Form No. 3351–849 Rev B

Flow Divider Kit

Groundsmaster 4500-D/4700-D

Model No. 30830

Installation Instructions

Loose Parts

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

Description	Qty.	Use
Flow divider manifold	1	Installing the hydraulic components
Large 90° fitting	1	
Medium 90° fitting	1	
Small 90° fitting	1	
Large straight fitting	1	
Small straight fitting	1	
Bracket	1	
Bolt (3/8 x 3-3/4 inch)	1	
Flange nut (3/8 inch)	1	
Hydraulic tube A	1	
Hydraulic tube B	1	
Hydraulic tube C	1	
Hollow plug	2	
Hydraulic hose D	1	
Hydraulic tube E	1	
Hydraulic tube F	1	
Hydraulic tube G	1	
Hydraulic tube H	1	
Switch	1	Installing the wiring harness
Decal	1	
Wiring harness	1	
T-tap assembly	1	
Declaration of conformity	1	
Installation instructions	1	Read before installing.

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Safety and Instruction Decals

Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.



106-2042

1. Flow divider
2. Locked
3. Unlocked

Installing the Hydraulic Components

1. Engage the parking brake, be sure the traction pedal is in the neutral position, the PTO lever is in the Off position, shut the engine Off and remove the key from the switch.

Caution

If you leave the key in the ignition switch, someone could accidently start the engine and seriously injure you or other bystanders.

Remove the key from the ignition switch before you do any maintenance.

2. Raise the machine on a hoist or jack up the front of the machine. Use jack stands or block the machine to prevent if from falling.

Important Cap or plug any disconnected hydraulic hoses, tubes or component ports to prevent contamination of the system during installation of the kit.

3. Assemble and orientate the fittings into the flow divider manifold (Fig. 1) as follows:

Note: Make sure the o–rings are oiled and properly positioned on the fittings before installation.

- Install the flow divider to the bracket using the bolt, (3/8 x 3-3/4 inch) and flange nut, (3/8 inch).
- Thread the large 90° fitting from loose parts into the bottom of the flow divider manifold. Position the fitting as shown with the back-up nut fully retracted. Do not tighten at this time.
- Thread the large straight fitting into the rear of the flow divider manifold. Torque the fitting to 81-87 ft-lbs.
- Thread the medium 90° fitting into the left side of the flow divider manifold. Position the fitting as shown with the back-up nut fully retracted. Do not tighten at this time.
- Thread the small straight fitting into the right side of the flow divider manifold. Torque the fitting to 81-87 ft-lbs.
- Thread the small 90° fitting into the front of the flow divider manifold. Position the fitting as shown with the back-up nut fully retracted. Do not tighten at this time.

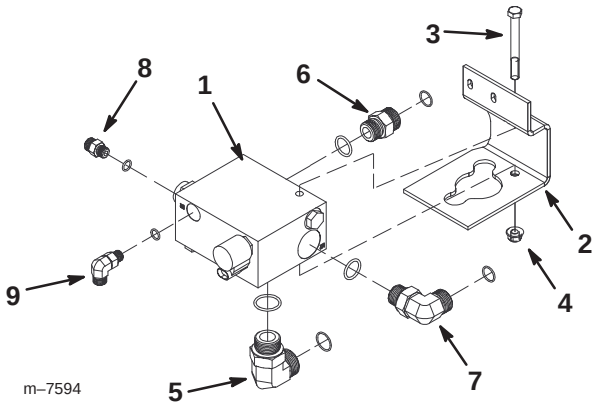


Figure 1

1. Flow divider manifold
2. Bracket
3. Bolt, 3/8 x 3-3/4 inch
4. Flange nut,3/8 inch
5. 90° fitting
6. Straight fitting
7. 90° fitting
8. Straight fitting
9. 90° fitting

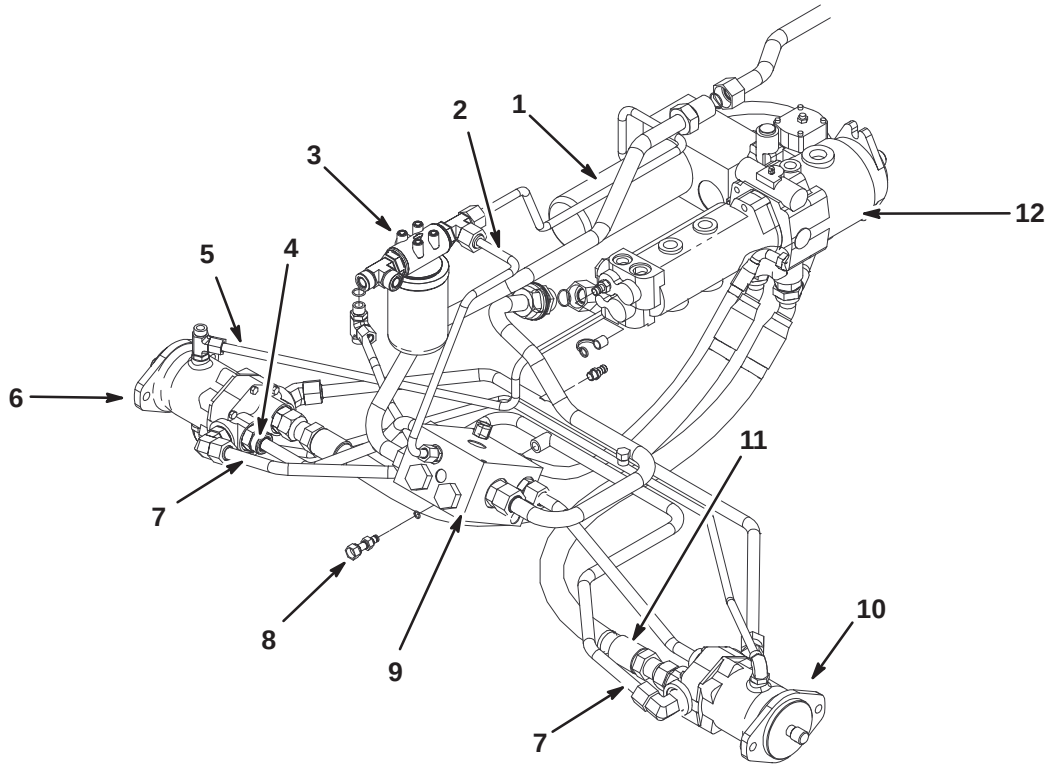


Figure 2

Existing hydraulic configuration

1. Filter manifold assembly
2. Hydraulic tube (filter assembly to 4WD manifold)
3. Filter assembly
4. Hydraulic tube (4 WD manifold to right wheel motor)
5. Hydraulic tube (right wheel motor to filter manifold assembly)
6. Right wheel motor
7. Hydraulic tube (left to right wheel motor)
8. Test port
9. 4WD manifold assembly
10. Left wheel motor
11. Hydraulic hose (hydraulic pump to left wheel motor)
12. Hydraulic pump assembly

4. Disconnect the hydraulic tube connecting the front of the left and right wheel motors (Ref. 7, Fig. 2). Remove and retain the test port from the tube (Fig. 2). Discard the tube.

5. Install the test port and the dust cap into the new hydraulic tube A (Fig. 3). Torque the fitting to 15-17 ft-lbs.

6. Loosely connect hydraulic tube A to the left and right hand motors (Fig. 3). Do not tighten at this time.

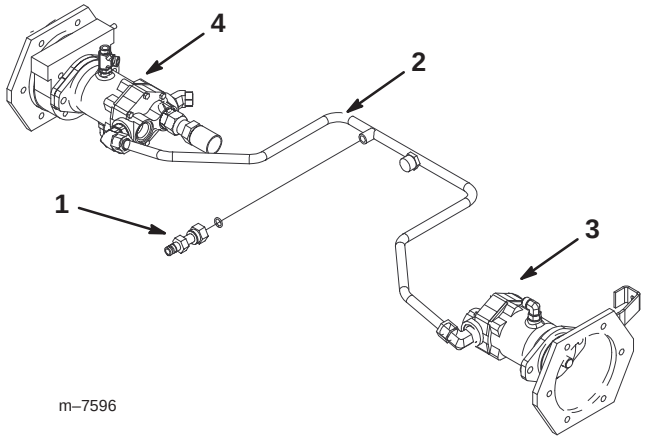


Figure 3

1. Test port
2. Hydraulic tube A
3. Left wheel motor
4. Right wheel motor

7. Replace the existing hydraulic tube running from the top of the front, right wheel motor to the manifold filter assembly with new hydraulic tube B (Fig. 4).

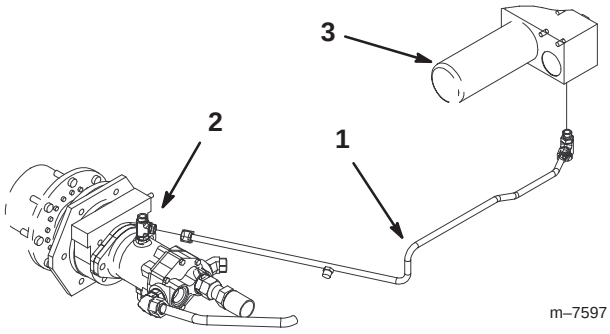


Figure 4

1. Hydraulic tube B
2. Front, right wheel motor
3. Filter manifold assembly

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8. Replace the existing hydraulic tube running from the 4WD manifold assembly to the hydraulic oil filter assembly with new hydraulic tube C (Fig. 5).

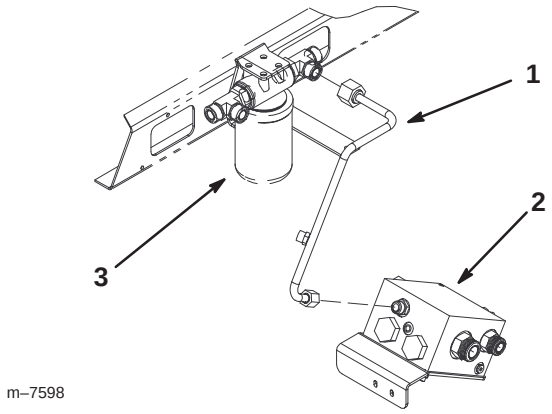


Figure 5

1. Hydraulic tube C
2. 4WD manifold
3. Filter assembly

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9. Install the flow divider manifold assembled previously to the 4WD manifold bracket and vehicle frame using the existing bolts.

- Remove the existing fasteners securing the 4WD manifold bracket to the frame.
- Install the flow divider assembly and bracket as shown in Figure 6.

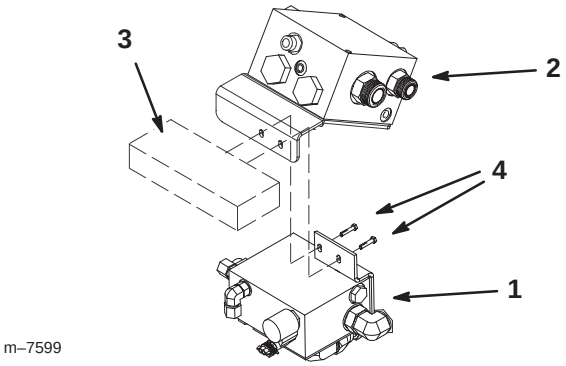


Figure 6

1. Flow divider manifold assembly
2. 4WD manifold
3. Vehicle frame
4. Existing fasteners

- Secure both assemblies to the frame with the fasteners removed previously.

10. Remove and discard the hydraulic hose running from the hydraulic pump assembly to the left front wheel motor (Ref. 11, Fig. 2).

11. Remove and discard the fitting from the right side of the left wheel motor.

12. Install a hollow plug w/o–ring into the wheel motor port were the straight fitting was removed (Fig. 7). Torque the plug to 202-218 ft-lbs.

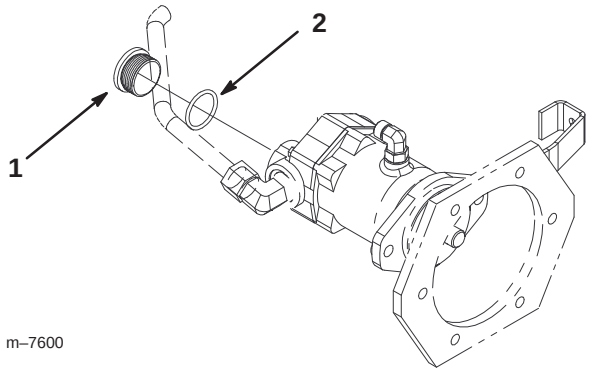


Figure 7

Left wheel motor shown

1. Plug
2. O-ring

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13. Install the new hydraulic hose D to the hydraulic pump assembly in place of the hose removed in step 10 (Fig. 8).

14. Route hydraulic hose D to the flow divider and connect it to the 90° fitting in the bottom of the manifold (Fig. 8).

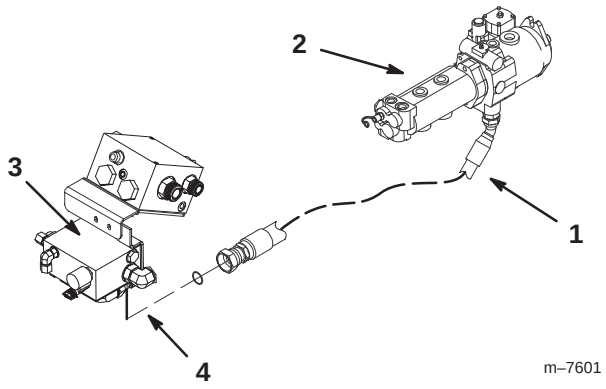


Figure 8

1. Hydraulic hose D
2. Hydraulic pump assembly
3. Flow divider manifold
4. 90° fitting

15. Remove and discard the hydraulic tube running from the 4 WD manifold to the right front wheel motor (Ref. 4, Fig. 2).

16. Remove and discard the fitting from the left side of the right front wheel motor.

17. Install a hollow plug w/o–ring into the wheel motor port were the straight fitting was removed (Fig. 7). Torque the plug to 202-218 ft-lbs.

18. Install new hydraulic tube E from the left side of the flow divider manifold to the right side of the 4WD manifold (Fig. 9).

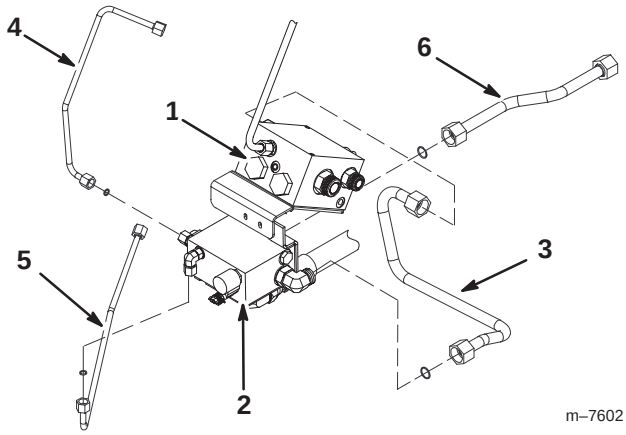


Figure 9

1. 4WD manifold
2. Flow divider manifold
3. Hydraulic tube E
4. Hydraulic tube F
5. Hydraulic tube G
6. Hydraulic tube H

19. Install new hydraulic tube F to the straight fitting on the right side of the flow divider manifold (Fig. 9). Connect the other end to the fitting in the midsection of hydraulic tube C installed in step 8.

20. Install new hydraulic tube G to the 90° fitting on the front side of the flow divider manifold (Fig. 9, 10). Connect the other end to the fitting in the midsection of hydraulic tube B installed in step 7.

21. Install new hydraulic tube H to the straight fitting in the rear of the flow divider manifold (Fig. 9, 10). Connect the other end to the fitting in the midsection of hydraulic tube A installed in step 6.

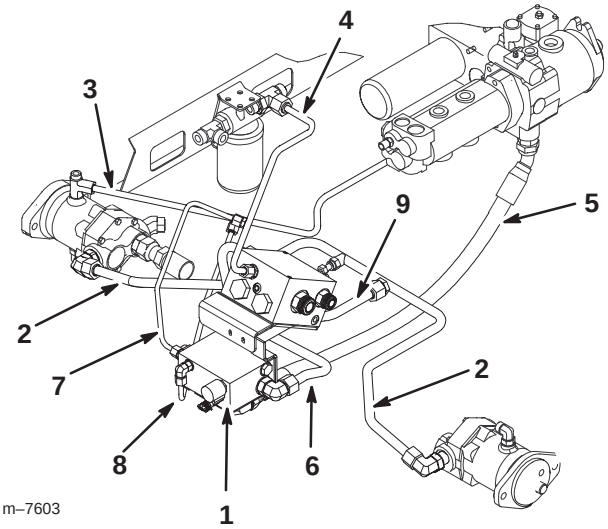


Figure 10

1. Flow divider manifold
2. Hydraulic tube A
3. Hydraulic tube B
4. Hydraulic tube C
5. Hydraulic hose D
6. Hydraulic tube E
7. Hydraulic tube F
8. Hydraulic tube G
9. Hydraulic tube H

22. Check and tighten all fittings and hydraulic connections.

23. Check the hydraulic oil level and replenish as required.

24. Open the battery cover and disconnect the negative battery cable.

Installing the Wire Harness

1. Remove the (2) knobs securing the console cover to the frame of the control console. Remove the cover.

2. Install the flow divider switch to the control console as follows:

- On machines with serial numbers 250000001 & up, remove the knock out plug in the control console (Fig. 11).

- On machines with serial numbers prior to 249999999, use the dimensions shown in Figure 11, to locate, mark and cut a hole the size of the switch in the top of the control console. The switch should align with the edge of the deck levers.

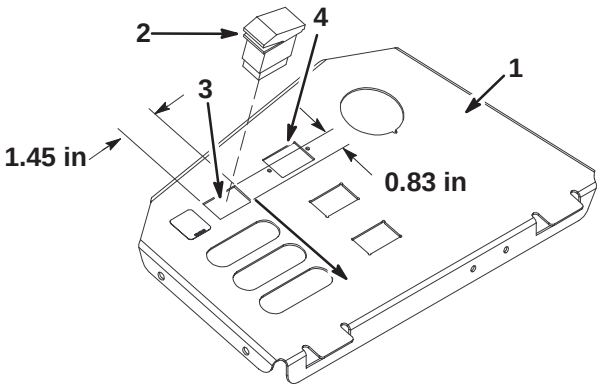


Figure 11

1. Console
2. Switch
3. Cut hole here
4. Location of knock out plug in console

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3. Insert the switch into the hole (Fig. 11).

4. Clean and dry the area next to the installed switch. Affix the decal to the control panel.

5. Plug the matching connector on the wire harness into the switch terminal under the console.

6. Locate the pink wire with a blue terminal in the clear tubing adjacent to the Hi/Lo switch.

- Cut the clear tubing to allow access the blue terminal.
- Connect the terminal on provided wiring harness with the blue terminal from the machine.

Important If a blue terminal in not present within the clear tubing adjacent to the Hi/Lo switch follow the steps below:

- Locate the wires in the connector attached into the Hi/Lo switch.
- On traction units with serial numbers 230000001 and up, clip the T-tap onto the pink wire.
- On traction units with serial numbers prior to 299999999, clip the T-tap onto the orange wire.
- Connect the terminal on the provided wiring harness with the T-tap terminal.

7. Locate the power point/cigarette lighter connector.

8. Unplug the power point connector and plug the mating male connector on the provided harness into the power point connector.

9. Plug the female connector on the provided harness to the open power point connector on the machine.

10. Route the remainder of the harness to the flow divider manifold and secure in place with tie straps.

11. Plug the wiring harness connector into the connector in the front of the flow divider.

Important The wires must not contact any sharp edges or moving parts.

12. Replace the control panel housing and secure it with the knobs.

13. Operate the machine and re–check the hydraulic oil level.

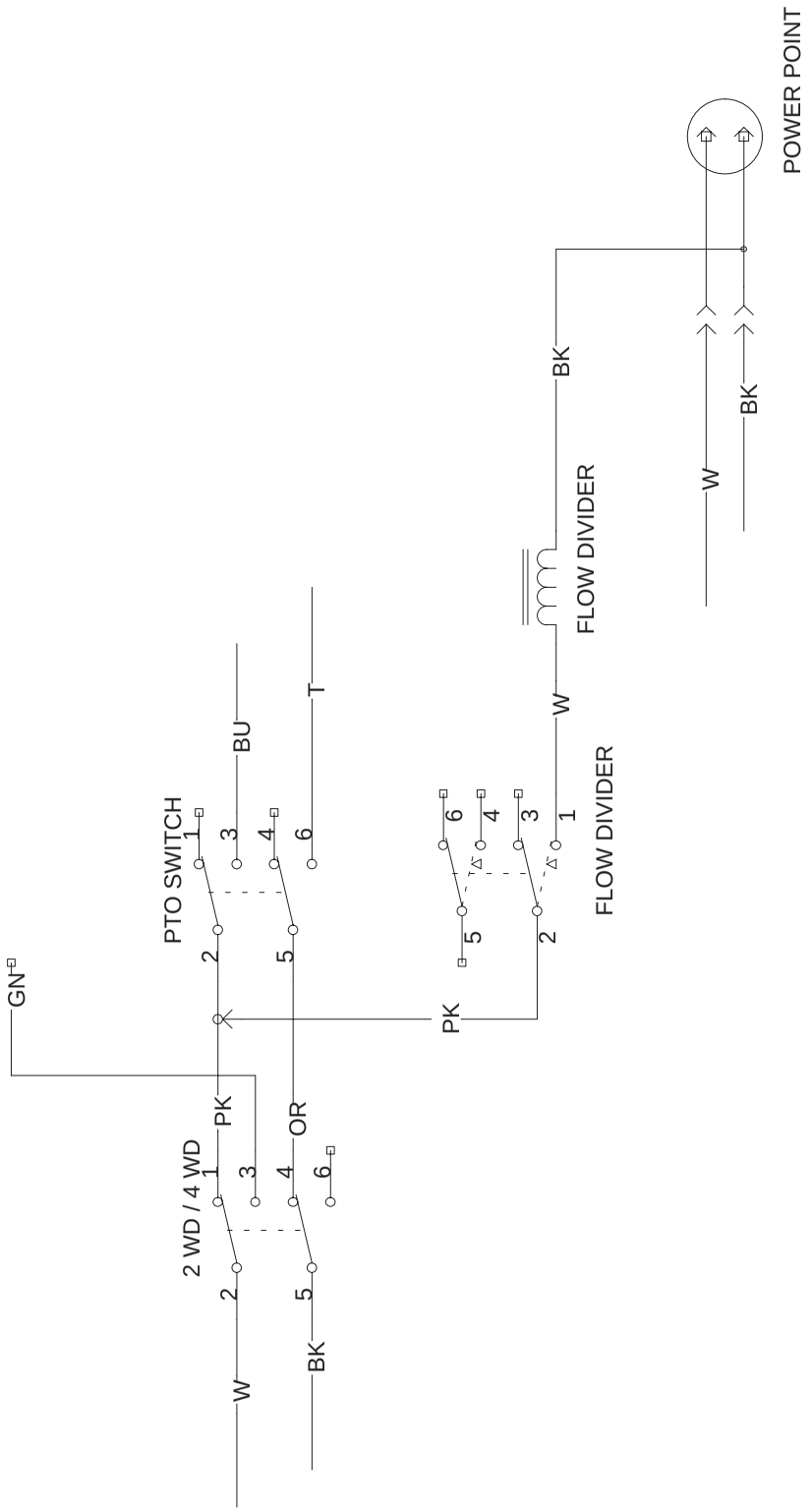
Operating Tips

The flow divider kit enhances the traction drive performance in compromised operating conditions.

Use the following information to best operator the machine with the flow divider kit installed:

- The flow divider is for intermittent use in the low speed range only.
- When approaching an area known to cause wheel spin, depress and hold the flow divider switch until completely past the problem area.
- If a tire spins while climbing or maneuvering on slopes, depress the switch and slowly drive out of the area.
- If both a front and rear wheel spins, the steering brake can be feathered to transfer the torque from the spinning wheels to the opposite front wheel.

Electrical Schematic



Hydraulic Schematic

