ARIENS
THE KING OF SNOW

Service Guide

Professional Series Sno-Thro®

With Hydrostatic Drive

Models

926060 – Pro 28 RapidTrak
(SN 000101 +)

926068 – Pro 28 EFI
(SN 000101 +)

926069 – Pro 32 RapidTrak
(SN 000101 +)

926070 – Pro 36 EFI
(SN 000101 +)

926334 – Pro 32 12V CE
(SN 000101 +)

926336 – Pro 28 EFI CE
(SN 000101 +)

926337 – Pro 28 EFI CE Track
(SN 000101 +)

926338 – Pro 28 EFI CE RapidTrak
(SN 000101 +)

E10 E15 E20 E85

EN ENGLISH

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WELCOME

Before operating or servicing the unit, carefully and completely read the Operator's Manual and engine manual provided with the unit at time of purchase. They contain important safety instructions and information about unit controls.

Have Questions or Need Assistance?

www.ariens.com

A parts manual and an operator's manual for your unit are available for free download or purchase at www.ariens.com.

AriensCo recommends using only genuine Ariens replacement parts on this unit. Using unauthorized parts may adversely affect the performance, durability or safety of this unit and may void the warranty. Installing unauthorized parts will not automatically void the warranty; however, the warranty will not apply if the installation and use of unauthorized parts damages the unit. The AriensCo warranty applies solely to defects in AriensCo materials and / or factory workmanship. AriensCo disclaims liability for any claims or damages – whether warranty, property damage, personal injury or death – arising from using unauthorized replacement parts.

Be aware of your mechanical aptitude when applying information in this manual for service and / or repairs. If you are not comfortable or capable of completing service and / or repairs to the machine, take the machine to an authorized AriensCo service dealer.

SAFETY

Read these safety rules and follow them closely. Failure to follow these rules could lead to loss of control of unit, severe personal injury or death to you or bystanders, or result in damage to property or the machine.

PRACTICES & LAWS

Practice usual and customary safe working precautions. Learn applicable rules and laws in your area. Always follow the practices set forth in this manual.

EMISSION CONTROL SYSTEM

This equipment and/or its engine may include exhaust and evaporative emissions control system components required to meet U.S. Environmental Protection Agency (EPA) and/or California Air Resources Board (CARB) regulations. Tampering with emission controls and components by unauthorized personnel may result in severe fines or penalties. Emission controls and components can only be adjusted by an AriensCo dealer or an authorized engine manufacturer's service center. Contact your Ariens Equipment Retailer concerning emission controls and component questions.

REQUIRED OPERATOR TRAINING

Read and understand the Operator's Manual and decals on the unit. This information is for your safety and the proper use of your equipment. Failure to follow these instructions and warnings may cause death or serious injury. If you have purchased this product from an Ariens dealer, the dealer can provide you with training.

Familiarize yourself and any other operators with all controls and the safe use of the features of this unit. If you loan, rent or sell this product to others, provide them with all manuals.

If you have any questions, please call our customer support line at 920-756-4688 or contact us at www.ariens.com. Do not use this equipment if, after reading the Operator's Manual and the on-board decals, you have any questions about the safe use of this product.

WARNING: AVOID INJURY. This snow thrower is capable of crushing or amputating body parts. Failure to observe the safety instructions in the manuals and on decals could result in serious injury or death.

ALWAYS disengage auger, stop unit and engine, remove key and allow moving parts to stop before leaving operator’s position.

SAFETY ALERT SYMBOL

This is the safety alert symbol. It means:

- **ATTENTION!**
- **YOUR SAFETY IS INVOLVED!**

When you see this symbol:

- **BECOME ALERT!**
- **OBEY THE MESSAGE!**

SIGNAL WORDS

The safety alert symbol above and signal words below are used on decals and in this manual. Read and understand all safety messages.

1. Danger

DANGER: Indicates an IMMINENTLY HAZARDOUS SITUATION! If not avoided, WILL RESULT in death or serious injury.

2. Warning

WARNING: Indicates a POTENTIALLY HAZARDOUS SITUATION! If not avoided, COULD RESULT in death or serious injury.

3. Caution

CAUTION: Indicates a POTENTIALLY HAZARDOUS SITUATION! If not avoided, MAY RESULT in minor or moderate injury. It may also be used to alert against unsafe practices.

4. Notice

NOTICE: Indicates information or procedures that are considered important but not hazard related. If not followed, property damage could result.

5. Important

IMPORTANT: Indicates general reference information worthy of special attention.

SAFETY DECALS

The safety decals on your machine are visual reminders of the important safety information in this manual. All messages on your unit must be fully understood and carefully followed. Safety decals on the machine are explained below.

Always replace missing or damaged safety decals. Replacement decal information is in the parts manual for your machine. Decals can be ordered from your dealer.

See Figure 1 for safety decal locations.

Safety Decal Locations

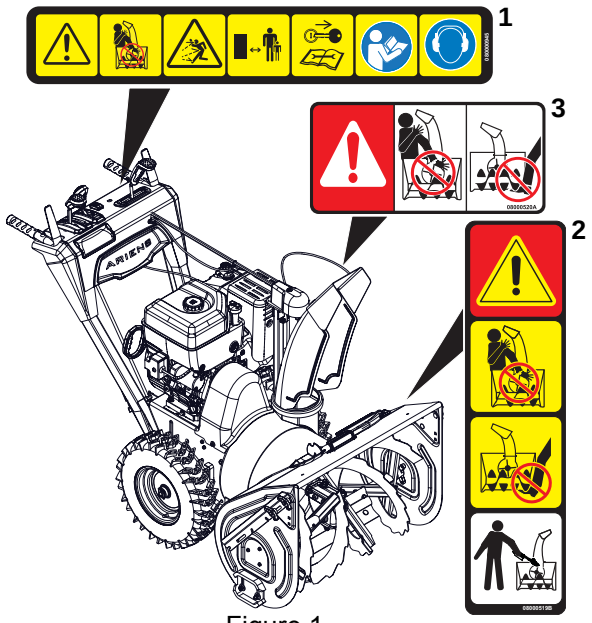


Figure 1

Safety Decal Descriptions

1. CAUTION!

Danger!

Only use clean-out tool to clear blockages. NEVER use your hands.

NEVER direct discharge towards persons or property that may be injured or damaged by thrown objects.

Keep people away from unit while operating. Keep children out of work area and under watchful care of a responsible adult.

Stop engine, remove key, and read manual before making any repairs or adjustments.

Read Operator's Manual.

Wear appropriate hearing protection.

2. DANGER!

Danger!

ROTATING PARTS! Only use clean-out tool to clear blockages. NEVER use your hands.

High-speed auger/impeller rotates below discharge opening. Wait for all moving parts to stop before removing clogs or servicing.

3. DANGER!

Danger!

ROTATING PARTS! Keep clear of auger while engine is running.

- Read Operator's Manual.
- Allow operation only by properly-trained adult, never children.
- Stop engine and remove ignition key prior to leaving the operator's position for any reason.
- Keep all controls, guards and safety devices properly serviced and functional.
- NEVER direct discharge towards persons or property that may be injured or damaged by thrown objects.

SAFETY RULES

The following safety instructions are based on the B71.3 specifications of the American National Standards Institute in effect at the time of production.

Training

Read, understand and follow all instructions on the machine and in the manual(s) before operating this unit. Be thoroughly familiar with the controls and the proper use of the equipment. Know how to stop the unit and disengage the controls quickly.

Never allow children to operate or play on or near the equipment. Never allow adults to operate the equipment without proper instruction.

Keep the area of operation clear of all persons, particularly small children. Be alert and shut off unit if children enter area.

Exercise caution to avoid slipping or falling, especially when operating the snow thrower in reverse.

Always remove key and/or wire from spark plug before assembly, maintenance or service. Unintentional engine start up can cause death or serious injury.

Complete a walk-around inspection of the unit to understand the unit, your work area and all safety decals.

Understand how to operate all controls, the functions of all controls and how to STOP in an emergency.

Preparation

Always check overhead and side clearances carefully before operation.

Always be aware of traffic when operating near streets or along curbs.

Thoroughly inspect the area where the equipment is to be used and remove all doormats, sleds, boards, toys, wires and other foreign objects.

Disengage all clutches and shift into neutral before starting the engine.

Use extension cords and receptacles as specified by the manufacturer for all units with electric drive motors or electric starting motors.

Handle fuel with care; it is highly flammable.

- Use an approved fuel container.
- Never add fuel to a running engine or hot engine.
- Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
- Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground, away from your vehicle, before filling.
- When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
- Keep the nozzle in contact with the rim of the fuel tank or container opening at all times, until refueling is complete. Do not use a nozzle lock-open device.
- Replace gasoline cap securely and wipe up spilled fuel.
- If fuel is spilled on clothing, change clothing immediately.

Adjust the auger / impeller housing height to clear gravel or crushed rock surface.

Never attempt to make any adjustments while the engine is running (except when specifically recommended by manufacturer).

Always allow unit and engine to adjust to outdoor temperature before clearing snow.

Operation

Disengage all controls before starting engine.

Never leave a running unit unattended. Always stop engine and remove key before leaving unit to prevent unauthorized use.

Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.

Moving and/or rotating parts can cut off body parts such as fingers or a hand. NEVER place your hands, other body part or clothing near any moving parts while unit is running.

Always keep hands away from all pinch points.

Do not touch parts which might be hot from operation. Allow parts to cool before attempting to maintain, adjust or service.

Thrown objects can cause injury. Check for weak spots on docks, ramps or floors. Avoid uneven work areas and rough terrain and stay alert for hidden hazards.

Exercise extreme caution when operating on or crossing gravel drives, walks or roads. Stay alert for hidden hazards or traffic.

After striking a foreign object, stop the engine, remove the wire from the spark plug, disconnect the cord on electric motors, thoroughly inspect the snow thrower for any damage, and repair the damage before restarting and operating the snow thrower.

If the unit should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.

Stop the engine whenever you leave the operating position, before unclogging the auger / impeller housing or discharge chute, and when making any repairs, adjustments or inspections.

When cleaning, repairing or inspecting the snow thrower, stop the engine and make certain the auger / impeller and all moving parts have stopped. Disconnect the spark plug wire and keep the wire away from the plug to prevent someone from accidentally starting the engine.

Do not run the engine indoors, except when starting the engine and for transporting the snow thrower in or out of the building. Open the outside doors; exhaust fumes are dangerous.

Never operate the snow thrower without proper guards, and other safety protective devices in place and working.

Always stand clear of the discharge area when operating this unit.

Never direct the discharge toward people or areas where injury or property damage can occur from thrown objects. Keep children and others away.

Do not overload the machine capacity by attempting to clear snow at too fast a rate.

Never operate the machine at high transport speeds on slippery surfaces. Look behind and use care when operating in reverse.

Do not operate in reverse unless absolutely necessary. Always back up slowly and look down and behind before and while backing.

Do not carry passengers.

Disengage attachment when not in use and when traveling from one work area to another.

Disengage power to the auger / impeller when snow thrower is transported or not in use.

Use only attachments and accessories approved by the manufacturer of the snow thrower (such as wheel weights, counterweights or cabs).

This product is equipped with an internal combustion engine. Do not use unit on or near any unimproved, forest-covered or brush-covered land unless exhaust system is equipped with a spark arrester meeting applicable local, state or federal laws. A spark arrester, if used, must be maintained in effective working order by operator.

Never operate the snow thrower without good visibility or light. Always be sure of your footing, and keep a firm hold on the handles. Walk; never run.

Never operate unit after or during the use of medication, drugs or alcohol. Safe operation requires complete and unimpaired attention at all times.

Never allow anyone to operate this unit when their alertness or coordination is impaired.

Never touch a hot engine or muffler.

Avoid contact with sharp edges; sharp edges can cut.

Do not throw snow higher than necessary.

Clearing a Clogged Discharge Chute

Hand contact with the rotating auger / impeller inside the discharge chute is the most common cause of injury associated with snow throwers. Never use your hand to clean out the discharge chute.

To clear the chute:

1. SHUT THE ENGINE OFF!
2. Wait 10 seconds to be sure the auger / impeller blades have stopped rotating.
3. Always use a clean-out tool, not your hands.

Maintenance and Storage

Secure unit so it will not tip over during maintenance.

Before cleaning, removing clogs or making any inspections, repairs, etc., disengage clutch(es), stop engine, remove key, allow moving parts to stop and hot parts to cool.

Check shear bolts and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working condition.

Check clutch and brake operation frequently.

Do not change engine governor settings and do not over-speed engine.

Adjust and service as required. Motion of drive wheels and auger / impeller must stop quickly when clutch levers are released.

Always maintain unit in safe operating condition. Damaged or worn out muffler can cause fire or explosion.

Keep unit free of ice or other debris. Clean up oil or fuel spills.

Always keep protective structures, guards, and panels in good repair and secured in place. Never modify or remove safety devices.

Never store the machine with fuel in the fuel tank inside a building where ignition sources are present such as hot water heaters, space heaters or clothes dryers. Close fuel valve and allow the engine to cool completely before storing in any enclosure or covering the unit.

Always refer to operator's manual for important details if the snow thrower is to be stored for an extended period.

Maintain or replace safety and instruction labels as necessary.

Run the machine a few minutes after throwing snow to prevent freeze-up of the auger / impeller.

Personal Protection

Do not operate the equipment without wearing adequate winter garments. Avoid loose fitting clothing that can get caught in moving parts. Wear footwear that will improve footing on slippery surfaces.

Wear adequate safety gear, including safety glasses with side shields and protective gloves.

Do not wear loose clothing or jewelry, and tie back hair that may get caught in rotating parts.

NEVER attempt to unclog or clean unit while engine is running. Rotating auger / impeller can cause serious injury.

Protect eyes, face and head from objects that may be thrown from unit. Wear appropriate hearing protection.

Always wear safety glasses or eye shields during operation or while performing an adjustment or repair to protect eyes from foreign objects that may be thrown from the machine.

Slope Operation

Exercise extreme caution when operating on slopes. DO NOT operate on steep slopes. DO NOT clear snow across the face of slopes; go up and down. Keep all movement on slopes slow and gradual.

Use a slow speed to avoid stops or shifts on slopes. Avoid starting or stopping on a slope. Do not park unit on a slope unless absolutely necessary. When parking on a slope always block the wheels.

Do not operate near drop-offs, ditches, or embankments. Unit can suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.

Fuel

DO NOT run engine in an enclosed area. Always provide good ventilation. Fumes from engine exhaust can cause injury or death.

Fuel is highly flammable and its vapors are explosive. Handle with care. Use only an approved gasoline container with an appropriately-sized dispensing spout.

No smoking, no sparks, no flames. Always allow engine to cool before servicing.

Never fill fuel tank when engine is running or hot from operation.

Never fill or drain fuel tank indoors.

Replace fuel cap securely and clean up spilled fuel.

Never fill fuel containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.

When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel on a trailer with a portable container, rather than from a gasoline dispenser nozzle.

Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.

If fuel is spilled on clothing, change clothing immediately.

Properly remove fuel before tipping unit up onto housing to avoid spills.

Towing/Transporting

Always stop engine, remove key and close fuel valve or drain fuel when transporting unit on a truck or trailer.

Use extra care when loading or unloading unit onto trailer or truck. Secure unit chassis to transport vehicle. Never secure from rods or linkages that could be damaged. Do not transport machine while engine is running.

Accessories

Use only AriensCo-recommended attachments or accessories that are designed for your unit and that are appropriate to your use and can be used safely in your application.

DRAINING FUEL SYSTEM

1. Move unit to an open, well-ventilated area with no flames or sparks.
2. Remove fuel tank cap and siphon fuel into a clean gasoline container.
3. Reinstall fuel tank cap and tighten.
4. Start engine to burn remaining fuel in fuel system and leave engine running until it “runs dry” and stops. Refer to Operator’s Manual for engine start procedure.
5. Stop engine, remove key and close fuel valve.

SERVICE POSITION

See Figure 2.

WARNING: AVOID INJURY. Before placing unit in service position, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

IMPORTANT: NEVER store unit in service position.

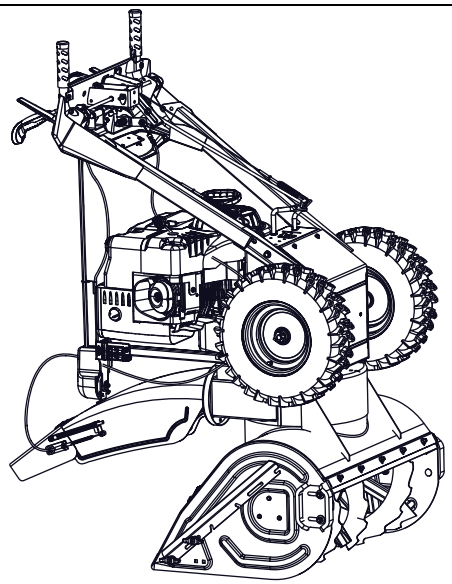


Figure 2

SEPARATE HOUSING FROM FRAME

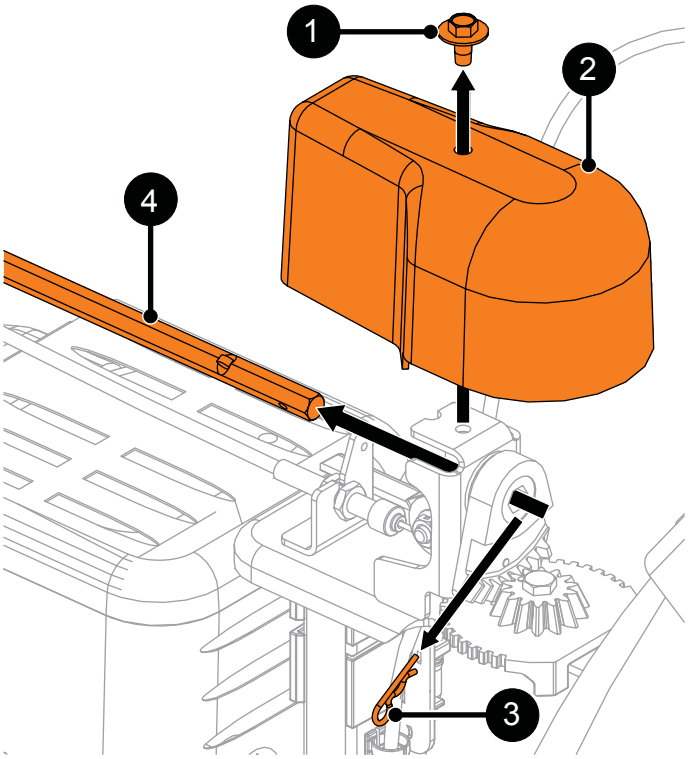
Remove Auger Housing

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.

See Figure 3.

3. Remove hardware retaining chute gear cover to chute pedestal and remove cover.
4. Remove hairpin from hex rod and remove hex rod from chute gears.



1. Tapping Screw
2. Chute Gear Cover
3. Hairpin
4. Hex Rod

Figure 3

5. Remove hex rod from dash panel.

IMPORTANT: Discharge chute control designs differ based on serial number. Generation 2 chute control designs appear as shown in Figure 4 and Generation 3 chute control designs appear as shown in Figure 5. Continue to step 6 for service to units with Generation 2 designs and advance to step 10 for service to units with Generation 3 designs.

Generation 2 Chute Control Designs

See Figure 4.

6. Remove hairpin and cable eyelet from chute control assembly.
7. With a pliers, compress cable anchor tabs and remove anchor from chute control assembly.
8. Guide cable end through hole in dash panel.

IMPORTANT: Reinstall hairpin into clevis pin so it is not misplaced.

Generation 2 Chute Control Design

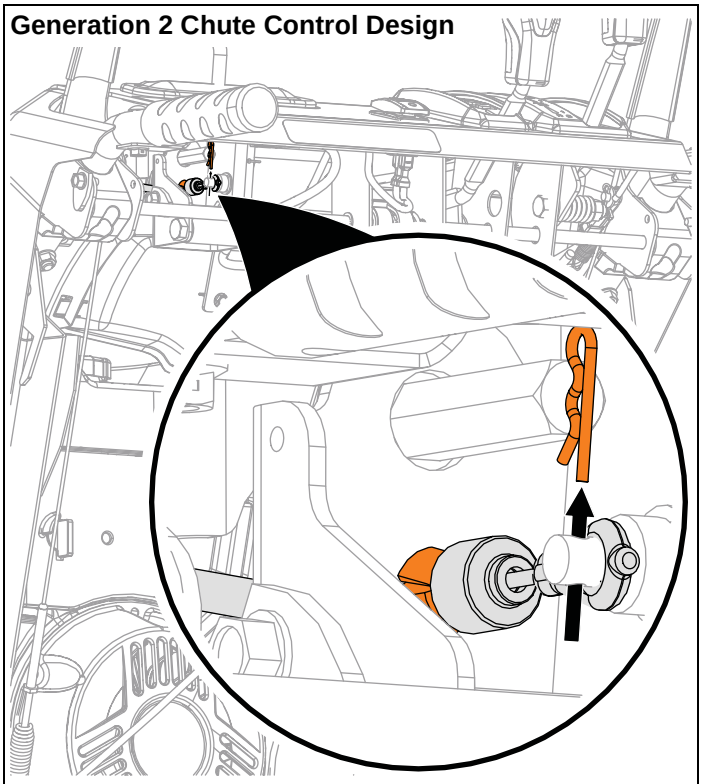


Figure 4

9. Advance to step 13.

Generation 3 Chute Control Designs

See Figure 5.

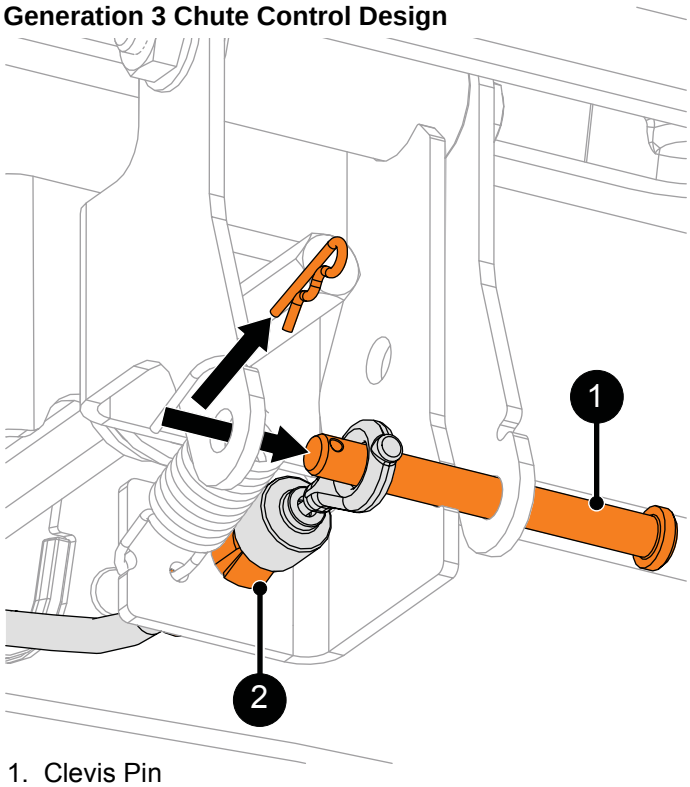
10. Remove hairpin from clevis pin and partially remove clevis pin from chute control assembly.

IMPORTANT: Chute control will come apart if clevis pin is fully removed.

11. With a pliers, compress cable anchor tabs and remove anchor from chute control assembly.
12. Guide cable end through hole in dash panel.

IMPORTANT: Reinstall hairpin into clevis pin so it is not misplaced.

Generation 3 Chute Control Design



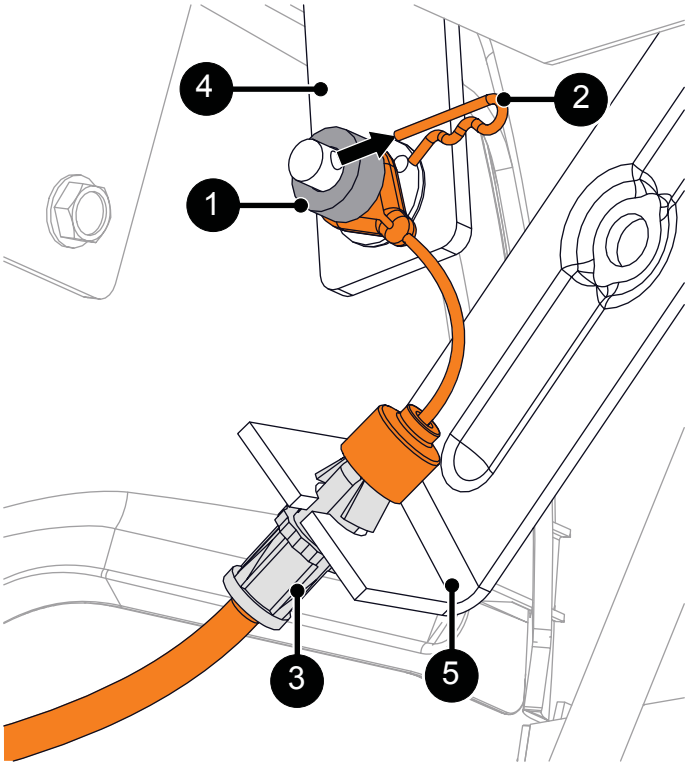
1. Clevis Pin
2. Cable Anchor

Figure 5

See Figure 6.

13. Remove hairpin, sleeve bushing and cable eyelet from deflector arm under dash panel.
14. With a pliers, compress cable anchor tabs and remove anchor from deflector bracket.

IMPORTANT: Reinstall sleeve bushing and hairpin so parts are not misplaced.



1. Sleeve Bushing
2. Hairpin
3. Cable Anchor
4. Deflector Arm
5. Deflector Bracket

Figure 6

15. Remove chute deflector cable from J-clamp on engine mount. See Figure 7.

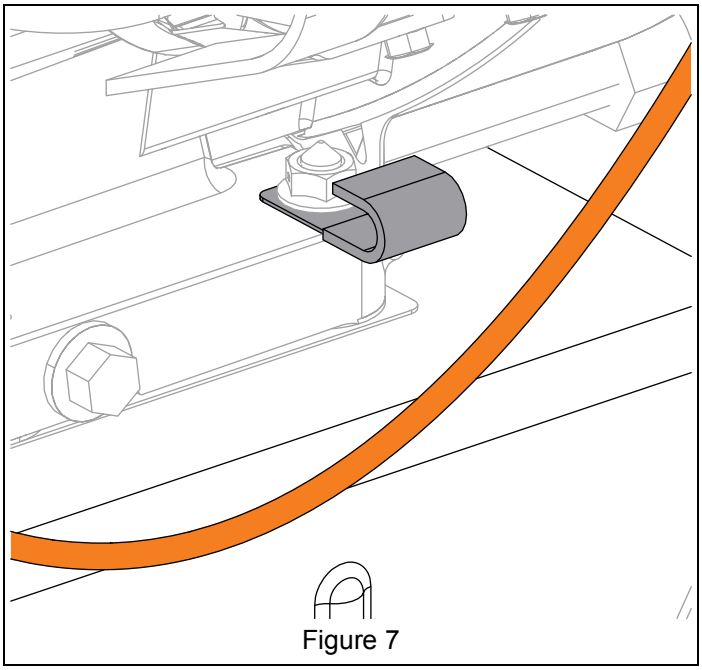


Figure 7

See Figure 8.

16. Remove tapping screw securing left side of belt cover to frame.
17. Loosen, but DO NOT remove tapping screw securing right side of belt cover to frame. Remove belt cover.

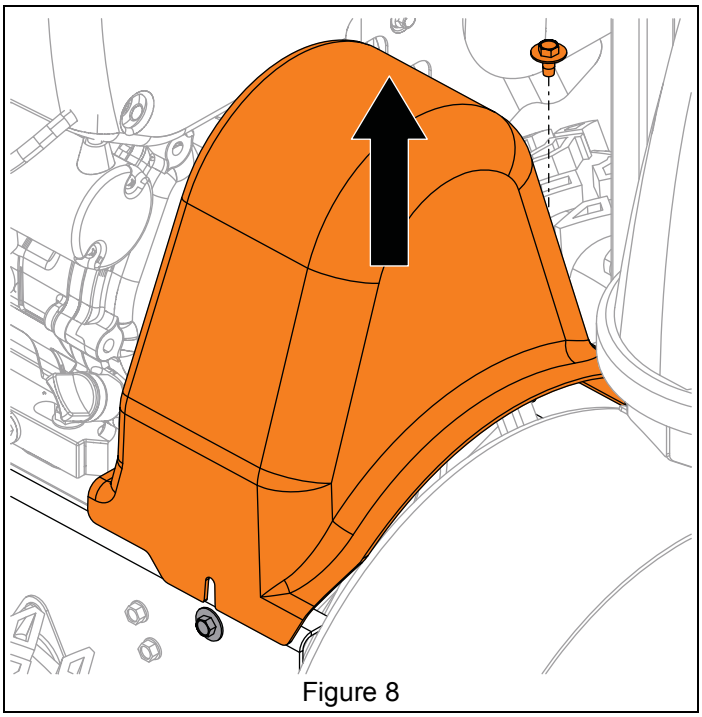


Figure 8

18. Remove hardware retaining belt finger to engine and remove belt finger. See Figure 9.

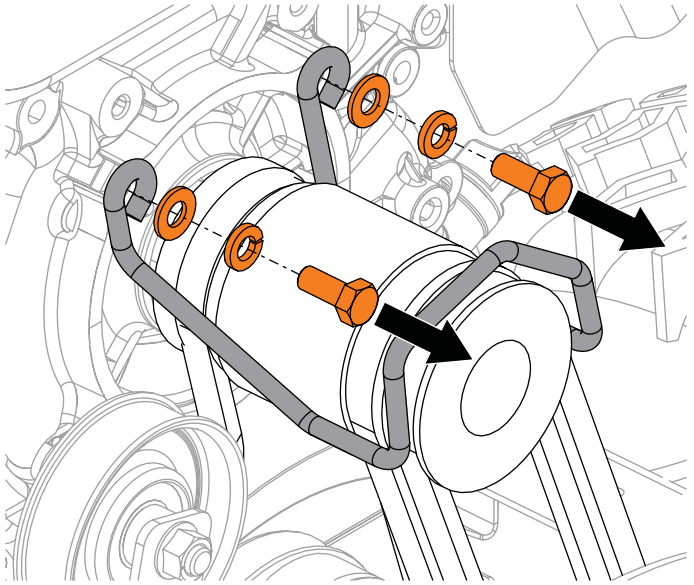


Figure 9

WARNING: AVOID INJURY. Attachment sheave edges are sharp. Wear thick gloves to remove belts from attachment sheave.

See Figure 10.

19. Remove attachment drive belts from attachment sheave.

To assist belt removal, slowly pull recoil starter handle while gently pulling belts from attachment sheave.

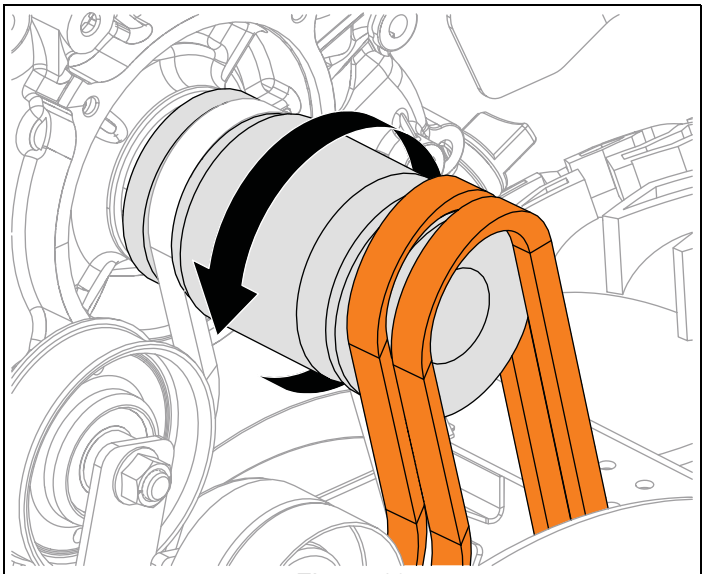


Figure 10

See Figure 11.

20. Position support, such as a trash can, under handlebars so tractor / frame remains upright when separated from auger housing.
21. Chock or block wheels to prevent tractor / frame movement.

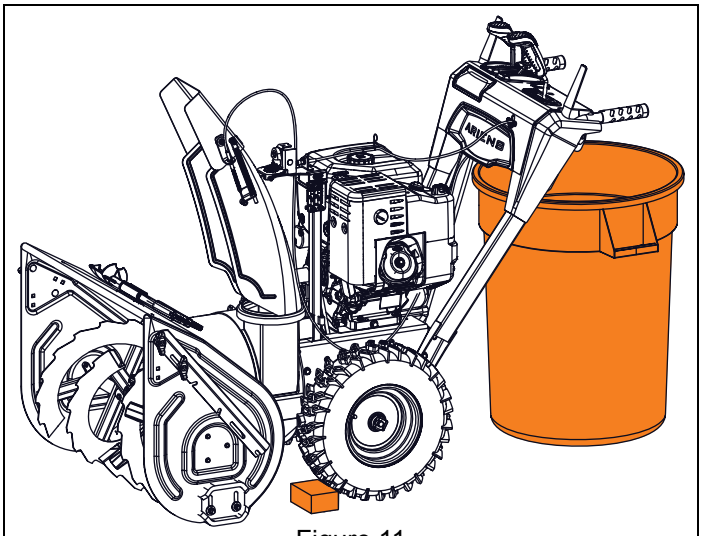
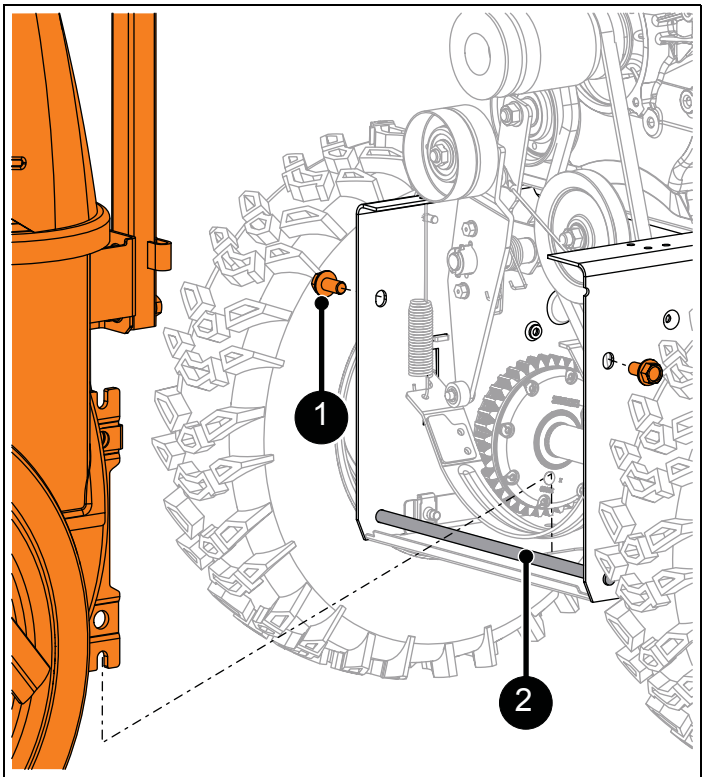


Figure 11

See Figure 12.

22. Remove hardware securing auger housing to frame.
23. Lift auger housing rear slightly to disengage from mount rod and separate from unit.



1. Tapping Screw
2. Mount Rod

Figure 12

Reinstall Auger Housing

See Figure 13.

1. With help from an adult assistant, engage attachment clutch lever so attachment brake will not obstruct attachment drive pulley in step 2.
2. Tilt auger housing rear up and lower into frame so housing mount brackets engage mount rod.

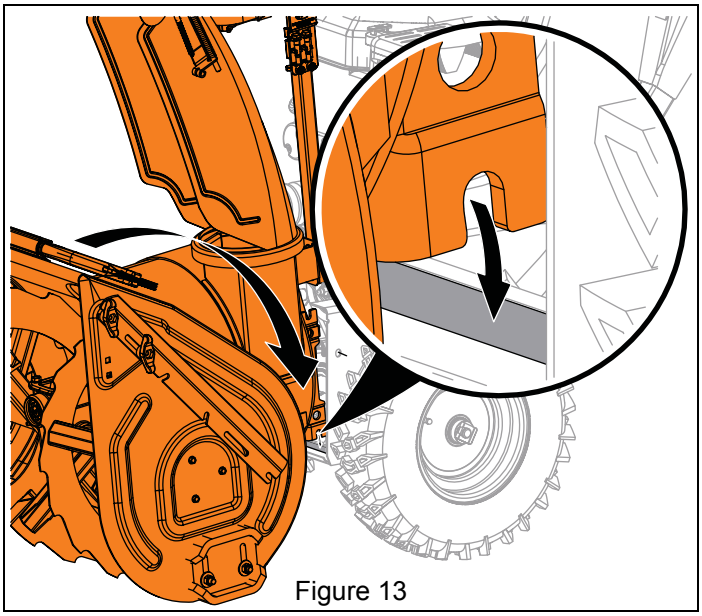


Figure 13

3. Release attachment clutch lever.
4. Align holes in housing mount brackets with holes in frame and reinstall two tapping screws, but DO NOT tighten.

IMPORTANT: Unit must be on a flat, level surface during steps 6 – 8.

5. Check tire pressure and adjust if necessary. Refer to Operator's Manual for specification.
6. Loosen skid shoe hardware and adjust skid shoes. Refer to Operator's Manual for adjustment procedure.
7. Torque tapping screws installed in step 5 to 33.8 N•m – 70.1 N•m (24.9 lb-ft – 51.7 lb-ft).

See Figure 14.

WARNING: AVOID INJURY. Attachment sheave edges are sharp. Wear thick gloves to install belts onto attachment sheave.

8. Reinstall attachment drive belts onto attachment sheave.

To assist belt installation, slowly pull recoil starter handle while gently guiding belts onto attachment sheave.

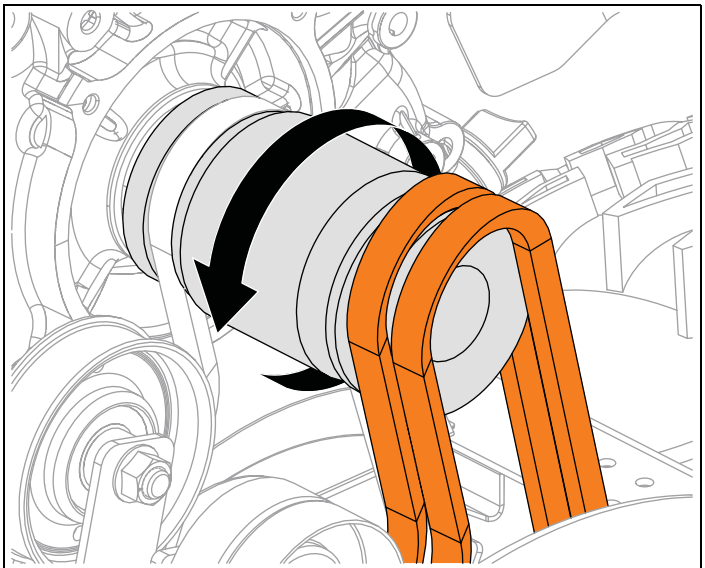
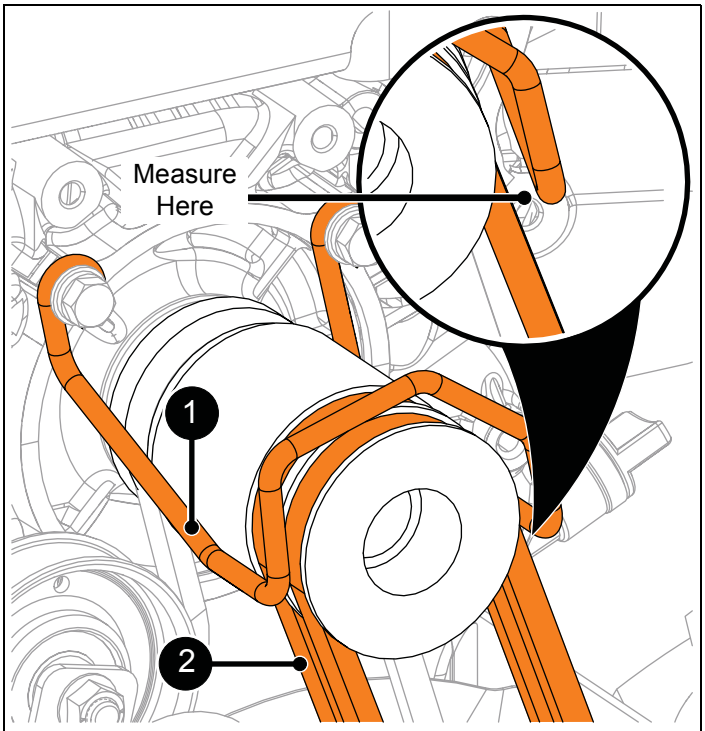


Figure 14

9. Reinstall belt finger and secure with two flat steel washers, two locking washers and two hex bolts.

See Figure 15.

10. Check belt finger clearance:
    - Engage attachment clutch lever and make sure belt finger located opposite belt idler is less than 3.2 mm (1/8") from belt, but not touching the belt.
    - If needed, adjust clearance by loosening hex bolts, repositioning belt finger, and tightening bolts.



1. Belt Finger
2. Attachment Drive Belts

Figure 15

11. Reinstall belt cover and secure left side with tapping screw. Position right side under tapping screw and tighten.
12. Insert hex rod end without ears into dash panel until opposite end clears chute gear.
13. Position discharge chute facing forward.
14. Position chute rotation lever upright and insert hex rod through chute gear until it stops.
15. Reinstall hairpin into hex rod.
16. Insert chute lock cable through hole in dash panel and insert cable anchor into chute control assembly.
17. For service to models with a Generation 3 chute control design, continue to step 18. For service to models with a Generation 2 chute control design, advance to step 20.

Generation 3 Chute Control Design

See Figure 16.

18. Remove hairpin from clevis pin and reinstall cable eyelet onto clevis pin.
19. Insert clevis pin through chute control bracket and secure with hairpin.

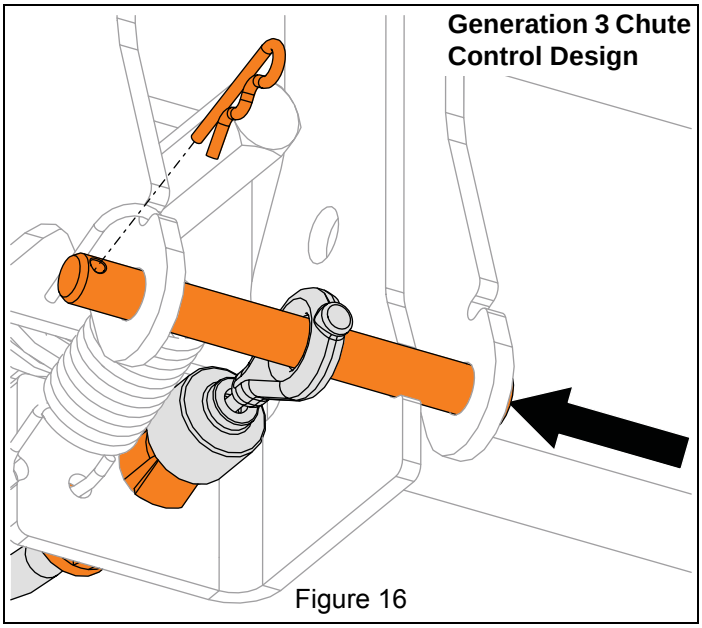


Figure 16

Generation 2 Chute Control Design

20. Remove hairpin from chute control assembly and reinstall cable eyelet onto assembly. Reinstall hairpin. See Figure 17.

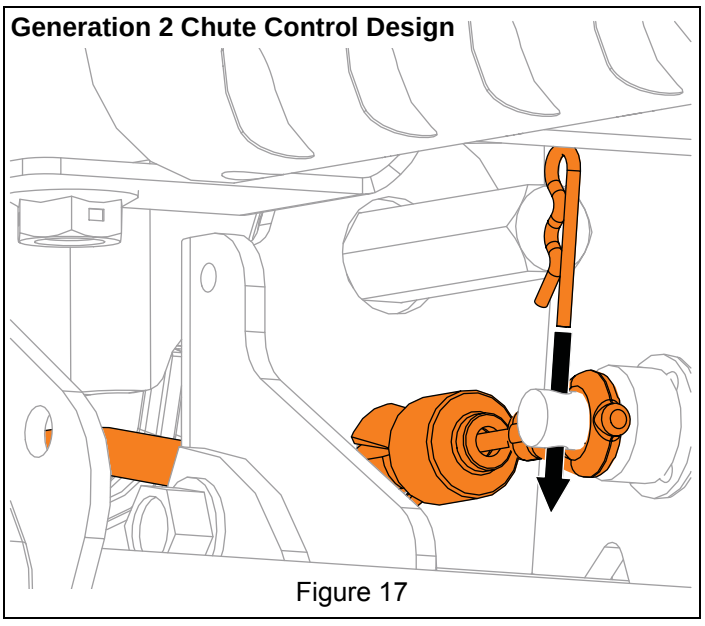


Figure 17

All Models

21. Reinstall gear cover and secure with tapping screw.
22. Reinstall chute deflector cable into J-clamp on engine mount.
23. Reinstall deflector cable anchor into deflector bracket.
24. Remove sleeve bushing and hairpin from deflector arm and reinstall cable eyelet onto deflector arm. Reinstall sleeve bushing and hairpin. See Figure 6.
25. Reconnect spark plug wire.
26. Adjust chute lock cable and deflector cable. Refer to operator's manual for instructions.

IMPORTANT: Check all adjustments after first use.

WARNING: AVOID INJURY. Auger / impeller must stop within 5 seconds when attachment clutch lever is released.

BOTTOM COVER REMOVAL

Remove Bottom Cover

IMPORTANT: Save all hardware for reinstallation.

WARNING: AVOID INJURY. Before placing unit in service position, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Place unit in service position. See *Service Position* on page 7.
4. *Models 926068, 926070, 926336:* Advance to step 7. *Models 926060, 926069, 926338:* Continue to step 5. *Model 926337:* Place track carriage in the “Raised Position” and advance to step 7. Refer to Operator’s Manual. See Figure 18.

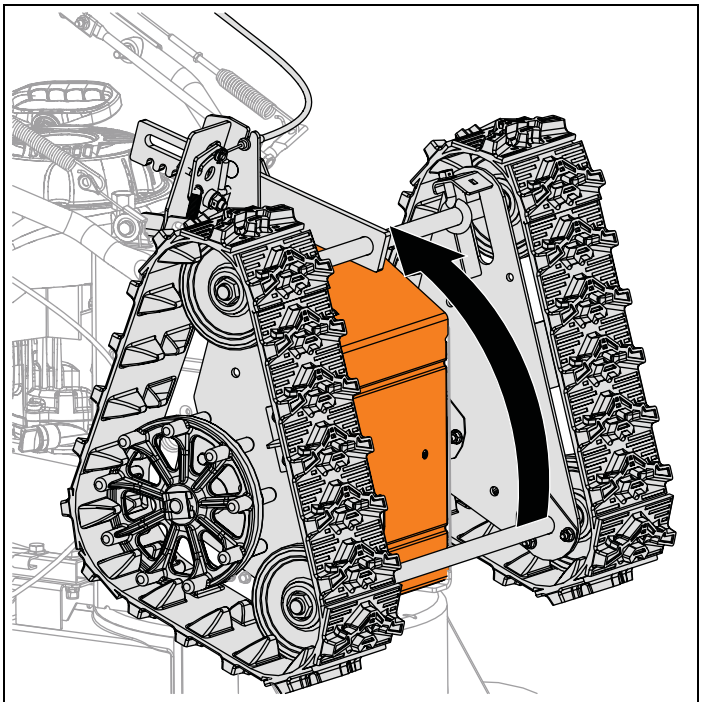


Figure 18

Models 926060, 926069, 926338

CAUTION: AVOID INJURY. Track carriage will rotate freely when height adjuster plate is removed and height adjuster is free. Keep hands away from pinch points.

See Figure 19.

5. Remove hardware securing height adjuster plate to height adjuster bracket.

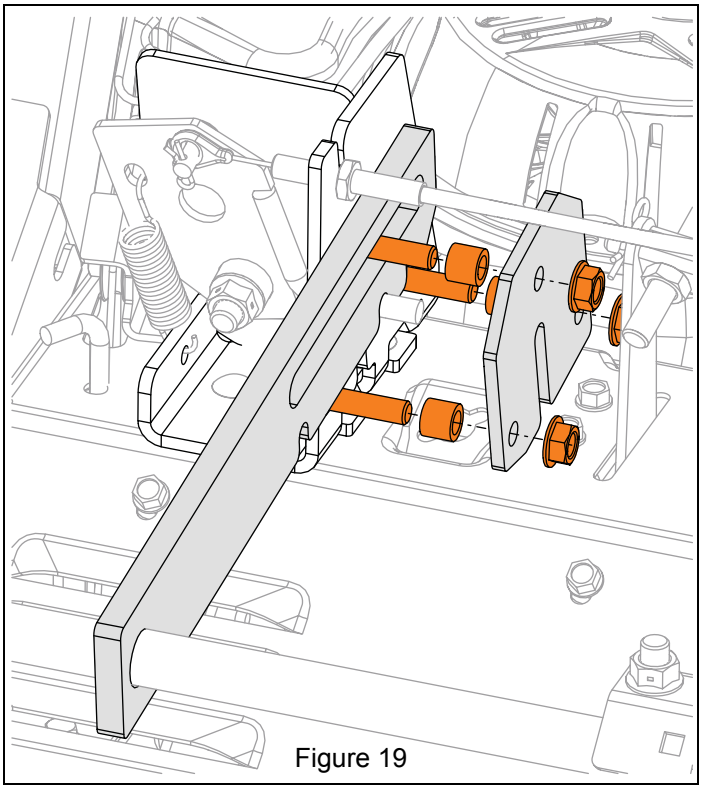


Figure 19

6. Move height adjuster to the right, rotate away from bottom cover and remove bottom cover. See Figure 20.

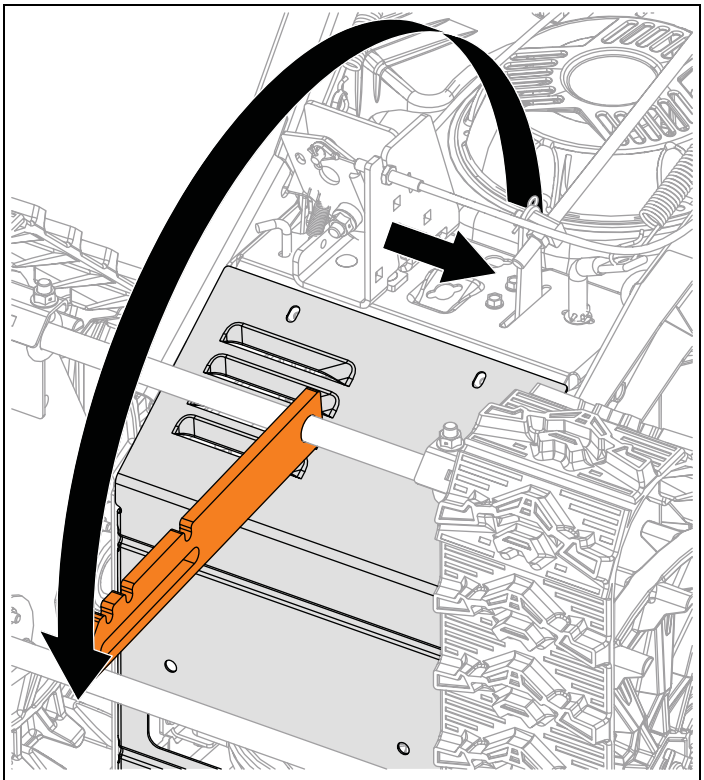


Figure 20

7. Remove hardware retaining bottom cover to frame and remove cover. See Figure 21.

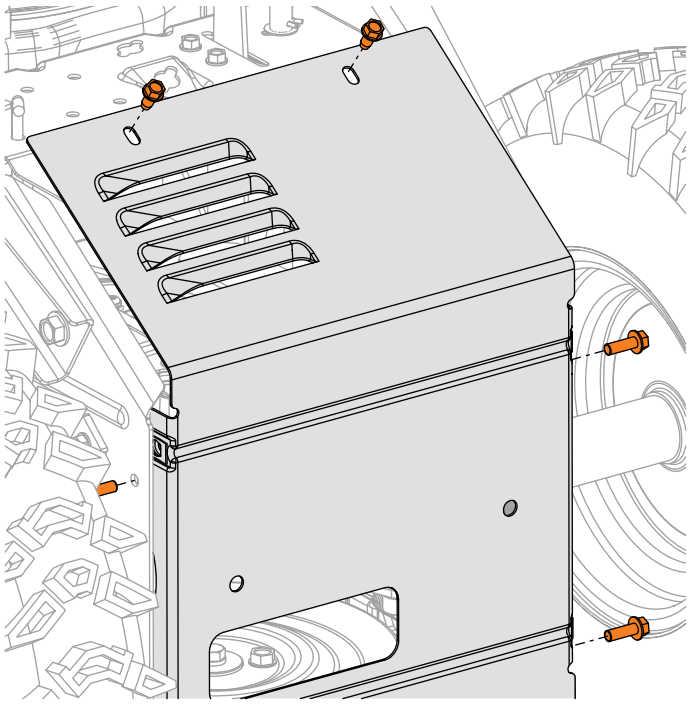


Figure 21

Install Bottom Cover

1. Reinstall bottom cover and secure with two tapping screws and four hex bolts.
2. *Models 926068, 926070, 926334, 926336, 926337:* advance to step 6.

Models 926060, 926069, 926338

See Figure 22.

3. Reposition height adjuster stop against height adjuster bracket. Align slot with top hole in height adjuster bracket.

IMPORTANT: Align one of the three notches in height adjuster with lock finger to hold adjuster position.

CAUTION: AVOID INJURY. Height adjuster is unsecured until hardware is reinstalled. Be careful not to bump adjuster from position on lock finger. Keep hands away from pinch points.

4. Reinstall carriage bolts through height adjuster bracket and reinstall spacers onto bolts.
5. Reinstall height adjuster plate and secure with three flange nuts.

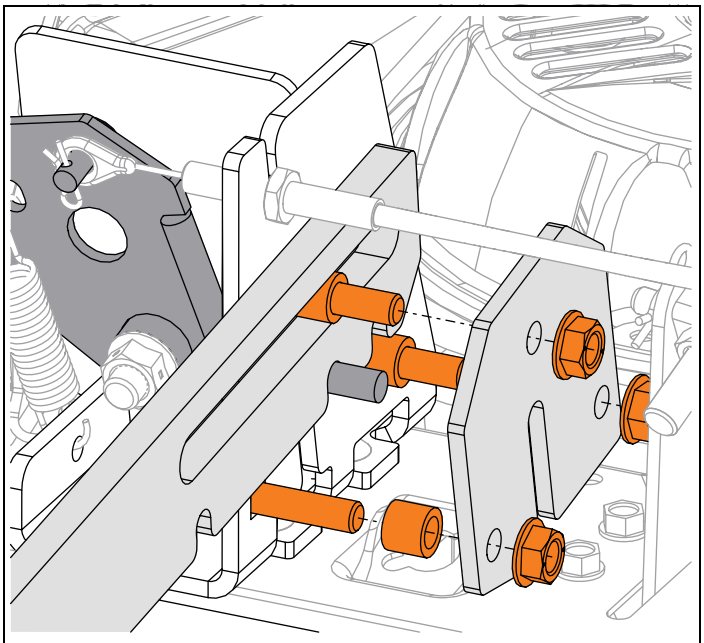


Figure 22

All Models

6. Return unit to operating position.

ATTACHMENT DRIVE BELT REPLACEMENT

Remove Attachment Drive Belts

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove auger housing. See *Separate Housing From Frame* on page 7.
4. Remove attachment drive belts from attachment drive pulley. See Figure 23.

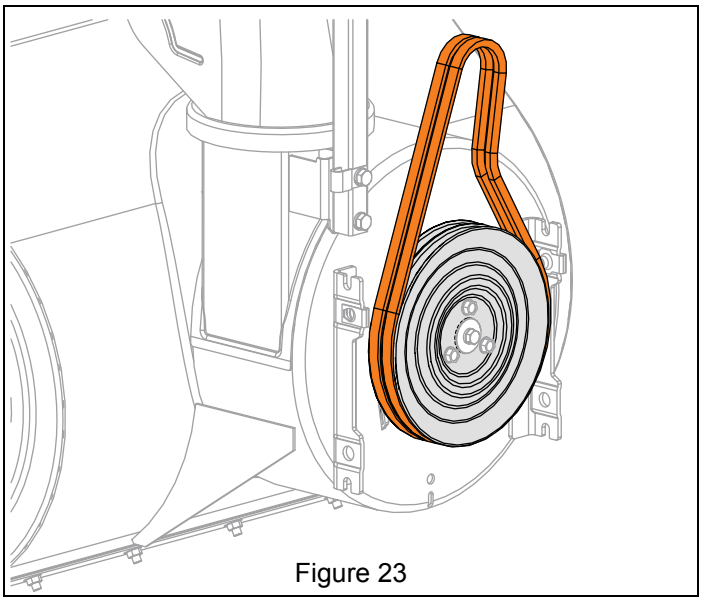


Figure 23

Install Attachment Drive Belts

1. Install belts onto attachment drive pulley.
2. Reinstall auger housing to frame. See *Reinstall Auger Housing* on page 11.
3. Adjust attachment drive clutch. See Operator's Manual for adjustment procedure.

NOTICE: Check all adjustments after first use.

WARNING: AVOID INJURY. Auger / impeller must stop within 5 seconds when attachment clutch lever is released.

TRACTION DRIVE BELT REPLACEMENT

Remove Traction Drive Belt

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove auger housing. See *Separate Housing From Frame* on page 7.
4. Remove hardware retaining belt finger and remove belt finger. See Figure 24.

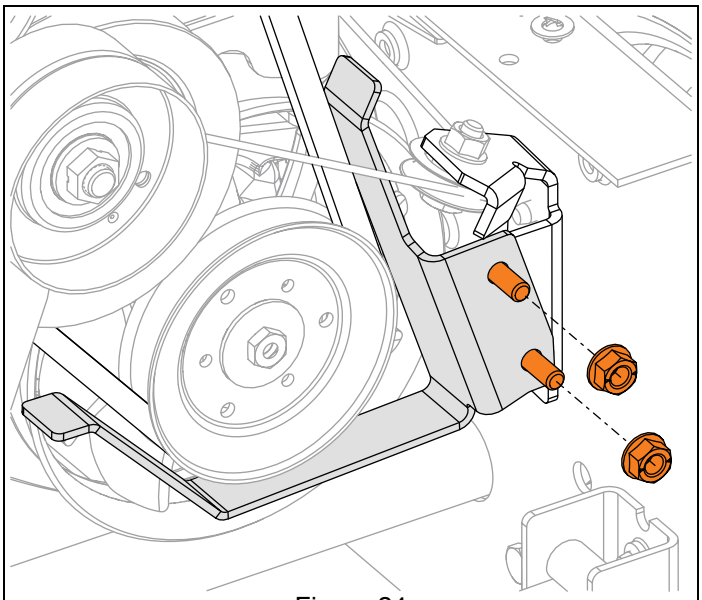
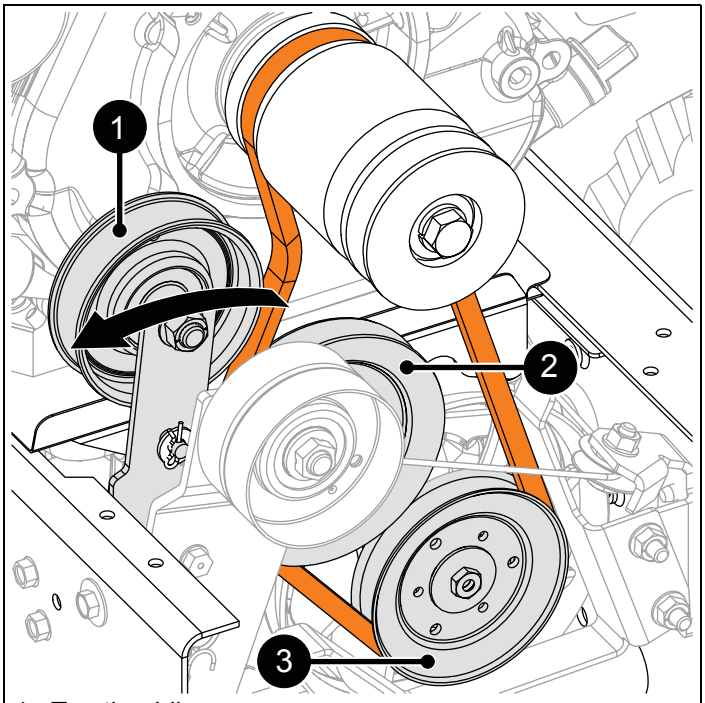


Figure 24

5. Push traction drive idler away from belt and remove belt from idler pulley first, then transaxle pulley. Remove belt. See Figure 25.



1. Traction Idler
2. Idler Pulley
3. Transaxle Pulley

Figure 25

Install Traction Drive Belt

1. Install belt onto engine sheave first, then transaxle pulley and idler pulley.
2. Reinstall belt finger and secure with two round head square neck bolts and two locking nuts.
3. Reinstall housing to frame. See *Reinstall Auger Housing* on page 11.
4. Adjust traction drive clutch. Refer to Operator's Manual for adjustment procedure.
5. Reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.

DRIVE IDLER ASSEMBLY REPLACEMENT

Remove Attachment Drive Idler Assembly

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove auger housing. See *Separate Housing From Frame* on page 7.
4. Remove attachment brake spring from frame. See Figure 26.

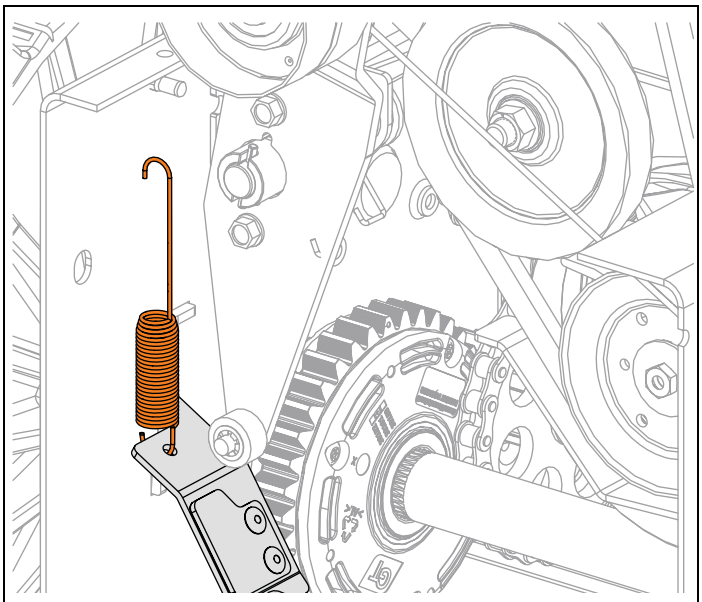


Figure 26

See Figure 27.

5. Remove torsion spring tension from around attachment idler arm.
6. Remove tapping screws retaining attachment idler arm to hub and remove idler assembly.

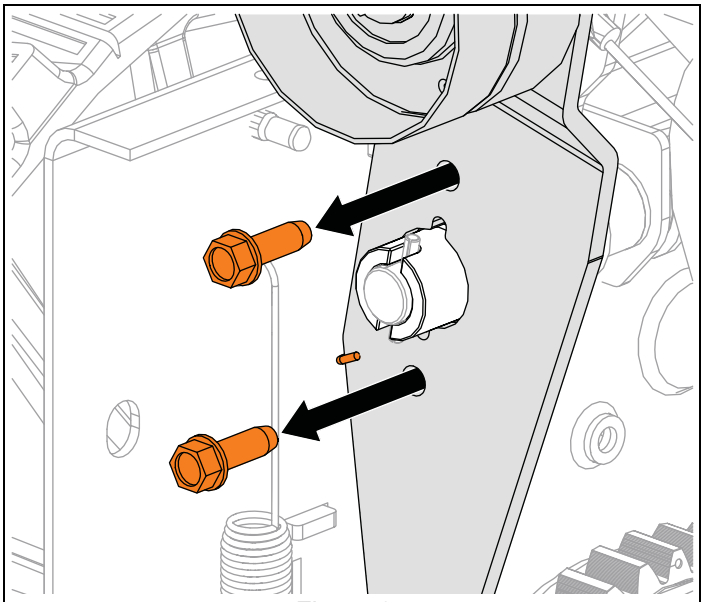


Figure 27

Remove Traction Drive Idler Assembly

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove attachment drive idler assembly. See *Remove Attachment Drive Idler Assembly* on page 17.

See Figure 28.

4. Remove hairpin and flat steel washer from traction drive idler arm.
5. Remove traction drive cable from idler arm.

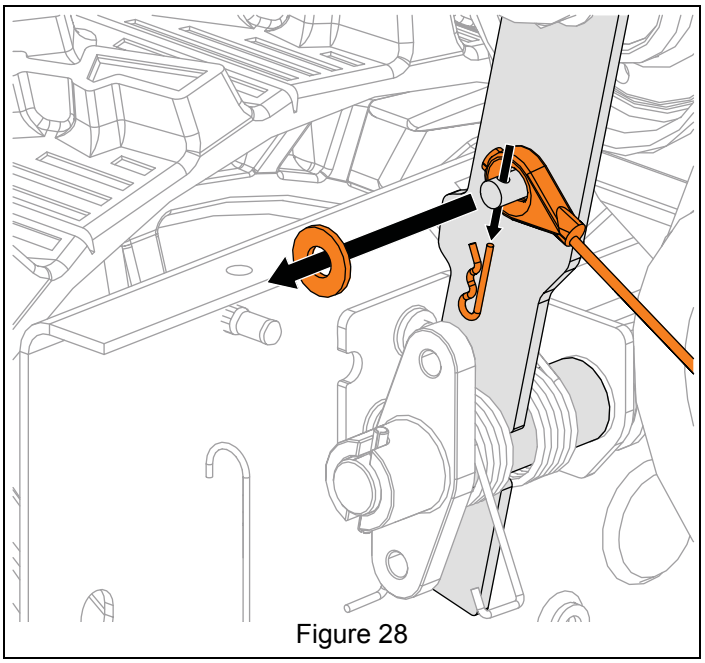


Figure 28

See Figure 29.

6. Remove roll pin, attachment idler arm hub and front torsion spring from drive idler pivot rod.
7. Remove rear torsion spring from around idler pivot rod.

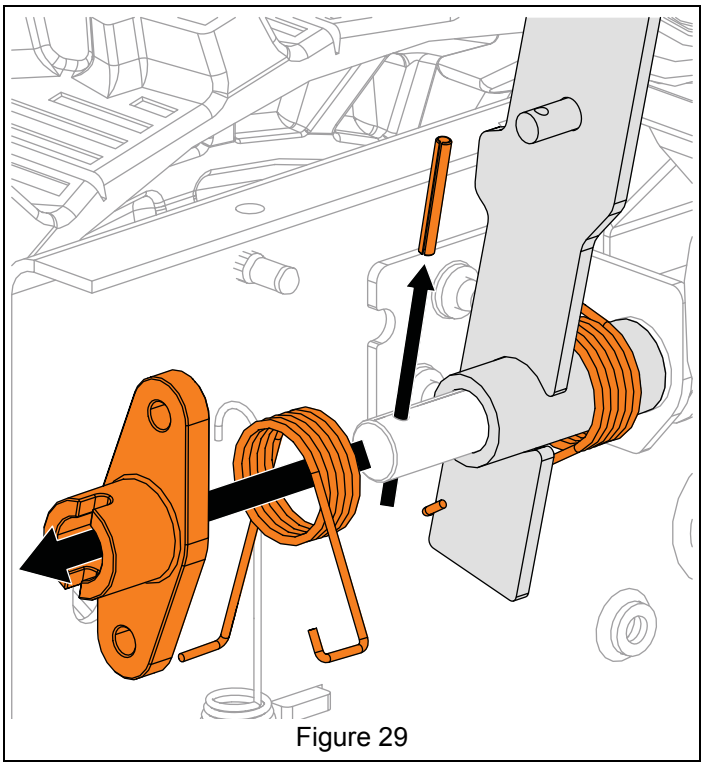


Figure 29

8. Remove traction idler arm assembly from pivot rod. See Figure 30.

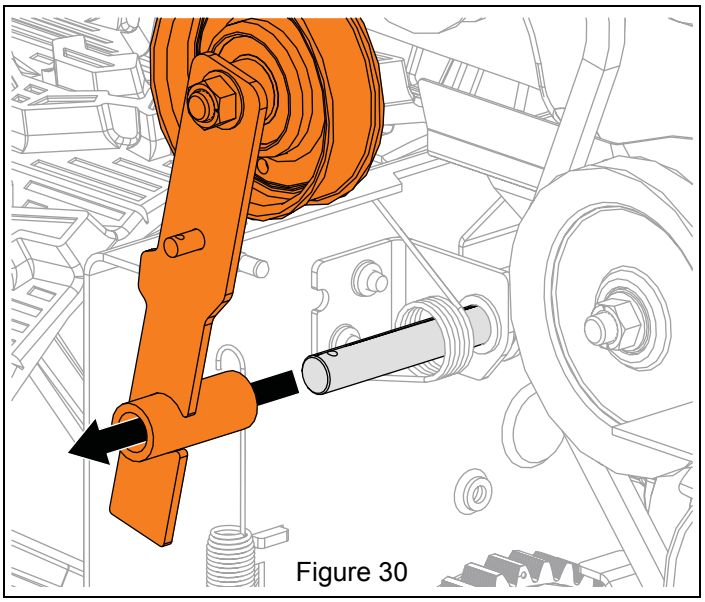


Figure 30

Install Traction Drive Idler Assembly

See Figure 31.

1. Reposition torsion spring leg around idler arm.

IMPORTANT: Ensure idler arm has tension.

2. Reinstall second torsion spring and attachment idler arm hub onto pivot rod.

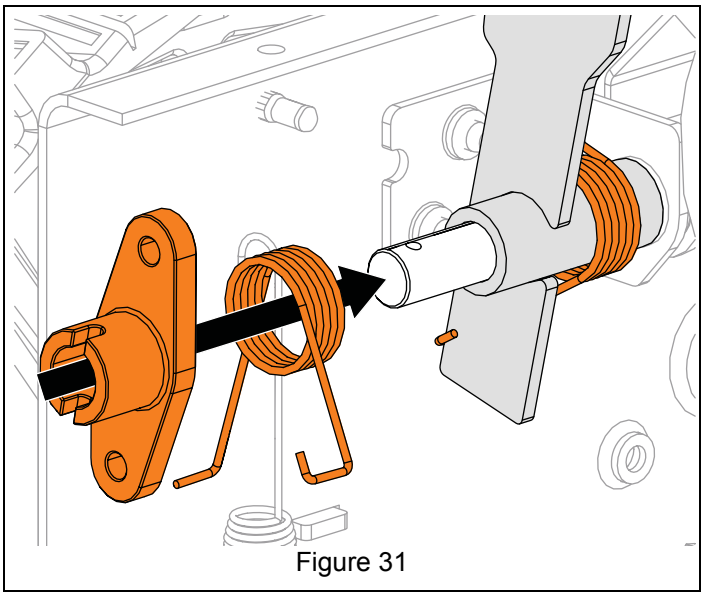


Figure 31

See Figure 32.

3. Align attachment arm idler hub with hole through pivot rod and reinstall roll pin.
4. Reinstall traction drive cable end onto traction drive idler arm and secure with original flat steel washer and hairpin.

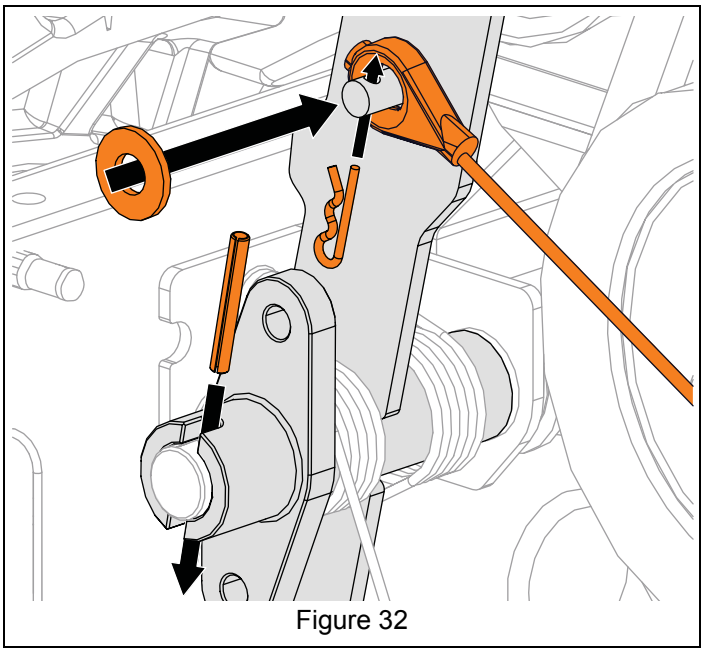


Figure 32

5. Reinstall attachment drive idler assembly. See *Install Attachment Drive Idler Assembly* on page 19.

Install Attachment Drive Idler Assembly

See Figure 33.

1.
2. Secure attachment drive idler assembly to hub with original tapping screws.
3. Reposition torsion spring leg around idler arm.

IMPORTANT: Ensure idler assembly has tension.

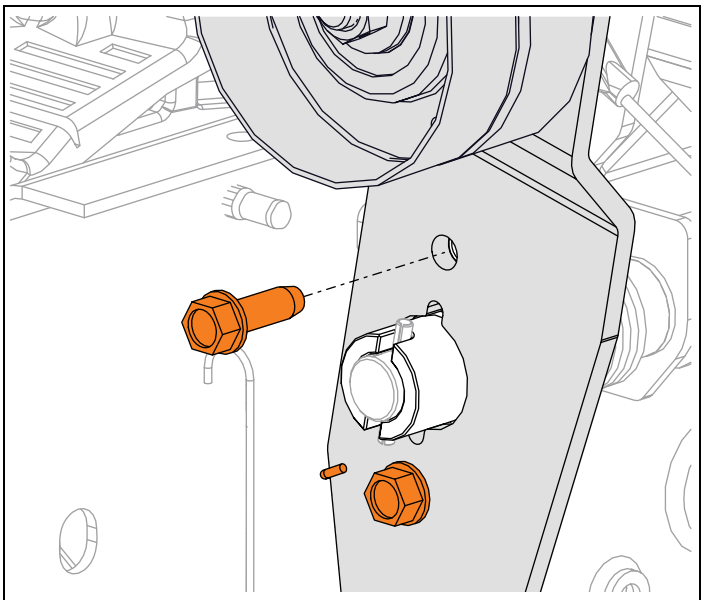


Figure 33

4. Reinstall attachment brake spring onto frame. See Figure 34.

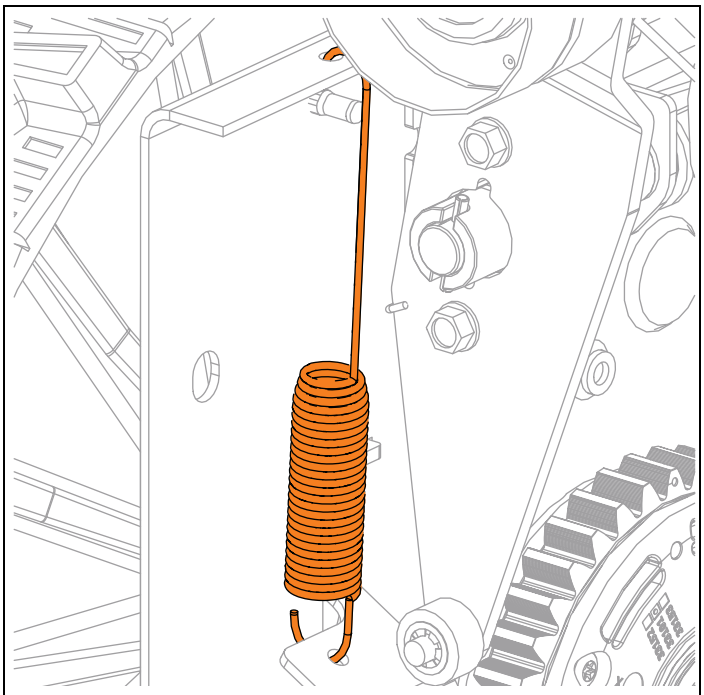


Figure 34

5. Reinstall auger housing. See *Reinstall Auger Housing* on page 11.

6. Adjust attachment drive clutch. Refer to Operator's Manual for adjustment procedure.
7. Reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.

ATTACHMENT BRAKE REPLACEMENT

Remove Attachment Brake

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove auger housing. See *Separate Housing From Frame* on page 7.

See Figure 35.

4. Disconnect extension spring from frame.
5. Remove hardware retaining attachment brake arm to brake mount bracket.
6. Remove attachment brake arm.

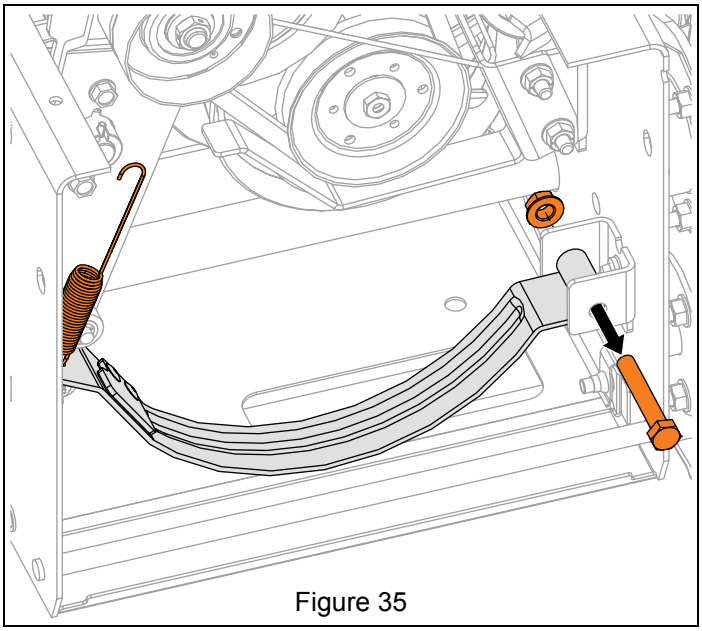


Figure 35

Install Attachment Brake

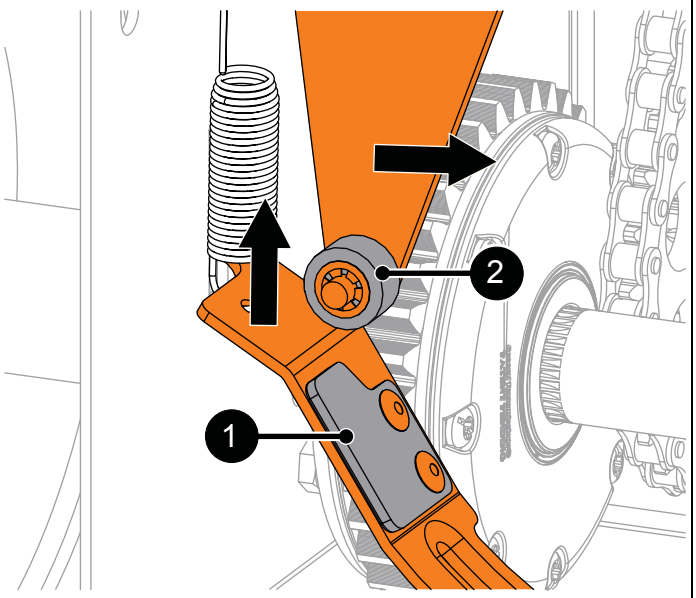
1. Position pivoting end of attachment brake arm in brake mount bracket. Secure with hex bolt and top locking flange nut, but DO NOT overtighten.
2. With flathead screwdriver or similar pry bar, reconnect extension spring to attachment brake arm.

See Figures 36 and 37.

3. Engage and disengage attachment clutch to verify brake roller on attachment idler does not interfere with brake pad.

IMPORTANT: Make sure brake roller does not bind.

Attachment Clutch Disengaged / Brake Engaged



1. Brake Pad
2. Brake Roller

Figure 36

Attachment Clutch Engaged / Brake Disengaged

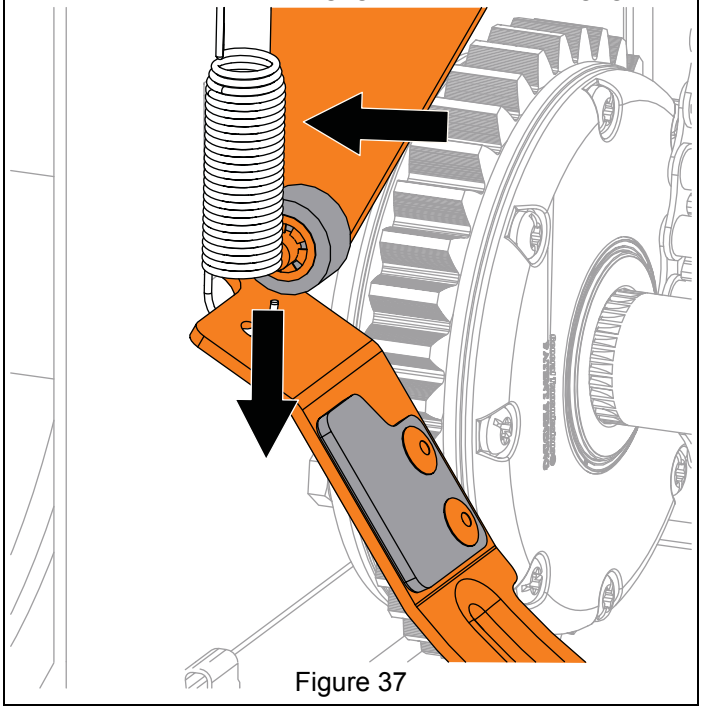


Figure 37

4. Reinstall attachment drive belts. See *Install Attachment Drive Belts* on page 16.

WARNING: AVOID INJURY. Before placing unit in service position, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

5. Place unit in service position and remove bottom cover. See *Service Position* on page 7 and *Remove Bottom Cover* on page 14.

See Figure 38.

6. Check attachment brake:
   - Brake must contact attachment belt when attachment clutch is disengaged.
   - Brake must be more than 1.6 mm (1/16") away from attachment belt when attachment clutch is engaged.

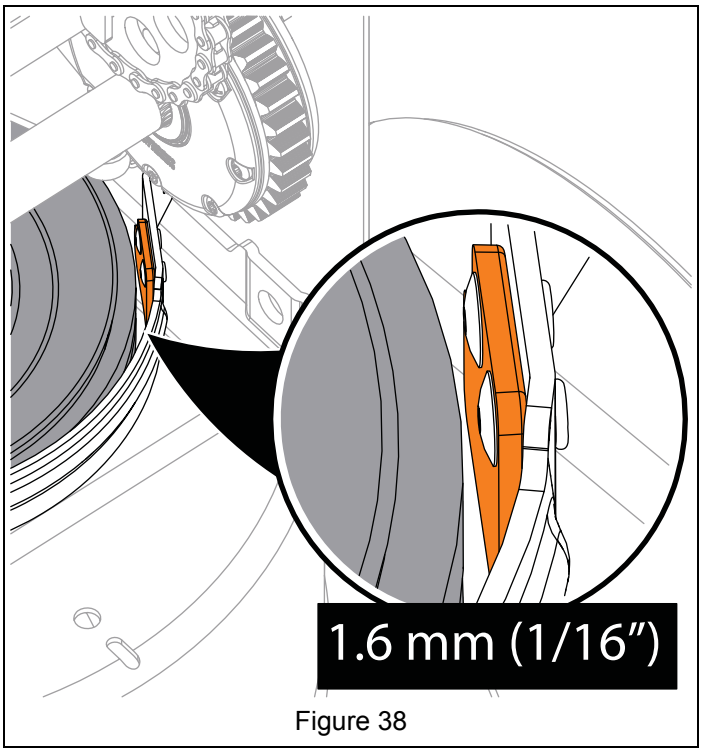


Figure 38

7. Reinstall bottom cover and secure with two tapping screws and four hex bolts.
8. Return unit to operating position.
9. Reconnect spark plug wire and fill fuel tank.

IMPORTANT: Check all adjustments after first use.

WARNING: AVOID INJURY. Auger / impeller must stop within 5 seconds when attachment clutch lever is released.

TRANSAXLE REPLACEMENT

Remove Transaxle

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.

> **WARNING:** AVOID INJURY. Before rotating unit forward, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

3. Place unit in service position and remove bottom cover. See *Service Position* on page 7 and *Bottom Cover Removal* on page 14.
4. Return tractor to operating position and support handlebars. Make sure unit is secure and will not tip.
5. Remove auger housing. See *Separate Housing From Frame* on page 7.
6. Remove hardware retaining belt finger and remove belt finger. See Figure 39.

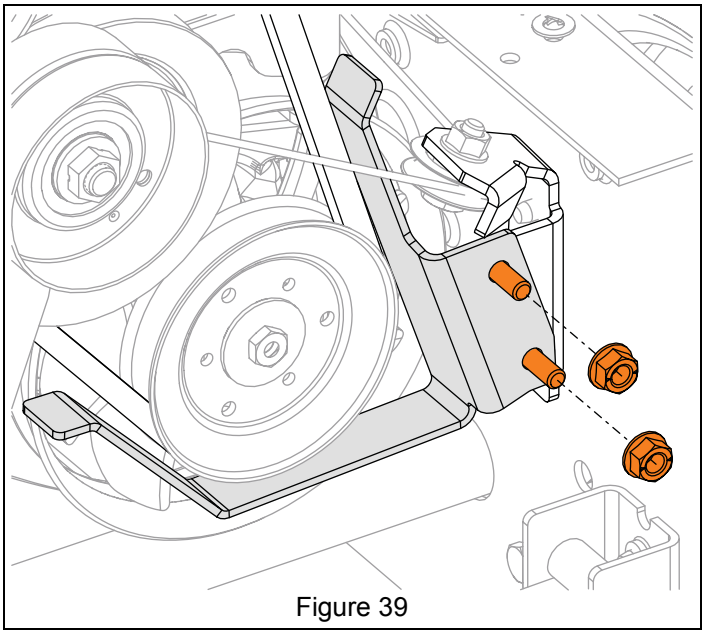


Figure 39

7. Remove traction drive belt.
8. Remove hairpin and flat steel washer retaining traction drive cable end to traction idler arm. Remove cable end from arm. See Figure 40.

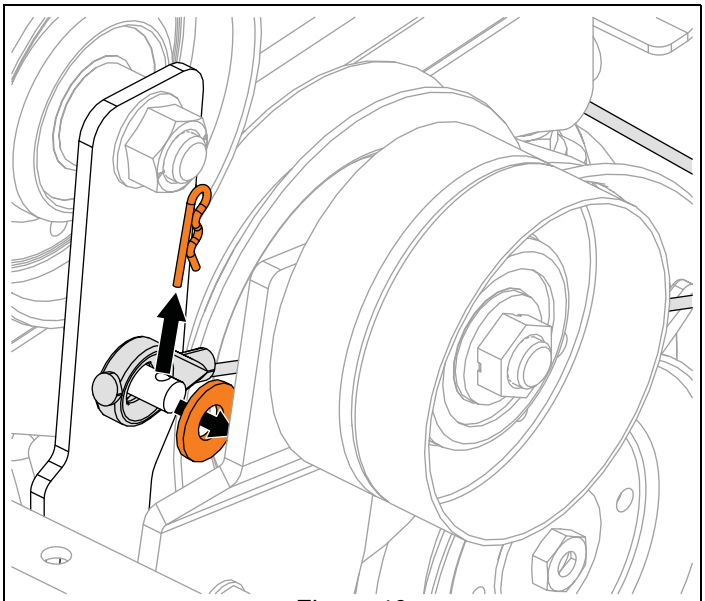
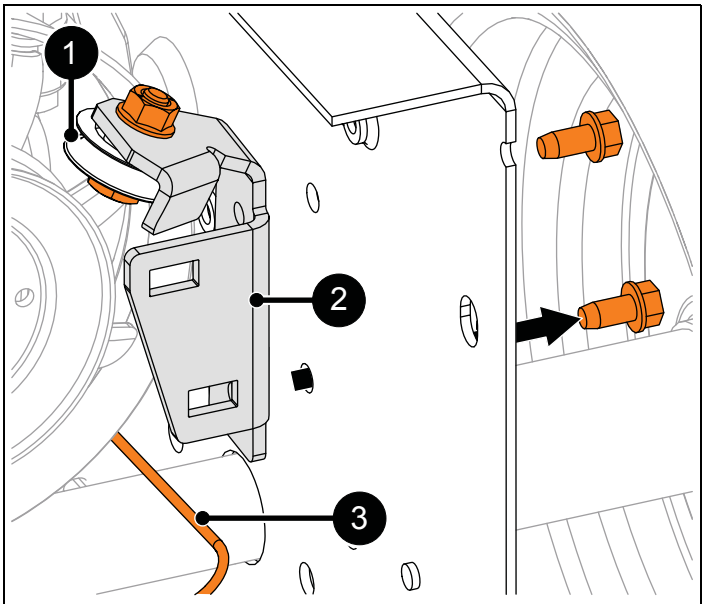


Figure 40

See Figure 41.

9. Loosen, but DO NOT remove hardware retaining cable pulley to cable pulley bracket and remove traction drive cable from pulley.
10. Remove hardware retaining cable pulley bracket to frame and remove bracket.



1. Cable Pulley
2. Cable Pulley Bracket
3. Traction Drive Cable

Figure 41

11. Remove hardware retaining idler pulley and remove pulley. See Figure 42.

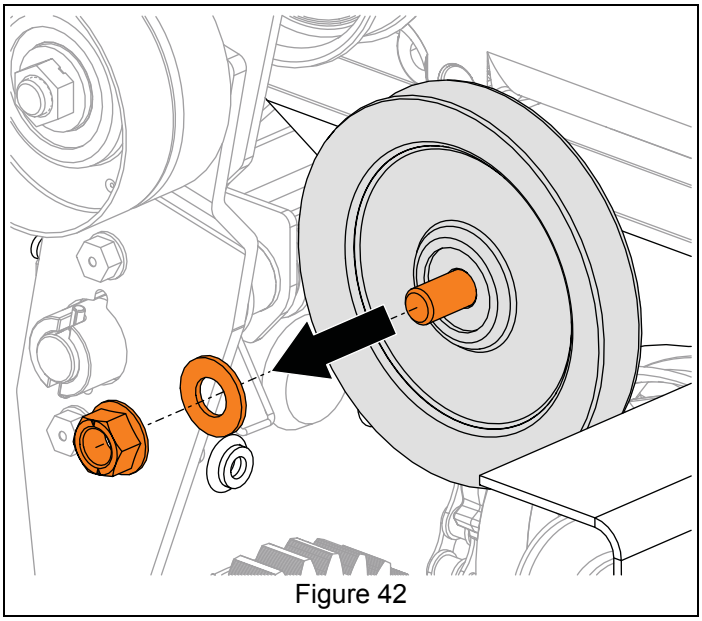


Figure 42

12. Remove hardware retaining transaxle shroud and remove shroud. See Figure 43.

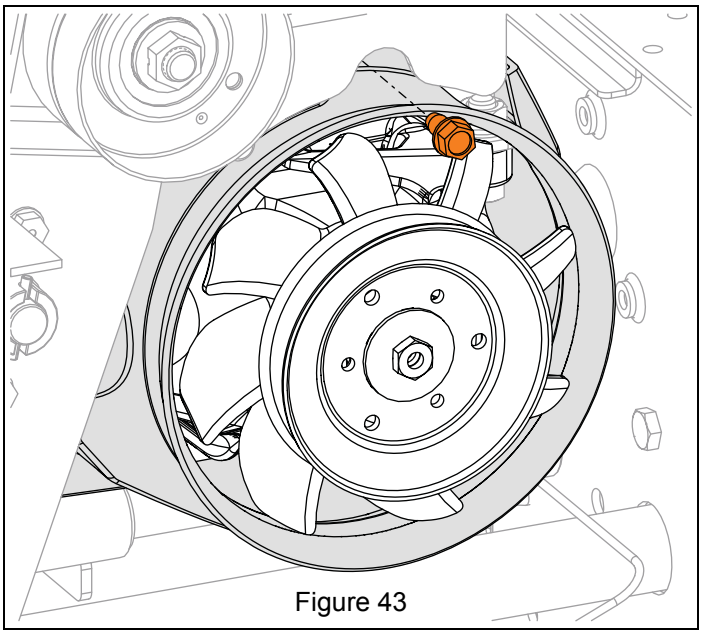


Figure 43

13. Remove hairpin and flat steel washer securing shift rod to transaxle. See Figure 44.

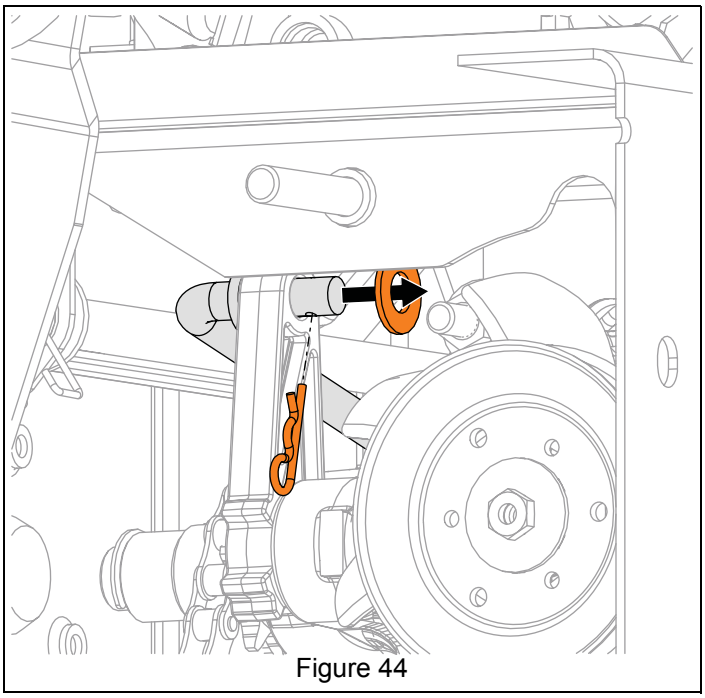


Figure 44

14. Remove hairpin securing shift rod to bell crank at unit rear and remove shift rod. See Figure 45.

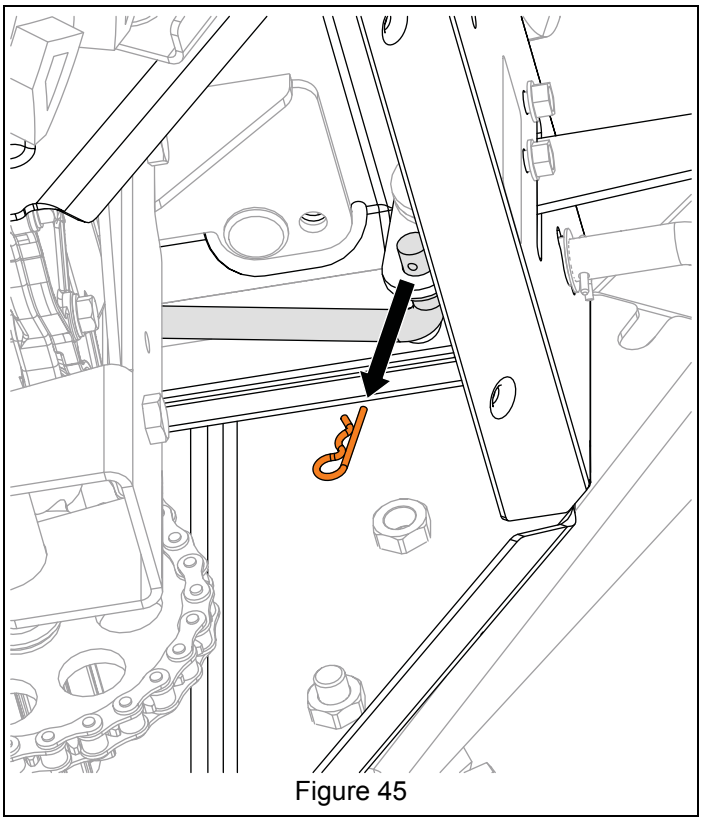


Figure 45

15. Remove hairpin securing transaxle bypass rod to transaxle and remove bypass rod from transaxle. See Figure 46.

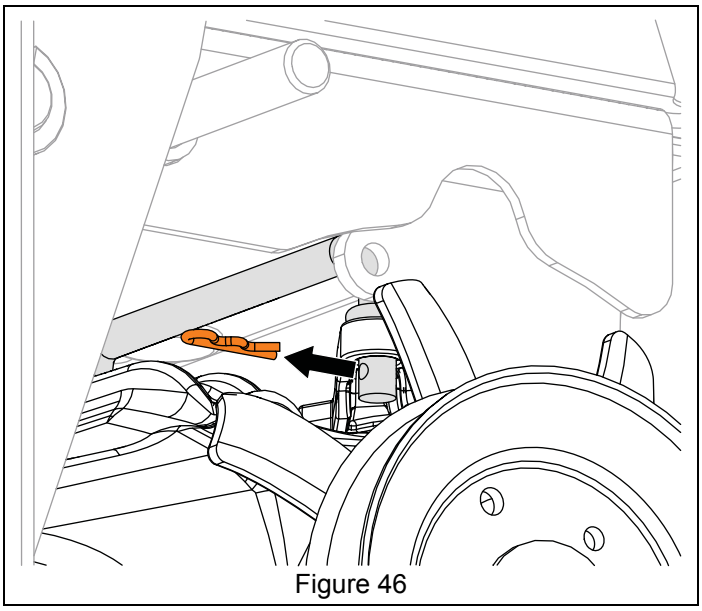


Figure 46

16. Remove bypass rod through unit rear.
17. Remove hardware securing transaxle to transaxle mount. See Figure 47.

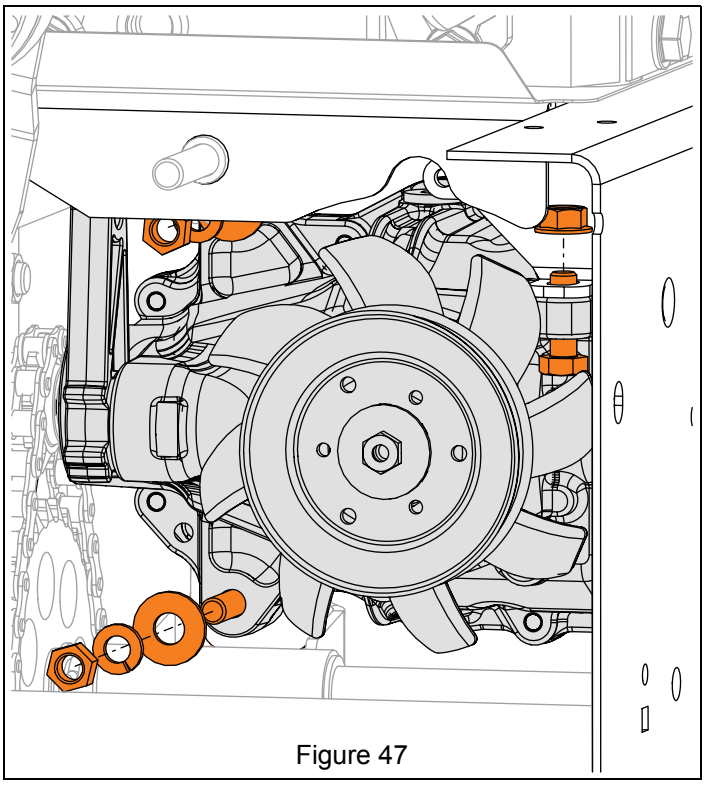


Figure 47

See Figure 48.

18. Tilt transaxle so tension is removed from chain and remove chain from transaxle.
19. Remove transaxle.

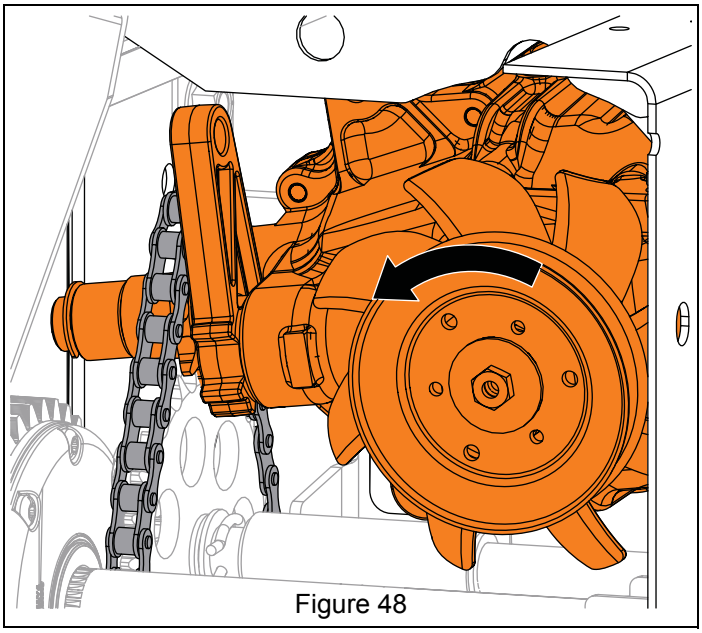
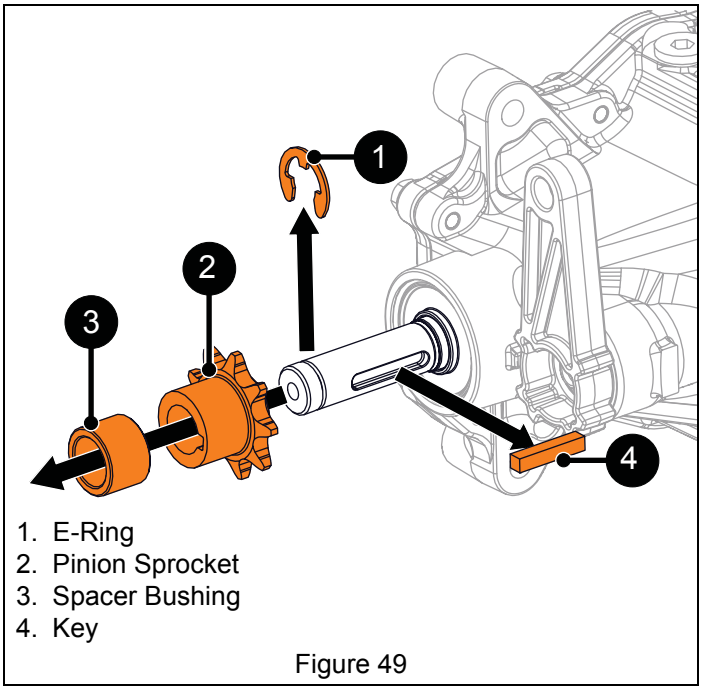


Figure 48

20. Remove E-ring, pinion sprocket, spacer bushing and key from transaxle driveshaft. See Figure 49.



1. E-Ring
2. Pinion Sprocket
3. Spacer Bushing
4. Key

Figure 49

Install Transaxle

1. Install key, pinion sprocket and spacer bushing onto transaxle driveshaft. Secure with E-ring.

See Figure 50.

2. Position transaxle inside unit and install chain around pinion sprocket.
3. Level transaxle and align with transaxle mount. Support transaxle, but DO NOT reinstall mounting hardware.

IMPORTANT: Each side of chain should have an equal amount of links / tension between pinion sprocket and pinion gear. If tension is uneven, manually turn pinion gear toward side with greater tension until equal.

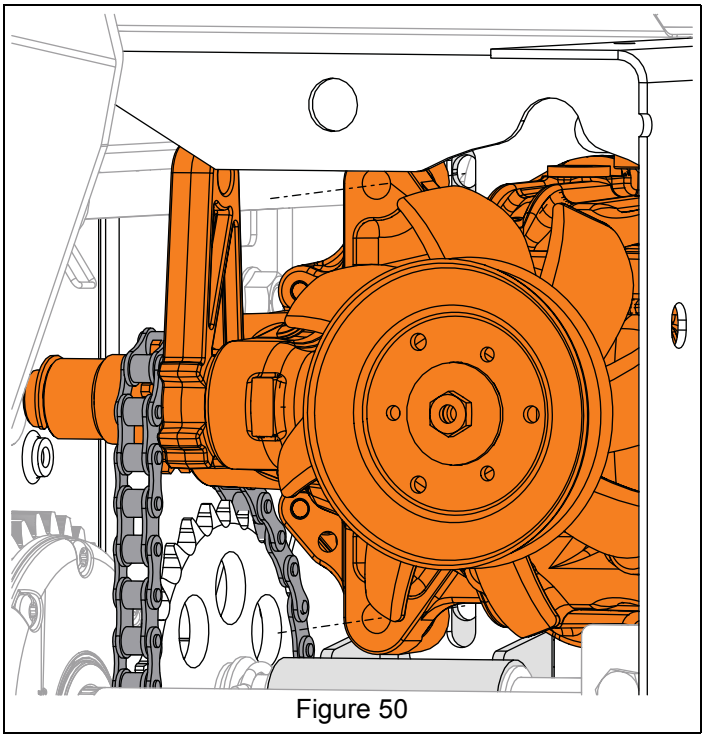


Figure 50

See Figure 51.

4. Reinstall shift rod into transaxle and bell crank.

IMPORTANT: Shift rod ends are not equal length. The long end inserts through transaxle, and the short end inserts through bell crank.

5. Secure shift rod to transaxle with one flat steel washer and hairpin. Secure shift rod to bell crank with one hairpin.

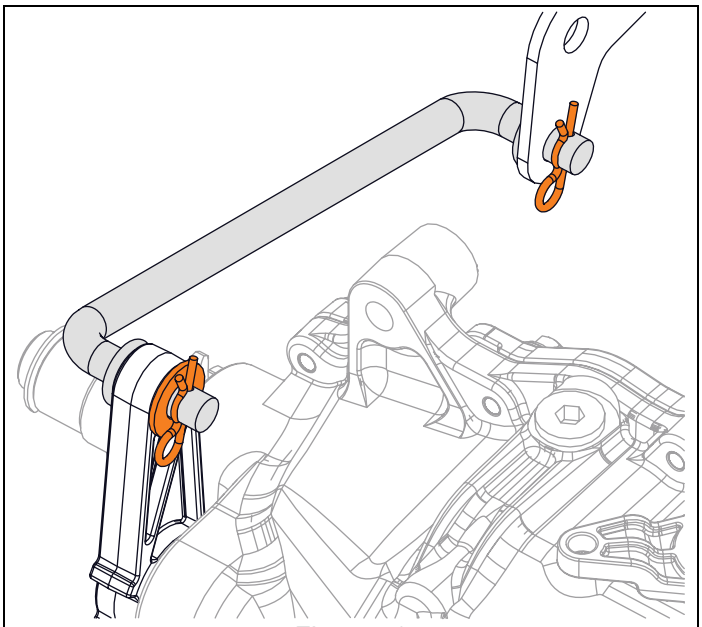


Figure 51

6. Reinstall transaxle bypass rod through unit rear and into bypass arm on transaxle. Secure with hairpin. See Figure 52.

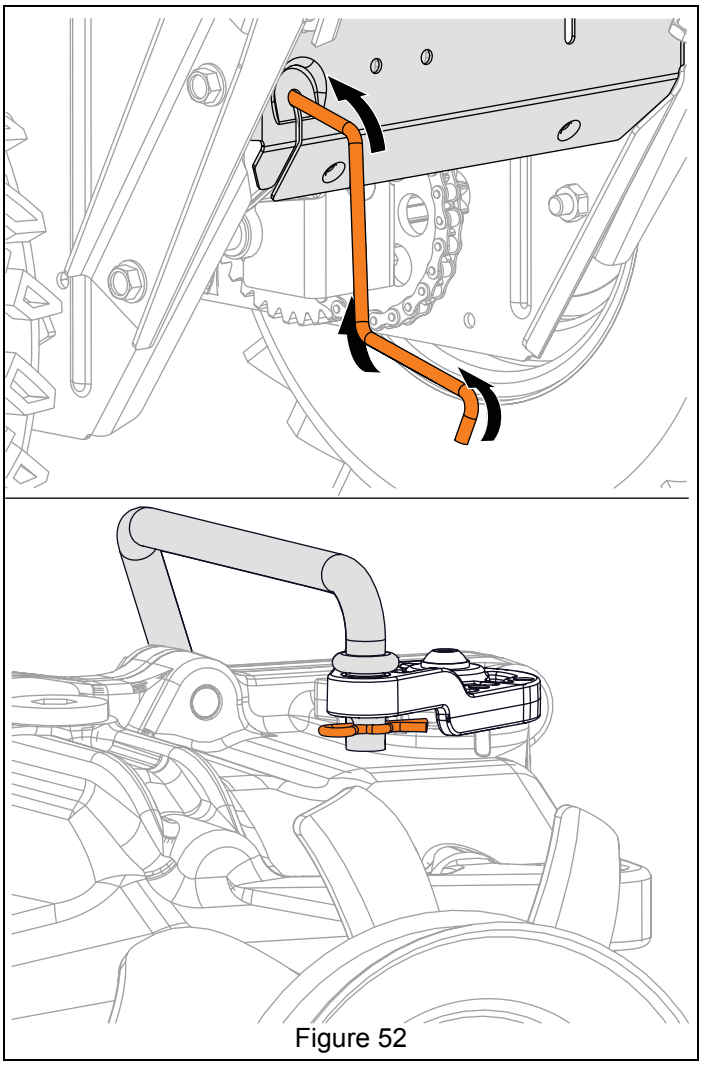


Figure 52

See Figure 53.

7. Align transaxle with transaxle mount.
8. Reinstall two hex bolts through transaxle mount and transaxle. Secure with two flat steel washers, two locking washers and two hex nuts, but DO NOT tighten hardware.
9. Check chain tension and adjust if necessary. See *Check Chain Tension* on page 28 and *Adjust Chain Tension* on page 28.
10. Tighten hardware if chain tension is within specification.

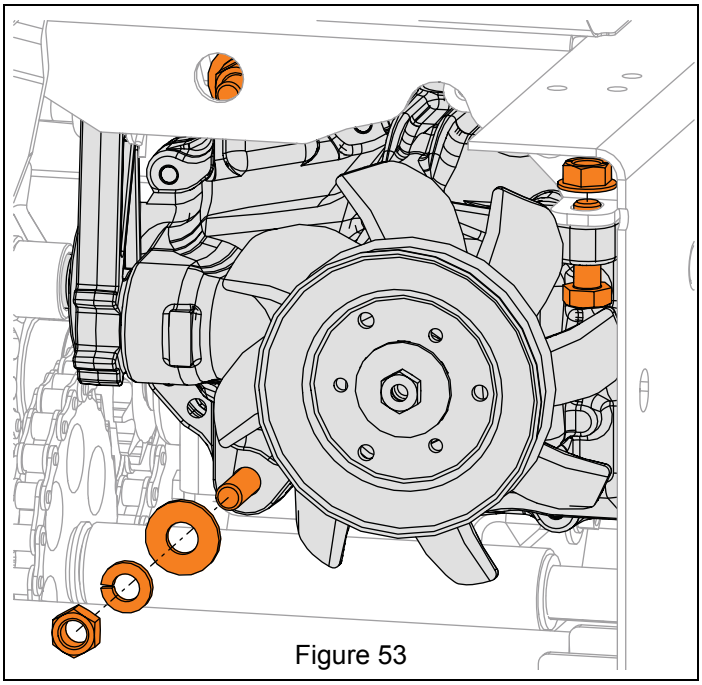


Figure 53

See Figure 54.

11. Reinstall hex bolt and locking nut securing front of transaxle to transaxle bracket and tighten.
12. Adjust transaxle chain tension. See *Adjust Chain Tension* on page 28.
13. Reinstall transaxle shroud and secure with tapping screw.

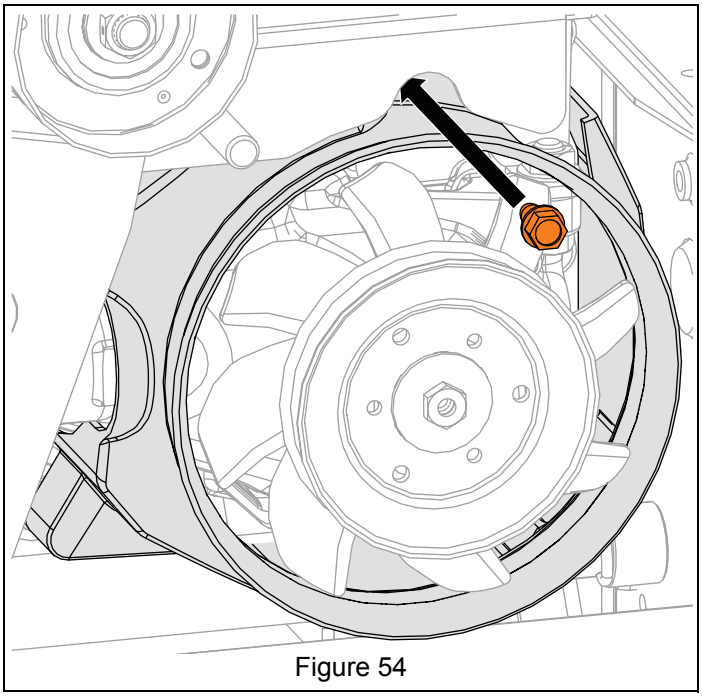


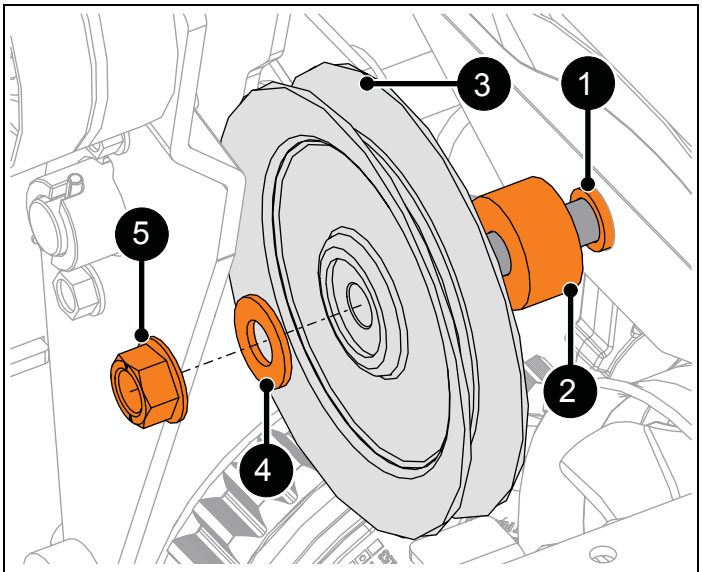
Figure 54

See Figure 55.

14. Reinstall stepped spacer onto hex bolt and insert bolt through frame front from inside frame.

IMPORTANT: Make sure bushing is in correct orientation so stepped-down end of bushing inserts through frame.

15. Reinstall pocket bushing onto hex bolt so flat face of bushing is forward.
16. Reinstall idler pulley onto hex bolt and secure with one flat steel washer and locking nut.
17. Reinstall traction drive belt. See *Install Traction Drive Belt* on page 17.



1. Stepped Spacer
2. Pocket Bushing
3. Idler Pulley
4. Flat Steel Washer
5. Locking Nut

Figure 55

18. Reinstall housing to frame. See *Reinstall Auger Housing* on page 11.
19. Reinstall bottom cover. See *Install Bottom Cover* on page 15.
20. Return unit to operating position.
21. Fill fuel tank and reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.

Check Chain Tension

1. Push on front chain length and observe amount of deflection.
   - If chain deflects less than 3.2 mm (1/8"), chain is too tight and requires adjustment.
   - If chain deflects 3.2 mm – 7.9 mm (1/8" – 5/16"), chain tension is within specification and does not require adjustment.
   - If chain deflects more than 7.9 mm (5/16"), chain is loose and requires adjustment.

Adjust Chain Tension

1. Remove auger housing. See *Separate Housing From Frame* on page 7.

See Figure 56.

2. Loosen hardware retaining transaxle to transaxle mount bracket.
3. Position a pry bar or similar tool under transaxle and pivot about pinion shaft.
   - To increase chain tension, push down slightly on pry bar and raise transaxle.
   - To decrease chain tension, release pressure from pry bar and lower transaxle.
4. Check chain tension and continue adjustment if necessary.
5. Hold transaxle position and tighten hardware securing transaxle to transaxle mount.

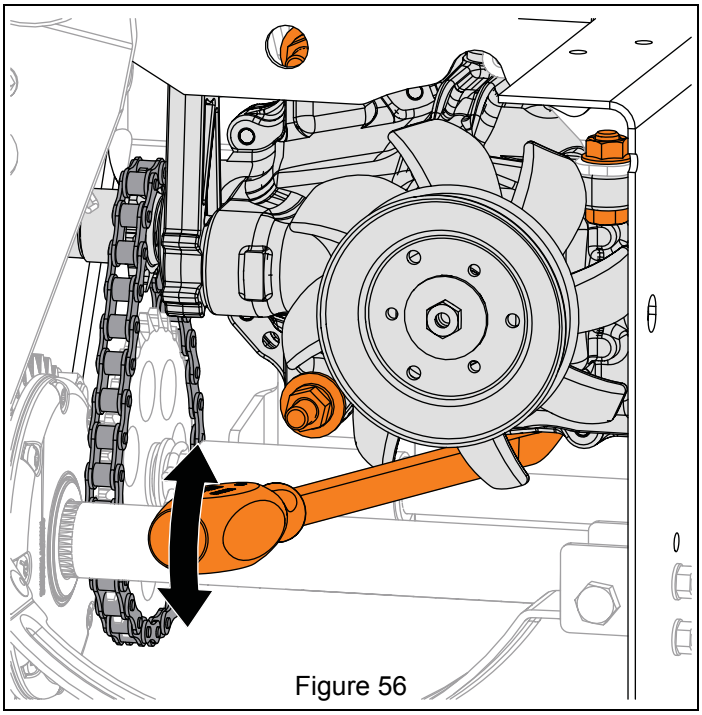


Figure 56

6. Perform steps 13 – 21 of *Install Transaxle* on page 25 and see *Check Chain Tension* on page 28. Repeat chain adjustment if necessary.

TRANSAXLE SERVICE

Add Transaxle Fluid

SAE 0W-40 is approved for all-season applications in Hydro-Gear® RT-310™ transaxles.
SAE 20W-50 is approved for non-winter applications where operation does not occur in ambient temperatures below 4.4° C (40° F) ONLY. Biodegradable oils are NOT approved for use in Hydro-Gear® RT-310 transaxles.

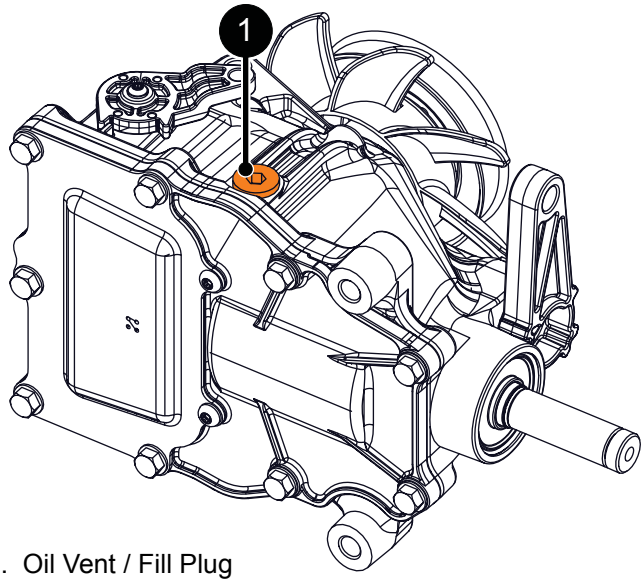
1. Remove transaxle as instructed in *Remove Transaxle* on page 22, but DO NOT remove E-ring, sleeve bushing and pinion sprocket from transaxle driveshaft.

See Figure 57.

2. Place transaxle on a level surface and remove fill plug.

NOTICE: Transaxle is equipped with a bladder-style oil reservoir that expands as oil temperature increases. It is NOT necessary to leave an air pocket in the reservoir for oil expansion.

3. Add oil to top of fill port.
4. Reinstall fill plug to fill port and tighten.



1. Oil Vent / Fill Plug

Figure 57

5. Reinstall transaxle. See *Install Transaxle* on page 25.

Purge Air From Transaxle

Due to the effects air has on efficiency in hydrostatic drive applications, it's critical that air is purged from the system.

The purge procedure in this section should be performed each time a hydrostatic system has been opened for maintenance or after adding oil. Without purging the system, the drive may lose efficiency.

Symptoms of efficiency loss include:

- Noisy operation
- Lack of power or drive after short-term operation
- High operation temperature and excessive oil expansion

1. Position a jack under unit and lift unit so wheels are off the ground. Make sure unit is secure and will not tip.
2. Pull transmission bypass lever out and start unit. Refer to Operator's Manual for engine start procedure.
3. Slowly cycle the speed selector lever through all forward and reverse positions 5 – 6 times.
4. Position speed selector lever in neutral and push transmission bypass lever in.
5. Repeat step 3.

IMPORTANT: Wheel rotation should increase and decrease accordingly as speed selector lever moves between all forward and reverse speeds.

6. Stop engine, close fuel valve and release jack so unit lowers to the ground. Remove jack.

If unit drives normally, no further adjustment is needed. If drive malfunctions, continue to steps 7 – 10.

7. Wait for all moving parts to stop and for hot parts to cool and remove transaxle from unit. See *Remove Transaxle* on page 22.
8. Remove fill plug and add oil. See *Add Transaxle Fluid* on page 28.
9. Reinstall transaxle. See *Install Transaxle* on page 25.
10. Test forward and reverse speeds. If necessary, purge air from the system again until unit drives normally.

NOTICE: When unit moves forward and reverse at normal speed, purging is complete.

REDUCTION SHAFT BEARING REPLACEMENT

Models 926060, 926069, 926338

Remove Bearings

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.

WARNING: AVOID INJURY. Before rotating unit forward, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

3. Place unit in service position and remove bottom cover. See *Service Position* on page 7 and *Bottom Cover Removal* on page 14.
4. Remove spring clip and sleeve bushing from reduction shaft end. See Figure 58.

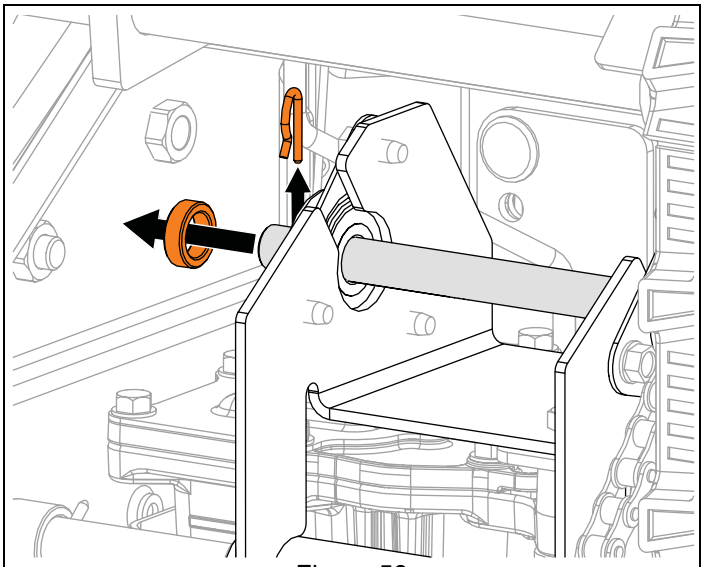


Figure 58

5. Move reduction shaft as far right as possible and remove spring clip from shaft. See Figure 59.

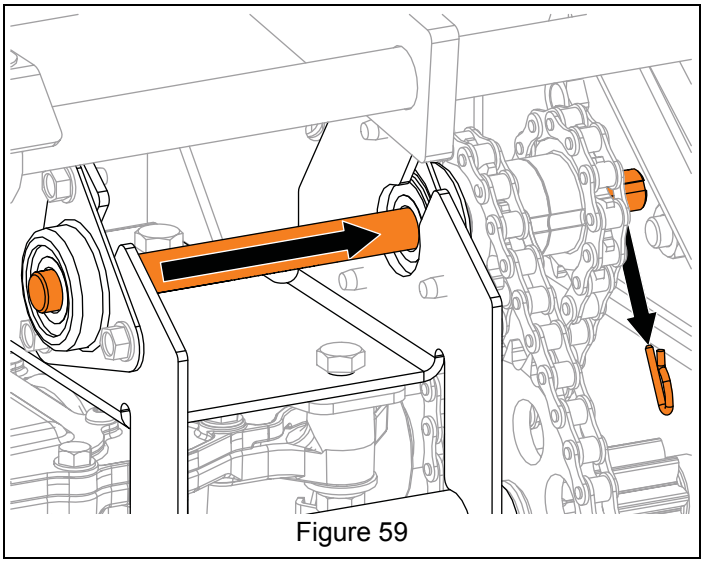
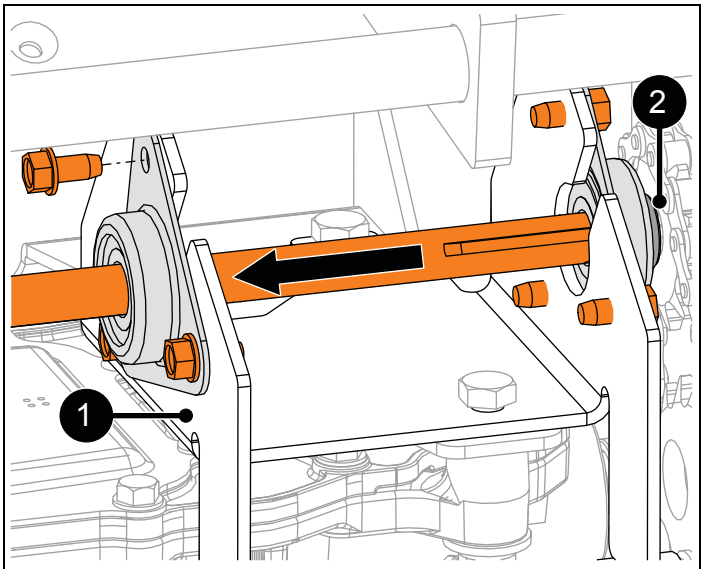


Figure 59

See Figure 60.

6. Move reduction shaft as far left as possible.
7. Remove hardware retaining bearing flanges and remove parts from transmission bracket.

IMPORTANT: Be aware of sleeve bushing on right reduction shaft end.



1. Transmission Bracket
2. Sleeve Bushing

Figure 60

8. Remove bearing flanges from reduction shaft and remove bearings.

Install Bearings

1. Press bearings into bearing flanges and install onto reduction shaft.
2. Install shaft into transmission bracket and position bearing flanges outside transmission bracket.
3. Secure each bearing flange to transmission bracket with 3 tapping screws.
4. Install sleeve bushing onto right side of pinion shaft. See Figure 61.

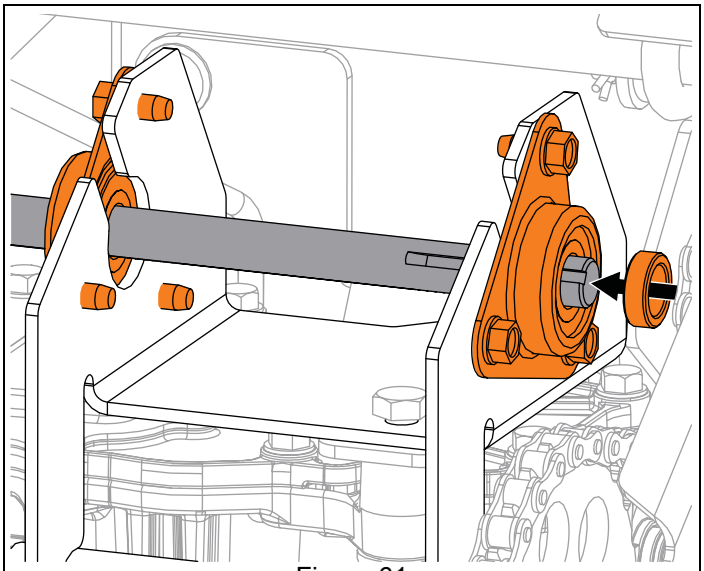


Figure 61

5. Align pinion sprocket keyways with reduction shaft keyway and insert reduction shaft through sprockets. See Figure 62.

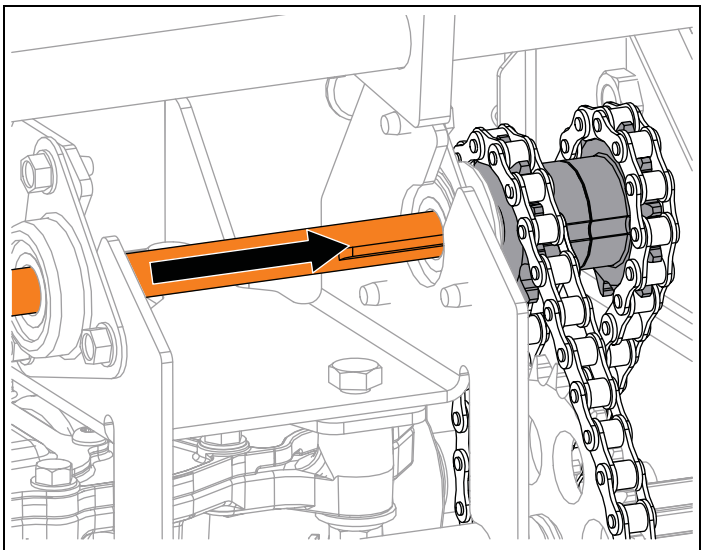


Figure 62

6. Reinstall spring clip into right side of reduction shaft.
7. Reinstall sleeve bushing and spring clip onto left side of reduction shaft.

AUGER REPLACEMENT

Remove Auger

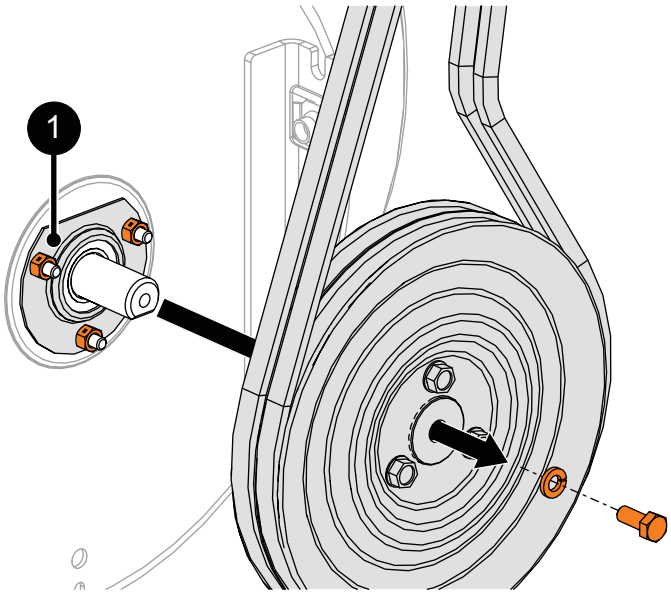
IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove auger housing. See *Separate Housing From Frame* on page 7.

See Figure 63.

> **CAUTION:** AVOID INJURY. Attachment drive pulley edges are sharp. Wear gloves when handling pulley.

4. Hold attachment drive pulley in place and remove hardware securing pulley to impeller shaft. Remove pulley.
5. Loosen, but DO NOT remove hardware securing bearing plate to auger housing.



1. Bearing Plate

Figure 63

6. Remove hardware retaining support bushings to auger housing. See Figure 64.

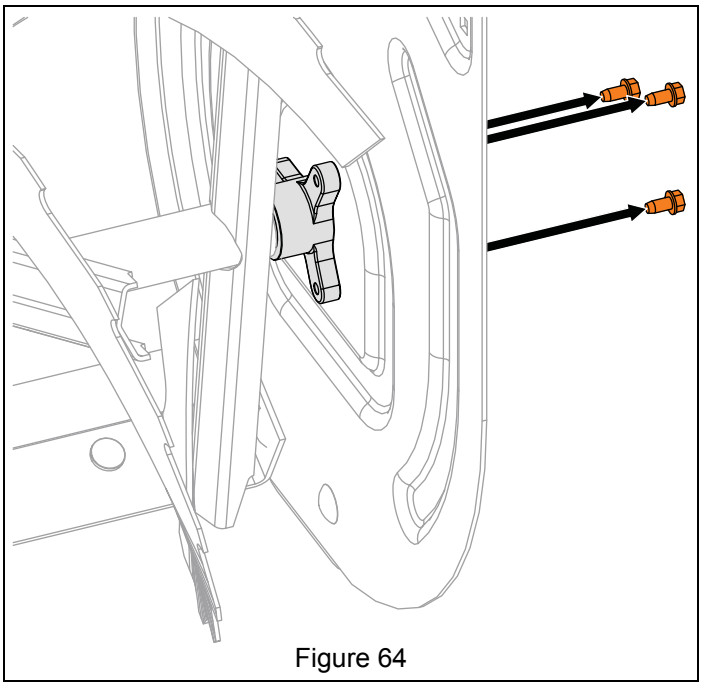


Figure 64

7. Remove auger assembly from housing. See Figure 65.

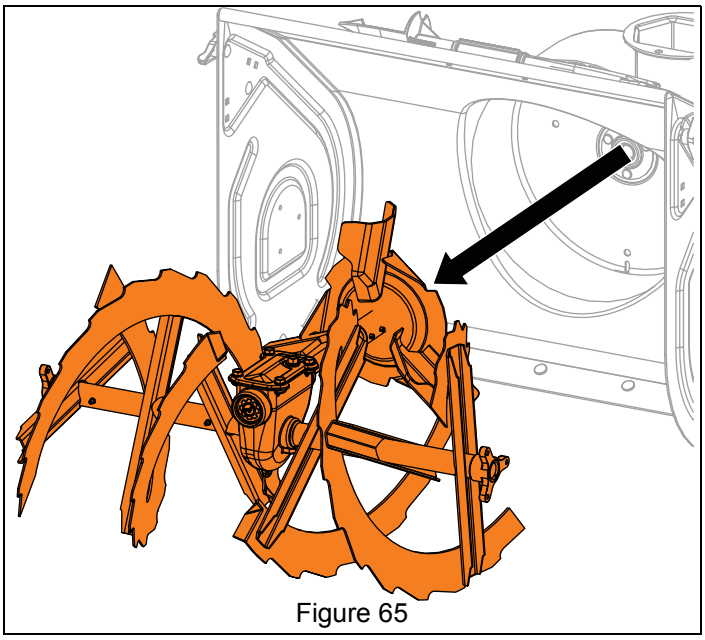


Figure 65

See Figure 66.

IMPORTANT: Flange bushing is to remain inside support bushing.

8. Remove support bushing from auger shaft end.
9. Remove shear bolt from auger shaft.
10. Remove auger from auger shaft. Use of penetrating oil or heat may be necessary to remove auger.

IMPORTANT: If rust is present on auger shaft, remove with sand paper and wipe clean with oil.

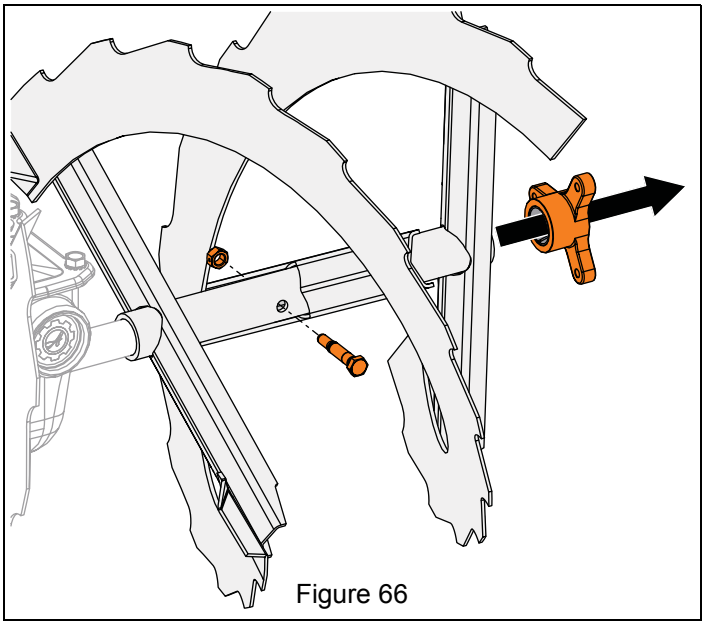


Figure 66

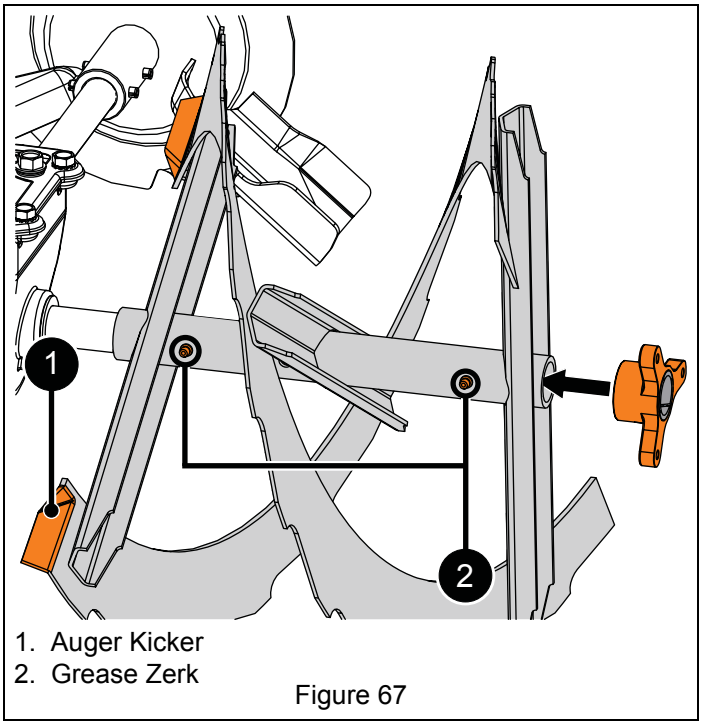
Install Auger

See Figure 67.

1. Install auger onto auger shaft with auger kickers facing gearcase.

IMPORTANT: Make sure auger helix direction matches original auger orientation.

2. Apply grease to grease zerks and spin auger by hand to spread grease along auger shaft.
3. Repeat step 2.
4. Reinstall support bushing onto auger shaft end.



1. Auger Kicker
2. Grease Zerk

Figure 67

5. Align holes in auger with holes in auger shaft and reinstall shear bolt. Torque bolt to 7.9 N•m – 16.5 N•m (5.8 lb-ft – 12.2 lb-ft). If torque wrench is unavailable, tighten until bolts no longer spin freely. DO NOT overtighten.
6. Reinstall auger assembly into housing so impeller shaft is seated in ball bearing at housing rear. See Figure 68.

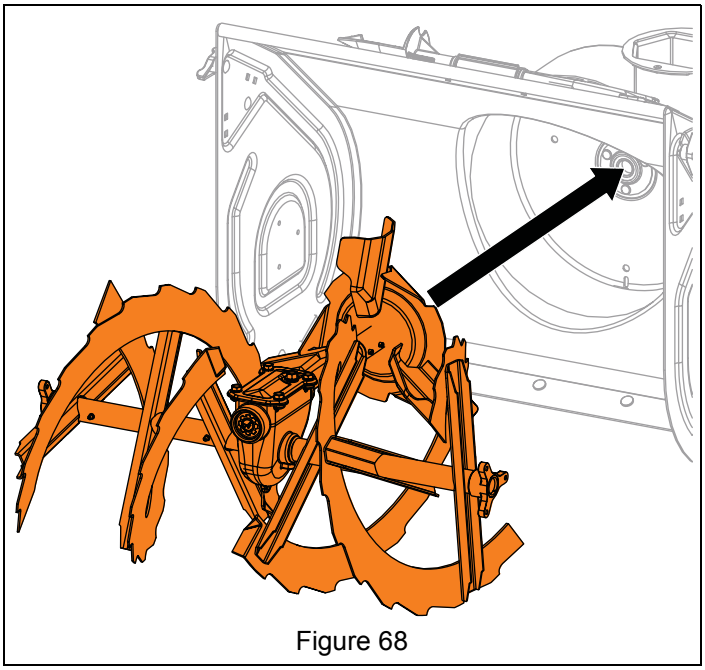
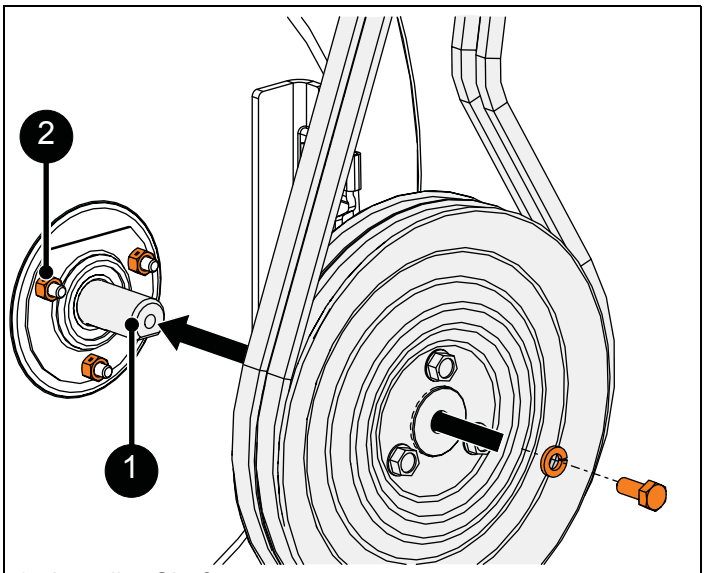


Figure 68

7. Align holes in bushings on auger ends with holes in housing and partially thread all six tapping screws.
8. Tighten tapping screws.

See Figure 69.

9. Tighten three hex nuts securing bearing plate to auger housing.
10. Apply anti-seize compound to impeller shaft end.
11. Reinstall attachment drive pulley onto impeller shaft and secure with locking washer and hex bolt. Torque to 7.9 N•m – 16.5 N•m (5.8 lb-ft – 12.2 lb-ft).



1. Impeller Shaft
2. Hex Nut

Figure 69

12. Reinstall housing to frame. See *Reinstall Auger Housing* on page 11.
13. Reconnect spark plug wire.

AUGER GEARCASE REPLACEMENT

Remove Gearcase Assembly

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove augers. See *Remove Auger* on page 31.

See Figure 70.

4. Remove two flat steel washers from auger shaft.
5. Remove two roll pins retaining impeller to impeller shaft and remove impeller.

IMPORTANT: Use of penetrating oil or heat may be necessary to remove impeller.

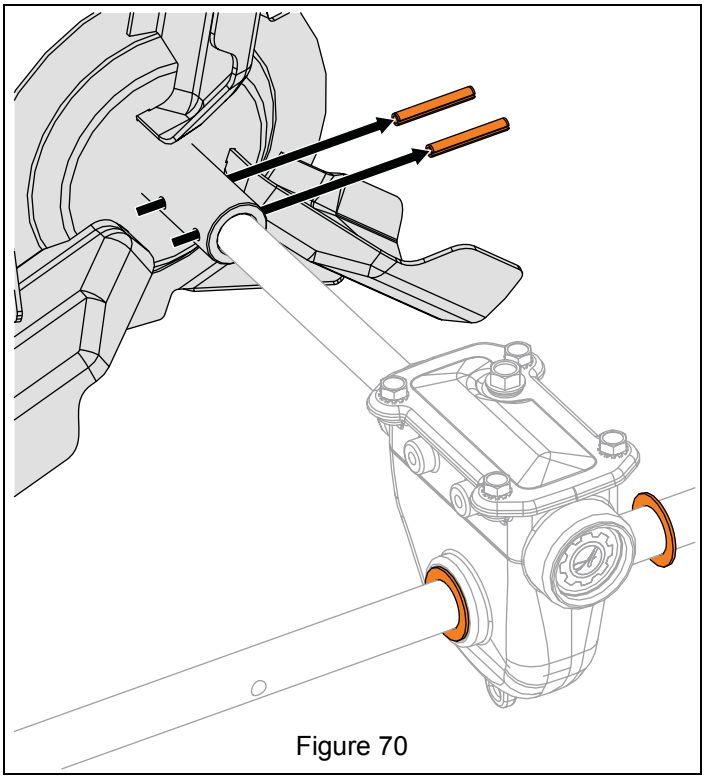


Figure 70

Install Gearcase Assembly

1. Install impeller onto impeller shaft.
2. Align holes in impeller with holes in impeller shaft and reinstall roll pins.
3. Reinstall one flat steel washer onto each auger shaft end.
4. Reinstall augers. See *Install Auger* on page 32.
5. Reconnect spark plug wire.

IMPELLER REPLACEMENT

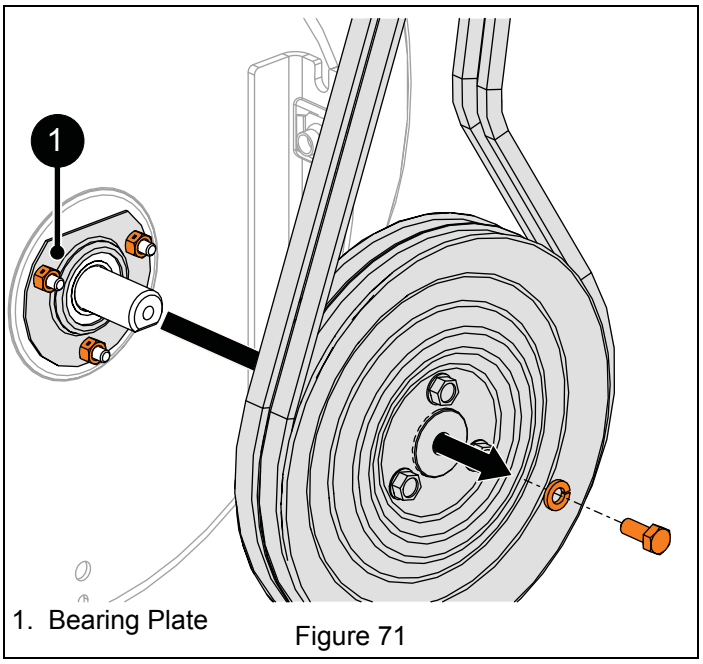
Remove Impeller

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove auger housing. See *Separate Housing From Frame* on page 7.

See Figure 71.

4. Remove hardware securing attachment drive pulley to auger housing and remove pulley.
5. Loosen, but DO NOT remove hardware securing bearing plate to housing.
6. Remove hardware securing auger bushings to auger housing.



1. Bearing Plate

Figure 71

7. Remove auger assembly from housing. See Figure 65.
8. Remove two roll pins securing impeller to impeller shaft and remove impeller. See Figure 70.

IMPORTANT: Use of penetrating oil or heat may be necessary to remove impeller.

Install Impeller

1. Install impeller onto impeller shaft and align with holes in impeller with holes in impeller shaft. Reinstall roll pins.
2. Reinstall auger assembly into housing so impeller shaft is seated in ball bearing at housing rear. See Figure 68.
3. Align holes in bushings on auger ends with holes in housing and secure with six tapping screws. See Figure 72.

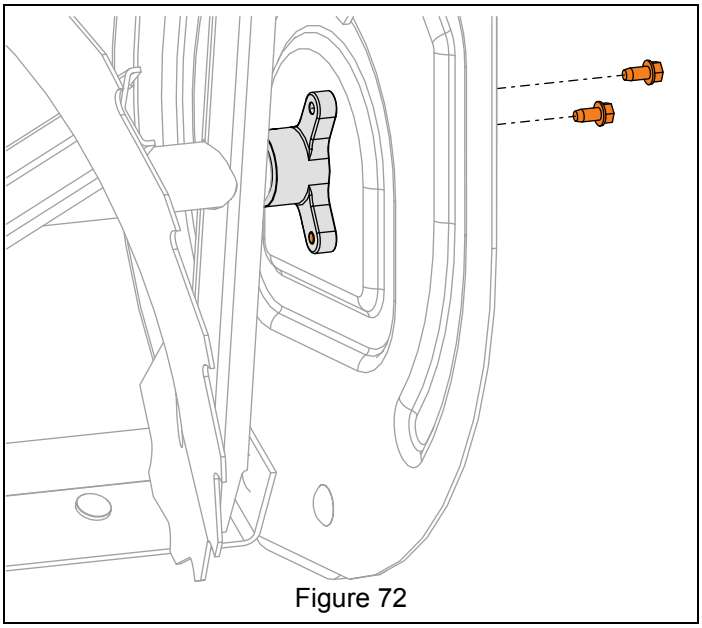
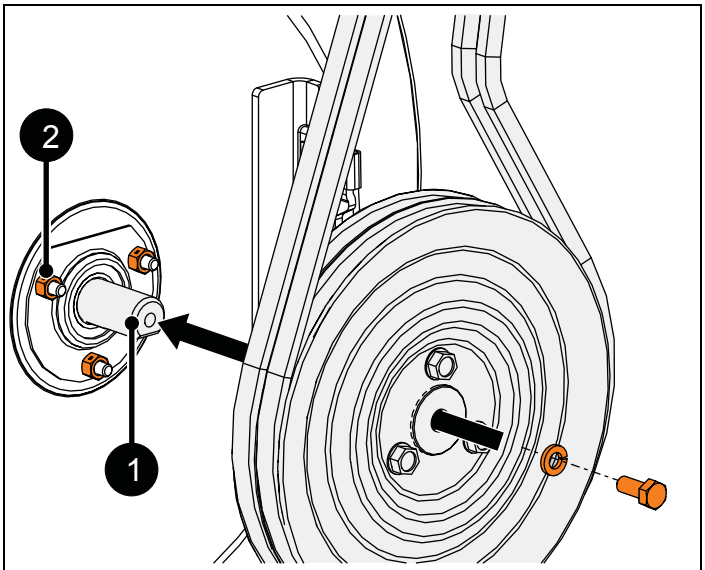


Figure 72

See Figure 73.

4. Tighten three hex nuts securing bearing plate to housing.
5. Apply anti-seize compound to impeller shaft end.
6. Reinstall attachment drive pulley onto impeller shaft and secure with locking washer and hex bolt. Torque to 7.9 N•m – 16.5 N•m (5.8 lb-ft – 12.2 lb-ft).



1. Impeller Shaft
2. Hex Nut

Figure 73

7. Reinstall auger housing to frame. See *Reinstall Auger Housing* on page 11.
8. Reconnect spark plug wire.

ENGINE REPLACEMENT

Remove Engine

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key an d wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Drain gasoline from fuel system and tank. See *Draining Fuel System* on page 7.
4. Remove belt cover. See Figure 8.
5. Remove hardware securing belt finger to engine and remove belt finger. See Figure 9.

See Figure 74.

6. Remove chute deflector cable from J-clamp on engine mount.
7. Remove hardware securing engine mount to frame.

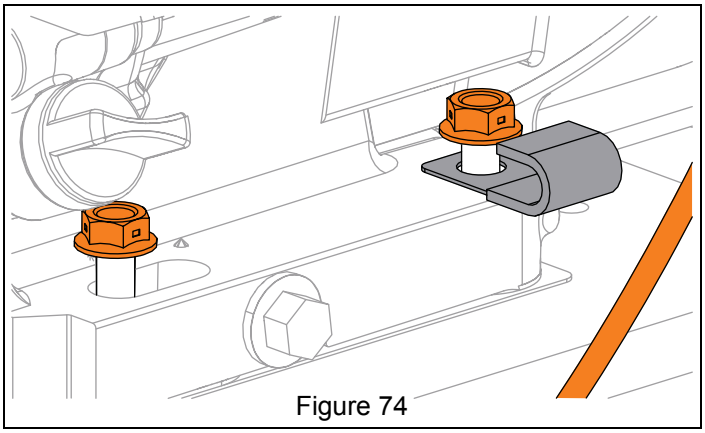


Figure 74

WARNING: AVOID INJURY. Engine is heavy. NEVER lift engine without a suitable lifting device or adult assistant.

8. Using a suitable lifting device or an adult assistant, lift engine and tilt forward slightly to relieve tension from belts. Remove belts from engine sheaves.
9. Lower engine onto a flat, level surface.

See Figure 75.

10. Remove hardware securing engine sheave to crankshaft.
11. Remove engine sheave and key from crankshaft.

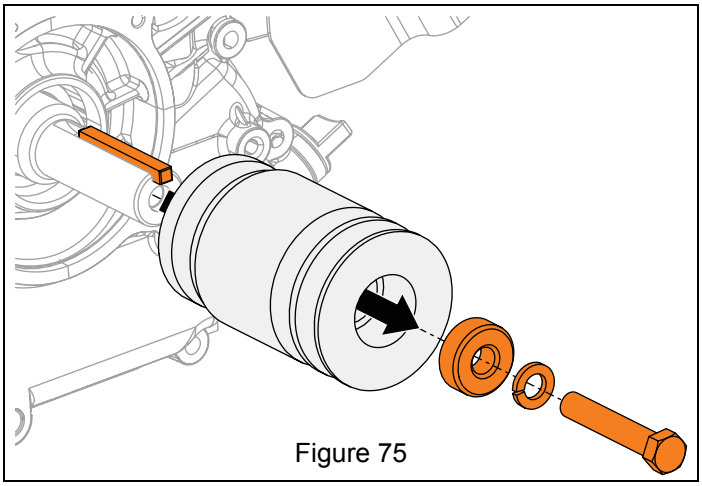


Figure 75

Install Engine

1. Install key into crankshaft keyway.
2. Align engine sheave keyway with crankshaft key and reinstall sheave onto crankshaft. Secure with spacer bushing, locking washer and hex bolt.

WARNING: AVOID INJURY. Engine is heavy. NEVER lift engine without a suitable lifting device or adult assistant.

3. Using a suitable lifting device or adult assistant, lift engine over frame and tilt slightly forward so belts reach over engine sheave.
4. Level engine and lower onto bolts in frame.
5. Secure engine to frame with four locking nuts. Torque to 11.9 N•m – 17.9 N•m (8.8 lb-ft – 13.2 lb-ft).
6. Reinstall belt finger and secure with two flat steel washers, two locking washers and two hex bolts as shown in Figure 15.
7. Check belt finger clearance:
   - Engage attachment clutch lever and make sure belt finger located opposite belt idler is less than 3.2 mm (1/8") from belt, but not touching the belts.
   - If needed, adjust clearance by loosening hex bolts, repositioning belt finger, and tightening bolts.
8. Reinstall belt cover and secure left side to frame with one tapping screw. Position right side of belt cover under tapping screw and tighten.
9. Reconnect spark plug wire and fill fuel tank.

BATTERY REPLACEMENT

Model 926334

Remove Battery

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove wing knobs and other hardware retaining battery cover and remove cover. See Figure 76.

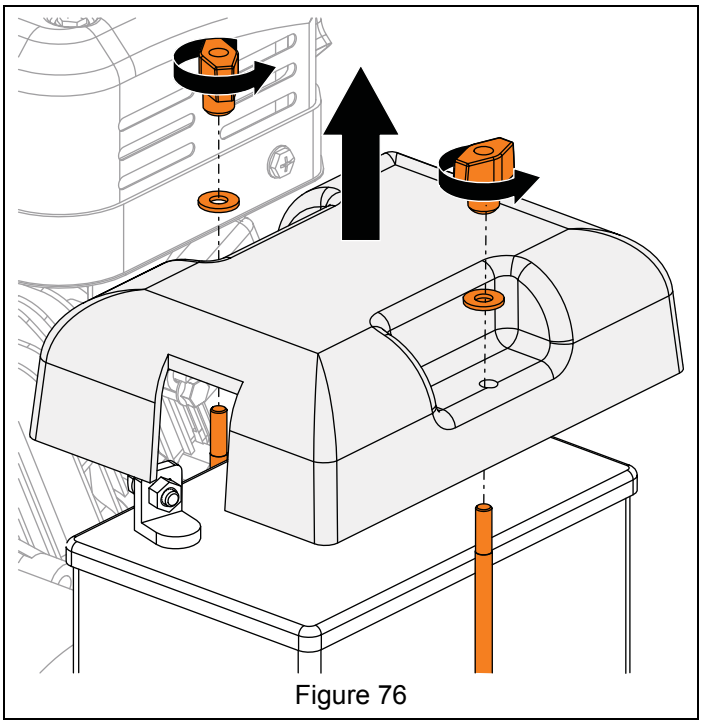


Figure 76

4. Disconnect negative, then positive battery cable from battery terminal.
5. Remove battery.

Install Battery

1. Install battery in battery tray so negative terminal is positioned on the right side (from perspective of the operator in operator's position).
2. Reconnect positive battery cable to positive battery terminal first, then the negative cable to negative terminal. Secure with two hex bolts, two flat steel washers, two locking washers and two hex nuts. See Figure 77.

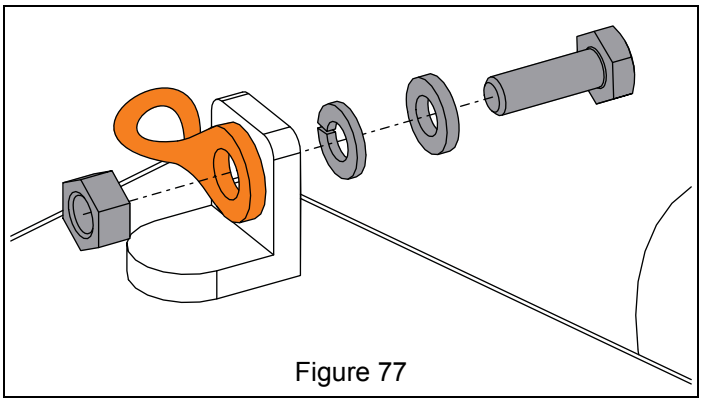


Figure 77

3. Reinstall battery cover and route battery cables through cutout in cover. Secure with two hex bolts, two flat steel washers and two wing knobs. See Figure 76.

TRACTION DRIVE CLUTCH CABLE REPLACEMENT

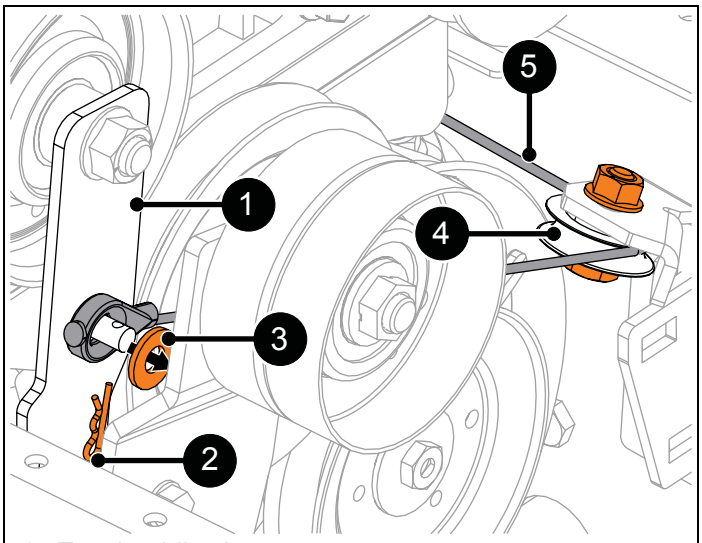
Remove Traction Drive Clutch Cable

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove belt cover. See Figure 8.

See Figure 78.

4. Remove hardware securing traction clutch cable eyelet to traction idler arm and remove cable.
5. Loosen, but DO NOT remove hardware securing cable pulley to pulley bracket. Remove cable from pulley.



1. Traction Idler Arm
2. Hairpin
3. Flat Steel Washer
4. Cable Pulley
5. Traction Drive Cable

Figure 78

WARNING: AVOID INJURY. Before placing unit in service position, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

6. Place unit in service position and remove bottom cover. See *Service Position* on page 7 and *Remove Bottom Cover* on page 14.
7. Remove hardware securing upper traction clutch cable to clutch lever and remove cable. See Figure 79.

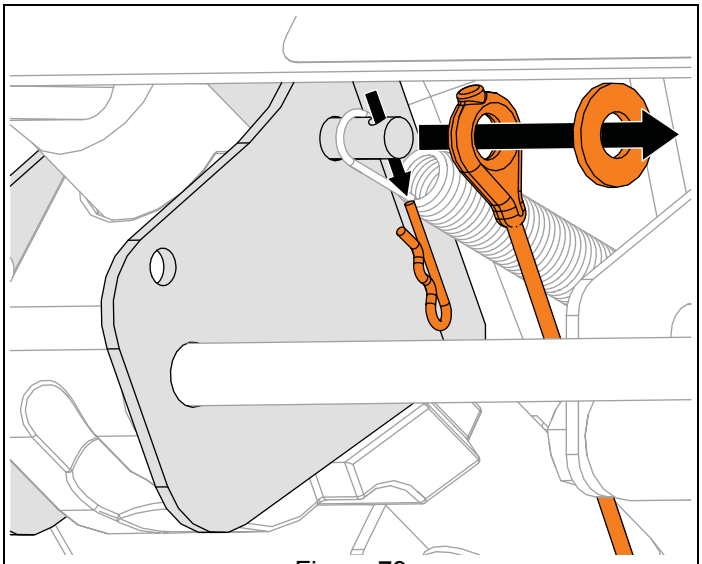
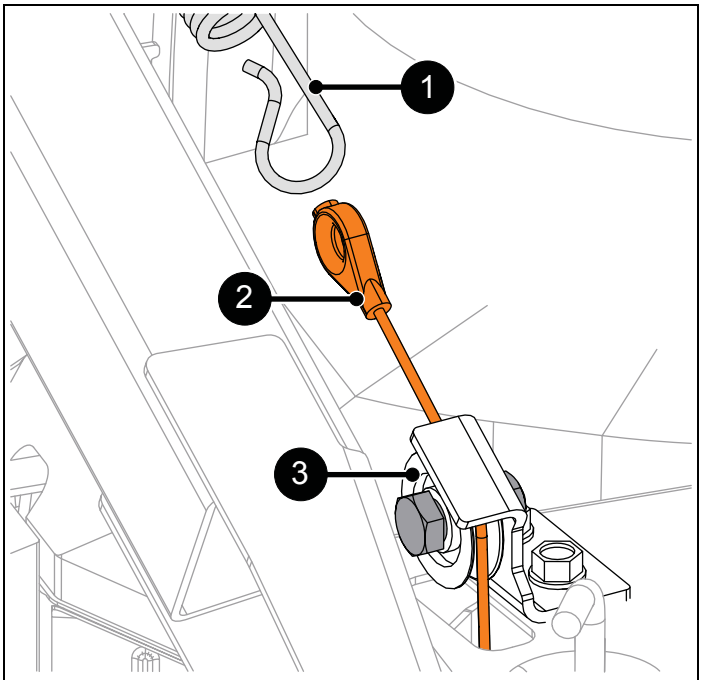


Figure 79

See Figure 80.

8. Remove upper traction clutch cable from lower traction clutch cable.
9. Loosen, but DO NOT remove hardware retaining cable pulley to pulley bracket.



1. Upper Traction Clutch Cable
2. Lower Traction Clutch Cable
3. Cable Pulley

Figure 80

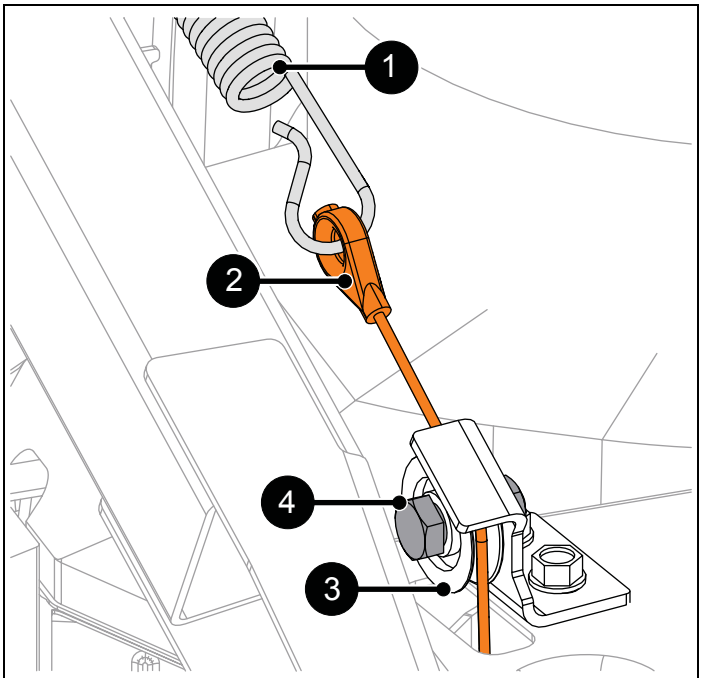
10. Remove lower traction drive clutch cable.

Install Traction Drive Clutch Cable

1. Reinstall upper traction clutch cable to traction clutch lever and secure with one flat steel washer and hairpin. See Figure 79.
2. Connect lower traction clutch cable to upper traction clutch cable.

See Figure 81.

3. Route lower traction clutch cable through hole in back cover.
4. Align lower traction clutch cable in cable pulley and tighten shoulder bolt.



1. Upper Traction Clutch Cable
2. Lower Traction Clutch Cable
3. Cable Pulley
4. Shoulder Bolt

Figure 81

5. Reinstall bottom cover and secure with four hex bolts and two tapping screws.
6. Retrieve cable end from inside tractor / frame and align in cable pulley. See Figure 78.
7. Install cable end onto traction idler arm and secure with one flat steel washer and hairpin. See Figure 78.
8. Tighten shoulder bolt securing cable pulley to pulley bracket.
9. Return unit to operating position.
10. Reinstall belt cover and secure left side to frame with one tapping screw. Position right side of belt cover under tapping screw and tighten.
11. Adjust traction drive clutch. Refer to Operator's Manual for adjustment procedure.
12. Fill fuel tank and reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.

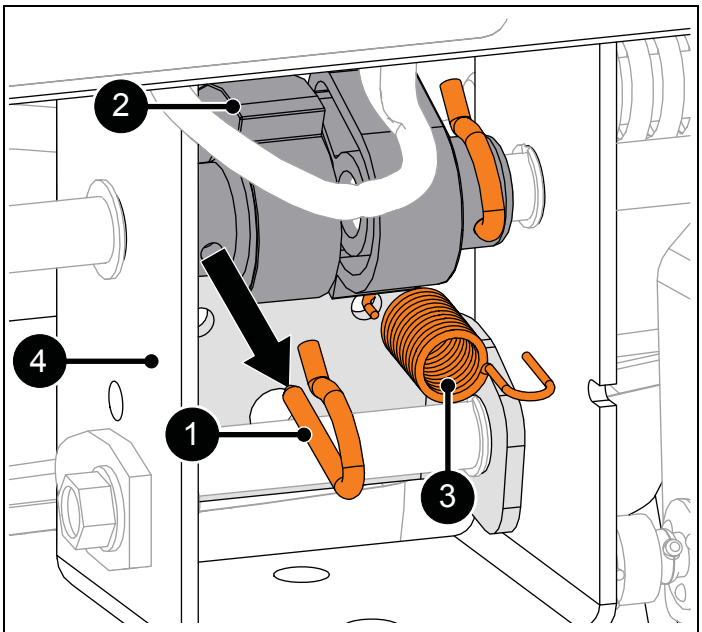
DUAL-HANDLE INTERLOCK REPLACEMENT

Remove Interlock Cam

IMPORTANT: Save all hardware for reinstallation.

See Figure 82.

1. Disconnect spring from interlock bracket.
2. Remove spring clips securing interlock cams to camshafts.



1. Spring Clip
2. Interlock Cam
3. Spring
4. Interlock Bracket

Figure 82

IMPORTANT: Interlock cams will fall from camshafts in next step.

3. Remove hardware retaining camshafts to clutch levers and remove camshafts from interlock bracket. See Figure 83.

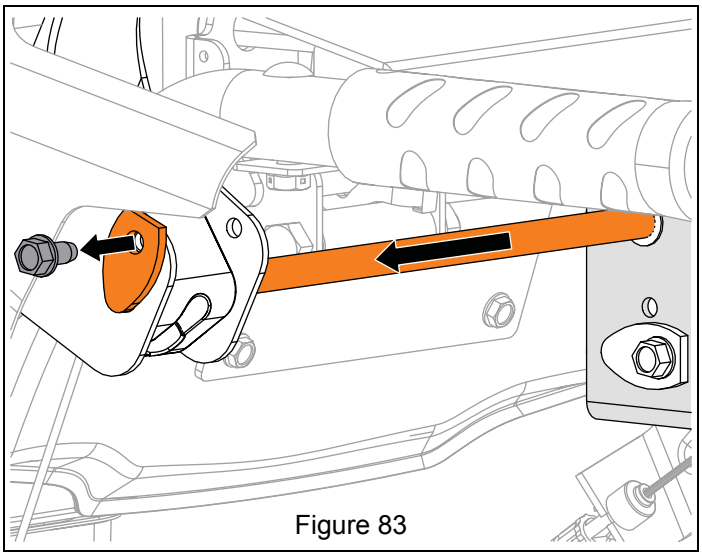


Figure 83

4. Remove cams.

Install Interlock Cams

IMPORTANT: Make sure nylon bushings are seated in interlock bracket. See Figure 84.

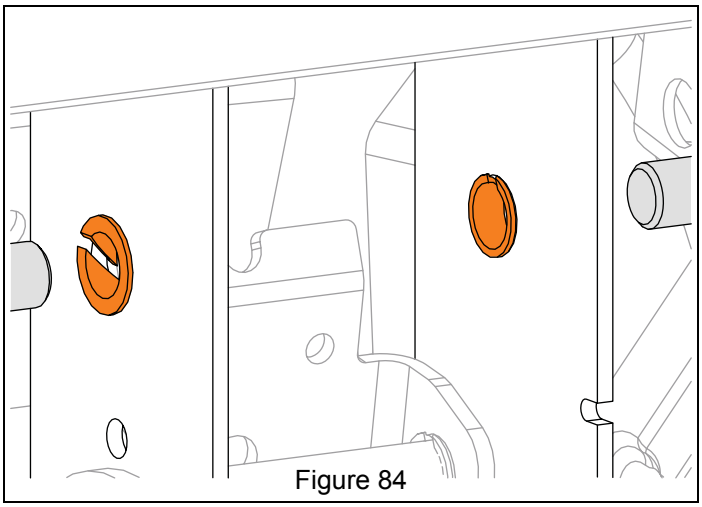


Figure 84

1. Reinstall right camshaft and secure to clutch lever with one tapping screw.
2. Install interlock cam onto camshaft so flat edge is positioned downward. Secure with spring clip. See Figure 85.

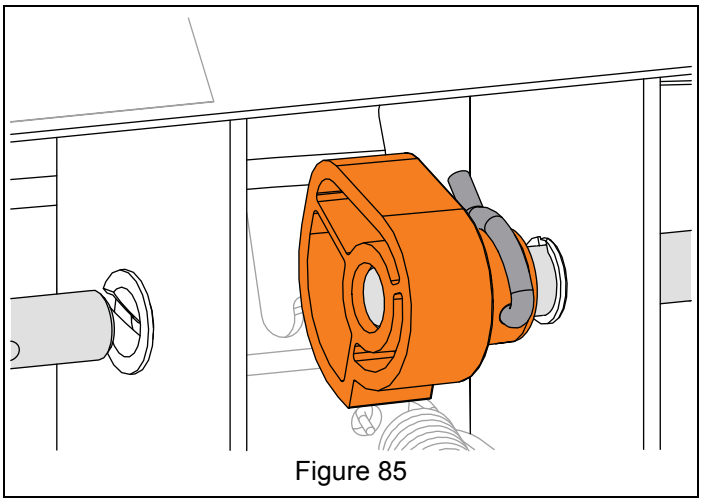


Figure 85

See Figure 86.

3. Position left interlock cam inside interlock bracket and align with left camshaft.
4. Insert camshaft through cam.
5. Secure camshaft to clutch lever with one tapping screw.
6. Rotate cam so flat edge is positioned upward and secure with spring clip.
7. Reconnect spring to interlock bracket.

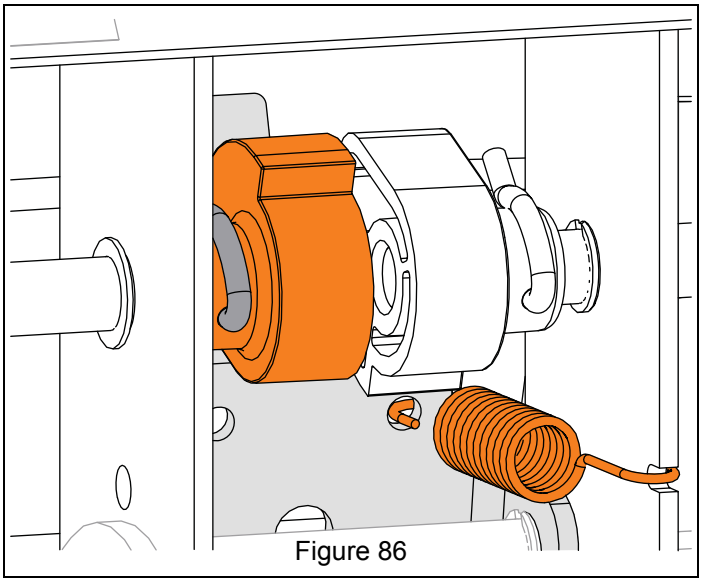


Figure 86

8. Check dual-handle interlock function. Refer to Operator's Manual for test procedure.

IMPORTANT: If dual-handle interlock continues to malfunction, see your Ariens dealer.

AXLE BEARING REPLACEMENT

Models 926068, 926070, 926336

Remove Left Axle Bearing

IMPORTANT: Save all hardware for reinstallation.

WARNING: AVOID INJURY. Before placing unit in service position, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

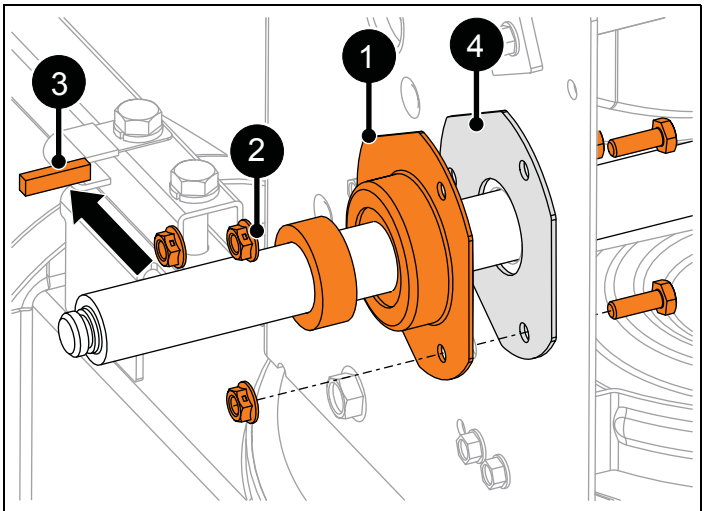
1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Place unit in service position and remove bottom cover. See *Service Position* on page 7 and *Remove Bottom Cover* on page 14.
4. Remove snap clip from left axle end and remove wheel.

See Figure 87.

5. Remove key and sleeve bushing from axle.
6. Remove hardware securing axle bearing and bearing plate to frame.

IMPORTANT: Bearing plate is not a wear item and is not necessary to replace.

7. Remove axle bearing.



1. Axle Bearing
2. Sleeve Bushing
3. Key
4. Bearing Plate

Figure 87

Install Left Axle Bearing

1. Install bearing onto axle and align with bearing plate.
2. Insert three hex bolts from inside frame through bearing and secure with three locking nuts.
3. Reinstall sleeve bushing and key onto axle.
4. Reinstall bottom cover and secure with two tapping screws and four hex bolts.
5. Reinstall wheel and secure with snap clip.
6. Return unit to operating position.
7. Reconnect spark plug wire and fill fuel tank.

Remove Right Axle Bearing

IMPORTANT: Save all hardware for reinstallation.

WARNING: AVOID INJURY. Before placing unit in service position, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Place unit in service position and remove bottom cover. See *Service Position* on page 7 and *Remove Bottom Cover* on page 14.
4. Remove snap clips from axle ends and remove wheels.

See Figure 88.

5. Remove E-ring from axle end.
6. Remove axle from differential.

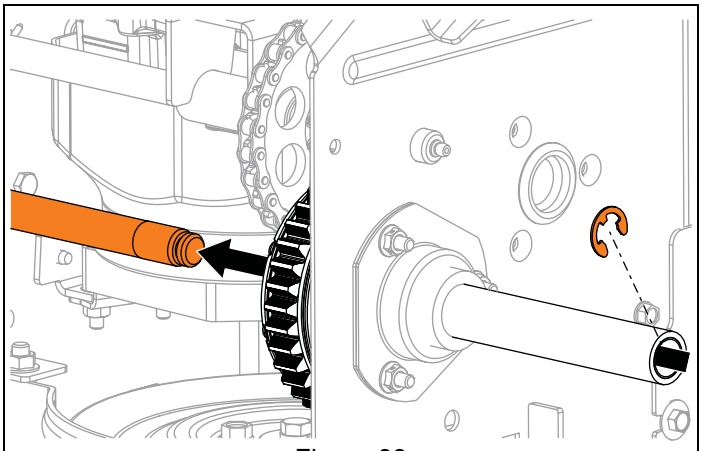


Figure 88

See Figure 89.

IMPORTANT: Two flat steel washers will become free when short axle is removed.

7. Hold differential gear and remove short axle.

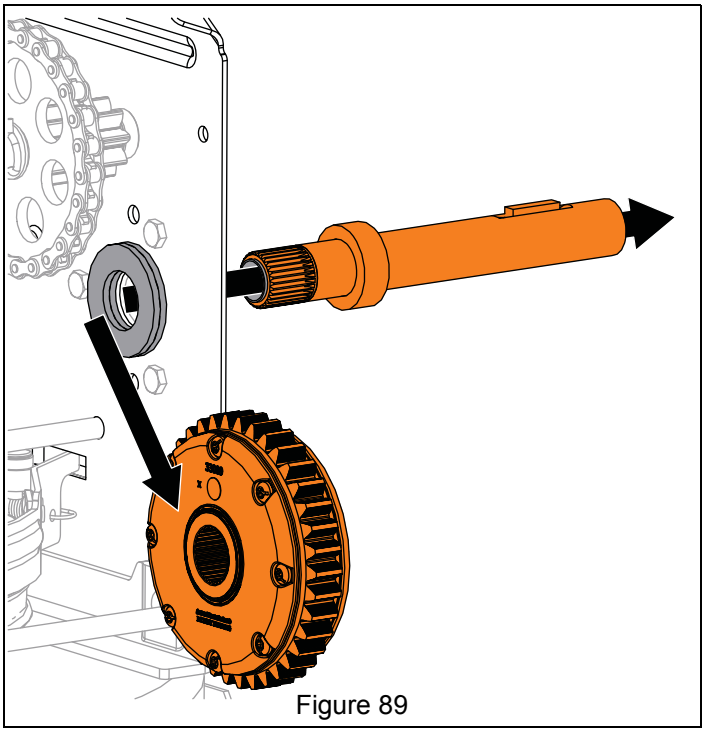


Figure 89

See Figure 90.

8. Remove hardware securing axle bearing and bearing plate to frame.

IMPORTANT: The bearing plate is not a wear item and is not necessary to replace.

9. Remove axle bearing.

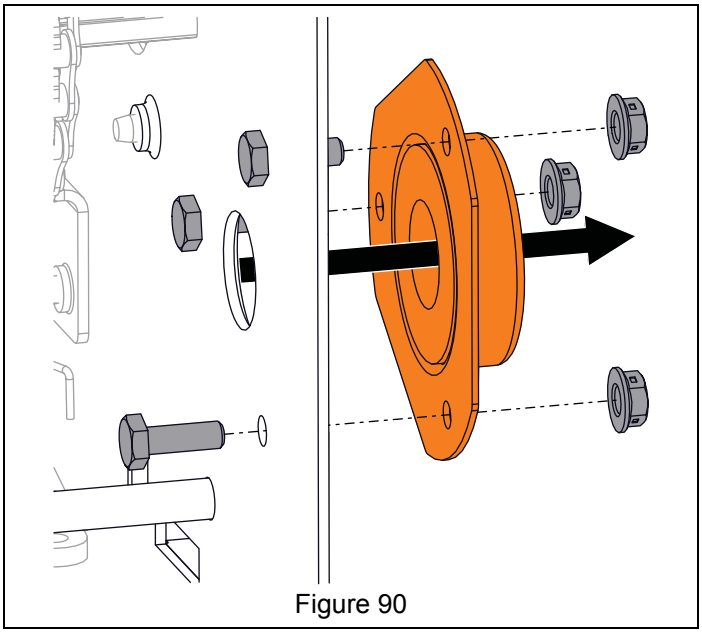


Figure 90

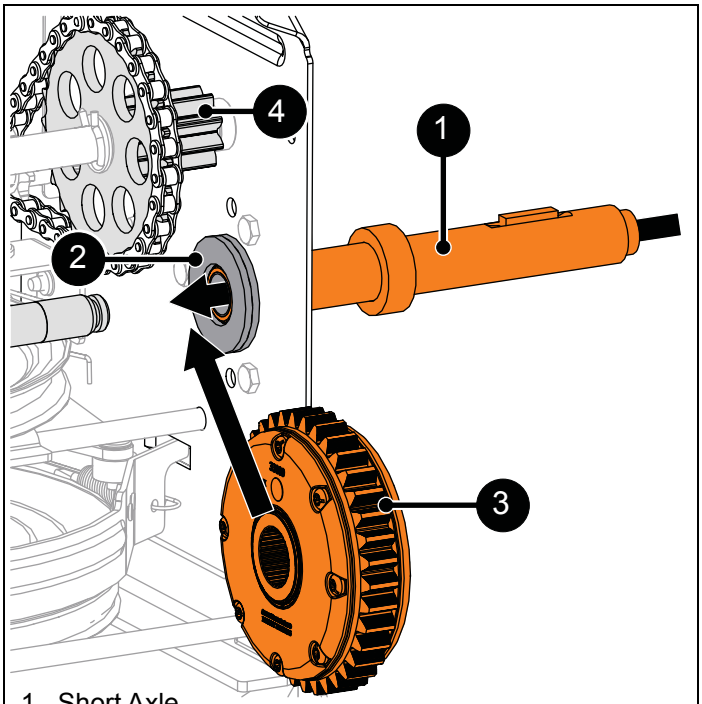
Install Right Axle Bearing

1. Align bearing with bearing plate and mount to frame with three hex bolts from inside frame. Secure with three locking nuts.

See Figure 91.

IMPORTANT: Make sure sleeve bushings remain inside short axle.

2. Reinstall short axle until a small portion of axle is through frame.
3. Reinstall two flat steel washers onto short axle.
4. Align differential gear with pinion gear and short axle and reinstall axle into differential.



1. Short Axle
2. Flat Steel Washer
3. Differential Gear
4. Pinion Gear

Figure 91

See Figure 92.

5. Reinstall long axle into differential gear.
6. Reinstall E-ring onto axle end.

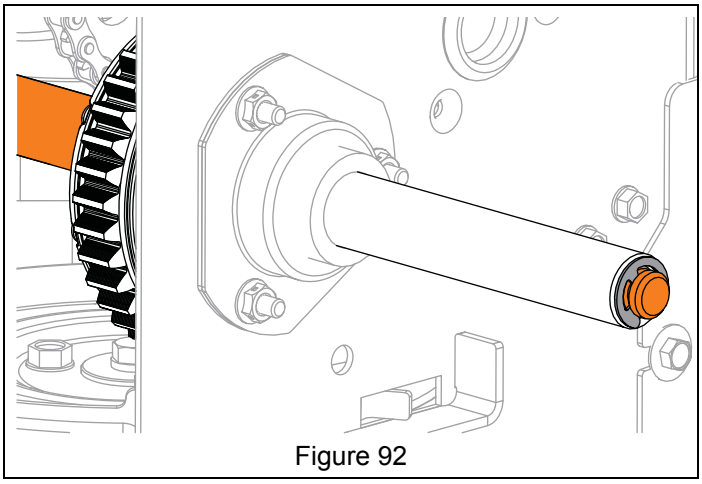


Figure 92

7. Reinstall bottom cover and secure with two tapping screws and four hex bolts.
8. Reinstall wheels and secure with snap clips.
9. Return unit to operating position.
10. Reconnect spark plug wire and fill fuel tank.

PINION SHAFT BUSHING REPLACEMENT

Remove Bushings

IMPORTANT: Save all hardware for reinstallation.

WARNING: AVOID INJURY. Before rotating unit forward, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Rotate unit to service position and remove bottom cover. See *Service Position* on page 7 and *Remove Bottom Cover* on page 14.
4. *Models 926060, 926069, 926338:* Advance to step 8. *Model 926337:* Advance to step 12.

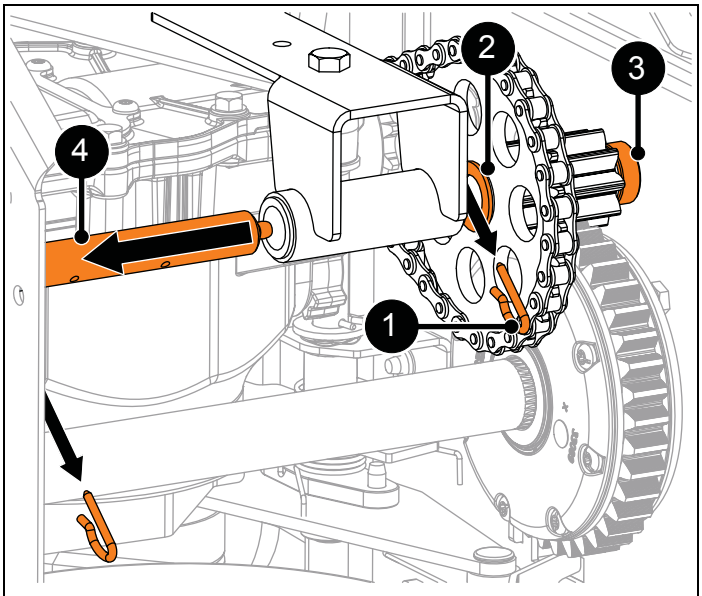
Models 926068, 926070, 926336

5. Remove snap clip from left axle end and remove left wheel.

See Figure 93.

6. Remove two spring clips from pinion shaft and remove pinion shaft from pinion gear and transaxle mounting bracket.

IMPORTANT: Sleeve bushing and one flat steel washer will become free when pinion shaft is removed from pinion shaft.



1. Spring Clip
2. Flat Steel Washer
3. Sleeve Bushing
4. Pinion Shaft

Figure 93

7. Advance to step 14.

Models 926060, 926069, 926338

8. Remove drive wheels and tracks from unit. See *Remove Track Drive Wheel* on page 60.
9. Slowly rotate track carriage assembly as far down as possible. See Figure 94.

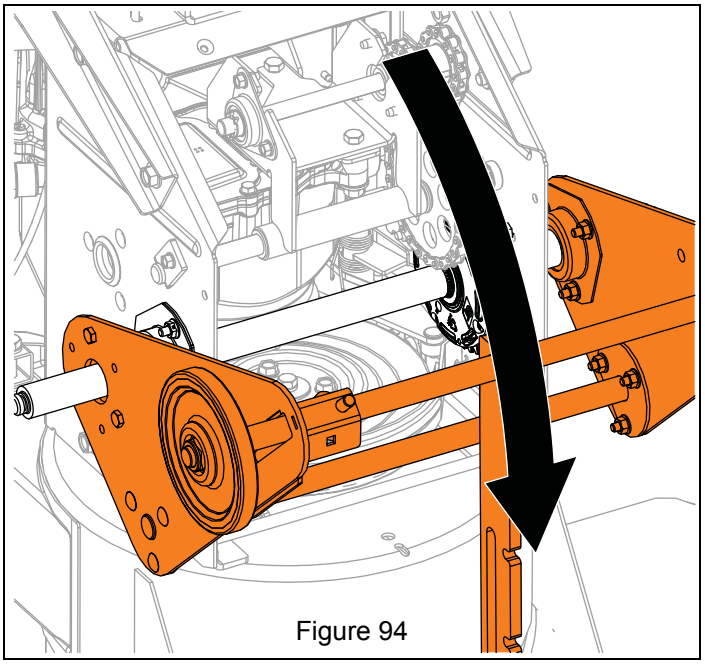


Figure 94

See Figure 95.

10. Remove spring clip from pinion shaft and move pinion gear left through pinion gear and transaxle mounting bracket.

IMPORTANT: Be aware of flat steel washer and spacer that will fall when pinion shaft is removed.

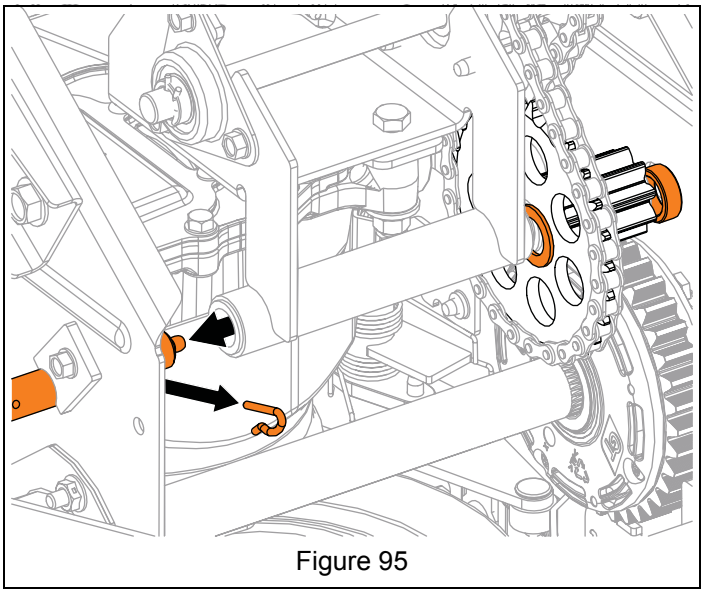


Figure 95

11. Advance to step 14.

Model 926337

12. Remove drive wheels and tracks from unit. See *Remove Track Drive Wheel* on page 60.

See Figure 96.

13. Remove two spring clips from pinion shaft and remove pinion shaft from pinion gear and transaxle mounting bracket.

IMPORTANT: Be aware of two flat steel washers and one spacer that will fall when pinion shaft is removed.

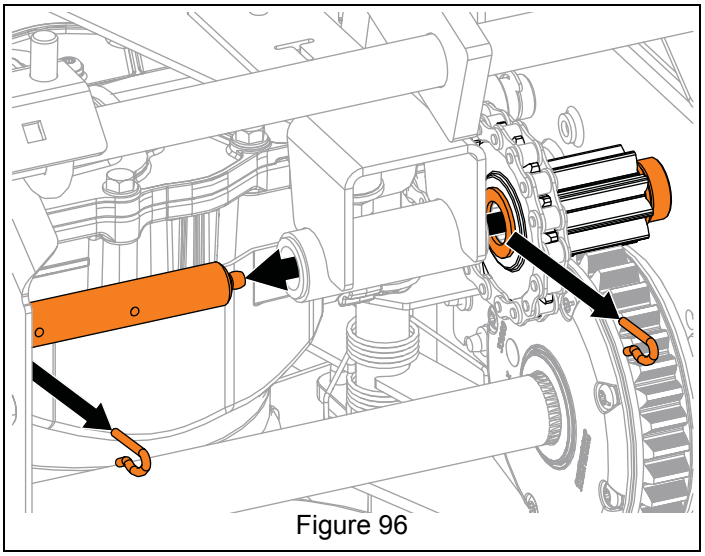


Figure 96

14. Remove bushings from pinion gear and / or transaxle mounting bracket, as necessary. See Figure 97, Figure 98 and Figure 99.

Models 926068, 926070, 926336

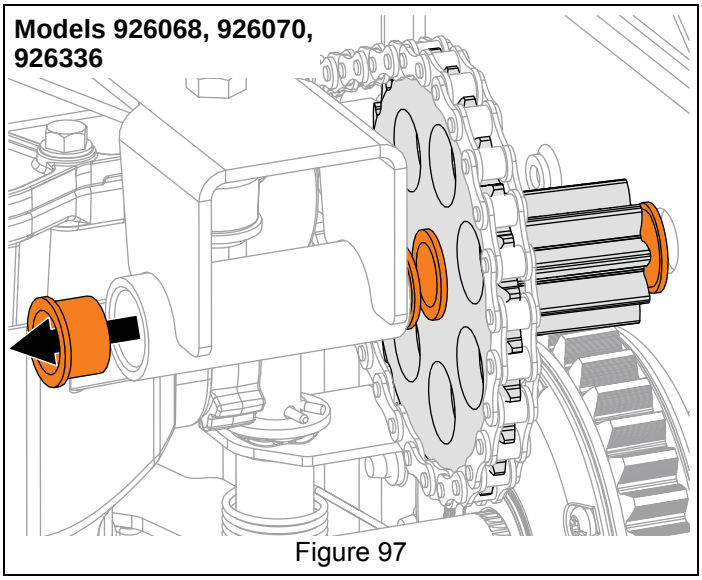


Figure 97

Models 926060, 926069, 926338

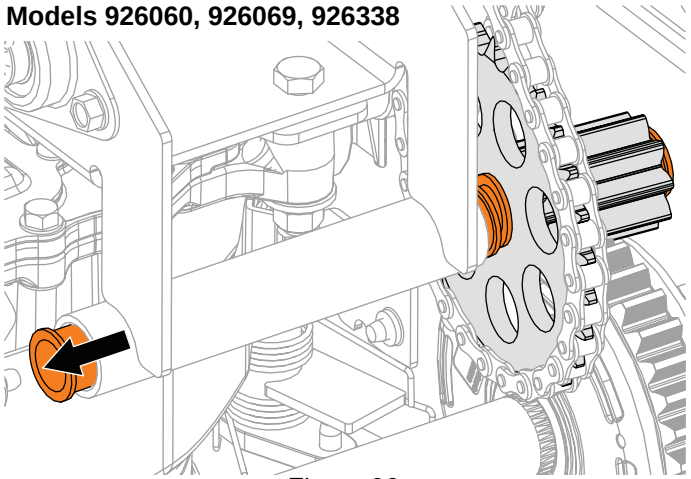


Figure 98

Model 926337

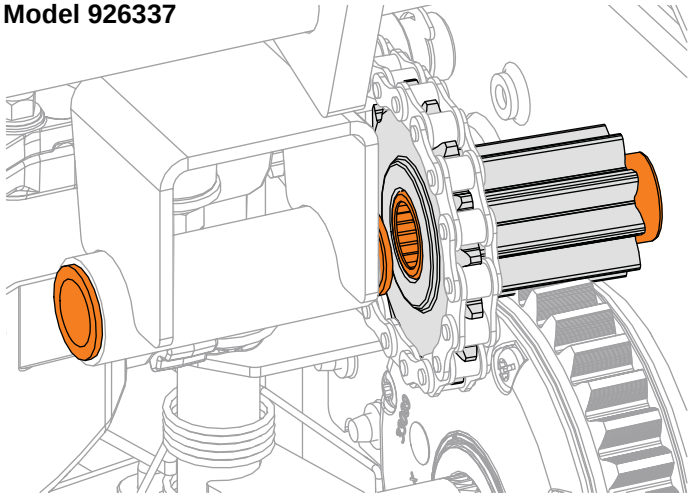


Figure 99

Install Bushings

1. Install bushings into pinion gear and / or transaxle mounting bracket.

See Figure 100, Figure 101 and Figure 102.

2. Reinstall pinion gear through transaxle mounting bracket.
3. Position one flat steel washer between transaxle mounting bracket and pinion gear and insert pinion shaft into pinion gear.

IMPORTANT: Make sure pinion gear is aligned with chain and differential gear.

4. *Models 926068, 926070, 926334, 926336, 926337:* Position spacer between pinion gear and frame. *Models 926060, 926069, 926338:* Position one flat steel washer and one spacer between pinion gear and frame.
5. Insert pinion shaft through pinion gear until it stops.

Models 926068, 926070, 926336

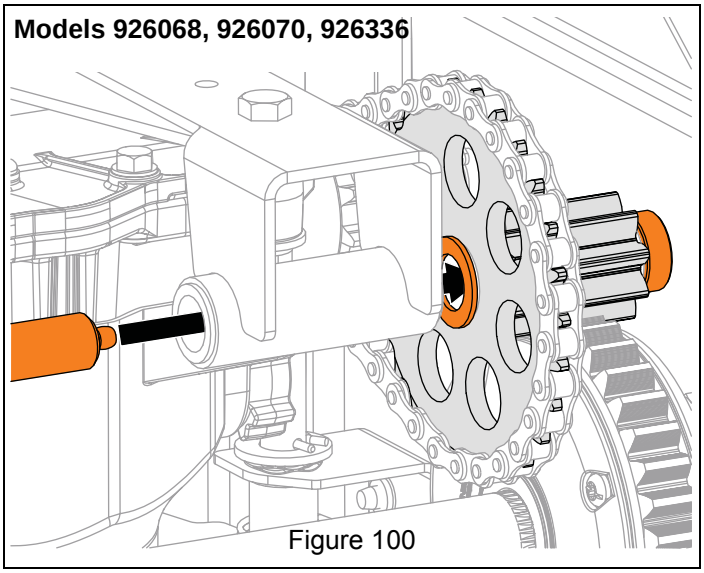


Figure 100

Models 926060, 926069, 926338

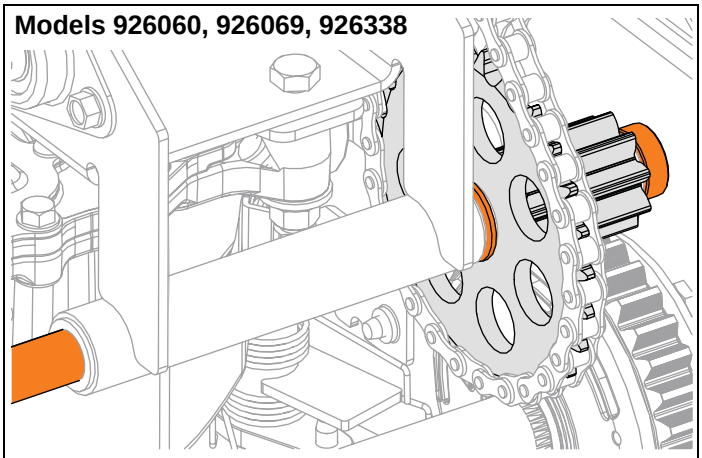


Figure 101

Model 926337

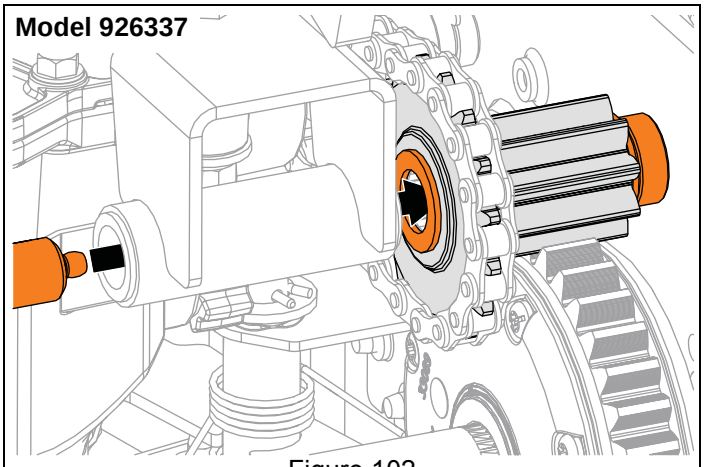


Figure 102

See Figure 103.

6. Position spacer against frame and reinstall spring clip into pinion shaft.
7. *Models 926068, 926070, 926334, 926336, 926337:* Position flat steel washer against pinion gear and reinstall remaining spring clip into pinion shaft.

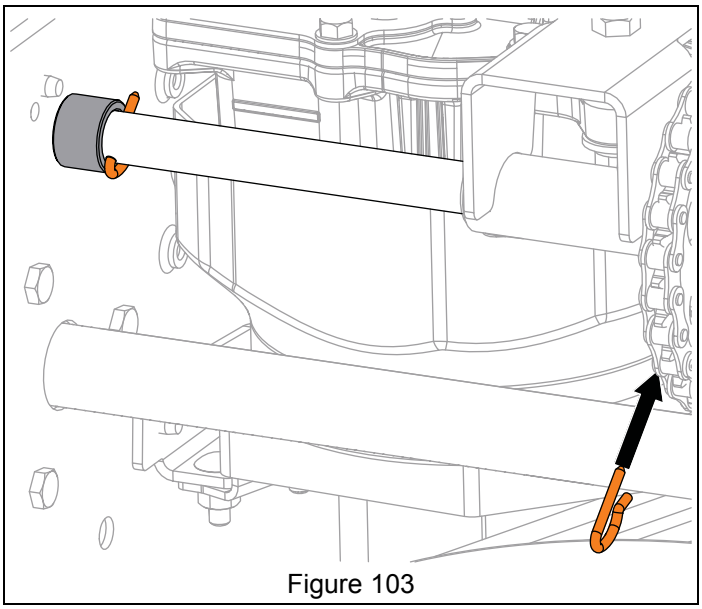


Figure 103

8. Reinstall bottom cover and secure with original hardware.
9. *Models 926060, 926069, 926338:* Rotate track carriage assembly into its original position and reinstall height adjuster. See Figure 22.
10. *Models 926068, 926070, 926336:* Reinstall wheels and secure with snap clips.
    Models 926060, 926069, 926337, 926338: Reinstall drive wheels and tracks. See *Install Track Drive Wheel* on page 60 and see *Install Track* on page 61.
11. Return unit to operating position.
12. Fill fuel tank and reconnect spark plug wire.

DIFFERENTIAL GEAR REPLACEMENT

Remove Differential Gear

IMPORTANT: Save all hardware for reinstallation.

WARNING: AVOID INJURY. Before placing unit in service position, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Place unit in service position and remove bottom cover. See *Service Position* on page 7 and *Remove Bottom Cover* on page 14.
4. *Models 926068, 926070, 926336:* Remove snap clips from axle ends and remove wheels.
   Models 926060, 926069, 926337, 926338: Remove track drive wheels and remove tracks. See *Remove Track Drive Wheel* on page 60 and see *Remove Track* on page 61.

See Figure 104.

5. Remove E-ring from axle end.
6. Remove long axle from differential gear.

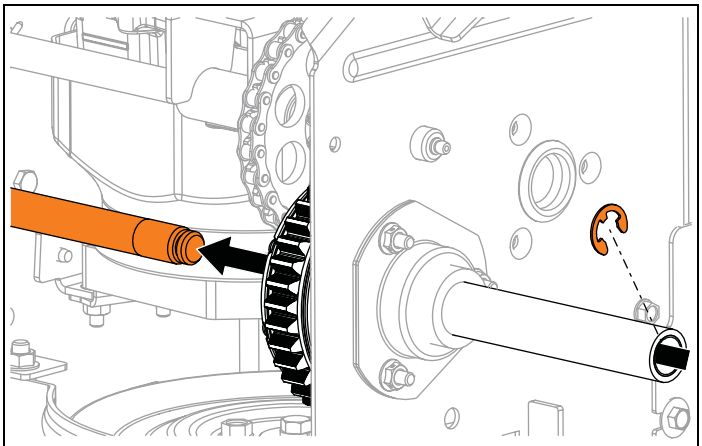


Figure 104

See Figure 105.

IMPORTANT: Two flat steel washers will become free when short axle is removed.

7. Hold differential gear and remove short axle from unit.

IMPORTANT: Make sure two sleeve bushings remain inside short axle ends.

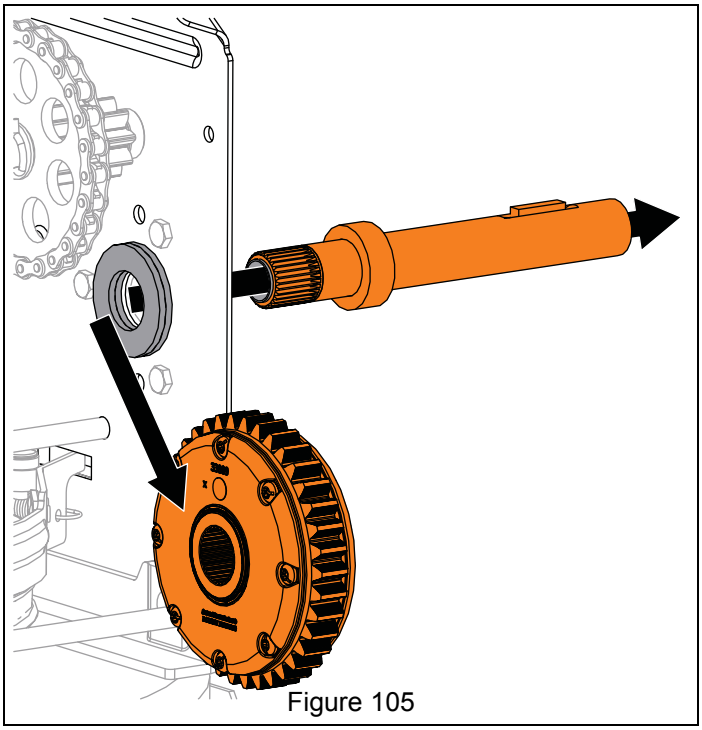
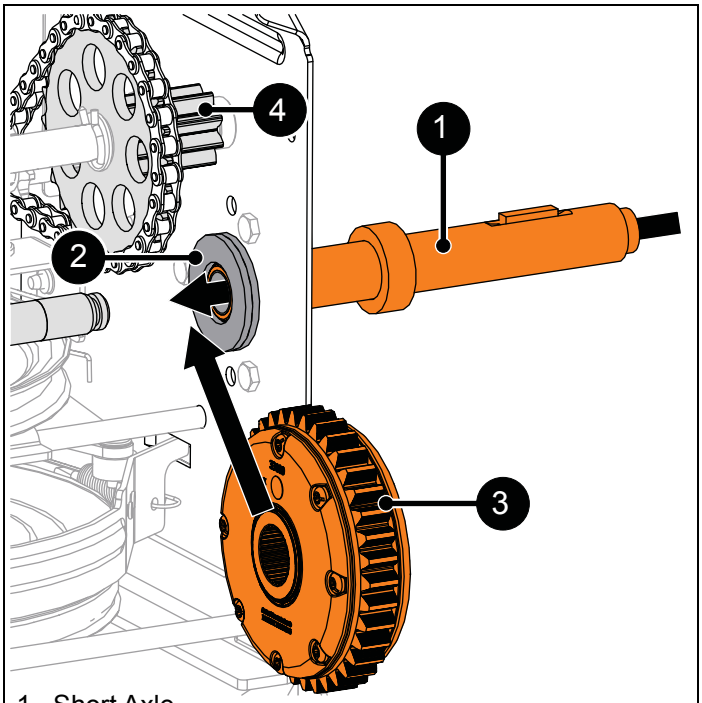


Figure 105

Install Differential Gear

See Figure 106.

1. Reinstall short axle until a small portion of axle is through frame.
2. Reinstall two flat steel washers onto short axle.
3. Align differential gear with pinion gear and short axle and reinstall axle into differential.



1. Short Axle
2. Flat Steel Washer
3. Differential Gear
4. Pinion Gear

Figure 106

See Figure 107.

4. Reinstall long axle into differential gear.
5. Reinstall E-ring onto axle end.

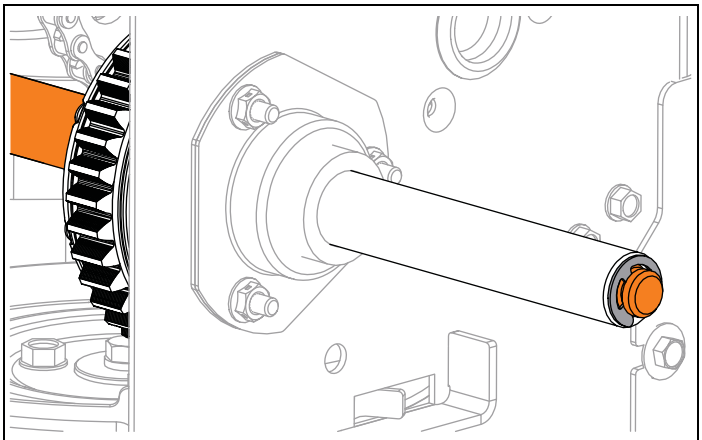


Figure 107

6. Reinstall bottom cover and secure with original hardware.
7. *Models 926068, 926070, 926336:* Reinstall wheels and secure with snap clips.
   Models 926060, 926069, 926337, 926338: Reinstall drive wheels and tracks. See *Install Track Drive Wheel* on page 60 and see *Install Track* on page 61.
8. Return unit to operating position.
9. Reconnect spark plug wire and fill fuel tank.

CHUTE GEAR REPLACEMENT

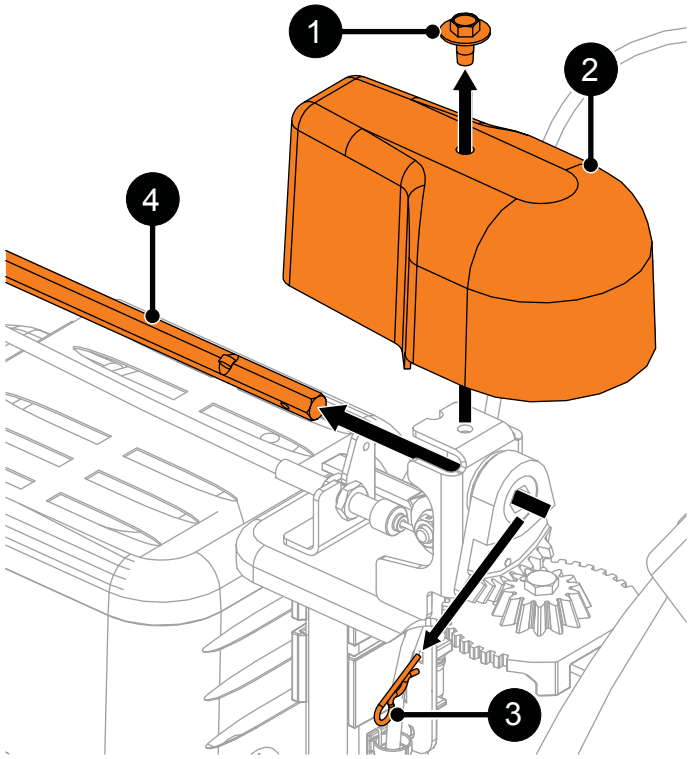
Remove Chute Rotation Gear

IMPORTANT: Save all hardware for reinstallation

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.

See Figure 108.

3. Position discharge chute facing forward.
4. Remove hardware retaining chute gear cover and remove cover.
5. Remove hairpin from hex rod and remove hex rod from chute gear.



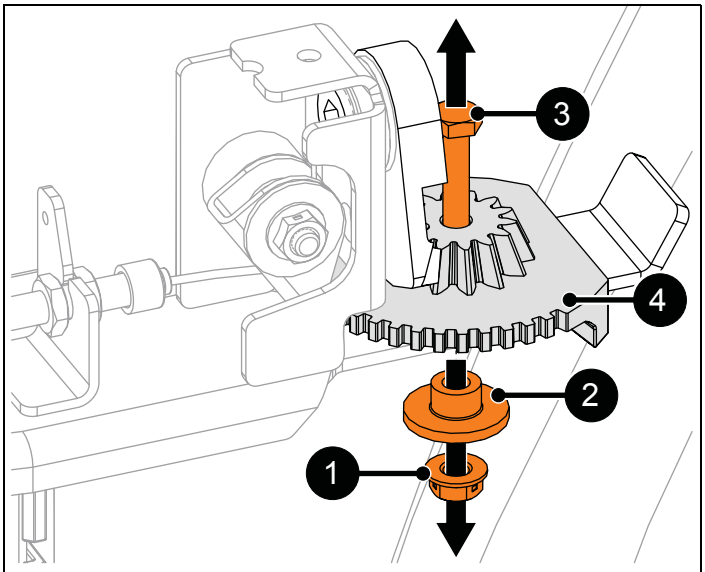
1. Tapping Screw
2. Chute Gear Cover
3. Hairpin
4. Hex Rod

Figure 108

See Figure 109.

IMPORTANT: Support discharge chute so it remains upright.

6. Remove hardware securing chute rotation gear to pedestal plate and remove chute gear.



1. Center Locking Flange Nut
2. Flange Bushing
3. Hex Bolt
4. Chute Rotation Gear

Figure 109

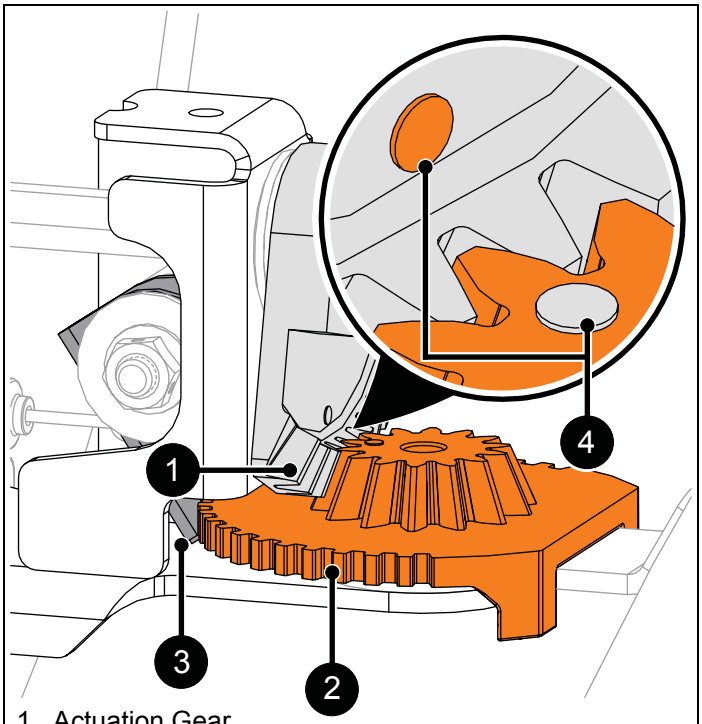
Install Chute Rotation Gear

IMPORTANT: Make sure discharge chute is positioned forward.

See Figure 110.

1. Position actuation gear so gear teeth are at lowest position.
2. Install chute rotation gear so midpoint of gear teeth are seated in chute lock arm.

IMPORTANT: Make sure calibration markers on actuation gear and chute rotation gear align.



1. Actuation Gear
2. Chute Rotation Gear
3. Chute Lock Arm
4. Calibration Markers

Figure 110

3. Position chute rotation lever upright.
4. Reinstall hex rod into chute gear and secure with hairpin.
5. Reinstall chute gear cover and secure with tapping screw.
6. Adjust discharge chute. Refer to Operator's Manual for adjustment procedure.
7. Reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.

Remove Actuation Gear

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove chute rotation gear. See *Remove Chute Rotation Gear* on page 47.
4. Remove actuation gear and two flat steel washers from chute gear bracket. See Figure 111.

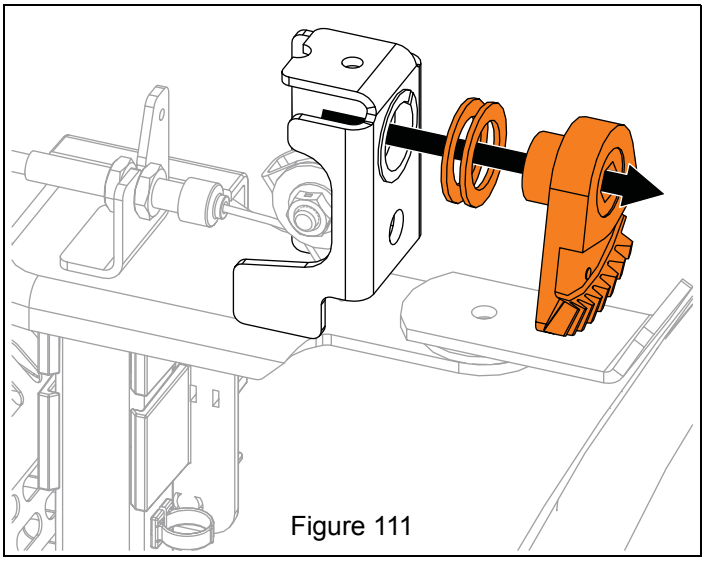


Figure 111

Install Actuation Gear

1. Install two flat steel washers onto actuation gear.
2. Install actuation gear into chute gear bracket.
3. Reinstall chute rotation gear. See *Install Chute Rotation Gear* on page 47.

SCRAPER BLADE REPLACEMENT

Remove Scraper Blade

IMPORTANT: Save all hardware for reinstallation.

WARNING: AVOID INJURY. Before tipping unit onto handlebars, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove hardware securing scraper blade ends to auger housing. See Figure 112.

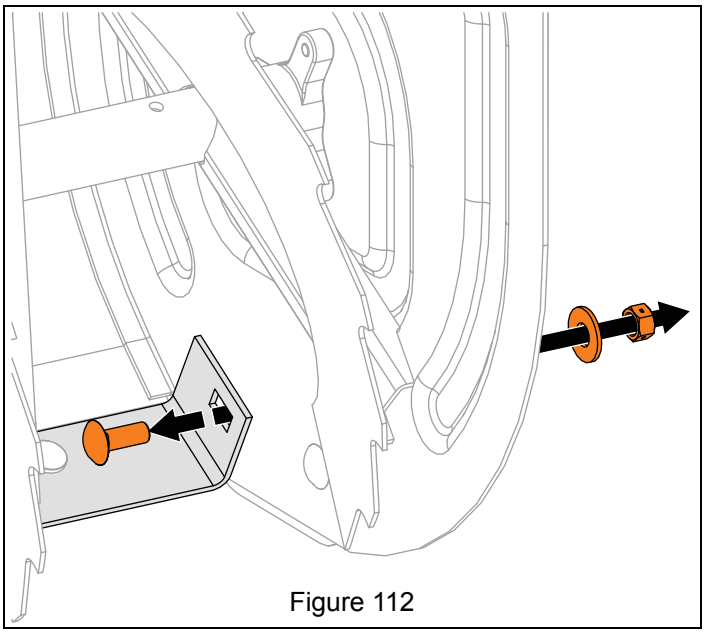


Figure 112

See Figure 113.

4. Slowly tip unit back so it rests on handlebars.
5. Remove remaining hardware securing scraper blade to auger housing and remove scraper blade.

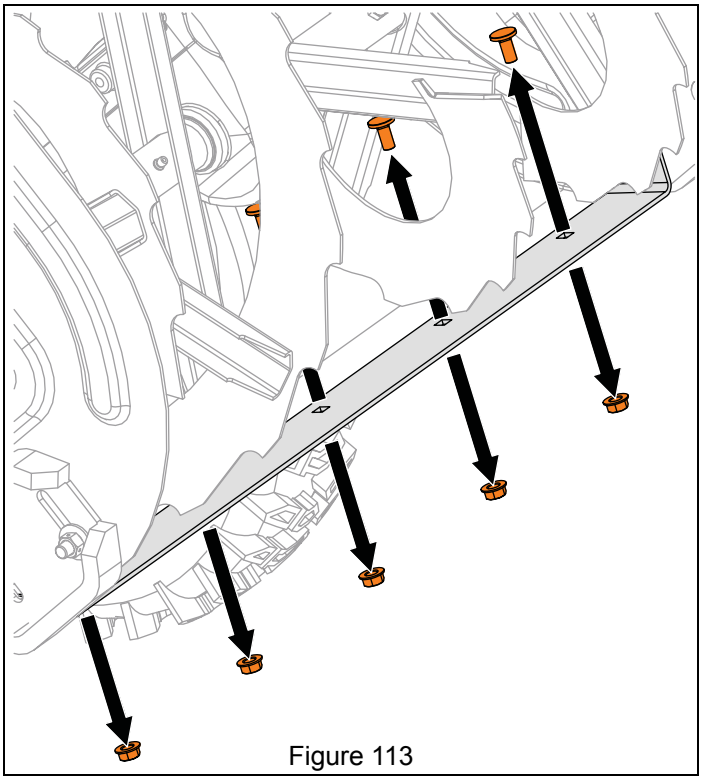


Figure 113

Install Scraper Blade

1. Position scraper blade inside auger housing and align with holes in housing.
2. Insert five flat head square neck bolts through scraper blade from inside housing. Secure with five top locking flange nuts.
3. Insert two round head square neck bolts through scraper blade ends and skid shoes from inside housing. Secure with two flat steel washers and two hex nuts.
4. Return unit to operating position.
5. Adjust scraper blade and skid shoes. Refer to Operator's Manual for adjustment procedures.
6. Reconnect spark plug wire and fill fuel tank.

NOTICE: Check all adjustments after first use.

HEADLIGHT REPLACEMENT

Remove Bulb

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Remove hardware securing headlight to dash panel. See Figure 114.

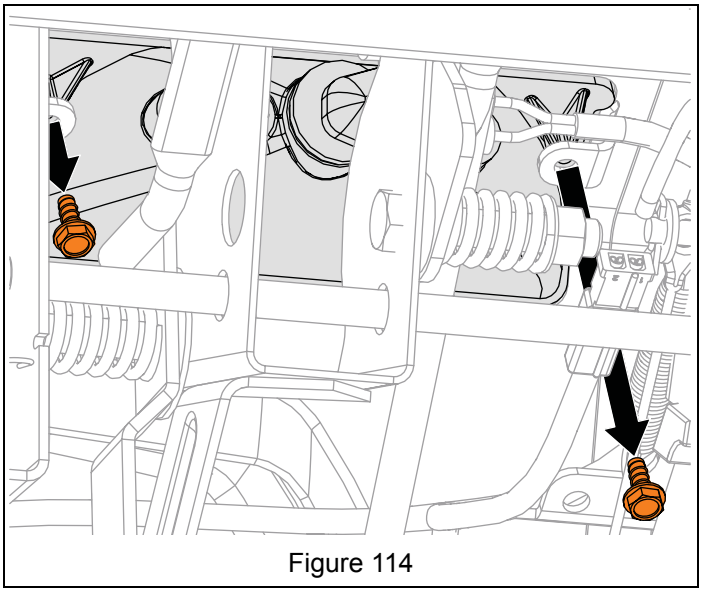


Figure 114

See Figure 115.

4. Remove headlight from dash panel.
5. Disconnect wire harness from bulb.

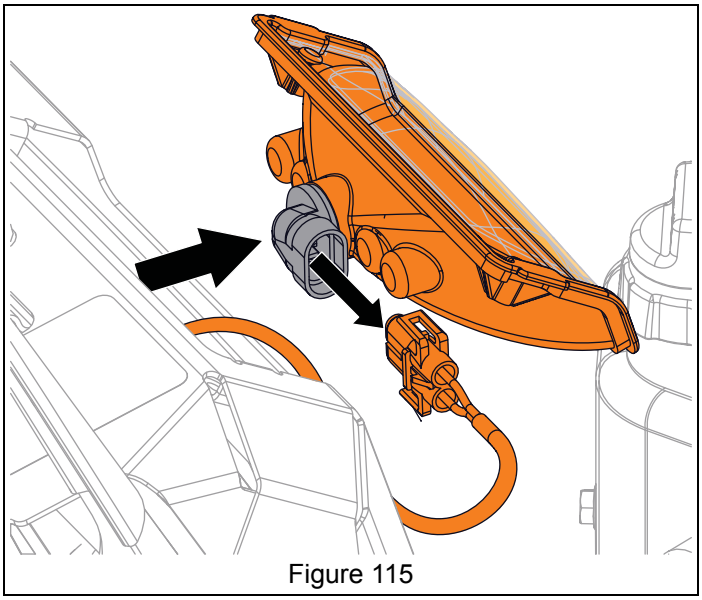


Figure 115

6. Turn bulb one-eighth turn counterclockwise and remove from headlight bezel. See Figure 116.

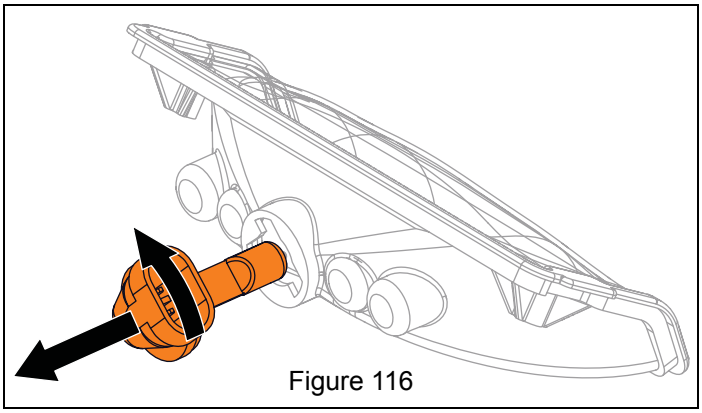


Figure 116

Install Bulb

IMPORTANT: DO NOT touch new bulb with bare hands; wear gloves. Body oil on a headlight bulb can increase bulb temperature and reduce bulb life.

1. Install bulb into headlight bezel and turn one-eighth turn clockwise.
2. Connect bulb to wire harness.
3. Reinstall headlight housing into dash panel and secure with two tapping screws.

IMPORTANT: Reconnect spark plug wire.

EFI BATTERY REPLACEMENT

Models 926068, 926070, 926336, 926337, 926338

Remove Battery

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Disconnect wire harnesses from ECU.
4. Remove hardware retaining ECU bracket and remove bracket. See Figure 117.

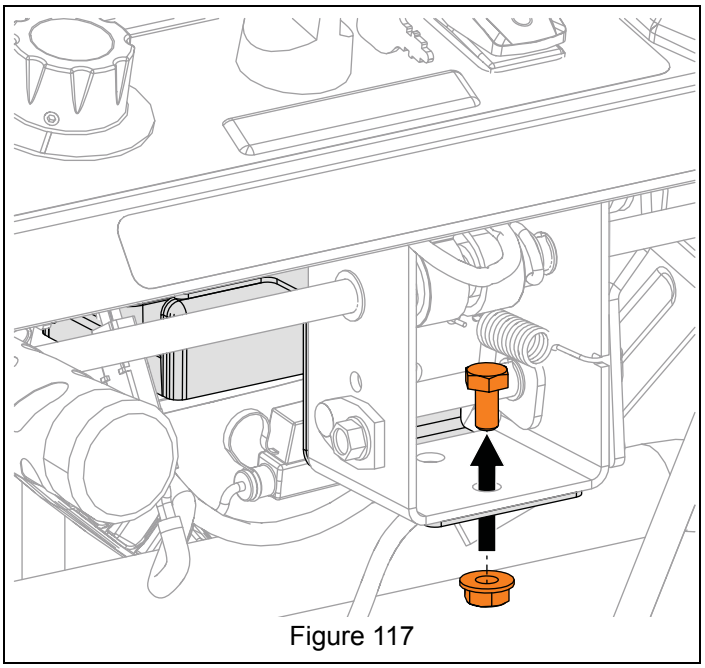


Figure 117

See Figure 118.

5. Disconnect wire harness from battery connector.
6. Remove hardware retaining battery bracket and remove bracket.

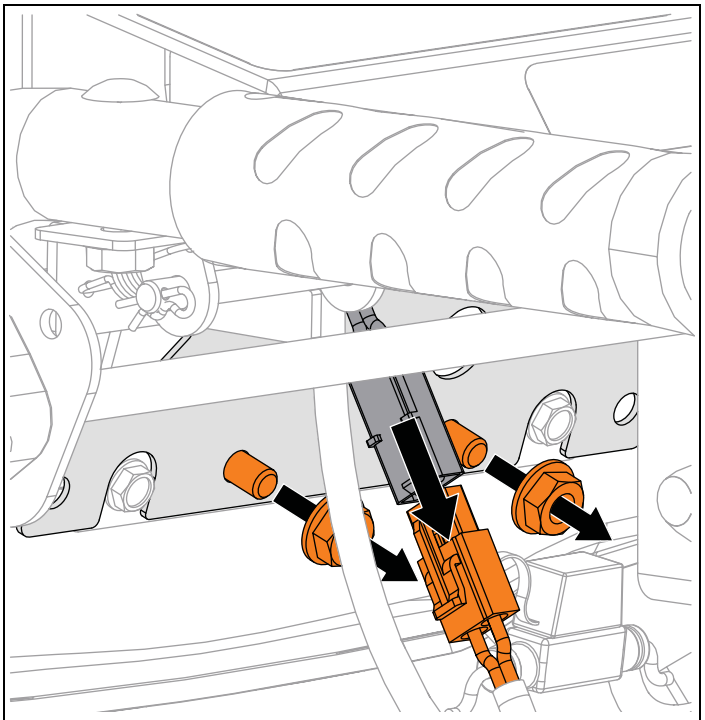


Figure 118

7. Cut cable ties retaining battery to battery bracket. Remove battery and discard.

Install Battery

1. Position battery in battery bracket and secure with two cable ties. See Figure 119.

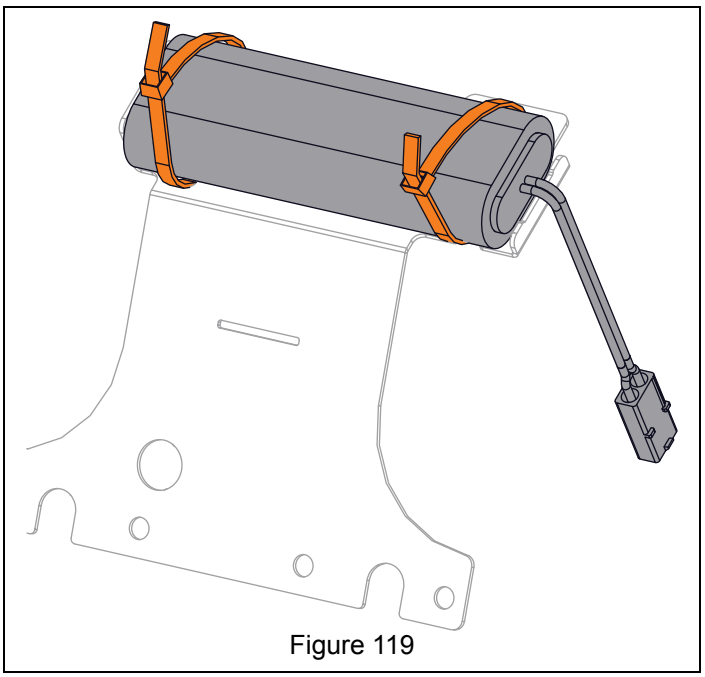


Figure 119

See Figure 120.

2. Secure battery bracket to dash panel with original hardware.
3. Reconnect battery connector to wire harness.

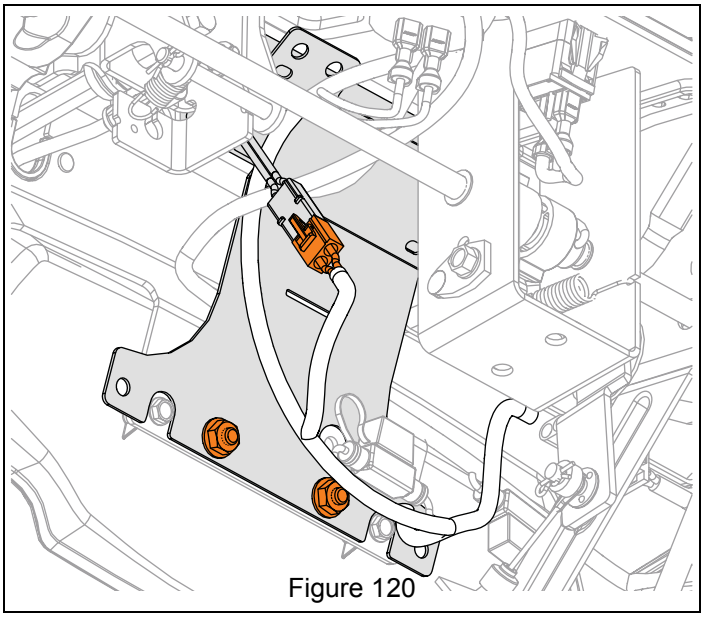


Figure 120

4. Reinstall ECU and secure to dash panel with original hardware. See Figure 121.

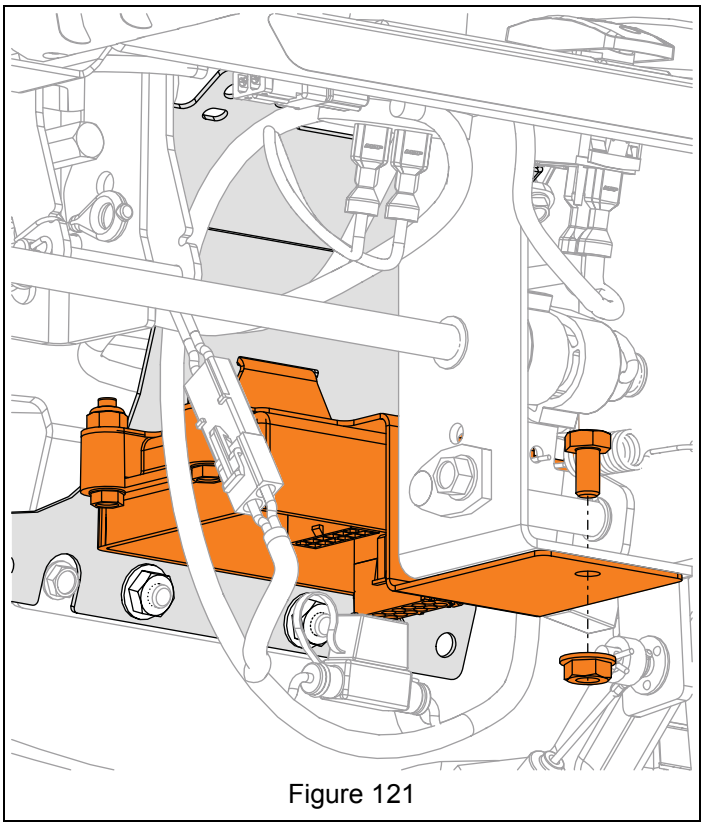


Figure 121

5. Reconnect wire harnesses to ECU.
6. Reconnect spark plug wire.

REPLACE ENGINE CONTROL UNIT (ECU)

Models 926068, 926070, 926336, 926337, 926338

Remove ECU

IMPORTANT: Save all hardware for reinstallation.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Disconnect wire harnesses from ECU.
4. Remove hardware retaining ECU and bracket and remove bracket. See Figure 122.

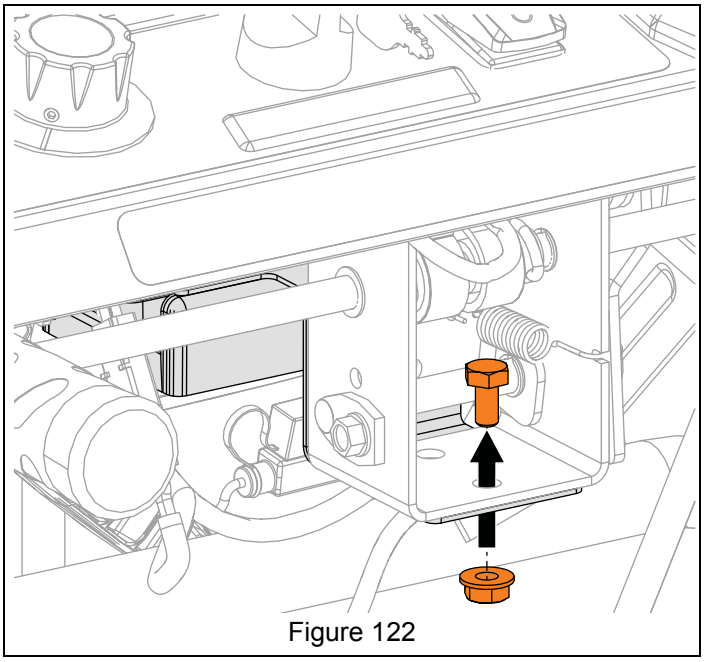


Figure 122

5. Remove hardware retaining ECU to bracket and remove ECU. See Figure 123.

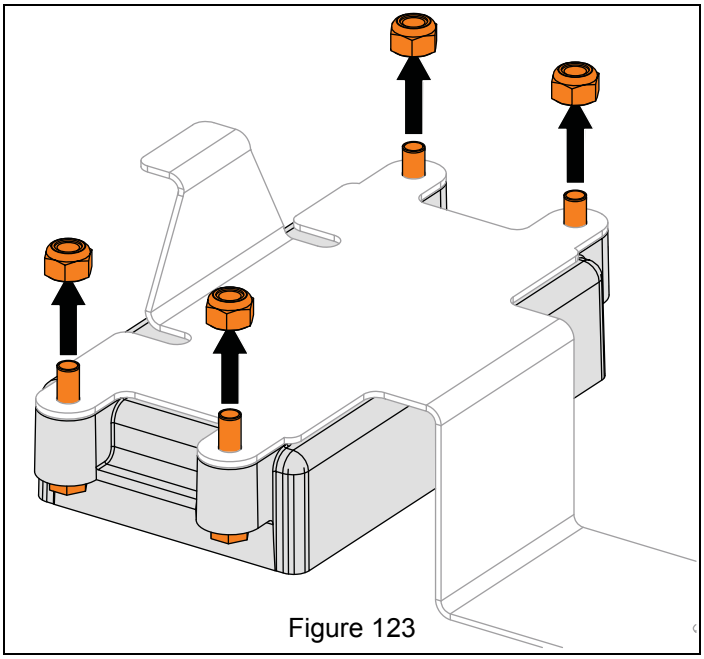


Figure 123

Install ECU

1. Secure ECU to bracket with original hardware. See Figure 123.
2. Secure ECU bracket to dash panel with original hardware. See Figure 121.
3. Reconnect wire harnesses to ECU.
4. Reconnect spark plug wire.

GEARCASE REBUILD

Disassemble Gearcase

IMPORTANT: Save all parts for reassembly, unless otherwise specified.

1. Remove gearcase. See *Remove Gearcase Assembly* on page 33.
2. Remove any rust, if present, from auger and impeller shafts with sandpaper. Wipe clean with oil.
3. Remove drain plug and seal washer from gearcase. See Figure 124.

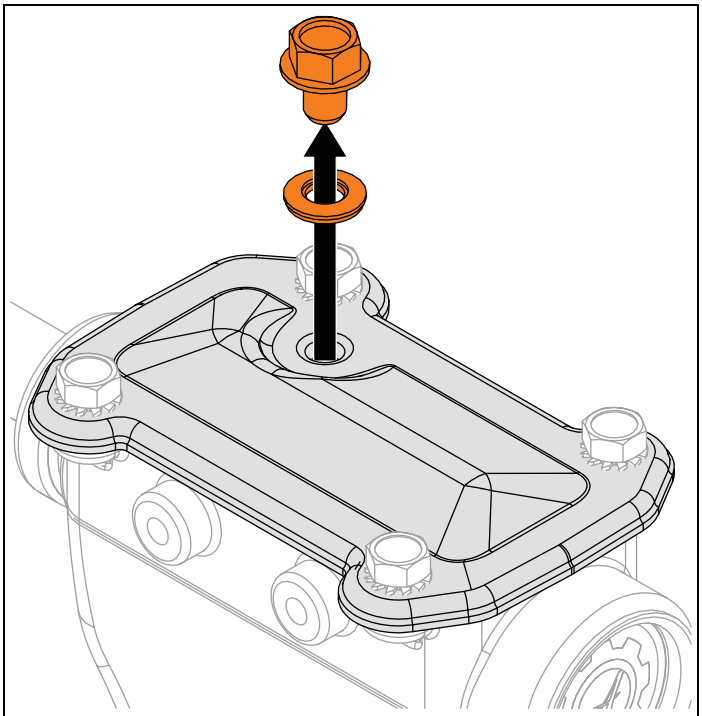


Figure 124

See Figure 125.

4. Remove hardware retaining gearcase cover and remove cover.
5. Remove gasket and drain gearcase.

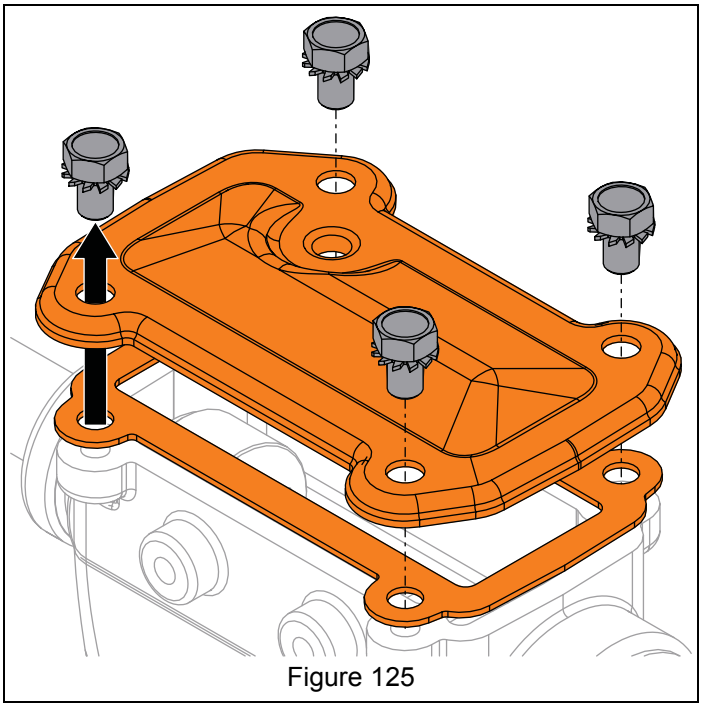


Figure 125

6. Remove bushing retainer from gearcase. See Figure 126.

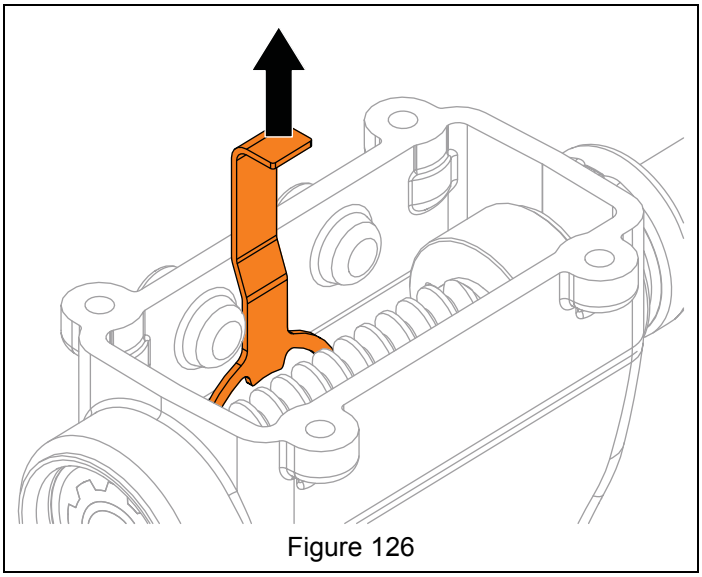


Figure 126

See Figure 127.

7. Press auger shaft through the right side of gearcase.

NOTICE: DO NOT strike auger shaft end; use a press.

8. Remove seal, bushing and washer from auger shaft.

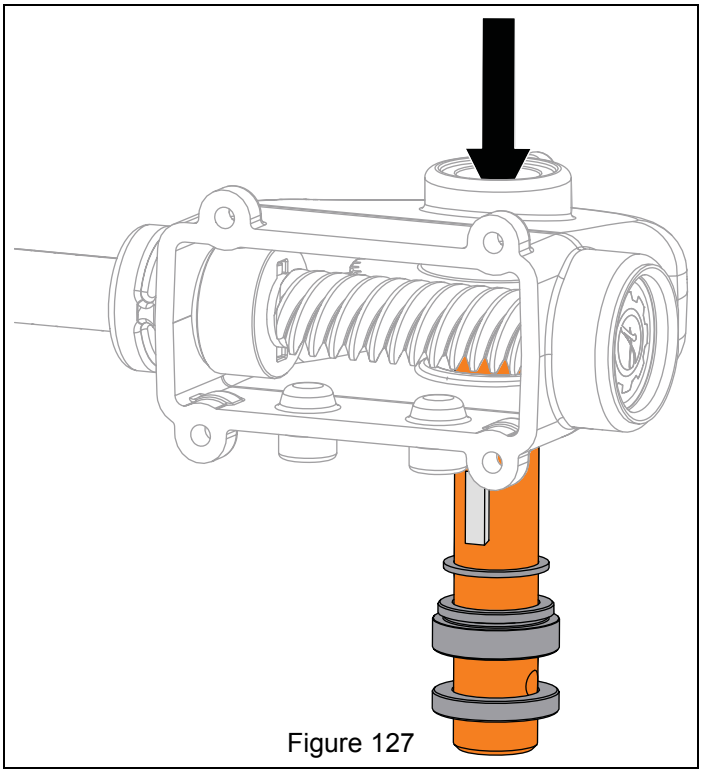


Figure 127

9. With a flathead screwdriver or similar pry bar, remove front seal cover and discard. See Figure 128.

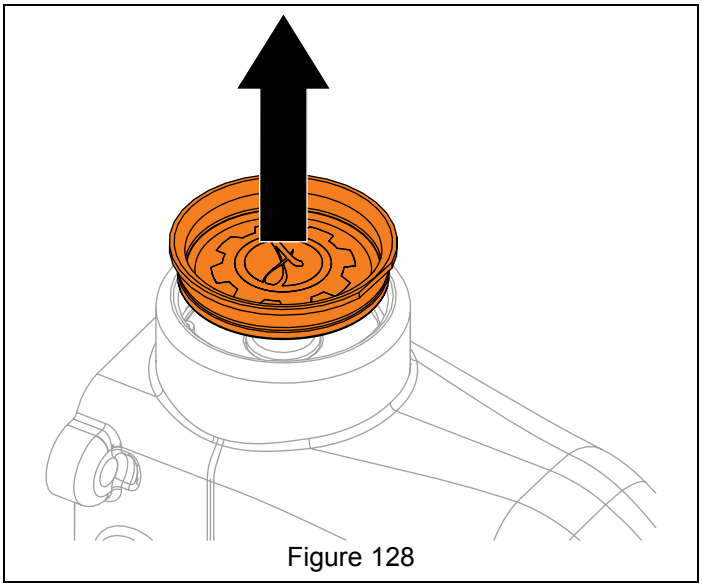


Figure 128

10. With a snap ring pliers, remove retaining ring. See Figure 129.

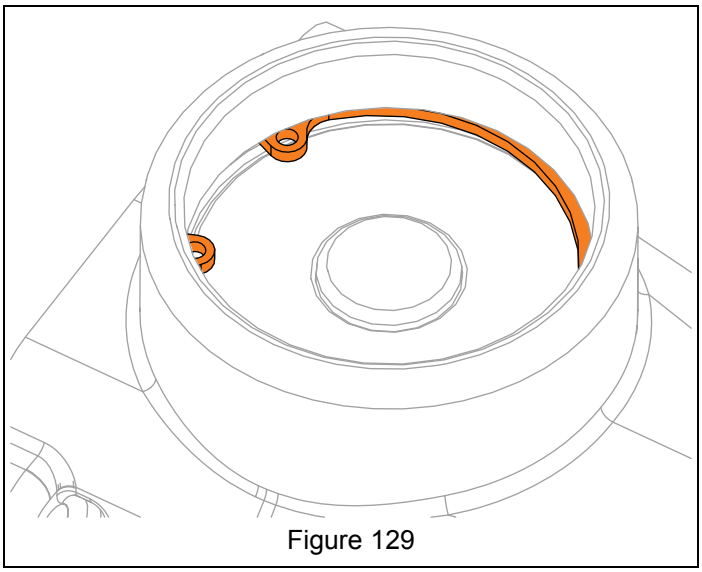


Figure 129

See Figure 130.

11. With a driver, strike impeller shaft end until shaft is through front of gearcase.

NOTICE: DO NOT strike impeller shaft end without using a driver.

12. Remove pin and bushing from impeller shaft.

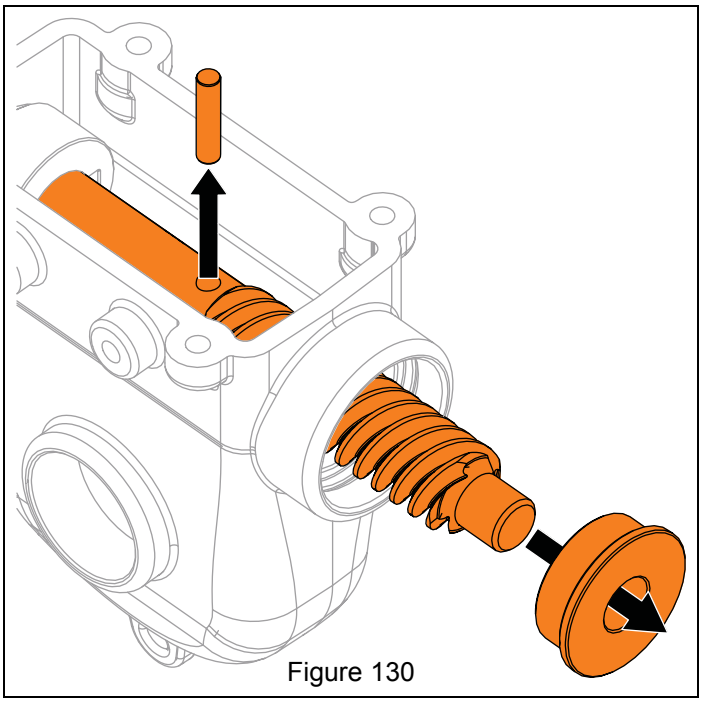


Figure 130

13. Remove impeller shaft from gearcase and remove all loose parts from inside gearcase.

14. Remove seals and flange bushings from gearcase. See Figure 131.

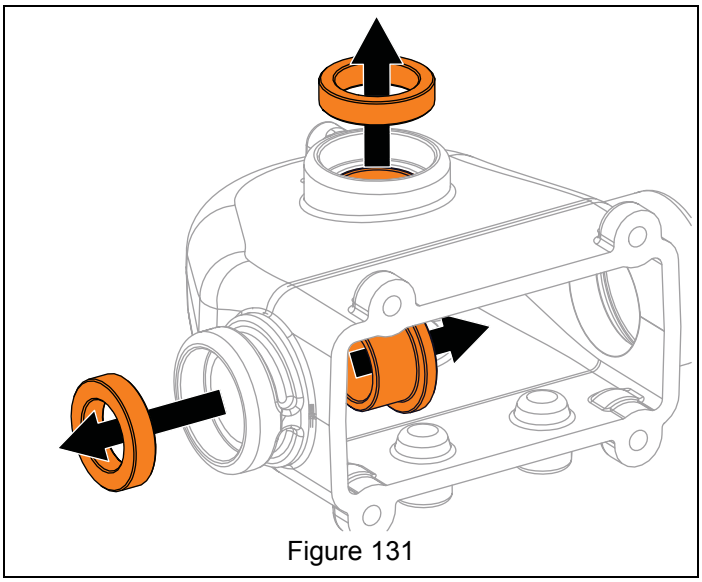


Figure 131

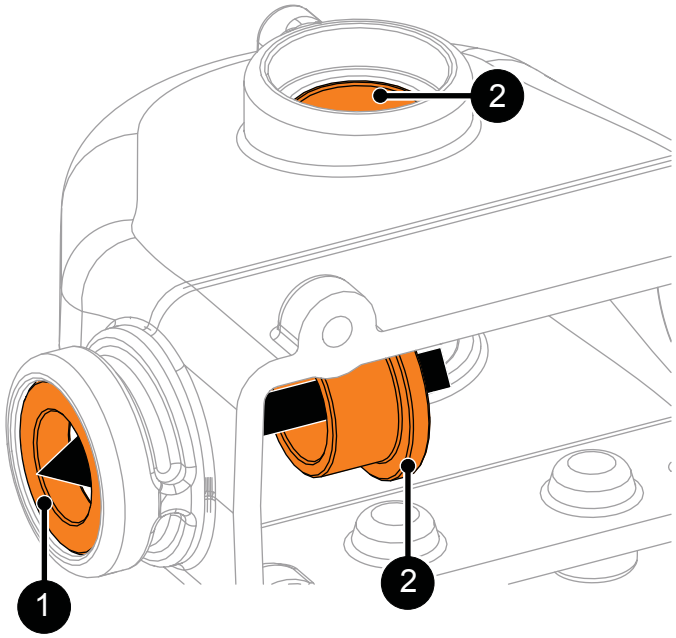
Assemble Gearcase

See Figure 132.

1. Press rear seal into gearcase until flush with gearcase exterior.

IMPORTANT: DO NOT press right seal into gearcase.

2. Reinstall right and rear flange bushings.



1. Seal
2. Flange Bushing

Figure 132

See Figure 133.

IMPORTANT: Gear is symmetrical and may be installed in either orientation.

3. Install gear into gearcase.

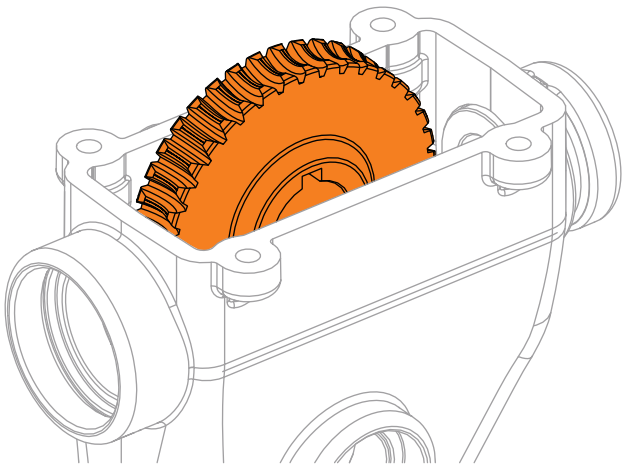
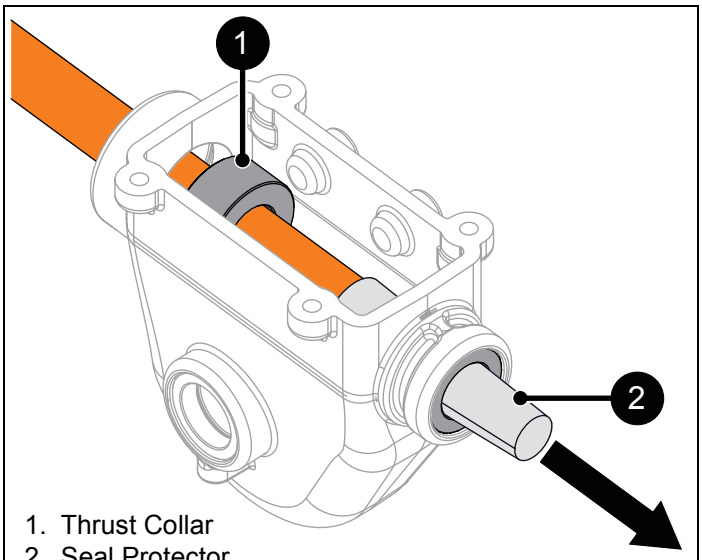


Figure 133

See Figure 134.

4. Reinstall impeller shaft through gearcase front and reinstall thrust collar onto impeller shaft end.
5. Wrap a seal protector around impeller shaft end and insert shaft through gearcase seal. Remove seal protector.

NOTICE: Unprotected seals can be damaged when rough edges in shaft, such as holes, pass through seal.



1. Thrust Collar
2. Seal Protector

Figure 134

See Figure 135.

6. Reinstall pin into impeller shaft and turn shaft so pin is horizontal.
7. Align thrust collar with pin and install thrust collar over pin.
8. Move impeller shaft as far through gearcase rear as possible.

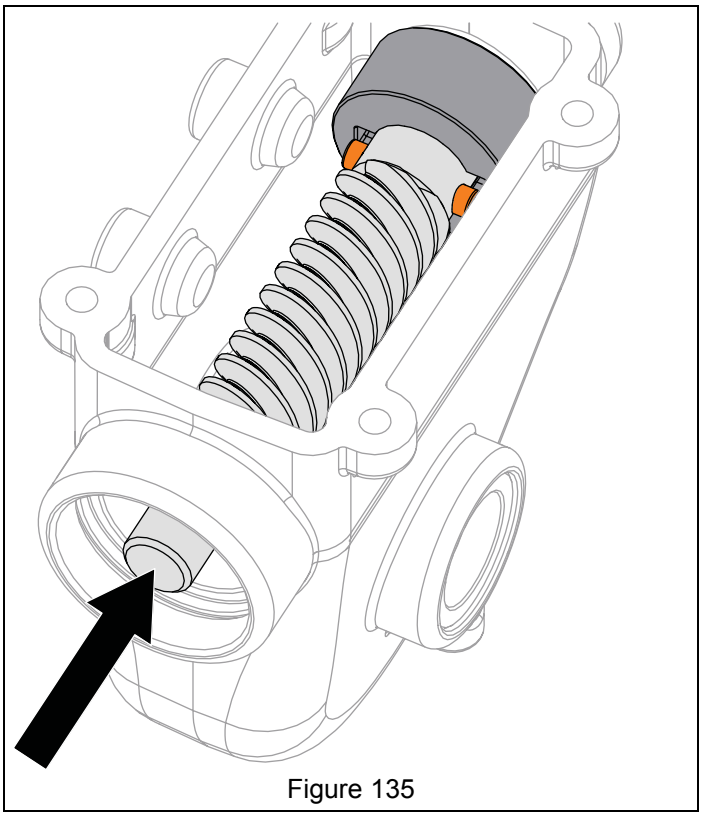


Figure 135

9. Reinstall flange bushing onto impeller shaft end. With a driver, strike bushing until positioned just below retaining ring groove. See Figure 136.

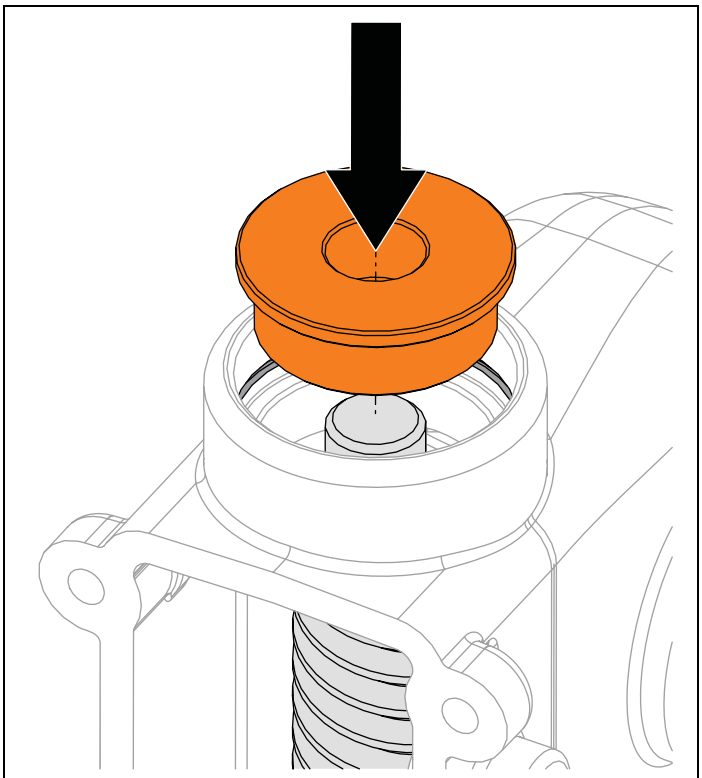


Figure 136

10. Reinstall retaining ring. See Figure 137.

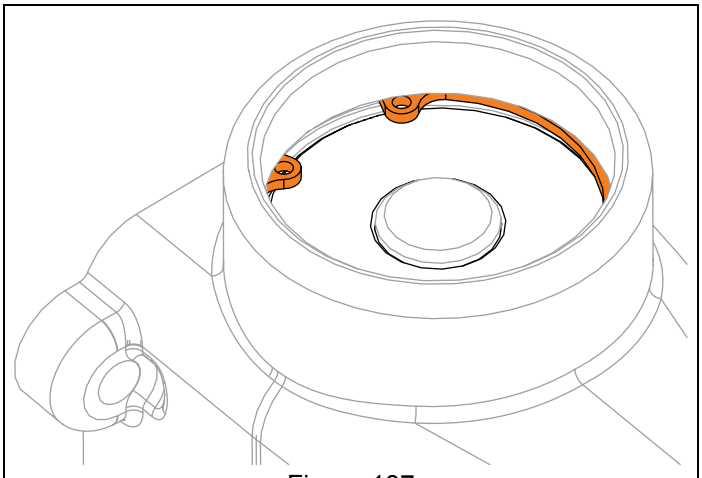


Figure 137

11. Turn impeller shaft by hand to make sure shaft rotates easily.

See Figure 138.

12. Reinstall one flat steel washer into left side of gearcase.
13. Align washer with gearcase hole and reinstall auger shaft through gear.

IMPORTANT: Make sure auger shaft key aligns with gear keyway.

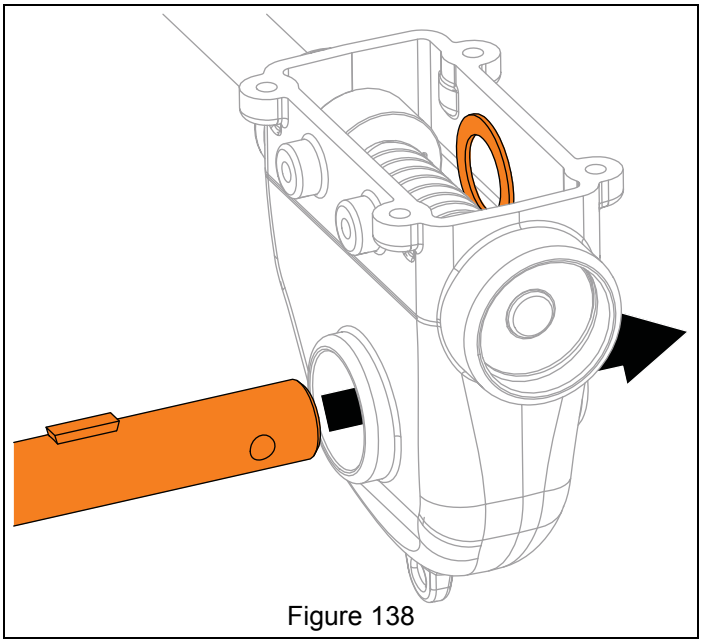


Figure 138

See Figure 139.

14. Reinstall one flat steel washer and bushing onto right auger shaft end.

IMPORTANT: Stepped-down side of bushing MUST be positioned toward gearcase.

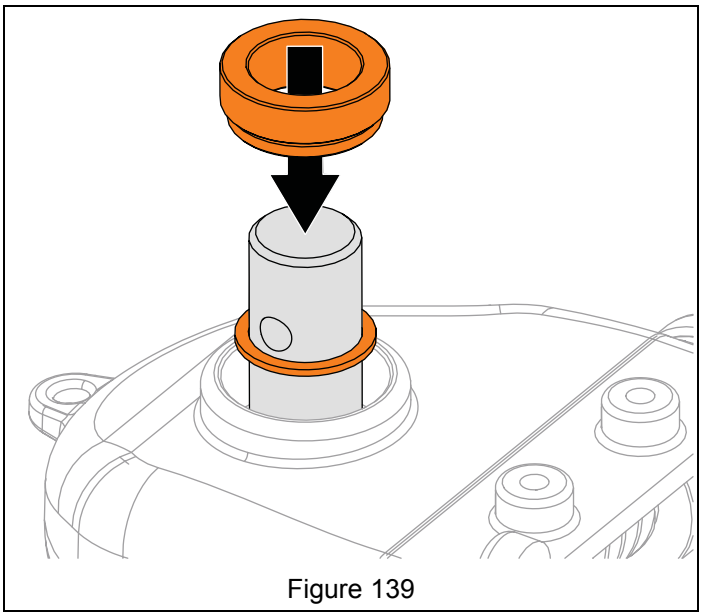


Figure 139

15. With a driver, such as a 1 1/4" deep-well socket, drive bushing into gearcase until groove is just beyond interior gearcase wall. See Figure 140.

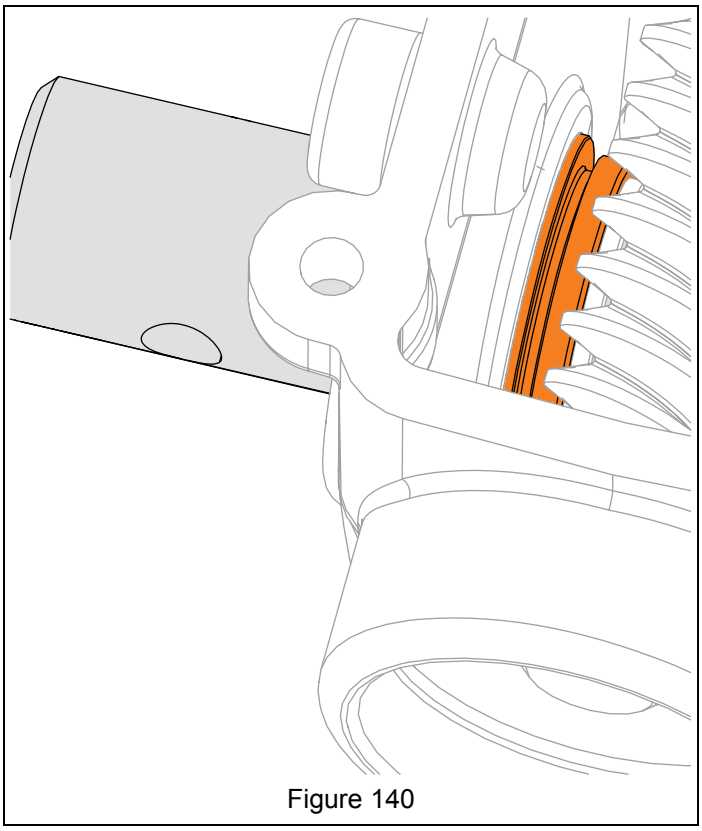


Figure 140

See Figure 141.

16. Wrap seal protector around each auger shaft end so they cover the shear bolt holes.

NOTICE: Unprotected seals can be damaged when installed over rough edges in shaft, such as holes.

17. Install gearcase seals over seal protectors and press into gearcase until each seal is flush with gearcase exterior.
18. Remove seal protectors.

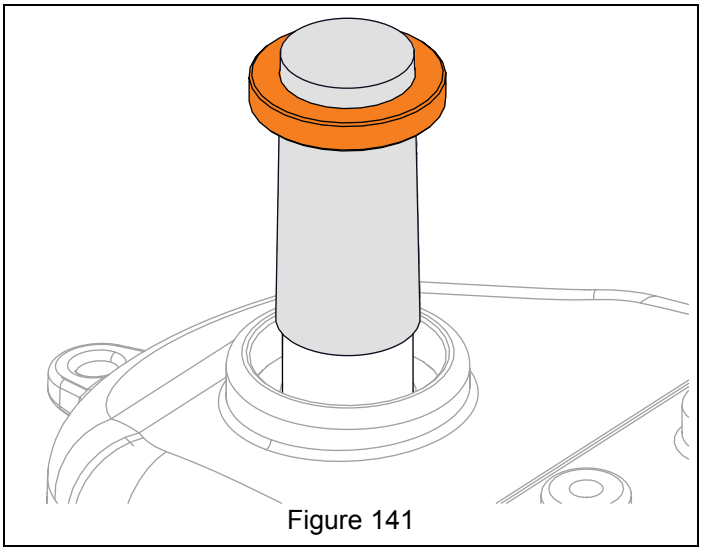


Figure 141

19. Turn auger shaft by hand to ensure shaft rotates easily.
20. Reinstall bushing retainer into flange bushing groove. See Figure 142.

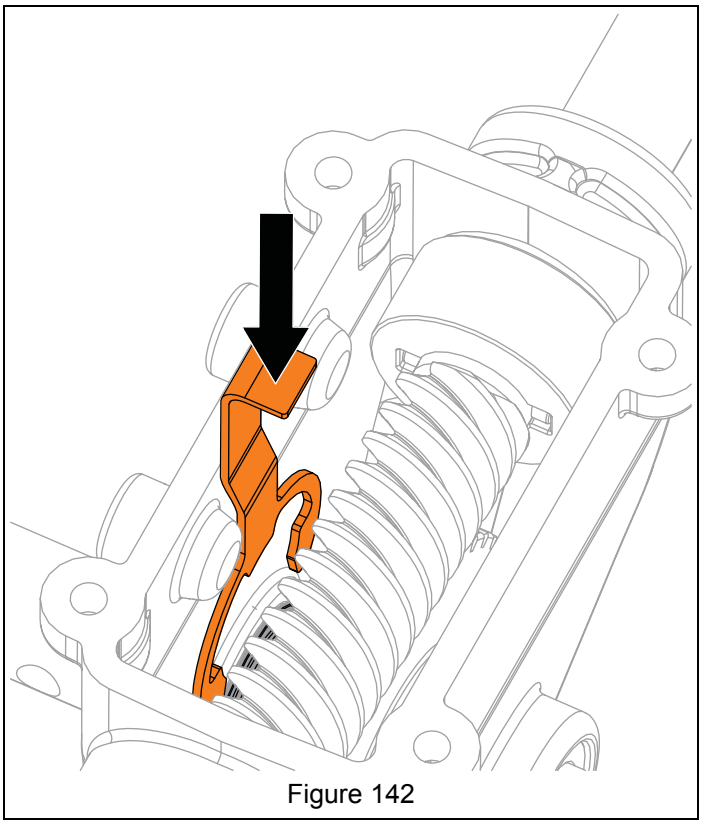


Figure 142

See Figure 143.

21. Reinstall gearcase gasket.
22. Secure cover to gearcase with four external tooth locking washer bolts.

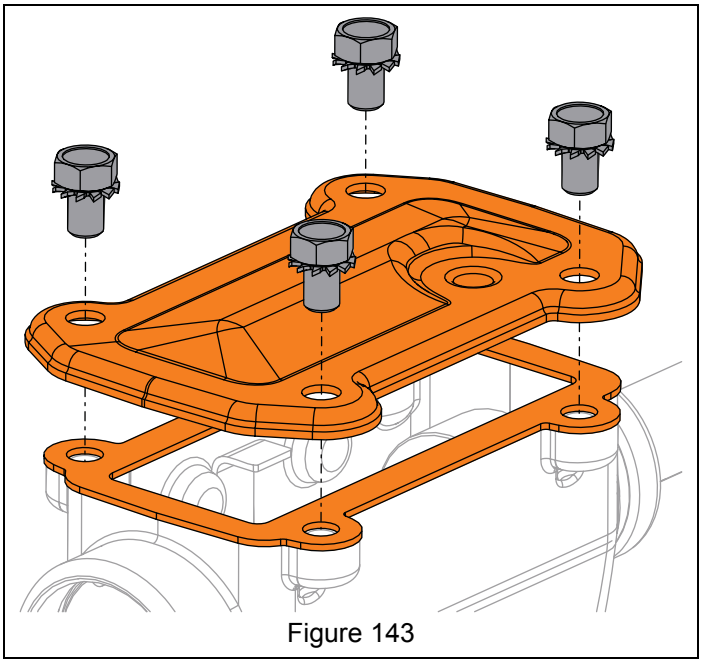


Figure 143

See Figure 144.

23. Press a new front cover into gearcase.
24. Add gearcase oil. Oil level MUST be 6.1 cm – 6.7 cm (2.4" – 2.6") from the flat surface of the gearcase cover.

IMPORTANT: Ariens recommends using only Ariens L3 synthetic sever duty gear lube. Using other lubricants will not automatically void unit warranty, but the warranty will not cover damage caused by using unauthorized lubricants. Refer to the Operator's Manual for your unit for the service part numbers.

25. Reinstall seal washer (rubber side down) and oil fill plug. Torque to 9 N•m (80 lb-in). DO NOT over-torque.

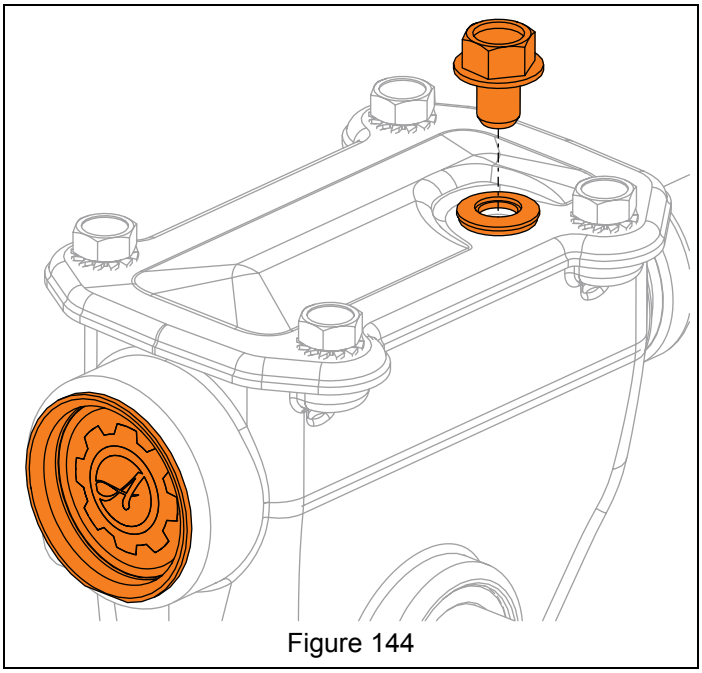


Figure 144

TRACK DRIVE WHEEL REPLACEMENT

Remove Track Drive Wheel

IMPORTANT: Save all hardware for reinstallation.

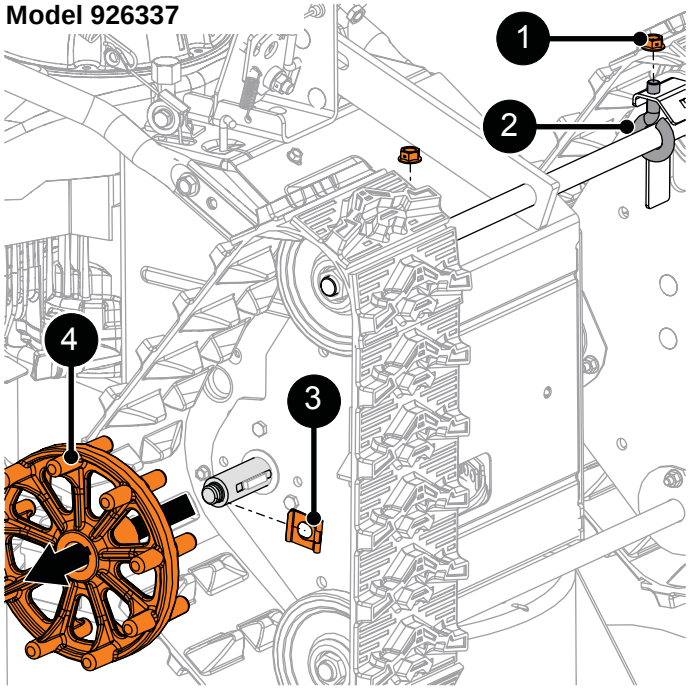
> **WARNING:** AVOID INJURY. Before placing unit in service position, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Rotate unit to service position. See *Service Position* on page 7.

See Figure 145 and Figure 146.

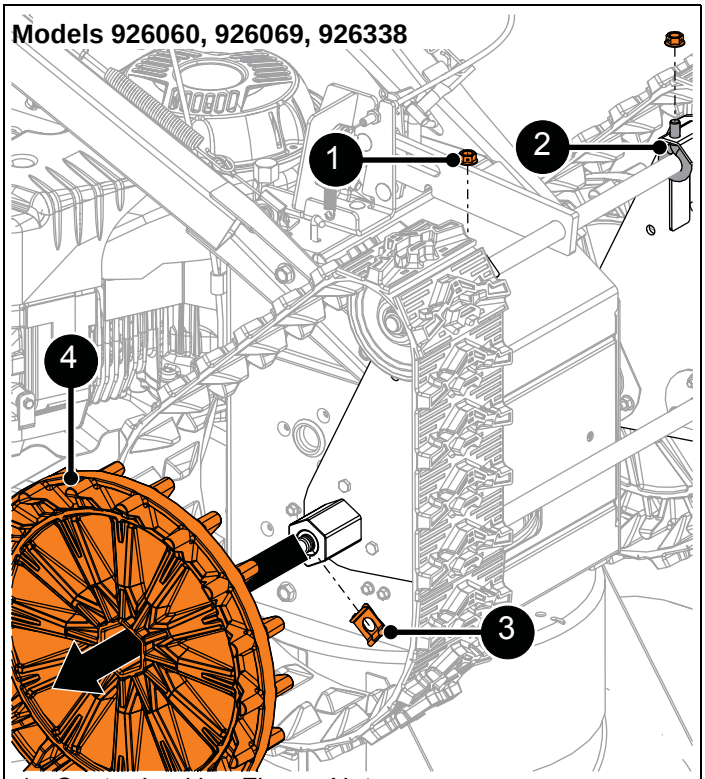
4. Remove hardware from eye bolts on carriage assembly to release track tension.
5. Remove snap clip retaining track drive wheel to drive axle and remove wheel.

IMPORTANT: *Model 926337 only:* Be aware of key on axle ends. If key is removed, reinstall before reinstalling wheel.



1. Center Locking Flange Nut
2. Eye Bolt
3. Snap Clip
4. Track Drive Wheel

Figure 145



1. Center Locking Flange Nut
2. Eye Bolt
3. Snap Clip
4. Track Drive Wheel

Figure 146

Install Track Drive Wheel

1. Install track drive wheel onto axle.
2. Align track drive wheel with track center and secure to axle with snap ring.
3. With help from an adult assistant, pull up on rear track axle so eye bolts insert through tension brackets. Secure with center locking flange nuts. See Figure 147.

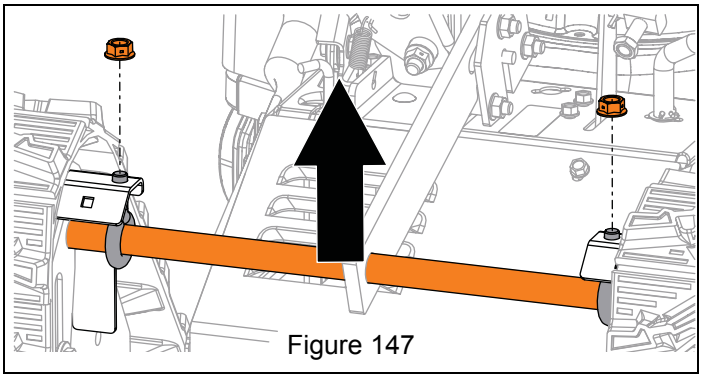


Figure 147

4. Return unit to operating position.
5. Model 926337: Adjust track tension. Refer to Operator's Manual for adjustment procedure.
6. Fill fuel tank and reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.

TRACK REPLACEMENT

Remove Track

IMPORTANT: Save all hardware for reinstallation.

WARNING: AVOID INJURY. Before placing unit in service position, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Place unit in service position. See *Service Position* on page 7.
4. Remove track drive wheel. See *Remove Track Drive Wheel* on page 60.
5. Remove track from carriage assembly. See Figure 148 and Figure 149.

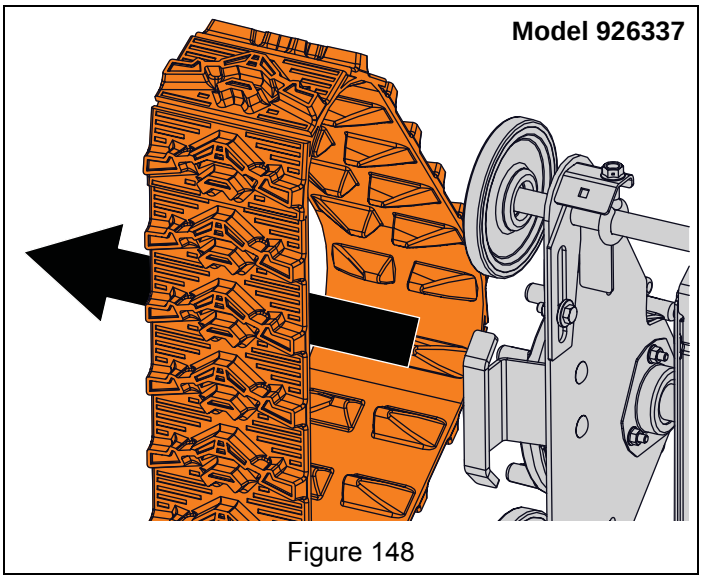


Figure 148

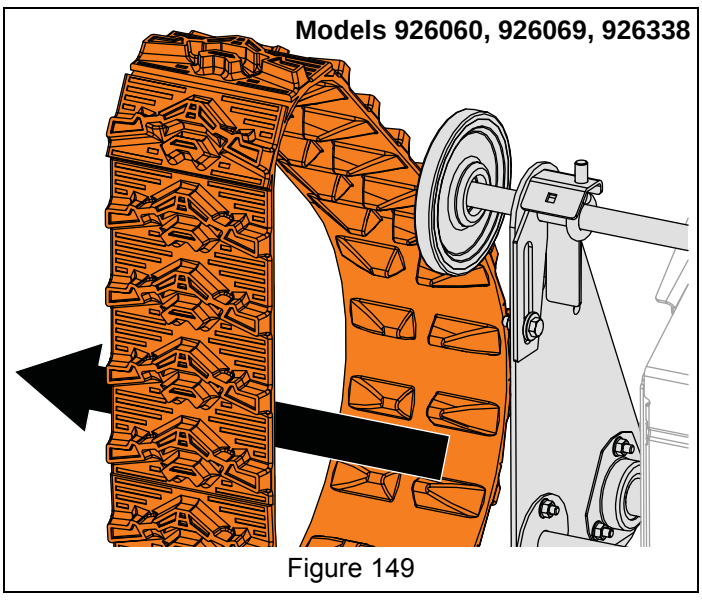


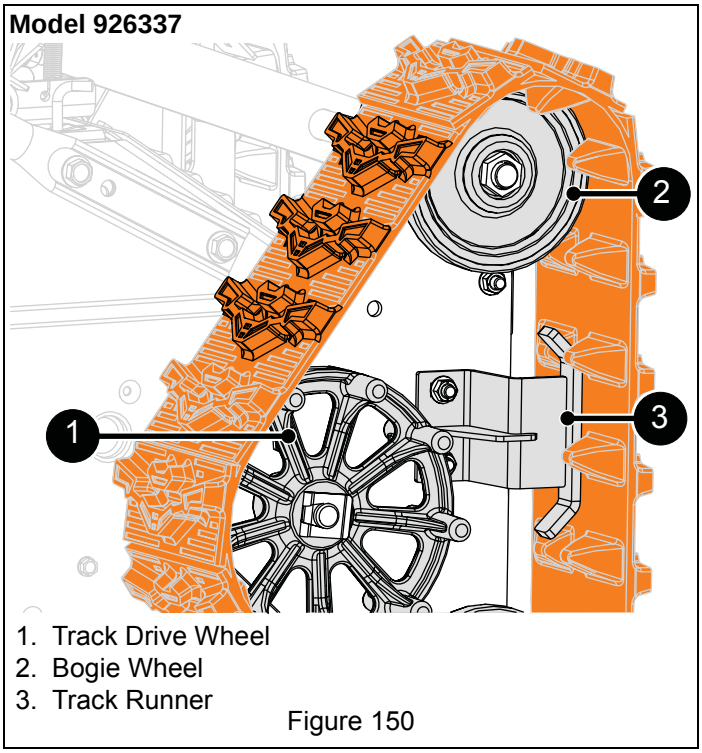
Figure 149

Install Track

See Figure 150 and Figure 151.

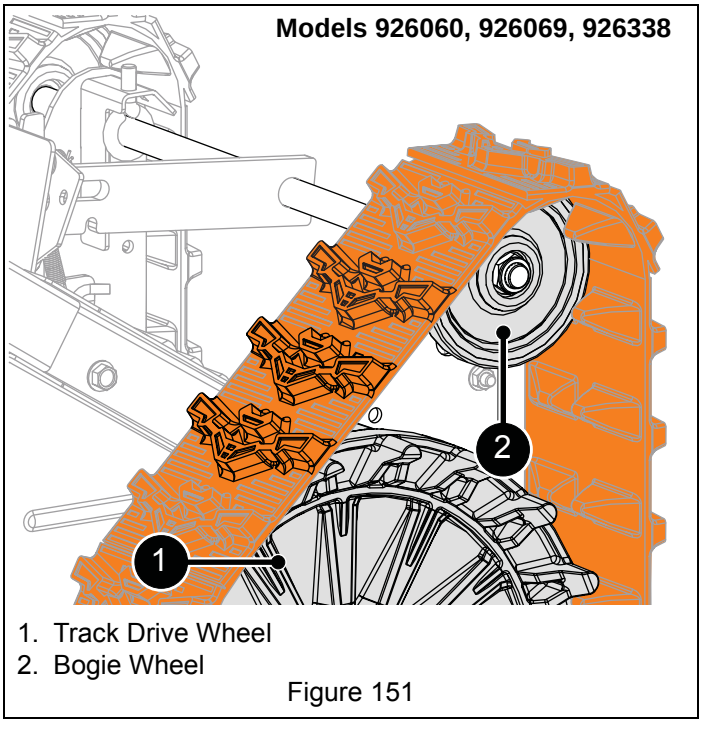
IMPORTANT: Tracks are directional and MUST be installed in the orientation shown in Figure 150 and Figure 151.

1. Install track onto carriage assembly and align with bogie wheel(s) and track runner, if applicable.
2. Reinstall track drive wheel. See *Install Track Drive Wheel* on page 60.



1. Track Drive Wheel
2. Bogie Wheel
3. Track Runner

Figure 150



1. Track Drive Wheel
2. Bogie Wheel

Figure 151

3. Return unit to operating position.

4. Model 926337: Adjust track tension. Refer to Operator's Manual for adjustment procedure.
5. Fill fuel tank and reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.

BOGIE WHEEL REPLACEMENT

Remove Bogie Wheel

IMPORTANT: Save all hardware for reinstallation.

WARNING: AVOID INJURY. Before placing unit in service position, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Place unit in service position. See *Service Position* on page 7.
4. Remove track drive wheels and remove tracks. See *Remove Track Drive Wheel* on page 60 and *Remove Track* on page 61.
5. Remove hardware retaining bogie wheels to rear track axle and remove wheels. See Figure 152.

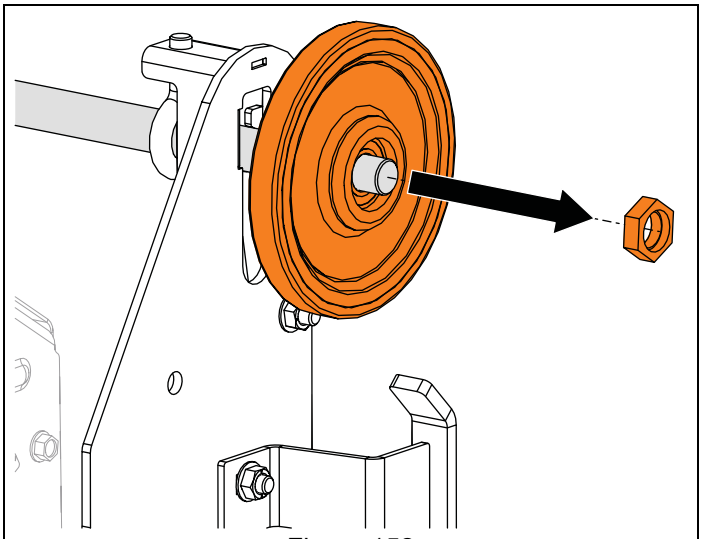


Figure 152

Install Bogie Wheel

1. Install bogie wheel onto track axle and secure with hex nut, but DO NOT overtighten.

NOTICE: Bogie wheel should spin freely.

2. Reinstall track drive wheel and reinstall track. See *Install Track Drive Wheel* on page 60 and *Install Track* on page 61.
3. Return unit to operating position.
4. Model 926337: Adjust track tension. Refer to Operator's Manual for adjustment procedure.
5. Fill fuel tank and reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.

AXLE BEARING REPLACEMENT (TRACK MODELS)

Remove Left Bearing

IMPORTANT: Save all hardware for reinstallation.

> **WARNING:** AVOID INJURY. Before placing unit in service position, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Place unit in service position. See *Service Position* on page 7.
4. Remove track drive wheel and remove track. See *Remove Track Drive Wheel* on page 60 and *Remove Track* on page 61.
5. Remove bottom cover. See *Remove Bottom Cover* on page 14.

See Figure 153 and Figure 154.

6. Remove E-ring from right axle end.
7. *Models 926060, 926069, 926338:* Remove hubs from axle ends.
   Model 926337: Remove flat steel washers from axle ends.
8. Remove long axle from differential gear.

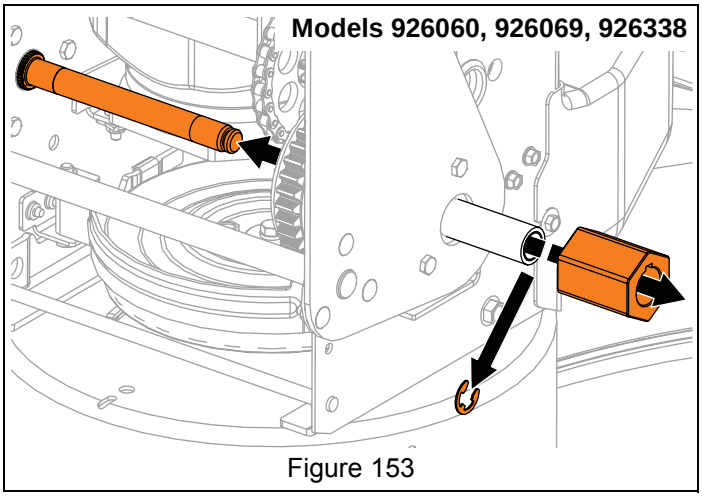


Figure 153

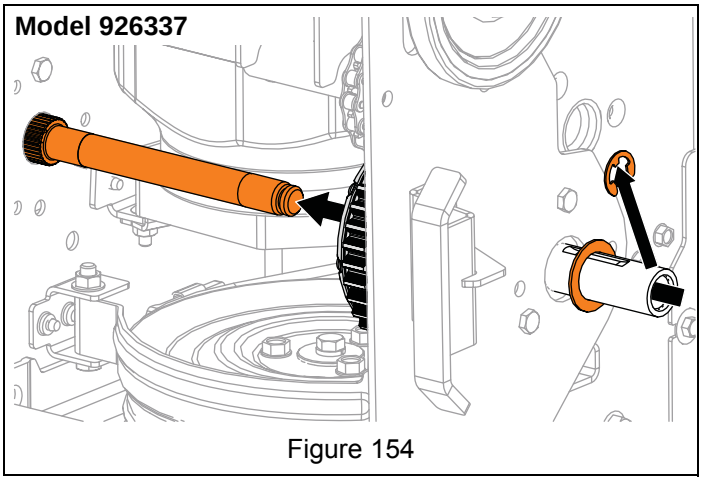
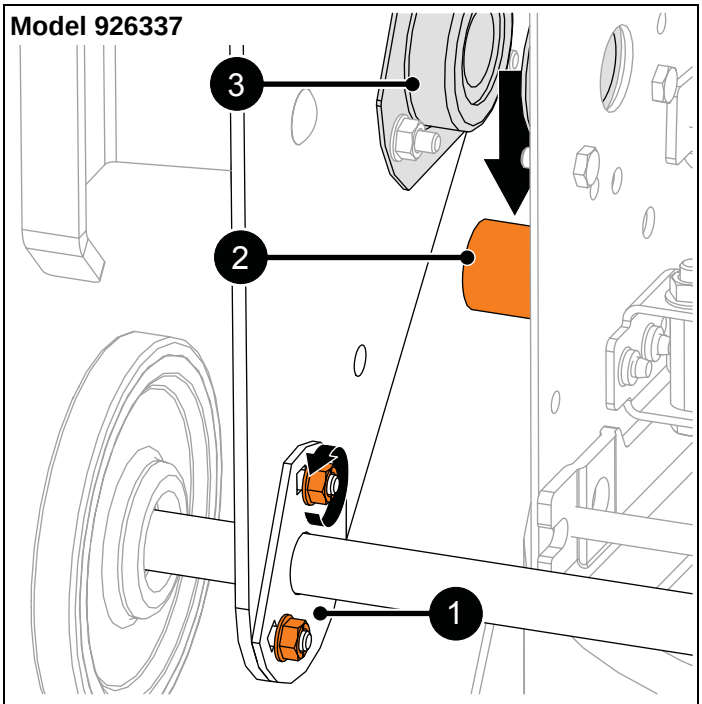


Figure 154

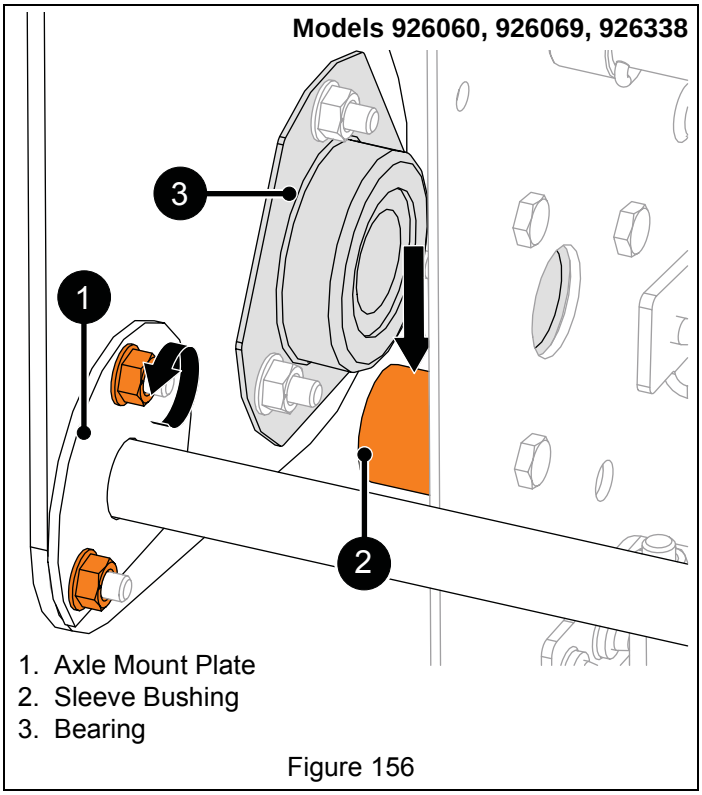
See Figure 155 and Figure 156.

9. Loosen, but DO NOT remove hardware retaining axle mount plates to side plates.
10. Remove sleeve bushing between frame and carriage side plate bearings.



1. Axle Mount Plate
2. Sleeve Bushing
3. Bearing

Figure 155



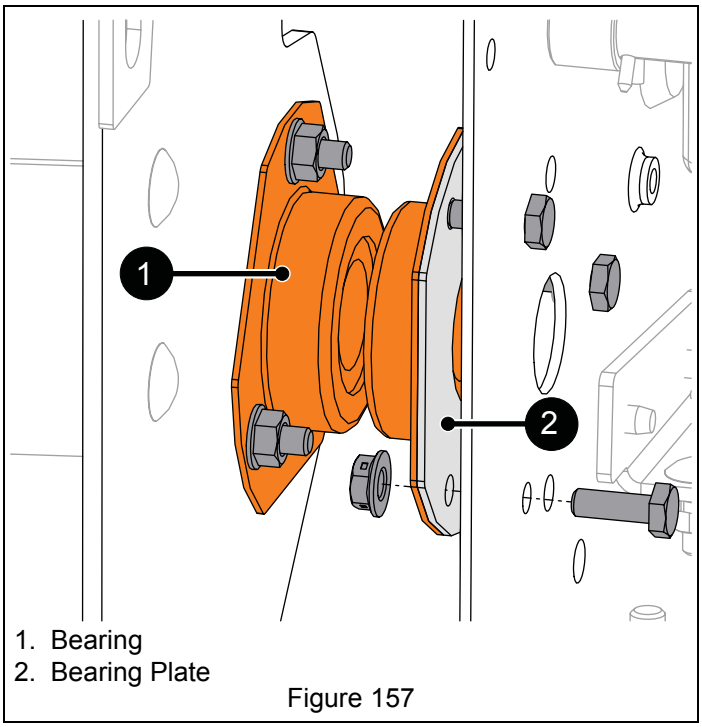
1. Axle Mount Plate
2. Sleeve Bushing
3. Bearing

Figure 156

See Figure 157.

11. Remove hardware retaining bearing(s) and remove bearing(s).

IMPORTANT: Bearing plate is not a wear item and does not need to be replaced unless damaged.



1. Bearing
2. Bearing Plate

Figure 157

Install Left Bearing

IMPORTANT: Bearing plates are ONLY installed with bearing on frame. Bearing plates are NOT installed with bearing on carriage.

1. Secure each bearing to frame and / or carriage with three hex bolts and three locking nuts.
2. Reinstall sleeve bushing between bearings.

See Figure 158 and Figure 159.

3. Insert stepped-down end of long axle through carriage, frame and into differential gear.
4. *Models 926060, 926069, 926338:* Reinstall hub onto each axle end.
   Model 926337: Reinstall one flat steel washer onto each axle end.

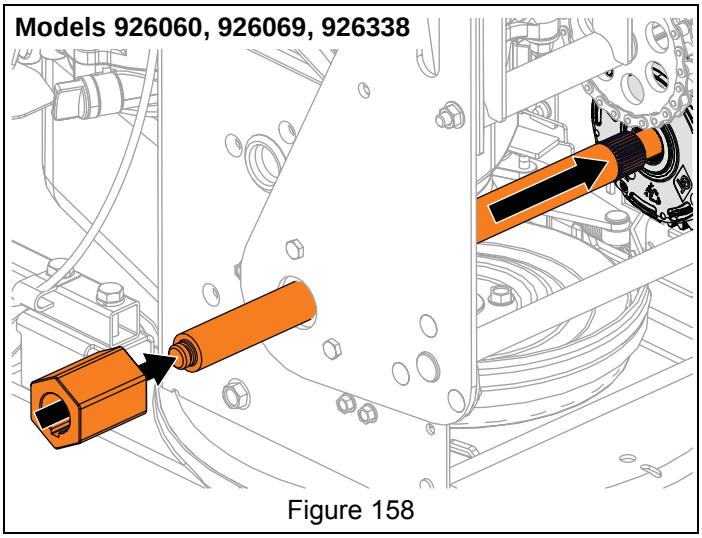


Figure 158

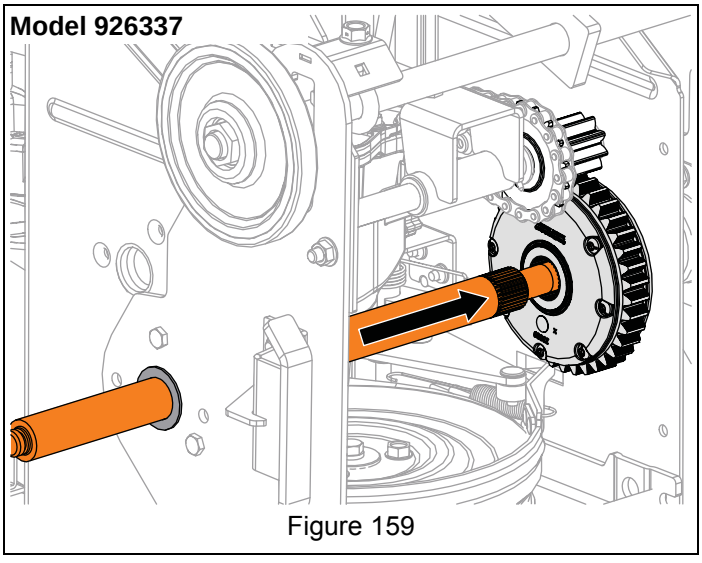


Figure 159

5. Reinstall E-ring onto right axle end.
6. Tighten hardware securing mount plates to track carriage.
7. Reinstall bottom cover and secure with two tapping screws and four hex bolts.

8. Reinstall track drive wheel and reinstall track. See *Install Track Drive Wheel* on page 60 and *Install Track* on page 61.
9. Return unit to operating position.
10. Model 926337: Adjust track tension. Refer to Operator's Manual for adjustment procedure.
11. Fill fuel tank and reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.

Remove Right Bearing

IMPORTANT: Save all hardware for reinstallation.

WARNING: AVOID INJURY. Before placing unit in service position, drain fuel from tank and fuel system. See *Draining Fuel System* on page 7. Make sure unit is secure and will not tip.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Disconnect spark plug wire from engine.
3. Place unit in service position. See *Service Position* on page 7.
4. Remove track drive wheel and remove track. See *Remove Track Drive Wheel* on page 60 and *Remove Track* on page 61.
5. Remove bottom cover. See *Remove Bottom Cover* on page 14.

See Figure 160 and Figure 161.

6. Remove E-ring from right axle end.
7. *Models 926060, 926069, 926338:* Remove hubs from axle ends.
   Model 926337: Remove flat steel washers from axle ends.
8. Remove long axle from differential gear.

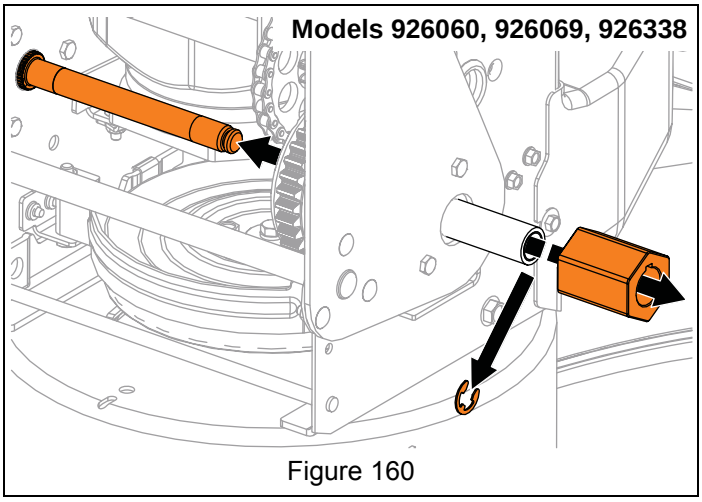


Figure 160

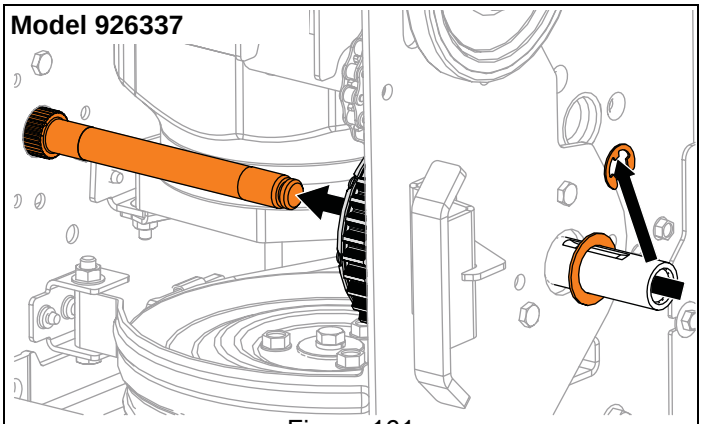


Figure 161

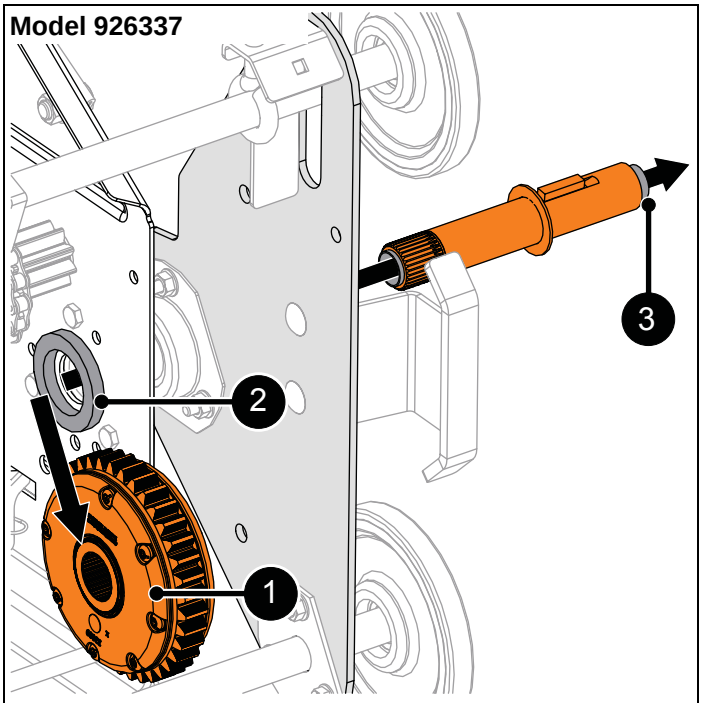
Model 926337

See Figure 162.

IMPORTANT: Flat nylon washer will become free when short axle is removed.

9. Hold differential gear and remove short axle.

IMPORTANT: Make sure sleeve bushings remain inside short axle ends.



1. Differential Gear
2. Flat Nylon Washer
3. Sleeve Bushing

Figure 162

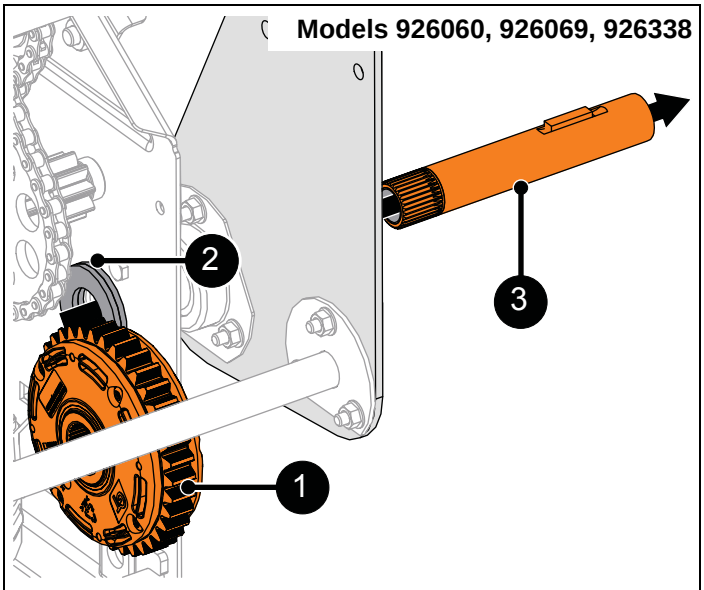
Models 926060, 926069, 926338

See Figure 163.

IMPORTANT: Flat steel washers will become free when short axle is removed.

10. Hold differential gear and remove short axle.

IMPORTANT: Make sure sleeve bushings remain inside short axle ends.

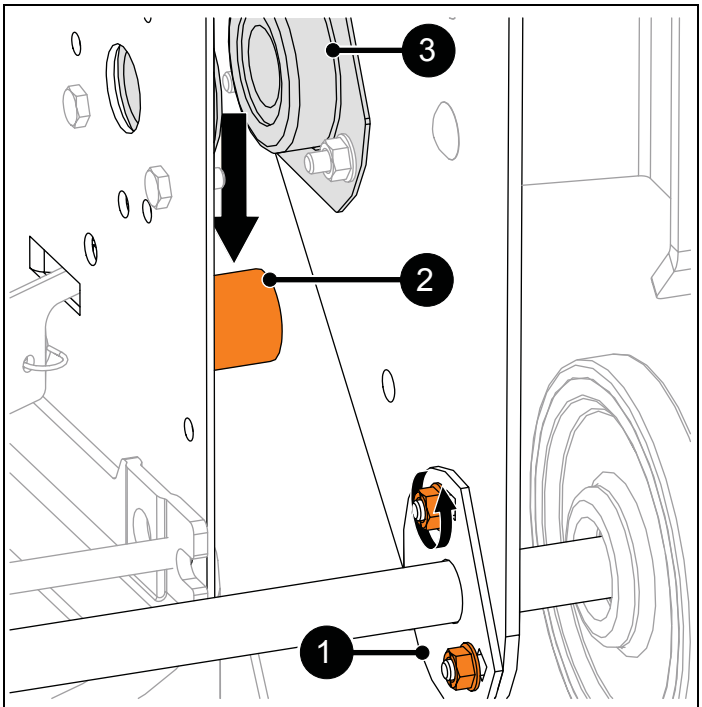


1. Differential Gear
2. Flat Steel Washer
3. Sleeve Bushing

Figure 163

See Figure 164.

11. Loosen, but DO NOT remove hardware retaining axle mount plates to side plates.
12. Remove sleeve bushing between frame and carriage side plate bearings.



1. Mount Plate
2. Sleeve Bushing
3. Bearing

Figure 164

See Figure 165.

13. Remove hardware retaining bearing(s) and remove bearing(s).

IMPORTANT: Bearing plate is not a wear item and does not need to be replaced unless damaged.

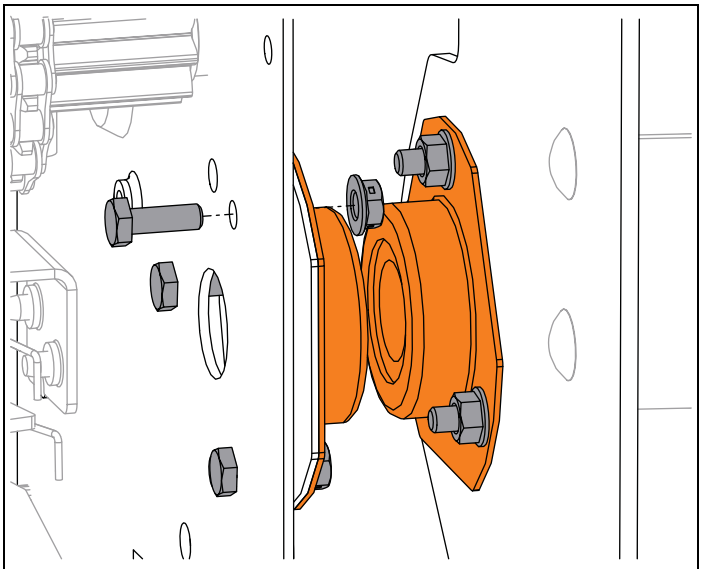


Figure 165

Install Right Bearing

IMPORTANT: Bearing plates are ONLY installed with bearing on frame. Bearing plates are NOT installed with bearing on carriage.

1. Secure each bearing to frame and / or carriage with three hex bolts and three locking nuts.
2. Reinstall sleeve bushing between frame and carriage bearings.

See Figure 166 and Figure 167

3. Reinstall short axle until a small portion of axle is through frame.
4. *Models 926060, 926069, 926338:* Reinstall two flat steel washers onto axle.
   Model 926337: Reinstall flat nylon washer onto axle.
5. Align differential gear with pinion gear and short axle and reinstall axle into differential.

Models 926060, 926069, 926338

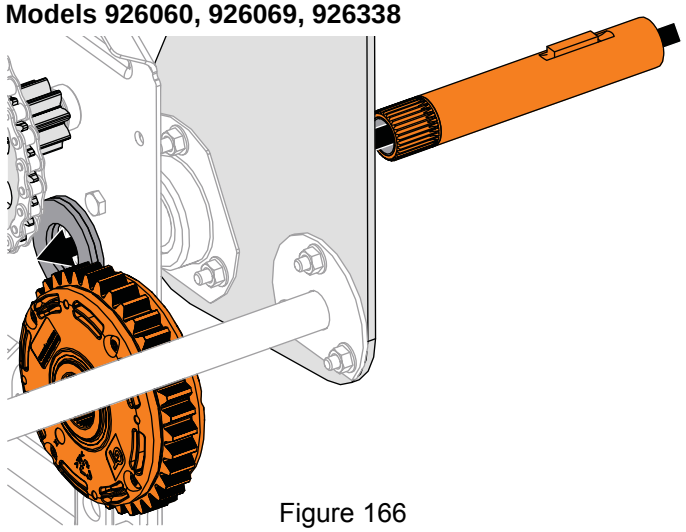


Figure 166

Model 926337

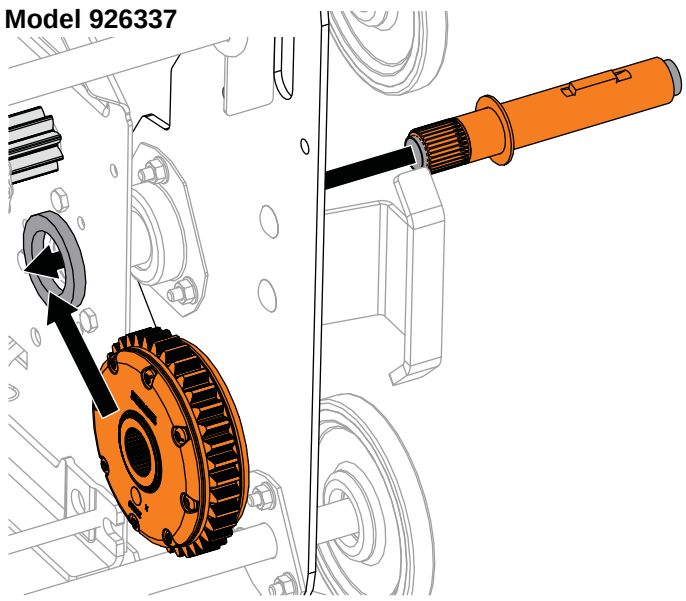


Figure 167

See Figure 168 and Figure 169.

6. Reinstall long axle into differential gear.
7. *Models 926060, 926069, 926338:* Reinstall hub onto each axle end.
   Model 926337: Reinstall one flat steel washer onto each axle end.

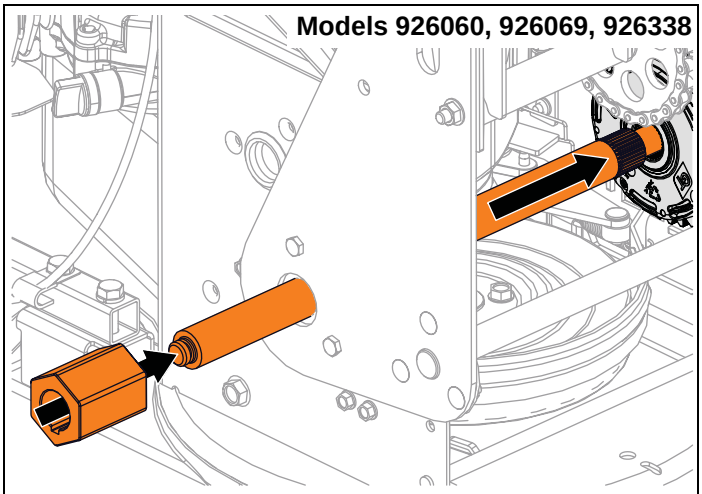


Figure 168

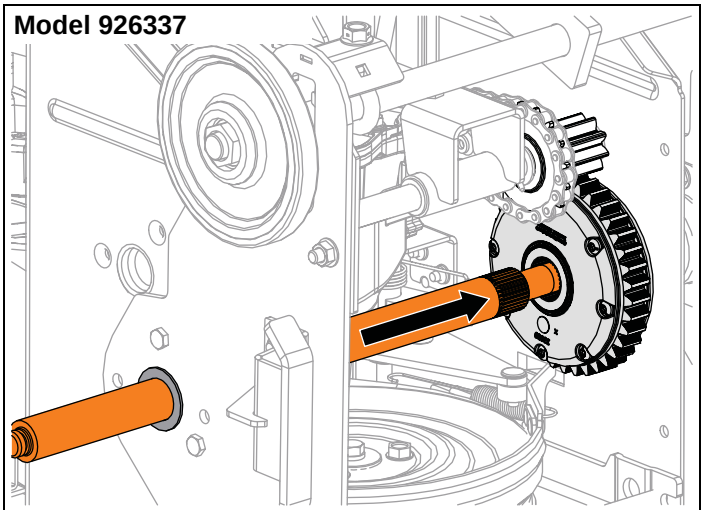


Figure 169

8. Reinstall E-ring onto right axle end.
9. Tighten hardware securing mount plates to track carriage.
10. Reinstall bottom cover and secure with four hex bolts and two tapping screws. Tighten hardware.
11. Reinstall track drive wheel and reinstall track. See *Install Track Drive Wheel* on page 60 and *Install Track* on page 61.
12. Return unit to operating position.
13. Model 926337: Adjust track tension. Refer to Operator's Manual for adjustment procedure.
14. Fill fuel tank and reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.

EFI TROUBLESHOOTING

EFI REPLACEMENT COMPONENTS

Models 926068, 926070, 926336, 926337, 926338

See Figure 170, Figure 171 and Figure 172.

Ariens recommends using only genuine Ariens replacement parts on this unit. Using unauthorized parts may adversely affect the performance, durability or safety of this unit and may void the warranty. Click the **Parts Diagrams by Parts Radar** link at www.ariensco.com for replacement part numbers of the items listed below:

- ECU
  - Barometric Pressure Sensor
  - Air Temperature Sensor
- Throttle Body Assembly
  - Throttle Plate Servo Motor
  - Fuel Injector
  - Fuel Pressure Sensor
  - Engine Temperature Sensor
- Battery
- Fuel Pump
- Inline Fuel Filter

IMPORTANT: Replacement part sub components are not available as individual parts.

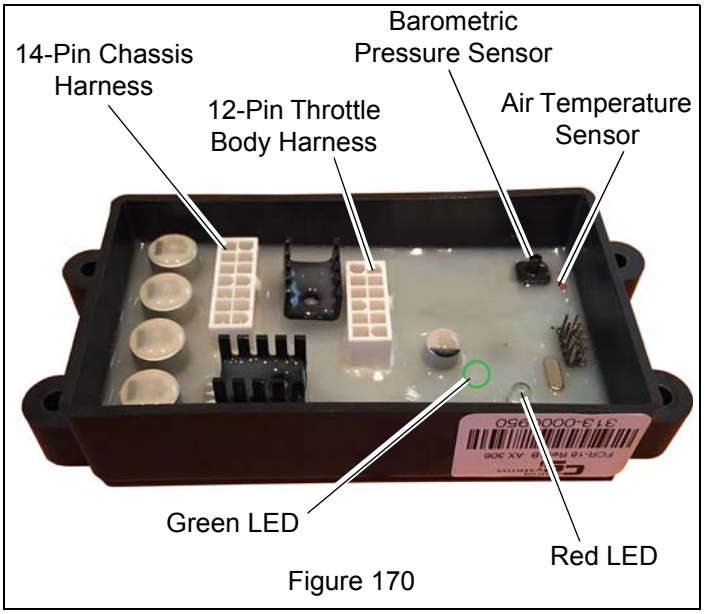
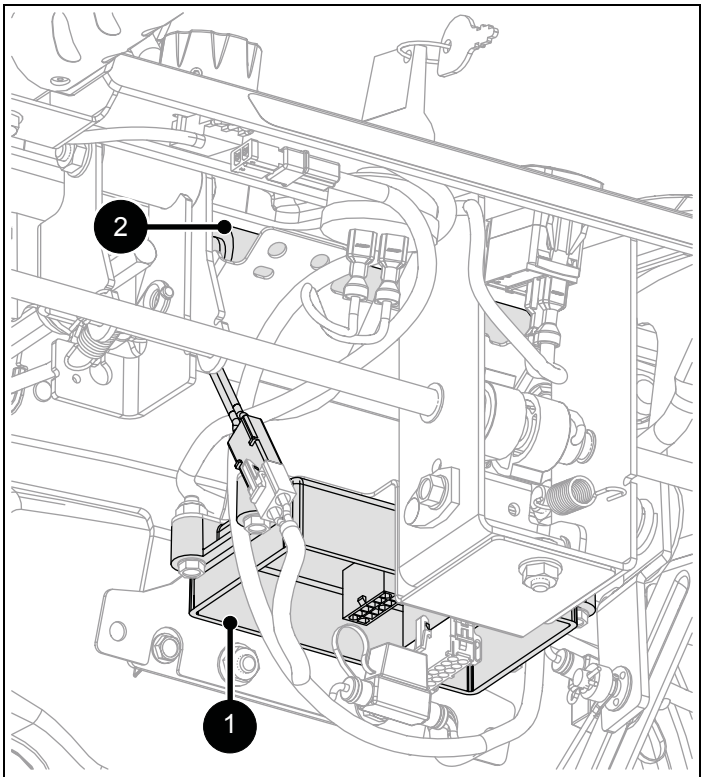


Figure 170



1. ECU
2. Battery

Figure 171

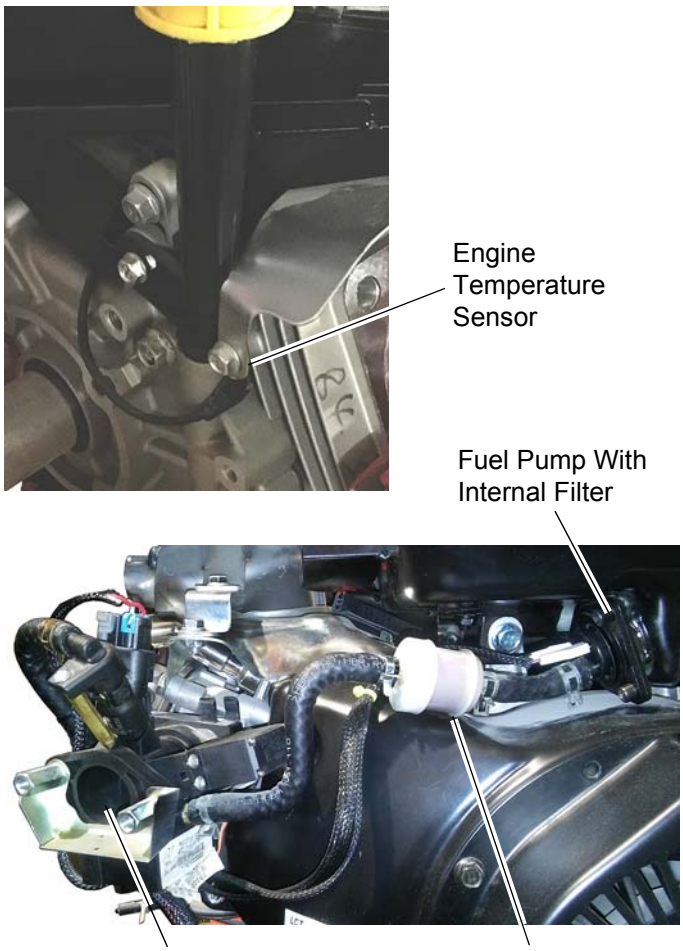


Figure 172

*Throttle body assembly consists of fuel injector, fuel pressure sensor and servo-operated throttle plate. See Figure 173.

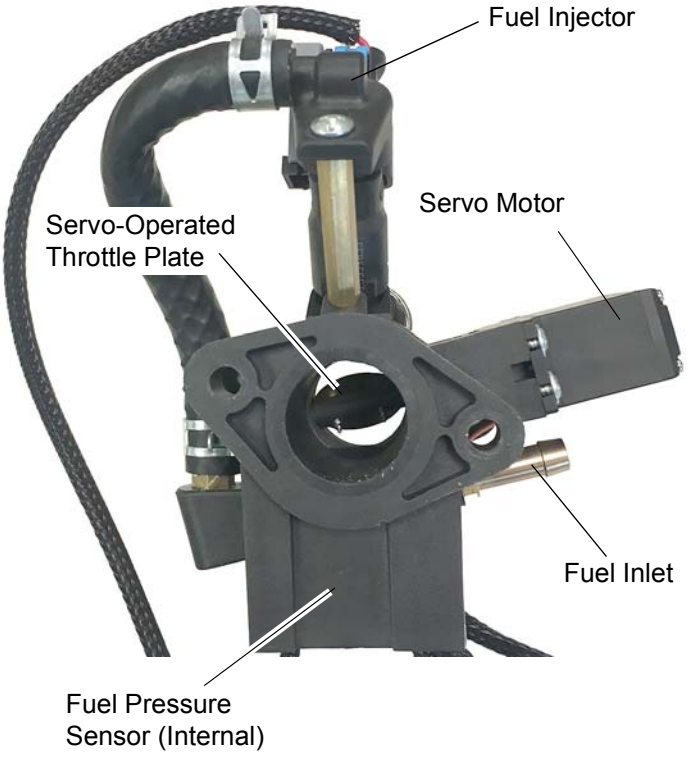


Figure 173

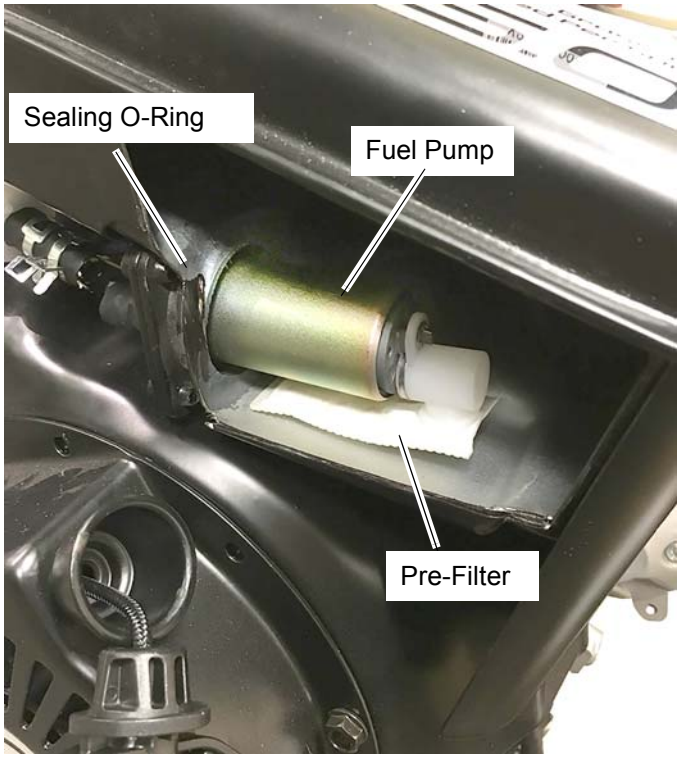


Figure 174

EFI TROUBLE CODE IDENTIFICATION

Trouble Code	Problem	Correction
16	Low Battery Voltage	Check charging system and battery.
21	Barometer Pressure Sensor Failure	Replace ECU.
22	Engine Temperature Sensor Failure	Check engine temperature sensor and wiring.
23	EFI System Cannot Sustain Desired RPM	Disconnect, reconnect and inspect wire harness connections from the engine to the ECU.
27	Low Fuel Pressure	Check fuel level.
28	High Battery Voltage	Check charging systems.
Green LED is Constant (not blinking)	Low Battery Voltage or Faulty ECU	Check battery voltage. If voltage is 7.2 V DC – 8.4 V DC, replace ECU. If battery measures lower than 7.2 V DC, charge battery.
LEDs are dim.	Low Battery Voltage	Check battery voltage and charging system. Battery should measure 7.2 V DC – 8.4 V DC.
No LEDs Illuminated	No Battery Voltage	Check battery voltage and charging system. Battery should measure 7.2 V DC – 8.4 V DC.

CHECKING TROUBLE CODES

The blinking red LED light on the ECU displays trouble codes. Its sequence indicates a particular system malfunction by blinking as many times as the first digit of a trouble code, pausing, and then blinking as many times as the second digit of a trouble code.

For example, the red LED will indicate low fuel pressure (27) by blinking twice, pausing, and blinking seven more times.

IMPORTANT: More than one trouble code may be present.

IMPORTANT: DO NOT mistake a constant red (non-blinking) LED for a trouble code. Red LED will illuminate when the ignition switch is turned to the “ON” position and the fuel pump is pressurizing, which may last for up to 30 seconds.

A blinking green LED indicates the ECU processor is operating correctly, even if a sub-component of the ECU (e.g.: barometric pressure sensor) has failed. A constant illuminated green (not blinking) LED indicates the ECU may be experiencing a low battery voltage condition or need replacement. See *EFI Trouble Code Identification* on page 73.

Visually inspect the red LED to verify trouble codes.

To read trouble codes more easily, place a mirror under the ECU to view LED reflection.

IMPORTANT: If no trouble code is present, but engine is not operating normally, See *Diagnostics for Non-Trouble Codes* on page 77.

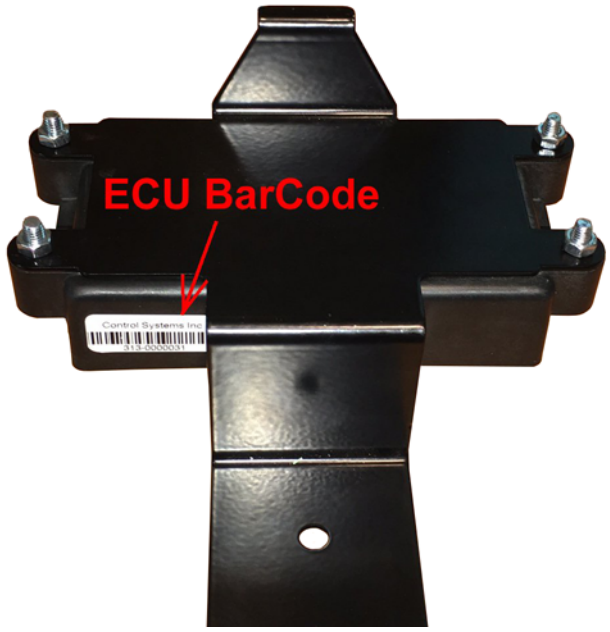


Figure 175

TROUBLE CODE DIAGNOSTICS

NOTICE: Before performing diagnostic tasks, be aware of the screw on the bottom of the throttle body that adjusts the servo offset. The servo offset calibrates the throttle body at the factory using a flow bench and should NEVER be touched. If it is tampered with, the engine will run poorly and void the warranty. See Figure 176.

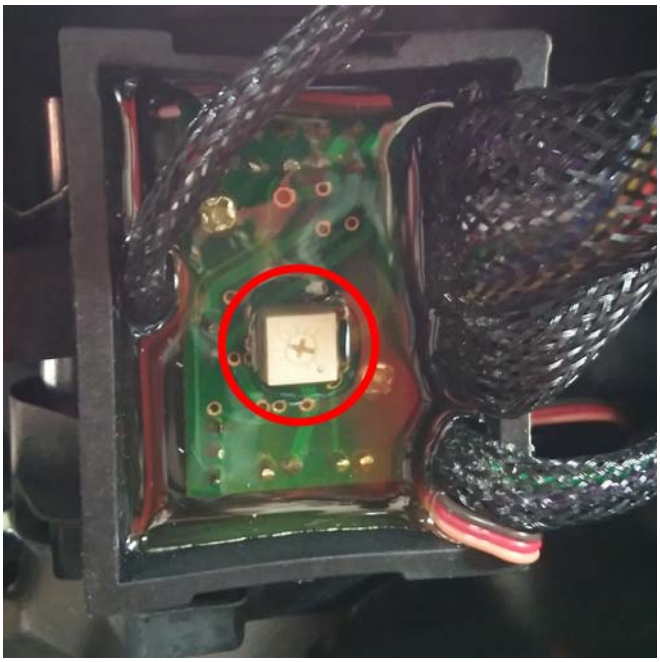


Figure 176

Code 16: Low Battery Voltage

1. Charge the battery. Refer to Operator's Manual.
2. Start the engine. Refer to Operator's Manual.
3. Check charging system at the battery.
    a. With a multi-meter set to volts DC, back probe the battery terminals. At full throttle (3600 RPM), the reading should be 7.5 V DC – 8.4 V DC.

If voltage measures less than 7.5 V DC, check charging system at the engine. Advance to step 5.

IMPORTANT: If the engine is cold, it is normal for the engine speed to be 100 RPM – 200 RPM higher until operating temperature is reached.

4. Stop the engine. Refer to Operator's Manual.
    b. Check the battery. With the engine off, the battery voltage should be 7.2 V DC – 8.4 V DC. See Figure 177.

If voltage measures less than 7.2 V DC after charging, replace battery.

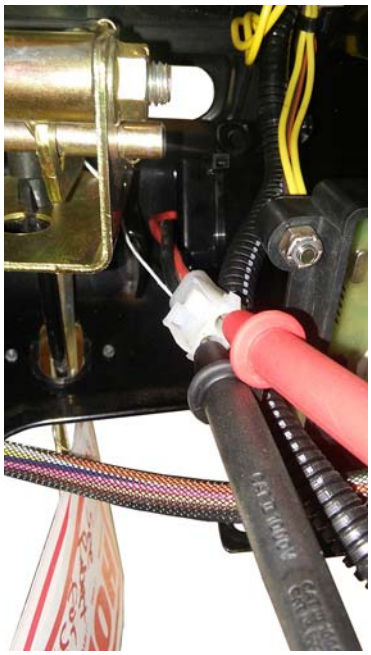


Figure 177

5. Back probe the engine stator output connector. See Figure 178.
    a. Start the engine. Refer to Operator's Manual.
    b. At full throttle (3600 RPM), the stator output MUST be 11.5 V AC – 14 V AC.

If AC voltage measure less than 11.5 V AC, remove flywheel and replace stator.

If stator output is within range and battery is not charging, check ECU wiring for damage. Replace ECU if necessary.

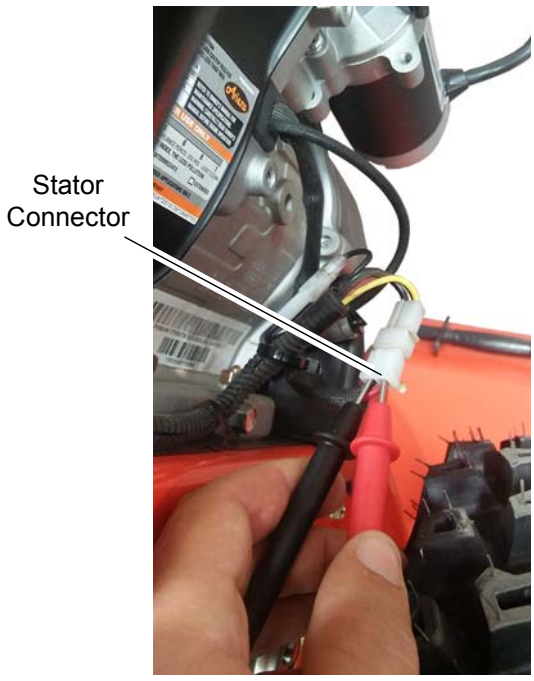


Figure 178

Code 21: Barometer Sensor

See Figure 170.

This trouble code indicates the barometric pressure sensor has failed. When the barometric sensor fails, the engine will not adjust to altitude changes, but will continue to operate at a default altitude of 800 feet above sea level.

Engine may continue to operate with a failed barometric pressure sensor, but may not operate at optimal performance. If barometric pressure sensor fails, replace ECU.

Code 22: Engine Temperature Sensor

See Figure 170.

If the sensor is damaged or has failed, the engine may not run smoothly because the ECU cannot adjust for engine temperature changes.

The temperature sensor and engine components can be visually inspected for engine temperature issues:

1. Check engine cooling fan and engine cooling fins for debris or damage.
2. Check the temperature sensor wiring from the throttle body to the mounting boss on the side of the cylinder. Make sure connection is secure. See Figure 179.

Figure 179

3. Check wiring and connection from the throttle body to the ECU for damage.

If no damage is visible, replace throttle body assembly.

Code 23: EFI System Cannot Sustain Desired RPM

The ECU reads the RPM through the alternator. If a faulty connection exists, the ECU will not read the RPM correctly.

1. Start engine.
2. Check AC voltage of the alternator by back probing the wire harness connector at the engine. Voltage should read 11.5 V AC – 14 V AC. If voltage is within specification record the voltage and move to step 3.
   a. If voltage is not to specification, inspect wires to connectors. If wires are disconnected, repair or replace wire harness.
   b. If connections are in good condition, disconnect and reconnect wire harness and recheck voltage. Voltage should read 11.5 V AC – 14 V AC.
   c. If low or no voltage exists, remove the flywheel and inspect the alternator ground wire contact. If ground wire is corroded, repair alternator. If ground contact is in good condition, replace alternator.
3. Check voltage of the black and gray wires to the 14-pin connector at the ECU. Record the voltage here and compare to reading from step 2.
   a. If voltage drop of 1 V AC or greater is observed, inspect wire connections for a disconnected or corroded connection. If wires are disconnected or corroded, repair or replace wire harness.
   b. If connections are in good condition, disconnect and reconnect harness and recheck for voltage drop. Voltage should read 11.5 V AC – 14 V AC.
   c. If voltage drop of 1.0 V AC or higher is still present, replace wire harness(es).
4. If voltage is within specification and less than 1 VDC voltage drop from alternator to ECU, and trouble code still appears or the engine is still not performing optimally, replace ECU.

Code 27: Low Fuel Pressure

Low fuel pressure is usually a result of an empty fuel tank, but could also be from a clogged fuel filter or faulty fuel pump.

Attempt engine start and check for trouble code re-occurrence after each of the following steps. Refer to Operator's Manual for engine starting instructions.

1. Check fuel level and fill fuel tank completely if not already full.
2. Check fuel lines to ensure there are no leaks or kinks.
3. Check inline fuel filter for debris and blockage. See Figure 180.

CAUTION: AVOID INJURY. Fuel lines are pressurized; wear safety glasses.

Figure 180

4. Check fuel pump wiring to ensure it is connected correctly. See Figure 181.

Figure 181

See Figure 182.

5. Remove the fuel pump wires, turn ignition key to the ON position and measure the fuel pump voltage. Voltage output should measure 7.2 V DC – 8.4 V DC.

NOTICE: Disconnecting wires from fuel pump incorrectly can cause damage to the fuel pump. To disconnect fuel pump wires, carefully compress the center tab of the connector and gently pull the connector away from the fuel pump.

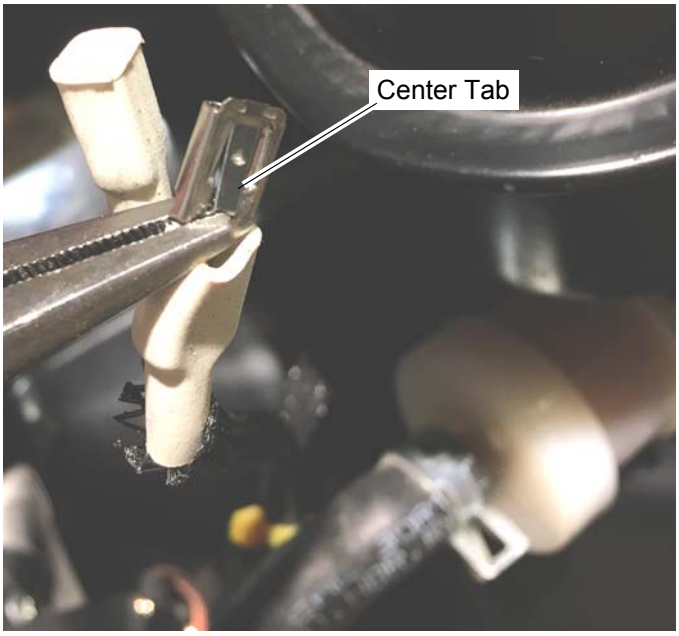


Figure 182

IMPORTANT: Fuel pump voltage MUST be measured within 30 seconds of the ignition switch being turned to the ON position. See Figure 183.

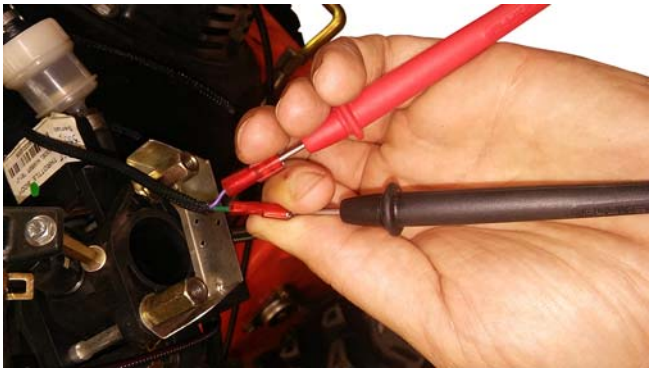


Figure 183

If voltage measures less than 7.2 V DC, check the battery voltage by probing the green wire on the ECU 12-pin connector. See Figure 184.

- If low voltage or no voltage is present, replace the ECU.
- If voltage is present, inspect the green wire between the 12-pin connector and throttle body for a pinched or broken wire. If the wire has no damage, replace the throttle body assembly.
- If voltage measures 7.2 V DC – 8.4 V DC, turn ignition key to OFF position, reconnect fuel pump wires and turn key back to ON position. Fuel pump should make a “humming” noise.

If fuel pump is silent, the pump may have failed. Check fuel pump:

1. Drain fuel from fuel system and tank. See *Draining Fuel System* on page 7.

2. Remove pump from tank.
3. Reconnect pump wires.
4. Turn the ignition key to the ON position and listen for a “humming” noise.

If fuel pump is silent, replace fuel pump.

If voltage is within range and fuel pump is operating normally, the fuel pressure sensor is defective. Replace the throttle body assembly. See Figure 189.

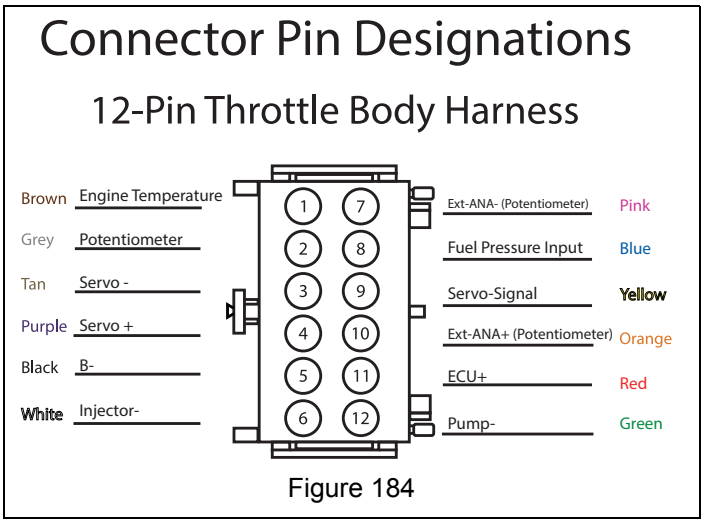


Figure 184

Code 28: High Battery Voltage

This trouble code will activate if ECU detects a higher voltage from the stator.

1. Start the engine. Refer to Operator’s Manual.
2. Set a multi-meter to V AC and probe the red and black stator connector wire. The output should be 11.5 V AC – 14 V AC at full throttle (3600 RPM).

If stator output measures over 14 V AC, replace stator. If output is within range, advance to step 3. See Figure 178.

IMPORTANT: If the engine is cold, it is normal for the engine speed to be 100 RPM – 200 RPM higher until operating temperature is reached.

3. Set a multi-meter to V DC and probe the battery connector at the battery terminals. With the engine running at full throttle (3600 RPM), the output should be 7.2 V DC – 8.4 V DC.

If DC output is higher than 8.4 V DC, replace ECU. See Figure 177.

If DC output is within range and red trouble code persists, replace ECU.

DIAGNOSTICS FOR NON-TROUBLE CODES

IMPORTANT: The following conditions and diagnostic procedures apply to EFI components only.

Engine Starts and Loses Power

If the engine starts and loses power immediately, this is usually an indication that the ECU does not detect an RPM signal. The RPM signal is generated by the stator, which also powers the hand warmers, headlight and charges the ECU battery.

Common causes for RPM signal failure may be due to a disconnected engine wire harness or a ground short in the AC output wire from the stator to the ECU. Other possible causes may include an ECU or engine-charging system failure.

1. Check wire harness connection to the ECU.
   a. With the ignition key in the off position, check the wire harness connections to the ECU. If connections are secure, disconnect the 12-pin and 14-pin connections to the ECU and inspect connectors for bad connections or burn marks.
   b. Check that all wire terminals are snug in their connectors. If connections appear to be good, reconnect wire harness and start engine to check if issue is still present. If bad connection is present, replace wire harness.
   c. If issue is still present, advance to next step.
2. Check the ECU.
   a. Disconnect wire harness from ECU and test with a new ECU to verify the original ECU is not cause for malfunction. If malfunction is not resolved with a new ECU, reconnect wire harness to original ECU and continue diagnostics.
3. Back probe the engine stator output connector. See Figure 178.
   a. Start the engine. Refer to Operator’s Manual.
   b. At full throttle (3600 RPM), the stator output MUST be 11.5 V AC – 14 V AC.

If AC voltage measures less than 11.5 V AC, remove flywheel and replace stator.

Engine No-Start Condition

If the engine does not start, check for system power.

1. Check EFI battery fuse.
2. Check spark plug.
   a. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
   b. Disconnect the spark plug wire and remove debris from the spark plug area.
   c. Remove spark plug.
   d. Inspect the spark plug. Spark plug gap MUST be 0.7 mm – 0.8 mm (0.027" – 0.030"). Replace if the electrodes are worn, fouled, or if the insulator is cracked or chipped.
   e. Position spark plug against engine block and pull

recoil starter handle to check for spark. If no spark is present, replace spark plug.

f. Reinstall spark plug and finger tighten. Turn an additional 1/4 turn after spark plug is seated.

g. Reinstall spark plug wire and make sure it is correctly positioned onto the spark plug.

3. Check the battery. Battery should have 7.2 V DC – 8.4 V DC, depending on when the battery was most recently charged. Extremely low voltage could prevent the ECU from triggering a trouble code and result in a no-start condition. If battery has low voltage, connect battery charger to battery. Also check the inline fuse on the battery cable.

If battery measures below specification after charging, replace battery.

4. Check wire harness connection to the ECU.

   a. With the ignition key in the off position, check the wire harness connections to the ECU. If connections are secure, disconnect the 12-pin and 14-pin connections to the ECU and inspect connectors for bad connections or burn marks.

   b. Check that all wire terminals are snug in their connectors. If connections appear to be good, reconnect wire harness and start engine to check if issue is still present. If bad connection is present, replace wire harness.

   c. If issue is still present, advance to next step.

5. Check the ECU.

   a. Disconnect wire harness from ECU and test with a new ECU to verify the original ECU is not cause for malfunction. If malfunction is not resolved with a new ECU, reconnect wire harness to original ECU and continue diagnostics.

6. Check the ECU status. With battery voltage between 7.2 V DC – 8.4 V DC, check if the green ECU status light is blinking at a consistent rate.

IMPORTANT: If battery measures below 7.2 V DC, ECU LEDs may appear dim or will not illuminate red or green LEDs. If green LED is constant, (not-blinking) see *EFI Trouble Code Identification* on page 73.

7. Check fuel pump output.

   a. Remove the heater box.

   b. Check voltage at fuel pump. See *Code 27: Low Fuel Pressure* on page 75 for voltage readings.

   c. Remove fuel hose from fuel pump outlet and attach a suitable length of fuel hose to the fuel pump outlet that can safely reach a clearly marked fuel container.

   d. With battery voltage between 7.2 V DC – 8.4 V DC, turn the key to the ON position for 10 seconds to pump fuel into the container. Fuel should measure approximately 160 mL (5 oz.).

If fuel amount measures less than 160 mL, remove the fuel pump and check the pre-filter for blockage. If filter is clean, replace fuel pump. See Figure 185.

Figure 185

IMPORTANT: If replacing fuel pump, wet the fuel system:

   a. Fill fuel tank full.

   b. Cycle ignition key to the ON position, then to the OFF position. Repeat.

IMPORTANT: Cycling the ignition key multiple times may inject excessive amounts of fuel into the throttle body and "flood" the engine. A flooded engine may require more starting attempts than normal.

8. Remove connector to the injector.

   a. Move gray slide upward until it stops. Gently compress gray slide and remove connector. See Figure 186.

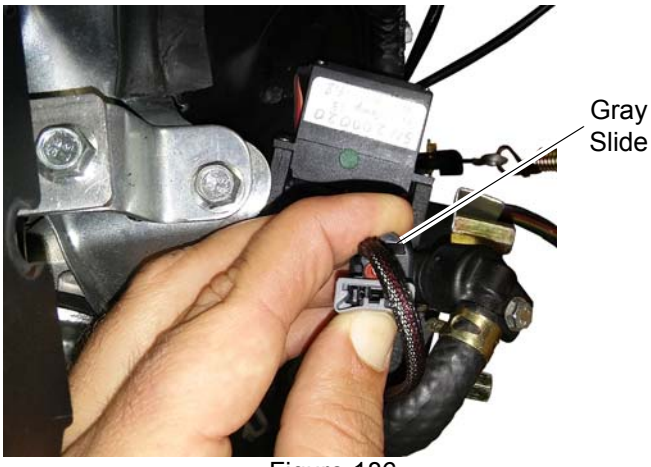


Figure 186

   b. Set a multi-meter to V DC and probe each terminal with the red probe and contact the black probe against the engine block. With the ignition key in the ON position, each terminal should measure 7.2 V DC – 8.4 V DC. See Figure 187.

If voltage is within range and the fuel injector is not operating correctly with the key in the ON position, replace throttle body assembly.

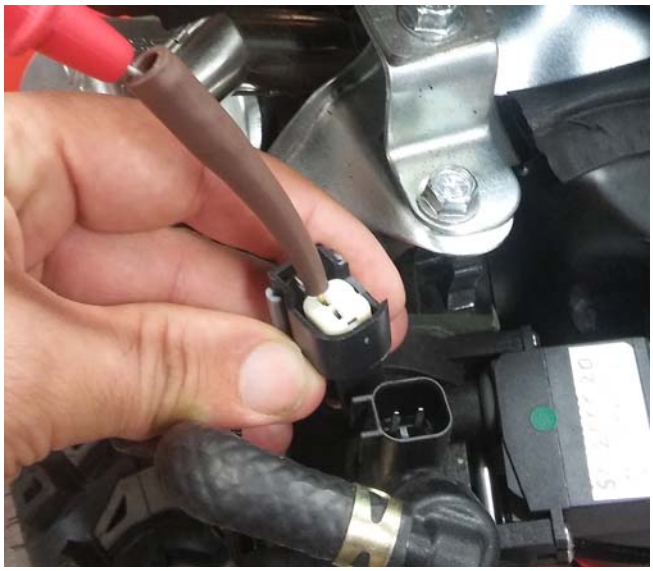


Figure 187

c. If no voltage is present at the injector, check battery voltage by probing the red and white wires on the
12-pin ECU connector with the red probe and contact the black probe against the engine block. With the ignition key in the ON position, each terminal should measure 7.2 V DC – 8.4 V DC. See Figure 188.

Figure 188

If no voltage is present at the ECU, replace ECU. If voltage is present at the ECU, check wires for kinks or damage. If damage is present repair wires if possible, or replace throttle body. See Figure 189.

Figure 189

Surging Run Condition

1. Check wire harness connection to the ECU.
   a. With the ignition key in the off position, check the wire harness connections to the ECU. If connections are secure, disconnect the 12-pin and 14-pin connections to the ECU and inspect connectors for bad connections or burn marks.
   b. Check that all wire terminals are snug in their connectors. If connections appear to be good, reconnect wire harness and start engine to check if issue is still present. If bad connection is present, replace wire harness.
   c. If issue is still present, advance to next step.
2. Check the ECU.
   a. Disconnect wire harness from ECU and test with a new ECU to verify the original ECU is not cause for malfunction. If malfunction is not resolved with a new ECU, reconnect wire harness to original ECU and continue diagnostics.

If the AC output wire from the engine charging system is damaged, it may cause an intermittent short. This will result in erratic running such as the engine over revving or “popping” through the exhaust.

3. Check the engine wiring and wiring under the handlebar to verify that it is not damaged.
4. With an inline spark tester, check ignition for intermittent spark.
5. Check fuel pump output.
   a. Remove the heater box.
   b. Check voltage at fuel pump. See *Code 27: Low Fuel Pressure* on page 75 for voltage readings.
   c. Remove fuel hose from fuel pump outlet and attach a suitable length of fuel hose to the fuel pump outlet that can safely reach a clearly marked fuel container.
   d. With battery voltage between 7.2 V DC – 8.4 V DC, turn the key to the ON position for 10 seconds to pump fuel into the container. Fuel should measure approximately 160 mL (5 oz.).

If fuel amount measures less than 160 mL, remove the fuel pump and check the pre-filter for blockage. If filter is clean, replace fuel pump. See Figure 185. If fuel pump output is to specification, replace the ignition coil.

Engine Speed Does Not Change

If engine speed does not change when using the potentiometer (throttle control), check the following:

1. Set a multi-meter to ohms (Ω) and measure the potentiometer resistance. See Figure 190 and Figure 191.
   a. Unplug the 14-pin connector from the ECU.
   b. Position the red probe on the terminal of the red wire at the potentiometer (Pin 5 in Figure 190) and the black probe on the terminal of the green / white wire.

The potentiometer output should measure 0 Ω – 5000 Ω.

If ohm reading measures close to 0 Ω at full throttle and close to 5000 Ω at low-idle, potentiometer is operating normally. If ohm reading stays constant at either position, replace potentiometer.

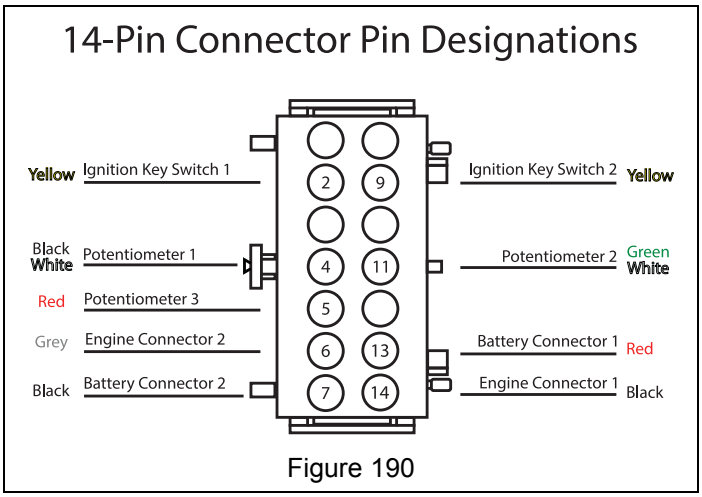


Figure 190

2. With a multi-meter, measure the V DC of the red wire.
   a. With engine off, reconnect the 14-pin connector to the ECU.
   b. Position the red probe on the terminal of the red wire at the potentiometer (Pin 5 in Figure 190). Also see Figure 191.

c. Position the black probe on the engine block.
d. Turn ignition key to ON position.
e. Turn the potentiometer from low-idle to full throttle.

Voltage to the red wire should measure 4.90 V DC – 5.0 V DC at both low-idle and full throttle positions.

If voltage measures less than 4.9 V DC, replace ECU.

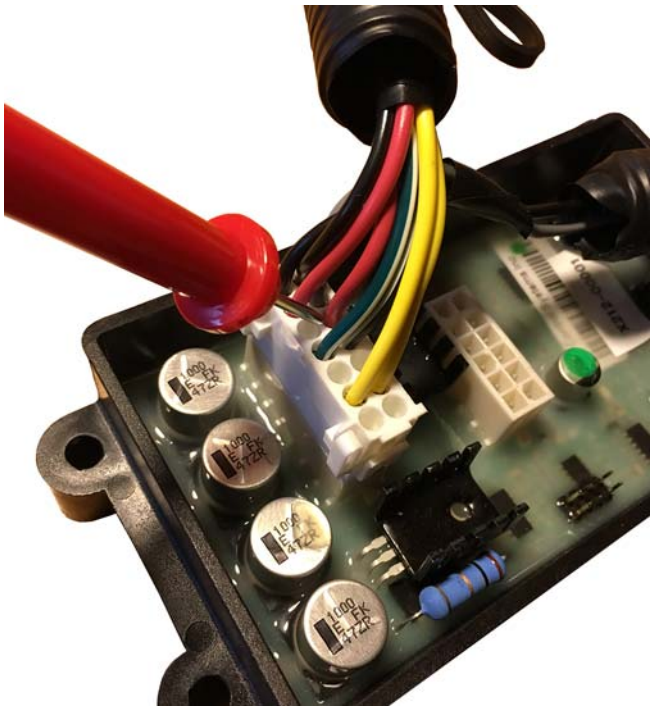


Figure 191

3. With a multi-meter, measure the V DC of the green / white wire. See Figure 192.
   a. With engine off, position the red probe on the terminal of the green / white wire.
   b. Position the black probe on the engine block.
   c. Turn ignition key to ON position.
   d. Turn the potentiometer from low-idle to full throttle.

Voltage to the green / white wire should measure close to 0.01 V DC at low-idle and close to 5.0 V DC at full throttle.

If voltage does not vary between low-idle and full throttle, replace the ECU. If voltage varies at both terminals, replace throttle body.

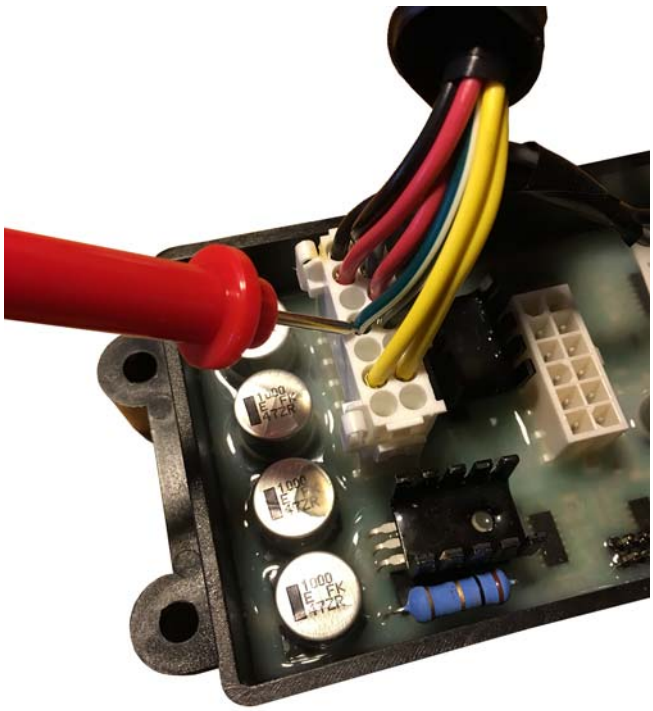


Figure 192

Fluttering Servo Motor

If the throttle plate in the throttle body flutters continuously when the key is in the ON position, check the following:

1. Wire harness connection to the ECU.
   a. With the ignition key in the off position, disconnect the wire harness from the ECU and inspect connection at the tan, purple and yellow wires on the 12-pin connector. See Figure 184. If connection is faulty, repair, if possible. If repair cannot be completed, replace the throttle body.
   b. If connection is good, a faulty connection exists in the throttle body or servo motor. Replace the throttle body.

SERVICE RECORD

DATE	SERVICE COMPLETED	NOTES

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WARNING

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

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