

TM10849 - 310SJ Backhoe Loader (S.N. 159760—) Transmission Remove

Transmission Remove

-: Specifications

SPECIFICATIONS	
310SJ Weight (approximate)	7693 kg 16 960 lb.
Hydraulic System Reservoir Capacity	37 L 9.8 gal.
Torque Converter and Transmission System Capacity	15 L 4.0 gal.
Hydraulic Pump Weight (approximate)	34 kg 75 lb.
Transmission Weight (approximate)	247 kg 545 lb.

-: Service Equipment and Tools

SERVICE EQUIPMENT AND TOOLS
JDG820 Flywheel Turning Tool
JT01642A Low Lift Transmission Jack
D01004AA Universal Mounting Arm (2 used)

1. _____



CAUTION:

Prevent possible crushing injury from heavy component. Use appropriate lifting device.

Raise machine so bottom of battery and fuel tank frames are approximately 940 mm (37 in.) off the floor.

Item	Measurement	Specification
310SJ	Weight (approximate)	7693 kg 16 960 lb.

2. Put floor stands under machine.

3. Drain hydraulic system reservoir. [See Change Hydraulic Reservoir Oil](#) . (Operator's Manual.)

Item	Measurement	Specification
Hydraulic System Reservoir	Capacity	37 L 9.8 gal.

4. Drain transmission. [See Change Transmission Oil and Replace Filter](#) . (Operator's Manual.)

Item	Measurement	Specification
Torque Converter and Transmission System	Capacity	15 L 4.0 gal.

5. Remove rear axle drive shaft. [See Universal Joint and Drive Shaft Remove and Install](#) . (Group 0225.)
6. Remove mechanical front wheel drive (MFWD) drive shaft (if equipped). [See Universal Joint and Drive Shaft Remove and Install](#) . (Group 0225.)

7. **NOTE:**

Hydraulic hoses, wire harness connectors, and harness clamps can be accessed through openings in the cab floor.

Remove floor mat.

8. Remove the two cab floor access plates between the seat and steering console.

9.



Prevent possible crushing injury from heavy component. Use appropriate lifting device. To avoid injury from escaping fluid under pressure, relieve the pressure in the system before disconnecting hydraulic hoses. Tighten all connections before applying pressure.

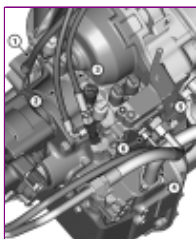
Remove hydraulic pump. [See Hydraulic Pump Remove and Install](#) . (Group 2160.)

Item	Measurement	Specification
Hydraulic Pump	Weight (approximate)	34 kg 75 lb.

10.



To avoid injury from escaping fluid under pressure, relieve the pressure in the system before disconnecting hydraulic hoses. Tighten all connections before applying pressure.



TX1154522A-UN: Transmission Hydraulic Connections



TX1156124A-UN: Transmission Hydraulic Connections

LEGEND:

- 1 - Transmission Reservoir Port Line
- 2 - Brake Boost Pressure Line
- 3 - Brake Boost Return Line
- 4 - Transmission Dipstick Fill Tube
- 5 - Differential Lock -to-Transmission Line
- 6 - Transmission-to-Park Brake Line
- 7 - Transmission Cooler-to-Transmission Line
- 8 - Transmission Cooler -to-Transmission Line

Install identification tags and disconnect lines (1—3 and 5—8). Close all openings using caps and plugs.

11. Disconnect the transmission dipstick fill tube (4) from transmission. Close openings using caps and plugs.



12. TX1153330-UN: Transmission Electrical Connectors—Front



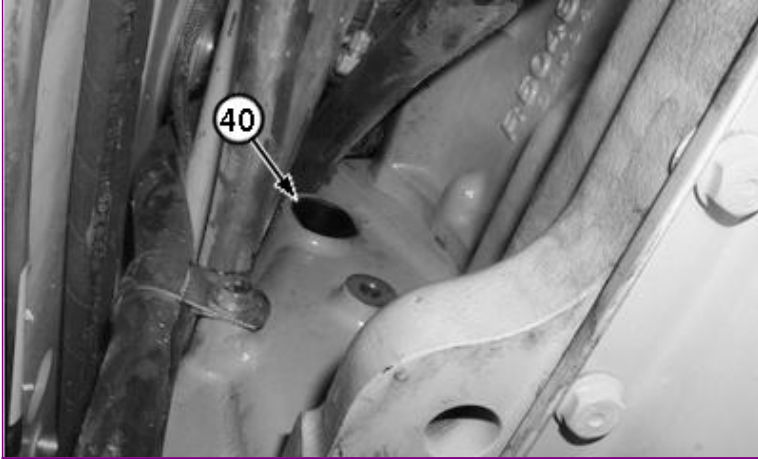
TX1059943-UN: Transmission Electrical Connectors—Rear

LEGEND:

- 15 - Torque Converter Oil Temperature Sensor
- 18 - Transmission Speed Solenoid 1
- 19 - Transmission Harness-to-Cab/Canopy Harness Connector
- 20 - Transmission Reverse Direction Solenoid
- 21 - Transmission Forward Direction Solenoid
- 22 - Differential Lock Solenoid
- 23 - Park Brake Release Solenoid
- 24 - Return to Dig Harness-to-Transmission Harness Connector
- 25 - Not Used
- 26 - Transmission Speed Solenoid 2
- 27 - Transmission Speed Solenoid 4
- 28 - Mechanical Front Wheel Drive (MFWD) Solenoid

Disconnect electrical connector (15) at sensor.

13. Disconnect connectors at solenoids (18, 20—23, and 26—28).
14. Disconnect harness connectors (19 and 24).
15. Remove hydraulic pump (if necessary). [See Hydraulic Pump Remove and Install](#) . (Group 2160.)
16. Remove access plate at bottom of flywheel housing.

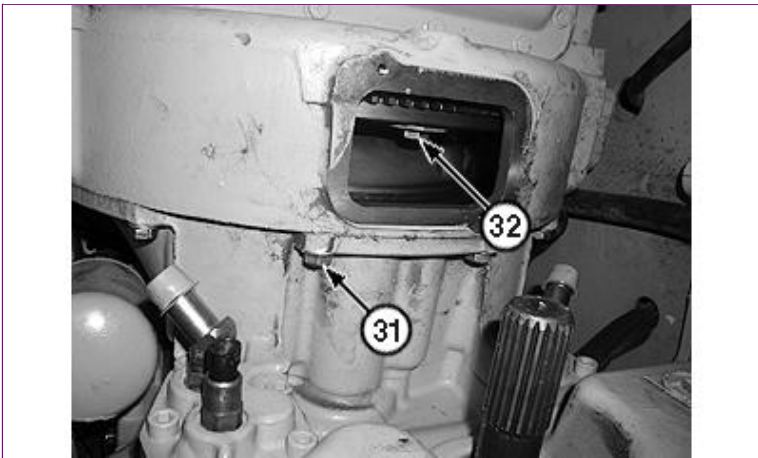


17. TX1020055A-UN: JDG820 Tool Use Location

LEGEND:

40 - Flywheel Access Port

Remove cover to flywheel access port (40) and insert JDG820 Flywheel Turning Tool.



18. TX1017753A-UN: Torque Converter and Flywheel Housing Cap Screws

LEGEND:

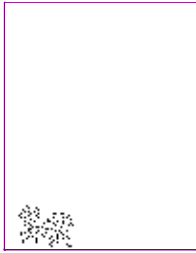
31 - Transmission-to-Flywheel Housing Cap Screw (6 used on lower half of transmission)

32 - Torque Converter Flexplate-to-Flywheel Cap Screw (4 used)

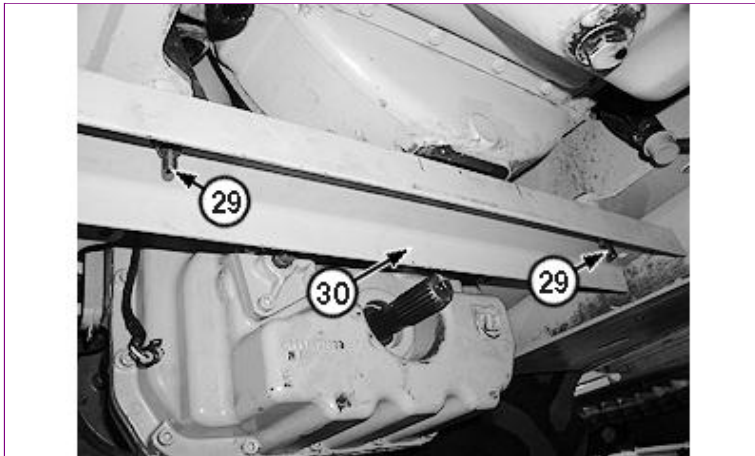
Remove torque converter flexplate-to-flywheel cap screws (32). Use JDG820 Flywheel Turning Tool to rotate flywheel as necessary.

19. **NOTE:**

When installing the DFT1285 Engine Support Bracket, use M10 cap screws that are at least 80 mm (3 in.) in length and with 40 mm (1.5 in.) of thread.



TX1061106-UN: DFT1285 Engine Support Bracket



TX1017748A-UN: DFT1285 Engine Support Bracket

LEGEND:

- 29 - Cap Screw (4 used)
- 30 - DFT1285 Engine Support Bracket
- 41 - Washer (6 used)
- 42 - Nut (2 used)
- 43 - Rivet Nut (2 used) (M10 for 8mm plate)
- 44 - Small Spacer (2 used)
- 45 - Large Spacer (2 used)

Install DFT1285 Engine Support Bracket (30). [See DFT1285 Engine Support Bracket](#) . (Group 9900.)

20. **NOTE:**

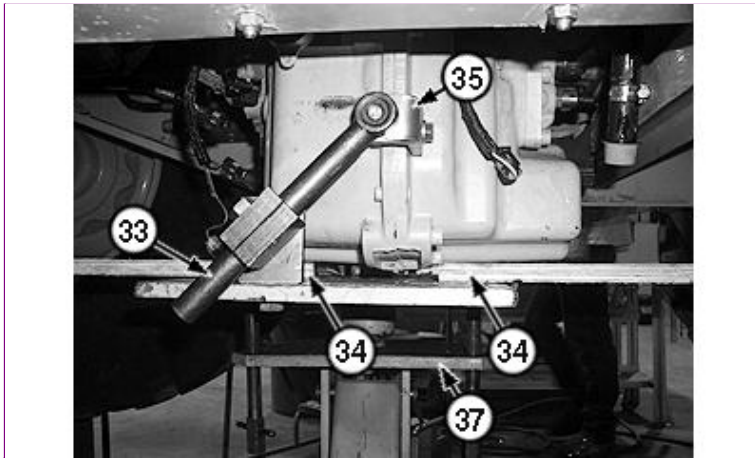
Upper six transmission-to-flywheel housing cap screws (31) must be left in place until engine and transmission are supported.

Remove the six transmission-to-flywheel housing cap screws (31) from the lower half of the flywheel/transmission housings.

21.

**CAUTION:**

Prevent possible crushing injury from heavy component. Use appropriate lifting device.



TX1017774A-UN: Low Lift Transmission Jack and Mounting Brackets (right side)



TX1017775A-UN: Low Lift Transmission Jack and Mounting Bracket (left side)

LEGEND:

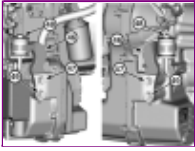
- 33 - D01004AA Universal Mounting Arm (2 used)
- 34 - Block (2 used)
- 35 - Angle Bracket (part of D01004AA)
- 36 - Angle Bracket (part of D01004AA)
- 37 - JT01642A Low Lift Jack

Attach a JT01642A Low Lift Jack to transmission as follows:

- a. Install blocks (34) between JT01642A Low Lift Jack and bottom of transmission as necessary.
- b. Raise and adjust low lift jack until jack's mounting plate and block are tight against bottom of transmission.
- c. Fasten jack to transmission using at least two DO1004AA Universal Mounting Arms (33).
- d. To provide as much offset and stability as possible, fasten angle brackets (35 and 36) to transmission so each points in opposite direction, then fasten mounting arms to opposite (diagonal) corners of jack's mounting plate.
- e. Make sure all mounting arm hardware are tight before removing transmission.

Item	Measurement	Specification
Transmission	Weight (approximate)	247 kg 545 lb.

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22. Remove isolator-to-frame cap screws (48) from mounting brackets (46).



XJ1186723A-UN: Mounting Bracket Location

LEGEND:

- 46 - Mounting Bracket (2 used)
- 47 - Mounting Bracket-to-Transmission Cap Screw (4 used)
- 48 - Isolator-to-Frame Cap Screw (2 used)
- 49 - Washer (4 used)

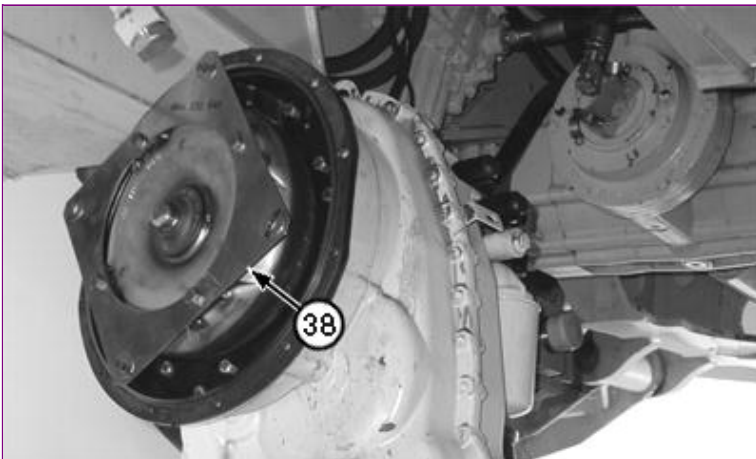
23. Remove mounting bracket-to-transmission cap screws (47), washers (49) and mounting brackets (46) from transmission.
24. Remove remaining six transmission-to-flywheel housing cap screws (31).
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25.



CAUTION:

Prevent possible crushing injury from heavy component. Use care when removing transmission. Torque converter could fall out of housing.



TX1017803A-UN: Torque Converter

LEGEND:

- 38 - Torque Converter

Move transmission away from engine until torque converter (38) clears flywheel housing.

26. Lower transmission until top of transmission clears bottom of battery box or fuel tank.
27. Carefully move jack and transmission out from under machine.
28. Repair or replace transmission as necessary.

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