RYAN®

OP / PARTS MANUAL

MODEL:

544874F

LAWNAIRE 28 - 6.5 HP B&S

544887

LAWNAIRE 28 - 5.5 HP HONDA

MAN 4163566
Rev. A 2-2009

SCHILLER GROUNDS CARE

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Californie Proposition 65 Avertissement

Les échappements des moteurs diesel et certains de leurs composés sont reconnus par l'Etat de Californie pour être cancérigènes, provoquer des défauts congénitaux et d'autres dangers en matière de reproduction.

⚠ AVERTISSEMENT

L'émission du moteur de ce matériel contient des produits chimiques que l'Etat de Californie considère être cancérigènes, provoquer des défauts congénitaux et d'autres dangers en matière de reproduction.

California Advertencia de la Proposicion 65

El estado de California hace saber que los gases de escape de los motores diesel y algunos de sus componentes producen cáncer, defectos de nacimiento y otros daños en el proceso de reproducción humana.

⚠ ADVERTENCIA

El estado de California hace saber que los gases de escape de este producto contienen productos quÍmicos que producen cáncer, defectos de nacimiento y otros daños en el proceso de reproducción humana.

CALIFORNIA

Proposition 65 Warning

Battery posts, terminals, wiring insulation, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **WASH HANDS AFTER HANDLING.**

IMPORTANT MESSAGE

Thank you for purchasing this Schiller Grounds Care, Inc. product. You have purchased a world class product, one of the best designed and built anywhere.

This machine comes with a Technical Manual containing safety, operation, parts, maintenance and service information. The useful life and good service you receive from this machine depends to a large extent on how well you read and understand this manual. Treat your machine properly, lubricate and adjust it as instructed, and it will give you many years of reliable service.

Your safe use of this Schiller Grounds Care, Inc. product is one of our prime design objectives. Many safety features are built in, but we also rely on your good sense and care to achieve accident-free operation. For best protection, study the manual thoroughly. Learn the proper operation of all controls. Observe all safety precautions. Follow all instructions and warnings completely. Do not remove or defeat any safety features. Make sure those who operate this machine are as well informed and careful in its use as you are.

See a Schiller Grounds Care, Inc. dealer for any service or parts needed. Schiller Grounds Care, Inc. service ensures that you continue to receive the best results possible from Schiller Grounds Care, Inc. products. You can trust Schiller Grounds Care, Inc. replacement parts because they are manufactured with the same high precision and quality as the original parts.

Schiller Grounds Care, Inc. designs and builds its equipment to serve many years in a safe and productive manner. For longest life, use this machine only as directed in the manual, keep it in good repair and follow safety warnings and instructions. You'll always be glad you did.

Schiller Grounds Care, Inc.
One Bob Cat Lane
Johnson Creek, WI 53038-0469

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NOTICE !!!

Unauthorized modifications may present **extreme** safety hazards to operators and bystanders and could also result in product damage.

Schiller Grounds Care, Inc. strongly warns against, rejects and disclaims any modifications, add-on accessories or product alterations that are not designed, developed, tested and approved by Schiller Grounds Care, Inc. Engineering Department. Any Schiller Grounds Care, Inc. product that is altered, modified or changed in any manner not specifically authorized after original manufacture–including the addition of "after-market" accessories or component parts not specifically approved by Schiller Grounds Care, Inc.–will result in the Schiller Grounds Care, Inc. Warranty being voided.

Any and all liability for personal injury and/or property damage caused by any unauthorized modifications, add-on accessories or products not approved by Schiller Grounds Care, Inc. will be considered the responsibility of the individual(s) or company designing and/or making such changes. Schiller Grounds Care, Inc. will vigorously pursue full indemnification and costs from any party responsible for such unauthorized post-manufacture modifications and/or accessories should personal injury and/or property damage result.

This symbol means:
ATTENTION!
BECOME ALERT!

Your safety and the safety of others is involved.

Signal word definitions:

The signal words below are used to identify levels of hazard seriousness. These words appear in this manual and on the safety labels attached to Schiller Grounds Care, Inc. machines. For your safety and the safety of others, read and follow the information given with these signal words and/or the symbol shown above.

⚠DANGER

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

⚠WARNING

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

⚠CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices or property damage.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, **MAY** result in property damage.

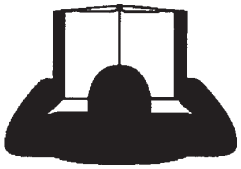
MODEL NUMBER: This number appears on sales literature, technical manuals and price lists.

SERIAL NUMBER: This number appears only on your mower. It contains the model number followed consecutively by the serial number. Use this number when ordering parts or seeking warranty information.

PREPARING FOR SAFE OPERATION

Operator preparation and training

Read the Operation & Safety Manual



- If an operator or mechanic cannot read English, it is the owner's responsibility to explain this material to them. If any portion of this material is unclear, contact your factory representative for clarification.
- Become familiar with the safe operation of the equipment, operator controls and safety signs. Know how to stop the engine and attachments quickly in an emergency. Do not operate or allow another person to operate this machine if there are any questions about safety.
- All operators and mechanics should be trained. The owner is responsible for training the users.
- Wear appropriate clothing, including long trousers and safety goggles or safety glasses with side shields when operating mower. Do not operate barefoot or wearing open sandals. Long hair, loose clothing or jewelry may get tangled in moving parts.
- Wear hearing protection.
- Never allow underage children, unskilled or improperly trained people operate this equipment. Local regulations can restrict the age of the operator.
- Keep warning labels and this operator's manual legible and intact. Replacement labels and manuals are available from the factory.
- Do not operate machine while under the influence of drugs or alcohol.
- The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people or property.

Site preparation and circumstances

- Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Only use accessories and attachments approved by the manufacturer.
- Clear the area to be aerated of objects such as rocks, toys, wire or other debris that may be struck or thrown by the aerator.
- Be sure the area is clear of pets and people, especially young children. Never assume they will remain where you last saw them. Stop the machine if any enter the area.
- Aerate only in daylight or in good artificial light.
- Do not aerate wet grass as tires may lose traction.

Machine preparation

- Check operator presence interlock system and brake operation. Adjust or repair any problems before using.
- Do not tamper with or defeat safety devices. Keep guards, shields and interlock safety devices in place and in proper working condition. They are for your protection.
- Keep all fasteners such as nuts, bolts and pins well secured.
- Visually inspect tires, tine bolts and the aerator mechanism for wear or damage. Replace worn or damaged parts.
- Verify that machine and attachments, if any, are in good operating condition.
- Do not engage traction drive or tines until ready to aerate.

OPERATING SAFELY

In general

- Use extra care when loading or unloading the machine into a trailer or truck.
- Slow down and use caution when making turns and crossing roads and sidewalks. Stop tines if not aerating.
- Do not run the engine in an enclosed area where dangerous carbon monoxide fumes can collect.
- Never leave a machine unattended. Always disengage times, traction drive ans stop engine before leaving machine.

Starting

- Start only according to instructions in this manual or on the machine.
- Before attempting to start the engine, make sure the traction drive and tines are disengaged.
- When starting the engine, make sure hands and feet are clear of the tines.
- Do not change engine governor settings or overspeed the engine. Operating the engine at excessive speed can increase the hazard of personal injury.

Interrupting operation

- Before leaving the operator's position:
  - Park on level ground.
  - Disengage the traction drive and tines.
  - Shut off the engine.
- Disengage the tines and wait until they quit moving:
  - when not aerating;
  - for transport;
  - when crossing surfaces other than grass.
- Stop the engine, disengage the tines and traction drive and wait until the tines stop moving before refueling.
- Stop the engine, disengage the traction drive and tines and disconnect the spark plug wire(s) or remove the key:
  - before checking, cleaning or working on the machine;
  - after striking a foreign object. Inspect the machine for damage and make repairs before restarting;
  - if the machine begins to vibrate abnormally: shut off machine immediately. Inspect and make repairs as needed before restarting;
  - except for repairs or adjustments as specifically noted, such as for carburetor adjustment, where the engine must be running. Keep hands and feet clear of moving parts in these circumstances.
- Allow the tines to come to a complete stop when stopping operation to inspect the machine, do maintenance or repair.
- Reduce the throttle setting during engine shut-down and, if the engine is provided with a shut-off valve, turn the fuel off at the conclusion of aerating.

MANEUVERING SAFELY

In general

- Slow down before turning.
- Be aware when approaching blind corners, shrubs, trees, tall grass or other objects that may obscure vision.

Slopes

⚠ WARNING

Slopes are a major factor in loss-of-control and tipover accidents that sometimes lead to severe injury or death. All slopes require extra caution.

- Do not aerate on slopes if uneasy or uncertain. Ultimate responsibility for safe operation on slopes rests with the operator.
- Do not aerate excessively steep slopes.
- Aerate across slopes, not up and down.
- Avoid starting or stopping on a slope. If tires lose traction, disengage the tines and proceed slowly straight down the slope.
- Keep all movement on the slopes slow and gradual. Do not make sudden changes in speed or direction.
- Do not turn on slopes unless necessary, and then turn slowly and downhill when possible.
- Stay away from slopes if the ground is loose or if caught in the rain during mowing.
- Use lower speeds on a slope to avoid stopping or shifting.

- Remove obstacles such as rocks, treelimbs etc.
- Avoid driving over obstacles such as ruts, holes, rocks and roots whenever possible. Be alert to dips and rises. Uneven terrain can overturn a mower or cause it to slide. Tall grasses can hide obstacles.
- Do not aerate dropoffs, ditches or embankments. The machine could suddenly turn over if a wheel runs over the edge or an edge caves in.
- Do not aerate slopes when grass is wet. Reduced traction could cause sliding.

MAINTENANCE SAFETY

In general

- Maintain machine according to manufacturer's schedule and instructions for maximum safety and best mowing results.
- Park machine on level ground.
- Never allow untrained personnel to service machine.
- Adjust or repair only after the engine has been stopped and the tines have stopped moving.
- Replace parts if worn, damaged or faulty. For best results, always replace with parts recommended by the manufacturer.
- Disconnect battery or remove spark plug wire(s) before making any repairs. Disconnect the negative terminal first and the positive last. Reconnect positive first and negative last.
- Do not dismantle the machine without releasing or restraining forces which may cause parts to move suddenly.
- Provide adequate support, e.g. jackstands for lifted machine or parts if working beneath.
- Do not put hands or feet near or under rotating parts.
- Clean up spilled oil or fuel thoroughly.
- Replace faulty mufflers.
- To reduce fire hazards, keep the engine, muffler, battery compartment and fuel storage area free of grass, leaves, debris buildup or grease.

Tines

⚠ WARNING

- Tines can be sharp and can cut. Use extra caution when handling. Remove obstructions with care.
- Be aware that moving one tine can cause other tines to move.
- Only replace tines. Never straighten or weld them.
- Keep other persons away from tines.

Fuel

⚠ WARNING

- Gasoline and diesel fuels are flammable; gasoline vapors are explosive. Use extra care when handling.
- Store only in containers specifically designed for fuel.
- When refueling or checking fuel level:
  - Stop the engine and allow to cool;
  - Do not smoke;
  - Refuel outdoors only;
  - Use a funnel;
  - Do not overfill;
  - If fuel is spilled, do not attempt to start the engine until the spill is cleaned up and vapors have cleared.
- Do not fill containers in a vehicle or on a truck or trailer bed with a plastic liner. Fill containers on the ground away from the vehicle.
- When practical, remove gas powered equipment from the truck or trailer and refuel it on the ground. If equipment must be refueled on the truck or trailer, refuel from a portable container rather than a dispenser nozzle.

  Keep the dispenser nozzle in contact with the rim of the fuel tank or container opening until fueling is complete. Do not use a nozzle lock-open device.
- Replace caps on fuel cans and tanks securely.

TRANSPORTATION AND STORAGE SAFETY

- Stop the engine and allow to cool before storing.
- Drain the fuel tank outdoors only.
- Store fuel in an approved container in a cool, dry place.
- Keep the machine and fuel containers in a locked storage place to prevent tampering and to keep children from playing with them.
- Do not store the machine or fuel container near heating appliances with an open flame such as a water heater or an appliance with a pilot light.
- Keep gasoline storage area free of grass, leaves and excessive grease to reduce fire hazard.
- Clean grass and debris from cutting units, drives, mufflers and engine to help prevent fires.

OPERATING INSTRUCTIONS

BEFORE AERATING

1. READ OPERATOR'S MANUAL THOROUGHLY
2. BE SURE UNIT IS IN "RAISED" POSITION
3. BE SURE DOG CLUTCH LEVER IS IN "ENGAGED" (DOWN) POSITION
4. START ENGINE PER INSTRUCTIONS IN OPERATOR'S MANUAL
5. PULL CLUTCH LEVER BACK TO HANDLE SLOWLY TO PUT UNIT IN MOTION. TRANSPORT UNIT TO AREA TO BE AERATED

TO AERATE

1. LOWER UNIT TO AERATING POSITION
2. PUSH THROTTLE LEVER TO "FAST" SPEED
3. PULL CLUTCH LEVER BACK TO HANDLE TO AERATE
4. MAKE IT EASY FOR YOURSELF - - TURN WHILE AERATING IT IS NOT NECESSARY TO RAISE UNIT TO MAKE TURNS

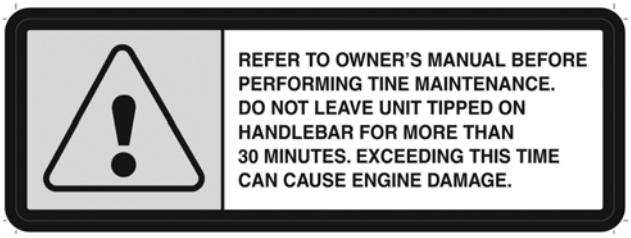
523307

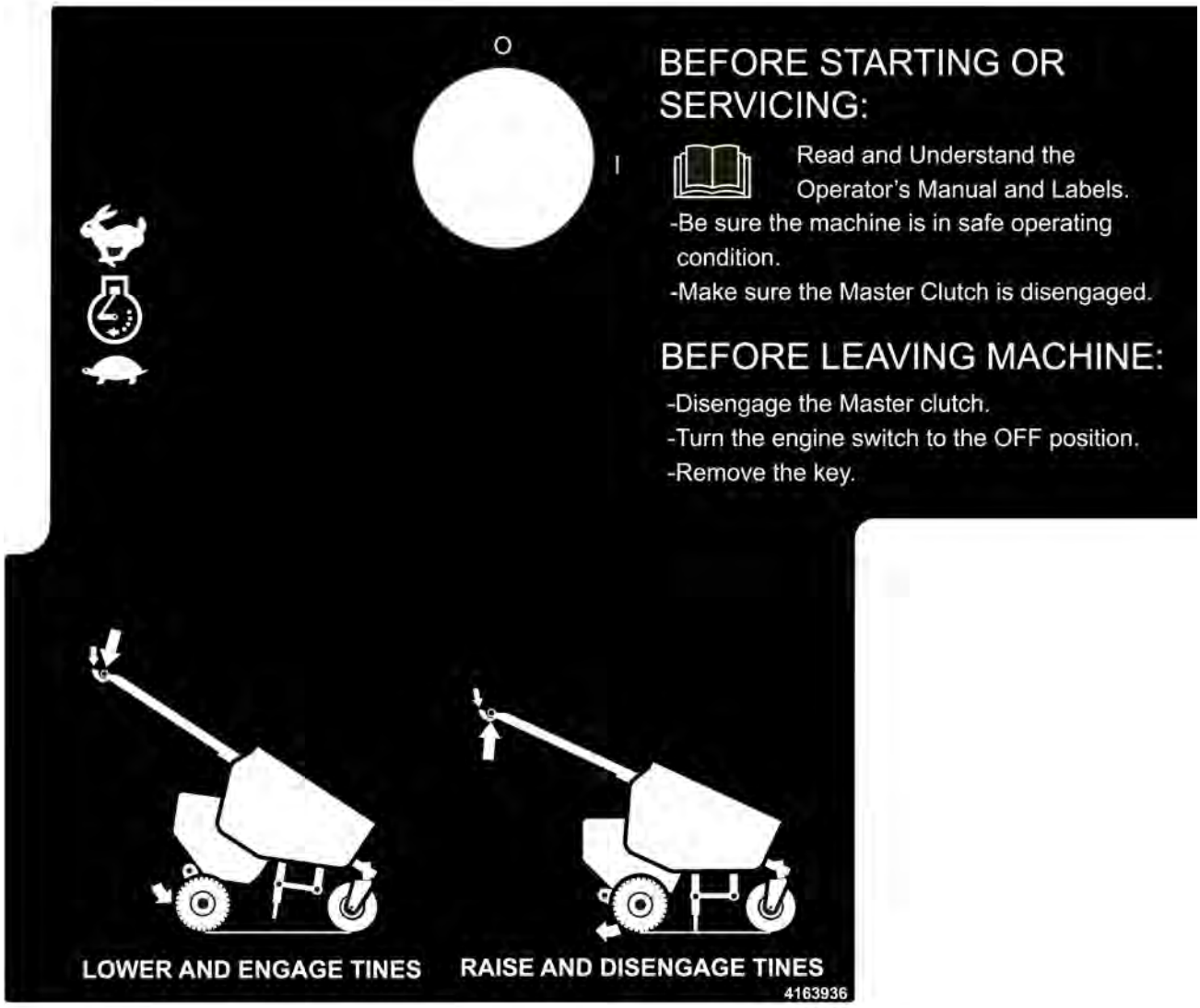
WARNING

Operation of This Equipment May Create Sparks That Can Start Fires Around Dry Vegetation. A Spark Arrestor May be Required. The Operator Should Contact Local Fire Agencies For Laws or Regulations Relating to Fire Prevention Requirements.

--This label meets California 4442.6

4163986




O
I
BEFORE STARTING OR SERVICING:
Read and Understand the Operator's Manual and Labels.
-Be sure the machine is in safe operating condition.
-Make sure the Master Clutch is disengaged.
BEFORE LEAVING MACHINE:
-Disengage the Master clutch.
-Turn the engine switch to the OFF position.
-Remove the key.
LOWER AND ENGAGE TINES
RAISE AND DISENGAGE TINES
4163936


ENGAGE
MASTER CLUTCH
DISENGAGE
4163937


ENGAGE
WHEEL DRIVE
DISENGAGE
4163938

GENERAL NOTE: FRONT, REAR, RIGHT HAND AND LEFT HAND REFERENCES BELOW ARE WITH RESPECT TO AN OPERATOR AT THE CONTROLS.

UNPACKING - Unpacking the aerator entails securing the handle and rolling the unit off the shipping pallet.

1. Cut the banding securing the aerator to the pallet

   ⚠ WARNING

   Banding is under tension and may snap back when cut. Wear eye protection and stay clear when cutting the band.

2. Unhook the two side latches. Pivot the hood forward and remove it from the aerator.

3. Remove the two loose parts bags tied to the unit. These bags contain the hardware required for set-up and an extra set of tines.

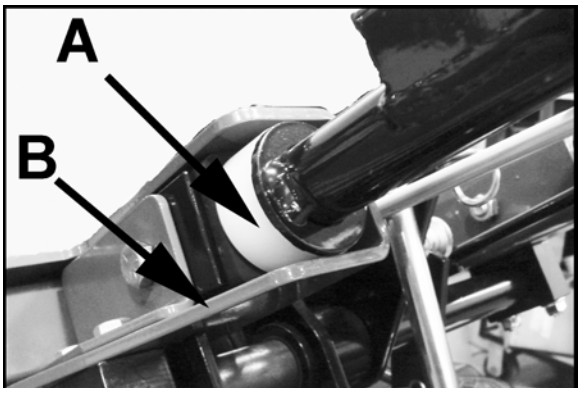
4. Remove the (6) six bolts securing the handle cover to the handle and remove the handle cover.

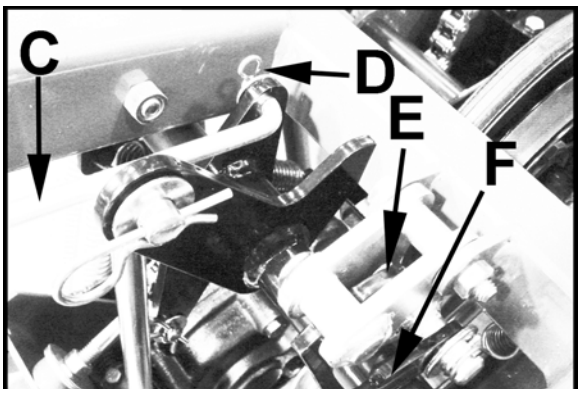
5. Apply a solution of soap and water to the rubber isolators **A** on the handle and, while holding the clutch and latch rods up in their approximate position, slide the handle into the handle mounts **B**. The outside flange of the handle mount should be loosened to allow the handle to be inserted to the proper position.

6. Secure the handle with two (2) 3/8-16 X 2 1/2" screws with locknuts (from hardware bag). Tighten only until snug. The handle must be free to move in the rubber mount.

7. Cut the plastic tie from the clutch lever on top of the handle. Connect the clutch lever rod **C** to the linkage bellcrank **D** and secure it with the 5/16" washer and hairpin cotter from the hardware bag.

8. Unhook the spring from the latch **E**. Slide the hole in the end of the latch rod **F** over the pin on the latch and secure with the 1/2" washer and cotter pin. Reconnect the spring to the latch. Cut the safety tie from the latch after the rod and spring have been attached.



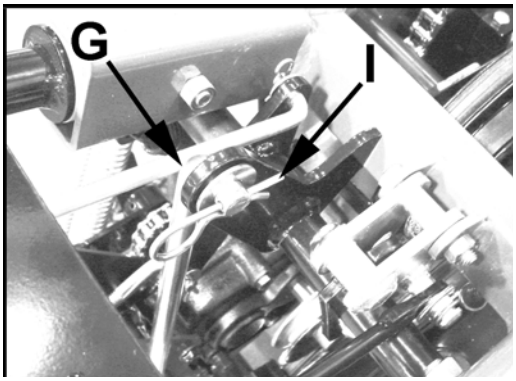


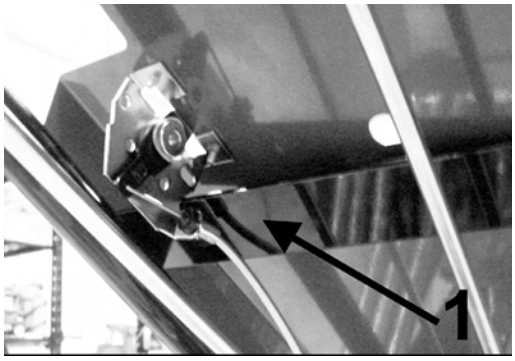
9. Push the latch lever (on the handle) to raise and lower the unit. If the latch drops into the notch easily, when raised and lowered, proceed to step 10. Remove hairpin cotter **I** from rod **G**. Pull rod from Pivot Shaft and adjust by turning rod so that the latch drops into the notch easily when the unit is lowered. Operating the clutch lever with the unit lowered, will allow the rod to be removed for adjustment.

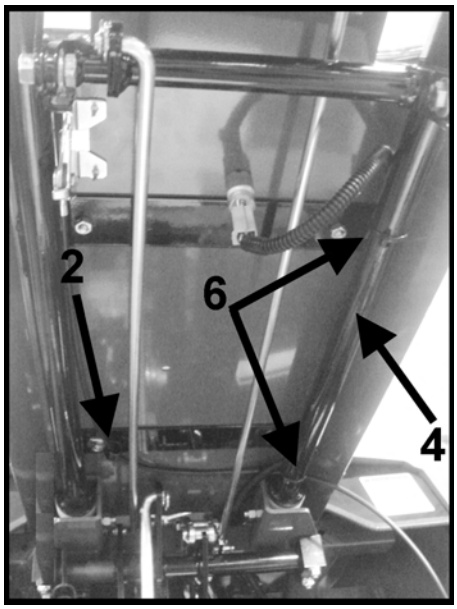
10. Operate the clutch lever to check for positive belt engagement. If belt needs adjustment, refer to Drive Belt Adjustment (page 17).

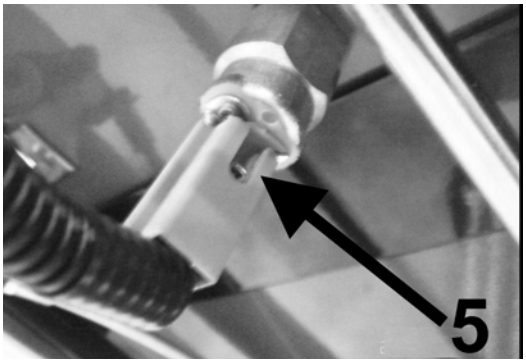
11. Reisntall the handle cover assembly. Route the throttle cable as shown, under the handlebar support **1**. Route the throttle cable through the clip **2** , and then over the handle bar tube. (Note: For ease of cover assembly, the throttle control cable can be removed, then reinstalled.)

12. Install the engine on/off switch **3**. Cut the plastic tie holding the wire harness. Route the wire harness along the handlebar tube **4**. Connect the harness to the switch **5**. The notch in the connector goes on the terminal with the formed detent. Secure the wire harness to the handlebars with two plastic ties **6**.

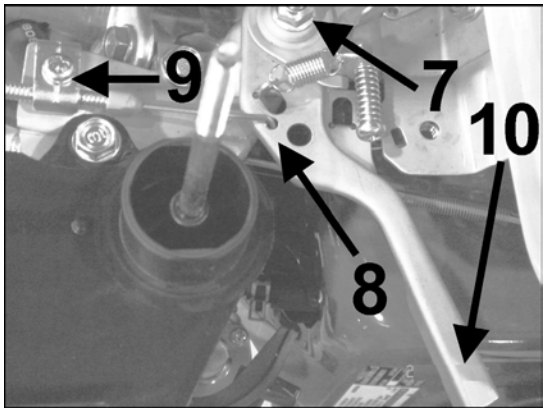




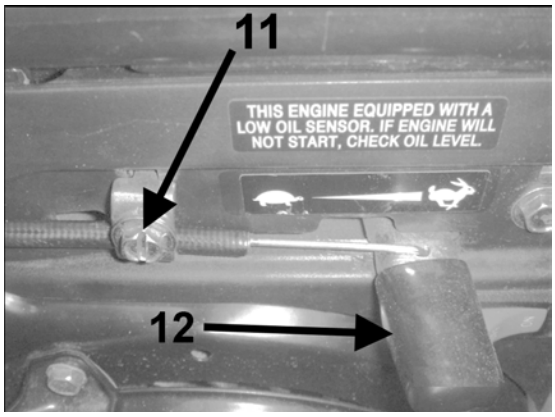




13. HONDA THROTTLE HOOK-UP:
(See step 14 for Briggs throttle hookup.)
-Remove the air cleaner.
-Using a 10mmm socket or wrench, slightly loosen the engine throttle pivot nut **7**, 1/8 of a turn. (this is approximate, adjust as required for proper throttle control feel.)
-Attach the throttle cable as shown, with the "Z-bend" end put into the hole **8** in the carburetor lever.
-Remove the cable clamp **9** on the engine.
-Route the cable under the clamp, and replace the cable clamp leaving it loose.
-Move the throttle control lever on the handle to the fast position, then pull back about 1/8".
-On the engine, move the throttle lever **10** to the fully fast position (far left).
-Tighten cable clamp **9**.



14. BRIGGS THROTTLE HOOK-UP:
-Remove the cable clamp on the engine **11**.
-Insert the "Z-bend" end of the throttle cable into the hole **12** on the throttle arm
-Reinstall the cable clamp leaving it loose with the cable below the mounting screw.
-Move the throttle control lever on teh handle to the "FAST" position, then pull back about 1/8".
-On the eninge, move the throttle lever to the fully fast position (far right).
-Tighten the cable clamp screw.



15. Check the engine oil level (best when done with the machine lowered to the aerating position.)

16. Raise the machine to the transport position and add fuel and start the engine. (Refer to Controls on P. 12 if necessary)

17. Check for full range of throttle movement, and adjust cable position **9** or **11** if necessary.

18. Stop the engine using the key switch, and replace the air cleaner on Honda engines.

19. Reinstall the hood.

ENGINE CONTROLS

The engines are equipped with a choke control and and a fuel shut-off valve.

Choke (A): Choke as required to start the engine (slide control).

Fuel Shut-Off Valve (B): Turn the valve lever to "ON" (horizontal position) to allow fuel to flow from the tank to the engine.

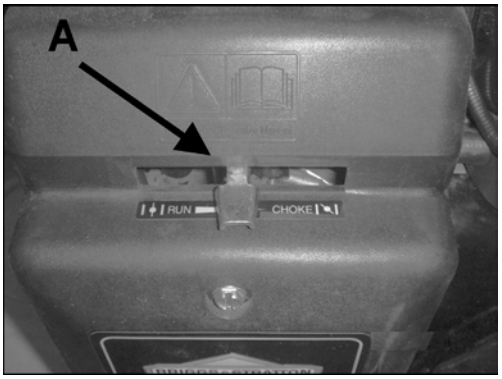
Handle Mounted Engine Shut-Off Key Switch (D): The handle bar mounted key switch needs to be in the ON position to start the engine. To stop the engine turn the key switch to the OFF position.

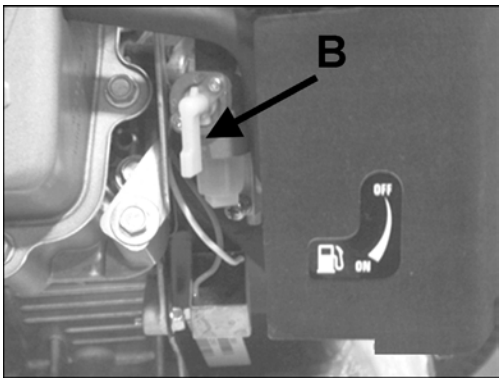
Engine Shut-Off Switch (C): Leave the engine switch in the ON position. The Handle Mounted Engine Shut-Off Key Switch is used to start and stop engine.

BRIGGS: This switch is located under the hood, on the right side of the engine toward the front of the unit.

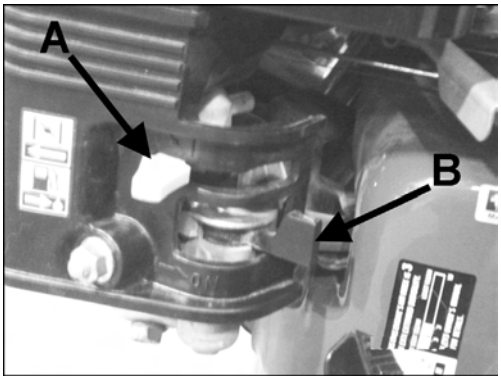
HONDA: This switch is located on the front right side of the unit.

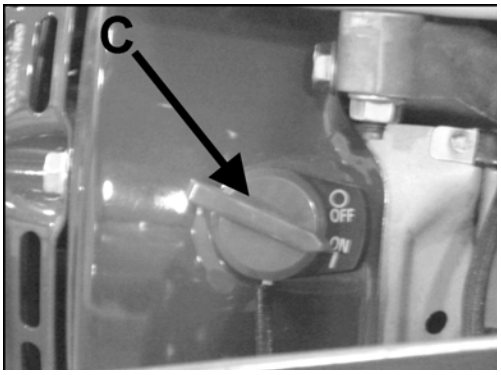
BRIGGS ENGINE:

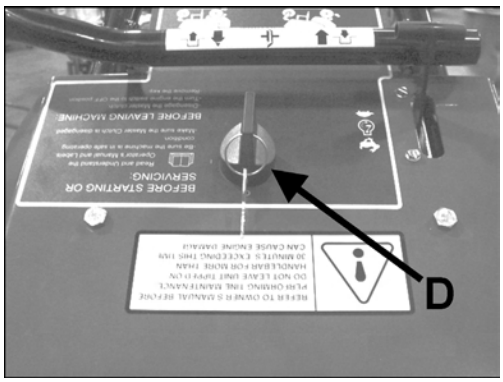




HONDA ENGINE:

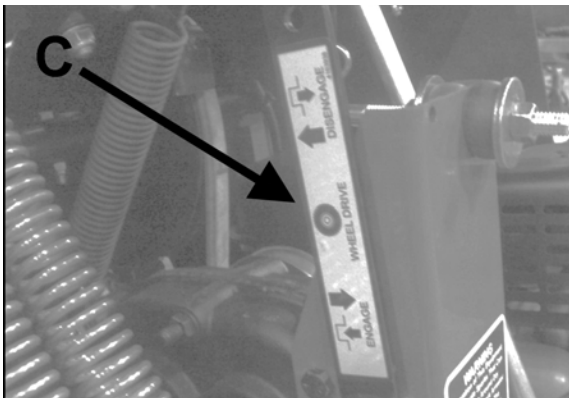






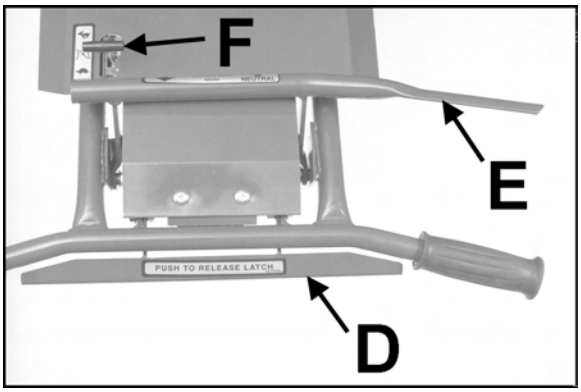
AERATOR CONTROLS

The aerator is equipped with a Dog Clutch Lever **C**, Latch Lock Lever **D**, Clutch Lever **E** and Throttle Control **F**.



Dog Clutch Lever: Controls the drive mechanism. Push the lever down to engage the dog clutch, pull up to disengage. The aerator drive will not operate unless the dog clutch is engaged.

Latch Lock Lever: Locks the aerator in the up or down position. To lower the unit and engage the aerator, push the Latch Lock Lever and push down on the handlebar. To raise the unit and disengage the aerator, push the Latch Lock Lever and pull up on the handlebar.



Clutch Lever: Engages the unit drive. Pull back on the Clutch Lever with the unit raised to transport the unit without operating the aeration mechasism. Pull back on the Clutch Lever with the unit lowered to move the unit forward and begin aerating.

Throttle Control: Adjusts the engine speed. Pushing the control forward increases the speed; pulling the control back reduces the speed.

PRE-OPERATION CHECK

1. Visually check all moving parts and all fasteners. If loose or broken, tighten or replace. Check for and replace any broken, bent or excessively worn tines.

2. Lubricate all lubrication fittings before each days use or after every eight hours of operation (see SERVICE section).

3. Check the engine crankcase oil level with the engine resting in a level position. Add oil if necessary (see SERVICE section).

4. Follow the engine manufacturer's recommendations for the correct type and amount of oil. Fill the fuel tank according to the engine manufacturer's specifications.

⚠ WARNING

Gasoline is extremely flammable and highly explosive under certain conditions. Always stop the engine and do not smoke or allow open flames or sparks when refueling. **BE SURE** to install fuel cap after refueling.

NEVER start or run the engine inside where exhaust fumes can collect. Carbon monoxide present in the exhaust is an odorless and deadly gas.

DO NOT operate equipment without shields in place.

DO NOT make adjustments or perform any maintenance while the engine is running.

Before operating, check the area and remove any object which may present a safety hazard or damage the equipment.

This unit is not designed to be used on steep slopes. To prevent injury and/or damage to equipment, use extreme caution when operating near terraces or hilly terrain. Travel up and down slopes at a 45 degree angle rather that across, to prevent unit from tipping over, **DO NOT** release clutch handle on a slope; this will cause freewheeling, allowing the unit to roll down the slope.

AERATING

NOTE: For best performance and maximum tine penetration, the lawn should be thoroughly watered the day before aeration. Compacted soil conditions will cause the unit to bounce, resulting in possible damage to the tines and undue stress to the unit

⚠ WARNING

DO NOT operate unit unless all shields are in place.

DO NOT make any adjustments or perform any maintenance while the engine is running.

Before operating, check the area to be aerated and remove any objects that may be a safety hazard or cause damage to the unit.

DO NOT place hands or feet beneath the unit at any time.

NOTE: Never cross hard objects or surfaces (such as sidewalks, driveways, stepping stones, etc.) with aerator in the lowered position.

OPERATION TIP

NOTE: Walk through the area to be aerated and mark with flags immovable objects, such as sprinkler heads and water mains.

Be sure the unit is raised, and the fuel shut-off valve on the bottom of the fuel tank is open.

1. Set the throttle control lever to a "middle" position. Place engine key switch in the "ON" position. Pull recoil starter and choke if necessary to start engine.

2. Slowly pull back on the clutch lever and adjust the throttle for a comfortable transport speed. Transport the unit to the work area.

3. Upon reaching the work area, release the clutch lever. Lower the aerator, push the throttle lever all the way forward to "FAST" and pull the clutch lever back to start aerating.

   Aerate across slopes or on steeper grades at a 45^0 angle up and down the slope.

   The unit is designed to make turns while aerating. If the tines damage the turf while making turns, push down on the handlebars while turning to help eliminate the problem.

4. Release the clutch lever and raise the aerator when aerating is completed.

⚠ WARNING

When replacement parts are required, use genuine **Schiller Grounds Care, Inc.** parts or parts with equivalent characteristics, including type, strength and material. Failure to do so may result in product malfunction and possible injury to the operator and/or bystanders.

Replace any warning decal that becomes illegible.

Do not operate equipment without shields in place.

Do not make any adjustments or perform any maintenance while the engine is running.

CLEANING

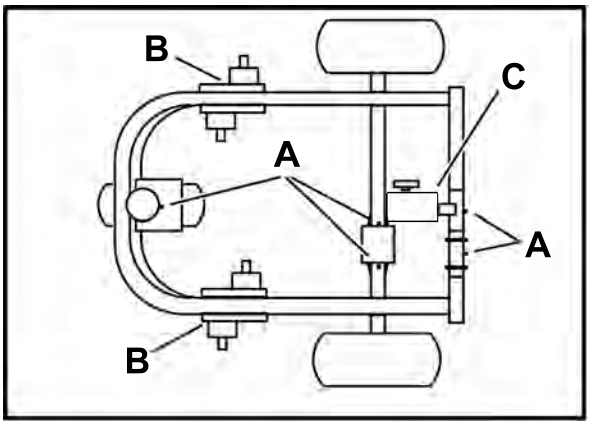
After each day's aerating, remove and thoroughly clean the tines. Apply a light coating of oil to the tines to prevent rust. Replace bent, broken or worn tines and reinstall the tines on the unit. After the engine has cooled, clean the unit with water. Keep the belts free of oil and dirt.

LUBRICATION

Lubrication Fittings - A: The Lawnaire 28 has eight grease fittings. (1) Front wheel pivot, (5) Pivot axle, (2) Differential. Use a standard lithium based grease to lubricate all eight fittings after every eight hours of operation. Wipe each fitting before and after lubricating.

Reversing Gear Boxes - B: Lubrication filled gear boxes should require no additional lubrication, add lithium based gun lubricant if required.

Transmission - C: Remove plug, fill to bottom of plug opening with 80-90W gear lube.



TRANSPORTING

Close the fuel shut-off valve before transporting.

Loading; When using ramps to load the unit for transporting, be sure all three wheels are supported by ramps.

Unloading; When using ramps to unload the unit, engage the dog clutch (lever down) to keep the unit from rolling down the ramp too quickly.

TIRE PRESSURE

NOTE: Improper inflation will shorten tire life considerably.

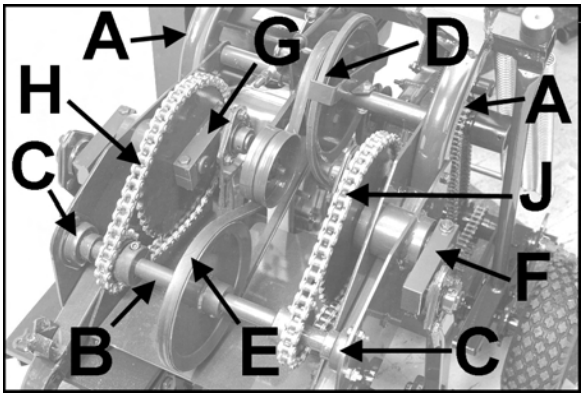
Check tire pressure before each days operation. Keep all three tires inflated to 14-16 PSI (97-110 kPa).

⚠WARNING

Use caution when inflating a tire, or bringing a low tire up to recommended pressure. Use a pressure gauge to check the pressure in a partially inflated tire before connecting an air hose. Due to the low air volume requirements of small tires, over-inflation may reached in a matter of two or three seconds, which may cause the tire to explode.

BELT REMOVAL AND INSTALLATION

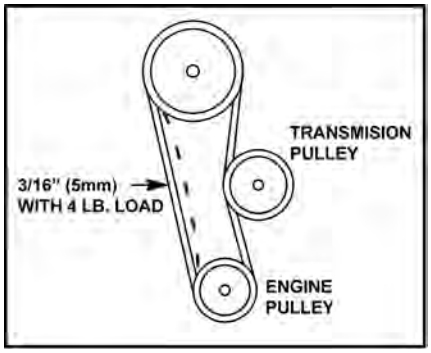
1. Remove the shield covering the aerator mechanism.
2. Remove the two screws **A** securing the ends of the pulley shaft.
3. Remove the hardware from the idler shaft pillow blocks **C**. Move the idler shaft **B** back (toward the rear of the unit) to release the tension on the idler drive belt **E** and aerator chains **H** and **J**.
4. Remove the LEFT aerator chain **J**.
5. Remove both the Idler Drive Belt **E** and the Drive Belt **D**.
6. Put on new belts and reinstall the two screws **A** securing the ends of the pulley shaft.
7. Make sure the RIGHT aerator chain **H** is properly meshed with the sprocket on the idler shaft and reinstall the pillow block on the RIGHT side of the idler shaft. **DO NOT** tighten the pillow block hardware.

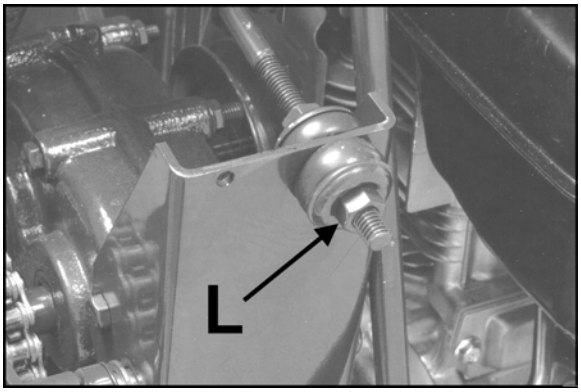


8. Time the aerator by positioning the inner two crank arms **G** level and to the back of the unit (the outer two crank arms **F** will be level and to the front).
9. Install the LEFT aerator chain **J** and the pillow block at the LEFT side of the idler shaft (a pry bar may be necessary to align the holes in the pillow block flange and the frame).
10. Tighten the hardware on both pillow blocks.

DRIVE BELT ADJUSTMENT

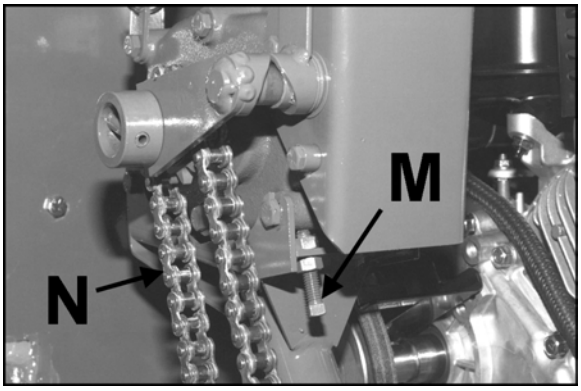
11. Pull back on the clutch lever to engage the drive belt. Adjust the nut **L** on the Drive Belt Adjustment Screw (until there is a 3/16" (5mm) deflection by four pounds of force on the side of the drive belt opposite the transmission
12. Reinstall shields before operating the unit.

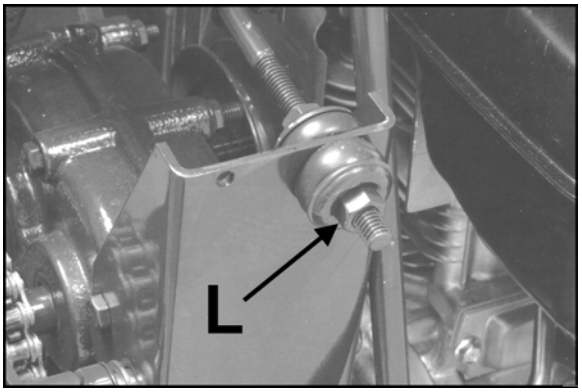


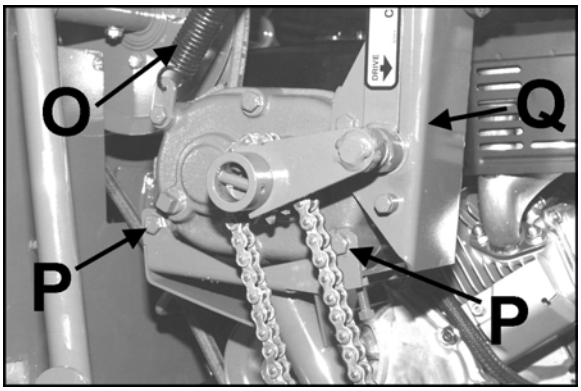


TRANSMISSION REMOVAL

1. Remove the shield covering the aerator mechanism.
2. Loosen primary drive chain adjustment screw **M**.
3. Open the connector link of the primary drive chain **N** and remove the chain from the unit.
4. Disconnect the drive belt adjustment screw **L** from the bellcrank and detach the tension spring **O** from the top of the transmission.
5. Take out the two transmission mounting screws **P** and remove the transmission with the clutch mounting bracket **R**.
6. Remove the clutch mounting bracket **R** from the transmission.
7. Remove the screw securing the dog clutch sprocket to the output shaft and pull the sprocket from the shaft.







TRANSMISSION SERVICE

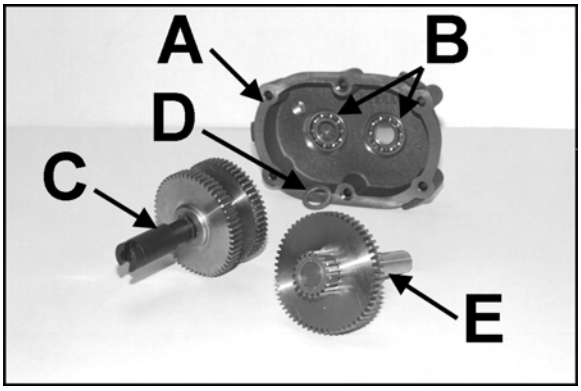
1. With the transmission taken out of the unit, Remove the belt pulley and key from the input shaft.

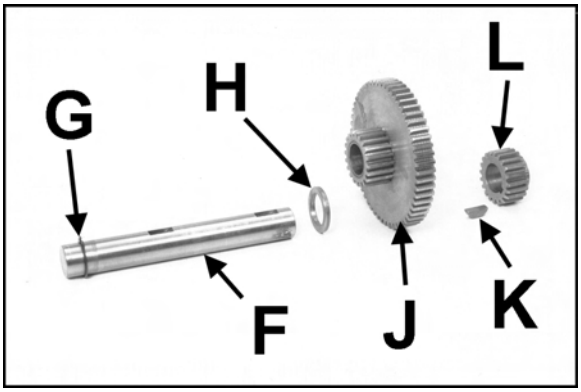
2. Remove one of the drain plugs and drain the oil from the transmission case.

3. Remove the hardware holding the two case halves together, and tap the tabs on the case with a soft hammer (lead, leather, plastic etc.) to break the seal and separate the case halves.

4. Remove both the input **E** and output shafts **C** (with gears) from the case halves. Note the position of the spacer **D** at the end of the output shaft for reassembly.

5. Remove the ball bearings **B** and oil seal from each case half **A**. Install new ball bearings in both case halves but **DO NOT** install new oil seals at this time.





INPUT SHAFT

6. Remove gears, key and spacer from the input shaft **F**.

7. Check shaft **F** for wear and replace if necessary. If replacing shaft, install existing snap ring **G** on new shaft. Check for, and remove any burrs on key ways in the shaft.

8. Replace the press-in bushings in the large double gear **J** (be sure the oil holes in the bushings align properly), or, replace the gear if necessary.

9. Reinstall the spacer **H** on the shaft **F** next to the snap ring **G**, then the large double gear **J** with the smaller end next to the spacer, followed by the key **K** and small gear **L** with the flat end of the small gear facing the large gear.

TRANSMISSION SERVICE

OUTPUT SHAFT

10. Remove both of the gears and key from the shaft **A**.

11. Check the shaft **A** for wear and replace if necessary. If replacing shaft, install existing snap ring **B** on new shaft. Check for, and remove any burrs on key ways in the shaft.

12. Replace the press-in bushings in the double gear **E** (be sure the oil holes in the bushings align properly), or, replace the gear if necessary.

13. Reinstall the key **C** and single gear **D** on the output shaft **A**. The end of the gear with the higher step should face the snap ring **B**.

14. Install the double gear on the shaft with the small end facing the single gear.

15. Install the spacer **F** on the shaft next to the double gear. Be sure the spacer at the end of the output shaft stays in position while installing gears in case halves.

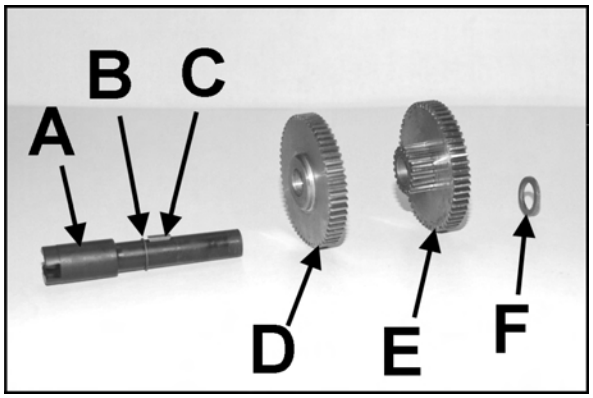
16. Install both shafts with gears into one of the case halves. Rotate one shaft to make sure the other turns and keys are in proper location.

17. Apply Loctite 515, or equivalent, to the mating edges of the case halves. Be sure the case alignment spacers are in place in the upper and lower middle holes and put the two halves of the case together.

18. Install the clutch bracket and hardware (with screw heads on the input shaft side). Torque the hardware to 16 ft. lbs. (22 N·m).

19. Apply some 30W oil to the lips of the oil seals and install one on each side of the transmission.

20. Reinstall pulley and sprocket.



21. Position the transmission in its mounting location. Remove one of the filler plugs and fill the case to the bottom of the filler hole with 80-90W gear lube. Reinstall the filler plug.

22. Mount the transmission back on the unit and reconnect the drive belt adjustment screw and tension spring.

23. Align the belt pulley by loosening the set screw and moving the pulley on its shaft until it aligns with the drive belt. Tighten the set screw.

24. Check the drive belt tension and adjust if necessary (See drive belt adjustment).

25. Reinstall the primary drive chain and chain adjustment screw. Adjust screw to obtain 1/8" - 1/4", (3 - 6mm) deflection in the chain at the center point of the chain's span between the two sprockets.

NOTE: Excessive roller chain tension will shorten bearing life.

26. Reinstall shields before operating the unit.

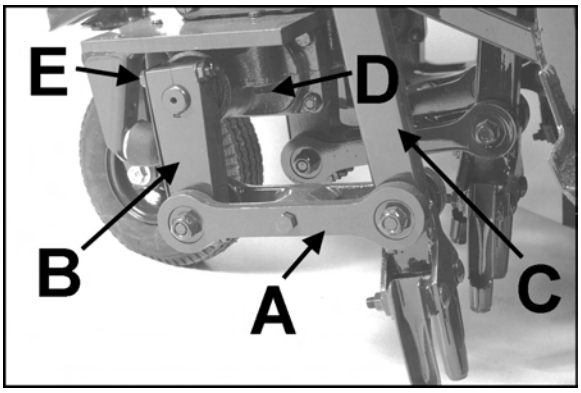
REVERSING GEAR BOX REMOVAL

1. Remove the shield covering the aerator mechanism.

2. Remove the return links **A** connecting the tine arms **C** to the vertical links **B** by unscrewing the hardware and separating the two halves. Note the position of the washers for reinstallation.

3. Remove the four (4) screws **D** holding the reversing gear box to the mounting plate and remove the reversing gear box with the vertical links still attached.

4. Loosen the two (2) screws **E** securing the vertical link to the reversing gear box shaft. Remove the vertical link by sliding it off of the shaft

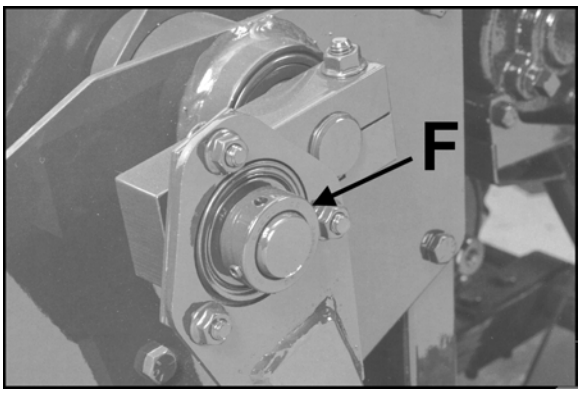


REVERSING GEAR BOX INSTALLATION

5. When work on the reversing gear box is complete, reinstall by reversing the preceding procedure.

   When reassembled, the tine arms should be vertical side-to-side. If they are not, loosen the set screws in the crankshaft bearing lock collar **F** and slide the bearing in or out on the shaft until the tine arm is vertical.

6. Rotate the crankshaft by hand to make sure the tine arms do not bind.



TINE REPLACEMENT

1. For ease of tine removal, the unit can be tilted back on the handlebars. Before tilting machine, turn the engine fuel valve to the OFF position.

2. Replace tines.

3. Tilt unit back up.

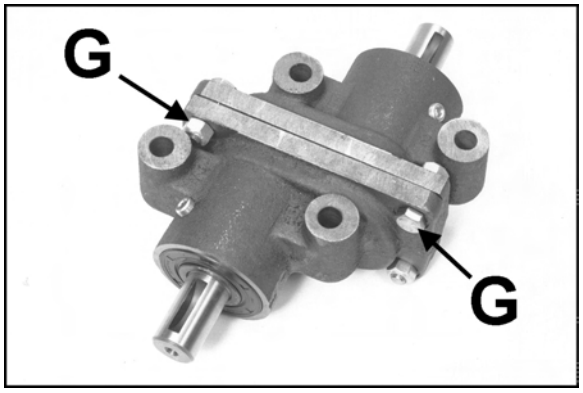
4. Turn fuel valve on.

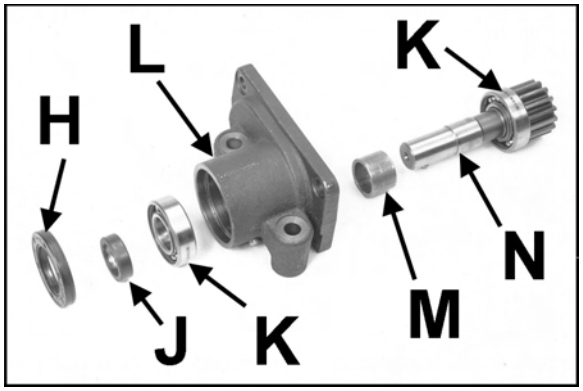
5. Wait 10 minutes after returning unit to the upright position to start the engine. This will allow oil from the valve cover to return to teh crankcase and prevent engine damage.

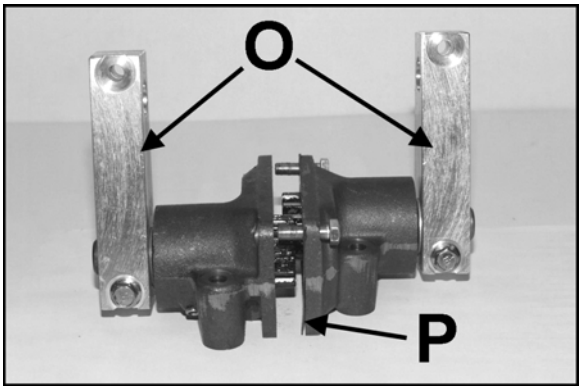
REVERSING GEAR BOX SERVICE

1. Remove the gear box from the unit.
2. Remove the hardware **G** holding the two case halves together.
3. Remove the oil seals **H** from each end of the gear box and separate the two halves **L**.
4. Use a soft hammer (lead, plastic, leather, etc.) to remove the shaft **N** from each case half.
5. Separate all of the components (press the bearings **K** off of the shaft **N** and out of the case half **L** if they need to be replaced). Clean the components and check for wear, replace parts as required.
6. Press new bearings **K** onto shafts if required, install inner spacers **M** and insert shafts into case halves.
7. Install outer bearing and spacer **J**. Apply 30W oil to the lips of the oil seals **H** and install one on each half of the gear case.
8. Reinstall the vertical links **O** on the gear box shafts. Be sure that the link is oriented so that the wear strip will face forward when the gear box is remounted.
9. Insert two screws through one of the case halves and install a new gasket **P** over the screws.
10. Place the two halves on a flat surface with the gears facing each other and the flat (mounting) side down. Turn the vertical links so that they are both pointing straight up. Be sure the gear teeth mesh and put the two case halves together. Install all of the hardware but **DO NOT** tighten.
11. Slide the case halves against each other to eliminate backlash (play between the shafts) and tighten the hardware. Torque hardware to 30 ft. lbs. (41 N·m).

NOTE: Shafts must rotate 180° from original position shown without binding.







12. Pump lithium based gun lubricant in one plug hole until it starts to come out of the other. Apply thread sealant to the threads of the plugs and reinstall the plugs.
13. Reinstall gear box.

STORAGE INSTRUCTIONS

⚠ WARNING

To prevent possible explosion or ignition of vaporized fuel, do not store equipment with fuel in tank or carburetor in enclosure with open flame (for example, a furnace or water heater pilot light).

Before the equipment is put in to storage for any period exceeding 30 days, the following steps should be taken.

1. Drain all fuel from the fuel tank and fuel lines.
2. Start the engine and run until all the fuel is used from the carburetor float bowl.
3. While the engine is still warm, drain the crankcase oil and replace with the proper weight oil corresponding to the season the equipment will next be used.
4. Remove the spark plug and squirt a small amount of engine oil into the cylinder. Turn the engine over a few times to distribute the oil.
5. Lubricate all lubrication fittings.

To put the equipment into service after an extended period of storage:

1. Check for loose parts and tighten if necessary.
2. Check for cracked or broken tines and replace as necessary.
3. Fill the fuel tank.
4. Check the engine and gear reduction case oil levels with the engine in a level position.
5. Start the engine.
6. Check for fuel leaks.
7. Check clutch control operation to make sure the unit stops when the clutch control is released.

SPECIFICATIONS

Features:
Tricycle front wheel for easy maneuverability.

Rubber isolated handlebars and spring assist lift for easy, comfortable operation.

Sealed precision ball bearings in tine arms and linkage.

Engine:
Model 544874F.....B&S 12H332
Type 0144, Trim B8
4 cycle 6.5 H.P. Briggs & Stratton Vanguard
12.5 cu. in. (206 cc)

Model 544887.....Honda GX200UTQX2
4 cycle 5.5 H.P. Honda GX Series
11.9 cu. in. (196 cc)

Starter.....Recoil, on/off switch
Governor..... 3600 RPM, no load

Drive:
Primary..... V Belt / Roller chain
beveled gear differential

Tires:
Front..... 2.80 / 2.50 - 4
Rear..... 4.10 / 3.50 - 4

Dimensions:
Width..... 41" (1041 mm)
Length..... 57" (1448 mm)
Width..... 34" (864 mm)
Weight..... 400 lbs. (183 Kg)

Aeration:
Aerating Width..... 28" (711 mm)
Tines.... Eight (8) 3/4" (19 mm) heat treated tines on four (4) tine arms
Coring Depth..... 2 1/2" (64 mm) max.
Coring Diameter..... 3/4" (19 mm) max.
Coring Pattern.. 3 1/2" x 5" (89 x127mm)
Production..... up to 24,00 sq. ft./ hr (2230 M^2 / hr)

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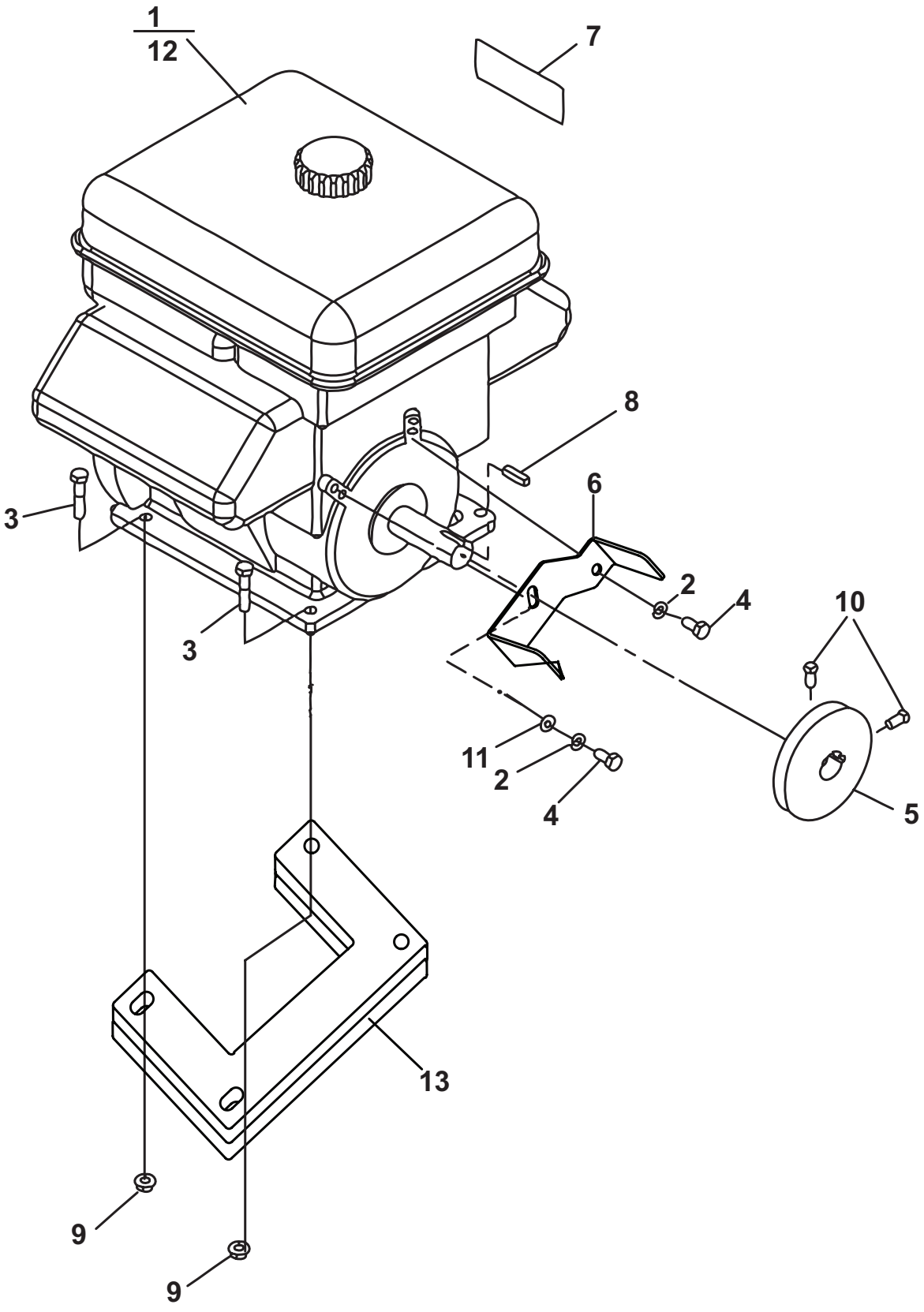
PARTS SECTION

FIGURE 1



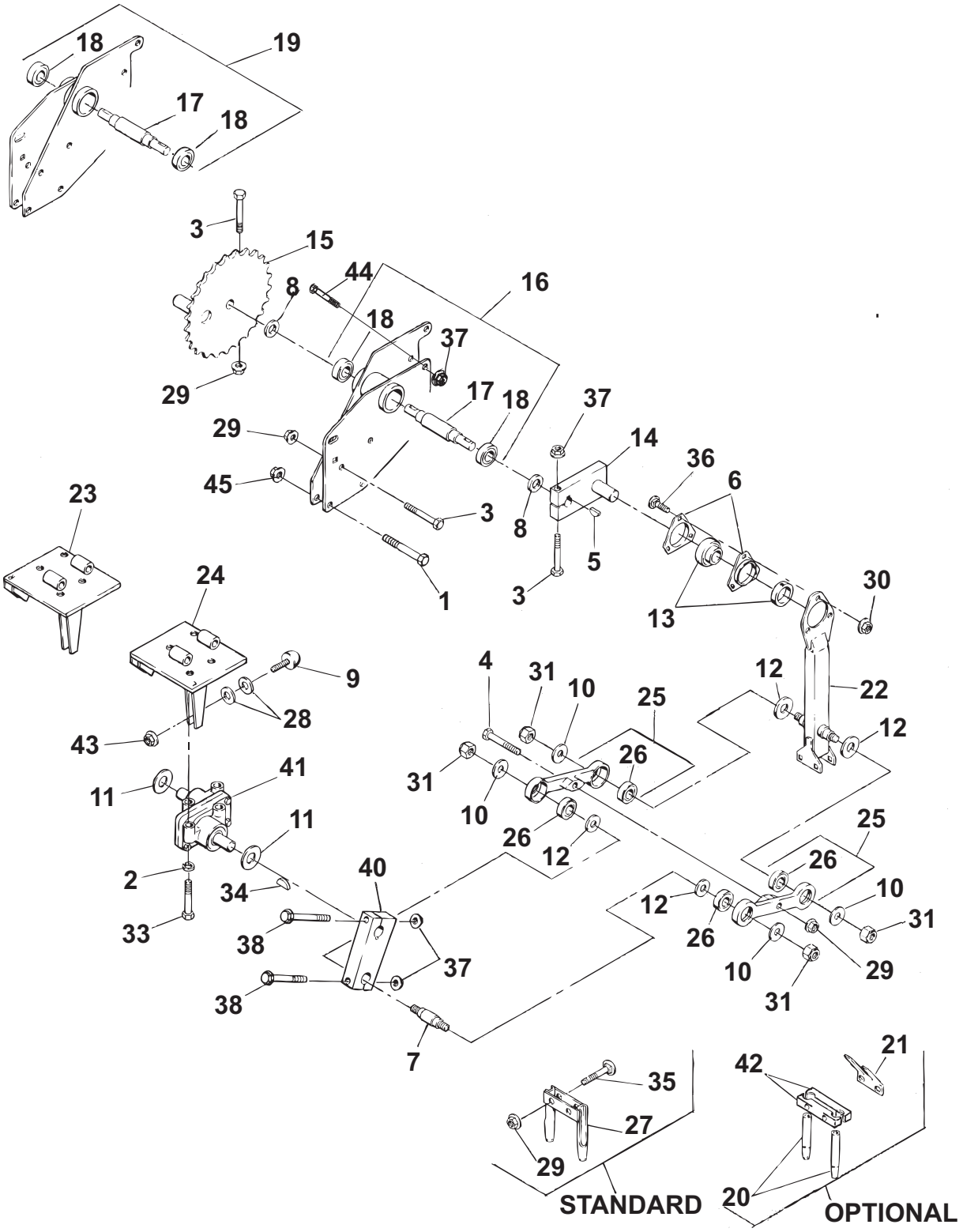
ENGINE MOUNTING

FIGURE 1

ITEM	PART NO.	DESCRIPTION	QTY
1	4163520	ENGINE,5.5 HP HONDA (USED ON 544887 MODEL ONLY)	1
2	64006-02	LOCKWSHR-HELICAL 5/16	2
3	64139-23	BLT-WLF 5-16-18 X 1-3/4	4
4	306861	SCRW,.31-24.625	1
5	517137	PULLEY,4 IN. DIA	1
6	4163352.7	GUIDE, BELT	1
7	524798	DECAL,NOTICE OIL	1
8	64164-11	KEY-3/16X3/16X1 1/4 SQ	1
9	64141-6	NUT, WLF LOCK 5/16-18	4
10	64044-18	SCREW-SET 5/16-18X3/8	2
11	64163-55	WSHR .328X.75X14 GA	1
12	4163322	ENGINE, 6.5 HP B&S (USED ON 544874F MODEL ONLY)	1
13	4164058.7	PLATE-SPACER, ENGINE	2

ITEM	PART NO.	DESCRIPTION	QTY

FIGURE 2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STANDARD
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OPTIONAL

FIGURE 2

ITEM	PART NO.	DESCRIPTION	QTY
1	64123-125	BOLT-HEX 1/2-13X2-3/4	4
2	64006-06	LOCKWSHR-HELICAL 7/16	8
3	64123-100	BOLT-3/8-16X2-1/4 HEX	12
4	64123-79	BLT-HEX 3/8-16X3-1/4	4
5	64164-28	KEY-#808 WOODRUFF	4
6	522723	FLANGE, BEARING	8
7	522724	PIN	4
8	522740	SPACER (PLATED)	4
9	523126	BUMPER-RUBBER	4
10	523222	WASHER,THRUST (PLTD)	16
11	523240	WASHER, THRUST	4
12	523249	WASHER, DUST (PLATED)	16
13	545786	BEARING ASSEMBLY	4
14	545992.7	WLDMT-CRANK ARM	2
15	545993.7	WLDMT SPROCKET, CRANK	2
16	547504	ASSY-BEARING HOUSING LH (INCLUDES ITEMS 17 & 18)	1
17	522735	CRANKSHAFT	2
18	523127	BEARING, BALL	4
19	547505	ASSY-BEARING HOUSING RH (INCLUDES ITEMS 17 & 18)	1
20	523326	TINE, 3/4" (19mm)	8
21	522971.7	DEFLECTOR, CORE	4
22	547509.7	ARM, TINE	4
23	4164124.7	WLDMT-GEARBOX MTG RH	1
24	4164123.7	WLDMT-GEARBOX MTG LH	1
25	547655	ASSY-RETURN LINK (INCLUDES ITEM 26)	8
26	832498	BEARING, .67 1.57.47	16
27	547709	TINE, AERATING	4
28	548159	WASHER, PLAIN	8
29	64141-4	NUT-WLF 3/8-16	26
30	64141-6	NUT-WLF 5/16-18	32
31	64151-27	NUT-HEX 1/2-20 EDGE LOCK	16
32	64141-13	NUT WLF 1/2-13	4
33	319773	SCRW,.44-14 2.50	8
34	800519	KEY,WDRUF.25 X 1.25 PS	4
35	64018-31	BLT-CRG 3/8-16X2 1/2	8
36	64018-9	BLT-CRG 5/16-18X3/4 G5	12
37	64268-03	NUT-FL NYLN LOCK 3/8-16	14
38	6426014	BLT-FLG HD 3/8-16 X 2	8
39	64268-02	NUT-FL NLYON LOCK 5/16-18	4
40	4163729	LINK, VERTICAL	4
41	890981	GEARBOX, REVERSING (INCLUDES ITEMS 11, 34, 37, 38 & 40)	2
42	522757.7	HOLDER, 3/4" TINE	8
43	64268-02	NUT-FL NYLON LOCK 5/16-18	4
44	64123-82	BLT-HEX 3/8-16 X 2-1/2	2
45	64141-13	NUT-WLF 1/2-13	1

FIGURE 3

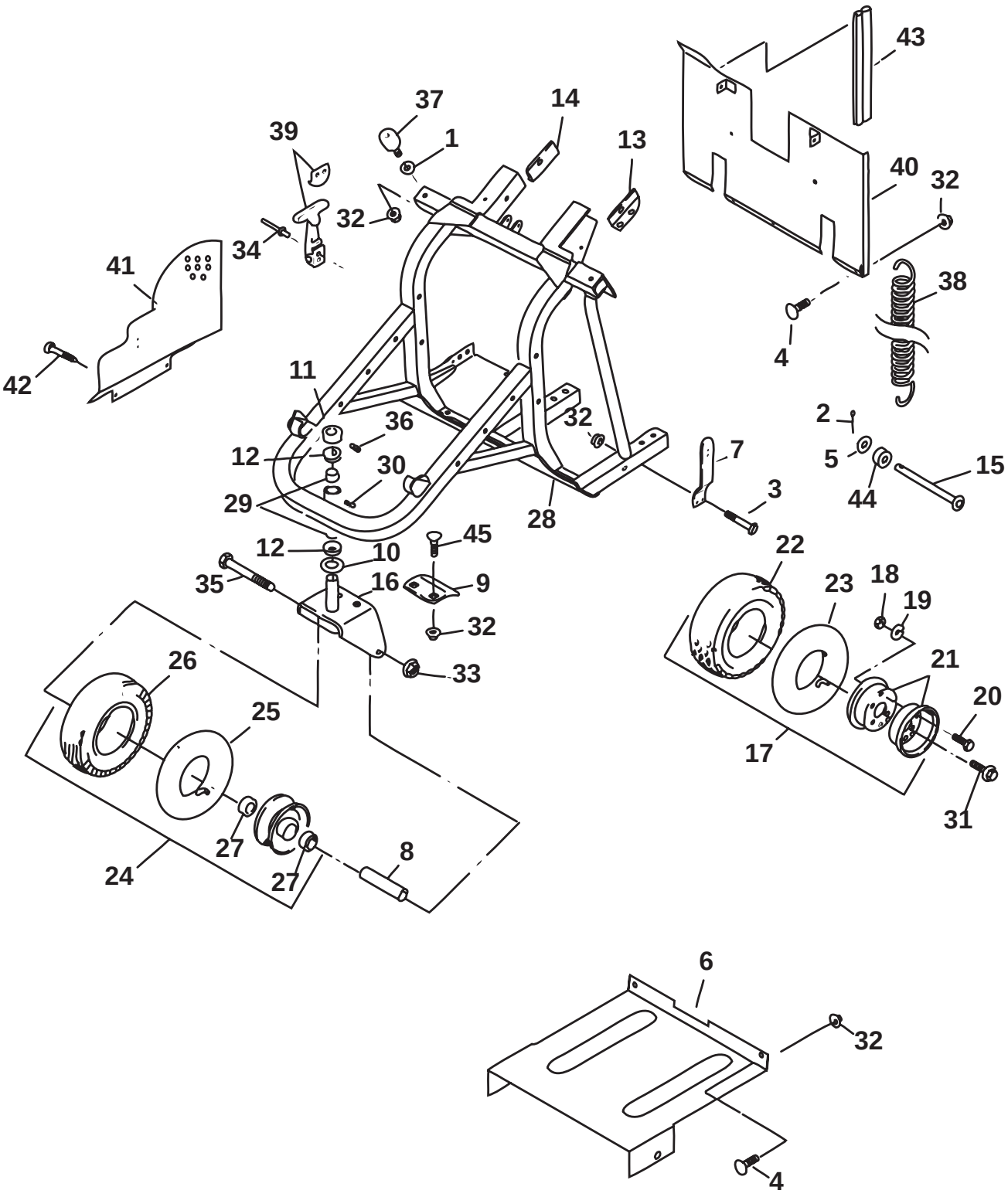
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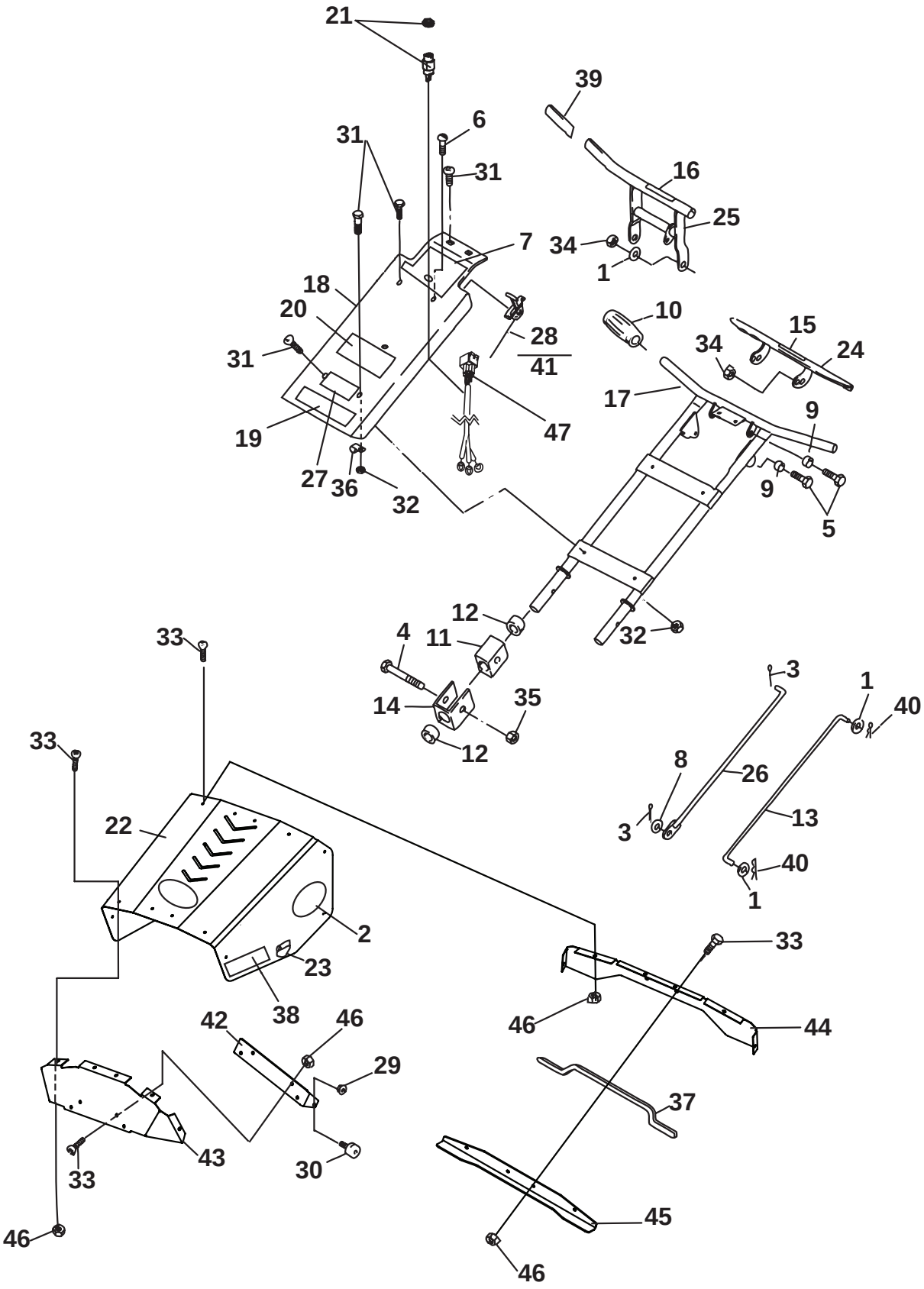
FIGURE 3

ITEM	PART NO.	DESCRIPTION	QTY
1	64163-29	WASHER-21/64 X 1 X 11GA	1
2	64140-1	COTTER PIN-1/8X1	1
3	64123-56	BLT-HEX 5/16-18X2	2
4	64139-08	BLT-WLF 5/16-18X3/4	7
5	64163-67	WASHER-.516X1X12GA	1
6	4163565.7	SHIELD, DIRT	1
7	4163768.7	BRACKET-HOOD LATCH	1
8	523053	SPACER,.51 .75 3.28 ZS	1
9	523094.7	SCRAPER-FRONT WHEEL	1
10	64163-64	WSHR 1.015X1.500X14GA	1
11	523325	COLLAR, LOCKING	1
12	523815	SEAL,V-RING	2
13	524002.7	ANGLE-HNDLE MOUNT LH	1
14	524001.7	ANGLE-HNDLE MOUNT RH	1
15	547499	WLDMT-ROD	1
16	547507.7	YOKE-FRONT AXLE	1
17	4124196	WHEEL AY	2
	(INCLUDES ITEMS 18-23)		
18	64025-03	NUT-HEX 5/16-24	4
19	64006-02	LOCKWSHR-HELICAL 5/16	4
20	306861	SCRW,.31-24.625 YS HX	8
21	517332	WHEEL HALF	2
22	523264	TIRE-4.10/3.50-4 2 PLY	1
23	548546	TUBE-4.10/3.50-4	1
24	4124197	WHEEL AY	1
	(INCLUDES ITEMS 25-27)		
25	523261	TUBE-2.80/2.50-4	1
26	523262	TIRE-2.80/2.50-4 4 PLY	1
27	523263	BEARING-BALL	2
28	540220	ASSY-FRAME	1
	(INCLUDES ITEMS 29 & 30)		
29	523430	BEARING,BRONZE	2
30	4165962	ZERK-1/4-28 90° SELF TAP	1
31	64139-08	BOLT-WLF 5/16-18X3/4	8
32	64141-6	NUT, WLF 5/16-18	13
33	64141-13	NUT WLF 1/2-13	1
34	64215-02	RIVET-POP IFI# 44	4
35	800537	SCRW,.5-13 4.25 YS HX	1
36	800554	SSCRW,.25-20.68 BS	2
37	05-042	MOUNT,ISOLATION	2
38	832525	SPRING,EXTENSION	3
39	888102	LATCH AY	2
40	4163769.7	WLDMNT-SHIELD AY	1
41	4163767.7	PANEL, SIDE RGN	1
42	64152-27	SCREW ,1/4-20X5/8 LG SP	2
43	108194-06	SEAL, PUSH ON 25:5"	1
44	517162	SPACER	1
45	64018-9	BLT-CRG 5/16-18X3/4 G5	2

ITEM	PART NO.	DESCRIPTION	QTY

FIGURE 4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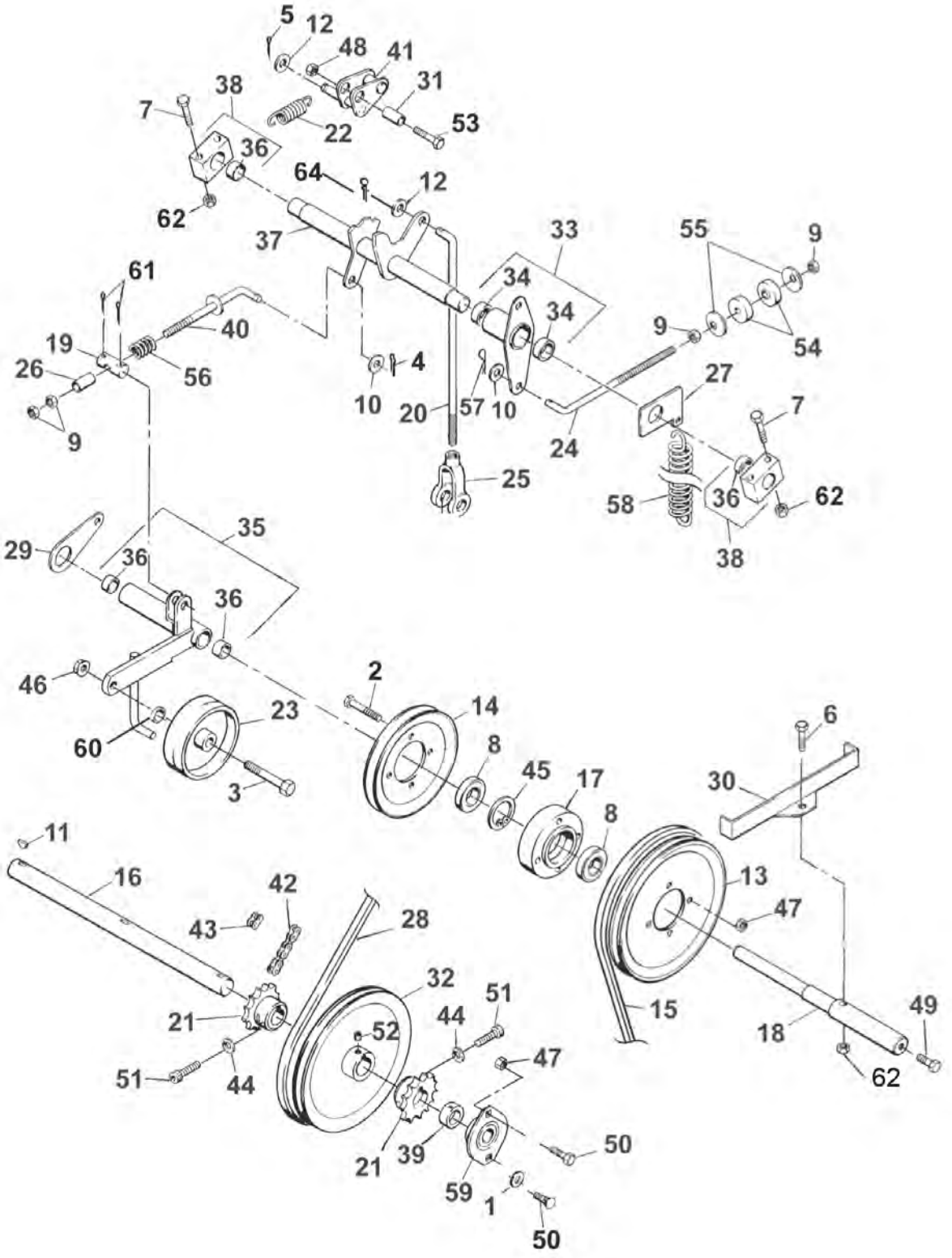
HANDLEBAR & SHROUD

FIGURE 4

ITEM	PART NO.	DESCRIPTION	QTY
1	64163-55	WASHER .328X.75X14 GA	5
2	4163976	LABEL-RYAN	3
3	64140-3	COTTER PIN-3/32X3/4	4
4	64123-82	BLT-HEX 3/8-16X2-1/2	2
5	64123-54	BLT -HEX 5/16-18X3/4	4
6	64152-18	TSCRW #8-32 TTFM	2
7	4163936	DECAL,CONTROL PANEL	1
8	64163-67	WASHER-.516X1X12GA	1
9	515268	BUSHING	4
10	522727	GRIP,HANDLE	2
11	522730	CUSHION, RUBBER	2
12	523158	SLEEVE, HANDLE MOUNT	4
13	524482	ROD, ENGAGEMENT	1
14	523267.7	CHANNEL	2
15	523306	DECAL-LIFT	1
16	4163937	DECAL, CLUTCH	1
17	547503.7	HANDLEBAR AY	1
18	547520	S-ASSY COVER (INCLUDES ITEMS 2, 7 & 19-21)	1
19	523307	DECAL, OPER INSTRNS	1
20	524798	DECAL,WARNING	1
21	38148	SWITCH-ENGINE STOP	1
22	4164053	S-ASSY HOOD W/ LABELS	1
23	4163939	DECAL,DANGER HND/FT	2
24	547567	S-ASSY, LOCKOUT BAR	1
25	547583	S-ASSY, CLUTCH HANDLE	1
26	547620	ROD AY	1
27	4163592	LABEL-BELTS/SERV	1
28	4163186	CONTROL AY,THROTTLE (USED ON B&S MODEL ONLY)	1
29	64141-6	NUT, 5/16-18	2
30	829148	MOUNT,ISOLATION	2
31	64123-49	BLT-HEX 1/4-20X1/2	6
32	64151-17	LOCKNUT, HEX	6
33	64262-006	BLT-HEX 5/16-18X3/4	20
34	64151-15	5/16-18 HEX NUT CNTRLK	4
35	64151-18	NUT-HEX	2
36	48228A	CABLE CLIP-INSULATED	1
37	4132722	TRIM- PUSH ON 12'	A/R
38	4162988	LABEL-LAWNAIRE 28	2
39	523139	GRIP	1
40	64168-2	COTTER-HAIRPIN .08-1.19	2
41	2703185	CONTROL AY,THROTTLE (USED ON HONDA MODEL ONLY)	1
42	4163770.7	SUPPORT-HOOD PIVOT	1
43	4163766.7	PANEL-HOOD, FRONT	1
44	4164066	S-PANEL-HOOD, REAR	1
45	4163801.7	BRKT-BUMPER	1
46	64268-02	NUT-FLG NYLON 5/16-18	20
47	4163941	HARNESS-ENG,CONTROL	1

*** NOT ILLUSTRATED**

FIGURE 5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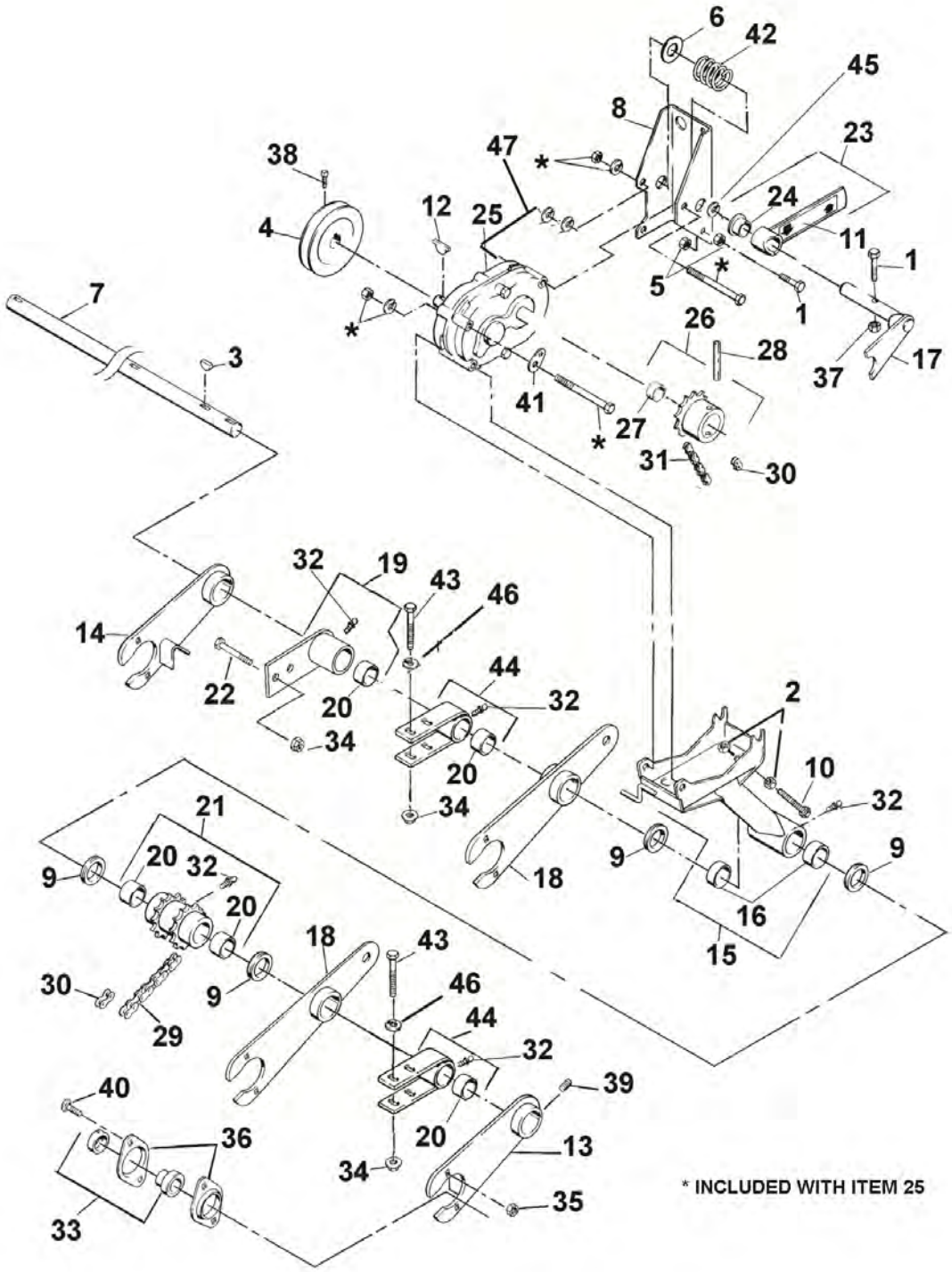
AERATOR DRIVE

FIGURE 5

ITEM	PART NO.	DESCRIPTION	QTY
1	64163-55	WASHER .328X.75X14 GA	2
2	64123-47	BLT-HEX 5/16-18X1-1/4	4
3	64123-67	BLT-HEX 3/8-16X2	1
4	64168-2	COTTER HAIRPIN-.018X1.19	1
5	64140-3	COTTERPIN- 3/32 X 3/4	1
6	64123-61	BLT-HEX 5/16-18X1-3/4	1
7	64123-64	BLT-HEX 5/16-18X2-1/4	5
8	832499	BEARING, BALL	2
9	64025-05	NUT-3/8-16 HEX	4
10	64163-61	WSHR .81X.406X16GA	2
11	64164-28	KEY-#808 WOODRUFF	3
12	64163-67	WASHER-.516X1X12GA	2
13	522717	PULLEY, 8" (203mm)	1
14	522720	PULLEY, 6" (152mm)	1
15	4163515	V-BELT	1
16	522746	JACKSHAFT	1
17	522760	HUB-PULLEY	1
18	522771	SHAFT	1
19	522793	PIN-BELT TIGHTENER	1
20	522827	ROD, LINKAGE	1
21	522889	SPROCKET,15T 5/8P	2
22	522943	SPRING,EXTENSION	1
23	38184-2	PULLEY, IDLER 4.00 DIA.	1
24	523011	ROD,ADJUSTMENT PLTD	1
25	523154	YOKE END	1
26	523221	SPACER (PLATED)	1
27	523226.7	PLATE-SPRING MOUNT	1
28	523268	V-BELT	1
29	523280.7	BRACKET-SPRING LATCH	1
30	523405.7	GUIDE	1
31	523485	BUSHING	1
32	545991	PULLEY, FRONT	1
33	547501	S-ASSY BELLCRANK (INCLUDES ITEM 34)	1
34	515376	BUSHING	2
35	547516	S-IDLER ARM (INCLUDES ITEM 36)	1
36	523160	BUSHING	4
37	547582.7	SHAFT-PIVOT	1
38	547608	S-PIVOT BLOCK (INCLUDES ITEM 36)	2
39	832440	COLLAR,LOCKING	2
40	547619	ROD AY (PLATED)	1
41	547739	WLDMT-LATCH, LOCKOUT	1
42	4162886	CHAIN-#50 ROLLER NP	2
43	4163063	LINK,#50 CONNECTOR NP	2
44	64006-16	LWSHR-5/16 HI COLLAR	2
45	64144-17	SNAP RING	1
46	64141-4	NUT-WLF 3/8-16	1
47	64141-6	NUT, WLF 5/16-18	12
48	64151-15	NUT-HEX 5/16-18 CTRLCK	1
49	64139-21	BLT-WLF 3/8-16X3/4	2
50	64123-54	BLT-HEX 5/16-18X3/4	4
51	800513	SCREW-HEX 5/16-18-1-1/4	2
52	64044-3	SCREW-SET 3/8-16X5/16	2
53	64123-56	BLT-HEX 5/16-18X2	1
54	810157	BUSHING, SHOCK MNTNG	2
55	64163-82	WSHR-FLAT .406X1.44X9GA	2
56	814499	SPRING,COMPRESSION	1
57	64168-1	COTTER-HAIRPIN.120X2-3/8	2
58	830389	SPRING	1
59	832405	BEARING, BALL	2
60	64163-61	WASHER-.81X.406X16GA	AR
61	304636	COTTER PIN-1/8 X 1/8	2
62	64268-02	NUT-FL NYLON LK 5/16-18X4	5

FIGURE 6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* INCLUDED WITH ITEM 25

FIGURE 6

ITEM	PART NO.	DESCRIPTION	QTY
1	64123-07	BLT-HEX 1/4-20X1-1/2	2
2	64025-02	NUT-HEX 5/16-18	1
3	64164-28	KEY-#808 WOODRUFF	4
4	517137	PULLEY,4" DIA	1
5	64141-2	NUT-WLF 1/4-20	2
6	522226	WSHR,.78 1.11.07 YS FLAT	2
7	522828	SHAFT,AXLE PIVOT	1
8	523153.2	S-BRACKET, CLUTCH	1
9	523241	SEAL,V-RING	4
10	548223	SSCRW .31-18 1.50 (KC)	1
11	4163938	DECAL, DOG CLUTCH	1
12	523941	KEY, HI-PRO.19 X.62	1
13	545995.7	WLDMT-WHEEL ARM LH	1
14	545996.7	WLDMT-WHEEL ARM RH	1
15	545997.2	MOUNT-GEARBOX	1
	(INCLUDES ITEMS 16 & 32)		
16	523484	BEARING,BRONZE	2
17	545998.7	WLDMT-CLUTCH FORK	1
18	545999.7	WLDMT-ARM-DIFFERENTIAL	2
19	540216	ASSY-CLAMP-PIVOT	1
	(INCLUDES ITEMS 20 & 32)		
20	522722	BUSHING	5
21	547545	SPROCKET-DOUBLE	1
	(INCLUDES ITEMS 20 & 32)		
22	64139-21	BLT-WLF 3/8-16X3/4	2
23	547635	ASSY-DOG CLUTCH HANDLE	1
	(INCLUDES ITEM 24)		
24	515511	BUSHING	1
25	540402	TRANSMISSION	1
26	540287	ASSY-SPROCKET DOG CLUTCH	1
	(INCLUDES ITEMS 28 & 29)		
27	841332	BEARING	1
28	64176-10	PIN,SPIROL 5/16 X 1-1/2	1
29	4162885	CHAIN-#40, 49 PITCHES NP	1
30	4113841	LINK, #40 CONNECTOR NP	2
31	4162877	CHAIN-#40, 59PITCHES NP	1
32	85010N	ZERK,1/4-28 STR SLFTHRD	6
33	548101	BEARING ASSEMBLY	4
34	64268-03	NUT-FL NYLON LOCK 3/8-16	6
35	64141-6	NUT, 5/16-18	8
36	548962	HOUSING,BEARING	8
37	64151-17	NUT- HEX CNTR LK 1/4-20	1
38	64044-2	SCREW-SET 5/16-18X3/8	2
39	64044-3	SCREW-SET 3/8-16X5/16	2
40	64018-9	BLT-CRG 5/16-18X3/4 G5	8
41	811677.7	BRACKET, RETURN SPRNG	1
42	813011	SPRING	1
43	64123-82	BLT-HEX 3/8-16X2-1/2	4
44	547544	ASSY-CLAMP CENTER	2
	(INCLUDES ITEMS 20 & 32)		
45	64163-89	WSHR.FLT1.25X.76X18GA	A/R
46	64163-31	WSHR-25/64X1X12 GA	4
47	64163-55	WSHR-.328X.75X14GA	2

*NOT ILLUSTRATED

FIGURE 7

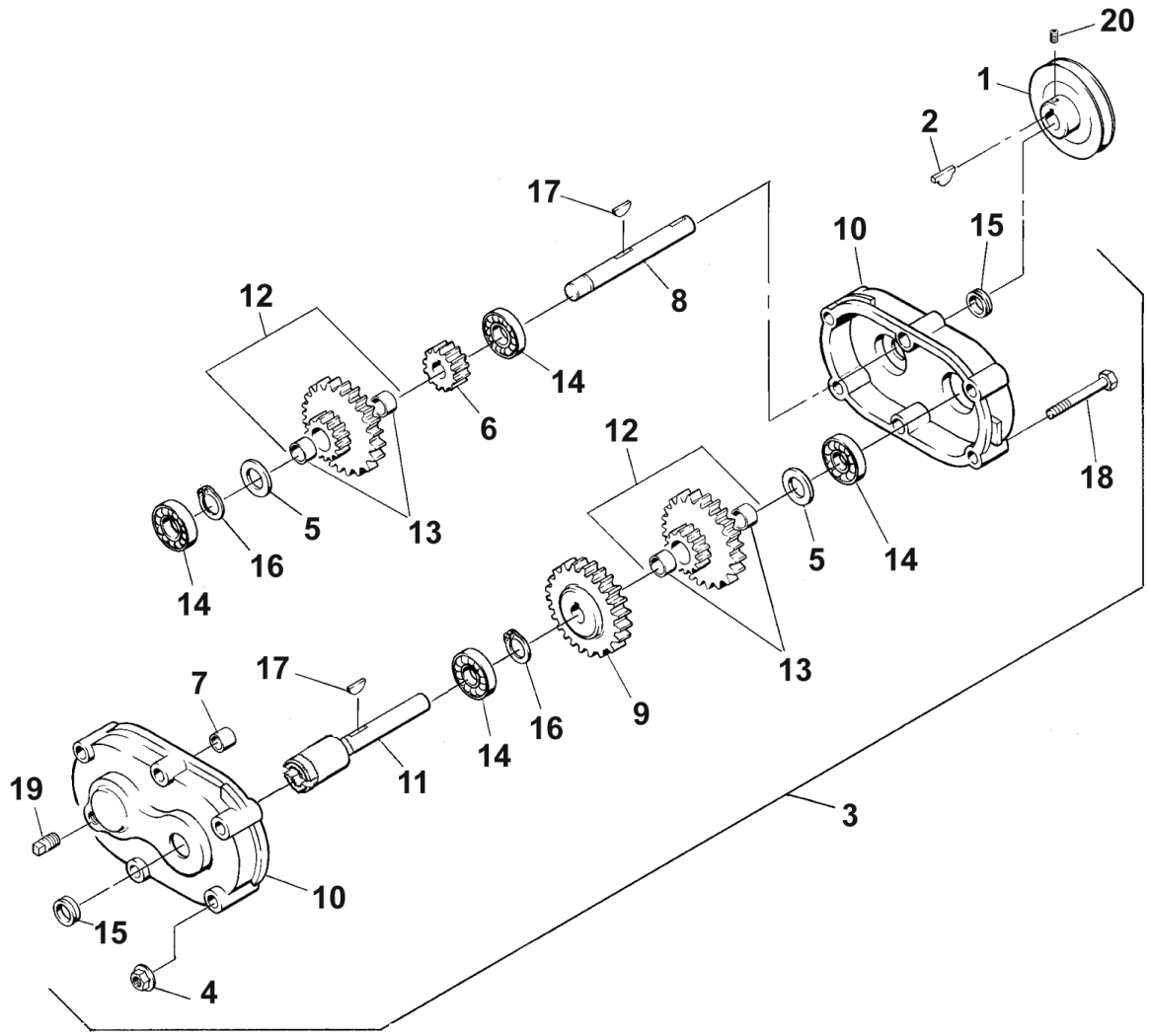
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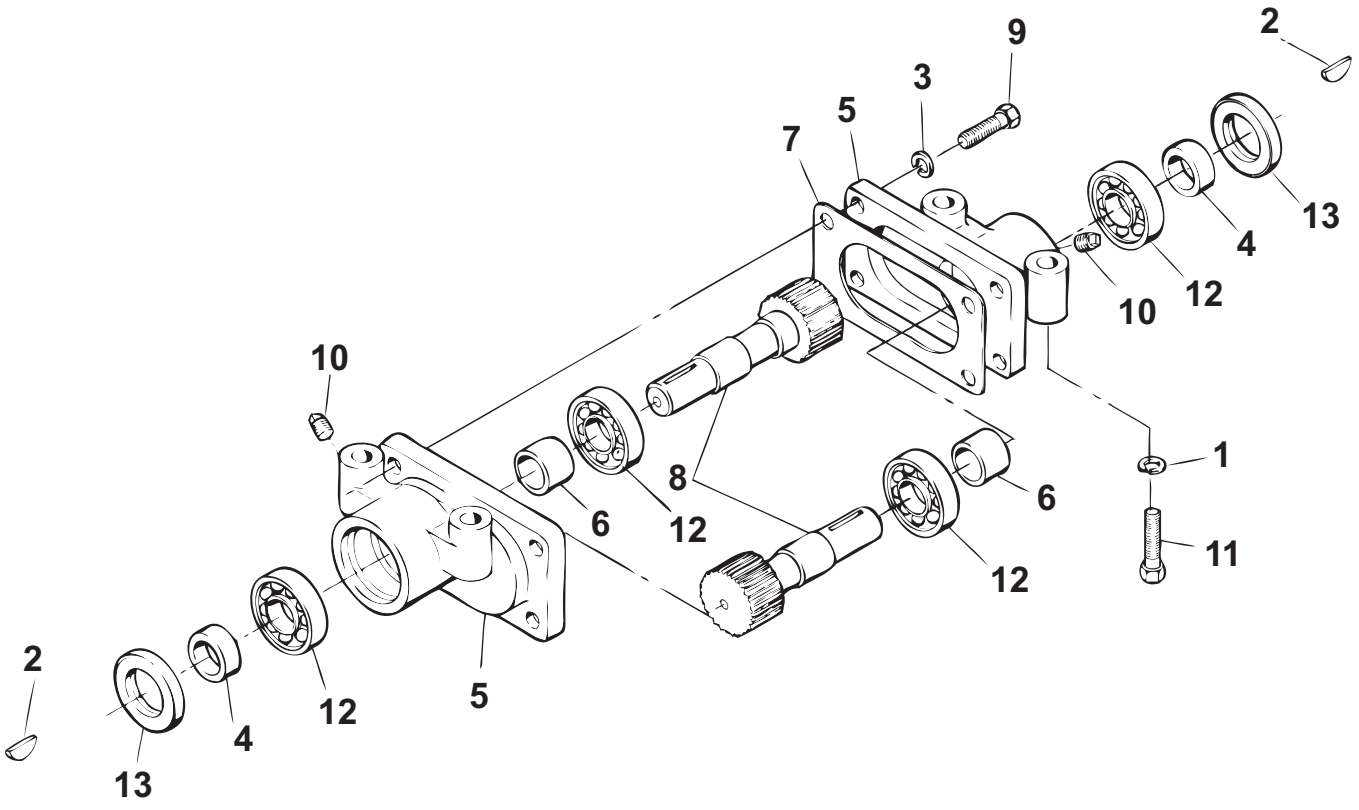
FIGURE 7

ITEM	PART NO.	DESCRIPTION	QTY
1	517137	PULLEY,4" DIA	1
2	523941	KEY, HI-PRO.19 X.62 PS	1
3	540402	TRANSMISSION	1
	(INCLUDES ITEMS 4-20)		
4	64141-6	NUT, 5/16-18	6
5	516700	SPACER	2
6	516724	GEAR	1
7	517226	BRG,SLV .33 .50 .20	2
8	518826	SHAFT	1
9	518827	GEAR	1
10	522638	GEAR CASE HALF	2
11	524620	SHAFT,GEARBOX	1
12	2702142	GEAR AY,IDLER 56T/20T	2
13	515511	BUSHING	4
14	548119	BRG,BALL.75 1.62.31 "OP"	4
15	548274	OIL SEAL	2
16	548324	RING,EXT RET.691ID.042T	2
17	548369	KEY, WDRUF.19 X.62 PS	2
18	548958	SCREW, .31-18 3.50 YS HX	6
19	800120	PLUG,.38-18NPT PS SQ HD	2
20	64044-2	SCREW-SET 5/16-18X3/8	2

ITEM	PART NO.	DESCRIPTION	QTY

FIGURE 8



REVERSING GEAR BOX

FIGURE 8

ITEM	PART NO.	DESCRIPTION	QTY
1	64006-06	LOCKWSHR-HELICAL 7/16	8
2	800519	KEY,WDRUF.25 X 1.25 PS	2
3	64006-03	WSHR, 3/8 HELICAL LOCK	4
4	522747	SPACER,.98 1.37 .40 BS	2
5	522807	CASE, REVERSING GEAR	2
6	522991	SPACER	2
7	522992	GASKET, RVRSNG GRBX	1
8	4164168	SHAFT,ROCKER (2pcs)	1
9	64123-123	SCRW,.38-24 1.0 ZS HX	4
10	800227	PLUG,.12-27NPTF ZS HS	2
11	800444	SCREW-7/16-14 X 2 1/2	8
12	815093	BEARING, BALL .998 2.05.	4
13	887272	SEAL-OIL	2

ITEM	PART NO.	DESCRIPTION	QTY

FIGURE 9

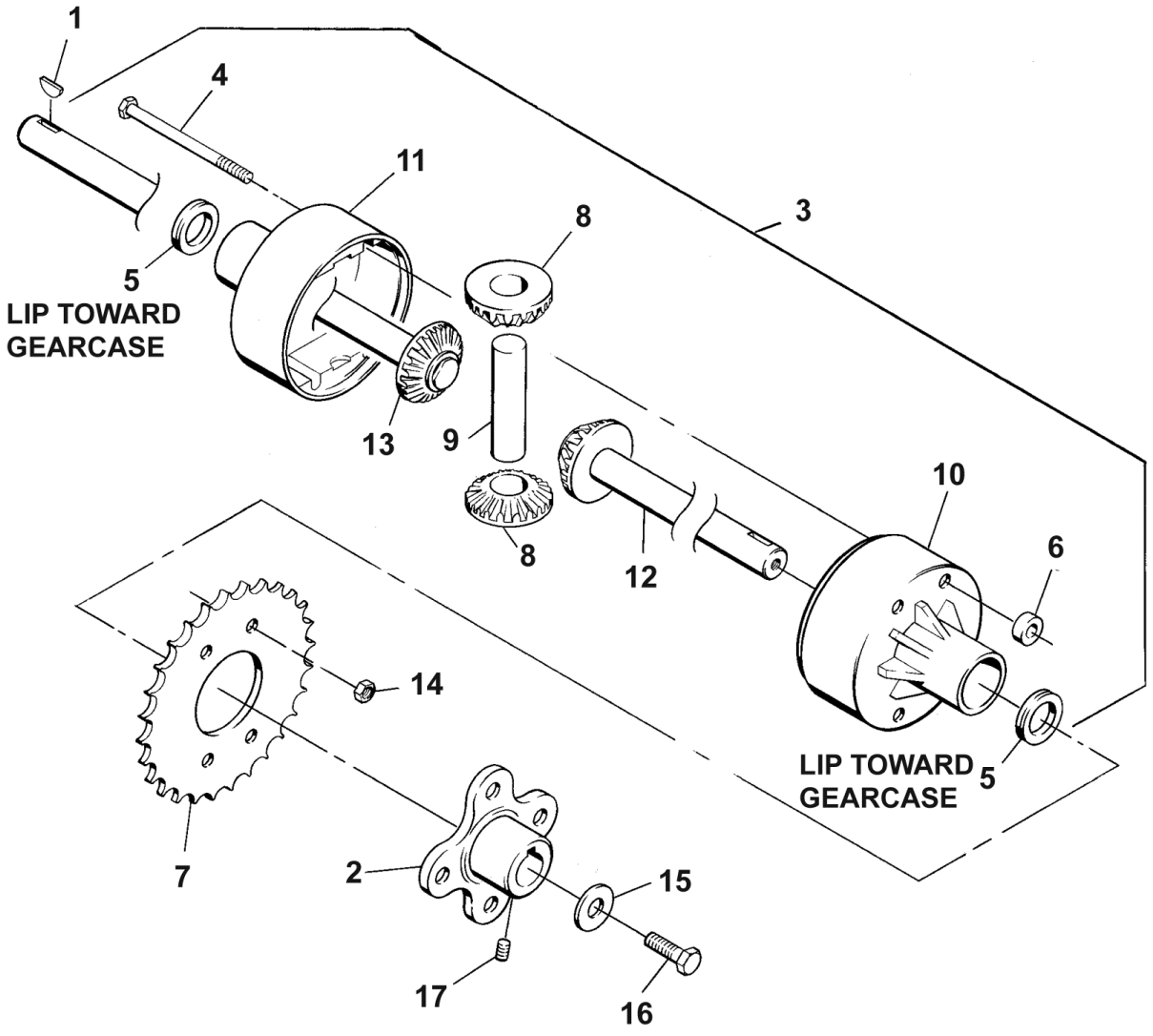

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FIGURE 9

ITEM	PART NO.	DESCRIPTION	QTY
1	64164-19	KEY WOODRUFF.19X.75 #9	2
2	516944	HUB-AXLE	2
3	547658	DIFFERENTIAL	1
	(INCLUDES ITEMS 3-14)		
4	316909	SCRW,.31-18 4.50 YS HX	4
5	523242	SEAL,V-RING	2
6	523258	SPACER	4
7	523259	SPROCKET	1
8	523512	TRANSFER GEAR	2
9	523513	CROSS AXLE	1
10	547748	HOUSING BEARING AY	1
11	547749	HOUSING BEARING AY	1
12	547750	AXLE GEAR AY	1
13	547751	AXLE GEAR AY	1
14	800290	NUT,.31-18 HX CNTRLCK	4
15	64163-31	WASHER 25/64X1X12	2
16	64139-21	BLT-WLF 3/8-16X3/4	2
17	64044-2	SCREW-SET 5/16-18X3/8	4

ITEM	PART NO.	DESCRIPTION	QTY

SCHILLER GROUNDS CARE, INC.
ONE BOB-CAT LANE
P.O. BOX 469
JOHNSON CREEK, WI 53038
920-699-2000
www.schillergc.com