FORM NO. 3322–957 Rev B

Four Wheel Drive Kit

Groundsmaster 580D

Model No. 30599—30101 thru 99999

INSTALLATION INSTRUCTIONS

⚠ WARNING

POTENTIAL HAZARD
- **Traction Unit rolls over.**

WHAT CAN HAPPEN
- **Bodily injury could occur.**

HOW TO AVOID THE HAZARD
- **Make sure ROPS is installed on all Groundsmaster 580–D Traction Units equipped with a Four Wheel Drive Kit. Use ROPS kit, Part No. 104–1265 with this kit.**

Install Rear Axle

1. Disconnect and remove the rear tires, tie rod assembly, and steering cylinders from the rear axle assembly (Fig. 1). Remove the rear axle assembly and discard the mounting locknut.

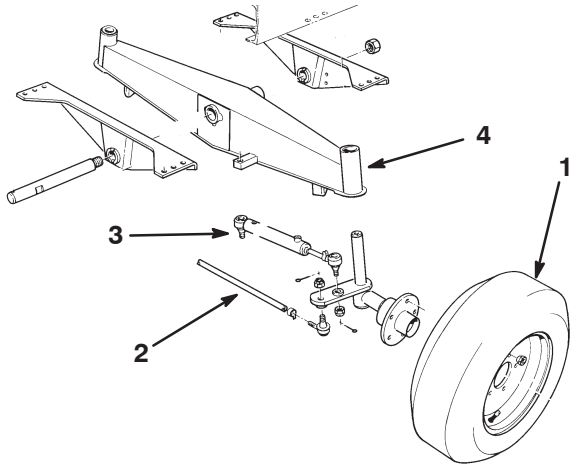


Figure 1

1. Rear tire
2. Tire rod
3. Steering cylinder
4. Rear axle assembly

2. Mount the four–wheel–drive axle to the axle support with new large locknut. Tighten the locknut enough to eliminate any axial movement, yet allow free rotation of the axle (Fig. 2).

3. Slide a thrust washer over the shaft on each wheel motor housing (Fig. 2).

Printed in USA

4. Slide the left and right wheel motor housings onto the axle and secure with retaining rings, spindle caps, and 3/8–16 x 3/4" lg. flange bolts (Fig. 2).

5. Reinstall the steering cylinders. Adjust the ball joint on the steering cylinder so that the steering arms contact the stops on the axle in either direction (Fig. 2).

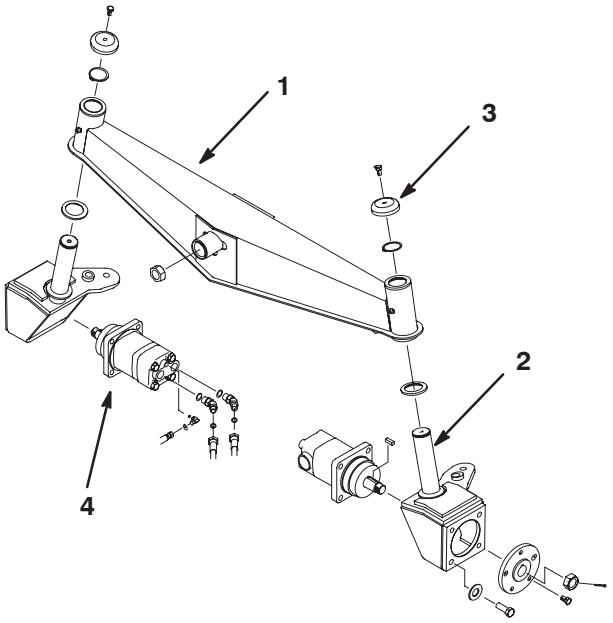


Figure 2

1. Four wheel drive axle
2. Wheel motor housing
3. Spindle caps
4. Wheel motor

6. Reinstall the tie rod and tires. Torque wheel studs to 50 ft–lbs. Adjust the tie rod so that the toe–in (measure at the front of the tires) is within 1/8 of an inch when the wheels are in the straight ahead position. The measurement must be taken at the same height from the ground both front and rear (Fig. 3). After adjusting, the slots in the tie rod and the clamps should face downwards.

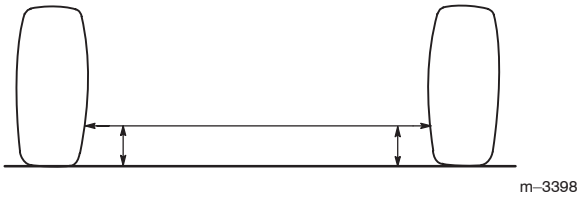


Figure 3

Install Hydraulic Lines

1. Remove the hydraulic tubes from the bulkhead assembly (Fig. 4).

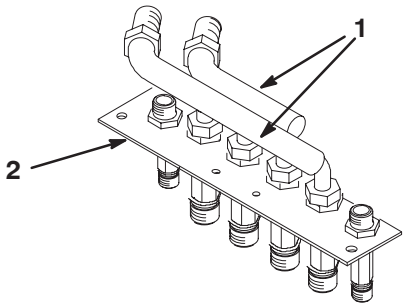


Figure 4

1. Hydraulic tubes
2. Bulkhead assembly

2. Clamp the bulkhead assembly to the bumper so that the serial plate is near the center of the bumper. The bulkhead fittings will be located between the rear bumper and axle support (Fig. 5).

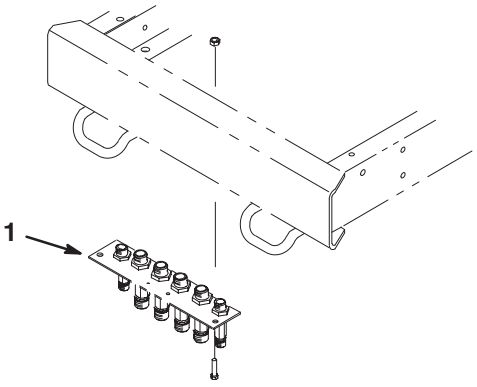


Figure 5

1. Bulkhead assembly

3. Using the bulkhead assembly as a template, locate, mark, and drill two 15/32” holes. Secure the bulkhead assembly to the rear bumper with two 3/8–16 x 1” lg. screws and 3/8–16 locknuts (Fig. 5). Remove the clamp.

4. Install the hoses from the wheel motors to the bulkhead assembly (Fig. 6).

Note: The two hoses in the center of the bulkhead assembly go to the rear port holes that are closest to the rear of the unit. The outside hoses attach to the port holes that are closest to the front of the unit.

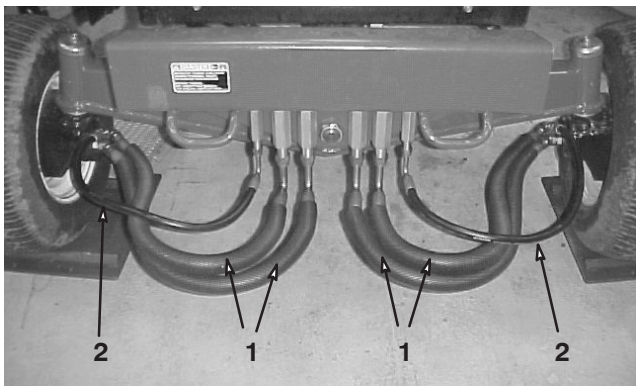


Figure 6

1. Wheel motor hoses (Part No. 100–3910)
2. Wheel motor drain hoses (Part No. 100–3912)

5. Install a Tee fitting to the bulkhead plate as shown in figure. 7.

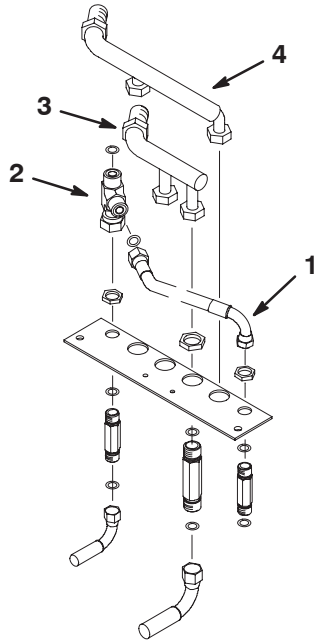


Figure 7

1. Bulkhead hose (Part No. 100–39110
2. Tee fitting
3. Hydraulic tube (short)
4. Hydraulic tube (long)

6. Install bulkhead hose as shown in figure. 7.

7. Reinstall the hydraulic tubes to the bulkhead assembly. Install longer tube first.

8. Using the dimension shown in figure 8 and block bracket as a template locate, mark, and drill two 9/32” holes in the right side of the frame (Fig. 8).

Note: The block bracket can also be welded to the side of the frame.

9. Attach the block bracket to the frame with two 5/16–18 x 3/4” lg. self–tapping screws and washers (Fig. 8).

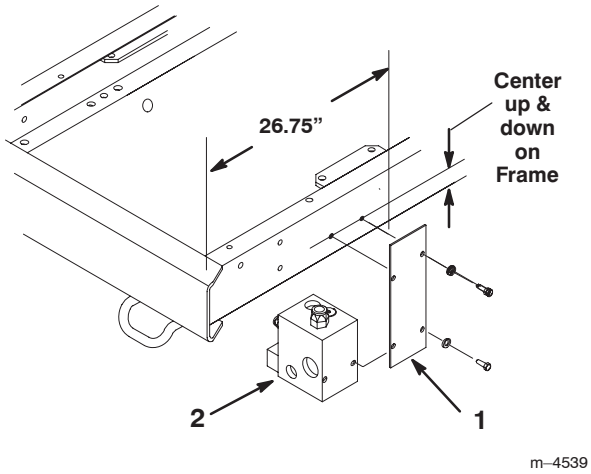


Figure 8

1. Block bracket
2. Control block

10. Attach the control block to the block bracket using two 5/16–18 x 5/8” lg. screws and washers (Fig. 8).

11. Install two tee fittings to the bulkheads on the wing deck motor return lines on both sides of the unit (Fig. 9).

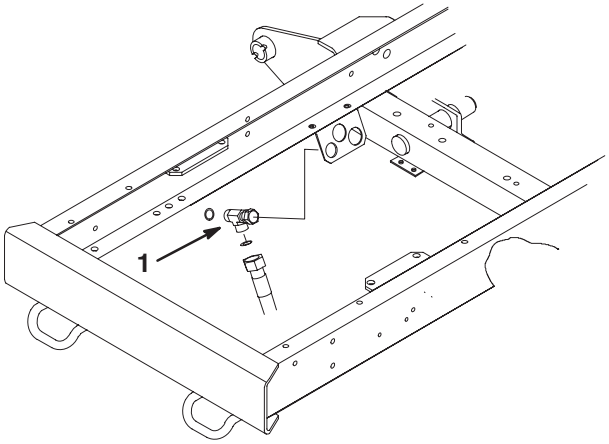


Figure 9

1. Tee fitting

12. Loosen the hose fittings at the Hydrostat. Install two tee fittings between the pressure lines from the Hydrostat and the traction tubes (Fig. 10). Tighten the hose fittings at the Hydrostat.

Note: To ease assembly of fittings and hoses, connect hoses to tee fittings before installing tee fittings.

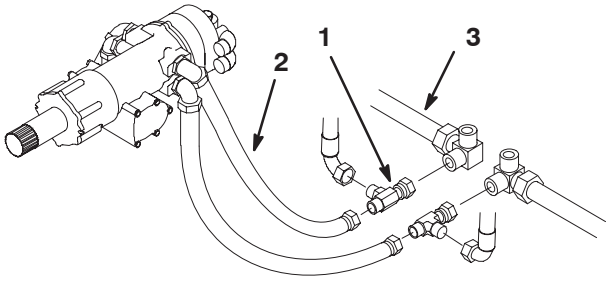


Figure 10

1. Tee fitting
2. Pressure line
3. Traction tube

13. Replace the 90 degree fitting in the charge port on the bottom of the Hydrostat with a tee fitting (Fig. 11). Replace the hose previously connected to 90 degree fitting with hose.

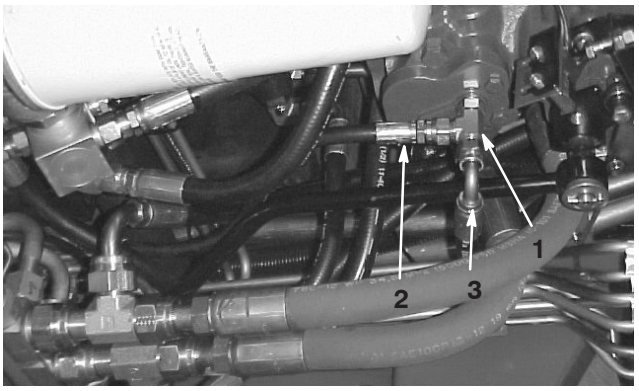


Figure 11

1. Tee fitting
2. Hose (Part No. 100–3919)
3. Hose (Part No. 100–4150)

14. Remove the two fasteners from the cover on the bottom of the Hydrostat. Install the mechanical switch so that the arm on the switch is in contact with the cam neutral device (approx. 3/8” in from outer edge of cam). Engage the switch by sliding it towards the cam until a click is heard. Slowly slide the switch away from the cam until it clicks again (resets) (Fig. 12).

15. To check position and operation of switch, depress traction pedal fully in reverse and measure gap between arm and switch body. Gap should be 1/8” minimum.

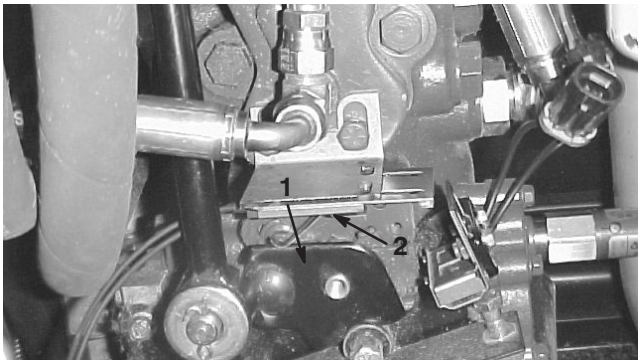


Figure 12

1. Cam
2. Switch

16. Insert the spacer into the hose clamp. Attach the hose clamp to the hose bracket using two 1/4–20 x 2–1/2” lg. screws and nuts. Remove the bolts and locknuts from the left front motor mount near the left side of the carrier frame and discard the locknuts. Install the hose bracket and hose clamp with the previously removed bolts and two new locknuts (Fig. 13).

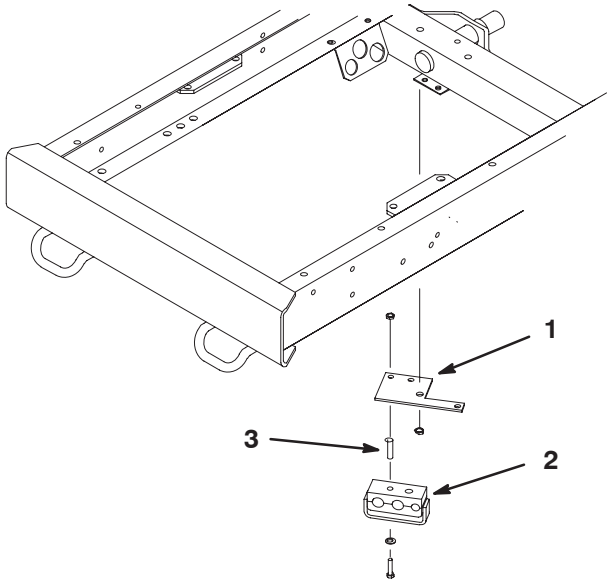


Figure 13

1. Hose bracket
2. Hose clamp
3. Spacer

17. Install the remaining hoses positioning as shown in figures 14 & 15 Use figures 16 –21 for reference during installation.

Note: Route hoses #2 thru #4 above carrier frame, on top of existing long hydraulic tubes and next to main wire harness.

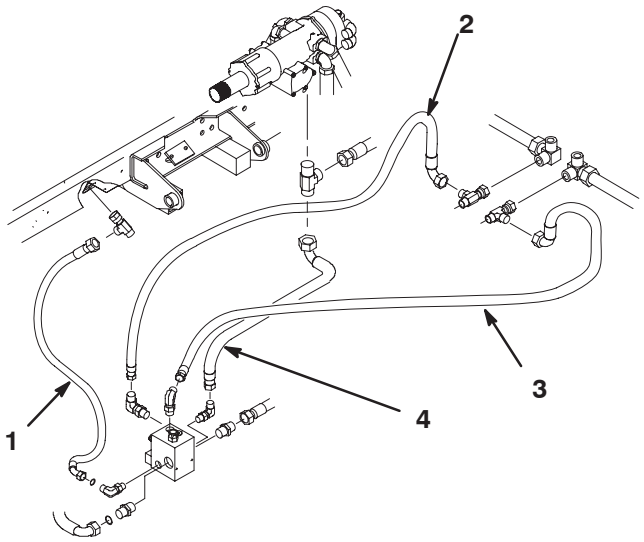


Figure 14

1. Hose (Part No. 76–9570)
2. Hose (Part No. 100–3916
3. Hose (Part No. 100–3917)
4. Hose (Part No. 100–3919)

Note: Route hose #3 under oil pan allowing a 4” gap between oil pan and hose.

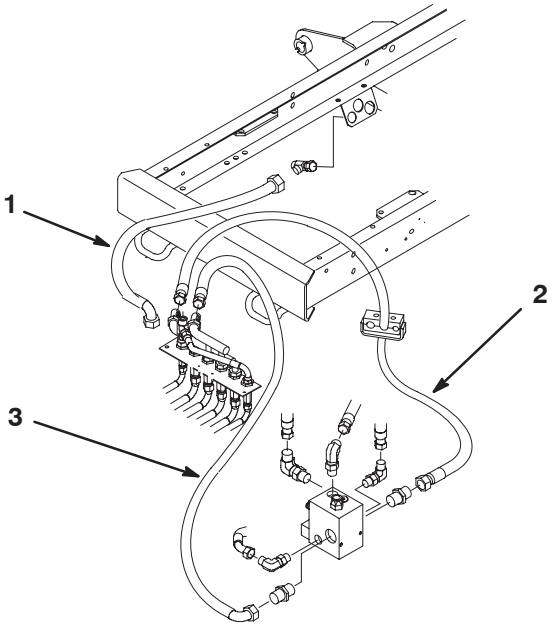


Figure 15

1. Hose (Part No. 100–3915)
2. Hose (Part No. 100–3913)
3. Hose (Part No. 100–3914)

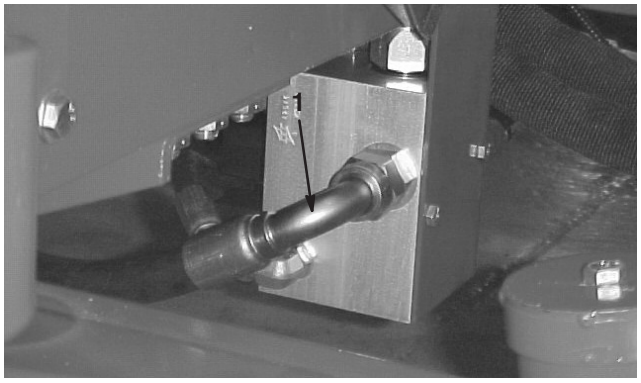


Figure 16

1. Hose (Part No. 100–3914)
2.

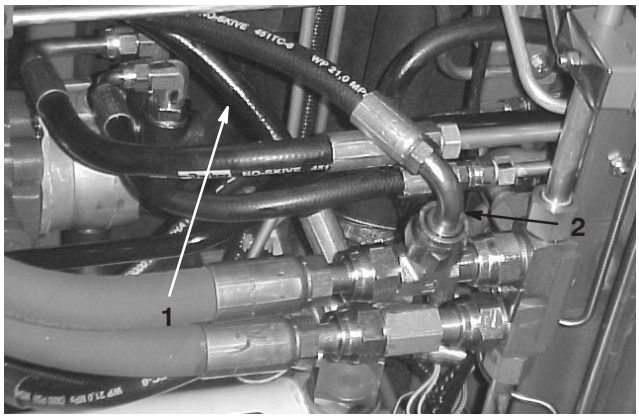


Figure 17

1. Hose (Part No. 100–3916)
2. Hose (Part No. 100–3917)

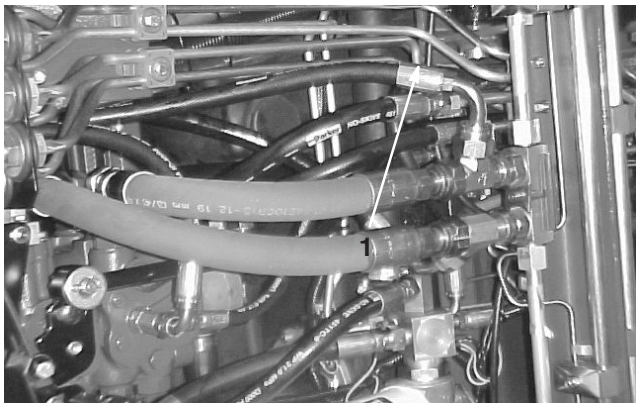


Figure 18

1. Hose (Part No. 100–3917)

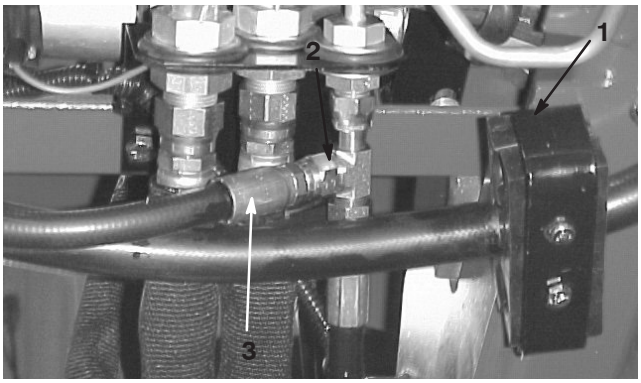


Figure 19

1. Clamp
2. Tee fitting
3. Hose (Part No. 100–3915)

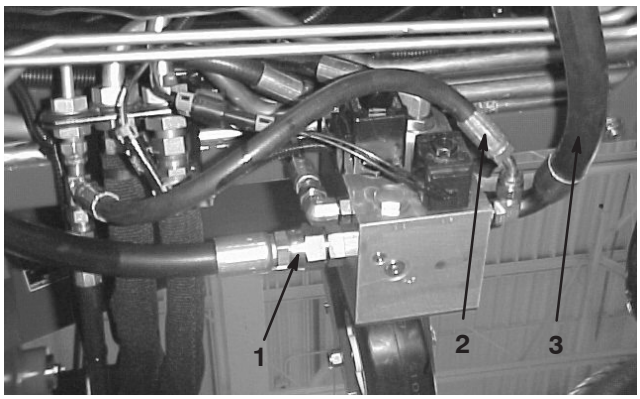


Figure 20

1. Hose (Part No. 100–3913)
2. Hose (Part No. 76–9570)
3. Hose (Part No. 100–3914)

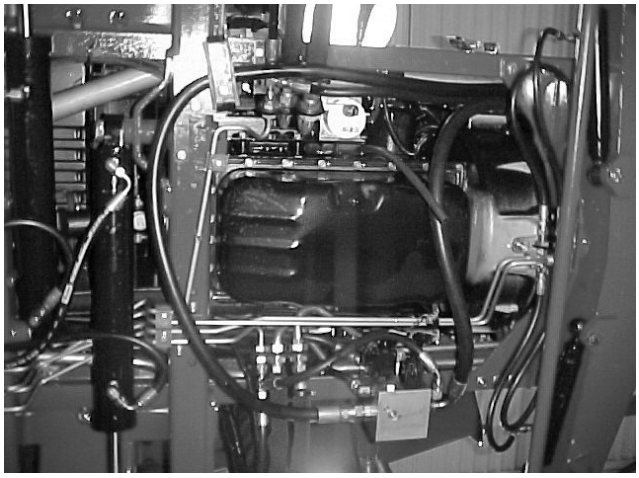


Figure 21

Installing Control Panel, Wire Harness and Bumper Guard

1. Remove the existing control panel control plate and replace it with the new control panel and control plate.

2. Attach the four–wheel–drive toggle switch to the right of the ignition switch on the control panel.

3. Unplug the glow plug indicator light from the wire harness and reinstall the indicator light in the new deck lift panel.

4. Remove the existing deck lift panel and replace it with the new deck lift panel and lift lever plate.

5. Install the new wire harness by following the electrical schematic. Route the harness under and out the back of the cup holder. The harness should continue straight down the outside of the shrouding to the existing wire harness and run along side of it.

6. Attach the bumper bracket to the frame using eight 3/8–16 x 1–1/4" lg. bolts, washers, and nuts. (Fig. 22).

7. Secure the guard assembly to the bumper bracket with four carriage bolts (Fig. 22).

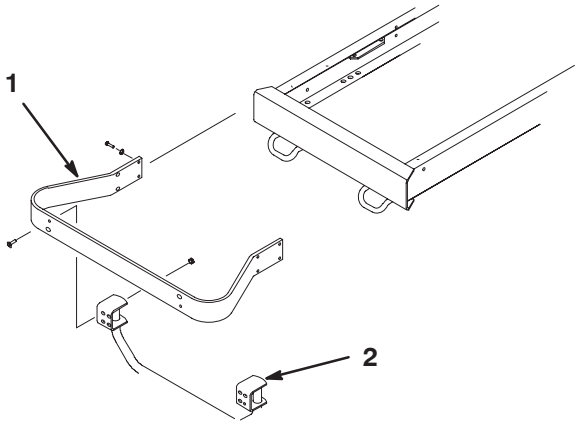


Figure 22

1. Bumper bracket
2. Guard assembly

Operation

Toggle the switch in the on or forward position to engage the four wheel drive in forward. Toggle the switch in the momentary or reverse position will engage the four wheel drive in reverse.

Note: Four wheel drive should only be used in mowing mode.

Note: Come to a complete stop before engaging or disengaging the four wheel drive.

Note: Mow speed will drop from 7.5 mph to 5.2 mph with 4wheel drive engaged.

Check Hydraulic Lines

Check the hydraulic lines and hoses for leaks, loose fittings, kinked lines, and loose mounting supports. Make necessary repairs before operating.

Note: Keep areas around the hydraulic system clean from grass and debris build up.

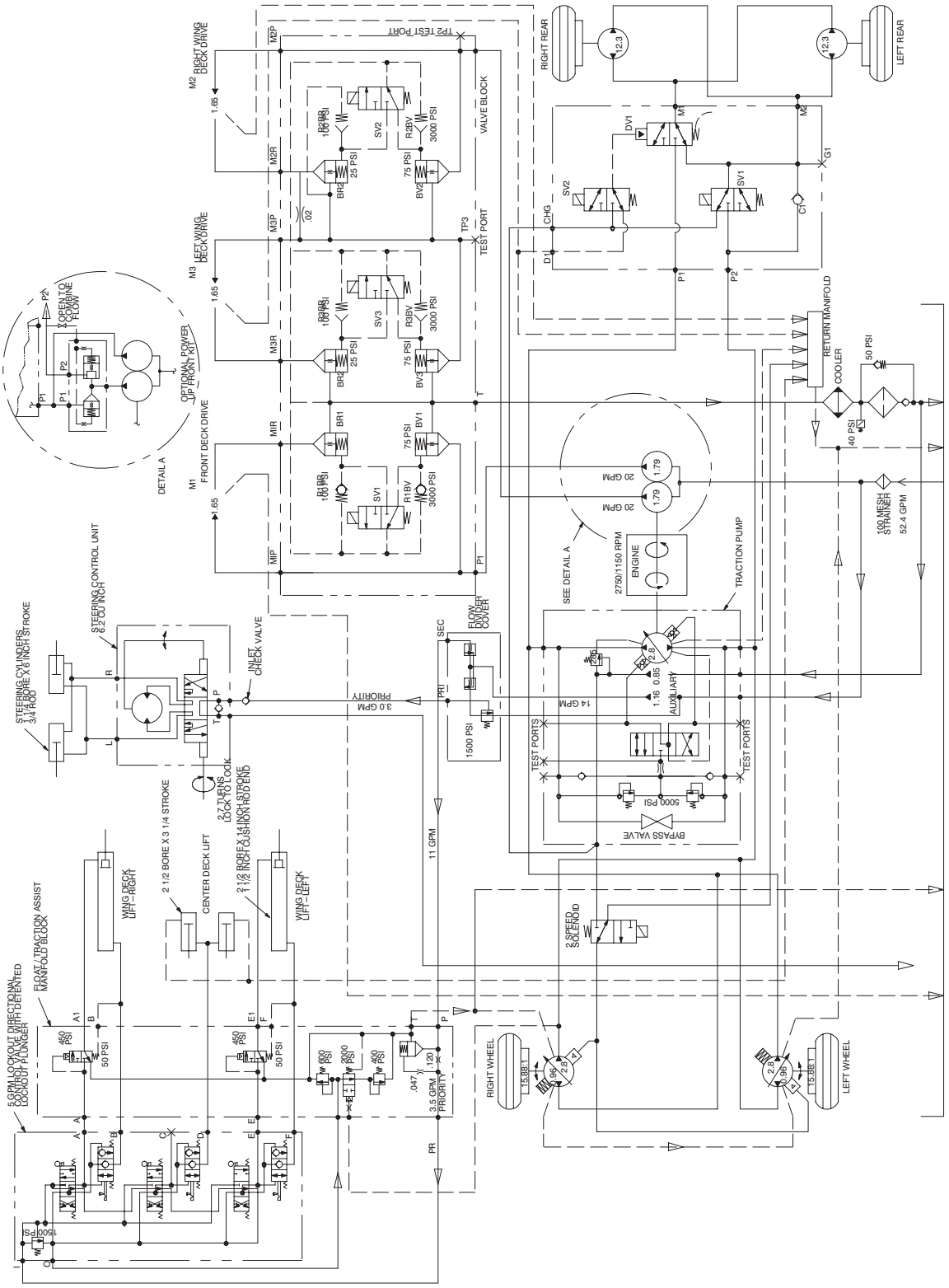
⚠ WARNING

POTENTIAL HAZARD
- **Hydraulic fluid escaping under pressure can penetrate skin and cause injury.**

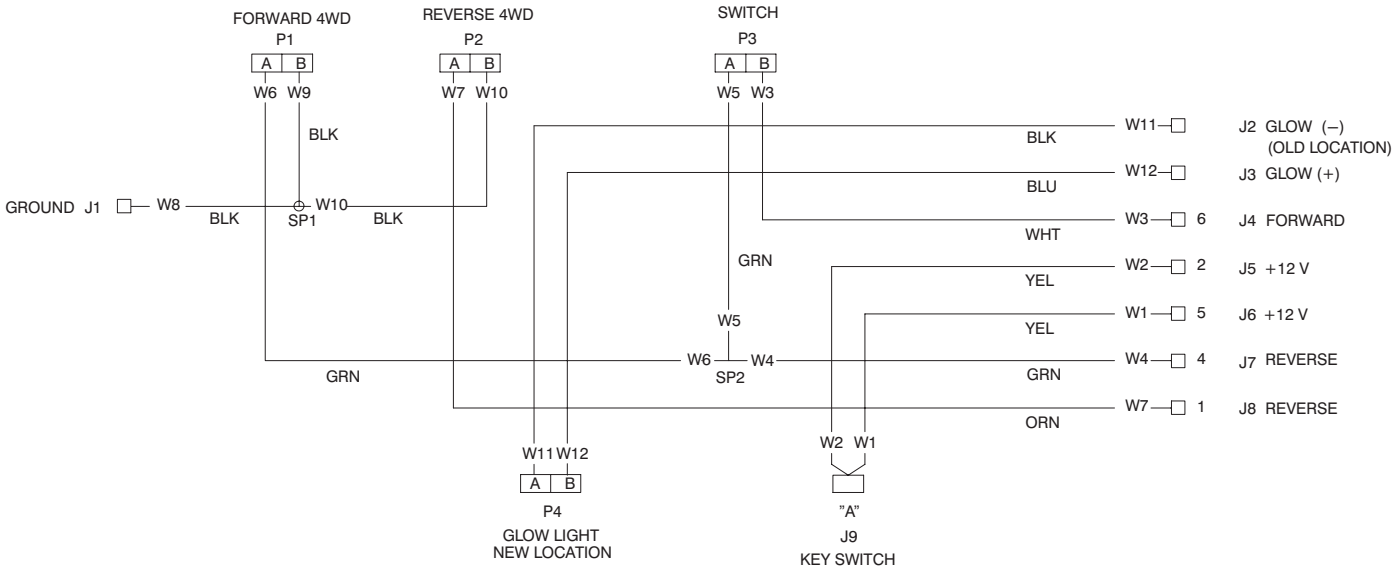
WHAT CAN HAPPEN
- **Fluid accidentally injected into the skin must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.**

HOW TO AVOID THE HAZARD
- **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.**

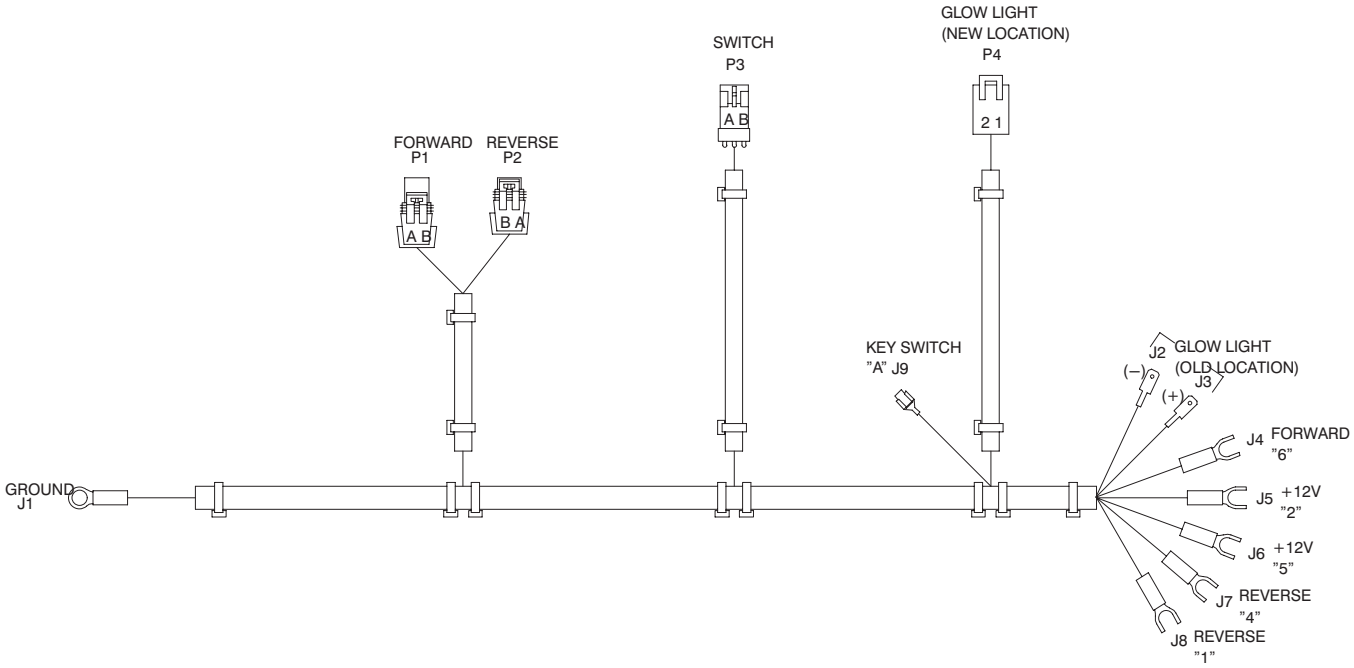
HYDRAULIC SCHEMATIC



ELECTRICAL SCHEMATIC



WIRE HARNESS




TORO®