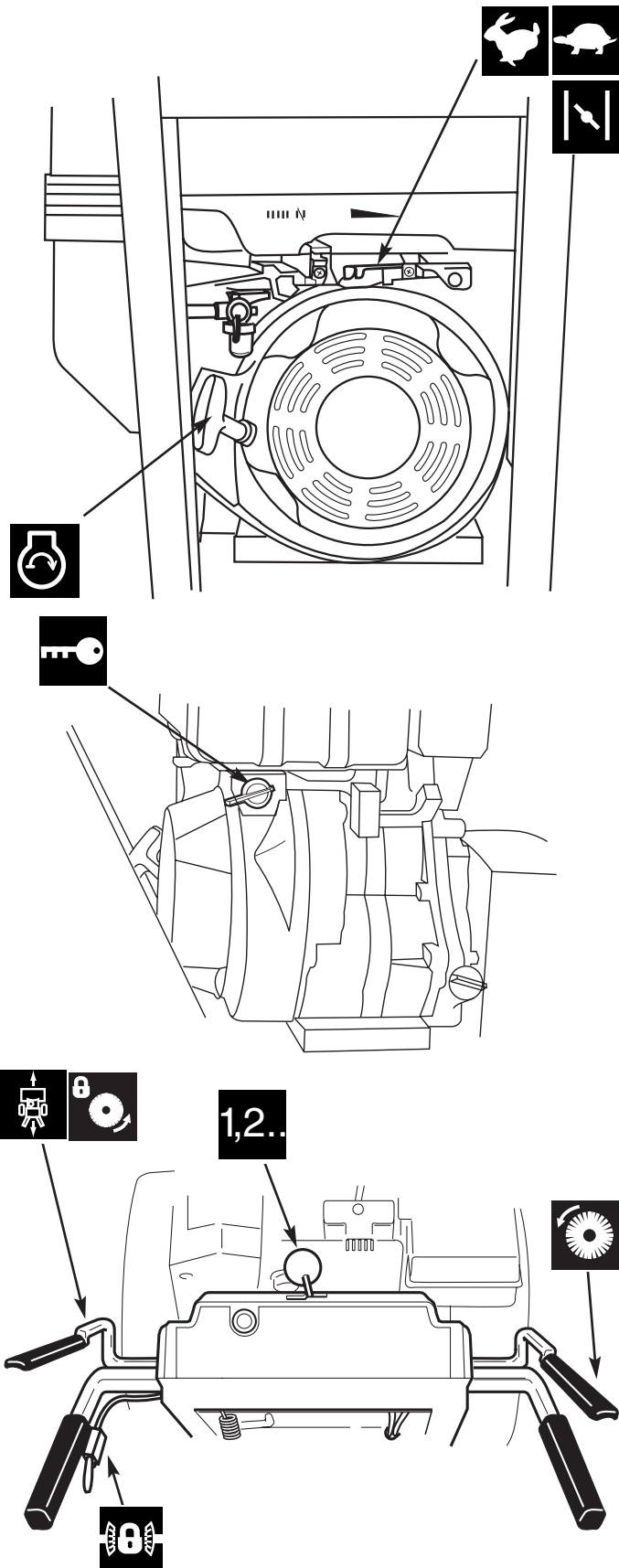
NOTE: For location of engine identification numbers, refer to the engine owner's manual.

Broom S/N _____
Engine S/N _____





Features, Controls, & Operation



1,2.. Speed Selector

Selects forward speeds 1-5 and reverse speeds 1-2. No neutral position or gate is required, since the traction drive design automatically provides "neutral" (no forward or reverse movement), whenever the Drive Control is released.

Traction Control / Free Hand™ Lock

Engages traction drive to wheels when depressed. Also locks broom control when depressed simultaneously. Releasing the traction control lever releases the Free Hand™ broom control lock and stops the drive wheels.

Broom Control

Engages the broom when depressed. Releasing the control stops the broom.

Easy Turn™ Control

Easy Turn Control: Engaging the Easy Turn™ lever releases the right wheel to allow easy turning in tight areas. Releasing the control automatically engages both drive wheels for full traction.

Traction Lock Pins: The right traction wheel can be completely released using the locking pin (see Figure 7). This allows the unit to be easily moved with the engine off.

Fuel

Fuel tank filler cap. Note: The fuel shut off valve is located under the fuel tank. Close the valve when the power broom is not in use. Open the valve before starting.

Throttle Lever

Controls engine speed. Move toward the hare icon for faster engine speed, move toward the turtle icon for slower engine speed. Set throttle to FULL/FAST (hare icon) for operation. Move throttle past FAST to engage choke. Once engine is running smoothly, move throttle to FAST run position.

Engine Power Switch

The Engine Power Switch prevents the engine from being started. Rotate switch to ON position to start engine, OFF on shut engine off.

Operation

GENERAL OPERATION

CHECKS BEFORE EACH START-UP

1. Make sure all safety guards are in place and all nuts, bolts and clips are secure.
2. Check the engine oil level. See your engine Owner's Manual for procedure and specifications.
3. Check to make sure spark plug wire is attached and spark plug is tightened securely. If necessary, torque spark plug to 15 ft. lbs.
4. Check the fuel supply. Fill the tank no closer than 1/4 to 1/2 inch of top of tank to provide space for expansion. See your engine Owner's Manual for fuel recommendations.
5. Check the casters to make sure they are set at the desired height.
6. Check the Drive Control (B, Figure 2), and Broom Control (C) for proper operation. If adjustment is required, see the Service section for procedures.
7. Make sure that the broom is angled in the proper direction. See the Service section for adjustment procedures and troubleshooting.
8. Check the Speed Selector (A, Figure 2) for smooth operation. The control must move freely into each speed position gate and remain in position when released. If the Speed Selector does not move freely into all forward and reverse speed positions, contact your local authorized dealer for assistance.

STARTING THE ENGINE

1. Turn the fuel valve (D, Fig. 1) to the ON position.
2. Set Engine Power switch (C) to the ON position.

WARNING

For your safety, operation on slopes should be in an up and down direction only. If it becomes necessary to move across the face of a slope, use caution and do not engage the broom. Be very careful when changing direction on a slope.

Proper footwear is recommended for the operator to help prevent slipping. Never attempt to operate on excessively steep slopes. The maximum slope for any operation is 17.7% (10°).

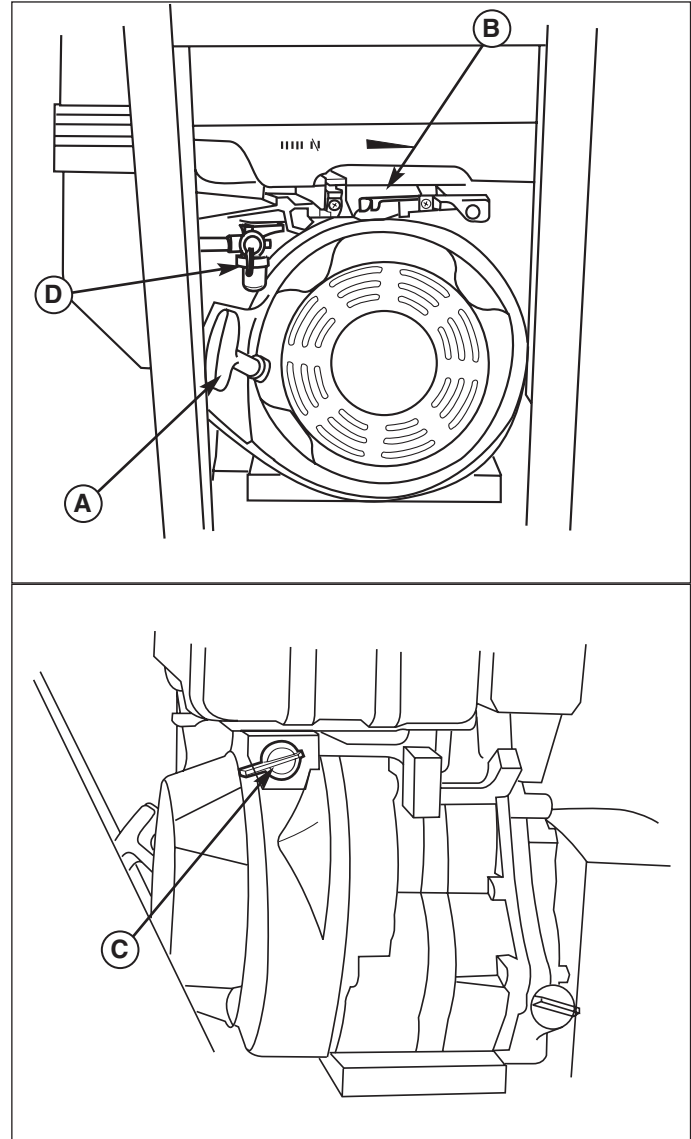


Figure 1. Engine Controls

- A. Starter Handle
- B. Throttle Lever and Choke Control
- C. Engine Power Switch
- D. Fuel Valve

WARNING

Gasoline is highly flammable and must be handled with care. Never fill the tank when the engine is hot or running. Always move outdoors to fill the tank. Keep power broom and gasoline away from open flame or spark.

3. Move the Throttle Lever (E) fully up to the FAST position and to the Choke position. (Do not choke a warm engine.)
4. Pull Starter Handle (A) rapidly to start the engine. Do not allow the Starter Handle to snap back—let the starter rope rewind slowly—while keeping a firm grip on the Starter Handle.
7. As the engine starts slide throttle lever towards the idle position for a few minutes until engine runs smoothly

NOTE: Allow the engine to warm up at SLOW throttle for a few minutes before operating the power broom at full speed. The engine will not develop full power until it reaches operating temperature. After warming up, always operate at full throttle.

OPERATING THE POWER BROOM

WARNING

ALWAYS ENGAGE GROUND DRIVE BEFORE ENGAGING BROOM DRIVE.

ALWAYS REMOVE YOUR HAND COMPLETELY FROM THE BROOM DRIVE LEVER BEFORE DISENGAGING GROUND DRIVE.

1. Set the Speed Selector to the desired forward speed.
2. Fully press and hold the Traction & Free-Hand™ Control lever (B, Figure 2) on the left-hand grip to engage the traction drive and begin moving the power broom. To disengage the traction drive, completely release the lever.
3. Fully press and hold the Broom Engage Control (C, Figure 2) on the right-hand grip to begin broom rotation. Releasing the Broom Engage Control will disengage the broom —**unless the Free-Hand™ Control has been activated (See step 4 below).**
4. When BOTH levers are depressed, the Free-Hand™ Control is activated. This allows Broom Engage Control to be released — **BROOM ROTATION WILL CONTINUE — until the Free-Hand™ Control is released.**
5. Select forward or reverse speeds as needed using the Speed Selector (A, Figure 2). Release both control levers before changing drive speeds.

WARNING

When BOTH levers are depressed, the Free-Hand™ Control is activated. This allows Brush Engage Control to be released — THE BRUSH ROTATION WILL CONTINUE — until the Free-Hand™ Control is released.

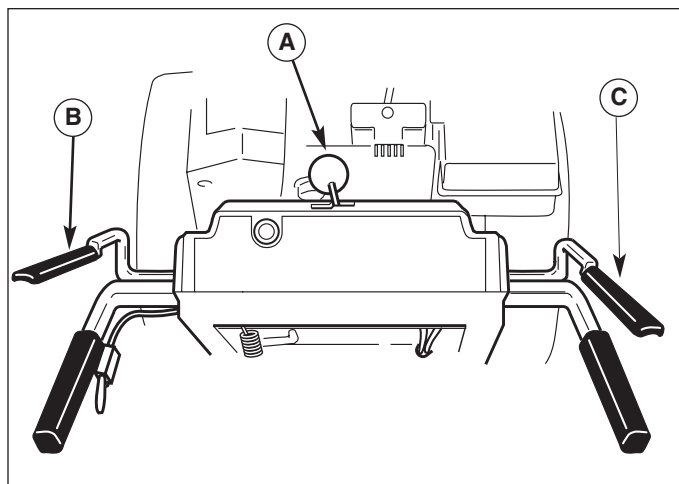


Figure 2. Controls (from operator's position)
A. Speed Selector
B. Traction & Free-Hand™ Control
C. Broom Engage Control

GROUND SPEED SELECTOR

Use the Speed Selector (A, Figure 2) to control the drive speed of the broom. There are five forward speeds and two reverse speeds.

To change speeds, release both control levers (B, Figure 2), then move the Speed Selector to the desired setting. Fully depress the control levers to resume.

ENGINE SPEED

Broom speed is adjusted by engine rpm. Adjust broom speed as needed.

Operation

BRUSH ANGLE ADJUSTMENT

To change the angle of the brush:

1. Release the attachment clutch and then the traction clutch.
2. Loosen the T-nut on top of the adapter frame and turn the brush as needed. (See A, Figure 3)
3. Retighten the T-nut.

BRUSH HEIGHT ADJUSTMENT

! CAUTION

If brush height is set too low, brush can drive machine rearward when attachment clutch is engaged. Engage brush slowly with brush set at proper height.

For hard surfaces, adjust the caster wheels so that brush just touches surface. The brush works best with the brush properly leveled. To adjust the brush height:

1. Move the brush to a dusty, flat surface. Leave the engine running.
2. Start the brush at a slow speed. Run the brush in a stationary position for 30 seconds.
3. Lift the brush head assembly off the ground and reverse the unit to move it away from the swept area.
4. Stop engine and allow all moving parts to stop.
5. Check the width of the swept area. The brush pattern should be 2-3 inches wide, running the length of the brush. (See Figure 4)
6. To adjust
 - a) Loosen the caster wheel lock lever. (See A, Figure 5)
 - b) Raise or lower the caster wheel as needed.
 - c) Tighten the caster wheel lock lever.

NOTE: If using the power broom for turf applications, less ground contact is required.

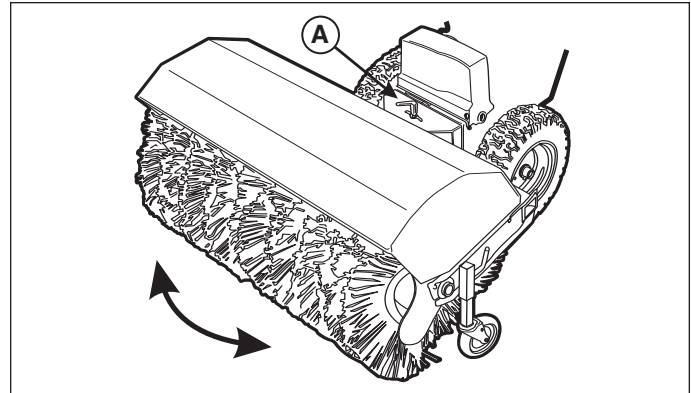


Figure 3. Brush Angle Adjustment
A. T-nut

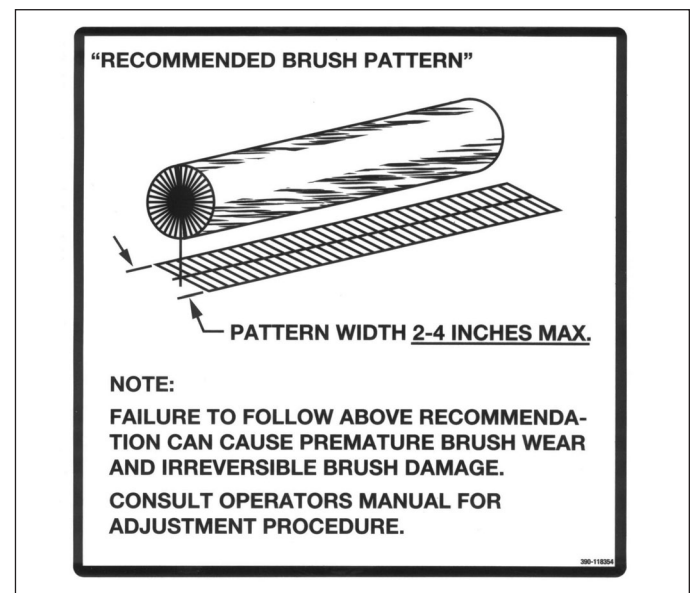


Figure 4. Brush Sweeping Pattern

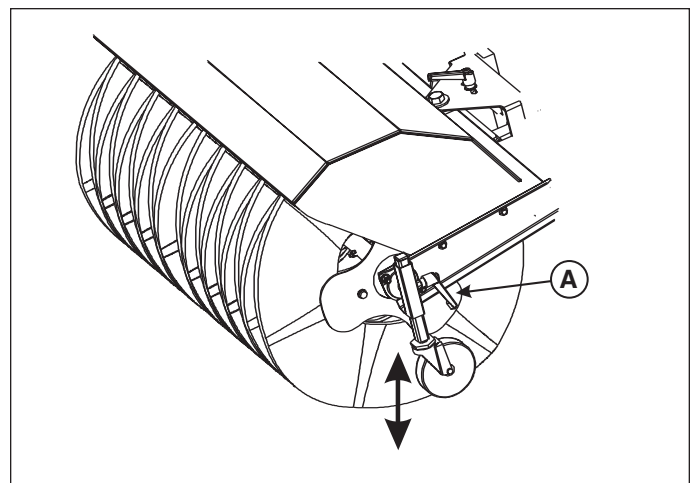


Figure 5. Caster Adjustment
A. Caster wheel lock lever

EASY TURN™ TRACTION

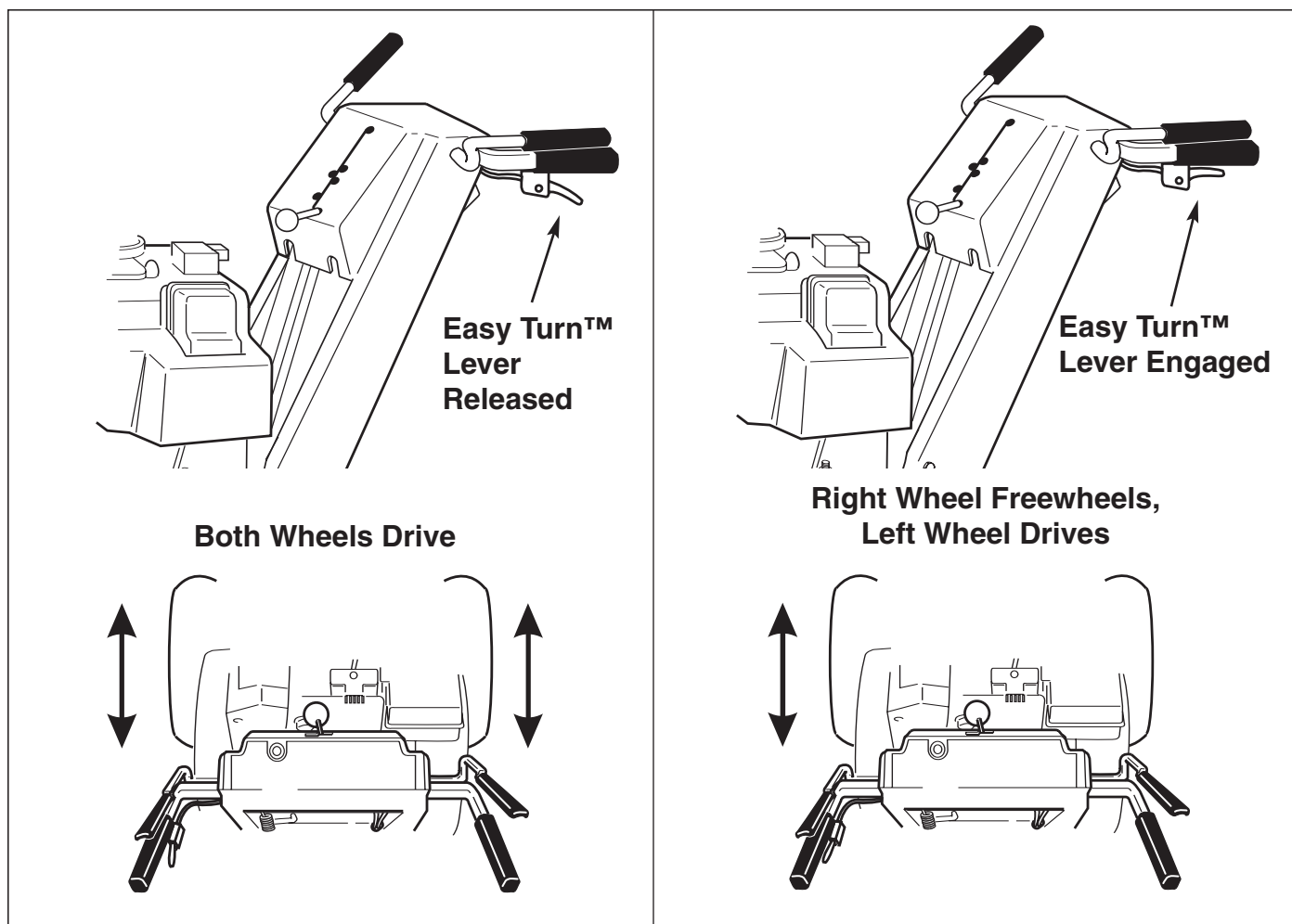


Figure 6. Easy Turn Control

EASY TURN™ FREEWHEELING AND TRACTION DRIVE LOCK

Normal Operation

For easy turning when using the power broom, squeeze the Easy Turn™ lever (Figure 6). Engaging the Easy Turn™ lever releases the right traction wheel but allows the left wheel to continue driving. Releasing the Easy Turn™ lever automatically engages both drive wheels for full traction.

NOTE: The Easy Turn™ lever will be more difficult to activate under a heavy load. Activate the lever before beginning a turn.

When Pushing the Power Broom:

For easy turning when pushing the power broom, disengage the right wheel using the Traction Lock Pin. (See Figure 7)

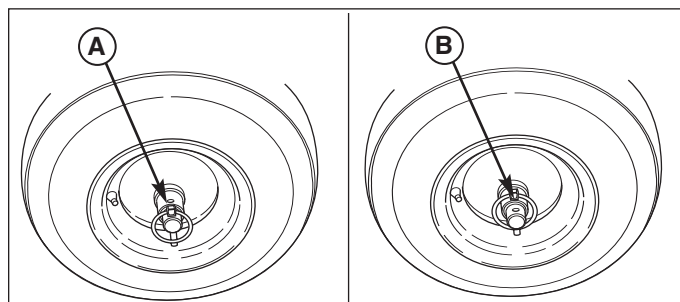


Figure 7. Traction Drive Lock
 A. Pin in Outer Hole (Freewheel)
 B. Pin in Inner Hole (Drive)

1. Turn the unit off, remove the Engine Key, and disconnect the spark plug wire.

Storage

TEMPORARY STORAGE (30 DAYS OR LESS)

Remember, the fuel tank will still contain some gasoline, so never store the unit indoors or in any other area where fuel vapor could travel to any ignition source. Fuel vapor is also toxic if inhaled, so never store the unit in any structure used for human or animal habitation.

Here is a checklist of things to do when storing your unit temporarily or in between uses:

- Keep in an area away from where children may come into contact with it. If there's any chance of unauthorized use, remove the spark plug wire.
- If the unit can't be stored on a reasonable level surface, chock the wheels.
- Clean all debris and snow from the unit.

NOTE: If storing your unit between winter snow removal jobs in a cold area, we suggest that you fill the fuel tank at the completion of each job to prevent water condensation in the fuel tank. Wait for engine to cool before filling tank.

LONG TERM STORAGE (LONGER THAN 30 DAYS)

Before you store your unit for the off-season, read the Maintenance and Storage instructions in the Safety Rules section, then perform the following steps:

1. Drain crankcase oil and refill with a grade of oil that will be required when unit is used again.
2. Coat all bare metal surfaces with paint or light coat of oil to prevent rusting.
3. Clean external surfaces and engine.
4. Prepare engine for storage. See engine owner's manual.
5. Clean any dirt from the engine housing.
6. Cover air intake and exhaust outlet tightly with plastic or other waterproof material to keep out moisture, dirt and insects.
7. Completely grease and oil as outlined in the Normal Care section.

WARNING

Never store the unit, with gasoline in engine or fuel tank, in a heated shelter or in enclosed, poorly ventilated enclosures. Gasoline fumes may reach an open flame, spark or pilot light (such as a furnace, water heater, clothes dryer, etc.) and cause an explosion.

Handle gasoline carefully. It is highly flammable and careless use could result in serious fire damage to your person or property.

Drain fuel into an approved container outdoors away from open flame or sparks.

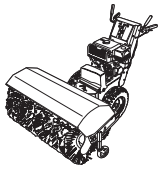
8. Drain fuel system completely or add a gasoline stabilizer to the fuel system. If you have chosen to use a fuel stabilizer and have not drained the fuel system, follow all safety instructions and storage precautions in this manual to prevent the possibility of fire from the ignition of gasoline fumes. Remember, gasoline fumes can travel to distant sources of ignition and ignite, causing risk of explosion and fire.

NOTE: Gasoline, if permitted to stand unused for extended periods (30 days or more), may develop gummy deposits which can adversely affect the engine carburetor and cause engine malfunction. To avoid this condition, add a gasoline stabilizer to the fuel tank or drain all fuel from the system before placing unit in storage.

STARTING AFTER LONG TERM STORAGE

Before starting the unit after it has been stored for a long period of time, perform the following steps.

1. Remove any blocks from under the unit.
2. Unplug the exhaust outlet and air cleaner.
3. Fill the fuel tank with fresh gasoline. See engine manual for recommendations.
4. See engine owner's manual and follow all instructions for preparing engine after storage.
5. Check crankcase oil level and add proper oil if necessary.
6. Inflate tires to proper pressure.
7. Start the engine and let it run slowly. DO NOT run at high speed immediately after starting. Be sure to run engine only outdoors or in well ventilated area.



Regular Maintenance

MAINTENANCE SCHEDULE

Maintenance Required	Service Interval	Notes
Lubricate power broom	10 Hours	Use 10W Oil and Automotive Lithium Grease
Check tire pressure	Monthly	Inflate to 20 psi (1.37 bar)
Check/Change engine oil**	Check oil before each use **	None
Replace spark plug**	Yearly**	None
Check drive linkage & belt tension	4-6 Hours	None
** See your engine owner's manual for engine-related information.		

CHECKING TIRE PRESSURE

The air pressure in each tire (Figure 8) should be 20 psi (136 kPa) and should be equal for both tires for best performance. Be sure to keep caps on valves to prevent entry of debris into the valve stem when tires are filled.

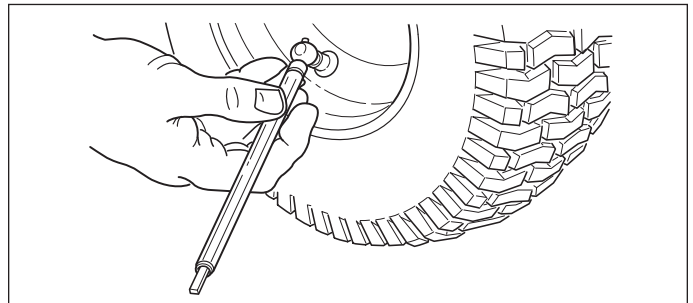


Figure 8. Checking Tire Pressure

Regular Maintenance

LUBRICATION

IMPORTANT NOTE

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 shown (See Figures 9-12).
2. Remove wheels and grease axles once each year (See Figure 11).
3. Apply 5W-50 synthetic motor oil to the friction disk drive hex shaft.
4. Grease broom drive universal joint (See Figure 12).
NOTE: Access is best gained from underneath machine.

Generally, all moving metal parts should be oiled where contact is made with other parts. Keep oil and grease off belts, pulley grooves, drive disc, and friction disc.

LUBRICATION NOTES:



Grease locations indicated by grease gun symbol. Use grease fittings when present. Disassemble parts to apply grease to moving parts when grease fittings are not installed.



Oil locations indicated by oil can symbol. Do not allow oil to drip onto traction drive or friction disc.

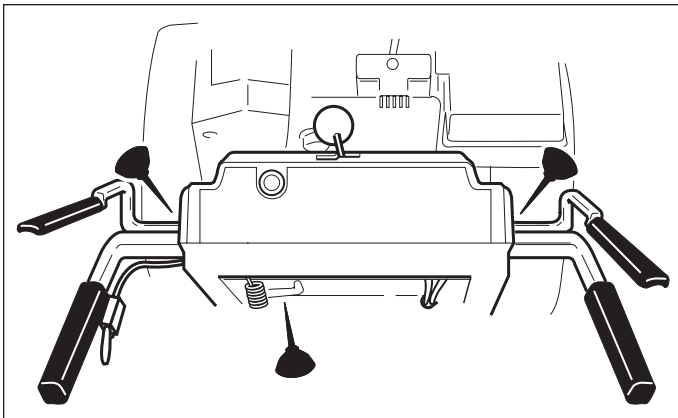


Figure 9. Lubricate Free Hand Control Linkage

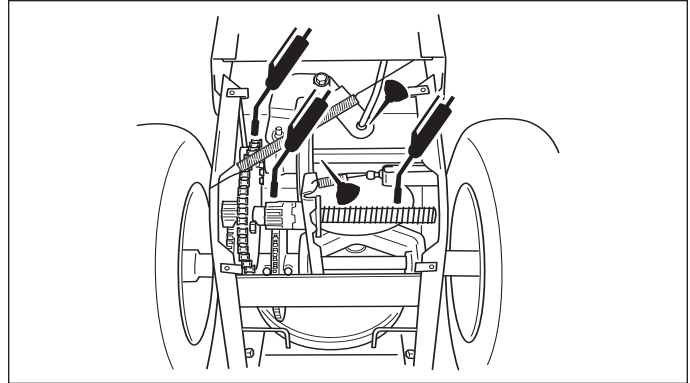


Figure 10. Drive Lubrication

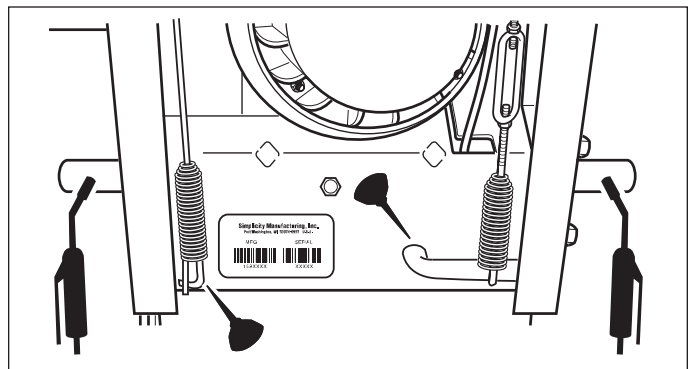


Figure 11. Grease Axles and Control Levers

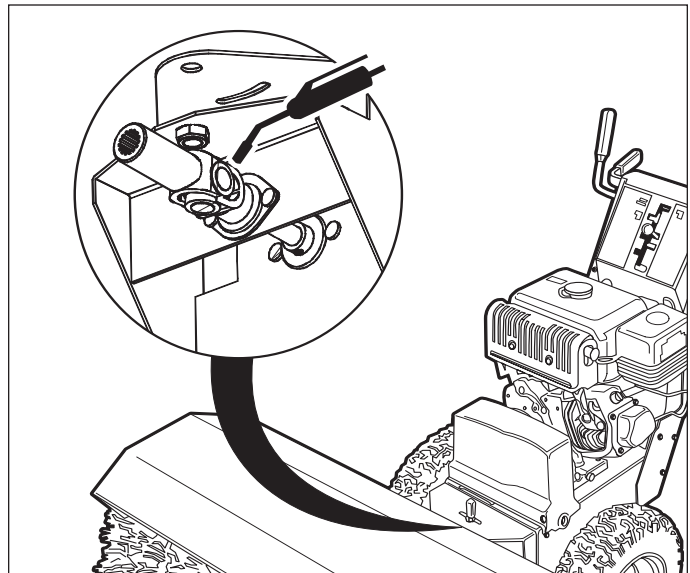
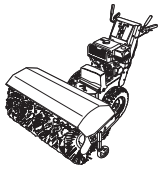


Figure 12. Grease Universal Joint



Troubleshooting, Adjustments and Service

TROUBLESHOOTING

This section provides troubleshooting and service instructions. Locate the problem and check the possible cause/remedy in the order listed.

Also, refer to the engine manufacturer's Owner's Manual for additional information.

For problems not covered here, contact your local dealer.

WARNING

Before performing any adjustment or service to power broom, stop the engine and wait for moving parts to stop. Remove the key. To prevent accidental starting, disconnect the spark plug wire and fasten away from the plug.

PROBLEM	POSSIBLE CAUSE	REMEDY
Engine fails to start	1. Engine switch is OFF.	1. Set switch to ON position.
	2. Fuel valve is in CLOSED position.	2. Turn valve to OPEN position.
	3. Out of fuel.	3. Fill fuel tank.
	4. Choke OFF - cold engine.	4. Turn choke to ON, set throttle to FAST.
	5. Engine flooded.	5. Turn choke to OFF; try starting.
	6. No spark.	6. Check gap. Gap plug, clean electrode, or replace plug as necessary.
	7. Water in fuel, or old fuel.	7. Drain tank (Dispose of fuel at an authorized hazardous waste facility). Fill with fresh fuel.
Engine starts hard or runs poorly	1. Fuel mixture too rich.	1. Move choke to OFF position.
	2. Carburetor adjusted incorrectly.	2. See your dealer for adjustments.
	3. Spark plug faulty, fouled, or gapped improperly.	3. Clean and gap, or replace.
	4. Fuel Cap Vent is blocked.	4. Clear vent.
Brush does not clean hard surface	1. Casters improperly adjusted.	1. RAISE casters (this lowers the broom).
Broom does not rotate	1. Broom Control not engaged.	1. Engage Broom Control.
	2. Broom drive clutch rod slack.	2. Tighten to remove slack. See broom clutch rod adjustment.
	3. Broom drive belt slipping.	3. Check broom drive belt adjustment.
	4. Broken belt.	4. Replace belt.
	5. Shear pin broken.	5. Replace shear pin.
Poor traction	1. Tires slipping.	1. Check tire pressure and tread.

Troubleshooting

PROBLEM	POSSIBLE CAUSE	REMEDY
Broom does not stop when broom lever is released	1. Free-Hand™ Control is ACTIVE.	1. Release BOTH broom Engage Control AND Free-Hand™ Control to stop broom.
	2. Broom clutch rod too tight or bent.	2. Loosen or straighten clutch rod.
	3. Broom drive belt out of adjustment.	3. Adjust broom belt.
	4. Broom belt guide out of adjustment.	4. Adjust broom belt guide.
Power broom does not stop when drive lever is released	1. Traction drive clutch rod bent or too tight.	1. Loosen rod to remove slack or replace. See adjustment procedure.
	1. Traction drive clutch rod loose.	1. Tighten to remove slack. See adjustment procedure.
	2. Drive belt loose, broken, or stretched.	2. Replace drive belt.
	3. Drive roller chain damaged.	3. Replace chain.
	4. Traction Lock Pins in Free-Wheeling position (OUTER hole).	4. Change Traction Lock Pins to INNER hole to engage traction drive.
5. Friction Disc worn.	5. Replace Disc (see your dealer).	
Power broom veers to one side	1. Tires pressure not equal.	1. Check tire pressure.
	2. One wheel is set in Free-Wheeling mode. (Traction Lock Pin is in the OUTER hole).	2. Make certain the left Traction Lock Pin is in the INNER holes (to engage traction drive).
Excessive vibration	1. Loose parts or damaged broom assembly.	1. STOP engine and REMOVE the key. DISCONNECT the spark plug wire. Tighten all hardware. Replace broom assembly if necessary. If vibration continues, see your dealer.
Drive fails to move power broom at slow speeds	1. Traction Drive out of adjustment.	1. Readjust drive, or shift Speed Selector setting up one speed faster.
Speed selector difficult to move or frozen in place	1. Hex shaft needs lubrication.	1. Lubricate hex shaft with 5W-50 synthetic motor oil (see Maintenance).

SPEED SELECTOR ADJUSTMENT

1. Loosen the two nuts (F, Figure 13).
2. Place the shift lever in 5th gear.
3. Push the lower rod into the housing and tighten the two nuts. Do not lift up or down on rods while tightening. Make sure the shoulders of the carriage bolts (D) are in the slots.
4. Always check traction drive tension and broom drive tension after adjusting speed selector.

BROOM DRIVE TENSION

1. With the drive lever released, the hook (B, Figure 13) should barely touch the lever (C) without raising it. There can be a maximum 1/32" clearance as shown.
2. To adjust, loosen the two nuts (G) and hold the lower rod to keep from rotating. Turn the turnbuckle toward the right to lower the spring, or toward the left to raise the spring.
3. Tighten the two nuts against the turnbuckle. Hold the turnbuckle with pliers while tightening the nuts.

TRACTION DRIVE TENSION

1. With the drive lever engaged, bottom end of lower rod (D, Figure 14) should be flush with bottom of spring (E).
2. To adjust, loosen the two nuts, (B) and hold the lower rod to keep from rotating. Turn the turnbuckle (C) toward the right to lower rod or toward the left to raise rod.
3. Engage the drive lever to check the adjustment. When correct, tighten the two nuts against the turnbuckle. Hold the turnbuckle with pliers while tightening the nuts.

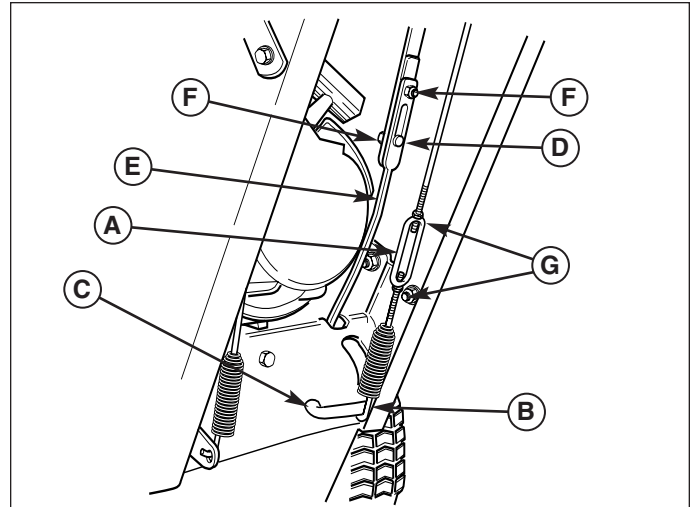


Figure 13. Speed Selector and Broom Drive Linkages

- A. Turnbuckle
- B. Spring Hook
- C. Lever
- D. Carriage Bolts
- E. Lower Rod
- F. Nuts
- G. Nuts

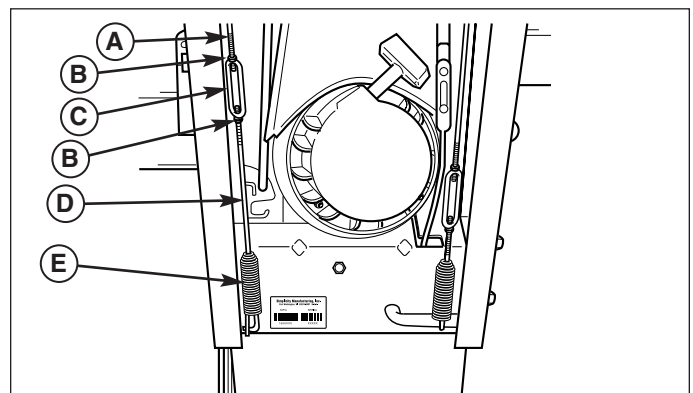


Figure 14. Drive Tension Adjustment

- A. Upper Rod
- B. Nuts
- C. Turnbuckle
- D. Lower Rod
- E. Spring

Adjustments & Service

EASY TURN™ CABLE ADJUSTMENT

If the Easy Turn™ cable has stretched, the gears will not disengage when the control lever is activated. Adjust the cable using the following procedure.

1. Turn the engine off and disconnect the spark plug wire.
2. Loosen the jam nut (B, Figure 15).
3. Turn the adjustment nut (A) to lengthen or shorten the cable. The cable should be tightened just until all slack is removed from the lever, however it must not engage the Easy Turn™ release without depressing the control lever.
4. Tighten the jam nut.

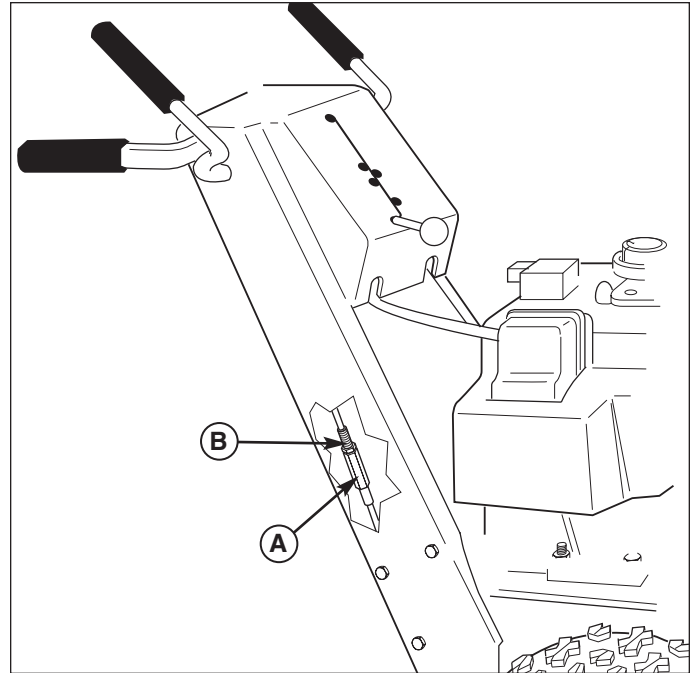


Figure 15. Cable Adjustment
A. Adjustment Nut
B. Jam Nut

BELT REPLACEMENT

1. Turn off the engine, remove the spark plug wire, and wait for all moving parts to stop. Loosen the two screws (B, Figure 16) securing the belt cover.
2. Tilt the cover forward and work it off the power broom.
3. Move the belt guides (B, Figure 17) by loosening the two capscrews (A).
4. Remove the broom drive belt as follows:
 - a. Slip the broom drive belt (D, Figure 17) from the idler pulley by pushing it away from the pulley and then toward the rear.
 - b. Remove the belt from the engine pulley.
 - c. Remove six capscrews from bottom cover to power broom frame. Loosen nuts (A, Figure 18) on each side to release broom pulley belt stops (B). Move belt stops and remove belt from pulley (C).
 - d. Remove the four bolts that hold the broom head on and remove broom head assembly. NOTE: Make sure to firmly support the broom assembly.
 - e. Remove broom drive belt.
 - f. For more clearance to remove the belt, engage the traction drive lever.
5. Remove the traction drive belt as follows:
 - a. Pull the idler pulley (I, Figure 17) away from the belt and slip the belt from the pulley.
 - b. Slip the belt off the traction pulley and then the engine pulley. The arm for the front idler pulley (G, Figure 17) may have to be pivoted to provide clearance for removing the belt from the traction pulley.
 - c. Pull the belt out between the broom pulley (F, Figure 17) and traction pulley.

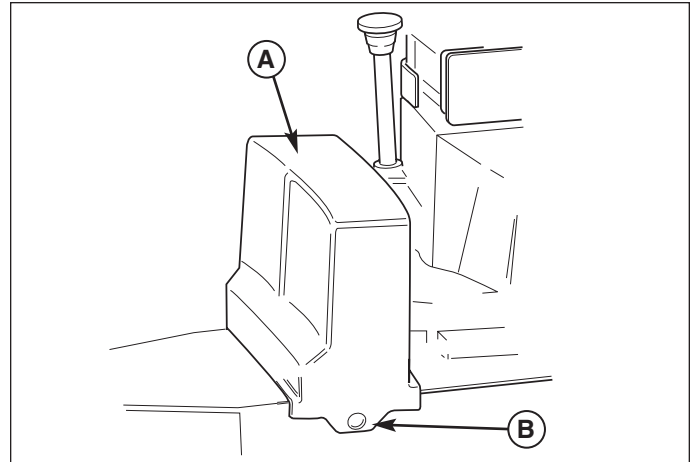


Figure 16. Belt Cover
A. Belt Cover
B. Screws

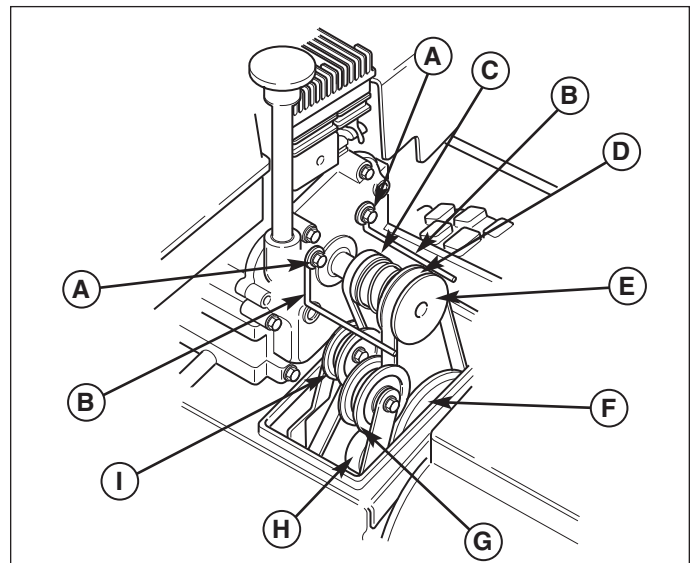


Figure 17. Belts and Pulleys
A. Capscrews
B. Belt Guides
C. Traction Drive Belt
D. Broom Drive Belt
E. Engine Pulley
F. Broom Pulley
G. Idler Pulley, Broom
H. Traction Pulley
I. Idler Pulley, Traction

Service

- Reverse the procedure to install the belts. Be sure there are no twists and the belts are properly seated in the grooves. Adjust the belt stops so there is 1/8" (3mm) clearance between belt and stop. The pattern for both belts is shown in Figure 19. Slide the right axle left fully before tightening the set collar (E, Figure 18).
- Check the traction drive tension and broom drive tension. Follow the procedures under BROOM/TRACTION DRIVE TENSION.
- Make sure the broom stops when the broom drive lever is released. Make sure traction drive stops when the traction drive lever is released. If not, check the drive tension. If a problem exists, see your dealer.

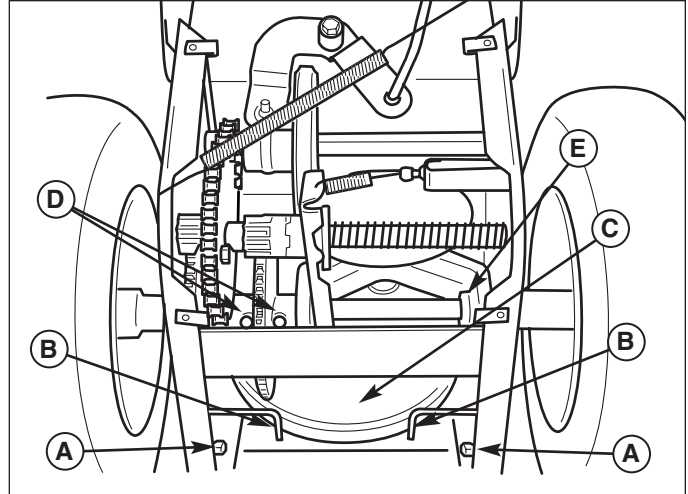


Figure 18. Broom Pulley Belt Stops (shown with bottom cover removed)

- A. Nuts
- B. Belt Stops
- C. Broom Pulley
- D. Gear Assy. Bolts
- E. Set Collar

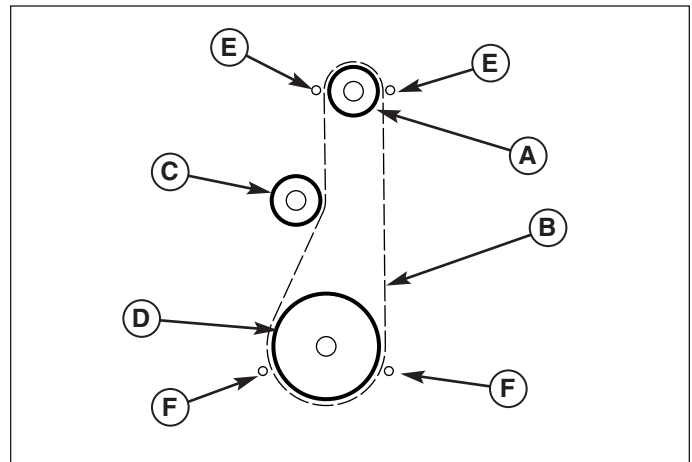


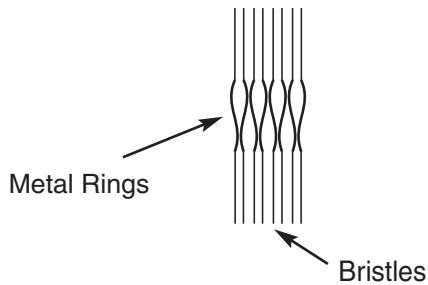
Figure 19. Belt Pattern (viewed from front)

- A. Engine Pulley
- B. Drive Belt
- C. Idler Pulley
- D. Driven Pulley
- E. Engine Belt Stops
- F. Broom Pulley Belt Stops

BRUSH SEGMENT REPLACEMENT

1. Remove bolts from broom bearings at both ends of the support shaft (A, Figure 20).
2. Loosen bearing setscrews and slide bearings inwards toward the center of broom.
3. Manually move power unit backwards away from the brush assembly. **IMPORTANT** – Support splined drive shaft to prevent damage.
4. Stand broom assembly on one end. (See Figure 21)
5. Remove the three bolts from the end plate (See A, Figure 21).
6. Remove used broom segments.
7. Install new broom segments.
NOTE – Align segment engagement fingers (C, Figure 21) on alternating support shafts. This will evenly spread rotating force through the drive system.

Note: Brush segments must align properly



8. Reinstall broom assembly.
IMPORTANT – Fully tighten the bearing setscrews before operating the power broom.

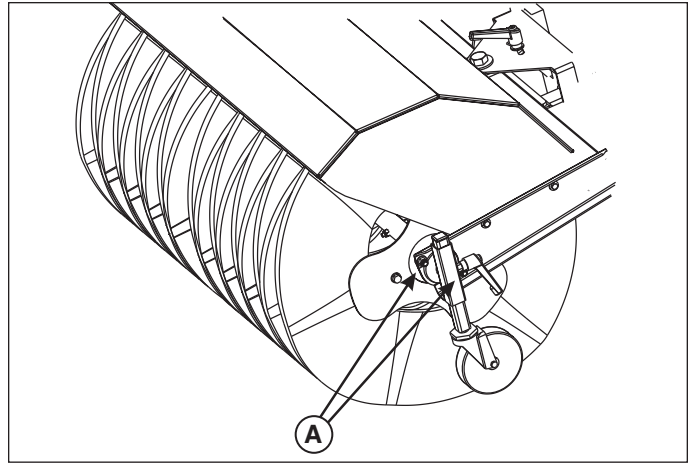


Figure 20. Brush Removal
A. Attachment bolts

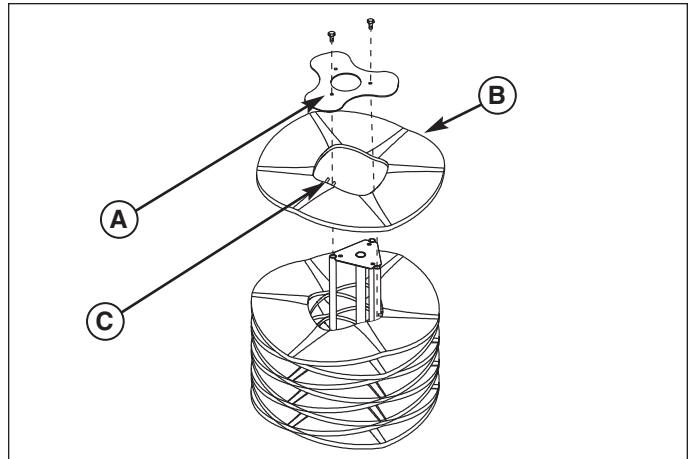
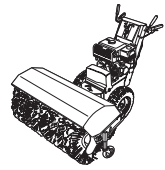


Figure 21. Brush Assembly
A. End plate
B. Brush segment
C. Engagement fingers

Optional Equipment



TURF CASTER KIT

The optional turf casters replace the standard broom caster wheels. These casters provide greater floatation when using the broom in turf grooming applications. Install the turf casters as follows:

1. Raise and support the broom head assembly about 2" off the ground.
2. Loosen the standard caster assembly by loosening and removing the locking lever. See Figure 22.
NOTE: Save both levers for use with the turf caster assemblies.
3. Remove the original caster wheel and caster mounting tube.
4. Install the new caster mounting bracket (9) onto the broom side frame and secure with the furnished nuts and bolts (3, 4 and 8).

NOTE:

- a. The caster mounting brackets are designed for right hand and left hand installation.
 - b. Remove the two bolts (11) holding hood in place. Reinstall these bolts through the upper holes in the new caster mounting bracket (9), securing the caster mounting bracket and hood assembly.
5. Attach caster wheel (1) to the caster fork swivel plate (2) using bolt, bushing and nut. **NOTE:** Make sure to install the bushing into caster wheel before attaching caster wheel to the caster fork swivel plate.
 6. Attach the caster forks (2) onto the caster mounting bracket (10) using the carriage bolts (7), washer (5) and nuts (6).
 7. Slide the turf caster wheel assembly into the mounting bracket from underneath and secure in place with the locking lever removed from the original caster wheels.
 8. Repeat Steps 2 - 6 for the other side of the broom.

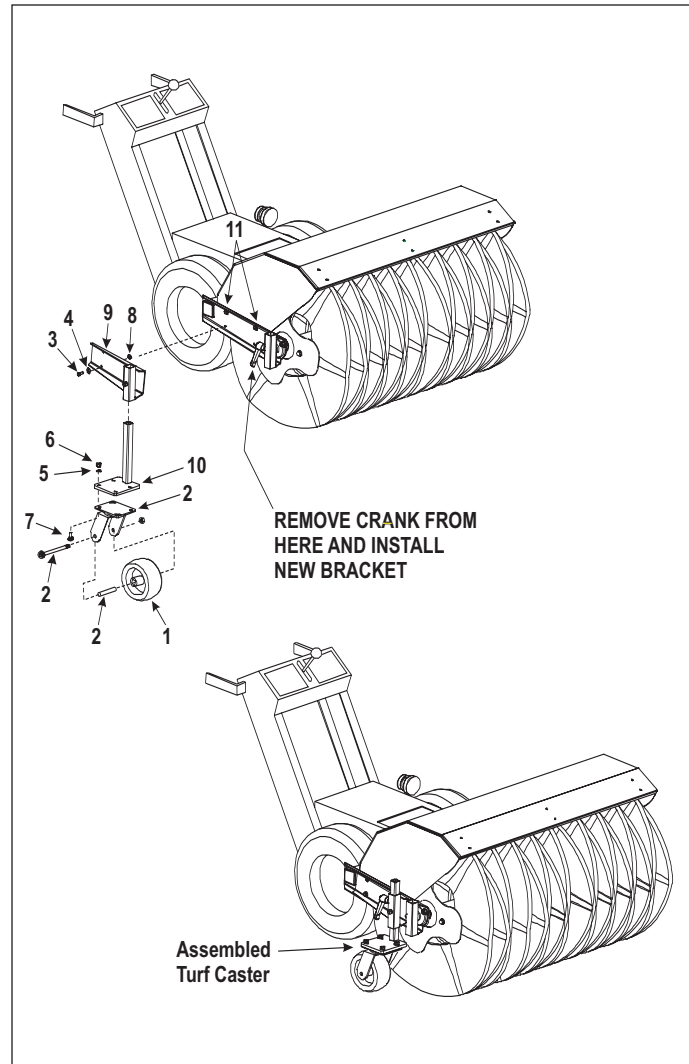


Figure 22. Turf Caster Assembly

DEBRIS BOX INSTALLATION

The optional debris box requires only a few assembly steps to enable full use. Install the debris box as follows:

1. Install Deflector Kit onto Broom Hood.
 - a. Position deflector straps (2, Figure 23) over broom hood (1) and secure each strap with one bolt (3) washer (4) and nut (5) in the top hole of the strap and broom hood.
 - b. Attach strap support (6) to each deflector strap. Position the support strap at the lower edge of the deflector strap and secure with one bolt (3) and nut (5) in each support strap.

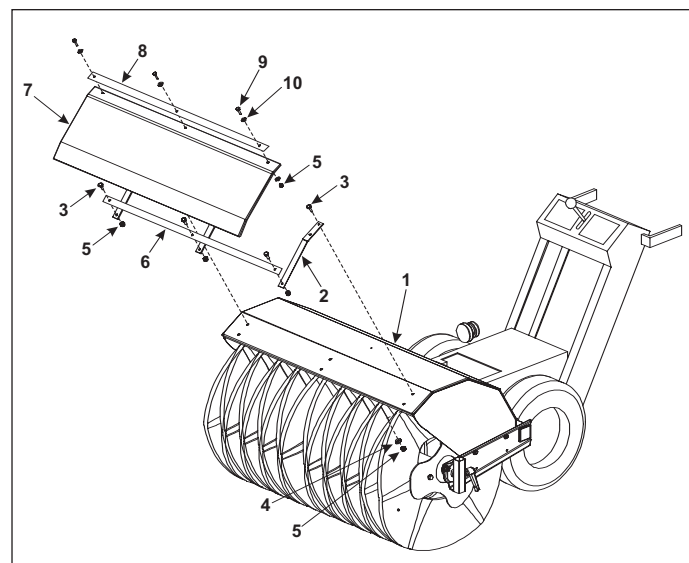


Figure 23. Deflector Kit Installation

- c. Position the deflector (7) and upper support strap (8) over the broom hood and deflector strap assembly. Secure the deflector through the second hole at the top of the deflector strap and broom hood using one bolt (9), washer (10) washer (4) and nut (5).
2. Raise and support the broom head assembly about 2" off the ground. Loosen the standard caster assembly by loosening the locking lever (2, Figure 24) and remove the caster assemblies. **NOTE:** Save the standard casters for future use.
3. Position the debris box assembly (6) in-front of the power broom.
4. Remove hitch pin (5), releasing debris box mounting tubes (3).
5. Raise the power broom upwards and insert the mounting tubes (3) through the mounting brackets (1) on the broom frame.
6. Position the debris box under the broom assembly and lower the broom assembly onto the debris box mounting brackets.
7. Insert hitch pin (5) to secure the broom assembly to the debris box. Install hairpin cotter pin (4) to secure the hitch pin.
8. The final assembly is shown in Figure 25.
9. Adjust the broom height to according to the Broom Height Adjustment instructions earlier in this manual.

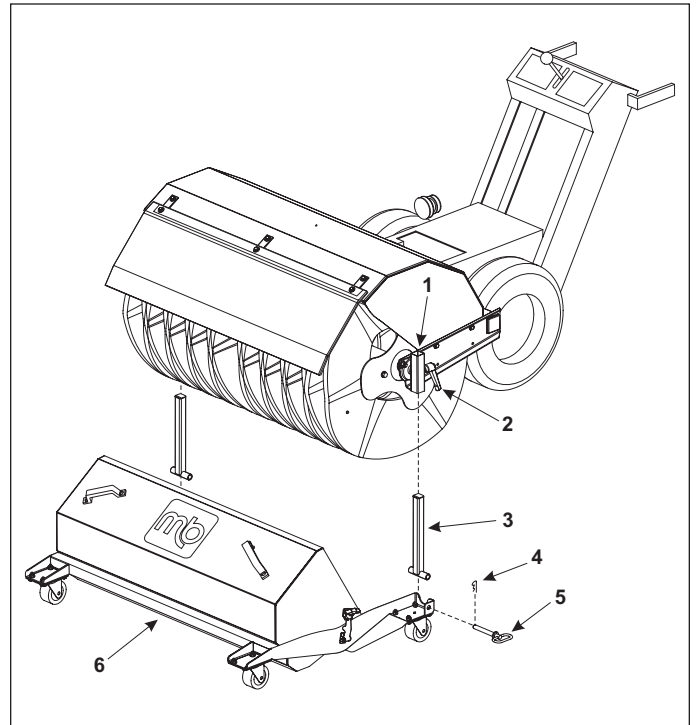


Figure 24. Debris Box Installation

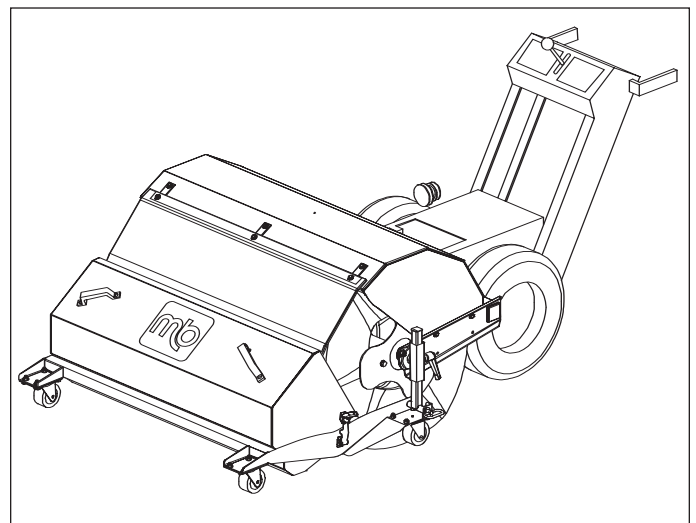
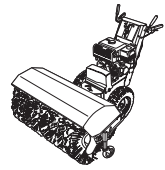
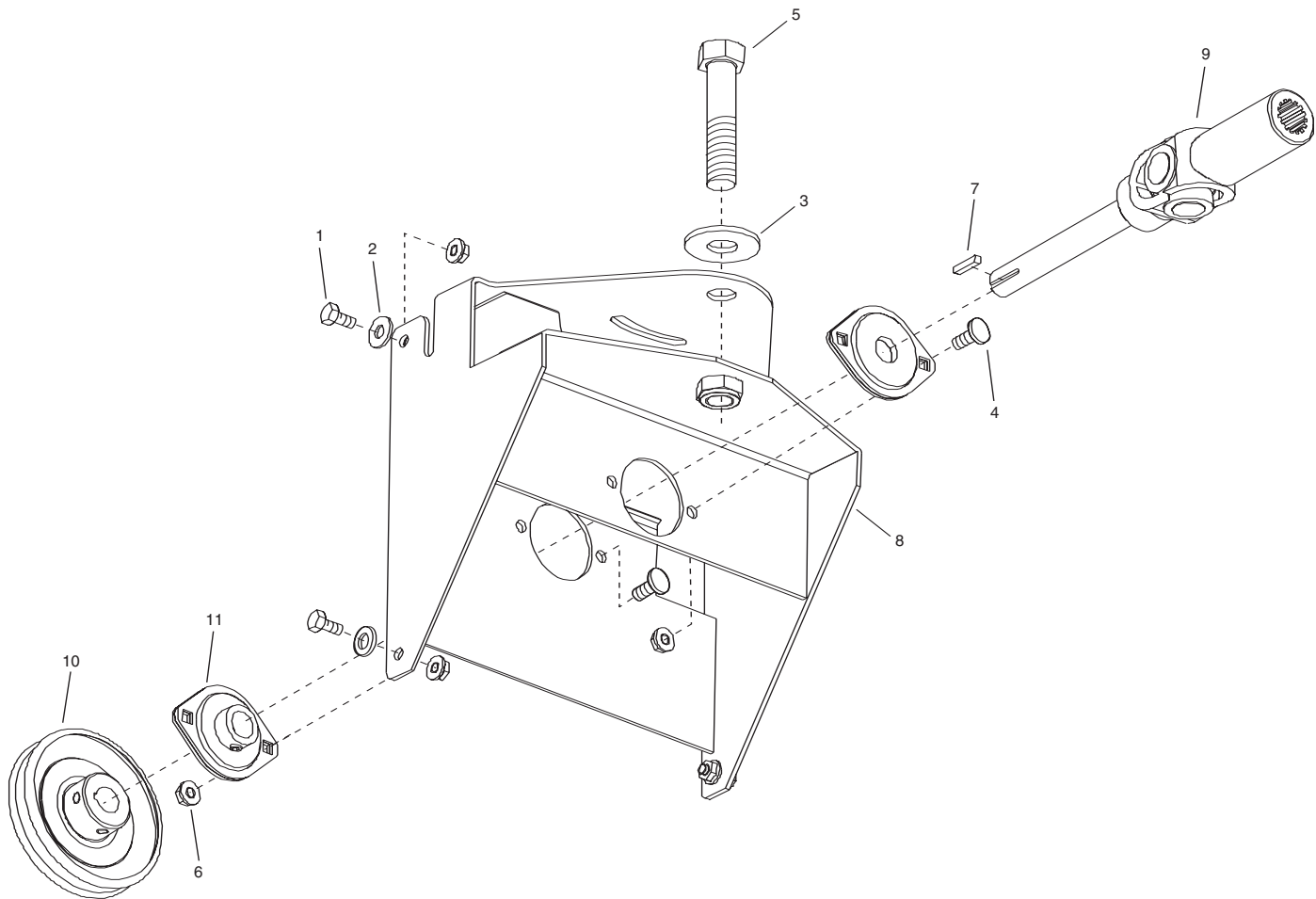


Figure 25. Debris Box/Power Broom Final Assembly

Parts Lists



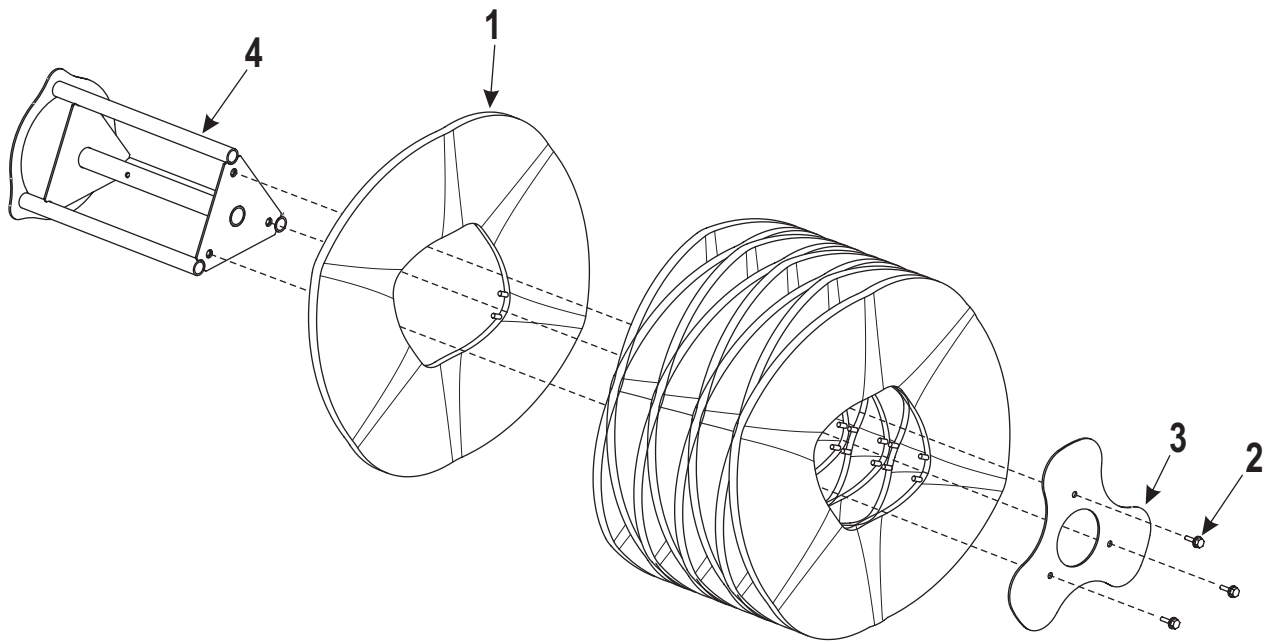
FINAL DRIVE REPAIR PARTS



REF NO.	PART NO.	QTY.	DESCRIPTION
1	311-20750	4	HHCS, .31-18, Unc X 0.750
2	341-20000	4	WASHER, Flat, 5/16, Std Zinc PL
3	341-80000	1	WASHER, Flat
4	370-126976	4	CARRIAGE BOLT, 5/16-18, UNC x .75
5	370-97446	1	HHCS, .75-10, UNC X .75
6	371-92059	8	NUT, Flanged, 5/16-18, Platted Locking
7	386-91174	1	KEY, Round End, .1875 x 1
8	410-140493	1	FRAME, Mounting
9	502-129543	1	DRIVELINE, Series 07, 3/4, Keyd x 1-15 Spin
10	505-129571	1	SHEAVE, 6 OD, 3/4 ID A, Section Stamped Steel
11	600-132224	2	BEARING, 3/4", Flangette

Footnotes:

BRUSH ASSEMBLY

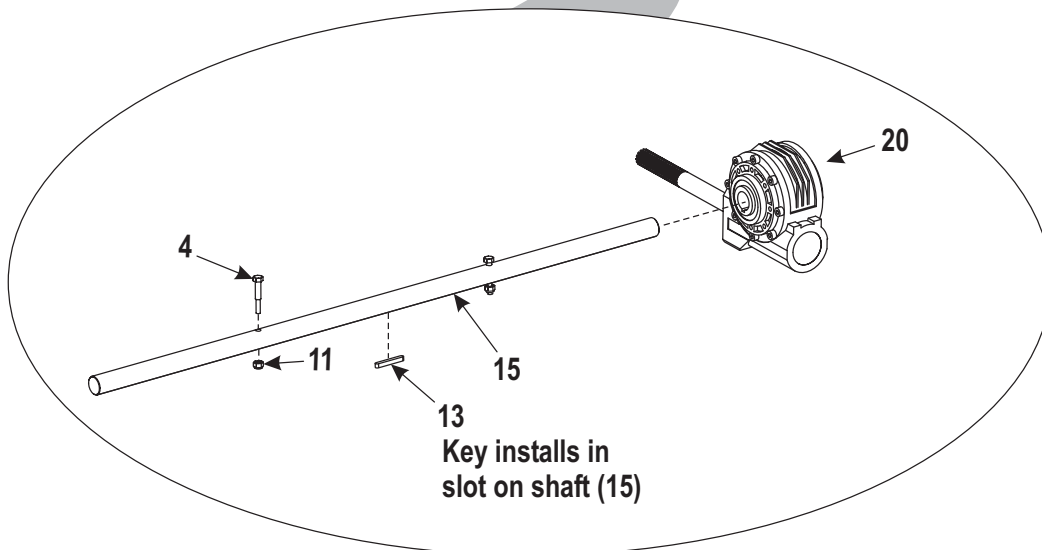
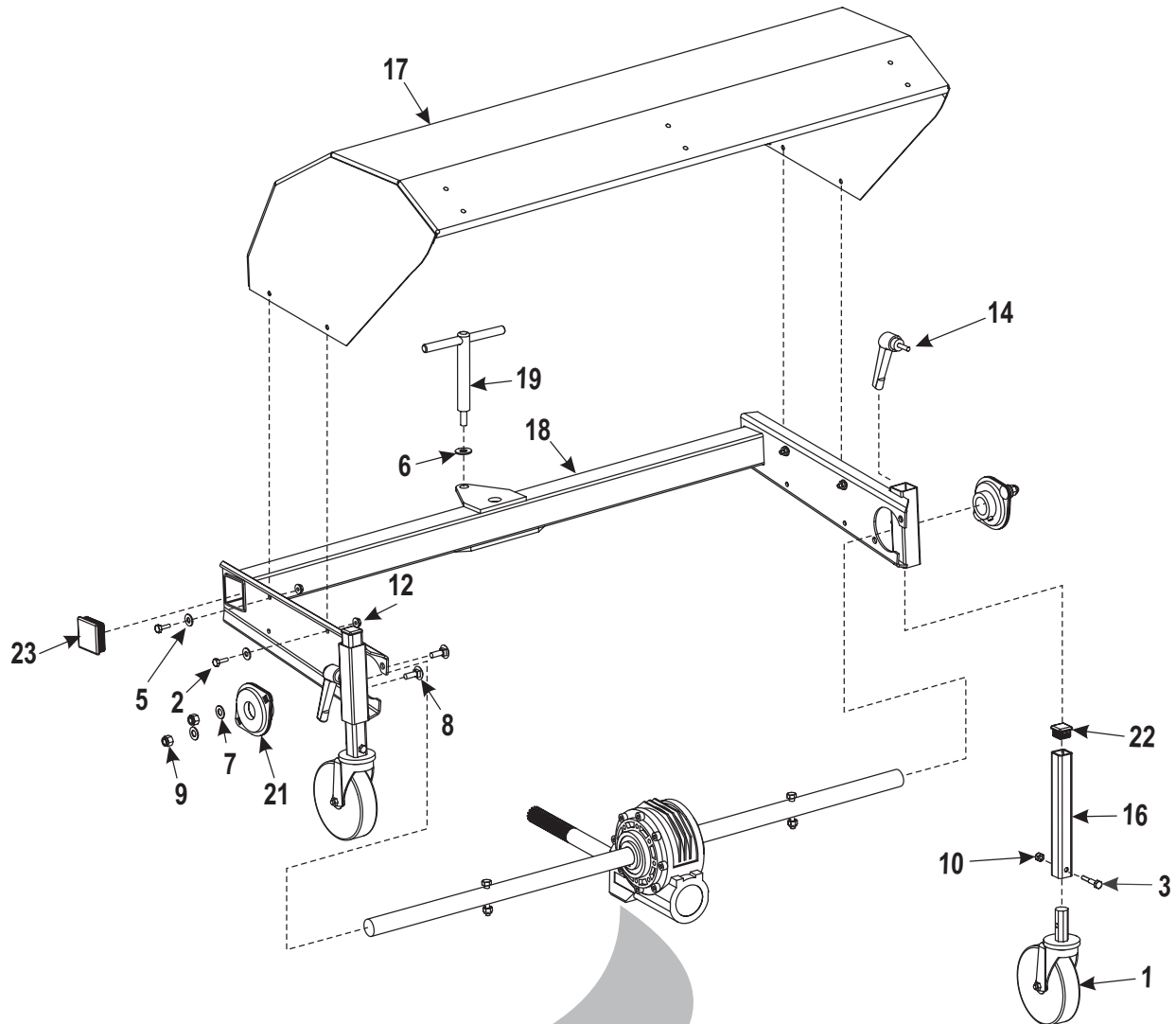


REF NO.	PART NO.		QTY.	DESCRIPTION
	3' Brush	4' Brush		
1	101-129541		9	Segment, Poly, 10 x 25, Conv Black
	101-132808		9	Segment, Poly/Wire, 10 x 25, Cov Black
		101-129541	12	Segment, Poly, 10 x 25, Conv Black
		101-132808	12	Segment, Poly/Wire, 10 x 25, Cov Black
2	370-126977	370-126977	3	HHCS, Serrated Flange, 3/8-16 x 1 Plated
3	401-129523	401-129523	1	Plate, End, Retainer
4	410-132213		1	Core, W.U., Thru Shaft Tri
		410-140473	1	Core, W.U., Thru Shaft Tri

Footnotes:

Parts Lists

BROOM HEAD ASSEMBLY



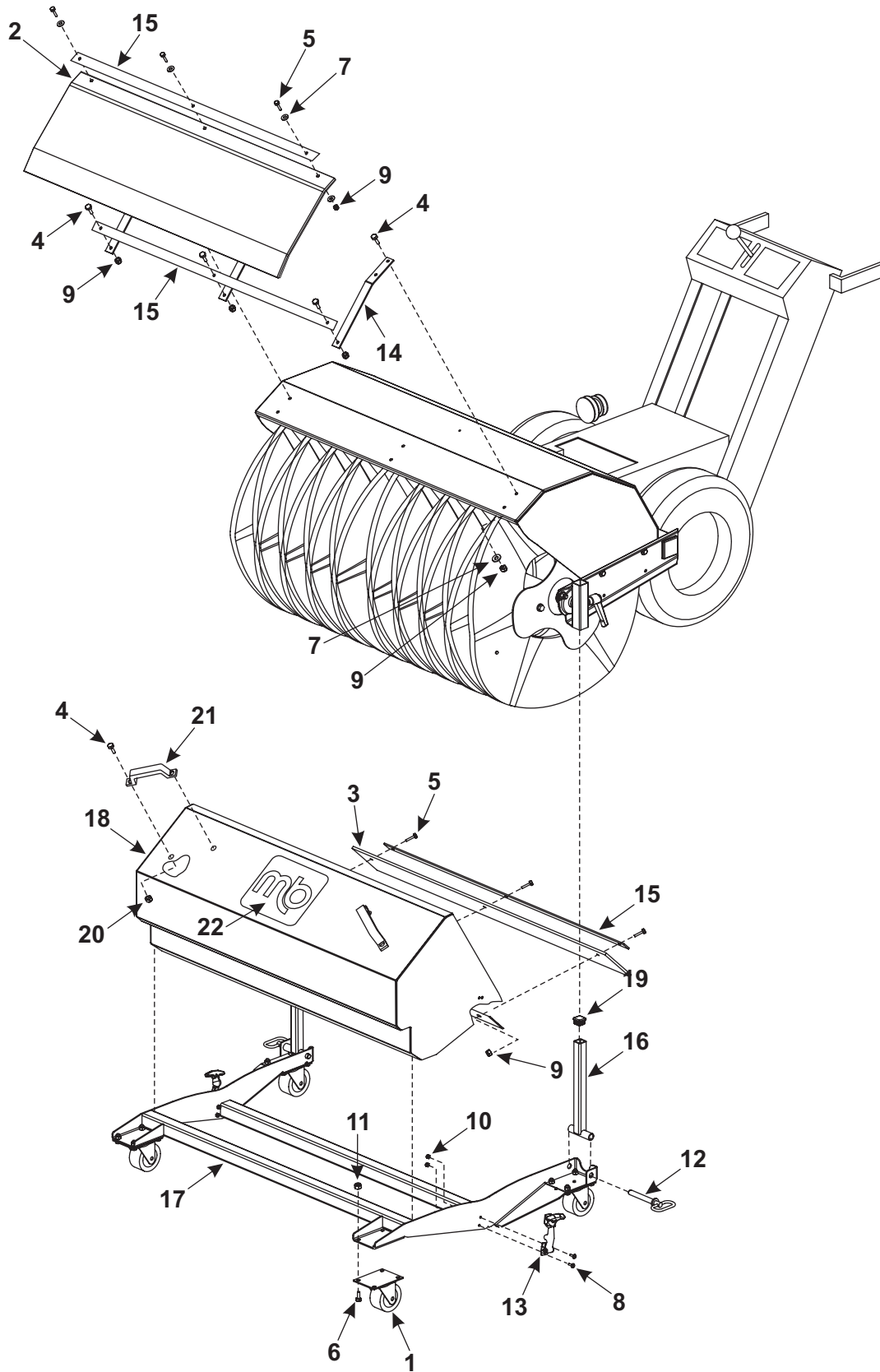
Parts Lists

REF NO.	PART NO.		QTY.	DESCRIPTION
	3' Brush	4' Brush		
1	100-140487	100-140487	2	Stem Caster, 5"
2	311-10750	311-10750	4	HHCS, .25-20 UNC x 0.75
3	311-11500	311-11500	2	HHCS, .25-20 UNC x 1.50
4	311-22000	311-22000	2	HHCS, .31-18 UNC x 2.00
5	341-10000	341-10000	4	Washer, Flat - 1/4", Std Zink Plate
6	361-30000	361-30000	1	Washer, Flat, 3/8" Std Zink Plate
7	343-30000	343-30000	4	Washer, SAE 3/8
8	370-92047	370-92047	4	Carriage Bolt, 3/8-16 UNC x 1
9	371-81297	371-81297	4	Nut, Hex, ESNA, 3/8-16 UNC
10	371-81299	371-81299	2	Nut, Hex, ESNA, 1/4-20 NC
11	371-81620	371-81620	2	Nut, Hex, ESNA, 5/16-18 UNC
12	371-92058	371-92058	4	Nut, Flanged, 1/4-20 Plated Locking
13	386-120689	386-120689	1	Key, Square, 2 Rnd Ends .25 x .25 x 2 Lg
14	387-129559	387-129559	2	Lever, Adjustable
15	401-140151		1	Shaft, Thru, 1-1/8, 3' MCD
		401-140471	1	Shaft, Thru, 1-1/8, 4' MCD
16	401-140486	401-140486	2	Tube, Square, Caster Mounting
17	410-129522		1	Hood, W.U. 3' MCD
		410-140003	1	Hood, W.U. 4' MCD
18	410-132203		1	Frame, Brush, W.U. 3' Brush
		410-140001	1	Frame, Brush, W.U. 4' Brush
19	410-140292	410-140292	1	Handle, T-bar
20	510-140152	510-140152	1	Gearbox, worm, Aluminum, 8.25:1
21	600-132225	600-132225	2	Bearing, 1 1/8" Flanged
22	711-132229	711-132229	2	Plug, Square, 1" Plastic
23	711-132230	711-132230	2	Plug, Square, 2" x 2" Tube

Footnotes:

Parts Lists

DEBRIS BOX ASSEMBLY

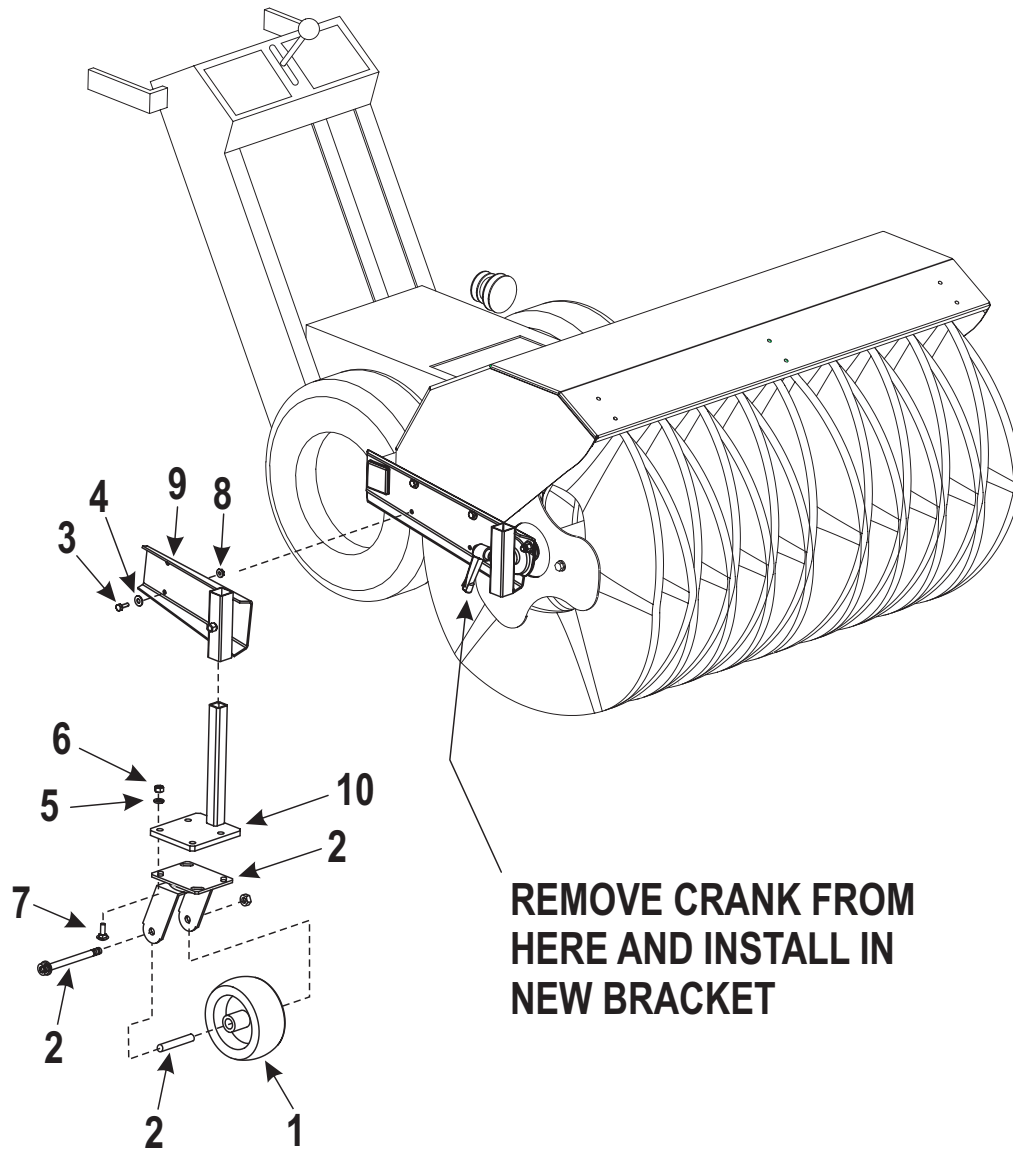


Parts Lists

REF NO.	PART NO.		QTY.	DESCRIPTION
	3' Brush	4' Brush		
	430-96354			3' MCD Deflector Kit
		430-96472		4' MCD Deflector Kit
	430-96435			3' MCD Debris Box, includes Deflector Kit
		430-96473		4' MCD Debris Box, includes Deflector Kit
1	100-90281	100-90281	4	Caster Wheel
2	101-132985		1	Deflector, 3' MCD
		101-140505	1	Deflector, 4' MCD
3	101-140412		1	Deflector, Rubber, 3' Debris Box
		101-140506	1	Deflector, Rubber, 4' Debris Box
4	311-10750	311-10750	10	HHCS, .25-20 UNC X 0.750
5	311-11000	311-11000	6	HHCS, .25-20 UNC X 1.0
6	370-126976	370-126976	16	Carriage Bolt, 5/16-18 UNC X 0.750
7	341-10000	341-10000	9	Washer, Flat, 1/4"
8	370-91955	370-91955	8	Machine Screw, Plated, 10-32 x 1/2
9	371-81299	371-81299	12	Nut, Hex, ESNA, 14-20 NC
10	371-81379	371-81379	4	ESNA Nut, #10-32
11	371-81620	371-81620	16	Nut, Hex, ESNA, 5/16-18 UNC
12	383-140400	383-140400	2	Pin, Modified
13	384-140384	384-140384	2	Latch, Rubber, Pull
14	401-132986	401-132986	3	Strap, Deflector Support
15	401-132987		3	Strap, Support, 3' Debris Box
		401-140504	3	Strap, Support, 4' Debris Box
16	410-140376		2	Bracket, Mtg, W.U., 3' Debris Box
		410-140502	2	Bracket, Mtg, W.U., 4' Debris Box
17	410-140378		1	Frame, MCD FOD
		410-140503	1	Frame, MCD FOD
18	410-140414	410-140414	1	Debris Box, W.U
19	711-132229	711-132229	2	Plug, Square, Plastic
20	371-92058	371-92058	4	Nut, flanged, 1/4-20 Plated Locking
21	384-92034	384-92034	2	Handle, Grab, Rubber Coated
22	390-117897	390-117897	1	Decal, MB Logo, Medium black on Clear

Parts Lists

TURF CASTER PARTS



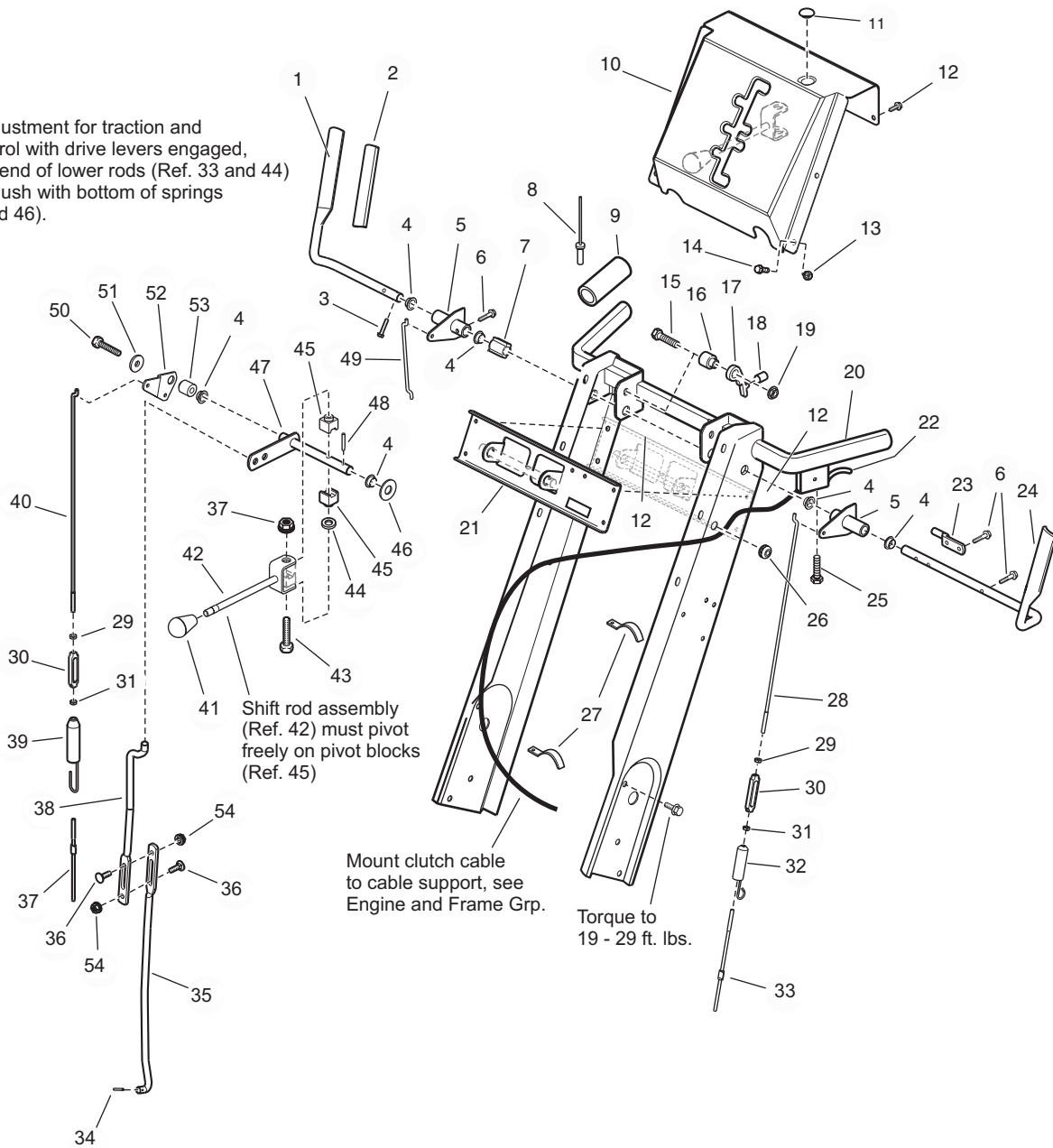
Parts Lists

REF NO.	PART NO.	QTY.	DESCRIPTION
	430-96237		Caster Wheel Kit
1	100-92126	2	6.25 x 3 Caster Wheel, .75 I.D. Brg Rub. St,
2	100-92156	2	Caster Fork, Swivel Plate, includes attachment bolt, nut and sleeve bearing
3	311-10750	4	HHCS, .25-20 UNC x 0.750
4	341-10000	4	Washer, Flat - 1/4", Std Zink Plate
5	341-30000	8	Washer, Lock - 3/8", Std Zink Plate
6	361-30000	8	Nut, Hex, UNC 3/8-16
7	370-92047	8	Carriage Bolt, 3/8-16 UNC x 1"
8	371-92058	4	Nut, Flanged, 1/4-20 Plated, Locking
9	410-132595	1	Bracket, Caster Mounting, RH
	410-132593	1	Bracket, Caster Mounting, LH
10	410-95245	2	Caster Mount

Parts Lists

HANDLES AND CONTROLS GROUP

Linkage adjustment for traction and broom control with drive levers engaged, the bottom end of lower rods (Ref. 33 and 44) should be flush with bottom of springs (Ref. 32 and 46).

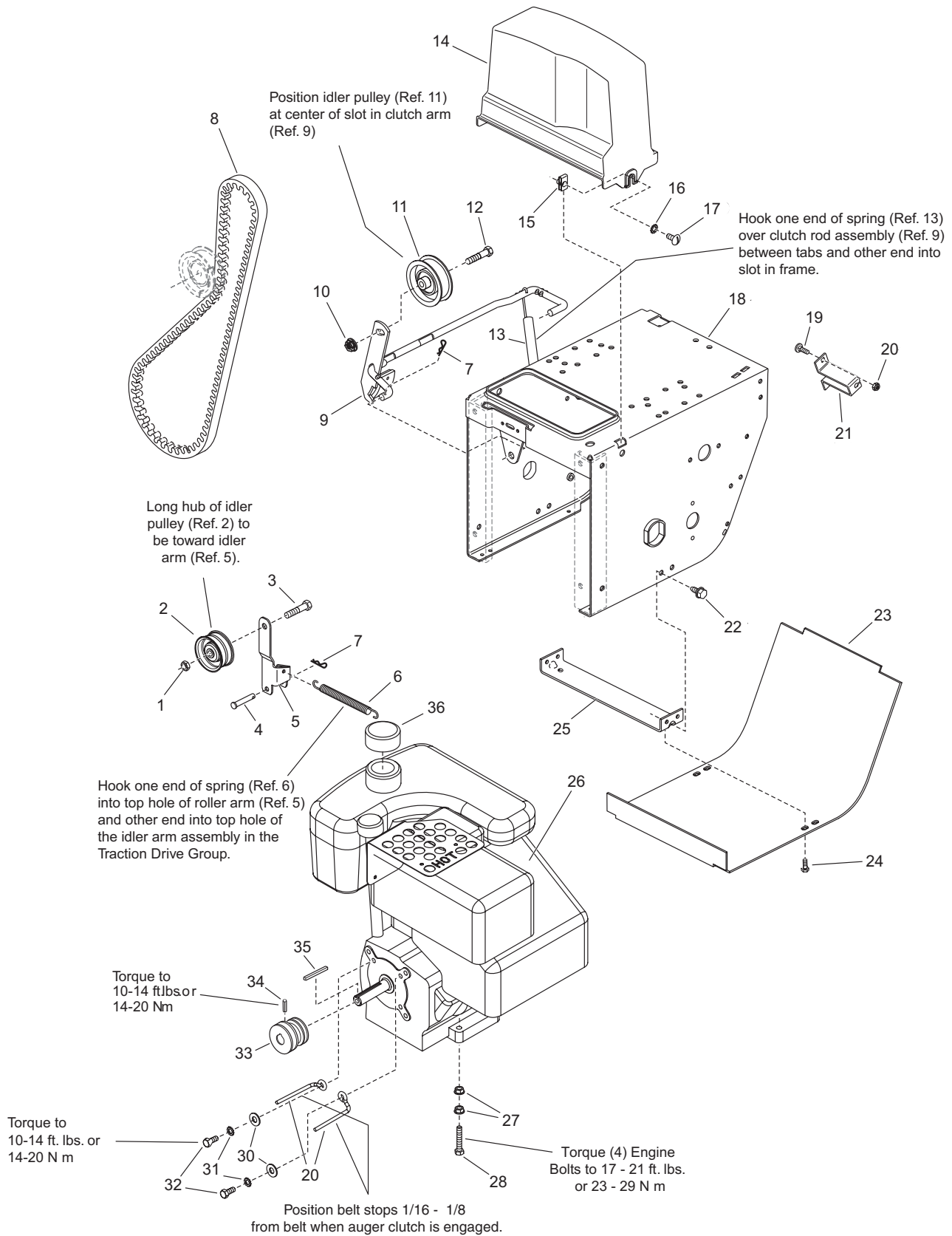


Parts Lists

REF NO.	PART NO.	QTY.	DESCRIPTION
1	1727128	1	HANDLE, Clutch R.H.
2	1668608	2	GRIP, Handle Clutch, Black
3	1928732	1	CAPSCREW, Hex Washer Head Taptite #10-24 x 1
4	1668185	5	BUSHING, 1/2 ID x 3/4 OD x 1/4, Nylon
5	1725205	2	LEVER & TUBE ASSEMBLY, Clutch
6	1960471	4	CAPSCREW, Hex Washer Head Taptite #12-24 x 1
7	1705899	1	GUIDE, Control
8	1726422	2	RIVET, Pop
9	1726317	2	GRIP, Black Soft 1"
10	1667800	1	DASHBOARD
11	1724489	1	PLUG, Button
12	1925592	6	CAPSCREW, Hex Washer Head Taptite 1/4-20 x 3/4
13	1930641	4	NUT, Hex Flange Whiz Lock 1/4-20
14	1935450	4	CAPSCREW, Hex Washer Head, 1/4-20 x 3/4 G5
15	1933689	1	CAPSCREW, Hex Flange Whiz Lock, 5/16-18 x 1-1/2
16	1678579	1	SPACER, 21/64 ID x 13/16 OD x 15/16
17	1705898	1	LATCH, Control
18	1701342	1	SPRING, Compression
19	1960686	1	NUT, Hex Flange 5/16-18 ESNA
20	1726672	1	HANDLE ASSEMBLY, Channel
21	1723935	1	BRACKET, Shift Control
22	1718791	1	CABLE & HANDLE ASSEMBLY, Clutch L.H.
23	1677453	1	ROD, Control 2" Flat
24	1727127	1	HANDLE, Clutch L.H.
25	1725702	1	SCREW, Pan Head Torx #10 x 1/2 Thick Cut
26	1664022	1	GROMMET, 1/2
27	934683	1	CLIP, Wire
28	1668121	1	ROD, Clutch, 17-5/16
29	928704	2	NUT, Hex Machine Screw 10-24 NC-2B LH YEL
30	108775	2	TURNBUCKLE, 2-1/4 Long #10-24NC (L.H. & R.H.)
31	1916621	2	NUT, Hex Machine Screw 10-24 NC-2B
32	1707452	1	SPRING, Extension 3-11/32 Long
33	1668526	1	ROD, Clutch, 6-5/16 Long
34	1722460	1	PIN, Quick
35	1666255	1	ROD, Lower Shift 15-21/64 Long
36	1931317	2	CARRIAGE BOLT, 1/4-20 x 3/4 G5
37	1702004	1	ROD, Lower Clutch
38	1726304	1	ROD, Upper Shift 11-3/8 Long
39	1701996	1	SPRING, Extension 4-3/4 Long
40	1702485	1	ROD, Upper Clutch
41	1713844	1	KNOB, Hole
42	1714120	1	ROD & CLEVIS ASSEMBLY, Shift
43	1960705	1	CAPSCREW, Hex Flange Whiz Lock 1/4-20 x 2-1/4
44	1668681	1	WASHER, Curved
45	1668524	2	BLOCK, Pivot, Powdered Metal
46	1924361	1	WASHER, 1/2
47	1703043	1	ROD & ARM ASSEMBLY, Pivot
48	1960074	1	CLIP, Hair Pin
49	1702663	1	ROD, Clutch 5-11/32 Long
50	1933689	1	CAPSCREW, Hex Flange Whiz Lock 5/16-18 x 1-1/2
51	1919326	1	WASHER, 5/16
52	1702662	1	LEVER, Clutch
53	1702552	1	SPACER, 21/64 ID x 3/4 OD x 53/64, Powdered Metal
54	1960685	2	NUT, Hex KEPS, 1/4-20 Conical Washer

Parts Lists

ENGINE AND FRAME



Parts Lists

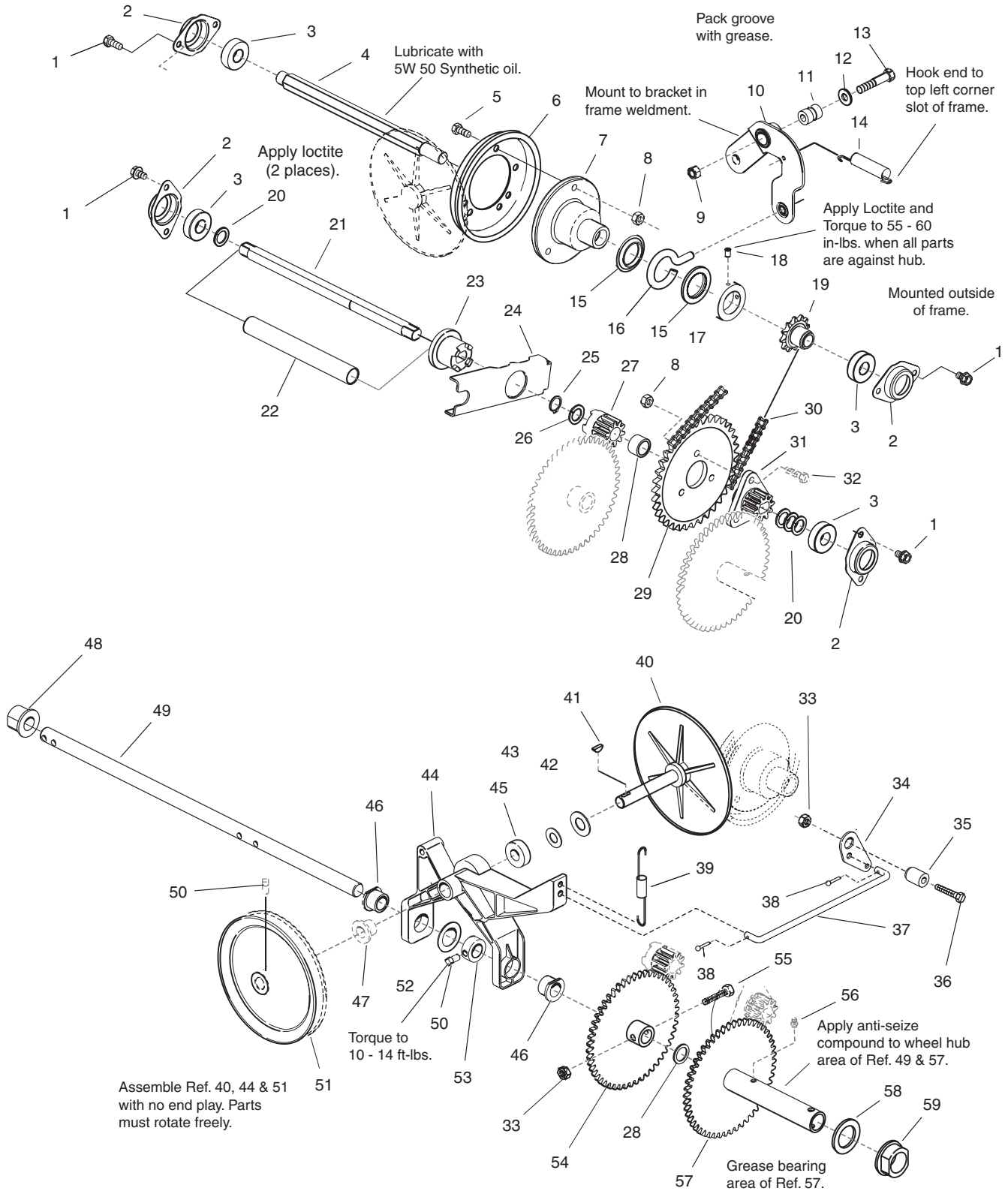
REF NO.	PART NO.	QTY.	DESCRIPTION
1	1928731	1	NUT, Hex, Toplock, Jam, 3/8-16
2	1668477	1	PULLEY, Idler
3	1960647	1	SCREW, Hex Head, 3/8-16 x 1-1/2
4	1665994	1	PIN, Flat Head Drilled
5	1703046	2	ARM, Idler, 5-3/4 LG
6	1727149	1	SPRING, Extension
7	1722460	1	PIN, Quick
8	1721257	1	V-BELT, HA (Used Only on 1390 Models)
9	1727058	1	ROD AND ARM ASSEMBLY, Clutch, Brake w/Pad
10	1928352	1	NUT, Hex Flange, 3/8-16 Whiz Lock Large
11	1726348	1	PULLEY, Idler
12	960709	1	SCREW, Hex Whiz Lock Flange, 3/8-16 x 1-3/4
13	1727059	1	SPRING, Extension
14	1724612	1	COVER, Belt
15	1935255	1	NUT, Speed, 5/16-18, Lug Type
16	920426	2	LOCKWASHER, External Tooth, 5/16
17	1918249	2	SCREW, Truss head Slotted, 5/16-18 x 3/4
18	1726568	4	FRAME ASSEMBLY, Chain/Tube Handles
19	1931317	1	CARRIAGE BOLT, 1/4-20 x 3/4 G5
20	1960685	2	NUT, Hex KEPS, 1/4-20, Conical Washer
21	1720404	4	SUPPORT, Clutch Cable, 16GA
22	1664847	1	SCREW, Hex Washer Head Taptite, 5/16-18 x 3/4
23	1726870	4	COVER, Bottom Frame, 20GA
24	1925003	1	SCREW, Hex Washer Head Taptite, 1/4-20 x 1/2
25	1727004	2	SUPPORT, Tie Bar
26	*	1	ENGINE, 8.5 HP Kohler
27	931277	3	NUT, Hex Flange, 5/16-18, Whiz Lock Small
28	960551	4	CAPSCREW, Hex Washer Head Taptite, 5/16-18 x 2-1/2
29	1668174	1	STOP, Belt
30	1919326	2	WASHER, 5/16
31	1917356	2	LOCKWASHER, Spring, 5/16
32	1921515	1	CAPSCREW, Hex Head, 5/16-24 x 3/4 G5
33	1676493	1	PULLEY, Engine
34	1930540	1	SET SCREW
35		1	KEY, furnished with engine
36	500-132927	1	CAP, Gas Tank

Footnotes:

* See your local Kohler distributor for Parts and Service.

Parts Lists

TRACTION DRIVE GROUP



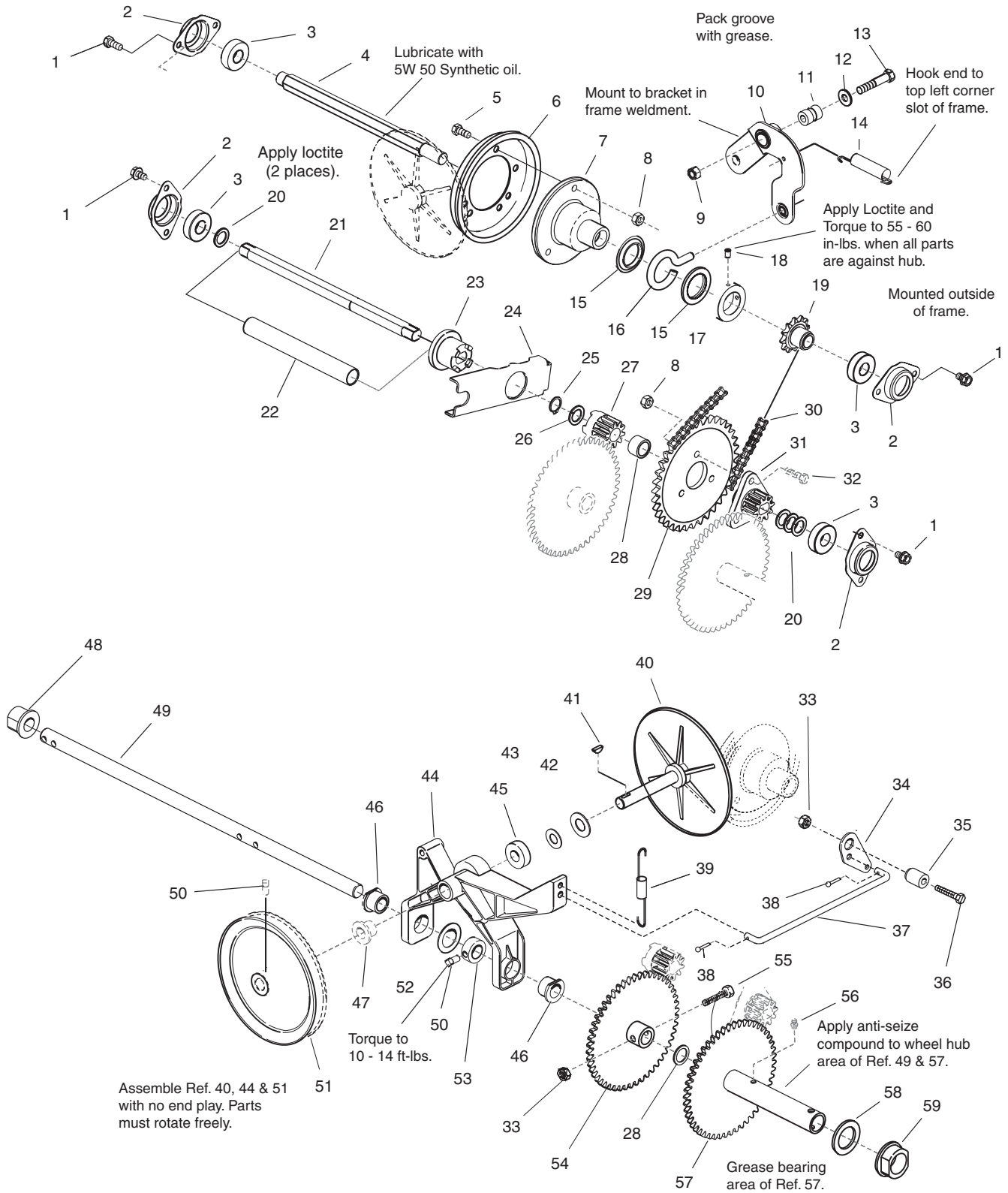
Parts Lists

REF NO.	PART NO.	QTY.	DESCRIPTION
1	1930601	8	SCREW, Hex Washer Head Taptite, 5/16-18 x 5/8
2	1667341	4	RETAINER, Bearing
3	1722703	4	BEARING, Ball
4	1726856	1	SHAFT, Hex
5	1921332	3	CAPSCREW, Hex Head, 5/16-18 x 3/4 G5
6	1725428	1	DISC, Friction with Insert
7	1665995	1	HUB, Friction Disc
8	1960684	6	NUT, Hex Keps, 5/16-18, Conical Washer
9	1960687	1	NUT, Hex Flange, 3/8-16 ESNA
10	1669256	1	ARM ASSEMBLY, Shift w/Bushing
11	1666114	1	BUSHING, 19/50 ID x 3/4 OD x 1-3/100 LG
12	1924940	1	WASHER, 3/8
13	1923701	1	CAPSCREW, Hex Head, 3/8-16 x 2 G5
14	1668255	1	SPRING, Extension
15	1678956	2	COLLAR, Thrust
16	1666207	1	PIN, Loop
17	1667335	1	COLLAR, Set
18	1724333	2	SCREW, Set Square Head Cup Point, 1/4-20 x 1/2
19	1726931	1	SPROCKET, 10 Tooth
20	960164	4	WASHER, 5/8
21	1718752	1	JACKSHAFT, Double D
22	1720298	1	SPRING, Complete
23	1718689	1	CLUTCH, Sliding, 1/5LG, Powdered Metal
24	1720078	1	ARM, Clutch
25	927732	1	RING, Retaining Extension
26	1960114	3	WASHER, 3/4
27	1718688	1	GEAR, Stationary Clutch
28	1679556	1	SPACER, Heat Treated, 31/100 LG
29	1667330	1	SPROCKET
30	1666980	1	CHAIN, Roller
31	1718687	1	GEAR, Double D
32	1921333	3	CAPSCREW, Hex Head, 5/16-18 x 1 G5
33	1960686	2	NUT, Hex Flange, 5/16-18 ESNA
34	1700473	1	BELLCRANK
35	1666106	1	BUSHING, 11/32 ID x 3/4 OD x 1-3/50 LG
36	1922127	1	CAPSCREW, Hex Head, 5/16-18 x 1-3/4 G5
37	1726467	1	ROD, Pivot, 9-15/100 LG
38	1722460	1	PIN, Quick
39	1725666	1	SPRING, Extension
40	1719879	1	DRIVE DISC with SPINDLE
41	918312	1	KEY, Woodruff, 47/250 x 5/8
42	1960114	1	WASHER, 3/4
43	1924366	1	WASHER, 5/8
44	1670849	1	ARM, Pivot with Bushings & Bearings
45	1665521	1	BEARING, Ball
46	1666425	2	BUSHING, 3/4 ID x 1 OD x 3/4 LG, Powder Metal
47	1666855	1	BUSHING, 5/8 ID x 13/16 OD x 3/4 LG, Powder Metal
48	1666001	1	BUSHING, 377/100 ID x 1-13/100 OD x 1 LG, Powdered Metal
49	1720299	1	AXLE, Round

Footnotes:

Parts Lists

TRACTION DRIVE GROUP



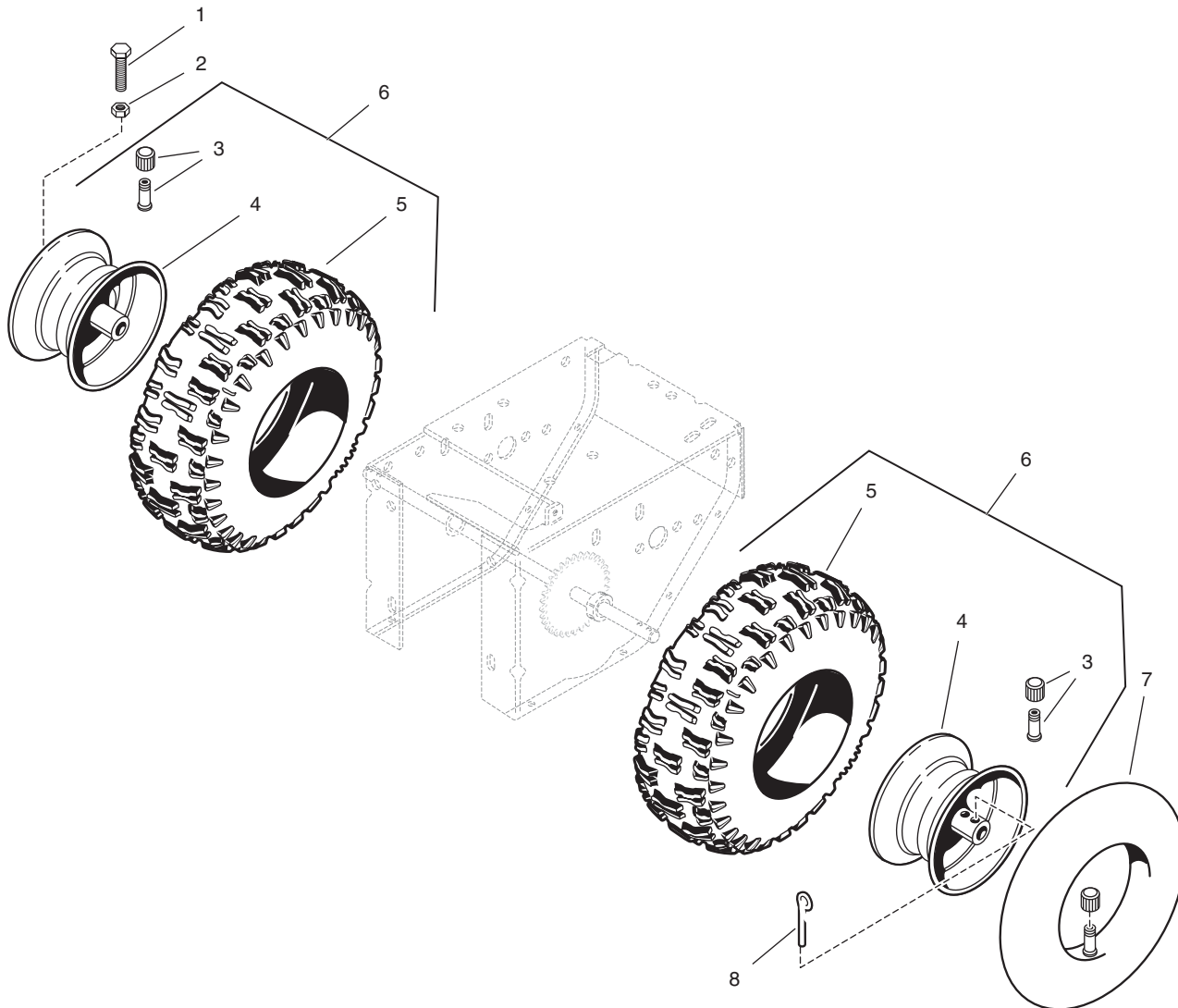
Parts Lists

REF NO.	PART NO.	QTY.	DESCRIPTION
50	1928721	2	SCREW, Set Square Head Cup Point, 5/16-18 x 1/2 G8
51	1672595	1	PULLEY AND HUB ASSEMBLY
52	1919394	1	WASHER, 1
53	8021010	1	COLLAR, Set
54	1720300	1	GEAR AND HUB ASSEMBLY- RH
55	1930570	1	CAPSCREW, Hex Head, 5/16-18 x 1-1/2 G8
56	921133	1	FITTING, Lube 1/4 Drive, No Check Ball
57	1720716	1	GEAR AND HUB ASSEMBLY, with Bushings
58	960169	1	WASHER, 1-47/250
59	1720305	1	BUSHING, 1-27/200 ID x 1-157/250 OD x 3/4 LG

Footnotes:

Parts Lists

WHEEL GROUP



REF NO.	PART NO.	QTY.	DESCRIPTION
1	1921978	1	CAPSCREW, Hex Head, 5/16-18 x 2
2	1919438	1	NUT, Hex Lock ESNA Light, 5/16-18
3	172353	2	VALVE STEM & CAP
4	1714242	1	HUB, Wheel, RH
5	1612000	2	TIRE, 4.80-4.00-8
6	1714235	2	WHEEL & TIRE ASSEMBLY (Includes Ref. Nos. 3, 4 & 5)
7	153038	2	TUBE, Tire
8	1666969	1	KLIK-PIN



M-B Companies, Inc.

M-B COMPANIES, INC.

Sales, Administration, Brush Mfg:
1615 Wisconsin Avenue, P.O. Box 200, New Holstein, WI 53061
Telephone: (920) 898-4203 FAX: (920) 898-4588

Engineering, Manufacturing:
1200 Park Street, Chilton, WI 53014
Telephone: (920) 898-4203 FAX: (920) 849-2629

WARRANTY POLICY

The M-B Companies, Inc. of Wisconsin warrants all of its products to be free from manufacturing defects in normal service for a period six months, to begin with the delivery of said product to its original owner.

A twelve month warranty applies to the following products: Truck Mounted Paint Stripers, and Airport Runway Sweepers- (Tow Behind Sweepers/ Chassis Mounted Sweepers). All other products are covered by our six month warranty.

M-B will, at its own expense and without expense to the owner, replace all failed parts for and make all repairs that may be required by reason of defective design, workmanship, or material in any part of the assembly of the product and associated components.

Upon notice in writing, M-B will promptly repair or replace all defective or damaged items delivered under the contract. The batteries, tires, rubber materials, brushes and material normally consumed in operation, and major components such as engines, air compressors, and hydraulic pumps and motors are excluded from this guarantee but shall, in any event, be guaranteed by M-B to the extent of any guarantee received from its supplier.

If requested by M-B, products or parts for which a warranty claim is made are to be returned, transportation prepaid, to M-B's factory. 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 judgement 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.

The M-B Companies shall not be liable for consequential damages of any kind, including, but not limited to, consequential labor costs or transportation charges in connection with the replacement or repair of defective parts, or lost time or expense which may have accrued because of said defect. M-B's total liability hereunder in no event shall exceed the purchase price of this product.

The M-B Companies do not make any warranty of merchantability or fitness for a particular purpose. The only warranty made by M-B Companies is as set forth herein. This warranty cannot be extended, broadened or changed except in writing by an authorized officer of M-B companies Inc. of Wisconsin.

