# Wiper and Washer Systems: Pinpoint Tests
# Test J: The Washer Pump is Inoperative
## PINPOINT TEST J: THE WASHER PUMP IS INOPERATIVE

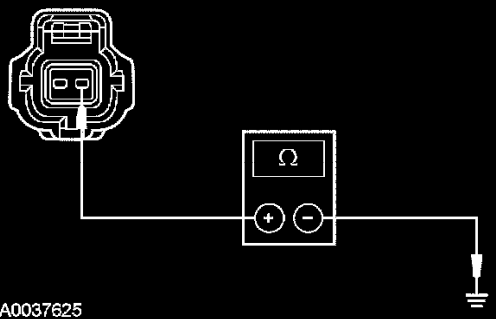
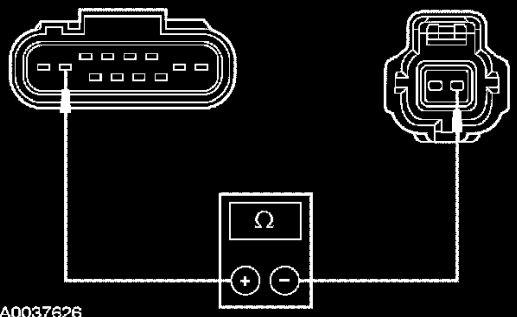
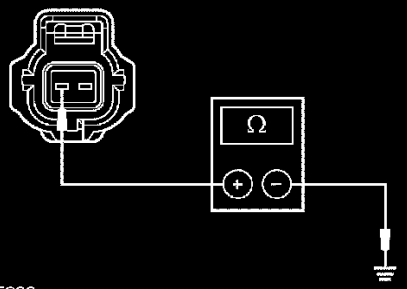
**PINPOINT TEST J: THE WASHER PUMP IS INOPERATIVE — EXPLORER**

| Test Step | | Result / Action to Take |
|---|---|---|
| J1 | CHECK CIRCUIT CRW14 (BU/WH) FOR GROUND | |
| | • Disconnect: Washer Pump Motor C1359.<br>• Key in ON position. | |

(Continued)

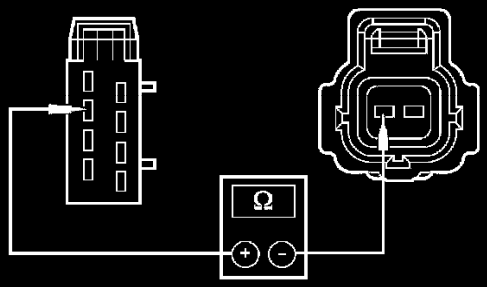
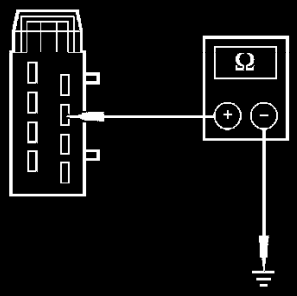
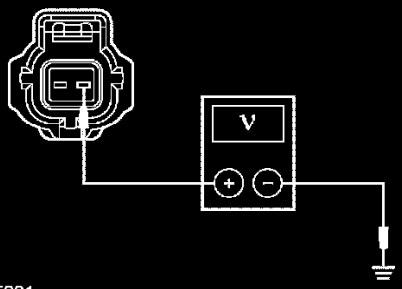
**J1**

## PINPOINT TEST J: THE WASHER PUMP IS INOPERATIVE — EXPLORER (Continued)

| Test Step | | Result / Action to Take |
|---|---|---|
| J1 | CHECK CIRCUIT CRW14 (BU/WH) FOR GROUND (Continued) | |
| | • Measure the resistance between washer pump C1397-2, circuit CRW14 (BU/WH) harness side and ground.<br>  <br><br>A0037625<br>• **Is the resistance less than 5 ohms?** | **Yes**<br>GO to **J3**.<br>**No**<br>GO to **J2**. |
| J2 | CHECK CIRCUIT CRW14 (BU/WH) FOR AN OPEN | |
| | • Key in OFF position.<br>• Disconnect: Windshield Wiper Motor C125.<br>• Measure the resistance between windshield wiper motor C125-7, circuit CRW14 (BU/WH), harness side and washer pump C1397-2, circuit CRW14 (BU/WH) harness side.<br>  <br><br>A0037626<br>• **Is the resistance less than 5 ohms?** | **Yes**<br>GO to **J14**.<br>**No**<br>REPAIR the circuit. TEST the system for normal operation. |
| J3 | CHECK CIRCUIT CRW12 (GY/OG) FOR GROUND | |
| | • Measure the resistance between washer pump C1397-1, circuit CRW12 (GY/OG) harness side and ground.<br>  <br><br>A0045230<br>• **Is the resistance less than 5 ohms?** | **Yes**<br>GO to **J6**.<br>**No**<br>GO to **J4**. |

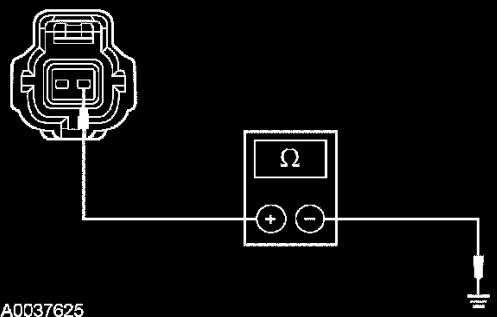
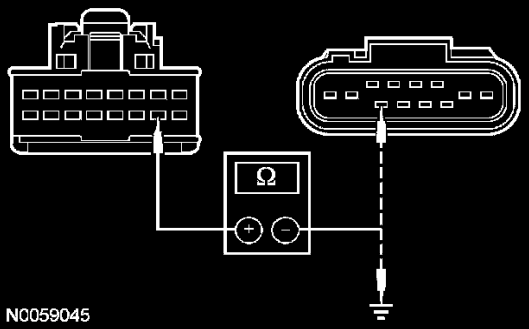
(Continued)

## PINPOINT TEST J: THE WASHER PUMP IS INOPERATIVE — EXPLORER (Continued)

| Test Step | | Result / Action to Take |
|---|---|---|
| J4 | CHECK CIRCUIT CRW12 (GY/OG) FOR AN OPEN | |
| | • Key in OFF position.<br>• Disconnect: Rear Window Wiper Motor C4323.<br>• Measure the resistance between rear window wiper motor C4323-4, circuit CRW12 (GY/OG), harness side and washer pump C1397-1, circuit CRW12 (GY/OG) harness side.<br>  <br><br>N0037080<br>• **Is the resistance less than 5 ohms?** | **Yes**<br>GO to **J5**.<br>**No**<br>REPAIR the circuit. TEST the system for normal operation. |
| J5 | CHECK CIRCUIT GD150 (BK/WH) FOR AN OPEN | |
| | • Measure the resistance between rear window wiper motor C4323-3, circuit GD150 (BK/WH), harness side and ground.<br>  <br><br>N0059129<br>• **Is the resistance less than 5 ohms?** | **Yes**<br>GO to **J15**.<br>**No**<br>REPAIR the circuit. TEST the system for normal operation. |
| J6 | CHECK CIRCUIT CRW14 (BU/WH) FOR VOLTAGE | |
| | • Key in ON position.<br>• Measure the voltage between washer pump C1397-2, circuit CRW14 (BU/WH) harness side and ground while depressing the multi-function switch to the WASH position.<br>  <br><br>A0045231<br>• **Is the voltage greater than 10 volts?** | **Yes**<br>GO to **J10**.<br>**No**<br>GO to **J7**. |

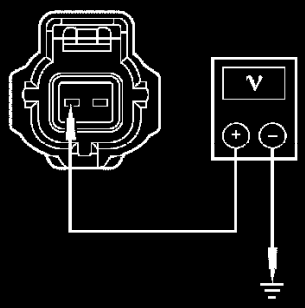
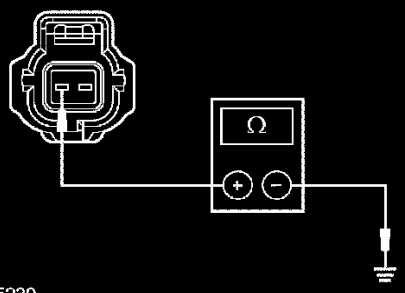
(Continued)

## PINPOINT TEST J: THE WASHER PUMP IS INOPERATIVE — EXPLORER (Continued)

| Test Step | | Result / Action to Take |
|---|---|---|
| J7 | CHECK CIRCUIT CRW14 (BU/WH) FOR A SHORT TO GROUND | |
| | • Key in OFF position.<br>• Disconnect: Windshield Wiper Motor C125.<br>• Measure the resistance between washer pump C1397-2, circuit CRW14 (BU/WH) harness side and ground.<br>  <br><br>A0037625<br>• **Is the resistance greater than 10,000 ohms?** | **Yes**<br>GO to **J8**.<br>**No**<br>REPAIR the circuit. TEST the system for normal operation. |
| J8 | CHECK THE MULTI-FUNCTION SWITCH | |
| | • Disconnect: Multi-function switch C202.<br>• Carry out the multi-function switch component test.<br>• **Did the multi-function switch pass the component test?** | **Yes**<br>GO to **J9**.<br>**No**<br>INSTALL a new multi-function switch. TEST the system for normal opertion. |
| J9 | CHECK CIRCUIT CRW07 (BY/BN) FOR AN OPEN OR SHORT TO GROUND | |
| | • Measure the resistance between windshield wiper motor C125-12, circuit CRW07 (GY/BN) harness side and multi-function switch C202-10, circuit CRW07 (GY/BN) harness side; and between multi-function switch C202-10, circuit CRW07 (GY/BN) harness side and ground.<br>  <br><br>N0059045<br>• **Is the resistance less than 5 ohms between multi-function switch and wiper motor; and greater than 10,000 ohms between multi-function switch and ground?** | **Yes**<br>GO to **J14**.<br>**No**<br>REPAIR the circuit. TEST the system for normal operation. |

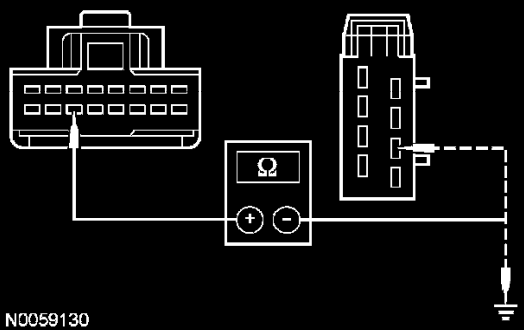
(Continued)

## PINPOINT TEST J: THE WASHER PUMP IS INOPERATIVE — EXPLORER (Continued)

| Test Step | | Result / Action to Take |
|---|---|---|
| J10 | CHECK CIRCUIT CRW12 (GY/OG) FOR VOLTAGE | |
| | • Measure the voltage between washer pump C1397-1, circuit CRW12 (GY/OG) harness side and ground while depressing the multi-function switch to the REAR WASH position.<br>  <br>N0059046<br>• **Is the voltage greater than 10 volts?** | **Yes**<br>INSTALL a new washer pump. TEST the system for normal operation.<br>**No**<br>GO to **J11**. |
| J11 | CHECK CIRCUIT CRW12 (GY/OG) FOR A SHORT TO GROUND | |
| | • Key in OFF position.<br>• Disconnect: Rear Window Wiper Motor C4323.<br>• Measure the resistance between washer pump C1397-1, circuit CRW12 (GY/OG) harness side and ground.<br>  <br>A0045230<br>• **Is the resistance greater than 10,000 ohms?** | **Yes**<br>GO to **J12**.<br>**No**<br>REPAIR the circuit. TEST the system for normal operation. |
| J12 | CHECK THE MULTI-FUNCTION SWITCH | |
| | • Disconnect: Multi-function switch C202.<br>• Carry out the multi-function switch component test.<br>• **Did the multi-function switch pass the component test?** | **Yes**<br>GO to **J13**.<br>**No**<br>INSTALL a new multi-function switch. TEST the system for normal opertion. |

(Continued)

**PINPOINT TEST J: THE WASHER PUMP IS INOPERATIVE — EXPLORER (Continued)**

| Test Step | | Result / Action to Take |
|---|---|---|
| J13 | **CHECK CIRCUIT CRW20 (GY/YE) FOR AN OPEN OR SHORT TO GROUND** | |
| | • Measure the resistance between rear window wiper motor C4323-5, circuit CRW20 (GY/YE) harness side and multi-function switch C202-14, circuit CRW20 (GY/YE) harness side; and between multi-function switch C202-14, circuit CRW20 (GY/YE) harness side and ground.<br>  <br><br>N0059130<br>• **Is the resistance less than 5 ohms between multi-function switch and wiper motor; and greater than 10,000 ohms between multi-function switch and ground?** | **Yes**<br>GO to **J15**.<br>**No**<br>REPAIR the circuit. TEST the system for normal operation. |
| J14 | **CHECK THE WINDSHIELD WIPER MOTOR** | |
| | • Disconnect all wiper motor connectors.<br>• Check for:<br>— liftgate glass open.<br>— corrosion.<br>— pushed-out pins.<br>• Connect all wiper motor connectors and make sure they seat correctly.<br>• Operate the system and verify the concern is still present.<br>• **Is the concern still present?** | **Yes**<br>INSTALL a new windshield wiper motor. TEST the system for normal operation.<br>**No**<br>REPAIR the circuit. TEST the system for normal operation. |
| J15 | **CHECK THE REAR WINDOW WIPER MOTOR** | |
| | • Disconnect all wiper motor connectors.<br>• Check for:<br>— liftgate glass open.<br>— corrosion.<br>— pushed-out pins.<br>• Connect all wiper motor connectors and make sure they seat correctly.<br>• Operate the system and verify the concern is still present.<br>• **Is the concern still present?** | **Yes**<br>INSTALL a new rear window wiper motor. TEST the system for normal operation.<br>**No**<br>REPAIR the circuit. TEST the system for normal operation. |

**J13-J15**

**Normal Operation**

Under normal operation, the windshield washer pump motor is grounded through internal relays in the wiper motors using circuits CRW14 (BU/WH) and CRW12 (GY/OG). The multi-function switch provides input to the windshield wiper motor through circuit CRW07 (GY/BN) to activate the washer. The windshield wiper motor activates the internal relay and then provides power through circuit CRW14 (BU/WH). When the rear window washer is activated, the internal relay in the rear window wiper motor provides power through circuit CRW12 (GY/OG).

**Possible Causes**

- Open in circuits CRW14 (BU/WH), CRW12 (GY/OG), CRW20 (GY/YE), CRW07 (GY/BN) or GD150 (BK/WH)
- Short to ground in circuit CRW14 (BU/WH), CRW12 (GY/OG), CRW07 (GY/BN) or CRW20 (GY/YE)
- Inoperative multi-function switch
- Inoperative windshield washer pump motor
- Inoperative windshield wiper motor
- Inoperative rear window wiper motor