FORM NO. 3319–483

TORO®

MODEL NO. 30726–70001 & UP

INSTALLATION INSTRUCTIONS

HYDRAULIC KIT
GROUNDSMASTER® 3000

NOTE: The Hydraulic Kit can only be installed on Groundsmaster 3000 traction units with serial numbers 70001 & up.

⚠ CAUTION

Before servicing or making adjustments to the machine, stop engine and remove key from the switch.

NOTE: Right and left are as viewed from the operator's position.

⚠ WARNING

Before disconnecting or performing any work on the hydraulic system, all pressure in the system must be relieved by stopping the engine and lowering the cutting units to the ground.

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. Hydraulic fluid escaping under pressure can penetrate skin and cause injury. Fluid accidentally injected into the skin must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

IMPORTANT: Before modifying any hydraulics on the traction unit, clean all grease, dirt or grass clippings from areas to keep from contaminating the hydraulic system. If pressure washing the machine, be sure to allow all water to dry before continuing.

MOUNT PUMP

1. Thoroughly clean front of axle.
2. Remove plug (Fig. 1) from front of axle.

IMPORTANT: Before installing any hydraulic fittings, make sure O–rings are lubricated with hydraulic oil and positioned correctly. Use a backup wrench to tighten fittings.

3. Thread a 45° fitting into front of axle (Fig. 2). Tighten fitting until nut contacts axle housing, then, back out until fitting is orientated 45° toward the right side of traction unit. Tighten fitting nut.
4. Thread quick coupler nipple (Fig. 2) onto 45° fitting.
5. Remove (4) metric bolts securing cover plate (Fig. 1) to front of axle. Remove cover plate to expose PTO clutch shaft.

IMPORTANT: Retain cover plate and bolts for re–installation. See mechanical PTO drive conversion.

6. Remove square O–ring from cover plate and install in end of new pump assembly.
7. Insert splined coupler onto axle shaft.

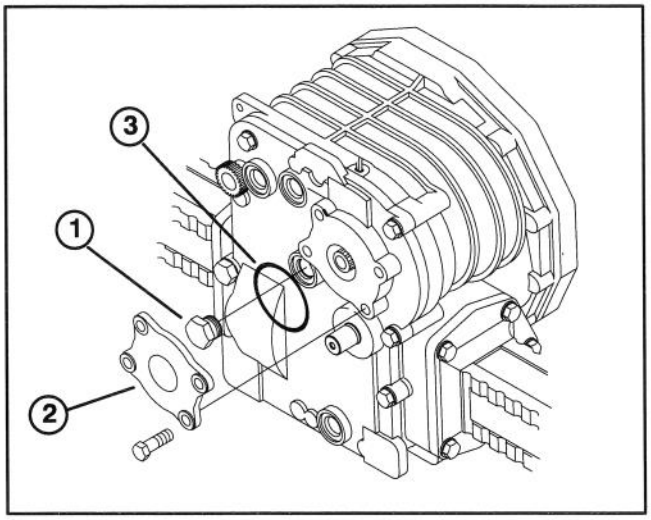

Figure 1
1. Plug
2. Cover plate
3. Square O–ring

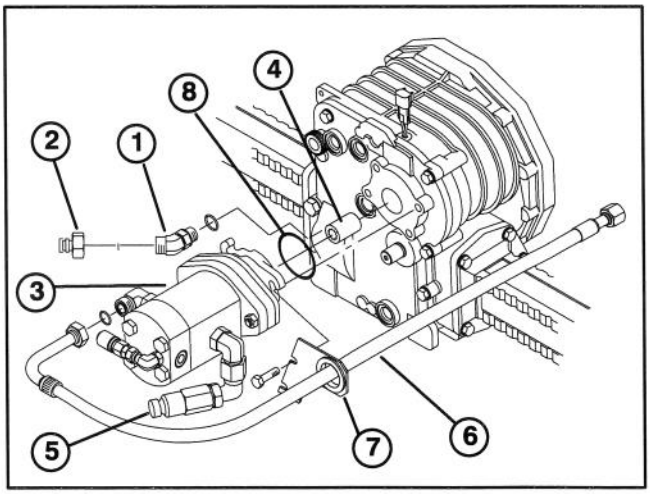

Figure 2
1. 45° Degree fitting
2. Quick coupler nipple
3. Pump
4. Splined coupler
5. Flush faced coupler
6. Pump supply hose
7. Hose bracket
8. Square O–ring

8. Thread (4) new M10 x 30mm bolts into axle until bolt heads are approximately 1/2" from axle surface.

9. Insert pump shaft into coupler and pump flanges onto bolts. Pump to be positioned so flush face coupler fitting is on left side.

10. Insert hose bracket between bolt heads and pump flanges (Fig. 2).

11. Rotate pump clockwise and tighten bolts.

MOUNT PUMP SUPPLY HOSE

1. Thoroughly clean hydraulic manifold (Fig. 3).

2. Position a drain pan under "T" fitting on bottom of hydraulic manifold.

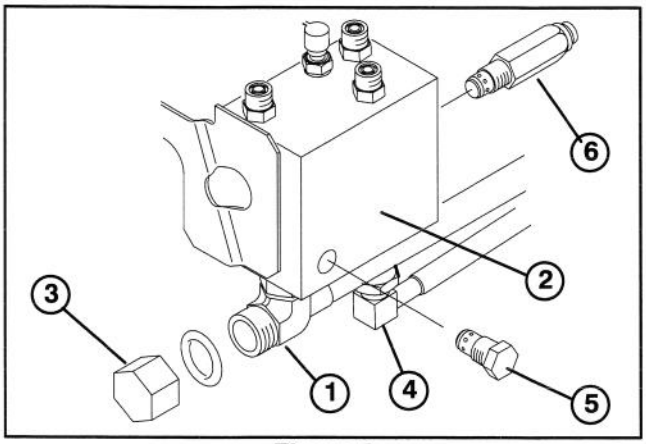

Figure 3

1. **"T" fitting (Port "T2")**
2. **Hydraulic manifold**
3. **Hydraulic cap**
4. **90° Fitting**
5. **Check valve (Port "CV ")**
6. **Relief valve (Port "R1 ")**

3. Remove and retain hydraulic cap from "T" fitting. See mechanical PTO drive conversion.

4. Connect pump supply hose (Fig. 2) to 90° fitting on right side of pump (Fig. 2) and to "T" fitting on bottom of manifold (Fig. 3). Straight end of hose to be routed through grommet on hose bracket, between main axle housing and left lift arm (above left axle shaft housing).

INSTALL RELIEF & CHECK VALVES

1. Remove plug from "CV" port on left side of hydraulic manifold (Fig. 3).

2. Install check valve in its place.

3. Remove plug from "R1" port on rear of hydraulic manifold (Fig. 3).

4. Install relief valve in its place.

5. Locate implement relief valve on top of transaxle.

6. Loosen lock nut on top of valve. Using a Allen wrench, screw valve clockwise until spring bottoms out, then, tighten nut.

MOUNT OIL FILTER ASSEMBLY

1. Using dimensions shown in figure 4, locate, mark and drill (2) 7/16" dia. holes in left end of frame support cross member (behind battery compartment).

Note: Holes may already be in frame support.

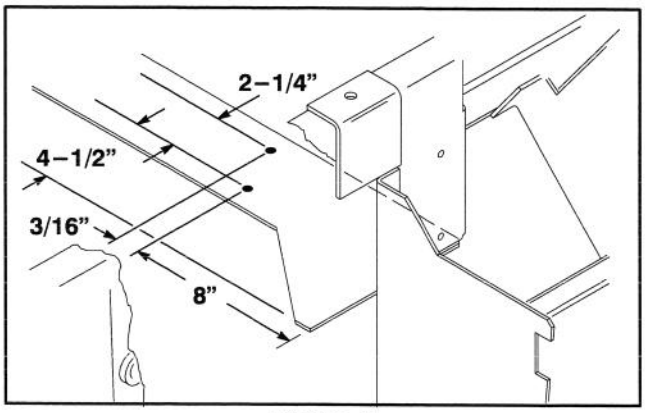

Figure 4

2. Position a drain pan under 90° fitting (Fig. 3) on bottom of hydraulic manifold.

3. Loosen hose clamp securing hose to fitting.

4. Slide hose off fitting allowing oil to drain into pan.

5. Re–install hose onto fitting and re–secure clamp.

6. Mount filter assembly (Fig. 5) to underside of frame support with (2) 3/8–16 x 1–1/4" lg. capscrews and locknuts. Filter assembly to be positioned so flush face coupler is toward front of machine.

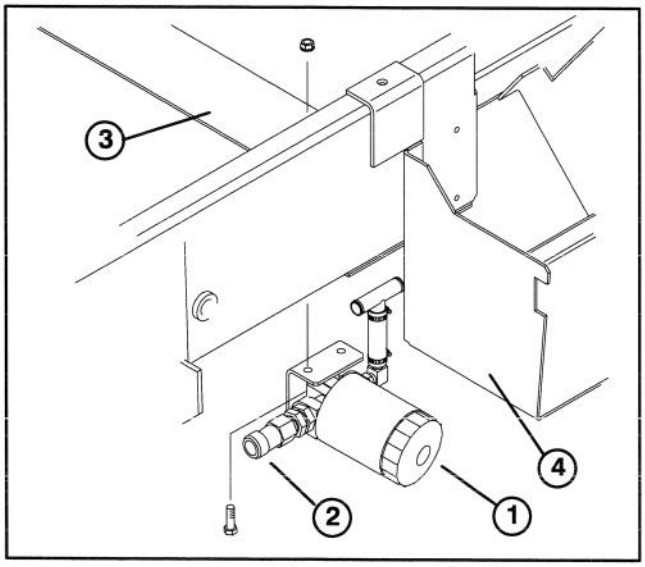

Figure 5

1. **Oil filter assembly**
2. **Flush faced fitting**
3. **Frame support**

7. Locate and mark where center of filter assembly "T" fitting contacts drained manifold hose (Fig. 6).

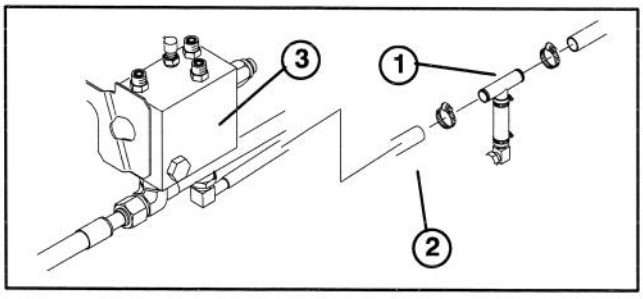

Figure 6

1. **"T" fitting**
2. **Manifold hose**
3. **Hydraulic manifold**

8. Using a low pressure line cutter, cut manifold hose.

9. Insert hose ends on "T" fitting and secure with hose clamps.

MOUNT OIL COOLER

1. Rotate hood latch and open hood.

2. Remove (2) hair pin cotters and clevis pins securing hood brackets to hood pivot. Remove hood.

3. Remove (2) 3/8–16 x .75 lg. capscrews securing oil cooler R–clamps to mounting brackets (Fig. 7).

4. Raise oil cooler enough to allow removal of R–clamps from cooler.

5. Remove capscrews securing oil cooler mounting brackets to radiator support braces (Fig. 7).

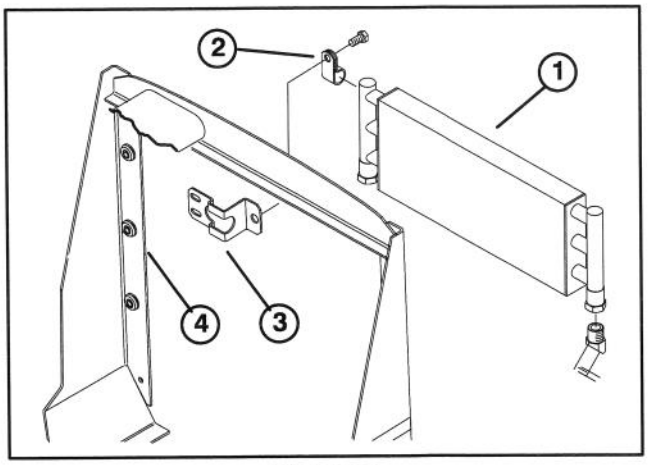

Figure 7

1. **Oil cooler**
2. **R–clamp**
3. **Mounting bracket**
4. **Radiator support braces**

6. Thread a 45° barb fitting into bottom of each tube of new oil cooler (Fig. 8). Tighten each fitting until nut contacts cooler, then, back out until fitting is positioned inward and approximately 30° rearward. Tighten fitting nuts.

7. Insert (4) R–clamps (Fig. 8) onto oil cooler cross tubes positioning clamps as follows:

A. Two R–clamps on second row from top of cross tubes with mounting holes down.

B Two R–clamps on bottom row of cross tubes with mounting holes up.

8. Insert a 3/8–16 x 3/4" lg. capscrew through each R–clamp and secure with a retaining ring. Position capscrews as shown in figure 8.

Note: Retaining rings will hold capscrews in place when removing/installing oil cooler for maintenance.

Note: Use a 3/8" socket to push retaining rings onto capscrews.

9. Loosely secure new cooler mounting brackets to R–clamp capscrews as shown in figure 8.

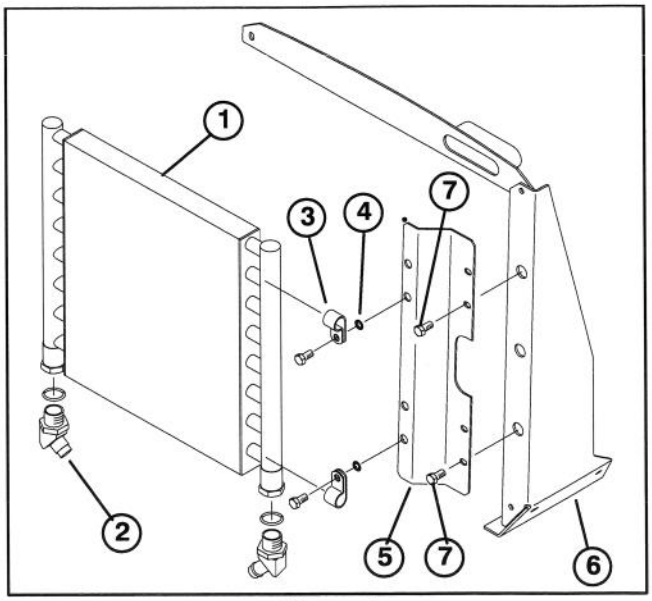

Figure 8

1. **Oil cooler**
2. **45° Barb fitting**
3. **R–clamp**
4. **Retaining ring**
5. **Mounting bracket**
6. **Radiator support braces**
7. **Existing capscrews**

10. Remove existing capscrews securing radiator to support braces. Only remove capscrews shown in figure 8. Do not loosen or remove middle capscrew.

11. Position a drain pan under old oil cooler.

12. Loosen hose clamps securing hoses to fittings on old oil cooler.

13. Tilt old oil cooler up and backward, remove hoses and hold them up to prevent additional oil loss.

14. Remove old oil cooler. Install new oil cooler with mounting brackets toward radiator.

15. Secure hoses to new oil cooler. Make sure hoses remain crossed. Tighten hose clamps.

16. Using capscrews previously removed and hole locations shown in figure 8, mount new oil cooler to support braces. Tighten all oil cooler mounting fasteners.

17. Re–install hood.

18. Check hydraulic fluid level and add fluid as required. DO NOT ENGAGE PTO. Start engine and drive machine for approximately one minute, turning steering wheel in both directions. Re–check fluid level to assure level is at FULL mark.

MECHANICAL PTO DRIVE CONVERSION

To convert traction unit back to a mechanical PTO option, proceed as follows:

1. Loosen (4) M10 x 30mm bolts securing pump to axle and remove hose bracket from bolt.

2. Position a drain pan under hydraulic manifold (Fig. 3) and disconnect pump supply hose from "T" fitting on bottom of manifold.

3. Re–install hydraulic cap on "T" fitting.

4. Rotate pump assembly counter clockwise and remove from axle. Remove mounting bolts. Make sure splined coupler comes with pump.

5. Remove square O–ring from pump and install on cover plate.

6. Re–install cover plate to axle with (4) M10 x 25mm bolts.

7. Check hydraulic fluid level any time work is done on hydraulic system or connections.

HYDRAULIC SCHEMATIC