NEW HOLLAND

L160
L170

Workshop
Manual

NEW HOLLAND
CONSTRUCTION
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SECTION 00 – GENERAL INFORMATION

BOOK 1 - 87634735

CONTENTS

Section	Description	Page
	Introduction	00-2
	About Improvements	00-2
	Company Policy	00-3
	Parts and Accessories	00-3
	Model Codes	00-3
	Precautionary Statements	00-4
	Safety Precaution Information	00-5
	General Safety Information	00-7
	Machine Model and Serial Number Location	00-9
	Engine Model and Serial Number Location	00-9
	Hardware Torque Specifications	00-10
	Installation of Adjustable Fittings in Straight Thread O Ring Bosses	00-12
	Standard Torque Data for Hydraulic Tubes and Fittings	00-12
	Pipe Thread Fitting Torque	00-13
	Lubricants and Coolants	00-13
	Sealants	00-13
	Properly Support a Raised Machine	00-14
	Properly Support Boom on Boom Lock Pins	00-14
	Raising Boom Without Hydraulic Oil Flow	00-14
	Raising Boom Without Battery Voltage (12V)	00-16
	Reattaching Cylinders After Repair with Boom Resting on Boom Lock Pins	00-17
	Major Unit Overhaul	00-18
	Cab and Boom Tilt Procedure	00-19
	Craning the Skid Steer	00-25
	Special Tools	00-28
	Specifications	00-29
	Dimensions	00-35
	Cab and Boom Tilt Procedure (Cab Upgrade Machines Only)	00-37

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SECTION 27 – REAR DRIVE AXLE (GEARBOXES)

BOOK 2 - 87634738

Chapter 1 – Gearboxes

CONTENTS

Section	Description	Page
27 000	General Information	27-2
	Specifications	27-4
	Troubleshooting	27-5
	Testing	27-7
27 126	Gearboxes	27-8
27 126 40	Gearbox Removal and Inspection	27-8
27 126 48	Gearbox Disassembly	27-12
	Gearbox Parts Inspection	27-13
	Gearbox Resassembly	27-14
27 126 40	Gearbox Resinstallation	27-16
	Labor Guide	27-19

SECTION 29 - HYDROSTATIC TRANSMISSION

BOOK 2 - 87634738

Chapter 1 - Neutralizer, Pumps, Motors

CONTENTS

Section	Description	Page
29 100	General Information	29-3
	Operation	29-3
	Specifications	29-5
29 100 01	Troubleshooting	29-6
	Hydrostatic Drive System Testing	29-8
	Hydrostatic System Oil Flow	29-11
	Hydrostatic Charge System Pressure Test	29-14
	Hydrostatic Pump Case Drain Test	29-15
	Hydrostatic Pump High Pressure Test	29-18

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SECTION 35 - HYDRAULIC SYSTEM

BOOK -3 - 87634740

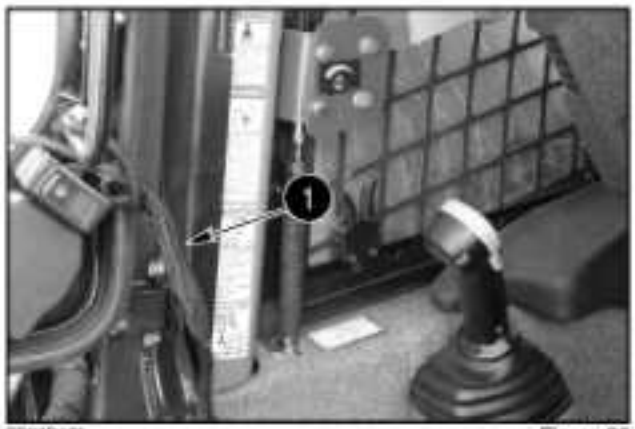
Chapter 1 - Valves, Gear Pump, Cylinders, and Pedal Controls

Contents

Section	Description	Page
35 000 -		
	General Information	35-3
	Hydraulic System Compatibility	35-4
	Boom Cylinder Pivot Pins	35-6
	Boom Cylinder Pivot Pin Location and Machine Usage	35-6
	Control Valve Power Beyond	35-7
	Specifications	35-8
	Troubleshooting	35-12
	Auxiliary Boom Hydraulics Troubleshooting	35-16
	Hydraulic System Testing	35-18
	Hydraulic System Oil Flow	35-24
	Control Valve - Bucket Spool Shifted	35-25
	Control Valve - Boom Spool Shifted	35-26
	Control Valve - Auxiliary Spool Shifted	35-27
35 710 02		
	Main System Pressure Tests	35-28
	Checking Main System Pressure at Boom Cylinders	35-30
	Checking Main System Pressure at Bucket Cylinders	35-31
	Checking Main System Pressure at Auxiliary Boom Hydraulic Quick Couplers	35-32
	Boom Circuit Relief Valve Test	35-33
	Gear Pump Flow Efficiency Test	35-35
	Boom and Bucket Spool Lock Solenoid Test	35-39
	Hydraulic, Hydrostatic System Air Ingress Test	35-41
	Control Valve Specifications	35-43
35 724 50		
	Control Valve Removal	35-44
	Control Valve Disassembly and Inspection	35-45
	Control Valve Parts Inspection	35-49
	Control Valve Reassembly	35-50
	Control Valve Reinstallation	35-53
	Hydraulic Pump Specifications	35-54
35 710 10		
	Hydraulic Pump Removal	35-55
35 710 20		
	Hydraulic Pump Removal/Disassembly (Without High Flow)	35-56
	High Flow Pump Parts Inspection	35-58
	Hydraulic Pump Parts Inspection	35-59
	Hydraulic Pump Reassembly/Installation (Without High Flow)	35-61
	Hydraulic Pump and High Flow Pump Reassembly/Installation	35-64
	New Hydraulic Pump Installation (Without High Flow)	35-70
	New Hydraulic Pump/High Flow Pump Installation	35-72
	Gear Pump Start-up Procedure	35-78
	Cylinders, Boom and Bucket	35-79
35 710 10		
	Boom Cylinder Removal	35-81
35 730 18		
	Boom Cylinder Disassembly	35-83
	Boom Cylinder Parts Inspection	35-84
	Boom Cylinder Reassembly	35-85
	Boom Cylinder Reinstallation	35-87

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12. Install door. Remove door wiring harness diode. Connect the door frame wiring harness, **(1)** to the Cab wiring harness.



80907D177 Figure 22

13. Reattach the air cleaner canister with mounting bolts, (1).



80907D036 Figure 23

14. Remove jack and supports.
15. Reconnect the battery cables.
16. After the Cab has been installed and if the cooling system was drained, refer to Section 00 for the correct type and quantity of coolant and refill the cooling system.
17. If the machine is equipped with air conditioning and the air conditioning was discharged, refer to **Air-conditioning system - Charging** and charge the air conditioning system.
18. Start machine and check for leaks.
19. Stop the engine.
20. Recheck all fluid levels.

ATTENTION: *Reinstall all shields that were removed for servicing and adjustment procedures.*

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PROBLEM	POSSIBLE CAUSES	CORRECTION
Both drive wheels on one side not powered	No hydrostatic motor shaft rotation	Check for pump to motor oil flow and repair
	No gearbox output drive	Check gearbox shaft rotation and repair
	Broken drive chains	Check chains and repair
One drive wheel not powered	Broken drive chain	Check chain and repair
	Axle or drive sprocket splines worn	Check axle and sprocket, replace
Chain case noise	Loose drive chains	Check and adjust chains
	No oil in final drive	Check oil level
	Worn drive sprockets	Check sprockets and repair
	Bearing failure	Check axle and gearbox bearings and repair
Excessive axle play	Bearing failure on axle shaft	Check bearings and repair
	Snap ring failure on axle shaft	Check axle bearing pre-load, repair
Noise in gearbox	No or low oil in gearbox	Check oil level
	Bearing failure	Check shafts and bearings, repair
	Bearing or shaft failure in drive motor	Check drive motor and repair
	Gears in gearbox worn	Check and replace
Axle outer bearing failure	Prolonged operation in liquid or semi-liquid material	Decrease lubrication interval to every 500 hours

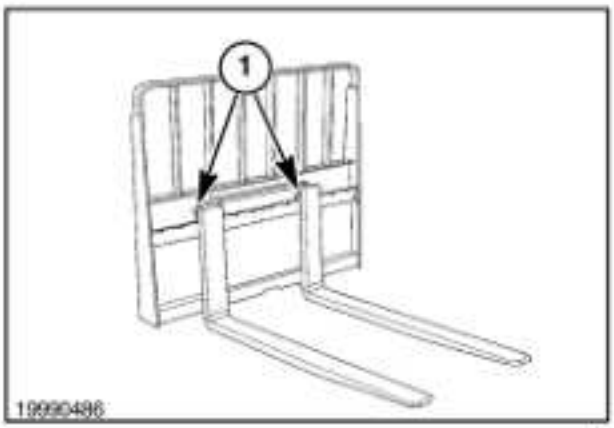
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Op. 82 100 30

PALLET FORK

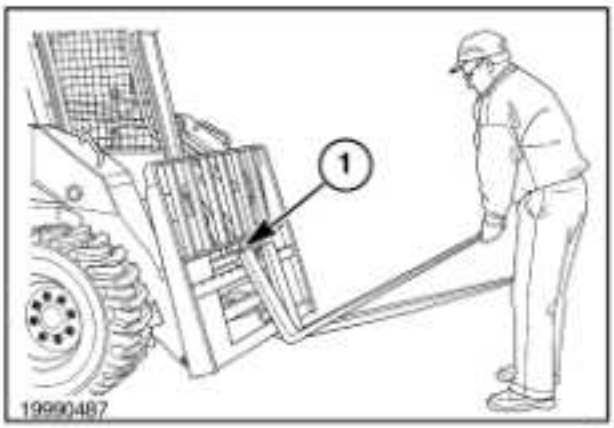
The pallet fork (shown) has a frame and guard assembly, with different length forks available. The fork pairs can be 36", 42", or 48" long. Also available is a multi-fork block fork set for lifting cinder blocks.

To adjust fork spacing, raise the lock pins, 1, slide the forks to the required spacing, and relatch lock pins into notches.



8

To install or remove the forks from the frame, slide the forks to the center of the frame at 1, and pick the end of the fork up to remove fork from frame.



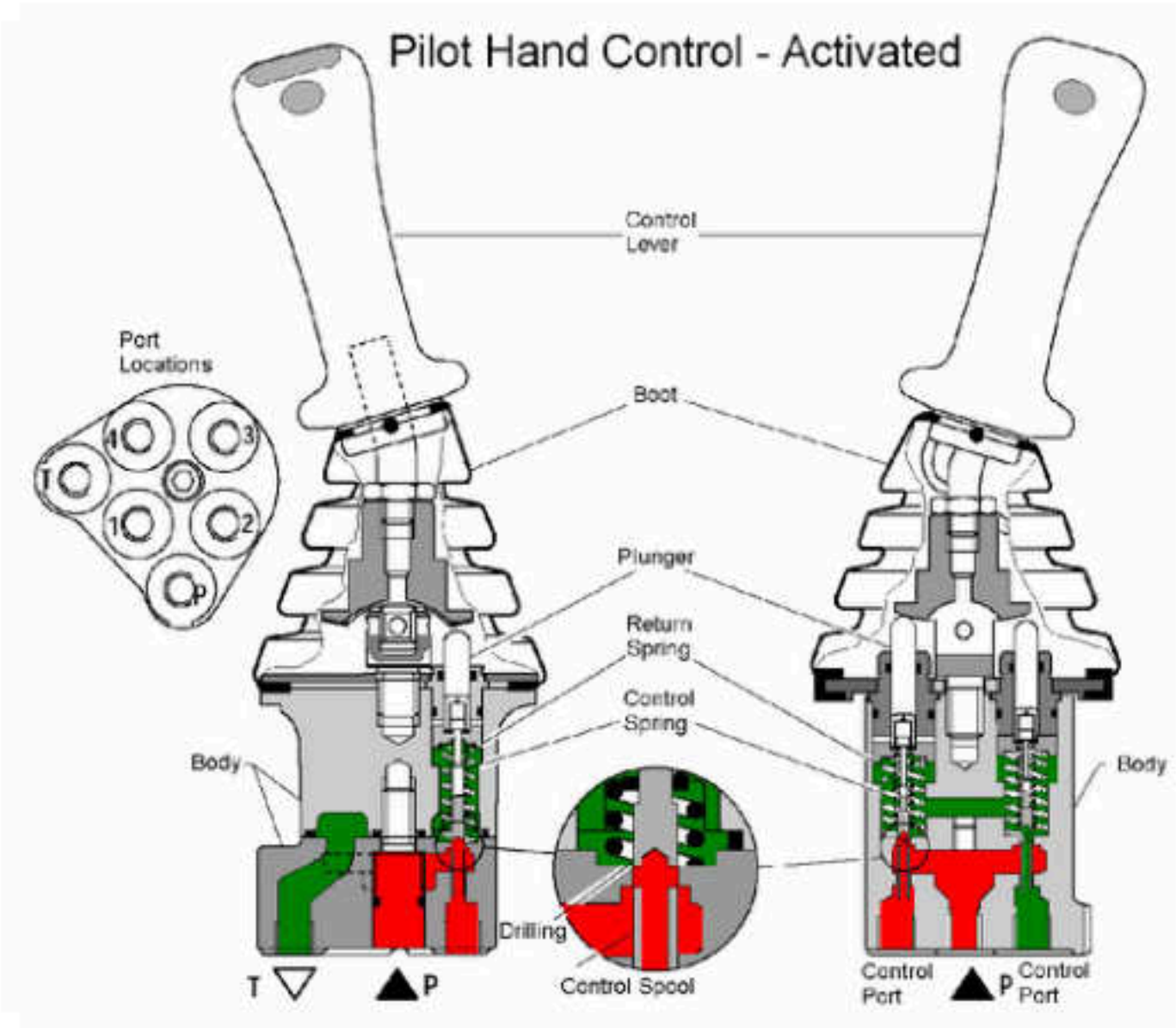
9

Pallet Fork Capacity

WITH WEIGHT KIT			
Max. Reach Height	**Tip Load**	**50%**	**SAE Rating**
2489 mm (98")	1290 kg (2840 lbs.)	645 kg (1420 lbs.)	645 kg (1420 lbs.)
WITHOUT WEIGHT KIT			
Max. Reach Height	**Tip Load**	**50%**	**SAE Rating**
2489 mm (98")	1140 kg (2510 lbs.)	570 kg (1255 lbs.)	570 kg (1255 lbs.)

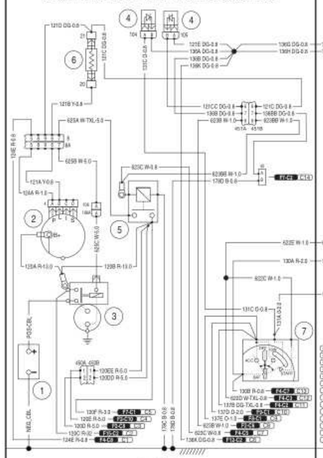
Capacities listed are L160/L170 with 10 x 16.5 tires at 3.5 bar (50 PSI), full fluids, 79 kg (175 lb.) operator, 48" pallet forks w/back guard, weight kit two 27 kg (60 lbs.) per side, per SAE rating specification J1197.

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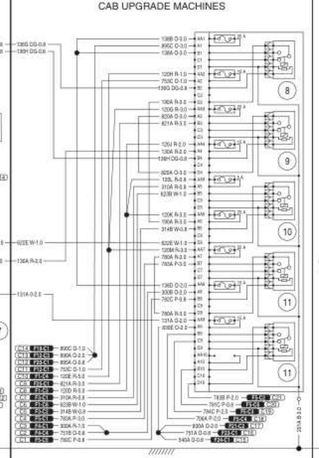
STARTING SYSTEM - CAB UPGRADE MACHINES



FRAME 1

BC07E492-01A

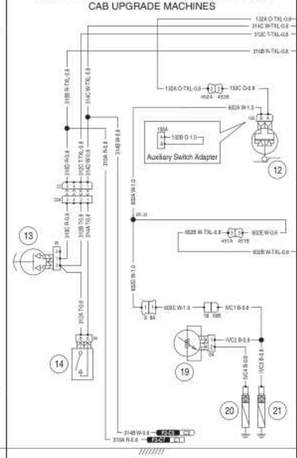
POWER DISTRIBUTION
CAB UPGRADE MACHINES



FRAME 2

BC07E492-02A

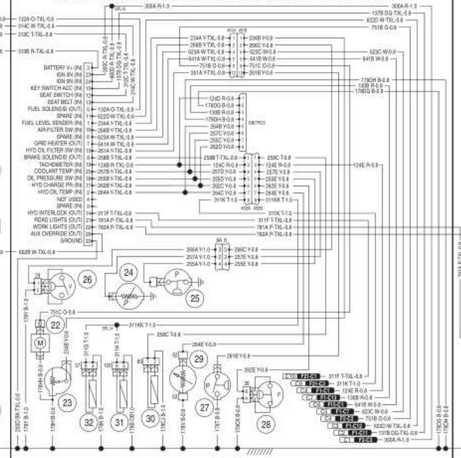
SAFETY INTERLOCK AND FUEL SUPPLY SYSTEM
CAB UPGRADE MACHINES



FRAME 3

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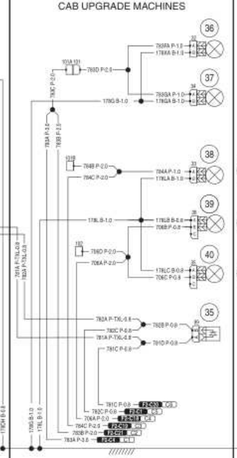
INSTRUMENT CLUSTER MONITORING SYSTEM - CAB UPGRADE MACHINES



FRAME 4

BC07E492-04A

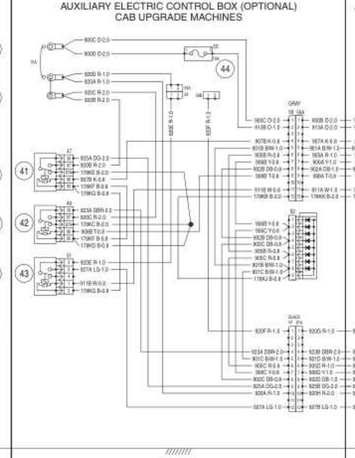
STANDARD LAMPS
CAB UPGRADE MACHINES



FRAME 5

BC07E492-05A

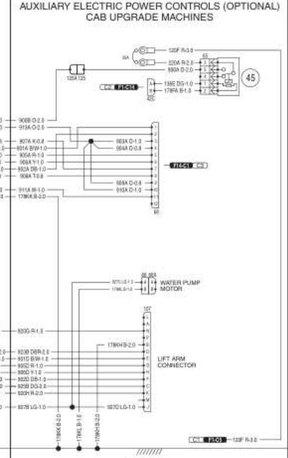
LOADER ARM
AUXILIARY ELECTRIC CONTROL BOX (OPTIONAL)
CAB UPGRADE MACHINES



FRAME 6

BC07E492-06A

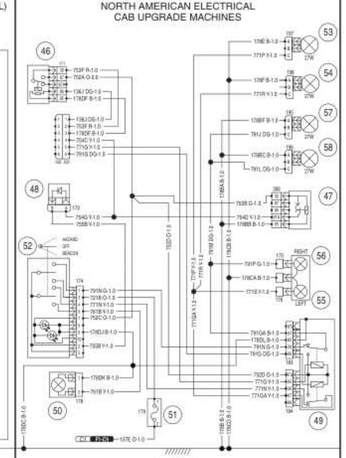
LOADER ARM
AUXILIARY ELECTRIC POWER CONTROLS (OPTIONAL)
CAB UPGRADE MACHINES



FRAME 7

BC07E492-07A

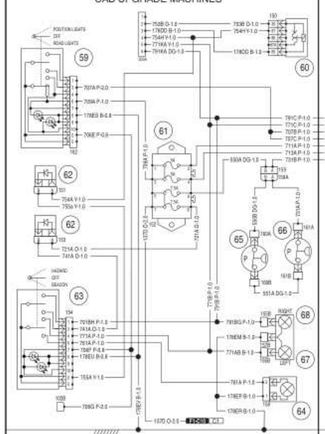
FLASHER AND TURN SIGNALS
NORTH AMERICAN ELECTRICAL
CAB UPGRADE MACHINES



FRAME 8

BC07E492-08A

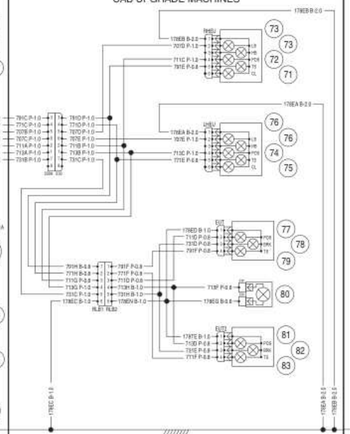
MAIN ELECTRICAL
EUROPEAN ON-ROAD REGULATIONS
CAB UPGRADE MACHINES



FRAME 9

BC07E492-09A

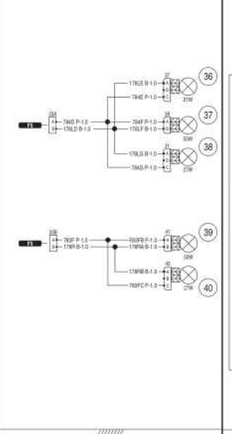
BOOM/REAR ELECTRICAL
EUROPEAN ON-ROAD REGULATIONS
CAB UPGRADE MACHINES



FRAME 10

BC07E492-10A

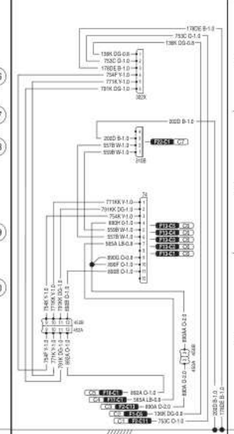
WORK LAMPS
CAB UPGRADE MACHINES



FRAME 11

BC07E492-11A

CONTROL LEVER INTERFACE
CAB UPGRADE MACHINES

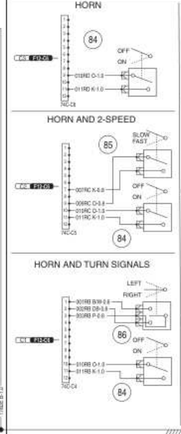


FRAME 12

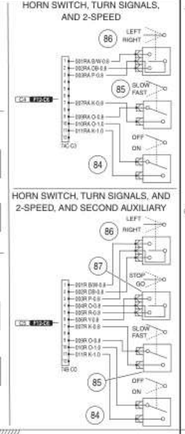
BC07E492-12A

LEFT-HAND CONTROL LEVER (OPTIONS)
CAB UPGRADE MACHINES

HORN



HORN SWITCH, TURN SIGNALS, AND 2-SPEED



HORN AND 2-SPEED

HORN SWITCH, TURN SIGNALS, AND 2-SPEED, AND SECOND AUXILIARY

HORN AND TURN SIGNALS

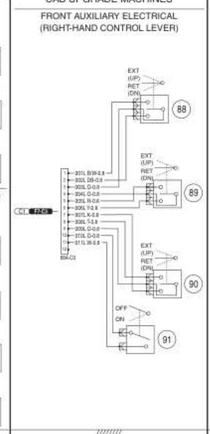


FRAME 13

BC07E492-13A

RIGHT-HAND CONTROL LEVER
(OPTIONAL)
CAB UPGRADE MACHINES

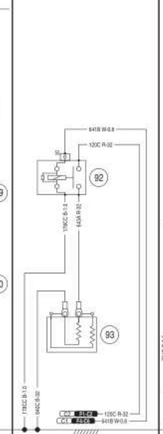
FRONT AUXILIARY ELECTRICAL
(RIGHT-HAND CONTROL LEVER)



FRAME 14

BC07E492-14A

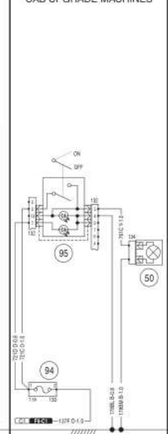
GRID HEATER SYSTEM
CAB UPGRADE MACHINES



FRAME 15

BC07E492-15A

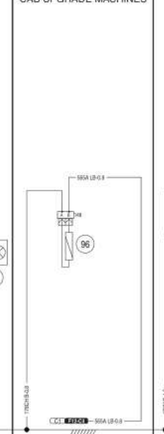
ROTATING BEACON
(OPTIONAL)
CAB UPGRADE MACHINES



FRAME 16

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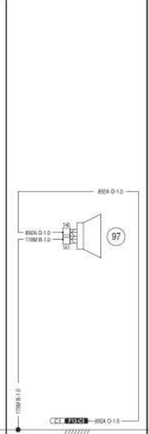
2 SPEED
(OPTIONAL)
CAB UPGRADE MACHINES



FRAME 17

BC07E492-17A

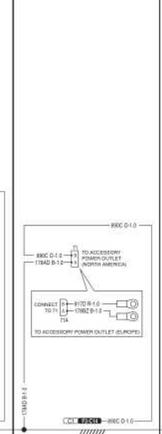
HORN
CAB UPGRADE MACHINES



FRAME 18

BC07E492-18A

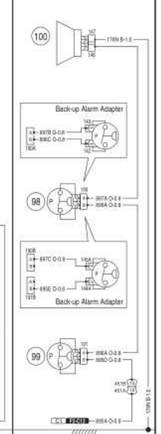
ACCESSORY OUTLET
CAB UPGRADE MACHINES



FRAME 19

BC07E492-19A

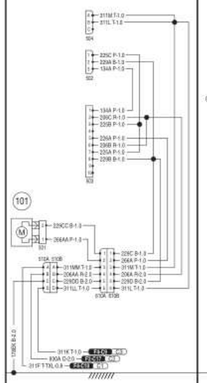
BACK-UP ALARM
CAB UPGRADE MACHINES



FRAME 20

BC07E492-20A

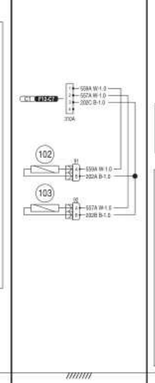
WIPER/WASHER
AND DOOR SWITCH
(OPTIONAL)
CAB UPGRADE MACHINES



FRAME 21

BC07E492-21A

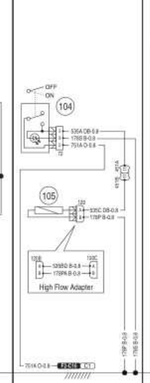
AUXILIARY HYDRAULICS
(OPTIONAL)
CAB UPGRADE MACHINES



FRAME 22

BC07E492-22A

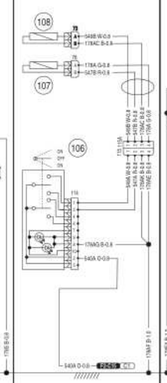
HIGH FLOW
(OPTIONAL)
CAB UPGRADE MACHINES



FRAME 23

BC07E492-23A

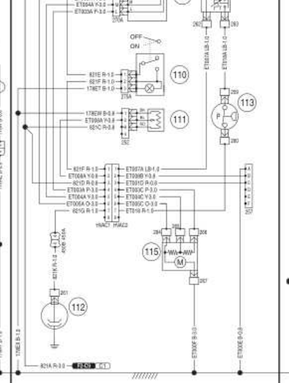
HYDRAULIC
MOUNT PLATE
(OPTIONAL)
CAB UPGRADE MACHINES



FRAME 24

BC07E492-24A

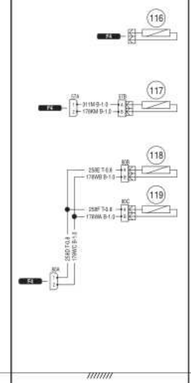
HEATING AND AIR CONDITIONING
(OPTIONAL)
CAB UPGRADE MACHINES



FRAME 25

BC07E492-25A

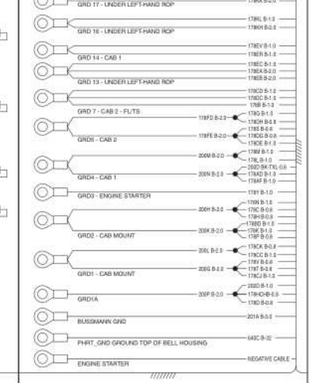
PILOT HYDRAULIC CONTROLS
(OPTIONAL)
CAB UPGRADE MACHINES



FRAME 26

BC07E492-26A

GROUND CONNECTIONS - CAB UPGRADE MACHINES



FRAME 27

BC07E492-27A

COMPONENTS - MECHANICAL AND PILOT CONTROL MACHINES

FRAME - COMPONENT NUMBERS

FRAME 1 COMPONENTS
1 - 1. Battery
1 - 2. Alternator
1 - 3. Starter and Solenoid
1 - 4. Reverse Polarity Diode
1 - 5. Starter Relay
1 - 6. Resistor
1 - 7. Ignition Switch

FRAME 2 COMPONENTS
2 - 8. Electrical Accessory (Run) Relay
2 - 9. HVAC Relay
2 - 10. Starter Relay
2 - 11. Lamp Relay #1
2 - 11. Lamp Relay #2

FRAME 3 COMPONENTS
3 - 12. Auxiliary Override Switch
3 - 13. Seat Switch
3 - 14. Seat Belt Switch
3 - 15. Not Used
3 - 16. Not Used
3 - 17. Not Used
3 - 18. Not Used
3 - 19. Cold Start Advance Temperature Sender
3 - 20. Cold Start Advance Solenoid
3 - 21. Fuel Hold-In Solenoid

FRAME 4 COMPONENTS
4 - 22. Fuel Pump (ISM Engine Only)
4 - 23. Fuel Sender
4 - 24. Engine Coolant Temperature Sender
4 - 25. Engine Oil Pressure Switch
4 - 26. Air Filter Restriction Switch
4 - 27. Hydraulic Filter Pressure Switch
4 - 28. Charge Pressure Switch
4 - 29. Hydraulic Oil Temperature Sender
4 - 30. Brake Release / Tandem Pump Neutral Override Switch
4 - 31. Loader Valve Solenoid
4 - 32. Loader Valve Solenoid

FRAME 5 COMPONENTS
5 - 33. Not Used
5 - 34. Not Used
5 - 35. Diode
5 - 36. Left Front Work Lamp
5 - 37. Right Front Work Lamp
5 - 38. Rear Work Lamp
5 - 39. Left Rear Indicator Lamp
5 - 40. Right Rear Indicator Lamp

FRAME 6 COMPONENTS
6 - 41. Motor Control Left Relay
6 - 42. Motor Control Right Relay
6 - 43. Wiper Motor Relay
6 - 44. Fuse (10 amp)

FRAME 7 COMPONENTS
7 - 45. Attachment Relay

FRAME 8 COMPONENTS
8 - 46. Hazard / Turn Relay
8 - 47. Flasher Module
8 - 48. Diode (6 amp)
8 - 49. Turn Signal Converter Module
8 - 50. Beacon
8 - 51. Fuse
8 - 52. Hazard/Beacon Switch
8 - 53. Left Front Flashing Lamp
8 - 54. Left Rear Flashing Lamp
8 - 55. Turn Indicator Lamp (Left)
8 - 56. Turn Indicator Lamp (Right)
8 - 57. Right Front Flashing Lamp
8 - 58. Right Rear Flashing Lamp

FRAME 9 COMPONENTS
9 - 59. Road Lamp Switch (Europe)
9 - 60. Flasher Module (Europe)
9 - 61. Cab Fuse Block (Europe)
9 - 62. Diode (6 amp)
9 - 63. Hazard/Beacon Switch (Europe)
9 - 64. Beacon (Europe)
9 - 65. Left Brake Lamp Switch (Europe)
9 - 66. Right Brake Lamp Switch (Europe)
9 - 67. Turn Indicator Lamp (Left) (Europe)
9 - 68. Turn Indicator Lamp (Right) (Europe
9 - 69. Not Used
9 - 70. Not Used

FRAME 10 COMPONENTS
10 - 71. Right Front Turn Lamp (Europe)
10 - 72. Right Front Position Lamp (Europe)
10 - 73. Right Front Road Lamp (Europe
10 - 74. Left Front Position Lamp (Europe)
10 - 75. Left Front Turn Lamp (Europe)
10 - 76. Left Front Road Lamp (Europe)
10 - 77. Right Rear Position Lamp (Europe)
10 - 78. Right Rear Brake Lamp (Europe)
10 - 79. Right Rear Turn Lamp (Europe)
10 - 80. License Plate Lamp
10 - 81. Left Rear Position Lamp (Europe)
10 - 82. Left Rear Brake Lamp (Europe)
10 - 83. Left Rear Turn Lamp (Europe)

FRAME 11 COMPONENTS
11 - 36. Optional Right Rear Work Lamp
11 - 37. Standard Rear Work Lamp
11 - 38. Optional Left Rear Work Lamp
11 - 39. Standard Front Work Lamp
11 - 40. Optional Front Work Lamp

FRAME 12 COMPONENTS
No Components

FRAME 13 COMPONENTS
13 - 84. Horn Switch
13 - 85. 2-Speed Switch
13 - 86. Turn Signal Switch
13 - 87. Auxiliary Hydraulic Switch

FRAME 14 COMPONENTS
14 - 88. Front Electric Control Switch #1
14 - 89. Front Electric Control Switch #2
14 - 90. Front Electric Control Switch #3
14 - 91. Front Electric Control Switch #4

FRAME 15 COMPONENTS
15 - 92. Grid Heater Relay
15 - 93. Grid Heater

FRAME 16 COMPONENTS
16 - 50. Beacon
16 - 94. Fuse (7.5 amp)
16 - 95. Beacon Switch

FRAME 17 COMPONENTS
17 - 96. 2 Speed Solenoid

FRAME 18 Components
18 - 97. Horn (Optional)

FRAME 19 COMPONENTS
No Components

FRAME 20 COMPONENTS
20 - 100. Back-Up Alarm
20 - 98. Back-Up Alarm Switch
20 - 99. Back-Up Alarm Switch

FRAME 21 COMPONENTS
21 - 101. Washer Pump

FRAME 22 COMPONENTS
22 - 102. Second Auxiliary Hydraulics - Solenoid #1
22 - 103. Second Auxiliary Hydraulics - Solenoid #2

FRAME 23 COMPONENTS
23 - 104. High Flow Switch (Optional)
23 - 105. High Flow Solenoid (Optional)

FRAME 24 COMPONENTS
24 - 106. Hydraulic Coupler Switch (Optional)
24 - 107. Hydraulic Coupler Release Solenoid (Optional)
24 - 108. Hydraulic Coupler Engage Solenoid (Optional)

FRAME 25 COMPONENTS
25 - 109. Blower Switch (Optional)
25 - 110. Air Conditioner Switch (Optional)
25 - 111. Heater Control Switch (Optional)
25 - 112. Compressor Clutch
25 - 113. Pressure Switch
25 - 114. Thermostat
25 - 115. Blower Motor

FRAME 26 COMPONENTS
26 - 116. Loader Control Pressure Solenoid
26 - 117. Magnetic Detent Solenoid
26 - 118. Ground Drive Control Pressure Solenoid
26 - 119. Brake Valve Solenoid

ACTUATORS

LEVER, HAND, FOOT, COIL, TEMP, DIODE, PRESSURE, FLOAT LIQUID LEVEL

HOUSINGS

V VACUUM SWITCH, P PRESSURE SWITCH, LAMP, M MOTOR, T TEMPERATURE SWITCH

SHOWS CIRCUIT SPLICE CONNECTION — SPI-99

SHOWS CIRCUIT CROSSING NOT CONNECTED

CONTACT CONFIGURATIONS

S.P.S.T., S.P.D.T., D.P.S.T., D.P.D.T.

MISCELLANEOUS SYMBOLS

MOMENTARY CONTACTS, MAINTAINED CONTACTS, VARIABLE RESISTOR, RESISTOR, FUSE, CIRCUIT BREAKER, MALE TERMINAL, FEMALE TERMINAL, 54 COMPONENT NUMBER

INDICATES EXTERNAL GROUND

INDICATES INTERNALLY GROUNDED COMPONENT

FEMALE CONNECTOR, MALE CONNECTOR, CONNECTOR NUMBER, CONNECTOR IDENTIFICATION, INDICATES PARTIAL CONNECTOR, NOT ALL CONNECTIONS ARE SHOWN

CIRCUIT CONTINUATION

Frame Number and Circuit Number where Circuit continues.

CIRCUIT TAGS

FRAME - CIRCUIT, CIRCUIT

Circuit Number assigned to Circuit in Frame

WIRE IDENTIFICATION

B . . . BLACK
DB. . . DARK BLUE
G. . . GREEN
K. . . PINK
LG. . . LIGHT GREEN
LB. . . LIGHT BLUE
DG . DARK GREEN
O. . . ORANGE
P. . . PURPLE
R. . . RED
T. . . TAN
W . . WHITE
Y. . . YELLOW

702A G-1.0
WIRE NUMBER, WIRE SIZE, WIRE COLOR

BC07ES19-06A

NOTES

ELECTRICAL SCHEMATIC FOR CAB UPGRADE MACHINES
(MECHANICAL and PILOT CONTROL MACHINES)
L160 / L170 SKID STEER

Additional copies of this Hydraulic and Electrical Schematic can be ordered through Technical Publications Distribution System.
The part number is 5-7050

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