John Deere 624L 4WD Loader Operation & Test Technical Manual - TM14343X19

642L 4WD Loader Diagnostic

PIN: 1DW624L_ _ _F693054—

JOHN HARE

COLLECTION

OPERATION & TEST TECHNICAL MANUAL

642L 4WD Loader (PIN: 1DW624L_ _ _F693054—)

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For complette service information also see:

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This service manual contains important information for the maintenance, troubleshooting and servicing of the **John Deere 624L 4WD Loader Operation & Test Technical Manual - TM14343X19**

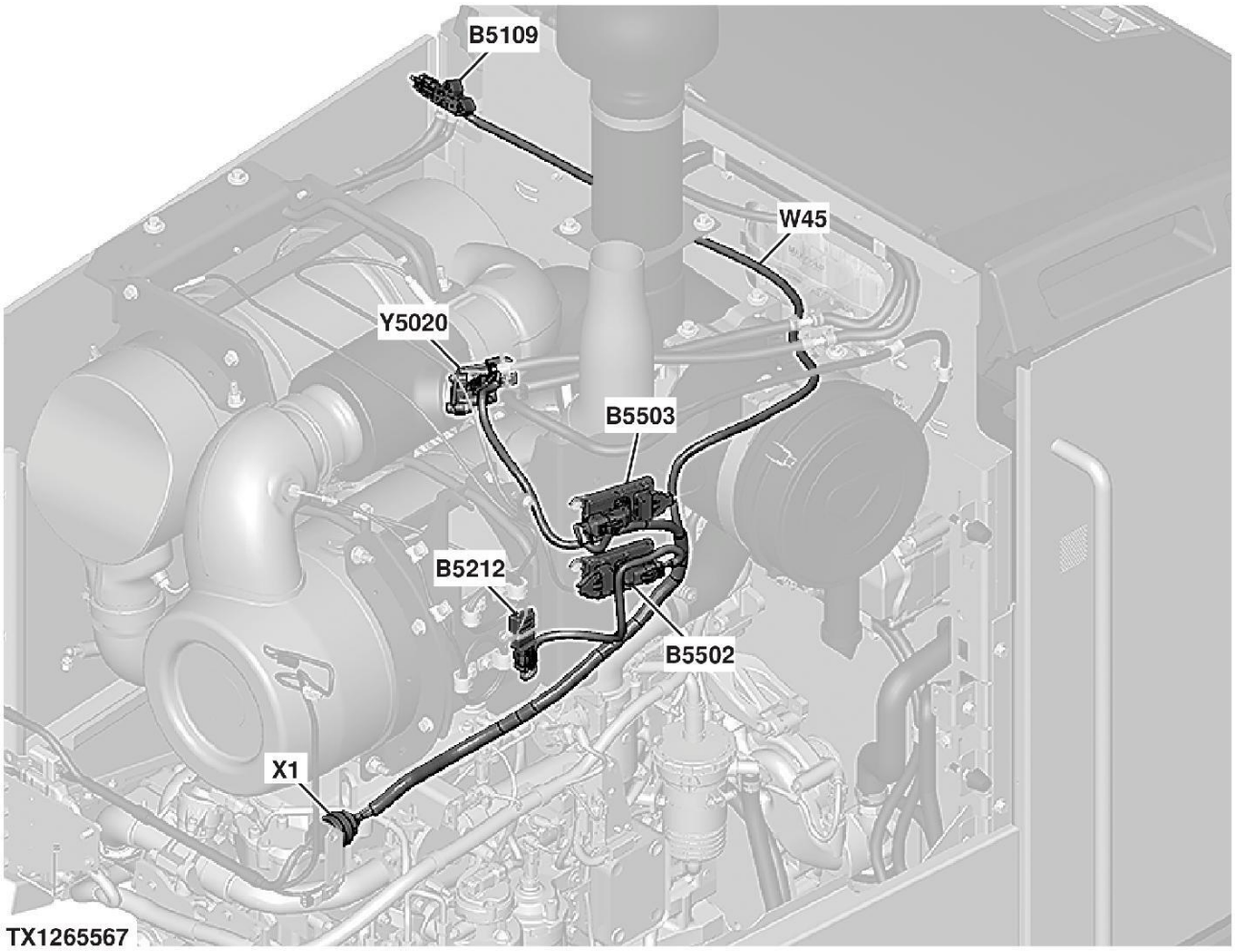
In this manual you will find detailed specifications, illustrations, schematics, diagrams and step-by-step procedures to properly service and diagnose the machine to the manufacturer's standards.

Contents:

- General Information
- Specifications
- Serial Number Location
- Engine Specifications
- Engine Diagnostics
- Engine Tests and Adjustments
- Engine Repair
- Power Train
- Transmission
- Axles
- Differential
- PTO
- Hydraulic System
- Electrical System
- Electrical Tests and Diagnostics
- Wiring Diagram / Schematic
- Ignition and Charging
- Steering
- Brakes
- Wheels
- Operator's Platform
- Body Panels
- Disassembly and Assembly
- Diagnostics, Tests and Adjustments
- Troubleshooting
- and much more...

Please note this manual is in **downloadable PDF format only.** If you have any questions about this product or would like to request sample pages, please contact us and reference the product name or SKU.

Aftertreatment Harness (W45) Component Location



TX1265567-UN: Aftertreatment Harness (W45) Component Location

LEGEND:

B5109-Diesel Particulate Filter (DPF) Differential Pressure Sensor
B5212-Selective Catalyst Reduction (SCR) Temperature Module
B5502-Aftertreatment Inlet NOx Sensor
B5503-Aftertreatment Outlet NOx Sensor
W45-Aftertreatment Harness
X1-Aftertreatment Harness-to-Hydraulic Reservoir Harness 23-Pin Connector
Y5020-Diesel Exhaust Fluid (DEF) Dosing Injector

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B65B-Load Sense Pressure Sensor (624L Z-bar only)
Y55-Boom Lower Solenoid 1
Y57-Boom Raise Solenoid 1
Y81-Third Function Auxiliary Solenoid A
Y82-Third Function Auxiliary Solenoid B

The auxiliary section of the loader control valve is a closed-center, electrohydraulic (EH) solenoid-operated, three-position, four-way, spool-type valve. Both work ports are equipped with screw-adjustable circuit relief with anticavitation valve (79 and 80) protection. Load sense check valves in each section route the highest load sense signal to the spring cavity of the auxiliary function compensator valve (74). The compensator valve meters main hydraulic pump flow during combined operation, allowing each section to receive flow command regardless of load pressure during multi-function operation.

Since the hydraulic system is load sensing, there is a set differential pressure across the opened inlet area of the spool. As a result, a flow proportional to this area will be delivered to the implement.

When only auxiliary work port A (7) function is activated, third function auxiliary solenoid A (Y81) shifts, allowing pilot oil (609) to shift the auxiliary spool valve (75) against the centering springs. As the pilot pressure increases, the spool will shift farther.

With the spool shifted, a load sense signal is immediately generated, which unseats auxiliary load sense check valve (82). The load sense pressure goes through a series of shuttle checks with other load sense functions in the loader control valve, steering load sense, and pilot pressure in the outlet section. The pressure is routed to the main hydraulic pump control valve, which causes the main hydraulic pump to stroke and maintain pump margin.

The main hydraulic pump discharge pressure builds and the pressure compensator opens. Oil flows through the passage to the auxiliary work port A (7). In auxiliary work port A, the oil flows through the work port to the implement. Return oil (604) will flow through auxiliary work port B (8), across the auxiliary spool valve metering notches and into the hydraulic return passage (4). The metering notches of the spool control the oil flow to regulate the function speed.

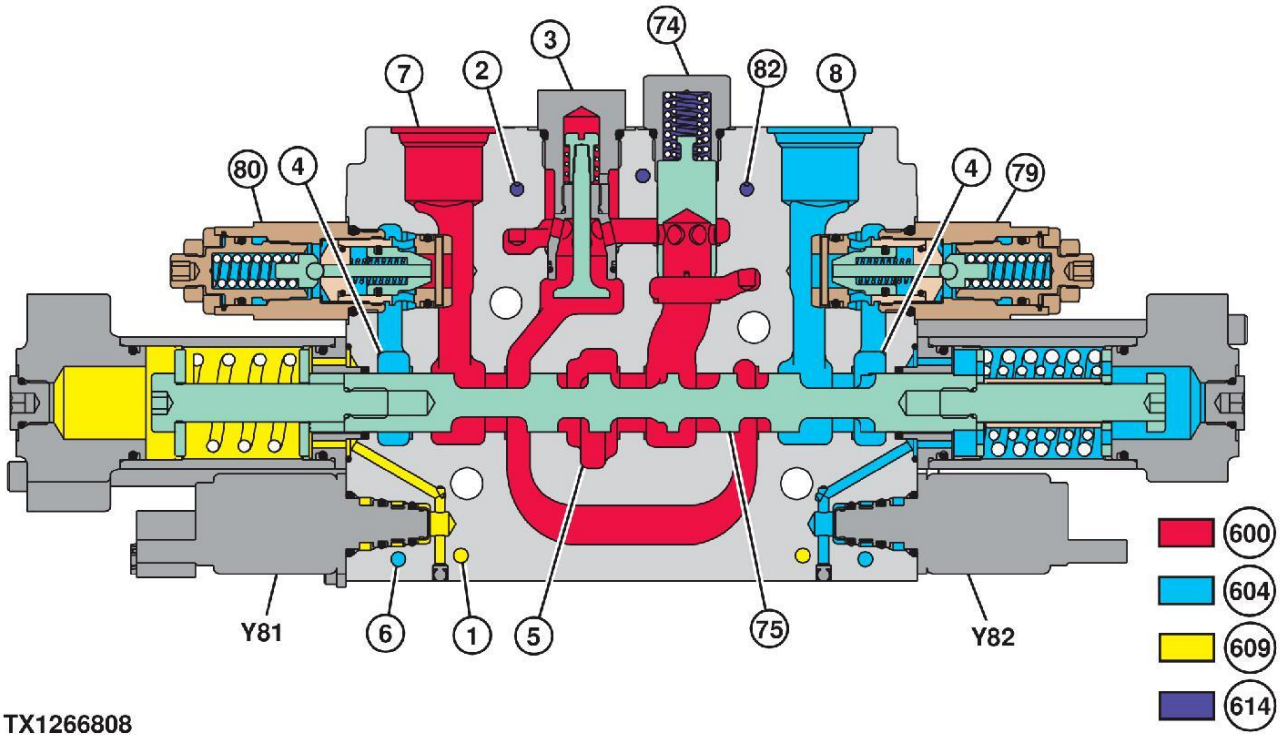
When auxiliary work port B is put into operation, the function will be similar to that of auxiliary work port A, except the work port flows are reversed.

In a combined operation in the loader control valve, the pressure conditions are determined by what functions are being actuated. The highest work port pressure is determined by the check valve logic network that is made up of the auxiliary load sense check valve (82) and the auxiliary load sense shuttle valves (76).

In an auxiliary operation and boom raise combination, the auxiliary load sense shuttle valves would be blocked if the load in the boom section demands a higher pressure. The load sense pressure acting on the spring side of the auxiliary function compensator valve is essentially the boom raise load sense pressure, which is the same pressure that is acting on the boom compensator.

As a result of the lower load pressure, the auxiliary function compensator valve will restrict and meter the flow to the auxiliary work port. As long as the main hydraulic pump capacity is not reached, the flow to auxiliary work port will still be controlled by the boom spool, even though the boom raise load sense pressure requires higher pressure oil.

Tool Carrier Linkage



TX1266808

TX1266808-UN: Auxiliary Section—Operating and Boom Raise (tool carrier linkage)

LEGEND:

1-From Pilot Manifold
2-Auxiliary Load Sense Check Valve
3-Load Check Valve
4-Hydraulic Return Passage
5-From Main Hydraulic Pump
6-To Hydraulic Reservoir
7-Auxiliary Work Port A
8-Auxiliary Work Port B
74-Auxiliary Function Compensator Valve
75-Auxiliary Spool Valve
79-Auxiliary Function B Circuit Relief With Anticavitation Valve
80-Auxiliary Function A Circuit Relief With Anticavitation Valve
82-Auxiliary Load Sense Check Valve