

John Deere 640L-II, 648L-II and 748L-II Skidders Operation & Test Technical Manual (TM14337X19)

640L-II, 648L-II and 748L-II Skidders Diagnostic

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PIN: 1DW648L__C690814—
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JOHN HARE



COLLECTION

OPERATION & TEST TECHNICAL MANUAL 640L-II, 648L-II and 748L-II Skidders

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TM14337X19 30NOV19 (ENGLISH)

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For complete service information

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PowerTech 3056 GLY Diesel Engines (Final Tier 4/Stage V platform) Level 33 ECU.....	ctm120C19
TeamMate V 1400 Series Inboard Planetary Axles.....	ctm143219
40 and 4000 Winches.....	ctm25
30 and 6000 Winches.....	ctm41

Worldwide Construction and
Forestry Division

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This service manual contains important information for the maintenance, troubleshooting and servicing of the **John Deere 640L-II, 648L-II and 748L-II Skidders Operation & Test Technical Manual (TM14337X19)**

In this manual you will find detailed specifications, illustrations, schematics, diagrams and step-by-step procedures to properly service and diagnose the machine to the manufacturer's standards.

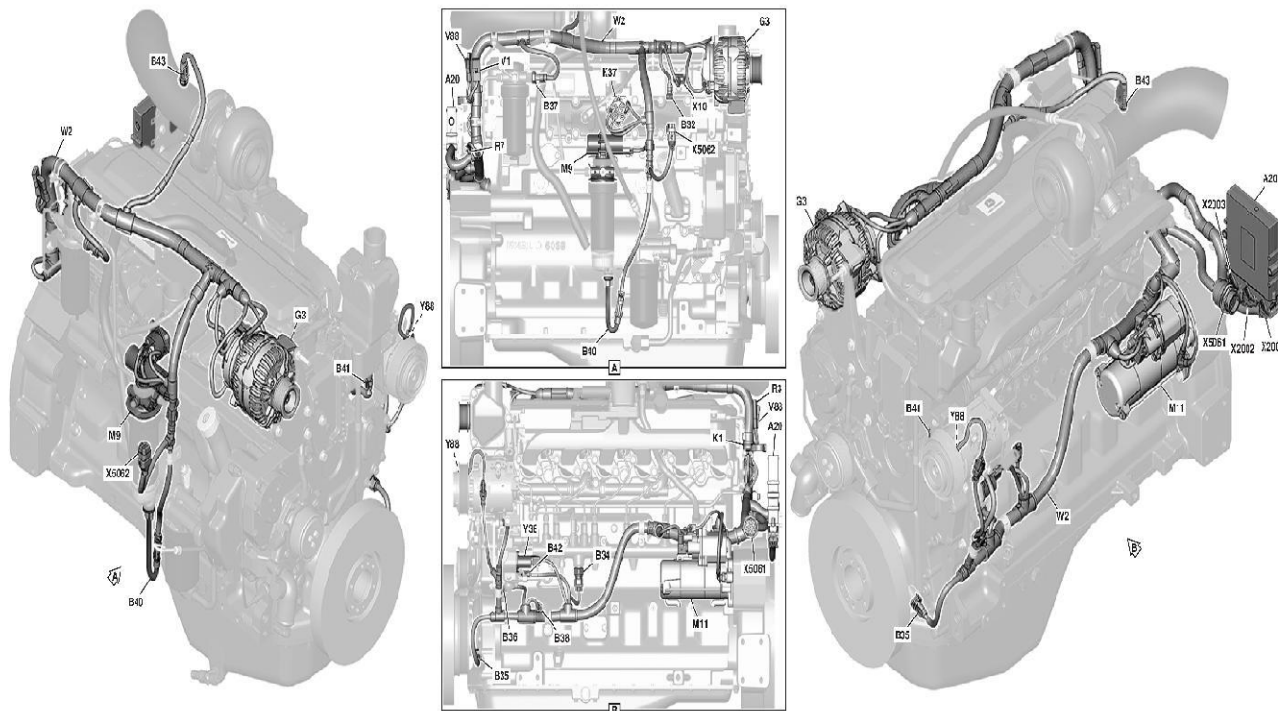
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Engine Harness (W2) Component Location

Engine Model 6068HTJ60



TX1260355

TX1260355-UN: Engine Harness (W2) Component Location

LEGEND:

- A20-Engine Control Unit (ECU)
- B32-Intake Air Temperature Sensor
- B34-Fuel Rail Pressure Sensor
- B35-Crankshaft Position Sensor
- B36-Camshaft Position Sensor
- B37-Fuel Pressure Sensor
- B38-Engine Oil Pressure Sensor
- B40-Water-in-Fuel (WIF) Sensor
- B41-Coolant Temperature Sensor
- B42-Fuel Temperature Sensor
- B43-Turbocharger Compressor Inlet Temperature Sensor
- G3-Alternator

- K1-Starter Relay
- K37-Glow Plug Relay
- M9-Fuel Transfer Pump
- M11-Starter Motor
- R3-Alternator Excitation Resistor
- R7-Fuel Filter Heater (if equipped)
- V1-Starter Relay Diode
- V88-Air Conditioner Compressor Clutch Diode
- W2-Engine Harness
- X10-Fuel Injector Harness Connector
- X2001-Engine Control Unit (ECU) 32-Pin Connector 1

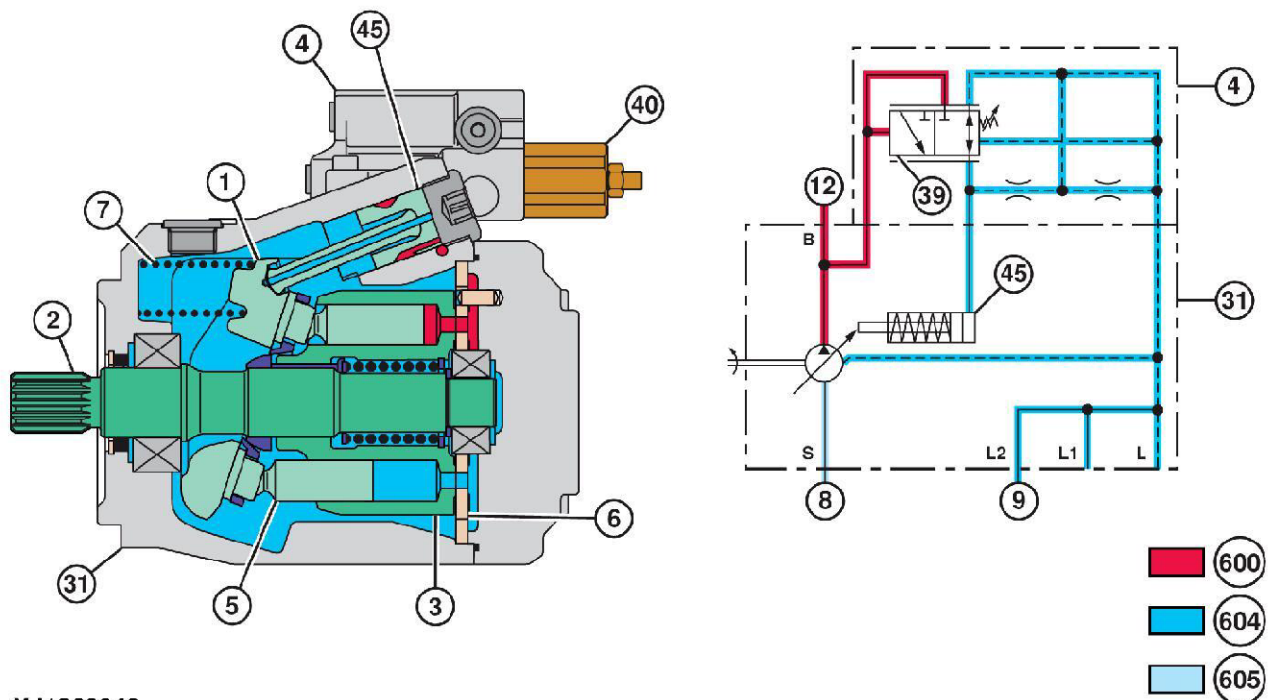
- X2002-Engine Control Unit (ECU) 48-Pin Connector 2
- X2003-Engine Control Unit (ECU) 32-Pin Connector 3
- X5061-Engine Frame Harness-to-Engine Harness Connector
- X5062-Engine Harness-to-Engine Accessory Harness 8-Pin Connector
- Y38-High-Pressure Fuel Solenoid
- Y88-Air Conditioner Compressor Clutch Solenoid

highest work port pressure created by an activated function. Load sense pressure is connected to the hydraulic circuit through the load sense port X on the pump compensator valve (4). The compensator valve consists of a standby pressure valve (39) and compensator valve (40), which are both adjustable. The standby pressure of hydraulic pump 1 is adjusted with the standby pressure valve adjustment screw. The maximum pressure of the pump is limited by the compensator valve and is adjusted by the compensator valve adjustment screw.

Hydraulic pump 2 has two different types of pistons: pumping pistons (5) and hydraulic pump 2 bias piston (45). With the engine off, the bias piston spring force works on the bias piston that holds the pump at maximum displacement. As the engine is started, the pump drive shaft (2) is rotated and the pump outlet pressure works with the bias piston and spring force. With no hydraulic functions active, pump outlet pressure acts against the standby pressure valve, allowing oil into the bias piston and holding the swash plate (1) vertical. At this position, the pump is considered to be in a neutral state. There is no piston stroke and no output flow. The bias piston spring force and pump displacement rotates the swash plate to minimum displacement, but allows a small amount of displacement for internal leakage.

When a function is activated, a load sense signal is sent to the compensator valve through the load sense system port, shifting the standby pressure valve. This pressure increase causes the standby pressure spool to shift. High-pressure oil (600) from the pump outlet is blocked from the bias piston. The bias spring (7) forces the bias piston to tilt the swash plate and causes pump to go into stroke. The greater the angle of the swash plate, the greater the pumping piston stroke, which will increase the amount of flow. When the work port pressure is achieved, the pressure shifts the standby pressure valve, causing the pump to de-swash and returning the pump to a neutral state.

Hydraulic Pump 2—648L-II and 748L-II Series



XJ1269940

XJ1269940-UN: Hydraulic Pump 2 Operation

LEGEND:

- | | | |
|---------------------------|---|--|
| 1-Swash Plate | 8-Suction Line (hydraulic oil reservoir to hydraulic pump 2 port S) | 31-Hydraulic Pump 2 |
| 2-Pump Drive Shaft | 9-Return Line (hydraulic pump 2 port L to hydraulic oil reservoir) | 40-Hydraulic Pump 2 Cut-Off Adjustment |
| 3-Cylinder Block | 12-High-Pressure Line (hydraulic pump 2 port B to hydraulic pump manifold port GRAP IN) | 45-Hydraulic Pump 2 Bias Piston |
| 4-Compensator Valve | | 600-High-Pressure Oil |
| 5-Pumping Piston (9 used) | | 604-Return Oil |
| 6-Valve Plate | | 605-Suction Oil |
| 7-Bias Spring | | |

Hydraulic pump 2 (31) is an axial-piston, variable-displacement pump capable of varying output flow from zero to maximum displacement. Oil is supplied to hydraulic pump 2 using the suction line (8) from the hydraulic oil reservoir. Hydraulic pump 2 is driven by the hydraulic pump 1. For more information on the location of the pumps, see [Hydraulic System Component Location](#). (Group 9025-10.) The compensator valve consists of a hydraulic pump 2 cut-off adjustment valve (40). The standby pressure of the hydraulic pump 2 is adjusted with the hydraulic pump 2 cut-off valve adjustment screw.

Hydraulic pump 2 has two different types of pistons: pumping pistons (5) and hydraulic pump 2 bias piston (45). With the engine off, the bias piston spring force works on the bias piston that holds the pump at maximum displacement. As the engine is started, the pump drive shaft (2) is rotated and the pump outlet pressure works with the bias piston and spring force. With no hydraulic functions active, pump outlet pressure acts against the standby pressure valve, allowing oil into the bias piston and holding the swash plate (1) vertical. At this position, the pump is considered to be in a neutral state. There is no piston stroke and no output flow. The bias piston spring force and pump displacement rotates the swash plate to minimum displacement, but allows a small amount of displacement for internal leakage.



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for your reading.
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