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1993 FORD Mustang OEM Service and Repair Workshop Manual

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SODCMC (Side Obstacle Detection Control Module C) , SODCMD (Side Obstacle Detection Control Module D) , SODL (side obstacle detection control module LH) or SODR (side obstacle detection control module RH) .

REFER to: Side Obstacle Detection Control Module C (SODCMC)

(419-04A Side and Rear Vision, Removal and Installation).

REFER to: Side Obstacle Detection Control Module D (SODCMD)

(419-04A Side and Rear Vision, Removal and Installation).

REFER to: Side Obstacle Detection Control Module (SODCM)

(419-04A Side and Rear Vision, Removal and Installation).

If the concern is still present, GO to Y7

No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

Y7 CHECK FOR CORRECT IPMA (IMAGE PROCESSING MODULE A) OPERATION

- Disconnect and inspect the IPMA (image processing module A) connectors.
- Repair:
    - corrosion (install new connector or terminals - clean module pins)
    - damaged or bent pins - install new terminals/pins
    - pushed-out pins - install new pins as necessary
- Reconnect the IPMA (image processing module A) connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new IPMA (image processing module A) . REFER to: Image Processing Module A (IPMA) (419-07 Lane Keeping System, Removal and Installation).

module LH) U2100:00	Sub Type Information	procedures. CHECK the vehicle service history for recent service actions related to this module. If there have been recent service actions with this module, INSTALL as-built data. REFER to: Module Configuration - System Operation and Component Description (418-01A Module Configuration, Description and Operation).
SODR (side obstacle detection control module RH) U2100:00	Initial Configuration Not Complete: No Sub Type Information	This continuous memory DTC (diagnostic trouble code) sets due to incomplete or incorrect SODR (side obstacle detection control module RH) PMI (programmable module installation) procedures. CHECK the vehicle service history for recent service actions related to this module. If there have been recent service actions with this module, INSTALL as-built data. REFER to: Module Configuration - System Operation and Component Description (418-01A Module Configuration, Description and Operation).
SODCMC (Side Obstacle Detection Control Module C) U2300:55	Central Configuration: Not Configured	This continuous memory DTC (diagnostic trouble code) sets due to incomplete or incorrect SODCMC (Side Obstacle Detection Control Module C) PMI (programmable module installation) procedures. CHECK the vehicle service history for recent service actions related to this module. If there have been recent service actions with this module, INSTALL as-built data. REFER to: Module Configuration - System Operation and Component Description (418-01A Module Configuration, Description and Operation).
SODCMD (Side Obstacle Detection Control Module D) U2300:55	Central Configuration: Not Configured	This continuous memory DTC (diagnostic trouble code) sets due to incomplete or incorrect SODCMD (Side Obstacle Detection Control Module D) PMI (programmable module installation) procedures. CHECK the vehicle service history for recent service actions related to this module. If there have been recent service actions with this module, INSTALL as-built data. REFER to: Module Configuration - System Operation and Component Description (418-01A Module Configuration, Description and Operation).
SODL (side obstacle detection control	Central Configuration: Not Configured	This continuous memory DTC (diagnostic trouble code) sets due to incomplete or incorrect SODL (side obstacle detection control module LH) PMI (programmable module installation) procedures. CHECK the vehicle service history for recent service

No	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been falsely set by the SODCMC (Side Obstacle Detection Control Module C) , SODCMD (Side Obstacle Detection Control Module D) , SODL (side obstacle detection control module LH) or SODR (side obstacle detection control module RH) causing the signal to momentarily stop and set the DTC (diagnostic trouble code) .

Z2 INSTALL SODCMC (SIDE OBSTACLE DETECTION CONTROL MODULE C) , SODCMD (SIDE OBSTACLE DETECTION CONTROL MODULE D) , SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) OR SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) PMI (PROGRAMMABLE MODULE INSTALLATION)

- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs).
- Install SODCMC (Side Obstacle Detection Control Module C) , SODCMD (Side Obstacle Detection Control Module D) , SODL (side obstacle detection control module LH) or SODR (side obstacle detection control module RH) As-Built data from PTS (Professional Technician System) following scan tool instructions.

Is DTC (diagnostic trouble code) U2100:00 or U2300:55 still present?

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new SODCMC (Side Obstacle Detection Control Module C) , SODCMD (Side Obstacle Detection Control Module D) , SODL (side obstacle detection control module LH) or SODR (side obstacle detection control module RH) . REFER to: Side Obstacle Detection Control Module C (SODCMC) (419-04A Side and Rear Vision, Removal and Installation). REFER to: Side Obstacle Detection Control Module D (SODCMD) (419-04A Side and Rear Vision, Removal and Installation). REFER to: Side Obstacle Detection Control Module (SODCM) (419-04A Side and Rear Vision, Removal and Installation).
No	The system is operating correctly at this time.

PINPOINT TEST AA : DTC (DIAGNOSTIC TROUBLE CODE) U3000:41, U3000:42, U3000:44 OR U3000:49

Normal Operation and Fault Conditions

SODR (side obstacle detection control module RH) U3000:42	Control Module: General Memory Failure	This continuous memory DTC (diagnostic trouble code) sets when the SODR (side obstacle detection control module RH) start operation and all preconditions in test run / pass fail criteria are met and detects an internal memory failure.
SODCMC (Side Obstacle Detection Control Module C) U3000:44	Control Module: Data Memory Failure	This continuous memory DTC (diagnostic trouble code) sets when the SODCMC (Side Obstacle Detection Control Module C) start operation and all preconditions in test run / pass fail criteria are met and detects a RAM (random access memory) memory failure.
SODCMD (Side Obstacle Detection Control Module D) U3000:44	Control Module: Data Memory Failure	This continuous memory DTC (diagnostic trouble code) sets when the SODCMD (Side Obstacle Detection Control Module D) start operation and all preconditions in test run / pass fail criteria are met and detects a RAM (random access memory) memory failure.
SODL (side obstacle detection control module LH) U3000:44	Control Module: Data Memory Failure	This continuous memory DTC (diagnostic trouble code) sets when the SODL (side obstacle detection control module LH) start operation and all preconditions in test run / pass fail criteria are met and detects a RAM (random access memory) memory failure.
SODR (side obstacle detection control module RH) U3000:44	Control Module: Data Memory Failure	This continuous memory DTC (diagnostic trouble code) sets when the SODR (side obstacle detection control module RH) start operation and all preconditions in test run / pass fail criteria are met and detects a RAM (random access memory) memory failure.
SODCMC (Side Obstacle Detection Control Module C) U3000:49	Control Module: Internal Electronic Failure	This continuous memory DTC (diagnostic trouble code) sets when the SODCMC (Side Obstacle Detection Control Module C) start operation and all preconditions in test run / pass fail criteria are met and detects an internal electronic failure.
SODCMD (Side Obstacle Detection Control Module D) U3000:49	Control Module: Internal Electronic Failure	This continuous memory DTC (diagnostic trouble code) sets when the SODCMD (Side Obstacle Detection Control Module D) start operation and all preconditions in test run / pass fail criteria are met and detects an internal electronic failure.
SODL (side obstacle detection control	Control Module: Internal Electronic	This continuous memory DTC (diagnostic trouble code) sets when the SODL (side obstacle detection control module LH)

		REFER to: Side Obstacle Detection Control Module C (SODCMC) (419-04A Side and Rear Vision, Removal and Installation).
SODCMD (Side Obstacle Detection Control Module D) U3002:62	Vehicle Identification Number: Signal Compare Failure	This continuous memory DTC (diagnostic trouble code) sets when the VIN (vehicle identification number) stored in the SODCMD (Side Obstacle Detection Control Module D) does not match the VIN (vehicle identification number) that is broadcast on the network. CHECK the vehicle service history for recent service actions related to this module. If there have been recent service actions with this module, REPEAT the PMI (programmable module installation) procedure as directed by the diagnostic scan tool. REFER to: Module Configuration - System Operation and Component Description (418-01A Module Configuration, Description and Operation). If there have been no recent service actions, INSTALL a new module to correct the failure to retain configuration data. REFER to: Side Obstacle Detection Control Module D (SODCMD) (419-04A Side and Rear Vision, Removal and Installation).
SODL (side obstacle detection control module LH) U3002:62	Vehicle Identification Number: Signal Compare Failure	This continuous memory DTC (diagnostic trouble code) sets when the VIN (vehicle identification number) stored in the SODL (side obstacle detection control module LH) does not match the VIN (vehicle identification number) that is broadcast on the network. CHECK the vehicle service history for recent service actions related to this module. If there have been recent service actions with this module, REPEAT the PMI (programmable module installation) procedure as directed by the diagnostic scan tool. REFER to: Module Configuration - System Operation and Component Description (418-01A Module Configuration, Description and Operation). If there have been no recent service actions, INSTALL a new module to correct the failure to retain configuration data. REFER to: Side Obstacle Detection Control Module (SODCM) (419-04A Side and Rear Vision, Removal and Installation).
SODR (side obstacle detection control module RH) U3002:62	Vehicle Identification Number: Signal Compare Failure	This continuous memory DTC (diagnostic trouble code) sets when the VIN (vehicle identification number) stored in the SODR (side obstacle detection control module RH) does not match the VIN (vehicle identification number) that is broadcast on the network. CHECK the vehicle service history for recent service actions related to this module. If there have been recent service actions with this

SODL (side obstacle detection control module LH) U3003:16	Battery Voltage: Circuit Voltage Below Threshold	Set by the SODL (side obstacle detection control module LH) as a continuous memory DTC (diagnostic trouble code) if the SODL (side obstacle detection control module LH) detects low battery voltage below 9.0 volts for more than 100 ms.
SODR (side obstacle detection control module RH) U3003:16	Battery Voltage: Circuit Voltage Below Threshold	Set by the SODR (side obstacle detection control module RH) as a continuous memory DTC (diagnostic trouble code) if the SODR (side obstacle detection control module RH) detects low battery voltage below 9.0 volts for more than 100 ms.

Possible Sources

- Wiring, terminals and connectors
- Battery
- Generator
- SODCMC (Side Obstacle Detection Control Module C)
- SODCMD (Side Obstacle Detection Control Module D)
- SODL (side obstacle detection control module LH)
- SODR (side obstacle detection control module RH)
- PCM (powertrain control module)

NOTICE

Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

NOTE

Failure to disconnect the battery when instructed results in false resistance readings. REFER to section 414-01.

AC1 RECHECK THE SODCMC (SIDE OBSTACLE DETECTION CONTROL MODULE C) , SODCMD (SIDE OBSTACLE DETECTION CONTROL MODULE D) , SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) OR SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, perform the SODCMC (Side Obstacle Detection Control Module C) , SODCMD (Side Obstacle Detection Control Module D) , SODL (side obstacle detection control module

- Ignition OFF.
- Disconnect SODCMC (Side Obstacle Detection Control Module C) C1483 .
- Disconnect SODCMD (Side Obstacle Detection Control Module D) C1484 .
- For Incandescent rear lamps without smart hitch.
- Disconnect SODL (side obstacle detection control module LH) C412B .
- Disconnect SODR (side obstacle detection control module RH) C415B .
- For Incandescent rear lamps with smart hitch.
- Disconnect SODL (side obstacle detection control module LH) C498 .
- Disconnect SODR (side obstacle detection control module RH) C499 .
- For LED (light emitting diode) rear lamps without smart hitch.
- Disconnect SODL (side obstacle detection control module LH) C4483 .
- Disconnect SODR (side obstacle detection control module RH) C4484 .
- For LED (light emitting diode) rear lamps with smart hitch.
- Disconnect SODL (side obstacle detection control module LH) C4485 .
- Disconnect SODR (side obstacle detection control module RH) C4484 .
- Ignition ON.
- Measure and record battery voltage at the battery.
- For SODCMC (Side Obstacle Detection Control Module C) and SODCMD (Side Obstacle Detection Control Module D) , measure:

Positive Lead	Measurement / Action	Negative Lead
C1483-1	$\overline{\overline{\text{V}}}$	Ground
C1484-1	$\overline{\overline{\text{V}}}$	Ground

- For SODL (side obstacle detection control module LH) and SODR (side obstacle detection control module RH) (Incandescent rear lamps without smart hitch), measure:

Positive Lead	Measurement / Action	Negative Lead
C412B-1	$\overline{\overline{\text{V}}}$	Ground

C4484-7	$\overline{\overline{\text{V}}}$	Ground

Is the voltage within 0.2 volts of the recorded battery voltage?

Yes	GO to AC5

No	REPAIR the circuit for high resistance.

AC5 CHECK THE SODCMC (SIDE OBSTACLE DETECTION CONTROL MODULE C) , SODCMD (SIDE OBSTACLE DETECTION CONTROL MODULE D) , SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) OR SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) GROUND CIRCUIT

- Ignition OFF.
- For SODCMC (Side Obstacle Detection Control Module C) and SODCMD (Side Obstacle Detection Control Module D) , measure:

Positive Lead	Measurement / Action	Negative Lead
C4183-4	Ω	Ground
C4183-8	Ω	Ground
C4184-4	Ω	Ground

- For SODL (side obstacle detection control module LH) and SODR (side obstacle detection control module RH) (Incandescent rear lamps without smart hitch), measure:

Positive Lead	Measurement / Action	Negative Lead

C4484-5	Ω	Ground

- For SODL (side obstacle detection control module LH) and SODR (side obstacle detection control module RH) (LED (light emitting diode) rear lamps with smart hitch), measure:

Positive Lead	Measurement / Action	Negative Lead
C4485-5	Ω	Ground
C4485-9	Ω	Ground
C4484-5	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to AC6

No	REPAIR the circuit for high resistance.

AC6 CHECK FOR CORRECT SODCMC (SIDE OBSTACLE DETECTION CONTROL MODULE C) , SODCMD (SIDE OBSTACLE DETECTION CONTROL MODULE D) , SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) OR SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) OPERATION

- Ignition OFF.
- Disconnect and inspect the SODCMC (Side Obstacle Detection Control Module C) , SODCMD (Side Obstacle Detection Control Module D) , SODL (side obstacle detection control module LH) or SODR (side obstacle detection control module RH) connector.
- Repair:
    - corrosion (install new connector or terminals - clean module pins)
    - damaged or bent pins - install new terminals/pins