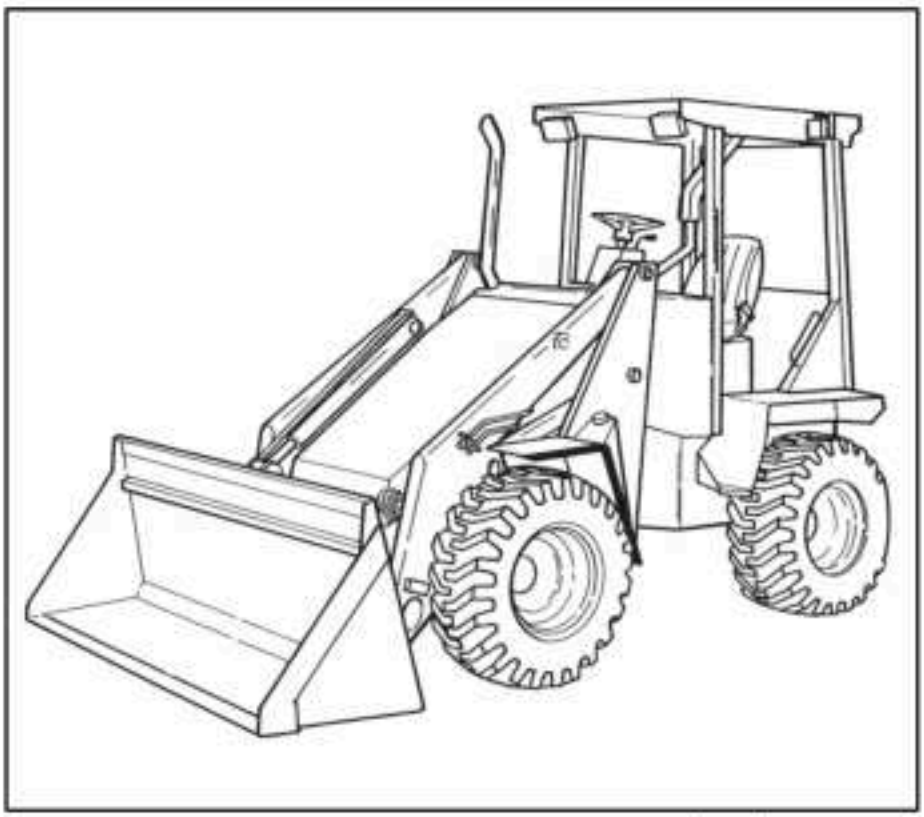
2400

Service Manual



MELROE
INGERSOLL-RAND

6720455(5–90)

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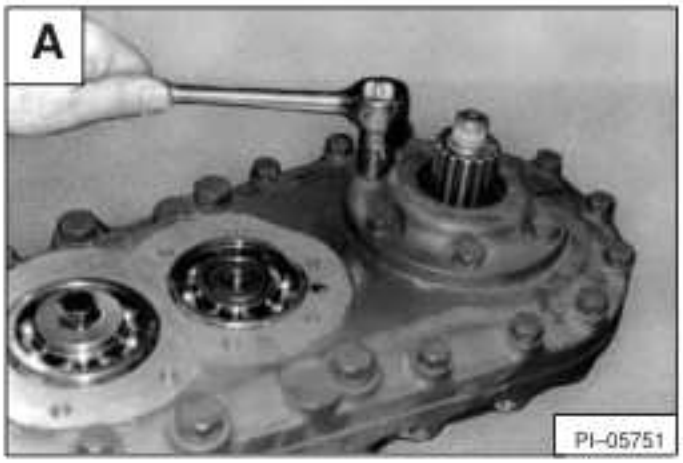
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DROP–BOX GEARCASE (Cont'd)

Disassembly And Assembly (Cont'd)

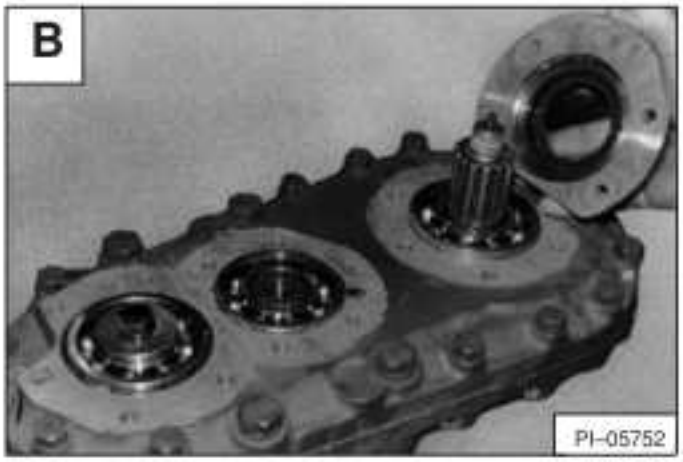
Remove the bolts from the output shaft seal housing **[A]**.

Assembly: Tighten the bolts to 38 ft.–lbs. (50 Nm) torque.



Remove the output shaft seal housing **[B]**.

Assembly: Install a new hub seal into the housing.

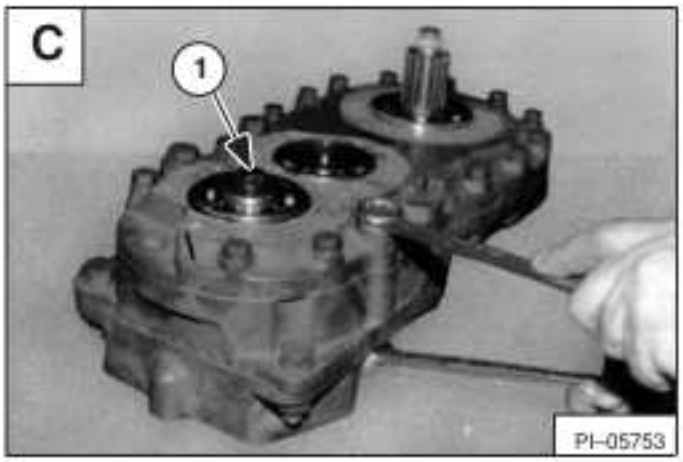


Remove the input shaft bearing retainer bolt (Item 1) **[C]** and washer.

Assembly: Tighten the retainer bolt (Item 1) **[C]** to 65 ft.–lbs. (88 Nm) torque.

Remove the bolts and nuts which fasten the drop–box gearcase halves together **[C]**.

Assembly: Tighten the bolts and nuts to 100 ft.–lbs. (136 Nm) torque.



Remove the case halves **[D]**.

Assembly: Put LOCTITE 515 on the case halves.



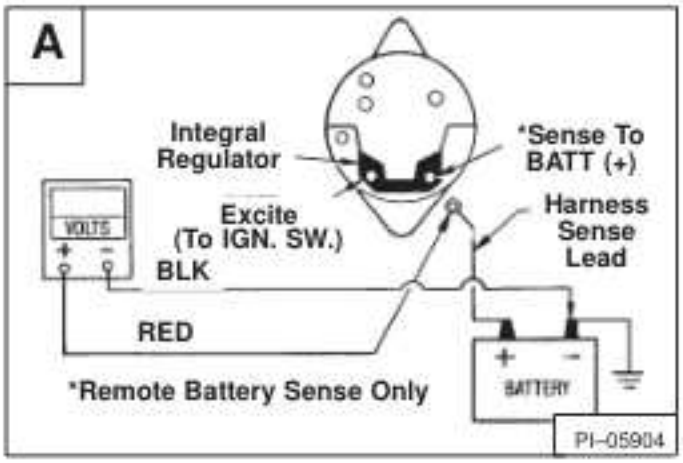
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ALTERNATOR (Cont'd)

Checking The Alternator Output (Cont'd)

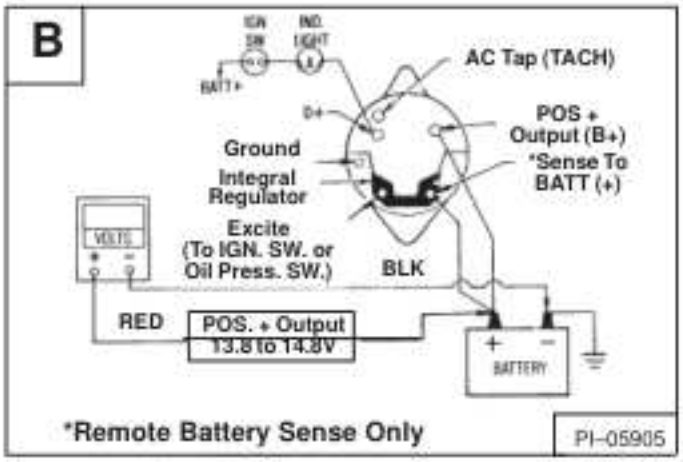
TEST NO. 3 – HARNESS VOLTAGE TEST **[A]**.

Disconnect the harness from sense terminal and connect voltmeter leads. Voltmeter should indicate battery voltage (approximately 12.6 volts). If voltage is zero, the harness *sense* wire is defective and must be repaired or replaced.



TEST NO. 4 – ALTERNATOR OUTPUT TEST **[B]**.

After voltmeter is connected, start the engine and run at approximately 1500 RPM. Turn on the work lights. Check for output voltage of between 13.8–14.8 for proper operating charging system (voltage may vary due to ambient temperature variations).



Removal And Installation

Stop the engine.

Disconnect the negative (–) cable from the battery.

Disconnect the alternator connector from the wiring harness.

Disconnect the wire from the alternator battery terminal.

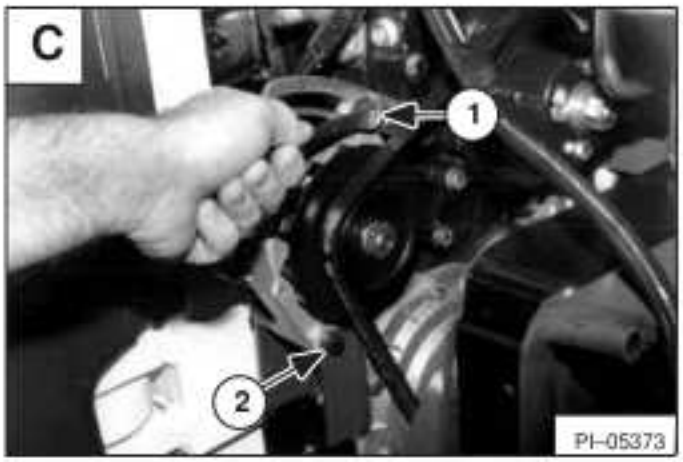
Remove the adjusting bolt (Item 1) **[C]**.

Remove the belt from the alternator pulley.

Remove the mounting bolt (Item 2) **[C]**.

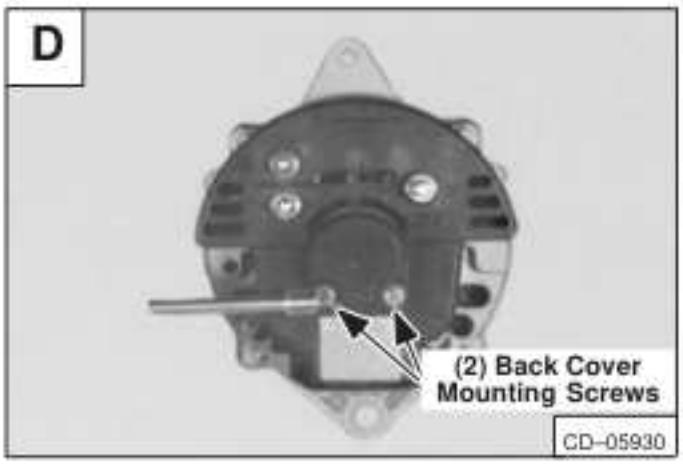
Remove the alternator from the mounting bracket.

Installation: Make sure to adjust the alternator belt to the correct tension. (See Page 6–8.)



Disassembly And Assembly

Remove the nuts from the terminals. Remove the two screws securing the back cover to the rear housing **[D]**.

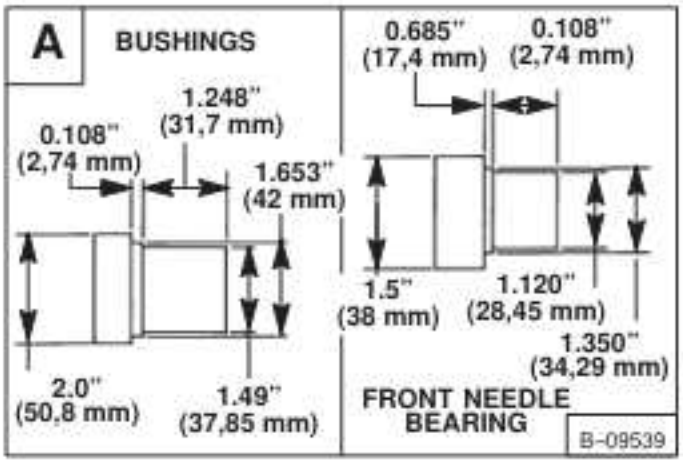


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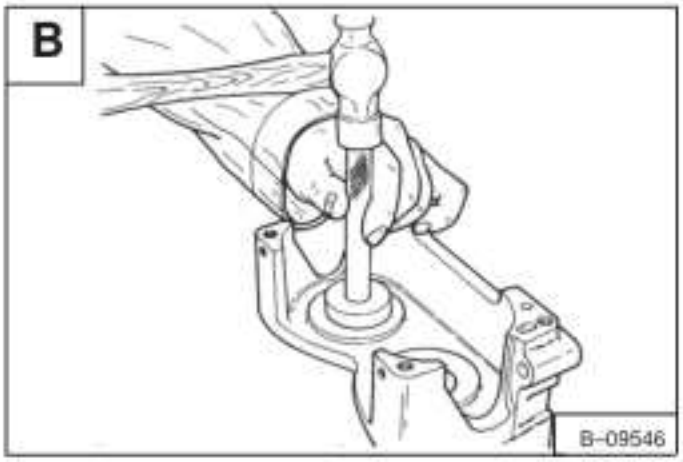
Inspection (Cont'd)

NOTE: When needle bearings and bushing bearings are replaced, they must be pressed into position with the correct driver tool [A].

Clean and lubricate the frame bores.

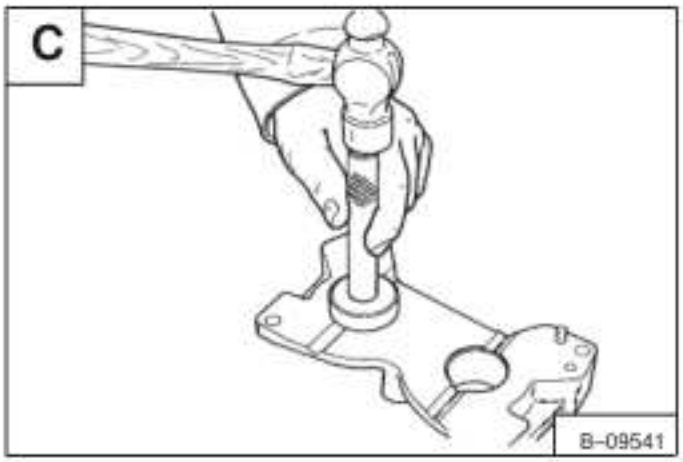


Press in the bushing bearings until they are 0.098–0.108 inch (2,5–2,75 mm) below the machined surface **[B]**.



Clean and lubricate the bores in the frame end cover.

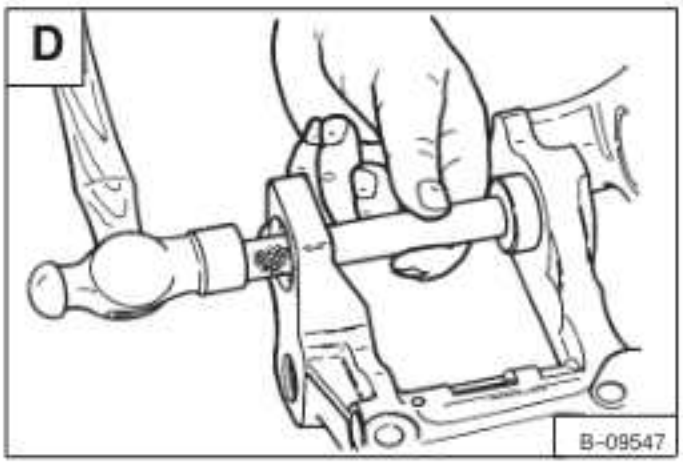
Press in the bushings until they are 0.108–0.128 inch (2,75–3,25 mm) below the machined surface **[C]**.



Clean and lubricate the bores for the needle bearings.

Press in the rear needle bearing until the bearing is 5.12–5.16 inch (130–131 mm) from the front of the frame **[D]**.

Press in the front needle bearing until the bearing is 0.098–0.118 inch (2,5–3,0 mm) below the front surface of the frame.



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HYDRAULIC / HYDROSTATIC SYSTEM OPERATION

To Be Used With

HYDRAULIC / HYDROSTATIC FLOW CHART

For Model

2410 BACKHOE

Chart # 6720494 (Printed May 1991) (Revised July 1992)

CHART LEGEND

1. **RESERVOIR,** . Reservoir Cap. 6 gals. (22,7 L.); System Cap. 8 gals. (30,3 L.)
2. **BREATHER**
3. **ORIFICE,** . . . . . 0.18'' - 0.19'' (4,6 - 4,8 mm)
4. **HYDROSTATIC PUMP**
5. **DISPLACEMENT CONTROL VALVE** Drain Orifice 0.046'' (1,17 mm) Diameter Inside Sleeve
6. **CHARGE RELIEF VALVE,** @ 120°F. (49°C.) & Above 340-370 PSI (2344-2551 kPa) Cold-370-400 PSI (2551-2758 kPa)
7. **INLET FILTER,** Orifice Supply 0.031'' (0,79 mm) Dia.
8. **HIGH PRESSURE REPLENISHING RELIEF VALVE,** . . . . 5220 PSI (35992 kPa)
9. **CHARGE PUMP,** 10.3 GPM (39 L/min.) @ 2200 Engine RPM
10. **TOW VALVE**
11. **HYDRAULIC PUMP,**
    a. Large Section, 19.5 GPM (73,8 L/min.) @ 2200 Engine RPM @ 1050 PSI (7239 kPa)
    b. Small Section, 7.1 GPM (26,9 L/min.) @ 2200 Engine RPM @ 1050 PSI (7239 kPa)
12. **DIAGNOSTIC COUPLER**
    a. Steering Pressure & Rear Aux. Hyd.
    b. Charge Pressure
    c. Hydraulic Pressure
13. **FLUID TEMPERATURE SWITCH** 225-232°F (105-111°C)
14. **OIL COOLER BY-PASS,** . . . . 120 PSI (827 kPa)
15. **PORT BLOCK**
16. **TEMPERATURE SWITCH,** . . . 100° F (38° C) Normally Open
17. **TWO-SPEED SOLENOID**
18. **LIFT CYLINDERS**
19. **PORT RELIEF,** . . . . . Lift Cylinders 3500 PSI (24133 kPa)
20. **HYDRAULIC CONTROL VALVE**
    a. Valve Outlet
    b. Valve Power-Beyond Outlet
21. **LOAD CHECK VALVES (3)**
22. **MAIN RELIEF VALVE,** 2400-2500 PSI (16548-17238 kPa) Measured at Diagnostic Coupler
23. **RESTRICTOR,** . . . . . 0.15-0.16'' (3,8-4,1 mm) Diameter
24. **ANTI-CAVITATION PORT RELIEF** Tilt Cylinder Base End 2500 PSI (17238 kPa)
25. **FRONT AUXILIARY SOLENOIDS**
26. **FRONT AUXILIARY QUICK COUPLERS**
27. **BUCKET POSITION VALVE**
28. **PRESSURE RELIEF VALVE**
29. **FLOW DIVIDER SPOOL**
30. **CHECK VALVE**
31. **UN-LOADING SPOOL**
32. **TILT CYLINDERS**
33. **HYDROSTATIC MOTOR**
34. **BRAKE,** . . . . . Multi-Disc
35. **SWITCH,** . . . . Differential; 36-44 PSI (248-303 kPa)
36. **FILTER BY-PASS,** . 50 PSI (345 kPa)
37. **FILTER,** . . . . . Type 3 Element
38. **OIL COOLER**
39. **FRONT MAIN FRAME PORT BLOCK**
40. **PRIORITY VALVE**
41. **PRIORITY SHUTTLE SPOOL**
42. **STEERING RELIEF VALVE,** 2500 PSI (17238 kPa)
43. **STEERING CONTROL VALVE**
44. **LOAD-SENSING LINE**
45. **STEERING CYLINDER**
46. **BACKHOE TILT CYLINDER**
47. **LOCKING PINS CYLINDER**
48. **CHECK VALVE**
49. **RETURN PORT BLOCK**
50. **BACKHOE CONTROL VALVE**
51. **RELIEF VALVE,** 2500 PSI (17238 kPa)
52. **REAR AUXILIARY CONTROL VALVE**
53. **QUICK COUPLERS**
54. **PORT RELIEF,** 2500 PSI (17238 kPa)

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WIRE LEGEND

NO.'s	COLOR	GAUGE
1AA	Red	8
1BB	Red	18
1DD	Red	12
1E	Red	16
1F	Red	10
2D	Red/White	14
2DD	Red/White	12
10A	Black	12
10B	Black	16
10F	Black	8
12TF	Orange	16
12S	Orange	16
12SR	White	16
12Y	Orange	16
19FF	Red/Blue	16
19L	Red/White	12
21RA	White	16
21RB	White	16
21RC	White	16
21RCM	White	16
23F	White/Black	16
25	Red/Blue	16
25A	Blue	16
28E	Lt. Blue/Dk. Blue	16
31P	Yellow/Green	16
31PM	Yellow/Green	16
31PR	Yellow/Green	16
31PS	Yellow/Green	16
32FPT	Yellow/Dk. Blue	16
32P	Yellow	16
32PM	Yellow	16
32PS	Yellow	16
32PT	Yellow	16
32T	Yellow/Black	16
32TM	Yellow/Black	16
32TR	Yellow/Black	16
32TS	Yellow/Black	16
36T	Purple/White	16
36TC	Purple/White	16
36TF	Purple/White	16
36TT	Purple/White	16
40B	Black	16
46B	Brown/Red	14
46C	Brown	16
46D	Brown/White	14
48A	Brown/White	16
50AA	Black	16
50AB	Black	18
50AC	Black	18
50B	Black/White	16
50C	Black/Yellow	16
50D	Black	18
50E	Black	18
50F	Black	18
50G	Black	18
56	Dk. Green/White	16
56A	Dk. Green/Yellow	16

WIRE LEGEND (Cont'd)

NO.'s	COLOR	GAUGE
59A	Orange	18
59B	Orange	18
59C	Orange	18
59D	Orange	18
60	Black	14
60C	Black	16
61	Orange/Red	14
61C	Orange/Green	14
63G	Orange/Black	14
63H	White/Black	14
63J	Red/Black	14
63K	Green	14
63L	Yellow	14
64	Orange/Blue	16
65	Orange/White	14
66	Orange/Green	16

PARTS LEGEND

1. Harness Connectors
2. Steering Column W/Horn Switch
3. Horn
4. Brake Engagement Light
5. Brake Light Switch (NC)
6. Ground
7. Two-Speed Switch (NO)
8. Computer or Accessory Connectors
9. Fuse Block
   - 7.5 Amp. Fuse-Instrument Panel
   - 7.5 Amp. Fuse-(Future Use)
   - 30 Amp. Fuse-Heater & A.C. Blower
   - 10 Amp. Fuse-Ignition Switch
10. Fuse Block
    - 10 Amp. Fuse & Switched Acc.
    - 7.5 Amp. Fuse-Two-Speed/Aux. Hyd.
    - 7.5 Amp. Fuse-Turn Signal
    - 5 Amp. Fuse-(Future Use)
11. Fuse Block
    - 10 Amp. Fuse-Flasher
    - 20 Amp. Fuse-Lights
    - 15 Amp. Fuse-Beacon (Opt.)
    - 25 Amp. Fuse-Wiper, Horn, Dome Light
12. Ignition Relay
13. Relay Connector (Becon Opt.)
14. Shut-Down Module (Opt.)
15. Fused & Switched Accessory Connector

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HYDRAULIC / HYDROSTATIC FLOW CHART

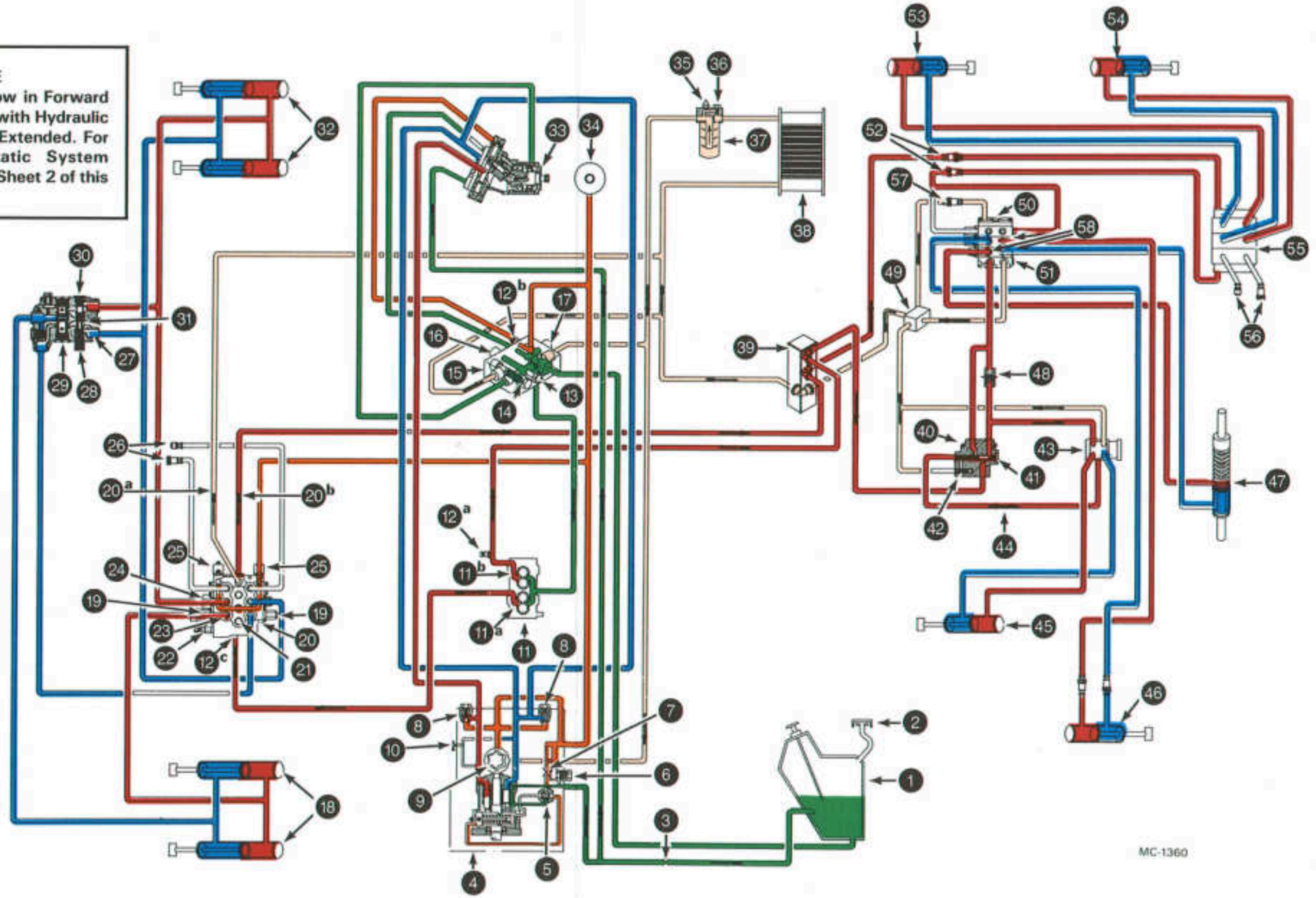
For Model

2410/THREE-POINT HITCH

Chart # 6720495 (Printed May 1991)
(Revised July 1992)

RED - - - - - - - High Pressure
BLUE - - - - - - Low Pressure
GREEN - - - - - Case Drain & Reservoir
ORANGE - - - - Charge Pressure
LT. ORANGE - Hydraulic Pump Charge

NOTE
Chart shows oil flow in Forward Drive Position and with Hydraulic Cylinders Partially Extended. For Hydraulic/Hydrostatic System Operation, refer to Sheet 2 of this publication.



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