

2005 Ford Focus ZX5 S

2005 ACCESSORIES & BODY, CAB Speed Control - Focus

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Speed Control - Focus

SPECIFICATIONS

GENERAL SPECIFICATIONS

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Item	Specification
Speed control deactivator switch plunger length	24 mm (0.94 in)

TORQUE SPECIFICATIONS

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Description	Nm	lb-in
Speed control actuator to bracket bolts	9	80
Speed control actuator bolts	6	53
Speed control switch bolts	5	44

DESCRIPTION AND OPERATION

SPEED CONTROL

The speed control system consists of the following components:

- Speed control actuator
- Speed control switches
- Speed control cable
- Deactivator switch
- Clutch pedal position (CPP) switch
- Brake pedal position (BPP) switch

It is normal for the engine RPM to increase slightly and then drop off slowly when the clutch pedal is applied during operation.

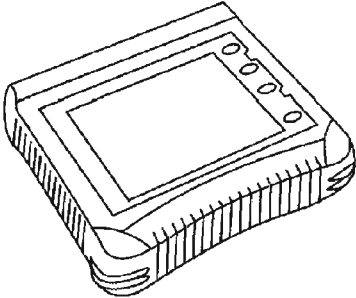
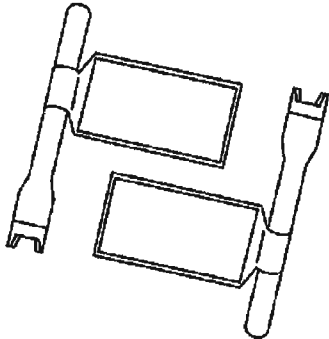
DIAGNOSIS AND TESTING

SPEED CONTROL

Refer to **SYSTEM WIRING DIAGRAMS** for schematic and connector information.

Special Tool(s)

SPECIAL TOOL

 <p>ST2332-A</p>	<p>73III Automotive Meter 105-R0057 or equivalent</p>
 <p>ST2621-A</p>	<p>Restraint System Diagnostic Tool 418-F088 (105-R0012) or equivalent</p>

Principles of Operation

Speed Control Actuator

The speed control actuator provides signals to the stepper motor. The actuator moves the throttle by means of an internal stepper motor/geartrain and an actuator cable. The powertrain control module (PCM) generates the vehicle speed signal that the speed control actuator compares to the set speed selected by the driver. If a discrepancy exists, the speed control actuator will adjust the throttle, correcting the vehicle speed.

The speed control actuator is mounted behind the LH headlamp. The speed control actuator contains the electronic module and the stepper motor and geartrain.

If the clutch pedal (vehicles with manual transaxle) or the brake pedal is applied, the speed control actuator deactivates the speed control. The speed control actuator will enter a stand-by mode.

Speed Control Switches

The speed control system is operated by a 5-function switch mounted on the steering wheel.

The switch functions are:

OPERATION PRINCIPLES

Switch	Function
ON	Activate system
OFF	Deactivate system
SET/ACC	Set/Accelerate and tap up
COAST	Coast and tap down
RES	Resume

When the ON switch is pressed and the vehicle is travelling at a speed greater than 48 km/h (30 mph) the speed control actuator will accept speed inputs.

The SET/ACC switch is used to set or accelerate the vehicle at speeds above 48 km/h (30 mph). The switch can be used in 3 ways.

- Accelerate the vehicle with the accelerator pedal to the desired speed, press and release the SET/ACC switch. The vehicle will then maintain the desired speed.
- Press the SET/ACC switch and hold it down until the vehicle reaches the desired speed. When the switch is released, the speed is stored in the memory and used to maintain the vehicle speed.
- Press the SET/ACC switch repeatedly in order to increase the vehicle speed by increments of 1.6 km/h (1 mph).

The COAST switch is used to reduce the vehicle speed. The switch can be used in 2 ways:

- Press and hold the COAST switch down until the vehicle slows to the desired speed. When the switch is released, the speed is stored in the memory and used to maintain the vehicle speed.
- Press the COAST switch repeatedly to reduce the vehicle speed by increments of 1.6 km/h (1 mph).

Pressing the RES switch returns the vehicle to the set speed when speed control is in the stand-by mode and vehicle speed is greater than 48 km/h (30 mph).

Pressing the OFF switch deactivates the speed control system. The speed setting stored in memory is erased.

Brake Pedal Position (BPP) Switch

If the brake pedal is tapped lightly while the speed control system is active, the actuator receives an input from the BPP switch. This causes the speed control actuator to close the throttle at a controlled rate. The system is put in stand-by mode.

Speed Control Deactivator Switch

If the brake pedal is applied rapidly while the speed control system is active, the speed control actuator receives a input from the deactivator switch. This causes the electromagnetic actuated coupling to disconnect from the stepper motor and deactivate. This allows the cable and throttle to close under throttle return spring control. The system is put in stand-by mode.

Clutch Pedal Position (CPP) Switch (with manual transaxle)

If the clutch pedal is applied while the speed control system is active, the speed control actuator receives an input from the CPP switch. This causes the speed control actuator to deactivate and close the throttle at a controlled rate. The system is put in stand-by mode.

Inspection and Verification

NOTE: If any concerns are noted with the speedometer, stoplamps, or horn, address those concerns by referring to their associated articles before continuing speed control system diagnosis.

1. Verify the customer concern.
2. Verify the speedometer operates correctly without speed control by test driving the vehicle. If the speedometer does not operate correctly, refer to **INSTRUMENT CLUSTER**.
3. Verify the stoplamps operate correctly with the ignition switch in the OFF position. If the stoplamps do not operate correctly, refer to **EXTERIOR LIGHTING**.
4. Visually inspect for obvious signs of mechanical or electrical damage.

VISUAL INSPECTION CHART

Mechanical	Electrical
<ul style="list-style-type: none"> • Speed control cable • Speed control actuator 	<ul style="list-style-type: none"> • Battery junction box (BJB) fuse 29 (10A) (speed control servo) (vehicles built after 11/04) • Central junction box (CJB) fuse(s): <ul style="list-style-type: none"> ○ 42 (15A) (speed control deactivator switch) ○ 53 (10A) (speed control servo)

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	(vehicles built before 11/04) <ul style="list-style-type: none">• Circuitry• Loose or corroded connector(s)• Switches• Speed control actuator
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5. Check the wiring harness for obvious signs of shorts, opens, bad connections, or damage.
6. Verify that the throttle cable is adjusted correctly and not holding the throttle open or increasing the idle speed.
7. Make sure the throttle linkage operates freely and smoothly when connected to the speed control cable and speed control actuator.
8. If the fault is not visually evident, verify the symptom and go to the Self-Test Diagnostics.

Self-Test Diagnostics

WARNING: This test is a key on, engine off (KOEO) test that is conducted only in PARK with the parking brake fully engaged. Failure to follow these instructions may result in personal injury.

NOTE: On vehicles equipped with a manual transmission, the clutch pedal needs to be applied in order to correctly perform the self-test. On vehicles equipped with an automatic transmission, the transmission selector lever needs to be in the PARK (P) or NEUTRAL (N) position.

NOTE: A review of the following steps is required before carrying out the self-test diagnostic procedure. After entering the diagnostic mode, the speed control actuator will time-out if the mandatory switch sequence is not completed within 5 seconds. If a time-out occurs, the procedure must be re-initiated.

NOTE: If the self-test cannot be entered, GO to PINPOINT TEST A.

- Enter self-test diagnostics by pressing the speed control OFF switch while turning the ignition key on, making sure the engine does not start and is not running. The speed control indicator lamp on the instrument panel will flash once to indicate that the speed

control actuator has entered the diagnostic mode. Five additional flashes at this point indicate a damaged speed control actuator. Release the OFF switch.

- Press the remaining switches in this sequence: ON, RES (resume), COAST and SET/ACC.
- The speed control indicator lamp will flash as each switch is pressed. Press each switch in the sequence immediately after the light goes out for the previous switch.

NOTE: **There will be a slight delay when the last button is pressed and the lamp flashes.**

- A lamp flash with the last button (SET/ACC) indicates that the static test has passed. If the lamp does not flash with the last button and there are no additional flashes of the lamp, the switch is damaged. If the lamp does not flash with the last button, and additional flashes occur, follow the list below for trouble codes:
 - Flashes: The BPP switch is damaged, the circuit is damaged, the brake pedal or clutch pedal is applied.
 - Flashes: The speed control deactivator switch is open or the circuit is damaged.
 - Flashes: The vehicle speed sensor is out of range or the circuit is damaged.
 - Flashes: The speed control actuator is damaged.
- Immediately (0.25 second) after the static test has passed, the speed control actuator will carry out a dynamic test automatically by actuating the throttle lever from 1 to 10 mm (0.04 to 0.39 inches) of travel from the idle position. During the dynamic throttle pull, observe the throttle movement to witness any binding or sticking of the speed control cable, verify the correct connection of the speed control cable to the throttle lever, and make sure that the throttle returns to the idle position. If an incorrect connection and/or binding or sticking of the speed control is observed, GO to **SYMPTOM CHART**.

Symptom Chart

SYMPTOM CHART

Condition	Possible Sources	Action
<ul style="list-style-type: none"> • The speed control is inoperative - no flash codes 	<ul style="list-style-type: none"> • Speed control cable. • Battery junction box (BJB) fuse(s): <ul style="list-style-type: none"> • 1 (40 A). • 8 (30A). • Central junction box (CJB) fuse(s): 	<ul style="list-style-type: none"> • GO to <u>PINPOINT TEST A</u>.

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	<ul style="list-style-type: none"> • 42 (15A). • 53 (10A). • 61 (7.5A). • Circuitry. • Speed control deactivator switch. • Clutch pedal position (CPP) switch. • Brake pedal position (BPP) switch. • Speed control switches. • Speed control actuator. 	
<ul style="list-style-type: none"> • The set speed fluctuates 	<ul style="list-style-type: none"> • Speed control switch. • Circuitry. • Loose fit or binding between speed control cable and throttle body. • Speed control actuator. 	<ul style="list-style-type: none"> • GO to <u>PINPOINT TEST B.</u> • See <u>INTRODUCTION - GASOLINE</u> article . REPAIR the engine controls as necessary.
	<ul style="list-style-type: none"> • Engine controls 	
<ul style="list-style-type: none"> • The speed control does not disengage when the brakes are applied 	<ul style="list-style-type: none"> • Battery junction box (BJB) fuse(s): • 1 (40 A). • 8 (30A). • Brake pedal position (BPP) switch. • Speed control 	<ul style="list-style-type: none"> • GO to <u>PINPOINT TEST C.</u>

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	<ul style="list-style-type: none"> deactivator switch. • Circuitry. • Binding speed control cable. • Speed control actuator. 	
<ul style="list-style-type: none"> • The COAST switch is inoperative 	<ul style="list-style-type: none"> • COAST switch. • Circuitry. 	<ul style="list-style-type: none"> • GO to <u>PINPOINT TEST E.</u>
<ul style="list-style-type: none"> • The RES switch is inoperative 	<ul style="list-style-type: none"> • RES switch. • Circuitry. 	<ul style="list-style-type: none"> • GO to <u>PINPOINT TEST E.</u>
<ul style="list-style-type: none"> • The speed control does not deactivate when the clutch is applied 	<ul style="list-style-type: none"> • Clutch pedal position (CPP) switch. • Circuitry. 	<ul style="list-style-type: none"> • GO to <u>PINPOINT TEST D.</u>
<ul style="list-style-type: none"> • The OFF switch is inoperative 	<ul style="list-style-type: none"> • Speed control switch. 	<ul style="list-style-type: none"> • GO to <u>PINPOINT TEST E.</u>
<ul style="list-style-type: none"> • Flash with last switch pressed and dynamic pull occurs at the throttle 	<ul style="list-style-type: none"> • - 	<ul style="list-style-type: none"> • Test passed.
<ul style="list-style-type: none"> • Flash with last switch pressed, but no dynamic pull occurs at the throttle and the speed control is inoperative 	<ul style="list-style-type: none"> • Speed control cable. • Speed control actuator. 	<ul style="list-style-type: none"> • GO to <u>PINPOINT TEST F.</u>
<ul style="list-style-type: none"> • Flash code 2 - Brake pedal position (BPP) circuit failure 	<ul style="list-style-type: none"> • Circuitry. • BPP switch. • Clutch pedal position (CPP) switch. • Speed control actuator. 	<ul style="list-style-type: none"> • GO to <u>PINPOINT TEST G.</u>
<ul style="list-style-type: none"> • Flash code 3 - Speed control 	<ul style="list-style-type: none"> • Central junction box (CJB) fuse 42 	<ul style="list-style-type: none"> • GO to <u>PINPOINT TEST H.</u>

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deactivator circuit failure	(15A). <ul style="list-style-type: none">• Circuitry.• Speed control deactivator switch.• Speed control actuator.	
• Flash code 4 - Vehicle speed sensor (VSS) circuit failure	<ul style="list-style-type: none">• Circuitry.• Speed control actuator.	• GO to <u>PINPOINT TEST I.</u>
	<ul style="list-style-type: none">• Powertrain control module (PCM).	
• Flash code 5 - Damaged speed control actuator	<ul style="list-style-type: none">• Speed control actuator.	• INSTALL a new speed control actuator. REFER to <u>SPEED CONTROL ACTUATOR.</u> CARRY OUT the <u>SELF-TEST DIAGNOSTICS.</u>
• The speed control indicator does not operate correctly	<ul style="list-style-type: none">• Circuitry.• Instrument cluster.• Speed control actuator.	• REFER to <u>INSTRUMENT CLUSTER</u> .

Pinpoint Tests

PINPOINT TEST A: THE SPEED CONTROL IS INOPERATIVE - NO FLASH CODES

A1 CHECK THE SPEED CONTROL CABLE ATTACHMENT TO THE THROTTLE

- Key in OFF position.
- Remove the accelerator control splash shield (if equipped). Inspect the speed control cable attachment. Check the speed control cable by pulling on the speed control cable and noting the throttle movement.
- **Is the speed control cable snapped onto the throttle body and is the speed control cable movement OK?**

Yes : GO to A2.

No : CONNECT the speed control cable. TEST the system for normal operation.

A2 CHECK THE SPEED CONTROL ACTUATOR CONNECTION

- Check that the speed control actuator connector is fully connected.
- **Is the speed control actuator connector installed correctly?**

Yes : GO to A3.

No : INSTALL the speed control actuator connector. TEST the system for normal operation.

A3 CHECK THE VOLTAGE TO THE SPEED CONTROL ACTUATOR

- Disconnect: Speed Control Actuator C122.
- Key in ON position.
- Measure the voltage between the speed control actuator C122 pin 7, circuit 15-PG12 (GN/WH), harness side and the speed control actuator C122 pin 10, circuit 91-PG12 (BK/WH), harness side.

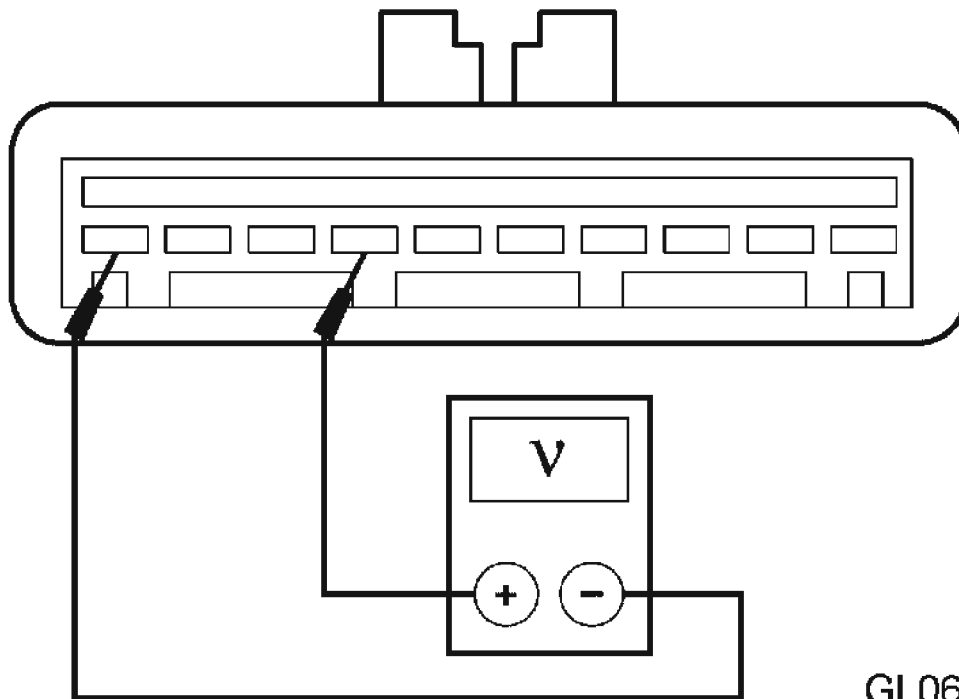


Fig. 1: Checking Voltage To Speed Control Actuator
Courtesy of FORD MOTOR CO.

- Is the voltage greater than 10 volts?

Yes : GO to A5.

No : GO to A4.

A4 CHECK THE SPEED CONTROL GROUND CIRCUIT 91-PG12 (BK/WH) FOR AN OPEN

- Measure the resistance between the speed control actuator C122 pin 10, circuit 91-PG12 (BK/WH), harness side and ground.

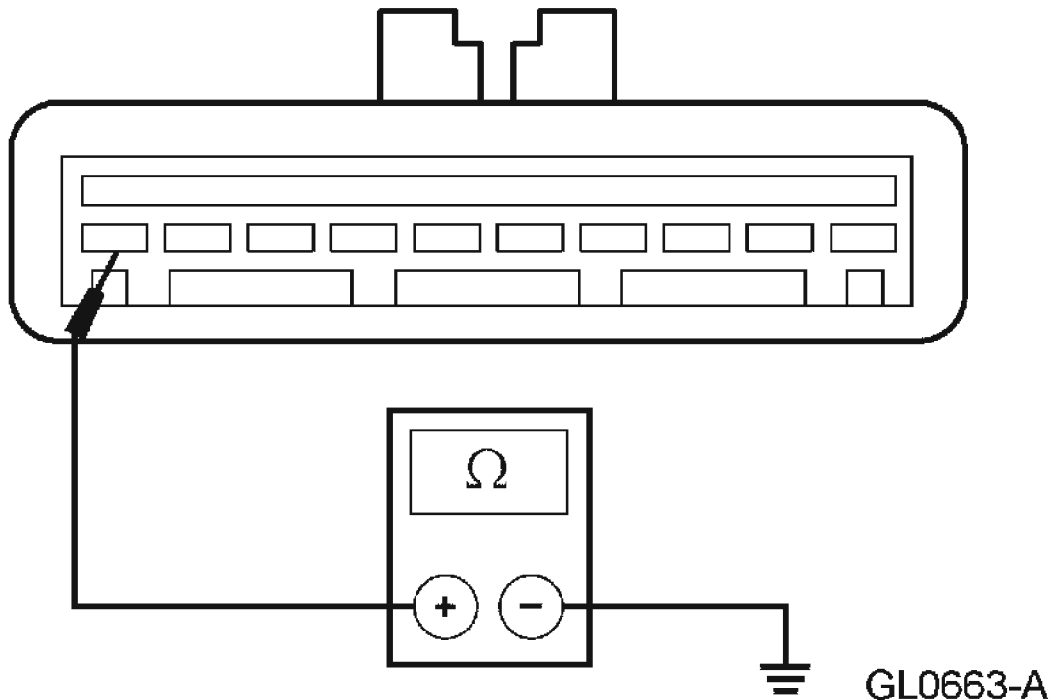


Fig. 2: Measuring Resistance Between Speed Control Actuator C122 Pin 10, Circuit 91-PG12 (BK/WH), Harness Side And Ground
Courtesy of FORD MOTOR CO.

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

Yes : REPAIR circuit 15-PG12 (GN/WH). TEST the system for normal operation.

No : REPAIR circuit 91-PG12 (BK/WH). TEST the system for normal operation.

A5 CHECK THE BPP SWITCH INPUT WITH NO BRAKES APPLIED

- Measure the voltage between the speed control actuator C122 pin 4, circuit 15S-PG17 (GN/BU), harness side and the speed control actuator C122 pin 10, circuit 91-PG12 (BK/WH), harness side.

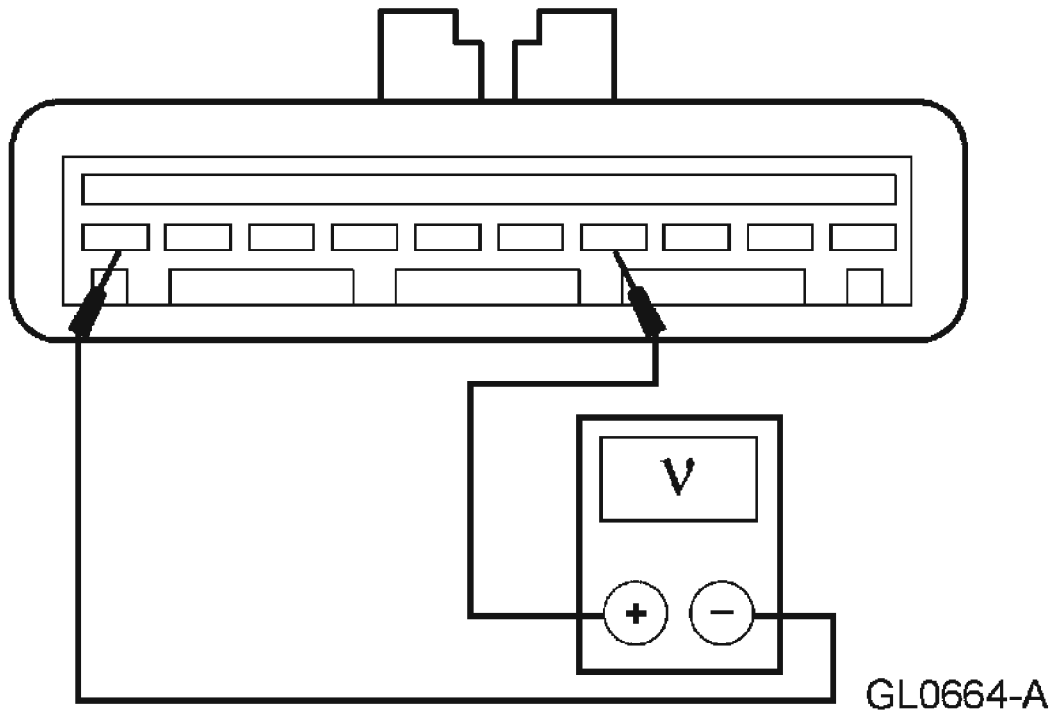


Fig. 3: Checking BPP Switch Input With No Brakes Applied
 Courtesy of FORD MOTOR CO.

- **Is any voltage present?**

Yes : REPAIR circuit 15S-PG17 (GN/BU). TEST the system for normal operation.

No : GO to A6.

A6 CHECK THE DEACTIVATOR SWITCH INPUT TO THE SPEED CONTROL ACTUATOR

- Measure the voltage between the speed control actuator C122 pin 9, circuit 16S-PG16 (GN/YE), harness side and the speed control actuator C122 pin 10, circuit 91-PG12 (BK/WH), harness side.

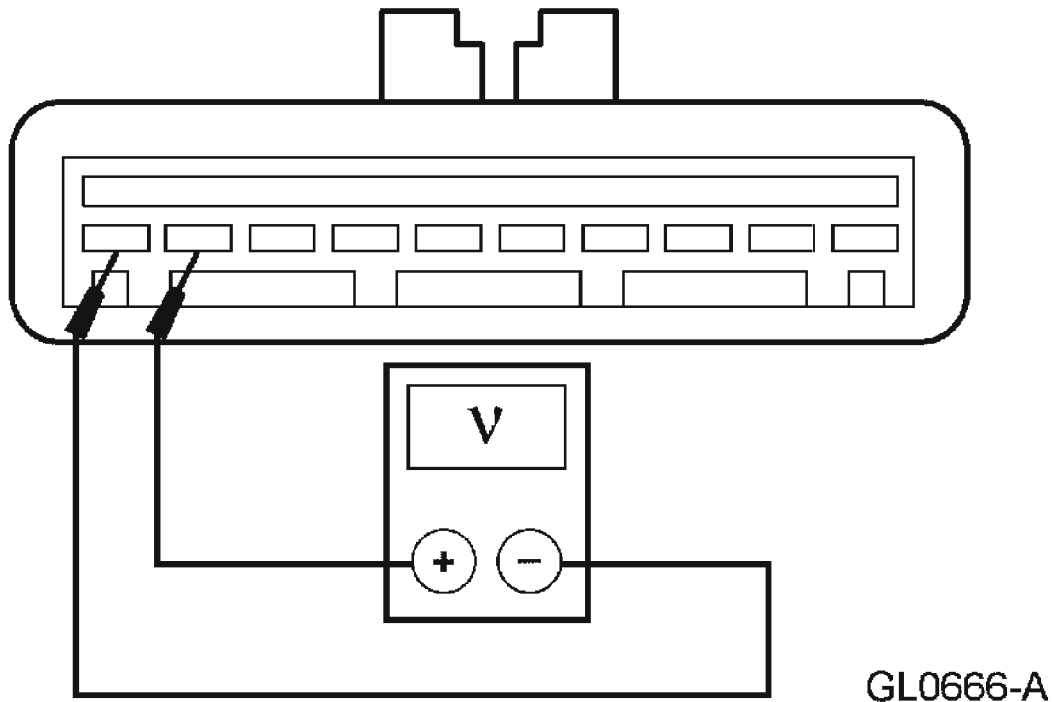


Fig. 4: Checking Deactivator Switch Input To Speed Control Actuator
Courtesy of FORD MOTOR CO.

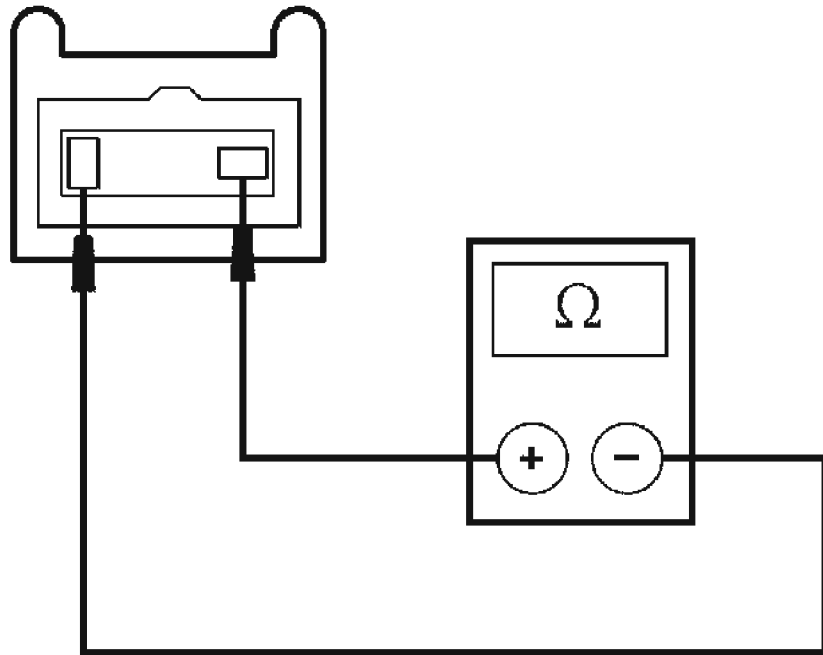
- **Is the voltage greater than 10 volts?**

Yes : GO to A9.

No : GO to A7.

A7 CHECK THE DEACTIVATOR SWITCH

- Disconnect: Deactivator Switch C278.
- Measure the resistance between the deactivator switch C278 pin 1, component side and the deactivator switch C278 pin 2, component side with the brake pedal applied and released.



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Fig. 5: Checking Deactivator Switch
Courtesy of FORD MOTOR CO.

- Is the resistance less than 5 ohms with the brake pedal released and greater than 10,000 ohms with the brake pedal applied?

Yes : GO to A8.

No : INSTALL a new deactivator switch. REFER to **SPEED CONTROL DEACTIVATOR SWITCH**. TEST the system for normal operation.

A8 CHECK THE DEACTIVATOR SWITCH POWER

- Key in ON position.
- Measure the voltage between the deactivator switch C278 pin 2, circuit 15-PG6 (GN/YE), harness side and ground.

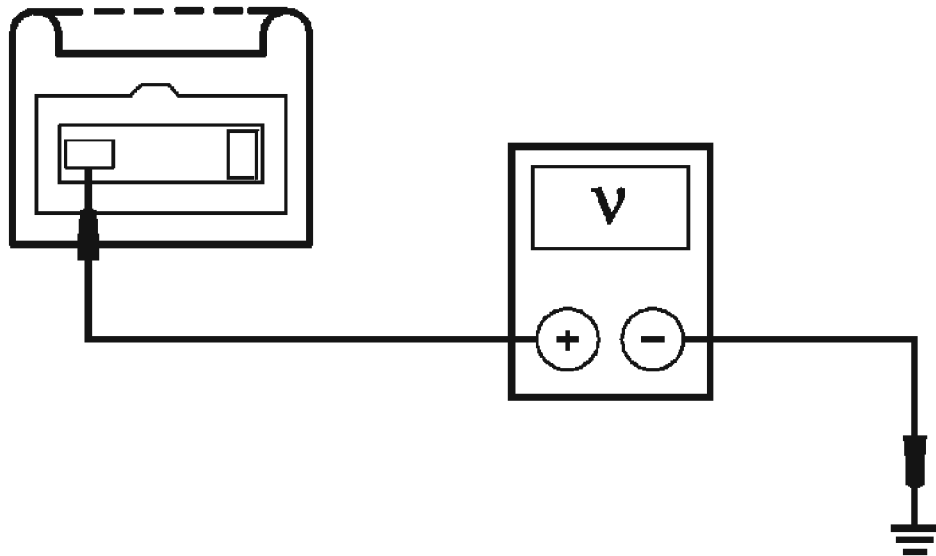
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Fig. 6: Measuring Voltage Between Deactivator Switch C278 Pin 2, Circuit 15-PG6 (GN/YE), Harness Side And Ground
Courtesy of FORD MOTOR CO.

- **Is the voltage greater than 10 volts?**

Yes : REPAIR circuit 15S-PG16 (GN/YE). TEST the system for normal operation.

No : REPAIR circuit 15-PG6 (GN/YE). TEST the system for normal operation.

A9 CHECK CIRCUIT 8-PG13 (WH) FOR A SHORT TO POWER

- Measure the voltage between the speed control actuator C122 pin 5, circuit 8-PG13 (WH), harness side and the speed control actuator C122 pin 10, circuit 91-PG12 (BK/WH), harness side.

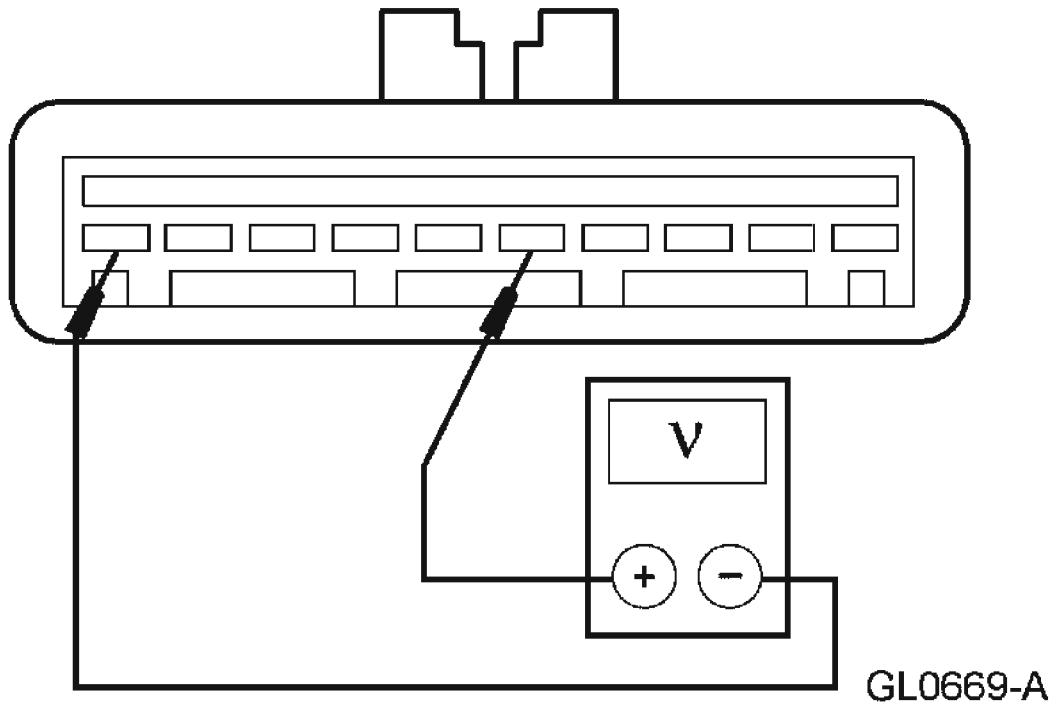


Fig. 7: Checking Circuit 8-PG13 (WH) For A Short To Power
 Courtesy of FORD MOTOR CO.

- **Is any voltage present?**

Yes : GO to A15.

No : GO to A10.

A10 CHECK THE SPEED CONTROL ON SWITCH OPERATION

- Measure the voltage between the speed control actuator C122 pin 5, circuit 8-PG13 (WH), harness side and the speed control actuator C122 pin 10, circuit 91-PG12 (BK/WH), harness side while pressing the speed control ON switch.

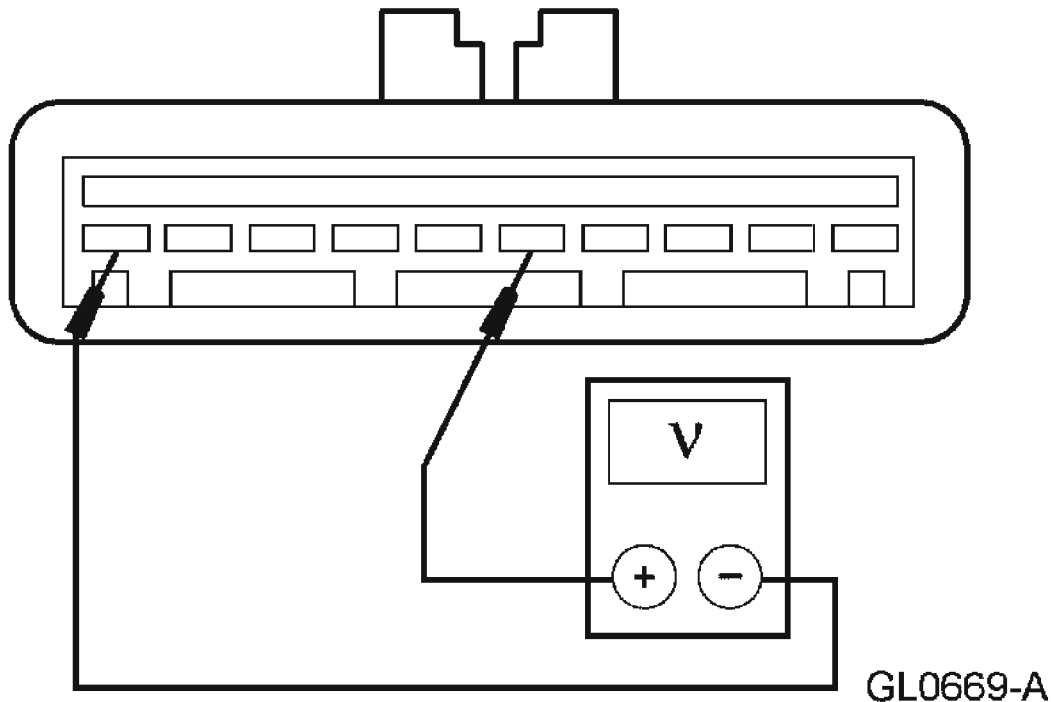


Fig. 8: Checking Speed Control On Switch Operation
Courtesy of FORD MOTOR CO.

- **Is the voltage greater than 10 volts?**

Yes : GO to A13.

No : GO to A11.

A11 CHECK CIRCUIT 8-PG13 (WH) FOR AN OPEN

- Disconnect: Clockspring C2274.
- Measure the resistance between the clockspring C2274 pin 4, circuit 9-PG13 (BN), harness side and the speed control actuator C122 pin 5, circuit 8-PG13 (WH), harness side.

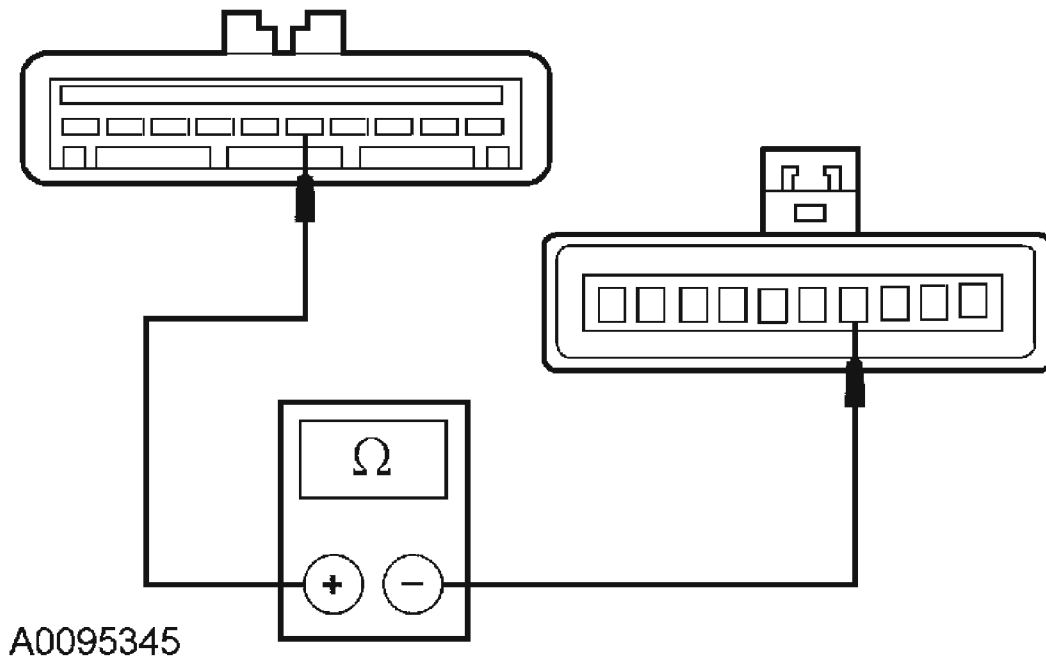


Fig. 9: Checking Circuit 8-PG13 (WH) For An Open
Courtesy of FORD MOTOR CO.

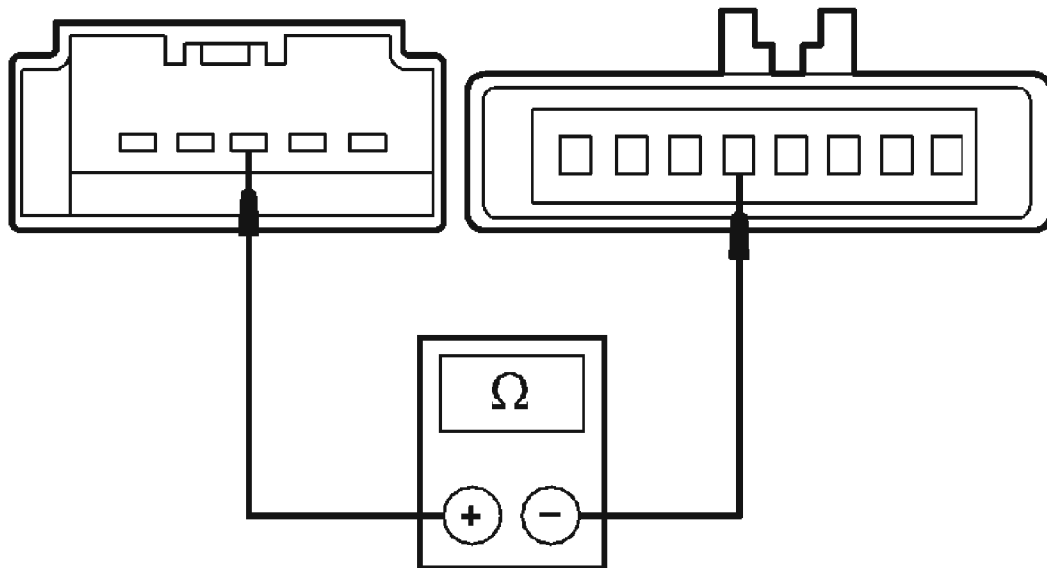
- **Is the resistance less than 5 ohms?**

Yes : GO to A12.

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

A12 CHECK THE CLOCKSPEED FOR AN OPEN

- Remove the driver air bag. Refer to SUPPLEMENTAL RESTRAINT SYSTEM .
- Measure the resistance between the upper clockspring pin 3, component side and the clockspring C2274 pin 4, component side.



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Fig. 10: Measuring Resistance Between Upper Clockspring Pin 3, Component Side And Clockspring C2274 Pin 4, Component Side
Courtesy of FORD MOTOR CO.

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

Yes : INSTALL a new speed control switch. REFER to **SPEED CONTROL SWITCH**. INSTALL the driver air bag. REFER to **SUPPLEMENTAL RESTRAINT SYSTEM** . TEST the system for normal operation.

No : INSTALL a new clockspring. REFER to **SUPPLEMENTAL RESTRAINT SYSTEM** . INSTALL the driver air bag. REFER to **SUPPLEMENTAL RESTRAINT SYSTEM** . TEST the system for normal operation.

A13 CHECK THE SET/ACCEL SWITCH

- Measure the resistance between the speed control actuator C122 pin 5, circuit 8-PG13 (WH), harness side and the speed control actuator C122 pin 6, circuit 9-PG13 (BN), harness side while pressing the speed control SET/ACC switch.

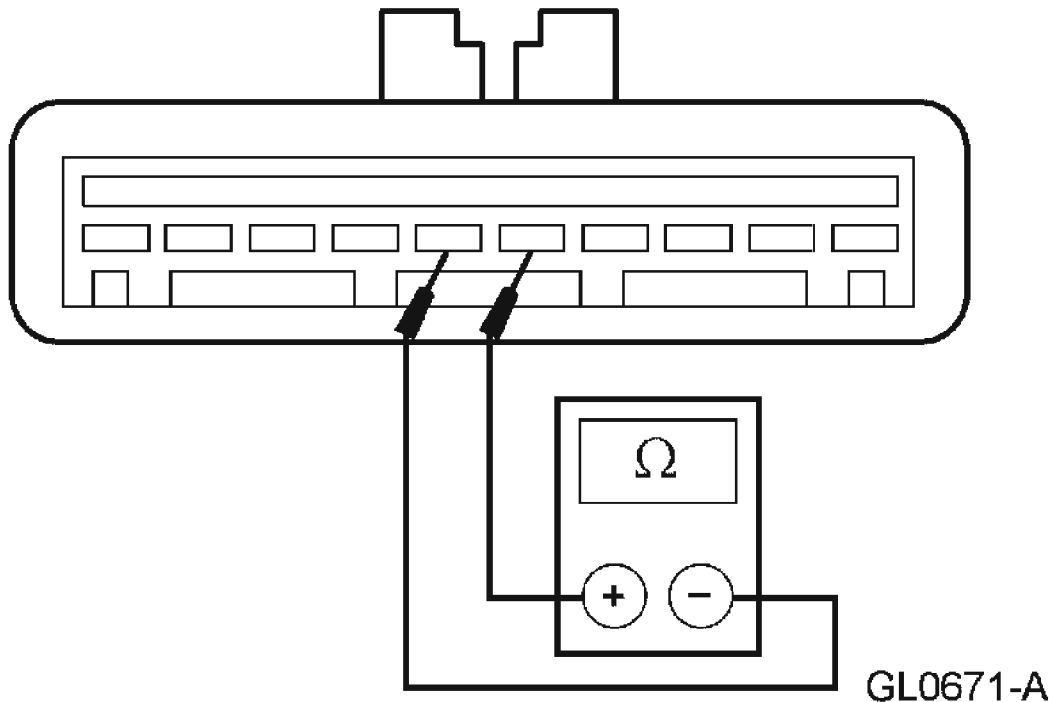


Fig. 11: Checking Set/Accel Switch
Courtesy of FORD MOTOR CO.

- Is the resistance between 612 and 748 ohms?

Yes : GO to A14.

No : INSTALL a new speed control switch. REFER to **SPEED CONTROL SWITCH**. TEST the system for normal operation.

A14 CHECK CIRCUIT 8-PG18 (WH/BU) FOR AN OPEN

- Disconnect: PCM C175b.
- Disconnect: Speed Control Actuator C122.
- Measure the resistance between the PCM C175b pin 1, circuit 8-RE22 (WH/VT), harness side and the speed control actuator C122 pin 3, circuit 8-PG18 (WH/BU), harness side.

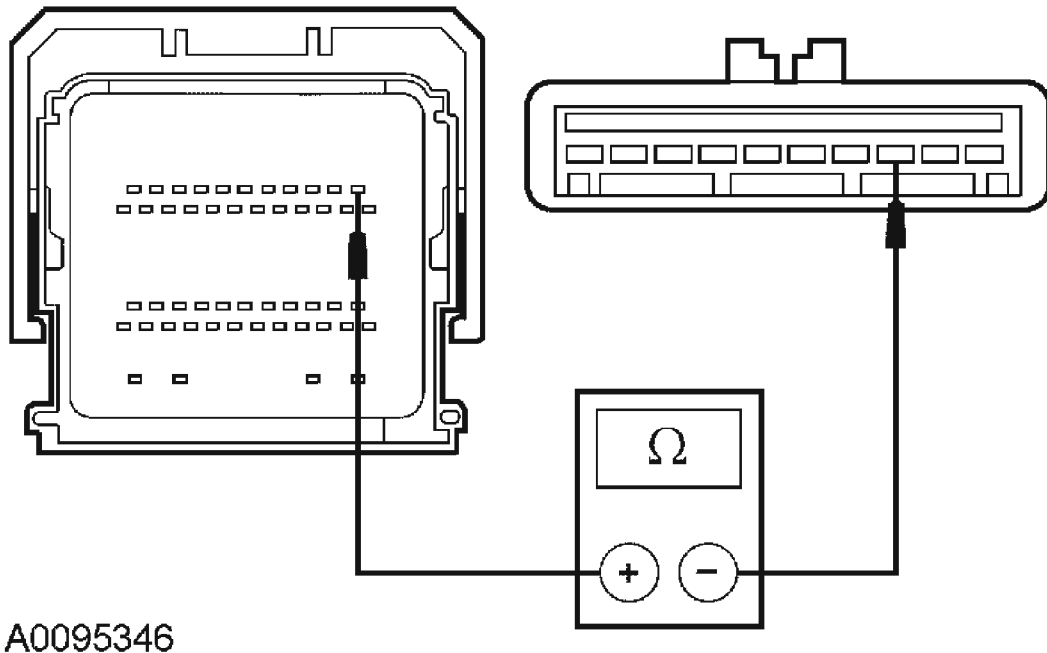


Fig. 12: Checking Circuit 8-PG18 (WH/BU) For An Open
Courtesy of FORD MOTOR CO.

- Is the resistance less than 5 ohms?

Yes : GO to A17.

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

A15 CHECK THE SPEED CONTROL SWITCH

- Key in OFF position.
- Remove the driver air bag. Refer to **SUPPLEMENTAL RESTRAINT SYSTEM** .
- Connect: Restraint System Diagnostic Tool 418-F088 (105-R0012) or equivalent.
- Connect the battery. Refer to **BATTERY, MOUNTING AND CABLES** .
- Disconnect: Speed Control Switches.
- Key in ON position.
- Measure the voltage between the speed control actuator C122 pin 5, circuit 8-PG13 (WH), harness side and the speed control actuator C122 pin 10, circuit 91-PG12 (BK/WH), harness side.

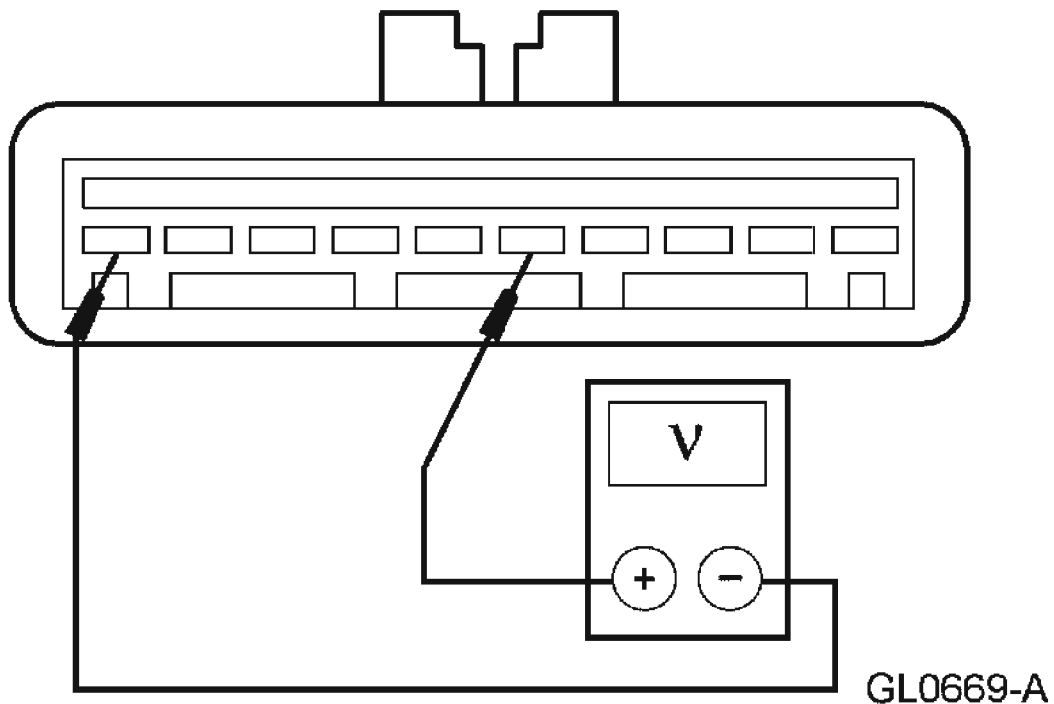


Fig. 13: Checking Speed Control Switch
Courtesy of FORD MOTOR CO.

- **Is any voltage present?**

Yes : GO to A16.

No : INSTALL a new speed control switch. REFER to **SPEED CONTROL SWITCH**. DISCONNECT the battery. REFER to **BATTERY, MOUNTING AND CABLES** . INSTALL the driver air bag. REFER to **SUPPLEMENTAL RESTRAINT SYSTEM** . TEST the system for normal operation.

A16 CHECK CIRCUIT 8-PG13 (WH) FOR A SHORT TO POWER

- Key in OFF position.
- Disconnect: Clockspring C2274.
- Key in ON position.
- Measure the voltage between the speed control actuator C122 pin 5, circuit 8-PG13 (WH), harness side and the speed control actuator C122 pin 10, circuit 91-PG12 (BK/WH), harness side.

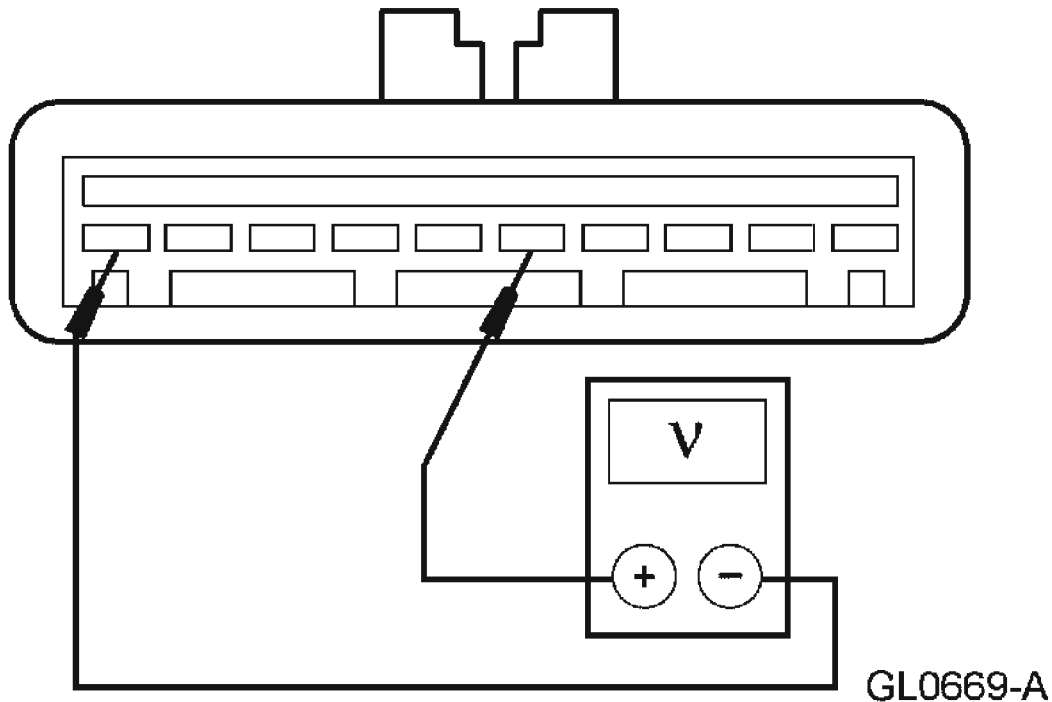


Fig. 14: Checking Circuit 8-PG13 (WH) For A Short To Power
 Courtesy of FORD MOTOR CO.

- **Is any voltage present?**

Yes : REPAIR circuit 8-PG13 (WH). DISCONNECT the battery. REFER to **BATTERY, MOUNTING AND CABLES** . INSTALL the driver air bag. REFER to **SUPPLEMENTAL RESTRAINT SYSTEM** . TEST the system for normal operation.

No : INSTALL a new clockspring. REFER to **SUPPLEMENTAL RESTRAINT SYSTEM** . DISCONNECT the battery. REFER to **BATTERY, MOUNTING AND CABLES** . INSTALL the driver air bag. REFER to **SUPPLEMENTAL RESTRAINT SYSTEM** . TEST the system for normal operation.

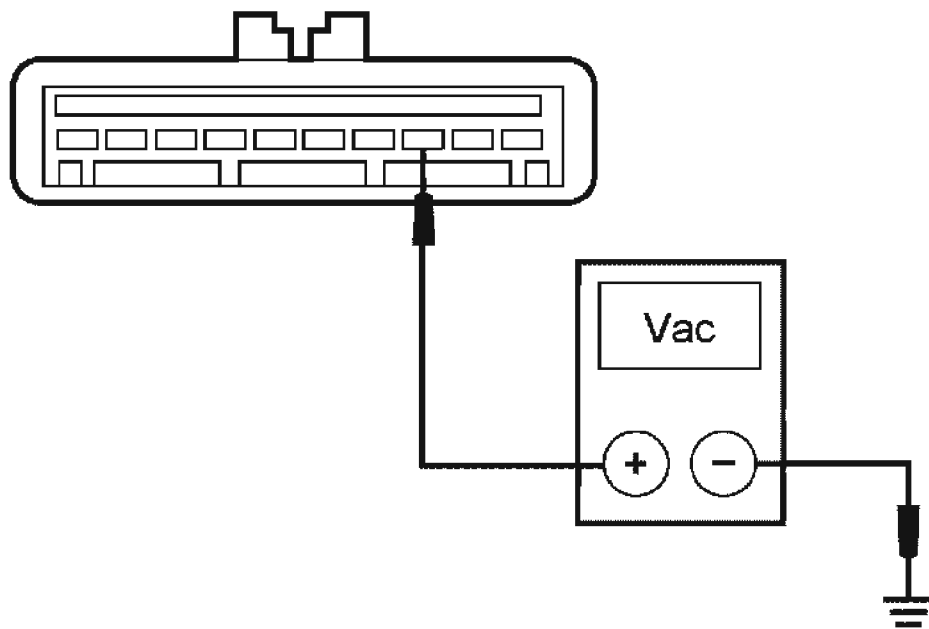
A17 CHECK THE SPEED SIGNAL TO THE SPEED CONTROL ACTUATOR

CAUTION: Make sure the vehicle is secured correctly before attempting to place the transmission range selector lever in DRIVE or in first gear if equipped with a manual transmission.

- Connect: PCM C175b.
- Raise and support the vehicle until the wheels can be spun freely. Refer to **JACKING AND LIFTING** .

NOTE: For vehicles with a manual transmission, place the transmission in 1st gear.

- Start the vehicle, place the transmission in DRIVE and, with the engine at idle, allow the drive wheels to spin.
- Measure and record the AC voltage between the speed control actuator C122 pin 3, circuit 8-PG18 (WH/BU), harness side and ground.



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Fig. 15: Measuring AC Voltage Between Speed Control Actuator C122 Pin 3, Circuit 8-PG18 (WH/BU), Harness Side And Ground
Courtesy of FORD MOTOR CO.

- Apply the brakes until the drive wheels come to a stop. Place the transmission in PARK and turn the engine off.
- **Is the recorded AC voltage between 5 and 8 volts?**
Yes : INSTALL a new speed control actuator. REFER to **SPEED CONTROL ACTUATOR**. TEST the system for normal operation.
No : See **INTRODUCTION - GASOLINE** article for PCM concern.

PINPOINT TEST B: THE SET SPEED FLUCTUATES

B1 CHECK THE SPEED CONTROL CABLE/THROTTLE BODY LINKAGE

- Key in OFF position.

NOTE: It is normal for the engine RPM to increase slightly and then drop off slowly when the clutch pedal is applied during operation.

Remove the speed control cable from the speed control actuator. Visually inspect the core wire and check the speed control cable by pulling on the cable and noting the throttle movement.

- **Is the speed control cable OK?**

Yes : GO to B2.

No : INSTALL a new speed control cable or REPAIR the throttle body linkage. For speed control cable installation, REFER to **TO SPEED CONTROL CABLE**. To repair the throttle linkage, REFER to **ACCELERATION CONTROL**. TEST the system for normal operation.

B2 CHECK THE SPEEDOMETER

- Check the speedometer for correct operation by driving the vehicle.
- **Does the speedometer fluctuate?**

Yes : REFER to **INSTRUMENT CLUSTER** to continue diagnosis of the speedometer.

No : INSTALL a new speed control actuator. REFER to **SPEED CONTROL ACTUATOR**. TEST the system for normal operation.

PINPOINT TEST C: THE SPEED CONTROL DOES NOT DISENGAGE WHEN THE BRAKES ARE APPLIED

C1 CHECK THE BPP SWITCH OPERATION

- Disconnect: Speed Control Actuator C122. Measure the voltage between the speed control actuator C122 pin 4, circuit 15S-PG17 (GN/BU), harness side and the speed control actuator C122 pin 10, circuit 91-PG12 (BK/WH), harness side while applying and releasing the brake pedal.

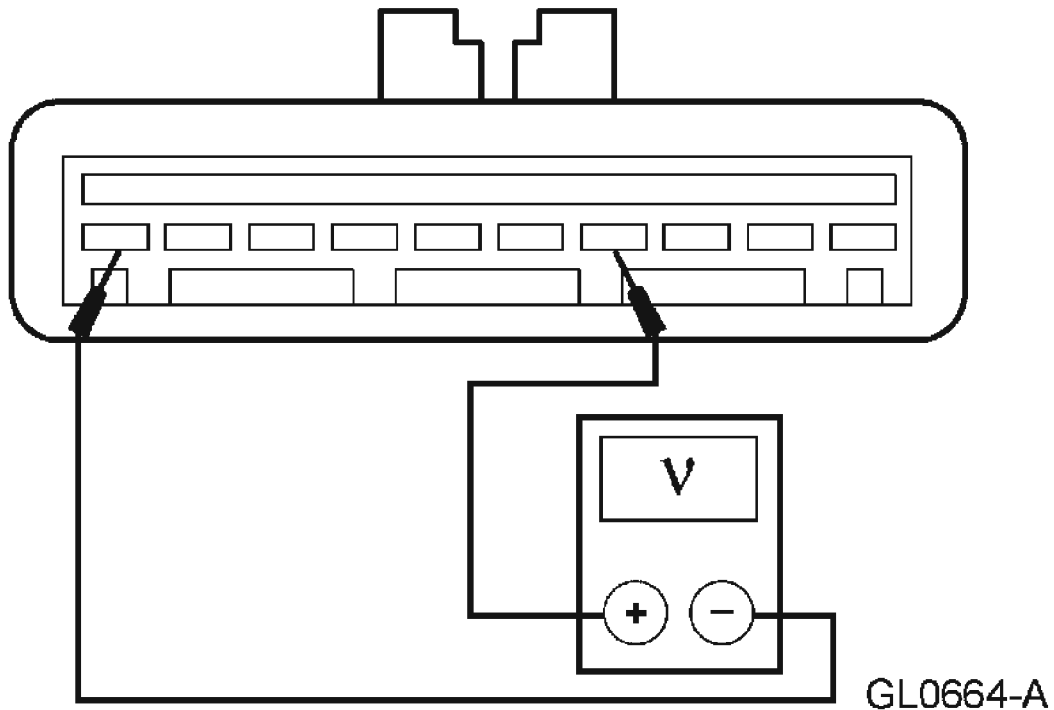


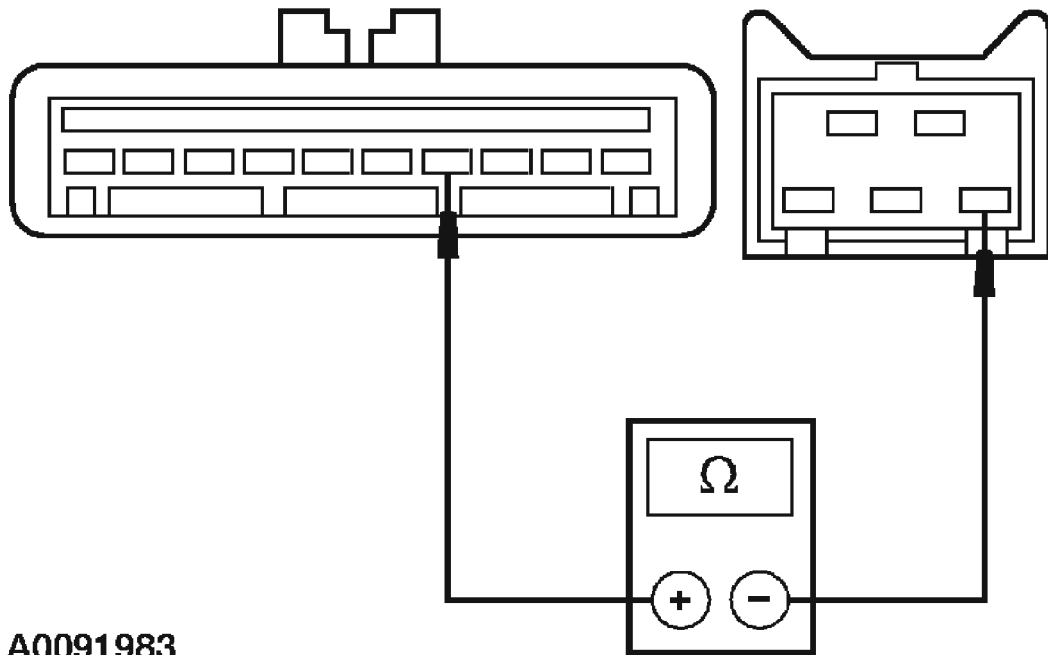
Fig. 16: Checking BPP Switch Operation
Courtesy of FORD MOTOR CO.

- Is the voltage greater than 10 volts with the brake pedal applied and 0 volts with the pedal released?
Yes : INSTALL a new speed control actuator. REFER to **SPEED CONTROL ACTUATOR**. TEST the system for normal operation.
No : REPAIR circuit 15S-PG17 (GN/BU). TEST the system for normal operation.

PINPOINT TEST D: THE SPEED CONTROL DOES NOT DISENGAGE WHEN THE CLUTCH IS APPLIED

D1 CHECK CIRCUIT 15S-PG17 (GN/BU) FOR AN OPEN

- Disconnect: Speed Control Actuator C122.
- Disconnect: CPP Switch C257.
- Measure the resistance between the CPP switch C257 pin 1, circuit 15S-PG17 (GN/BU), harness side and the speed control actuator C122 pin 4, circuit 15S-PG17 (GN/BU), harness side.



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Fig. 17: Checking Circuit 15S-PG17 (GN/BU) For An Open
 Courtesy of FORD MOTOR CO.

- Is the resistance less than 5 ohms?

Yes : GO to D2.

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

D2 CHECK CIRCUIT 15S-PG7 (GN/BU) FOR AN OPEN

- Key in ON position.
- Measure the voltage between the CPP switch C257 pin 3, circuit 15S-PG7 (GN/BU), harness side and ground.

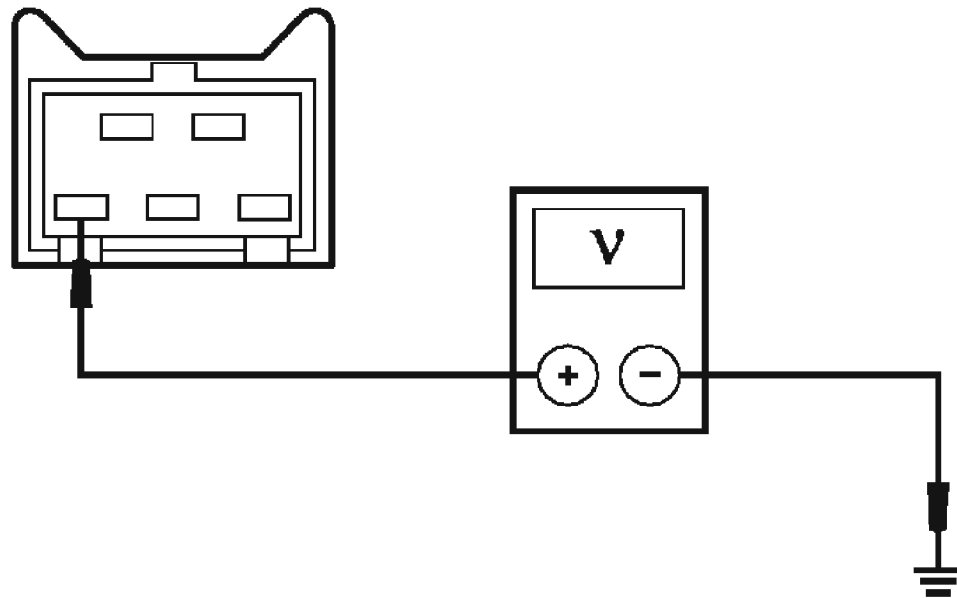
**A0092694**

Fig. 18: Measuring Voltage Between CPP Switch C257 Pin 3, Circuit 15S-PG7 (GN/BU), Harness Side And Ground
Courtesy of FORD MOTOR CO.

- Is the voltage greater than 10 volts?

Yes : GO to D3.

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

D3 CHECK THE CPP SWITCH

- Key in OFF position.

NOTE: It is normal for the engine RPM to increase slightly and then drop off slowly when the clutch pedal is applied during operation.

- Measure the resistance between the CPP switch C257 pin 1, component side and the CPP switch C257 pin 3, component side while applying and releasing the clutch pedal.

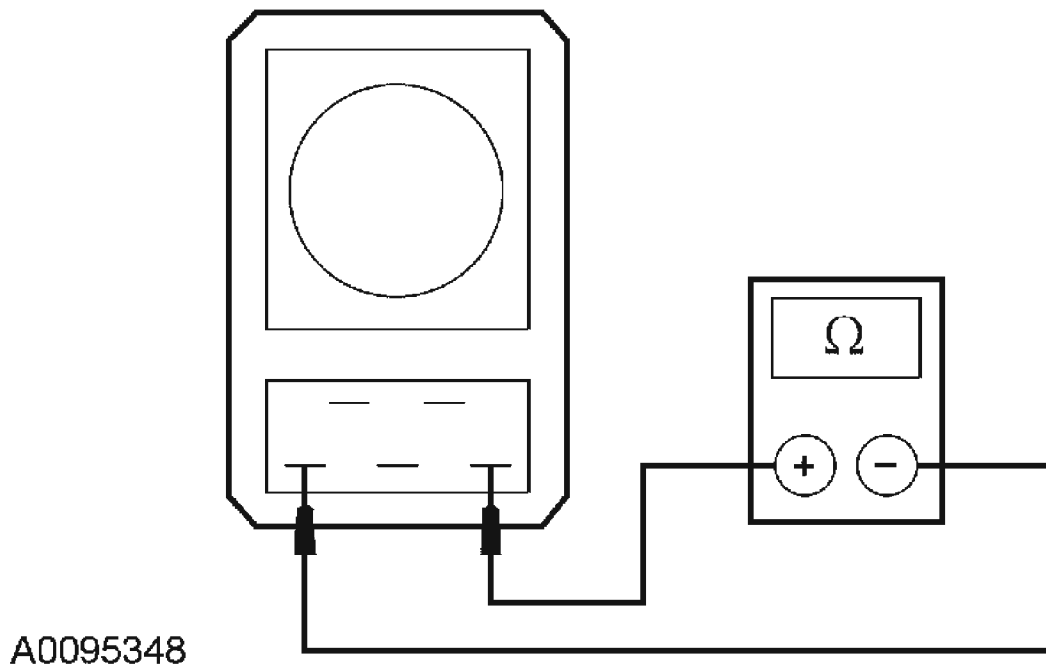


Fig. 19: Checking CPP Switch
 Courtesy of FORD MOTOR CO.

- **Is the resistance less than 5 ohms with the clutch pedal applied and greater than 10,000 ohms with the clutch pedal released?**

Yes : INSTALL a new speed control actuator. REFER to **SPEED CONTROL ACTUATOR**. TEST the system for normal operation.

No : INSTALL a new CPP switch. REFER to **HYDRAULIC BRAKE ACTUATION** . TEST the system for normal operation.

PINPOINT TEST E: THE SPEED CONTROL SWITCH IS INOPERATIVE

E1 CHECK THE SPEED CONTROL SWITCH

- Key in OFF position.
- Disconnect: Speed Control Actuator C122.
- Measure the resistance between the speed control actuator C122 pin 5, circuit 8-PG13 (WH), harness side and the speed control actuator C122 pin 6, circuit 9-PG13 (BN), harness side while pressing the speed control switch as follows:

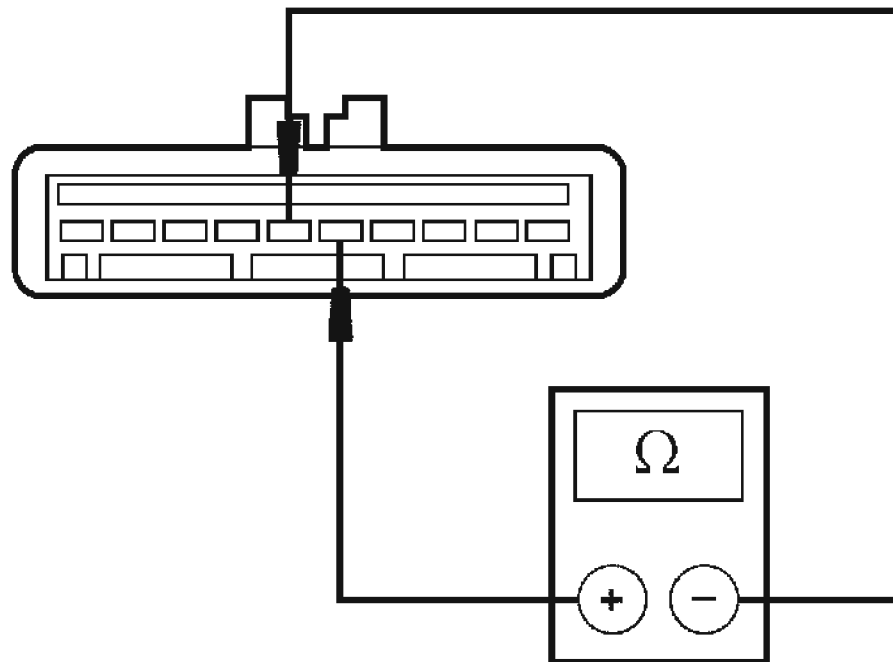
SPEED CONTROL SWITCH RESISTANCE

Speed Control Switch	Resistance Value
COAST	Between 114 and 126 ohms

2005 Ford Focus ZX5 S

2005 ACCESSORIES & BODY, CAB Speed Control - Focus

SET/ACC	Between 612 and 748 ohms
RES	Between 2,090 and 2,310 ohms
OFF	Less than 5 ohms



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Fig. 20: Checking Speed Control Switch
Courtesy of FORD MOTOR CO.

- **Are the speed control switch resistance values OK?**

Yes : INSTALL a new speed control actuator. REFER to **SPEED CONTROL ACTUATOR**. TEST the system for normal operation.

No : INSTALL a new speed control switch. REFER to **SPEED CONTROL SWITCH**. TEST the system for normal operation.

PINPOINT TEST F: THE SPEED CONTROL IS INOPERATIVE-FLASH WITH LAST SWITCH PRESSED, BUT NO DYNAMIC PULL OCCURS AT THE THROTTLE

F1 CHECK THE SPEED CONTROL CABLE

- Check the speed control cable for correct attachment at the speed control actuator and throttle body.

- **Is the speed control cable attached correctly?**

Yes : GO to F2.

No : CONNECT the speed control cable. TEST the system for normal operation.

F2 CHECK FOR A STICKING OR BINDING SPEED CONTROL CABLE

- Check the speed control cable for sticking or binding.

- **Is the speed control cable OK?**

Yes : INSTALL a new speed control actuator. REFER to **SPEED CONTROL ACTUATOR**. TEST the system for normal operation.

No : REPAIR or INSTALL a new speed control cable. REFER to **TO SPEED CONTROL CABLE**. TEST the system for normal operation.

PINPOINT TEST G: FLASH CODE 2- BRAKE PEDAL POSITION (BPP) CIRCUIT FAILURE

G1 CHECK THE BPP SWITCH OPERATION

- Apply and release the brake pedal while observing the stoplamps.

- **Do the stoplamps operate correctly?**

Yes : GO to G2.

No : REFER to **EXTERIOR LIGHTING** to continue diagnosis of the stoplamps.

G2 CHECK CIRCUIT 15S-PG17 (GN/BU)

- Key in OFF position.
- Disconnect: Speed Control Actuator C122.
- Key in ON position.
- Measure the voltage between the speed control actuator C122 pin 4, circuit 15S-PG17 (GN/BU), harness side and the speed control actuator C122 pin 10, circuit 91-PG12 (BK/WH), harness side while applying the brake pedal.

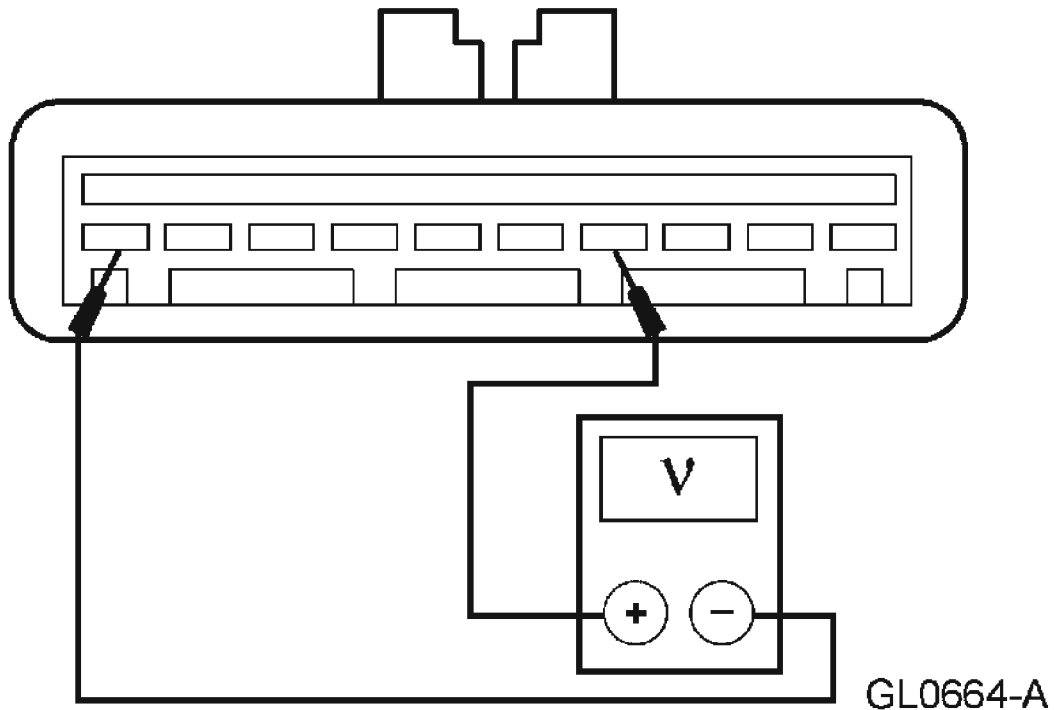


Fig. 21: Checking Circuit 15S-PG17 (GN/BU)
Courtesy of FORD MOTOR CO.

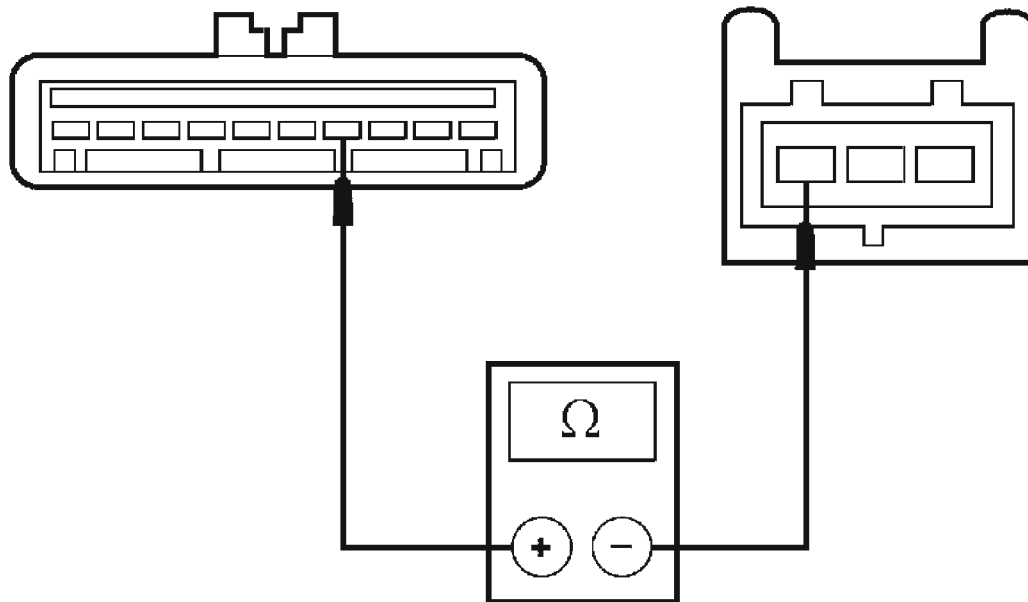
- Is the voltage greater than 10 volts?

Yes : INSTALL a new speed control actuator. REFER to **SPEED CONTROL ACTUATOR**. TEST the system for normal operation.

No : GO to G3.

G3 CHECK CIRCUIT 15S-PG17 (GN/BU) FOR AN OPEN

- Key in OFF position.
- Disconnect: BPP C1225.
- Measure the resistance between the speed control actuator C122 pin 4, circuit 15S-PG17 (GN/BU), harness side and the BPP C2314 pin 1, circuit 15S-LG14B (GN/RD), harness side.



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Fig. 22: Checking Circuit 15S-PG17 (GN/BU) For An Open
Courtesy of FORD MOTOR CO.

- Is the resistance less than 5 ohms?

Yes :

The system is operating normally at this time. TEST the system for normal operation.

No :

On vehicles equipped with an automatic transmission, REPAIR circuit 15S-PG17 (GN/BU). TEST the system for normal operation.

On vehicles equipped with a manual transmission, GO to **G4**

G4 CHECK THE CLUTCH PEDAL POSITION (CPP) SWITCH FOR AN OPEN

- Key in OFF position.
- Disconnect: CPP Switch C257.
- Measure the resistance between the CPP switch C257 pin 1, component side and the CPP switch C257 pin 3, component side with the clutch pedal applied and then released.

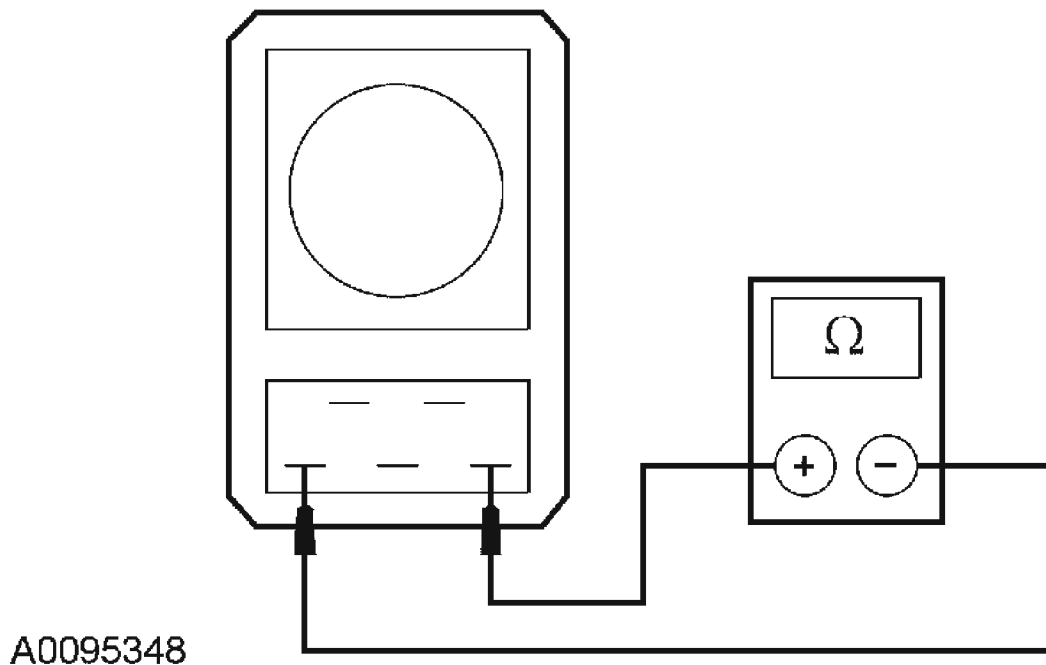


Fig. 23: Checking Clutch Pedal Position (CPP) Switch For An Open
Courtesy of FORD MOTOR CO.

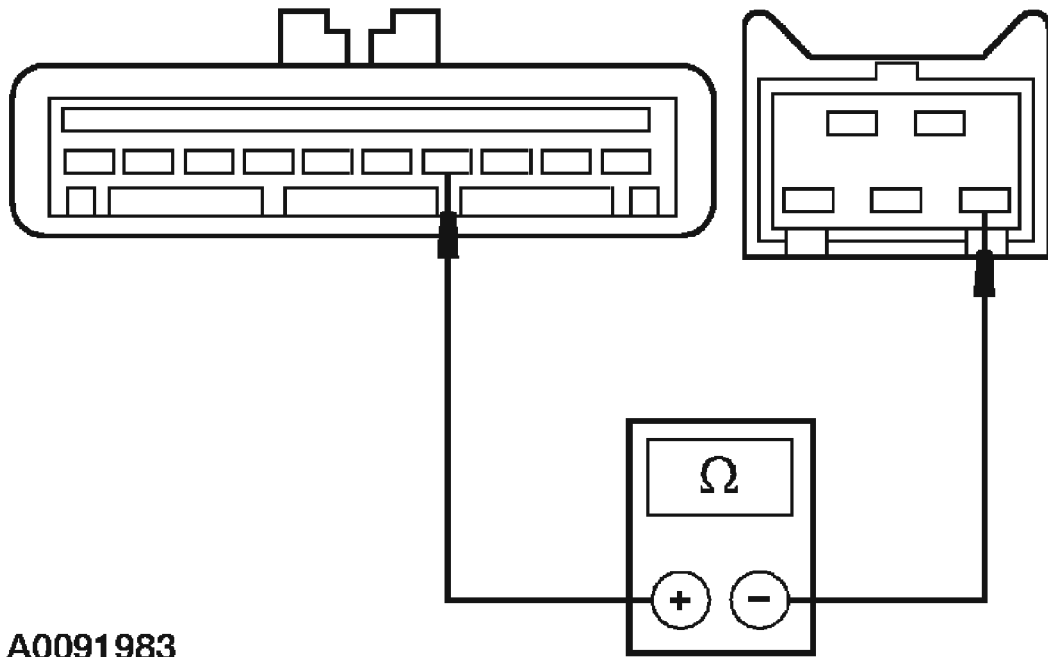
- Is the resistance less than 5 ohms with the clutch pedal applied; and greater than 10,000 ohms with the clutch pedal released?

Yes : GO to G5.

No : INSTALL a new CPP switch. REFER to **HYDRAULIC BRAKE ACTUATION** . TEST the system for normal operation.

G5 CHECK CIRCUIT 15S-PG17 (GN/BU) FOR AN OPEN BETWEEN THE SPEED CONTROL ACTUATOR AND THE CPP SWITCH

- Measure the resistance between the speed control actuator C122 pin 4, circuit 15S-PG17 (GN/BU), harness side and the CPP switch C257 pin 1, circuit 15S-PG17 (GN/BU), harness side.



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Fig. 24: Checking Circuit 15S-PG17 (GN/BU) For An Open Between Speed Control Actuator And CPP Switch
Courtesy of FORD MOTOR CO.

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

Yes : REPAIR circuit 15S-PG7 (GN/BU). TEST the system for normal operation.

No : REPAIR circuit 15S-PG17 (GN/BU). TEST the system for normal operation.

PINPOINT TEST H: FLASH CODE 3-SPEED CONTROL DEACTIVATOR SWITCH CIRCUIT FAILURE

H1 CHECK THE SPEED CONTROL DEACTIVATOR SWITCH CIRCUITRY

- Key in OFF position.
- Disconnect: Speed Control Actuator C122.
- Key in ON position.
- Measure the voltage between the speed control actuator C122 pin 9, circuit 15S-PG16 (GN/YE), harness side and the speed control actuator C122 pin 10, circuit 91-PG12 (BK/WH), harness side.

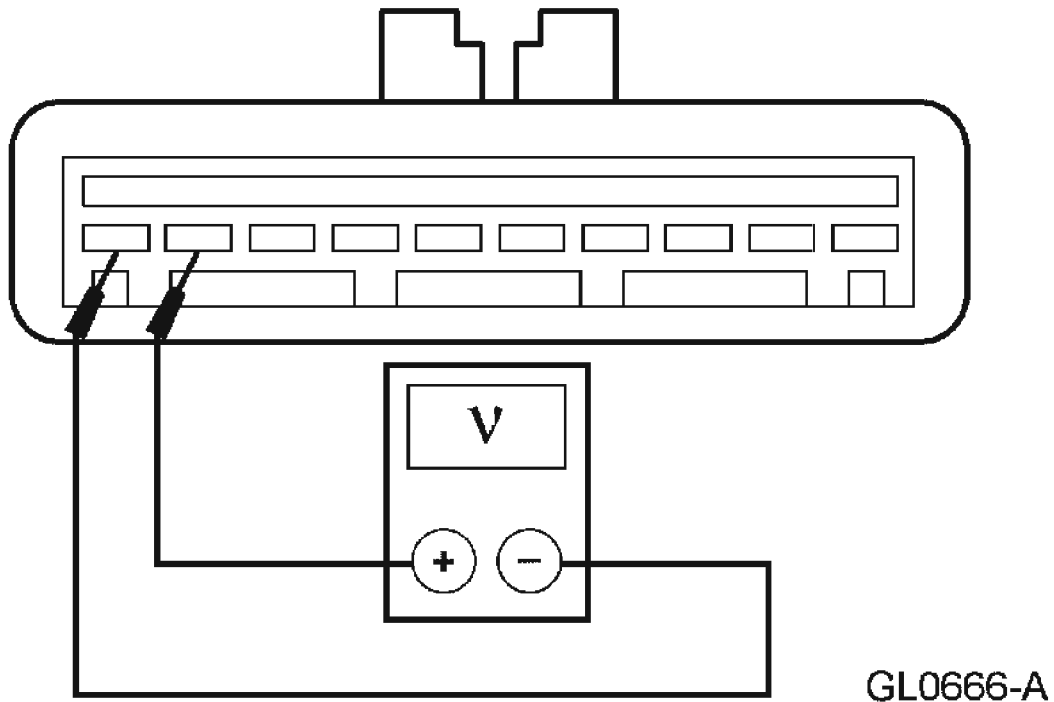


Fig. 25: Checking Speed Control Deactivator Switch Circuitry
Courtesy of FORD MOTOR CO.

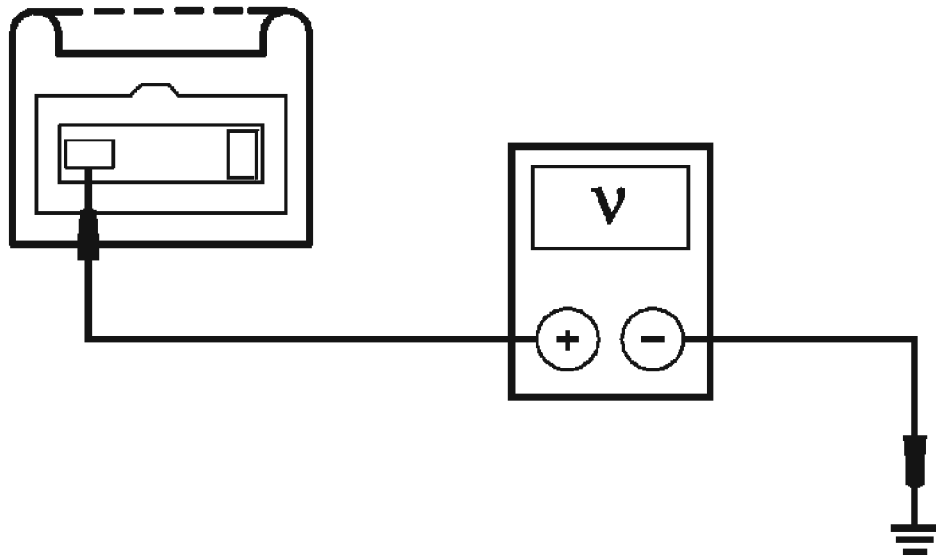
- **Is the voltage greater than 10 volts?**

Yes : INSTALL a new speed control actuator. REFER to **SPEED CONTROL ACTUATOR**. TEST the system for normal operation.

No : GO to H2.

H2 CHECK THE SPEED CONTROL DEACTIVATOR SWITCH POWER

- Key in OFF position.
- Disconnect: Speed Control Deactivator Switch C278.
- Key in ON position.
- Measure the voltage between the speed control deactivator switch C278 pin 2, circuit 15-PG6 (GN/YE), harness side and ground.



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Fig. 26: Measuring Voltage Between Speed Control Deactivator Switch C278 Pin 2, Circuit 15-PG6 (GN/YE), Harness Side And Ground
 Courtesy of FORD MOTOR CO.

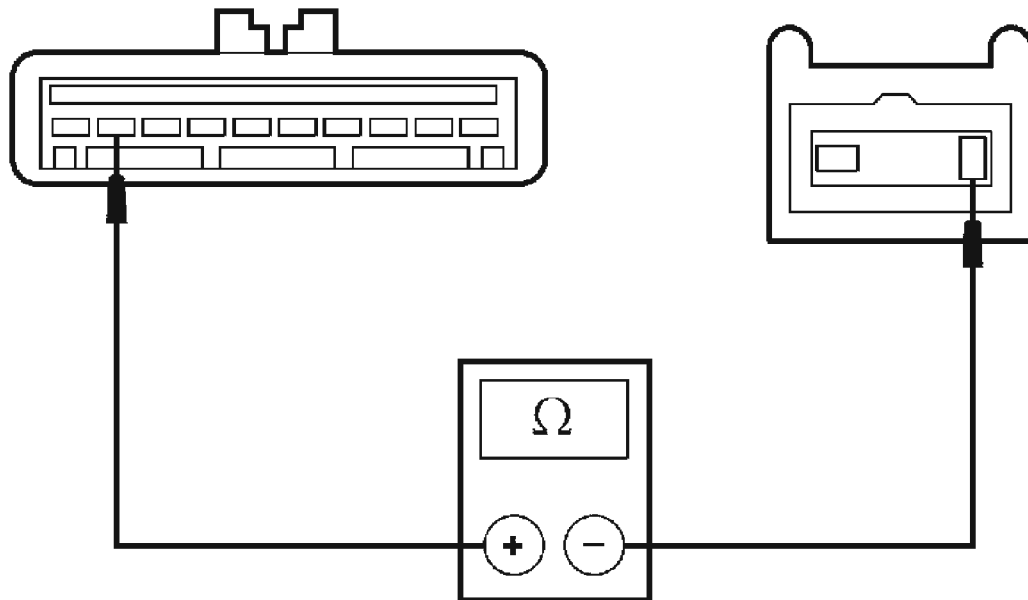
- Is the voltage greater than 10 volts?

Yes : GO to H3.

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

H3 CHECK CIRCUIT 15S-PG16 (GN/YE) FOR AN OPEN

- Key in OFF position.
- Measure the resistance between the speed control actuator C122 pin 9, circuit 15S-PG16 (GN/YE), harness side and the speed control deactivator switch C278 pin 1, circuit 15S-PG16 (GN/YE), harness side.



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Fig. 27: Checking Circuit 15S-PG16 (GN/YE) For An Open
Courtesy of FORD MOTOR CO.

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

Yes : INSTALL a new speed control deactivator switch. REFER to **SPEED CONTROL DEACTIVATOR SWITCH**. TEST the system for normal operation.

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

PINPOINT TEST I: FLASH CODE 4-VEHICLE SPEED SENSOR (VSS) CIRCUIT FAILURE

I1 CHECK THE SPEEDOMETER OPERATION

- Check the speedometer for correct operation by driving the vehicle.
- **Does the speedometer operate correctly?**

Yes : GO to I2.

No : REFER to **INSTRUMENT CLUSTER** to continue diagnosis of the speedometer.

I2 CHECK THE VSS CIRCUIT FOR AN OPEN

- Key in OFF position.
- Disconnect: Speed Control Actuator C122.
- Disconnect: Powertrain Control Module (PCM) C175b.
- Measure the resistance between the speed control actuator C122 pin 3, circuit 8-

PG18 (WH/BU), harness side and the PCM C175b pin 1, circuit 8-RE22 (WH/VT), harness side.

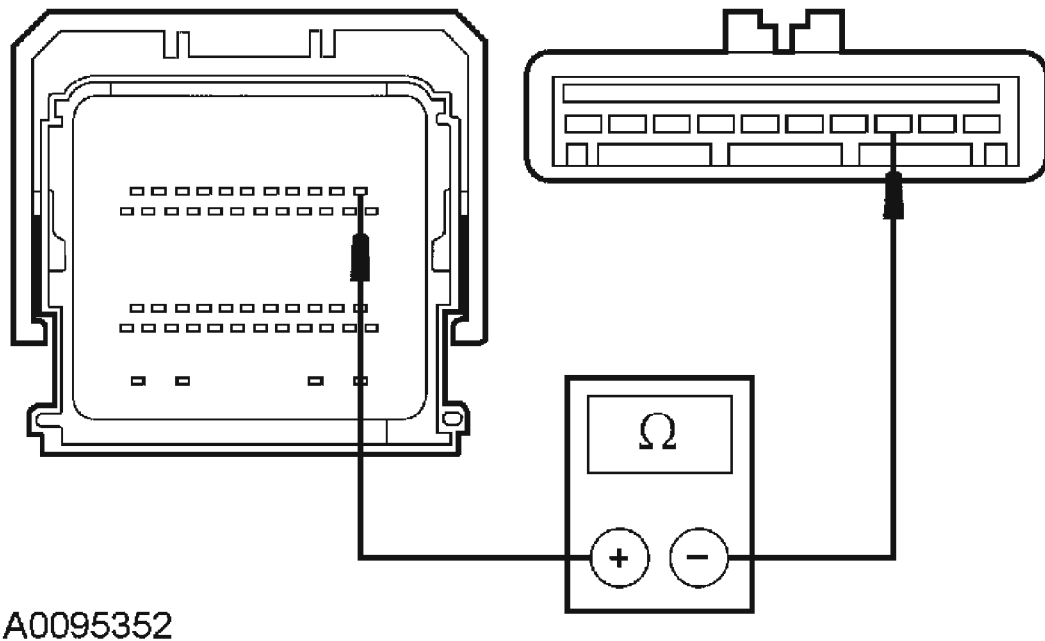


Fig. 28: Checking VSS Circuit For An Open
Courtesy of FORD MOTOR CO.

- Is the resistance less than 5 ohms?

Yes : GO to I3.

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

I3 CHECK THE VSS CIRCUIT FOR A SHORT TO GROUND

- Measure the resistance between the speed control actuator C122 pin 3, circuit 8-PG18 (WH/BU), harness side and ground.

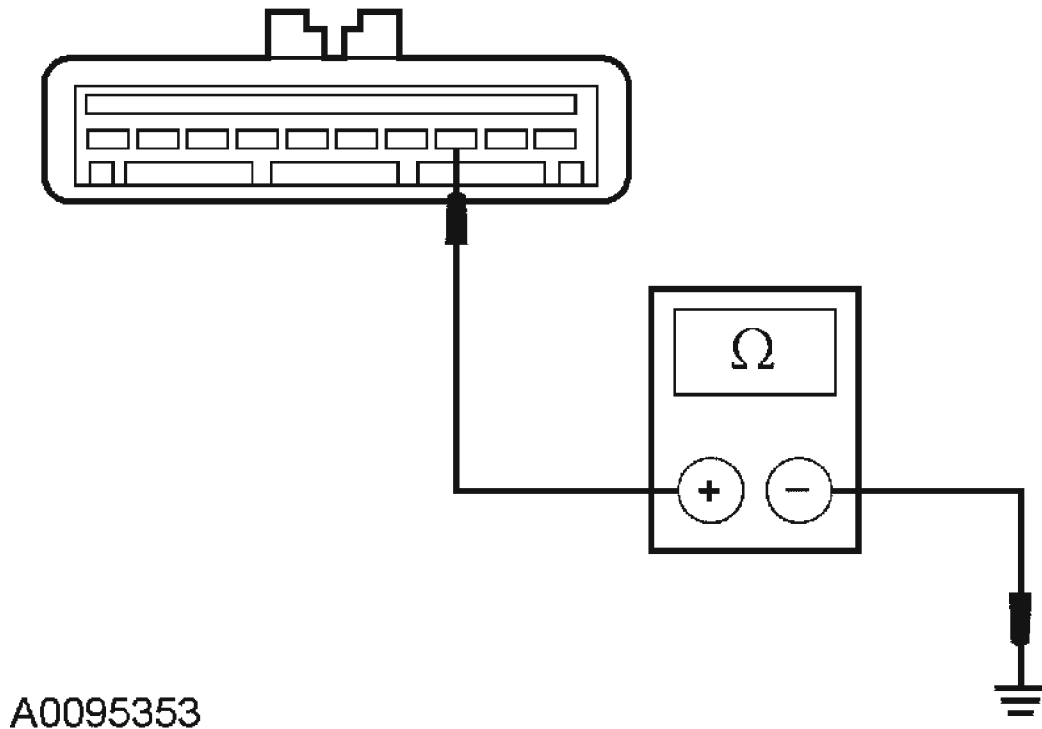


Fig. 29: Measuring Resistance Between Speed Control Actuator C122 Pin 3, Circuit 8-PG18 (WH/BU), Harness Side And Ground
Courtesy of FORD MOTOR CO.

- **Is the resistance greater than 10,000 ohms?**
Yes : INSTALL a new speed control actuator. REFER to **SPEED CONTROL ACTUATOR**. TEST the system for normal operation.
No : REPAIR the circuit. TEST the system for normal operation.

GENERAL PROCEDURES

SPEED CONTROL DEACTIVATOR SWITCH ADJUSTMENT

NOTE: Brake pedal position (BPP) switch and clutch pedal position (CPP) switch removed for clarity.

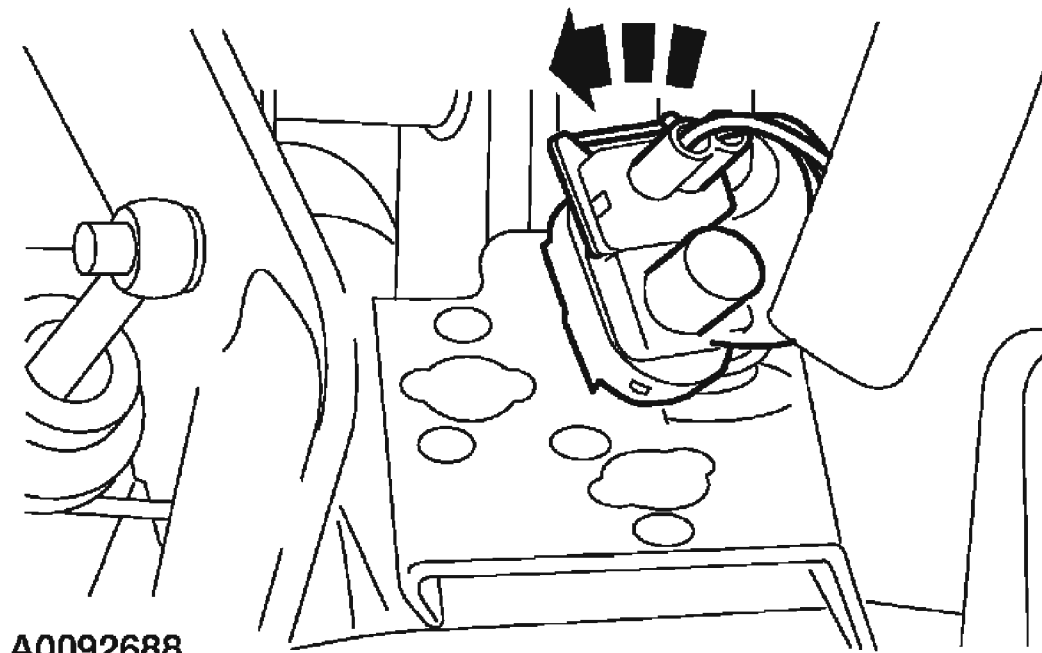
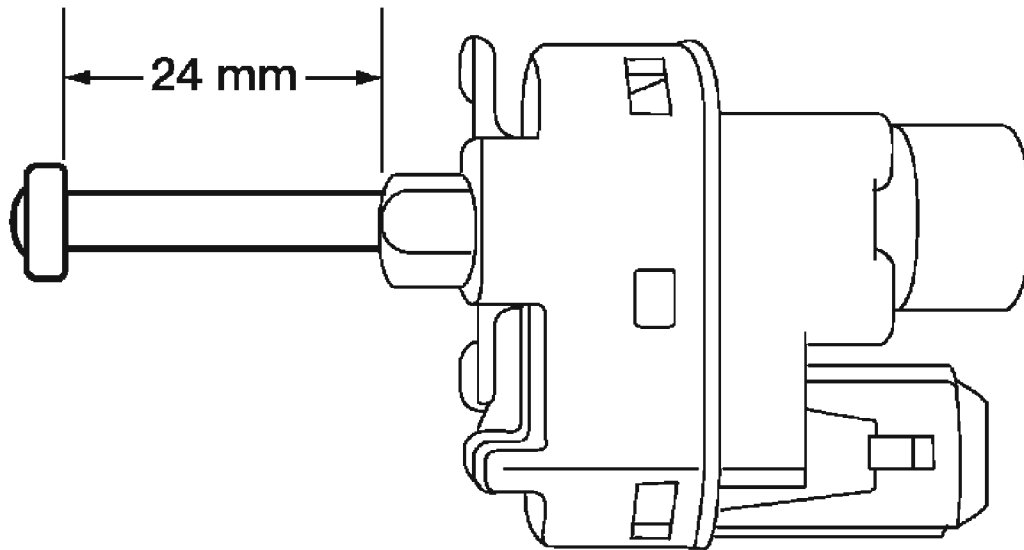


Fig. 30: Removing Speed Control Deactivator Switch By Turning Switch Counterclockwise
Courtesy of FORD MOTOR CO.

1. Remove the speed control deactivator switch by turning the switch counterclockwise.
2. Pull out the speed control deactivator switch plunger until it is fully extended.
 1. Measure the plunger length. It should measure 24 mm (0.94 in).



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Fig. 31: Measuring Plunger Length
Courtesy of FORD MOTOR CO.

3. Apply the brake pedal.

CAUTION: When installing the deactivator switch, the switch is rotated clockwise. Failure to follow this instruction will result in the switch plunger binding inside the switch.

NOTE: The speed control deactivator switch is automatically adjusted during installation.

NOTE: A slight ratcheting noise and feel during installation of the speed control deactivator switch is normal.

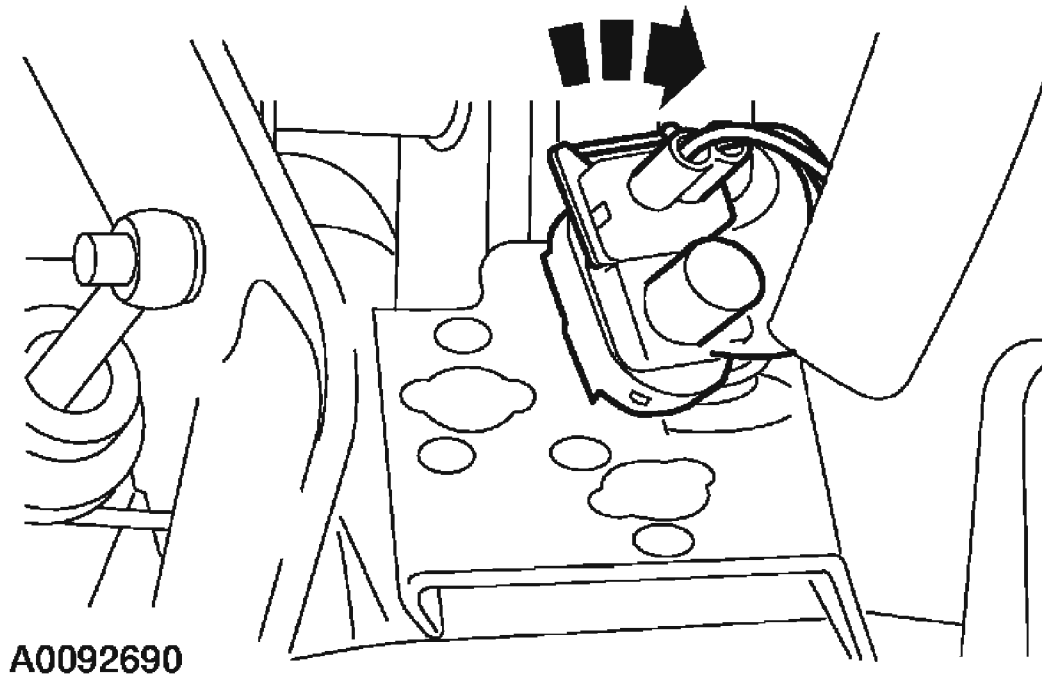


Fig. 32: Installing Speed Control Deactivator Switch By Turning Switch Clockwise

Courtesy of FORD MOTOR CO.

4. Install the speed control deactivator switch by turning the switch clockwise.
5. Slowly release the brake pedal.

REMOVAL AND INSTALLATION

SPEED CONTROL ACTUATOR

Removal and Installation

1. Disconnect the speed control actuator electrical connector.

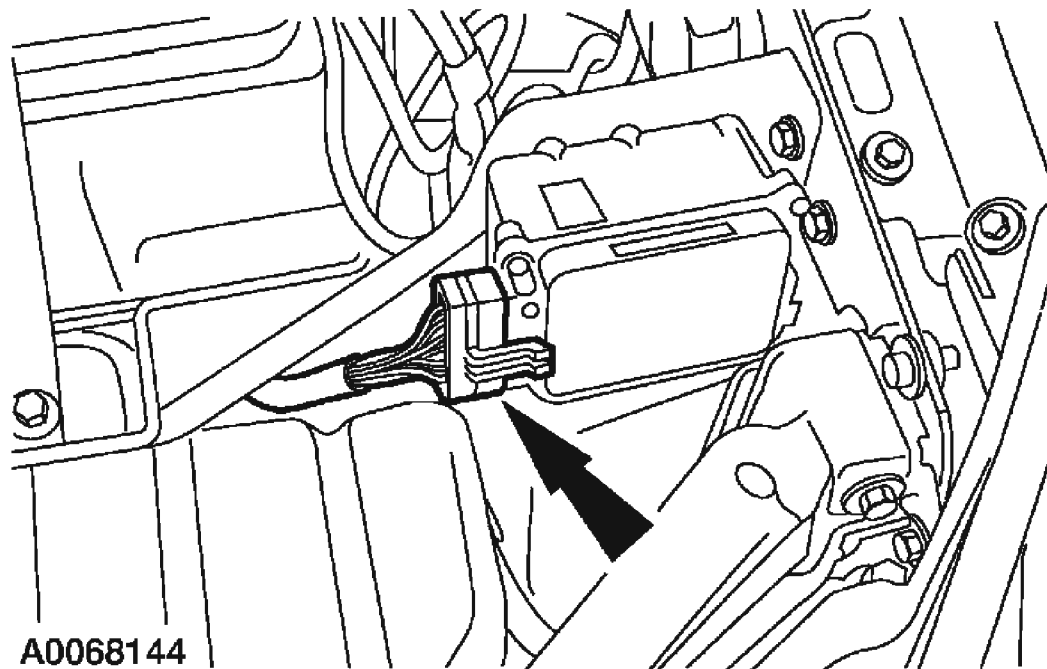


Fig. 33: Disconnecting Speed Control Actuator Electrical Connector
Courtesy of FORD MOTOR CO.

2. Remove the bolts and the speed control actuator.

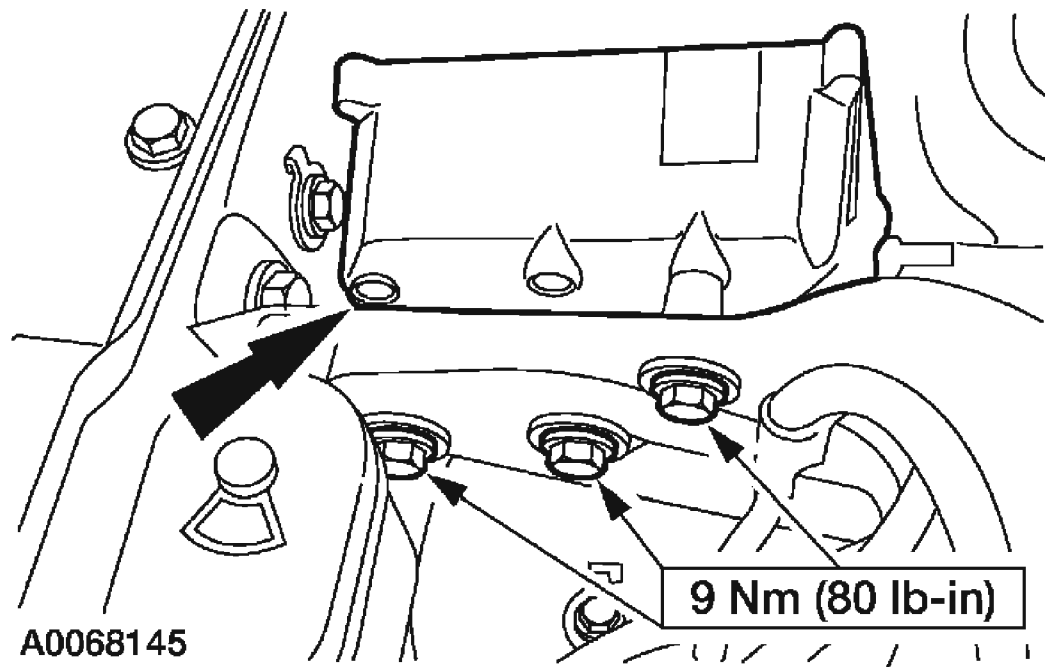


Fig. 34: Removing Bolts And Speed Control Actuator
Courtesy of FORD MOTOR CO.

3. Press the locking tab and rotate the speed control cable cover counterclockwise to remove.

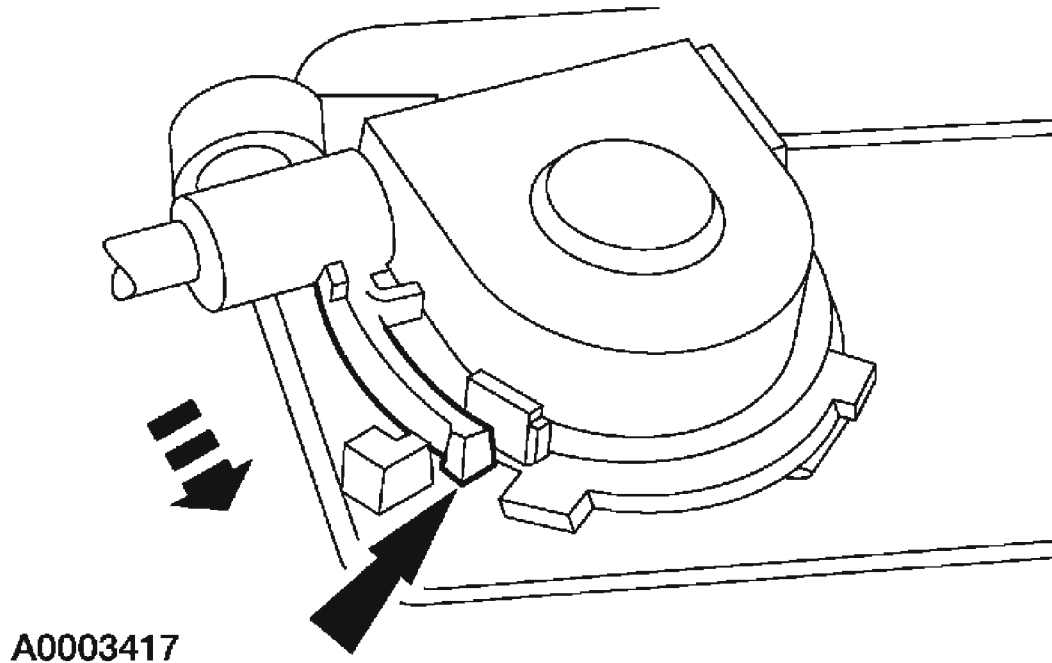
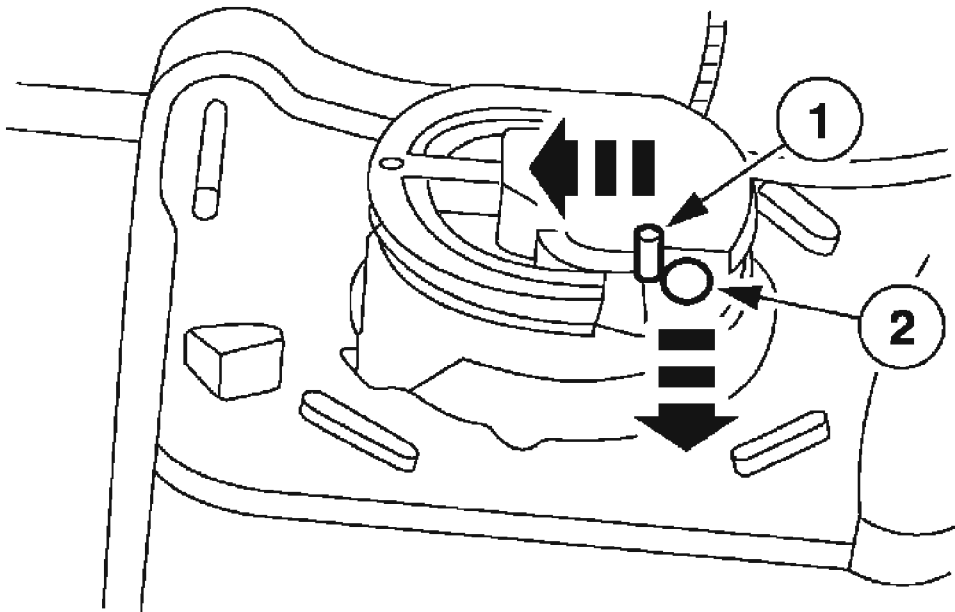


Fig. 35: Pressing Locking Tab And Rotating Speed Control Cable Cover Counterclockwise
Courtesy of FORD MOTOR CO.

4. Remove the speed control cable.
 1. Press the spring retainer.
 2. Slide the core wire end out of the speed control actuator pulley and disconnect the speed control actuator cable.



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Fig. 36: Removing Speed Control Cable
Courtesy of FORD MOTOR CO.

NOTE: Make sure downward pressure is applied to the speed control actuator cable cover prior to rotating it clockwise.

5. To install, reverse the removal procedure.

SPEED CONTROL CABLE

Removal and Installation

1. If equipped, remove the watershield.
 - Remove the screw.
 - Remove the pin-type retainers.

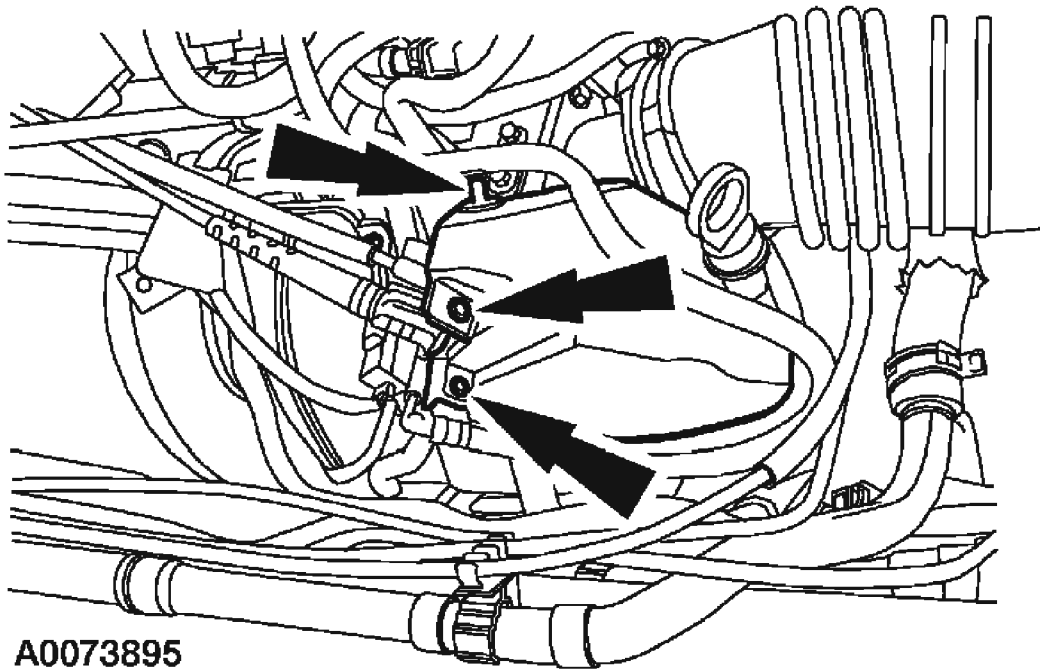


Fig. 37: Removing Screw And Pin-Type Retainers
Courtesy of FORD MOTOR CO.

2. Disconnect the speed control cable from the throttle body linkage.
 - Rotate the throttle body linkage and disconnect the speed control cable end by pushing forward.

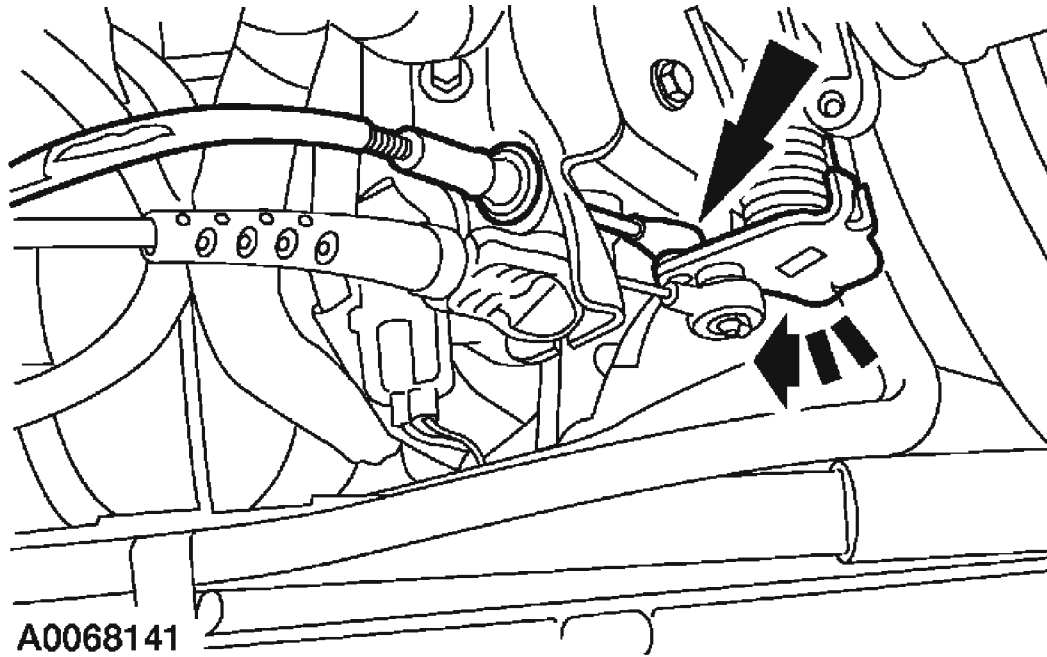


Fig. 38: Disconnecting Speed Control Cable From Throttle Body Linkage
Courtesy of FORD MOTOR CO.

3. Position the speed control cable away from the throttle body bracket retaining ring.

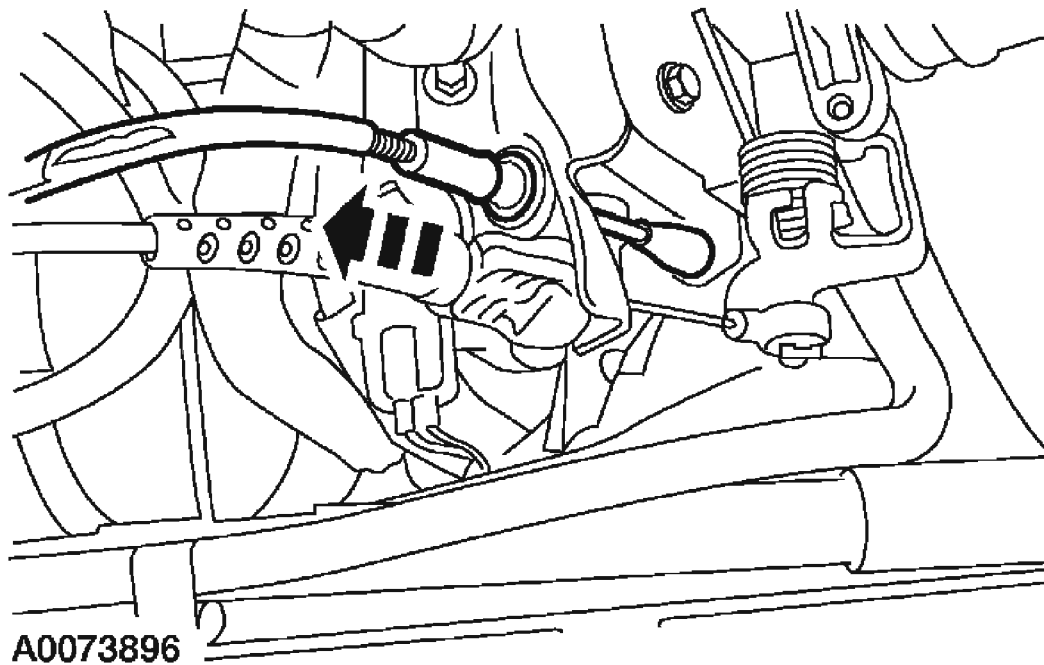


Fig. 39: Positioning Speed Control Cable Away From Throttle Body Bracket Retaining Ring
Courtesy of FORD MOTOR CO.

4. Remove the speed control cable from the throttle body bracket.
 - Using a suitable tool, remove the retaining ring from the throttle body bracket.

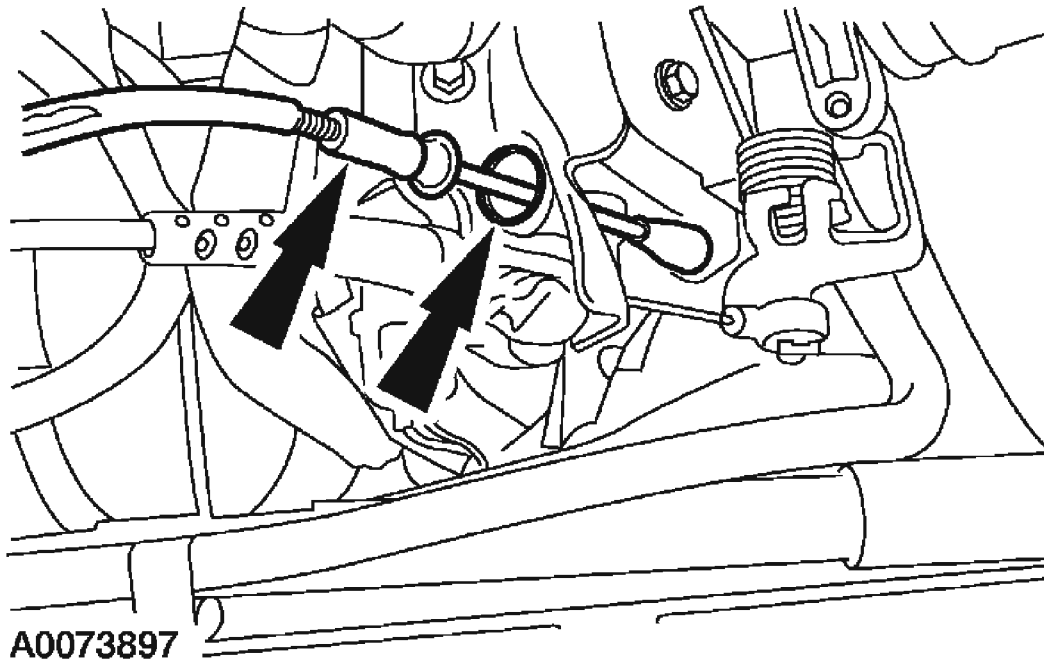


Fig. 40: Removing Speed Control Cable From Throttle Body Bracket
Courtesy of FORD MOTOR CO.

5. Remove the speed control cable from the retaining clips.

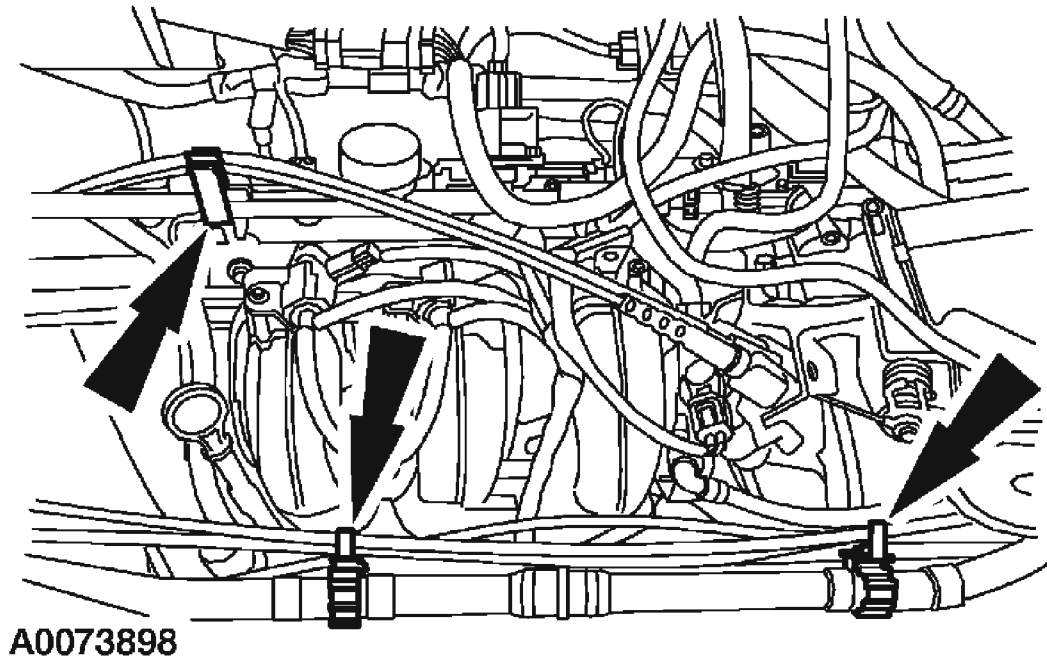


Fig. 41: Removing Speed Control Cable From Retaining Clips
Courtesy of FORD MOTOR CO.

6. Disconnect the speed control actuator electrical connector.

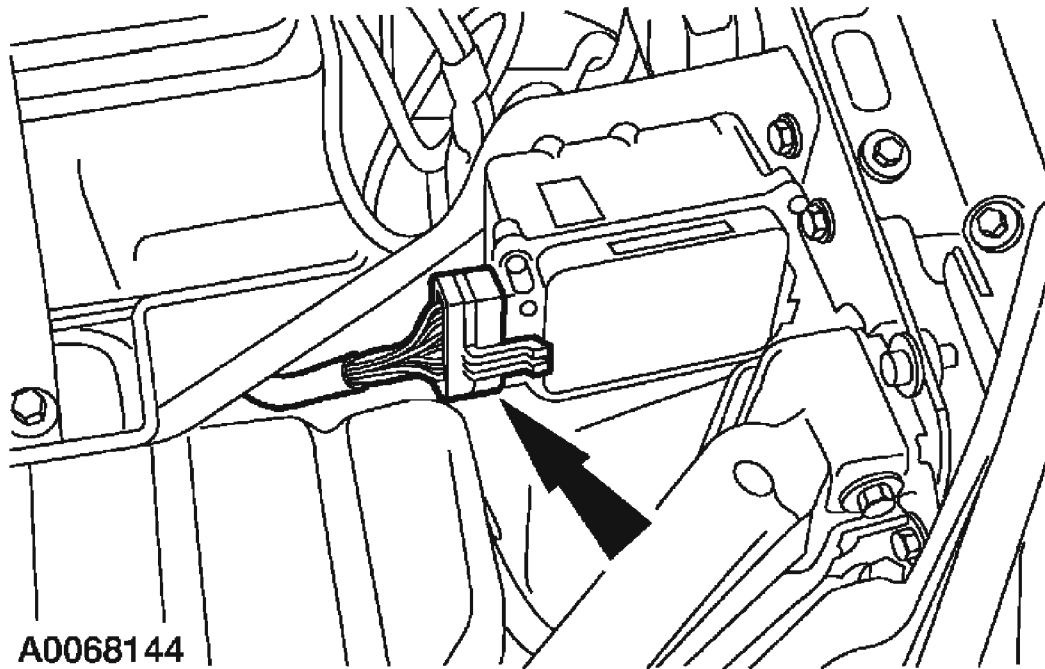


Fig. 42: Disconnecting Speed Control Actuator Electrical Connector
Courtesy of FORD MOTOR CO.

7. Remove the speed control actuator.
 - Remove the bolts.

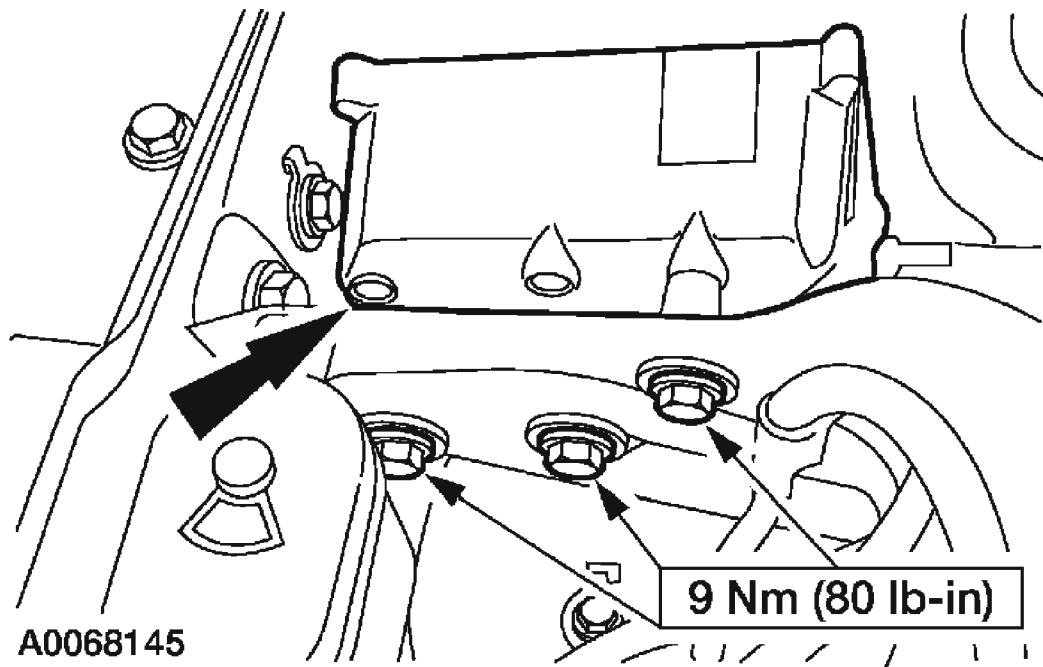


Fig. 43: Removing Speed Control Actuator
Courtesy of FORD MOTOR CO.

8. Press the locking tab and rotate the speed control cable cover counterclockwise to remove.

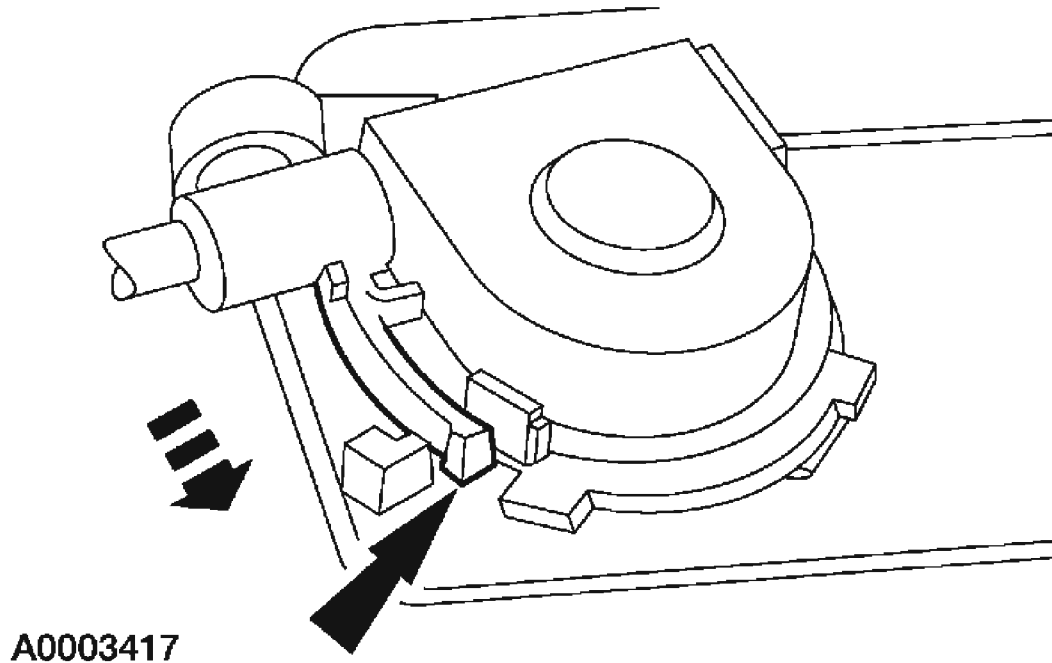
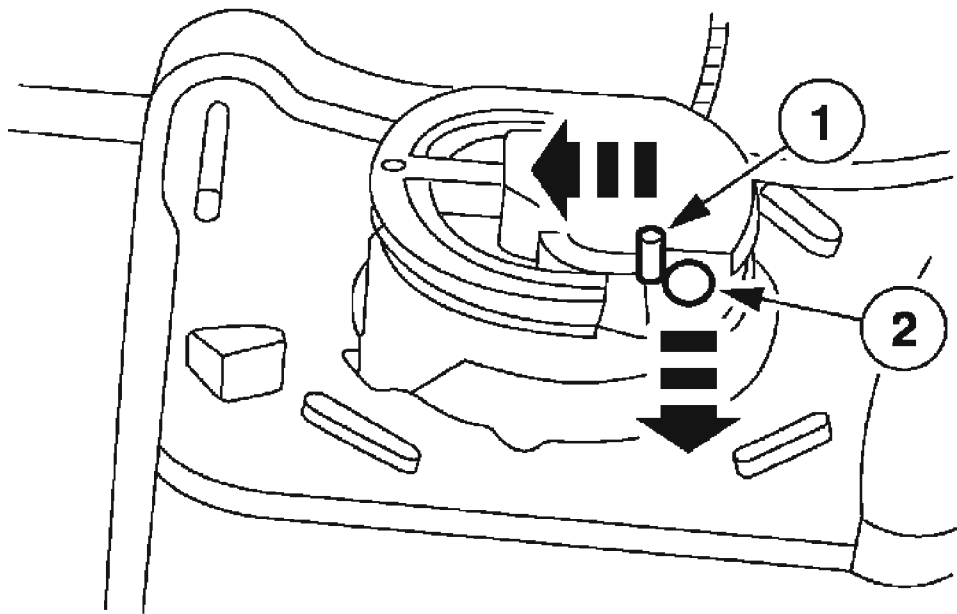


Fig. 44: Pressing Locking Tab And Rotating Speed Control Cable Cover
Courtesy of FORD MOTOR CO.

9. Remove the speed control cable from the speed control actuator pulley.
 1. Press the spring retainer.
 2. Slide the core wire end out of the speed control actuator pulley and disconnect the speed control actuator cable.



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Fig. 45: Removing Speed Control Cable From Speed Control Actuator Pulley
Courtesy of FORD MOTOR CO.

CAUTION: A new speed control cable must be installed.

NOTE: Make sure downward pressure is applied to the speed control actuator cable cover prior to rotating it clockwise.

10. To install, reverse the removal procedure.

SPEED CONTROL DEACTIVATOR SWITCH

Removal

NOTE: Brake pedal position switch (BPP) and clutch pedal position (CPP) switch removed for clarity.

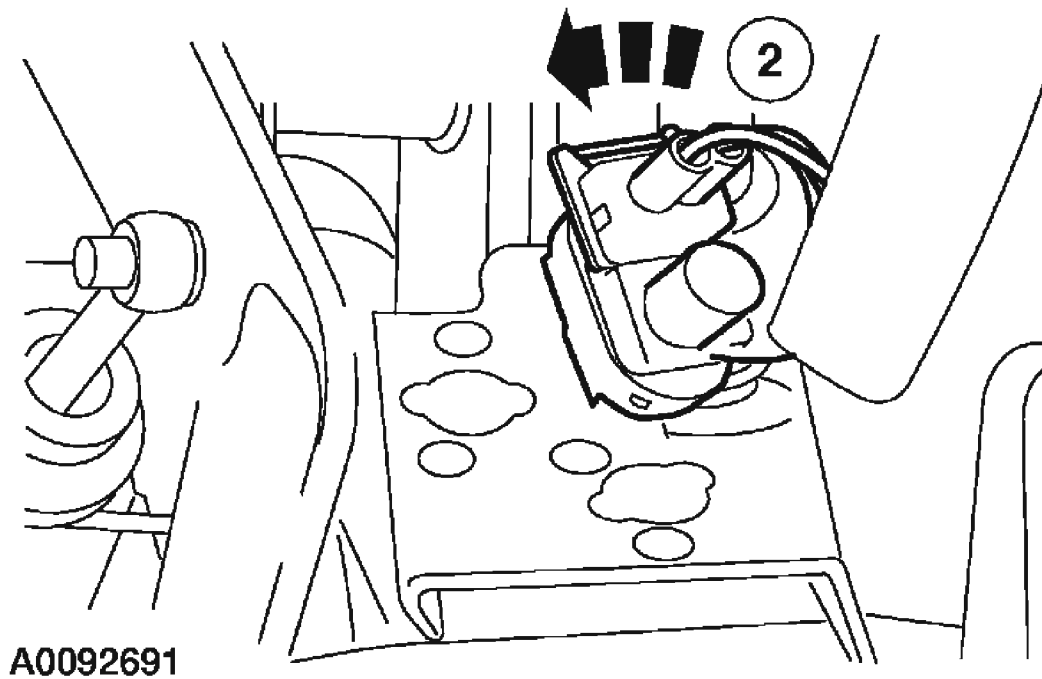
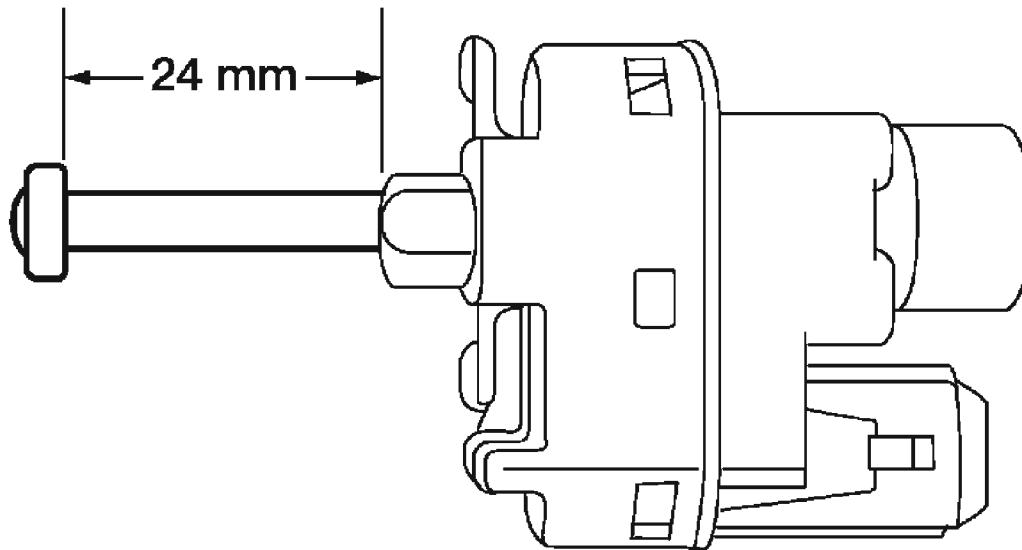


Fig. 46: Removing Speed Control Deactivator Switch
Courtesy of FORD MOTOR CO.

1. Remove the speed control deactivator switch.
 1. Disconnect the electrical connector.
 2. Rotate the speed control deactivator switch counterclockwise.
2. Pull out the speed control deactivator switch plunger until it is fully extended.
 1. Measure the plunger length. It should measure 24 mm (0.94 in).



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Fig. 47: Measuring Plunger Length
Courtesy of FORD MOTOR CO.

Installation

1. Apply the brake pedal.

CAUTION: When installing the deactivator switch, the switch is rotated clockwise. Failure to follow this instruction will result in the switch plunger binding inside the switch.

NOTE: The speed control deactivator switch is automatically adjusted during installation.

NOTE: A slight ratcheting noise and feel during installation of the speed control deactivator switch is normal.

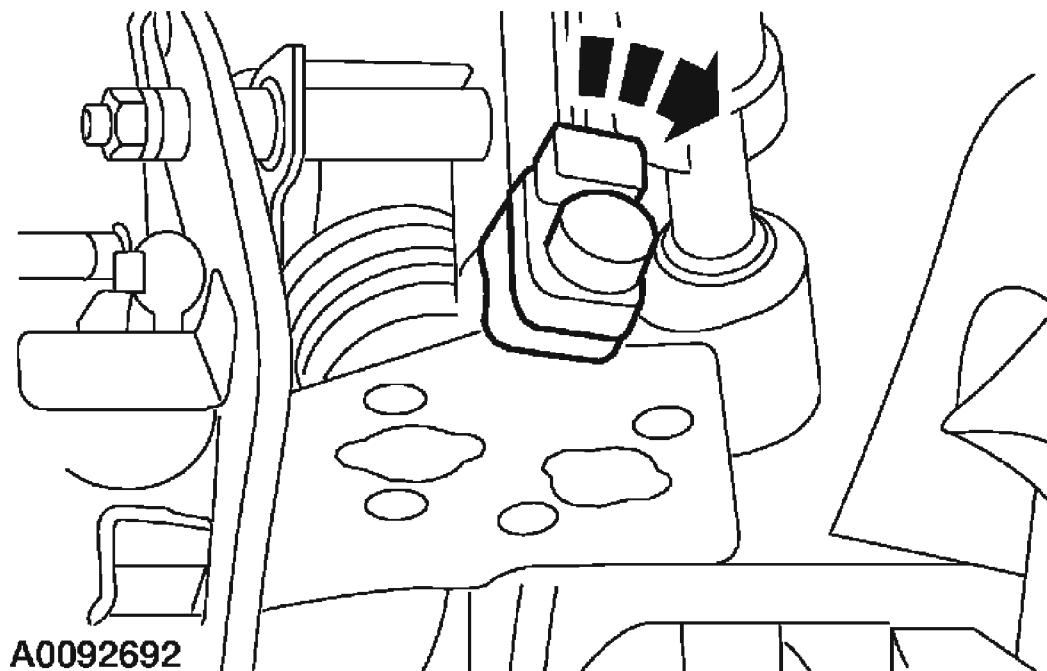


Fig. 48: Installing Speed Control Deactivator Switch By Turning Switch Clockwise

Courtesy of FORD MOTOR CO.

2. Install the speed control deactivator switch by turning the switch clockwise.
3. Slowly release the brake pedal.
4. Connect the electrical connector to the speed control deactivator switch.

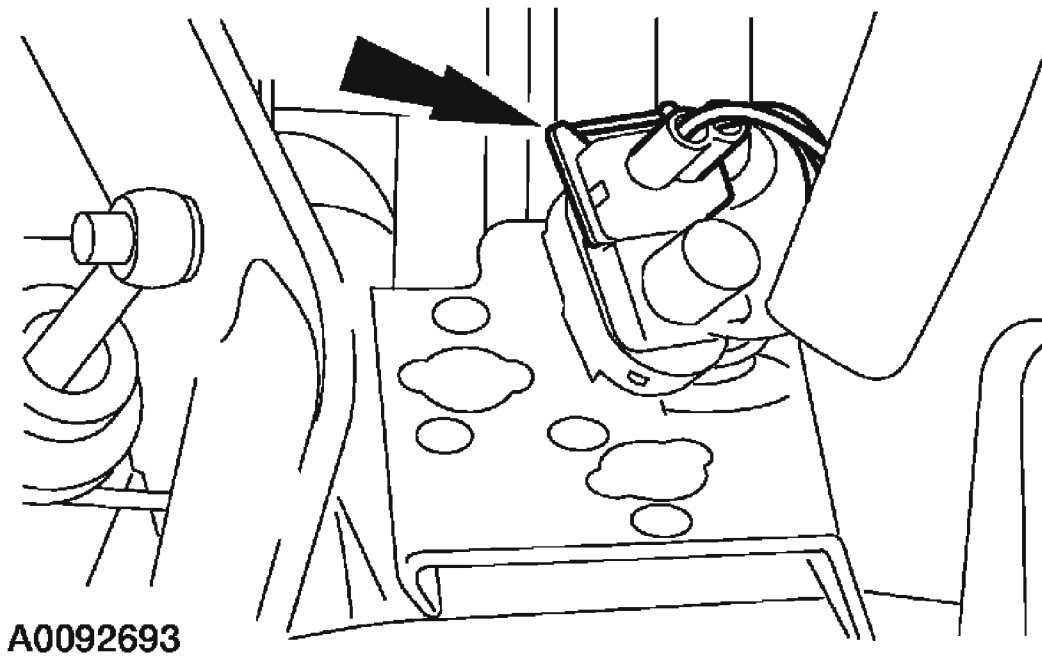


Fig. 49: Connecting Electrical Connector To Speed Control Deactivator Switch
Courtesy of FORD MOTOR CO.

SPEED CONTROL SWITCH

Removal and Installation

1. Remove the driver air bag. For additional information, refer to **SUPPLEMENTAL RESTRAINT SYSTEM**.
2. Disconnect the speed control switch electrical connector.

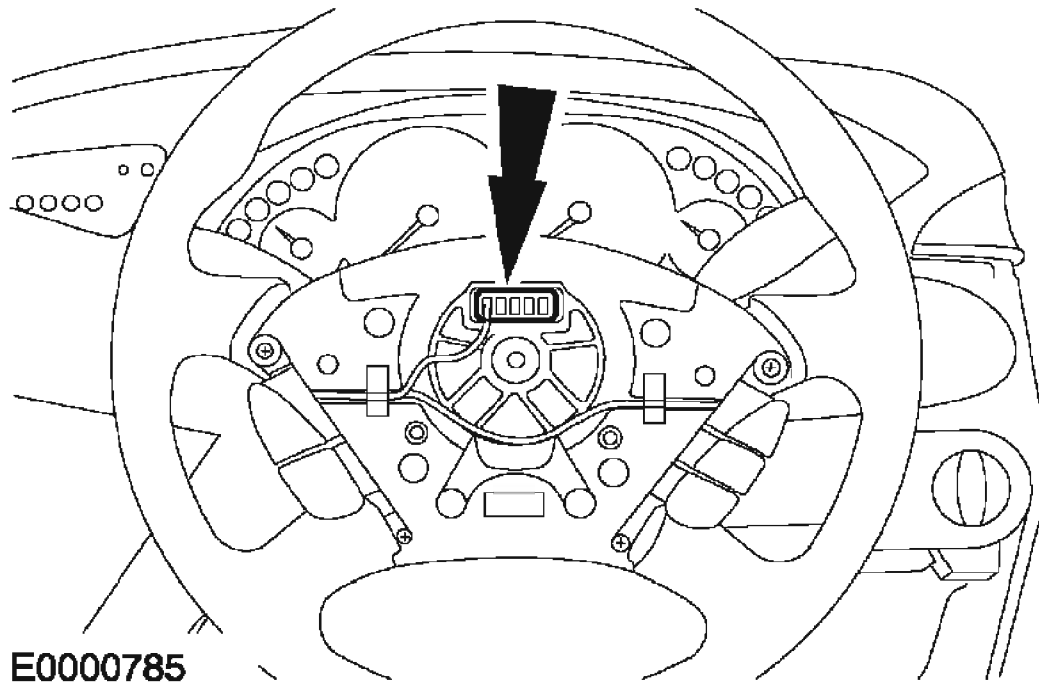


Fig. 50: Disconnecting Speed Control Switch Electrical Connector
Courtesy of FORD MOTOR CO.

3. Remove the speed control switches.

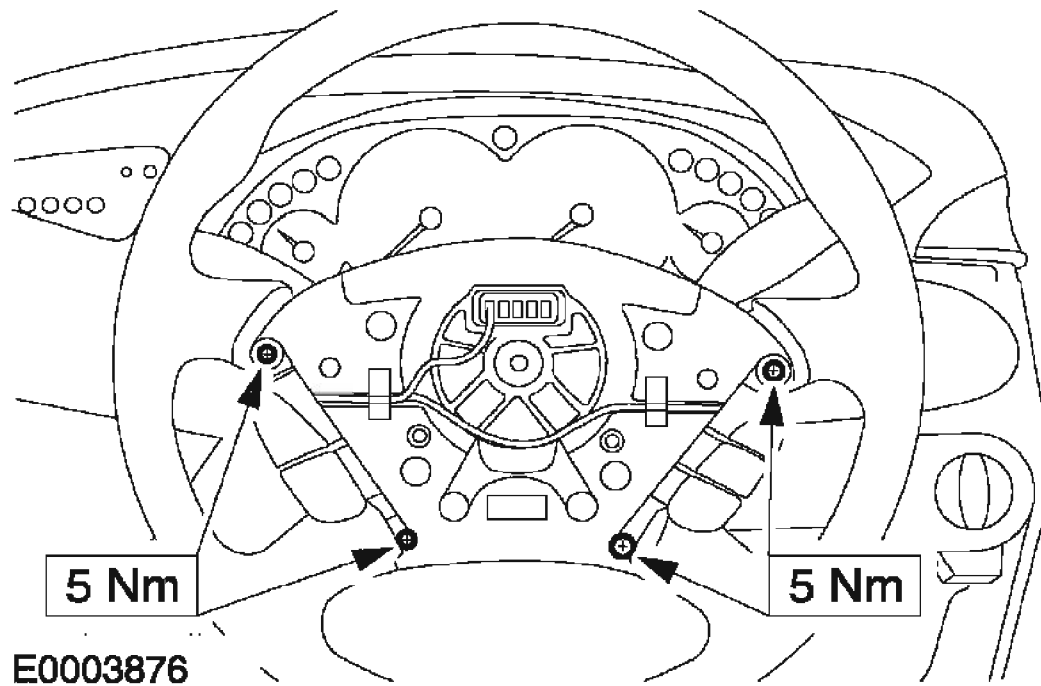


Fig. 51: Removing Speed Control Switches
Courtesy of FORD MOTOR CO.

4. To install, reverse the removal procedure.