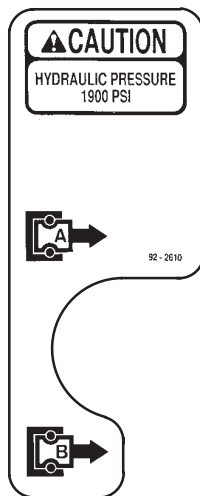


TORO®

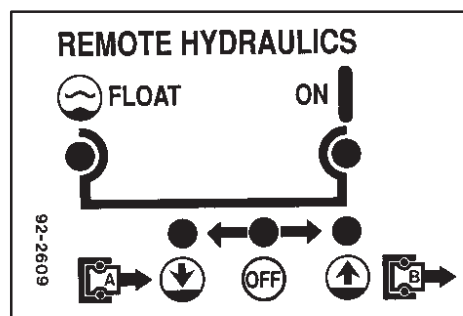
MODEL NO. 07415

**INSTALLATION
INSTRUCTIONS****REMOTE HYDRAULIC CONTROL KIT**
For Workman 3000 Series**SAFETY AND INSTRUCTION DECALS**

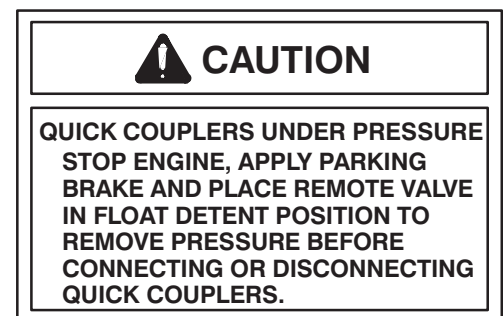
The following safety and instruction decals are to be installed on the kit. If any become damaged or illegible, replace them. Decal part numbers are listed below and in the parts catalog. Order replacements from your Authorized Toro Distributor.



ON COUPLER BRACKET
(Part No. 92-2610)



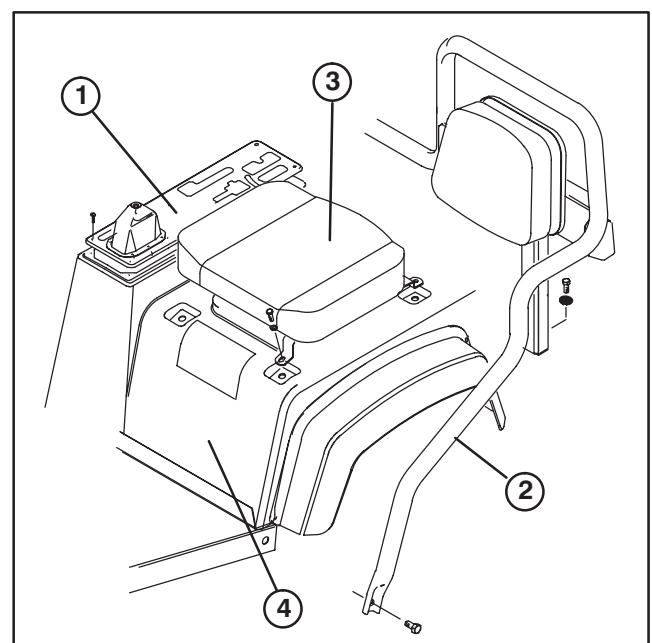
ON CENTER CONSOLE COVER
(Part No. 92-2609)



ON REAR AXLE
(Part No. 92-2611)

INSTALLATION

1. Position vehicle on a clean, level surface, stop engine, engage parking brake and remove key from ignition switch.
2. Unscrew and remove all knobs from console levers (Fig. 1).
3. Remove (6) screws securing outside edge of center console cover plate to frame and remove cover plate (Fig. 1).
4. Remove (2) capscrews and locknuts securing front legs of seat frame to sides of vehicle floor (Fig. 1).
5. Remove (2) capscrews and lockwashers securing seat frame brackets to vehicle frame (Fig. 1). Remove seat frame from vehicle.
6. Loosen hose clamp securing overflow tube to radiator and slide tube off radiator opening (Fig. 2). Plug overflow tube to prevent fluid from escaping.

**Figure 1**

- | | |
|-------------------------|----------------------------|
| 1. Center console cover | 3. Seat assembly |
| 2. Seat frame | 4. Skirt & fender assembly |

INSTALLATION



CAUTION

If engine has been running, pressurized hot coolant can escape if overflow tube or radiator cap is removed and cause burns. Allow engine to cool at least 15 minutes or until the radiator cap is cool enough to touch without burning hand before removing tube.

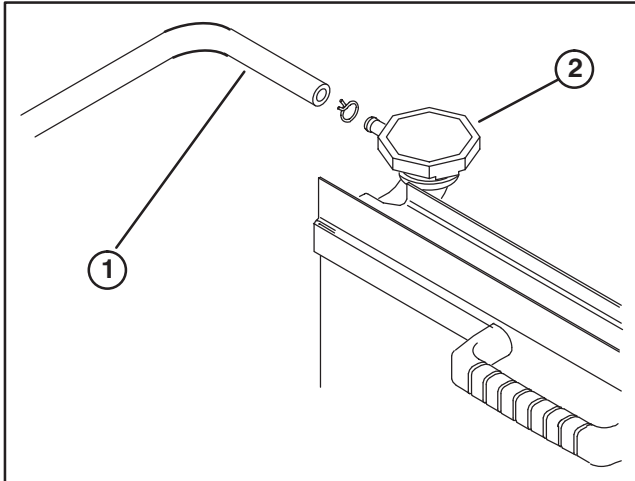


Figure 2

1. Overflow tube
2. Radiator

7. Remove (4) capscrews and lockwashers securing each set of seat brackets to vehicle frame and remove seat assemblies (Fig. 1). Lift off skirt and fender assembly.

8. Remove carriage bolts and locknuts securing lift lever hold down brackets to control support brackets (Fig. 3).

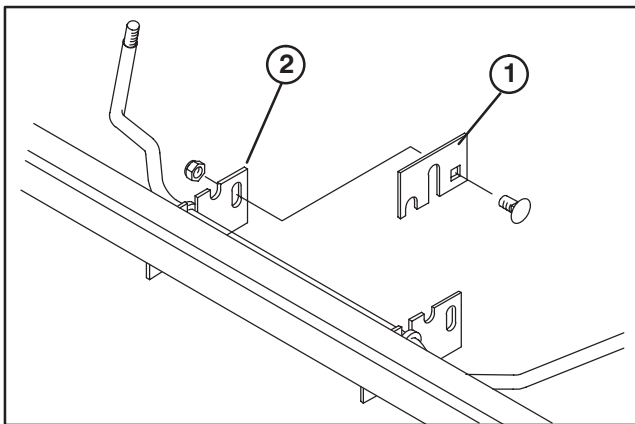


Figure 3

1. Hold down bracket
2. Control support brackets

9. Assemble new rod lever, spring and flat washer to rod assembly with cotter pin as shown in figure 4. Rotate lever into slot in rod assembly bracket while assembling.

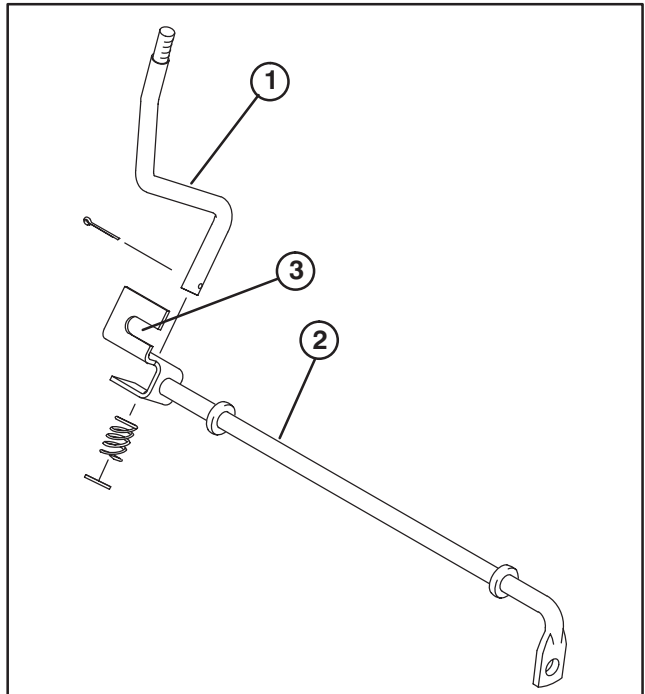


Figure 4

1. Rod lever
2. Rod assembly
3. Rod assembly slot

10. Insert rod lever up thru console while placing rod assembly into slots in frame channel brackets (Fig. 5 & 6). Secure rod assembly to frame channel brackets with hold down brackets, carriage bolts and locknuts previously removed. Do not overtighten hold down brackets or rod will not pivot freely.

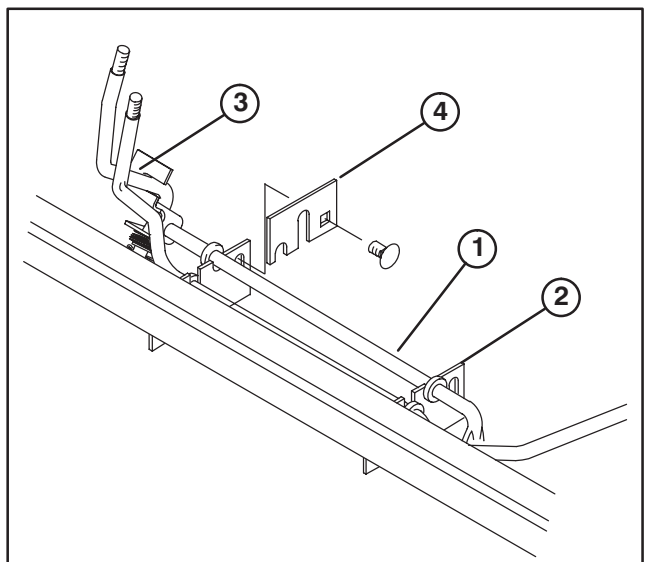


Figure 5

1. Rod assembly
2. Frame channel bracket
3. Lever in slot
4. Hold down brackets

11. Place upper and lower detent plates over lever, positioning plates as shown in figure 6. Loosely secure plates to console frame with (2) 5/16–18 x 1" lg. capscrews and flatwashers. Do not tighten capscrews at this time.

INSTALLATION

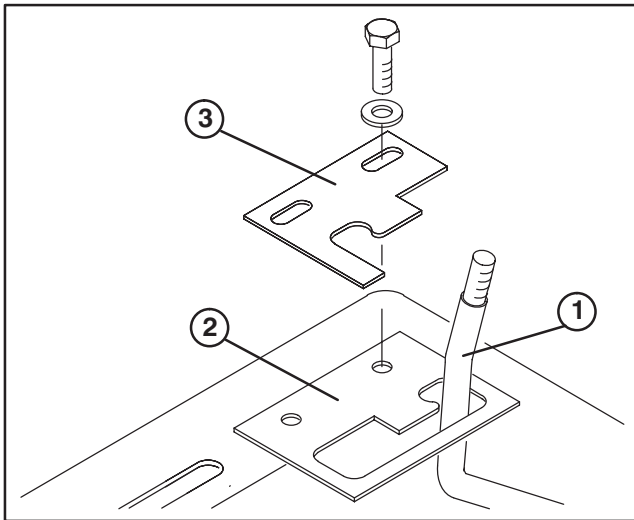


Figure 6
 1. Lever
 2. Lower detent plate
 3. Upper detent plate

12. Loosely thread a tee fitting into top port of auxiliary valve (Fig. 7).

13. Loosely thread a 45° fitting into bottom port of auxiliary valve (Fig. 7).

14. Mount the control valve assembly and valve mount plate to auxiliary valve bracket with (2) 1/4–20 x 2–3/4" lg. capscrews and flange locknuts, as shown in figure 7.

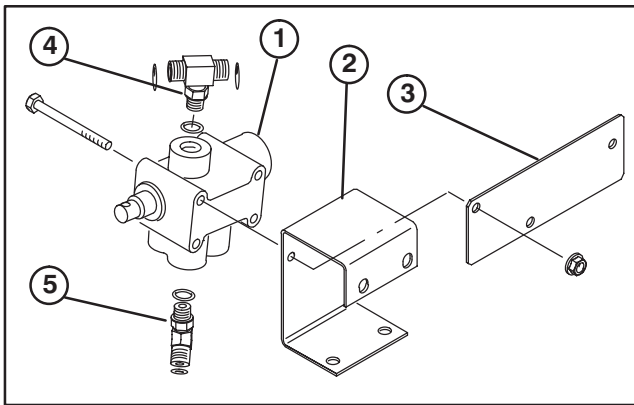


Figure 7
 1. Control valve assembly
 2. Auxiliary valve bracket
 3. Valve mount plate
 4. Tee fitting
 5. 45° fitting

15. Mount connecting rod to control valve assembly with a M5 x 30 mm capscrew and nut, as shown in figure 8. Nut must be positioned on top.

16. Mount auxiliary valve bracket to side and bottom of left vehicle frame rail, just behind lift valve, with (4) 5/16–18 x 3/4" lg. capscrews and flange locknuts, as shown in figure 9.

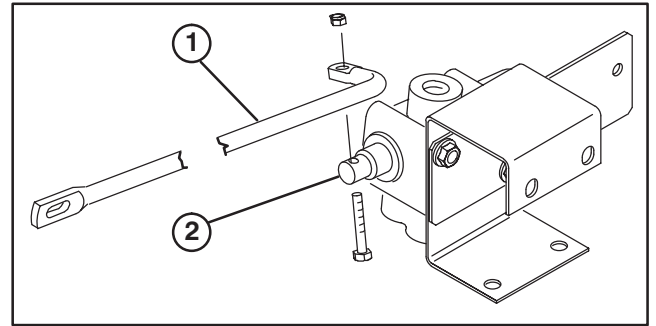


Figure 8
 1. Connecting rod
 2. Control valve assembly

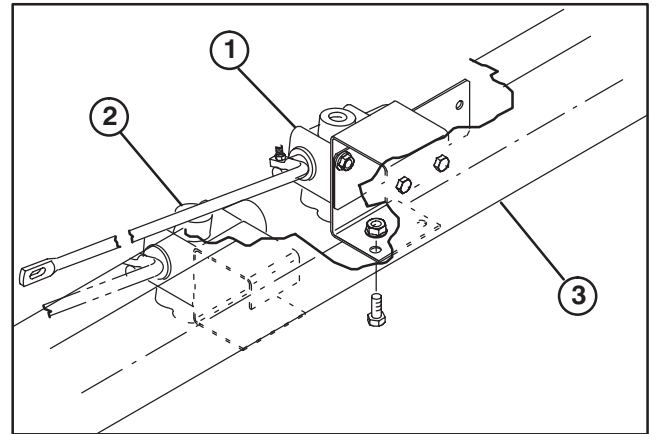


Figure 9
 1. Auxiliary valve & bracket
 2. Lift valve
 3. Left frame rail

17. Loosely mount connecting rod to rod assembly with a 5/16–18 x 1" lg. capscrew, spacer, (2) flatwashers and a locknut, as shown in figure 10.

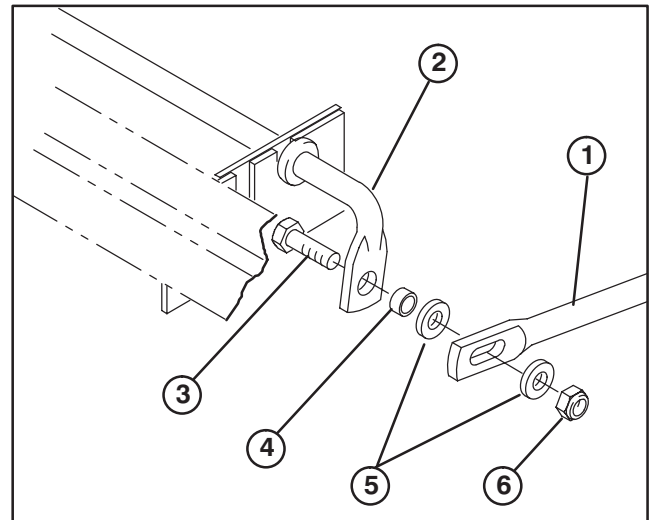


Figure 10
 1. Connecting rod
 2. Rod assembly
 3. Capscrew
 4. Spacer
 5. Flatwashers
 6. Locknut

18. Position control lever in the middle of detent positions on upper and lower control plates. While holding lever in this position, tighten nut securing connecting rod to rod assembly.

INSTALLATION

19. Adjust control lever detent plates as follows:

A. Move control lever to rear detent position and check the valve spool travel. Spool should be pulled all the way out of valve before lever reaches the rear detent position.

Note: Rod must spring slightly into detent position.

B. If lever does not reach the rear position, loosen capscrew securing connecting rod to lever assembly (Fig. 10) and adjust as required.

C. Release lever and allow it to spring back into neutral position.

D. Move control lever to the full forward position. Move upper detent plate forward so it contacts control lever.

Note: Rod must spring slightly into detent position.

E. Tighten capscrews securing detent plates to lock adjustment. Check operation to assure valve spool is held all the way in and out when in detent positions.

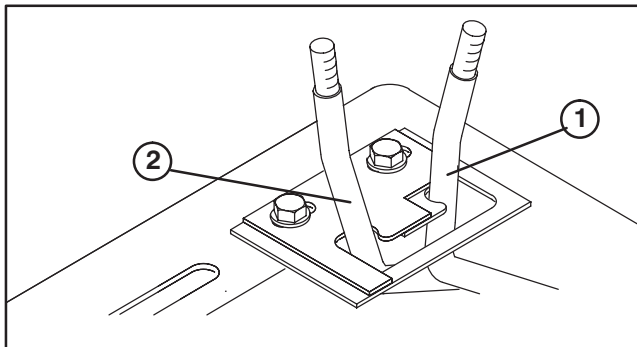


Figure 11

- 1. Rear detent position
- 2. Forward detent position

20. Remove existing hydraulic line mounted to bottom port of lift valve and front tee fitting of power steering relief valve. Remove straight fitting from bottom port of lift valve (Fig. 12).

IMPORTANT: Before installing any hydraulic fittings, make sure O-rings are lubricated with hydraulic oil and positioned correctly.

21. Loosely thread a 90° fitting into bottom port of lift valve (Fig. 13).

22. Mount a hydraulic tube to 90° fitting in bottom port of lift valve and tee fitting in top port of auxiliary valve (Fig. 13).

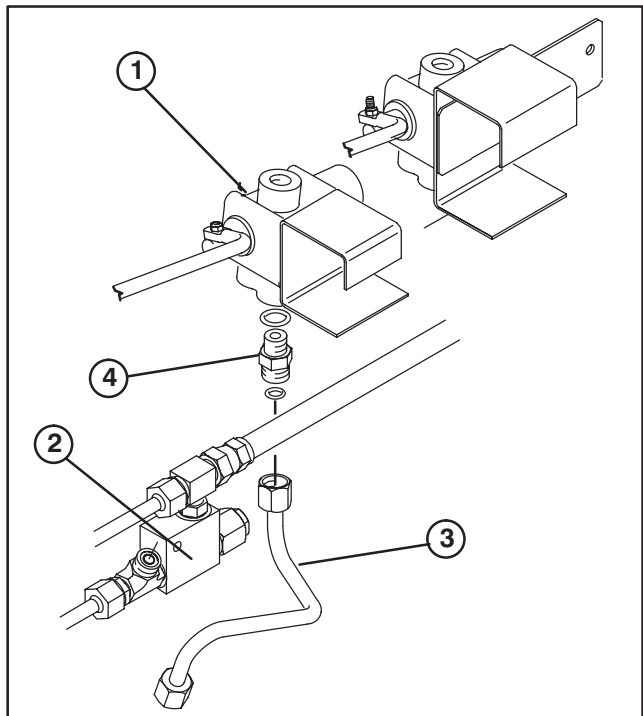


Figure 12

- 1. Lift valve
- 2. Power steering relief valve
- 3. Existing hydraulic line
- 4. Straight fitting

23. Mount a hydraulic tube to tee fitting in power steering relief valve and 45° fitting in bottom port of auxiliary valve (Fig. 13).

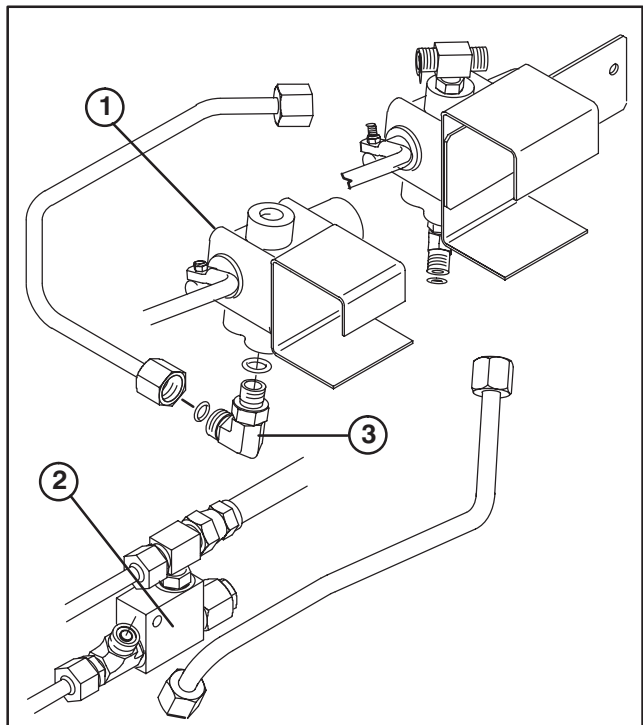


Figure 13

- 1. Lift valve
- 2. Power steering relief valve
- 3. 90° fitting

INSTALLATION

24. Loosely thread a 90° fitting into top port of auxiliary relief valve (Fig. 14).

25. Loosely thread a tee adapter fitting into side port of auxiliary relief valve (Fig. 14).

26. Mount the hydraulic tube to 90° fitting in top port of auxiliary relief valve (Fig. 14).

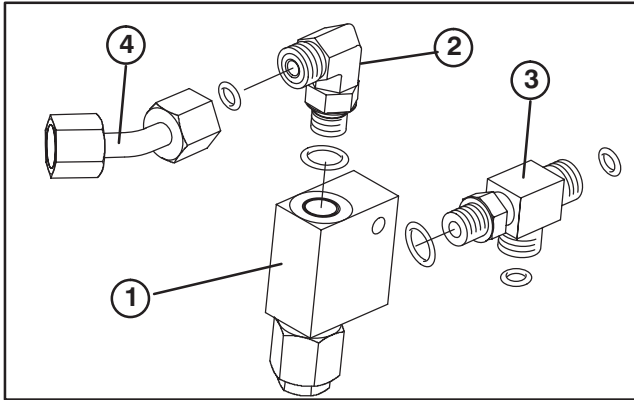


Figure 14

- | | |
|---------------------------|------------------------|
| 1. Auxiliary relief valve | 3. Tee adapter fitting |
| 2. 90° fitting | 4. Hydraulic tube |

27. Loosely mount other end of hydraulic tube to tee fitting in top port of auxiliary valve (Fig. 15).

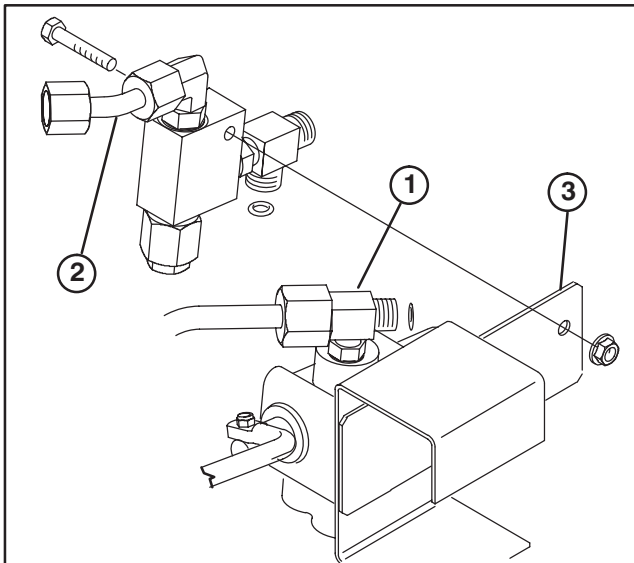


Figure 15

- | |
|----------------------|
| 1. Tee fitting |
| 2. Hydraulic tube |
| 3. Valve mount plate |

28. Mount auxiliary relief valve to valve mount plate with a 1/4–20 x 1–1/2" lg. capscrew and flange locknut (Fig. 15).

29. Disconnect hydraulic hose from tee fitting on power steering relief valve (Fig. 16).

30. Loosen hose clamp securing other end of hydraulic hose to "IN" port fitting of hydraulic filter (Fig. 17). Remove hose from fitting. Cut off approximately 13–1/2 inches from end of hose and reconnect to filter with hose clamp.

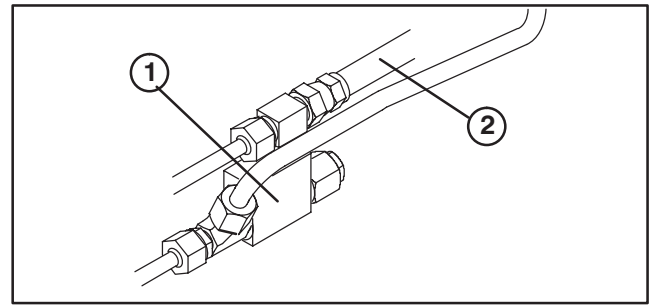


Figure 16

- | |
|---------------------------------------|
| 1. Power steering relief valve |
| 2. Hydraulic hose to hydraulic filter |

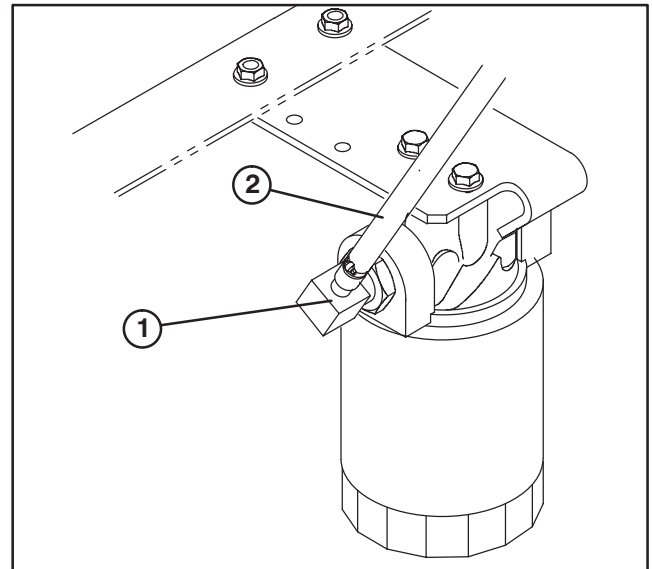


Figure 17

- | |
|--|
| 1. Hydraulic filter port |
| 2. Hydraulic hose from power steering relief valve |

31. Connect hydraulic hose from filter "IN" port to auxiliary relief valve tee fitting (Fig. 18)

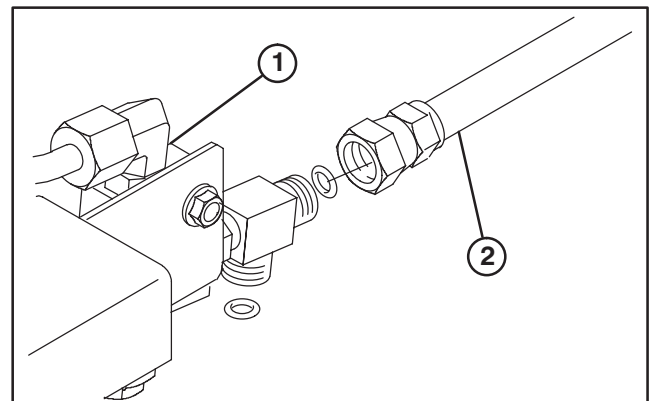


Figure 18

- | |
|---------------------------|
| 1. Auxiliary relief valve |
| 2. Hydraulic hose |

32. Mount a hydraulic hose to front of tee fitting on lift valve and bottom of tee fitting on auxiliary relief valve (Fig. 19).

INSTALLATION

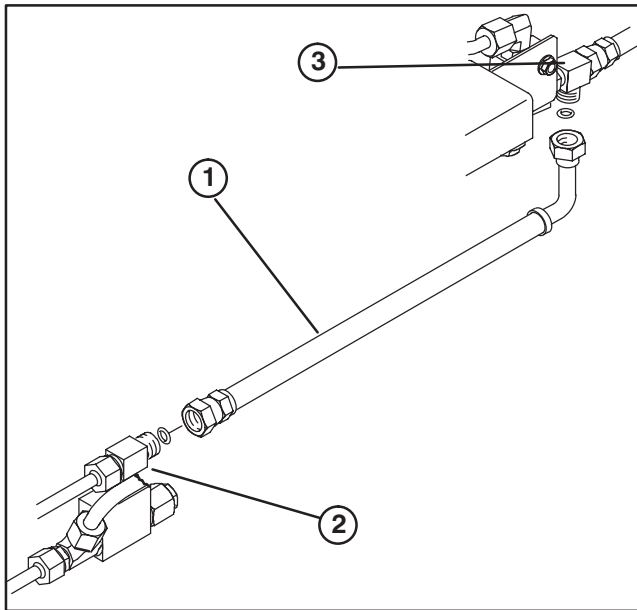


Figure 19

- 1. Hydraulic hose
- 2. Lift valve
- 3. Relief valve

33. If vehicle is equipped with an optional rear PTO, remove (2) capscrews, spacers and lockwashers securing right side (passenger side) of PTO shield to rear frame bracket (Fig. 20).

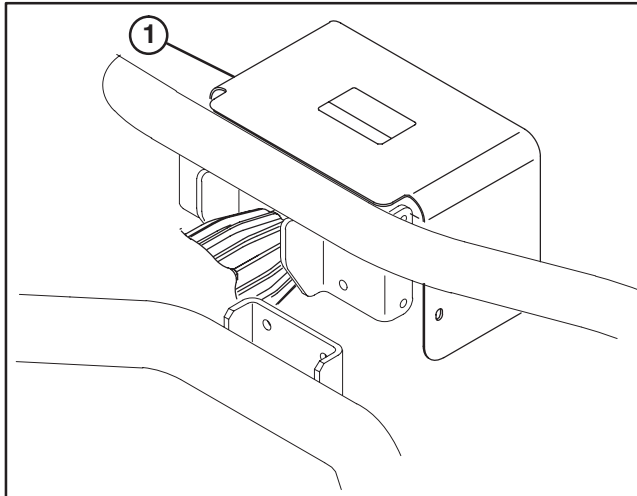


Figure 20

- 1. Right side of PTO shield

34. Install a retaining ring onto each hydraulic coupler, insert couplers into coupler bracket and secure each with another retaining ring (Fig. 21).

35. Secure dust plug mounting rings to holes in coupler bracket (Fig. 21). Insert dust plugs into couplers.

36. Mount coupler bracket to rear frame bracket with (2) 1/4–20 x 1–1/4" lg. flangehead capscrews and flange locknuts (Fig. 21). If vehicle is equipped with an optional rear PTO, mount coupler bracket and PTO shield.

NOTE: If vehicle is equipped with an optional 540 PTO, insert optional spacer (supplied with 540 PTO) between bracket and frame when installing.

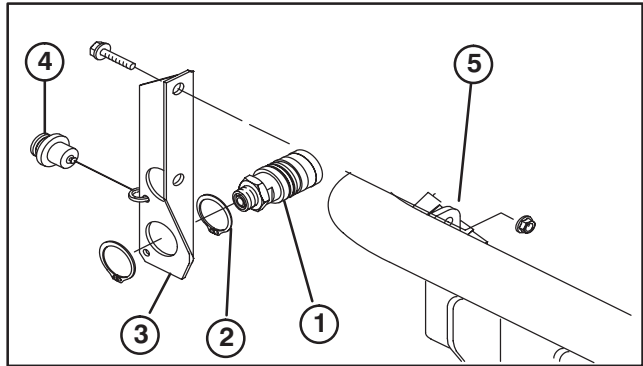


Figure 21

- 1. Hydraulic coupler
- 2. Retaining ring
- 3. Coupler bracket
- 4. Dust plug
- 5. Rear frame bracket

37. Loosely thread 90° fitting into front port on side of auxiliary valve (Fig. 22).

38. Thread adapter fitting into rear port on side of auxiliary valve (Fig. 22).

39. Loosely thread 90° fitting into rear adapter fitting on side of auxiliary valve (Fig. 22).

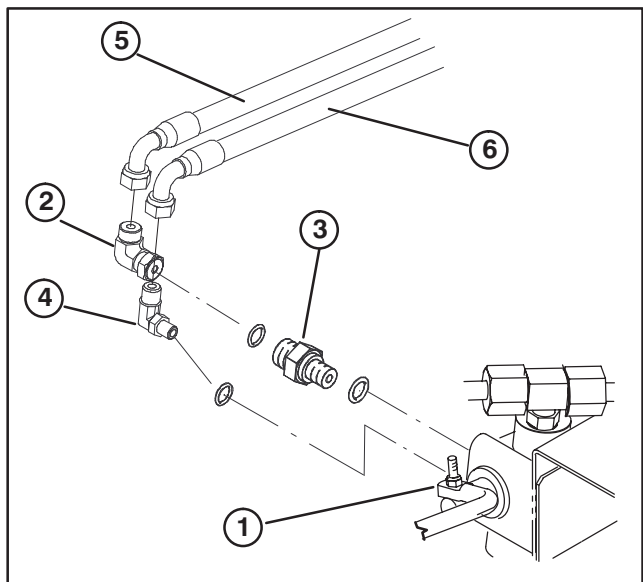


Figure 22

- 1. Auxiliary valve
- 2. 90° fitting
- 3. Adapter fitting
- 4. 90° fitting
- 5. Hydraulic hose to bottom coupler
- 6. Hydraulic hose to top coupler

40. Mount 90° fitting end of hydraulic hose to adapter fitting on side of auxiliary valve (Fig. 22). Route hose rearward, along left side of frame and in front of PTO (if so equipped) to straight fitting in lower coupler. Direct end of hose with 45° fitting towards right side of frame away from transaxle. Route hose away from any hot or moving parts. Secure hose fittings.

INSTALLATION

41. Mount 90° fitting end of hydraulic hose to 90° fitting in auxiliary valve (Fig. 22). Route hose rearward, along left side of frame and in front of PTO (if so equipped) to straight fitting in upper coupler. Direct end of hose with 45° fitting towards right side of frame away from transaxle. Route hose away from any hot or moving parts. Secure hose fittings.

42. Secure hoses with cable ties.

43. Tighten all fittings, hoses and mounting fasteners.

44. Reinstall skirt, seats, seat frame and console cover plate.

45. Reinstall overflow tube to radiator. Check coolant level and replenish, if required.

46. Clean console cover plate and install console decal to console, next to control lever, locating as shown in figure 23. Thread knobs onto respective control levers.

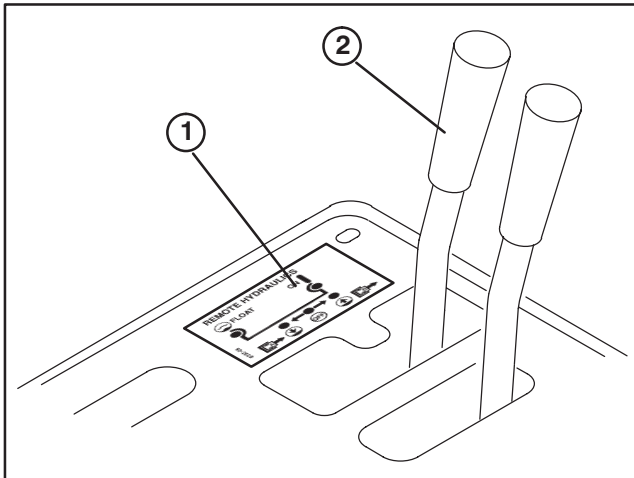


Figure 23

- 1. Console decal
- 2. Control lever knob

47. Apply warning decal to rear axle tube next to existing decal, just above and to the right of hitch point (Fig. 24).

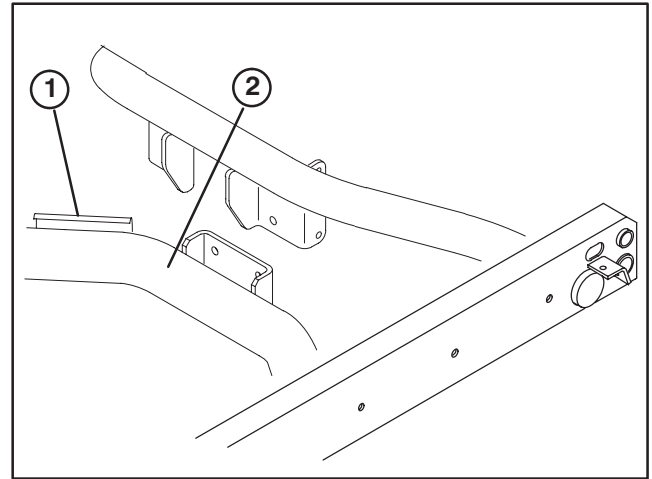


Figure 24

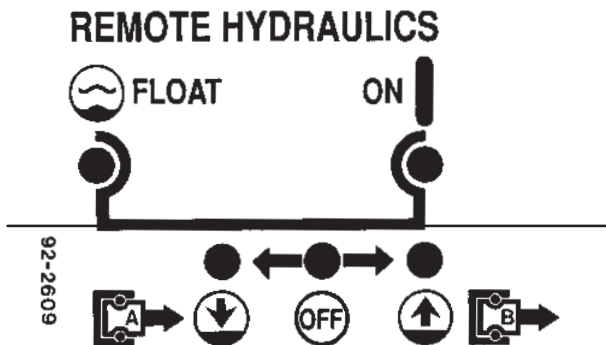
- 1. Caution decal
- 2. Rear axle

OPERATION

REMOTE HYDRAULIC CONTROL KIT MODEL 07415

The remote hydraulic control kit supplies “live” hydraulic power from the vehicle pump whenever the engine is running. The power can be used through the the quick couplers at the rear of the vehicle (See Hydraulic Schematic).

CONTROL LEVER POSITIONS



Off Position: This is the normal position for the control valve when it is not being used. This position allows the oil leaving the dump valve to flow through the remote hydraulic valve to the power steering circuit. In this position the work ports of the control valve are blocked and any load will be held by the check valves in both directions.

Raise (Quick Coupler “B” Position): This is the position which will lift the rear hitch attachment or apply pressure to quick coupler “B”. This also allows return oil from Quick coupler “A” to flow back into the valve and then out to the power steering circuit. This is a momentary position and when the lever is released it spring returns to the center off position.

IMPORTANT: Use double acting cylinders only. Using a single acting cylinder does not allow return flow of hydraulic oil and makes steering more difficult. Using a single acting cylinder can lower oil level in transaxle and cause damage to hydraulic pump and transaxle.

On Position: This position is similar to Raise (quick coupler “B” position). It also directs oil to quick coupler “B” except that the lever is held in this position by a detent notch in the control panel. This allows oil to flow continuously to equipment that uses a hydraulic motor. This position must only be used on attachments with a hydraulic motor attached.

Note: If hydraulic motor is used, it may see 1000 psi back pressure.

IMPORTANT: If used with a hydraulic cylinder or no attachment, the Raise or On position causes the oil flow to go over a relief valve which can damage the hydraulic system. Additionally this condition does not allow return flow to supply the power steering circuit, which makes steering more difficult. Use these positions only momentarily or with a motor attached.

Lower (Quick Coupler “A” Position): This position will lower the rear hitch attachment or apply pressure to quick coupler “A”. This also allows return oil from quick coupler “B” to flow back into the valve and then out to the power steering circuit. This is a momentary position and when the lever is released it spring returns to the center off position. Momentarily holding and then releasing the control lever in this position will provide flow to quick coupler “A” which provides power down on the rear hitch. When released, it will hold the down pressure on the hitch.

IMPORTANT: If used with a hydraulic cylinder, holding the control lever in the lower position causes the oil flow to go over a relief valve which can damage the hydraulic system.

Float Position: This valve position allows oil to flow in and out of the work ports and is connected to the inlet and outlet ports at the same time. This allows for attachments as the rear hitch to “float” up and down. The same pressure is applied to both quick couplers due to back pressure from the steering circuit.



CAUTION

Use caution when moving lever to the float position because it will allow rear implement to lower unimpeded.

IMPORTANT: Check hydraulic oil level after installation of attachment. Check operation of attachment by cycling attachment several times to purge air from system, then recheck hydraulic oil level. Attachment cylinder will slightly affect transaxle oil level. Operation of vehicle with low oil level can damage pump, remote hydraulics, power steering and vehicle transaxle.

OPERATION



CAUTION

Hydraulic fluid escaping under pressure can have sufficient force to penetrate skin and do serious damage. Care must be used when connecting or disconnecting hydraulic quick couplers. Stop engine, apply parking brake, lower attachment and place remote hydraulic valve in float detent position to relieve hydraulic pressure before connecting or disconnecting quick couplers.

HYDRAULIC FLUID

Dexron II automatic transmission fluid.

QUICK COUPLER OPERATION

CONNECTION

IMPORTANT: Clean dirt from quick couplers before connecting. Dirty couplers can introduce contamination to hydraulic system.

Insert hose nipple into coupler until it snaps into position.

Note: When attaching remote hydraulic cylinders to the quick couplers, determine which side of the remote cylinder requires pressure, then attach that hose to quick coupler "B". Only connect double acting cylinders (two hoses).

DISCONNECTION

Pull hose firmly from coupler

IMPORTANT: Clean and install dust plug and dust covers to quick coupler ends when not in use.

TROUBLE SHOOTING:

- A. Difficulty in connecting or disconnecting quick couplers.
 - Pressure not relieved (Quick coupler under pressure).
 - Engine running.
 - Remote hydraulic valve not placed in float.
- B. Power steering hard.
 - Remote valve not in neutral or float position.
 - Remote hydraulic valve linkage out of adjustment.
 - Hydraulic oil level low.
 - Hydraulic oil hot.
- C. Hydraulic leaks.
 - Fittings loose.
 - Fitting missing o—ring.
- D. Attachment does not function.
 - Quick couplers not fully engaged.
 - Quick couplers are interchanged.
- E. Squealing noise.
 - Remote valve left in ON detent position causing hydraulic oil to flow over relief valve.

HYDRAULIC SCHEMATIC

(Vehicle w/ Remote Hydraulic Kit)

