

2008 Ford Mustang

2008 ACCESSORIES & BODY, CAB Convertible Top - Mustang

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Convertible Top - Mustang

SPECIFICATIONS

Material

Item	Specification	Fill Capacity
MERCON® V Automatic Transmission Fluid XT-5-QM (or XT-5-QMC) (US); CXT-5-LM12 (Canada)	MERCON® V	-

TORQUE SPECIFICATIONS

Description	Nm	lb-ft	lb-in
Clevis-to-hydraulic lift cylinder rod bolts	20	-	177
Compression panel screws	2	-	18
Convertible top ajar switch screw	9	-	80
Convertible top frame No. 5 bow pivot bolts	9	-	80
Convertible top latch screws	6	-	53
Header form panel screws	5	-	44
Hydraulic fluid reservoir fill plug	1	-	9
Hydraulic lift cylinder bracket bolts	20	-	177
Hydraulic line-to-motor bolts	14	-	124
Hydraulic pump and motor assembly nuts	4	-	35
L-bracket bolts	27	20	-
Pivot bracket bolts	48	35	-
Pivot bracket-to-quarter panel bracket bolts	11	-	97
Weatherstrip retaining channel screws	6	-	53

DESCRIPTION AND OPERATION

CONVERTIBLE TOP

NOTE: The Smart Junction Box (SJB) may also be identified as the Generic Electronic Module (GEM).

The convertible top consists of the following components:

- Convertible top cover assembly
- Convertible top frame bows (1-5)
- Convertible top frame side rails
- Convertible top latches

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- Header form panel
- Headliner
- Hydraulic pump and motor assembly
- Hydraulic lift cylinders with hydraulic lines
- Stay pads
- Weatherstrips

Convertible Top Assembly

The convertible top is not adjustable, and is removed from the vehicle as an assembly. Once removed, the convertible top components can be disassembled, replaced and installed as necessary.

Convertible Top Cover Assembly

The convertible top cover assembly includes the rear window glass. The rear window glass is not removable, and the convertible top material and rear glass must be installed as an assembly.

Convertible Top Frame Bows

The convertible top frame bows provide support for the convertible top cover assembly. The convertible top frame bows are the attachment points for the convertible top cover assembly.

Convertible Top Frame Side Rails

The convertible top frame side rails form the LH and RH side structure of the convertible top assembly. The convertible top frame side rails support the convertible top frame bows and provide the attachment points for the LH and RH side convertible top cover assembly.

Convertible Top Latches

The convertible top latches secure the convertible top assembly to the windshield header when the convertible top assembly is in the raised position. The convertible top latches must be manually released before lowering the convertible top assembly.

Header Form Panel

The header form panel supports the forward portion of the convertible top assembly. The convertible top latches secure the header form panel to the windshield header.

Headliner

The headliner is attached to the convertible top frame bows and must be installed after the convertible top cover assembly and the stay pads are removed.

Hydraulic Pump and Motor Assembly

The hydraulic pump and motor assembly provide pressurized hydraulic fluid to the hydraulic lines and the hydraulic lift cylinders.

The convertible top hydraulic system is comprised of the hydraulic lift cylinders, the motor, the hydraulic lines and a convertible top switch. The hydraulic system, except for the convertible top switch, is removed as an assembly, but the components may be installed separately.

Hydraulic Lift Cylinders and Hydraulic Lines

The hydraulic lines receive the pressurized hydraulic fluid from the hydraulic motor and pump assembly. The hydraulic lines carry the pressurized hydraulic fluid to the hydraulic lift cylinders which then raise or lower the convertible top assembly.

Stay Pads

The stay pads are attached to the convertible top frame bows and are installed as an assembly.

Weatherstrips

The weatherstrips seal the convertible top assembly to the vehicle to provide a weather-tight seal.

DIAGNOSTIC TESTS

CONVERTIBLE TOP

Special Tools

Illustration	Tool Name	Tool Number
 ST1137-A	73III Automotive Meter	105-R0057 or equivalent
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool	

Material

Item	Specification
MERCON® V Automatic Transmission Fluid XT-5-QM (or XT-5-QMC) (US); CXT-5-LM12 (Canada)	MERCON® V

Principles of Operation

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NOTE: The Smart Junction Box (SJB) may also be identified as the Generic Electronic Module (GEM).

The convertible top system is controlled by the SJB. When the convertible top switch is activated, the SJB commands the front and rear windows to the full down position. When the SJB detects that the LH and RH rear window motors are in the full downward position, it will command the appropriate relay to close in order to raise or lower the convertible top. If the SJB does not detect a full down signal from the LH and RH rear window motors, the convertible top operation will be disabled.

The convertible top assembly is a floating frame, Z-fold design. The main pivot brackets are attached to the body, and the convertible top frame side rails expand or fold when the convertible top is raised or lowered. The LH and RH stay pads are attached to the convertible top frame bows, and provide the main source of tension for the convertible top material. When the convertible top is in the full down position, it is stored in the compartment behind the rear seat backrest. When the convertible top is in the full up position, the body provides a stop which the convertible top frame No. 5 bow contacts to provide a weather seal for the convertible top against the body.

The convertible top hydraulic system uses a reversible hydraulic pump and motor assembly. When activated, the hydraulic pump uses hydraulic pressure to extend the hydraulic lift cylinders to raise the convertible top, or retract the hydraulic lift cylinders to lower the convertible top. The hydraulic motor/pump assembly is equipped with a thermal circuit breaker. In the event of a concern, the circuit breaker will reset after approximately 5 minutes. The thermal circuit breaker is integral to the hydraulic motor and pump assembly and cannot be serviced separately. In the event of a hydraulic system failure, the convertible top cannot be operated manually.

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

VISUAL INSPECTION CHART

Mechanical	Electrical
• Convertible top brackets and frame • Convertible top latches • Hydraulic motor and pump assembly • Hydraulic lift cylinders	• Bussed Electrical Center (BEC) fuse(s): ○ 13 (40A) ○ 51 (10A) • Hydraulic motor and pump assembly • Convertible top ajar switch • Convertible top switch • Convertible top raise relay • Convertible top lower relay

Hydraulic lines	- LH or RH rear power window motor - Smart Junction Box (SJB) - Loose or corroded connections - Wiring harness
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3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.

NOTE: **Make sure to use the latest scan tool software release.**

4. If the cause is not visually evident, connect the scan tool to the Data Link Connector (DLC).

NOTE: **The Vehicle Communication Module (VCM) LED prove out confirms power and ground from the DLC are provided to the VCM.**

5. If the scan tool does not communicate with the VCM:
- check the VCM connection to the vehicle.
 - check the scan tool connection to the VCM.
 - refer to **MODULE COMMUNICATIONS NETWORK** article, No Power To The Scan Tool, to diagnose no power to the scan tool.
6. If the scan tool does not communicate with the vehicle:
- verify the ignition key is in the ON position.
 - verify the scan tool operation with a known good vehicle.
 - refer to **MODULE COMMUNICATIONS NETWORK** article to diagnose no response from the SJB.
7. Carry out the network test.
- If the scan tool responds with no communication for one or more modules, refer to **MODULE COMMUNICATIONS NETWORK** article.
 - If the network test passes, retrieve and record continuous memory DTCs.
8. Clear the continuous DTCs and carry out the self-test diagnostics for the SJB.
9. If the DTCs retrieved are related to the concern, go to the Smart Junction Box (SJB) DTC Chart. For all other DTCs, refer to **MULTIFUNCTION ELECTRONIC MODULES** article.
10. If no DTCs related to the concern are retrieved, go to **Symptom Chart**.

DTC Charts

SMART JUNCTION BOX (SJB) DTC CHART

DTC	Description	Action

B1402	Driver Power Window Down Switch Circuit Failure	Go to <u>Pinpoint Test A.</u>
B2068	Convertible Top Up Output Circuit Failure	Go to <u>Pinpoint Test A.</u>
B2069	Convertible Top Down Output Circuit Failure	Go to <u>Pinpoint Test A.</u>
B2481	Convertible Top Up/Down Switch Fault	Go to <u>Pinpoint Test A.</u>
B2578	Passenger Power Window Down Switch Circuit Failure	Go to <u>Pinpoint Test A.</u>
All Other DTCs	-	REFER to <u>MULTIFUNCTION ELECTRONIC MODULES</u> article.

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
The convertible top does not raise/lower	- Bussed Electrical Center (BEC) - Circuitry - Convertible top lower relay - Convertible top raise relay - Convertible top switch - Fuse(s) - Hydraulic motor and pump assembly - LH rear window motor - RH rear window motor - Smart Junction Box (SJB)	Go to <u>Pinpoint Test A.</u>
The convertible top does not operate correctly	- Convertible top frame bows - Convertible top side rails - Hydraulic fluid leak - Hydraulic lift cylinder - Hydraulic motor and pump assembly - Low hydraulic fluid	Go to <u>Pinpoint Test B.</u>

Pinpoint Tests

Pinpoint Test A: The Convertible Top Does Not Raise/Lower

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE. Convertible Top for schematic and connector

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information.

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Power Windows for schematic and connector information.

Normal Operation

The convertible top switch supplies a ground signal to the Smart Junction Box (SJB) on circuit 2038 (LB/OG) when the convertible top switch is depressed to the lower position, or circuit 2052 (VT/OG) when the convertible top switch is depressed to the raise position. The convertible top system will not operate when the vehicle speed is greater than 5 km/h (3 mph) or if the ignition switch is in the START position. The convertible top hydraulic system uses a 12-volt reversible pump and motor assembly. When the SJB receives a request to operate the convertible top, the SJB sends a signal to the front and rear windows to lower the windows to the full down position. The SJB monitors the status of the rear windows on circuit 2012 (RD/BK) for the right rear window, and circuit 2014 (YE/LB) for the left rear window. When the SJB detects a full down signal from the RH and LH rear window motors, the convertible top operation is enabled. If the SJB does not detect a full down signal from the RH and LH rear window motors, the convertible top operation is disabled. When either the convertible top raise relay or the convertible top lower relay is activated, the other relay will remain in its normal state and supplies ground to the hydraulic motor and pump assembly. The convertible top raise and lower relay coils receive voltage at all times from SJB fuse 51 (10A). The convertible top raise and lower relay contacts receive voltage at all times from SJB fuse 13 (40A). When the convertible top switch is pressed to the lower position, and the SJB detects a full down signal from the LH and RH rear window motors, the SJB activates the convertible top lower relay by grounding circuit 1174 (WH/RD). When the convertible top lower relay is activated, voltage is supplied to the hydraulic motor and pump through circuit 902 (YE). Ground is supplied to the hydraulic motor and pump assembly through circuit 903 (RD). When the convertible top switch is pressed in the raise position, and the SJB detects a full down signal from the LH and RH rear window motors, the SJB activates the convertible top lower relay by grounding circuit 588 (VT). When the convertible top raise relay is activated, voltage is supplied to the hydraulic motor and pump assembly through circuit 903 (RD). Ground is supplied to the hydraulic motor and pump assembly through circuit 902 (YE).

The hydraulic motor/pump assembly is equipped with a thermal circuit breaker. In the event of a concern, the circuit breaker will reset after approximately 5 minutes. The thermal circuit breaker is integral to the hydraulic motor and pump assembly and cannot be serviced separately.

DTC Description	Fault Trigger Conditions
B1402 - Driver Power Window Down Switch Circuit Failure	Short to ground detected by the Driver Seat Module (DSM) during on-demand self test.
B2068 - Convertible Top Up Output Circuit Failure	Short to ground, short to battery or open.
B2069 - Convertible Top Down Output Circuit Failure	Short to ground, short to battery or open.
B2481 - Convertible Top Up/Down Switch Fault	Short to ground.
B2578 - Passenger Power Window Down Switch Circuit Failure	Short to ground detected by the DSM during on-demand self test.

This pinpoint test is intended to diagnose the following:

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- Bussed Electrical Center (BEC)
- Convertible top raise relay
- Convertible top lower relay
- Convertible top switch
- Fuse(s)
- Hydraulic motor and pump assembly
- LH or RH rear window motor
- SJB
- Wiring, terminals or connectors

PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER

A1 RETRIEVE THE RECORDED DTCs FROM THE SJB

NOTE: **Repair all Vehicle Speed Sensor (VSS) DTCs before proceeding with pinpoint test.**

- Retrieve the recorded SJB DTCs from the continuous and on-demand self tests.
- **Are any SJB DTCs recorded?**

YES : For DTC B2481, go to A10.

For DTC B2068, VERIFY that BEC fuse 51 (10A) is OK. If OK, go to A12.

For DTC B2069, VERIFY that BEC fuse 51 (10A) is OK. If OK, go to A14.

For DTC B1402 or B2578, go to A21.

NO : Go to A2.

A2 CHECK THE VEHICLE SPEED INPUT

- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: PCM DataLogger
- Monitor the PCM VSS PID.
- **Does the PID display less than 5 km/h (3 mph)?**

YES : Go to A3.

NO : REFER to the **Introduction - Gasoline Engines** article to diagnose the VSS.

A3 CHECK THE SJB CONVERTIBLE TOP SWITCH INPUT

- Enter the following diagnostic mode on the diagnostic tool: SJB PIDs
- Monitor the convertible top switch TOP_UP and TOP_DN SJB PIDs while operating the convertible top switch in the raise and lower positions.
- **Does the PID status change from OFF to ON for both positions?**

YES : Go to A4.

NO : Go to A7.

A4 CHECK THE WINDOW OPERATION

- Raise the front and rear windows to the full up position.
- Operate the convertible top switch.
- **Do the front and rear windows fully open?**

YES : Go to A5.

NO : REFER to **GLASS, FRAMES AND MECHANISMS** article to diagnose the convertible top drop feature.

A5 CHECK THE REAR WINDOW FULL DOWN INPUTS TO THE SJB

- Enter the following diagnostic mode on the diagnostic tool: SJB DataLogger
- Lower the LH and RH rear windows to the full down position.
- Monitor the LH and RH rear window LR_DOWN and RR_DOWN SJB PIDs.
- **Does the PID status display Yes for both PIDs?**

YES : Go to A6.

NO : Go to A24.

A6 CHECK FOR CONVERTIBLE TOP MOTOR OPERATION

- Key in OFF position.
- Disconnect: SJB C2280C
- Key in ON position.

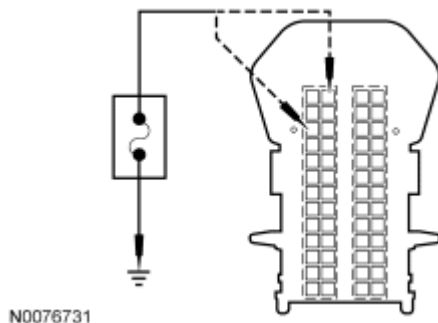


Fig. 1: Checking For Convertible Top Motor Operation
Courtesy of FORD MOTOR CO.

- Connect a fused jumper wire between ground and SJB:
 - C2280C-11, circuit 588 (VT), harness side.
 - C2280C-26, circuit 1174 (WH/RD), harness side.
- **Does the convertible top motor operate in both directions?**

YES : The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.

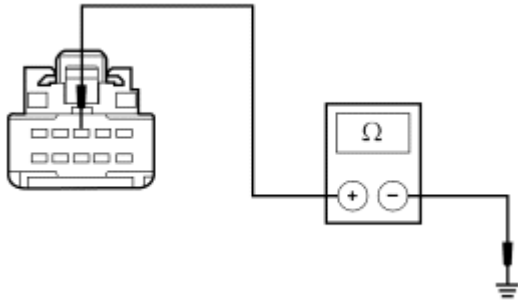
NO : Go to A16.

A7 CHECK CIRCUIT 1205 (BK) AT THE CONVERTIBLE TOP SWITCH FOR AN OPEN

- Key in OFF position.
- Disconnect: Convertible Top Switch C9013

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Fig. 2: Measuring Resistance Between Convertible Top Switch C9013-3, Circuit 1205 (BK) & Ground

Courtesy of FORD MOTOR CO.

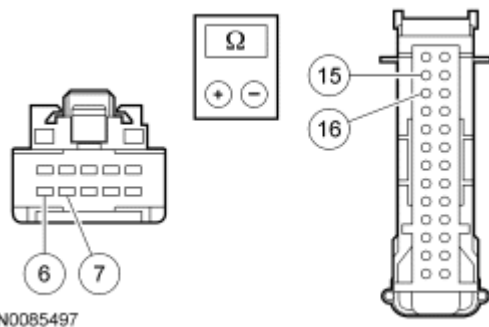
- Measure the resistance between convertible top switch C9013-3, circuit 1205 (BK), harness side and ground.

- **Is the resistance less than 5 ohms?**

YES : Go to A8.

NO : REPAIR the circuit. TEST the system for normal operation.

A8 CHECK CIRCUITS 2038 (LB/OG) AND 2052 (VT/OG) FOR AN OPEN



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Fig. 3: Checking Circuits 2038 (LB/OG) & 2052 (VT/OG) For An Open

Courtesy of FORD MOTOR CO.

- Measure the resistance between convertible top switch C9013, harness side and SJB, harness side using the following chart:

Convertible Top Switch	Circuit	SJB
C9013-6	2038 (LB/OG)	C2280F-16
C9013-7	2052 (VT/OG)	C2280F-15

- **Are the resistances less than 5 ohms?**

YES : Go to A9.

NO : REPAIR the circuit(s). TEST the system for normal operation.

A9 CHECK THE OPERATION OF THE CONVERTIBLE TOP SWITCH

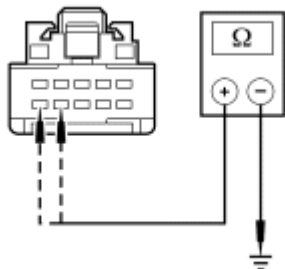
- Measure the resistance between the convertible top switch pin 7, component side and the convertible top switch pin 3, component side while operating the convertible top switch in the raise position; and between the convertible top switch pin 6, component side and the convertible top switch pin 3, component side while operating the convertible top switch in the lower position.
- **Are the resistances less than 5 ohms?**

YES : Go to A27.

NO : INSTALL a new convertible top switch. REFER to Convertible Top Switch. TEST the system for normal operation.

A10 CHECK CIRCUITS 2038 (LB/OG) AND 2052 (VT/OG) FOR A SHORT TO GROUND

- Key in OFF position.
- Disconnect: Convertible Top Switch C9013
- Disconnect: SJB C2280F



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Fig. 4: Checking Circuits 2038 (LB/OG) & 2052 (VT/OG) For A Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between ground and convertible top switch:
 - C9013-7, circuit 2052 (VT/OG), harness side.
 - C9013-6, circuit 2038 (LB/OG), harness side.

- **Are the resistances greater than 10,000 ohms?**

YES : Go to A11.

NO : REPAIR the circuit(s). CLEAR the DTCs. REPEAT the self-test.

A11 CHECK THE CONVERTIBLE TOP SWITCH

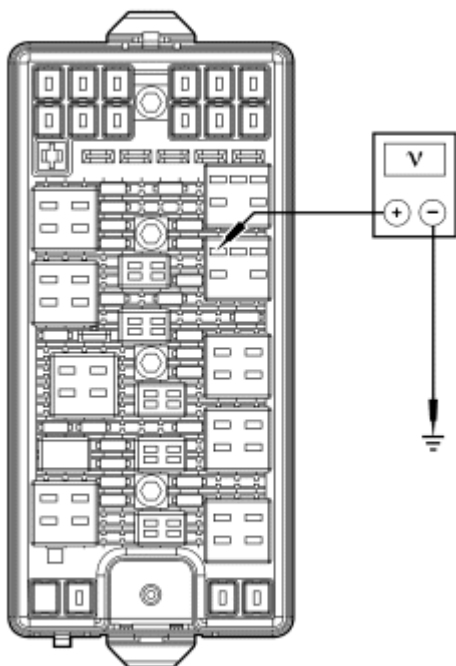
- Measure the resistance between the convertible top switch pin 7, component side and the convertible top switch pin 3, component side; and between the convertible top switch pin 6, component side and the convertible top switch pin 3, component side.
- **Are the resistances greater than 10,000 ohms?**

YES : Go to A27.

NO : INSTALL a new convertible top switch. REFER to Convertible Top Switch. CLEAR the DTCs. REPEAT the self-test.

A12 CHECK CIRCUIT 588 (VT) FOR A SHORT TO VOLTAGE

- Key in OFF position.
- Disconnect: SJB C2280c
- Remove the BEC convertible top raise relay.
- Key in ON position.



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Fig. 5: Checking Circuit 588 (VT) For A Short To Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between BEC convertible top raise relay pin 85 and ground.
- **Is any voltage present?**
YES : REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
NO : Go to A13.

A13 CHECK CIRCUIT 588 (VT) FOR A SHORT TO GROUND OR AN OPEN

- Key in OFF position.

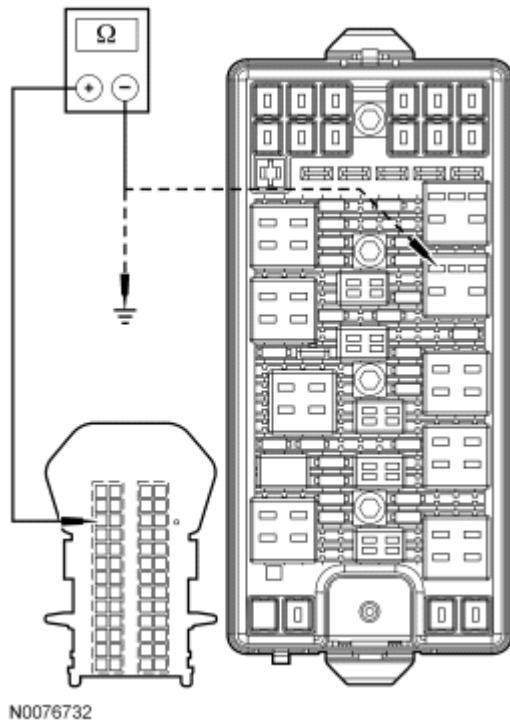


Fig. 6: Checking Circuit 588 (VT) For A Short To Ground Or An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between SJB:
 - C2280c-11, circuit 588 (VT), harness side and BEC convertible top raise relay pin 85.
 - C2280c-11, circuit 588 (VT), harness side and ground.
- **Is the resistance less than 5 ohms between the SJB and the BEC, and greater than 10,000 ohms between the SJB and ground?**

YES : CARRY OUT the relay component test for the convertible top raise relay. Refer to COMPONENT TESTING. If the convertible top raise relay does not pass the component test, INSTALL a new convertible top raise relay. CLEAR the DTCs. REPEAT the self-test. If the convertible top raise relay passes the component test, Go to A27.

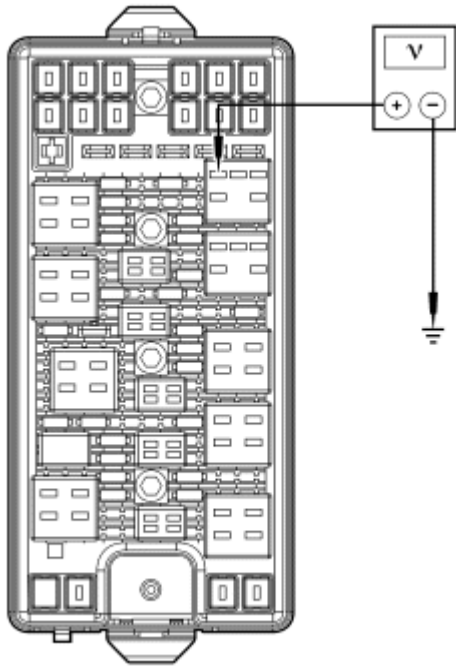
NO : REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.

A14 CHECK CIRCUIT 1174 (WH/RD) FOR A SHORT TO VOLTAGE

- Key in OFF position.
- Disconnect: SJB C2280c
- Remove the BEC convertible top lower relay.
- Key in ON position.

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Fig. 7: Checking Circuit 1174 (WH/RD) For A Short To Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between BEC convertible top lower relay pin 85 and ground.
- **Is any voltage present?**
YES : REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
NO : Go to A15.

A15 CHECK CIRCUIT 1174 (WH/RD) FOR A SHORT TO GROUND OR AN OPEN

- Key in OFF position.

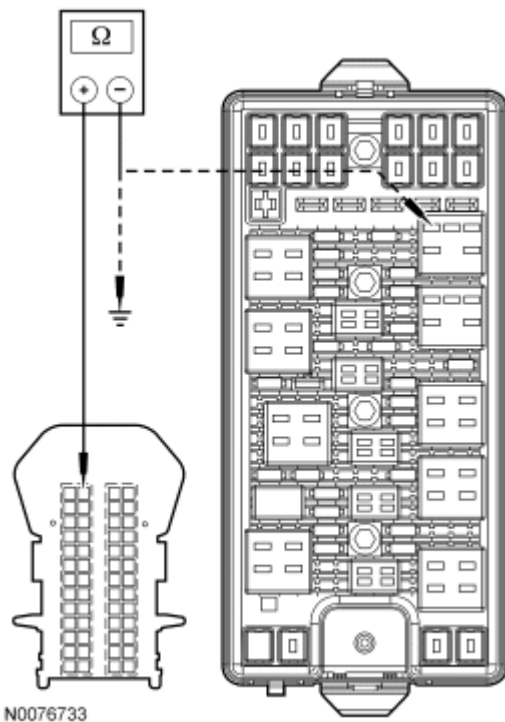


Fig. 8: Checking Circuit 1174 (WH/RD) For A Short To Ground Or An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between SJB:
 - C2280c-26, circuit 1174 (WH/RD), harness side and BEC convertible top lower relay pin 85.
 - C2280c-26, circuit 1174 (WH/RD), harness side and ground.

- **Is the resistance less than 5 ohms between the SJB and the BEC, and greater than 10,000 ohms between the SJB and ground?**

YES : CARRY OUT the relay component test for the convertible top lower relay. Refer to COMPONENT TESTING. If the convertible top lower relay does not pass the component test, INSTALL a new convertible top lower relay. CLEAR the DTCs. REPEAT the self-test. If the convertible top lower relay passes the component test, Go to A27.

NO : REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.

A16 CHECK THE CONVERTIBLE TOP RELAYS

- Carry out the relay component test for the convertible top raise relay and the convertible top lower relay. Refer to COMPONENT TESTING.
- **Did the convertible top raise relay and the convertible top lower relay pass the relay component test?**

YES : Go to A17.

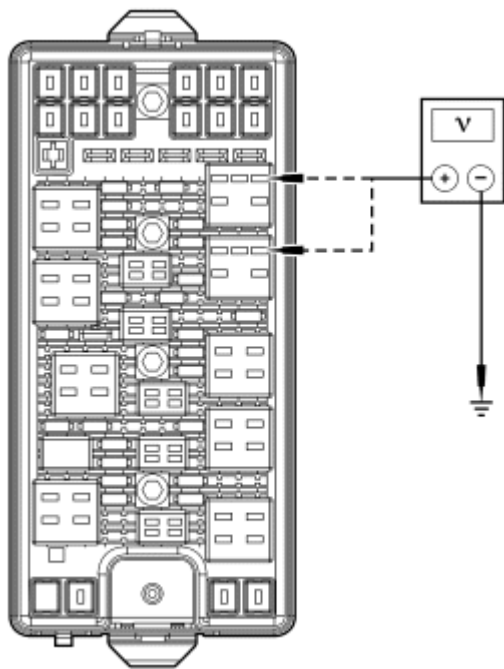
NO : INSTALL a new convertible top raise relay or convertible top lower relay. TEST the system for normal operation.

A17 CHECK FOR VOLTAGE TO THE CONVERTIBLE TOP RELAYS

- Remove the convertible top raise and lower relays.

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N0072275

Fig. 9: Checking For Voltage To Convertible Top Relays
Courtesy of FORD MOTOR CO.

- Measure the voltage between ground and:
 - BEC convertible top lower relay pin 87.
 - BEC convertible top raise relay pin 87.

- **Are the voltages greater than 10 volts?**

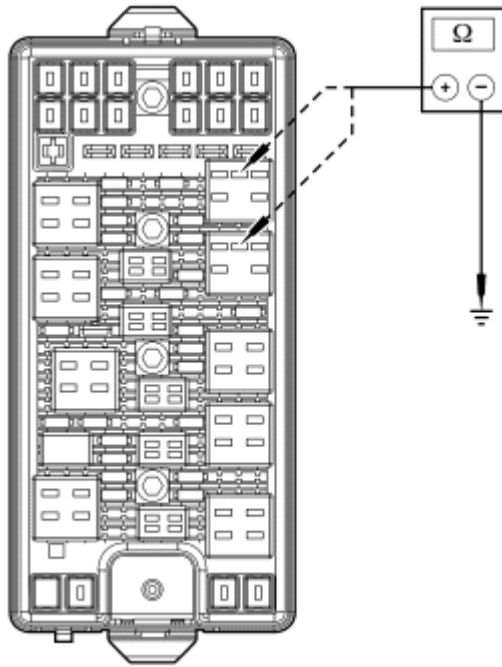
YES : Go to A18.

NO : VERIFY that BEC fuse 13 (40A) is OK. If BEC fuse 13 (40A) is not OK, go to A20.

A18 CHECK CIRCUIT 1205 (BK) FOR AN OPEN

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Fig. 10: Checking Circuit 1205 (BK) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between ground and:
 - BEC convertible top lower relay pin 87a.
 - BEC convertible top raise relay pin 87a.

- **Are the resistances less than 5 ohms?**

YES : Go to A19.

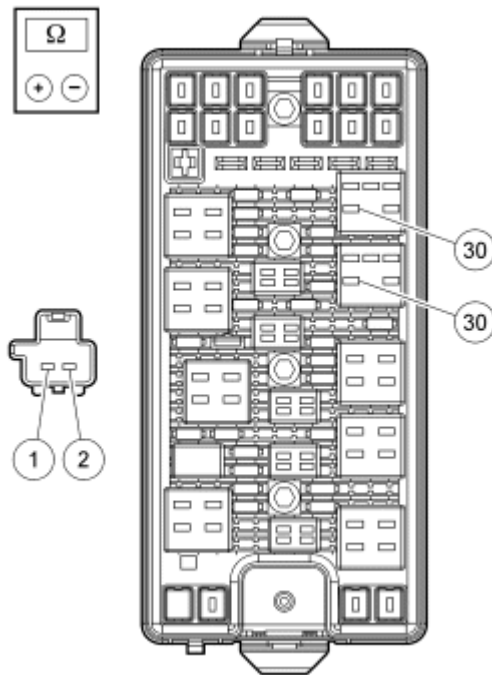
NO : REPAIR the circuit. TEST the system for normal operation.

A19 CHECK CIRCUITS 902 (YE) AND 903 (RD) FOR AN OPEN

- Key in OFF position.
- Disconnect: Convertible Top Motor C4062

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N0085498

Fig. 11: Checking Circuits 902 (YE) & 903 (RD) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between convertible top motor C4062, harness side and BEC relays using the following chart:

Convertible Top Motor	Circuit	BEC
C4062-1	903 (RD)	Convertible Top Lower Relay Pin 30
C4062-2	902 (YE)	Convertible Top Raise Relay Pin 30

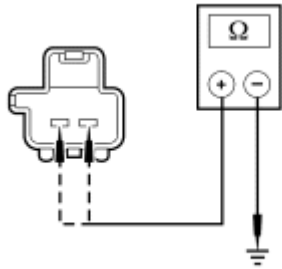
- **Are the resistances less than 5 ohms?**

YES : INSTALL a new convertible top motor. REFER to **Hydraulic System, Lift Cylinder and Motor**. TEST the system for normal operation.

NO : REPAIR the circuit(s). TEST the system for normal operation.

A20 CHECK CIRCUITS 902 (YE) AND 903 (RD) FOR A SHORT TO GROUND

- Disconnect: Convertible Top Motor C4062



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Fig. 12: Checking Circuits 902 (YE) & 903 (RD) For A Short To Ground
Courtesy of FORD MOTOR CO.

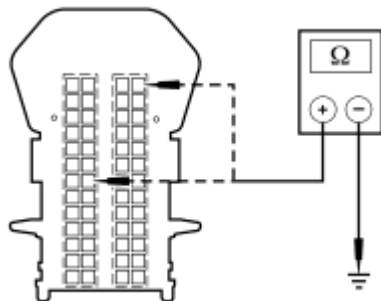
- Measure the resistance between ground and convertible top motor:
 - C4062-1, circuit 903 (RD), harness side.
 - C4062-2, circuit 902 (YE), harness side.
- **Are the resistances greater than 10,000 ohms?**

YES : INSTALL a new convertible top motor. REFER to Hydraulic System, Lift Cylinder and Motor. TEST the system for normal operation.

NO : REPAIR the circuit(s). TEST the system for normal operation.

A21 CHECK THE OPERATION OF THE REAR WINDOW MOTORS

- Raise the LH and RH rear windows to the full up position.
- Key in OFF position.
- Disconnect: SJB C2280c



N0072279

Fig. 13: Checking Operation Of Rear Window Motors
Courtesy of FORD MOTOR CO.

- Measure the resistance between ground and SJB:
 - **DTC B1402:** C2280c-52, circuit 2014 (YE/LB), harness side.
 - **DTC B2578:** C2280c-20, circuit 2012 (RD/BK), harness side.
- **Is the resistance less than 5 ohms?**

YES : Go to A22.

NO : Go to A27.

A22 CHECK CIRCUIT 2012 (RD/BK) OR 2014 (YE/LB) FOR A SHORT TO GROUND

- Disconnect: **DTC B1402:** Inline C312
- Disconnect: **DTC B2578:** Inline C313

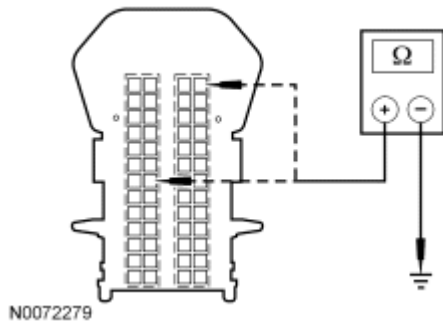


Fig. 14: Checking Circuit 2012 (RD/BK) Or 2014 (YE/LB) For A Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between ground and SJB:
 - **DTC B1402:** C2280c-52, circuit 2014 (YE/LB), harness side.
 - **DTC B2578:** C2280c-20, circuit 2012 (RD/BK), harness side.

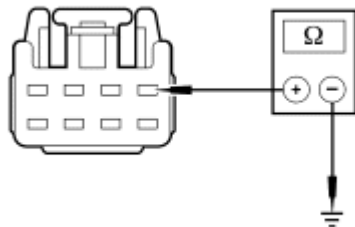
- **Is the resistance greater than 10,000 ohms?**

YES : Go to A23.

NO : REPAIR the circuit(s). CLEAR the DTCs. REPEAT the self-test.

A23 CHECK RH REAR WINDOW MOTOR CIRCUIT 2012 (RD/BK) AND LH REAR WINDOW MOTOR CIRCUIT 2012 (RD/BK) FOR A SHORT TO GROUND

- Disconnect: **DTC B1402:** LH Rear Window Motor C3118
- Disconnect: **DTC B2578:** RH Rear Window Motor C3119



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Fig. 15: Checking RH Rear Window Motor Circuit 2012 (RD/BK) & LH Rear Window Motor Circuit 2012 (RD/BK) For A Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between ground and SJB:
 - **DTC B1402:** C312-1, circuit 2012 (RD/BK), window motor side.

- **DTC B2578:** C313-1, circuit 2012 (RD/BK), window motor side.
- **Is the resistance greater than 10,000 ohms?**
YES : INSTALL a new LH or RH rear window motor as necessary. REFER to **GLASS, FRAMES AND MECHANISMS** article. CLEAR the DTCs. REPEAT the self-test.
NO : REPAIR the circuit(s). CLEAR the DTCs. REPEAT the self-test.

A24 CHECK THE INPUTS TO THE SJB

- Key in OFF position.
- Disconnect: Inline C312
- Disconnect: Inline C313
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: SJB DataLogger

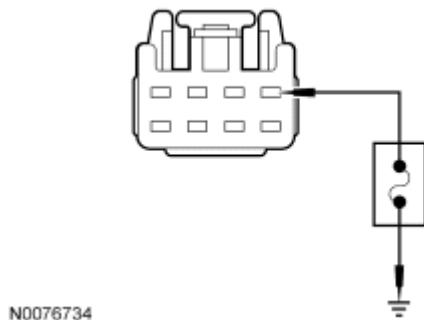


Fig. 16: Checking Inputs To SJB
Courtesy of FORD MOTOR CO.

- Monitor the LH and RH rear window LR_DOWN and RR_DOWN SJB PIDs while connecting a fused jumper wire between ground and inline:
 - C312-1, circuit 2014 (YE/BK), SJB side.
 - C313-1, circuit 2012 (RD/BK), SJB side.
- **Does the PID status display Yes for both PIDs?**
YES : Go to A26.
NO : Go to A25.

A25 CHECK CIRCUIT 2012 (RD/BK) OR CIRCUIT 2014 (YE/LB) FOR AN OPEN

- Disconnect: SJB 2280C

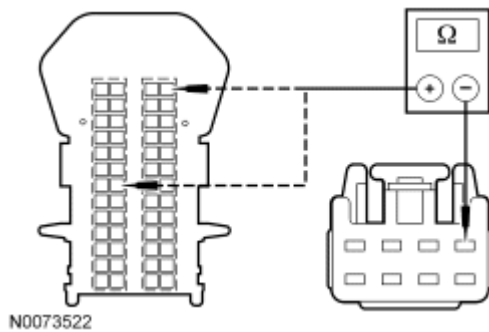


Fig. 17: Checking Circuit 2012 (RD/BK) Or Circuit 2014 (YE/LB) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between SJB:
 - C2280C-20, circuit 2012 (RD/BK), harness side and inline C313-1, circuit 2012 (RD/BK), SJB side.
 - C2280C-52, circuit 2014 (YE/LB), harness side and inline C312-1, circuit 2014 (YE/LB), SJB side.

• **Are the resistances less than 5 ohms?**

YES : Go to A27.

NO : REPAIR the circuit(s). TEST the system for normal operation.

A26 CHECK RH REAR WINDOW MOTOR CIRCUIT 2012 (RD/BK) AND LH REAR WINDOW MOTOR CIRCUIT 2012 (RD/BK) FOR AN OPEN

- Disconnect: RH Rear Window Motor C3118
- Disconnect: LH Rear Window Motor C3119

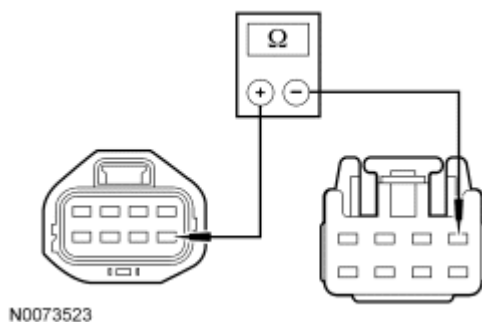


Fig. 18: Checking RH Rear Window Motor Circuit 2012 (RD/BK) & LH Rear Window Motor Circuit 2012 (RD/BK) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between rear window motor:
 - **RH:** C3119-5, circuit 2012 (RD/BK), harness side and inline C313-1, circuit 2012 (RD/BK), window motor side.
 - **LH:** C3118-5, circuit 2012 (RD/BK), harness side and inline C312-1, circuit 2012 (RD/BK), window motor side.

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- **Are the resistances less than 5 ohms?**

YES : INSTALL a new LH or RH rear window motor. REFER to **GLASS, FRAMES AND MECHANISMS** article. TEST the system for normal operation.

NO : REPAIR the circuit(s). TEST the system for normal operation.

A27 CHECK FOR CORRECT SJB OPERATION

- Disconnect all the SJB connectors.
- Check for:
 - corrosion.
 - pushed-out pins.
- Connect all the SJB connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

YES : INSTALL a new SJB. REFER to **MULTIFUNCTION ELECTRONIC MODULES** article. CLEAR the DTCs. REPEAT the self-test.

NO : The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

Pinpoint Test B: The Convertible Top Does Not Operate Correctly

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Convertible Top for schematic and connector information.

Normal Operation

The convertible top hydraulic system uses a 12-volt reversible pump and motor assembly. When active, the pump uses hydraulic pressure to extend the hydraulic lift cylinders to raise the convertible top, or retract the hydraulic lift cylinders to lower the convertible top. The convertible top assembly is a floating frame, Z-fold design. The main pivot brackets are attached to the body, and the convertible top frame side rails expand or fold when the convertible top is raised or lowered. The convertible top frame bows attach to the convertible top frame side rails and provide tension for the convertible top material.

This pinpoint test is intended to diagnose the following:

- Convertible top frame bows
- Convertible top side rails
- Hydraulic fluid leak
- Hydraulic lift cylinders
- Hydraulic motor/pump assembly
- Low hydraulic fluid

PINPOINT TEST B: THE CONVERTIBLE TOP DOES NOT OPERATE CORRECTLY

B1 CHECK THE HYDRAULIC FLUID LEVEL

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- Lower the convertible top.
- Gain access to the hydraulic motor and pump assembly.

NOTE: **Make sure that the hydraulic lift cylinders are fully retracted before checking the hydraulic fluid level.**

- Inspect the hydraulic reservoir and check the hydraulic fluid level.
- **Is the hydraulic fluid level at the "+" sign that is molded into the hydraulic reservoir?**
YES : Go to B4.
NO : Go to B2.

B2 CHECK THE HYDRAULIC SYSTEM FOR LEAKS

- Inspect all hydraulic fittings and hoses for hydraulic fluid leaks.
- **Are any hydraulic fluid leaks present?**
YES : REPAIR the leaking hydraulic fitting or INSTALL a new hydraulic hose as necessary. BLEED the hydraulic system. REFER to **System Bleeding**. TEST the system for normal operation.
NO : Go to B3.

B3 FILL THE HYDRAULIC SYSTEM

NOTE: **The hydraulic fluid level should be at the "+" sign that is molded into the hydraulic reservoir.**

- Add hydraulic fluid to the hydraulic fluid reservoir.
- Operate the convertible top system.
- **Does the convertible top system operate correctly?**
YES : The concern is not present at this time. RETURN the vehicle to the customer.
NO : BLEED the hydraulic system. REFER to **System Bleeding**. TEST the system for normal operation.

B4 CHECK THE CONVERTIBLE TOP LINKAGE

- Remove the hydraulic lift cylinder bolts and disconnect the hydraulic lift cylinders from the convertible top linkage.

NOTE: **The convertible top is not adjustable. If the convertible top frame is damaged or requires adjustment, the damaged components must be replaced.**

- Manually operate the convertible top assembly up and down while observing the convertible top linkage.
- **Does the linkage operate smoothly without binding?**
YES : Go to B5.
NO : INSTALL new components as necessary. REFER to **Convertible Top Bows** or **Convertible Top Side Rail**. TEST the system for normal operation.

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B5 CHECK THE HYDRAULIC LIFT CYLINDERS

- Operate the hydraulic system using a 12-volt fused (40A) power source.
- **Do the hydraulic lift cylinders extend and retract fully and evenly?**

YES : Go to B6.

NO : BLEED the hydraulic system. REFER to **System Bleeding**. If concern is still present after bleeding the hydraulic system, INSTALL a new hydraulic lift cylinder. REFER to **Hydraulic System, Lift Cylinder and Motor**. TEST the system for normal operation.

B6 BLEED THE HYDRAULIC SYSTEM

- Bleed the hydraulic system. Refer to **System Bleeding**.
- Operate the convertible top system upward and downward 3 times.
- **Does the convertible top system operate correctly?**

YES : The concern is not present at this time. RETURN the vehicle to the customer.

NO : INSTALL a new motor and pump assembly. REFER to **Hydraulic System, Lift Cylinder and Motor**. TEST the system for normal operation.

GENERAL PROCEDURES

SYSTEM BLEEDING

Material

Item	Specification
MERCON® V Automatic Transmission Fluid XT-5-QM (or XT-5-QMC) (US); CXT-5-LM12 (Canada)	MERCON® V

1. Remove the hydraulic system. For additional information, refer to **Hydraulic System, Lift Cylinder and Motor**.

NOTE: The hydraulic fluid must be checked with the hydraulic motor and pump assembly in a level horizontal position.

NOTE: The hydraulic fluid level should be at the "+" sign that is molded into the hydraulic fluid reservoir.

2. Check the hydraulic fluid level and add transmission fluid as needed.
 - To add transmission fluid, remove the hydraulic fluid reservoir fill plug.
 - Add transmission fluid to the hydraulic fluid reservoir.
 - Install the hydraulic fluid reservoir fill plug.
 - Tighten to 1 Nm (9 lb-in).
 - Check the hydraulic fluid level.

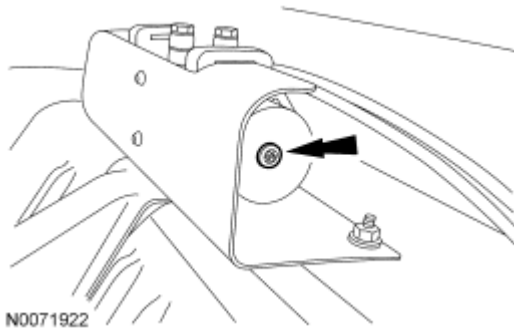


Fig. 19: Locating Hydraulic Fluid Reservoir Fill Plug
Courtesy of FORD MOTOR CO.

NOTE: Make sure the hydraulic pump and motor assembly is above the hydraulic lift cylinders before operating the hydraulic pump and motor assembly.

NOTE: A squealing noise may be heard due to the air in the hydraulic system.

3. With the RH and LH hydraulic lift cylinder rod ends tilted upward, connect a 12-volt source and operate the hydraulic motor until the hydraulic cylinders are fully extended and then fully retracted.
4. Repeat Steps 2 and 3 until the hydraulic fluid level remains unchanged.
5. Install the hydraulic system. For additional information, refer to **Hydraulic System, Lift Cylinder and Motor**.

REMOVAL AND INSTALLATION

CONVERTIBLE TOP - EXPLODED VIEW

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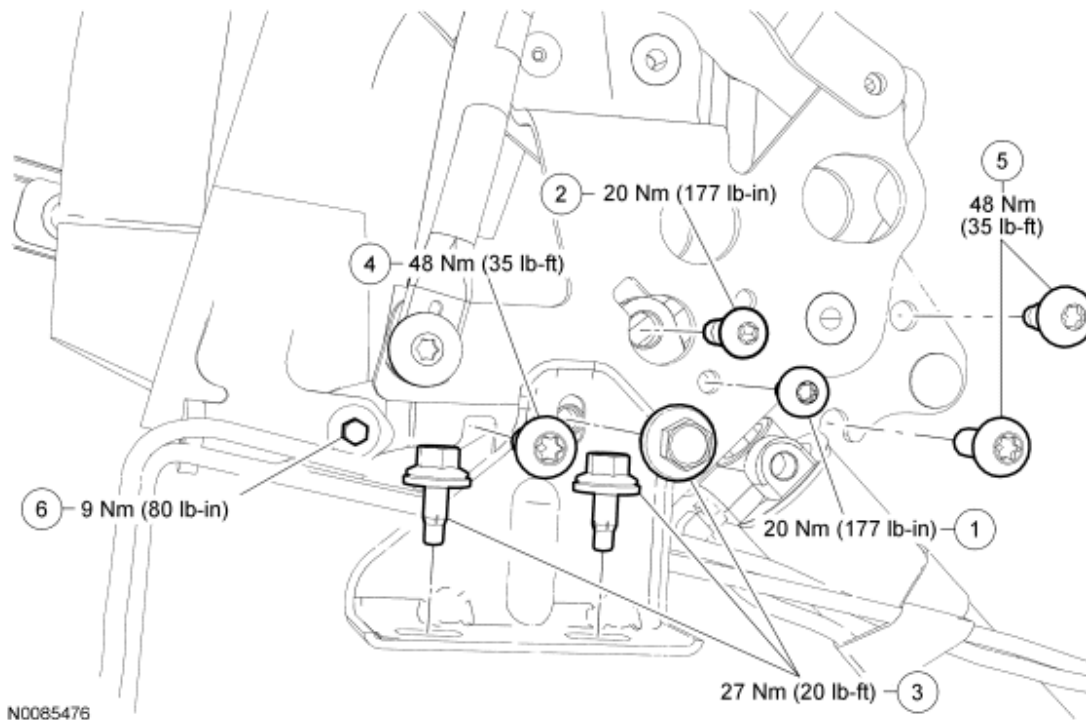
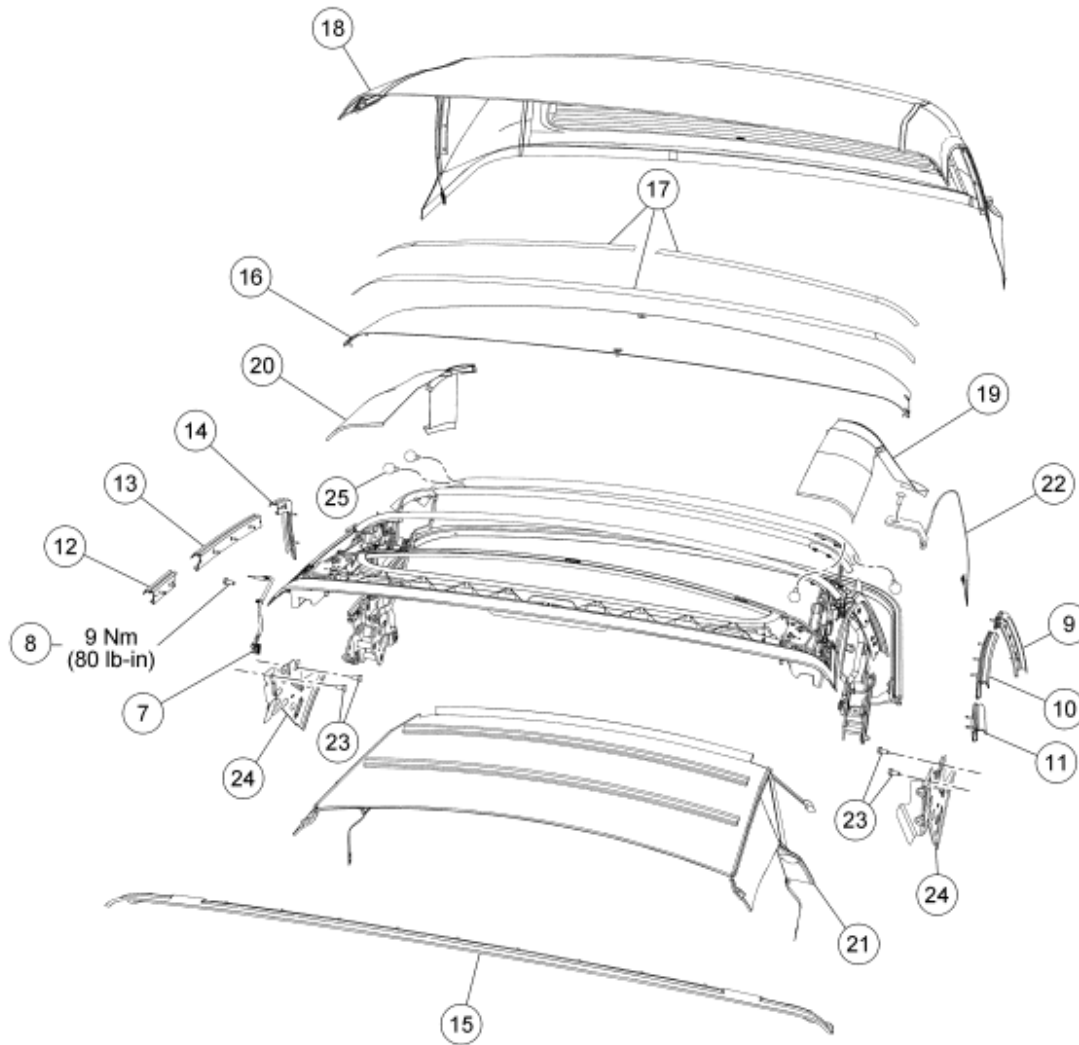


Fig. 20: Exploded View Of Convertible Top Assembly With Torque Specifications (1 Of 3)
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	W709053	Hydraulic lift cylinder bracket bolt (2 required)
2	N808519	Clevis-to-hydraulic lift cylinder rod bolt (2 required)
3	W711423	L-bracket bolts (6 required)
4	W711772	Pivot bracket rear bolt (2 required)
5	W711393	Pivot bracket front bolts (4 required)
6	W506413	Convertible top frame No. 5 bow pivot bolt (2 required)

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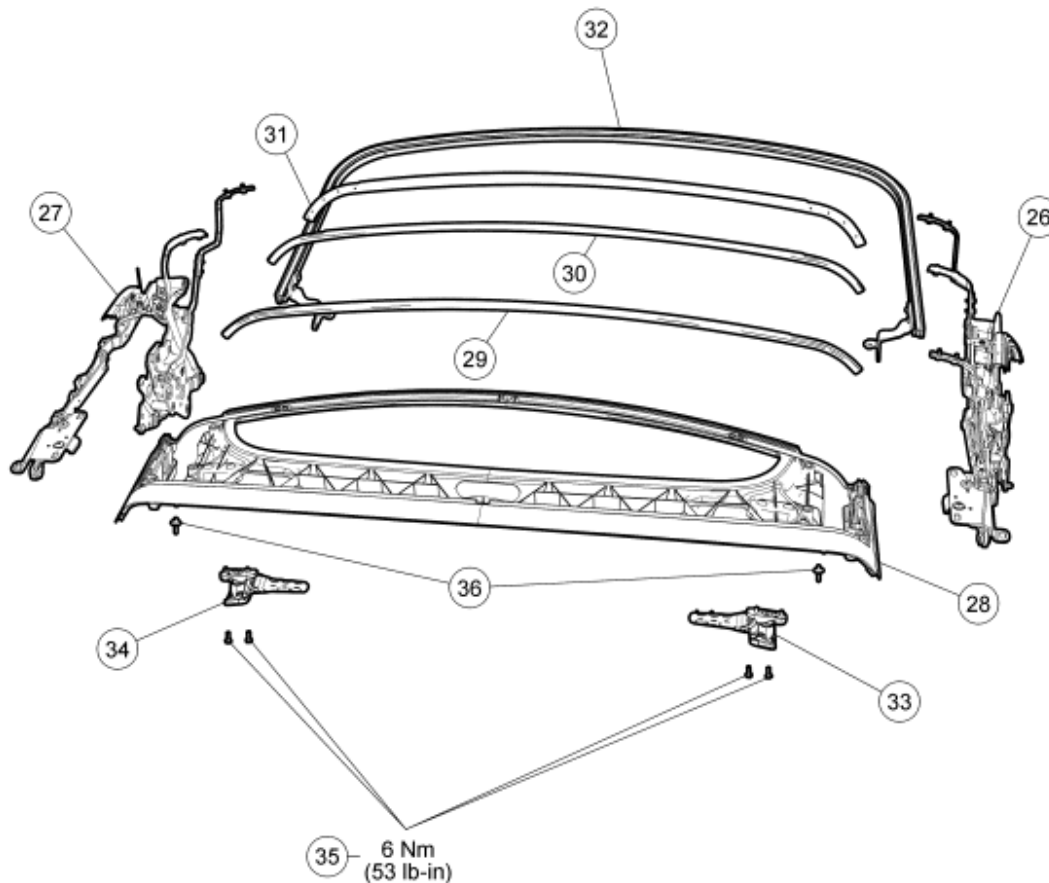
Fig. 21: Exploded View Of Convertible Top Assembly With Torque Specification (2 Of 3)
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
7	14018	Convertible top ajar switch
8	-	Convertible top ajar switch screw
9	51555	LH rear weatherstrip retainer channel
10	51561	LH center weatherstrip retainer channel
11	51543	LH front weatherstrip retainer channel
12	51542	RH front weatherstrip retainer channel
13	51560	RH center weatherstrip retainer channel
14	51554	RH rear weatherstrip retainer channel
15	514A34	Compression panel
16	-	Header form panel (part of 7653038)

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17	-	Double-sided tape
18	52700	Top cover assembly
19	54212	LH stay pad
20	54213	RH stay pad
21	51916	Convertible top headliner
22	52806 RH/ 52807 LH	Convertible top tension cable
23	W710918	Pivot bracket-to-quarter panel bracket bolts (6 required)
24	28126 RH/ 28127 LH	Pivot bracket-to-quarter panel brackets
25	W707504	Rivet (37 required)



N0086444

Fig. 22: Exploded View Of Convertible Top Assembly With Torque Specification (3 Of 3)
 Courtesy of FORD MOTOR CO.

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Item	Part Number	Description
26	53105	Convertible top frame LH side rail
27	53104	Convertible top frame RH side rail
28	53024	Convertible top frame No. 1 bow
29	51274	Convertible top frame No. 2 bow
30	51269	Convertible top frame No. 3 bow
31	52178	Convertible top frame No. 4 bow
32	52188	Convertible top frame No. 5 bow
33	50508-B	LH convertible top latch
34	50508-A	RH convertible top latch
35	-	Convertible top latch screws (4 required)
36	514A38	Dowel pins (2 required)

1. For additional information, refer to the procedures.

CONVERTIBLE TOP AJAR SWITCH

REMOVAL AND INSTALLATION

1. Remove the RH rear quarter trim panel. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.
2. Remove the RH rear window inner belt molding.
3. Remove the screw and the convertible top ajar switch.
 - To install, tighten to 9 Nm (80 lb-in).
4. To install, reverse the removal procedure.

CONVERTIBLE TOP LATCH

REMOVAL AND INSTALLATION

NOTE: Make sure to hand-start the screws for the convertible top latches to avoid damaging the convertible top frame.

1. Release the convertible top latches.
2. Partially open the convertible top.
3. Remove the caps and the 2 convertible top latch screws.
 - To install, tighten to 6 Nm (53 lb-in).
4. Remove the convertible top latch.
5. To install, reverse the removal procedure.

CONVERTIBLE TOP ASSEMBLY

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REMOVAL

- NOTE:** Removal, installation and handling of the convertible top requires an assistant or damage to the convertible top may occur.
- NOTE:** Use care when working around or handling the convertible top material to avoid scratching or creasing the material.
- NOTE:** Use care when handling the convertible top material to avoid damaging the rear glass. If damaged or broken, the rear glass cannot be replaced and will require replacement of the convertible top material.
- NOTE:** Light scratches in the convertible top material can be removed using isopropyl alcohol and 600-grit sandpaper or steel wool. Use light pressure, polishing in a circular motion. Use care not to use excessive pressure. Do not use power tools, as these permanently damage the convertible top material. Heavy scratches require replacement of the convertible top material.
- NOTE:** Light creases in the convertible top material can be removed by applying water to the creased area, and pulling the creased area flat, while applying mild heat from a heat gun. Use care not to apply excessive heat, as this permanently damages the convertible top material. Heavy creases may require replacement of the convertible top material.

1. Remove the well sling channel and the 4 pin-type retainers from the rear seat backrest.
2. Remove the rear seat backrest. For additional information, refer to **SEATING** article.
3. Disconnect the rear window defrost electrical connector.
4. Fully lower the convertible top.
5. Remove the LH and RH rear quarter trim panels. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.
6. Remove the LH and RH inner quarter window belt line seals.
7. Disconnect the convertible top ajar switch electrical connector.
8. Momentarily place the convertible top switch in the raise position to release the tension on the convertible top frame.
9. Remove the LH and RH hydraulic lift cylinder bolts and brackets.
10. Remove the LH and RH clevis-to-hydraulic-lift cylinder rod bolts.
11. Position the hydraulic lift cylinders aside.
12. Remove the LH and RH bolts attaching the L-brackets to the quarter panel.
13. Loosen the LH and RH pivot bracket rear bolts and remove the 4 pivot bracket front bolts.
14. Remove the LH and RH convertible top frame No. 5 bow pivot bolts.

NOTE: Do not compress the convertible top frame No. 5 bow more than

necessary to remove it from the vehicle. Excessive compression can damage the convertible top frame No. 5 bow.

15. Place a cargo strap or other suitable device around the convertible top frame No. 5 bow, near the ends, and compress the convertible top frame No. 5 bow approximately 80 cm (3.14 in), while lifting on the convertible top.
16. With an assistant, remove the convertible top assembly from the vehicle.
 - If necessary, release the tension of the convertible top frame No. 5 bow.

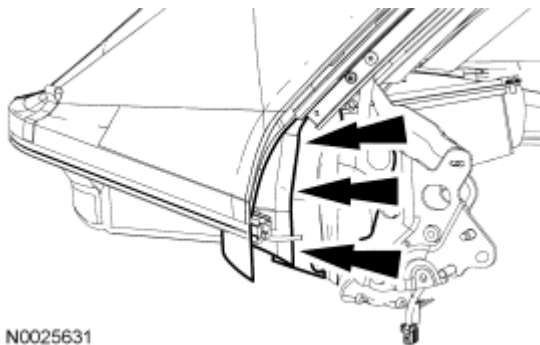
INSTALLATION

NOTE: Use care when cutting the tie straps or damage to the convertible top material may occur.

1. Cut and remove the No. 5 bow and side rail tie straps.

NOTE: Do not compress the convertible top frame No. 5 bow more than necessary to install it to the vehicle. Excessive compression can damage the convertible top frame No. 5 bow.

2. With an assistant, position the convertible top assembly into the vehicle.
 - If necessary, compress the convertible top frame No. 5 bow approximately 80 cm (3.14 in).
3. Slowly release the convertible top frame No. 5 bow, while aligning the guide pins on the convertible top frame with the holes in the rear quarter panels.
4. Install the LH and RH convertible top frame No. 5 bow pivot bolts.
 - Tighten to 9 Nm (80 lb-in).
5. Position the water diverter as shown, making sure the edges overlap completely, and the diverter are not caught between the brackets and the body.



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Fig. 23: Positioning Water Diverter To Convertible Top
Courtesy of FORD MOTOR CO.

6. Install the LH and RH pivot bracket bolts.
 - Tighten to 48 Nm (35 lb-ft).

7. Operate the convertible top by hand, to make sure the top operates freely, without binding.
8. Position the LH and RH hydraulic lift cylinders.
9. Install the LH and RH clevis-to-hydraulic lift cylinder rod bolts.
 - Tighten to 20 Nm (177 lb-in).
10. Install the LH and RH hydraulic lift cylinder brackets and bolts.
 - Tighten to 20 Nm (177 lb-in).
11. Connect the convertible top ajar switch electrical connector.

NOTE: RH pivot bracket bolts and pivot bracket-to-quarter panel bracket bolts are shown, LH pivot bracket bolts and pivot bracket-to-quarter panel bracket bolts are similar.

12. Using the convertible top switch, raise and latch the convertible top to check for correct alignment and latching.

If the convertible top is not aligned or does not latch correctly, carry out the steps in the following sequence:

1. Fully lower the convertible top.
2. Loosen the 6 LH and RH pivot bracket bolts.
3. Loosen the 4 LH and RH pivot bracket-to-quarter panel bracket bolts.
4. Fully raise and latch the convertible top.
5. Tighten the 4 LH and RH pivot bracket-to-quarter panel bracket bolts.
 - Tighten to 11 Nm (97 lb-in).
6. Tighten the 6 LH and RH pivot bracket bolts.
 - Tighten to 48 Nm (35 lb-ft).
7. Fully lower the convertible top.

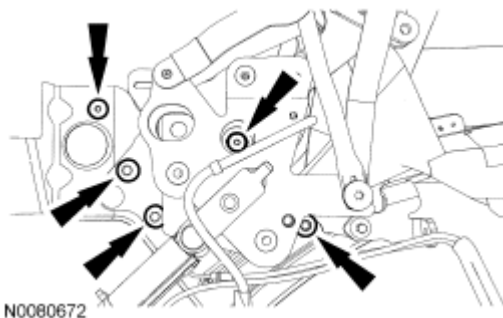


Fig. 24: Locating Pivot Bracket Bolts
Courtesy of FORD MOTOR CO.

13. Install the LH and RH bolts attaching the L-brackets to the quarter panel.

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- Tighten to 27 Nm (20 lb-ft).

14. Install the LH and RH inner quarter window belt line seals.
15. Install the LH and RH rear quarter trim panels. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.

NOTE: Use care when cutting the tie straps or damage to the convertible top material may occur.

16. Cut and remove the well sling tie strap.
17. Fully raise the convertible top.
18. Recheck the position of the water diverter, and adjust as necessary for correct placement.
19. Connect the rear window defrost electrical connector.
20. Install the rear seat backrest. For additional information, refer to **SEATING** article.
21. Position the well sling channel and install the 4 pin-type retainers to the rear seat backrest.
22. Make sure the door glass and quarter glass correctly seal against the convertible top side rail. If adjustment is necessary, refer to **GLASS, FRAMES AND MECHANISMS** article.

CONVERTIBLE TOP MATERIAL

REMOVAL

NOTE: Be sure to mark the location of the weatherstrip retaining channels prior to removal. If the weatherstrip retaining channels are not replaced in their original locations, the weatherstrips may not seal properly, resulting in water leaks and interior damage. Failure to replace the retaining channels correctly may require replacement of the convertible top assembly.

NOTE: Use care when working around or handling the convertible top material to avoid scratching or creasing the material.

NOTE: Use care when handling the convertible top material to avoid damaging the rear glass. If damaged or broken, the rear glass cannot be replaced, and will require replacement of the convertible top material.

NOTE: Light scratches in the convertible top material can be removed using isopropyl alcohol and 600-grit sandpaper or steel wool. Use light pressure, polishing in a circular motion. Use care not to use excessive pressure. Do not use power tools, as these permanently damage the convertible top material. Heavy scratches require replacement of the convertible top material.

NOTE: Light creases in the convertible top material can be removed by applying water to the creased area, and pulling the creased area flat, while applying mild heat from a heat gun. Use care not to apply excessive heat, as this permanently

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damages the convertible top material. Heavy creases may require replacement of the convertible top material.

1. Remove the convertible top assembly. For additional information, refer to **Convertible Top Assembly**.
2. Place the convertible top assembly on a flat surface and open fully.
3. Remove the screws and the LH and RH side front and rear weatherstrips and retainer channels.
4. Remove the 11 screws and the compression panel.
5. Remove the staples which secure the LH and RH front corners of the convertible top material to the frame.
6. Remove the front retaining track securing the front of the convertible top material from the front of the convertible top frame No. 1 bow.
7. Remove the foam tape and the rivets attaching the front corners of the convertible top material to the convertible top frame.
8. Pull the top material from the header form panel.
9. Remove the 6 screws and the header form panel.
10. Using chalk, mark the positioning of the old top cover at the top of the convertible top frame No. 5 bow.
11. Remove the staples attaching the convertible top material to the convertible top frame No. 5 bow.
12. Disconnect the heated rear window electrical connectors from the rear window glass.
13. Remove the convertible top cover elastic listing strap from the front side rails.
14. Remove the convertible top cover elastic listing straps (one on each side) from the front side rails.
15. Remove the convertible top cover elastic listing strap from the convertible top cover.
16. Remove the convertible top cover elastic listing straps (one on each side) from the rear side rails.
17. Position the water diverter aside to gain access to the tensioner cables.
18. Remove the tensioner cable guides from the convertible top frame No. 5 bow.
19. Remove the tensioner cables from the tensioner cable springs.
20. Remove the 2 pin-type retainers (1 each side) securing the convertible top material to the weatherstrip retainer channels.
21. Remove the convertible top channels from the convertible top frame No. 2 and No. 3 bows.
 - Remove the convertible top material.

INSTALLATION

NOTE: **Using chalk, make sure to mark the position of the convertible top frame No. 5 bow on the new top cover.**

1. Snap the convertible top channels into the guides on the convertible top frame No. 3 bow, then the No. 2 bow, and center the convertible top on the frame.
2. Using heavy wire or other suitable material, pull the convertible top listing strap through the channel on the underside of the top cover.
3. Using heavy wire or other suitable material, pull the convertible top tensioner cables through the channels

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to the rear of the convertible top.

4. Connect the heated rear window electrical connectors.
5. Install the convertible top tensioner cables to the tensioner cable springs.
6. Install the tensioner cable guides to the convertible top frame No. 5 bow.
7. Position the convertible top material, and secure to the weatherstrip retainer channels with pin-type retainers.
8. Attach the convertible top listing straps (one on each side) to the rear side rails.
9. Install the convertible top listing strap to the front side rails.
10. Install the convertible top listing straps (one on each side) to the front side rails.
11. Install the convertible top listing straps under the header form panel.
12. Install the header form panel and 6 screws in the following sequence.
 1. Tighten to 5 Nm (44 lb-in).
 2. Apply 3 pieces of double-sided tape to the header form panel.
13. Apply a light mist of water to the double-sided tape, and the underside of the convertible top material where it will contact the tape.
14. Install the rivets attaching the front corners of the convertible top material to the frame (2 each side) and cover the rivets with a short piece of foam tape.
15. Install the front retaining channel into place on the front of the frame and, starting in the center and working out towards the edges, clamp the convertible top material in place.

NOTE: Prior to stapling, make sure there are no wrinkles in the convertible top material along the front edge.

16. Staple the front corners of the convertible top material to the frame.
17. Install the compression panel and 11 screws.
 - Tighten to 2 Nm (18 lb-in).
18. Using an assistant, pull the convertible top material rearward around the convertible top frame No. 5 bow, to the same position as the old top cover.
19. After all wrinkles are removed, remove the tape cover strip and press the convertible top material firmly against the front header panel to seat it against the double-sided tape.

NOTE: Make sure there are no wrinkles on the top of the convertible top material.

20. Staple the convertible top material to the convertible top frame No. 5 bow.
21. Remove the extra material from the convertible top below the convertible top frame No. 5 bow.

NOTE: Make sure the weatherstrip retaining channels are replaced in their original locations. Failure to replace the retaining channels in their correct positions may cause water leaks, resulting in interior damage.

22. Install the LH and RH side front and rear weatherstrip retainer channels and screws.

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- Tighten to 6 Nm (53 lb-in).
23. Install the left and right side weatherstrips.
 24. Install the convertible top assembly in the vehicle. For additional information, refer to **Convertible Top Assembly**.

STAY PAD

REMOVAL

- NOTE:** Be sure to mark the location of the weatherstrip retaining channels prior to removal. If the weatherstrip retaining channels are not replaced in their original locations, the weatherstrips may not seal properly, resulting in water leaks and interior damage. Failure to replace the retaining channels correctly may require replacement of the convertible top assembly.
- NOTE:** Use care when working around or handling the convertible top material to avoid scratching or creasing the material.
- NOTE:** Use care when handling the convertible top material to avoid damaging the rear glass. If damaged or broken, the rear glass cannot be replaced, and will require replacement of the convertible top material.
- NOTE:** Light scratches in the convertible top material can be removed using isopropyl alcohol and 600-grit sandpaper or steel wool. Use light pressure, polishing in a circular motion. Use care not to use excessive pressure. Do not use power tools, as these permanently damage the convertible top material. Heavy scratches require replacement of the convertible top material.
- NOTE:** Light creases in the convertible top material can be removed by applying water to the creased area, and pulling the creased area flat, while applying mild heat from a heat gun. Use care not to apply excessive heat, as this permanently damages the convertible top material. Heavy creases may require replacement of the convertible top material.
1. Remove the convertible top assembly. For additional information, refer to **Convertible Top Assembly**.
 2. Place the convertible top assembly on a flat surface and open fully.
 3. Remove the screws and the LH and RH side front and rear weatherstrips and retainer channels.
 4. Remove the 11 screws and the compression panel.
 5. Remove the staples which secure the LH and RH front corners of the convertible top material to the frame.
 6. Remove the front retaining track securing the front of the convertible top material from the front of the convertible top frame No. 1 bow.
 7. Remove the foam tape and the rivets attaching the front corners of the convertible top material to the

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convertible top frame.

8. Pull the top material from the header form panel.
9. Remove the 6 screws and the header form panel.
10. Remove the convertible top cover elastic listing strap from the front side rails.
11. Remove the convertible top cover elastic listing straps (one on each side) from the front side rails.
12. Remove the convertible top cover elastic listing strap from the convertible top cover.
13. Remove the convertible top cover elastic listing straps (one on each side) from the rear side rails.
14. Position the water diverter aside to gain access to the tensioner cables.
15. Remove the tensioner cable guides from the convertible top frame No. 5 bow.
16. Remove the tensioner cables from the tensioner cable springs.
17. Remove the 2 pin-type retainers (1 each side) securing the convertible top material to the weatherstrip retainer channels.
18. Remove the convertible top channels from the convertible top frame No. 2 and No. 3 bows.
 - Remove the convertible top material.
19. Position aside the convertible top material from the convertible top frame tensioner cable stays attached to the No. 1 bow.

NOTE: Prior to performing this step, be sure to mark the distance from the convertible top frame No. 4 bow to the convertible top frame No. 5 bow on the new stay pad, using the original stay pad as a guide.

20. Remove the staples attaching the stay pads to the convertible top frame No. 5 bow.
21. Remove the 6 fasteners (3 each side) attaching the stay pads to the front mount brackets.
22. Remove the 4 fasteners (2 each side) attaching the stay pads to the convertible top frame No. 4 bow.
23. Remove the 4 fasteners (2 each side) attaching the stay pads to the convertible top frame No. 3 bow.

INSTALLATION

1. Install the 4 fasteners (2 each side) attaching the stay pads to the convertible top frame No. 3 bow.
2. Install the 4 fasteners (2 each side) attaching the stay pads to the convertible top frame No. 4 bow.
3. Install the 6 fasteners (3 each side) attaching the stay pads to the front mount brackets.

NOTE: Make sure to install the new stay pads in the same location as the original stay pads.

4. Pull the rear of the stay pad tight and staple the stay pad to the convertible top frame No. 5 bow, keeping the same distance to the convertible top frame No. 4 bow as the old stay pad.
5. Snap the convertible top channels into the guides on the convertible top frame No. 3 bow, then the No. 2 bow and center the convertible top on the frame.
6. Using heavy wire or other suitable material, pull the convertible top listing strap through the channel on the underside of the top cover.

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7. Using heavy wire or other suitable material, pull the convertible top tensioner cables through the channels to the rear of the convertible top.
8. Install the convertible top tensioner cables to the tensioner cable springs.
9. Install the tensioner cable guides to the convertible top frame No. 5 bow.
10. Position the convertible top material and secure to the weatherstrip retainer channels with pin-type retainers.
11. Attach the convertible top listing straps (one on each side) to the rear side rails.
12. Install the convertible top listing strap to the front side rails.
13. Install the convertible top listing straps (one on each side) to the front side rails.
14. Install the convertible top listing straps under the header form panel.
15. Install the header form panel and 6 screws in the following sequence.
 1. Tighten to 5 Nm (44 lb-in).
 2. Apply 3 pieces of double-sided tape to the header form panel.
16. Apply a light mist of water to the double-sided tape and the underside of the convertible top material where it will contact the tape.
17. Install the rivets attaching the front corners of the convertible top material to the frame (2 each side) and cover the rivets with a short piece of foam tape.
18. Install the front retaining channel into place on the front of the frame and starting in the center and working out towards the edges, clamp the convertible top material in place.

NOTE: Prior to stapling, make sure there are no wrinkles in the convertible top material along the front edge.

19. Staple the front corners of the convertible top material to the frame.
20. Install the compression panel and 11 screws.
 - Tighten to 2 Nm (18 lb-in).
21. Using an assistant, pull the convertible top material rearward around the convertible top frame No. 5 bow, to the same position as the old top cover.
22. After all wrinkles are removed, remove the tape cover strip and press the convertible top material firmly against the front header panel to seat it against the double-sided tape.
23. Remove the extra material from the convertible top below the convertible top frame No. 5 bow.

NOTE: Make sure the weatherstrip retaining channels are replaced in their original locations. Failure to replace the retaining channels in their correct positions may cause water leaks, resulting in interior damage.

24. Install the LH and RH side front and rear weatherstrip retainer channels and screws.
 - Tighten to 6 Nm (53 lb-in).
25. Install the left and right side weatherstrips.
26. Install the convertible top assembly in the vehicle. For additional information, refer to **Convertible Top Assembly**.

CONVERTIBLE TOP HEADLINER**REMOVAL AND INSTALLATION**

1. Remove the convertible top stay pad. For additional information, refer to **Stay Pad**.
2. Remove the sail panel clips from the convertible top frame.
3. Remove the 2 sail panel fasteners (1 each side) from the convertible top frame No. 5 bow.
4. Remove the 2 listing strap rivets (1 each side) from the rear rail.
5. Remove the 2 headliner mounting brackets (1 each side) from the rear rail.
6. Remove the 3 headliner fasteners from the convertible top frame No. 4 bow.
7. Remove the 6 fasteners attaching the headliner tracks to the convertible top frame No. 2 and No. 3 bows (3 each bow).
8. Remove the 2 listing strap fasteners (1 each side) from the convertible top frame between the convertible top frame No. 2 and No. 3 bows.
9. Remove the 6 headliner fasteners from front corners of the convertible top frame.
10. Remove the headliner from the convertible top frame.
11. To install, reverse the removal procedure.

CONVERTIBLE TOP TENSION CABLE**REMOVAL**

NOTE: LH shown, RH similar.

1. Remove the upper quarter trim panel cap and upper quarter trim panel. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.
2. Open the convertible top approximately half-way.
3. Remove pushpins and the front weatherstrip.

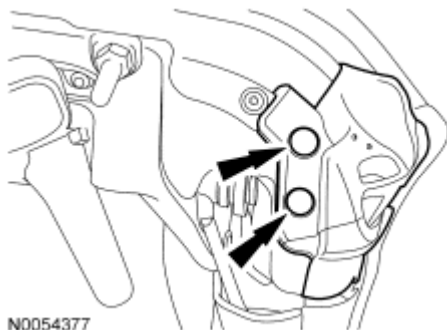


Fig. 25: Locating Front Weatherstrip Pushpins
Courtesy of FORD MOTOR CO.

4. Remove the 2 Torx screws and the front weatherstrip retainer channel.

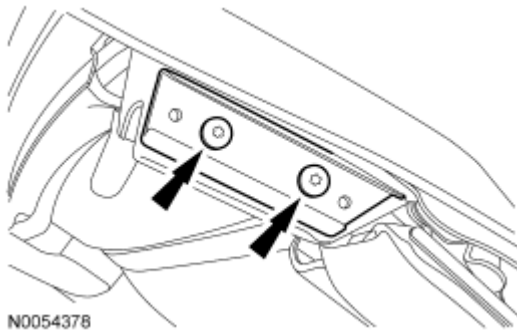


Fig. 26: Locating Front Weatherstrip Retainer Channel Screws
Courtesy of FORD MOTOR CO.

5. Drill out the rivet attaching the cable flag to the convertible top frame No. 1 bow. Once the cable flag is loose, use a small punch to knock out the rivet slug and clear the hole.

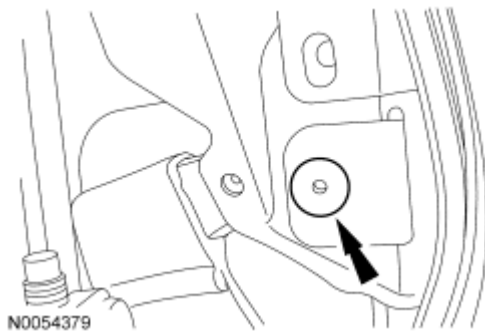


Fig. 27: Locating Rivet
Courtesy of FORD MOTOR CO.

6. Using side cutters, cut the cable from the cable flag (cut as close to the flag as possible).

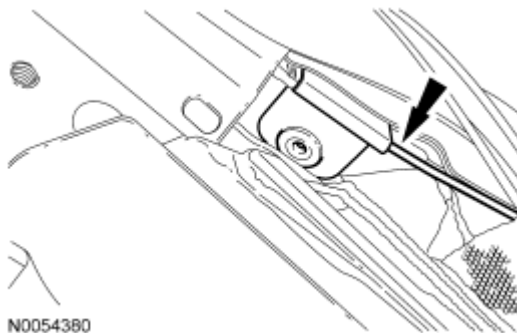


Fig. 28: Locating Cable
Courtesy of FORD MOTOR CO.

NOTE: Use the old cable to pull the new cable through the top.

7. Temporarily tie the old cable to the spring end of the new tension cable (make sure it is secure).

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8. Close the convertible top until it is approximately 15.25 cm (6 in) from the top of the windshield frame.
9. From inside vehicle, carefully pull the old tension cable out to feed the new tension cable through the convertible top. It may be necessary to open the convertible top to get the spring of the new cable passed through the body.
10. With the convertible top 15.25 cm (6 in) from the top of the window, drill out the rivet attaching the old cable to the convertible top frame No. 5 bow. Use a small punch to knock out the rivet slug and clear the hole.

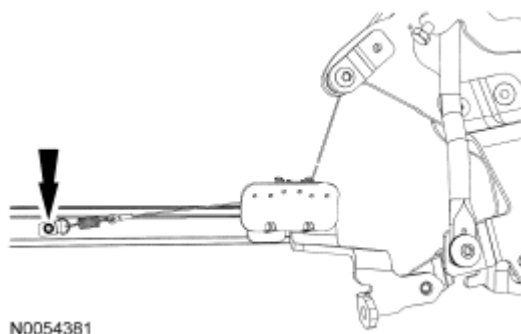


Fig. 29: Locating Rivet In Rivet Slug
Courtesy of FORD MOTOR CO.

INSTALLATION

1. Open the convertible top as necessary to rivet new cable flag to convertible top frame No. 1 bow.

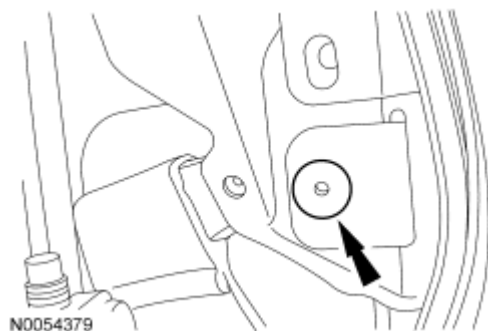


Fig. 30: Locating Rivet
Courtesy of FORD MOTOR CO.

2. Pull the cable sheathing upward, approximately 15.25 cm (6 in) from the cable eyelet and position the cable into the cable guide.

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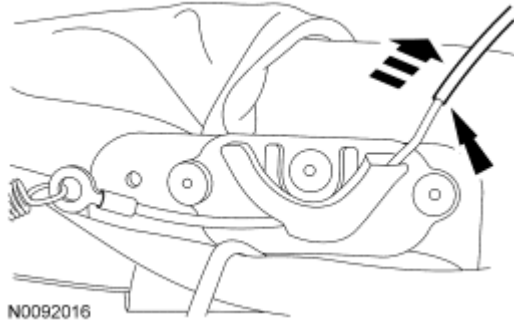


Fig. 31: Pulling Cable Sheathing Upward From Cable Eyelet & Position Cable Into Cable Guide
Courtesy of FORD MOTOR CO.

NOTE: Save the sound isolation webbing from the old cable spring so it can be transferred to the new cable spring.

3. Pull the old cable through the cable guide and route the new cable through the cable guide.
4. Put the sound isolation material on the new cable spring and rivet new cable to convertible top frame No. 5 bow.

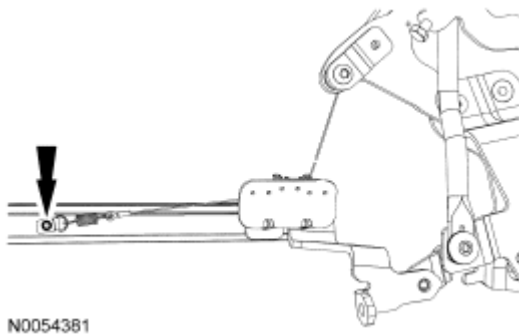


Fig. 32: Locating Rivet In Rivet Slug
Courtesy of FORD MOTOR CO.

5. Install the 2 Torx screws and the front weatherstrip retainer channel.

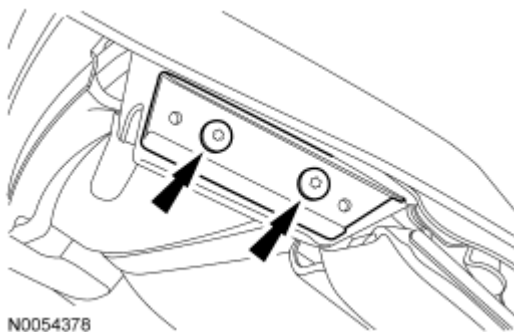


Fig. 33: Locating Front Weatherstrip Retainer Channel Screws
Courtesy of FORD MOTOR CO.

6. Install the front weatherstrip.
 - Install the 2 pushpins.

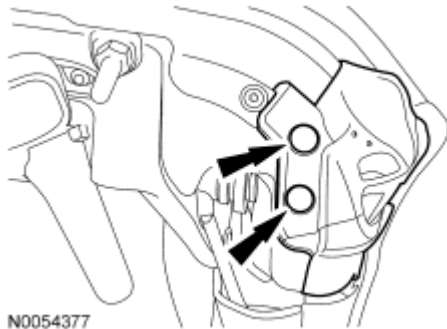


Fig. 34: Locating Front Weatherstrip Pushpins
Courtesy of FORD MOTOR CO.

7. Close the convertible top completely.
 - Check the outside appearance of the convertible top.
 - From inside the vehicle, make sure the cable is routed through guide and cable is under tension. Repair as necessary.
8. Install the upper quarter trim panel cap and upper quarter trim panel. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.

CONVERTIBLE TOP BOWS

REMOVAL AND INSTALLATION

1. Remove the convertible top headliner. For additional information, refer to **Convertible Top Headliner**.
2. Remove the screws and the appropriate convertible top frame bow(s).

NOTE: **Manually operate the convertible top frame before installing the headliner, to be sure the frame operates smoothly, without binding.**

3. To install, reverse the removal procedure.

CONVERTIBLE TOP SIDE RAIL

REMOVAL AND INSTALLATION

1. Remove the convertible top headliner. For additional information, refer to **Convertible Top Headliner**.
2. Remove the screws and the side rail(s) from the convertible top frame bows.

NOTE: **Manually operate the convertible top frame before installing the headliner, to be sure the frame operates smoothly, without binding.**

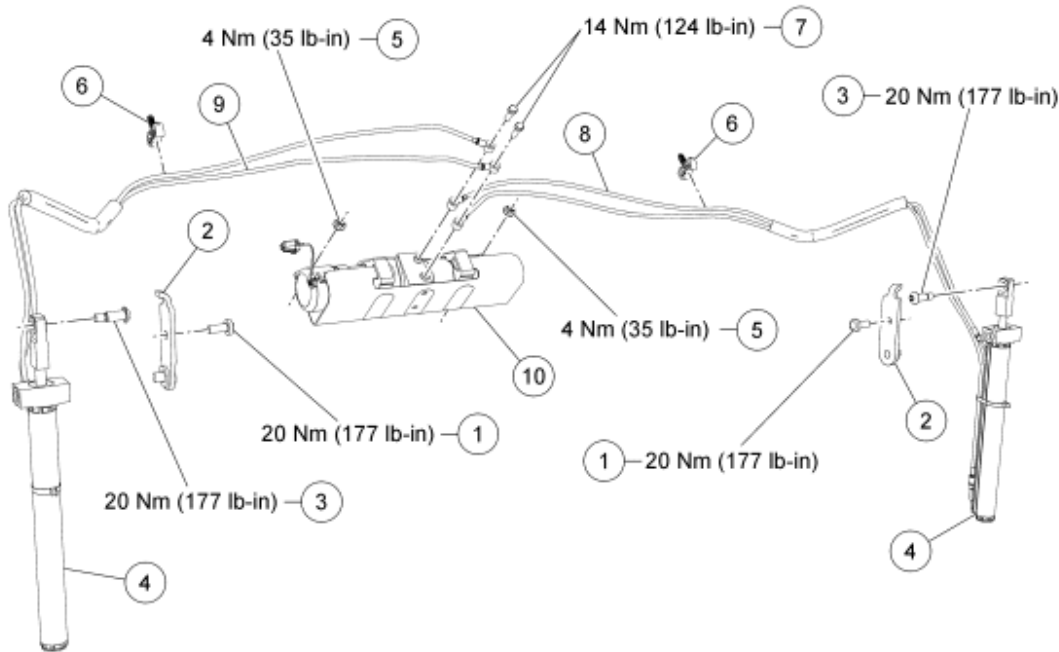
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3. To install, reverse the removal procedure.

- Make sure the door glass and quarter glass correctly seal against the convertible top side rail. If adjustment is necessary, refer to **GLASS, FRAMES AND MECHANISMS** article.

HYDRAULIC SYSTEM, LIFT CYLINDER AND MOTOR



N0085477

Fig. 35: Exploded View Of Hydraulic System, Lift Cylinder & Motor With Torque Specifications
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	W505590	Hydraulic lift cylinder bracket bolts (2 required)
2	50668	Hydraulic lift cylinder brackets (2 required)
3	N808519	Clevis-to-hydraulic lift cylinder rod bolts (2 required)
4	50600	Hydraulic lift cylinders (2 required)
5	W704723	Convertible top pump and motor assembly nuts (2 required)
6	W710531	Hydraulic line locators
7	-	Hydraulic line-to-motor bolts
8	53390	Upper hydraulic line
9	53392	Lower hydraulic line
10	533A00	Hydraulic pump and motor assembly

REMOVAL

NOTE: The convertible top hydraulic components are removed from the vehicle as an assembly. The hydraulic components are individually repaired and the system must be bled before being installed into the vehicle.

Hydraulic system

1. Lower the convertible top.
2. Remove the rear seat backrest. For additional information, refer to **SEATING** article.
3. Remove the LH and RH quarter trim panels. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.
4. Momentarily place the convertible top switch in the raise position to release the tension on the convertible top system.
5. Remove the LH and RH L-bracket bolts and the LH and RH L-brackets.

NOTE: LH side shown, RH side similar.

6. Remove the LH and RH hydraulic lift cylinder bracket bolts and the LH and RH hydraulic lift cylinder brackets.

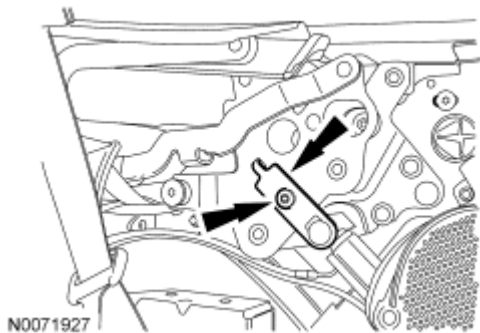


Fig. 36: Identifying Hydraulic Lift Cylinder Bracket Bolts & Hydraulic Lift Cylinder Brackets
Courtesy of FORD MOTOR CO.

7. Remove the LH and RH clevis-to-hydraulic lift cylinder rod bolts.
8. Fully lower the LH and RH hydraulic lift cylinders.
9. Release the LH and RH hydraulic line locators on each side.
10. Disconnect the hydraulic pump and motor assembly electrical connector.

NOTE: Remove the hydraulic pump and motor assembly and the LH and RH hydraulic lift cylinders together.

11. Remove the hydraulic pump and motor assembly.
 - Remove the 2 hydraulic pump and motor assembly nuts.
 - Remove the hydraulic pump and motor assembly and the LH and RH hydraulic lift cylinders.

Hydraulic lift cylinder

12. Remove the hydraulic lines from the hydraulic lift cylinder.
 - Release the hydraulic line retaining tabs to remove the hydraulic lines from the hydraulic lift cylinder.

Motor assembly

13. Remove the hydraulic lines from the hydraulic pump and motor assembly.
 - Remove the hydraulic line-to-motor bolts from hydraulic pump and motor assembly.

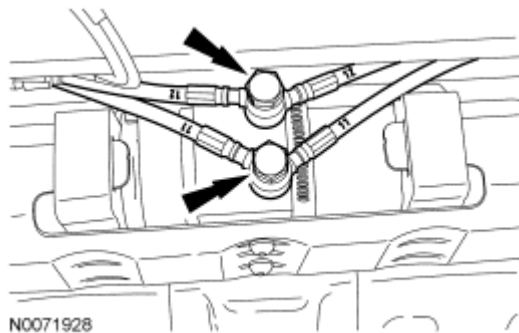


Fig. 37: Locating Hydraulic Line-To-Motor Bolts
Courtesy of FORD MOTOR CO.

INSTALLATION**Motor assembly**

NOTE: Match the numbers that are visible on the hydraulic lines to the numbers that are stamped onto the hydraulic pump and motor assembly to make sure that the hydraulic lines are lined up to the correct hydraulic pump and motor assembly port.

1. Install the hydraulic lines onto the hydraulic pump and motor assembly ports.
 - Install and tighten the hydraulic line-to-motor bolts to 14 Nm (124 lb-in).

Hydraulic lift cylinder

NOTE: Match the numbers that are visible on the hydraulic lines to the numbers that are stamped onto the hydraulic lift cylinder to make sure that the hydraulic lines are lined up to the correct hydraulic lift cylinder port.

NOTE: Make sure that the hydraulic lines are fully seated into the hydraulic lift cylinder.

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2. Install the hydraulic lines into the hydraulic lift cylinder ports.
 - Install the hydraulic line retaining tabs to lock the hydraulic lines into the hydraulic lift cylinders.

Hydraulic system

3. Bleed the hydraulic system. For additional information, refer to **System Bleeding**.

NOTE: **Install the hydraulic pump and motor assembly and the LH and RH hydraulic lift cylinders together.**

4. Position the hydraulic pump and motor assembly and the LH and RH hydraulic lift cylinders into the vehicle.
5. Install the hydraulic pump and motor assembly nuts.
 - Tighten to 4 Nm (35 lb-in).
6. Connect the hydraulic pump and motor assembly electrical connector.
7. Install the LH and RH hydraulic line locators.
8. Install the LH and RH clevis-to-hydraulic lift cylinder rod bolts.
 - Tighten to 20 Nm (177 lb-in).
9. Install the LH and RH hydraulic lift cylinder brackets and the LH and RH hydraulic lift cylinder bracket bolts.
 - Tighten to 20 Nm (177 lb-in).
10. Install the LH and RH L-brackets and the LH and RH L-bracket bolts.
 - Tighten to 27 Nm (20 lb-ft).
11. Install the LH and RH quarter trim panels. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.
12. Install the rear seat backrest. For additional information, refer to **SEATING** article.
13. Raise the convertible top.

CONVERTIBLE TOP SWITCH

REMOVAL AND INSTALLATION

1. Remove the overhead console.
 - Disconnect the overhead console electrical connector.
2. Disconnect the convertible top switch electrical connector.
3. Release the locking tabs, and remove the convertible top switch.
4. To install, reverse the removal procedure.