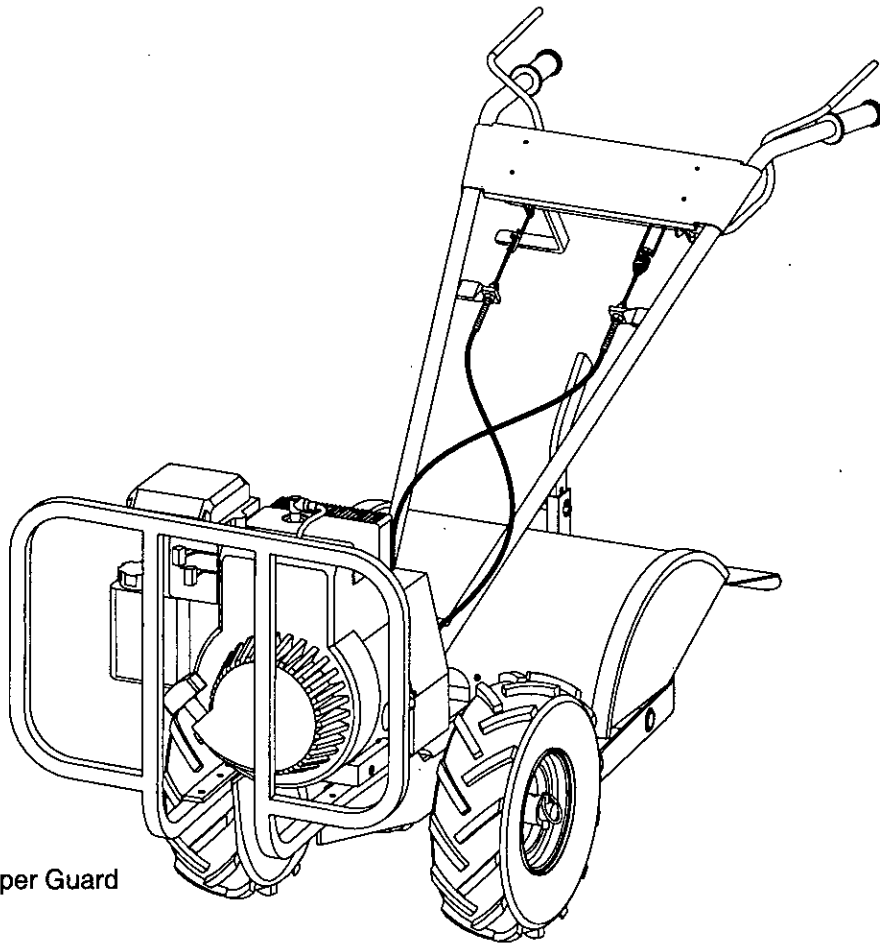


CRT Rototiller

Operator's Manual



Shown with
Optional Bumper Guard

Includes Models

5050-5050GS

5055-5055GS

Part #: OM5050CRT

Rev. 1/01

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WARRANTY AND REGISTRATION

Thank You . . .

for purchasing an Ardisam, Inc. CRT rototiller. We guarantee that this rototiller conforms to applicable North American safety standards, and have worked to ensure that it will meet your exacting standards for usability and durability. With proper care, your rototiller will provide many years of service.

Please take time to read this manual carefully to learn how to operate and service your rototiller correctly. Failure to do so could result in personal injury or equipment damage. This manual should be considered a permanent part of your rototiller. Congratulations on your investment in quality.

TWO YEAR LIMITED WARRANTY

The Ardisam, Inc., Manufacturing Company warrants this rototiller to be free from defects in material or workmanship. Conditions of this warranty include:

What is covered under warranty:

For the first year from the date of purchase, Ardisam will furnish 100% parts and labor to correct any defect caused by faulty material or workmanship. During the second year of ownership, Ardisam will furnish 100% of the parts to correct any defect caused by faulty material or workmanship. All repairs made under warranty must have prior approval from Ardisam, Inc. Items subject to normal wear and tear, such as belts, batteries, tines, shear bolts and tires, due to the nature of their function are not covered under this warranty. Any unit used in a commercial application is covered for a period of 90 days after purchase. The engine is covered under a separate warranty issued by the engine manufacturer as stated in the engine manual.

What is not covered under warranty:

This warranty applies only to products which have not been repaired or altered outside our factory. It covers only defects resulting from normal use, and does not cover defects arising from misuse, alteration, negligence, or accident. This warranty applies only to the original purchaser, and is not transferrable.

This warranty supersedes all other warranties either expressed or implied and all other obligations or liabilities on our part. Ardisam, Inc., does not assume, and does not authorize any other person to assume for us, any liability in connection with the sale of our products. This guarantee is void unless the warranty card is properly filled out and returned to Ardisam, Inc., Cumberland, Wisconsin, within two weeks of the purchase date.



ARDISAM, INC.

POWER AUGERS ★ ICE SHELTERS ★ ROTOTILLERS
TREE STANDS ★ CHIPPER SHREDDERS ★ EDGERS
1360 1st Avenue, P.O. Box 666
Cumberland, Wisconsin 54829
(715) 822-2415 Fax (715) 822-4180
1-800-3456-007
www.ardisam.com

CAUTION

You must read, understand and comply with all safety and operating instructions in this manual before attempting to setup and operate this equipment.

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.

CAUTION

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

For easy reference, please record the information on the chart below.

The Rototiller Reference Data can be found on the identification tag located on the unit's left engine mount. (Refer to the engine manual for location of engine information and serial number.)

ROTOTILLER REFERENCE DATA

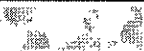
Model Description/Number

M/N (Manufacturer's Number)

S/N (Serial Number)

Dealer Name

Date Purchased



ENGINE REFERENCE DATA

Engine Make/Model

Engine ID/Serial Number



SECTION CHECKLIST

Owner's Responsibility
Cautions and Important Notes
Important Safety Instructions

OWNER'S RESPONSIBILITY

Safe and effective use of the rototiller is the owner's responsibility.

1. Read and follow all safety instructions.
2. Maintain the tiller according to directions and schedule included.
3. Ensure that anyone who uses the tiller is familiar with all controls and safety precautions.

CAUTIONS AND IMPORTANT NOTES

Two symbols which draw attention to information of special importance appear throughout this manual. These comments range in importance from helpful hints to warnings about risk of personal injury. Please take the time to read and understand them.



Indicates a situation which may cause personal injury. It means - attention! Become alert! Your safety is involved.



Provides helpful information for proper assembly, operation, or maintenance of your rototiller.

IMPORTANT SAFETY INSTRUCTIONS

Please read this section carefully. Operate the tiller according to the safety instructions and recommendations outlined here and inserted throughout the text. Make sure anyone who uses the tiller has read the instructions and is familiar with the controls.

GENERAL

- **CAREFULLY READ THIS MANUAL AND FOLLOW ALL INSTRUCTIONS.**
- Be familiar with all controls before operating the tiller. Your tiller is equipped with a safety device that enables you to stop the wheels and tines quickly in an emergency. Learn how the drive control levers work and how to control the tiller at all times.
- Never allow children to operate the tiller. Keep small children away from the area being tilled. Do not allow adults to operate the tiller without proper instruction.

PREPARATION

- Dress appropriately when operating the tiller. Always wear sturdy footwear. Never wear sandals, sneakers, or open shoes, and never operate the tiller with bare feet. Do not wear loose clothing that might get caught in moving parts.
- Carefully inspect the area to be tilled, and remove all foreign objects. Do not till above underground water lines, gas lines, electric cables, or pipes. Do not operate the tiller in soil with large rocks and foreign objects which can damage the equipment.
- Disengage all clutches and shift into neutral before starting the engine.
- 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 gasoline cap securely and clean up spilled fuel before restarting.
- Never attempt to make any adjustments while the engine is running.



OPERATION

- Never operate the tiller without guards, covers, and hoods in place.
- Never start the engine or operate the tiller with the wheels in the free-wheel position. Make sure the wheel lockpins are engaged through wheel hubs and wheel axle. Disengage wheel lockpins to permit free-wheeling only when engine is stopped.
- Keep hands, feet, and clothing away from rotating parts. Keep clear of tiller tines at all times.
- Tines and wheels rotate when tiller is engaged in **forward** or **reverse**— in **forward**, tines and wheels rotate when the drive control levers are pulled down; in **reverse**, wheels and tines rotate when the reverse handle is pulled back towards the operator. Releasing the drive control levers to **neutral** stops the wheels and tines.
- Be extremely cautious when operating in **reverse**. Take extra care to avoid slipping or falling, and to keep feet clear of tines.
- Exercise extreme caution when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.
- After striking a foreign object, stop the engine, remove the wire from the spark plug, thoroughly inspect the tiller for any damage, and repair the damage before restarting and operating the tiller.
- If vegetation clogs the tines, raise the handlebars to elevate the tines, and run the tiller in **reverse**. If this does not clean clogged vegetation from the tines, **STOP THE ENGINE AND DISCONNECT THE SPARK PLUG WIRE** before removing vegetation by hand.
- Engine muffler will be hot from operation. Do not touch it with bare skin or a severe burn may result.
- If the unit should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
- Do not run the engine indoors; exhaust fumes are dangerous.
- Do not overload the machine capacity by attempting to till too deep at too fast a rate.
- Never operate the machine at high transport speeds on slippery surfaces. Look behind and use care when backing.
- Never allow bystanders near the unit.
- Use only attachments and accessories approved by the manufacturer of the tiller.
- Never operate the tiller without good visibility or light.
- Be careful when tilling in hard ground. The tines may catch in the ground and propel the tiller backward. If this occurs, let go of the handlebars.
- Take all possible precautions when leaving the machine unattended. Disengage all controls levers, stop the engine, wait for all moving parts to stop, and make certain guards and shields are in place.
- When leaving the operating position for any reason:
 - shut off the engine.
 - wait for all moving parts to stop.

MAINTENANCE AND STORAGE

- Keep machine, attachments, and accessories in safe working condition.
- Check shear bolts, engine mounting bolts, and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working condition.
- To prevent accidental starting, always disconnect the spark plug wire from the spark plug before performing tiller maintenance.
- Never run the engine indoors. Exhaust fumes are deadly.
- Always allow muffler to cool before filling fuel tank.
- Never store equipment with gasoline in the tank inside a closed building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any building.
- Always refer to the operator's guide instructions for important details if the tiller is to be stored for an extended period.

SAFETY DECALS

Safety warning decals are placed at strategic locations on the equipment as a constant reminder to the operator of the most important precautions. All warning, caution and instructional messages on your equipment should be carefully read and obeyed. If any of these decals are lost or damaged, replace them at once. They can be purchased from Ardisam, Inc.



Part No. LBL821B
WARNING / Hood Decal



Part No. LBLCRTA
OPERATING INSTRUCTIONS / Hood Decal



Part No. LBL516E
TINES DANGER / Hood Flap Decal



Part No. LBL516C
WARNING / Belt Cover Decal



Part No. LBL516F
FREE HAND / Bumper Guard Decal



5050/5055 Decals



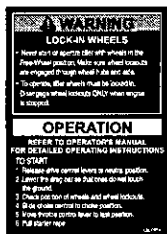
Part No. LBL304EQ
DECAL-Handlebar Dash (Earthquake)



Part No. LBL304GS
DECAL-Handlebar Dash (Garden Star)



Part No. LBL516B
DECAL-Console (Forward Instructions)



Part No. LBLCRTA
DECAL-Tine Hood (Operating Instructions)



Part No. LBLCRTC
DECAL-Model CRT



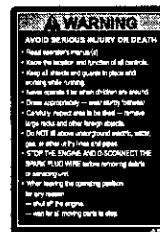
Part No. LBL516C
DECAL-Belt Cover (Warning)



Part No. LBL516E
DECAL-Tine Hood Flap (Tine Danger)



Part No. LBL516F
DECAL-Bumper Guard (Free Hand Warning), Optional



Part No. LBL821B
DECAL-Tine Hood (Warning)

UNPACKING AND ASSEMBLY



SECTION CHECKLIST

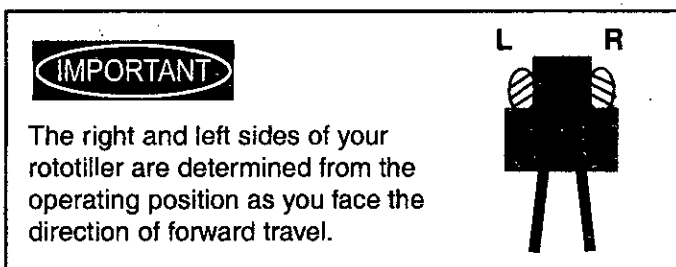
Unpack Tiller

Attach Handlebar to Tiller

Install the Drag Bar

Fill Engine Crankcase

Your rototiller comes fully assembled except for a few parts. The following instructions will help you unpack your tiller and assemble and adjust your tiller's drag bar, cable tension and handlebar height. You will need a 3/8", 2- 1/2", and 2- 9/16" wrenches and a pliers.



UNPACK TILLER

1. Open top of carton and remove handlebar assembly.



CAUTION

Do not try to lift the rototiller from the carton.

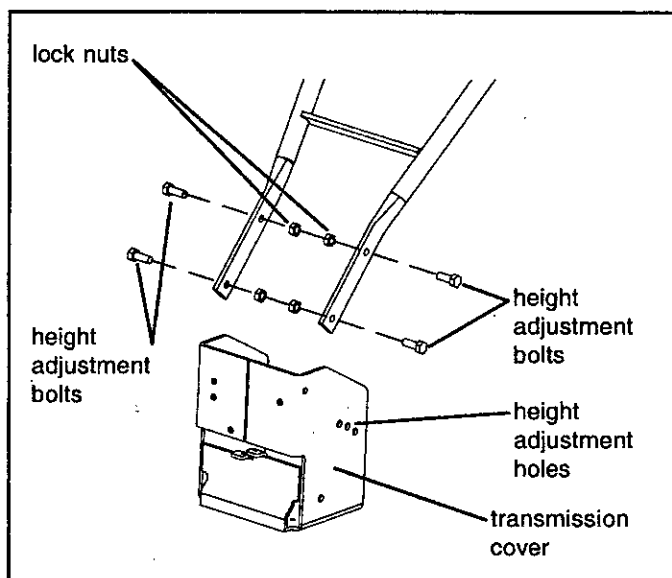
2. Find parts packet. Parts packet contains:

- 5- 3/8"-16 x 1" hex head bolts
- 5- 3/8"-16 locknuts
- 1- 5/16"-18 x 3/4" hex head bolt
- 1- 5/16"-18 locknut
- 1- detent pin

3. Cut open end of carton and remove machine by:
 - a. Removing lockpins on wheels.
 - b. Roll tiller from carton.

ATTACH HANDLEBAR TO TILLER

1. Place handlebar stems on outside of transmission cover and align lower holes.
2. Insert one 3/8"-16 x 1" bolt for each side in lower holes.
3. Start 3/8"-16 nuts on each bolt.
4. Insert one 3/8"-16 x 1" bolt for each side in upper holes at desired handlebar height.
5. Tighten all 3/8"-16 nuts.





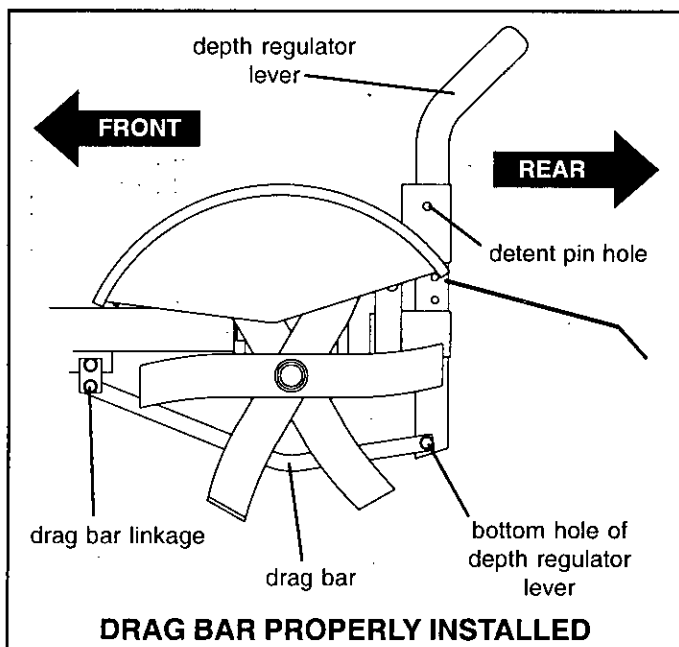
UNPACKING AND ASSEMBLY

INSTALL THE DRAG BAR

1. Install the depth regulator lever into the top of the depth regulator bracket with handle facing rearward.
2. Insert detent pin through depth regulator bracket and top hole of depth regulator lever--tines should clear the ground.

NOTE: The rototiller is now in the transport position.

3. Insert one 3/8"-16 x 1" bolt through rear of drag bar and lower hole of depth regulator lever. Place nut on end of bolt.
4. Align front hole in drag bar with hole in drag bar linkage and insert one 5/16"-18 x 3/4" bolt.
5. Place nut on bolt and tighten. Back off nuts so drag bar can move freely when depth regulator lever is raised or lowered.

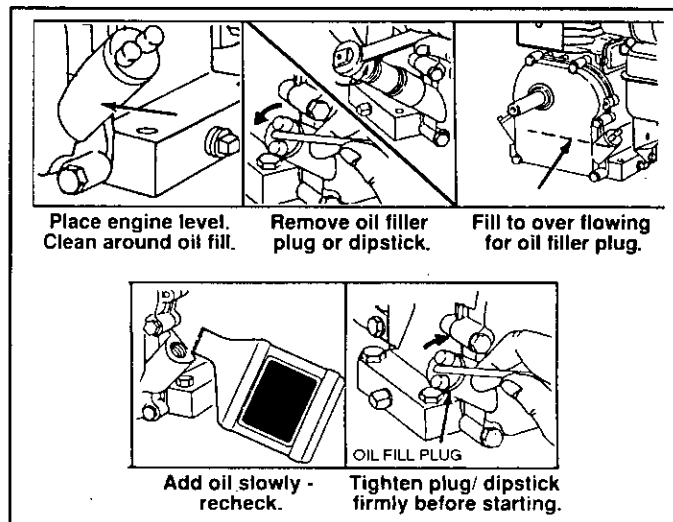


FILL ENGINE CRANKCASE

IMPORTANT

ENGINE IS SHIPPED FROM FACTORY WITHOUT OIL. YOU MUST ADD ENGINE OIL BEFORE STARTING ENGINE.

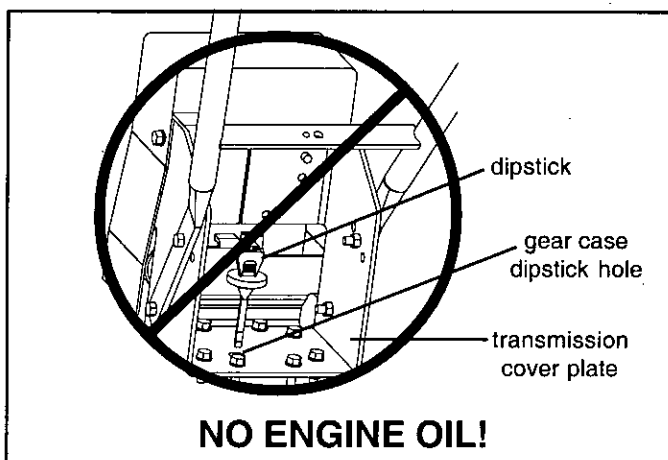
1. Add oil according to chart below. **Do not overfill.** Use a high quality detergent oil classified "For Service SC, SD, SE, SF, SG," such as Briggs & Stratton "Warranty Certified" SAE 30 oil. Use no special additives with recommended oils. Do not mix oil with gasoline.
2. Always check oil level before starting engine. Refer to engine manual for capacity.



Adapted from Briggs & Stratton Corporation, form No. 272643-7/95.

CAUTION

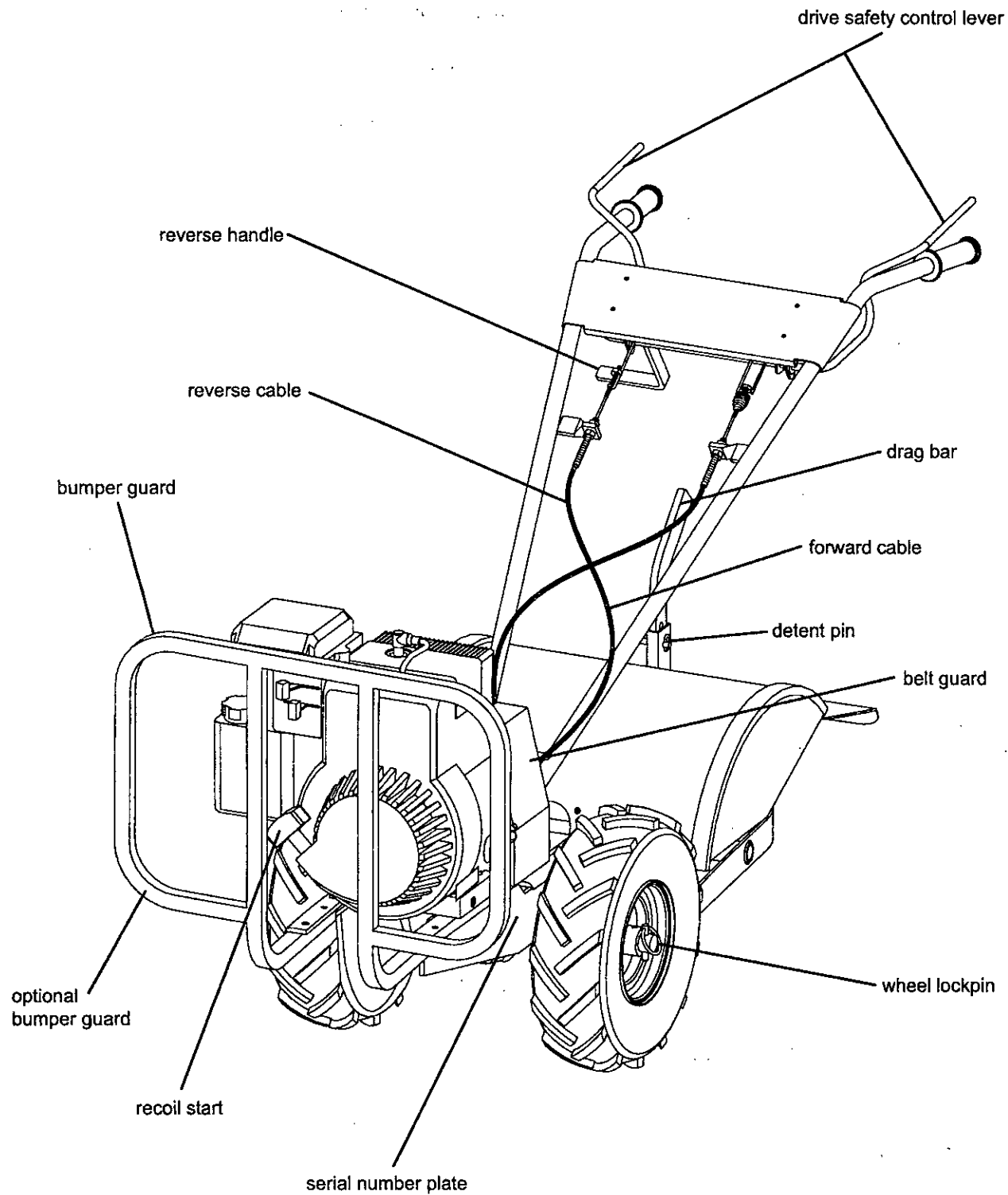
Do not add engine oil into gear case dipstick hole.



FEATURES



ALL CRT MODELS





SECTION CHECKLIST

Drive Safety Control Levers

Reverse Handle

CAUTION

This information is provided here only to introduce the controls. **DO NOT START THE ENGINE AT THIS TIME.** Starting and operating instructions are given on page 16. Please read this section and all operating and safety instructions before starting your tiller.

CAUTION

ENGINE SHOULD BE OFF BEFORE ADJUSTING ANY CONTROLS!

DRIVE CONTROL LEVERS

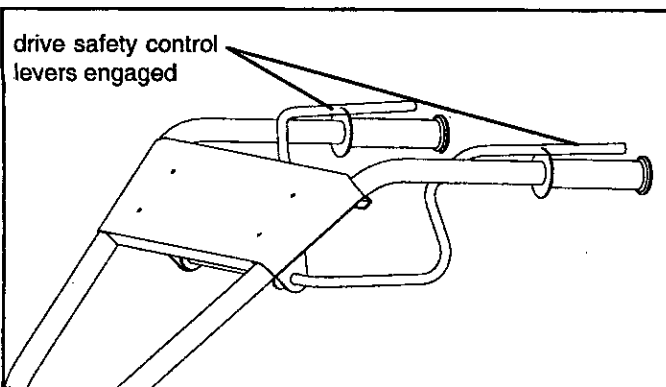
Engage wheels and tines into forward, releasing returns machine to neutral.

Pulling down on drive control levers engages the wheels and tines. Releasing drive control levers disengages the wheels and brings the tiller to a complete stop.

IMPORTANT

- ❖ As a safety precaution, the drive control levers will not lock in the forward position.
- ❖ To stop the wheels and tines at any time, release the drive control levers.

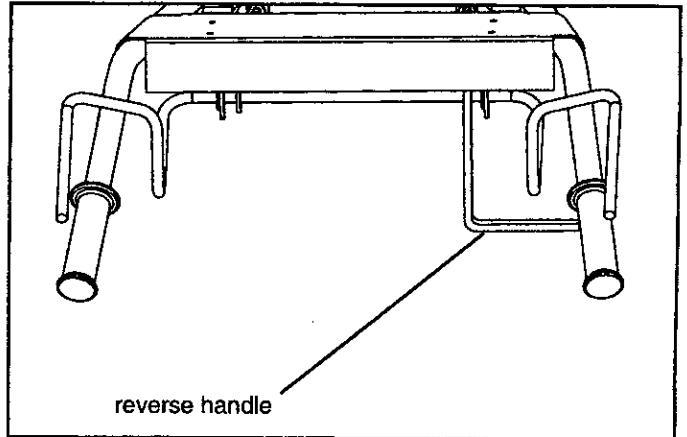
drive safety control
levers engaged



REVERSE HANDLE

Engages wheels and tines in reverse.

Pulling reverse handle back towards operator reverses tiller.



CAUTION

Extreme caution should be used when operating rototiller in the reverse direction.



IMPORTANT

- ❖ As a safety precaution, the reverse handle will not lock in reverse.
- ❖ To stop the wheels and tines at any time, release the reverse handle.
- ❖ Do not operate both the reverse handle and drive control levers at the same time.

ADJUSTMENTS



SECTION CHECKLIST

Wheel Lockpins

Handlebar Height Adjustment

Drag Bar

Belt Tension Adjustment



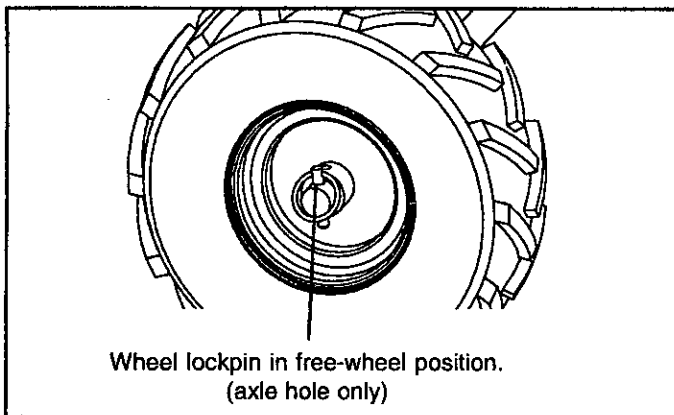
CAUTION

ENGINE SHOULD BE OFF BEFORE LOCKING OR UNLOCKING WHEELS.

WHEEL LOCKPINS

Place wheels in tilling position.

1. Remove lockpin. Align hole in axle with hole in wheel hub.
2. Insert lockpin through holes, fold lockpin ring to secure pin to axle.
3. Wheel and axle should be firmly locked together before tilling.
4. Repeat for other wheel.



Wheel lockpin in free-wheel position.
(axle hole only)

NOTE: Always have both wheel lockpins in or out. Do not operate tiller with only one wheel locked.

To place wheels in free-wheel position.

1. Remove lockpin. Slide wheel inward toward machine.
2. Insert pin in axle only.
3. Wheel should turn freely on axle.



CAUTION

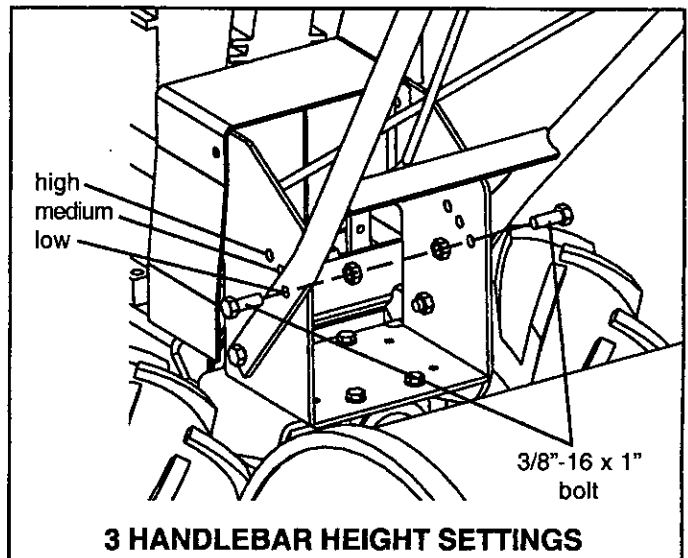
Never start engine or operate tiller with wheels in free-wheel position. The free-wheel position is for transporting the tiller long distances over level ground—do not attempt to move the tiller up or down steep grades in the free-wheel position.

HANDLEBAR HEIGHT ADJUSTMENT

Adjust handlebar height.

The ideal height of the handlebar varies with operator height and the depth of tilling. To adjust handlebar height:

1. Unscrew nuts and remove top bolt until handlebar moves freely up and down.
2. Align handlebar to desired hole on the transmission cover.
3. Install bolts and nuts. Retighten.



3 HANDLEBAR HEIGHT SETTINGS



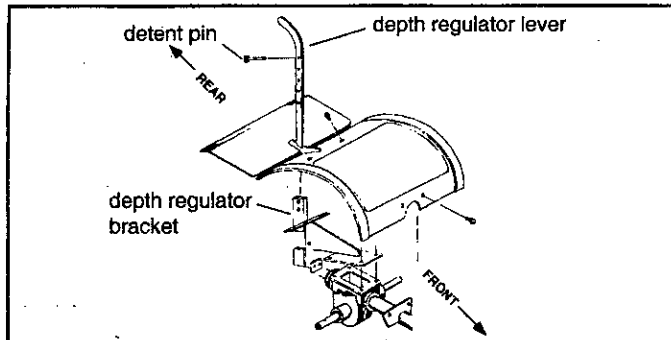
ADJUSTMENTS

DEPTH REGULATOR LEVER

Tilling depth is controlled by the height of the depth regulator lever.

To adjust tilling depth.

1. Remove detent pin.
2. Raise the depth regulator lever to position tines at chosen tilling depth.
3. Align hole in depth regulator lever with hole in depth regulator bracket and replace detent pin.



Depth Regulator Lever Down = Shallower tilling. Place the detent pin in the top hole of the depth regulator lever for shallowest tilling.

Depth Regulator Lever Up = Deeper tilling. Place the detent pin in the bottom hole of the depth regulator lever for deepest tilling.

CAUTION

Always set the depth regulator lever in the transport position before starting engine, that is, place the detent pin in the highest hole of the depth regulator lever.

CAUTION

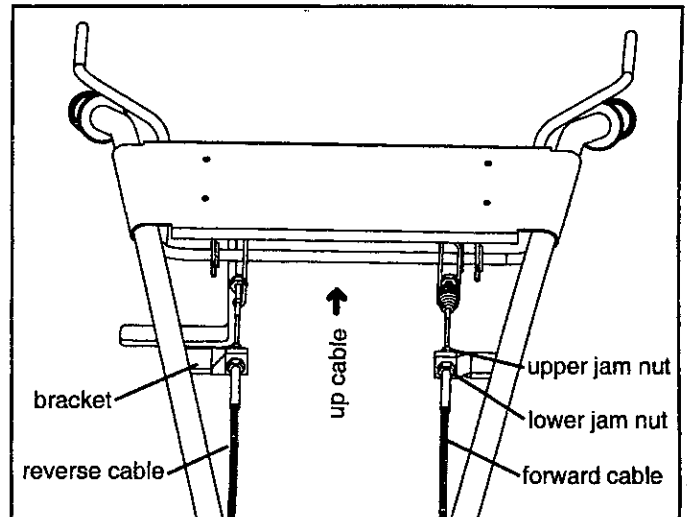
Do not adjust tilling depth unless drive control levers are released to neutral position.

BELT TENSION ADJUSTMENT

Proper belt tension is critical to good performance. After 1/2 hour of operation, all cables may have to be adjusted due to initial stretch. Thereafter, check tension after every 2 hours of operation.

To increase belt tension:

1. Loosen upper jam nut. Turn nut up cable in 1/8" increments.



2. Tighten lower jam nut.
3. Check adjustment.

This procedure can be repeated until conduit adjustment bolts have no more adjustment left. If no more adjustment can be made, belt may have to be replaced.



SECTION CHECKLIST

Pre-Start Inspection

Starting and Stopping the Engine

Tilling



ENGINE IS SHIPPED FROM FACTORY WITHOUT OIL. YOU MUST ADD ENGINE OIL BEFORE STARTING ENGINE.

PRE-START INSPECTION

1. Make sure all safety guards are in place and all nuts and bolts are secure.
2. Check oil level in engine crankcase. See your engine manual for procedure and specifications.
3. Inspect air cleaner for cleanliness. See your engine manual for procedure.
4. Check the fuel supply. Fill the fuel tank no closer than 1/4 to 1/2 inch of top of tank to provide space for expansion. See your engine manual for fuel recommendations.
5. Be sure spark plug wire is attached and spark plug is tightened securely.
6. Check position of wheels and wheel lockouts.
7. Check drag bar position.

CAUTION

Please do not start your tiller until you have read the Manual that came with your engine, and the sections in this manual titled Controls, Adjustments and Safety. If you have read these, follow the steps below to start your tiller. Always perform this pre-start checklist before starting the engine.

CAUTION

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.

CAUTION

Wheels must always be locked in the TILLING position when engine is running. Do not operate the tiller with the wheel lockouts unlocked. Always set the wheels in tilling position before starting engine.

CAUTION

Always put the drag bar in the transport position before starting engine. Tines should clear the ground.



IMPORTANT

ENGINE IS SHIPPED FROM FACTORY WITHOUT OIL. YOU MUST ADD ENGINE OIL BEFORE STARTING ENGINE.

STARTING AND STOPPING THE ENGINE

NOTE: Refer to engine manual for proper operating instructions.



CAUTION

Always keep hands and feet clear of rotating machine parts.



CAUTION

Temperature of muffler and near by areas may exceed 150° F. Avoid these areas.



CAUTION

Do not move choke control to CHOKE to stop engine. Backfire or engine damage may occur.

IMPORTANT

To stop the engine at any time, move throttle control to the off position. To stop wheels and tines at any time, release drive control levers to neutral position.

TILLING

1. Adjust the drag bar to desired tilling depth.

NOTE: Raise drag bar up one hole at a time, testing tiller operation after each raise. Raising drag bar too high can result in loss of control of tiller!

2. Move the throttle control to *fast*.
3. Place the tiller in *forward* by pushing down on the drive control levers--this will engage the wheels and tines.

NOTE: You can slow the tiller's forward advance at any time by putting slight downward pressure on the handlebars, or you can stop the tiller by releasing the drive control levers to the neutral position.



CAUTION

To stop wheels and tines at any time, release drive control levers to neutral position.



CAUTION

Always release drive control levers to neutral position before adjusting the drag stake.

IMPORTANT

Practice operating the controls and tiller with tines out of ground before beginning to till. It is important that you know how to use the tiller properly, how to keep control at all times, how to stop the tines and wheels from turning, and how to stop the engine if necessary. If you do not know how to do these things, read the Controls, Adjustments and Safety sections before proceeding.



TILLING TIPS

The key to successful tilling is to begin with a shallow cut on the first pass, and then work an inch or two deeper on each successive pass.

- ★ Tilling depth will vary with ground conditions.
- ★ When beginning to till in unbroken ground or in extremely hard soil, set the detent pin in the highest hole of the drag bar (follow instructions under Tilling on previous page). This will allow for shallow tilling. With the drag bar in this position, make several light passes over the area to be tilled. Reset for deeper depths with successive passes.
- ★ If tiller jumps or skids uncontrollably, lower the drag bar by placing the detent pin in a higher hole. This will allow for shallower tilling. Hold firmly to the handlebars to control sudden lurches.
- ★ If weeds, tall grasses, vines, or other materials clog or jam the tines, reverse tine direction to unwind vegetation.

*Immediately release the drive control levers if the tines jam or you strike a foreign object. With drive control levers in neutral, push throttle control to **stop** position to stop the engine. Disengage the spark plug wire. When tines have stopped, remove foreign objects and check for damage.*

CULTIVATING TIPS

If you plan to use your tiller for cultivating:

- ★ Plant rows on 20" - 22" centers for ease of turning.
- ★ Set the drag bar with the detent pin in one of the higher holes. This will allow the shallow cultivation necessary to turn over weeds, and break up and aerate the soil.

CAUTION

Extreme caution must be taken in selecting tilling depth. If you attempt to till too deeply for soil conditions, that is, with the drag bar in too high a position, loss of control could result.

CAUTION

If removing material from the tines by hand, stop engine and remove spark plug wire first.



MAINTENANCE AND STORAGE

SECTION CHECKLIST

- Check Forward Belt Tension
- Change Forward/Reverse Belt
- Check or Fill Engine Crankcase
- Check Tiller Transmission Grease
- Engine Maintenance
- Clean Tine Axle Shaft
- Check Tire Pressure
- Prepare for Storage
- Tiller and Engine Maintenance Schedule

CHECK FORWARD BELT TENSION

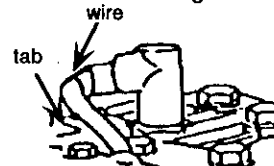
Forward belt tension may decrease over time. It must be adjusted within the first half hour of operation, and checked after every two hours of operation. Proper adjustment will assure long belt life. Too much or too little belt tension will cause premature belt failure. To check and adjust the forward belt tension:

1. Turn off engine. Engine must be cool.
2. Remove spark plug wire from spark plug.
3. With drive control levers in neutral position, measure length of spring when compressed.
4. Pull down on drive control levers and measure length of spring when stretched out. Ideal length would be 1/4" longer.

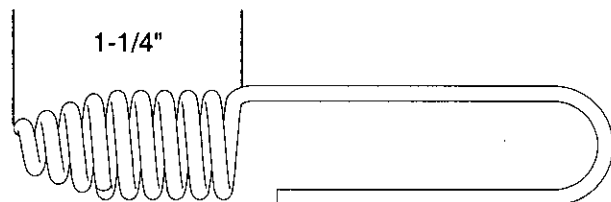
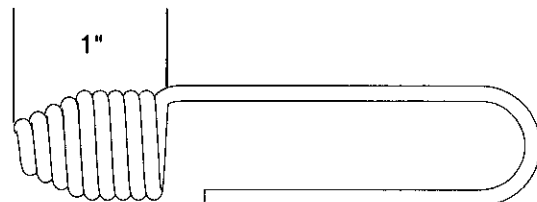


CAUTION

To prevent accidental starting:



Engine must be turned off and cool, and spark plug wire must be removed from spark plug before checking and adjusting engine or equipment.



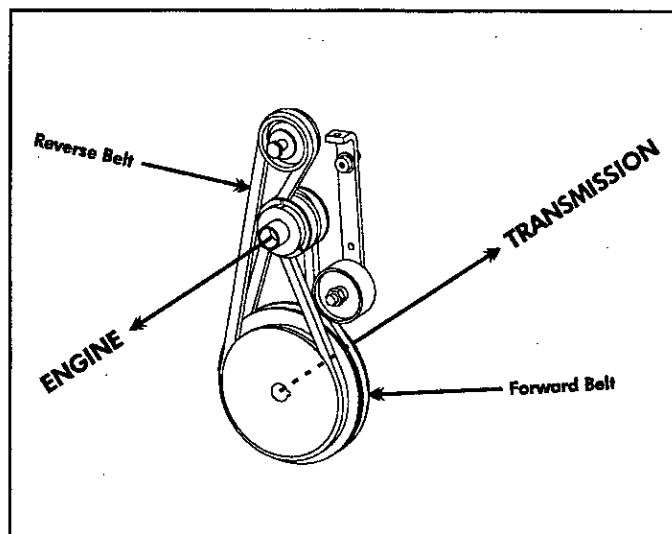
CAUTION

Check forward belt tension regularly. Too much or too little tension will cause premature belt failure.

MAINTENANCE AND STORAGE

CHANGE FORWARD/REVERSE BELT

1. Turn off engine. Engine must be cool.
2. Remove spark plug wire from spark plug.
3. Remove belt guard.
 - ★ remove the forward belt from the forward engine pulley:
 - gently pull the engine recoil rope to rotate the pulley.
 - with the pulley turning, force the forward belt out of the V-groove.
 - slide the belt free of the engine pulley.
 - pull the forward belt down and out of the way.
 - ★ remove the reverse belt from the reverse engine pulley:
 - gently pull the engine recoil rope to rotate the pulley.
 - with the pulley turning, force the reverse belt out of the V-groove.
 - slide the belt free of engine pulleys and reverse belt guides.
 - pull belt down and away from transmission pulley.
 - ★ install new reverse belt:
 - thread belt up from bottom.
 - place belt around transmission pulley in groove.
 - place belt under reverse belt guides.
 - gently pull engine recoil rope while forcing the belt over the edge of the engine pulley into the V-groove.
 - ★ install new forward belt:
 - place forward belt in transmission pulley groove.
 - gently pull the engine recoil rope to rotate the pulley while forcing the forward belt into the V-groove.
4. Replace belt guard.
5. Attach spark plug wire.



BELT REPLACEMENT PART #'S:

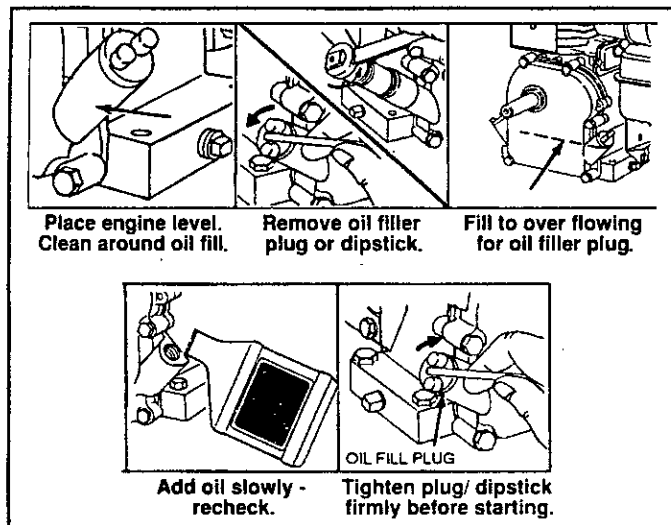
- 727A (forward)
- 726 (reverse) 2000 models
- 730 (reverse) 2001 models



MAINTENANCE AND STORAGE

CHECK OR FILL ENGINE CRANKCASE

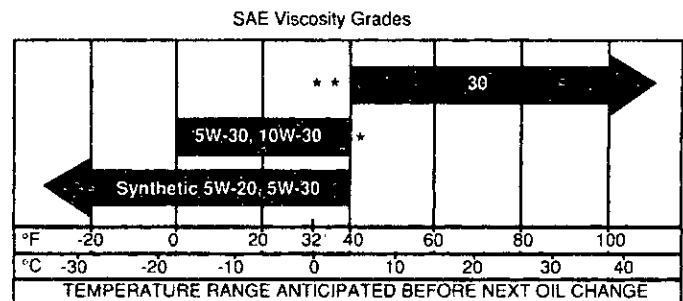
1. Add and change oil according to chart below. Do not overfill. Use a high quality detergent oil classified "For Service SC, SD, SE, SF, SG," such as Briggs & Stratton "Warranty Certified" SAE 30 oil. Use no special additives with recommended oils. Do not mix oil with gasoline.
2. Always check oil level before starting engine. Add oil as shown below. Refer to engine manual for capacity.



Adapted from Briggs & Stratton Corporation, form No. 272643-7/95.

IMPORTANT

ENGINE IS SHIPPED FROM FACTORY WITHOUT OIL. YOU MUST ADD ENGINE OIL BEFORE STARTING ENGINE.



Adapted from Briggs & Stratton Corporation, form No. 272646-10/93.

* Air cooled engines run hotter than automotive engines. Use of multi-viscosity oils (10W-30, etc.) above 40° F (4° C) will result in high oil consumption and possible engine damage. Check oil level more frequently if using these types of oils.

** SAE 30 oil, if used below 40° F (4° C), will result in hard starting and possible engine bore damage due to inadequate lubrication.

MAINTENANCE AND STORAGE



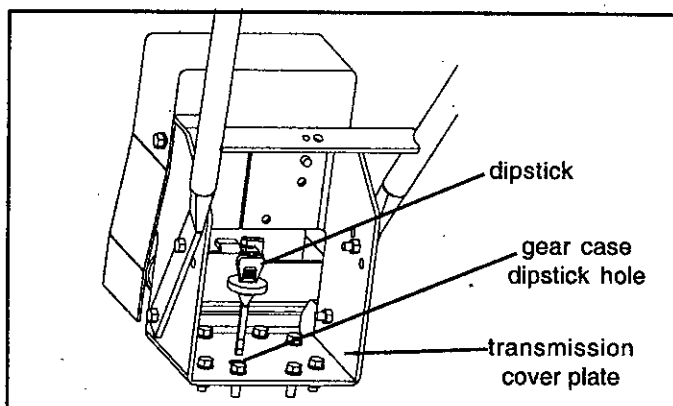
CHECK TILLER TRANSMISSION GREASE

IMPORTANT

TILLER TRANSMISSION IS SHIPPED FROM FACTORY WITH THE PROPER AMOUNT OF 00 LIQUID GREASE.

Check the grease level annually. To check the grease level:

1. Move tiller to level ground.
2. Remove grease level dipstick located between the handlebar mounts in the front transmission cover. Correct 00 grease level is indicated between the high and low levels on the dipstick.
3. Replace grease level dipstick in the filler hole.
4. Note that the front wheel transmission and rear tine transmission are one common reservoir. When you add to the front transmission, you must wait a short period of time for the 00 grease to flow rearward and equalize in both front and rear. The dipstick will read correctly on level ground for both gear units.



IMPORTANT

When replacing grease, the tiller transmission holds 18-22 ounces. DO NOT OVERFILL.



MAINTENANCE AND STORAGE

CAUTION

Do not operate tiller before reading the engine manual provided in the parts packet.

CAUTION

Temperature of muffler and near by areas may exceed 150° F. Avoid these areas.

IMPORTANT

Engine can overheat and become damaged if debris blocks the cooling system or rotating screen.

IMPORTANT

Never run engine without complete air cleaner installed on engine.

CLEAN TINE AXLE SHAFT

1. Turn off engine. Engine must be cool.
2. Remove spark plug wire from spark plug.
3. Tip the tiller forward. Block the tiller in position so that it rests on the engine mount and the tines are exposed.
4. Remove all vegetation, string, wire, and other material that may have accumulated on the axle between the inside set of tines and the seal on the transmission housing.
5. Tip the tiller back to a level position.
6. Replace spark plug wire.

CHECK TIRE PRESSURE

Recommended tire pressure is 20 PSI. If tires do not have equal pressure, tiller will pull to one side.

ENGINE MAINTENANCE

Refer to the engine manual included in your parts packet for information on engine maintenance. Your engine manual provides detailed information and a maintenance schedule for performing the following tasks:

1. Check oil level every 5 hours of operation, or before each use.
2. Change oil after first 5 hours of operation. Change oil while engine is warm. Refill with new oil of recommended grade.
4. Check spark plug yearly or every 100 hours of operation. Refer to engine manual for spark plug type and gap setting.
5. Service air cleaner.
6. Keep engine and parts clean.
7. Check engine and equipment often for loose nuts and bolts, keep these items tightened.



MAINTENANCE AND STORAGE

PREPARE FOR STORAGE

Follow the steps below to prepare your tiller for storage. Read your engine manual for detailed instructions on preparing the engine for storage.

1. Protect wheels and axles from rust:

All Wheel Lockpin Models

- Remove lockpin and slide wheel off hub.
- Coat the axles lightly with axle grease.
- Slide wheel back on hub and insert lockpin.

2. Run with gas stabilizer in fuel.

3. Drain the fuel tank. Run the engine until it stops.

4. While engine is still warm, drain the oil from the engine. Refill with fresh oil of the recommended grade.

5. Remove spark plug, pour one-half ounce of clean engine oil into cylinder. Pull starter handle slowly several times to distribute oil. Replace spark plug.

6. Clean entire tiller.

7. Store your tiller in a clean, dry building.



CAUTION

Do not store tiller in a non-ventilated area where fuel fumes may reach flame, sparks, pilot lights or an ignited object. Drain fuel outdoors away from any ignition sources. Use only approved fuel containers.

TILLER AND ENGINE MAINTENANCE SCHEDULE

Your tiller will require maintenance including service and adjustments before and after use. To help ensure long life and peak performance for your tiller, follow the maintenance schedule below. Refer to your engine manual to establish a maintenance schedule for your engine.

Maintenance Operation	See Page #	Before Each Use	50 hrs or Every Season
Check forward belt tension _____	16	✓	
Check or fill engine crankcase _____	18	✓	
Check tiller transmission grease _____	19		✓
Check tire pressure _____	20	✓	
Change forward/reverse belt _____	17		✓
Clean tine axle shaft _____	20		✓
Lube wheel axle shaft _____	21		✓
Check throttle control adjustment _____	EM		1
Change engine oil _____	EM		2

EM = See engine manual.

1 Adjust throttle control after first 3 hours of operation or if engine is hard to start or run-on occurs.

2 Change oil after first 5 hours, then after every 50 hours or every season. Change oil every 25 hours when operating under heavy load or in high temperatures.



TROUBLESHOOTING AND REPAIR

TROUBLESHOOTING GUIDE

CAUTION

Practice safety at all times. Engine must be turned off and allowed to cool, and spark plug wire must be disconnected before attempting any maintenance or repair.

PROBLEM	REMEDY/ACTION
Engine will not start	<ol style="list-style-type: none">1. Connect spark plug wire to spark plug2. Throttle must be positioned at choke for a cold start
Engine runs rough, floods during operation	<ol style="list-style-type: none">1. Clean or replace air cleaner
Engine is hard to start	<ol style="list-style-type: none">1. Drain old fuel and replace with fresh. Use gas stabilizer at end of season2. Make sure spark plug wire is securely attached to spark plug3. Drive control levers must be released to <i>neutral</i> to start the engine
Engine misses or lacks power	<ol style="list-style-type: none">1. Raise the tines for shallower tilling by lowering the depth regulator lever, see page 122. Remove and clean fuel tank3. Clean or replace air cleaner4. Improper carburetor adjustment, take to authorized engine service center5. Replace spark plug and adjust gap6. Drain and refill gas tank and carburetor
Engine will not stop when throttle control is positioned at stop	<ol style="list-style-type: none">1. See engine manual to check and adjust throttle linkage
Tiller moves forward during starting	<ol style="list-style-type: none">1. Drive control levers must be released to <i>neutral</i> to start the engine
Tiller is difficult to control when tilling (machine jumps or lurches forward)	<ol style="list-style-type: none">1. Lock wheels in tilling position, see page 112. Raise the tines for shallower tilling by lowering the depth regulator lever, see page 12
Tines turn, wheels do not turn	<ol style="list-style-type: none">1. Lock wheels in tilling position, see page 112. Internal transmission failure, see your dealer
Tines turn, wheels turn, tiller does not move	<ol style="list-style-type: none">1. Lower the tines for deeper tilling by raising the depth regulator lever, see page 12

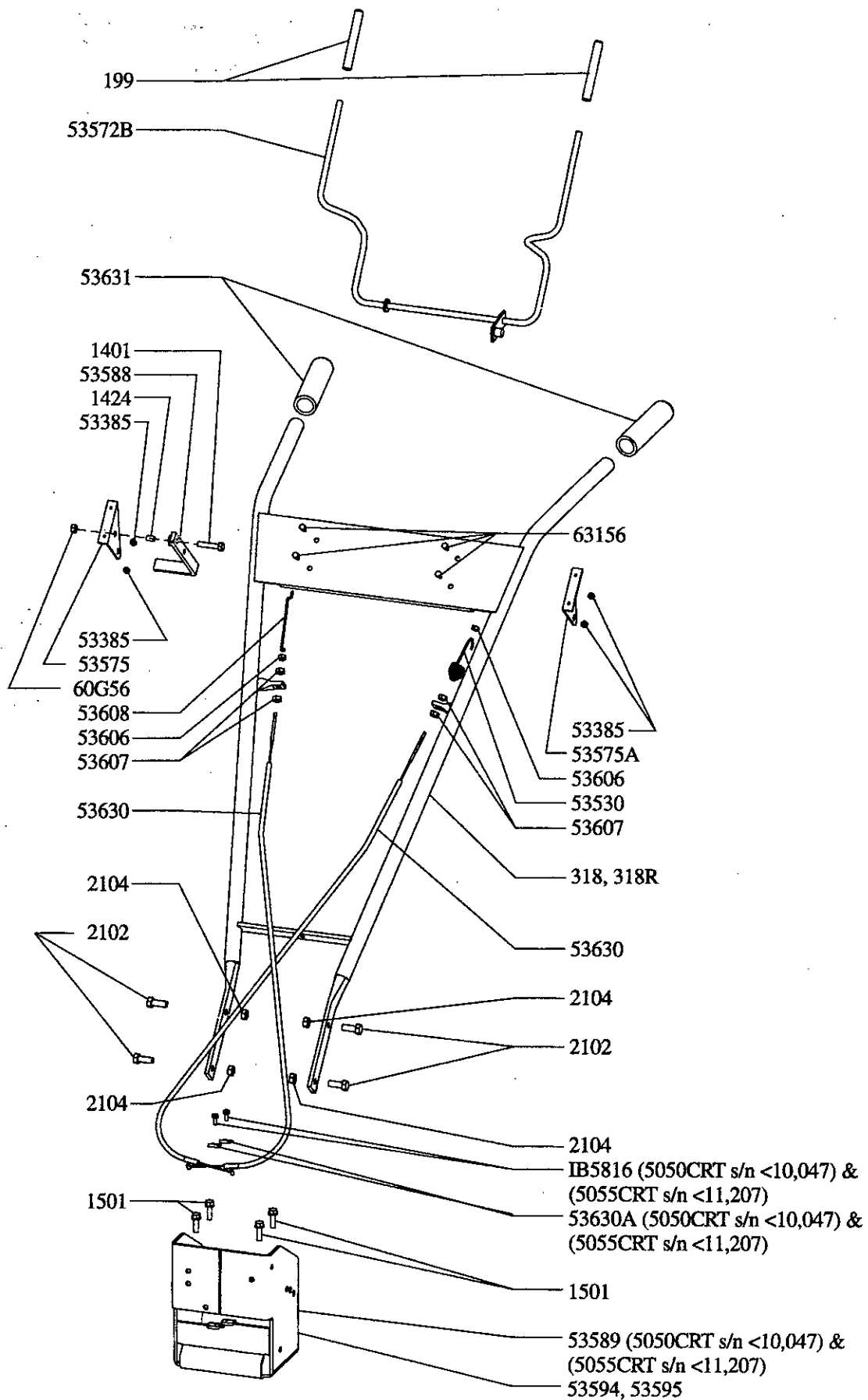
TROUBLESHOOTING AND REPAIR



PROBLEM	REMEDY/ACTION
Belts squeal in neutral and/or reverse	<ol style="list-style-type: none"> Adjust forward belt guide: <ul style="list-style-type: none"> - turn engine off and allow muffler to cool - disconnect spark plug wire from spark plug - remove belt guard - pull down on drive control levers - manually bend forward belt guide so there is 1/16 inch or less clearance between belt guide and belt - replace belt guard and spark plug wire
Belts squeal in forward operation	<ol style="list-style-type: none"> Adjust tabs on the reverse belt guide <ul style="list-style-type: none"> - turn engine off and allow muffler to cool - disconnect spark plug wire from spark plug - release drive control levers to neutral - remove belt guard - adjust tabs of reverse belt guide: <ul style="list-style-type: none"> while drive control levers are released, bend metal tabs on reverse belt guide to 1/64 inch or less clearance from reverse belt - replace belt guard and spark plug wire
Excessive heat build up in transmission/tine area during tilling	<ol style="list-style-type: none"> Remove vegetation by following instructions in Clean Tine Axle Shaft on page 20 of Maintenance & Storage section. FOLLOW ALL SAFETY INSTRUCTIONS Check transmission fluid and fill if needed by following instructions on page 19



5050/5055 Handlebar Assembly



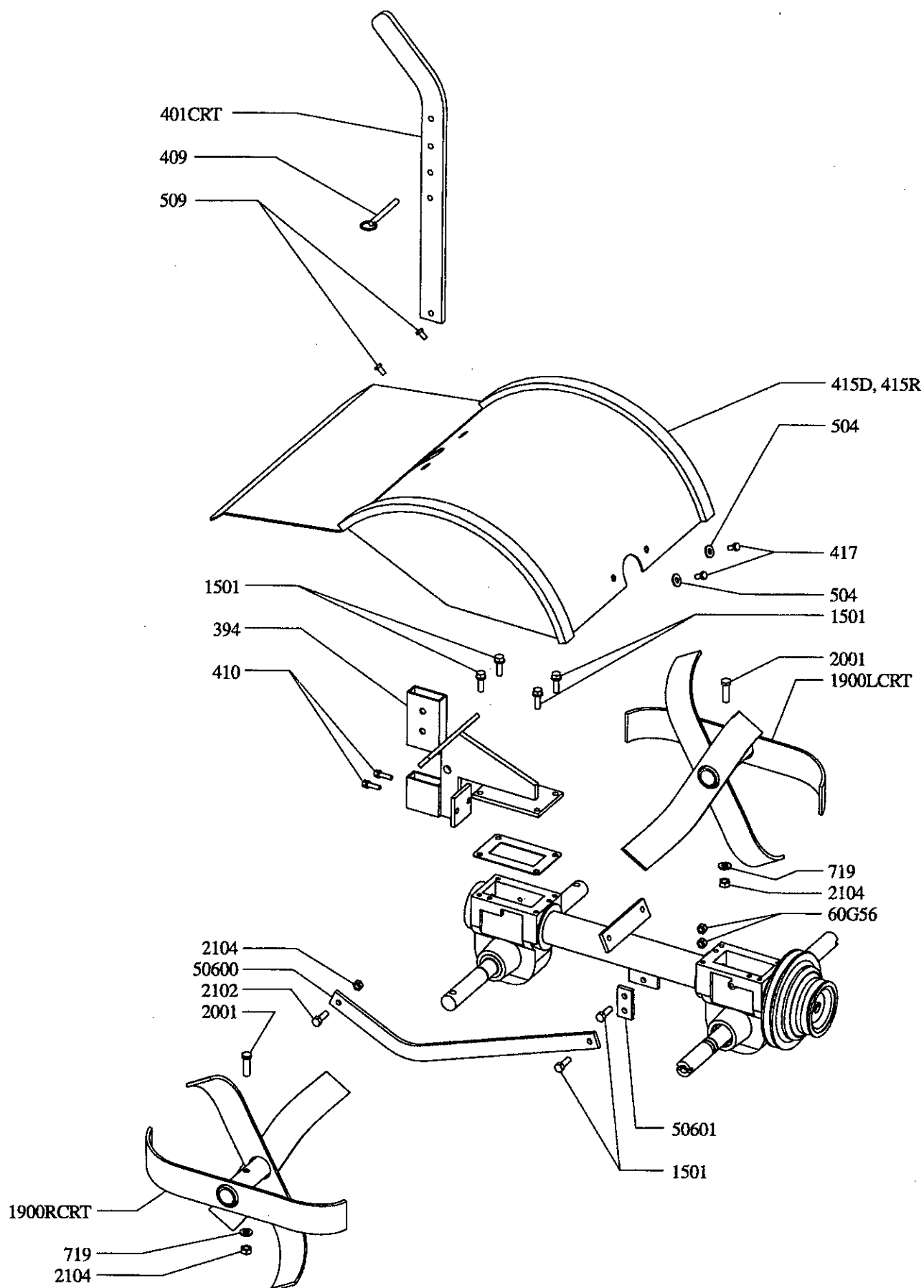
5050/5055 Handlebar Assembly



<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
60G56	NUT-Bi-Way Lock, 5/16-18	1
199	HANDLE GRIP-Drive Control Lever	2
318	HANDLEBAR ASSEMBLY, Black	1
318R	HANDLEBAR ASSEMBLY, Red	1
1401	BOLT-Hex Hd, 5/16-18 x 1-1/4"	1
1424	BUSHING-Pivot, 5/16"	1
1501	BOLT-Hex Flange Hd, 5/16-18 x 3/4"	4
2102	BOLT-Hex Hd, 3/8-16 x 1", Grade 5	4
2104	NUT-Hex, 3/8-16	4
53385	NUT-Keps, 10-24	4
53530	SPRING-Bee Hive, Forward Cable Adjust	1
53572B	DRIVE CONTROL LEVER	1
53575	BRACKET-Drive Control Lever, Right	1
53575A	BRACKET-Drive Control Lever, Left	1
53588	REVERSE HANDLE	1
53589	FRONT COVER PLATE & HANDLEBAR MOUNT, Black, w/Filler Tube (2000)	1
53594	FRONT COVER PLATE & HANDLEBAR MOUNT, Black, No Filler Tube (2001)	1
53595	FRONT COVER PLATE & HANDLEBAR MOUNT, Red, No Filler Tube (2001)	1
53606	NUT-Nyloc, #10	2
53607	NUT-Jam, 5/16-24	4
53608	REVERSE LINK	1
53630	CABLE ASSEMBLY	2
53630A	CABLE CLAMP (2000 models)	2
53631	HANDLE GRIP, No Flange, Black	2
53156	SCREW-Button Hd Torx, 10-24 x 1/2", T-25	4
IB5816	BOLT-Hex Hd, 5mm x 0.8mm x 16mm (2000 models)	2
LBL304EQ	DECAL-Handlebar Dash, Earthquake	1
LBL304GS	DECAL-Handlebar Dash, Garden Star	1
LBL516B	DECAL-Console (Forward/Reverse Instructions)	1



5050/5055 Tines & Hood Assembly



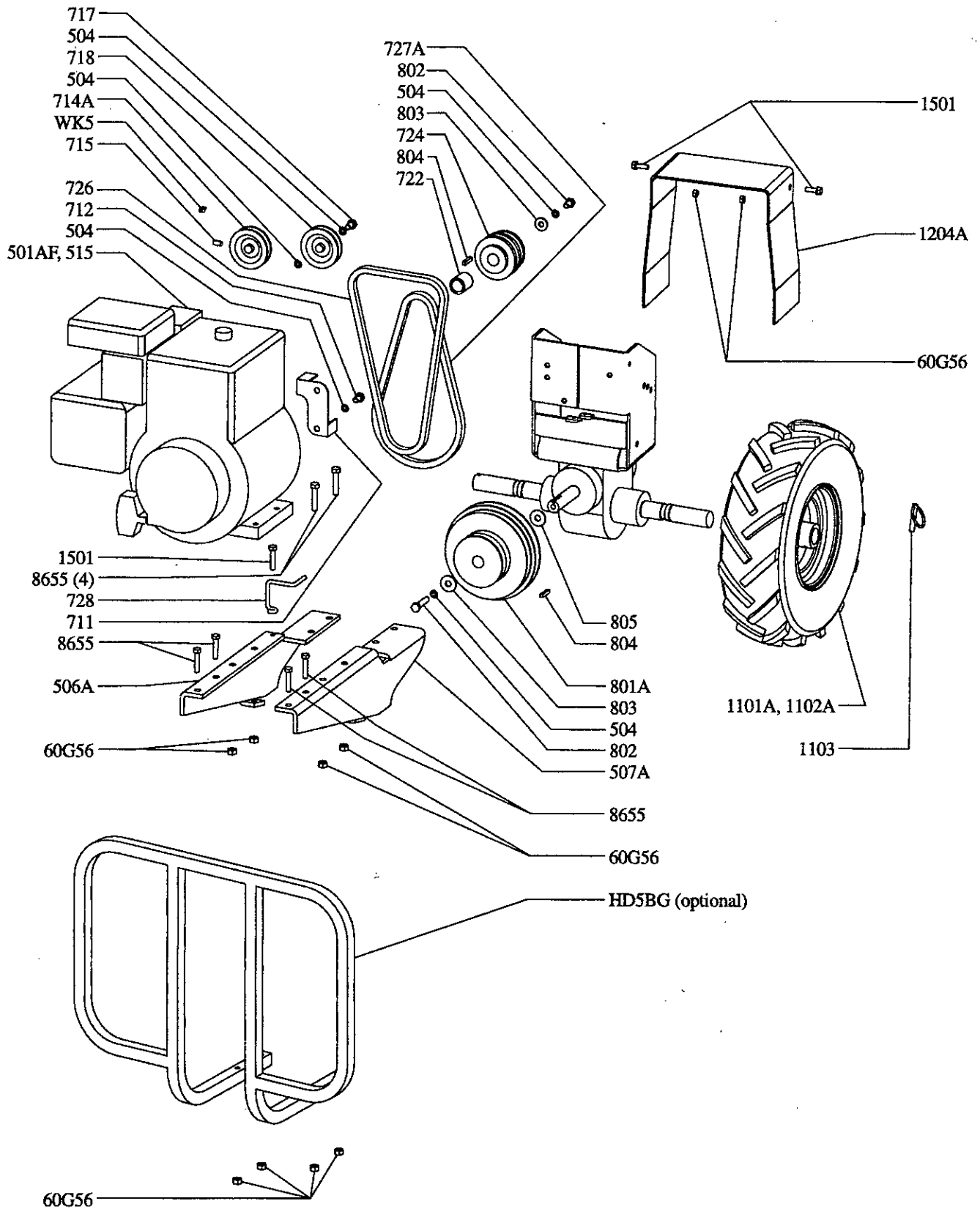
5050/5055 Tines & Hood Assembly



<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
60G56	NUT, 5/16-18	2
394	BRACKET-Depth Regulator, Black, 2-holes	1
401CRT	DEPTH REGULATOR LEVER, Black, 4-holes	1
409	DETENT PIN, 5/16"	1
410	BOLT-Hex Flange Head, 5/16-18 x 1/2", Grade 5	2
415D	HOOD-Tiller, w/Side Shields, w/o Decals, Black	1
415R	HOOD-Tiller, w/Side Shields, w/o Decals, Red	1
417	BOLT-Hex Hd, 5/16-18 x 1/2", Grade 5	2
504	LOCKWASHER-Spring, 5/16"	2
509	BOLT-Hex Hd, 1/4-20 x 1/2"	2
719	LOCKWASHER-Spring, 3/8"	2
1501	BOLT-Hex Flange Head, 5/16-18 x 3/4"	6
1900LCRT	TINE SET, Left Side, Complete Assembly	1
1900RCRT	TINE SET, Right Side, Complete Assembly	1
2001	BOLT-Hex Hd, 3/8-16 x 1-3/4"	2
2003C	SLASHER TINE-Double End, Right Side, Black	3
2004C	SLASHER TINE-Double End, Left Side, Black	3
2102	BOLT-Hex Hd, 3/8-16 x 1", Grade 5	1
2104	LOCKNUT-Hex, 3/8-16	3
50600	DRAG BAR-Lower	1
50601	LINKAGE-Lower Drag Bar	1
LBL516AA	DECAL, Tine Hood (Operating Instructions)	1
LBL516E	DECAL, Tine Hood Flap (Tine Danger)	1



5050/5055 Motor Mount Assembly (2000)



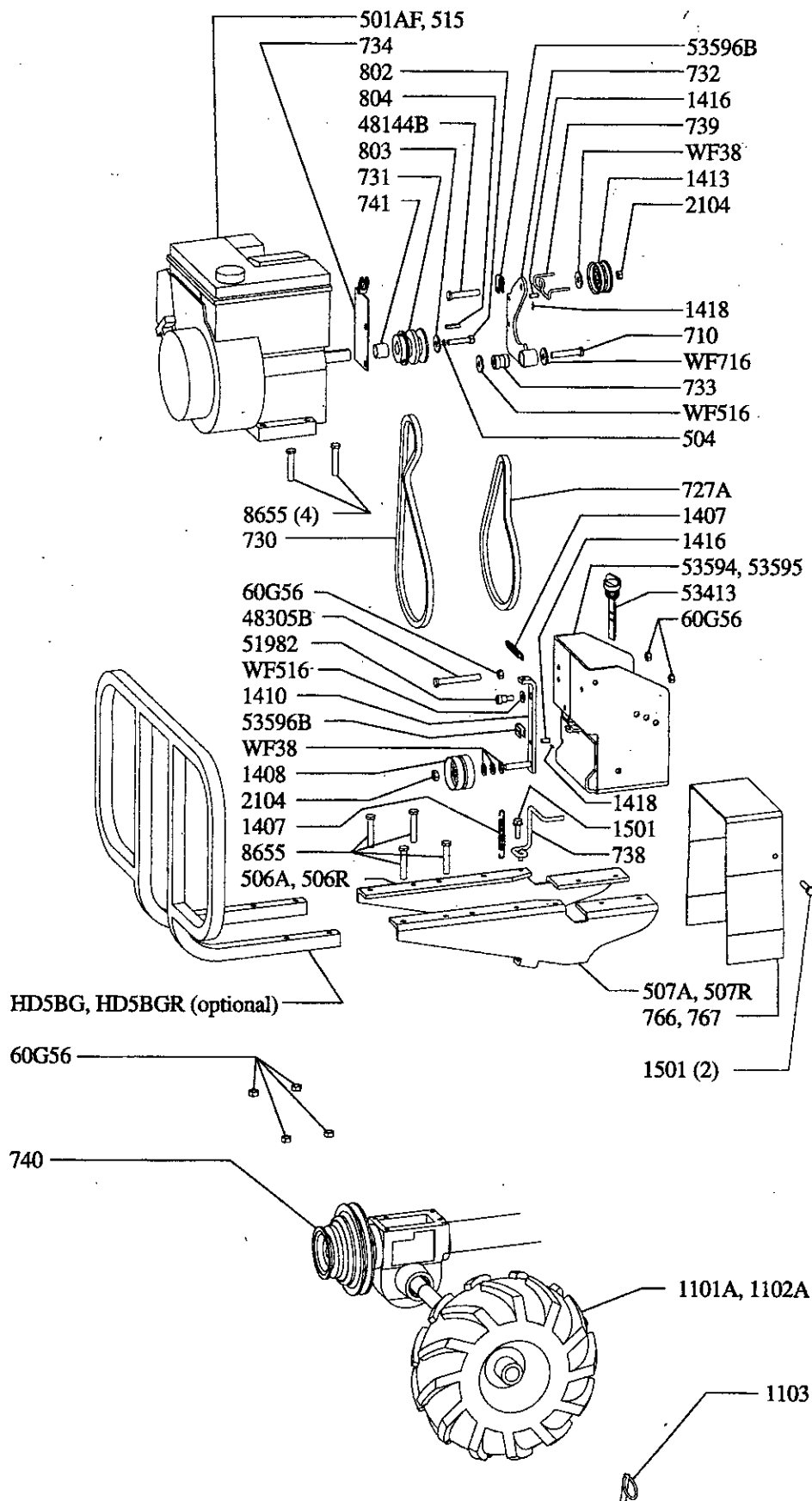


5050/5055 Motor Mount Assembly (2000)

Part #	Description	Qty.
60G56	NUT, 5/16-18	10
501AF	ENGINE-Tecumseh OHV, 5-hp (5050-5050GS)	1
504	LOCKWASHER-Spring, 5/16"	5
506A	BRACKET-Motor Mount, Right, Black	1
507A	BRACKET-Motor Mount, Left, Black	1
515	ENGINE-Tecumseh OHV, w/Extended Camshaft, 5.5-hp (5055-5055GS)	1
711	BELT GUIDE-Reverse	1
712	SCREW-Hex Hd Cap, 5/16-24 x 1/2"	1
714A	PULLEY-Engine, Reverse	1
715	SETSCREW, 1/4-20 x 1/4"	1
717	BOLT-Hex Hd, 5/16-24 x 1-3/4"	1
718	BELT GUIDE-Pulley, V-Groove	1
722	SPACER-Engine Pulley	1
724	PULLEY-Engine, Forward	1
726	BELT-Reverse	1
727A	BELT-Forward	1
728	BELT GUIDE-Forward	1
1204A	BELT GUARD, Black	1
801A	PULLEY, Transmission	1
802	BOLT-Hex Hd, 5/16-24 x 3/4", Grade 5	2
803	WASHER, 5/16" ID x 1-5/8" OD, Engine Pulley	2
804	KEY, 3/16" x 1"	2
805	FLAT WASHER, 11/16" ID, Transmission Pulley	1
1101A	WHEEL/TIRE ASSEMBLY, Left	1
1102A	WHEEL/TIRE ASSEMBLY, Right	1
1103	LOCKPIN	2
1501	BOLT-Hex Flange Hd, 5/16-18 x 3/4", Grade 5	3
2102	BOLT-Hex Hd, 3/8-16 x 1", Grade 5	2
8655	BOLT-Hex Hd, 5/16-18 x 1-3/4"	8
HD5BG	BUMPER GUARD, Black (Optional)	1
LBL516C	DECAL, Belt Cover (Warning)	1
LBL516F	DECAL, Bumper Guard (Free Hand Warning)	1
OIL05	OIL, One Quart 30W	
WK5	KEY-Woodruff, #5	1



5050/5055 Motor Mount Assembly (2001)



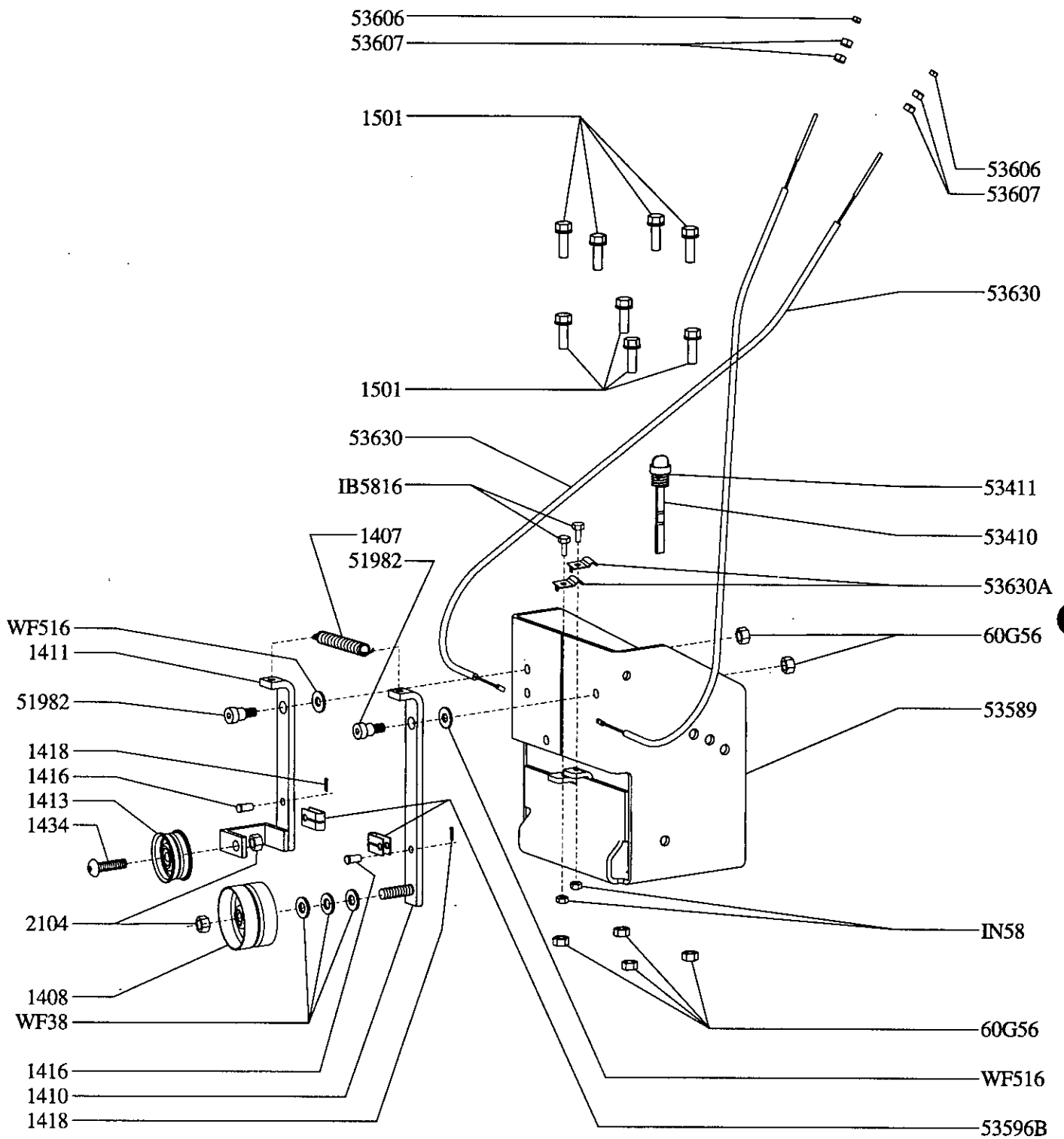


5050/5055 Motor Mount Assembly (2001)

<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
60G56	NUT-Bi-Way Lock, 5/16-18	7
501AF	ENGINE, 5-hp Tecumseh Enduro (5050-5050GS)	1
504	LOCKWASHER-Spring, 5/16"	1
506A	BRACKET-Motor Mount, Right, Black	1
506R	BRACKET-Motor Mount, Right, Red	1
507A	BRACKET-Motor Mount, Left, Black	1
507R	BRACKET-Motor Mount, Left, Red	1
515	ENGINE, 5.5-hp Tecumseh OHV (5055-5055GS)	1
710	CAPSCREW-Flat Hd, 5/16-24 x 1-1/2"	1
727A	BELT-Forward	1
730	BELT-Reverse	1
731	PULLEY-2 Groove, Tecumseh Engine	1
732	PIVOT ARM	1
733	PIVOT-Pivot Arm	1
734	BRACKET-Engine	1
738	BELT GUIDE-Forward	1
739	BELT GUIDE-Reverse	1
740	PULLEY-2 Groove, Transmission	1
741	SPACER-Engine	1
766	BELT COVER, Black	1
767	BELT COVER, Red	1
802	BOLT-Hex Hd, 5/16-24 x 3/4", Grade 5	1
803	WASHER, 5/16" ID x 1-5/8" OD, Engine Pulley	1
804	KEY, 3/16 x 1"	1
1101A	WHEEL/TIRE ASSEMBLY, Left	1
1102A	WHEEL/TIRE ASSEMBLY, Right	1
1103	LOCKPIN	2
1407	SPRING-Idler Arm	2
1408	PULLEY-Forward Idler	1
1410	IDLER ARM-Forward	1
1413	PULLEY-Reverse Idler	1
1416	LINK PIN-Forward/Reverse	2
1418	COTTER PIN	2
1439	WASHER, 1/4" ID	2
1501	BOLT-Hex Flange Head, 5/16-18 x 3/4", Grade 5	3
2104	NUT-Hex, 3/8-16	2
8655	BOLT-Hex Hd, 5/16-18 x 1-3/4"	8
48144B	BOLT-HHCS, 3/8-16 x 2", Grade 5, Black Zinc	1
48305B	BOLT-HHCS, 5/16-18 x 3-1/2", Grade 5, Black Zinc	1
51982	BOLT-Soc Hd Shoulder, 3/8-16 x 3/8"	1
53413	DIPSTICK	1
53594	FRONT COVER PLATE & HANDLEBAR MOUNT, Black	1
53595	FRONT COVER PLATE & HANDLEBAR MOUNT, Red	1
53596B	CABLE YOKE	2
HD5BG	BUMPER GUARD, Black (Optional)	1
HD5BGR	BUMPER GUARD, Red (Optional)	1
LBL516C	DECAL, Belt Cover (Warning)	1
LBL516F	DECAL, Bumper Guard (Free Hand Warning)	1
OIL05	OIL, One Quart 30W	
WF38	WASHER-Flat, 3/8"	4
WF516	WASHER-Flat, 5/16"	2
WF716	WASHER-Flat, 7/16"	1



5050/5055 Shift Mech Assembly (2000)



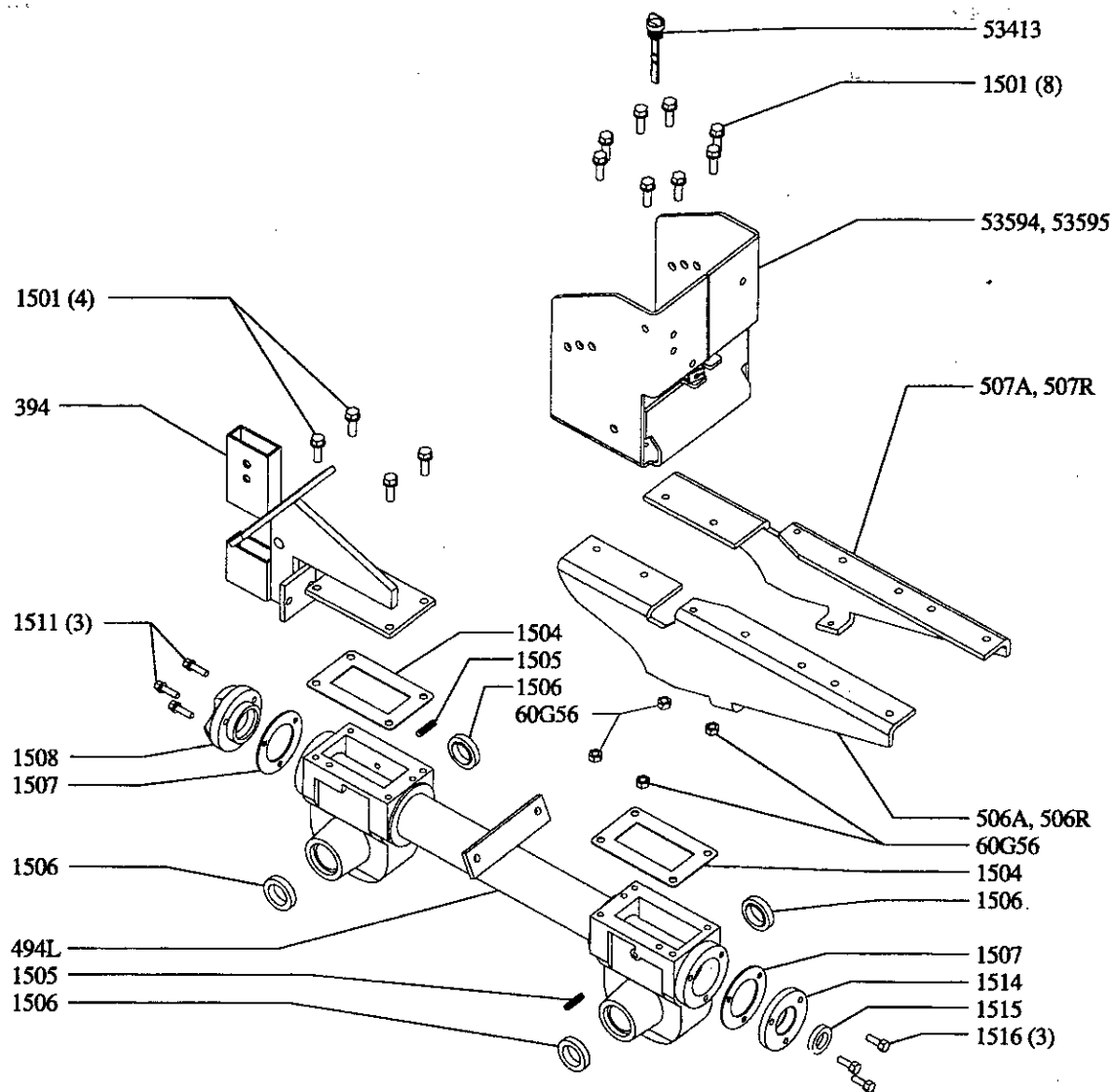


5050/5055 Shift Mech Assembly (2000)

<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
60G56	NUT-Bi-Way Lock, 5/16-18	6
1407	SPRING-Idler Arm	1
1408	PULLEY-Forward Idler	1
1410	IDLER ARM-Forward	1
1411	IDLER ARM-Reverse	1
1413	PULLEY-Reverse Idler	1
1416	LINK PIN-Forward/Reverse	2
1418	COTTER PIN	2
1434	SCREW-Button Hd Cap, 3/8-16 x 1-1/2"	1
1501	BOLT-Hex Flange Hd, 5/16-18 x 3/4"	8
2104	NUT-Hex, 3/8-16	2
51982	BOLT-Soc Hd Shoulder, 3/8-16 x 3/8"	2
53410	DIPSTICK s/n <14200	1
53411	O-RING, Dipstick s/n <14200	1
53589	FRONT COVER PLATE & HANDLEBAR MOUNT, w/Filler Tube	1
53596B	CABLE YOKE	2
53606	NUT-Nyloc, #10	2
53607	NUT-Jam, 5/16-24	4
53630	CABLE ASSEMBLY	2
53630A	CABLE CLAMP	2
IB5816	BOLT-Hex Hd, 5mm X 0.8mm X 16mm	2
IN58	NUT-Nyloc, 5mm x 0.8mm	2
WF38	WASHER-Flat, 3/8"	3
WF516	WASHER-Flat, 5/16"	2

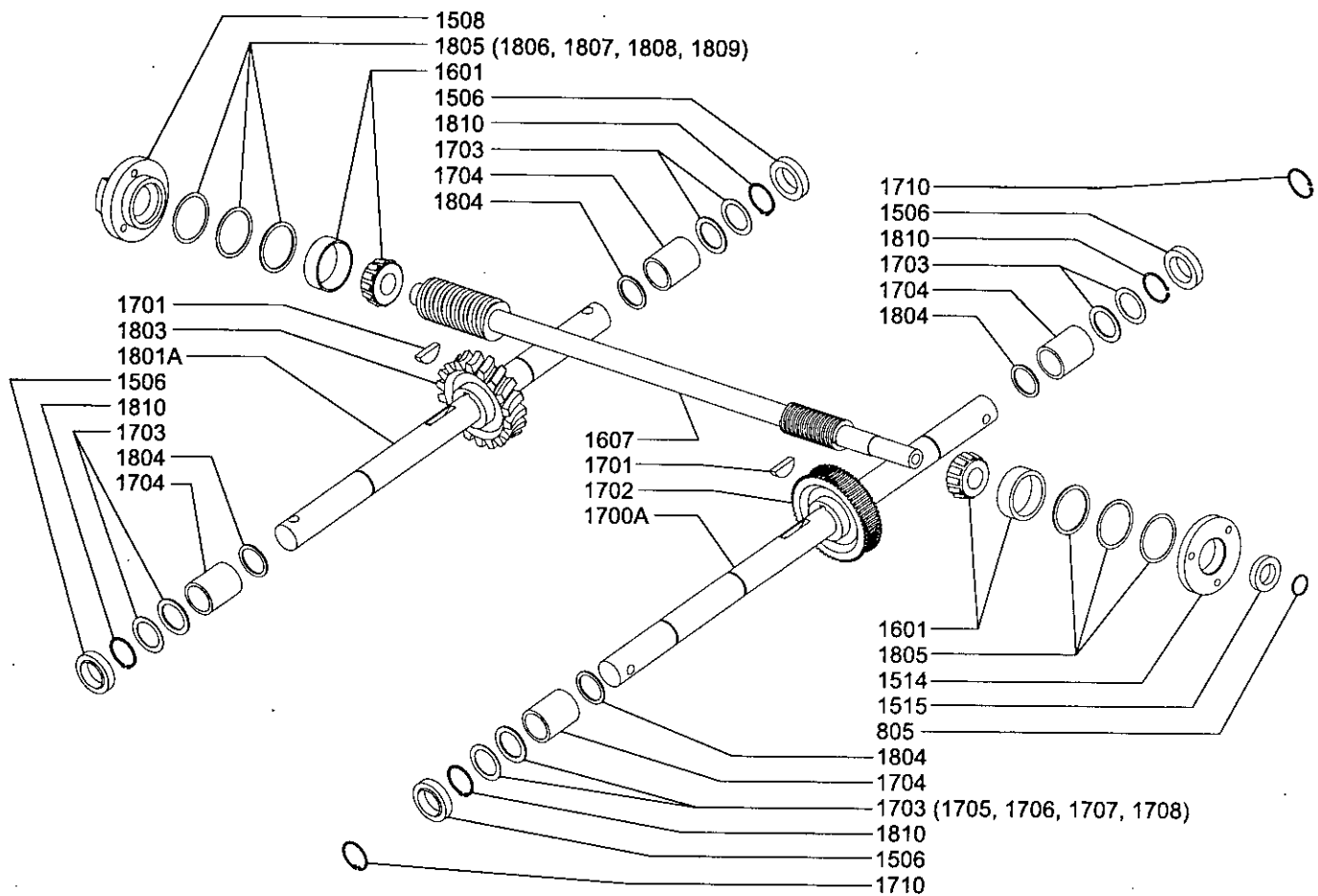


5050/5055 Transmission Assembly



Part #	Description	Qty.
60G56	NUT-Bi-Way Lock, 5/16-18	4
394	BRACKET-Depth Regulator, Black, 2-holes	1
494L	TILLER TRANSMISSION CASTING	1
506A	BRACKET-Motor Mount, Right, Black	1
506R	BRACKET-Motor Mount, Right, Red	1
507A	BRACKET-Motor Mount, Left, Black	1
507R	BRACKET-Motor Mount, Left, Red	1
1500CRT	TRANSMISSION ASSEMBLY, Black, Lockpin (Replacement Only)	1
1501	BOLT-Hex Flange Hd, 5/16-18 x 3/4", Grade 5	12
1504	GASKET-Tiller Housing & Transmission Cover	2
1505	PIPE PLUG-Soc Hd, 1/4-18, Oil Level	2
1506	SEAL-Tiller Housing	4
1507	GASKET-Front Rear Bearing Cap	2
1508	CAP-Rear Bearing, Black	1
1511	BOLT-Hex Flange Hd, 1/4-20 x 7/8"	3
1514	CAP-Front Bearing, Black	1
1515	OIL SEAL-Drive Shaft	1
1516	BOLT-Hex Flange Hd, 1/4-20 x 3/4"	3
1517	KIT-Oil Seal Gasket (Includes two #1504, four #1506, two #1507, one #1515)	1
1690	TRANSMISSION LUBE 00, 1 Qt.	1
53413	DIPSTICK	1
53594	FRONT COVER PLATE & HANDLEBAR MOUNT, Black	1
53595	FRONT COVER PLATE & HANDLEBAR MOUNT, Red	1

5050/5055 Wheel & Tiller Shaft Assembly



<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
1506	SEAL-Tiller Housing	4
1508	CAP-Rear Bearing	1
1515	OIL SEAL-Drive Shaft	1
1600LC	MAIN DRIVE SHAFT, LH	1
1601	BEARING-Tapered (Includes Cone & Race)	2
1700A	WHEEL SHAFT ASSEMBLY, Lockpin	1
1701	KEY, 1/4" x 1"	2
1702	GEAR-Worm, Brass, 61 Tooth, Wheel Shaft	1
1703	SHIM SET-Axle Spacer Kit	4
1704	BUSHING	4
1705	SHIM, 1.375 OD x .062" thick, (as req'd.)	
1706	SHIM, 1.375 OD x .030" thick, (as req'd.)	
1707	SHIM, 1.375 OD x .015" thick, (as req'd.)	
1708	SHIM, 1.375 OD x .010" thick, (as req'd.)	
1710	SNAP RING-Retainer, External	2
1801A	TILLER SHAFT ASSEMBLY	1
1803C	GEAR-Worm, Brass, 30 Tooth, LH, Tiller Shaft	1
1804	SPACER, 1.250" x 1.000" x .062" thick	4
805	SHIM SET-Rear Bearing Cap	1
1806	SHIM, 1.750 OD x .062" thick, (as req'd.)	
1807	SHIM, 1.750 OD x .030" thick, (as req'd.)	
1808	SHIM, 1.750 OD x .015" thick, (as req'd.)	
1809	SHIM, 1.750 OD x .010" thick, (as req'd.)	
1810	SNAP RING-Retainer, Internal	4





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