CASE CONSTRUCTION

SERVICE MANUAL

WHEEL LOADER

621E
TIER 3

84243974
(Replaces 87634756

Revised June 2009
Issued September 2007

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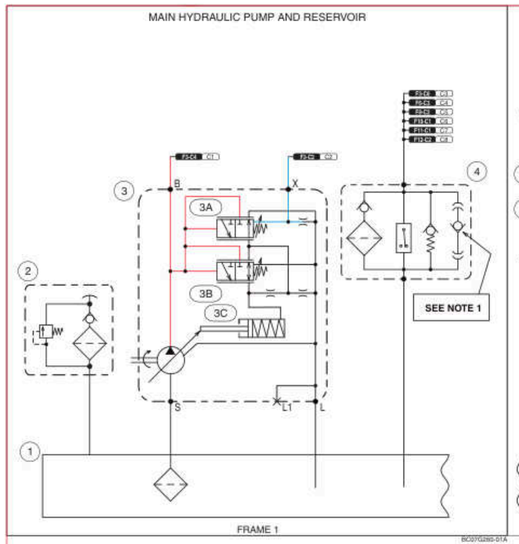
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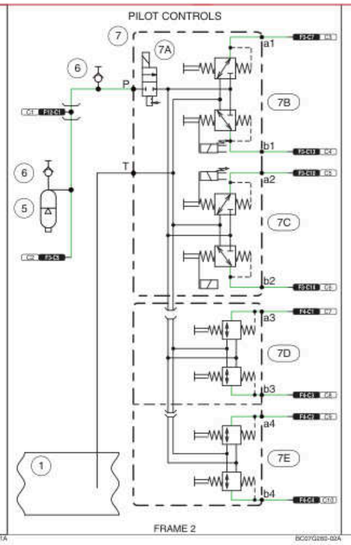
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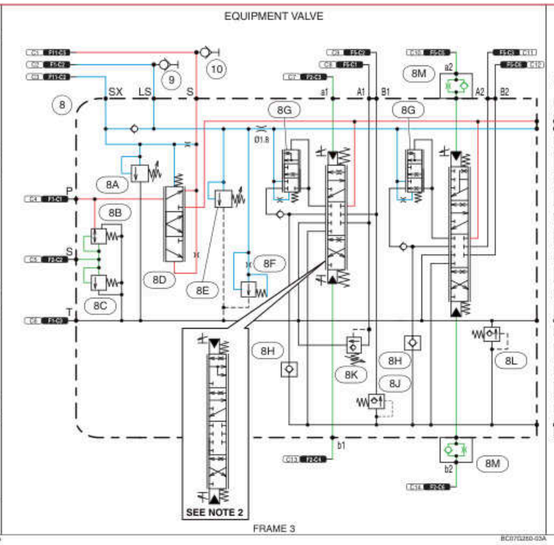
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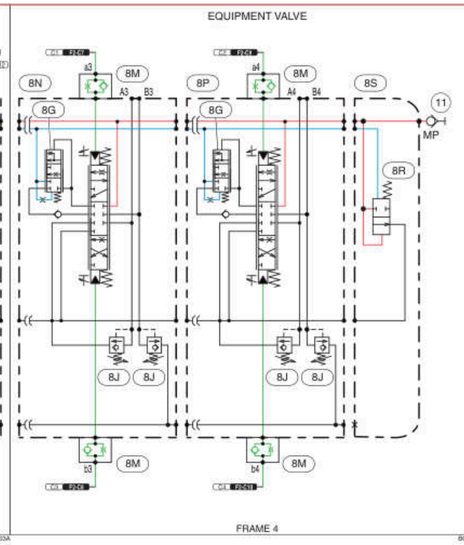
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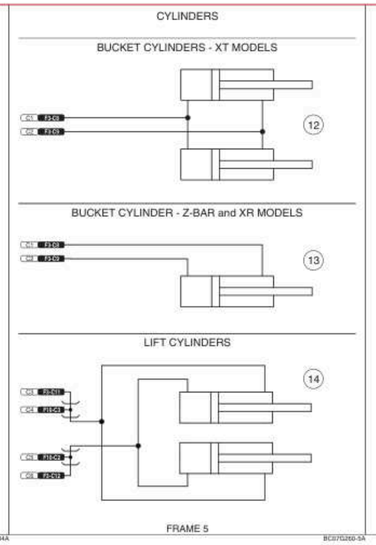
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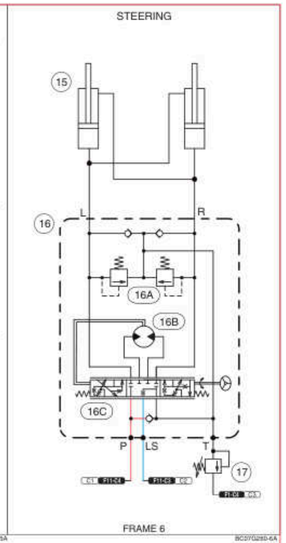


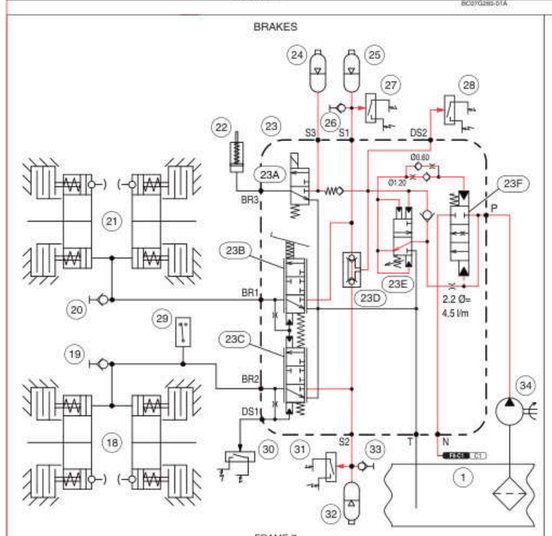


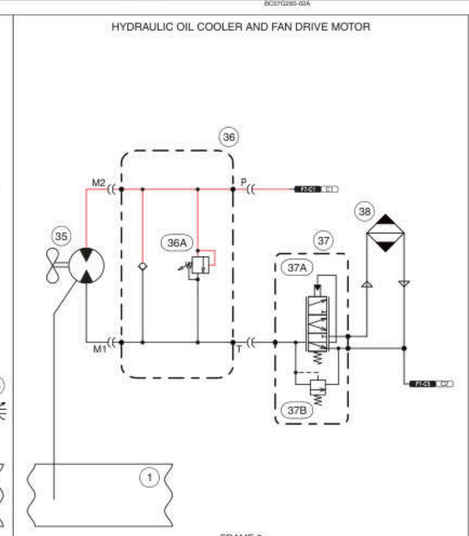


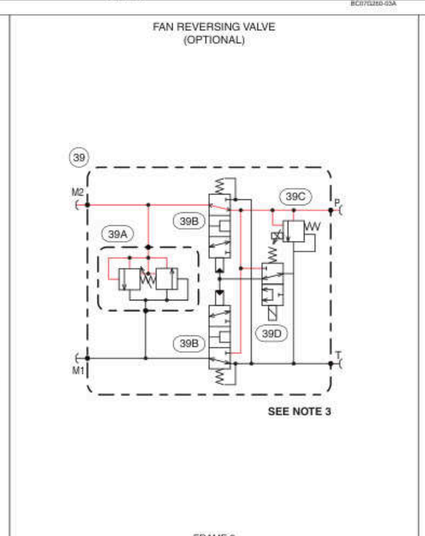


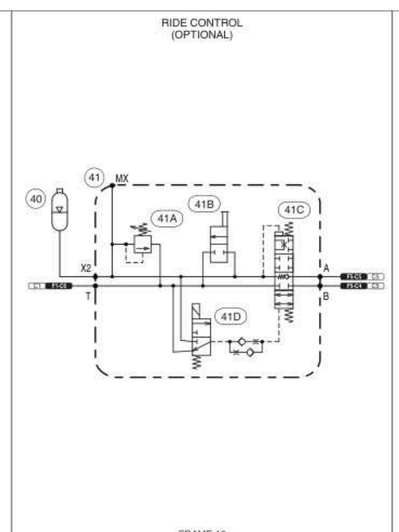


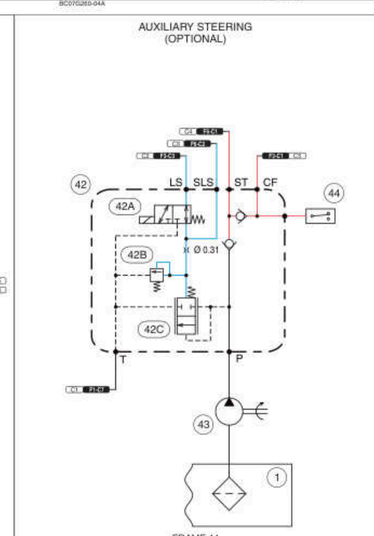


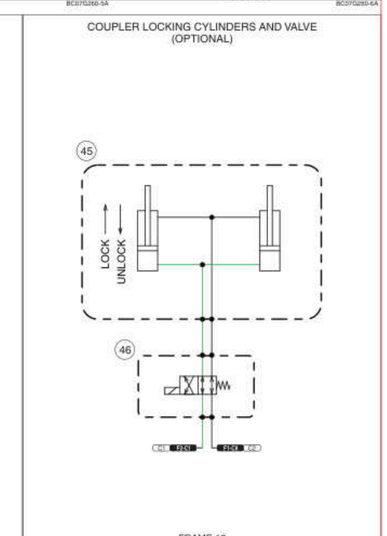












COMPONENTS

FRAME 1 COMPONENTS

1 - 1. Hydraulic Reservoir
1 - 2. Breather - Hydraulic Reservoir
Check Valve (0.03 Bar/0.43 PSI)
Relief Valve (0.35 Bar/5.07 PSI)
1 - 3. Implement Hydraulic Pump
Displacement (90 cc rev/5.5 cu in rev)
Cutoff (280 Bar/4061 psi)
Delta (24 Bar/348 psi)
1 - 3A. Compensator Differential Spool
1 - 3B. Compensator High Pressure Cutoff Spool
1 - 3C. Control Piston with Spring
1 - 4. Hydraulic Filter Assembly
Bypass (3.4 Bar/50 psi)
Warning Switch (2.7 Bar/40psi)

FRAME 2 COMPONENTS

2 - 1. Hydraulic Reservoir
2 - 5. Pilot Pressure Accumulator
Pre-charge (13.8 Bar /200 psi)
Capacity (0.75 liter/45.8 cu in)
2 - 6. Pilot Pressure Test Port
2 - 7. Controller (4-Spool Valve)
2 - 7A. Pilot ON/OFF Solenoid
2 - 7B. Bucket Control
2 - 7C. Lift Control
2 - 7D. Auxiliary Control #1
2 - 7E. Auxiliary Control #2

FRAME 3 COMPONENTS

3 - 8. Equipment Valve: 2-spool
3 - 8A. Steering Pressure Relief (217 Bar/3147 psi)
3 - 8B. Pilot Pressure Reducing Valve (30 Bar/435 psi)
3 - 8C. Pilot Pressure Relief (45 Bar/653 psi)
3 - 8D. Steering Priority Spool
3 - 8E. Loader Main Relief (227 Bar/3292 psi)
3 - 8F. Load Sense Bleed Down Orifice (0.7 L/min)
3 - 8G. Flow Compensator Spool
3 - 8H. Regeneration Check Valve
3 - 8J. Circuit Relief Valve with Anti-Cavitation (290 Bar/4206 psi)
3 - 8K. Circuit Relief Valve with Anti-Cavitation (XT Models: 183 Bar/2654 psi) (Z-Bar Models: 290 Bar/4206 psi)
3 - 8L. Regeneration Relief Valve (6.7 Bar/97 psi)
3 - 8M. Shuttle Check Valve
3 - 9. Load Sense Pressure Test Port
3 - 10. Steering Pressure Test Port

FRAME 4 COMPONENTS

3 - 8G. Flow Compensator Spool
3 - 8J. Circuit Relief Valve with Anti-Cavitation (290 Bar/4206 psi)
4 - 8M. Shuttle Check Valve
4 - 8N. Auxiliary Valve #1
4 - 8P. Auxiliary Valve #2
4 - 8R. Pressure Differential Valve (40 Bar/580 psi)
4 - 8S. End Cover
4 - 11. Pump Pressure Test Port

FRAME 5 COMPONENTS

5 - 12. Bucket Cylinders
Bore: 114 mm (4.49 in)
Rod: 63.5 mm (2.5 in)
Stroke: 820 mm (32.28 in)
5 - 13. Bucket Cylinder
Bore: 127 mm (5 in)
Rod: 76.2 mm (3 in)
Stroke: 619.7 mm (24.5 in)
5 - 14. Lift Cylinders
Bore: 120.9 mm (4.9 in)
Rod: 63.5 mm (2.5 in)
Stroke: 787.7 mm (31 in)

FRAME 6 COMPONENTS

6 - 15. Steering Cylinders
Bore: 76.2 mm (3 in)
Rod: 44.5 mm (1.75 in)
Stroke: 486.9 mm (19 in)
6 - 16. Steering Control Valve
Displacement:
983 cc/rev (60 cu in/rev)
6 - 16A. Circuit Relief Valve
(290 Bar/4206 psi)
6 - 16B. Gerotor Pump
6 - 16C. Steering Spool
6 - 17. Back Pressure Valve
(8-10 Bar/115-145 psi)

FRAME 7 COMPONENTS

7 - 1. Hydraulic Reservoir
7 - 18. Rear Brakes
Modulation Pressure:
(87 to 94 Bar/1262 to 1363 psi)
7 - 19. Rear Brake Pressure Test Port
7 - 20. Front Brake Pressure Test Port
7 - 21. Front Brake
Modulation Pressure:
(90 to 97 Bar/1350 to 1406 psi)
7 - 22. Parking Brake Cylinder
7 - 23. Brake Valve and Accumulator Charging Valve
Cut-in Pressure:
(157 to 167 Bar/2277 to 2422 psi)
Cut-out Pressure:
(190 to 196 Bar/2755 to 2843 psi)
7 - 23A. Park Brake Solenoid
7 - 23B. Front Brake Valve
7 - 23C. Rear Brake Valve
7 - 23D. Accumulator Isolation Check Valve
7 - 23E. Accumulator Charging Spool
7 - 23F. Priority Spool
7 - 24. Parking Brake Accumulator
Pre-charge (96 Bar/1392 psi)
Capacity: 0.16 liter/9.7 cu/in)
7 - 25. Front Axle Accumulator
Pre-charge (55 Bar (800 psi)
Capacity (2.8 liter/170.8 cu/in)
7 - 26. Front Accumulator Test Port
7 - 27. Redundant Brake Pressure Switch
(NO, Closes at 62 Bar/900 psi)
7 - 28. Low Brake Pressure Switch
Rising (128 Bar/1856 psi)
Falling (103 Bar/1494 psi)
7 - 29. Brake Declutch Switch
(NC, Opens at 24 Bar/350 psi)
7 - 30. Brake Lamp Switch
(NO, Closes at 4.1 Bar/60 psi)
7 - 31. Redundant Brake Pressure Switch
(NO, Closes at 62 Bar/900 psi)
7 - 32. Rear Axle Accumulator
Pre-charge (55 Bar/800 psi)
Capacity (2.8 liter/170.8 cu/in)
7 - 33. Rear Accumulator Test Port
7 - 34. Brake and Cooling Fan Pump
23cc/rev (0.77 cu/in)

FRAME 8 COMPONENTS

8 - 1. Hydraulic Reservoir
8 - 35. Fan Drive Motor
Displacement: 23 cc/rev (1.4 cu/in)
8 - 36. Fan Valve
Fan Speed: 1200 ± 25 rpm
8 - 36A. Fan Relief
(162 Bar/2350 psi)
8 - 37. Cooler Bypass Valve (Optional)
8 - 37A. Priority Valve
8 - 37B. Relief Valve
0.3 ± 0.6 Bar/ 5 ± 8 psi
8 - 38. Hydraulic Cooler

FRAME 9 COMPONENTS

9 - 39. Fan Reversing Valve
Fan Speed: 1200 ± 25 rpm
9 - 39A. Fan Crossover Relief
(234 BAR/3394 psi)
9 - 39B. Reversing Spools
9 - 39C. Pulse Width Modulator (PWM) Relief Solenoid
9 - 39D. ON/OFF Reverse Solenoid

FRAME 10 COMPONENTS

10 - 40. Ride Control Accumulator
Pre-charge (17 Bar/247 psi)
Capacity (3.78 liter/231 cu/in)
10 - 41. Ride Control Valve
10 - 41A. Pressure Relief Valve
(280 BAR/4061 psi)
10 - 41B. Manual Bleed Valve
10 - 41C. Ride Control Spool Valve
10 - 41D. Ride Control Solenoid

FRAME 11 COMPONENTS

11 - 1. Hydraulic Reservoir
11 - 42. Auxiliary Steering Priority Valve
Relief Pressure: (241 Bar/3495 psi)
11 - 42A. Auxiliary Steering Activation Solenoid
11 - 42B. Relief Valve (241 BAR/3495 psi)
11 - 42C. Priority Spool
11 - 43. Auxiliary Steering Pump
Displacement:
11 cc/rev (0.671 cu/in)
11 - 44. Auxiliary Steering Pressure Switch
NO (Normally Open)
Closes at 2.00-2.75 Bar/30-40 psi

FRAME 11 COMPONENTS

12 - 45. Coupler Locking Cylinders
12 - 46. Coupler Locking Valve

HYDRAULIC SYMBOLS

54 / 36D — COMPONENT NUMBER
SHOWS CIRCUIT CROSSING NOT CONNECTED
SHOWS CIRCUIT CONNECTED
CHECK VALVE
RESTRICTOR
FILTER OR SCREEN
OIL COOLER
DIRECTION OF FLOW
CIRCUIT
COMPONENT
PRESSURE
LOAD SENSE
PILOT PRESSURE
LINE TYPES

CIRCUIT CONTINUATION

Frame Number and Circuit Number where Circuit continues.
CIRCUIT TAGS
FRAME - CIRCUIT
CIRCUIT
Circuit Number assigned to Circuit in Frame.

NOTES

NOTE 1. Reverse Control Check Valve.
Used with Ride Control equipped Models ONLY.
NOTE 2. Used for XT Model Machines ONLY.
NOTE 3. This will replace Item 36 in Frame 8 when this Option is installed on machine.
NOTE 4. See the Repair Manual for the proper Testing and Adjustment for Hydraulic Components.

HYDRAULIC SCHEMATIC
621E WHEEL LOADER

Additional copies of this Hydraulic and Electrical Schematic can be ordered through Technical Publications Distribution System.
The part number is 5-7560

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