



# Hydraulic Tank Relocation Kit

## 100 Series Z Master Mowers

Model No. 107-3080

Form No. 3350-460

### Installation Instructions

## Loose Parts

**Note:** Use the chart below to identify parts for assembly.

DESCRIPTION	QTY.	USE
Template, hydraulic tank	1	Installing the hydraulic tank
Bolt, 1/4 x 1 inch	2	
Flat washer, 1/4 inch	2	
Tank stand	1	
Bolt, 5/16 x 3/4 inch	1	
Bolt, 5/16 x 1 inch	1	
Flange nut, 5/16 inch	2	
Swivel head hydraulic line assembly, model year 2001 and before	1	Installing the new hydraulic line
R-clamp	1	
Open end hydraulic line assembly, model year 2002	1	
Hydraulic filter	1	Replacing the hydraulic filter and filling the hydraulic tank

## Draining the Hydraulic Tank



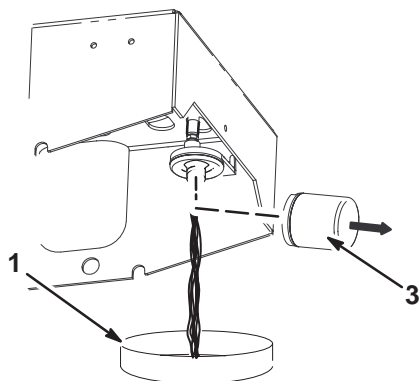
### Warning



Hydraulic fluid escaping under pressure can penetrate skin and cause injury.

- If hydraulic fluid is injected into the skin it must be surgically removed within a few hours by a doctor familiar with this type of injury. Gangrene may result if this is not done.
- Keep body and hands away from pin hole leaks or nozzles that eject high pressure hydraulic fluid.
- Use cardboard or paper to find hydraulic leaks.
- Safely relieve all pressure in the hydraulic system before performing any work on the hydraulic system.
- Make sure all hydraulic fluid hoses and lines are in good condition and all hydraulic connections and fittings are tight before applying pressure to hydraulic system.

1. Position machine on a level surface, disengage the PTO, move the motion control levers to the neutral locked position, and set the parking brake.
2. Stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Place a pan under the hydraulic filter. The filter is located toward the rear, on the underside of the unit (Fig. 1).



m-7142

Figure 1

1. Pan
2. Hydraulic filter

**Important** Clean the hydraulic lines and filter, as well as the surrounding areas, before draining the hydraulic oil.

4. Remove the hydraulic filter and let the fluid drain into the pan (Fig. 1).
5. Discard the hydraulic filter.

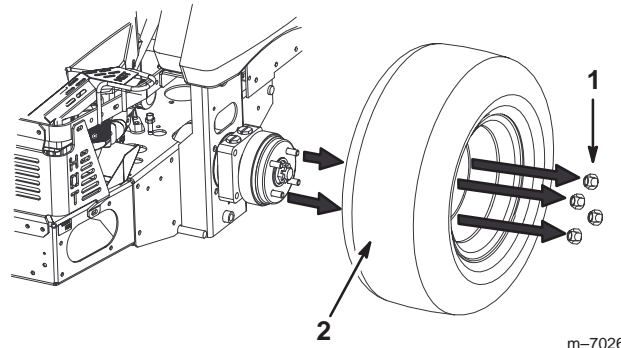
**Note:** Dispose of the used oil at a certified recycling center.

## Removing the Rear Wheels

1. Loosen the wheel nuts from the both sides of the vehicle.

**Note:** Most units have nuts securing the wheel to the unit; however, some older models have bolts in place of the nuts.

2. Raise the back of the machine up and support it with jack-stands.
3. Remove the wheel fasteners from both sides of the vehicle (Fig. 2).



m-7026

Figure 2

Right wheel shown

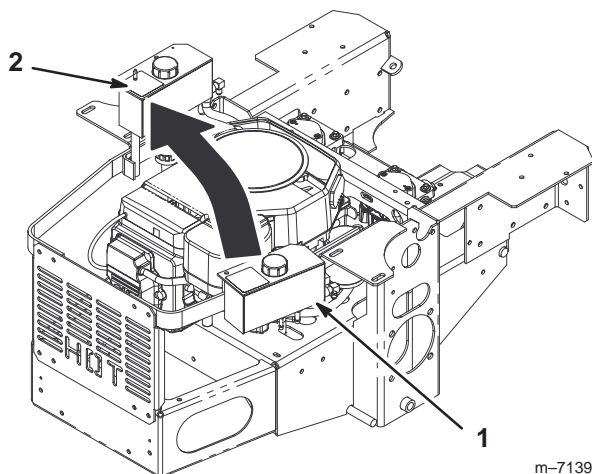
1. Wheel nuts
2. Left rear wheel

4. Remove the rear wheels (Fig. 2).

# Relocating the Hydraulic Tank for Model Year 2001 and Before

**Important** If you are relocating the hydraulic tank on a 2002 unit, turn to the *Relocating the Hydraulic Tank for Model Year 2002* section on page 7.

The hydraulic tank is moved from the right side to the left side (Fig. 3). Once the tank is moved, the hydraulic lines are rerouted to accommodate the new tank location.



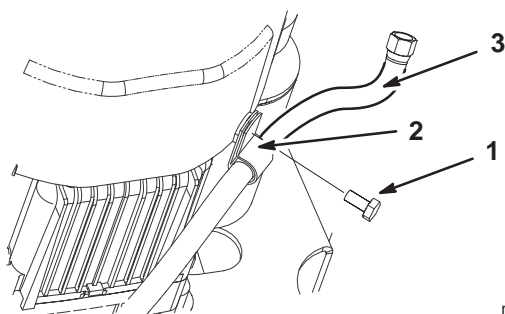
**Figure 3**

Kohler engine shown

1. Old tank location      2. New tank location

## Removing the Hydraulic Tank

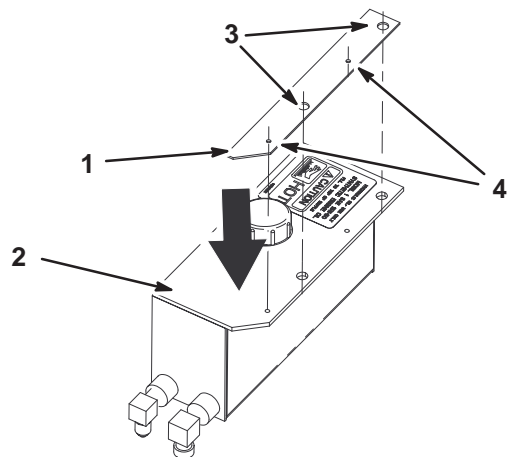
1. Locate the hydraulic line that runs from the tank to the filter.
2. Disconnect the line first at the elbow fitting on the tank, and then at the filter bracket. Discard the hydraulic line.
  - A. For units with Kawasaki engines, remove the screw and R-clamp securing the hydraulic line to the engine (Fig. 4). Save the screw for later use.



**Figure 4**

1. Screw      3. Hydraulic line  
2. R-clamp

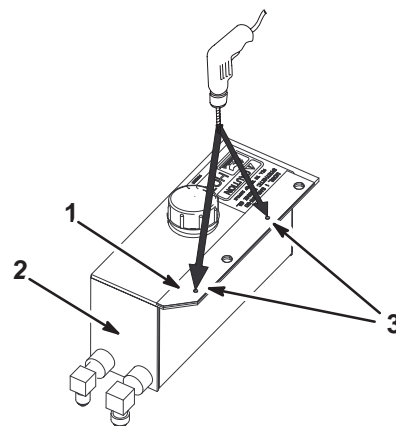
3. Locate the hydraulic line that runs from the tank to the hydraulic pumps.
4. Disconnect the line at the elbow fitting on the tank.
5. Remove the two bolts and two nuts securing the hydraulic tank to the engine guard.
6. Remove the hydraulic tank assembly.
7. Install the hydraulic tank template on the tank as shown in figure 5, using the fasteners removed previously.



**Figure 5**

1. Tank template      3. Fastener holes  
2. Hydraulic tank      4. Center punch holes

8. Use a center punch to mark the drill holes designated by the template (Fig. 5).
9. Remove the bolts and nuts securing the template to the tank. Discard the fasteners and template.
10. Drill two, 5/16 inch holes into the tank at the marked drill points (Fig. 6).



**Figure 6**

1. Tank template      3. Drill points  
2. Hydraulic tank

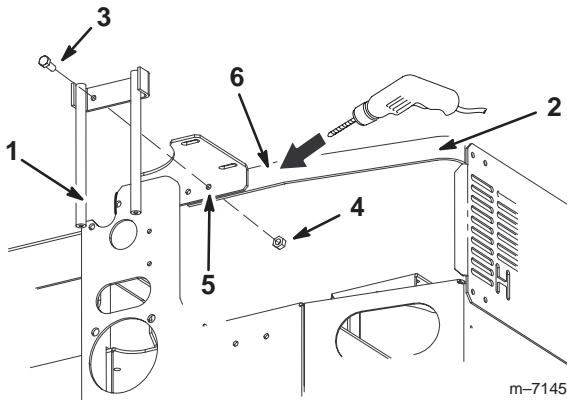
11. Remove the hydraulic tank cap and flush out the empty tank to remove any foreign debris.
12. Replace the tank cap.

## Installing the Hydraulic Tank

A hole must be drilled in the left engine guard to accommodate the new tank stand. Use the tank stand to mark the location of the drill hole.

1. Install the tank stand upside down to the left engine guard as shown in figure 7, using a bolt (5/16 x 1 inch) and a flange nut (5/16 inch).

**Important** Verify the rear bolt hole is used when attaching the tank stand (Fig. 7).

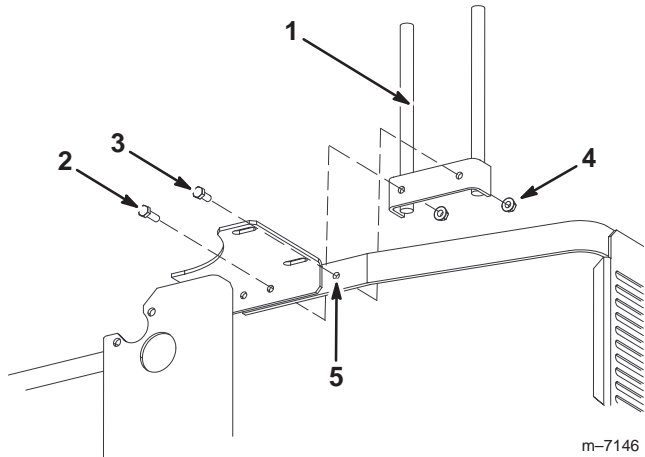


**Figure 7**

- |                            |                          |
|----------------------------|--------------------------|
| 1. Tank stand, upside down | 4. Flange nut, 5/16 inch |
| 2. Left engine guard       | 5. Rear bolt hole        |
| 3. Bolt, 5/16 x 1 inch     | 6. Drill point           |

2. Use a center punch to mark the location of the second hole to be drilled.
3. Remove the tank stand and fasteners. Set them aside for later use.
4. Drill a hole in the engine guard, 5/16 inch in diameter, at the point marked previously (Fig. 7).

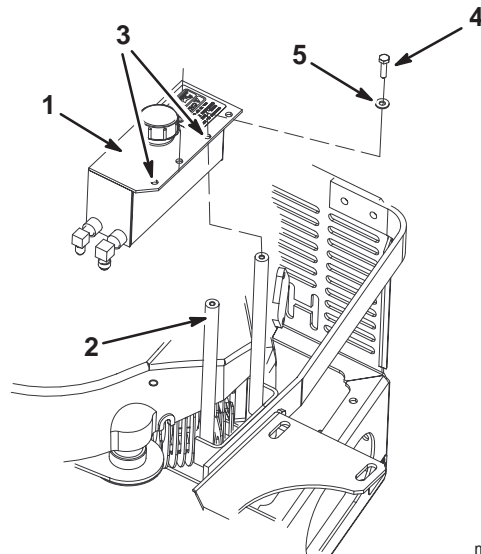
5. Install the tank stand in the upright position as shown in figure 8, using one bolt (5/16 x 1 inch), one bolt (5/16 x 3/4 inch), and two flange nuts (5/16 inch).



**Figure 8**

- |                                 |                          |
|---------------------------------|--------------------------|
| 1. Tank stand, upright position | 3. Bolt, 5/16 x 3/4 inch |
| 2. Bolt, 5/16 x 1 inch          | 4. Flange nut, 5/16 inch |
|                                 | 5. Drilled hole          |

6. Position the hydraulic tank assembly on the tank stand, lining up the newly drilled holes to the tank stand posts (Fig. 9).



**Figure 9**

- |                    |                       |
|--------------------|-----------------------|
| 1. Tank assembly   | 4. Bolt, 1/4 x 1 inch |
| 2. Tank stand post | 5. Washer, 1/4 inch   |
| 3. Drilled holes   |                       |

7. Install the tank to the tank stand using two bolts (1/4 x 1 inch) and two washers (1/4 inch) as shown in figure 9.

## Rerouting the Hydraulic Pump Lines

The hydraulic lines that connect the pump to the tank need to be rerouted to reach the new tank position.

1. Loosen the swivel nuts of the threaded elbow connections at both the left and right pumps and disconnect the hydraulic lines (Fig. 10).

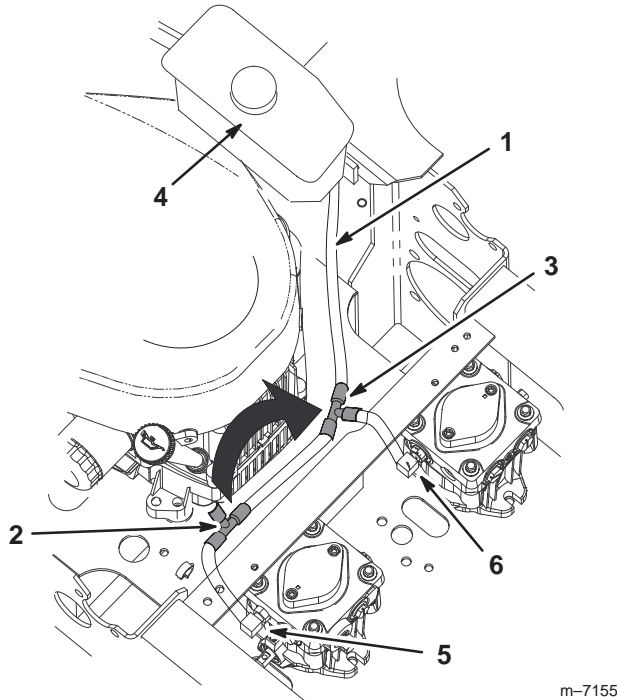


Figure 10

- |                               |                                    |
|-------------------------------|------------------------------------|
| 1. Hydraulic pump line        | 5. Threaded connection, right pump |
| 2. T-connection, old location | 6. Threaded connection, left pump  |
| 3. T-connection, new location |                                    |
| 4. Hydraulic tank             |                                    |

**Important** Do not disconnect the hydraulic lines at the T-connection.

2. Flip the hydraulic line assembly, as shown in figures 10 and 11, so the lines reach the new tank location.

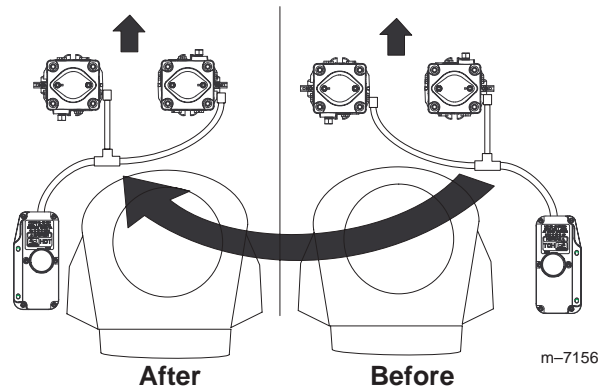


Figure 11

3. Connect the hydraulic lines to the respective pumps (Fig. 11).
4. Connect the remaining hydraulic line to the hydraulic tank.

## Installing the New Hydraulic Line

1. Locate the swivel head hydraulic line assembly, for model year 2001 and before, and apply thread sealer tape to the pipe thread end of the line (Fig. 12).

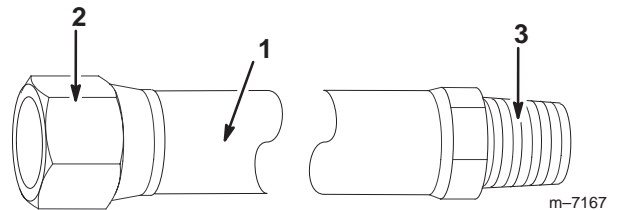
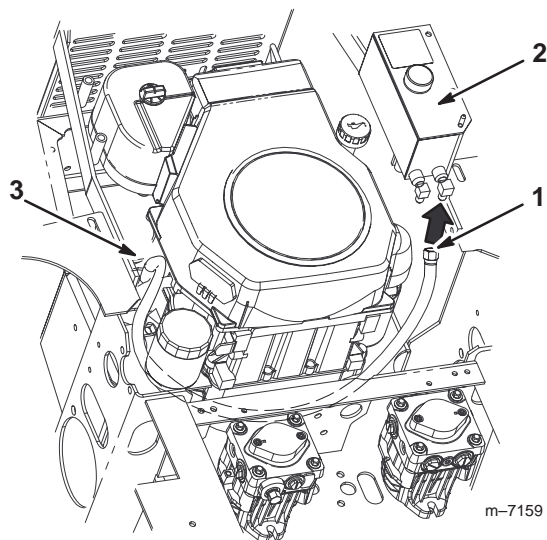


Figure 12

- |  |                    |
|--|--------------------|
| 1. Hydraulic line assembly, model year 2001 and before | 2. Swivel head end |
|  | 3. Pipe thread end |
2. Connect the pipe thread end of the new hydraulic line assembly to the hydraulic filter bracket.
  3. Route the new line around the engine and to the hydraulic tank (Fig. 13).

- A. For units with Kawasaki engines, use the screw removed previously and the R-clamp to secure the new hydraulic line to the engine (Fig. 4).
4. Install the swivel head end of the new hydraulic line to the hydraulic tank at the elbow fitting as shown in figure 13.



**Figure 13**

1. New hydraulic line
2. Hydraulic tank
3. Filter location

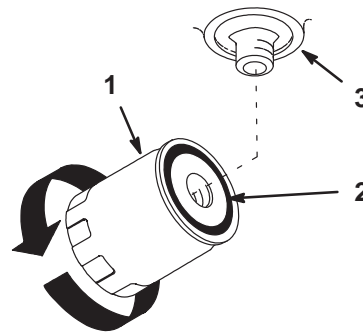
## Replacing the Filter and Filling the Hydraulic Tank

Fluid Type: Mobil 1 15W-50 synthetic motor oil or equivalent synthetic oil.

**Important** Use oil specified or equivalent. Other fluids could cause system damage.

1. Change the hydraulic filter with the filter included in the loose parts before the hydraulic fluid is replaced.
2. Apply a thin coat hydro fluid to the rubber gasket on the replacement filter (Fig. 14).

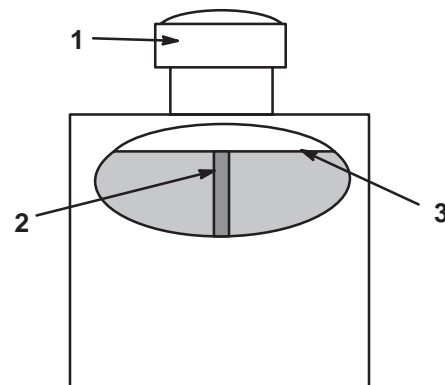
3. Install the replacement hydraulic filter onto the filter adapter (Fig. 14). Do not tighten.



**Figure 14**

1. Hydraulic filter
2. Gasket
3. Adapter

4. Remove the cap from the filler neck.
5. Fill the hydraulic tank with hydraulic fluid until the fluid overflows the filter and then turn it clockwise until the rubber gasket contacts the filter adapter, then tighten the filter an additional 1/2 turn (Fig. 14).
6. Clean up any spilled fluid.
7. Add fluid to the top of the baffle in the hydraulic tank (Fig. 15). **Do not overfill.**



**Figure 15**

1. Cap
2. Baffle
3. Hot fluid level—full

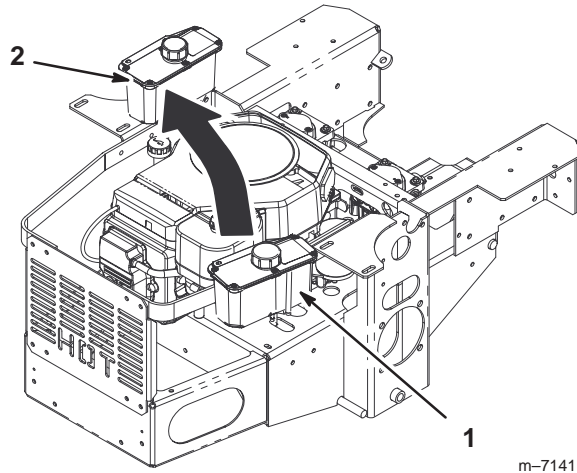
8. Clean the area around the filler neck of hydraulic tank.
9. Install cap on filler neck.

## Restart Original Maintenance Schedule

After changing the hydraulic fluid or working on the system, it is necessary to restart the maintenance schedule. This includes changing the hydraulic fluid after the first 8 hours of use. Refer to the Maintenance Section in your *Operator's Manual* for more information.

# Relocating the Hydraulic Tank for Model Year 2002

The hydraulic tank is moved from the right side to the left side (Fig. 16). Once the tank is moved, the hydraulic lines are rerouted to accommodate the new tank location.

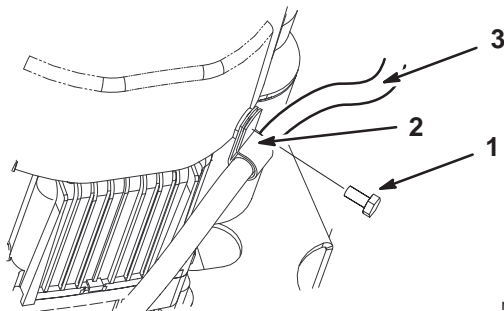


**Figure 16**

1. Old tank location
2. New tank location

## Removing the Hydraulic Tank

1. Locate the hydraulic line that runs from the tank to the filter.
2. Disconnect the line at the tank by removing the spring lock securing the line to the tank. Remove the spring lock from the line and save for later use.
3. Disconnect the line at the filter bracket. Discard the hydraulic line.
  - A. For units with Kawasaki engines, remove the screw and R-clamp securing the hydraulic line to the engine (Fig. 17). Save the screw for later use.



**Figure 17**

1. Screw
2. R-clamp
3. Hydraulic line

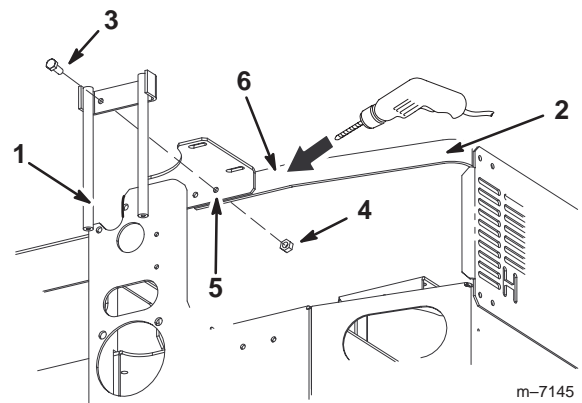
4. Locate the hydraulic line that runs from the tank to the hydraulic pumps.
5. Disconnect the line at the tank by removing the spring lock securing the line to the tank. Keep the spring lock from the line for later use.
6. Remove the two bolts, two washers, and two flange nuts securing the hydraulic tank to the engine guard and discard.
7. Remove the hydraulic tank assembly.

## Installing the Hydraulic Tank

A hole must be drilled in the left engine guard to accommodate the new tank stand. Use the tank stand to mark the location of the drill hole.

1. Install the tank stand upside down to the left engine guard as shown in figure 7, using a bolt (5/16 x 1 inch) and a flange nut (5/16 inch).

**Important** Verify the rear bolt hole is used when attaching the tank stand (Fig. 18).

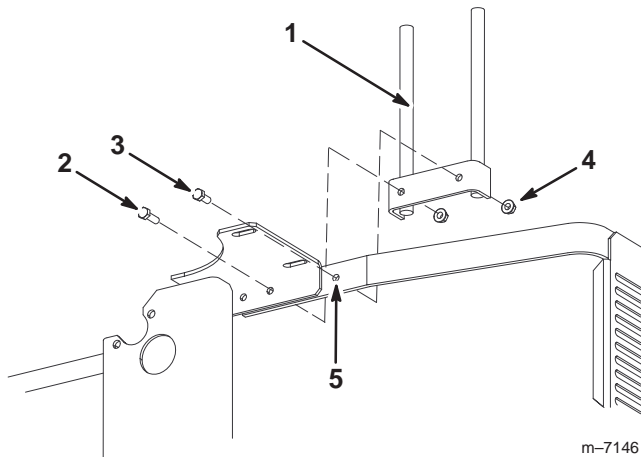


**Figure 18**

1. Tank stand, upside down
  2. Left engine guard
  3. Bolt, 5/16 x 1 inch
  4. Flange nut, 5/16 inch
  5. Rear bolt hole
  6. Drill point
2. Use a center punch to mark the location of the second hole to be drilled.
  3. Remove the tank stand and fasteners. Set them aside for later use.
  4. Drill a hole in the engine guard, 5/16 inch in diameter, at the point marked previously.



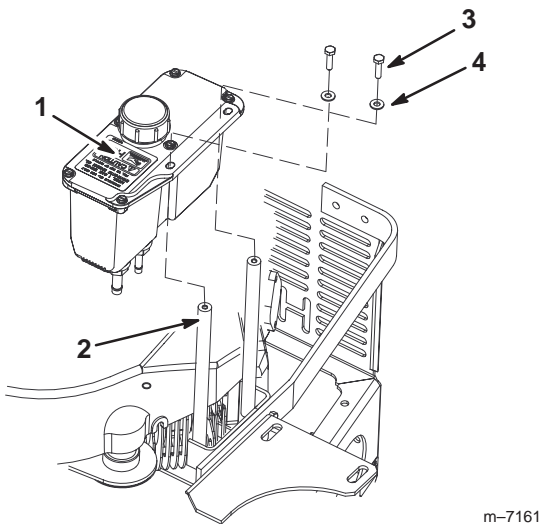
5. Install the tank stand in the upright position as shown in figure 19, using one bolt (5/16 x 1 inch), one bolt (5/16 x 3/4 inch), and two flange nuts (5/16 inch).



**Figure 19**

- |                                 |                          |
|---------------------------------|--------------------------|
| 1. Tank stand, upright position | 3. Bolt, 5/16 x 3/4 inch |
| 2. Bolt, 5/16 x 1 inch          | 4. Flange nut, 5/16 inch |
|                                 | 5. Drilled hole          |

6. Position the hydraulic tank assembly on the tank stand, lining up the existing holes in the tank to the tank stand posts (Fig. 20).



**Figure 20**

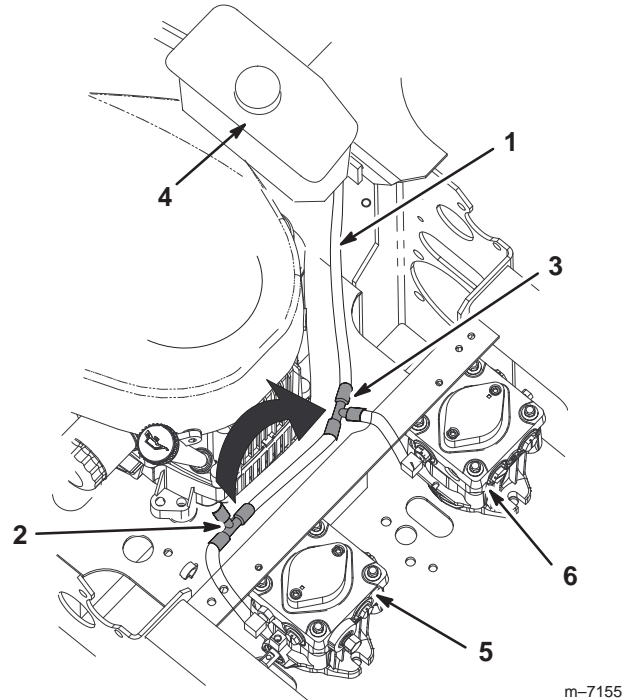
- |                    |                       |
|--------------------|-----------------------|
| 1. Tank assembly   | 3. Bolt, 1/4 x 1 inch |
| 2. Tank stand post | 4. Washer, 1/4 inch   |

7. Install the tank to the tank stand using two bolts (1/4 x 1 inch) and two washers (1/4 inch) as shown in figure 20.

## Rerouting the Hydraulic Pump lines

The hydraulic lines that connect the pump to the tank need to be rerouted to reach the new tank position.

1. Loosen the swivel nuts of the threaded elbow connections at both the left and right pumps and disconnect the hydraulic lines (Fig. 21).



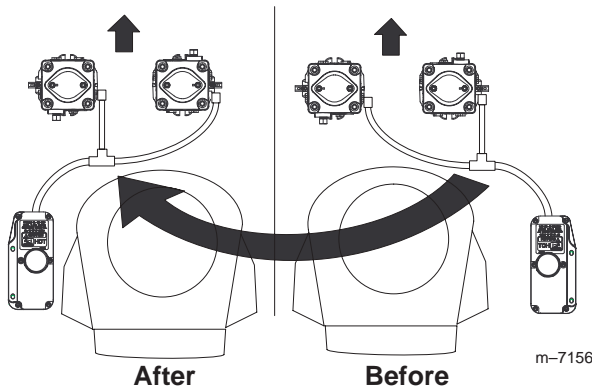
**Figure 21**

- |                               |                         |
|-------------------------------|-------------------------|
| 1. Hydraulic pump line        | 4. Hydraulic tank       |
| 2. T-connection, old location | 5. Right hydraulic pump |
| 3. T-connection, new location | 6. Left hydraulic pump  |

**Important** Do not disconnect the hydraulic lines at the T-connection.



2. Flip the hydraulic line assembly, as shown in figures 21 and 22, so the lines reach the new tank location.

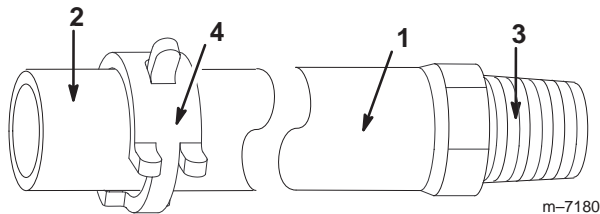


**Figure 22**

3. Connect the hydraulic lines to the respective pumps (Fig. 22).
4. Connect the remaining hydraulic line to the hydraulic tank.

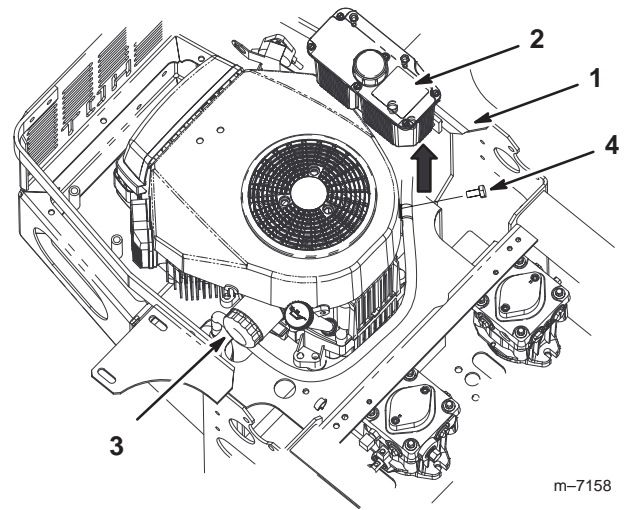
## Installing the New Hydraulic Line

1. Locate the open end hydraulic line assembly, for model year 2002, and apply thread sealer tape to the pipe thread end of the line (Fig. 23).



**Figure 23**

1. Hydraulic line assembly, model year 2002
  2. Open end
  3. Pipe thread end
  4. Spring lock
2. Place the spring lock, removed previously, over the open end of the hydraulic line assembly.
  3. Connect the pipe thread end of the new hydraulic line to the hydraulic filter bracket.
  4. Route the new line around the engine and to the hydraulic filter (Fig. 24).
    - A. For units with Kawasaki engines, use the screw removed previously and the R-clamp to secure the new hydraulic line to the engine (Fig. 17).
  5. Install the open end of the new hydraulic line to the hydraulic tank as shown in figure 24. Use the spring lock to secure the line to the tank.



**Figure 24**

Kawasaki Engine Shown

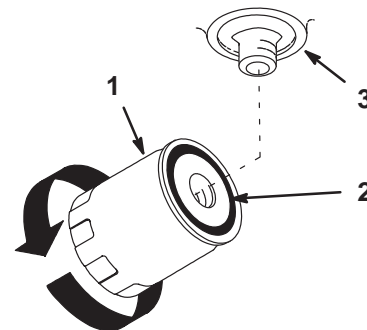
- |                       |                    |
|-----------------------|--------------------|
| 1. New hydraulic line | 3. Filter location |
| 2. Hydraulic tank     | 4. Screw           |

## Replacing the Filter and Filling the Hydraulic Tank

Fluid Type: Mobil 1 15W-50 synthetic motor oil or equivalent synthetic oil.

**Important** Use oil specified or equivalent. Other fluids could cause system damage.

1. Change the hydraulic filter with the filter included in the loose parts before the hydraulic fluid is replaced.
2. Apply a thin coat hydro fluid to the rubber gasket on the replacement filter (Fig. 25).
3. Install the replacement hydraulic filter onto the filter adapter (Fig. 25). Do not tighten.

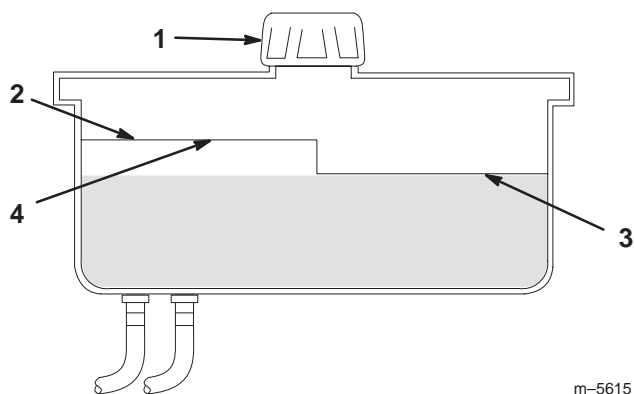


**Figure 25**

- |                     |            |
|---------------------|------------|
| 1. Hydraulic filter | 3. Adapter |
| 2. Gasket           |            |

4. Remove the cap from the filler neck.

5. Fill the hydraulic tank with hydraulic fluid until the fluid overflows the filter and then turn it clockwise until the rubber gasket contacts the filter adapter, then tighten the filter an additional 1/2 turn (Fig. 25).
6. Clean up any spilled fluid.
7. Add fluid to the cold level of the baffle in the hydraulic tank (Fig. 26). **Do not overfill.**



**Figure 26**

- |           |                          |
|-----------|--------------------------|
| 1. Cap    | 3. Cold fluid level—full |
| 2. Baffle | 4. Hot fluid level—full  |

8. Clean the area filler neck of hydraulic tank.
9. Install cap on filler neck.

## Restart Original Maintenance Schedule

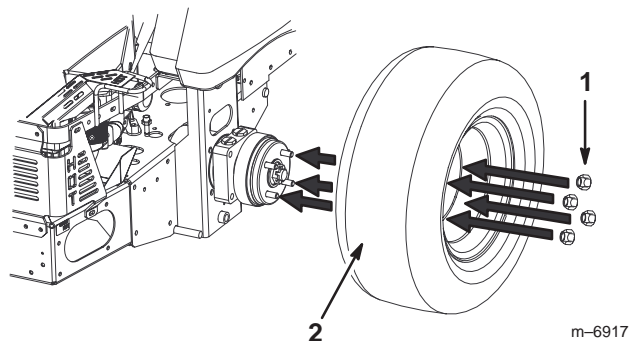
After changing the hydraulic fluid or working on the system, it is necessary to restart the maintenance schedule. This includes changing the hydraulic fluid after the first 8 hours of use. Refer to the Maintenance Section in your *Operator's Manual* for more information.

## Installing the Rear Wheels

1. Mount the wheels with the valve stem to the outside and secure it with the nuts previously removed (Fig. 27).

**Note:** Most units have nuts securing the wheel to the unit; however, some older models have bolts in place of the nuts.

2. Torque the nuts to 95 ft-lb (128 N·m).



**Figure 27**

Right wheel shown

- |               |                    |
|---------------|--------------------|
| 1. Wheel nuts | 2. Left rear wheel |
|---------------|--------------------|

# Bleeding the Hydraulic System



## Warning



Hydraulic fluid escaping under pressure can penetrate skin and cause injury.

- If hydraulic fluid is injected into the skin it must be surgically removed within a few hours by a doctor familiar with this type of injury. Gangrene may result if this is not done.
- Keep body and hands away from pin hole leaks or nozzles that eject high pressure hydraulic fluid.
- Use cardboard or paper to find hydraulic leaks.
- Safely relieve all pressure in the hydraulic system before performing any work on the hydraulic system.
- Make sure all hydraulic fluid hoses and lines are in good condition and all hydraulic connections and fittings are tight before applying pressure to hydraulic system.

After changing the hydraulic fluid or working on the system, it is necessary to bleed the system.

1. Raise the rear of the machine so wheels are off the ground and support with jack stands, if not already raised.
2. Start the engine and run at low idle speed. Engage the lever and traction on one side and spin the wheel by hand.
3. When the wheel begins to spin on its own, keep it engaged until wheel drives smoothly. Approximately 15 minutes.
4. Recheck the fluid level while the fluid is warm. The fluid should be between cold and hot.
5. If required, add fluid to the hydraulic tank. **Do not overfill.**

**Note:** The fluid level should be to the top of the **hot** level of the baffle, when the fluid is hot.

6. Install cap on filler neck.

