RYAN®

SELF-PROPELLED WALK BEHIND SCARIFIER/POWER RAKE

MODEL:
744283C
MATAWAY

SCHILLER GROUNDS CARE

PARTS / SET-UP MANUAL

MAN 41641187
Rev. A 4-2009
Original Language Instructions

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.**

MATAWAY

IMPORTANT MESSAGE

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

This machine comes with an Operators and a Parts 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 Ryan 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 Ryan dealer for any service or parts needed. Ryan service ensures that you continue to receive the best results possible from Ryan's products. You can trust Ryan replacement parts because they are manufactured with the same high precision and quality as the original parts.

Ryan 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

TABLE OF CONTENTS **FIGURES** **PAGE**

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 unit. It contains the model number followed consecutively by the serial number. Use this number when ordering parts or seeking warranty information.

MAINTENANCE AND STORAGE SAFETY

In general

- Maintain machine according to manufacturer's schedule and instructions for maximum safety and best results.
- Park machine on level ground.
- Never allow untrained personnel to service machine.
- Guards should only be removed by a qualified technician for maintenance or service. EReplace guards when work is complete.
- Adjust or repair only after the engine has been stopped and the blades have quit rotating.
- Replace parts if worn, damaged or faulty. For best results, always replace with parts recommended by the manufacturer.
- Disconnect spark plug wire(s) before making any repairs.
- 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, and fuel storage area free of grass, leaves, debris buildup or grease.
- 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 other 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.

Blades

- Only replace blades. Never straighten or weld them.
- Keep other persons away from blades.

Fuel

- Petrol (gasoline) and diesel fuels are flammable; petrol (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.
  - Replace caps on fuel containers and tanks securely.

Sparks from static electricity can start fires or cause explosions. Flowing fuel can generate static electricity. To prevent static electricity sparks:

- Keep fuel containers electrically grounded. 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 petrol (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.

⚠CAUTION

Do not operate this equipment until you have read and understand the SAFETY, CONTROLS and OPERATION sections the operator manual.
To prevent injury, use an adequate lifting device (i.e., hoist, or fork lift) to remove unit from pallet.

1. Remove the crate top and sides.

⚠WARNING

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

2. Remove and discard banding attaching the Mataway to the pallet, Remove shipping brackets that hold down front axle and discard. Remove unit from pallet.

3. Remove the transmission belt cover. Tilt unit forward and support the chassis with jack stands.

4. Remove the belt shield under frame **G** (Figure 3**).**

⚠WARNING

To prevent fuel spillage and/or the risk of fire or personal injury from inhalation of fumes, be sure fuel tank is empty before tilting the unit forward.

Support rear of tilted unit adequately.

5. Remove Side guards in **Figure 1**.

6. Move the reel clamp levers **E** (Figure 1) (left and right side) rearward to release the reel clamps.

7. Position the reel with the pulley toward the right side of the machine. Slip the 3 belts around the pulley **F** (Figure 2).

8. Position the pillow block in the recessed part of the frame on each side so the pillow block groove fits over the frame.

9. Hook the retaining clamp rods into the holes in the reel clamps, then rotate the levers forward until they lock over the center to secure the reel. If necessary, the over center tension can be adjusted with the turnbuckles on the reel clamp rod assemblies.

⚠CAUTION

A loose reel may cause injury or property damage. Be certain the reel clamp lever locks over center to keep the reel from working loose.

10. Reinstall belt sheild and LH and RH side guards.

11. Install the belt shield **G** under the frame and secure it with (1) 5/16-18 X 3/4 screw and lockwasher.

12. Remove jack stands and set unit on the ground.

13. For final adjustment of the reel, refer to the Adjustment section of this manual.

    Check the engine oil level. Top off if necessary. See the adjustment section for setting blade height.

14. Add weight to front of unit.

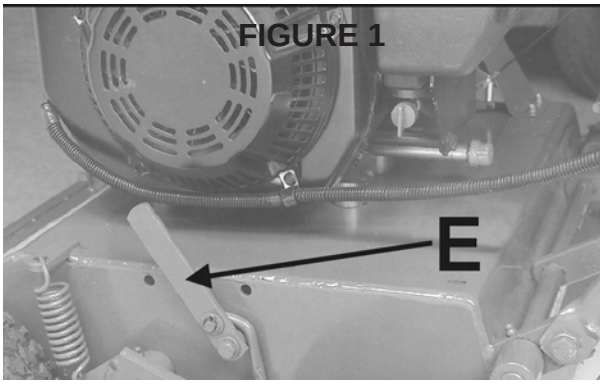


FIGURE 1

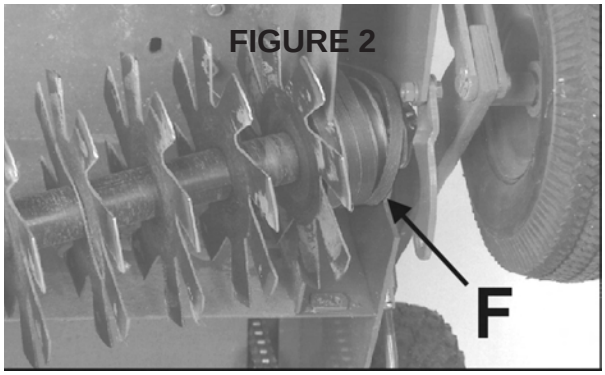


FIGURE 2

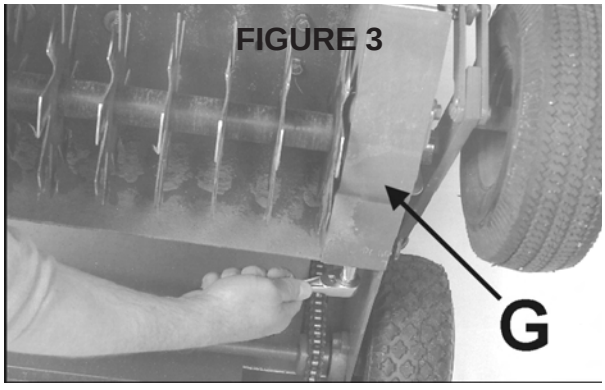


FIGURE 3

REEL BLADE REPLACEMENT

1. Remove reel. See Reel Removal and Installation

NOTE: Note how the blades and spacers are arranged on the reel and the direction of the blades **before** disassembly so that it can be reassembled in the same manner.

2. On the end of the shaft opposite the pulley, loosen the set screw in the locking collar **A** on the reel shaft. Insert a punch in the small hole on the collar and use a hammer to tap the collar clockwise until it's loose (approx. 1/4 turn). Remove the collar and remove the pillow block and bearing **B**.

3. Loosen the socket head screw **C** in the reel nut **D** and remove the reel nut from the shaft.

4. Slide the blades and spacers off of the shaft.

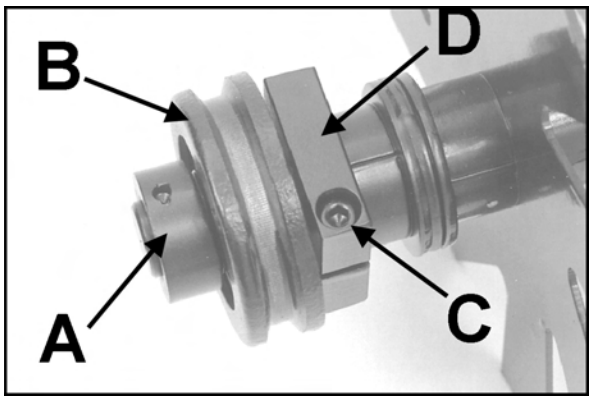
5. Reassemble the reel with new blades.

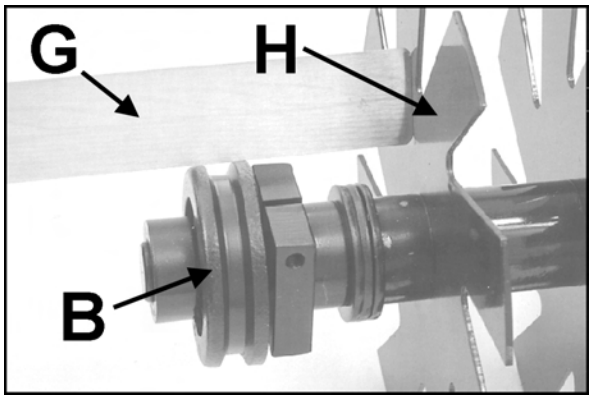
NOTE: When reassembling the reel, it is important to start and end with a spacer. DO NOT assemble with a blade next to the shaft nut.

6. Make sure the socket head screw **C** in the reel nut **D** is just "snug" or about 1 to 2 ft.-lb. (1.5 - 3 N·m). Screw the nut onto the reel shaft and torque to 80 + 10 ft.-lb. (108 + 13 N·m). Make sure enough spacers are used to prevent the reel nut from contacting the shoulder of the hexagonal section of the shaft. Tighten the socket head screw to 10 to 12 ft.-lb. (13-16 N·m).

7. Install the pillow block with bearing **B** on the shaft. Slide the pillow block on until the outside edge of the block is 5/8" (16mm) from the end of the shaft.

8. The pillow block **B** must also be perpendicular to the shaft. To check this, hold a ruler **G** against the first blade **H** and across the edge of the pillow block. Rotate the pillow block by hand. If the edge of the pillow block does not appear to wobble (move back and forth) the pillow block is perpendicular.





9. Install the locking collar against the bearing by tapping it counterclockwise approx. 1/4 turn and tightening the set screw.

10. Reinstall belt sheild and LH and RH side guards. **(See Figure 1 in Set-Up)**

11. After the reel has been reinstalled (refer to the section on Reel Removal And Installation) readjust the blade height.

After 4 hours of use, check reel nut for proper torque. The torque value for the reel nut is 80 ft.-lbs. + 10 ft.-lbs. (108 + 13 N·m).

BLADE REPLACEMENT

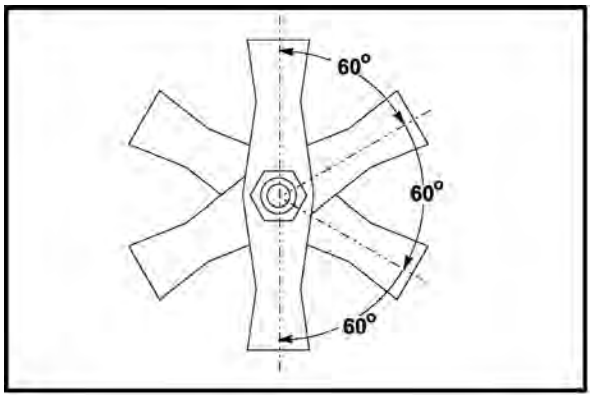
Remove the reel in the reverse order of installation as stated in the Set-Up instructions in this manual.

Blades are removed from the reel by removing the pillow block and the reel nut on the end of the reel, opposite the drive pulley.

Note how the blades are spaced before removing them to assure proper installation of the new blades.

NOTE: When reassembling the reel, it is important to start and end with a spacer. DO NOT assemble with a blade next to the shaft nut.

When installing new blades (Part No. 516901 and Part No. 516900, straight blades) note the hexagon shape of the shaft. Install the first blade onto the shaft, then rotate the next blade so it is one lobe forward (60° off center) from each previous blade.



Keep installing the blades in this order until all blades are installed.

Mount the reel shaft, with new blades in the reverse order it was removed.

After 4 hours of use, check reel nut for proper torque. The torque value for the reel nut is 348 ft.-lbs. + 35 ft.- lbs. (420 to 510 N·m).

ADJUSTMENT FOR REEL AND DRIVE BELTS

Belt tension may need adjusting due to run in and normal wear. Inspect belts daily to ensure proper operation of the unit.

NOTE: Reel and drive belt adjustments are guidelines only. The reel drive belts should engage without slipping and disengage completely. The drive belt should engage without slipping and disengage so that the unit will not creep.

Remove the transmission drive belt cover.

REEL DRIVE BELT.

Engage the reel drive clutch. Measure the distance between the reel drive belts and the forward edge of the idler assembly belt stop. Measurement **D** should be 3/4" (19 mm). If the Reel belt requires adjustment the Transmission Drive Belt must also be adjusted. (Figure 1)

TRANSMISSION DRIVE BELT

Engage the drive clutch. Measure the distance from the top edge of the idler pulley **F**, to the top edge of the drive belt **G**. The measurement **E** should be 3/4" to 2" (44 to 50 mm). The Transmission Belt may be adjusted independent of the Reel Drive Belt. (Figure 2)

REEL DRIVE BELT ADJUSTMENT:

1. Loosen the transmission mounting plate **A** and chain idler sprocket hardware. Slide the transmission/mounting plate assembly as far rearward as it will go to provide slack in the transmission drive belt.

2. Clean the underside of chassis to allow movement of the engine and loosen the engine mounting hardware.

3. Loosen the set screw in the locking collar **C** on the drive shaft. Insert a punch in the small hole in the collar and use a hammer to tap the collar clockwise (opposite direction of engine rotation) until it's loose (approx. 1/4 turn).

4. Loosen the hardware securing the mounting plate **B** (supporting the reel drive pulley) and the pillow block.

5. Make sure the springs are in place on the drive belt idler arm and the reel belt idler arm.

NOTE: Belt cover removed for clarity.

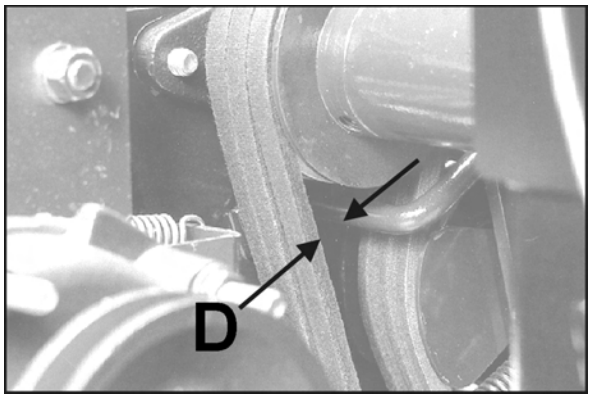


FIGURE 1

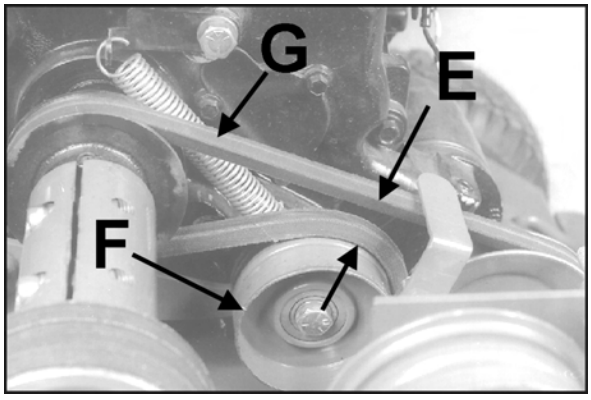
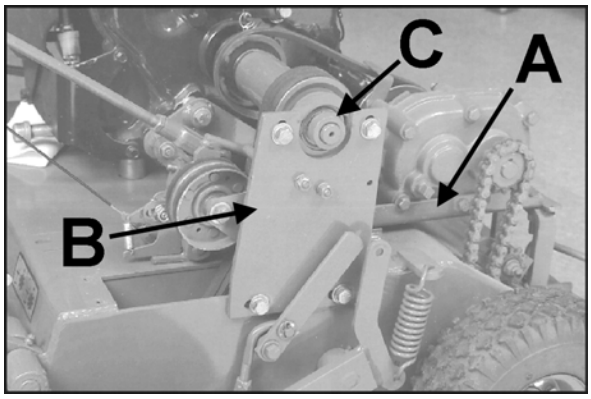


FIGURE 2



6. Square the engine with the chassis. If measurement D(Figure 1) is over 3/4" (19mm) slide the engine forward as necessary to obtain proper measurement D. If measurement D is under 3/4" (19mm) slide the engine rearward as necessary to obtain proper measurement. Tighten the engine mounting screws.

7. Align the mounting plate **L** so that it is perpendicular to the chassis and the pillow block bearing is centered on the coupler shaft. Tighten the two plate mounting screws **H** at the bottom of the plate.

8. Align the pillow block bearing with the coupler shaft so that there is no vertical or side load on the shaft and tighten the pillow block mounting hardware. Torque the pillow block screws to 25 ft.-lbs. (34 N·m).

9. Tighten locking collar **K** on engine coupler shaft. Rotate collar counterclockwise on pillow block shoulder. Using hammer and punch, lock collar into position. Tighten set screw in collar **K**.

10. Engage reel drive clutch. Check the clearance from the idler pulley **M** to the belt stop **N** bolted to the mounting plate, clearance should be a minimum of 1/16" (2 mm). If necessary, loosen the belt stop hardware **O** and reposition it. Tighten hardware.

11. Complete adjustment process by performing steps 12-17 of the Transmission Belt Adjustment.

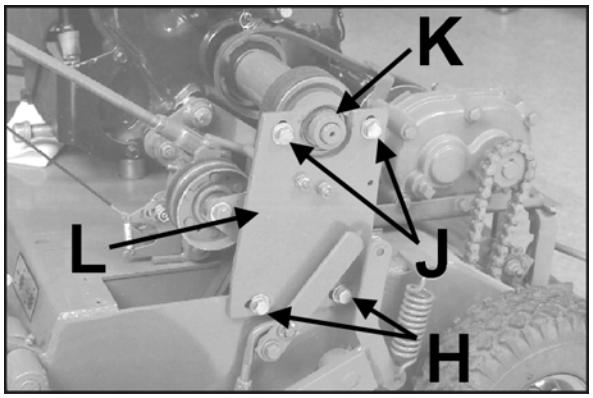
TRANSMISSION DRIVE BELT ADJUSTMENT:

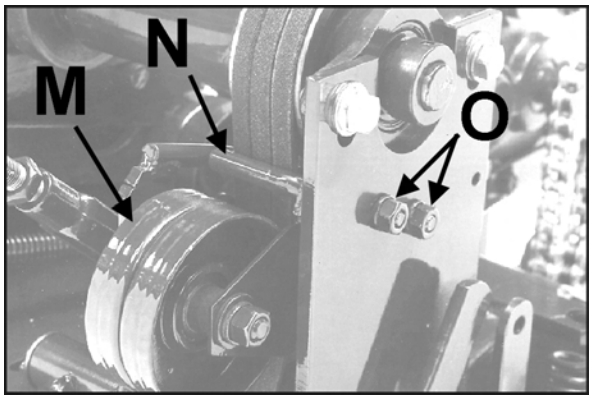
12. Perform step one of the Reel Belt adjustment.

13. Slide the transmission assembly forward until measurement **E** is less than 3/4" to 2" (44-50mm).

14. Tighten transmission mounting hardware securely. Slide chain idler sprocket against the drive chain until there is 1/8" to 1/4" (3 to 6mm) play in the chain opposite the sprocket and secure hardware.

NOTE: Belt cover removed for clarity.





15. Check transmission belt alignment with a straight edge. Loosen the set screw on the transmission pulley and slide it in or out to achieve proper alignment.

16. Check operation of reel and transmission belt drives. The drive belts should engage without slipping and disengage so that the unit will not creep. Readjust if necessary.

17. Reinstall the transmission belt cover. Check clutch control over-center and belt stop tension adjustments.

CLUTCH CONTROL OVER-CENTER:

NOTE: The clutch control should positively lock over-center in the disengaged position. Adjust rod length if necessary.

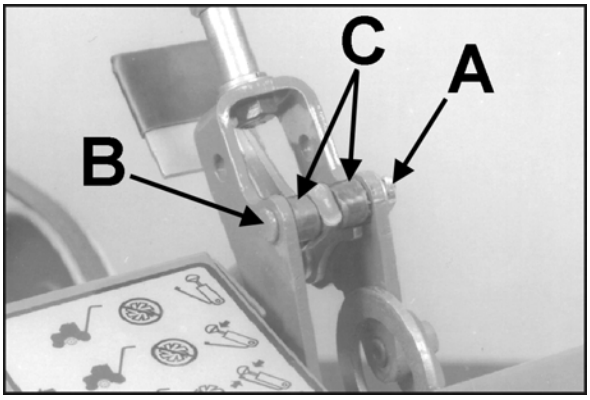
18. Remove the transmission belt cover.

19. Loosen the jam nut on top of the clevis at the bottom of the clutch lever E (below).

20. Remove the cotter pin **A** and clevis pin **B**, and the two bushings **C** on the control handle. Turn the rod to shorten or lengthen the rod as required and reattach the rod to the handle with the clevis pin.

21. Check to ensure over-center locking action. When proper locking action is obtained, completely reassemble control handle and tighten jam nut.

22. Reinstall the transmission belt cover.



BELT STOP TENSION:

The reel drive belts should be held firmly but not pinched severely with reel drive lever disengaged.

NOTE: Over tight belt stops will cause undo wear on reel drive belts and bearings.

23. Remove the transmission belt cover.

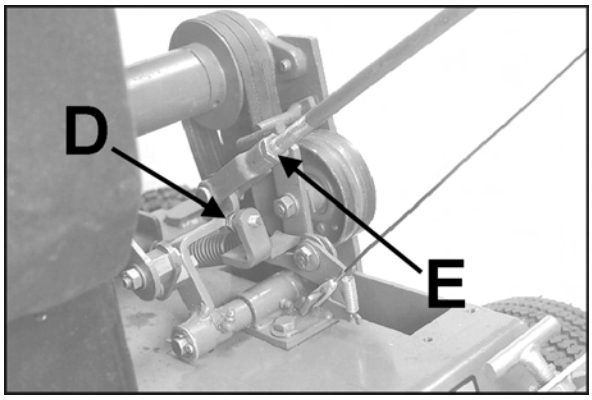
24. Engage clutch control. Loosen the jam nut on screw D in the reel belt idler assembly. Adjust belt stop tension by turning screw D in or out

25. Disengage the clutch lever. Check the belt stop adjustment. Readjust if necessary.

22. Reinstall the transmission belt cover.

NOTE: The belt stops should be perpendicular to the reel belts and parallel to each other. Make sure reel drive idler pulley is centered and aligned over reel drive belts.

NOTE: Belt cover removed for clarity.



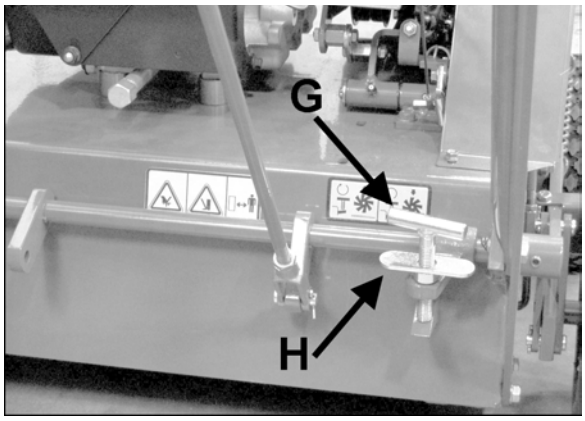
DEPTH ADJUSTMENT

Make initial depth adjustment with the unit on a level surface.

1. Lower the unit to the operating position.
2. Loosen locknut H.
3. Turn adjusting screw G until the blades just touch the surface.
4. Raise the unit to the transport position. Turn the adjustment screw G counterclockwise to get deeper penetration or clockwise to reduce penetration. 3 1/2 turns of screw G changes penetration by 1/4" (6mm).
5. Tighten lock nut H after adjustment.

Make a test run to check adjustment.

Increasing depth decreases ground clearance.

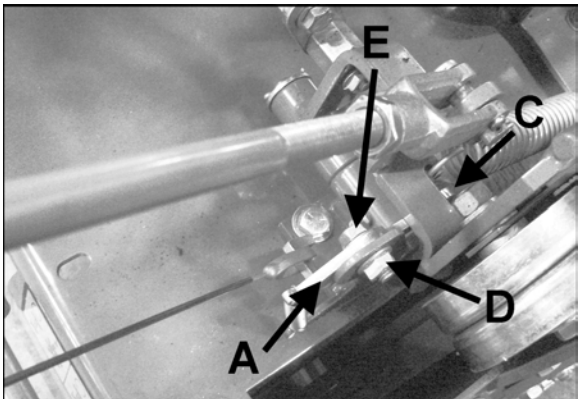


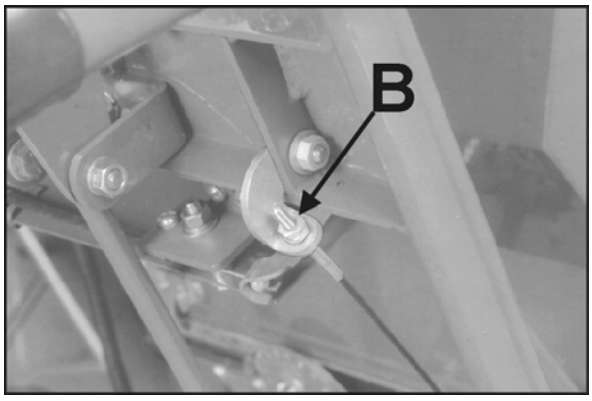
NOTE: Never cross hard surfaces or objects (sidewalks, driveways, stepping stones, etc.) with reel blades down and/or engaged.

Low tire pressure may cause uneven reel penetration. Correct tire pressure should be maintained to eliminate this possibility (refer to the Tire Pressure section of this manual, for recommended tire pressure).

HOOK AND CABLE ADJUSTMENT

1. Remove transmission belt cover.
2. Loosen the nut D and bolt E securing the latch **A**. Slide the latch in the slot so that the latch hook C captures the reel idler assembly when the clutch control is disengaged. When only the drive clutch is engaged, the latch should hold the reel idler assembly back far enough that the reel belts will not engage. Retighten the hook mounting hardware.
3. After the LATCH has been adjusted, Loosen the two jam nuts **B** at the top of the cable. Adjust the bottom nut to take up any slack in the cable. Be careful not to overtighten the cable or the LATCH may not hold the reel idler assembly. Use the top nut to lock the lower nut into place.





REEL BELT AND DRIVE BELT REPLACEMENT

NOTE: Reel belts are serviced in matched sets of three. When replacement is required, replace all three belts. It is a good idea to replace all belts (drive and reel) on the unit at the same time.

1. Remove the transmission drive cover.

2. Tilt the unit forward and support the rear of the chassis with jack stands.

⚠ CAUTION

Use adequate jack stands when supporting the unit. Failure to do so may result in personal injury.

3. Remove the lower belt guard and side guards from under the chassis and remove the reel. See reel removal and installation. Remove the jack stands and lower the unit.

4. Loosen the set screw in the locking collar **K** on the drive shaft. Insert a punch in the small hole in the collar and use hammer to tap the collar clockwise (opposite direction of engine rotation) until it's loose (approx. 1/4 turn). Remove the collar.

5. Remove the bolts **H** securing the mounting plate **L**. Remove plate and the pillow block **J** (leave the pillow block attached to the mounting plate).

6. Remove all three reel belts.

NOTE: Inspect the drive belt to the transmission after the reel belts have been removed. Replacing the drive belt now will save work and down time.

7. Install new belts (matched set of three).

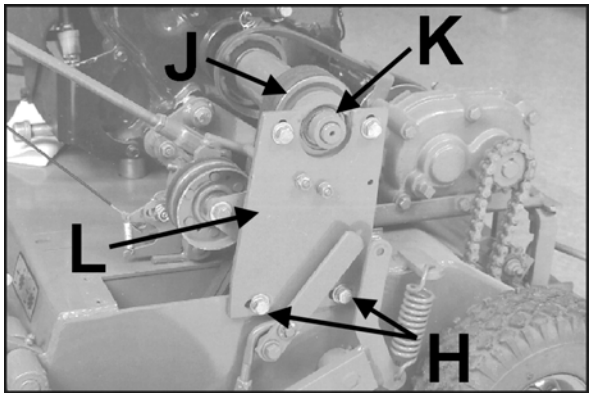
8. Before reinstalling the mounting plate **L**, loosen but do not remove the pillow block **J**.

9. Slide the pillow block bearing onto the shaft and loosely mount the plate to the chassis. Adjust the mounting plate **L** side-to-side so that there is no side load on the drive shaft. Tighten the mounting plate hardware **H**.

10. Reinstall the locking collar against the bearing. Tighten locking collar by rotating counterclockwise on pillow block shoulder. Using punch and hammer, lock collar into position. Tighten set screw.

11 Adjust the pillow block up and down until it is centered on the shaft. Tighten the pillow block hardware.

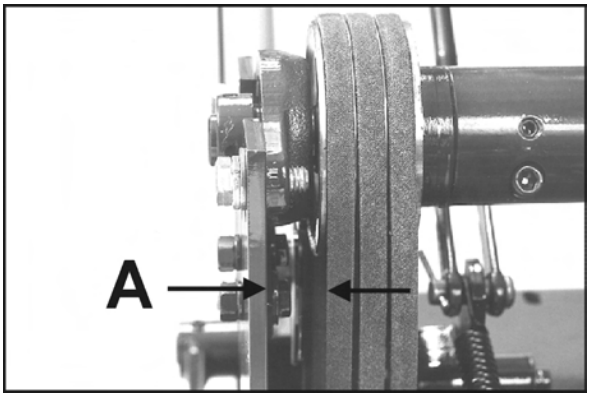
NOTE: Belt covers removed for clarity.



12. Rotate the drive shaft by hand to make sure there is no side load.

NOTE: Excessive side load on the shaft may cause engine crankshaft failure.

13. Check the reel belt pulley alignment. The measurement **A** should be 5/8" (16mm). If adjustment is required, loosen the set screw in the pulley and move the pulley in or out on the shaft.



NOTE: The pulley is secured to the shaft by set screw and key. It may need to be tapped with a hammer for adjustment. Use a plastic, rubber, lead or leather head hammer to avoid damaging the pulley.

14. Support the unit on jack stands and reinstall the reel and belt guard beneath the chassis.

NOTE: Belts should be tight when the reel and drive are engaged and loose enough to slip when they are disengaged.

15. Reinstall the transmission belt cover.

TIRE PRESSURE

Keep the tires to the recommended pressure. Improper inflation will shorten the life of the tires and cause unsatisfactory operation.

Tires.....4.10 / 3.50 - 4, 2-ply
Tire Pressure.....24 to 26 PSI (165 to 179 kPa)

⚠ CAUTION

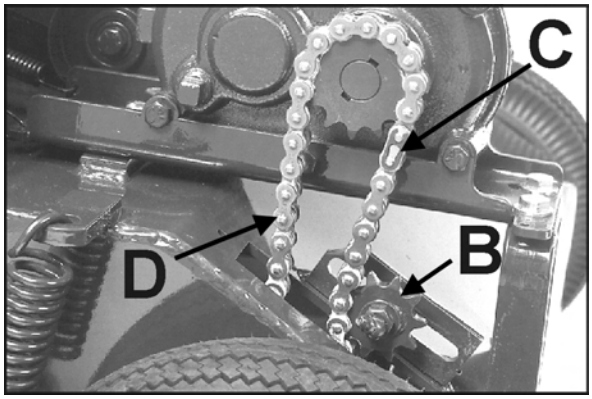
Due to low air volume of tires, over-inflation can be reached in a matter of seconds. To prevent explosion, check air pressure with air gauge before filling the tire. Fill to recommended air pressure, and Do Not exceed the recommended pressure.

CHAIN REPLACEMENT

1. Remove the transmission drive cover.
2. Loosen the drive chain idler sprocket **B**.
3. Remove connecting link **C** and chain **D**.
4. Install new chain and connecting link.
5. Adjust the idler sprocket to allow approximately 1/8" (3 mm) to 1/4" (6 mm) of play in the chain (check for play on the straight section of chain opposite the sprocket). Tighten the idler sprocket hardware.

NOTE: Proper chain tension is essential. A tight chain will impose excessive bearing loads. A loose chain will cause noisy operation and chain pulsations, which may result in irregular sprocket speed and abnormal chain and sprocket wear.

6. Lubricate the fitting on the idler sprocket.
7. Reinstall the transmission belt cover before using the unit.



REEL REMOVAL AND INSTALLATION

NOTE: All references to front, rear, right and left are from the perspective of an operator in the operator position.

1. Remove the guards covering the belts and transmission. Tilt the unit forward and support the rear of the chassis with jack stands.

⚠ WARNING

Fire Hazard.
Prevent fuel spillage.
Empty fuel tank before tilting unit forward.

Crush Hazard
Support rear of tilted unit adequately.

2. Remove the lower belt guard from under the chassis by removing the screw at the front of the guard and swinging the guard down.

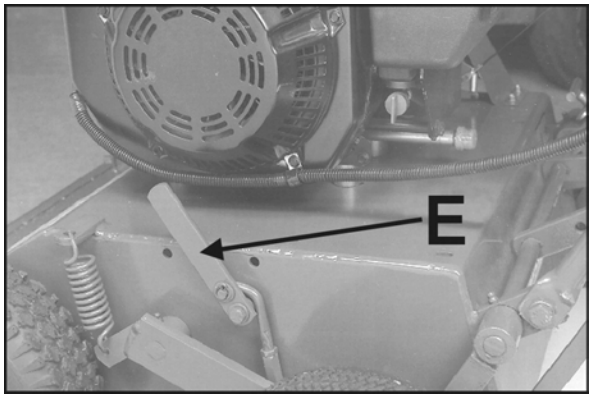
3. Move the reel clamp levers E (left and ride side) rearward to release the reel clamps.

4. Lower the left end of the reel and remove the three belts from the pulley at the right end. Remove the reel. If the blades need to be replaced, refer to the section on reel blade replacement.

5. Reinstall the reel in the reverse order of removal.

⚠ CAUTION

A loose reel may cause injury or property damage.
Be certain the reel clamp lever locks over center to keep the reel from working loose.



TRANSMISSION GEAR REPLACEMENT

1. Remove the transmission from the unit.

2. Remove the sprocket, pulley and keys.

3. Remove the plug and drain the oil from the gear case.

4. Remove the remaining hardware. Take note of which side is the input side and which is the output side so that they can be reassembled correctly. Using a soft hammer, tap case on the tabs to break the seal, and pull halves **E** & **F** apart.

5. Remove the input shaft **A**, output shaft **B** and spacer **C**. Also remove the bearings **D** and grease seals.

6. Install new bearings into both case halves. **DO NOT** install new grease seals at this time.

INPUT SHAFT

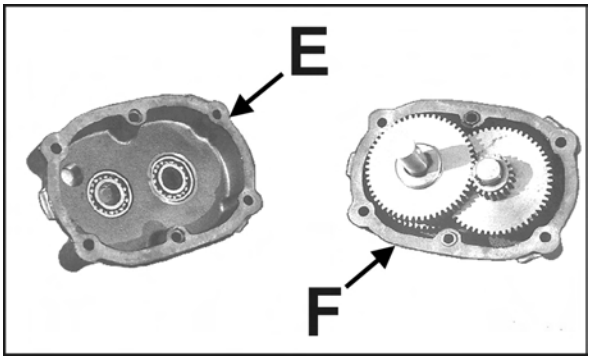
7. Remove large double gear **E**, small gear **F**, key **G**, and spacer **H** from input shaft **J**.

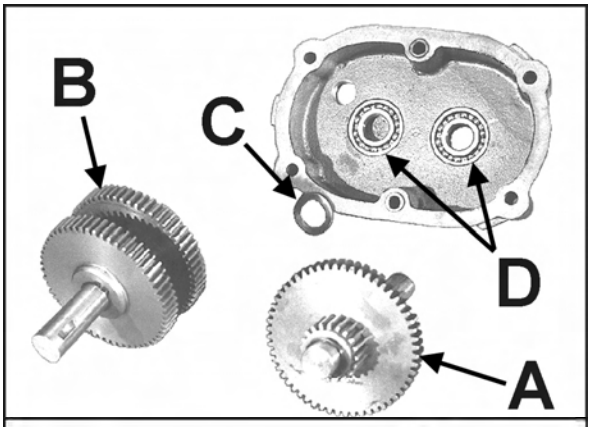
8. Check the input shaft for wear and replace if necessary (if shaft needs to be replaced, install the existing snap ring **K** on new shaft). If the shaft is NOT replaced, remove any burrs from keyways and/or shaft ends if necessary.

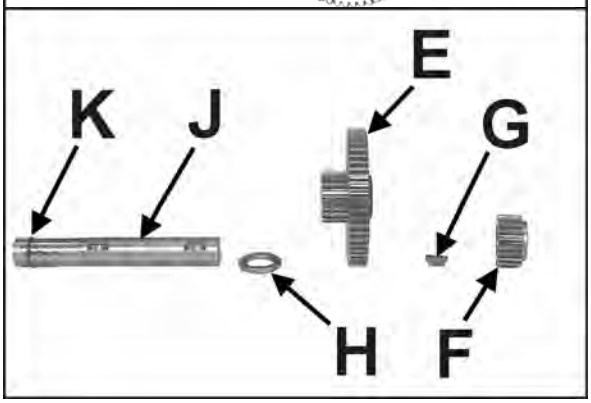
9. Replace bushings in the large double gear **E** (or replace gear if necessary). When replacing bushings, make sure they are flush with the edge of the gear and that the oil holes on gear are aligned.

10. Install the spacer **H** onto shaft against the snap ring **K**. Install the large double gear **E**, with the small gear side against the spacer.

11. Install key **G** into keyway and slide the small gear **F** (flat side toward the larger gear) onto the shaft.







OUTPUT SHAFT

12. Remove large gear **L** , large double gear **M** and key **N** from shaft **P**. Check the shaft for wear and replace if necessary (if shaft needs to be replaced, install the existing snap ring **O** on new shaft). If the shaft is NOT replaced, remove any burrs from keyways and/or shaft ends if necessary.

13. Replace bushings on large double gear **M** (or replace gear if necessary). When replacing bushings, keep the bushings flush with the edge of the gear. Be sure oil holes on gear are aligned.

14. Install key **N** and large single gear **L** onto shaft **P** (be sure the deep-step side of gear is toward snap ring **O**).

15. Slide the large double gear **M** onto shaft, with the small gear toward the large single gear.

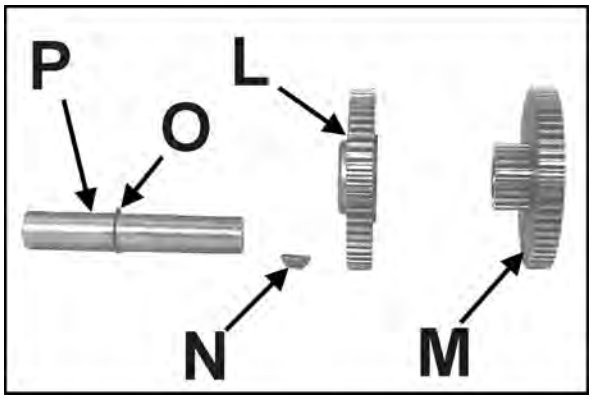
16. Install spacer onto output shaft.

17. Clean the old gasket material from the case halves.

18. Install the input and output shafts into the gear case half, making sure the spacer on the output shaft remains in place.

19. With shafts in gear case half, turn either shaft to make sure gears are turning. This will ensure the keys are properly set.

20. Apply Loctite 515 sealant (or equivalent) to case halves. Make sure the spacer bushings are in the center top and bottom holes of the case half.



21. Position transmission onto the mounting bracket with the drain plug facing to the outside of unit. Reinstall the six screws removed during disassembly. Secure all six screws and torque to 16 + 2 ft.- lbs. (21.5 N·m).

22. Apply 30w oil onto the lips of the new grease seals. Install the seals, drive pulley, and sprocket.

23. With the gear case resting level on the mounting bracket, fill transmission with EP90w oil until the oil reaches the bottom of the threads in the plug hole. Install plug (use a teflon based thread sealer on the threads). The transmission will hold 1/2 pint (.4L) of oil.

24. Check the alignment of the belt pulley and chain sprocket. If necessary, loosen the set screws securing the pulley and sprocket to the shaft and position each until properly aligned. If alignment cannot be reached refer to the previous instructions for adjustment of belts and chain.

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).

Do not smoke, avoid sparks and open flames when draining or filling the fuel tank.

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 engine is warm, drain the crankcase oil and replace it with the proper weight oil corresponding to the season the unit will next be used. Refer to the engine manual for proper oil recommendations.

⚠ CAUTION

Do not attempt to service or make repairs near the engine area while the engine is still hot.

4. Remove the spark plug and squirt a small amount of clean motor oil into the cylinder. Turn the engine over a few times to distribute the oil and reinstall the sparkplug.
5. Lubricate all lubrication fittings.
6. Apply a light coat of oil to the blades and reel shaft to prevent rust.
7. Lubricate drive chain with Lubricant #13563 or equivalent.

NOTE: Do not store unit with blades in the down position. Be sure all belts are free from tension (the clutch control lever in the disengaged position).

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

1. Move unit to a level, well ventilated area.
2. Check unit for loose hardware and broken parts. Tighten and replace as necessary.
3. Check for cracked or split fuel lines.
4. Make sure the air cleaner filter is clean.
5. Check that the air cleaner components and all shrouds and belt covers are in place.
6. Check spark plug and plug wire.
7. Note if any blades need replacing.
8. Determine if the transmission and engine oil need filling. Refill engine oil according to the manufacturers recommendations, and refer to the Preventive Maintenance section of this manual for correct oil weight and amount for the transmission.
9. Fill the tank with appropriate fuel as recommended by the engine manual.

⚠ WARNING

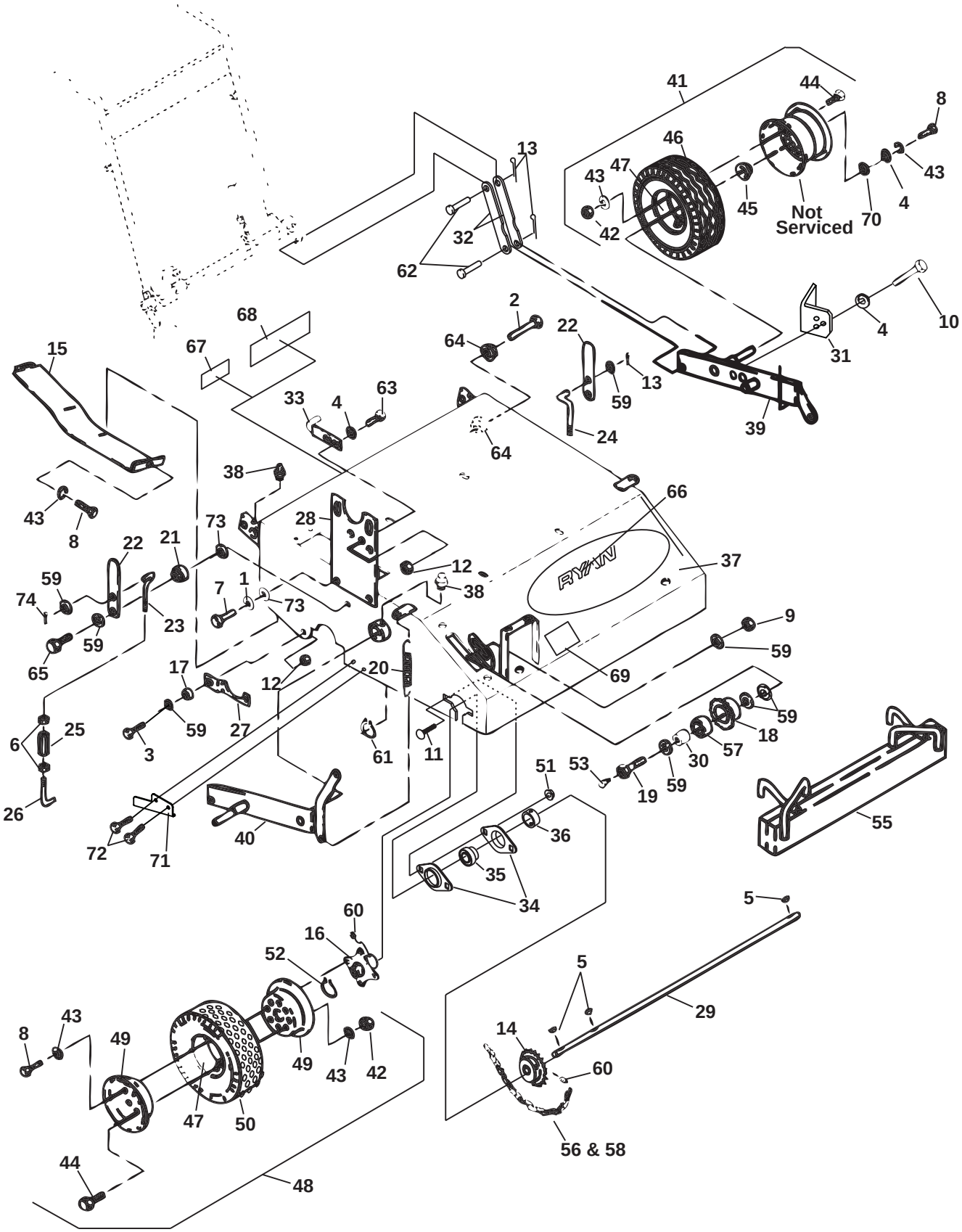
Do not smoke, avoid sparks and open flames when draining or filling the fuel tank.

10. Make sure controls are in the disengaged or neutral position.
11. Start engine and let run (at slow speed) until approximate operating temperature has been reached.
12. While engine is running (and has reached operating temperature) visually inspect fuel lines and carburetor for leaks. If a leak is found, make sure the engine has cooled sufficiently before attempting any repairs.

PARTS SECTION

MATAWAY

FIGURE 1



MATAWAY

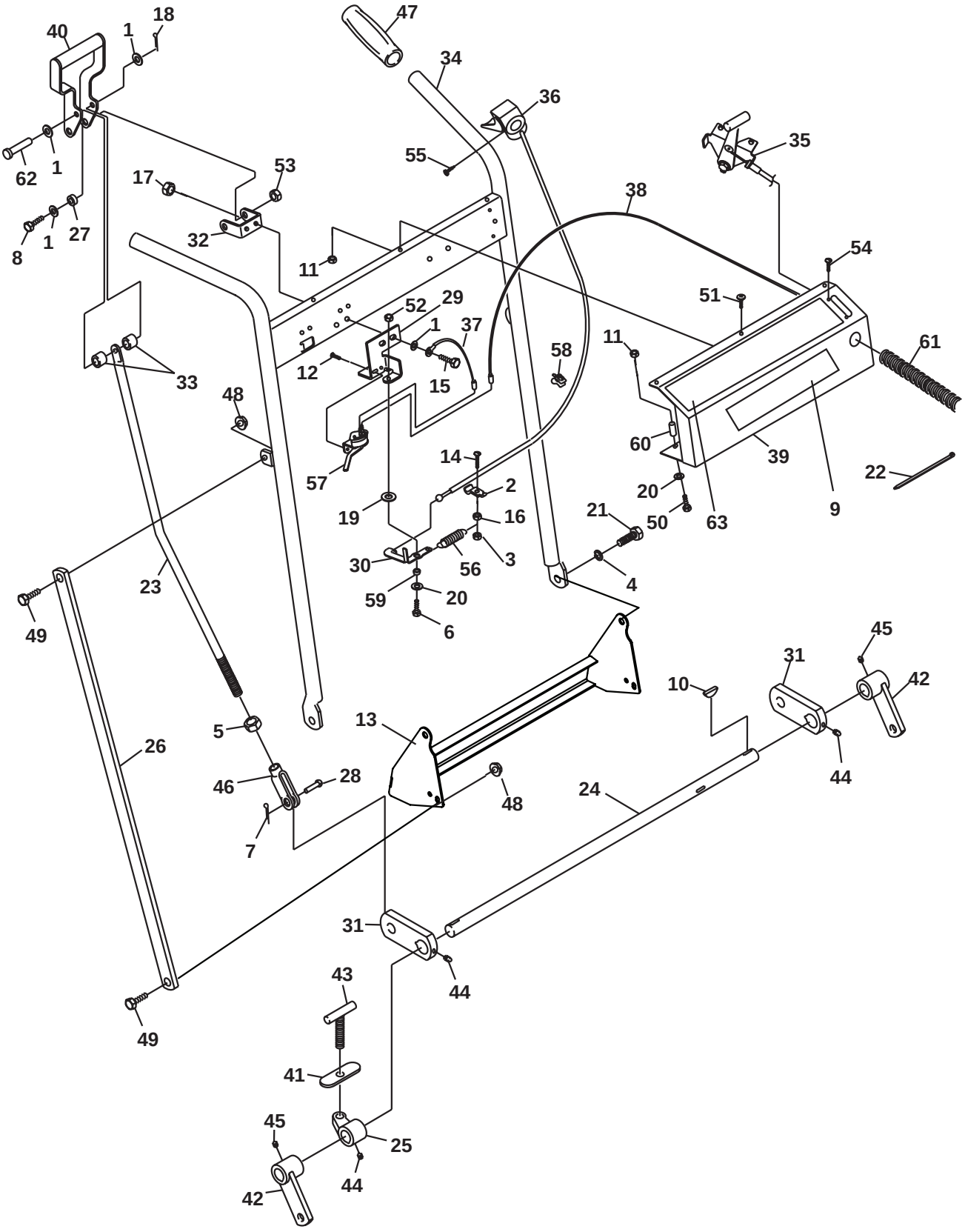
FIGURE 1

ITEM	PART NO.	DESCRIPTION	QTY
1	64006-03	WASHER, 3/8 HELICAL LCK	2
2	64123-82	BOLT-HEX 3/8-16X2-1/2	1
3	64123-107	BLT-HEX 5/16-18X7/8	2
4	64163-55	WASHER .328X.75X14 GA	8
5	64164-19	KEY WOODRUFF.19X.75 #9	3
6	64002	NUT-JAM 3/8-24	4
7	64123-50	BOLT-HEX 3/8-16X1	2
8	64123-54	BLT-HEX 5/16-18X3/4	3
9	64268-03	NUT-FL NYLON LOCK 3/8-16	1
10	64197-001	BLT-TDFM 5/16-18X3/4	2
11	64018-9	BLT-CRG 5/16-18X3/4 G5	4
12	64268-02	NUT-FL NYLN LCK 5/16-18	4
13	64140-1	COTTER PIN	4
14	841261	SPROCKET, 16T 1/2P BLK	1
15	516825.7	GUARD	1
16	516944	HUB	2
17	517226	BRG,SLV .33 .50 .20 IRON	2
18	517348	SPROCKET-IDLER	1
19	517641	SCRW,SPCL.38-16 1.75 HX	1
20	518506	SPRING	2
21	519038	BUSHING	2
22	4163618.7	LEVER	2
23	519040	HOOK, UPPER RIGHT	1
24	519041	HOOK, UPPER LEFT	1
25	519042	NUT	2
26	4130674	CLAMP, ROD LOWER	2
27	4163522.7	CLAMP, REEL	2
28	4163619.7	PLATE	1
29	519059	SHAFT,FRONT	1
30	519874	RACE,INNER	1
31	4163635.7	SCRAPER, WHEEL	2
32	4163630.7	LINK, LIFT	4
33	4163602.7	STOP, BELT	1
34	548962	HOUSING,BEARING	4
35	521856	BEARING,BALL	2
36	521857	COLLAR,BRG LOCKING	2
37	4164081	FRAME	1
	(INCLUDES ITEM 67-69)		
38	85010N	FITTING,GREASE 1/4 SPC	4
39	4163614.7	ARM, LEFT	1
40	4163613.7	ARM, RIGHT	1
41	4124194	WHEEL, 4.10/3.50-4 2PLY	2
	INCLUDES ITEMS 42-47)		
42	64025-03	NUT-HEX 5/16-24	4
43	64006-02	LOCKWSHR-HELICAL 5/16	4
44	306861	SCRW,.324.625 YS HX	4
45	548123	BEARING, WHEEL	2
46	548543	TIRE-4.10/3.50-4, 2 PLY	1
47	548546	TUBE	1
48	4124196	WHEEL ASSY	2
	(INCLUDES ITEMS 42-44, 47, 49 & 50)		
49	517332	RIM	1
50	523264	TIRE	1
51	64146	NUT, 5/16-18	4
52	64144-02	SNAP RING 3/4	2
53	29-045	GREASE FTG 1/4-28 45DEG	1
54	641518	NUT, HEX	2
55	4163603.7	WEIGHT AY-OPTIONAL	1
56	4163735	CHAIN,#40 ROLLER	1
57	521845	BEARING,NEEDLE	1
58	4113841	CONNECTOR LINK #40 NP	1
59	64163-61	WSHR .81X.406X16GA	7
60	64044-18	SCREW-SET 5/16-18 x 5/16	6
61	64144-03	SNAP RING 7/8"	2
62	64188-36	PIN CLEVIS 7/16X1/4	4
63	64123-68	BLT-HEX 5/16-18X1	2
64	64144	NUT-WLF 3/8-16	2
65	64123-87	BOLT-HEX 3/8-16X3/4	2
66	4163976	LABEL-RYAN OVAL X-LRG	1
67	524544	DECAL,REEL HEIGHT ADJ.	1
68	4163695	DECAL,CHF HOR	1
69	4163591	LABEL-BELTS/SERVICE	1
70	64163-04	WSHR-25/64X5/8X16GA	2
71	4164072.7	GUARD-SIDE	2
72	64152-23	SCREW 1/4-20X3/8 LG SP	4
73	64163-31	WSHR 25/64X1X12	4
74	64168-2	COTTER-HAIRPIN.08X1.19	2

HANDLE ASSEMBLY

MATAWAY

FIGURE 2



MATAWAY

FIGURE 2

ITEM	PART NO.	DESCRIPTION	QTY
1	64163-55	WASHER .328X.75X14 GA	6
2	111898	CLAMP,CABLE	1
3	64229-10	NUT-NYLON LOCK 10-24	1
4	64006-05	LOCKWSHR-HELICAL 1/2	2
5	640010	NUT-HEX JAM 7/16-20	1
6	64123-89	BOLT-HEX 1/4-20X3/4	1
7	64140-1	COTTER PIN-1/8X1	1
8	64123-68	BLT-HEX 5/16-18X1	2
9	4163791	LABEL-MATAWAY	1
10	64164-19	KEY WOODRUFF.19X.75 #9	5
11	64229-01	NUT-NYLON LOCK 1/4-20	4
12	64197-015	BLT-TDFM 10-32X1/2 TORX HD	2
13	4164070.2	WLDMT-FOOTGUARD	1
14	64189-18	BLT-HEX10-24 X 3/4LG	1
15	64123-68	BOLT-HEX 5/16-18X1	2
16	64025-15	NUT-HEX #10-24 KEPS	2
17	64268-02	NUT-FL NYLON LOCK 5/16-18	2
18	64140-1	COTTER PIN-1/8 X 1	1
19	64163-55	WASHER .328X.75X14 GA	1
20	64163-03	WSHR-.256X.62X18GA.	2
21	64123-73	BLT-HEX 1/2-13X1	2
22	65286-4A	TIE,CABLE 15/8 BLACK	2
23	515838.7	ROD, CONTROL	1
24	516855	SHAFT	1
25	516859.7	LEVER, ADJUSTING	1
26	4163645.7	BRACE	2
27	521679	BUSHING	2
28	64188-36	PIN,CLEVIS 7/16X1/4	1
29	524490	MOUNT,SWITCH (PLATED)	1
30	524493	ARM,PIVOT	1
31	524513.7	ARM, LIFT	2
32	524526.7	BRACKET, LIFT HANDLE	1
33	524578	BUSHING, .328X.63X.6	2
34	4164131	HANDLE AY	1
35	540243	CONTROL AY,THROTTLE	1
36	540245	CONTROL AY,KILL SWITCH	1
37	540265	WIRE AY, 7.5"	1
38	540266	WIRE AY, 75"	1
39	4163079	COVER, CNTRL W/DECALS	1
40	4163585.7	HANDLE AY	1
41	4163617	HANDLE AY,LOCKING PLTD	1
42	4163599.7	ARM AY,FRAME LIFT	2
43	4163604	SCREW AY, ADJUST PLTD	1
44	64044-18	SETSCREW, 5/16-18 X 5/16	3
45	85-SS14	SSCRW,.3/8-16 X 3/8 SKTHD	2
46	548507	CLEVIS	1
47	4163734	HAND GRIP	2
48	64268-03	NUTFL NYLON LOCK 3/8-16	2
49	64139-24	BLT-WLF 3/8-16 X 1	4
50	64123-07	BLT-HEX 1/4-20X1/2	1
51	64123-89	BLT-HEX 1/4-20X3/4	3
52	641517	LOCKNUT, HEX	1
53	64268-02	NUTFL NYLONLOCK 5/16-18	2
54	64152-18	SCR 8-32 X 3/8 S-TAP	2
55	64197-023	BLT-TDFM 10-32 X 3/4	1
56	805421	SPRING,EXTENSION	1
57	806800	SWITCH,STOP LIGHT	1
58	813840	CLIP	1
59	814585	BUSHING	1
60	820529	SPACER (PLATING)	1
61	4163774-01	TUBING, CONVOLUTED 50	1
62	64188-62	PIN CLEVIS 5/16X2.25	1
63	4163693	DECAL,CONTROL PANEL	1

CLUTCH ASSEMBLY AND CONTROL

MATAWAY

FIGURE 3

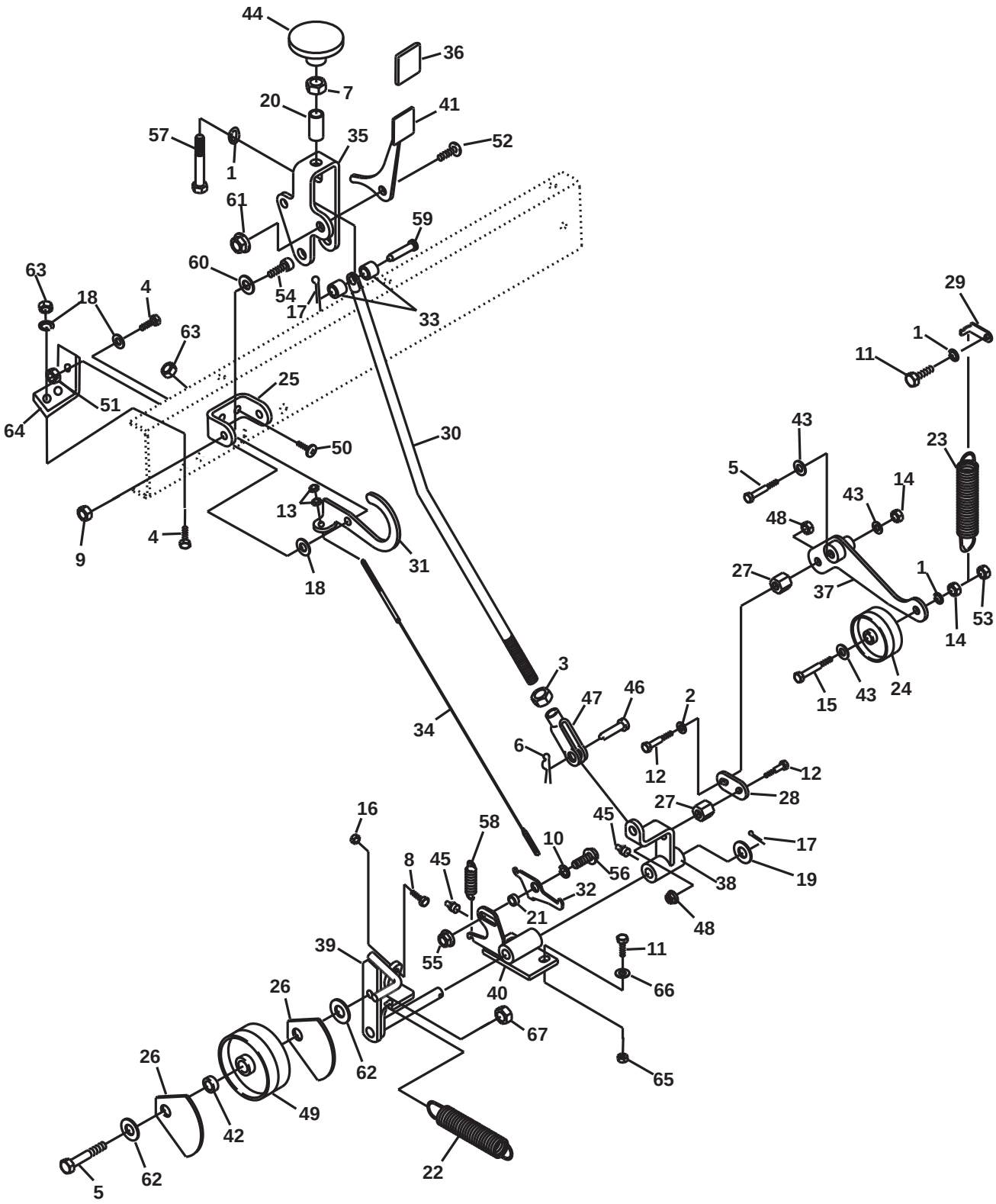
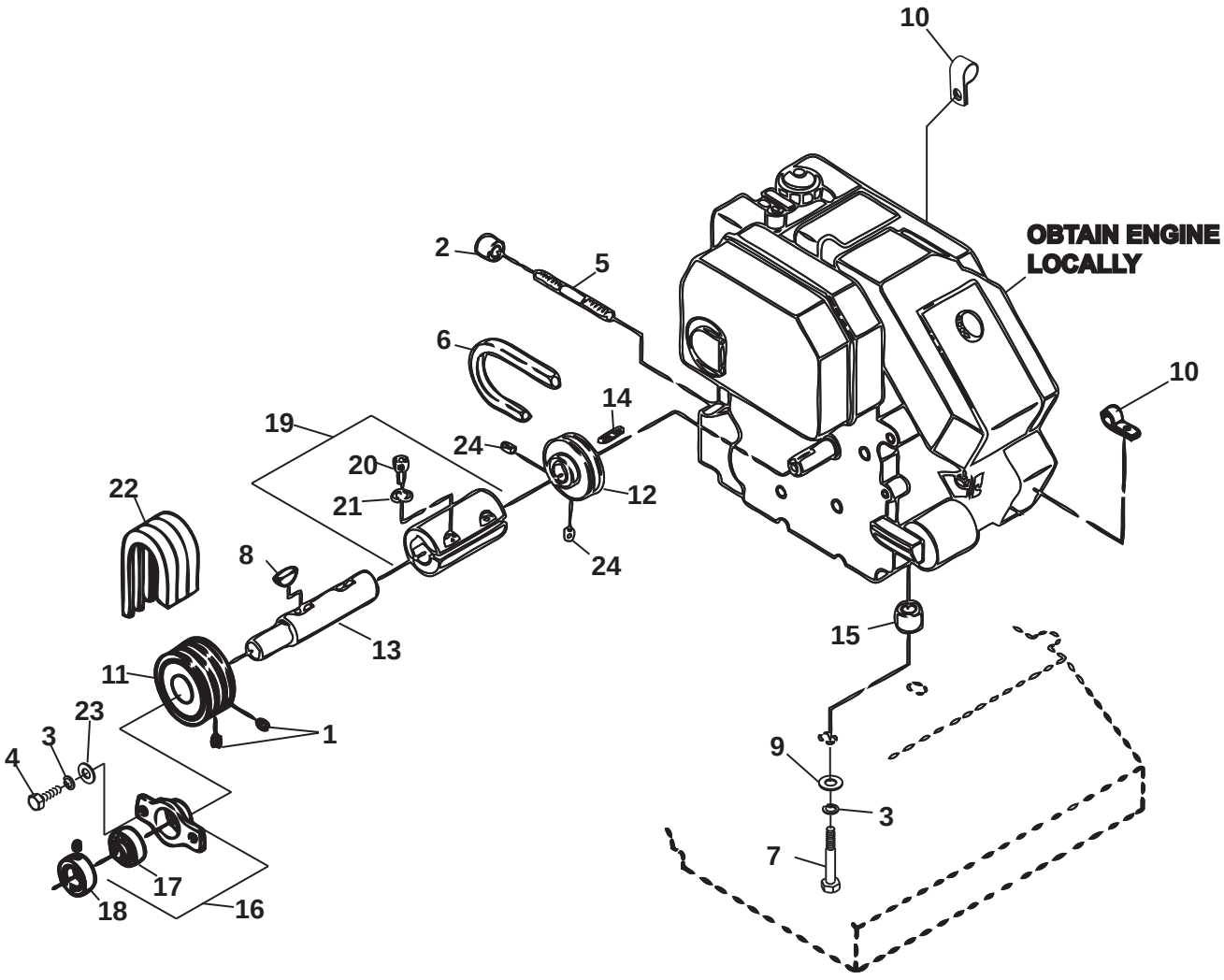


FIGURE 3

ITEM	PART NO.	DESCRIPTION	QTY
1	64006-03	WASHER, 3/8 HELICAL LCK	3
2	64163-55	WASHER .328X.75X14 GA	1
3	640010	NUT-HEX JAM 7/16-20	1
4	64123-89	BOLT-HEX 1/4-20X3/4	3
5	64123-82	BOLT-HEX 3/8-16X2-1/2	2
6	64168-2	COTTER-HAIRPIN.08X1.19	1
7	64025-04	NUT-3/8-24 HEX	1
8	64123-107	BLT-HEX 5/16-18X7/8	1
9	64229-01	NUT-NYLON LOCK 1/4-20	2
10	64163-55	WSHR .328X.75X14 GA	2
11	64123-50	BOLT-HEX 3/8-16X1	3
12	64123-69	BOLT-5/16-18X1/2 HEX	2
13	64025-15	NUT-HEX #10-24 KEPS	2
14	64025-05	NUT-3/8-16 HEX	2
15	64123-100	BOLT-3/8-16X2-1/4 HEX	1
16	64025-02	NUT-HEX 5/16-18	1
17	64140-1	COTTER PIN-1/8X1	2
18	64163-03	WSHR-.256X.62X18GA.	4
19	64163-67	WASHER-.516X1X12GA	1
20	516544	BUSHING (PLATING)	1
21	517226	BRG,SLV .33 .50 .20 IRON	1
22	2701258	SPRING, TSN 1.0X3.62X14	1
23	518487	SPRING	1
24	522882	PULLEY,IDLER	1
25	4163620.7	BRACKET, HANDLE	1
26	4163627.7	GUIDE, BELT	2
27	524507	NUT,SSPCL.312-18 Z HX	2
28	4163643	LINK (PLATING)	1
29	4163632	RETAINER,SPRING	1
30	524561.7	ROD, CONTROL	1
31	4163633	CAM,CONTROL (PLATED)	1
32	4163634	TRIGGER,LOCKING PLTD	1
33	524577	BUSHING,.328X.63X.41	2
34	524579	CABLE,CONTROL	1
35	524585.7	HANDLE, CONTROL	1
36	4163745	COVER,VINYL	1
37	4163612.7	ARM AY	1
38	4163611.7	PIVOT	1
39	4163610.7	IDLER ARM	1
40	4163609.7	BRACKET	1
41	4163608	LEVER AY,CONTROL PLTD	1
42	822474	SPACER	1
43	64163-61	WSHR .81X.406X16GA	3
44	548171	KNOB	1
45	29-045	FITTING,GREASE 1/4	2
46	64188-36	PIN,CLEVIS 7/16X1/4	1
47	548507	CLEVIS	1
48	64146	NUT, 5/16-18	2
49	548942	PULLEY, PLAIN FLAT 3.25	1
50	64123-89	BLT-HEX 1/4-20X3/4	2
51	64025-01	NUT-1/4-20 HEX	1
52	64218-06	SCR-BTN HD 5/16-18X3/4	1
53	641518	NUT, HEX	1
54	64189-3A	BLT-HEX SOC 1/4-20X5/8	2
55	64268-02	NUT-FL NYLN LCK 5/16-18	2
56	64262-006	BLT-FLG HD 5/16-18 X 3/4	1
57	64123-270	BLT-HEX 3/8-24X2-1/4	1
58	805421	SPRING,EXTENSION	1
59	64188-63	PIN-CLEVIS, 5/16 X 1.75	1
60	64205-02	WSHR-FLAT.265X.625X.125	2
61	64163-02	NUT-HEX 5/16-18	1
62	64163-04	WSHR-25-64X5/8X16GA	2
63	64229-01	NUT-NYLOCK 1/4-20	4
64	4163596.7	BRACKET-CAM CONTROL	1
65	64229-03	NUT-NYLOCK 3/8-16	2
66	64163-31	WSHR 25/64X1X12	2
67	64268-03	NUT-FL NYLON LOCK 3/8-16	1

MATAWAY

FIGURE 4



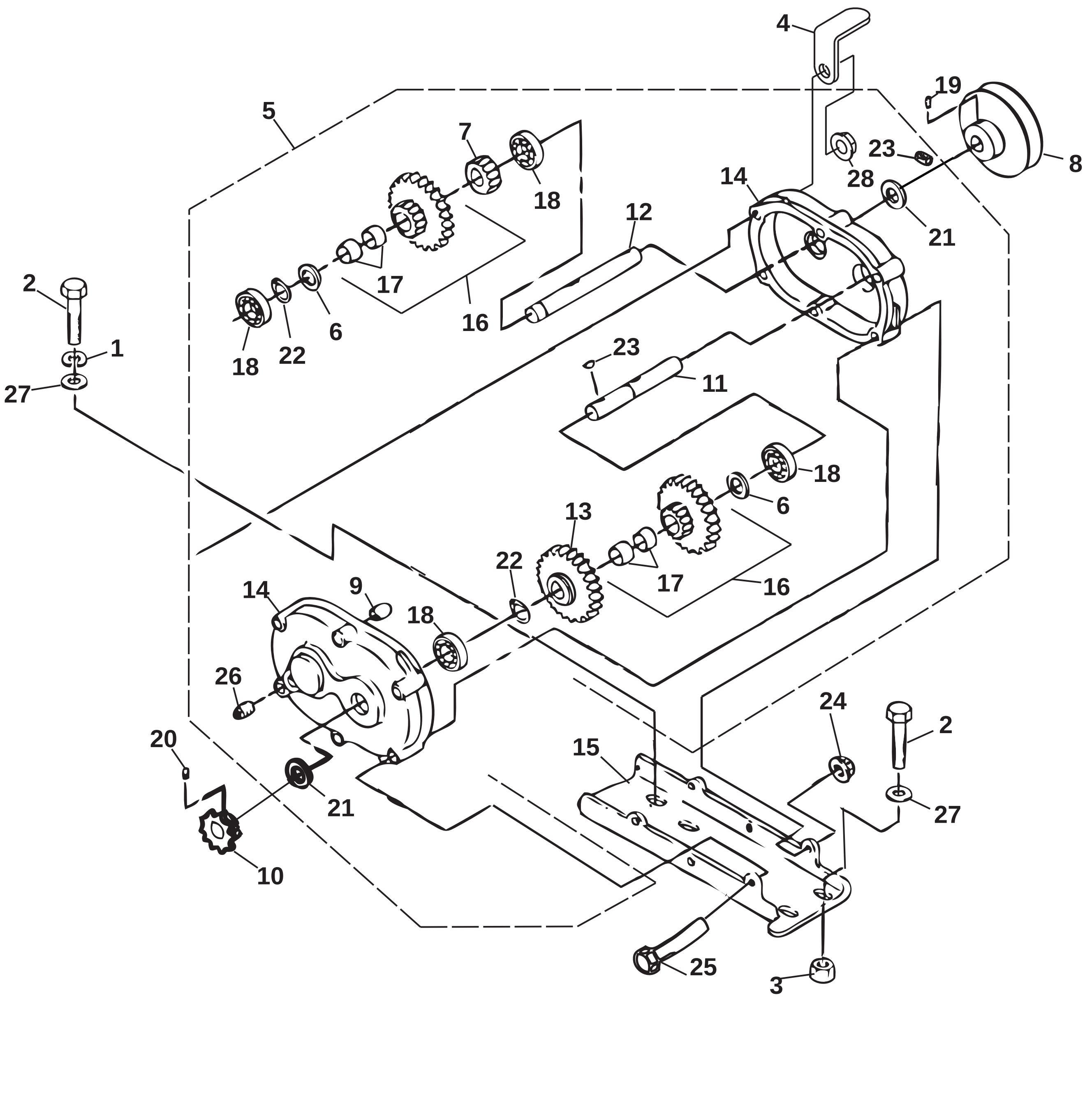
MATAWAY

FIGURE 4

ITEM	PART NO.	DESCRIPTION	QTY
1	85-SS14	SSCRW,.38-16.38 BS NH	2
2	118036	CAP,.38-18NPT GS PIPE	1
3	64006-03	WSHR, 3/8 HELICAL LCK	6
4	64123-50	BOLT-HEX 3/8-16X1	2
5	48024-17A	NIPPLE,.38-18NPT 5.0 GS	1
6	548403	V-BELT	1
7	64123-100	BOLT-3/8-16X2-1/4 HEX	4
8	64164-25	KEY-1/4X7/8 #807	2
9	64163-82	WASHR,.39 1.25.19 FLAT	4
10	48228A	CLIP	2
11	516892	PULLEY, REEL BELT	1
12	517101	PULLEY,3 IN. DIA BLK	1
13	517123	SHAFT	1
14	64164-36	KEY,.25 X.25 X 2.50 PS	1
15	838790	SPACER, ENG MNT PLTD	4
16	547835	PILLOW BLOCK AY	1
	(INCLUDES ITEM17)		
17	521856	BEARING,BALL	1
18	521857	COLLAR,BRG LOCKING	1
19	547755	COUPLING	1
	(INCLUDES ITEMS 20 & 21)		
20	64189-15	SCRW,.318 1.00 BS HS	2
21	64006-16	LWSHR,.31.09 HI-COLLAR	2
22	547759	BELT,DRIVE, SET OF 3	1
23	64163-31	WSHR- 25/64X1X12	2
24	64044-18	SETSCREW, 5/16-18 X 5/16	2

ITEM	PART NO.	DESCRIPTION	QTY

FIGURE 5



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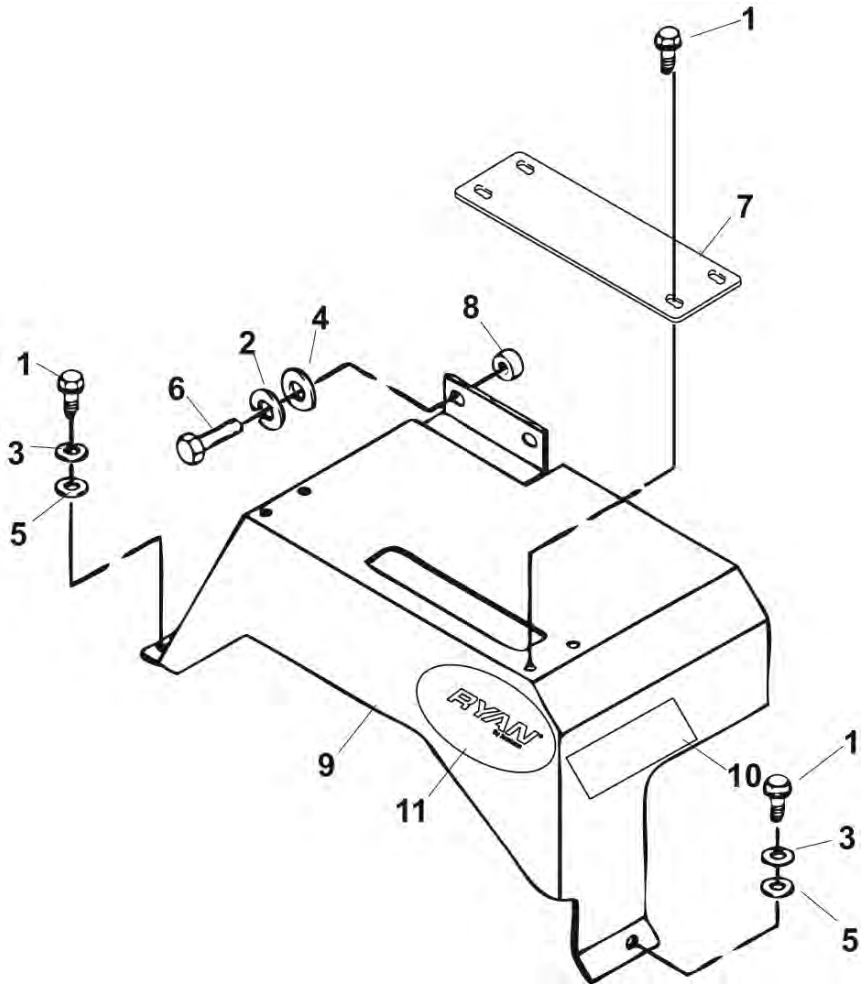
MATAWAY

FIGURE 5

ITEM	PART NO.	DESCRIPTION	QTY
1	64006-03	WASHER, 3/8 HELICAL LCK	2
2	64123-50	BOLT-HEX 3/8-16X1	4
3	64268-03	NUT-3/8-16 HEX	2
4	4163641	GUIDE,BELT (PLATING)	1
5	4163650	TRANSMISSION AY	1
	(INCLUDES ITEMS 6,7,9,114, 16-18, 226 ONLY 2 INNER KEYS INCLUDED ITEM 23)		
6	516700	SPACER	2
7	516724	GEAR	1
8	517137	PULLEY,4" DIA "A" SIZE	1
9	517226	BRG,SLV .33 .50 .20 IRON	2
10	517342	SPROCKET	1
11	518820	SHAFT, OUTPUT	1
12	518826	SHAFT, INPUT	1
13	518827	GEAR	1
14	522638	CASE, GEAR	2
15	4163628.7	BRACKET, MOUNTING	1
16	2702142	GEAR AY,IDLER 56T/20T	2
	(INCLUDES ITEM 17)		
17	515511	BUSHING	2
18	548119	BRG,BALL.75 1.62.31 "OP"	4
19	64044-18	SCREW,SET 5/16-18 x 5/16	2
20	85-SS14	SSCRW,3/8-16 X 3/8 SKTHD	1
21	548274	OIL SEAL	2
22	64144-02	SNAP RING 3/4	2
23	64164-37	KEY, WDRUF 5/16X5/8 #605	4
24	64146	NUT-WLF 5/16-18	6
25	64123-66	BLT-HEX 5/16-18X3-1/2	6
26	690501	PLUG-PIPE 3/8	2
27	64163-31	WSHR 25/64X1X12	4
28	64268-02	NUT-FL NYLON LOCK 5/16-18	1

ITEM	PART NO.	DESCRIPTION	QTY

FIGURE 6



MATAWAY

FIGURE 6

ITEM	PART NO.	DESCRIPTION	QTY
1	64197-002	BLT-TDFM 1/4-20X3/4	7
2	64006-06	LCKWSHER-HELICAL 7/16	2
3	64006-01	LCKWSHER-1/4 HELICAL	3
4	64163-67	WASHER-.516X1X12GA	2
5	64163-03	WSHR-.256X.62X18GA.	3
6	64123-84	BLT-HEX 7/16-14X1/2	2
7	4163648.2	COVER, PLATE	1
8	522982	SPACER (PLATING)	2
9	4164080	GUARD, W/DECALS	1
10	4163591	DECAL,WARNING HANDS	1
11	4161123	LABEL-RYAN OVAL	1

ITEM	PART NO.	DESCRIPTION	QTY

FIGURE 7

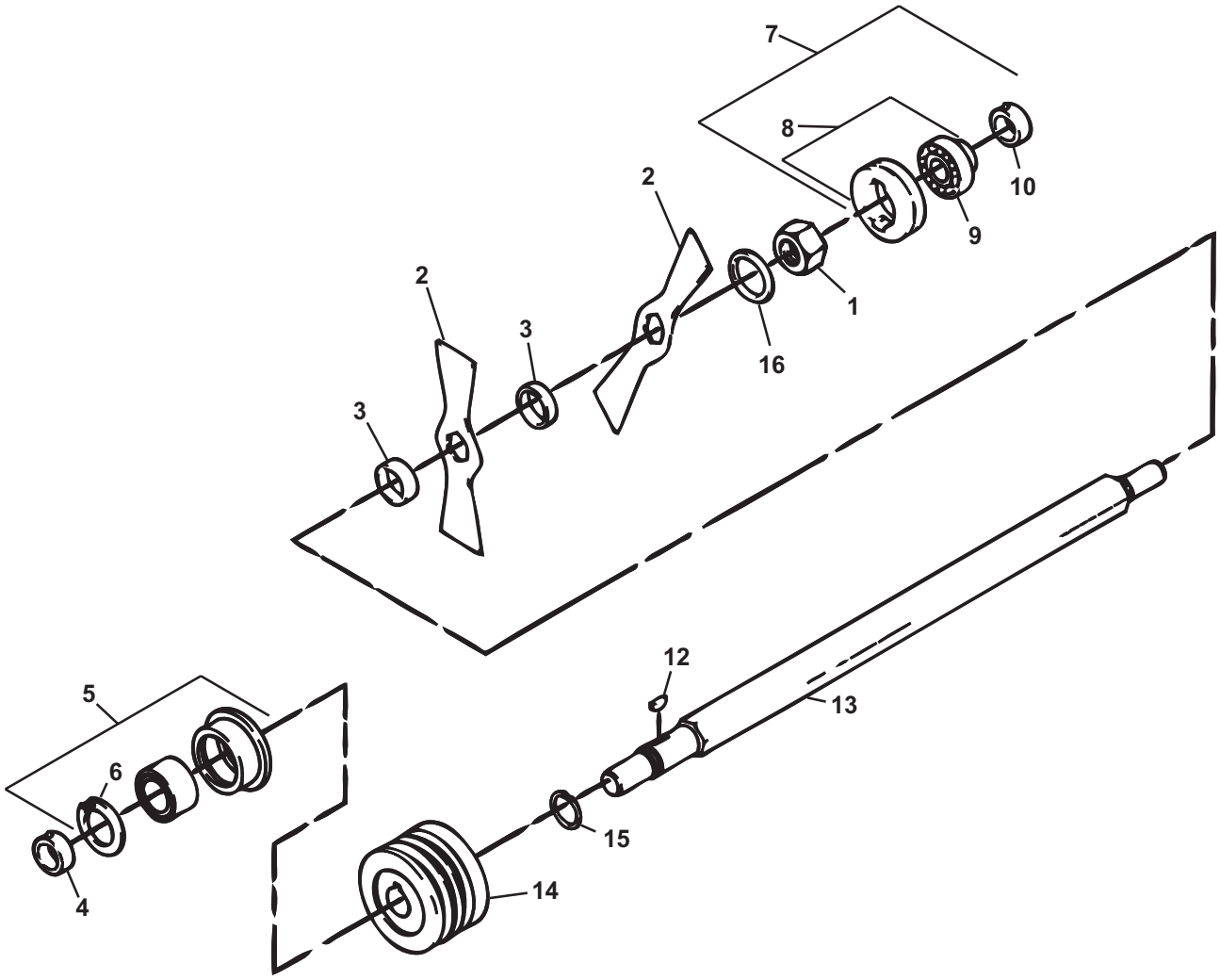


FIGURE 7

ITEM	PART NO.	DESCRIPTION	QTY
1	305134	NUT,.88-14 YS HX JAM	1
2	516901	BLADE, 1/32" (0.8mm)	36
3	516903	SPACER, .500 (12.7mm)	36
4	521857	COLLAR,BRG LOCKING	1
5	544287	BLOCK AY,PILLOW (INCLUDES ITEM 6)	1
6	548354	RING, INTERNAL RETAIN	1
7	545640	PILLOW BLOCK AY (INCLUDES ITEM 8)	1
8	544292	BEARING (INCLUDES ITEM 9)	1
9	521856	BEARING,BALL	1
10	521857	COLLAR,BRG LOCKING	1
11*	544260A	REEL (INCLUDES ITEMS 16)	1
12	64164-19	KEY, WOODRUFF	1
13	522542	SHAFT	1
14	522543	PULLEY	1
15	522545	RING,RETAINING	1
16	820484	WASHER, FLAT (USE ITEM 16 AS REQUIRED SO ITEM 1 DOES NOT CONTACT THE HEX SHAFT WHEN TIGHTENED)	3

ITEM	PART NO.	DESCRIPTION	QTY

NOTE:

THIS REEL ASSEMBLY IS BEST USED FOR PULVERIZING CORES AFTER AERATING.

BLADES ARE SPACED AT 1/2" INTERVALS ON THE REEL.

DEPTH OF CUTTING SHOULD BE LIMITED WHEN USING CLOSELY SPACED BLADES.

*** NOT ILLUSTRATED**

FIGURE 8

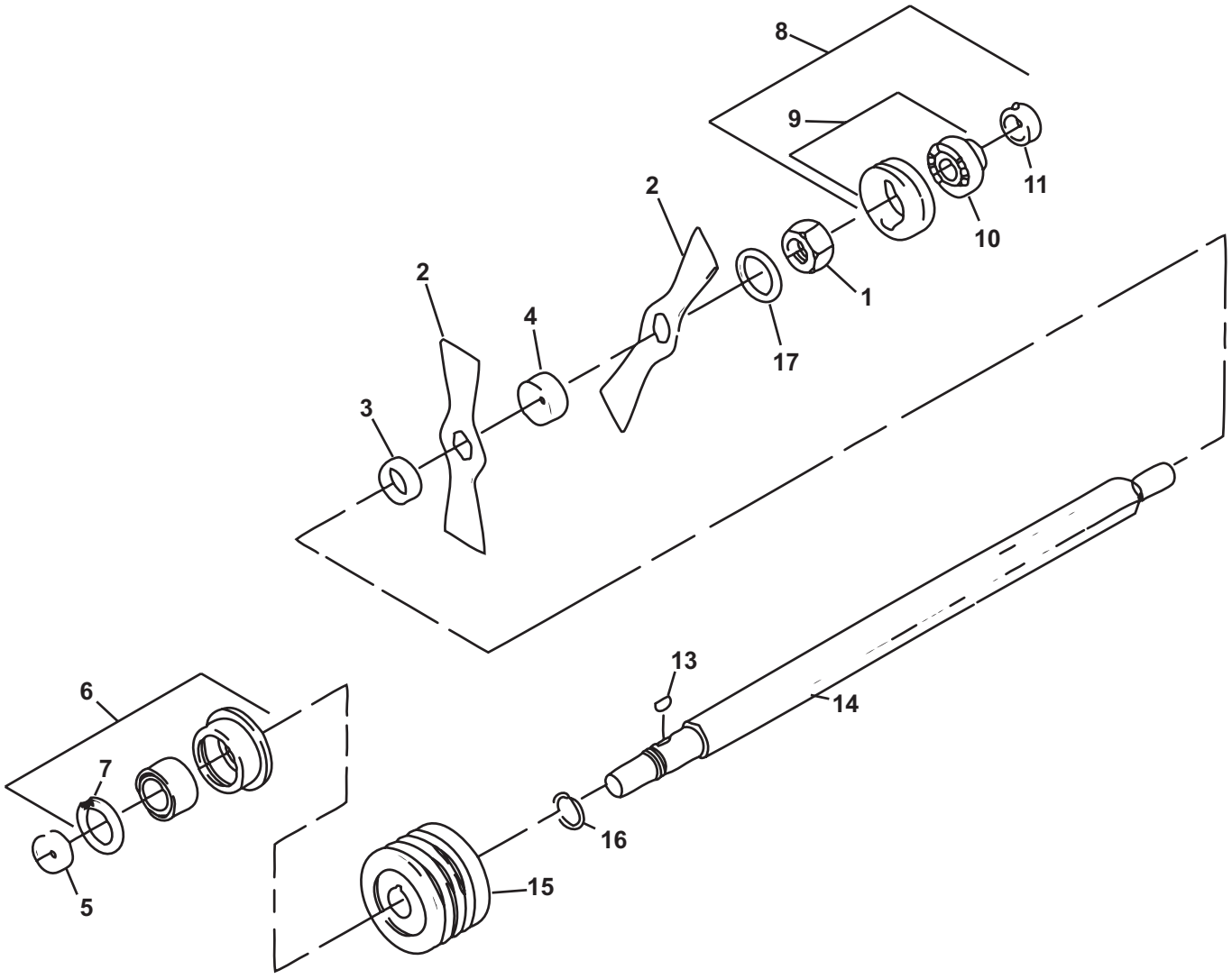


FIGURE 8

ITEM	PART NO.	DESCRIPTION	QTY
1	305134	NUT,.88-14 YS HX JAM	1
2	516901	BLADE, 1/32" (0.8mm)	21
3	516903	SPACER, .500 (12.7mm)	1
4	516905	SPACER, .900 (23mm)	20
5	521857	COLLAR,BRG LOCKING	1
6	544287	BLOCK AY,PILLOW (INCLUDES ITEM 7)	1
7	548354	RING, INTERNAL RETAIN	1
8	545640	PILLOW BLOCK AY (INCLUDES ITEM 9)	1
9	544292	BEARING ASSY (INCLUDES ITEM 10)	1
10	521856	BEARING,BALL	1
11	521857	COLLAR,BRG LOCKING	1
12*	544261A	REEL (INCLUDES ITEMS 11, 13-17)	1
13	64164-19	KEY, WOODRUFF	1
14	522542	SHAFT	1
15	522543	PULLEY	1
16	522545	RING,RETAINING	1
17	820484	WASHER, FLAT (USE ITEM 17 AS REQUIRED SO ITEM 1 DOES NOT CONTACT THE HEX SHAFT WHEN TIGHTENED)	3

ITEM	PART NO.	DESCRIPTION	QTY

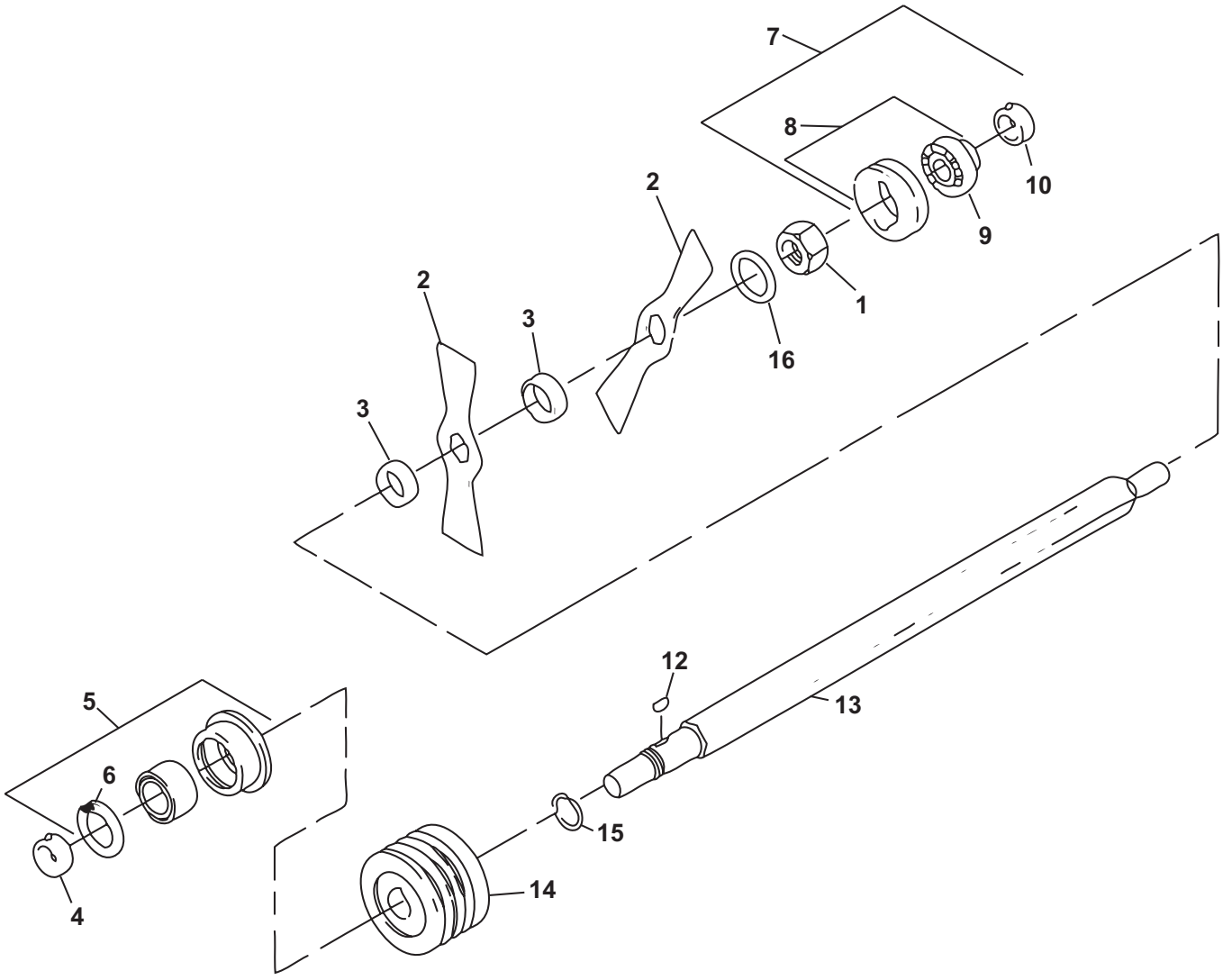
NOTE:

THIS REEL ASSEMBLY IS BEST SUITED FOR THATCH CONTROL OF FINE BENT GRASSES AS WELL AS GRAIN CONTROL.

BLADES ARE SPACED AT 1" INTERVALS ON THE REEL.

*** NOT ILLUSTRATED**

FIGURE 9



REEL 1/16" BLADES-1" SPACING

FIGURE 9

ITEM	PART NO.	DESCRIPTION	QTY
1	305134	NUT,.88-14 YS HX JAM	1
2	516900	BLADE, 1/16" (1.5mm)	20
3	516905	SPACER, .900 (23mm)	20
4	521857	COLLAR,BRG LOCKING	1
5	544287	BLOCK AY,PILLOW (INCLUDES ITEM 6)	1
6	548354	RING, INTERNAL RETAIN	1
7	545640	PILLOW BLOCK AY (INCLUDES ITEM 8)	1
8	544292	BEARING ASSY (INCLUDES ITEM 9)	1
9	521856	BEARING,BALL	1
10	521857	COLLAR,BRG LOCKING	1
11*	544262A	REEL (INCLUDES ITEMS 10,12-16)	1
12	64164-19	KEY, WOODRUFF	1
13	522542	SHAFT	1
14	522543	PULLEY	1
15	522545	RING,RETAINING	1
16	820484	WASHER, FLAT (USE ITEM 16 AS REQUIRED SO ITEM 1 DOES NOT CONTACT THE HEX SHAFT WHEN TIGHTENED)	3

ITEM	PART NO.	DESCRIPTION	QTY

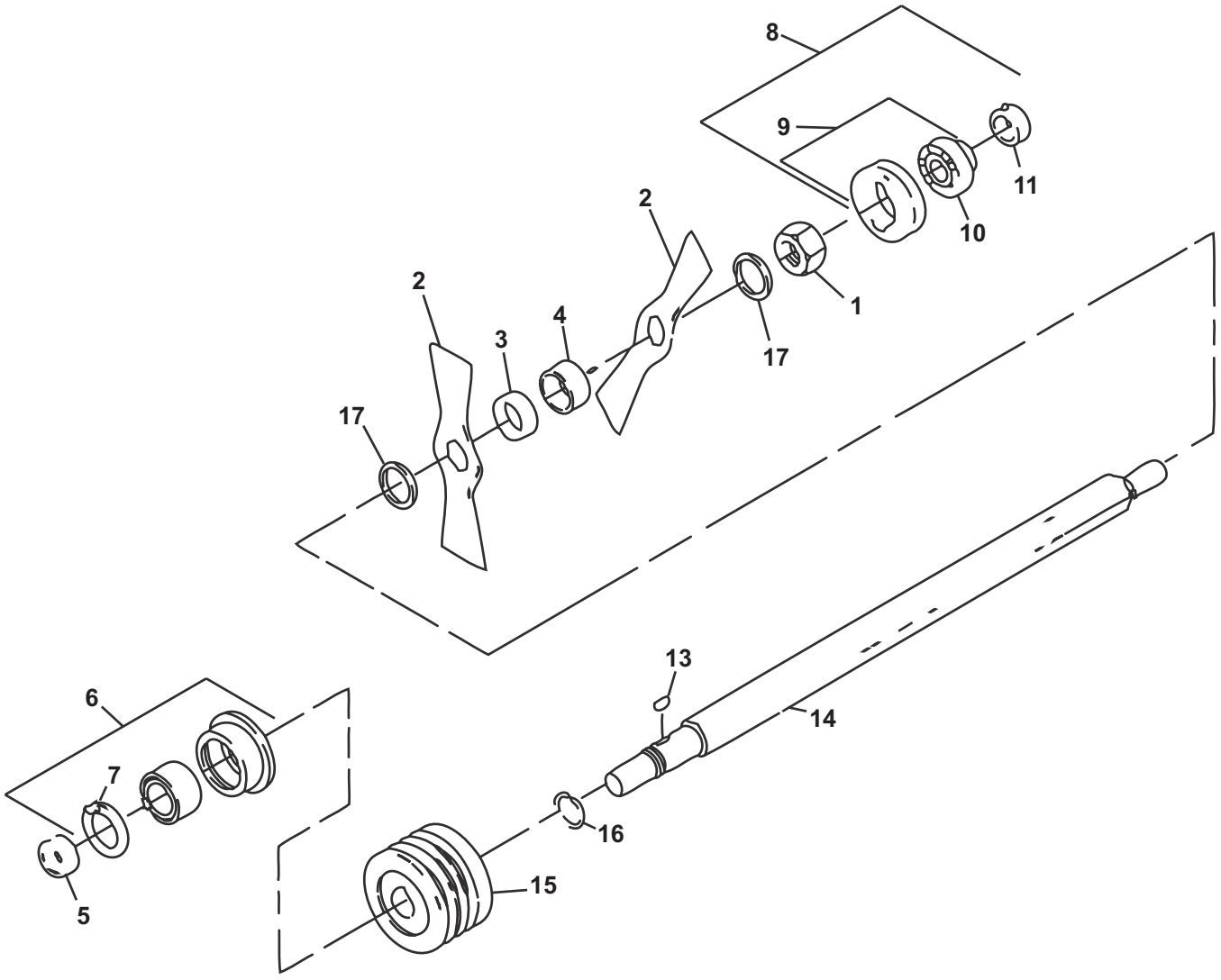
NOTE:

THIS REEL ASSEMBLY IS BEST USED FOR RENOVATING HEAVY GRASSES AND BEFORE OVERSEEDING.

BLADES ARE SPACED AT 1" INTERVALS ON THE REEL.

*** NOT ILLUSTRATED**

FIGURE 10



REEL 1/16" BLADES-1/2" SPACING

FIGURE 10

ITEM	PART NO.	DESCRIPTION	QTY
1	305134	NUT,.88-14 YS HX JAM	1
2	516900	BLADE, 1/16" (1.5mm)	14
3	516903	SPACER, .500 (12.7mm)	13
4	516905	SPACER, .900 (23mm)	13
5	521857	COLLAR,BRG LOCKING	1
6	544287	BLOCK AY,PILLOW (INCLUDES ITEM 7)	1
7	548354	RING, INTERNAL RETAIN	1
8	545640	PILLOW BLOCK AY (INCLUDES ITEM 9)	1
9	544292	BEARING ASSY (INCLUDES ITEM 10)	1
10	521856	BEARING,BALL	1
11	521857	COLLAR,BRG LOCKING	1
12*	544265A	REEL (INCLUDES ITEMS 11,13-17)	1
13	64164-19	KEY, WOODRUFF	1
14	522542	SHAFT	1
15	522543	PULLEY	1
16	522545	RING,RETAINING	1
17	820484	WASHER, FLAT (USE ITEM 17 AS REQUIRED SO ITEM 1 DOES NOT CONTACT THE HEX SHAFT WHEN TIGHTENED)	3

ITEM	PART NO.	DESCRIPTION	QTY

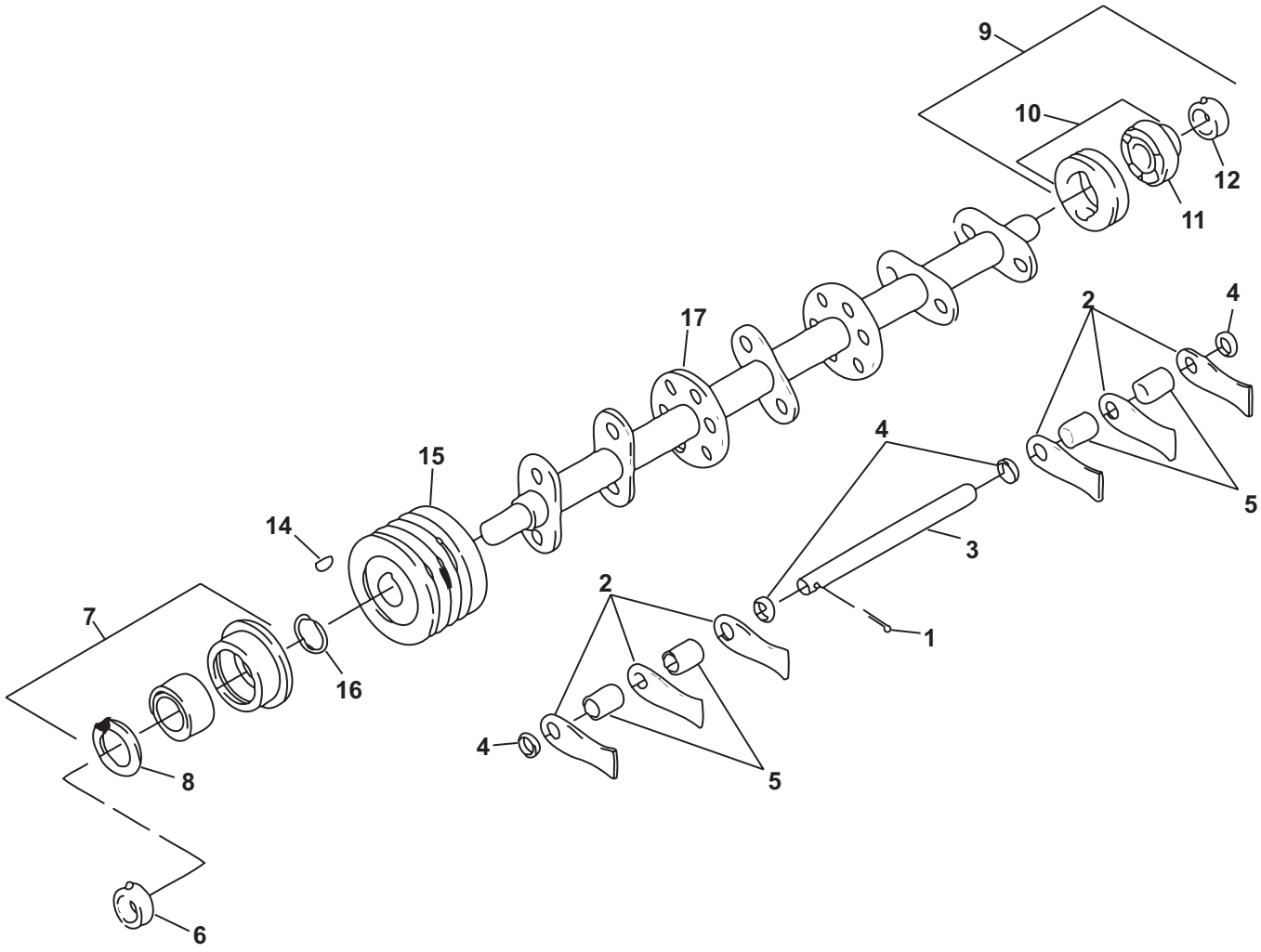
NOTE:

THIS REEL ASSEMBLY IS BEST USED FOR RENOVATING AND THINNING ALL COARSE STEMMED GRASSES.

BLADES ARE SPACED AT 1" INTERVALS ON THE REEL.

*** NOT ILLUSTRATED**

FIGURE 11



REEL FLAIL BLADES-1" SPACING

FIGURE 11

ITEM	PART NO.	DESCRIPTION	QTY
1	306956	COTTER PIN	6
2	516897	BLADE,FLAIL	36
3	517155	SHAFT	6
4	517162	SPACER, .328 (8mm)	24
5	517163	SPACER, .891 (23mm)	24
6	521857	COLLAR,BRG LOCKING	1
7	544287	BLOCK AY,PILLOW	1
	(INCLUDES ITEM 8)		
8	548354	RING, INTERNAL RETAIN	1
9	545640	PILLOW BLOCK AY	1
	(INCLUDES ITEMS 10-12)		
10	544292	BEARING ASST	1
	(INCLUDES ITEMS 11)		
11	521856	BEARING,BALL	1
12	521857	COLLAR,BRG LOCKING	1
13*	544269A	REEL	1
	(INCLUDES ITEMS 12,14-17)		
14	64164-19	KEY, WOODRUFF	1
15	522543	PULLEY	1
16	522545	RING,RETAINING	1
17	545913.7	SHAFT AY	1

ITEM	PART NO.	DESCRIPTION	QTY

NOTE:

THIS REEL ASSEMBLY IS BEST USED FOR THATCH CONTROL AND FOR PULVERIZING CORES AFTER AERATING.

BLADES ARE SPACED AT 1" INTERVALS ON THE REEL.

*** NOT ILLUSTRATED**

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