

# John Deere 655K Crawler Loader Operation & Test Technical Manual - TM14323X19

## 655K Crawler Loader Diagnostic

PIN: 1T0655KX\_\_F339207—



JOHN HARE



COLLECTION

### OPERATION & TEST TECHNICAL MANUAL 655K Crawler Loader (PIN: 1T0655KX\_\_F339207—)

TM14323X19 30NOV19 (ENGLISH)

For complete service information also see:

|  |            |
|--|------------|
| PowerTech 6068 OEM Diesel Engines (Final Tier 4/Stage IV platform) Level 33 ECU..... | ctm120019  |
| 655K Crawler Loader Repair.....  | TM14325X19 |
| JDLink™ (MTG) 4G LTE Technical Manual.....   | tm143019   |
| Hydraulic Cylinders.....   | TM14323X19 |



Worldwide Construction and  
Forestry Division

Covers: 655K,1T0655KX\_\_,\_F339207 ( )

**Type:** Service Manual

**Language:** English

**Pages:** 728

**Format:** PDF

**Features:** Bookmarked, searchable, printable

**Compatibility:** Windows/Mac/Tablet/Mobile

This service manual contains important information for the maintenance, troubleshooting and servicing of the **John Deere 655K Crawler Loader Operation & Test Technical Manual - TM14323X19**

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
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- Differential
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- 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...

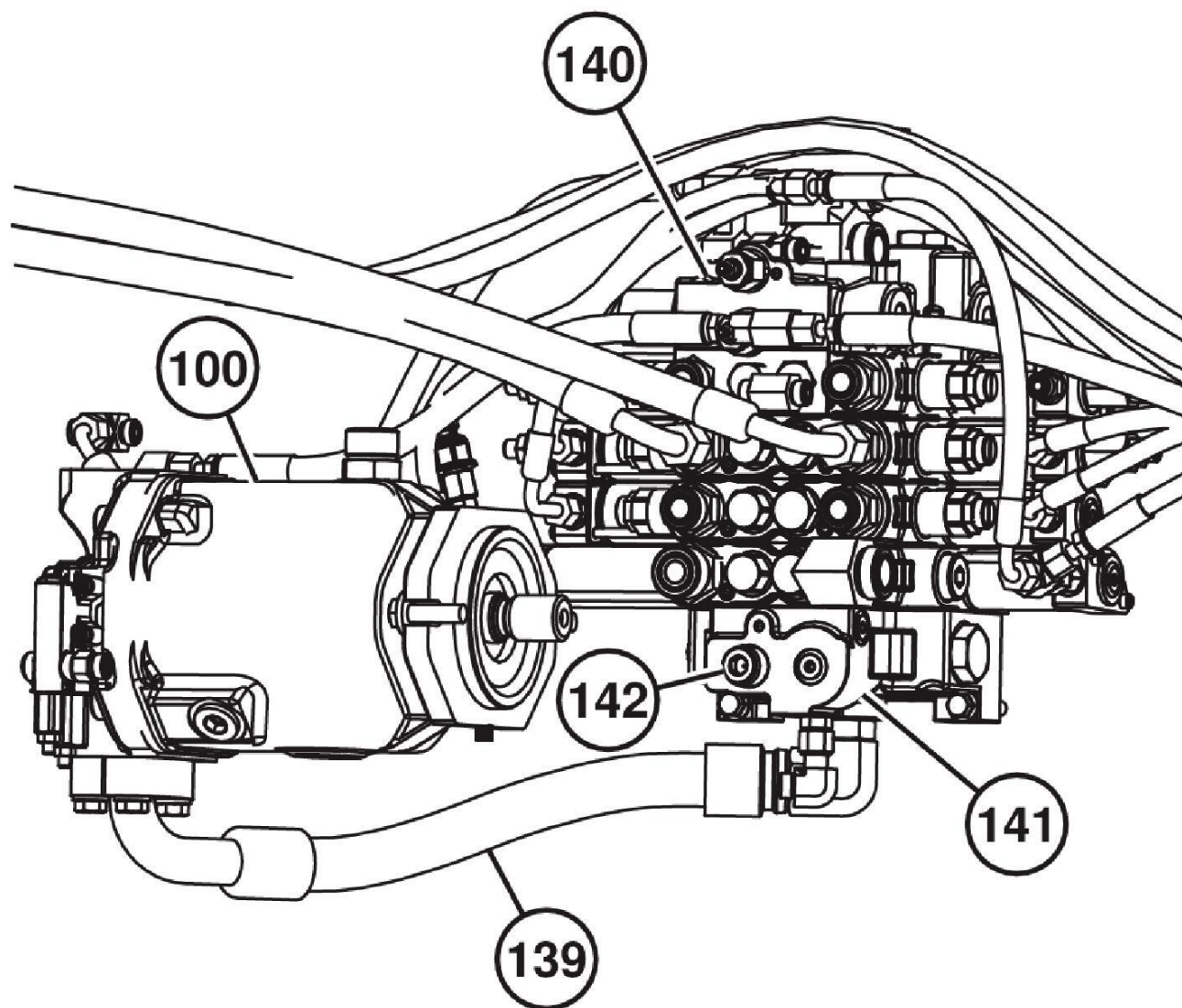
Please note this manual is in **downloadable PDF format only**. If you have any questions about this product or would like to request sample pages, please contact us and reference the product name or SKU.

**IMPORTANT:**

3. Prevent hydraulic system contamination. Absolute cleanliness is essential when working on hydraulic components. Clean component and adjacent areas before removing lines. Close all openings using caps and plugs.

NOTE:

Hydraulic system relief valve (142) is located in the main control valve inlet section (141).



TX1121755-UN: System Relief Valve Pressure Test

LEGEND:

100-Main Hydraulic Pump

139-Hydraulic Pump-to-Control Valve Inlet Hose

140-Main Control Valve

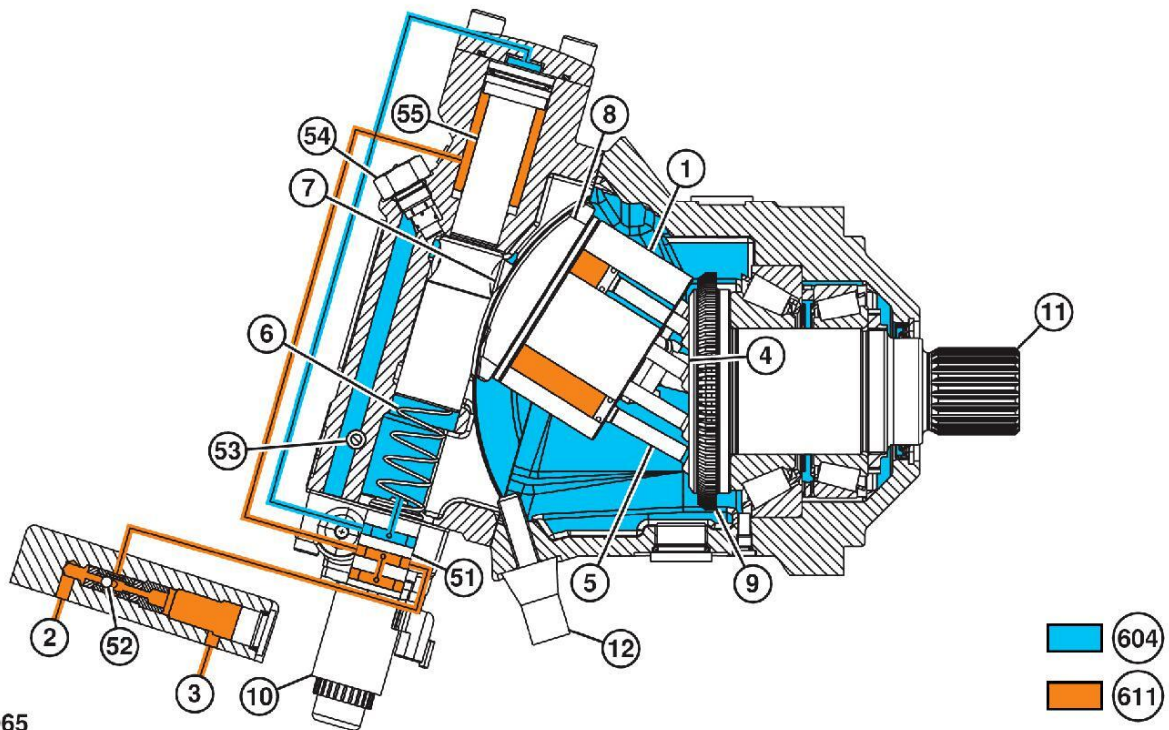
141-Inlet Section

142-Hydraulic System Relief Valve

Disconnect hydraulic pump-to-control valve inlet hose (139) at main control valve (140). Close open end of hose with a plug.

4. Connect JT07192 Electric/Hydraulic Pump pressure hose and JT02156A Digital Pressure and Temperature Analyzer Kit to control valve inlet port fitting.

## Hydrostatic Motor Operation

**TX1159065**

TX1159065-UN: Hydrostatic Motor Operation (neutral)

**LEGEND:**

|  |   |   |
|--|---|---|
| <b>1-Rotating Group</b>  | <b>7-Feedback Pin</b>                     | <b>53-Flushing Valve</b>                                  |
| <b>2-Hydrostatic Circuit Pressure (port A, forward travel)</b> | <b>8-Valve Segment</b>                    | <b>54-Operating Charge Pressure Relief Valve (2 used)</b> |
| <b>3-Hydrostatic Circuit Pressure (port B, reverse travel)</b> | <b>9-Speed Ring</b>                       | <b>55-Motor Servo Piston</b>                              |
| <b>4-Synchronizing Shaft</b>                                   | <b>10-Motor Shift Solenoid (Y1 or Y2)</b> | <b>604-Return Oil</b>                                     |
| <b>5-Piston (9 used)</b>                                       | <b>11-Output Shaft</b>                    | <b>611-Charge Oil</b>                                     |
| <b>6-Feedback Spring</b>                                       | <b>12-Minimum Angle Stop</b>              |   |
|  | <b>51-Motor Shift Solenoid Valve</b>      |   |
|  | <b>52-Ball Shuttle Valve</b>              |   |

Hydrostatic motors convert hydraulic power from the hydrostatic pumps to mechanical power for track speed and torque.

A bent-axis, variable-displacement hydrostatic motor is mounted to each final drive. Hydrostatic motors and final drives are located at the rear of the machine frame. An internal splined output shaft (11) connects each motor to a park brake assembly mounted on the corresponding final drive.

Each motor uses an electronic displacement control, consisting of a motor servo piston (55), a feedback spring (6), a two-position, three-way motor shift solenoid valve (51), and a direct-acting motor shift solenoid (10).

During operation, hydrostatic circuit pressure is forced through appropriate motor port into valve segment (8) passages. Pressure oil flows through valve segment into cylinder block of rotating group (1), forcing pistons (5) into flat face of output shaft assembly. Pistons slide down flat face of output shaft assembly, causing rotating group to turn. Spent oil flows to opposite side of valve segment as rotating group turns.

Synchronizing shaft (4) with spherical rollers synchronizes the rotation of the rotating group and output shaft. The ball end of each piston runs in a socket bushing pressed into the output shaft assembly. No other parts are used to connect the pistons to the output shaft.

The servo piston is connected to rotating group with feedback pin (7). The servo piston positions the rotating group between maximum and minimum angle. A minimum angle stop (12) set screw limits travel of rotating group and controls minimum displacement of hydrostatic motor. Minimum displacement of motor is preset with a set screw in the motor housing with tamper-proof cap.

When de-energized, the motor shift solenoid keeps the motor at maximum displacement.

When energized, the motor shift solenoid pushes on the spool of the motor shift solenoid valve, which directs pressurized oil to servo piston. The servo piston and rotating group move to change the displacement to the point where the oil pressure on the servo piston is in balance with the force from the feedback spring. Depending on the current supplied to the motor shift solenoid, the motor will stroke between maximum displacement at zero current and minimum displacement at maximum current.

The loop flushing valve (53) and the operating charge pressure relief valve (54) use closed-loop circuit pressure to flush the return side of the closed-loop circuit. Operating charge relief valve also sets charge system pressure during forward or reverse operation.

The speed ring (9) is used by the motor speed sensors to determine track speed and to calibrate transmission control. For more information on motor speed sensors, [see Transmission Control Unit \(TCU\) Circuit Theory of Operation](#). (Group 9015-05.)

**Neutral Operation**



Thank you very much  
for your reading.  
Please click here  
to get more information.