CASE

REPAIR MANUAL

CRAWLER DOZER

1650L
TIER 3

87634763 NA

Issued 01Oct 07

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1650L CRAWLER
Repair Manual
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Table of Contents

Description	Section Number	Publication Form Number
General	**Tab 1**	
Section Index - General		5-7690
Standard Torque Specifications	1001	8-71603
Fluids and Lubricants	1002	5-7700
Metric Conversion Chart	1003	7-52590
Engine	**Tab 2**	
Section Index- Engine		5-7710
Engine and Radiator Removal and Installation	2000	5-7720
After Cooler	2003	5-7730
For Engine Repair, see the Engine Repair Manual		87519803
Fuel System	**Tab 3**	
Section Index- Fuel System		5-7740
For Fuel System Repair, see the Engine Repair Manual		87519803
Electrical	**Tab 4**	
Section Index - Electrical		5-7750
Removal and Installation of Electrical Components	4001	5-7760
Electrical Specifications and Troubleshooting	4002	5-7770
Batteries	4003	6-42331
Instrument Cluster	4005	5-7780
Tracks	**Tab 5**	
Section Index - Tracks		5-7790
Undercarriage Fundamentals	5001	5-4230
Inspection of Track Components	5502	5-7800
Case Lubricated Track	5504	5-7810
Track Frame and Suspension	5506	5-4260
Idler, Track Adjuster, and Recoil Housing	5508	5-7820
Sprocket	5509	5-7830
Track Roller	5511	5-7840

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1650L CRAWLER
Repair Manual
Bur 87634763

Table of Contents (Continued)

Description	Section Number	Publication Form Number
Power Train	**Tab 6**	
Section Index - Power Train		5-7850
Hydrostatic Pumps and Motors System Overview	6000	5-4310
Removal and Installation of Hydrostatic Pumps and Motors	6001	5-7860
Transmission Specifications, Pressure Checks and Troubleshooting	6002	5-7870
Transmission Controller	6003	5-7880
Final Drives	6007	5-4350
Brakes	**Tab 7**	
Section Index - Brakes		5-7890
Removal and Installation of Brake Components	7001	5-4370
Brake System Troubleshooting	7002	5-4380
Hydraulics	**Tab 8**	
Section Index - Hydraulics		5-7900
How to Read Hydraulic Schematics	8000	5-5670
Removal and Installation of Hydraulic Components	8001	5-4400
Hydraulic System Specifications, Troubleshooting and Pressure Checks	8002	5-7910
Cleaning the Hydraulic System	8003	6-48180
Equipment Pump	8004	5-4420
Equipment Control Valve	8005	5-4430
Cylinders	8006	5-7920
Accumulator	8010	5-4450
Mounted Equipment	**Tab 9**	
Section Index - Mounted Equipment		5-7930
Pedals and Levers	9001	5-7940
Air Conditioning Troubleshooting and System Checks For System With HFC 134a Refrigerant	9003	5-4480
Air Conditioning System Service	9004	5-4490
Removal and Installation of Heater and Air Conditioning System Components	9005	5-4500
Air Conditioning Compressor and Clutch	9006	5-7970
Dozer Blade	9007	5-7950
Rollover Protective Structure (ROPS) Cab Structural Frame (CSF)	9008	5-7980
Air and Mechanical Suspension Seats and Seat Belts	9009	5-4530
Ripper	9010	5-4540
Schematic Set		
Hydraulic and Electrical Schematics	In Rear Pocket	5-7960

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Section
4002

ELECTRICAL SPECIFICATIONS AND TROUBLESHOOTING

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Bur 5-7770

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75 – Optional ROPS Heater

Operator's compartment.		
Check Points	**Reading**	**Possible Cause of Bad Reading**
NOTE: *Put the master disconnect switch in the ON position.*		
Terminal for wire 0 to ground.	Continuity	Bad ground circuit.
NOTE: *Put the ignition switch in the RUN position.*		
Terminal for wire BL (V2ACC) to ground.	24 Volts	Bad wire BL (V2ACC) between ROPS heater and fuse F3, bad fuse.
NOTE: *If readings are good, replace the ROPS heater.*		

76 – Optional Air Suspension Seat - Air Compressor

Operator's compartment.		
Check Points	**Reading**	**Possible Cause of Bad Reading**
NOTE: *Put the master disconnect switch in the ON position.*		
Terminal for wire 0 to ground.	Continuity	Bad ground circuit.
NOTE: *Put the ignition switch in the RUN position.*		
Terminal for wire BL (V2ACC) to ground.	24 Volts	Bad wire BL (V2ACC) between ROPS heater and fuse F3, bad fuse.
NOTE: *If readings are good, replace the seat air compressor.*		

77 – Blower Motor

Rear of cab under consoles.		
Check Points	**Reading**	**Possible Cause of Bad Reading**
NOTE: *No information at time of print.*		

78 – Thermostat

Rear of cab under consoles.		
Check Points	**Reading**	**Possible Cause of Bad Reading**
NOTE: *No information at time of print.*		

79 – Water Valve

Rear of cab under consoles.		
Check Points	**Reading**	**Possible Cause of Bad Reading**
NOTE: *No information at time of print.*		

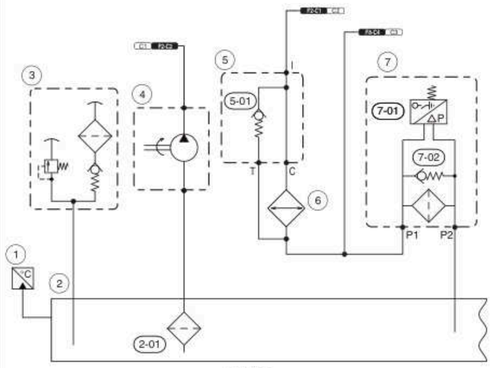
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INSTRUMENT CLUSTER FAULT CODES

CODE	DEFINITION	POSSIBLE STEPS FOR REPAIR
9129	CAN timed out during operation	If error is permanent or repeats often, check CAN wiring harness and connections on the CAN bus circuits.
9130	CAN timed out during operation	

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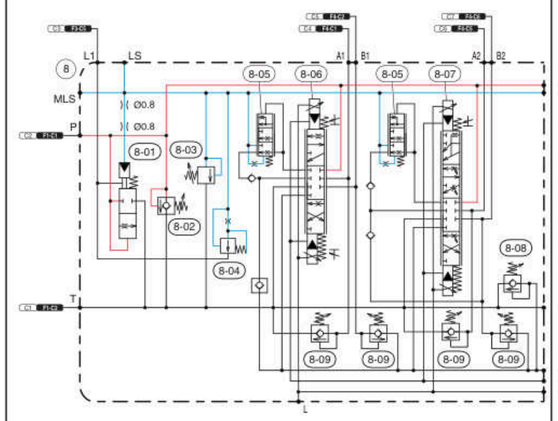
MAIN HYDRAULIC PUMP AND RESERVOIR



FRAME 1

BC07J087-01A

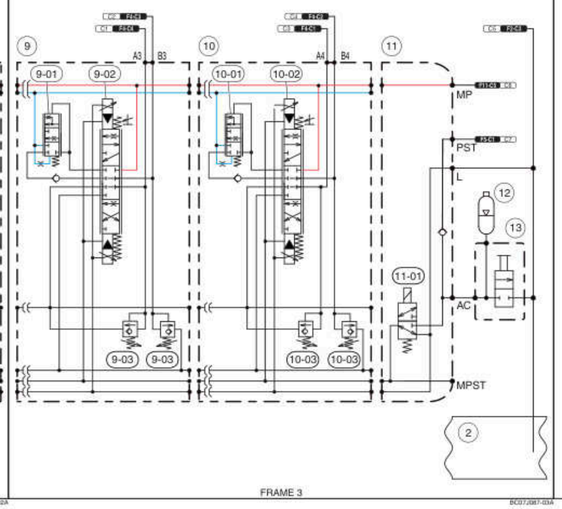
EQUIPMENT VALVE



FRAME 2

BC07J087-02A

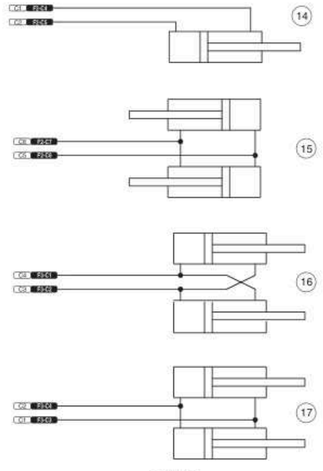
EQUIPMENT VALVE



FRAME 3

BC07J087-03A

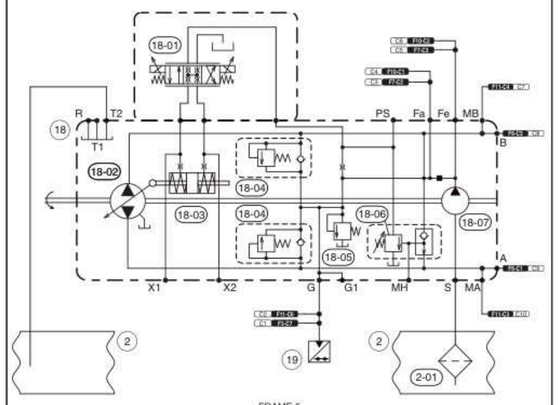
CYLINDERS



FRAME 4

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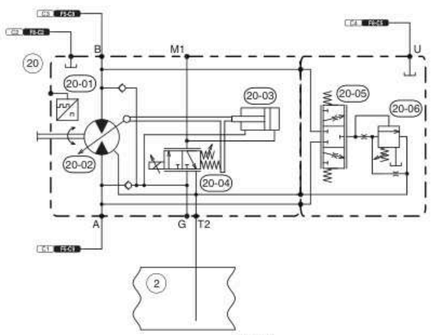
LEFT-HAND HYDROSTATIC PUMP ASSEMBLY



FRAME 5

BC07J087-05A

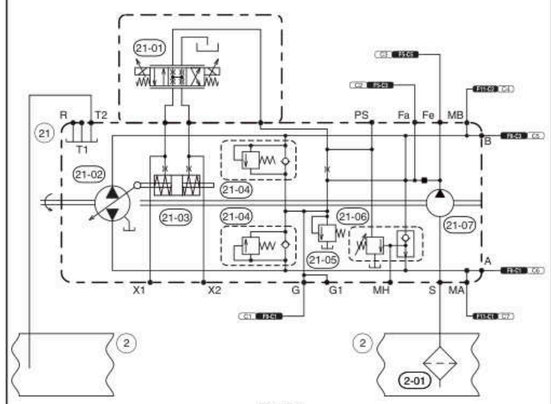
LEFT-HAND HYDROSTATIC MOTOR



FRAME 6

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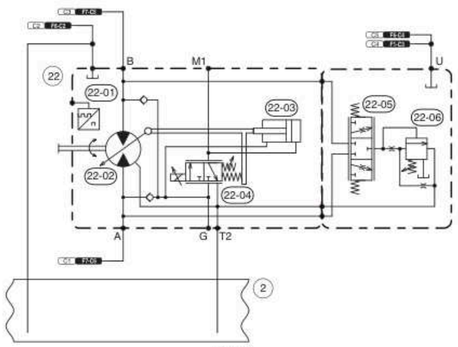
RIGHT-HAND HYDROSTATIC PUMP ASSEMBLY



FRAME 7

BC07J087-07A

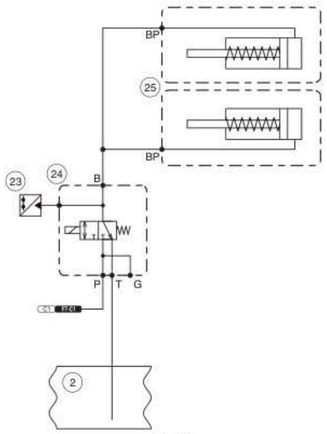
RIGHT-HAND HYDROSTATIC MOTOR



FRAME 8

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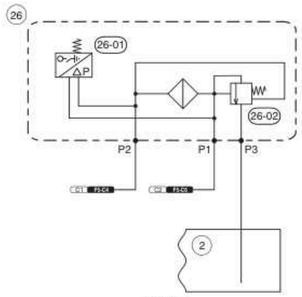
BRAKES



FRAME 9

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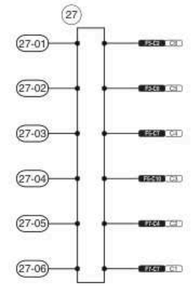
HYDROSTATIC FILTER



FRAME 10

BC07J087-10A

TEST PORT PANEL



FRAME 11

BC07J087-11A

COMPONENTS

FRAME 1 COMPONENTS

1 - 1. Hydraulic Temperature Sending Unit
1 - 2. Hydraulic Reservoir
1 - 2-01. Screen
1 - 3. Hydraulic Reservoir Vent
Pressure: 1.3 Bar / 20 psi
Vacuum: 0.06
Filter: 10 Micron
1 - 4. Equipment Hydraulic Pump
64.5 cc / 4 Cubic Inch
1 - 5. Hydraulic Cooler Bypass Valve
1 - 5-01. 13.8 Bar / 200 psi
1 - 6. Oil Cooler
1 - 7. Hydraulic Filter
1 - 7-01. Filter Bypass Switch
1 - 7-02. 3.5 Bar / 50 psi

FRAME 2 COMPONENTS

2 - 8. Equipment Valve
2 - 8-01. Unloading Valve
138 liters per minute
10-16 Bar / 145-232 psi
2 - 8-02. Main Pressure Relief
185 Bar / 2683 psi
2 - 8-03. Load Sense Relief
163 Bar / 2364 psi
2 - 8-04. Load Sense Bleed Down Orifice
0.4 liters per minute / 0.1 gpm
2 - 8-05. Flow Compensator Spool
2 - 8-06. Tilt Spool
2 - 8-07. Lift Spool
2 - 8-08. Pre-charge Valve
16 Bar / 232 psi
2.- 8-09. Circuit Relief Valve with Anti-cavitation
198 Bar / 2872 psi

FRAME 3 COMPONENTS

3 - 2. Hydraulic Reservoir
3 - 9. Angle Section
3 - 9-01. Flow Compensator Spool
3 - 9-02. Angle Spool
3 - 9-03. Circuit Relief Valve with Anti-cavitation
198 Bar / 2872 psi
3 - 10. Ripper Section (Optional)
3 - 10-01. Flow Compensator Spool
3 - 10-02. Ripper Spool
3 - 10-03. Circuit Relief Valve with Anti-cavitation
198 Bar / 2872 psi
3 - 11. End Cover
3 - 11-01. ON/OFF Solenoid
3 - 12. Pilot Accumulator
3 - 13. Accumulator Charge Valve

FRAME 4 COMPONENTS

4 - 14. Tilt Cylinder
Bore:125 mm
Rod: 63 mm Diameter
Stroke: 135 mm
4 - 15. Lift Cylinders
Bore: 90 mm
Rod: 50 mm Diameter
Stroke 826 mm
4 - 16. Angle Cylinders
Bore: 110 mm
Rod: 55 mm Diameter
Stroke: 509 mm
4 - 17. Ripper Cylinders (Optional)
Bore: 125 mm Cylinder
Rod: 70 mm Diameter
Stroke: 275 mm

FRAME 5 COMPONENTS

5 - 2. Hydraulic Reservoir
5 - 2-01 Screen
5 - 18. Left-Hand Track Pump
5 - 18-01. Proportional Solenoids and Spool
5 - 18-02. Hydrostatic Pump
5 - 18-03. Servo Piston
5 - 18-04. Main Pressure Relief
450 Bar / 6527 psi
5 - 18-05. Charge Pump Pressure Relief
30 Bar / 435 psi
5 - 18-06. Override Pressure Relief
Blocked
5 - 18-07. Charge Pressure Pump
19.6 cc / 1.2 Cubic Inch
5- 19 Charge Pressure Switch
Normally Closed (NC)
Opens at
17.5-19.5 Bar / 253-281 PSI

FRAME 6 COMPONENTS

6 - 2. Hydraulic Reservoir
6 - 20. Left-Hand Track Motor
6 - 20-01 Speed Sensor
6 - 20-02. Hydrostatic Motor
6 - 20-03. Positioning Piston
6 - 20-04. Proportional Solenoid
6 - 20-05. Flushing Valve
6 - 20-06. Flushing Orifice

FRAME 7 COMPONENTS

7 - 2. Hydraulic Reservoir
7 - 2-01 Screen
7 - 21. Right-Hand Track Pump
7 - 21-01. Proportional Solenoids and Spool
7 - 21-02. Hydrostatic Pump
7 - 21-03. Servo Piston
7 - 21-04. Main Pressure Relief
450 Bar / 6527 psi
7 - 21-05. Charge Pump Pressure Relief
30 Bar / 435 psi
7 - 21-06. Override Pressure Relief
Blocked
7 - 21-07. Charge Pressure Pump
19.6 cc / 1.2 Cubic Inch

FRAME 8 COMPONENTS

8 - 2. Hydraulic Reservoir
8 - 22. Right-Hand Track Motor
8 - 22-01 Speed Sensor
8 - 22-02. Hydrostatic Motor
8 - 22-03. Positioning Piston
8 - 22-04. Proportional Solenoid
8 - 22-05. Flushing Valve
8 - 22-06. Flushing Orifice

FRAME 9 COMPONENTS

9 - 2. Hydraulic Reservoir
9 - 23. Brake Pressure Switch
Normally Open (NO)
Closes at: 11-12.5 Bar / 164-184 psi
9 - 24. Brake Solenoid
9 - 25. Brake Cylinders

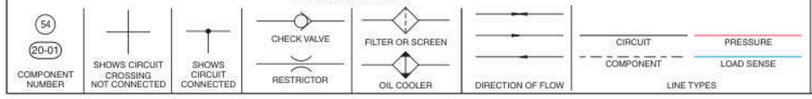
FRAME 10 COMPONENTS

10 - 2. Hydraulic Reservoir
10 - 26. Filter
10 - 26-01. By-pass Switch
10 - 26-02. 3.5 Bar / 50 psi

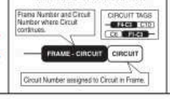
FRAME 11 COMPONENTS

11 - 27. Test Port Panel
11 - 27-01. Charge / Pilot Pressure
11 - 27-02. Equipment Valve Pressure
11 - 27-03. Travel Pressure -Left-Forward
11 - 27-04. Travel Pressure -Left-Reverse
11 - 27-05. Travel Pressure -Right-Forward
11 - 27-06. Travel Pressure -Right-Reverse

HYDRAULIC SYMBOLS



CIRCUIT CONTINUATION



NOTES

NOTE: All Pressures and Flows are at Operating RPM.

HYDRAULIC SCHEMATIC
1650L CRAWLER

Additional copies of this Hydraulic and Electrical Schematic can be ordered through Technical Publications Distribution System.
The part number is 5-7960

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