

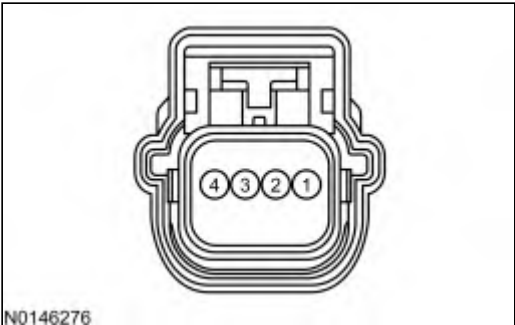
TA: Clutch Pedal Position (CPP) Switch

This pinpoint test is intended to diagnose the following:

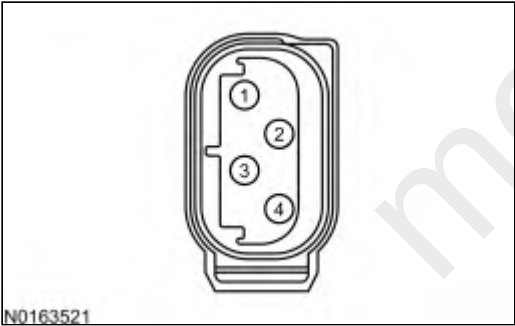
- CPP sensor
- CPP switch (11A152/7C534)
- harness circuits: CPP, CPP-BT, GND, SIGRTN, and VREF
- PCM (12A650)

Clutch Pedal Position (CPP) Sensor Connector

A



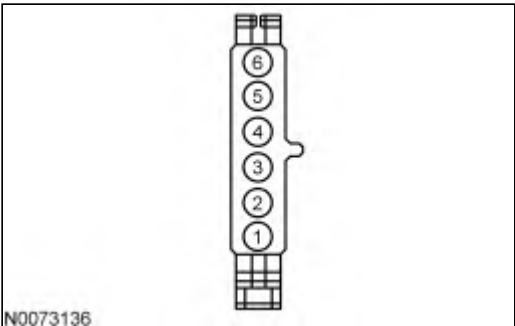
B



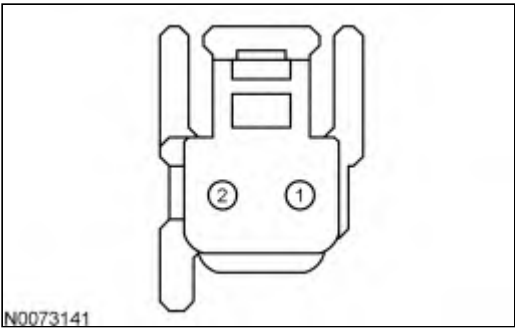
Vehicle	Connector	Pin	Circuit
Mustang 5.0L	A	1	CPP2
		3	CPP1
		4	SIGRTN
		2	VREF
Transit Connect	B	1	CPP2
		3	CPP1
		4	SIGRTN
		2	VREF

Clutch Pedal Position (CPP) Switch Connector

A



B



Vehicle	Connector	Pin	Circuit
F-Series Super Duty	A	2 1	GND CPP-BT
All other vehicles	B	2 1	GND CPP-BT

Powertrain Control Module (PCM) Connector

For PCM connector views or reference values, refer to Section 6, Reference Values.

Vehicle	Connector	Pin	Circuit
EcoSport 1.0L	198 PIN	B30	CPP-BT
F-Series Super Duty	306 PIN	B65	CPP-BT
KA 1.0L	128 PIN	B15	CPP-BT
Mustang 2.3L	198 PIN	B7	CPP-BT
Mustang 5.0L	306 PIN	T55 T40	CPP2 CPP1
Mustang 5.2L	198 PIN	B9	CPP-BT

Vehicle	Connector	Pin	Circuit
Ranger	128 PIN	E14	CPP-BT
Transit Connect	198 PIN	B5 B6	CPP2 CPP1
All other vehicles	112 PIN	B47	CPP-BT

TA1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

Note: Diagnose DTCs P0830, P0833 and P170A before entering this pinpoint test. Refer to the Workshop Manual Section 303-14, Electronic Engine Controls, to continue diagnosis.

Note: Diagnose and repair all circuit DTCs before diagnosing range and performance DTCs.

Are DTCs P08A9, P08AA, P08B6, P08B7, P08B9, or P26C4 present?

Yes	For DTCs P08B9 or P26C4, GO to TA2 . For all others, GO to TA9 .
No	GO to TA3 .

TA2 CHECK THE CPP PID CORRELATION

 **WARNING:** Block all wheels, set the parking brake and firmly apply the service brake to reduce the risk of vehicle movement during this procedure. Failure to follow these instructions may result in serious personal injury.

Note: All PIDs may not be available on all vehicles.

- Ignition ON, engine OFF.
- Access the PCM and monitor the CPP_BOT (MODE) and CPP_TOP (MODE) PIDs.
- Access the PCM and monitor the CPP_PERCENT (PER) PID.
- Apply and release the clutch pedal.

Do all the PID values change when the clutch pedal is applied and released?

Yes	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.
No	For the CPP_TOP PID value did not change, REFER to the Workshop Manual Section 419-03, Cruise Control, to DIAGNOSE the cruise control does not disengage when the clutch pedal is applied symptom. Clear the PCM DTCs. REPEAT the self-test. For the CPP_BOT PID value did not change, GO to TA4 . For all others, GO to TA9 .

TA3 CHECK THE CPP SWITCH

 **WARNING:** Block all wheels, set the parking brake and firmly apply the service brake to reduce the risk of vehicle movement during this procedure. Failure to follow these instructions may result in serious personal injury.

- Ignition ON, engine OFF.
- Access the PCM and monitor the CPP_BOT (MODE) PID.
- Apply and release the clutch pedal.

Does the PID value change when the clutch pedal is applied and released?

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Yes	GO to Pinpoint Test Z .
No	GO to TA4 .

TA4 CHECK THE SWITCH CIRCUIT RESISTANCE

Note: The CPP switch is located near the clutch pedal.

Note: Measure the CPP switch resistance with the clutch pedal pressed down.

- Ignition OFF.
- Inspect the switches and brackets for damage. Repair as necessary.
- CPP Switch connector disconnected.
- Measure the resistance between:

(+) CPP Switch Connector, Component Side	(-) CPP Switch Connector, Component Side
CPP-BT	GND

Is the resistance less than 5 ohms?

Yes	GO to TA5 .
No	INSTALL a new CPP switch. REFER to the Workshop Manual Section 303-14, Electronic Engine Controls. Clear the PCM DTCs. REPEAT the self-test.

TA5 CHECK THE CPP FOR INTERNAL SHORTS

Note: Measure the CPP switch resistance with the clutch pedal released.

- Measure the resistance between:

(+) CPP Switch Connector, Component Side	(-) CPP Switch Connector, Component Side
CPP-BT	GND

Is the resistance greater than 10K ohms?

Yes	GO to TA6 .
No	INSTALL a new CPP switch. REFER to the Workshop Manual Section 303-14, Electronic Engine Controls. Clear the PCM DTCs. REPEAT the self-test.

TA6 CHECK THE CPP AND GROUND CIRCUITS FOR AN OPEN

- PCM connector disconnected.
- Measure the resistance between:

(+) CPP Switch Connector, Harness Side	(-) PCM Connector, Harness Side
CPP-BT	CPP-BT

- Measure the resistance between:

(+) CPP Switch Connector, Harness Side	(-)
GND	Ground

Are the resistances less than 5 ohms?

Yes	GO to TA7 .
No	REPAIR the open circuit. Clear the PCM DTCs. REPEAT the self-test.

TA7 CHECK THE CPP CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition ON, engine OFF.
- Measure the voltage between:

(+) CPP Switch Connector, Harness Side	(-)
CPP-BT	Ground

Is any voltage present?

Yes	REPAIR the short circuit. Clear the PCM DTCs. REPEAT the self-test.
No	GO to TA8 .

TA8 CHECK THE CPP CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Measure the resistance between:

(+) CPP Switch Connector, Harness Side	(-)
CPP-BT	Ground

Is the resistance greater than 10K ohms?

Yes	GO to Pinpoint Test Z .
No	REPAIR the short circuit. Clear the PCM DTCs. REPEAT the self-test.

TA9 CHECK THE VREF VOLTAGE TO THE CPP SENSOR

- CPP Sensor connector disconnected.
- Ignition ON, engine OFF.
- Measure the voltage between:

(+) CPP Sensor Connector, Harness Side	(-) CPP Sensor Connector, Harness Side
VREF	SIGRTN

Is the voltage between 4.5 - 5.5 V?

Yes	GO to TA10 .
No	GO to Pinpoint Test C .

TA10 CHECK THE CPP CIRCUIT FOR AN OPEN

- Ignition OFF.
- PCM connector disconnected.
- For Mustang 5.0L and Transit Connect,
- Measure the resistance between:

(+) CPP Sensor Connector, Harness Side	(-) PCM Connector, Harness Side
CPP1	CPP1
CPP2	CPP2

- For all others,
- Measure the resistance between:

(+) CPP Sensor Connector, Harness Side	(-) PCM Connector, Harness Side
CPP	CPP

Is the resistance less than 5 ohms?

Yes	GO to TA11 .
No	REPAIR the open circuit. Clear the PCM DTCs. REPEAT the self-test.

TA11 CHECK THE CPP CIRCUIT FOR A SHORT TO GROUND

- For Mustang 5.0L and Transit Connect,
- Measure the resistance between:

(+) CPP Sensor Connector, Harness Side	(-)
CPP1	Ground
CPP2	Ground

- For all others,
- Measure the resistance between:

(+) CPP Sensor Connector, Harness Side	(-)
CPP	Ground

Is the resistance greater than 10K ohms?

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Yes	GO to TA12 .
No	REPAIR the short circuit. Clear the PCM DTCs. REPEAT the self-test.

TA12 CHECK THE CPP SENSOR CIRCUITS FOR A SHORT

- For Mustang 5.0L and Transit Connect,
- Measure the resistance between:

(+) CPP Sensor Connector, Harness Side	(-) CPP Sensor Connector, Harness Side
CPP1	VREF
CPP1	SIGRTN
CPP2	VREF
CPP2	SIGRTN

- For all others,
- Measure the resistance between:

(+) CPP Sensor Connector, Harness Side	(-) CPP Sensor Connector, Harness Side
CPP	VREF
CPP	SIGRTN

Are the resistances greater than 10K ohms?

Yes	GO to TA13 .
No	REPAIR the short circuit. Clear the PCM DTCs. REPEAT the self-test.

TA13 CHECK THE CPP CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition ON, engine OFF.
- For Mustang 5.0L and Transit Connect,
- Measure the voltage between:

(+) CPP Sensor Connector, Harness Side	(-)
CPP1	Ground
CPP2	Ground

- For all others,
- Measure the voltage between:

(+) CPP Sensor Connector, Harness Side	(-)
CPP	Ground

Is any voltage present?

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Yes	REPAIR the short circuit. Clear the PCM DTCs. REPEAT the self-test.
No	INSTALL a new CPP sensor. REFER to the Workshop Manual Section 303-14, Electronic Engine Controls. Clear the PCM DTCs. REPEAT the self-test.

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