RYAN®

OP/PARTS MANUAL

MODEL:

544283B
MATAWAY

SCHILLER GROUNDS CARE

MAN 4157304
Rev. A 6-2007

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.

Schiller Grounds Care, Inc.

One Bobcat Lane
Johnson Creek, WI 53038 U.S.A
Phone: 920-699-2000
Fax: 920-699-3683

MODEL NUMBER

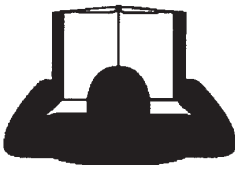
SERIAL NUMBER

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.

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. 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 to 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 dethatched/seeded of objects such as rocks, toys, wire or other debris that may be picked up or thrown by the machine.
- 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.
- Operate only in daylight or in good artificial light.
- Do not operate 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 blades, blade bolts and the cutter assembly for wear or damage. Replace worn or damaged blades and bolts to preserve balance.
- Verify that machine and attachments, if any, are in good operating condition.
- Do not engage blades until ready to dethatch/seed.

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 blades if not dethatching/seeding.
- Do not run the engine in an enclosed area where dangerous carbon monoxide fumes can collect.
- Stop operation if someone approaches.
- Keep housing service openings closed when dethatching/seeding.
- Do not turn sharply. Use care when reversing.
- Use counter-weight(s) or wheel sheights when suggested int he operator's manual.
- Never leave a machine unattended. Always turn off blades, set parking brake, stop engine and remove key before dismounting.

Starting

- Start only according to instructions in this manual or on the machine.
- Before attempting to start the engine, make sure:
  - the parking brake is on;
  - the PTO is disengaged;
  - the traction drive is in NEUTRAL.
- When starting the engine, make sure hands and feet are clear of the blades.
- Do not start the machine while standing in front of the discharge chute or with the chute directed at someone.
- Do not engage PTO at full throttle. Throttle to idle or lowest possible engine speed.
- 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 master clutch.
  - Shut off the engine and remove the key.
- Disengage the master clutch and wait until the blades quit rotating:
  - before raising blade assembly;
  - when not dethaching/seeding;
  - for transport;
  - when crossing surfaces other than grass.
- Stop the engine, disengage the master clutch:
  - before refueling;
  - before removing grass catcher;
  - before making height adjustment unless the adjustment can be made from the operator's position.
- Stop the engine, disengage the master clutch, and disconnect the spark plug wire(s) or remove the key:
  - before clearing blockages;
  - 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 blades to come to a complete stop when stopping operation to clear blockages, unclog, 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 mowing.

In general

- Slow down before turning.
- Do not operate in reverse unless absolutely necessary. Always look behind and down for small children and pets before and during backing.
- Be aware when approaching blind corners, shrubs, trees, tall grass or other objects that may obscure vision.
- If tires lose traction, disengage the blades. If on a slope, head downhill.

Slope Operation

⚠ 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 operate on slopes if uneasy or uncertain. Ultimate responsibility for safe operation on slopes rests with the operator.
- Do not operate excessively steep slopes.

  A slope is too steep if:

  - The machine must be crabbed (turned partially sideways uphill) to drive across the slope.
  - The machine turns downhill going across the slope.
  - You are uneasy about being on the slope
- With walk behind machines, operate across slopes, not up and down.
- Avoid starting or stopping on a slope. If tires lose traction, disengage the blades 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, tree limbs 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 operate near dropoffs, ditches or embankments. The machine could suddenly turn over if a wheel runs over the edge or an edge caves in.
- Follow the manufacturer's recommendations for wheel weights or counterweights to improve stability.
- Do not operate on slopes when grass is wet. Reduced traction could cause sliding.

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.
- 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.

Blades

WARNING

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

Fuel

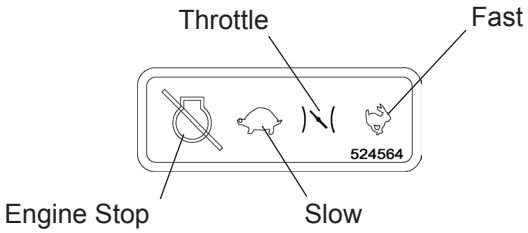
- Gasoline and diesel fuels are flammable; gasoline vapors are explosive. Use extra care when handling.
- Store only in containers specifically designed for fuel.

WARNING

- 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.

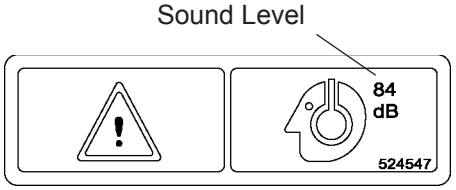
  Keep the dispenser nozzle in contact with the rim of the fuel tank or container opening until fueling is complete. Do not use a nozzle lock-open device.
- Replace caps on fuel cans and tanks securely.

Throttle Control

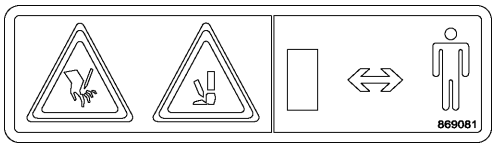


Sound Level

Operator should wear hearing protection if operating the machinery for extended periods of time (longer than 4 hours).



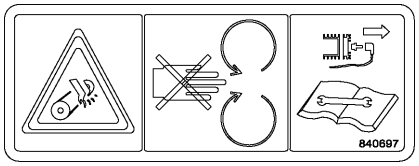
Safety Warnings



Hands or feet may be severely injured or severed if placed beneath the unit while running.

Bystanders should keep a safe distance from the machine while it is running.

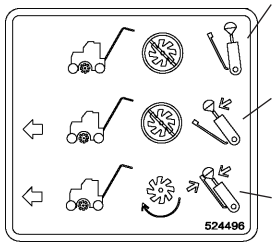
Keep hands away from moving parts.



Safety shields should remain in place while running the machine. Hands may become entangled in belts.

Disconnect the spark plug wire and read the manual before performing any service or maintenance on the unit.

Clutch Control



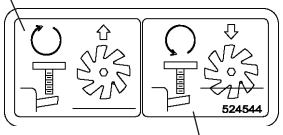
Both drive and reel clutches DISENGAGED (control is pulled back)

Drive clutch ONLY engaged (control is pushed forward)

Both drive and reel clutches engaged (lever is pulled back to knob, then control is pushed forward)

Cutting Height Adjustment

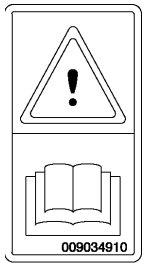
Turn the adjustment screw clockwise to raise the cutting height.



Turn the adjustment screw counterclockwise to lower the cutting height.

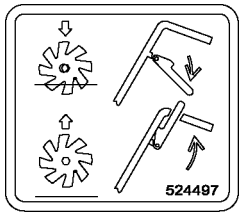
Operating Instructions

To prevent injury, the operator must be familiar with the operation of this machinery and fully aware of safe operating procedures.



Read and understand the operator's manual

Lift Control



Push down on the handle to lower the reel

Pull the handle up to raise the reel

⚠CAUTION

Do not operate this equipment until you have read the CONTROLS and OPERATION sections of this manual thoroughly.

To prevent injury, use an adequate lifting device (i.e., hoist, or fork lift) to remove unit from pallet.

1. Remove and discard banding attaching Mataway to pallet.

⚠WARNING

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

2. Lay-out all loose parts and hardware, and remove Mataway from pallet using appropriate lifting device.

3. Attach the handle **A** to the mounting tabs **B** on the frame **C** using (2) 1/2-13 X 1 screws and lockwashers.

4. Mount the side braces **D** to the handle **A** using (2) 3/8-16 X 1 flangelock screws, and flangelock nuts. Secure braces to frame using (2) 3/8-16 X 1 flangelock screws.

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

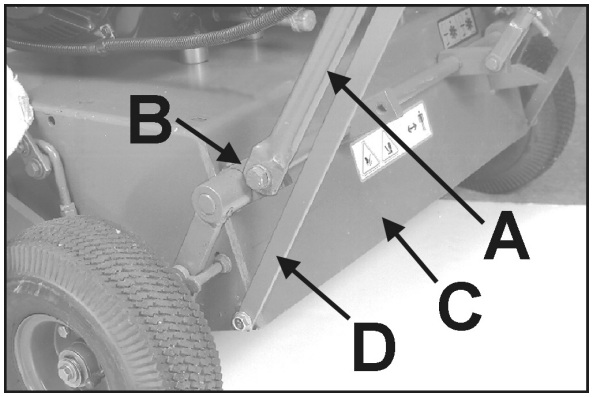
⚠WARNING

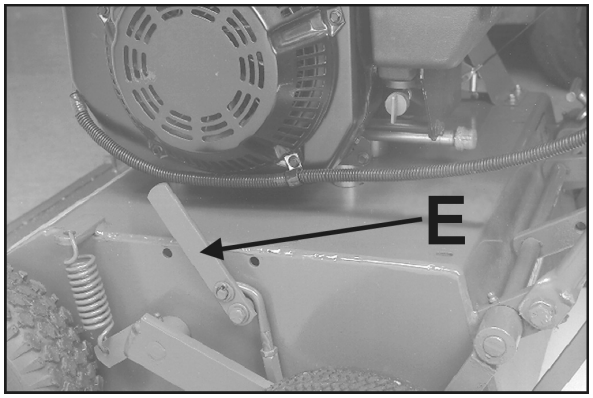
To prevent fuel spillage and/or the risk of fire or personal injury from inhalation of fumes, be sure fuel tank is empty before tilting the unit forward.

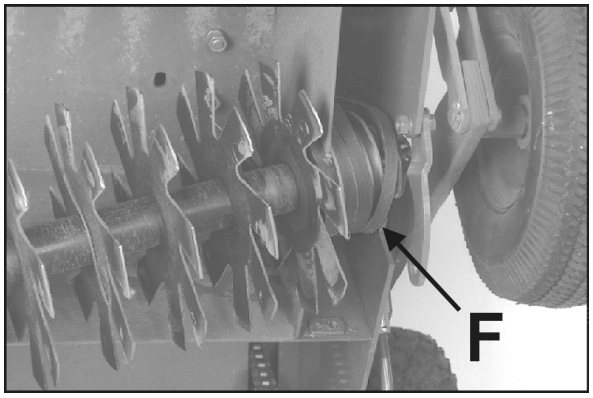
Support rear of tilted unit adequately.

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

7. Position the reel to allow installation of the three reel drive belts **F** onto the reel pulley.





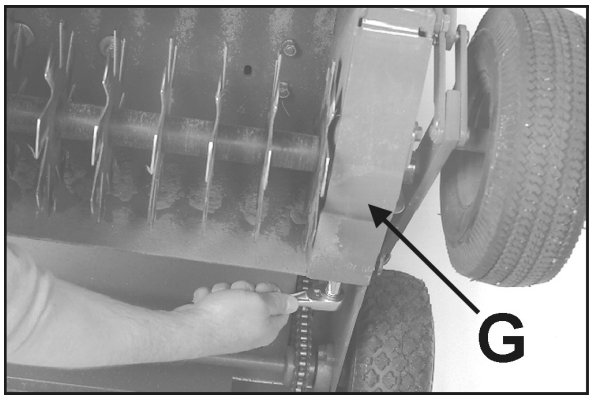


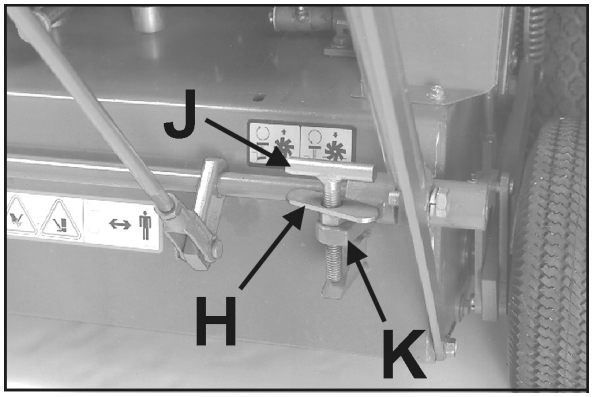
8. Place the pillow block (on the drive pulley end) into the recessed part of the frame and position the pillow block (opposite end of drive pulley) so the frame slips into the groove in the pillow block.

9. Place reel retaining hooks from the clamp lever into reel clamps and push the levers forward until they lock "over center" to secure the reel into position (the reel clamp will fit into the groove on the pillow block on left side of unit.

NOTE: The left side reel clamp is on the inside of the frame.

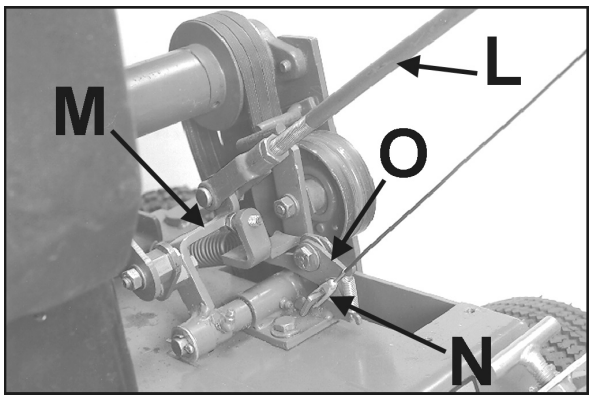
If the clamp is too tight or too loose, the hook can be adjusted so that the proper tension can be achieved when the lever is locked over center. After the reel is positioned properly, check for free rotation.





⚠ CAUTION

Be certain the reel clamp lever locks over center. Failure to do so may allow the reel to work free causing damage to the equipment and/or personal injury to the operator and/or bystanders.



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

11. Remove jack stands and set unit on ground.

12. Assemble the locking nut handle **H** and and depth adjustment screw **J**. Install them into the lift bracket **K**. For final depth adjustment of the reel, refer to the Operation section of this manual.

13. Attach the clutch control rod **L** to the drive belt idler assembly **M** using a clevis pin, washer and cotter pin.

14. Hook the clevis of the clutch cable **N** to the reel belt idler trigger **O**.

15. Attach the other end of the cable **A** to the cam **B** on the back of the handle. Pass the threaded portion through the hole in the cam and secure it with two jam nuts **C**.

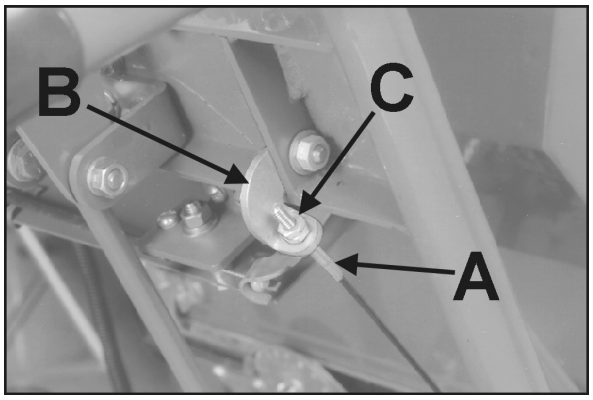
    Use the jam nuts to adjust tension on the cable. The cable must be loose enough to allow the trigger to latch the reel belt idler when it is disengaged and tight enough to fully retract the trigger when the control lever is pulled back.

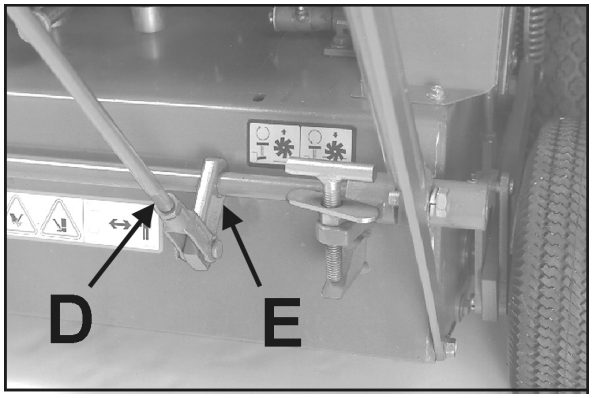
16. Using a clevis pin, connect the clevis on the lift rod **D** to the lift arm **E** as shown.

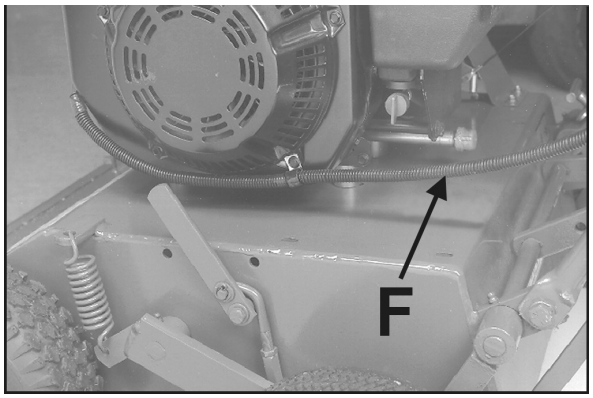
NOTE: Adjusting the clevis on the rod may be required to insure that the lever locks over center with enough force to hold the unit firmly in the up position.

Once the clevis is positioned properly, secure the clevis pin with a cotter pin. Tighten the locking nut on the rod against the clevis.

17. Secure the convoluted tubing **F** that contains the throttle cable and switch wire to the side of the engine as shown.





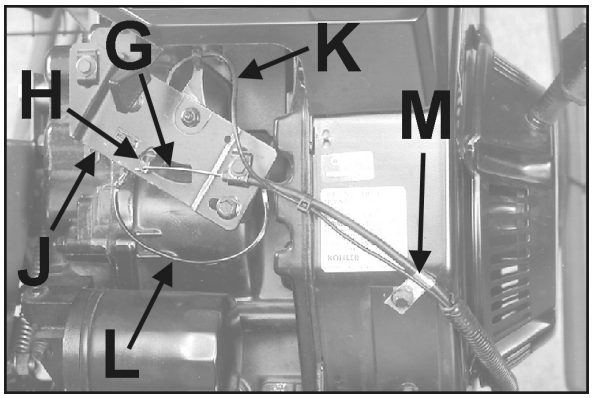


18. Connect the throttle cable wire **G** to the throttle lever **H** and clamp the cable to the throttle plate **J** on the front of the engine.

19. Connect the switch wire **K** to the electrode behind the throttle plate **J** (opposite end of the electrode to which the engine wire **L** is connected).

NOTE: Make sure that the throttle cable is clamped on the throttle plate so that when the throttle lever is pulled all the way back, the engine stops. Adjust the position of the cable in the clamp if required.

20. Clamp the throttle cable to the front of the engine cowl **M** as shown.



THROTTLE (A)

Move throttle lever forward to increase engine speed. Move the lever all the way back to stop the engine.

LIFT LEVER (B)

Raises and lowers the frame mounted reel. Pull the lever back and down to lower the reel. Pull the lever up and forward until it locks over center to raise the reel.

OPERATOR PRESENCE LEVER (C)

Must be held against the handle bar whenever the clutch control is engaged or the engine will stall (the engine can be started without holding the operator presence lever, if the clutch control is disengaged).

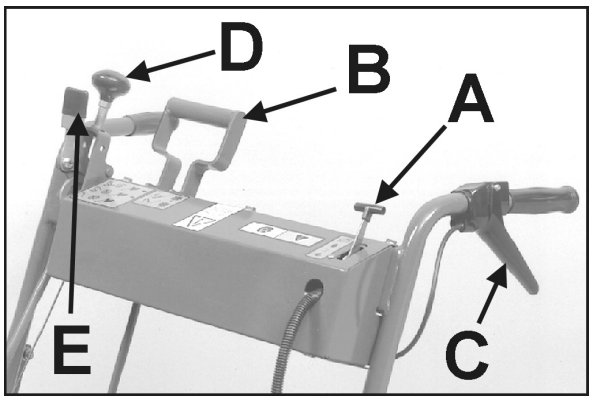
CLUTCH CONTROL (D)

Engages the clutch for both the drive transmission and reel rotation.

REEL CONTROL LEVER (E)

Must be pulled back against the clutch control handle for the reel clutch to be engaged.

Pull the Reel Control Lever back against the clutch control and push the clutch control forward to engage both the drive clutch and the reel clutch. Push the clutch control forward without pulling back the reel control lever to engage the drive clutch ONLY. Pull the clutch control all the way back until it locks over center to disengage both clutches.



⚠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.

Remove fuel cap slowly. Fuel tank may be under pressure and could cause personal injury from spraying.

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

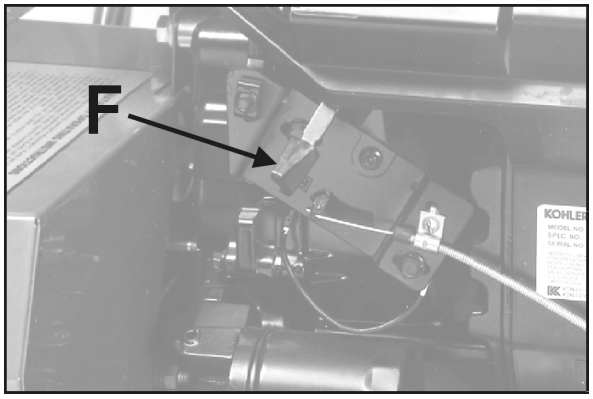
DO NOT operate equipment without shields in place. DO NOT make adjustments or perform any maintenance while the engine is running.

Immediately replace any warning decal which becomes illegible.

STARTING THE ENGINE

Before starting engine, check engine oil level. Fill if necessary following the engine manufacturer's recommendation for the type and amount of oil required.

Fill fuel tank with appropriate fuel recommended by the engines manufacturer.



1. Make sure the lift lever is in the raised position.
2. Make sure the clutch control is disengaged (engine will not start if the clutch control is engaged).
3. Move the throttle lever midway between fast and slow.
4. Use the choke as required to start a cold engine. Choke control **F** is located on the front of the engine.
5. Stand at side of unit placing left foot on top of housing and slowly pull the recoil starter until just past compression. Return starter handle, pull firmly with a smooth, steady motion to start.

DEPTH ADJUSTMENT

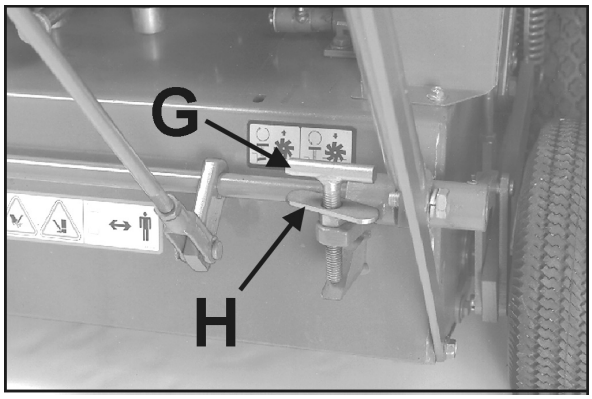
The factory reel depth setting gives a maximum of 1" (25 mm) turf penetration on level terrain, and a reel to ground clearance of 1 1/2" (38 mm) when reel lift lever is in the transport (raised) position.

NOTE: Initial depth adjustment should be made with the unit on a level surface. If level surface is concrete, the reel blades must not touch the surface when lifting lever is in the lowered position.

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

Fine depth adjustment is made by turning the adjusting screw **G** clockwise (down) to raise reel from the turf, and turning the adjusting screw counterclockwise (up) to lower reel into the turf. Tighten locking nut **H** after each reel adjustment.

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).



DETHATCHING

1. Adjust reel to desired cutting depth.

2. Whenever possible, a few test runs should be made on turf similar to where the unit will be used. This will allow preliminary adjustments to be made before entering greens (etc.) and help eliminate the possibility of turf damage due to misadjustments.

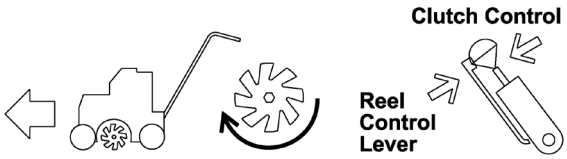
3. Start the engine. Compress and hold the operator presence lever.

4. Pull back on the reel control lever and push the clutch control forward to engage both the reel and drive clutches. Adjust the throttle to the operator's desired walking speed.

5. Lower the reel **after** the unit is in motion.

NOTE: To prevent damage to the turf, the unit should be in motion and the clutch control engaged **before** lowering reel onto the turf.

Never cross hard surfaces or objects (sidewalks, driveways, stepping stones, etc.) while the reel is down and/or engaged.



6. After each pass across the turf, raise the reel, disengage the clutch control and position the unit manually for the next pass (this will help prevent damage to the turf). Make all passes across the turf at uniform speed.

⚠ CAUTION

Before operating, check area to be worked and remove any object(s) which may present a safety hazard and/or damage the equipment.

To prevent injury due to rotating blades, never place hands or feet beneath the equipment at any time.

To prevent injury from thrown blades, never operate equipment with reel blades that are cracked, badly bent, missing, or in any abnormal condition.

To keep the Mataway in good operating condition, proper maintenance and immediate repair of any damaged part is necessary. Perform the following services, and follow procedures for proper storage.

⚠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.

Any warning decal that becomes illegible should be replaced immediately.

Wear protective eye equipment when using hammer, chisels, punches and drills.

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

Stop engine and let cool before servicing or making adjustments around the engine area.

Use adequate lifting device to raise unit. Use appropriate jack stands to support unit.

PREVENTIVE MAINTENANCE

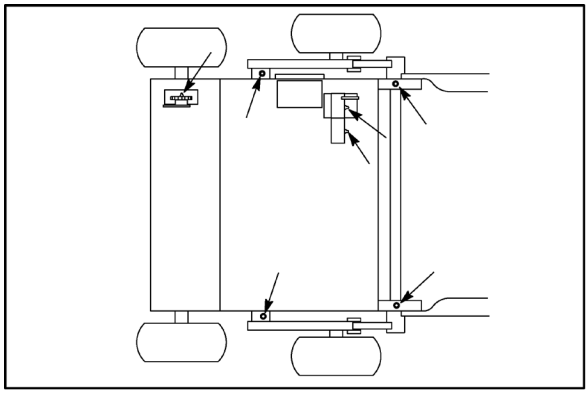
After each days use:

1. Wash unit with water after engine has cooled.
2. Check blades for damage (cracks, broken blades, etc.) replace if necessary. Make sure blades are free of debris and apply a light coat of oil to the blades to help prevent rust (any motor oil will work effectively).
3. Check engine oil level and air cleaner for dirt and/or obstructions. Service according to engine manual recommendations.
4. Check transmission case for proper oil level. The case holds 1/2 pint (.4L) when full. Use EP90w Oil.
5. Keep all belts free from dirt and oil.

LUBRICATION

The Mataway has 7 lubrication fittings.

1. Wipe off each fitting before and after lubrication.
2. Use a good quality Lithium based lubricant.
3. Lubricate equipment after every 8 hours of use and before long storage periods.



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

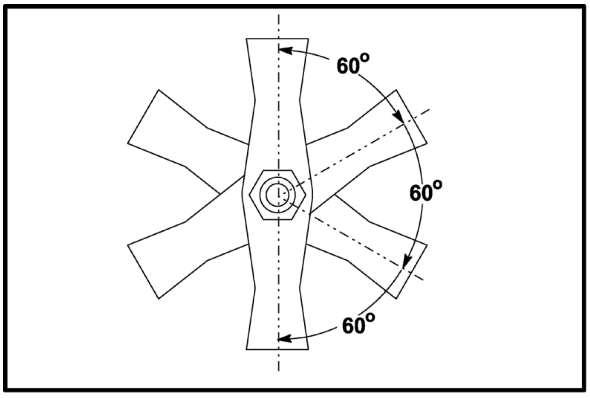
Due to low air volume of tires, over-inflation can be reached in a matter of seconds. To prevent explosion, check air pressure with air gauge before filling the tire. Fill to recommended air pressure, and Do Not exceed the recommended pressure.

NEW BLADE INSTALLATION

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.

Notice 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.

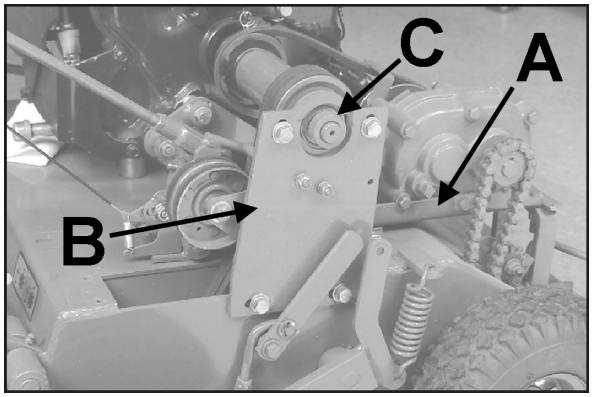
After 4 hours of use, check reel nut for proper torque. The torque value for the reel nut is 348 ft.-lbs. + 35 ft.- lbs. (420 to 510 N·m).

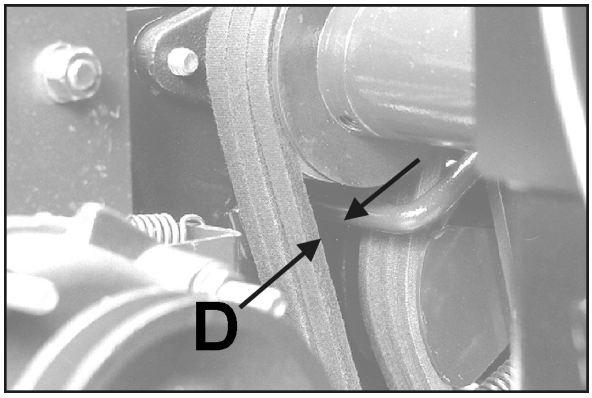
ADJUSTMENT FOR REEL AND DRIVE BELTS

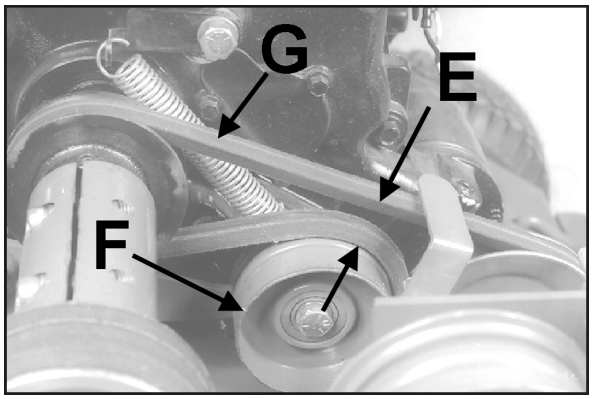
Over time, the belts will naturally need adjusting due to the use of the equipment. Inspect belts daily to ensure proper operation of the unit.

Before adjusting belts, make sure to:

1. Loosen the transmission mounting plate **A** and chain idler sprocket hardware.
2. Clean the underside of chassis to allow movement of the engine and loosen the engine mounting hardware.
3. Loosen the hardware securing the mounting plate **B** (supporting the reel drive pulley) and the pillow block.
4. 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).
5. Make sure the springs are in place on the drive belt idler arm and the reel belt idler arm.
6. Slide transmission and mounting plate toward the rear of unit as far as possible. Tighten transmission mounting hardware.
7. Position engine so it is square with the chassis and tighten either the two front or the two rear mounting screws.
8. 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 necessary, reposition engine to obtain proper dimension.
9. 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 1-3/4" to 2" (44 to 51 mm).
10. If measurement is less than 1-3/4" (44 mm) slide transmission forward until proper dimension is obtained.







11. If the measurement is over 2" (51 mm) slide the engine forward to obtain correct measurement. If the engine has to be moved, check the reel belt measurement again for proper dimension.

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.

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

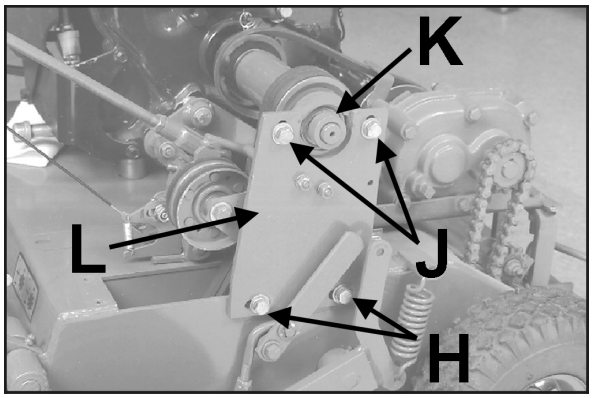
13. Using a straight edge, align the belt drive pulley on the transmission with the drive pulley on the engine. Loosen the set screw on the transmission pulley and slide it in or out to achieve proper alignment.

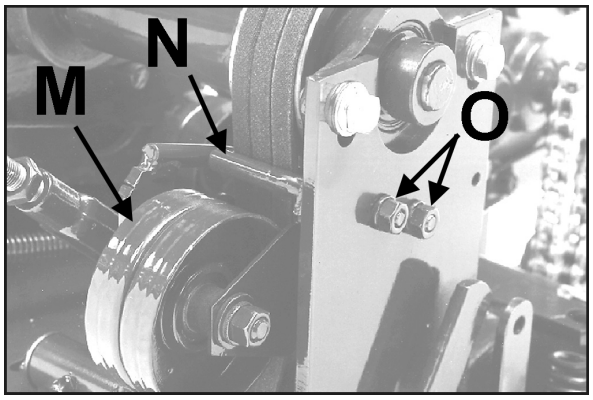
14. Align the mounting plate **L** so that it is perpendicular to the chassis and the pillow block bearing is centered on the coupler shaft. Tighten the two plate mounting screws **H** at the bottom of the plate.

15. 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).

16. 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**.

17. 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.

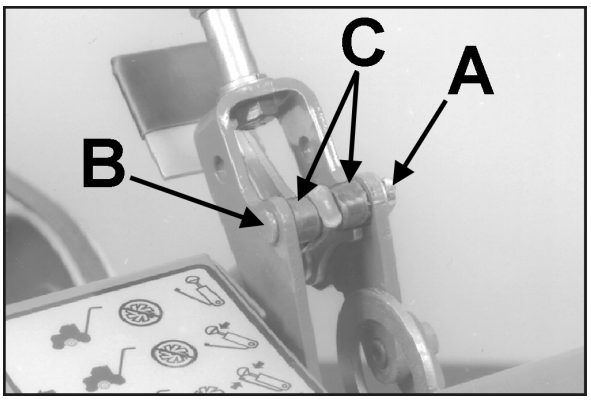




18. Check clutch control for positive over-center action in disengaged position. Adjust rod length if necessary.

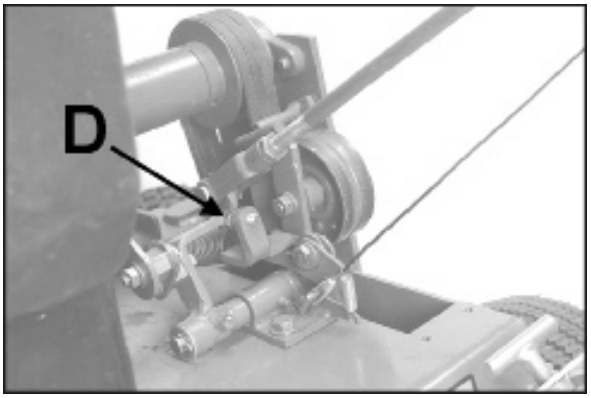
19. To adjust rod length to achieve positive over-center locking, loosen the jam nut on top of the clevis at the bottom of the clutch lever.

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. Double check to ensure over-center locking action. When proper locking action is obtained, completely assemble control handle and tighten jam nut.

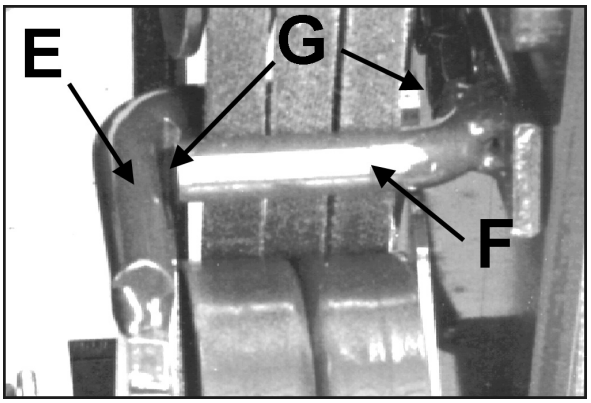
22. Engage and disengage clutch control lever several times and check to see that belt stops work properly. The belts should be held firmly, but not pinched severely, with reel drive lever disengaged.



NOTE: Overtight belt stops will cause undo wear on reel drive belts.

23. Belt stop tension on the reel belts can be adjusted by loosening the screw **D** in the reel belt idler assembly and screwing it in or out to adjust the tension on the idler arm when it is in the disengaged position.

24. Disengage the clutch lever. Check the tips of the two belt stops **E** & **F**. The gap **G** should be a minimum of 1/32" (1 mm) between the tips of the stops. If necessary, loosen reel idler pivot plate and adjust accordingly.

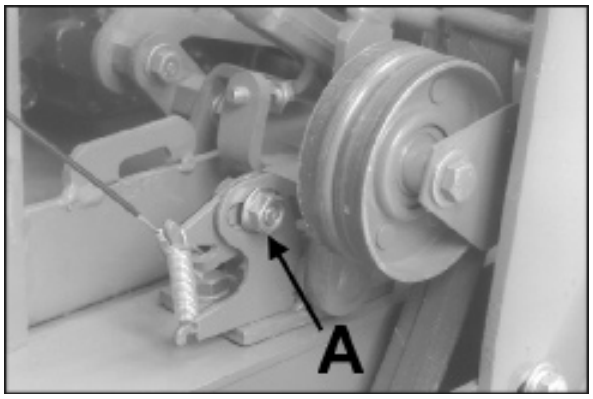


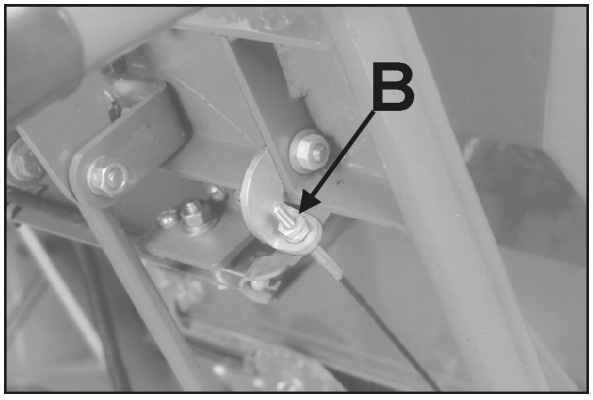
25. The belt stops should be perpendicular to the reel belts and parallel to each other. Make sure reel drive idler pulley is centered and aligned over reel drive belts.

HOOK AND CABLE ADJUSTMENT

1. Loosen the hardware securing the hook **A**. Slide the hook in the slot so that it captures the reel idler assembly when the clutch control is disengaged. When only the drive clutch is engaged, the hook should hold the reel idler assembly back far enough that the reel belts will not engage. Retighten the hook mounting hardware.

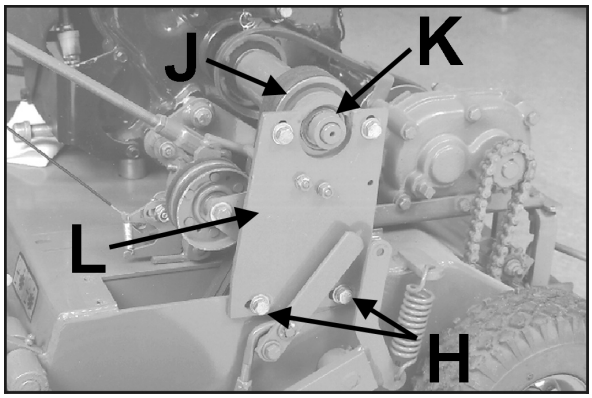
2. After the hook has been adjusted. Loosen the two jam nuts **B** at the top of the cable. Adjust the bottom nut to take up any slack in the cable. Be careful not to overtighten the cable or the hook may not hold the reel idler assembly. Use the top nut to lock the lower nut into place.





REEL BELT AND DRIVE BELT REPLACEMENT

NOTE: Reel belts are serviced in matched sets of three belts. When replacement is required, always 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 belt guards.

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 from under the chassis and take out the reel. 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 at a later date.

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.

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.

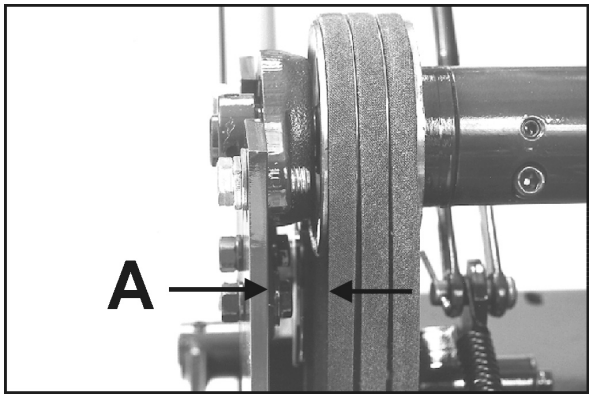
NOTE: The pulley is secured to the shaft by set screw and key. It may need to be tapped with a hammer for adjustment. Use a plastic, rubber, lead or leather head hammer to avoid damaging the pulley.

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

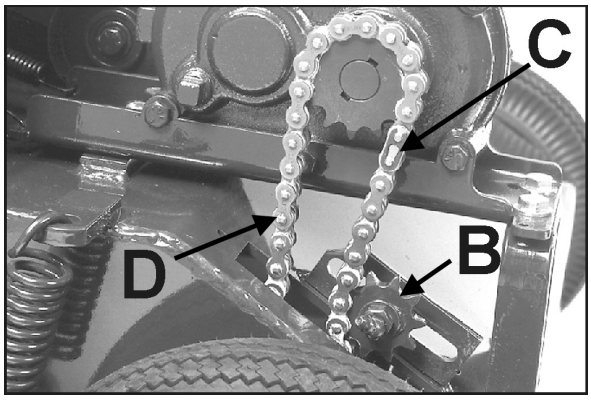
⚠CAUTION

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

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



CHAIN REPLACEMENT

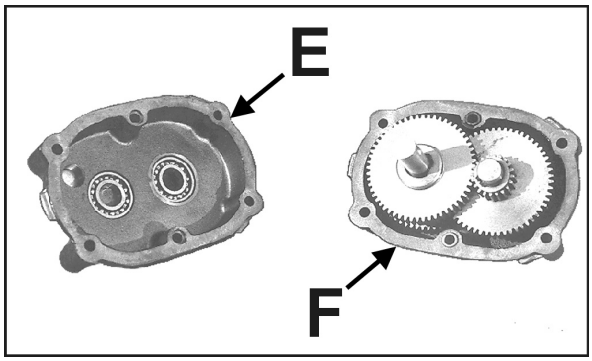


1. Remove belt guard.
2. Loosen the drive chain idler sprocket **B**.
3. Remove connecting link **C** and chain **D**.
4. Install new chain and connecting link.
5. Adjust the idler sprocket to allow approximately 1/8" (3 mm) to 1/4" (6 mm) of play in the chain (check for play on the straight section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

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. Tighten hardware and recheck tension on the chain.
7. Lubricate the fitting on the idler sprocket and lightly oil the chain to prevent excessive dirt accumulation.
8. Install belt guard.

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 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.

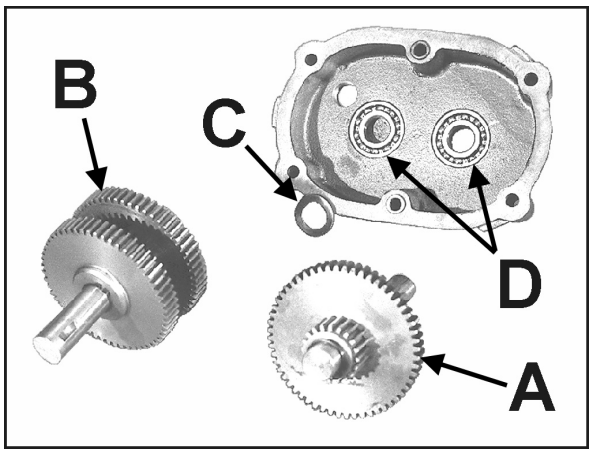
10. Install the spacer **H** onto shaft against the snap ring **K**. Install the large double gear **E**, with the small gear side against the spacer.

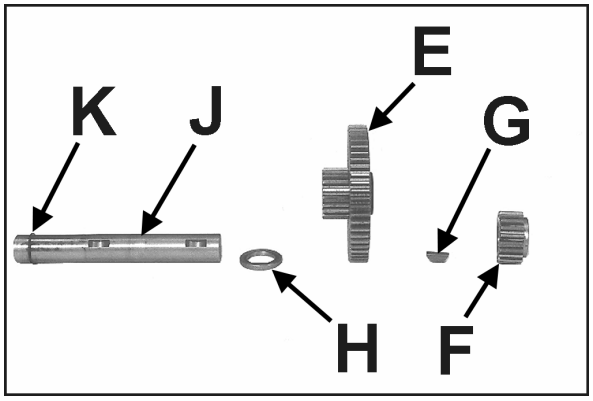
11. Install key **G** into keyway and slide the small gear **F** (flat side toward the larger gear) onto the shaft.

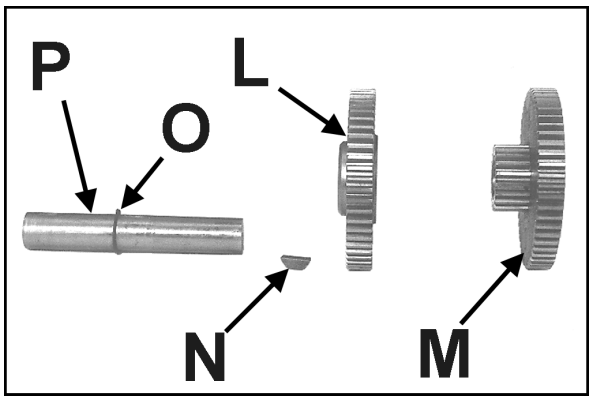
OUTPUT SHAFT

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.

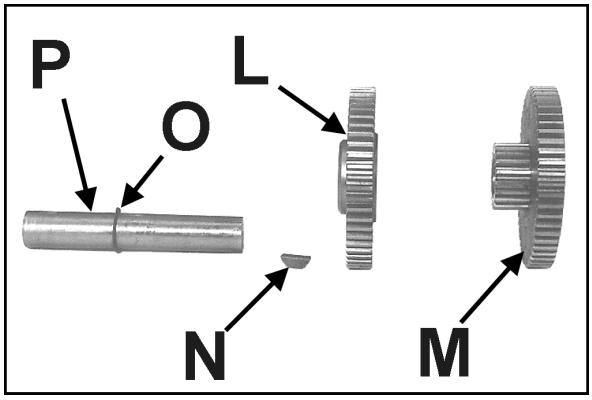
20. Apply Loctite 515 sealant (or equivalent) to case halves. Make sure the spacer bushings are in the center top and bottom holes of the case half.

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 Lubriplate #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

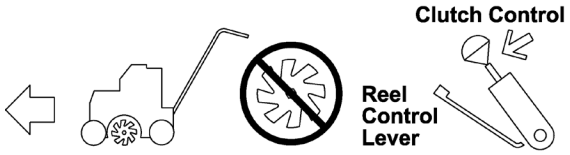
Do not smoke, avoid sparks and open flames when draining or filling the fuel tank.

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.

TRANSPORTING

The unit may be transported under it's own power. With the lift lever up and the clutch control disengaged, start the engine and compress and hold the operator presence lever. Engage only the drive transmission clutch by pushing the clutch control forward **without** pulling the reel control lever back. Set the throttle to the operator's desired walking speed.

The unit may be loaded into the back of a truck or trailer using a gradual sloped ramp and operating the unit in the same manner as stated previously.



⚠WARNING

Use adequate lifting device and/or assistance when loading and unloading unit. If loading by ramp, be sure ramp is properly supported.

Keep hands and feet from underneath the unit while operating or ramp loading the unit.

SPECIFICATIONS

Front axle..... ... 3/4" (19 mm) diameter mounted in self-aligning ball bearings
Rear axle..... 3/4" (19 mm) diameter welded to pivot arms

Blades.....Reversible, high carbon steel (hardened) (blade thickness varies by reel) 1/32" (.8mm); 1/16" (1.5mm); 1/8" (3mm)

Chassis.....3/16" (5 mm) formed and welded steel plate

Clutch.....Belt tightener type for reel and forward travel

Controls.....Throttle control, lift lever combined drive and reel clutch lever

Depth Adjustment.....Micrometer screw

Depth of Cut.....Up to 1" (25 mm)

Dimensions:
Width.....36" (91cm)
Height.....44" (112cm) including handle
Length.....53" (135cm) including handle
Wheelbase.....16 1/2" (42cm)
Width of cut...19" (483 mm) with blade spacing from 1/2" (13 mm) to 2" (50.8 mm) depending on which reel is used

Drive....."A" section belt from engine to gear box
No. 40 sealed roller chain from gearbox to front axle
Matched set of 3, V section belts from engine to reel

Engine.....Model No. CH11T, 11 H.P. Kohler Kohler specification number PS - 1630. Governor set at 3200 r.p.m. (no load). Engine displacement is 24.3 cu. in. (398 cc) and develops 20.2 ft.-lbs. (27.4 N·m) of torque at 2000 r.p.m.

Gear Case.....22 to 1 reduction

Net Weight.....386 lbs. (175 Kg) with 544265 Reel

Reduction.....Engine to reel - 1:1
Engine to wheels - 48:1

Reel.....Quick change mounting
Rotation in opposite direction of forward motion

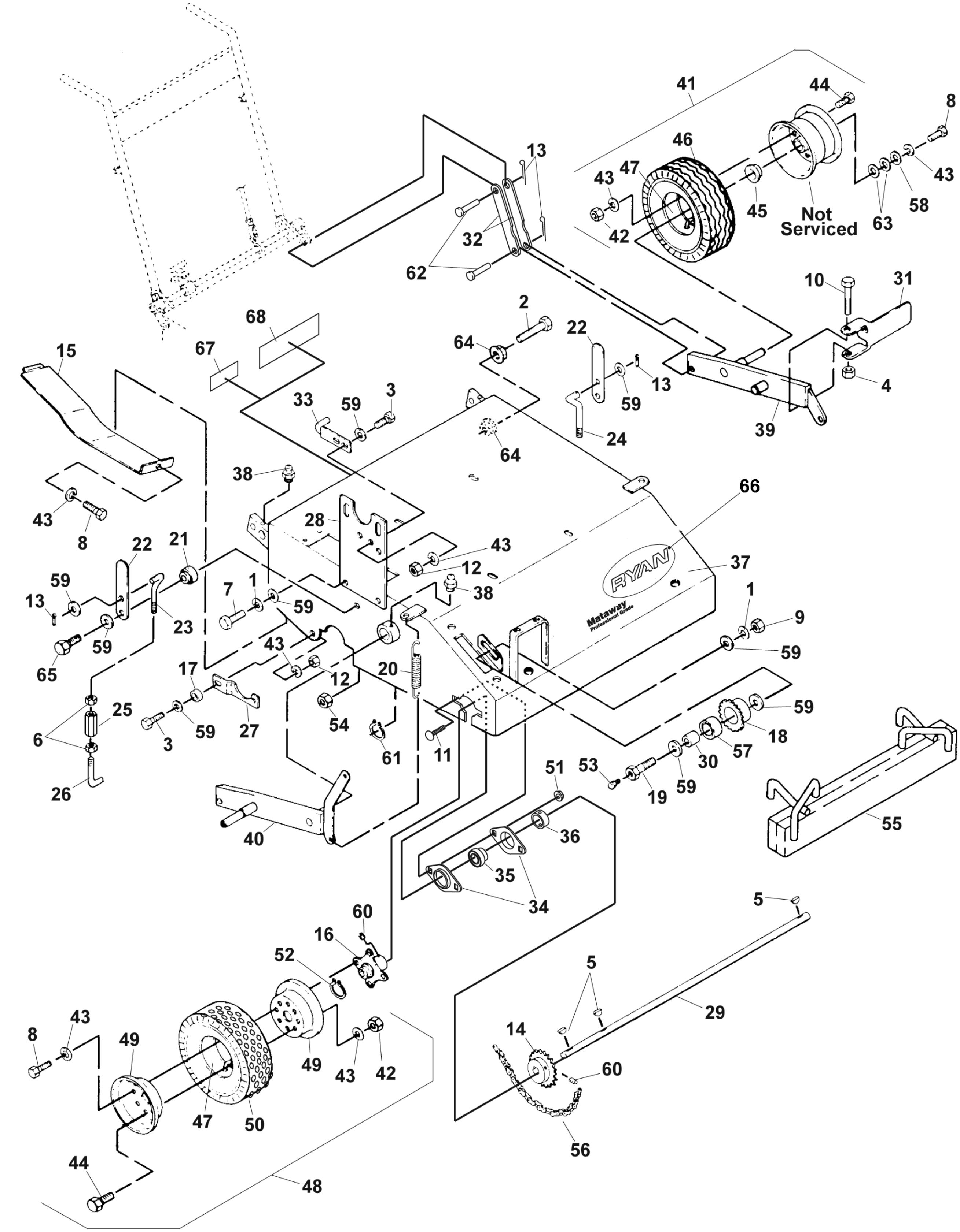
Reel Speed.....3200 r.p.m.

Speed...264 ft./min.(81m/min.) at 3200 engine r.p.m.

Wheels.....Front; 4.10/3.50 - 4, pneumatic tires chain driven
Rear; 4.10/3.50 - 4 pneumatic tires free wheeling on self-aligning ball bearings. Wheels on center line of reel to prevent scalping on rolling terrain and scuffing on turns.

PARTS SECTION

FIGURE 1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RYAN
Mataway

FIGURE 1

ITEM	PART NO.	DESCRIPTION	QTY
1-1	64006-03	WASHER, 3/8 HELICAL LCK	3
1-2	64123-82	BOLT-HEX 3/8-16X2-1/2	1
1-3	64123-107	BLT-HEX 5/16-18X7/8	4
1-4	64151-15	5/16-18 HEX NUT CNTRLCK	2
1-5	64164-19	KEY WOODRUFF.19X.75 #9	3
1-6	64001-2	NUT-JAM 3/8-24	4
1-7	64123-50	BOLT-HEX 3/8-16X1	2
1-8	306555	SCREW, 5/6-18 X 5/8	11
1-9	64025-05	NUT-3/8-16 HEX	1
1-10	64123-104	BLT-HEX 5/16-18X2-3/4	2
1-11	64018-9	BLT-CRG 5/16-18X3/4 G5	4
1-12	64025-02	NUT-HEX 5/16-18	2
1-13	306956	COTTER PIN	6
1-14	841261	SPROCKET, 16T 1/2P BLK	1
1-15	516825	GUARD	1
1-16	516944	HUB	2
1-17	517226	BRG,SLV .33 .50 .20 IRON	2
1-18	517348	SPROCKET	1
1-19	517641	SCRW,SPCL.38-16 1.75 HX	1
1-20	518506	SPRING	2
1-21	519038	BUSHING	2
1-22	519039	LEVER	2
1-23	519040	HOOK, UPPER RIGHT	1
1-24	519041	HOOK, UPPER LEFT	1
1-25	519042	NUT	2
1-26	519043	CLAMP, ROD LOWER	2
1-27	519045	CLAMP, REEL	2
1-28	519057	PLATE	1
1-29	519059	SHAFT,FRONT	1
1-30	519874	RACE,INNER	1
1-31	522714	SCRAPER, WHEEL	2
1-32	524508	LINK, LIFT	4
1-33	547743	STOP, BELT	1
1-34	548962	HOUSING,BEARING	4
1-35	521856	BEARING,BALL	2
1-36	521857	COLLAR,BRG LOCKING	2
1-37	540195	FRAME	1
	(INCLUDES ITEM 38)		
1-38	548224	FITTING,GREASE 1/4 SPC	4
1-39	540236	ARM, LEFT	1
1-40	540237	ARM, RIGHT	1
1-41	4124194	WHEEL, 4.10/3.50-4 2PLY	2
	INCLUDES ITEMS 42-47)		
1-42	306320	NUT-5/16-24	4
1-43	64006-02	LOCKWSHR-HELICAL 5/16	4
1-44	306861	SCRW,.31-24.625 YS HX	4
1-45	548123	BEARING, WHEEL	2
1-46	548543	TIRE-4.10/3.50-4, 2 PLY	1
1-47	548546	TUBE	1
1-48	4124197	WHEEL ASSY	2
	(INCLUDES ITEMS 42-44, 47, 49, 50)		
1-49	517332	RIM	1
1-50	523264	TIRE	1
1-51	64141-6	NUT, 5/16-18	4
1-52	64144-02	SNAP RING 3/4	2
1-53	807443	FTG, GREASE 45D.25-28	1
1-54	64151-18	NUT, HEX	2
1-55	547634	WEIGHT AY	1
1-56	523477	CHAIN,SEALED ROLLER	1
	(INCLUDES 522122 LINK CONNECTOR)		
1-57	521845	BEARING,NEEDLE	1
1-58	64163-55	WASHER .328X.75X14 GA	2
1-59	64163-61	WSHR .81X.406X16GA	13
1-60	548201	SETSCREW, 5/16-18 X 5/16	6
1-61	64144-03	SNAP RING 7/8"	2
1-62	548456	PIN,CLEVIS.438 1.25 YS	4
1-63	548477	WASHER	4
1-64	64141-4	NUT-WLF 3/8-16	2
1-65	64123-87	BOLT-HEX 3/8-16X1-3/4	2
1-66	4161123	LABEL-RYAN OVAL LARGE	1
1-67	524544	DECAL,REEL HEIGHT ADJ.	1
1-68	869081	DECAL,DANGER	1

HANDLE ASSEMBLY

MATAWAY

FIGURE 2

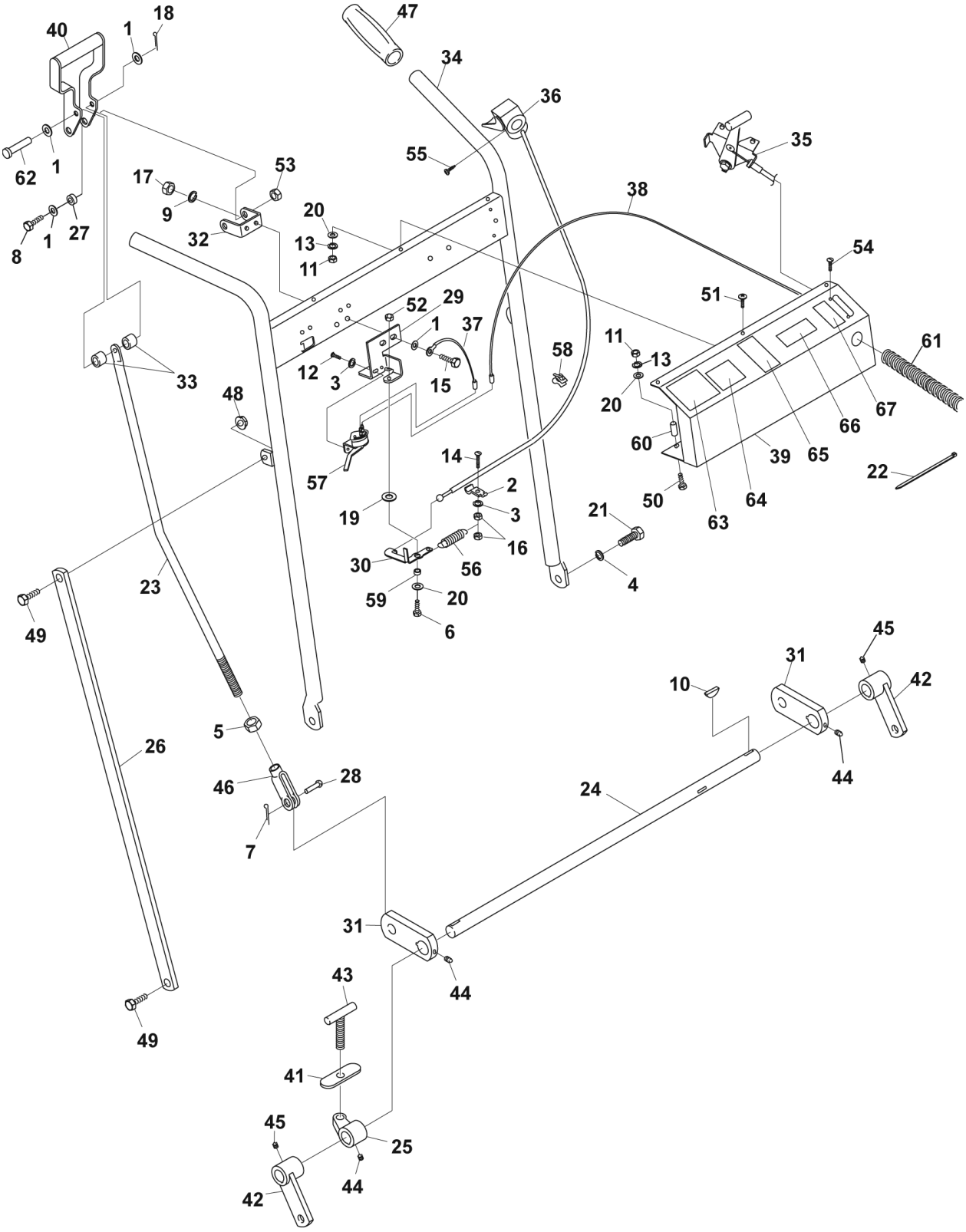

FIGURE 2

ITEM	PART NO.	DESCRIPTION	QTY
2-1	64163-55	WASHER .328X.75X14 GA	6
2-2	111898	CLAMP,CABLE	1
2-3	120052	LOCKWASHER	3
2-4	64006-05	LOCKWSHR-HELICAL 1/2	2
2-5	64001-10	NUT-HEX JAM 7/16-20	1
2-6	64123-89	BOLT-HEX 1/4-20X3/4	1
2-7	304636	COTTER PIN, 12 x 1.12 YS	1
2-8	64123-107	BLT-HEX 5/16-18X7/8	2
2-9	64006-02	LOCKWSHR-HELICAL 5/16	2
2-10	64164-19	KEY WOODRUFF.19X.75 #9	5
2-11	64025-01	NUT-1/4-20 HEX	6
2-12	306391	SCRW,#10-32.31 YS	2
2-13	64006-01	LOCKWSHR-1/4 HELICAL	6
2-14	306401	SCREW, MACHINE-RNDHD	1
2-15	64123-68	BOLT-HEX 5/16-18X1	2
2-16	306531	NUT, 10-24 YS HEX	2
2-17	64025-02	NUT-HEX 5/16-18	2
2-18	306956	COTTER PIN	1
2-19	64163-55	WASHER .328X.75X14 GA	1
2-20	64163-03	WSHR-.256X.62X18GA.	6
2-21	64123-73	BLT-HEX 1/2-13X1	2
2-22	65286-4A	TIE,CABLE 11-5/8 BLACK	2
2-23	515838	ROD, CONTROL	1
2-24	516855	SHAFT	1
2-25	516859	LEVER, ADJUSTING	1
2-26	516972	BRACE	2
2-27	521679	BUSHING	2
2-28	548456	PIN,CLEVIS.438 1.25 YS	1
2-29	524490	MOUNT,SWITCH (PLATED)	1
2-30	524493	ARM,PIVOT	1
2-31	524513	ARM, LIFT	2
2-32	524526	BRACKET, LIFT HANDLE	1
2-33	524578	BUSHING, .328X.63X.6	2
2-34	540242	HANDLE AY	1
2-35	540243	CONTROL AY,THROTTLE	1
2-36	540245	CONTROL AY,KILL SWITCH	1
2-37	540265	WIRE AY, 7.5"	1
2-38	540266	WIRE AY, 75"	1
2-39	540272	COVER, CNTRL W/DECALS	1
2-40	2702291.2	HANDLE AY	1
2-41	2702111	HANDLE AY,LOCKING PLTD	1
2-42	2702295.2	ARM AY,FRAME LIFT	2
2-43	546321	SCREW AY, ADJUST PLTD	1
2-44	548201	SETSCREW, 5/16-18 X 5/16	3
2-45	548204	SSCRW,.38-16.38 BS NH	2
2-46	548507	CLEVIS	1
2-47	548518	HAND GRIP	2
2-48	64141-4	NUT-WLF 3/8-16	2
2-49	548905	SCREW, .38-16 1.00 YS	4
2-50	800024	SCRW,.25-20 1.50 YS	1
2-51	800026	SCREW, .25-20.75 YS	4
2-52	64151-17	LOCKNUT, HEX	1
2-53	64151-15	5/16-18 HEX NUT CNTRLCK	2
2-54	819195	TSCRW,#8-18.50 YS	2
2-55	800896	TSCRW,.190-24.75 YS	1
2-56	805421	SPRING,EXTENSION	1
2-57	806800	SWITCH,STOP LIGHT	1
2-58	813840	CLIP	1
2-59	814585	BUSHING	1
2-60	820529	SPACER (PLATING)	1
2-61	826190	TUBING, CONVOLUTED	50'A/R
2-62	826633	PIN,CLEVIS.31 2.38 ZS	1
2-63	524496	DECAL,CONTROL DRIVE	1
2-64	524497	DECAL,CONTROL REEL	1
2-65	00903491	DECAL, OPERATING INSTR	1
2-66	524547	DECAL,WARN-HEARING	1
2-67	524564	DECAL,THROTTLE	1

FIGURE 3

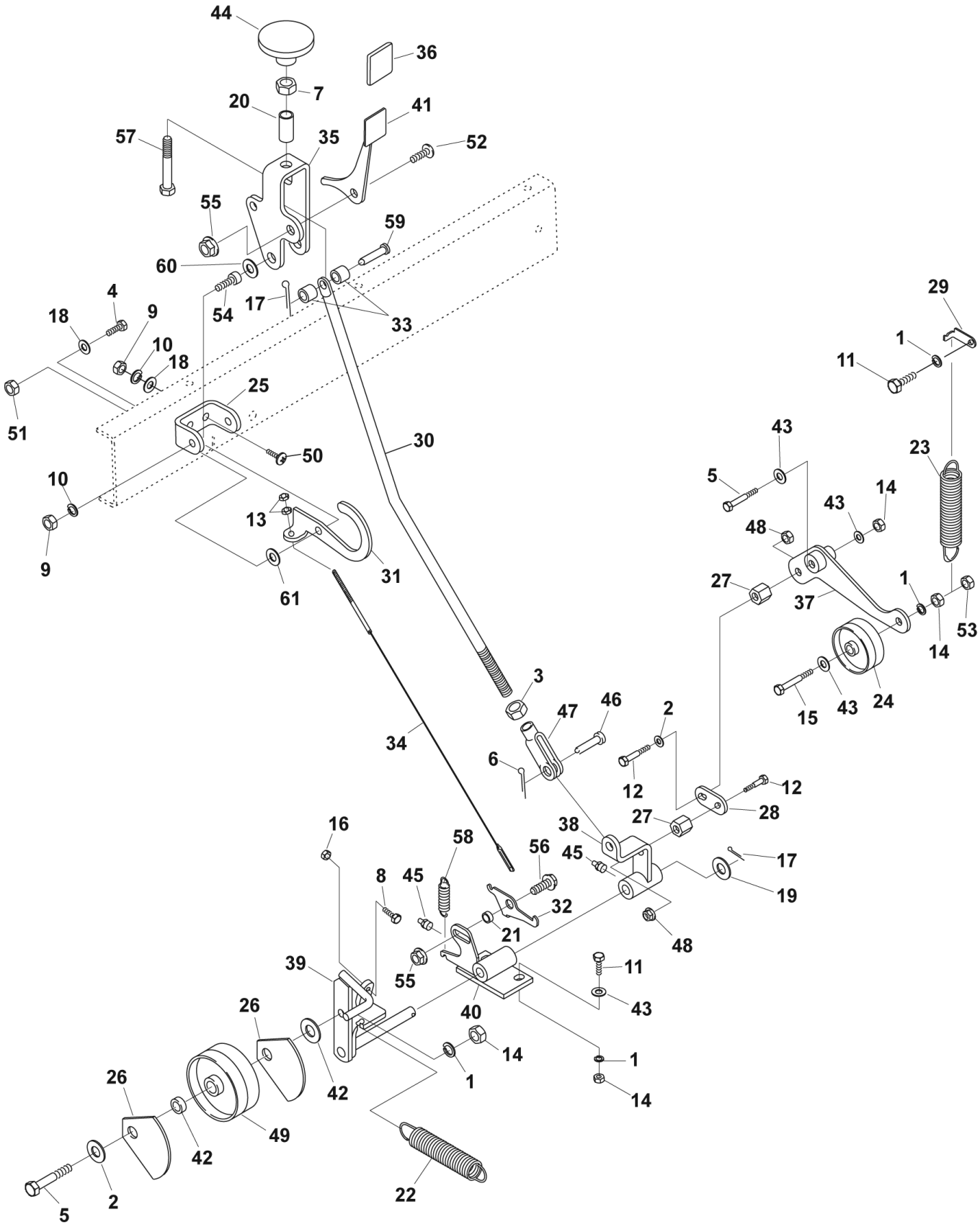
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FIGURE 3

ITEM	PART NO.	DESCRIPTION	QTY
3-1	64006-03	WASHER, 3/8 HELICAL LCK	5
3-2	64163-55	WASHER .328X.75X14 GA	3
3-3	64001-10	NUT-HEX JAM 7/16-20	1
3-4	64123-89	BOLT-HEX 1/4-20X3/4	1
3-5	64123-82	BOLT-HEX 3/8-16X2-1/2	2
3-6	304363	PIN, COTTER 1/8X1-1/8	1
3-7	64025-04	NUT-3/8-24 HEX	1
3-8	64123-107	BLT-HEX 5/16-18X7/8	1
3-9	64025-01	NUT-1/4-20 HEX	3
3-10	64006-01	LCKWSHER-1/4 HELICAL	3
3-11	64123-50	BOLT-HEX 3/8-16X1	3
3-12	64123-69	BOLT-5/16-18X1-1/2 HEX	2
3-13	306531	NUT, 10-24 YS HEX	2
3-14	64025-05	NUT-3/8-16 HEX	4
3-15	64123-100	BOLT-3/8-16X2-1/4 HEX	1
3-16	64025-02	NUT-HEX 5/16-18	1
3-17	306956	COTTER PIN	2
3-18	64163-03	WSHR-.256X.62X18GA.	3
3-19	64163-67	WASHER-.516X1X12GA	1
3-20	516544	BUSHING (PLATING)	1
3-21	517226	BRG,SLV .33 .50 .20 IRON	1
3-22	2701258	SPRING, TSN 1.0X3.62X14	1
3-23	518487	SPRING	1
3-24	522882	PULLEY,IDLER	1
3-25	522604	BRACKET, HANDLE	1
3-26	523508	GUIDE, BELT	2
3-27	524507	NUT,SSPCL.312-18 Z HX	2
3-28	524509	LINK (PLATING)	1
3-29	524560	RETAINER,SPRING	1
3-30	524561	ROD, CONTROL	1
3-31	524565	CAM,CONTROL (PLATED)	1
3-32	524576	TRIGGER,LOCKING PLTD	1
3-33	524577	BUSHING,.328X.63X.41	2
3-34	524579	CABLE,CONTROL	1
3-35	524585	HANDLE, CONTROL	1
3-36	524591	COVER,VINYL	1
3-37	540241	ARM AY	1
3-38	540246	PIVOT	1
3-39	540247	IDLER ARM	1
3-40	540270	BRACKET	1
3-41	540271	LEVER AY,CONTROL PLTD	1
3-42	822474	SPACER	1
3-43	64163-61	WSHR .81X.406X16GA	5
3-44	548171	KNOB	1
3-45	548224	FITTING,GREASE 1/4 SPCL	2
3-46	548456	PIN,CLEVIS.438 1.25 YS	1
3-47	548507	CLEVIS	1
3-48	64141-6	NUT, 5/16-18	2
3-49	548942	PULLEY, PLAIN FLAT 3.25	1
3-50	800026	SCREW, .25-20.75 YS PR	2
3-51	64151-15	5/16-18 HEX NUT CNTRLCK	1
3-52	800177	SCRW,.31-18.75 YS PR	1
3-53	64151-18	NUT, HEX	1
3-54	800492	CAPSCREW,HEX	2
3-55	64268-02	NUT-FL NYLN LCK 5/16-18	2
3-56	64262-006	BLT-FLG HD 5/16-18 X 3/4	1
3-57	800883	SCRW,.38-24 2.25 YS HX	1
3-58	805421	SPRING,EXTENSION	1
3-59	830005	PIN,CLEVIS.308 1.69 PS	1
3-60	809183	WSHR,.25.75.10 YS FLAT	2
3-61	64163-34	WSHR.256/.267X1X11GA	1

FIGURE 4

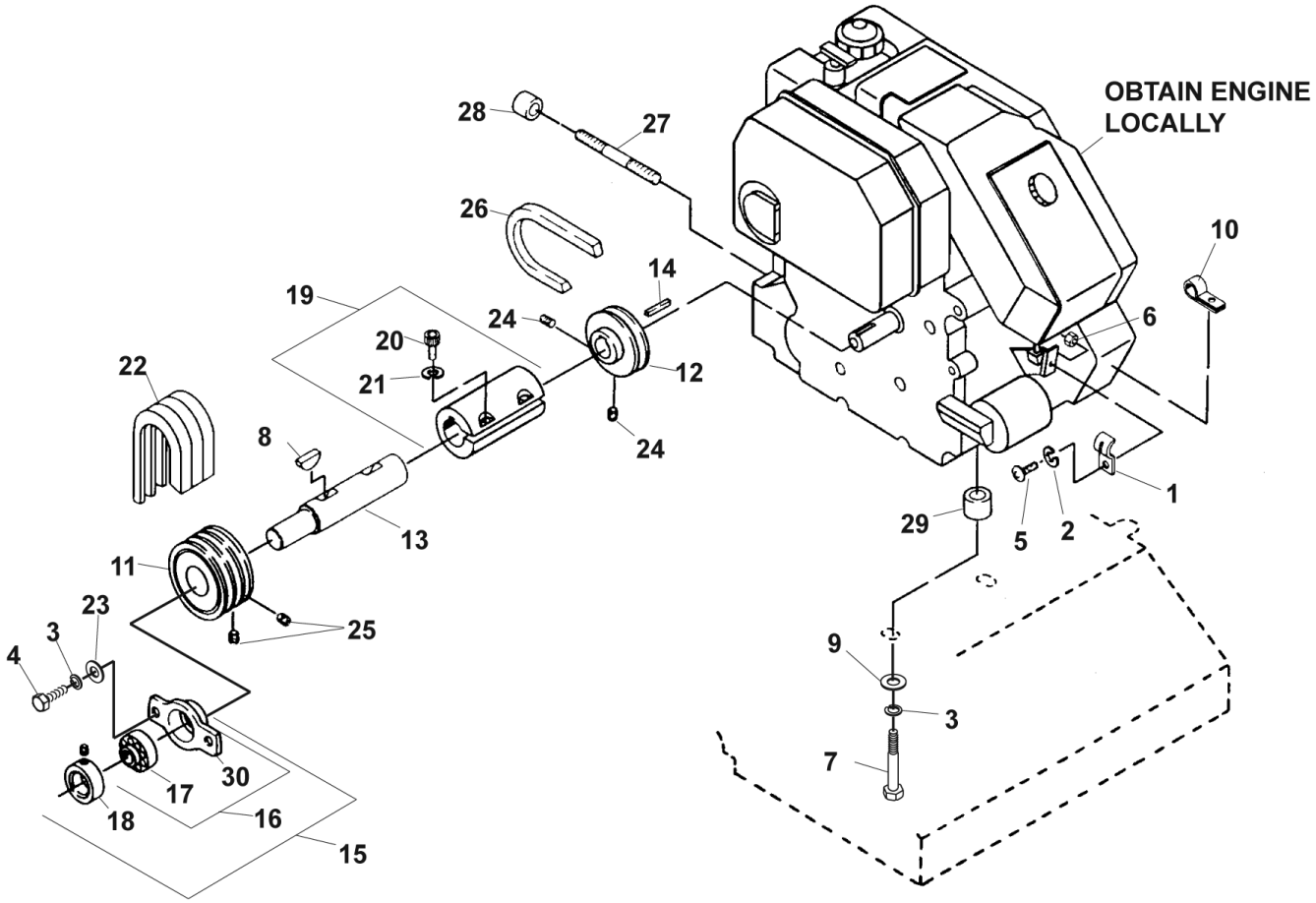
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FIGURE 4

ITEM	PART NO.	DESCRIPTION	QTY
4-1	111898	CLAMP,CABLE	1
4-2	120052	LOCKWASHER	1
4-3	64006-03	WASHER, 3/8 HELICAL LCK	6
4-4	64123-50	BOLT-HEX 3/8-16X1	2
4-5	64152-06	10-24X1/2 MACH SCREW	1
4-6	306531	NUT, 10-24 YS HEX	1
4-7	64123-100	BOLT-3/8-16X2-1/4 HEX	4
4-8	64164-25	KEY-1/4X7/8 #807	2
4-9	515390	WASHR,.39 1.25.19 FLAT	4
4-10	515755	CLIP	1
4-11	516892	PULLEY, REEL BELT	1
4-12	517101	PULLEY,3 IN. DIA BLK	1
4-13	517123	SHAFT	1
4-14	520574	KEY,.25 X.25 X 2.50 PS	1
4-15	544068	PILLOW BLOCK COMPLETE	1
	(INCLUDES ITEMS 16, 17, 18 & 30)		
4-16	547835	PILLOW BLOCK AY	1
	(INCLUDES ITEMS 17 & 30)		
4-17	521856	BEARING,BALL	1
4-18	521857	COLLAR,BRG LOCKING	1
4-19	547755	COUPLING	1
	(INCLUDES ITEMS 20 & 21)		
4-20	330748	SCRW,.31-18 1.00 BS HS	2
4-21	548183	LWSHR,.31.09 HI-COLLAR	2
4-22	547759	BELT,DRIVE, SET OF 3	1
4-23	64163-61	WSHR .81X.406X16GA	2
4-24	548201	SETSCREW, 5/16-18 X 5/16	6
4-25	548204	SSCRW,.38-16.38 BS NH	2
4-26	548403	V-BELT	1
4-27	800400	NIPPLE,.38-18NPT 5.0 GS	1
4-28	800401	CAP,.38-18NPT GS PIPE	1
4-29	838790	SPACER, ENG MNT PLTD	4
4-30	519809	PILLOW BLOCK	1

ITEM	PART NO.	DESCRIPTION	QTY

FIGURE 5

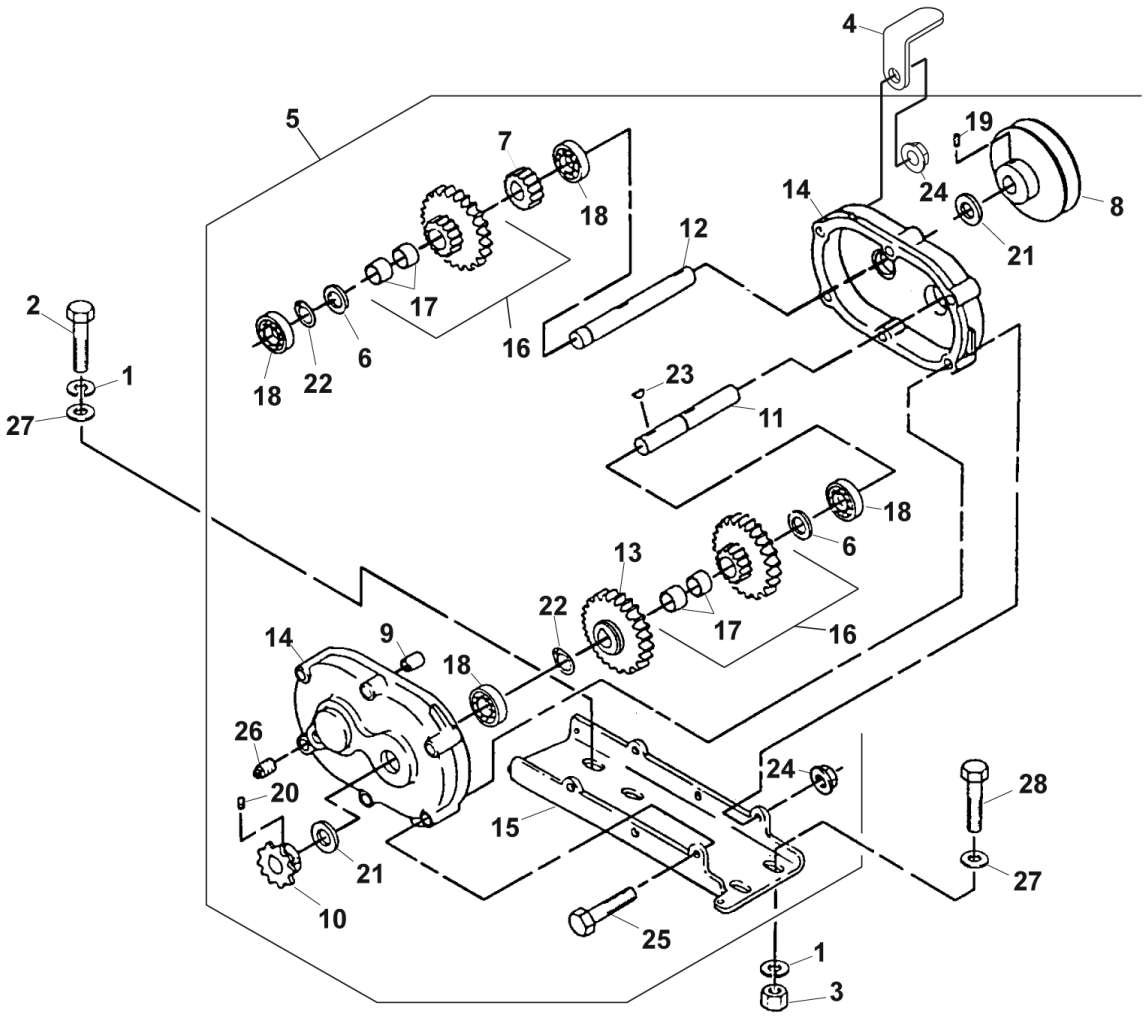
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FIGURE 5

ITEM	PART NO.	DESCRIPTION	QTY
5-1	64006-03	WASHER, 3/8 HELICAL LCK	4
5-2	64123-50	BOLT-HEX 3/8-16X1	2
5-3	64025-05	NUT-3/8-16 HEX	2
5-4	524536	GUIDE,BELT (PLATING)	1
5-5	2702128.2	TRANSMISSION AY	1
	(INCLUDES ITEMS 6-26)		
5-6	516700	SPACER	2
5-7	516724	GEAR	1
5-8	517137	PULLEY,4" DIA "A" SIZE	1
5-9	517226	BRG,SLV .33 .50 .20 IRON	2
5-10	517342	SPROCKET	1
5-11	518820	SHAFT, OUTPUT	1
5-12	518826	SHAFT, INPUT	1
5-13	518827	GEAR	1
5-14	522638	CASE, GEAR	2
5-15	523515	BRACKET, MOUNTING	1
5-16	2702142	GEAR AY,IDLER 56T/20T	2
	(INCLUDES ITEM 17)		
5-17	515511	BUSHING	2
5-18	548119	BRG,BALL.75 1.62.31 "OP"	4
5-19	548201	SETSCREW, 5/16-18 X 5/16	2
5-20	548204	SSCRW,.38-16.38 BS	1
5-21	548274	OIL SEAL	2
5-22	548324	RING,EXT RET.691ID.042T	2
5-23	548369	KEY, WOODRUFF.19 X.62	4
5-24	548911	NUT,.31-18 YS HSF	6
5-25	548958	SCREW, .31-18 3.50 YS HX	6
5-26	800120	PLUG,.38-18NPT PS SQ HD	2
5-27	64163-61	WSHR .81X.406X16GA	4
5-28	551094	SCREW, 3/8X1-3/4	2

ITEM	PART NO.	DESCRIPTION	QTY

FIGURE 6

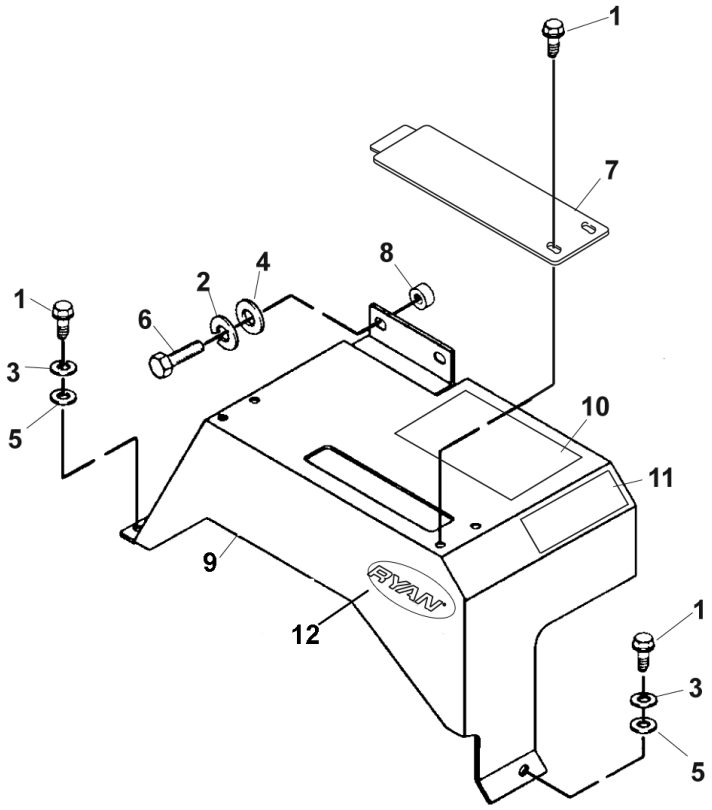
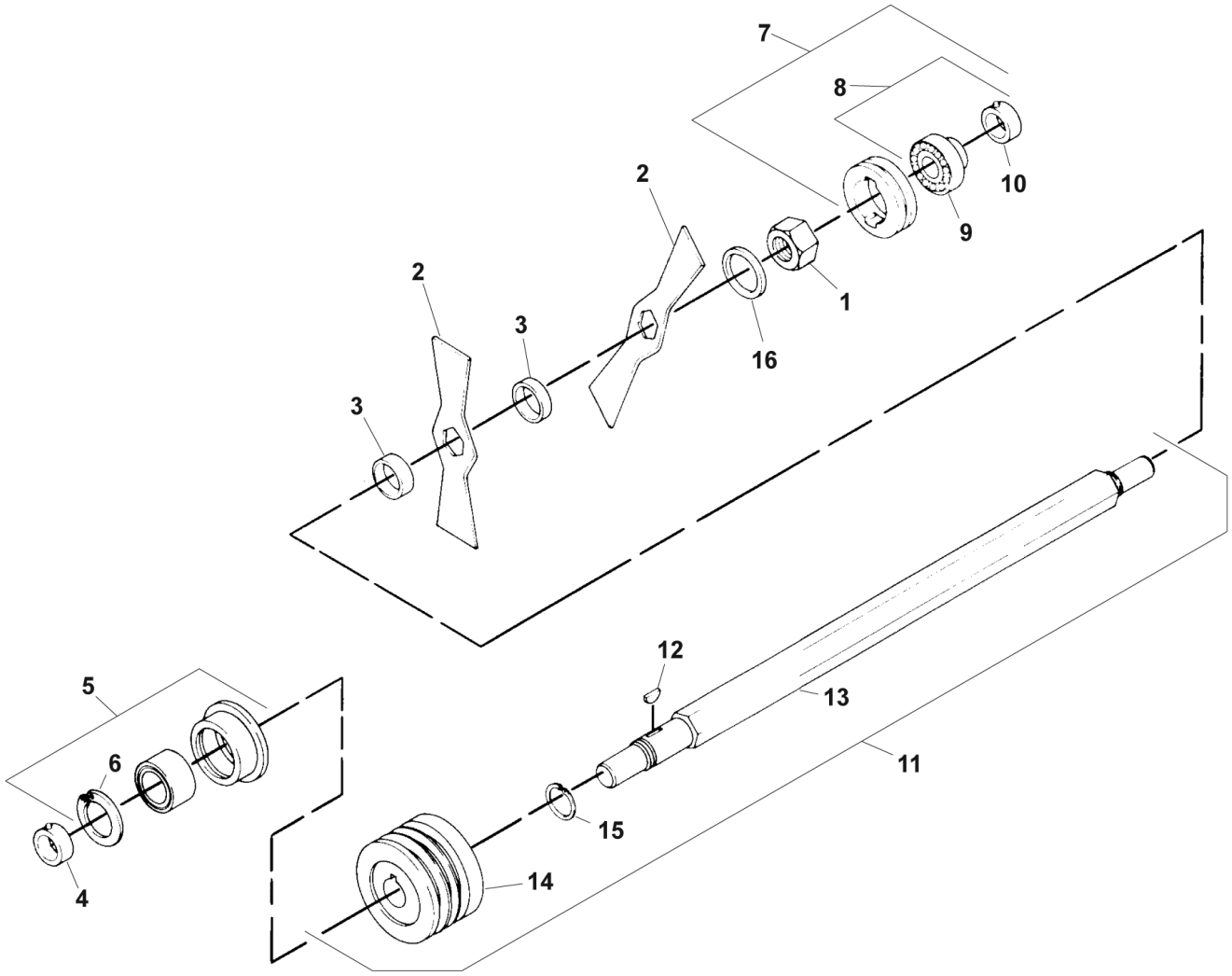


FIGURE 6

ITEM	PART NO.	DESCRIPTION	QTY
6-1	112050	TSCRW,.25-20.62 YS HW	7
6-2	64006-06	LCKWSHER-HELICAL 7/16	2
6-3	64006-01	LCKWSHER-1/4 HELICAL	3
6-4	64163-55	WASHER .328X.75X14 GA	2
6-5	64163-03	WSHR-.256X.62X18GA.	3
6-6	64123-84	BLT-HEX 7/16-14X1-1/2	2
6-7	522668	PLATE, COVER	1
6-8	522982	SPACER (PLATING)	1
6-9	540279	GUARD, W/DECALS	1
6-10	524568	DECAL,OP INST	1
6-11	840697	DECAL,WARNING HANDS	1
6-12	4161123	LABEL-RYAN OVAL LARGE	1

ITEM	PART NO.	DESCRIPTION	QTY

FIGURE 7



REEL 1/32" BLADES-1/2" SPACING

FIGURE 7

ITEM	PART NO.	DESCRIPTION	QTY
7-1	305134	NUT,.88-14 YS HX JAM	1
7-2	516901	BLADE, 1/32" (0.8mm)	36
7-3	516903	SPACER, .500 (12.7mm)	36
7-4	521857	COLLAR,BRG LOCKING	1
7-5	544287	BLOCK AY,PILLOW	1
	(INCLUDES ITEM 6)		
7-6	548354	RING, INTERNAL RETAIN	1
7-7	545640	PILLOW BLOCK AY	1
	(INCLUDES ITEM 8)		
7-8	548101	BEARING	1
	(INCLUDES ITEMS 9 & 10)		
7-9	521856	BEARING,BALL	1
7-10	521857	COLLAR,BRG LOCKING	1
7-11	545967	SHAFT, COMPLETE	1
	(INCLUDES ITEMS 12-15)		
7-12	306367	KEY, WOODRUFF	1
7-13	522542	SHAFT	1
7-14	522543	PULLEY	1
7-15	522545	RING,RETAINING	1
7-16	820484	WASHER, FLAT	3
	(USE ITEM 16 AS REQUIRED SO ITEM 1 DOES NOT CONTACT THE HEX SHAFT WHEN TIGHTENED)		
7-17*	544260	REEL	1
	(INCLUDES ITEMS 1-16)		

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

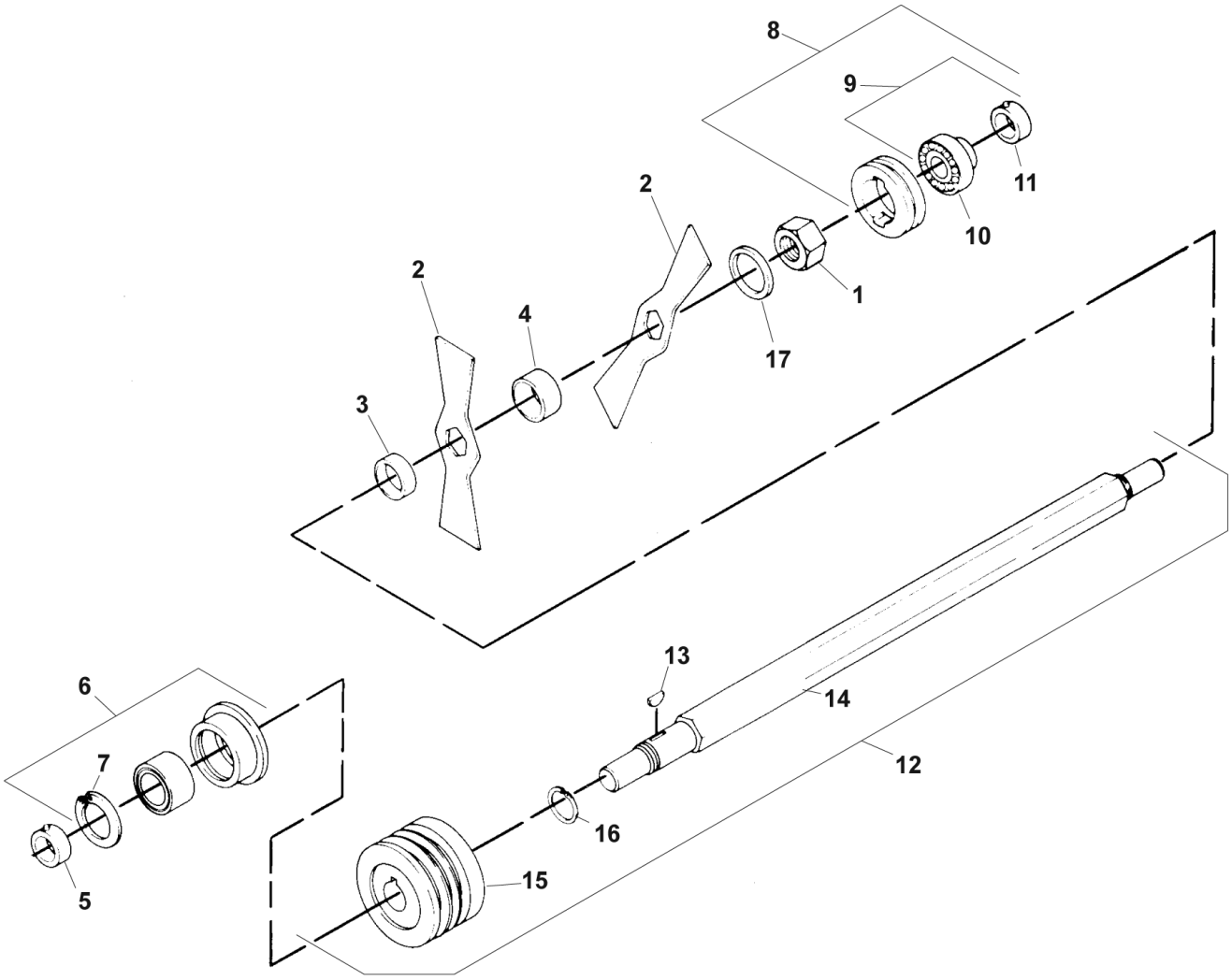


FIGURE 8

ITEM	PART NO.	DESCRIPTION	QTY
8-1	305134	NUT,.88-14 YS HX JAM	1
8-2	516901	BLADE, 1/32" (0.8mm)	21
8-3	516903	SPACER, .500 (12.7mm)	1
8-4	516905	SPACER, .900 (23mm)	20
8-5	521857	COLLAR,BRG LOCKING	1
8-6	544287	BLOCK AY,PILLOW	1
	(INCLUDES ITEM 7)		
8-7	548354	RING, INTERNAL RETAIN	1
8-8	545640	PILLOW BLOCK AY	1
	(INCLUDES ITEM 9)		
8-9	548101	BEARING	1
	(INCLUDES ITEMS 10 & 11)		
8-10	521856	BEARING,BALL	1
8-11	521857	COLLAR,BRG LOCKING	1
8-12	545967	SHAFT, COMPLETE	1
	(INCLUDES ITEMS 13-16)		
8-13	306367	KEY, WOODRUFF	1
8-14	522542	SHAFT	1
8-15	522543	PULLEY	1
8-16	522545	RING,RETAINING	1
8-17	820484	WASHER, FLAT	3
	(USE ITEM 17 AS REQUIRED SO ITEM 1 DOES NOT CONTACT THE HEX SHAFT WHEN TIGHTENED)		
8-18*	544261	REEL	1
	(INCLUDES ITEMS 1-17)		

ITEM	PART NO.	DESCRIPTION	QTY

NOTE:

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

BLADES ARE SPACED AT 1" INTERVALS ON THE REEL.

*** NOT ILLUSTRATED**

FIGURE 9

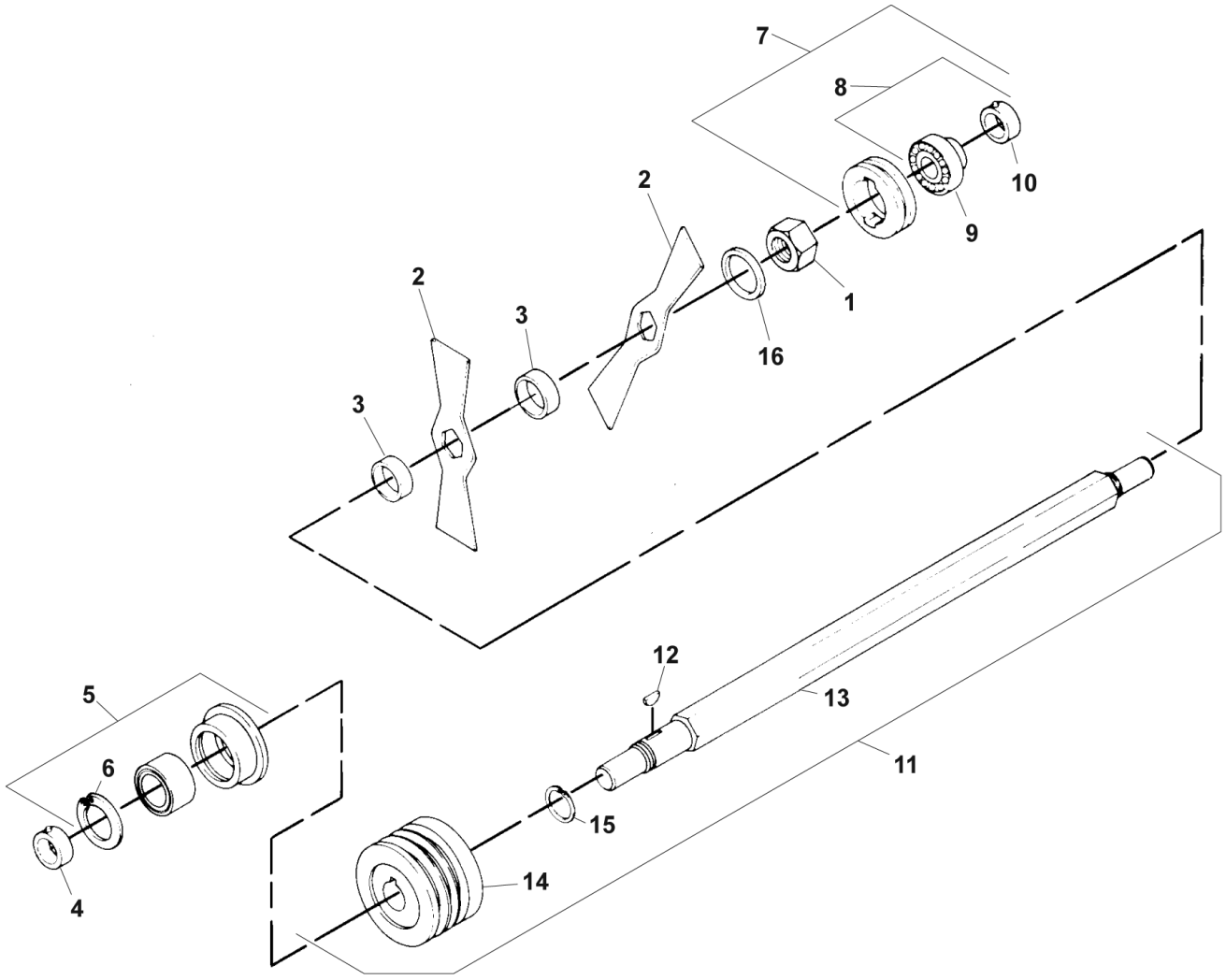


FIGURE 9

ITEM	PART NO.	DESCRIPTION	QTY
9-1	305134	NUT,.88-14 YS HX JAM	1
9-2	516900	BLADE, 1/16" (1.5mm)	20
9-3	516905	SPACER, .900 (23mm)	20
9-4	521857	COLLAR,BRG LOCKING	1
9-5	544287	BLOCK AY,PILLOW	1
	(INCLUDES ITEM 6)		
9-6	548354	RING, INTERNAL RETAIN	1
9-7	545640	PILLOW BLOCK AY	1
	(INCLUDES ITEM 8)		
9-8	548101	BEARING	1
	(INCLUDES ITEMS 9 & 10)		
9-9	521856	BEARING,BALL	1
9-10	521857	COLLAR,BRG LOCKING	1
9-11	545967	SHAFT, COMPLETE	1
	(INCLUDES ITEMS 12-15)		
9-12	306367	KEY, WOODRUFF	1
9-13	522542	SHAFT	1
9-14	522543	PULLEY	1
9-15	522545	RING,RETAINING	1
9-16	820484	WASHER, FLAT	3
	(USE ITEM 16 AS REQUIRED SO ITEM 1 DOES NOT CONTACT THE HEX SHAFT WHEN TIGHTENED)		
9-17*	544262	REEL	1
	(INCLUDES ITEMS 1-16)		

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

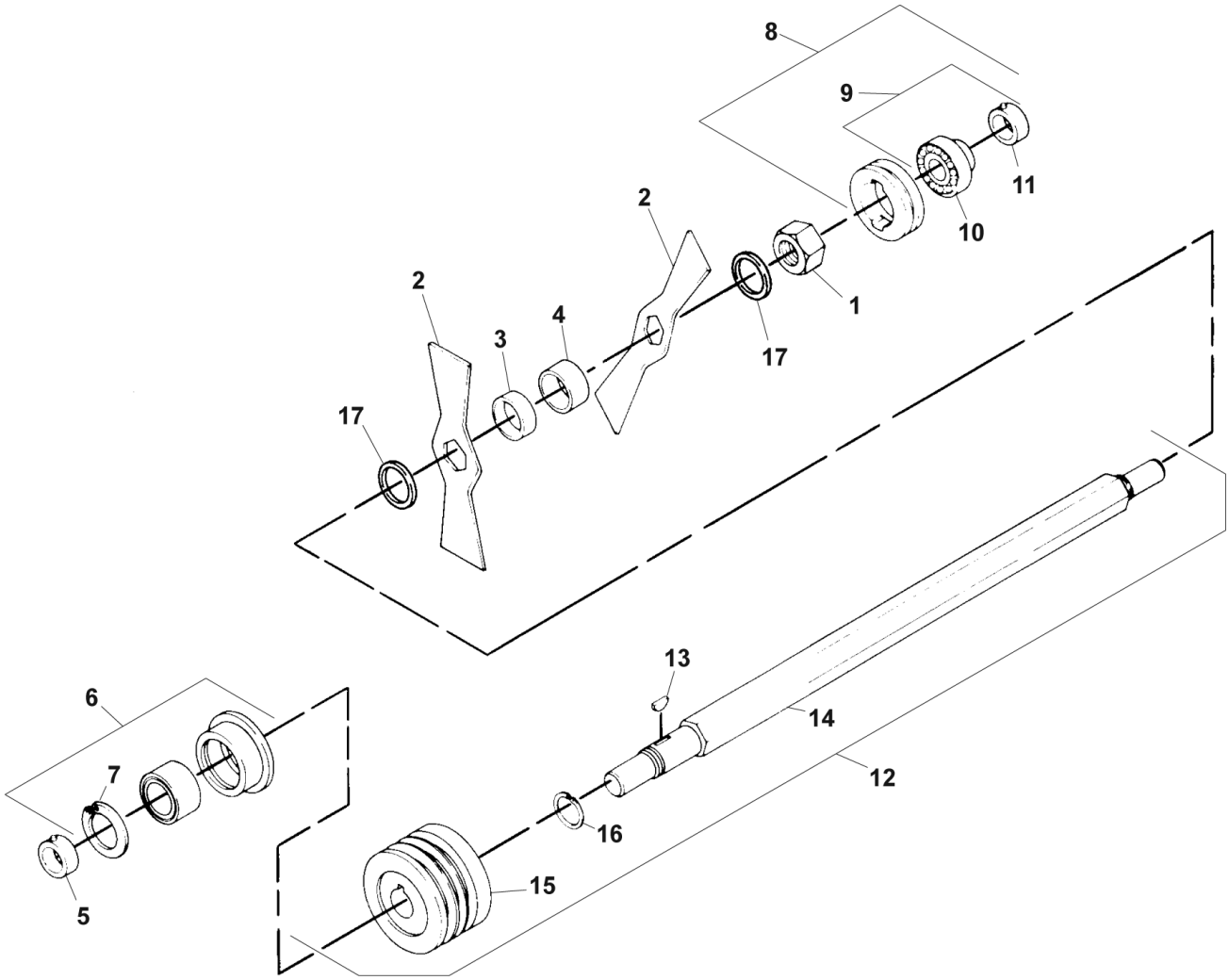


FIGURE 10

ITEM	PART NO.	DESCRIPTION	QTY
10-1	305134	NUT,.88-14 YS HX JAM	1
10-2	516900	BLADE, 1/16" (1.5mm)	14
10-3	516903	SPACER, .500 (12.7mm)	13
10-4	516905	SPACER, .900 (23mm)	13
10-5	521857	COLLAR,BRG LOCKING	1
10-6	544287	BLOCK AY,PILLOW	1
	(INCLUDES ITEM 7)		
10-7	548354	RING, INTERNAL RETAIN	1
10-8	545640	PILLOW BLOCK AY	1
	(INCLUDES ITEM 9)		
10-9	548101	BEARING	1
	(INCLUDES ITEMS 10 & 11		
10-10	521856	BEARING,BALL	1
10-11	521857	COLLAR,BRG LOCKING	1
10-12	545967	SHAFT, COMPLETE	1
	(INCLUDES ITEMS 13-16)		
10-13	306367	KEY, WOODRUFF	1
10-14	522542	SHAFT	1
10-15	522543	PULLEY	1
10-16	522545	RING,RETAINING	1
10-17	820484	WASHER, FLAT	3
	(USE ITEM 17 AS REQUIRED SO ITEM 1 DOES NOT CONTACT THE HEX SHAFT WHEN TIGHTENED)		
10-18*	544265	REEL	1
	(INCLUDES ITEMS 1-17)		

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**

ITEM	PART NO.	DESCRIPTION	QTY

FIGURE 11

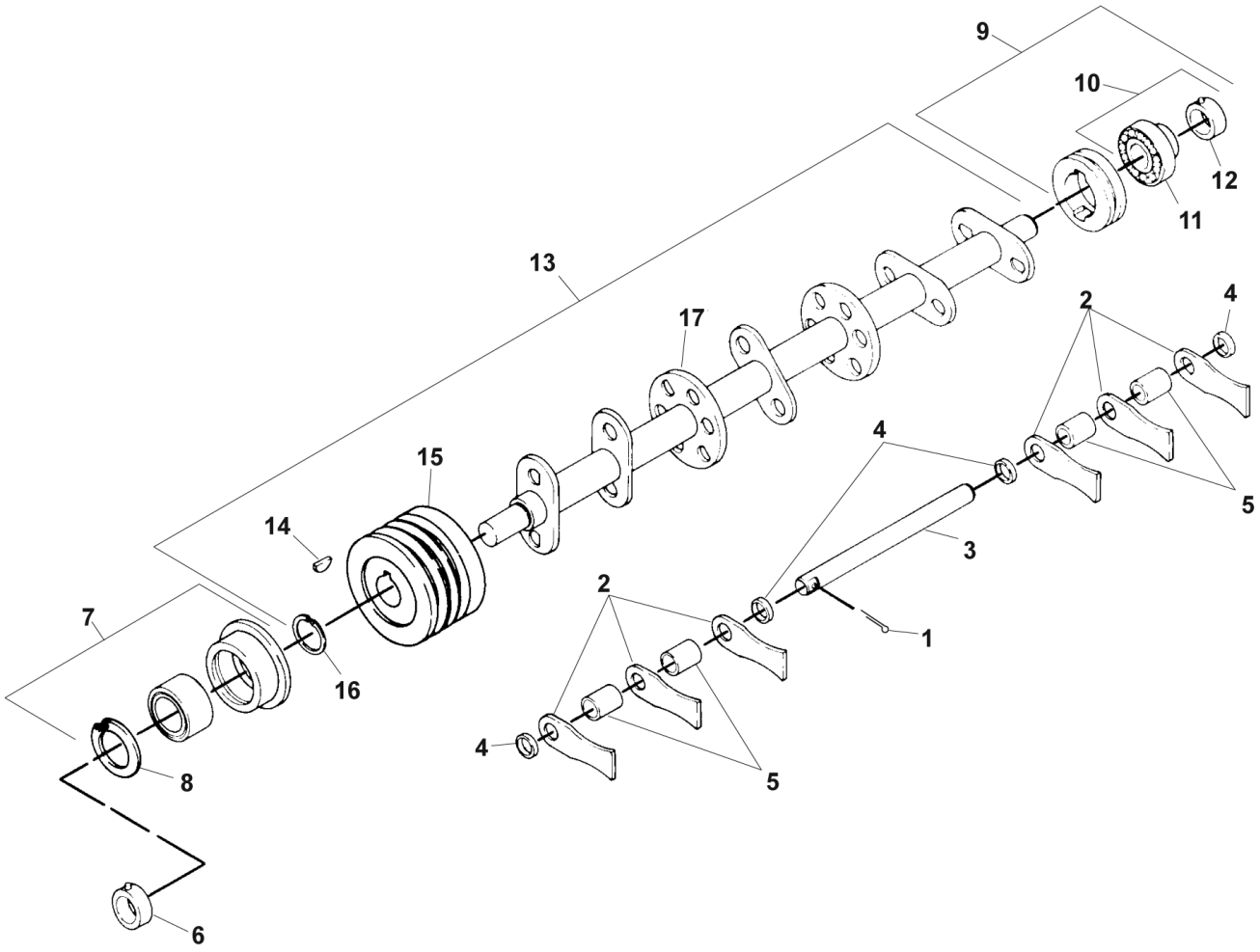


FIGURE 11

ITEM	PART NO.	DESCRIPTION	QTY
11-1	306956	COTTER PIN	6
11-2	516897	BLADE,FLAIL	36
11-3	517155	SHAFT	6
11-4	517162	SPACER, .328 (8mm)	24
11-5	517163	SPACER, .891 (23mm)	24
11-6	521857	COLLAR,BRG LOCKING	1
11-7	544287	BLOCK AY,PILLOW	1
	(INCLUDES ITEM 8)		
11-8	548354	RING, INTERNAL RETAIN	1
11-9	545640	PILLOW BLOCK AY	1
	(INCLUDES ITEMS 10-12)		
11-10	548101	BEARING	1
	(INCLUDES ITEMS 11 & 12)		
11-11	521856	BEARING,BALL	1
11-12	521857	COLLAR,BRG LOCKING	1
11-13	545966	SHAFT, COMPLETE	1
	(INCLUDES ITEMS 14-17)		
11-14	306367	KEY, WOODRUFF	1
11-15	522543	PULLEY	1
11-16	522545	RING,RETAINING	1
11-17	545913	SHAFT AY	1
11-18*	544269	REEL	1
	(INCLUDES ITEMS 1-17)		

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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