

SECTION 2B

Diagnostic Routines

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SECTION 2B

Diagnostic Routines

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Diagnostic Routines Preface

The Diagnostic Routines list in test step form the systems that can contribute to a particular condition in the order of probability, ease of accomplishment, and accessibility. These routines can be used as check lists for reference in the event of unusual or infrequent occurrences of a malfunction.

The order in which the Diagnostic Routines are listed has been carefully organized to include the most frequent faults at the top of each symptom list and least frequent at the bottom. Therefore, in some cases a system is listed ahead of another due to the fact that it is much easier to diagnose and less time consuming. Unless the fault is obvious, it is recommended that all diagnoses begin with a thorough visual inspection of a suspected system or component, followed by a system-by-system diagnosis as presented in the following routines. After each repair is made, check to see if the symptom(s) is(are) still present. If a particular system is determined to be operating normally, return to the Diagnostic Routines for other possible causes of the symptom.

NOTE: The technician is not required to adhere to the order specified in the Diagnostic Routines due to variations in vehicle type, system accessibility, vehicle repair history, or technician experience.

All references in each diagnostic routine are as follows:

- Section numbers reference a section in this manual.
- Service Manual section numbers reference the Body / Chassis / Electrical / Powertrain Service Manual.
- On-line Automotive Service Information System (OASIS) numbers have been included where applicable.

Special Note

The technician should obtain OASIS special service information on the customer's concern prior to performing extensive diagnosis and repairs.

NOTE: When referenced to a section in the Powertrain Control / Emissions Diagnosis Manual, look at the visual inspection chart provided prior to the test procedure. These charts list obvious fault possibilities that may have been overlooked.

NOTE: This section also contains a "Customer Information Worksheet." This worksheet is to be filled in by the customer so that his / her description of the problem can be given to the technician working on the vehicle.

Diagnostic Routines Worksheet

Customer Information Worksheet

Customer Information Worksheet			
CUSTOMER NAME _____		Repair Order No. _____	
DATE _____		DATE _____	
PLEASE HELP US HELP YOU by checking off all the boxes below that describe the drive problem which brought you here today.			
Problem Description			
Engine Starting Problems	Engine Quits Running Problems	Engine Idle Problems with the Vehicle Not Moving	Enging Problems While the Vehicle is Moving
<input type="checkbox"/> Will Not Start - Will Not Even Crank <input type="checkbox"/> Cranks But Will Not Start <input type="checkbox"/> Tries to Start, But Won't <input type="checkbox"/> Starts, But Takes a Long Time	Engine Quits: <input type="checkbox"/> Right After Starting <input type="checkbox"/> While Idling <input type="checkbox"/> When Put into Gear <input type="checkbox"/> On Acceleration <input type="checkbox"/> During Steady Speed Driving <input type="checkbox"/> On Deceleration <input type="checkbox"/> Right After the Vehicle is Brought to a Stop <input type="checkbox"/> When Parking	<input type="checkbox"/> Engine Speed is Too Slow All the Time <input type="checkbox"/> Engine Speed is Too Slow When the A/C is On <input type="checkbox"/> Engine Speed is Too Fast <input type="checkbox"/> Engine Speed is Rough or Uneven	<input type="checkbox"/> Runs Rough <input type="checkbox"/> Bucks and Jerks <input type="checkbox"/> Hesitates/Stumbles on Acceleration <input type="checkbox"/> Misfires - Cuts Out <input type="checkbox"/> Engine Knocks or Rattles <input type="checkbox"/> Lack of Power <input type="checkbox"/> Backfires <input type="checkbox"/> Poor Fuel Economy
When did the problem start to occur? _____		<input type="checkbox"/> Suddenly <input type="checkbox"/> Gradually	Approximate mileage _____
About how often does the problem happen? _____		<input type="checkbox"/> All the time <input type="checkbox"/> Most of the time	<input type="checkbox"/> Occasionally
When does the problem usually occur? In the: _____		<input type="checkbox"/> Morning <input type="checkbox"/> Later in the day	<input type="checkbox"/> Anytime
About how long after starting the engine does the problem happen?			
<input type="checkbox"/> Within 2 minutes of starting the engine <input type="checkbox"/> Between 2 and 10 minutes after the engine starts <input type="checkbox"/> At least 10 minutes or longer after starting the engine <input type="checkbox"/> It could happen any time after starting the engine			
About how long does the engine have to be off before the problem will happen again?			
<input type="checkbox"/> 4 hours or more <input type="checkbox"/> More than 30 minutes but less than 4 hours <input type="checkbox"/> Less than 30 minutes after being turned off <input type="checkbox"/> It does not matter how long the engine was off			
Do weather conditions affect the problem? _____		<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Hot <input type="checkbox"/> Cold <input type="checkbox"/> Rain <input type="checkbox"/> Fog <input type="checkbox"/> Snow <input type="checkbox"/> Humid <input type="checkbox"/> Dry	
Does outside temperature affect the problem? _____		<input type="checkbox"/> No <input type="checkbox"/> Yes If yes, what temperature? _____ °F	
Please check any of these driving conditions that cause the problem. _____		<input type="checkbox"/> Accelerating <input type="checkbox"/> Decelerating <input type="checkbox"/> Turning Right/Left <input type="checkbox"/> Steady Speed (approximate vehicle speed _____ mph)	
What are the traffic conditions that cause the problem? _____		<input type="checkbox"/> In/Around Town (frequent stops) <input type="checkbox"/> Highways (expressways)	<input type="checkbox"/> Offroad <input type="checkbox"/> Anytime
Type of fuel used? _____		<input type="checkbox"/> Regular Unleaded <input type="checkbox"/> Premium Unleaded	<input type="checkbox"/> Gasohol <input type="checkbox"/> Other
Was the Check Engine Light On? _____		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Flashing	
Were Other Warning Lights On? _____		<input type="checkbox"/> Yes <input type="checkbox"/> No Which Ones? _____	
Additional Comments: _____ _____ _____ _____			
Please use the back of this sheet if needed.			

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Diagnostic Routine Index

DRIVEABILITY			
Concern	Condition	OASIS Number	Routine Number
Starting Concerns	No Crank	601300	1
	Hard Start / Long Crank	602300	2
	Stall After Start	—	3
	No Start / Normal Crank	603300	4
Unique Idle Concerns	Slow Return To Idle	617400	5
	Rolling Idle	618400	6
	Fast Idle	619400	7
	Low / Slow Idle	—	8
Performance While Driving Concerns	Stalls / Quits	607000	3 / 8 / 9
	— Idle	607400	3
	— Acceleration	607500	9
	— Cruise	607600	9
	— Deceleration	607700	8
	Runs Rough	608000	6 / 10
	— Idle	608400	6
	— Acceleration	608500	10
	— Cruise	608600	10
	Misses	609000	6 / 10
	— Idle	609400	6
	— Acceleration	609500	10
	— Cruise	609600	10
	Buck / Jerk	610000	9
	— Acceleration	610500	9
	— Cruise	610600	9
	— Deceleration	610700	9
	Hesitation / Stumble	611000	9
	— Acceleration	611500	9
	Surge	612000	11
	— Acceleration	612500	11
	— Cruise	612600	11
	Backfires	613000	12
	— Idle	613400	12
	— Acceleration	613500	12
	— Deceleration	613700	12
	Lack / Loss Of Power	614000	13
	— Acceleration	614500	13
	— Cruise	614600	13
	Spark Knock	615000	14
	— Acceleration	615500	14
	— Cruise	615600	14
Additional Driveability Concerns	Diesels / Runs On	621000	7
	Poor Fuel Economy	622000	15
	Emissions Compliance	623000	16

Diagnostic Routine Index

DRIVELINE		
Concern	OASIS Number	Routine Number
Automatic Transaxle Upshift Concerns	501000	18
Automatic Transaxle Downshift Concerns	502000	18
Automatic Transaxle Engagement Concerns	503000	18
Other Automatic Transaxle Concerns	504000	18
Manual Transaxle Concerns	505000	19
ELECTRICAL		
Warning Indicators (Malfunction Indicator Lamp [MIL], Overdrive Off)	206000	17
ENGINE		
Oil System Concerns (High Oil Consumption)	401000	20
Cooling System Concerns	402000	
— Runs Hot (Overheating)		21
— Runs Cold		22
Exhaust System Concerns (Visual Smoke or Odor)	403000	23
Fuel System Concerns (Odor)	404000	24
Engine Noise	497000	25
Vibration Concerns	703000	26
Basic Engine	499000	27

<h1>Diagnostic Routines</h1>	<h1>Routine 1</h1>
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Routine 1 — No Crank

Symptom	OASIS Number
No Crank	601300

	TEST STEP	RESULT	ACTION TO TAKE
1-1	CHECK BATTERY VOLTAGE		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 14-01 and check the battery. ● Is the battery OK? 	Yes No	<ul style="list-style-type: none"> ▶ GO to 1-2. ▶ SERVICE as necessary.
1-2	CHECK STARTING CIRCUIT		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 11-05 and check the starting circuit. ● Is the starting circuit OK? 	Yes No	<ul style="list-style-type: none"> ▶ GO to 1-3. ▶ SERVICE as necessary.
1-3	CHECK STARTER MOTOR		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-06 and check the starter motor. ● Is the starter motor OK? 	Yes No	<ul style="list-style-type: none"> ▶ GO to 1-4. ▶ SERVICE as necessary.
1-4	CHECK BASIC ENGINE		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-01 and check for damaged flywheel or seized engine components. ● Is the engine OK? 	Yes No	<ul style="list-style-type: none"> ▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns. ▶ SERVICE as necessary.

Diagnostic Routines

Routine 2

Routine 2 — Hard Start/Long Crank

Concern	OASIS Number
Hard Start / Long Crank	602300

NOTE: It is a good practice to confirm that the correct starting procedure was being used by the customer before proceeding with diagnosis.

TEST STEP		RESULT	ACTION TO TAKE
2-1	CHECK VACUUM DISTRIBUTION		
	<ul style="list-style-type: none"> Check the vacuum distribution system for leaks. Is the vacuum distribution system OK? 	Yes No	<ul style="list-style-type: none"> GO to 2-2. SERVICE as necessary.
2-2	PERFORM EEC QUICK TEST		
	<ul style="list-style-type: none"> Go to Section 5B and perform the EEC Quick Test. Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No	<ul style="list-style-type: none"> SERVICE as necessary. GO to 2-3.
2-3	CHECK IGNITION SYSTEM		
	<ul style="list-style-type: none"> Go to Section 8B and perform the ignition system diagnostic procedures. Is the ignition system OK? 	Yes No	<ul style="list-style-type: none"> GO to 2-4. SERVICE as necessary.
2-4	CHECK FUEL DELIVERY SYSTEM		
	<ul style="list-style-type: none"> Go to Section 9B and perform the fuel delivery system diagnostic procedures. Is the fuel delivery system OK? 	Yes No	<ul style="list-style-type: none"> GO to 2-5. SERVICE as necessary.
2-5	CHECK AIR INTAKE SYSTEM		
	<ul style="list-style-type: none"> Go to Section 12B and perform the air intake system and the Bypass Air (BPA) control system diagnostic procedures. Are the air intake system and the Bypass Air (BPA) control system OK? 	Yes (1.3L and 2.5L) Yes (All others) No	<ul style="list-style-type: none"> GO to 2-6. GO to 2-7. SERVICE as necessary.
2-6	CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
	<ul style="list-style-type: none"> Go to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. Is the EGR system OK? 	Yes No	<ul style="list-style-type: none"> GO to 2-7. SERVICE as necessary.
2-7	CHECK COOLING FAN SYSTEM (HOT START CONCERN ONLY)		
	<ul style="list-style-type: none"> Go to Service Manual Section 03-03 and check the cooling fan system. Is the cooling fan system OK? 	Yes No	<ul style="list-style-type: none"> GO to 2-8. SERVICE as necessary.

Diagnostic Routines

Routine 2

TEST STEP		RESULT	ACTION TO TAKE
2-8	CHECK BASIC ENGINE		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-00 and check the engine compression. ● Go to Service Manual Section 03-01 and check camshaft, valve train, and timing belt condition. ● Is the basic engine OK? 	<p>Yes</p> <p>No</p>	<p>▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns.</p> <p>▶ SERVICE as necessary.</p>

<h1>Diagnostic Routines</h1>	<h1>Routine 3</h1>
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Routine 3 — Stall After Start, Stalls/Quits

Concern	OASIS Number
Stall After Start	—
Stalls/Quits	607000
— Idle	607400

	TEST STEP	RESULT	ACTION TO TAKE
3-1	CHECK VACUUM DISTRIBUTION		
	<ul style="list-style-type: none"> ● Check the vacuum distribution system for leaks. ● Is the vacuum distribution system OK? 	Yes No	► GO to 3-2 . ► SERVICE as necessary.
3-2	PERFORM EEC QUICK TEST		
	<ul style="list-style-type: none"> ● Go to Section 5B and perform the EEC Quick Test. ● Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No	► SERVICE as necessary. ► GO to 3-3 .
3-3	CHECK AIR INTAKE SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 12B and perform the air intake system and the Bypass Air (BPA) control system diagnostic procedures. ● Are the air intake system and the Bypass Air (BPA) control system OK? 	Yes No	► GO to 3-4 . ► SERVICE as necessary.
3-4	CHECK FUEL DELIVERY SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 9B and perform the fuel delivery system diagnostic procedures. ● Is the fuel delivery system OK? 	Yes (1.3L and 2.5L) Yes (1.6L Turbo) Yes (All others) No	► GO to 3-5 . ► GO to 3-6 . ► GO to 3-7 . ► SERVICE as necessary.
3-5	CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. ● Is the EGR system OK? 	Yes No	► GO to 3-7 . ► SERVICE as necessary.
3-6	CHECK TURBOCHARGER SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 9B and perform the turbocharger system diagnostic procedures. ● Is the turbocharger system OK? 	Yes No	► GO to 3-7 . ► SERVICE as necessary.

Diagnostic Routines

Routine 3

TEST STEP		RESULT	ACTION TO TAKE
3-7	CHECK POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM		
	<ul style="list-style-type: none"> Go to Section 14B and perform the Positive Crankcase Ventilation (PCV) system diagnostic procedures. Is the PCV system OK? 	Yes No	► GO to 3-8 . ► SERVICE as necessary.
3-8	CHECK EVAPORATIVE EMISSION (EVAP) SYSTEM		
	<ul style="list-style-type: none"> Go to Section 11B and perform the Evaporative Emission (EVAP) system diagnostic procedures. Is the EVAP system OK? 	Yes No	► GO to 3-9 . ► SERVICE as necessary.
3-9	CHECK BASIC ENGINE		
	<ul style="list-style-type: none"> Go to Service Manual Section 03-00 and check engine compression. Go to Service Manual Section 03-01 and check camshaft, valve train, and timing belt condition. Is the basic engine system OK? 	Yes No	► GO to 3-10 . ► SERVICE as necessary.
3-10	CHECK IGNITION SYSTEM		
	<ul style="list-style-type: none"> Go to Section 8B and perform the ignition system diagnostic procedures. Is the ignition system OK? 	Yes No	► RETURN to the Diagnostic Routine Index and CHECK for other concerns. ► SERVICE as necessary.

Diagnostic Routines

Routine 4

Routine 4 — No Start/Normal Crank

Concern	OASIS Number
No Start/Normal Crank	603300

NOTE: Extended cranking due to a "NO START" condition can load the exhaust system with raw fuel and ruin the three way catalytic converter after the engine starts. After the "NO START" condition has been repaired, disconnect the injectors and crank the engine until surplus fuel is purged, as evidenced by the absence of fuel odor in the exhaust.

TEST STEP		RESULT	ACTION TO TAKE
4-1	PERFORM EEC QUICK TEST		
	<ul style="list-style-type: none"> Go to Section 5B and perform the EEC Quick Test. Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes	SERVICE as necessary.
		No	GO to 4-2 .
4-2	CHECK IGNITION SYSTEM		
	<ul style="list-style-type: none"> Go to Section 8B and perform the ignition system diagnostic procedures. Is the ignition system OK? 	Yes	GO to 4-3 .
		No	SERVICE as necessary.
4-3	CHECK BASIC ENGINE		
	<ul style="list-style-type: none"> Go to Service Manual Section 03-00 and check engine compression. Go to Service Manual Section 03-01 and check camshaft, valve train, and timing belt condition. Is the basic engine OK? 	Yes	GO to 4-4 .
		No	SERVICE as necessary.
4-4	CHECK AIR INTAKE SYSTEM	Yes (1.3L and 2.5L)	GO to 4-5 .
		Yes (1.6L Turbo)	GO to 4-6 .
		Yes (All others)	GO to 4-7 .
		No	SERVICE as necessary.
4-5	CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
		<ul style="list-style-type: none"> Go to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. Is the EGR system OK? 	Yes
		No	SERVICE as necessary.
4-6	CHECK TURBOCHARGER SYSTEM		
		<ul style="list-style-type: none"> Go to Section 9B and perform the turbocharger system diagnostic procedures. Is the turbocharger system OK? 	Yes
		No	SERVICE as necessary.

Diagnostic Routines

Routine 4

TEST STEP		RESULT	ACTION TO TAKE
4-7	CHECK FUEL DELIVERY SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 9B and perform the fuel delivery system diagnostic procedures. ● Is the fuel delivery system OK? 	Yes	<ul style="list-style-type: none"> ▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns.
		No	<ul style="list-style-type: none"> ▶ SERVICE as necessary.

Diagnostic Routines

Routine 5

Routine 5 — Slow Return To Idle

Concern	OASIS Number
Slow Return To Idle	617400

TEST STEP		RESULT	ACTION TO TAKE
5-1	PERFORM EEC QUICK TEST		
	<ul style="list-style-type: none"> Go to Section 5B and perform the EEC Quick Test. Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes	SERVICE as necessary.
		No	GO to 5-2 .
5-2	CHECK FUEL DELIVERY SYSTEM		
	<ul style="list-style-type: none"> Go to Section 9B and perform the fuel delivery system diagnostic procedures. Is the fuel delivery system OK? 	Yes	GO to 5-3 .
		No	SERVICE as necessary.
5-3	CHECK VACUUM DISTRIBUTION		
	<ul style="list-style-type: none"> Check the vacuum distribution system for leaks. Is the vacuum distribution system OK? 	Yes	GO to 5-4 .
		No	SERVICE as necessary.
5-4	CHECK AIR INTAKE SYSTEM		
	<ul style="list-style-type: none"> Go to Section 12B and perform the air intake system and the Bypass Air (BPA) control system diagnostic procedures. Are the air intake system and the Bypass Air (BPA) control system OK? 	Yes	RETURN to the Diagnostic Routine Index and CHECK for other concerns.
		No	SERVICE as necessary.

Diagnostic Routines

Routine 6

Routine 6 — Rolling Idle, Runs Rough, Misses

Concern	OASIS Number
Rolling Idle	618400
Runs Rough	608000
— Idle	608400
Misses	609000
— Idle	609400

TEST STEP	RESULT	ACTION TO TAKE
6-1 CHECK VACUUM DISTRIBUTION		
<ul style="list-style-type: none"> ● Check the vacuum distribution system for leaks. ● Is the vacuum distribution system OK? 	Yes No	► GO to 6-2 . ► SERVICE as necessary.
6-2 CHECK AIR INTAKE SYSTEM		
<ul style="list-style-type: none"> ● Go to Section 12B and perform the air intake system and the Bypass Air (BPA) control system diagnostic procedures. ● Are the air intake system and the Bypass Air (BPA) control system OK? 	Yes No	► GO to 6-3 . ► SERVICE as necessary.
6-3 CHECK IGNITION SYSTEM		
<ul style="list-style-type: none"> ● Go to Section 8B and perform the ignition system diagnostic procedures. ● Is the ignition system OK? 	Yes No	► GO to 6-4 . ► SERVICE as necessary.
6-4 CHECK FUEL DELIVERY SYSTEM		
<ul style="list-style-type: none"> ● Go to Section 9B and perform the fuel delivery system diagnostic procedures. ● Is the fuel delivery system OK? 	Yes No	► GO to 6-5 . ► SERVICE as necessary.
6-5 PERFORM EEC QUICK TEST		
<ul style="list-style-type: none"> ● Go to Section 5B and perform the EEC Quick Test. ● Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No (1.3L and 2.5L) No (All others)	► SERVICE as necessary. ► GO to 6-6 . ► GO to 6-7 .
6-6 CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
<ul style="list-style-type: none"> ● Go to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. ● Is the EGR system OK? 	Yes No	► GO to 6-7 . ► SERVICE as necessary.

Diagnostic Routines

Routine 6

TEST STEP		RESULT	ACTION TO TAKE
6-7	CHECK POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM		
	<ul style="list-style-type: none"> Go to Section 14B and perform the Positive Crankcase Ventilation (PCV) system diagnostic procedures. Is the PCV system OK? 	Yes (1.6L Turbo) ▶ Yes (All others) ▶ No ▶	GO to 6-8 . GO to 6-9 . SERVICE as necessary.
6-8	CHECK TURBOCHARGER SYSTEM		
	<ul style="list-style-type: none"> Go to Section 9B and perform the turbocharger system diagnostic procedures. Is the turbocharger system OK? 	Yes ▶ No ▶	GO to 6-9 . SERVICE as necessary.
6-9	CHECK BASIC ENGINE		
	<ul style="list-style-type: none"> Go to Service Manual Section 03-00 and check engine compression. Go to Service Manual Section 03-01 and check camshaft, valve train, and timing belt condition. Is the basic engine OK? 	Yes ▶ No ▶	RETURN to the Diagnostic Routine Index and CHECK for other concerns. SERVICE as necessary.

Diagnostic Routines

Routine
7

Routine 7 — Fast Idle, Diesels/Runs On

Concern	OASIS Number
Fast Idle	619400
Diesels/Runs On	621000

TEST STEP		RESULT	ACTION TO TAKE
7-1	CHECK AIR INTAKE SYSTEM		
	<ul style="list-style-type: none"> Go to Section 12B and perform the air intake system diagnostic procedures. Is the air intake system OK? 	Yes No	GO to 7-2 . SERVICE as necessary.
7-2	CHECK VACUUM DISTRIBUTION		
	<ul style="list-style-type: none"> Check the vacuum distribution system for leaks. Is the vacuum distribution system OK? 	Yes No	GO to 7-3 . SERVICE as necessary.
7-3	PERFORM EEC QUICK TEST		
	<ul style="list-style-type: none"> Go to Section 5B and perform the EEC Quick Test. Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No	SERVICE as necessary. GO to 7-4 .
7-4	CHECK COOLING SYSTEM		
	<ul style="list-style-type: none"> Go to Service Manual Section 03-03 and check the cooling system. Is the cooling system OK? 	Yes (Vehicle has air-conditioning) Yes (Vehicle does not have air-conditioning) No	GO to 7-5 . RETURN to the Diagnostic Routine Index and CHECK for other concerns. SERVICE as necessary.
7-5	CHECK AIR-CONDITIONING SYSTEM		
	<ul style="list-style-type: none"> Go to Service Manual Section 12-00 and check the air-conditioning system. Is the air-conditioning system OK? 	Yes No	RETURN to the Diagnostic Routine Index and CHECK for other concerns. SERVICE as necessary.

Diagnostic Routines

Routine 8

Routine 8 — Low/Slow Idle, Stalls/Quits

Concern	OASIS Number
Low/Slow Idle	—
Stalls/Quits	607000
— Deceleration	607700

TEST STEP	RESULT	ACTION TO TAKE
8-1 CHECK AIR INTAKE SYSTEM <ul style="list-style-type: none"> Go to Section 12B and perform the air intake system and the Bypass Air (BPA) control system diagnostic procedures. Are the air intake system and the Bypass Air (BPA) control system OK? 	Yes No	GO to 8-2 . SERVICE as necessary.
8-2 CHECK FUEL DELIVERY SYSTEM <ul style="list-style-type: none"> Go to Section 9B and perform the fuel delivery system diagnostic procedures. Is the fuel delivery system OK? 	Yes No	GO to 8-3 . SERVICE as necessary.
8-3 PERFORM EEC QUICK TEST <ul style="list-style-type: none"> Go to Section 5B and perform the EEC Quick Test. Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No (1.3L and 2.5L) No (All others)	SERVICE as necessary. GO to 8-4 . RETURN to the Diagnostic Routine Index and CHECK for other concerns.
8-4 CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM <ul style="list-style-type: none"> Go to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. Is the EGR system OK? 	Yes No	RETURN to the Diagnostic Routine Index and CHECK for other concerns. SERVICE as necessary.

Diagnostic Routines

Routine 9

Routine 9 — Stalls/Quits, Buck/Jerk, Hesitation/Stumble

Concern	OASIS Number
Stalls/Quits	607000
— Acceleration	607500
— Cruise	607600
Buck/Jerk	610000
— Acceleration	610500
— Cruise	610600
— Deceleration	610700
Hesitation/Stumble	611000
— Acceleration	611500

TEST STEP	RESULT	ACTION TO TAKE
9-1 CHECK BYPASS AIR (BPA) CONTROL SYSTEM		
<ul style="list-style-type: none"> Go to Section 12B and perform the Bypass Air (BPA) control system diagnostic procedures. Is the BPA control system OK? 	Yes No	GO to 9-2 . SERVICE as necessary.
9-2 PERFORM EEC QUICK TEST		
<ul style="list-style-type: none"> Go to Section 5B and perform the EEC Quick Test. Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No	SERVICE as necessary. GO to 9-3 .
9-3 CHECK IGNITION SYSTEM		
<ul style="list-style-type: none"> Go to Section 8B and perform the ignition system diagnostic procedures. Is the ignition system OK? 	Yes No	GO to 9-4 . SERVICE as necessary.
9-4 CHECK FUEL DELIVERY SYSTEM		
<ul style="list-style-type: none"> Go to Section 9B and perform the fuel delivery system diagnostic procedures. Is the fuel delivery system OK? 	Yes No	GO to 9-5 . SERVICE as necessary.
9-5 CHECK AIR INTAKE SYSTEM		
<ul style="list-style-type: none"> Go to Section 12B and perform the air intake system diagnostic procedures. Is the air intake system OK? 	Yes (1.3L and 2.5L) Yes (1.6L Turbo) Yes (All others) No	GO to 9-6 . GO to 9-7 . GO to 9-8 . SERVICE as necessary.

Diagnostic Routines

Routine 9

TEST STEP		RESULT	ACTION TO TAKE
9-6	CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
	<ul style="list-style-type: none"> Go to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. Is the EGR system OK? 	Yes No	GO to 9-8 . SERVICE as necessary.
9-7	CHECK TURBOCHARGER SYSTEM		
	<ul style="list-style-type: none"> Go to Section 9B and perform the turbocharger system diagnostic procedures. Is the turbocharger system OK? 	Yes No	GO to 9-8 . SERVICE as necessary.
9-8	CHECK BASIC ENGINE		
	<ul style="list-style-type: none"> Go to Service Manual Section 03-01 and check camshaft, valve train, and timing belt condition. Is the basic engine OK? 	Yes No	GO to 9-9 . SERVICE as necessary.
9-9	CHECK EXHAUST SYSTEM		
	<ul style="list-style-type: none"> Go to Section 15B, Test Step EX1, and perform the exhaust system diagnostic procedures. Is the exhaust system OK? 	Yes No	RETURN to the Diagnostic Routine Index and CHECK for other concerns. SERVICE as necessary.

<h1>Diagnostic Routines</h1>	<h2>Routine 10</h2>
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Routine 10 — Runs Rough, Misses

Concern	OASIS Number
Runs Rough	608000
— Acceleration	608500
— Cruise	608600
Misses	609000
— Acceleration	609500
— Cruise	609600

	TEST STEP	RESULT	ACTION TO TAKE
10-1	CHECK IGNITION SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 8B and perform the ignition system diagnostic procedures. ● Is the ignition system OK? 	Yes No	<ul style="list-style-type: none"> ▶ GO to 10-2. ▶ SERVICE as necessary.
10-2	PERFORM EEC QUICK TEST		
	<ul style="list-style-type: none"> ● Go to Section 5B and perform the EEC Quick Test. ● Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No	<ul style="list-style-type: none"> ▶ SERVICE as necessary. ▶ GO to 10-3.
10-3	CHECK FUEL DELIVERY SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 9B and perform the fuel delivery system diagnostic procedures. ● Is the fuel delivery system OK? 	Yes No	<ul style="list-style-type: none"> ▶ GO to 10-4. ▶ SERVICE as necessary.
10-4	CHECK BYPASS AIR (BPA) CONTROL SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 12B and perform the Bypass Air (BPA) control system diagnostic procedures. ● Is the BPA control system OK? 	Yes (1.3L and 2.5L) Yes (All others) No	<ul style="list-style-type: none"> ▶ GO to 10-5. ▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns. ▶ SERVICE as necessary.
10-5	CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
	<ul style="list-style-type: none"> ● GO to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. ● Is the EGR system OK? 	Yes No	<ul style="list-style-type: none"> ▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns. ▶ SERVICE as necessary.

Diagnostic Routines

Routine 11

Routine 11 — Surge

Concern	OASIS Number
Surge	612000
— Acceleration	612500
— Cruise	612600

TEST STEP	RESULT	ACTION TO TAKE
11-1 CHECK VACUUM DISTRIBUTION		
<ul style="list-style-type: none"> Check the vacuum distribution system for leaks. Is the vacuum distribution system OK? 	Yes No	► GO to 11-2 . ► SERVICE as necessary.
11-2 CHECK IGNITION SYSTEM		
<ul style="list-style-type: none"> Go to Section 8B and perform the ignition system diagnostic procedures. Is the ignition system OK? 	Yes No	► GO to 11-3 . ► SERVICE as necessary.
11-3 CHECK BYPASS AIR (BPA) CONTROL SYSTEM		
<ul style="list-style-type: none"> Go to Section 12B and perform the Bypass Air (BPA) control system diagnostic procedures. Is the BPA control system OK? 	Yes No	► GO to 11-4 . ► SERVICE as necessary.
11-4 CHECK FUEL DELIVERY SYSTEM		
<ul style="list-style-type: none"> Go to Section 9B and perform the fuel delivery system diagnostic procedures. Is the fuel delivery system OK? 	Yes No	► GO to 11-5 . ► SERVICE as necessary.
11-5 PERFORM EEC QUICK TEST		
<ul style="list-style-type: none"> Go to Section 5B and perform the EEC Quick Test. Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No (1.3L and 2.5L) No (All others)	► SERVICE as necessary. ► GO to 11-6 . ► GO to 11-7 .
11-6 CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
<ul style="list-style-type: none"> Go to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. Is the EGR system OK? 	Yes No	► GO to 11-7 . ► SERVICE as necessary.
11-7 CHECK AIR INTAKE SYSTEM		
<ul style="list-style-type: none"> Go to Section 12B and perform the air intake system diagnostic procedures. Is the air intake system OK? 	Yes No	► GO to 11-8 . ► SERVICE as necessary.

<h1>Diagnostic Routines</h1>	<h1>Routine 11</h1>
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	TEST STEP	RESULT	ACTION TO TAKE
11-8	CHECK EVAPORATIVE EMISSION (EVAP) SYSTEM <ul style="list-style-type: none"> ● Go to Section 11B and perform the Evaporative Emission (EVAP) system diagnostic procedures. ● Is the EVAP system OK? 	Yes (1.6L Turbo) Yes (All others) No	<ul style="list-style-type: none"> ▶ GO to 11-9. ▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns. ▶ SERVICE as necessary.
11-9	CHECK TURBOCHARGER SYSTEM <ul style="list-style-type: none"> ● Go to Section 9B and perform the turbocharger system diagnostic procedures. ● Is the turbocharger system OK? 	Yes No	<ul style="list-style-type: none"> ▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns. ▶ SERVICE as necessary.

Diagnostic Routines

Routine 12

Routine 12 — Backfires

Concern	OASIS Number
Backfires	613000
— Idle	613400
— Acceleration	613500
— Deceleration	613700

TEST STEP	RESULT	ACTION TO TAKE
12-1 CHECK VACUUM DISTRIBUTION		
<ul style="list-style-type: none"> Check the vacuum distribution system for leaks. Is the vacuum distribution system OK? 	Yes No	► GO to 12-2 . ► SERVICE as necessary.
12-2 CHECK IGNITION SYSTEM		
<ul style="list-style-type: none"> Go to Section 8B and perform the ignition system diagnostic procedures. Is the ignition system OK? 	Yes No	► GO to 12-3 . ► SERVICE as necessary.
12-3 CHECK BASIC ENGINE		
<ul style="list-style-type: none"> Go to Service Manual Section 03-00 and check engine compression. Go to Service Manual Section 03-01 and check the intake manifold, intake manifold gasket, camshaft, and valves. Is the basic engine OK? 	Yes No	► GO to 12-4 . ► SERVICE as necessary.
12-4 PERFORM EEC QUICK TEST		
<ul style="list-style-type: none"> Go to Section 5B and perform the EEC Quick Test. Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No	► SERVICE as necessary. ► GO to 12-5 .
12-5 CHECK EXHAUST SYSTEM		
<ul style="list-style-type: none"> Go to Section 15B, Test Step EX 1, and perform the exhaust system diagnostic procedures. Is the exhaust system OK? 	Yes No	► GO to 12-6 . ► SERVICE as necessary.
12-6 CHECK FUEL DELIVERY SYSTEM		
<ul style="list-style-type: none"> Go to Section 9B and perform the fuel delivery system diagnostic procedures. Is the fuel delivery system OK? 	Yes No	► RETURN to Diagnostic Routine Index and CHECK for other concerns. ► SERVICE as necessary.

<h1>Diagnostic Routines</h1>	<h2>Routine 13</h2>
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Routine 13 — Lack/Loss Of Power

Concern	OASIS Number
Lack/Loss Of Power	614000
— Acceleration	614500
— Cruise	614600

	TEST STEP	RESULT	ACTION TO TAKE
13-1	CHECK AIR INTAKE SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 12B and perform the air intake system diagnostic procedures. ● Is the air intake system OK? 	Yes No	► GO to 13-2 . ► SERVICE as necessary.
13-2	CHECK IGNITION SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 8B and perform the ignition system diagnostic procedures. ● Is the ignition system OK? 	Yes No	► GO to 13-3 . ► SERVICE as necessary.
13-3	CHECK FUEL DELIVERY SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 9B and perform the fuel delivery system diagnostic procedures. ● Is the fuel delivery system OK? 	Yes No	► GO to 13-4 . ► SERVICE as necessary.
13-4	CHECK EXHAUST SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 15B, Test Step EX1, and perform the exhaust system diagnostic procedures. ● Is the exhaust system OK? 	Yes (1.3L and 2.5L) Yes (All others) No	► GO to 13-5 . ► GO to 13-6 . ► SERVICE as necessary.
13-5	CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. ● Is the EGR system OK? 	Yes No	► GO to 13-6 . ► SERVICE as necessary.
13-6	CHECK BASIC ENGINE		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-00 and check the engine compression. ● Go to Service Manual Section 03-01 and check the camshaft and valves. ● Is the basic engine OK? 	Yes No	► GO to 13-7 . ► SERVICE as necessary.

Diagnostic Routines

Routine 13

TEST STEP		RESULT	ACTION TO TAKE
13-7	PERFORM EEC QUICK TEST		
	<ul style="list-style-type: none"> Go to Section 5B and perform the EEC Quick Test. Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No (1.6L Turbo) No (All others)	SERVICE as necessary. GO to 13-8 . GO to 13-9 .
13-8	CHECK TURBOCHARGER SYSTEM		
	<ul style="list-style-type: none"> Go to Section 9B and perform the turbocharger system diagnostic procedures. Is the turbocharger system OK? 	Yes No	GO to 13-9 . SERVICE as necessary.
13-9	CHECK DRIVETRAIN AND BRAKES		
	<ul style="list-style-type: none"> Go to Service Manual Section 08-00 and perform the clutch system diagnostic procedures (MTX). Go to Service Manual Section 07-01 and perform the automatic transaxle diagnostic procedures (ATX). Go to Service Manual Section 06-00 and check for dragging brakes. Are the drivetrain and brakes OK? 	Yes No	RETURN to the Diagnostic Routine Index and CHECK for other concerns. SERVICE as necessary.

Diagnostic Routines

Routine 14

Routine 14 — Spark Knock

Concern	OASIS Number
Spark Knock	615000
— Acceleration	615500
— Cruise	615600

NOTE: If the following tests fail to correct the condition, it is recommended that the owner change the source of fuel. Water, alcohol percentage, fuel vapor pressure, and lead can be detected by using Rotunda Gas Check 014-00335, or equivalent.

TEST STEP		RESULT	ACTION TO TAKE
14-1	CHECK IGNITION SYSTEM		
	<ul style="list-style-type: none"> Go to Section 8B and perform the ignition system diagnostic procedures. Is the ignition system OK? 	Yes No	GO to 14-2 . SERVICE as necessary.
14-2	CHECK VACUUM DISTRIBUTION		
	<ul style="list-style-type: none"> Check the vacuum distribution system for leaks. Is the vacuum distribution system OK? 	Yes (1.3L and 2.5L) Yes (All others) No	GO to 14-3 . GO to 14-4 . SERVICE as necessary.
14-3	CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
	<ul style="list-style-type: none"> Go to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. Is the EGR system OK? 	Yes No	GO to 14-4 . SERVICE as necessary.
14-4	PERFORM EEC QUICK TEST		
	<ul style="list-style-type: none"> Go to Section 5B and perform the EEC Quick Test. Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No	SERVICE as necessary. GO to 14-5 .
14-5	CHECK COOLING SYSTEM		
	<ul style="list-style-type: none"> Go to Service Manual Section 03-03 and check the cooling system for overheating conditions. Is the cooling system OK? 	Yes (1.6L Turbo) Yes (All others) No	GO to 14-6 . RETURN to the Diagnostic Routine Index and CHECK for other concerns. SERVICE as necessary.

Diagnostic Routines

Routine 14

TEST STEP		RESULT	ACTION TO TAKE
14-6	CHECK TURBOCHARGER SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 9B and perform the turbocharger system diagnostic procedures. ● Is the turbocharger system OK? 	Yes	▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns.
		No	▶ SERVICE as necessary.

Diagnostic Routines

Routine 15

Routine 15 — Poor Fuel Economy

Concern	OASIS Number
Poor Fuel Economy	622000

TEST STEP	RESULT	ACTION TO TAKE
15-1 CHECK VACUUM DISTRIBUTION		
<ul style="list-style-type: none"> ● Check the vacuum distribution system for leaks. ● Is the vacuum distribution system OK? 	Yes No	► GO to 15-2 . ► SERVICE as necessary.
15-2 CHECK IGNITION SYSTEM		
<ul style="list-style-type: none"> ● Go to Section 8B, Test Step ADV1 for the 1.6L or Test Step IST1 for the 1.3L, 1.8L, or the 2.5L and perform the ignition system diagnostic procedures. ● Is the ignition system OK? 	Yes No	► GO to 15-3 . ► SERVICE as necessary.
15-3 CHECK AIR INTAKE SYSTEM		
<ul style="list-style-type: none"> ● Go to Section 12B and perform the air intake system diagnostic procedures. ● Is the air intake system OK? 	Yes No	► GO to 15-4 . ► SERVICE as necessary.
15-4 CHECK FUEL DELIVERY SYSTEM		
<ul style="list-style-type: none"> ● Go to Section 9B and perform the fuel delivery system diagnostic procedures. ● Is the fuel delivery system OK? 	Yes No	► GO to 15-5 . ► SERVICE as necessary.
15-5 PERFORM EEC QUICK TEST		
<ul style="list-style-type: none"> ● Go to Section 5B and perform the EEC Quick Test. ● Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No (1.3L and 2.5L) No (All others)	► SERVICE as necessary. ► GO to 15-6 . ► GO to 15-7 .
15-6 CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
<ul style="list-style-type: none"> ● Go to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. ● Is the EGR system OK? 	Yes No	► GO to 15-7 . ► SERVICE as necessary.
15-7 CHECK COOLING SYSTEM		
<ul style="list-style-type: none"> ● Go to Service Manual Section 03-03 and check the cooling system (thermostat). ● Is the cooling system OK? 	Yes No	► GO to 15-8 . ► SERVICE as necessary.

<h1 style="margin: 0;">Diagnostic Routines</h1>	<h1 style="margin: 0;">Routine 15</h1>
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	TEST STEP	RESULT	ACTION TO TAKE
15-8	CHECK EXTERNAL FACTORS		
	<ul style="list-style-type: none"> ● Check all factors external to the engine: <ul style="list-style-type: none"> — Tire pressure (Service Manual Section 04-04) — Transaxle slipping (Service Manual Section 07-01 or 07-03) — Brake dragging (Service Manual Section 06-00) — Odometer calibration (Service Manual Section 13-01) — Vehicle load — Driving habits — Road and weather conditions ● Are all of the external factors OK? 	Yes No	► GO to 15-9 . ► SERVICE as necessary.
15-9	CHECK EXHAUST SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 15B, Test Step EX1, and perform the exhaust system diagnostic procedures. ● Is the exhaust system free of restrictions? 	Yes No	► GO to 15-10 . ► SERVICE as necessary.
15-10	CHECK BASIC ENGINE		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-00 and check engine compression. ● Go to Service Manual Section 03-01 and check the intake manifold, intake manifold gasket, camshaft and valves. ● Is the basic engine OK? 	Yes No	► RETURN to the Diagnostic Routine Index and CHECK for other concerns. ► SERVICE as necessary.

<h1>Diagnostic Routines</h1>	<h2>Routine 16</h2>
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Routine 16 — Emissions Compliance

Concern	OASIS Number
Emissions Compliance	623000

NOTE: Canada and some states or metropolitan areas in the United States require periodic idle emission tests. All Ford products have been designed to pass these tests. If a Ford product fails an idle emission test, it is probable that 1) the engine temperature was not warm and stabilized prior to the test, or 2) the vehicle had idled excessively long prior to the test.

Prior to starting any services, complaints of an idle emission test failure should be verified by using the test procedure of the area which failed the vehicle if the area is approved by Ford for performance warranty.

The following example encompasses most of the emissions measurement modes of the current state idle test procedures:

- Ensure that the engine is at normal operating temperature and that all accessories are turned off.
- Read the emissions at idle.
- Run the engine at 2500 ± 300 rpm.
- Read the emissions within 30 seconds.
- Return the engine speed to idle.
- Read the emissions within 30 seconds.

If any emission components are changed, Keep Alive Memory (KAM) should be cleared before repeating the state emission test procedure. Refer to Erasing Diagnostic Trouble Codes in the Quick Test Appendix in Section 5B.

	TEST STEP	RESULT	ACTION TO TAKE
16-1	PERFORM EEC QUICK TEST		
	<ul style="list-style-type: none"> ● Go to Section 5B and perform the EEC Quick Test. ● Are diagnostic trouble codes obtained, or are any other conditions noticed? 	Yes No	SERVICE as necessary. GO to 16-2 .
16-2	CHECK IGNITION SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 8B, Test Step ADV1 for the 1.6L or Test Step IST1 for the 1.3L, 1.8L, or the 2.5L and perform the ignition system diagnostic procedure. ● Is the ignition system OK? 	Yes No	GO to 16-3 . SERVICE as necessary.
16-3	CHECK VACUUM DISTRIBUTION		
	<ul style="list-style-type: none"> ● Check the vacuum distribution system for leaks. ● Is the vacuum distribution system OK? 	Yes No	GO to 16-4 . SERVICE as necessary.

Diagnostic Routines

Routine 16

TEST STEP		RESULT	ACTION TO TAKE
16-4	CHECK FUEL DELIVERY SYSTEM		
	<ul style="list-style-type: none"> Go to Section 9B, Test Step FD 1, and perform the fuel delivery system diagnostic procedures. Is the fuel delivery system OK? 	Yes (1.3L and 2.5L)	▶ GO to 16-5 .
		Yes (All others)	▶ GO to 16-6 .
		No	▶ SERVICE as necessary.
16-5	CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
	<ul style="list-style-type: none"> Go to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. Is the EGR system OK? 	Yes	▶ GO to 16-6 .
		No	▶ SERVICE as necessary.
16-6	CHECK POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM		
	<ul style="list-style-type: none"> Go to Section 14B and perform the Positive Crankcase Ventilation (PCV) system diagnostic procedures. Is the PCV system OK? 	Yes	▶ GO to 16-7 .
		No	▶ SERVICE as necessary.
16-7	CHECK EVAPORATIVE EMISSION (EVAP) SYSTEM		
	<ul style="list-style-type: none"> Go to Section 11B and perform the Evaporative Emission (EVAP) system diagnostic procedures. Is the EVAP system OK? 	Yes	▶ GO to 16-8 .
		No	▶ SERVICE as necessary.
16-8	CHECK AIR INTAKE SYSTEM		
	<ul style="list-style-type: none"> Go to Section 12B and perform the air intake system diagnostic procedures. Is the air intake system OK? 	Yes	▶ GO to 16-9 .
		No	▶ SERVICE as necessary.
16-9	CHECK EXHAUST SYSTEM		
	<ul style="list-style-type: none"> Go to Section 15B and perform the exhaust system diagnostic procedures. Is the exhaust system OK? 	Yes	▶ GO to 16-10 .
		No	▶ SERVICE as necessary.
16-10	CHECK COOLING SYSTEM		
	<ul style="list-style-type: none"> Go to Service Manual Section 03-03 and perform the cooling system diagnostic procedures. Is the cooling system OK? 	Yes (1.6L Turbo)	▶ GO to 16-11 .
		Yes (All others)	▶ GO to 16-12 .
		No	▶ SERVICE as necessary.
16-11	CHECK TURBOCHARGER SYSTEM		
	<ul style="list-style-type: none"> Go to Section 9B and perform the turbocharger system diagnostic procedures. Is the turbocharger system OK? 	Yes	▶ GO to 16-12 .
		No	▶ SERVICE as necessary.

Diagnostic Routines

Routine 16

TEST STEP		RESULT	ACTION TO TAKE
16-12	CHECK BASIC ENGINE		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-00 and check the engine compression. ● Go to Service Manual Section 03-01 and check the intake manifold gasket, the camshaft, and the valves. ● Is the engine OK? 	<p>Yes</p> <p>No</p>	<p>▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns.</p> <p>▶ SERVICE as necessary.</p>

Diagnostic Routines

Routine 17

Routine 17 — Warning Indicator Lamps

Concern	OASIS Number
Warning Indicator Lamps (MIL, Overdrive Off)	206000

NOTE: Use this Routine when the Malfunction Indicator Lamp (MIL) or "Check Engine" lamp, or the Overdrive Off Lamp (O/D OFF) (1.6L 4EAT and 2.5L 4EAT only) is on or flashing while driving.

TEST STEP		RESULT	ACTION TO TAKE
17-1	PERFORM EEC OR 4EAT QUICK TEST		
	<ul style="list-style-type: none"> ● Go to Section 5B and perform the appropriate Quick Test: <ul style="list-style-type: none"> — EEC Quick Test if the MIL is on or flashing while driving — 4EAT Quick Test if the Overdrive Off Lamp (O/D OFF) is on or flashing while driving (other than overdrive off driving) ● Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No	<ul style="list-style-type: none"> ▶ SERVICE as necessary. ▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns.

Diagnostic Routines

Routine 18

Routine 18 — Automatic Transaxle Concerns

Concern	OASIS Number
Automatic Transaxle Upshift Concerns	501000
Automatic Transaxle Downshift Concerns	502000
Automatic Transaxle Engagement Concerns	503000
Other Automatic Transaxle Concerns	504000

TEST STEP		RESULT	ACTION TO TAKE
18-1	PERFORM 4EAT QUICK TEST		
	<ul style="list-style-type: none"> Go to Section 5B (Section 2A, 1.9L 4EAT) and perform the 4EAT Quick Test. Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes	SERVICE as necessary.
		No	GO to 18-2 .
18-2	CHECK BASIC TRANSAXLE		
	<ul style="list-style-type: none"> Go to Service Manual Section 07-01 and perform the automatic transaxle diagnostic procedures. Is the automatic transaxle OK? 	Yes	RETURN to the Diagnostic Routine Index and CHECK for other concerns.
		No	SERVICE as necessary.

Diagnostic Routines

Routine 19

Routine 19 — Manual Transaxle Concerns

Concern	OASIS Number
Manual Transaxle Concerns	505000

TEST STEP		RESULT	ACTION TO TAKE
19-1	CHECK MANUAL TRANSAXLE	Yes	▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns.
		No	▶ SERVICE as necessary.

Diagnostic Routines

Routine 20

Routine 20 — Oil System Concerns (High Oil Consumption)

Concern	OASIS Number
Oil System Concerns (High Oil Consumption)	401000

TEST STEP		RESULT	ACTION TO TAKE
20-1	CHECK OIL LEVEL		
	<ul style="list-style-type: none"> ● Check for proper filling of the crankcase and for proper dipstick application. ● Are the oil level and dipstick OK? 	Yes No	► GO to 20-2 . ► SERVICE as required.
20-2	CHECK ENGINE FOR EXTERNAL LEAKS		
	<ul style="list-style-type: none"> ● Check the following components for leakage. Refer to Service Manual Section 03-01. <ul style="list-style-type: none"> — Valve cover gasket — Crankshaft seals — Oil pan gasket and seals — Dipstick — Oil filter and seal — Oil pump — Engine assembly ● Are external leaks evident? 	Yes No	► SERVICE as necessary. ► GO to 20-3 .
20-3	CHECK POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 14B and perform the Positive Crankcase Ventilation (PCV) system diagnostic procedures. ● Is the PCV system OK? 	Yes (1.6L Turbo) Yes (All others) No	► GO to 20-4 . ► GO to 20-5 . ► SERVICE as necessary.
20-4	CHECK TURBOCHARGER SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 9B and perform the turbocharger system diagnostic procedures. ● Is the turbocharger system OK? 	Yes No	► GO to 20-5 . ► SERVICE as necessary.
20-5	CHECK ENGINE FOR INTERNAL LEAKS		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-00 and check the engine for internal oil leakage: <ul style="list-style-type: none"> — Oil contamination / dilution from fuel or water ● Are internal leaks evident? 	Yes No	► SERVICE as necessary. ► RETURN to the Diagnostic Routine Index and CHECK for other concerns.

<h1 style="margin: 0;">Diagnostic Routines</h1>	<h2 style="margin: 0;">Routine 21</h2>
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Routine 21 — Cooling System Concerns (Overheating)

Concern	OASIS Number
Cooling System Concerns — Runs Hot (Overheating)	402000

	TEST STEP	RESULT	ACTION TO TAKE
21-1	CHECK COOLING SYSTEM		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-03 and perform the cooling system diagnostic procedures. ● Is the cooling system OK? 	Yes No	<ul style="list-style-type: none"> ▶ GO to 21-2. ▶ SERVICE as necessary.
21-2	CHECK TEMPERATURE GAUGE		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 13-01 or 13-05 and perform the temperature gauge diagnostic procedures. ● Is the temperature gauge OK? 	Yes No	<ul style="list-style-type: none"> ▶ GO to 21-3. ▶ SERVICE as necessary.
21-3	PERFORM EEC QUICK TEST		
	<ul style="list-style-type: none"> ● Go to Section 5B and perform the EEC Quick Test. ● Are diagnostic trouble codes obtained, or are any other conditions noticed? 	Yes No	<ul style="list-style-type: none"> ▶ SERVICE as necessary. ▶ GO to 21-4.
21-4	CHECK IGNITION SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 8B, Test Step ADV1 for the 1.6L or Test Step IST1 for the 1.3L, 1.8L, or the 2.5L and perform the ignition system diagnostic procedures. ● Is the ignition system OK? 	Yes No	<ul style="list-style-type: none"> ▶ GO to 21-5. ▶ SERVICE as necessary.
21-5	CHECK BASIC ENGINE		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-00 and check for internal engine leaks. ● Go to Service Manual Section 03-01 and check the: <ul style="list-style-type: none"> — Oil level — Coolant passages — Cylinder head and gasket — Engine block ● Is the basic engine OK? 	Yes No	<ul style="list-style-type: none"> ▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns. ▶ SERVICE as necessary.

Diagnostic Routines

Routine 22

Routine 22 — Cooling System Concerns (Runs Cold)

Concern	OASIS Number
Cooling System Concerns — Runs Cold	402000

TEST STEP	RESULT	ACTION TO TAKE
22-1 CHECK COOLING SYSTEM		
<ul style="list-style-type: none"> ● Go to Service Manual Section 03-03 and check the cooling system: <ul style="list-style-type: none"> — Thermostat — Cooling fan ● Is the cooling system OK? 	Yes No	<ul style="list-style-type: none"> ▶ GO to 22-2. ▶ SERVICE as necessary.
22-2 CHECK TEMPERATURE GAUGE		
<ul style="list-style-type: none"> ● Go to Service Manual Section 13-01 or 13-05 and perform the temperature gauge diagnostic procedures. ● Is the temperature gauge OK? 	Yes No	<ul style="list-style-type: none"> ▶ GO to 22-3. ▶ SERVICE as necessary.
22-3 PERFORM EEC QUICK TEST		
<ul style="list-style-type: none"> ● Go to Section 5B and perform the EEC Quick Test. ● Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No	<ul style="list-style-type: none"> ▶ SERVICE as necessary. ▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns.

Diagnostic Routines

Routine 23

Routine 23 — Exhaust System Concerns

Concern	OASIS Number
Exhaust System Concerns (Visual Smoke or Odor)	403000

Symptom	Action To Take
Odor From Exhaust System	GO to 23-1.
Black Smoke (Rich Mixture)	GO to 23-3.
Blue Smoke (Burning Oil)	GO to 23-6.
White Smoke (Coolant in Combustion)	GO to 23-9.

TEST STEP	RESULT	ACTION TO TAKE
23-1 CHECK EXHAUST EMISSIONS		
<ul style="list-style-type: none"> Go to Section 15B and perform the exhaust emissions diagnostic procedures. Are the exhaust emissions OK? 	Yes (1.3L and 2.5L) Yes (All others) No	GO to 23-2 . RETURN to the Diagnostic Routine Index and CHECK for other concerns. SERVICE as necessary.
23-2 CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
<ul style="list-style-type: none"> Go to Section 10B and perform the Exhaust Gas Recirculation (EGR) system diagnostic procedures. Is the EGR system OK? 	Yes No	RETURN to the Diagnostic Routine Index and CHECK for other concerns. SERVICE as necessary.
23-3 CHECK AIR INTAKE SYSTEM		
<ul style="list-style-type: none"> Go to Section 12B and perform the air intake system diagnostic procedures. Is the air intake system OK? 	Yes No	GO to 23-4 . SERVICE as necessary.
23-4 CHECK FUEL DELIVERY SYSTEM		
<ul style="list-style-type: none"> Go to Section 9B and perform the fuel delivery system diagnostic procedures. Is the fuel delivery system OK? 	Yes No	GO to 23-5 . SERVICE as necessary.
23-5 PERFORM EEC QUICK TEST		
<ul style="list-style-type: none"> Go to Section 5B and perform the EEC Quick Test. Are diagnostic trouble codes obtained or are any other conditions noticed? 	Yes No	SERVICE as necessary. RETURN to the Diagnostic Routine Index and CHECK for other concerns.

Diagnostic Routines

Routine 23

TEST STEP		RESULT	ACTION TO TAKE
23-6	CHECK POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 14B and perform the Positive Crankcase Ventilation (PCV) system diagnostic procedures. ● Is the PCV system OK? 	Yes No	<ul style="list-style-type: none"> ▶ GO to 23-7. ▶ SERVICE as necessary.
23-7	CHECK BASIC ENGINE		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-01 and check the following: <ul style="list-style-type: none"> — Valve guides / stems / seals — Oil drain passages in head — Piston rings (seized, worn) — Pistons (worn) — Cylinder bores (scuffed) ● Is the basic engine OK? 	Yes (1.6L Turbo) Yes (All others) No	<ul style="list-style-type: none"> ▶ GO to 23-8. ▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns. ▶ SERVICE as necessary.
23-8	CHECK TURBOCHARGER SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 9B, Test Step PFO1, and check the turbocharger system. ● Is the turbocharger system OK? 	Yes No	<ul style="list-style-type: none"> ▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns. ▶ SERVICE as necessary.
23-9	CHECK BYPASS AIR (BPA) CONTROL SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 12B and perform the Bypass Air (BPA) control system diagnostic procedures. ● Is the BPA control system OK? 	Yes No	<ul style="list-style-type: none"> ▶ GO to 23-10. ▶ SERVICE as necessary.
23-10	CHECK COOLING SYSTEM		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-03 and perform the cooling system pressure test. ● Is the cooling system OK? 	Yes No	<ul style="list-style-type: none"> ▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns. ▶ SERVICE as necessary.

Diagnostic Routines

Routine 24

Routine 24 — Fuel System Concerns (Odor)

Concern	OASIS Number
Fuel System Concerns (Odor)	404000

TEST STEP		RESULT	ACTION TO TAKE
24-1	CHECK FUEL DELIVERY SYSTEM		
	<ul style="list-style-type: none"> Go to Section 9B and perform the fuel delivery system diagnostic procedures. Is the fuel delivery system OK? 	Yes No	GO to 24-2 . SERVICE as necessary.
24-2	CHECK EVAPORATIVE EMISSION (EVAP) SYSTEM		
	<ul style="list-style-type: none"> Go to Section 11B and perform the Evaporative Emission (EVAP) system diagnostic procedures. Is the EVAP system OK? 	Yes No	GO to 24-3 . SERVICE as necessary.
24-3	CHECK POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM		
	<ul style="list-style-type: none"> Go to Section 14B and perform the Positive Crankcase Ventilation (PCV) system diagnostic procedures. Is the PCV system OK? 	Yes No	RETURN to the Diagnostic Routine Index and CHECK for other concerns. SERVICE as necessary.

<h1>Diagnostic Routines</h1>	<h2>Routine 25</h2>
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Routine 25 — Engine Noise

Concern	OASIS Number
Engine Noise	497000

Symptom	Action To Take
Squeal, Click, or Chirp	GO to 25-1.
Rumble, Grind	GO to 25-4.
Rattle	GO to 25-5.
Hiss	GO to 25-6.
Snap	GO to 25-11.
Rap, Roar	GO to 25-12.
Knock	GO to 25-14.

TEST STEP	RESULT	ACTION TO TAKE
25-1 CHECK ACCESSORY DRIVE <ul style="list-style-type: none"> ● Go to Service Manual Section 03-05 and check the drive belts and the drive belt components. ● Is the accessory drive OK? 	Yes No	► GO to 25-2 . ► SERVICE as necessary.
25-2 CHECK BASIC ENGINE <ul style="list-style-type: none"> ● Go to Service Manual Section 03-01 and check the oil level and valves. ● Is the basic engine OK? 	Yes No	► GO to 25-3 . ► SERVICE as necessary.
25-3 CHECK ELECTRONIC ENGINE CONTROL (EEC) SOLENOIDS <ul style="list-style-type: none"> ● Go to Section 6B, Pinpoint Tests SCP and SCG, and perform the EEC solenoid diagnostic procedures. ● Are the EEC solenoids OK? 	Yes No	► RETURN to the Diagnostic Routine Index and CHECK for other concerns. ► SERVICE as necessary.
25-4 CHECK ACCESSORY DRIVE COMPONENTS <ul style="list-style-type: none"> ● Go to Service Manual Section 03-05 and check the drive belt components. ● Are the drive belt components OK? 	Yes No	► RETURN to the Diagnostic Routine Index and CHECK for other concerns. ► SERVICE as necessary.

Diagnostic Routines

Routine 25

TEST STEP		RESULT	ACTION TO TAKE
25-5	CHECK FOR LOOSE COMPONENTS		
	<ul style="list-style-type: none"> ● Visually inspect the vehicle for loose components. ● Are there any loose components? 	Yes	▶ SERVICE as necessary.
		No	▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns.
25-6	CHECK VACUUM DISTRIBUTION		
	<ul style="list-style-type: none"> ● Check the vacuum distribution system for leaks. ● Are there any vacuum distribution system leaks? 	Yes	▶ SERVICE as necessary.
		No	▶ GO to 25-7 .
25-7	CHECK AIR INTAKE SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 12B and check the air intake system for leaks. ● Is the air intake system OK? 	Yes	▶ GO to 25-8 .
		No	▶ SERVICE as necessary.
25-8	CHECK SPARK PLUGS		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-07 and check the spark plugs for proper torque. ● Are the spark plugs OK? 	Yes	▶ GO to 25-9 .
		No	▶ SERVICE as necessary.
25-9	CHECK COOLING SYSTEM		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-03 and check the cooling system for leaks. ● Is the cooling system OK? 	Yes	▶ GO to 25-10 .
		No	▶ SERVICE as necessary.
25-10	CHECK EVAPORATIVE EMISSION (EVAP) SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 11B and check the Evaporative Emission (EVAP) system for leaks. ● Is the EVAP system OK? 	Yes	▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns.
		No	▶ SERVICE as necessary.
25-11	CHECK SECONDARY IGNITION		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-07 and check the secondary ignition system. ● Is the secondary ignition system OK? 	Yes	▶ RETURN to the Diagnostic Routines Index and CHECK for other concerns.
		No	▶ SERVICE as necessary.

Diagnostic Routines

Routine
25

TEST STEP		RESULT	ACTION TO TAKE
25-12	CHECK EXHAUST SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 15B and check the exhaust system for leaks. ● Is the exhaust system OK? 	Yes (1.3L and 2.5L)	▶ GO to 25-13 .
		Yes (All others)	▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns.
		No	▶ SERVICE as necessary.
25-13	CHECK EXHAUST GAS RECIRCULATION (EGR) SYSTEM		
	<ul style="list-style-type: none"> ● Go to Section 10B and check the Exhaust Gas Recirculation (EGR) system for leaks. ● Is the EGR system OK? 	Yes	▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns.
		No	▶ SERVICE as necessary.
25-14	CHECK BASIC ENGINE		
	<ul style="list-style-type: none"> ● Go to Service Manual Section 03-01 and check the: <ul style="list-style-type: none"> — Connecting rod bearings — Main bearings — Piston pins — Piston-to-bore clearance ● Is the basic engine OK? 	Yes	▶ GO to 25-15 .
		No	▶ SERVICE as necessary.
25-15	CHECK FOR SPARK KNOCK		
	<ul style="list-style-type: none"> ● Perform Diagnostic Routine 14. ● Does the vehicle have spark knock? 	Yes	▶ SERVICE as necessary.
		No	▶ RETURN to the Diagnostic Routine Index and CHECK for other concerns.

Specifications/Special Service Tools

Special Service Tools/Equipment

ROTUNDA EQUIPMENT

Model	Description
014-00335	Gas Check