



Service Quick Tips



Significant T3100 Upgrades

2009

- Added Skid plate to transmission
 - o Upgrade kit available

2010

- Increased weld strength on the front axel

2011

- Aquatec pump release (**FIGURE 1**)
 - o Kit #87517
- Electric Start option
 - o Upgrade kit available on 2011 units or newer (Kit #87514)
- Rear wheel hub stop kit
 - o Kit #668574
- Drive belt idler pulley/arm upgrade
 - o Automatic part change

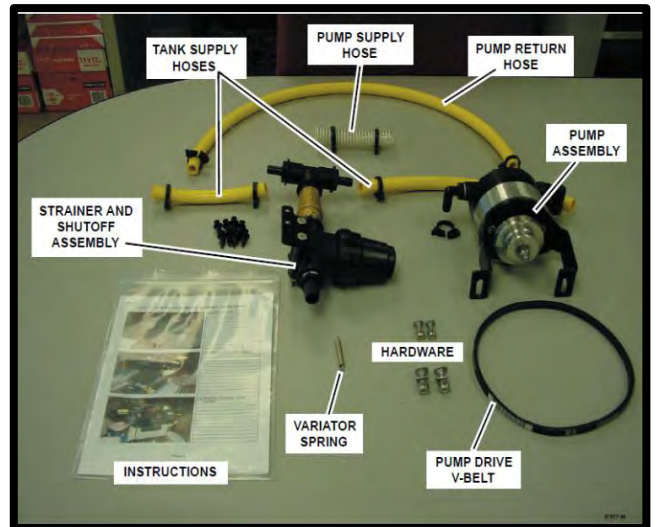


FIGURE 1: Pump upgrade kit

2012

- New foot operated forward ground speed foot pedal (**FIGURE 2**)
 - o Kit #87518
- Changed transaxle brake rotor
 - o Automatic part change

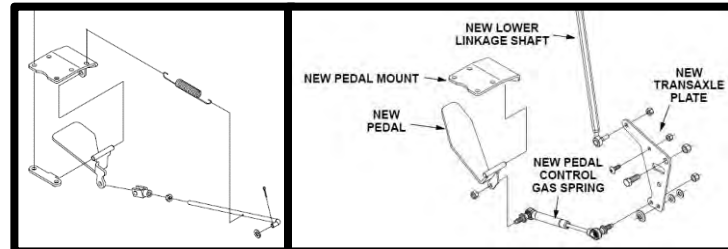


FIGURE 2: Left) Old speed lock foot pedal, Right) New foot operated forward ground speed foot pedal

2013

- New front wheel bearings (**FIGURE 3**)
 - o Kit #87522
- Hopper extension (**FIGURE 4**)
 - o Kit #87521
- New rain cover
 - o Part change – extended hopper only

2014

- New trim guard hinge
 - o New assembly part #669688



FIGURE 3: Left) Old front wheel bearing, Right) New front wheel bearing



FIGURE 4: Left) Old 120lb hopper, Right) New extended 175 lb hopper

2015

- New idler pulley system (**FIGURE 5**)
- Larger tanks for liquid
- Larger connection between tanks
- Access panel for brake adjustment and transmission oil change
- Adjustable stainless steel clevis on steering cables (**FIGURE 6**)
 - o Will Fit Old Cable
- Longer slots in hopper for adjustment on front belt
- New switch location for 3 in 1 tank
- Higher foot pedal clearance
 - o Kit #670316 or #87518 depending on product number



FIGURE 5: New idler pulley system

2016

- Translucent fuel tank (**FIGURE 7**)
 - o Will fit old machines
- Solid linkage Trim lever (**FIGURE 8**)
- Added bushings and grease zerk to steering arm
 - o Steering arm with new bushings can be put on old machines
- New Hand Wand
 - o Automatic Part Change
- New Wand flow control location



FIGURE 6: New adjustable stainless clevis



FIGURE 7: Translucent fuel tank



FIGURE 8: New solid linkage trim lever



T3000i/T3100 Daily Preventative Maintenance Checklist

WHAT? Daily Preventative Maintenance for the T3000i/T3100.

WHY? Preventative maintenance.

Checklist

- Clear any fertilizer and debris off of the unit every day with a blower or pressurized air hose. Key areas include:
 - o Around the axle (Remove the front hood) **(FIGURE 1)**
 - o Around and under the engine
 - o Inside and under the hopper (Move hopper gate open and closed while cleaning)
 - o Around the transmission

- Clean with water when necessary (i.e. high humidity days or once a week) **WHEN CLEANING WITH WATER BE THOROUGH ENSURING ALL FERTILIZER IS REMOVED FROM THE UNIT.** Water mixed with fertilizer sitting on the unit for extended periods of time is very harmful to any equipment. Blow off the unit with air after cleaning with water.
 - o Variable speed pulley – Clean the pulley with water as you switch between the wide and narrow setting on the unit. **DO NOT USE A LUBRICANT ON THE PULLEY.** Blow the water out of the pulley with air when done cleaning. **(FIGURE 2)**

- Check your spray system filter (wear proper personal protective equipment when cleaning the spray system (PPE) – Turn the ball valve to off and remove your filter. Clean with water as necessary (Do not use high pressured air or water to clean the filter. It can damage the filter screen). Replace the filter and turn the ball valve back to on. **(FIGURE 3)**

- Check your engine and transmission oil levels

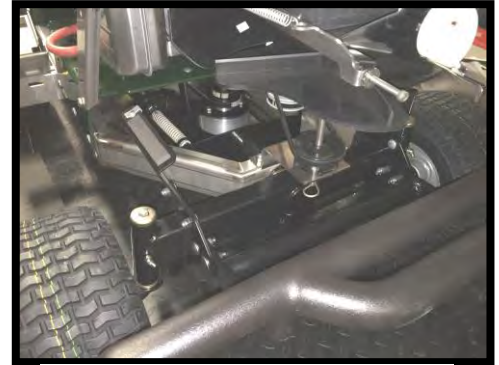


FIGURE 1: Front Hood Removed



FIGURE 2: Variable Speed Pulley



FIGURE 3: Check filter

Completed by:

Serial Number

Name

Signature

Date

This Quick Tip is only a guide, always refer to your Operators Manual



T3000i/T3100 Weekly Preventative Maintenance Checklist

WHAT? Weekly Preventative Maintenance for the T3000i/T3100.

WHY? Preventative maintenance.

Checklist

- Ensure the unit has been maintained following the T3000i/T3100 Daily Checklist Quick Tip
- Grease all grease fittings on the machine (**FIGURE 1**)
 - A. 2 Front Wheel fittings (2011 and newer units will not have these fittings)
 - B. 2 Front wheel spindles (All model years will have these fittings)
 - C. 1 Front wheel pivot (All model years will have these fittings)
 - D. 1 Idler arm for drive belt tensioner pulley (T3100's do not have this fitting)
 - E. 1 Steering Arm (2016 & Newer Models)
- Check and clean your engine air filter. To loosen debris, gently tap the filter on a hard surface. If excessively dirty replace the filter.
- Clean carb linkage, choke control, and governor spring. Blow off the area with air (brake cleaner works as well) and then using a DRY LUBRICANT work the linkage back and forth (**FIGURE 2**)
- Check air pressure in tires and inflate to marked PSI on tire
- Check your engine and transmission oil levels
- Check Steering cable tension. Adjust both sides evenly if needed. (**See T3000/T3000i Service Quick Tip – Steering Cable Adjustment**)
- Inspect belts for wear
- Clean and inspect your Trim and broadcast nozzle. Do not use metal objects to clean the nozzles as it can damage the tip and affect your spray pattern.
- Check all cables for smooth function (hopper gate, variable speed, throttle, and trim guard cable)

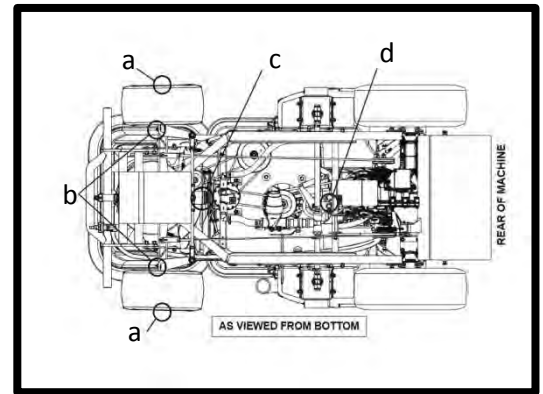


FIGURE 1: a)2 Front Wheel Bearings, b) 2 Front Wheel Spindles, c) 1 Front Axle, d)Idler Arm, e)Steering Arm



FIGURE 2

Completed by:

Serial Number _____ Name _____ Signature _____ Date _____

This Quick Tip is only a guide, always refer to your Operators Manual



Upright Repair Position

WHAT? Need to perform repairs underneath the T3000i.

WHY? Some items to repair are easier to access from the bottom of the unit.

Approximate time
5 Minutes

Machine Preparation (Figure 1)

1. Empty the Spreader hopper
2. Drain any liquid from the tank
3. Shut ball valve off at filter in spray line
4. Remove fertilizer tray or auxiliary tank
5. Disconnect battery cable and REMOVE BATTERY
6. Remove any fuel from gas tank
7. Locate the machine on a level surface
8. Secure the front bumper to your properly rated lifting device (**FIGURE 2**).

Lifting the T3000i

1. Slowly lift the T3000i with your properly rated lifting device.
2. Support the T3000 in the raised position and KEEP LIFTING DEVICE ATTACHED (**Figure 3**)
3. For 2016 & newer units make sure the platform lock is in the released position

Wrap Up

1. Return the T3000i to its normal position after performing your repair. Test your repair to ensure it was performed correctly.

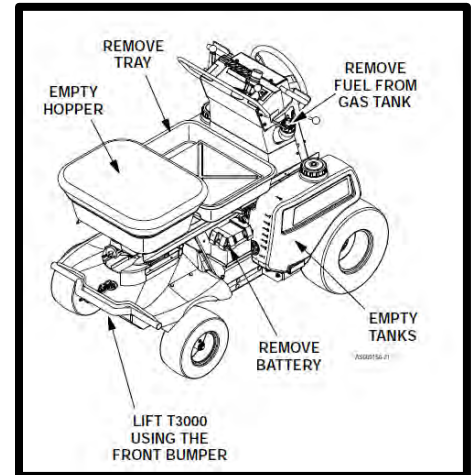


FIGURE 1: Machine preparation



FIGURE 2: Lifting device attached to T3000i



FIGURE 3: Jack Stands Supporting T3000i



Pump Replacement

WHAT? Need to replace the pump for the spray system on the T3000i. If the pump assembly needs to be replaced see T3000/T3000i Service and Repair Bulletin “Pump Assembly Replacement”.

WHY? Eventually pump diaphragms will fail and the pump must be replaced.

Approximate time
20 Minutes

Machine Preparation (Figure 1)

1. Stand the machine up for easy access to the parking break adjustment (see T3000/T3000i Service and Repair Bulletin “Upright Repair Position”).
2. Ensure the main shut off valve is in the off position (FIGURE 1a).

Removing the Pump Head

1. Remove the two hose clamps and hoses on the inlet and outlet side of the pump (FIGURE 1b).
2. Remove the 5 hex bolts (FIGURE 2) **IMPORTANT! Do not remove the torx bolts** from the bottom of the pump.
3. Remove the pump from the T3000 leaving the pump hub on the unit (FIGURE 3).
4. Place the new pump on the pump hub and replace the hex screws. **IMPORTANT! Put anti-seize on the screws when putting the new pump on and place RTV silicone adhesive to the hub ring (FIGURE 3).** Torque the bolts to 32 to 34 in/lbs.
5. Replace the inlet and outlet hose and put new hose clamps on each (FIGURE 1b).

Wrap Up

1. Return the T3000i to its normal position after performing your repair. Test your repair to ensure it was performed correctly (Ensure your main shut off valve is in the on position before checking the spray system (FIGURE 1a)).

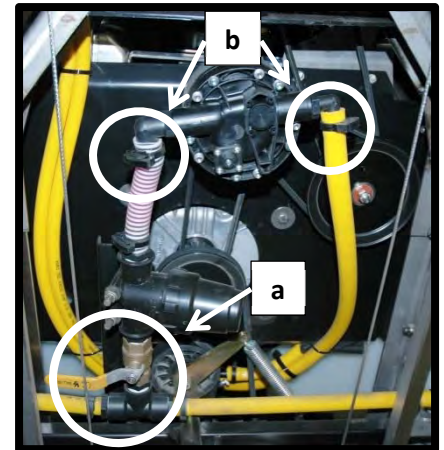


FIGURE 1: a) Main shut off valve, b) Hose clamp

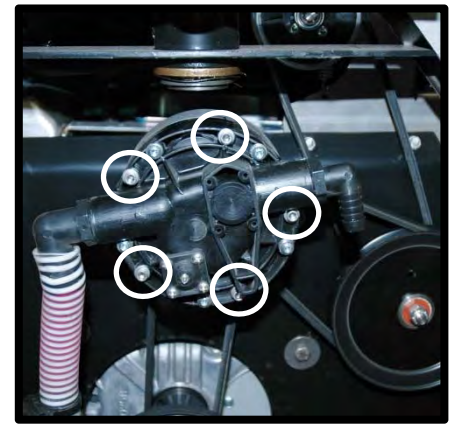


FIGURE 2: Hex bolts to remove the pump



FIGURE 3: Pump removed from the T3000i. Black RTV silicon is also visible on the hub ring.



Pump Assembly Replacement

WHAT? Pump and pulley assembly have stopped working. If only the pump needs to be replaced see T3000/T3000i service and repair bulletin “Pump Replacement”.

WHY? The pump and assembly will wear out over time.

Approximate time
20 Minutes

Machine Preparation

1. Stand the machine up for easy access to the pump assembly (see T3000/T3000i Service and Repair Bulletin “Upright Repair Position”)
2. Ensure the main shut off valve is in the off position (FIGURE 1a).

Removing the Pump Assembly

1. Remove the two hose clamps and hoses on the inlet and outlet side of the pump (FIGURE 1b).
2. Remove the two nylock nuts from the pump assembly bracket (FIGURE 2).
3. Remove the belts from the pump assembly pulley and then remove old pump assembly from the frame.

Wrap Up

1. Replace the new pump assembly by reversing the steps in the “Removing pump assembly” section. **IMPORTANT! Remember to replace the belts on the pulley in the correct position (FIGURE 3) before attaching the pump assembly. Also, as you are tightening the pump assembly to the frame keep constant tension on the belts.**

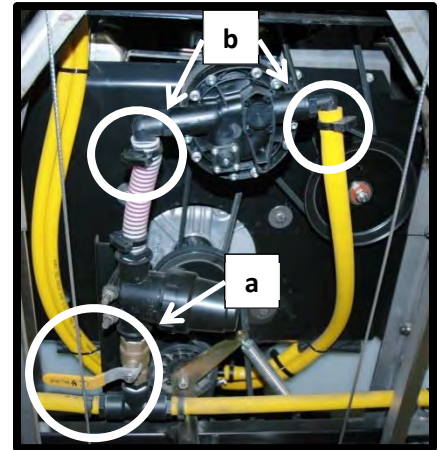


FIGURE 1: a) Main shut off valve, b) Hose clamps

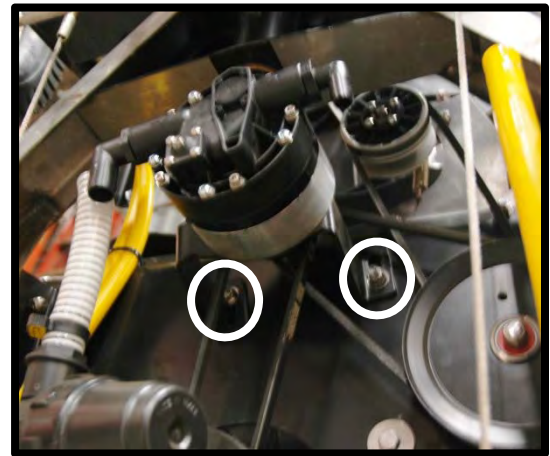


FIGURE 2: Nylock nuts holding the pump assembly on.

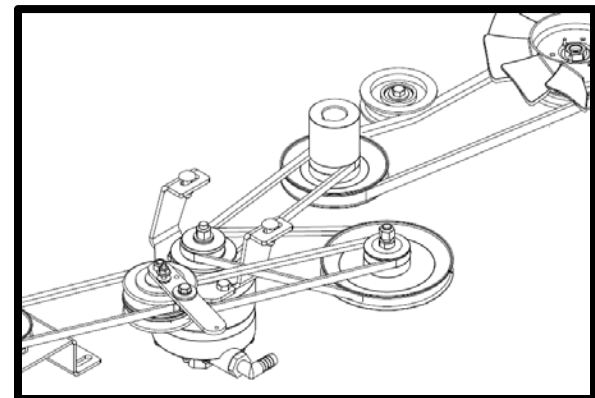


FIGURE 3: T3000i belt configuration



Spinner Shaft Adjustment

- WHAT?** Spinner shaft is not perpendicular to the ground when the unit is sitting level. This can cause the front belt to slip and potentially fall off.
- WHY?** Normal use of the machine can eventually cause the spinner shaft to shift position.

Approximate time
15 Minutes

Machine Preparation

1. Ensure your spinner shaft is out of alignment using a level (**FIGURE 1**).
2. Locate the adjustment area on the spinner pulley bracket and the hopper of the T3000i (**FIGURE 2a and b**).

Adjusting the Spinner Shaft

1. Adjust the spinner pulley bracket first before you adjust the hopper to align the spinner shaft (**FIGURE 2a**).
2. If you have used all of the adjustment in the spinner pulley shaft then adjust the hopper to complete your alignment (**FIGURE 2b**).

Wrap Up

1. If you used the hopper adjustments ensure that the hopper opening functions correctly. If there is a gap in the hopper rate gate inside the hopper when you have the spreader gate control in the closed position you need to adjust the swivel on the hopper gate cable (**FIGURE 3**).
2. Remove the spring from the hopper gate lever and the cotter pin from the swivel (**FIGURE 3**).
3. Twist the swivel clockwise on the threaded hopper gate cable to remove the gap from the hopper gate.
4. Reattach the swivel to the hopper gate lever and insert the cotter pin. Reattach the spring to the hopper gate lever and ensure the hopper gate functions correctly.



FIGURE 1: Spinner Shaft not perpendicular to level

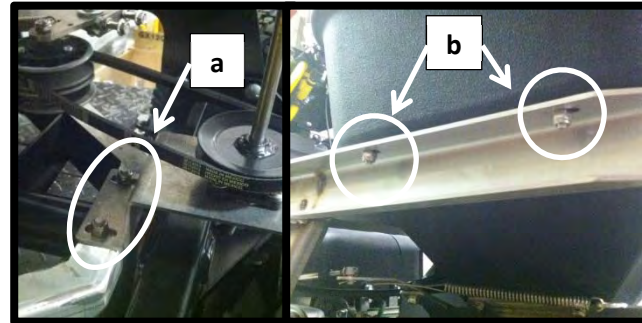


FIGURE 2: a) Slotted holes for belt pulley adjustment, b) slotted holes for hopper adjustment

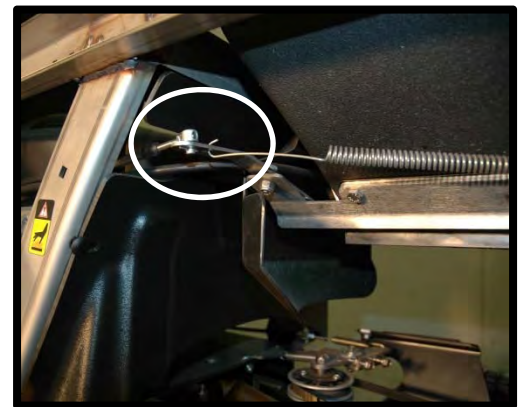


FIGURE 3: Hopper opening adjustment



Steering Cable Adjustment

***For 2015 & Newer units go to 2nd page for adjustment**

Approximate time
5-15 Minutes

Machine Preparation

1. Stand the machine up for easy access to the parking break adjustment (see T3000/T3000i Service and Repair Bulletin “Upright Repair Position”)
2. Find the clevis on the end of the steering cables (FIGURE 1).

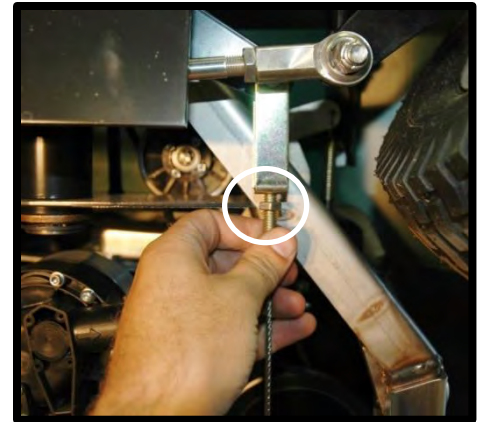


FIGURE 1: Steering cable clevis and locking nut

Minor Tension Adjustment

1. When only minor tightening of the steering cable is needed you do not need to remove the clevis from the steering arm assembly.
2. Loosen the nut below the clevis and turn the cable clockwise to tighten (FIGURE 1)
3. Re-tighten the lower nut to the clevis to complete tightening.

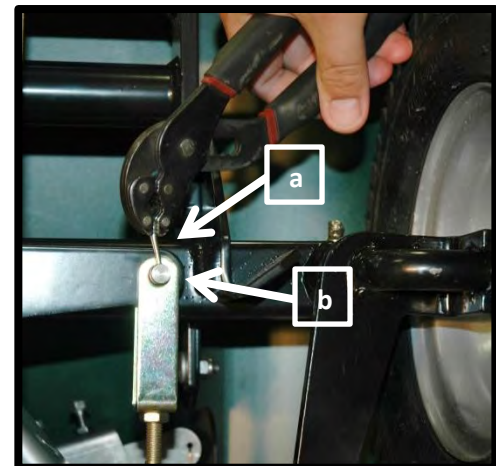


FIGURE 2: Steering Cable Clevis: a) Cotter Pin b) Clevis Pin

Normal Tension Adjustment

1. When the steering cables have normal “slack” the clevis must be removed from the steering arm and tightened.
2. Remove the cotter pin and clevis pin from the steering arm (FIGURE 2) **IMPORTANT! Ensure you keep constant tension on the steering cables to ensure they do not fall off of the pulleys near the rear of the machine (FIGURE 3).**
3. Loosen locking nuts on the clevis and turn it counter clockwise on the steering cable (FIGURE 4). **IMPORTANT! Tighten each steering cable equally to ensure equal alignment and avoid changing the steering wheel alignment.**

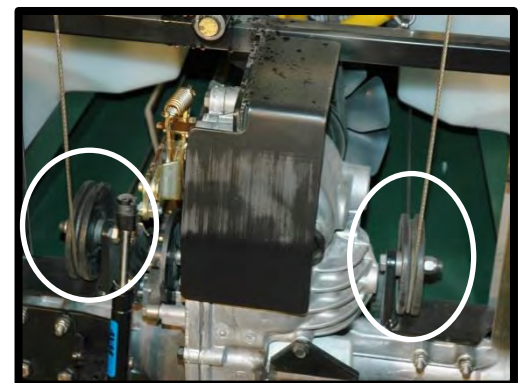


FIGURE 3: Steering Cable Pulleys



4. Replace clevis on to steering arm with clevis pin and cotter pin.
5. Repeat steps 2-4 for the other steering cable.
6. When both steering cables have been tightened equally and have been reattached to the steering arm sometimes more tension is needed. If so perform the minor tension adjustment on page 1.

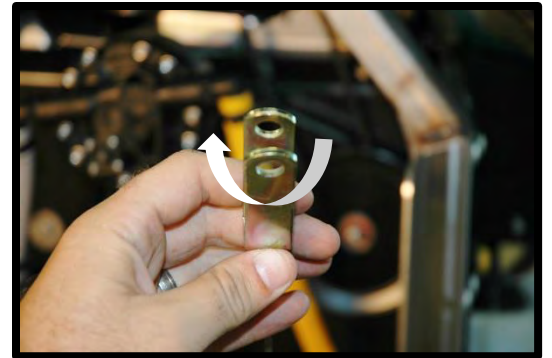


FIGURE 4: Clevis Removed from Steering Arm

2015 & Newer T3100's Adjustable Clevis

1. On 2015 & newer units the clevis had is adjustable. Use a wrench on the end of the cable to add tension and then secure position with locking nut



FIGURE 5: 2015 & Newer units adjustable clevis



Parking Brake Adjustment

WHAT? The parking brake will no longer engage on the T3000/T3000i (machine still moves when brake is in the on position) (**FIGURE 1**).

WHY? Normally occurs when the parking brake is left on while driving the machine.



FIGURE 1: Parking brake

Approximate time

10 Minutes

Machine Preparation

1. Stand the machine up for easy access to the parking brake adjustment (see **T3000/T3000i Service and Repair Bulletin “Upright Repair Position”**)
2. Find the crown nut on the transaxle (**FIGURE 2**).



FIGURE 2: Crown nut location

Parking Brake Adjustment

1. Remove the cotter pin and rotate the crown nut clockwise $\frac{1}{2}$ turn (**FIGURE 3**).
2. Turn your parking brake on and off to ensure the brake feels tight. If it still feels loose move the nut clockwise to tighten it more. If it is too tight move the nut counterclockwise to loosen it.
3. Insert the cotter pin back into the crown nut (**FIGURE 4**).



FIGURE 3: Tightening the parking brake

Wrap Up

1. With the T3000/T3000i in the operating position turn it on and ensure that the parking brake works properly.



FIGURE 4: Reinsert cotter pin



T3000/T3100 Bearing removal

Removal for inspection or replacement of front wheel bearings on the T3000/T3100



1. Remove outer retainer w/ snap ring pliers



2. Remove inner and outer retainer rings using a flathead screwdriver to pop out the tapered edge



3. Once tires are removed push bearings out by tapping the back side with a rod to work them out

4.



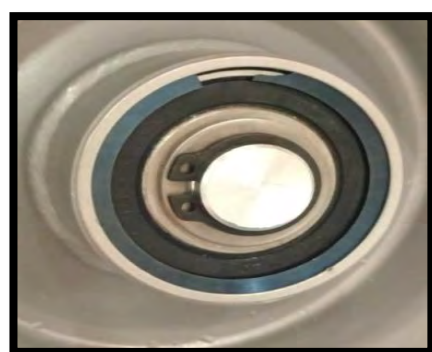
- Inspect surface of spindle shafts and clean. Apply a layer of anti-seizure lubrication to shaft & Reassemble

5.



- Make sure there is enough clearance on outer bearings to get retainers back in groove

6.



- Ensure retainers are seated in their grooves when reinstalling and replace vinyl cap



Transaxle Oil Change

- WHAT?** Change the oil and filter of the transaxle every 400 hours after the initial break in oil change.
- WHY?** Normal use of the machine will require oil and filter change on the transaxle.

Approximate time
60 Minutes + extra filling time.

Machine Preparation

1. Stand the machine up for easy access to transaxle oil filter (see T3000/T3000i Service and Repair Bulletin “Upright Repair Position”)
2. Place an oil drain pan under the filter of the transaxle.

Changing the Oil

1. Remove the filter guard and the filter from the transaxle. Drain oil into the oil drain pan (dispose of all oil properly) **(FIGURE 1)**.
2. Apply a film of oil to the gasket of the new transaxle oil filter (use transaxle manufacturers recommended replacement filter) and replace the oil filter (install by hand and turn $\frac{3}{4}$ to one full turn after the filter gasket contacts the filter base surface).
3. Reinstall the filter guard (torque screws to 65 in. lbs each).
4. Lower the T3000i into standard operating position.
5. Remove the oil level check port (requires hex wrench) on the transaxle to allow venting when you fill the transaxle with oil **(FIGURE 2)**.
6. Fill the transaxle with 20W/50 engine oil until filled to the oil level check port on the transaxle (Oil will come out of the port when that level is reached) **(FIGURE 2)**.
7. Insert the oil level check port back into the transaxle **(FIGURE 2)** and fill the remaining oil in the transaxle oil



FIGURE 1: Transaxle oil filter being removed from the transaxle

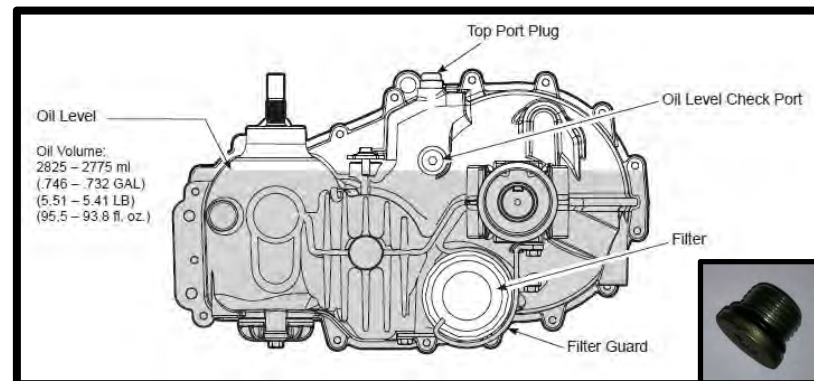


FIGURE 2: Side diagram of the transaxle showing the oil level check port. Insert is an image of the oil level check port removed.



FIGURE 3: Filling the remaining oil in the transaxle oil expansion tank

T3000/T3000i Service Quick Tip



expansion tank. Allow ample time for all air to escape from the transaxle and continue filling until on the cold level (**FIGURE 3**).

8. Purge any excess air from the transaxle. (Perform this procedure in an open area free of any objects or bystanders).
 - a. Start the T3000i engine and disengage the parking brake
 - b. Open the bypass valve on the transaxle (Placing the T3000i in freewheel will open the bypass valve) (**FIGURE 4**) and move the speed control handles in the forward and reverse direction 5 or 6 times.
 - c. Close the bypass valve (take the T3000i out of free wheel) and drive the T3000i in the forward and reverse direction 5 or 6 times.
 - d. Stop the engine and check the transaxle oil level. Add oil as required. Repeat steps b through d until adding oil is not required. When the T3000i transaxle operates at a normal noise level and normal forward and reverse speeds it is considered purged.



FIGURE 4: Place the T3000i in freewheel to open the transaxle bypass valve.

Wrap Up

1. Ensure the T3000i runs at normal speeds.



Transaxle Oil Change

- WHAT?** Change the oil and filter of the transaxle every 400 hours after the initial break in oil change.
- WHY?** Normal use of the machine will require oil and filter change on the transaxle.

Approximate time
60 Minutes + extra filling time.

Machine Preparation

1. Stand the machine up for easy access to transaxle oil filter (see T3000/T3000i Service and Repair Bulletin “Upright Repair Position”)
2. Place an oil drain pan under the filter of the transaxle.

Changing the Oil

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2. Apply a film of oil to the gasket of the new transaxle oil filter (use transaxle manufacturers recommended replacement filter) and replace the oil filter (install by hand and turn $\frac{3}{4}$ to one full turn after the filter gasket contacts the filter base surface).
3. Reinstall the filter guard (torque screws to 65 in. lbs each).
4. Lower the T3000i into standard operating position.
5. Remove the oil level check port (requires hex wrench) on the transaxle to allow venting when you fill the transaxle with oil **(FIGURE 2)**.
6. Fill the transaxle with 20W/50 engine oil until filled to the oil level check port on the transaxle (Oil will come out of the port when that level is reached) **(FIGURE 2)**.
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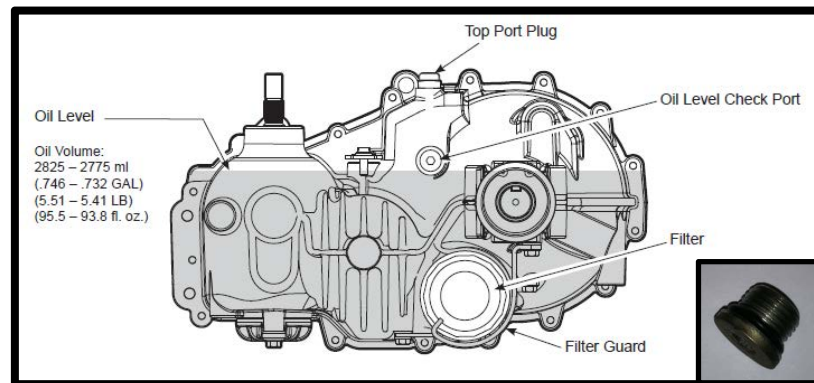


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FIGURE 3: Filling the remaining oil in the transaxle oil expansion tank

T3000/T3000i Service Quick Tip



expansion tank. Allow ample time for all air to escape from the transaxle and continue filling until on the cold level (**FIGURE 3**).

8. Purge any excess air from the transaxle. (Perform this procedure in an open area free of any objects or bystanders).
 - a. Start the T3000i engine and disengage the parking brake
 - b. Open the bypass valve on the transaxle (Placing the T3000i in freewheel will open the bypass valve) (**FIGURE 4**) and move the speed control handles in the forward and reverse direction 5 or 6 times.
 - c. Close the bypass valve (take the T3000i out of free wheel) and drive the T3000i in the forward and reverse direction 5 or 6 times.
 - d. Stop the engine and check the transaxle oil level. Add oil as required. Repeat steps b through d until adding oil is not required. When the T3000i transaxle operates at a normal noise level and normal forward and reverse speeds it is considered purged.



FIGURE 4: Place the T3000i in freewheel to open the transaxle bypass valve.

Wrap Up

1. Ensure the T3000i runs at normal speeds.



Turfc T3000, T3000i and T3100 Applicator Transaxle Filter, Transaxle Fluid Changing and Purging

PURGING PROCEDURES

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

Air creates inefficiency because its compression and expansion rate is higher than that of the oil approved for use in hydrostatic drive systems.

These purge procedures should be implemented any time a hydrostatic system has been opened to facilitate maintenance or the oil has been changed.

The resulting symptoms in hydrostatic systems may be:

1. Noisy operation.
2. Lack of power or drive after short term operation.
3. High operation temperature and excessive expansion of oil.

Before starting, make sure the transaxle is at the proper oil level. If it is not, fill to the specifications outlined in this manual.

The following procedures are best performed with the vehicle drive wheels off the ground. Then repeated under normal operating conditions. If this is not possible, then the procedure should be performed in an open area free of any objects or bystanders.

1. Disengage the brake if activated.
2. With the bypass valve (freewheel) open and the engine running, slowly move the directional control in both forward and reverse directions (5 or 6 times).
3. With the bypass valve closed and the engine running, slowly move the directional control in both forward and reverse directions (5 to 6 times). Check the oil level, and add oil as required after stopping the engine.
4. It may be necessary to repeat Steps 2 and 3 until all the air is completely purged from the system. When the transaxle operates at normal noise levels and moves smoothly forward and reverse at normal speeds, then the transaxle is considered purged.

The following is from the Hydro-Gear® Transaxle Service and Repair Manual. This section covers the changing of the transaxle filter, changing the transaxle fluid and purging procedures.

Additional transaxle service and maintenance procedures can be found in the Turfco Maintenance and Service CD that came with your Turfco applicator. The CD contains the entire Hydro-Gear entire transaxle manual.

Fluids

The fluids used in Hydro-Gear products have been carefully selected, and only equivalent, or better products should be substituted.

Typically, an engine oil with a minimum rating of 9.0 cSt (55 SUS) at 230° F (110° C) and an API classification of SL is recommended. A 20W50 engine oil has been selected for use by the factory and is recommended for normal operating procedures.

Fluid Volume and Level

Fluid volume information is provided in the table below.

Certain situations may require additional fluid to be added or even replaced. Refer to page 11 and figure 4 for the proper fill port location.

Recheck the fluid level once the unit has been operated for approximately 1 minute.

Purging will be required if oil has been changed. Refer to the purging procedures on page 12.

Fluid Description
20W50 engine oil
Volume – per Transaxle
92.9 fl.oz. (2747 ml) to 96.3 fl.oz. (2847 ml)

****Total Volume is approximately 4 quarts to get to the low level mark in the expansion bottle****

****While purging operate engine at lowest rpm****



FILTER AND FILTER GUARD

Refer to Figure 3

Disassembly

1. Remove the hex head screws (105), and filter guard (106).
2. Remove the filter (23) and discard.

NOTE: Always replace the filter when performing any internal maintenance to the transaxle.

Inspection

1. Inspect all parts for excessive wear or damage. Replace if necessary.

Assembly

1. Reassemble all parts in the reverse order of disassembly. Refer to "Fluid Change Procedures," page 11, steps 3-5 for filter installation instructions.
2. When tightening the fasteners, refer to the table on page 20 for the required torque values.

NOTE: As a general rule, use the low end of the torque specification on fasteners when reassembling the unit.

3. Fill transaxle with oil.

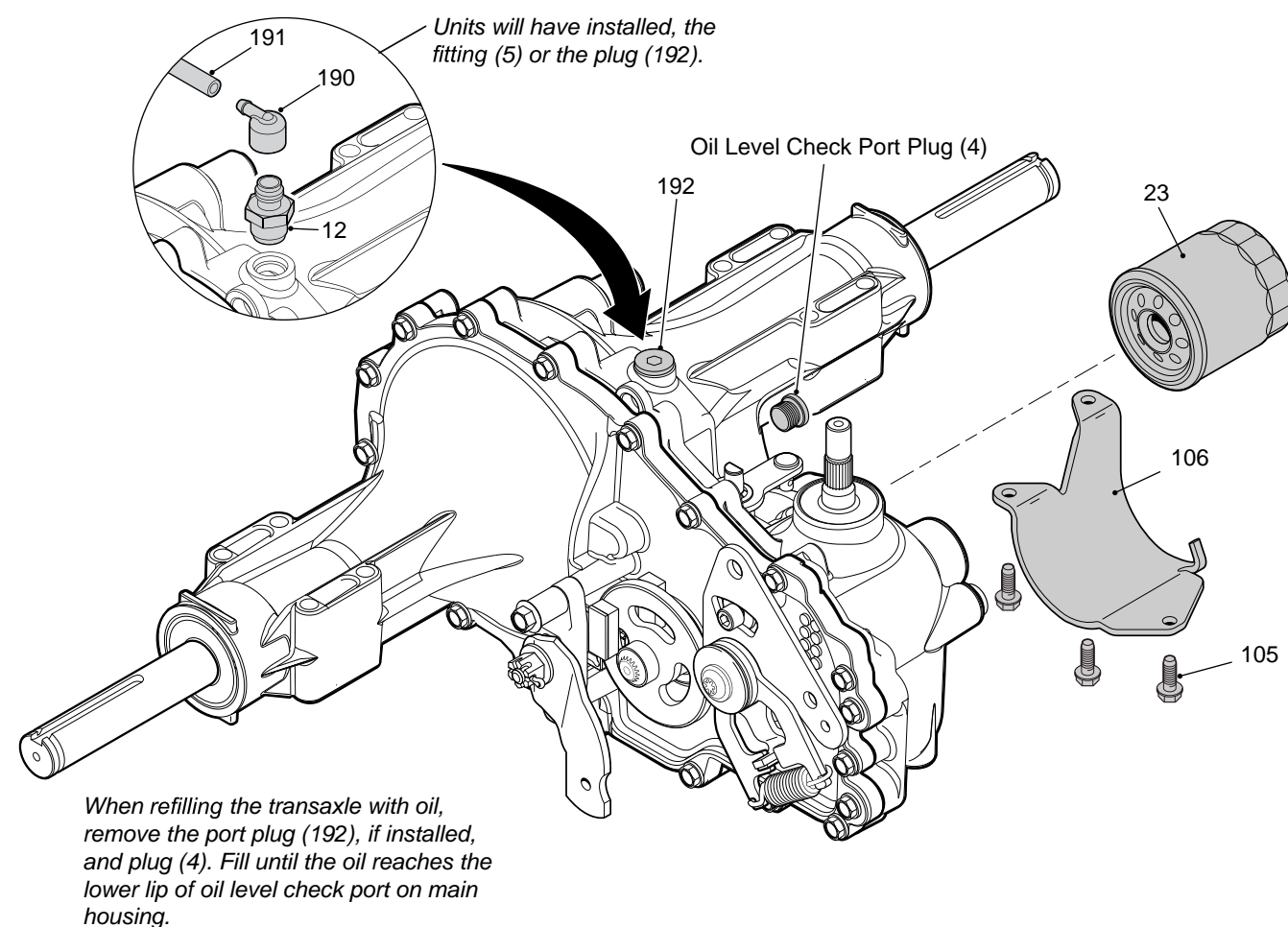


Figure 3, Filter and Guard

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FLUID CHANGE PROCEDURE

This transaxle is designed with an external filter for ease of maintenance. To ensure constant fluid quality levels and longer life, an initial oil and filter change at 75-100 hours, then every 400 hours thereafter is recommended.

The following procedure can be performed with the transaxle installed in the vehicle, and the vehicle on level ground. Apply the bypass valve (freewheel) and lock the vehicle parking brake.

1. Remove the three 1/4" filter guard screws and filter guard. Clean any loose debris from around the perimeter of the filter. See figure 3.
2. Place an oil drain pan (12" or more diameter and 8 qt. capacity is optimal) beneath the oil filter. Remove the oil filter from the transaxle.
3. After the oil has drained, wipe the filter base surface off and apply a film of new oil to the gasket of the new replacement filter (Hydro-Gear part number 52114).
4. Install the new filter by hand, turn 3/4 to one full turn after the filter gasket contacts the filter base surface.
5. Re-install the filter guard with three 1/4" screws. Torque screws to 65 in. lbs. (7.35 Nm) each.

6. Drain old oil filters of all free flowing oil prior to disposal. Place used oil in appropriate containers and deliver to an approved recycling collection facility.
7. Remove the oil level check port plug (figure 4) from the transaxle prior to filling with oil. This will allow the transaxle to vent during oil fill.
8. Remove the top port plug from the transaxle.
9. Fill with 20W50 motor oil until oil just appears at the bottom of the oil level check port. Install the oil level check port plug into transaxle. Torque to 180 in. lbs. (20.34 Nm).
10. Install and torque the top port plug to 180 in. lbs.
11. Proceed to the purge procedure.

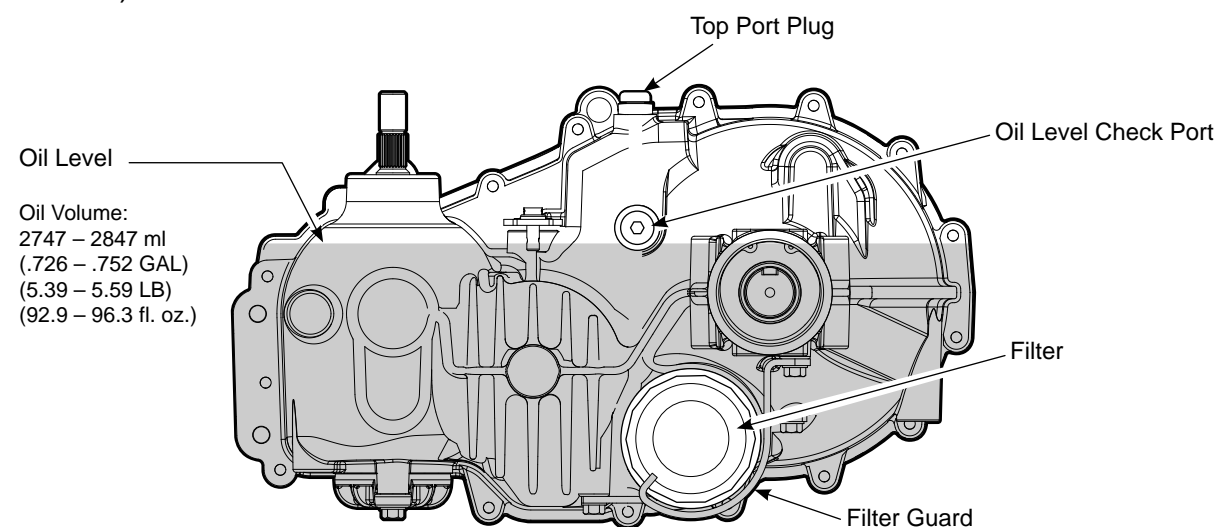


Figure 4, Filter Location

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T3000i/T3100 Recommended Winter Service Check List

This Quick tip is only a guide, always refer to your operator manuals. Read through all instructions and be sure you have all the required tools to safely perform each procedure before you begin.

- Add a seafoam to gasoline in fuel tank. This will help clean out the fuel system while performing service.
- Add a few gallons of clean water to spray tanks
- Clear any fertilizer and debris off of the unit with a blower or pressurized air hose. Key areas include:
 - a. Around the axle (Remove the front hood) **(FIGURE 1)**
 - b. Around and under the engine
 - c. Inside and under the hopper (Move hopper gate open and closed while cleaning)
 - d. Around the transmission
- Clean with water when necessary. Blow off the unit after cleaning.
 - a. Variable speed pulley – Clean the pulley with water as you switch between the wide and narrow setting on the unit. **DO NOT USE A LUBRICANT ON THE PULLEY.** Blow the water out of the pulley with air when done cleaning. **(FIGURE 2)**
- Clean and inspect your trim, broadcast, and wand spray nozzles. *(Do not use metal objects to clean the nozzles as it can damage the tip and affect your spray pattern.)*
- Check you spray system filter – Turn the ball valve to off and remove your filter. Rinse gently with clean water or replace as necessary. Replace the filter and turn the ball valve back to on. **(FIGURE 3)**
- Check all cables for smooth function (hopper gate, variable speed, throttle, and trim guard cable)
- Check air pressure in tires and inflate slightly above marked PSI on tire if storing.
- Grease all grease fittings on the machine
 - A. 2 Front Wheel fittings *(Models prior to 2011)*
 - B. 2 Front wheel spindles *(All model years will have these fittings)*
 - C. 1 Front wheel pivot *(All model years will have these fittings)*
 - D. 1 Idler arm for drive belt tensioner pulley *(Models prior to 2015)*
- Check Steering cable tension. Adjust both sides evenly if needed. **(See Service Quick Tip – Steering Cable Adjustment – pg. 3-4)**
- Check and clean your engine air filter. To loosen debris, gently tap the filter on a hard surface. If excessively dirty replace the filter.

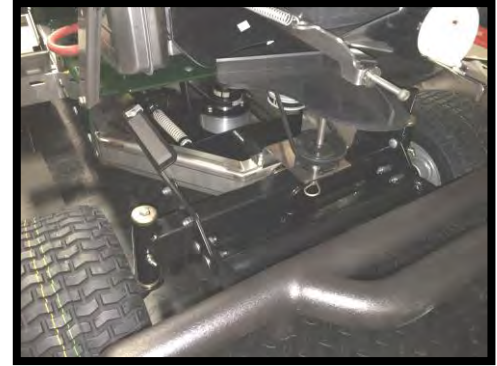


FIGURE 1: Front Hood Removed

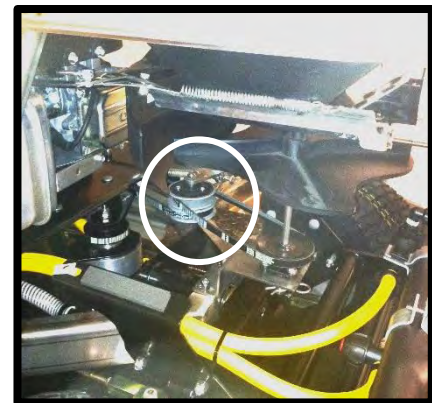


FIGURE 2: Variable Speed Pulley



FIGURE 3: Check filter



T3000i/T3100 Recommended Winter Service Check List continued

- Clean carb linkage, choke control, and governor spring. Blow off the area with air (brake cleaner works as well) and then using a DRY LUBRICANT work the linkage back and forth (FIGURE 4)
- Check V-Belts & Pulleys for wear. Replace as necessary
- Check & Adjust Parking Brake (See Parking Brake Adjustment Quick Tip, pg 5)
- Change engine oil and oil filter according to Briggs Operators Manual (pg. 6-9)
- Change spark plug & air filter according to Briggs Operators Manual (pg. 6-9)
- Change Transaxle oil and filter according to Hydro Gear service manual (pg. 10-13)
- Inspect all the hardware, hoses, and hose connections on the machine. Tighten as necessary and replace any cracked hoses.
- Remove front tire assembly. Inspect bearings for wear and replace if worn. Clean spindle shafts and inner tire assembly, apply a layer of anti-sieze to the inner tire and shaft and reassemble. (FIGURE 5)

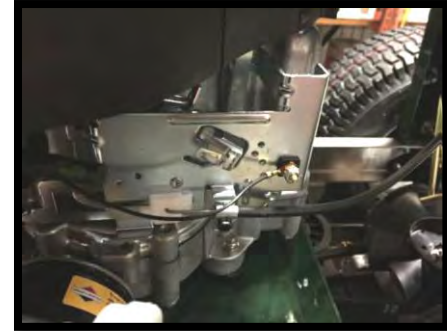


FIGURE 4.

Preparation for Extended Storage

- Preparation for storage and freeze damage protection
 - a. Pour 1 gallon of RV antifreeze mixed with a small amount of water in each tank.
 - b. Run the pump to circulate the antifreeze in the system. Open each valve one at a time until antifreeze sprays from the tips, then close that valve. (*Do not spray out all of the RV antifreeze, allow antifreeze to remain in strainer cap, pump, controls, and tank*)
- Disconnect battery from electric start. Connect to a battery maintainer to reduce drain.
- Drain fuel or add stabilizer treatment according to Briggs operators manual

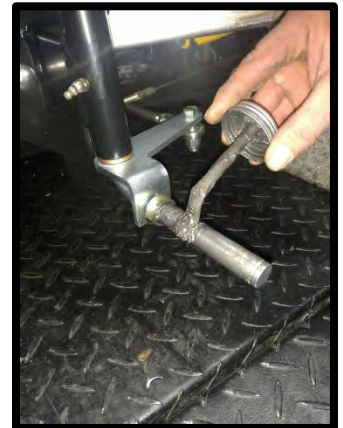


FIGURE 5. Front Spindle Shaft

Completed by:

Serial Number _____ Name _____ Signature _____ Date _____

*This Quick Tip is only a guide, always refer to your Operators Manual
If you have questions or need replacement parts please call 1-800-679-8201*

SERVICE AND MAINTENANCE



TO AVOID SERIOUS INJURY, Do Not Service, Inspect, Lubricate Or Adjust The T3000i With Any Part of the Sprayer or Spinner Assembly Operating or With the Engine Running.

All Of The Service And Adjustment Procedures Involve Or Are Near Rotating And Moving Parts. Work Safely, Follow All Hazard Warnings, Decals, Safety Precautions And Wear The Appropriate Safety Gear.

Operator Daily Inspection

INSPECTION - A general inspection is a good idea before the machine is ready to used or put away. Before and after each use, check the following items:

- Inspect for damaged or missing guards or covers. Do not operate any machine with missing or damaged guards.
- Inspect entire T3000i for damaged or inoperable components. Do not operate any machine with damaged or inoperable components.

- Inspect the entire machine for loose fasteners. Retighten as required.
- Inspect all the operator controls for proper operation.
- Check the tires for proper inflation.
- Inspect the spinner assembly spinner wheels. Check for proper alignment, damage, wear, and missing hardware.
- Check for a buildup of fertilizer on spinner assembly components and the hopper gate. Check for a buildup on and under the spinner wheels. Check for debris caught in spinner wheel.
- Check for a buildup of fertilizer on components under the hopper.
- Periodically inspect the steering cables for wear or damage.
- Protect from rust and moisture with a very light coating of machine oil.

INSPECTION OF THE V-BELTS - The lower front cover needs to be removed so you can clean or inspect the belts. To remove the cover, twist out the two thumb screws and slide the cover forward. You may now inspect and clean the belts or grease the belt idler.

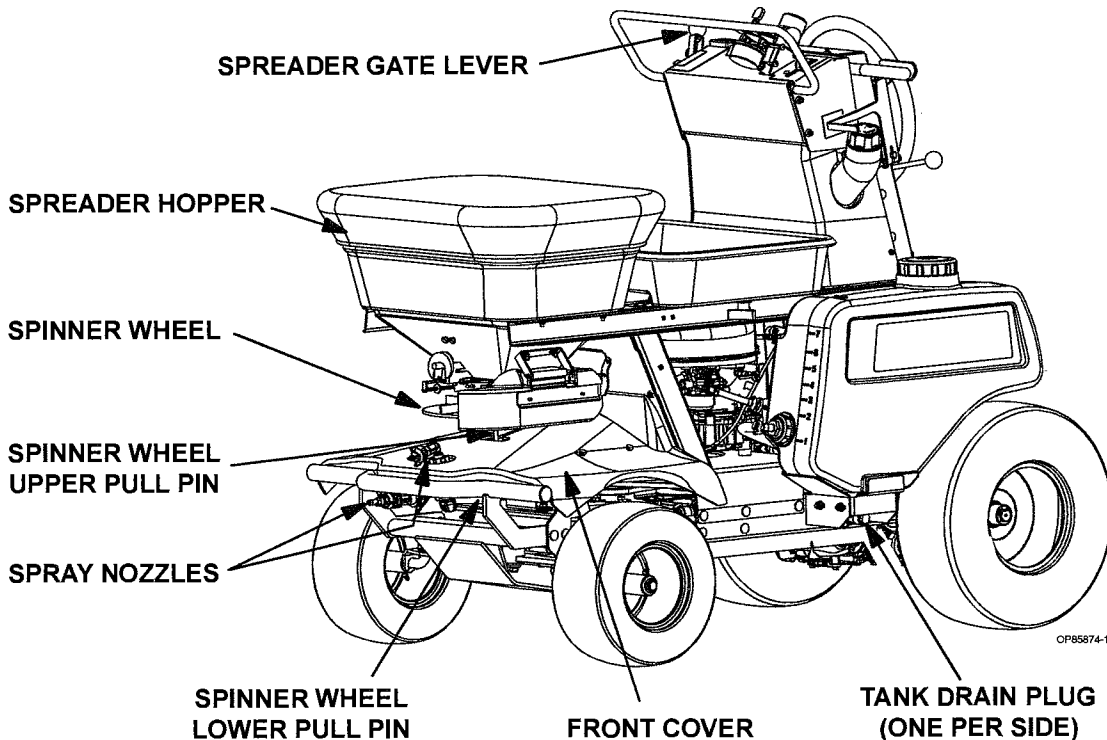


FIGURE 24

CLEANING

IMPORTANT!!

Keeping the machine clean and free of fertilizer and chemical residue is critical to the life of the machine. Always wash the machine until it is clean and free of fertilizer everywhere.

Fertilizer left on the machine will ruin the paint and cause corrosion. This will damage the machine and be the cause of failures later.

- Wash the entire machine with a hose or a low pressure washer.
- Avoid high pressure washing around bearings.
- Wash out the Fertilizer hopper.
- Move the gate opening lever while washing to make sure the gates are clean and free of chemicals.
- Clean the carburetor governor springs and linkages weekly. Refer to Lubrication Section in this Manual.
- Once clean, apply light machine oil to control rust. Refer to Lubrication Section in this Manual.

REMOVAL OF THE SPINNER WHEEL (See Figure 25) - The spinner wheel can be removed to aid in inspection and cleaning. First remove two spinner wheel pull pins. One from under the spinner and one on the bottom of the spinner shaft. Then pull the spinner shaft up and through the bottom of the fertilizer hopper. To replace the spinner shaft and spinner just do the reverse and replace the front cover.

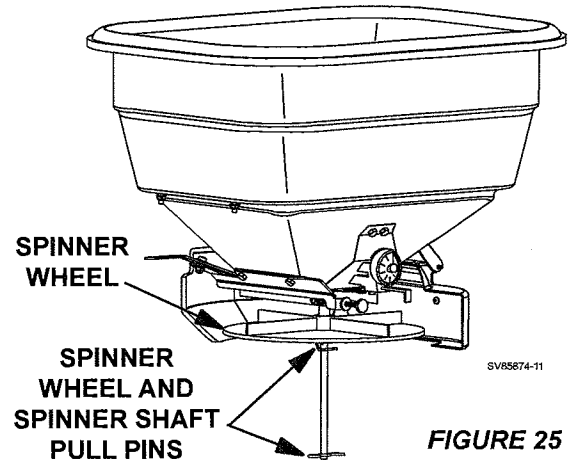


FIGURE 25

Storage

TO STORE THE T3000i OVER AN EXTENDED PERIOD, perform a complete inspection. Refer any needed service or repair to service level personnel.

- Completely clean the hopper and spinner wheel. Use low pressure wash, DO NOT use high pressure wash.
- Perform a complete lubrication procedure.
- Lubricate engine in accordance with the engine manufacturers instruction.
- Lubricate all grease fittings.
- Empty the engine fuel tank
- Apply a film of light machine oil to the pivot points, ball joints, steering components and engine to control rust.
- Flush and drain the tanks. Leaving caustic products in the system for storage could damage the pump and hoses. (See Protection Against Freeze Damage in the Winter Storage section)
- To protect the rubber and plastic parts, store the T3000i out of direct sunlight.

TO RETURN TO SERVICE AFTER EXTENDED STORAGE, inspect the entire machine for any damage that may have occurred during storage.

- Perform a complete lubrication procedure. Lubricate engine in accordance with the engine manufacturers instruction. Refer any needed service or repair to service level personnel.

Winter Storage

Protection Against Freeze Damage

The pump, tanks and spray system must be protected from freezing during storage. Use the following steps-

- Flush the entire spray system with clean water. Run the pump until the tanks are completely empty and water not longer sprays from the tips and the hand held wand.
- Stop the engine and remove the cap from the strainer. Allow any water to drain from the pump and hoses. Replace the cap.
- Put 1 gallon of RV antifreeze in each tank.

**DANGER**

TANKS MUST BE FLUSHED WITH WATER. DO NOT PUT ANTIFREEZE IN WITH CHEMICAL OR FERTILIZER AS A CHEMICAL REACTION CAN OCCUR. CHEMICAL REACTIONS CAN RELEASE HARMFUL AND TOXIC GASSES.

- Run the pump to circulate the antifreeze in the system.
- Open each valve one at a time until antifreeze sprays from the tips. Use the hand held spray wand until antifreeze sprays from the tip.

Do not spray out all of the RV antifreeze, allow antifreeze to remain in strainer cap, pump, controls and tanks.

Lubrication

ENGINE AND TRANSAXLE (See Figure 26)

Engine: CHECK OIL LEVELS DAILY. Follow the engine manufacturer's manual for intervals of oil change, oil filter replacement, proper oil types, and fill levels for the engine. Inspect and clean/replace the engine air filter as needed.

Engine Carburetor Linkages and Springs: CLEAN AND LUBRICATE WEEKLY. Clean and remove fertilizer dust from the linkages, governor springs, choke linkage on the carburetor with carb cleaner. Lightly lubricate to protect from rust. Wipe away excess lubrication that will attract and collect dust, dirt and debris.

Transaxle: Check the level of fluid in the transaxle reservoir. Fill only to the "Full Cold" level mark on the reservoir (located very low on reservoir). Use 20W/50 engine oil for the transaxle. Do not overfill.

Transaxle capacity is 95.5 fluid ounces (2.8 Liter/3 quarts). Add extra to allow for filter, the reservoir and the reservoir hose (approximately one quart).

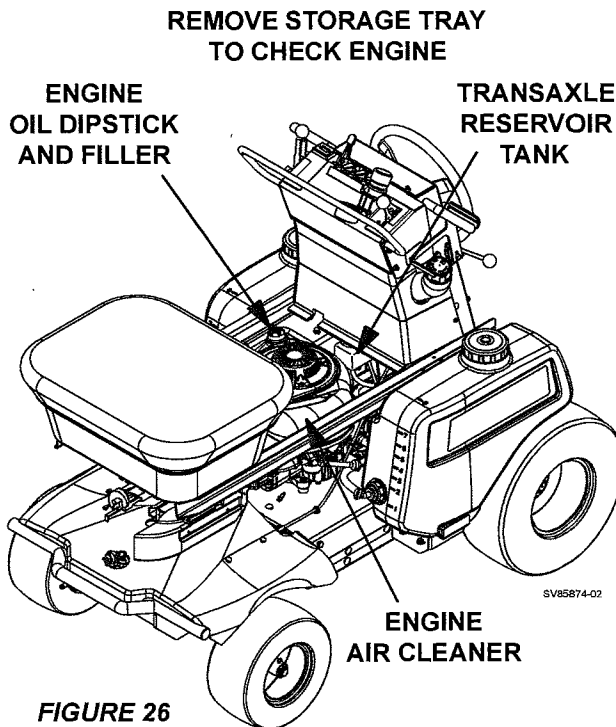


FIGURE 26

GREASE FITTINGS (See Figure 27)

Grease Fittings: (qty 4) Grease after every 8 hours of operation. Wipe away excess lubrication that will attract and collect dust, dirt and debris.

GREASE FITTING LOCATIONS (TOTAL OF 4)

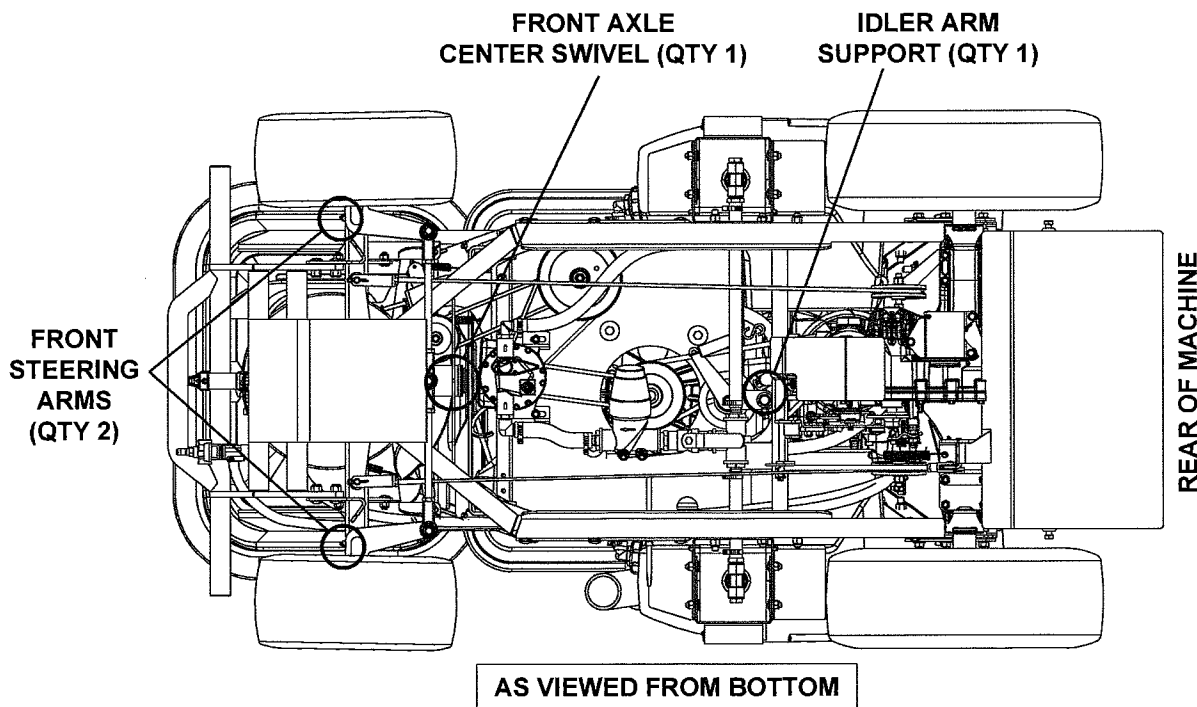


FIGURE 27

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Recommended Service Schedule

WHEN TO PERFORM SERVICE	DAILY	WEEKLY	5 HOURS	25 HOURS	50 HOURS	75 HOURS	100 HOURS	150 HOURS	200 HOURS	250 HOURS	300 HOURS	350 HOURS	400 HOURS	450 HOURS	500 HOURS	550 HOURS	600 HOURS	650 HOURS	700 HOURS	750 HOURS	800 HOURS	850 HOURS	900 HOURS	950 HOURS	1000 HOURS
WASH AND CLEAN UNIT INSPECT HARDWARE	X																								
CHASSIS LUBE GREASE FITTINGS (6)		X																							
ENGINE CHECK OIL LEVEL CHANGE OIL CHANGE OIL FILTER CHECK/CLEAN AIR FILTER CHANGE AIR FILTER CLEAN CARB LINKAGE	X		X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TIRES AIR PRESSURE		X																							
TRANSAXLE CHECK FLUID LEVEL CHANGE FLUID CHANGE FILTER		X				X	X						X	X								X	X		
SPRAYER CLEAN AND INSPECT CLEAN NOZZLES CLEAN STRAINER SCREEN (FILTER)	X X		X																						
SPREADER CLEAN AND INSPECT LUBE GATE	X		X																						
V-BELTS INSPECT TENSION		X																							
STEERING CABLES CHECK AND ADJUST					X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X