

* ENGINE SYSTEMS UNIFORM INSPECTION GUIDELINES *

1990 Nissan 240SX

GENERAL INFORMATION
Engine Performance and Maintenance Motorist Assurance Program
Standards For Automotive Repair

All Makes and Models

INTRODUCTION TO MOTORIST ASSURANCE PROGRAM (MAP)

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FUEL TANKS GAS CAPS GASKETS GROMMETS (VALVE COVER) HARMONIC DAMPERS HEATER CONTROL VALVES HEATER CORES HOSE AND TUBE COUPLERS, CONNECTORS AND CLAMPS HOSE CLAMPS HOSE CONNECTORS HOSE COUPLERS HOSES AND TUBES (FUEL LINES, RADIATOR, VACUUM, BY PASS, HEATER, RECOVERY TANK AND OIL COOLERS) HOUSTNGS IDLE AIR CONTROLS IDLE SPEED CONTROL ACTUATORS IGNITION BOOTS IGNITION COIL TOWERS IGNITION COILS IGNITION CONTROL MODULES (ICM) IGNITION SWITCHES IGNITION TERMINALS IGNITION WIRES, BOOTS, COIL TOWERS AND TERMINALS (SECONDARY) IN-TANK FUEL STRAINERS INERTIA FUEL SHUT-OFF SWITCHES INTAKE AIR TEMPERATURE SENSORS INTAKE MANIFOLDS INTERCOOLERS KNOCK SENSORS LIQUID VAPOR SEPARATORS MANIFOLD ABSOLUTE PRESSURE (MAP) SENSORS MASS AIR FLOW (MAF) SENSORS METAL AIR MANIFOLDS AND PIPES METAL AIR PIPES MIX CONTROL SOLENOIDS MOTOR MOUNTS O-RINGS, GASKETS, SEALS AND SPRING LOCKS O2 SENSORS OIL PRESSURE SENDING UNITS OIL PUMP PICK-UP SCREENS OIL PUMPS PARK NEUTRAL POSITION SWITCHES PCV BREATHER ELEMENTS PCV ORIFICES PCV VALVES PICK-UP ASSEMBLIES (INCLUDES MAGNETIC, HALL EFFECT AND OPTICAL) POWER STEERING PRESSURE SENSORS POWERTRAIN CONTROL MODULES (PCM) AND PROM POWERTRAIN CONTROL PROM PRESSURIZED EXPANSION TANK CAPS RADIATOR CAPS AND PRESSURIZED EXPANSION TANK CAPS RADIATOR FAN BLADES RADIATOR FAN CLUTCHES RADIATORS ROLL OVER VALVES SEALING COMPOUNDS SEALS SECONDARY AIR INJECTION SYSTEM MANAGEMENT DEVICES SENSORS AND ACTUATORS SHROUDS, BAFFLES AND DEFLECTORS SPARK PLUGS





SUPER CHARGERS SWITCHES THERMAL VACUUM VALVES THERMOSTATIC AIR DOOR ASSEMBLIES THERMOSTATS AND HOUSINGS THROTTLE BODIES THROTTLE CABLES THROTTLE LINKAGES AND CABLES THROTTLE POSITION SENSORS THROTTLE POSITION SWITCHES TIMING BELT SPROCKETS TIMING BELTS TORQUE STRUTS TRANSMISSION RANGE SWITCHES TUBE CLAMPS TUBE CONNECTORS TUBE COUPLERS TUBES TURBO CHARGERS VACUUM CONNECTIONS VACUUM HOSES, TUBES AND CONNECTIONS (NON-METALLIC) VACUUM REGULATOR SOLENOIDS VACUUM TUBES VEHICLE SPEED SENSORS VOLUME AIR FLOW SENSORS WASTE GATE CONTROL SOLENOIDS WASTE GATES AND BOOST CONTROL MECHANISMS WATER PUMPS (ELECTRIC) WATER PUMPS (NON-ELECTRIC) WIRING HARNESSES AND CONNECTORS

INTRODUCTION TO MOTORIST ASSURANCE PROGRAM (MAP)

OVERVIEW OF MOTORIST ASSURANCE PROGRAM

The Motorist Assurance Program is the consumer outreach effort of the Automotive Maintenance and Repair Association, Inc. (AMRA). Participation in the Motorist Assurance Program is drawn from retailers, suppliers, independent repair facilities, vehicle manufacturers and industry associations.

Our organization, s mission is to strengthen the relationship between the consumer and the auto repair industry. We produce materials that give motorists the information and encouragement to take greater responsibility for their vehicles—through proper, manufacturer—recommended, maintenance. We encourage participating service and repair shops (including franchisees and dealers) to adopt (1) a Pledge of Assurance to their Customers and (2) the Motorist Assurance Program Standards of Service. All participating service providers have agreed to subscribe to this Pledge and to adhere to the promulgated Standards of Service demonstrating to their customers that they are serious about customer satisfaction.

These Standards of Service require that an inspection of the vehicle's (problem) system be made and the results communicated to the customer according to industry standards. Given that the industry did not have such standards, the Motorist Assurance Program successfully promulgated industry inspection communication standards in 1994-95 for the following systems: Exhaust, Brakes, ABS, Steering and Suspension, Engine Maintenance and Performance, HVAC, and Electrical Systems. Further, revisions to all of these inspection communication standards are continually re-published. In addition to these, standards for Drive Train and Transmissions have recently been promulgated. Participating shops utilize these Uniform Inspection & Communication





Standards as part of the inspection process and for communicating their findings to their customers.

The Motorist Assurance Program continues to work cooperatively and proactively with government agencies and consumer groups toward solutions that both benefit the customer and are mutually acceptable to both regulators and industry. We maintain the belief that industry must retain control over how we conduct our business, and we must be viewed as part of the solution and not part of the problem. Meetings with state and other government officials (and their representatives), concerned with auto repair and/or consumer protection, are conducted. Feedback from these sessions is brought back to the association, and the program adjusted as needed.

To assure auto repair customers recourse if they were not satisfied with a repair transaction, the Motorist Assurance Program offers mediation and arbitration through MAP/BBB-CARE and other non-profit organizations. MAP conducted pilot programs in twelve states before announcing the program nationally in October, 1998. During the pilots, participating repair shops demonstrated their adherence to the Pledge and Standards and agreed to follow the UICS in communicating the results of their inspection to their customers. To put some "teeth" in the program, an accreditation requirement for shops was initiated. The requirements are stringent, and a self-policing method has been incorporated which includes the "mystery shopping" of outlets.

We welcome you to join us as we continue our outreach... with your support, both the automotive repair industry and your customers will reap the benefits. Please visit MAP at our Internet site www. motorist.org or contact us at:

1444 I Street, NW Suite 700 Washington, DC 20005 Phone (202) 712-9042 Fax (202) 216-9646 January 1999

MAP UNIFORM INSPECTION GENERAL GUIDELINES

OVERVIEW OF SERVICE REQUIREMENTS AND SUGGESTIONS

It is MAP policy that all exhaust, brake, steering, suspension, wheel alignment, drive-line, engine performance and maintenance, and heating, ventilation and air conditioning, and electrical services be offered and performed under the standards and procedures specified in these sections.

Before any service is performed on a vehicle, an inspection of the appropriate system must be performed. The results of this inspection must be explained to the customer and documented on an inspection form. The condition of the vehicle and its components will indicate what services/part replacements may be "Required" or "Suggested". In addition, suggestions may be made to satisfy the requests expressed by the customer.

When a component is suggested or required to be repaired or replaced, the decision to repair or replace must be made in the customer's best interest, and at his or her choice given the options available.

This section lists the various parts and conditions that indicate a required or suggested service or part replacement. Although this list is extensive, it is not fully inclusive. In addition to this list, a technician may make a suggestion. However, any suggestions must be based on substantial and informed experience, or the vehicle manufacturer's recommended service interval and must be documented.

Some conditions indicate that service or part replacement is





required because the part in question is no longer providing the function for which it is intended, does not meet a vehicle manufacturer's design specification or is missing.

Example:

An exhaust pipe has corroded severely and has a hole in it through which exhaust gases are leaking. Replacement of the exhaust pipe in this case is required due to functional failure.

Example:

A brake rotor has been worn to the point where it measures less than the vehicle manufacturer's discard specifications. Replacement of the rotor is required because it does not meet design specifications.

Some conditions indicate that a service or part replacement is suggested because the part is close to the end of its useful life or addresses a customer's need, convenience or request. If a customer's vehicle has one of these conditions, the procedure may be only to suggest service.

Example:

An exhaust pipe is rusted, corroded or weak, but no leaks are present. In this case, the exhaust pipe has not failed. However, there is evidence that the pipe may need replacement in the near future. Replacement of the pipe may be suggested for the customer's convenience in avoiding a future problem.

Example:

The customer desires improved ride and/or handling, but the vehicle's shocks or struts have not failed. In this case, replacement may be suggested to satisfy the customer's wishes. In this case, replacement of the shocks or struts may not be sold as a requirement.

A customer, of course, has the choice of whether or not a shop will service his or her vehicle. He or she may decide not to follow some of your suggestions. When a repair is required, a MAP shop must refuse partial service on that system if, in the judgment of the service provider, proceeding with the work could create or continue an unsafe condition. When a procedure states that required or suggested repair or replacement is recommended, the customer must be informed of the generally acceptable repair/replacement options whether or not performed by the shop.

When presenting suggested repairs to the customer, you must present the facts, allowing the customer to draw their own conclusions and make an informed decision about how to proceed.

The following reasons may be used for required and suggested services. These codes are shown in the "Code" column of the MAP Uniform Inspection & Communications Standards that follow:

Reasons to Require Repair or Replacement

- A Part no longer performs intended purpose
- B Part does not meet a design specification (regardless of performance)
- C Part is missing

NOTE:

When a repair is required, the shop must refuse partial service to the system in question, if the repair creates or continues an unsafe condition.





Reasons to Suggest Repair or Replacement

- 1 Part is close to the end of its useful life (just above discard specifications, or weak; failure likely to occur soon, etc.)
- 2 To address a customer need, convenience, or request (to stiffen ride, enhance performance, eliminate noise, etc.)
- 3 To comply with maintenance recommended by the vehicle's Original Equipment Manufacturer (OEM)
- 4 Technician's recommendation based on substantial and informed experience

NOTE:

Suggested services are always optional. When presenting suggested repairs to the customer, you must present the facts, allowing the customer to draw their own conclusions and make an informed decision about how to proceed.

ENGINE ASSEMBLIES

SERVICE PROCEDURES REQUIRED AND SUGGESTED FOR PROPER VEHICLE OPERATION

CYLINDER HEAD ASSEMBLIES

NOTE:

A Cylinder Head Assembly is a cylinder head fitted with valves, associated springs, retainers, and on overhead camshaft cylinder heads (OHC), camshaft, camshaft bearings, lash adjusters, tappets and rockers.

CYLINDER HEAD ASSEMBLY INSPECTION

Condition	Code	Procedure
Adjustable valve lash is out of specification Internal component failure		Require repair.
(any component)	. A	(1) Require repair or replacement of cylinder head assembly.

(1) - It is Required that all other failure related components be inspected for cause and condition. Additional components or assemblies may be Suggested for repair or replacement, such as a water pump on a short block (reason code 4, technician's recommendation based on substantial and informed experience).

Example:

If there is a failed head gasket with an external coolant leak, in addition to Requiring replacement of the head gasket, inspection of the following for cause and condition is Required: Block, Cooling System, Cylinder Head. It may be Suggested that additional inspections be performed, such as the other head gasket on a V-type engine.

LONG BLOCK ASSEMBLIES

NOTE:

A Long Block Assembly is a short block assembly together with a cylinder head assembly and all those components fitted within the rocker or cam cover, and timing cover





(the whole presented as an assembly). A rebuilt or new oil pump, or kit shall be supplied or fitted as appropriate.

LONG BLOCK ASSEMBLY INSPECTION

(1) - It is Required that all other failure related components be inspected for cause and condition. Additional components or assemblies may be Suggested for repair or replacement such as a water pump on a short block (reason code 4, technician's recommendation based on substantial and informed experience).

Example:

If there is a failed head gasket with an external coolant leak, in addition to Requiring replacement of the head gasket, inspection of the following for cause and condition is Required: Block, Cooling System, Cylinder Head. It may be Suggested that additional inspections be performed, such as the other head gasket on a V-type engine.

SHORT BLOCK ASSEMBLIES

NOTE:

A Short Block Assembly is a cylinder block and all those components contained within the limits of the block deck or decks, the pan rail, the block rear face and the timing cover (where fitted), including the crankshaft.

SHORT BLOCK ASSEMBLY INSPECTION

(1) - It is Required that all other failure related components be inspected for cause and condition. Additional components or assemblies may be Suggested for repair or replacement, such as a water pump on a short block (reason code 4, technician's recommendation based on substantial and informed experience).

Example:

If there is a failed head gasket with an external coolant leak, in addition to Requiring replacement of the head gasket, inspection of the following for cause and condition is Required: Block, Cooling System, Cylinder Head. It may be Suggested that additional inspections be performed, such as the other head gasket on a V-type engine.





ENGINE COMPONENTS

ACCELERATOR PEDAL POSITION SENSORS

ACCELERATOR PEDAL POSITION SENSOR INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	1 1
Attaching hardware threads damaged	. A	hardware Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	. A	Require repair or replacement
Connector broken		of hardware Require repair or replacement.
Connector (Weatherpack type) leaking	. A	Require repair or replacement.
Connector melted		(1) Require repair or replacement.
Connector missing Inoperative		
Missing	. C	inspection required Require replacement.
specification Terminal broken	. A	Require repair or replacement.Require repair or replacement.
Terminal burned, affectin performance		
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
affecting performance . Terminal corroded, not	. A	Require repair or replacement.
affecting performance . Terminal loose, affecting		Suggest repair or replacement.
performance Terminal loose, not		Require repair or replacement.
affecting performance . Threads stripped (threads		Suggest repair or replacement.
missing)		Require replacement.
exposed		Require repair or replacement.
Wire lead corroded		Require repair or replacement.
Wire lead open Wire lead shorted		Require repair or replacement.Require repair or replacement.
(1) - Determine cause and	corr	ect prior to repair or
	s into	ermittent operation or out of OEM ponents may be serviceable; check ocedure.

ACCESSORY BELTS





Condition	Code	Procedure
Alignment incorrect	. в	(1) Further inspection required.
Cracked	. 1	. Suggest replacement. Suggest replacement.
Plies separated Tension out of	. A	1
specification	. в	Require adjustment or replacement.
Worn beyond adjustment range	. в	. Require replacement.
bottom of pulley	. A	. Require replacement.
(1) - Determine cause of(2) - Determine cause of		

ACCESSORY PULLEYS

ACCESSORY PULLEY INSPECTION

Condition	Code	Procedure
Alignment incorrect Attaching hardware	. В	Require repair or replacement.
2	. A	Require repair or replacement of hardware.
Attaching hardware		
missing	. C	Require replacement of hardware.
Attaching hardware not		
functioning	. A	Require repair or replacement of hardware.
Bent	. A	Require replacement.
Cracked		± ±
Loose		Require repair or replacement.
Missing		Require replacement.
belt life	. A	Require replacement.

ACTUATORS

See SENSORS AND ACTUATORS.

AIR CONDITIONING CYCLING SWITCHES

AIR CONDITIONING CYCLING SWITCH INSPECTION

Condition		Code			Procedure
Attaching missing	hardware	. C		Require	replacement of hardware.
Attaching threads o	hardware damaged	. A	Requir	e repair	





Attaching hardware threads stripped		
(threads missing)	A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	A	Require repair or replacement.
type) leaking	Α	Require repair or replacement.
Connector melted	Α	(1) Require repair or
		replacement.
Connector missing	С	Require replacement.
Contaminated	Α	(2) Require repair or
		replacement.
Inoperative	В	(3) Require repair or
		replacement. Further
Tooleing	7\	inspection required.
Leaking	A C	Require repair or replacement Require replacement.
Resistance out of	C	Require repracement.
specification	В	Require repair or replacement.
Restricted, affecting	٧	Require repair or repracement.
performance	Α	Require repair or replacement.
Terminal broken	Α	Require repair or replacement.
Terminal burned, affecting		
performance	A	(1) Require repair or
		replacement.
Terminal burned, not	_	
affecting performance	2	Suggest repair or replacement.
Terminal corroded,	70	Describes and the second second
affecting performance	A	Require repair or replacement.
Terminal corroded, not affecting performance	2	Suggest repair or replacement.
affecting performance Terminal loose, affecting	_	Suggest repair or replacement.
performance	В	Require repair or replacement.
Terminal loose, not	_	·· Require repair or repracement.
affecting performance	1	Suggest repair or replacement.
Threads damaged	Α	Require repair or replacement.
Threads stripped (threads		
missing)	Α	Require replacement.
Wire lead conductors	_	
exposed	В	Require repair or replacement.
Wire lead corroded	A	Require repair or replacement.
Wire lead open Wire lead shorted	A 7	Require repair or replacement.
wire lead shorted	А	Require repair or replacement.
(1) - Determine cause and c	orr	ect prior to repair or
replacement of part. (2) - Determine source of o	ont	amination, such as engine
coolant, fuel, metal	par	ticles, or water. Require
repair or replacement		
(3) - Inoperative includes	int	ermittent operation or out of OEM
specification. Some c	omp	onents may be serviceable; check
for accepted cleaning	pr	ocedure.
-		

AIR CONDITIONING PRESSURE SENSORS

AIR CONDITIONING PRESSURE SENSOR INSPECTION

Condition	C	ode		Procedi	ıre
Attaching missing	hardware	С	 Require	replacement hardwa:	





Attaching hardware threads damaged	А	Require repair or replacement of hardware
Attaching hardware		
threads stripped (threads missing)	A	Require repair or replacement of hardware
Connector broken Connector (Weatherpack	А	Require repair or replacement
type) leaking Connector melted	A A	Require repair or replacement (1) Require repair o replacement
Connector missing Contaminated	C A	Require replacement (2) Require repair o
	_	replacement
Inoperative	В	(3) Require repair o replacement. Further
Leaking	А	inspection required Require repair or replacement
Missing	C	
Resistance out of		-
specification Restricted, affecting	В	Require repair or replacement
performance	Α	Require repair or replacement
Terminal broken	А	Require repair or replacement
Terminal burned, affecting performance	A	(1) Require repair o
periormanee	21	replacement
Terminal burned, not		-
affecting performance	2	Suggest repair or replacement
Terminal corroded, affecting performance	А	Require repair or replacement
Terminal corroded, not		vi noquiro ropari or ropradomeno
affecting performance Terminal loose, affecting	2	Suggest repair or replacement
performance	В	Require repair or replacement
Terminal loose, not	1	C
affecting performance Threads damaged	1 A	Suggest repair or replacement Require repair or replacement
Threads stripped (threads	А	Require repair or repracement
missing)	A	Require replacement
exposed	В	Require repair or replacement
Wire lead corroded	Α	Require repair or replacement
	Α	Require repair or replacement
Wire lead shorted	А	Require repair or replacement
(1) - Determine cause and c	orr	ect prior to repair or
replacement of part. (2) - Determine source of o	on+	amination such as engine
coolant, fuel, metal	par	ticles, or water. Require
repair or replacement		ermittent operation or out of
		components may be serviceable;
check for accepted cl		

AIR DUCTS AND TUBES

AIR DUCT AND TUBE INSPECTION

Condition Code Procedure





Attaching hardware broken	А	Require repair or replacement of hardware.
Attaching hardware missing	С	Require replacement of hardware.
Attaching hardware not functioning	А	Require repair or replacement of hardware.
		Require repair or replacement Require replacement.
,	A	Require repair or replacement.

AIR FILTER ELEMENTS

AIR FILTER ELEMENT INSPECTION

Condition	Code	Procedure
Leaking	. A	Require replacement.
oil-soaked		(1) Require replacement Suggest replacement to comply with vehicle's OEM recommended
Melted	. A	service intervals Required replacement.
		Require replacement.
performance	. A	Require replacement (1) Require replacement.
(1) - Further inspection	requi:	red to determine cause.

AIR FILTER GASKETS

See AIR FILTER HOUSINGS AND GASKETS.

AIR FILTER HOUSINGS AND GASKETS

AIR FILTER HOUSING AND GASKET INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
		Require repair or replacement Require replacement.







AIR FUEL RATIO SENSOR INSPECTION

Condition		Code	Procedu	re
Attaching hardware missing		С	Require replacement	
Attaching hardware			hardwar	e.
		A	Require repair or replaceme of hardwar	
Attaching hardware threads stripped			01 11414141	•
(threads missing)		A	Require repair or replaceme of hardwar	
Connector broken . Connector (Weatherp		Α	Require repair or replacemen	
type) leaking		A	Require repair or replacemen	ıt.
Connector melted .		A	(1) Require repair replacemen	
Connector missing Contaminated			Require replacemen (2) Require repair	
Inoperative		В	replacemen (3) Require repair	or
			replacement. Furth inspection require	
Leaking			Require repair or replacemen	
Missing		С	Require replacemen	ıt.
specification Restricted, affecti		В	Require repair or replacemen	ıt.
performance		А	Require repair or replacemen	ıt.
Terminal broken Terminal burned, af		A	Require repair or replacemen	it.
performance			(1) Require repair replacemen	
Terminal burned, no affecting performa		2	_	
Terminal corroded,				
affecting performa Terminal corroded,	not		Require repair or replacemen	
affecting performa Terminal loose, aff		2	Suggest repair or replacemen	it.
performance Terminal loose, not		В	Require repair or replacemen	ıt.
_affecting performa				
Threads damaged Threads stripped (t		A	Require repair or replacemen	it.
missing) Wire lead conductor		А	Require replacemen	ıt.
exposed		В	Require repair or replacemen	ıt.
Wire lead corroded		A	Require repair or replacemen	
Wire lead open			Require repair or replacemen	
Wire lead shorted		A	Require repair or replacemen	it.
(1) - Determine cau replacement o			ct prior to repair or	
			mination, such as engine	
coolant, fuel	, metal	part	icles, or water. Require	
repair or rep			pmittont openation or set of	
OEM specifica	ition. S	Some o	ermittent operation or out of components may be serviceable;	
check for acc	eprea c	reanl	ng procedure.	





AIR INJECTION CONTROL SOLENOIDS

AIR INJECTION CONTROL SOLENOID INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	7\	Require repair or replacement
-		of hardware. Require repair or replacement.
Connector broken Connector (Weatherpack		
type) leaking Connector melted		. Require repair or replacement (1) Require repair or replacement.
Connector missing Inoperative		Require replacement. (2) Require repair or replacement. Further inspection required.
Leaking		Require repair or replacement. Require replacement.
Resistance out of specification Restricted, affecting	. В	. Require repair or replacement.
performance Terminal broken		Require repair or replacement.Require repair or replacement.
Terminal burned, affecting performance	3	(1) Require repair or
Terminal burned, not		replacement.
affecting performance . Terminal corroded,	. 2	. Suggest repair or replacement.
affecting performance . Terminal corroded, not	. A	. Require repair or replacement.
affecting performance . Terminal loose, affecting	. 2	. Suggest repair or replacement.
performance	. В	. Require repair or replacement.
affecting performance . Threads damaged		Suggest repair or replacement.Require repair or replacement.
Threads stripped (threads		
missing)		Require replacement.
exposed	. B	Require repair or replacement.Require repair or replacement.
Wire lead open Wire lead shorted	. A	. Require repair or replacement.
(1) - Determine cause and		
replacement of part (2) - Inoperative includes	s inte Some o	ermittent operation or out of components may be serviceable;





AIR PLENUM INSPECTION

Condition	Code	Procedure
<pre>Integrated air or fuel control components inoperative</pre>	. A	(1) Require repair or replacement.
<pre>Internal air or fuel components damaged, affecting performance .</pre>	. A	Require repair or replacement
5 1		of component No service suggested or required.
Internal air or fuel components missing	. C	Require replacement of component.
Leaking	. A	 Require repair or replacement. Require repair or replacement.
(1) - Inoperative include OEM specification.	s inte	ermittent operation or out of

AIR PUMP BELTS

AIR PUMP BELT INSPECTION

Condition	Code	Procedure
Alignment incorrect	. В	(1) Further inspection required.
	. 1	Suggest replacement. Suggest replacement.
Missing Noisy	. C	
Plies separated Tension out of	. A	Require replacement.
specification	. В	Require adjustment or replacement.
Worn beyond adjustment range		Require replacement.
		Require replacement.
(1) - Determine cause of (2) - Determine cause of		rect alignment and require repair. and suggest repair.

AIR PUMPS (ELECTRIC-DRIVEN)

AIR PUMP (ELECTRIC-DRIVEN) INSPECTION





Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking Connector melted		<pre> Require repair or replacement(1) Require repair or</pre>
Connector missing Inoperative Leaking Missing Noisy Terminal broken	. A . A . C . 2	Require replacement. (2) Require replacement. Require replacement. Require replacement. Suggest replacement. Require repair or replacement.
Terminal burned, affectin performance		(1) Require repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
affecting performance . Terminal corroded, not	. A	Require repair or replacement.
affecting performance . Terminal loose, affecting	. 2	Suggest repair or replacement.
performance Terminal loose, not	. В	Require repair or replacement.
affecting performance . Threads damaged		 Suggest repair or replacement. Require repair or replacement.
Threads stripped (threads missing)		Require repair or replacement.
(1) - Determine cause and replacement of part(2) - Inoperative include of OEM specificatio	s inte	ect prior to repair or ermittent operation or out
OI OEM Specificatio	11.	

AIR TUBES

See AIR DUCTS AND TUBES.

ASPIRATOR, CHECK AND DECEL VALVES

ASPIRATOR, CHECK AND DECEL VALVE INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement





Inoperative	А	of hardware(1) Require repair or replacement.
Leaking Melted, affecting	A	Require replacement.
performance Melted, not affecting	Α	Require replacement.
performance	• •	No service suggested or required.
Threads damaged		Require replacement Require repair or replacement.
Threads stripped (threads missing)	A	Require repair or replacement.
(1) - Inoperative includes of OEM specification.		ermittent operation or out

BAFFLES

See SHROUDS, BAFFLES AND DEFLECTORS.

BALLAST PRIMARY SUPPLY RESISTOR WIRES

See BALLAST RESISTORS AND PRIMARY SUPPLY RESISTOR WIRES.

BALLAST RESISTORS AND PRIMARY SUPPLY RESISTOR WIRES

BALLAST RESISTOR AND PRIMARY SUPPLY RESISTOR WIRE INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Conductor exposed Connector broken Connector melted	. A	Require replacement Require repair or replacement (1) Require repair or replacement.
Connector missing Inoperative Insulation overheated Terminal broken	. A . A . A	Require replacement. Require replacement. Require replacement. Require replacement.
Terminal burned, affectin performance	_	(1) Require repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
affecting performance . Terminal corroded, not	. A	Require repair or replacement.
affecting performance . Terminal loose, affecting	. 2	Suggest repair or replacement.
performance Terminal loose, not		Require repair or replacement.
affecting performance .	. 1	Suggest repair or replacement.





- (1) Determine cause and correct prior to repair or
- replacement of part.
 (2) Inoperative includes intermittent operation or out of OEM specification.

BAROMETRIC PRESSURE SENSORS

BAROMETRIC PRESSURE SENSOR INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped	7)	
(threads missing) Connector broken		 Require repair or replacement of hardware. Require repair or replacement.
Connector (Weatherpack type) leaking	. A	Require repair or replacement.
Connector melted	. A	(1) Require repair or replacement.
Connector missing Contaminated		
Inoperative	. В	
Leaking		Require repair or replacement Require replacement.
specification Restricted, affecting	. В	Require repair or replacement.
performance Terminal broken Terminal burned, affectin	. A	Require repair or replacement.Require repair or replacement.
performance Terminal burned, not		(1) Require repair or replacement.
	. 2	Suggest repair or replacement.
affecting performance . Terminal corroded, not	. A	Require repair or replacement.
affecting performance . Terminal loose, affecting		Suggest repair or replacement.
performance Terminal loose, not		Require repair or replacement.
affecting performance . Threads damaged Threads stripped (threads	. A	 Suggest repair or replacement. Require repair or replacement.
missing)		Require replacement.
exposed	. A	Require repair or replacement.Require repair or replacement.Require repair or replacement.Require repair or replacement.

(1) - Determine cause and correct prior to repair or





replacement of part.

- (2) Determine source of contamination, such as engine coolant, fuel, metal particles, or water. Require repair or replacement.
- (3) Inoperative includes intermittent operation or out of OEM specification. Some components may be serviceable; check for accepted cleaning procedure.

BATTERIES

Proper operation of any electrical system or component can be affected by battery condition. The battery(ies) must meet or exceed minimum specification for vehicle as equipped and test to that specific battery's CCA.

Definition of Terms

- * Battery Performance Testing
 Testing that determines whether or not a battery meets both
 vehicle OEM and battery manufacturer's specifications.
- * Cold Cranking Amp (CCA) Rating
 The number of amperes a new, fully charged battery at
 0°F (-17.8°C) can deliver for 30 seconds and maintain at
 least a voltage of 1.2 volts per cell (7.2 volts for a
 12-volt battery).
- * Cranking Amps (CA)
 The number of amperes a new, fully charged battery, typically at 32° F (0° C) can deliver for 30 seconds and maintain at least a voltage of 1.2 volts per cell (7.2 volts for a 12-volt battery).
- * OEM Cranking Amps
 The minimum CCA required by the original vehicle manufacturer
 for a specific vehicle.

BATTERY INSPECTION

Condition	Code	Procedure
Battery frozen		(1) Further inspection required.
Case leaking		Require replacement
Circuit open internally Electrolyte	. A	Require replacement.
	. A	(2) Further inspection required.
Electrolyte discoloration	. A	
		(3) Require replacement (4) Further inspection required.
Out of performance specification		- 1
±	. В	(5) Require replacement.
application	. В	(5) Require replacement.





Post (top or side) burned, affecting performance A (6) Require repair or replacement.		
Post (top or side) burned, not affecting		
performance 2		
corroded, affecting performance A Require repair.		
Post (top or side) corroded, not affecting		
performance		
loose A Require replacement. Post (top or side) melted, affecting		
performance A (6) Require repair or replacement.		
Post (top or side) melted, not affecting		
performance		
Specific gravity low B (7) Further inspection required.		
State of charge low A (7) Further inspection required.		
Top dirty 2 Suggest cleaning battery. Top wet A (8) Require cleaning battery. Further inspection required.		
Vent cap loose A Require repair or replacement of vent cap.		
Vent cap missing C Require replacement of vent cap.		
(1) - DO NOT attempt to charge a frozen battery. Allow		
battery to warm thoroughly and then performance-test. If battery fails performance test, require replacement.		
(2) - No service suggested or required unless the battery fails performance test, in which case, require replacement.		
(3) - This phrase refers to a battery that fails to either		
accept and/or retain a charge using appropriate times listed in the Battery Charging Guide of the BCI Service		
Manual, battery charger operating manual, or battery manufacturer's specifications.		
(4) - Determine cause of low fluid level. Refill to proper level(s) with water (distilled water preferred).		
Recharge battery and performance-test. (5) - The battery may meet battery manufacturer's		
specifications but test below the minimum specification defined by the vehicle's OEM for		
that vehicle. (6) - Determine cause and correct prior to repair or		
replacement of part. (7) - Recharge and test to manufacturer's specifications.		
If battery fails performance test, require replacement.		
(8) - Check fluid level and adjust to manufacturer's specification. Suggest checking charging system for proper operation.		
1 11 11 11 11 11 11 11 11 11 11 11 11 1		





BATTERY CABLE, WIRE AND CONNECTOR INSPECTION

Condition	Code	Procedure
Application incorrect Attaching hardware	. В	Require repair or replacement.
broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Connector broken Connector melted		Require repair or replacement (1) Require repair or replacement.
Connector missing Insulation damaged,	. C	Require replacement.
conductors exposed	. A	(2) Require repair or replacement.
Insulation damaged, conductors not exposed Open		Suggest replacement Require repair or replacement.
(conduit) melted	. 2	(1) Suggest repair or replacement.
Protective shield (conduit) missing Resistance (voltage drop)		Suggest repair or replacement.
out of specification Routed incorrectly	. A	Require repair or replacement Require repair.
Secured incorrectly Shorted Terminal broken Terminal burned, affectin	. A	Require repair or replacement. Require repair or replacement.
performance		(1) Require repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
	. A	Require repair or replacement.
	. 2	Suggest repair or replacement.
performance	. В	Require repair or replacement.
	. 1	Suggest repair or replacement.
	. A	Require repair or replacement.
(1) - Determine cause and replacement of part(2) - Exposed conductor a end does not requir	t repi	lacement (aftermarket) terminal

BATTERY CONNECTORS

See BATTERY CABLES, WIRES AND CONNECTORS.

BATTERY TRAYS AND HOLD DOWN HARDWARE





BATTERY TRAY AND HOLD DOWN HARDWARE INSPECTION

Condition	Code	Procedure
Battery improperly secured	. 2	Suggest repair.
•	. A	Require repair or replacement.
		No service suggested or required.
Broken, affecting performance Broken, not affecting	. A	Require repair or replacement.
performance		No service suggested or required.
Corroded, affecting performance Corroded, not affecting	. A	Require repair or replacement.
	. 2	Suggest repair or replacement.
performance	. A	Require repair or replacement.
performance	. C . A	
missing)	. A	Require replacement. Require repair.

BATTERY WIRES

See BATTERY CABLES, WIRES AND CONNECTORS.

BELT-DRIVEN AIR PUMPS

BELT-DRIVEN AIR PUMP INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Inoperative Leaking Missing Noisy Pulley alignment incorrect Pulley bent Pulley cracked Pulley loose Pulley missing Threads damaged Threads stripped (threads	. A C C . B A A A . A C A	Require replacement Require replacement.





BELT IDLER ASSEMBLIES (ACCESSORY AND CAM BELTS)

BELT IDLER ASSEMBLY (ACCESSORY AND CAM BELT) INSPECTION

Condition	Code	Procedure
Alignment incorrect Attaching hardware	. В	Require repair or replacement.
2	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Bearings worn Cracked Missing Noisy Seized	. 2 . C . 2	Suggest replacement. Suggest replacement. Require replacement. Suggest replacement. Require repair or replacement.

BELT TENSIONERS (ACCESSORY AND CAM BELTS)

BELT TENSIONER (ACCESSORY AND CAM BELT) INSPECTION

Condition	Code	Procedure
Alignment incorrect Attaching hardware	. В	Require repair or replacement.
2	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Bearings worn Belt tension incorrect Cracked Missing Noisy Pulley damaged, affecting	B 2 C 2	
belt life	. A	Require replacement Require repair or replacement.

BOOST CONTROL MECHANISMS

See WASTE GATES AND BOOST CONTROL MECHANISMS.

CAMSHAFT POSITION SENSORS

CAMSHAFT POSITION SENSOR INSPECTION





Condition	Code	Procedure
Attaching hardware		
missing	. C	Require replacement of hardware.
Attaching hardware thread damaged		Require repair or replacement
Attaching hardware		of hardware.
threads stripped (threads missing)	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking	. A	Require repair or replacement.
Connector melted		(1) Require repair or replacement.
Connector missing	. C	Require replacement.
Contaminated	. A	(2) Require repair or replacement.
Inoperative	. B	(3) Require repair or replacement. Further
		inspection required.
Leaking		Require repair or replacement.
Missing		Require replacement.
Terminal broken Terminal burned, affecting		Require repair or replacement.
performance	_	(1) Require repair or replacement.
Terminal burned, not		_
Terminal corroded,	. 2	Suggest repair or replacement.
affecting performance . Terminal corroded, not	. A	Require repair or replacement.
affecting performance . Terminal loose, affecting	. 2	Suggest repair or replacement.
performance	. B	Require repair or replacement.
affecting performance . Wire lead conductors	. 1	Suggest repair or replacement.
exposed	. В	Require repair or replacement.
Wire lead corroded		Require repair or replacement.
Wire lead open		Require repair or replacement.
Wire lead shorted	. A	Require repair or replacement.
(1) - Determine cause and	corr	ect prior to repair or
	cont	amination, such as engine ticles, or water. Require
repair or replaceme	ent.	
OEM specification.	Some	ermittent operation or out of components may be serviceable;
check for accepted	clean	ing procedure.

CARBURETORS AND CHOKES

NOTE: Proper operation of a carburetor includes the ability to control air/fuel mixtures during all phases or driving operation to comply with all federal and local emissions standards. Adjustments are to be considered repairs.





CARBURETOR AND CHOKE INSPECTION

Condition	Code	Procedure
Air/fuel control incorrect		 Require repair or replacement. Require repair or replacement.
	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Components binding Components damaged, affecting operation or	. A	Require repair or replacement.
performance		± ± ± ±
Contaminated	. A	
Controlling linkages		
binding	. A	Require repair or replacement of linkage.
Leaking	. A	Require repair or replacement.
<pre>incorrect Operating incorrectly</pre>		
cleaning procedure.	Detei ant, i	erviceable; check for accepted rmine source of contamination, fuel, metal particles, or water.

CASTING CORE PLUGS AND EXPANSION PLUGS

CASTING CORE PLUG AND EXPANSION PLUG INSPECTION

Condition	Code	Procedure
Leaking	. A	 Require replacement.
incorrect	. 2	 Suggest replacement.

CHARGE AIR COOLERS "INTERCOOLERS" (CAC)

CHARGE AIR COOLER "INTERCOOLER" (CAC) INSPECTION

Condition	Code		Procedure
Air-to-air intercooler leaking, affecting boost	7		
performance	. A	• •	Require repair or replacement.
	. A	• • •	Require repair or replacement of hardware.
Attaching hardware			





missing	С	Require replacement of hardware.
Attaching hardware not		
functioning	A	Require repair or replacement of hardware.
Leaking coolant	Α	Require repair or replacement.
		Require replacement.
performance	A	Require repair or replacement.

CHECK VALVES

See ASPIRATOR, CHECK AND DECEL VALVES.

CHOKES

See CARBURETORS AND CHOKES.

CLUTCH PEDAL POSITION SWITCHES

CLUTCH PEDAL POSITION SWITCH INSPECTION

Condition		Code	Procedure
Attaching missing		. C	Require replacement of hardware.
	hardware thread		Require repair or replacement of hardware.
Attaching threads	stripped	_	
(threads	missing)	. A	Require repair or replacement of hardware.
Connector Connector			<pre> Require repair or replacement (1) Require repair or</pre>
	missing		Require replacement. (2) Require repair or replacement. Further inspection required.
Missing Resistance	 e out of	. C	Require replacement.
Terminal A	ation oroken ourned, affectin	. A	Require repair or replacement.Require repair or replacement.
-	nce	. A	(1) Require repair or replacement.
		. 2	Suggest repair or replacement.
affecting	g performance .	. A	Require repair or replacement.
affecting	g performance . loose, affecting		Suggest repair or replacement.
performa	nceloose, not		Require repair or replacement.
affecting Threads da	g performance . amaged cripped (threads	. A	22, 1, 1
missing)	conductors		Require replacement.





expo	sed .			В		Require	repair	or	replacement.
									replacement.
Wire	lead o	pen		Α		Require	repair	or	replacement.
Wire	lead s	horted		Α		Require	repair	or	replacement.
	repla Inope speci	cement or rative : fication	of part. includes n. Some c	int	ermi onen	prior to ttent opents may be procedure	eration e servi	or	out of OEM

COLD START INJECTORS

See FUEL AND COLD START INJECTORS.

CONNECTORS

See WIRING HARNESSES AND CONNECTORS.

COOLANT

COOLANT INSPECTION

Condition	Code	Procedure
Acidity (pH) incorrect .	. 1	Suggest correction or replacement.
Contaminated	. В	(1) Require replacement or recycling. Further inspection required.
Level low	. В	(2) Require filling to proper level.
		(3) Suggest replacement Require correction or replacement.
Type incorrect	. B	Require replacement.
(3) - The system should be refilled with corre	cool inco	

COOLANT RECOVERY TANKS

COOLANT RECOVERY TANK INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Leaking	. A	. Require repair or replacement.





Missing (if	original			
equipment)		С	 Require	replacement.

COOLING FAN MOTOR MODULES

See COOLING FAN MOTOR RELAYS AND MODULES.

COOLING FAN MOTOR RELAYS AND MODULES

COOLING FAN MOTOR RELAY AND MODULE INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement
Connector broken Connector (Weatherpack	. A	of hardware Require repair or replacement.
type) leaking Connector melted		<pre> Require repair or replacement(1) Require repair or</pre>
Connector missing Housing cracked Malfunctioning	. 2	Require replacement. Suggest repair or replacement. (2) Require repair or replacement.
Missing Terminal broken Terminal burned, affectir	. A	Require replacement Require repair or replacement.
performance	. A	(1) Require repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
	. A	Require repair or replacement.
	. 2	Suggest repair or replacement.
performance Terminal loose, not		Require repair or replacement.
affecting performance . Wire lead conductors		Suggest repair or replacement.
exposed		Require repair or replacement.
Wire lead corroded		Require repair or replacement.
Wire lead open Wire lead shorted		Require repair or replacement.Require repair or replacement.
	ve, in	ect prior to repair or termittent operation, failure, or out of OEM specification.

COOLING FAN MOTOR RESISTORS

COOLING FAN MOTOR RESISTOR INSPECTION





Condition	Code	Procedure
Application incorrect Attaching hardware	. В	Require replacement.
broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement
Connector broken Connector (Weatherpack		of hardware Require repair or replacement.
type) leaking		Require repair or replacement (1) Require repair or replacement.
Connector missing Missing Open Resistance out of	. C	Require replacement. Require replacement. Require replacement.
specification	. A	Require repair or replacement.Require replacement.Require repair or replacement.
performance	. A	(1) Require repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	2	. Suggest repair or replacement.
	A	. Require repair or replacement.
	2	. Suggest repair or replacement.
performance Terminal loose, not	В	
		. Suggest repair or replacement.
(1) - Determine cause and replacement of part		ect prior to repair or

COOLING FAN MOTOR SENSORS AND SWITCHES

COOLING FAN MOTOR SENSOR AND SWITCH INSPECTION

Condition	Code	Procedure
Attaching hardware missing	C	Require replacement of hardware.
Attaching hardware threadamaged		Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	A	Require repair or replacement of hardware.
		Require repair or replacement (1) Require repair or replacement.
Connector missing Contaminated		Require replacement.





Leaking	nt. or ner
Resistance out of specification B Require repair or replacement Terminal broken A Require repair or replacement Terminal burned, affecting performance A (1) Require repair replacement Terminal burned, not affecting performance 2 Suggest repair or replacement Terminal corroded, affecting performance A Require repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded	
specification B Require repair or replacement Terminal broken A Require repair or replacement Terminal burned, affecting performance A (1) Require repair replacement Terminal burned, not affecting performance 2 Suggest repair or replacement Terminal corroded, affecting performance A Require repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement Terminal corroded 2 Suggest repair or replacement .	nt.
Terminal broken A Require repair or replacement Terminal burned, affecting performance A	
Terminal burned, affecting performance	
performance	IT.
affecting performance 2 Suggest repair or replacement Terminal corroded, affecting performance A Require repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement	
Terminal corroded, affecting performance A Require repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement	
affecting performance A Require repair or replacement Terminal corroded, not affecting performance 2 Suggest repair or replacement	nt.
affecting performance 2 Suggest repair or replacement	nt.
	nt.
Terminal loose, affecting	
performance B Require repair or replacement	nt.
Terminal loose, not	
affecting performance 1 Suggest repair or replacement Threads damaged A Require repair or replacement	lt.
Threads stripped (threads	IL.
missing) A Require replacement	nt.
Wire lead conductors	
exposed B Require repair or replacement	nt.
Wire lead corroded A Require repair or replacement	
Wire lead open A Require repair or replacement	
Wire lead shorted A Require repair or replacement	nt.
(1) - Determine cause and correct prior to repair or replacement of part.	
(2) - Determine source of contamination, such as engine	
coolant, fuel, metal particles, or water. Require	
repair or replacement.	
(3) - Inoperative includes intermittent operation or out of OEM specification. Some components may be serviceable; check for accepted cleaning procedure.	

COOLING FAN MOTOR SWITCHES

See COOLING FAN MOTOR SENSORS AND SWITCHES.

COOLING FAN MOTORS

COOLING FAN MOTOR INSPECTION

Condition	С	ode		Procedure
Attaching hardwa		А		Require repair or replacement of hardware.
Attaching hardwa		С		Require replacement of hardware.
Attaching hardwa functioning .		А		Require repair or replacement of hardware.
Connector broker Connector (Weatl		А	•	Require repair or replacement.
·	-	A		Require repair or replacement.





Connector melted	A (1) Require repair or replacement.
Connector missing Hydraulic fan motor	C Require replacement.
leaking Inoperative Missing Noisy Rotation incorrect for	A . Require repair or replacement. A (2) Require replacement. C Require replacement. 2 Suggest replacement.
application Terminal broken Terminal burned, affecting	B . Require repair or replacement. A . Require repair or replacement.
performance	A (1) Require repair or replacement.
Terminal burned, not affecting performance Terminal corroded,	2 . Suggest repair or replacement.
affecting performance Terminal corroded, not	A . Require repair or replacement.
affecting performance Terminal loose, affecting	2 . Suggest repair or replacement.
performance Terminal loose, not	B . Require repair or replacement.
affecting performance Vibration	 Suggest repair or replacement. Suggest replacement.
exposed	 B . Require repair or replacement. A . Require repair or replacement. A . Require repair or replacement. A . Require repair or replacement.
(1) - Determine cause and c replacement of part.(2) - Check fan motor/contr intermittent operation	

CRANKSHAFT POSITION SENSORS

CRANKSHAFT POSITION SENSOR INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	. A	Require repair or replacement
Connector broken Connector (Weatherpack	. A	of hardware Require repair or replacement.
type) leaking Connector melted		<pre> Require repair or replacement(1) Require repair or</pre>
Connector missing Contaminated Inoperative	. A	Require replacement.
Leaking	. A	Require repair or replacement.





Missing Resistance out of	С	• • •	• • • • • • •	. Requi	ire	replacement.
specification Terminal broken						replacement. replacement.
Terminal burned, affecting performance	А			(1) R	equ:	ire repair or replacement.
Terminal burned, not affecting performance Terminal corroded,	2		Suggest	repair	or	replacement.
affecting performance Terminal corroded, not	A	• •	Require	repair	or	replacement.
	2	• •	Suggest	repair	or	replacement.
performance	В	• •	Require	repair	or	replacement.
affecting performance Threads damaged Threads stripped (threads	1 A					replacement. replacement.
missing)	A	• • •	 .	. Requi	ire	replacement.
exposed	A A		Require Require	repair repair	or or	replacement. replacement.
Wire lead shorted (1) - Determine cause and c	A	•••	-	-		replacement.
replacement of part. (2) - Determine source of coolant, fuel, metal repair or replacement (3) - Inoperative includes specification. Some contractions and contractions are contracted as a specification of the contraction	containt	amin ticl	ation, sues, or wattent ope	ich as e ater. Re	eng: equ: or	ire out of OEM
for accepted cleaning	, pr	oced	ure.			

DECEL VALVES

See ASPIRATOR, CHECK AND DECEL VALVES.

DEFLECTORS

See SHROUDS, BAFFLES AND DEFLECTORS.

DIP STICKS AND TUBES

DIP STICK AND TUBE INSPECTION

Condition	Code	Procedur
± ±	. 2	Require replacement Suggest repair or replacement
-		Require repair or replacement
performance Leaking, affecting performance (for example		Suggest repair or replacement
± · · · · · · · · · · · · · · · · · · ·	•	Require repair or replacement
performance	. 2 C	Suggest repair or replacement Require replacement





DIP STICK TUBES

See DIP STICKS AND TUBES.

DISTRIBUTOR ADVANCES AND RETARDERS (MECHANICAL AND VACUUM)

DISTRIBUTOR ADVANCE AND RETARDER (MECHANICAL AND VACUUM) INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
		Require repair or replacement. (1) Require repair or replacement.
		Require replacement Require repair or replacement.
(1) - Inoperative include	s inte	ermittent operation.

DISTRIBUTOR BOOTS AND SHIELDS

DISTRIBUTOR BOOT AND SHIELD INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Deteriorated Leaking Missing Torn	. A	Require replacement. Require replacement.

DISTRIBUTOR CAPS

DISTRIBUTOR CAP INSPECTION

Condition	Code		Procedure
Application incorrect Arcing			
broken	A	Require	repair or replacement





Attaching hardware missing	C Require replacement of hardware.
Attaching hardware not functioning	A Require repair or replacement of hardware.
Burned Carbon button missing	A Require replacement.
Carbon button worn,	1
affecting performance Carbon button worn, not	A Require replacement.
affecting performance	1 Suggest replacement.
Carbon-tracked	A Require replacement.
Cracked	A Require replacement.
Loose	2 Suggest repair or replacement.
Terminal broken	A Require repair or replacement.
Terminal burned, affecting	
	A (1) Require repair or replacement.
Terminal burned, not	
affecting performance Terminal corroded,	2 Suggest repair or replacement.
affecting performance	A Require repair or replacement.
Terminal corroded, not affecting performance	2 Suggest repair or replacement.
Terminal eroded, affecting	2 Suggest repair or replacement.
performance	A Require repair or replacement.
Terminal eroded, not affecting performance	No service suggested or required.
Terminal loose, affecting	<u>-</u>
performance Terminal loose, not	B Require repair or replacement.
	1 Suggest repair or replacement.
(1) - Determine cause and creplacement of part.	correct prior to repair or

DISTRIBUTOR RETARDERS (MECHANICAL AND VACUUM)

See DISTRIBUTOR ADVANCES AND RETARDERS (MECHANICAL AND VACUUM).

DISTRIBUTOR ROTORS

DISTRIBUTOR ROTOR INSPECTION

Condition	Code	Procedure
Application incorrect Attaching hardware	. В	Require replacement.
2	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Carbon-tracked	. A	Require replacement. Require replacement.





Eroded	1	Suggest replacement.
Loose	Α	Require repair or replacement.
Out of specification	В	Require replacement.

DISTRIBUTOR SHIELDS

See DISTRIBUTOR BOOTS AND SHIELDS.

DISTRIBUTORS

DISTRIBUTOR INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Bushings worn, affecting performance	. A	Require repair or replacement.
Bushings worn, not affecting performance . Cam lobes worn, affecting		Suggest repair or replacement.
performance		Require repair or replacement.
affecting performance . Gear broken Gear worn, affecting		 Suggest repair or replacement. Require repair or replacement.
performance	. A	Require replacement.
performance		No service suggested or required.
Integrated pickup triggering device loose Integrated pickup triggering device	. A	Require repair or replacement.
magnetism incorrect		Require repair or replacement.
Leaking oil internally . Noisy		Require repair or replacement.Suggest repair or replacement.
Pickup triggering device (reluctor) broken		Require repair or replacement.
Pickup triggering device (reluctor) loose	. A	Require repair or replacement.
Pickup triggering device (reluctor) weak Reluctor (pickup	. A	Require repair or replacement.
triggering device) broken	. A	Require repair or replacement.
Reluctor (pickup triggering device) loose	. A	Require repair or replacement.
triggering device) weak	. A	<pre> Require repair or replacement Require replacement Require repair or replacement.</pre>





Thrust washer missing	 С	 Require repair or replacement.
Thrust washer worn,		
affecting performance	 Α	 Require repair or replacement.
Thrust washer worn, not		
affecting performance	 1	 Suggest repair or replacement.

EARLY FUEL EVAPORATION VALVES (HEAT RISER ASSEMBLIES)

EARLY FUEL EVAPORATION VALVE (HEAT RISER ASSEMBLY) INSPECTION

Condition	Code	Procedure
Broken	. A	. Require replacement of affected
Diaphragm inoperative	. A	parts(1) Further inspection required.
Noisy	. 2	Require repair or replacement.Suggest repair or replacement.Require replacement of affected
Spring broken	. В	parts Require replacement of
Spring inoperative	. A	spring(s) (2) Require replacement of spring(s).
OEM specification. I separate from the he of the inoperative diaphragm is part of heat riser.	If the eat ri diaphi f the	ermittent operation or out of e inoperative diaphragm is iser, then require replacement ragm. If the inoperative heat riser, then replace the ermittent operation or out of OEM

EGR COOLERS

See EGR PLATES AND COOLERS.

EGR EXHAUST MANIFOLD PASSAGES

See EGR INTAKE AND EXHAUST MANIFOLD PASSAGES.

EGR INTAKE AND EXHAUST MANIFOLD PASSAGES

EGR INTAKE AND EXHAUST MANIFOLD PASSAGE INSPECTION

Condition	Code	Procedure
Leaking	. А	 Require repair or replacement.
· · · · · · · · · · · · · · · · · · ·	. A	 Require repair or replacement.

EGR PLATES AND COOLERS

EGR PLATE AND COOLER INSPECTION

Condition	n	Code				Procedure
Leaking		А	 Require	repair	or	replacement.





Missing	С			Require	replacement.
Restricted, affecting					
performance	Α	• •	Require :	repair or	replacement.

ELECTRONIC SPARK CONTROL MODULES

ELECTRONIC SPARK CONTROL MODULE INSPECTION

Condition	Code	Procedure
Application incorrect Attaching hardware	. B	Require replacement.
missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped		
(threads missing)	. A	of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking Connector melted		<pre> Require repair or replacement (1) Require repair or</pre>
Connector missing Contaminated		
Leaking		Require repair or replacement (3) Require repair or replacement.
Missing	. A	Require replacement Require repair or replacement.
performance		(1) Require repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
	. A	Require repair or replacement.
affecting performance . Terminal loose, affecting		Suggest repair or replacement.
performance		Require repair or replacement.
affecting performance . Threads damaged		 Suggest repair or replacement. Require repair or replacement.
Threads stripped (threads	;	
missing)	. A	Require replacement.
exposed	. B	Require repair or replacement.
Wire lead corroded		Require repair or replacement.
Wire lead open Wire lead shorted		Require repair or replacement.Require repair or replacement.
(1) - Determine cause and replacement of part		ect prior to repair or
(2) - Determine source of	cont	amination, such as engine coolant,

- fuel, metal particles, or water. Require repair or replacement of source.

 (3) - Includes inoperative, intermittent operation, failure to





perform all functions, or out of OEM specification.

ELECTRONIC TRANSMISSION CONTROL DEVICES

ELECTRONIC TRANSMISSION CONTROL DEVICE INSPECTION

Condition	Code	Procedure
Attaching hardware missing	C	Require replacement of
Attaching hardware	7\	hardware Require repair or replacement
	A	of hardware.
Attaching hardware threads stripped	73	Damina wanain an wanlacaman
-	A	of hardware.
Connector broken Connector (Weatherpack	2	Require repair or replacement.
type) leaking Connector melted		Require repair or replacement. (1) Require repair or replacement.
Connector missing Contaminated		Require replacement (2) Require repair or
Leaking Malfunctioning	A	replacement Require repair or replacement(3) Require repair or
Missing	C	replacement Require replacement.
Resistance out of specification	В	Require repair or replacement.
Restricted, affecting performance	A	Require repair or replacement.
Terminal broken Terminal burned, affect	А	Require repair or replacement.
performance		(1) Require repair or replacement.
	e 2	Suggest repair or replacement.
Terminal corroded, affecting performance		Require repair or replacement.
Terminal corroded, not affecting performance	2	Suggest repair or replacement.
Terminal loose, affect performance		Require repair or replacement.
Terminal loose, not affecting performance	1	Suggest repair or replacement.
Threads damaged Threads stripped (threads)	A	Require repair or replacement.
missing)		Require replacement.
exposed	В	Require repair or replacement.
Wire lead corroded		Require repair or replacement.
Wire lead open		
Wire lead shorted	A	Require repair or replacement.
		ect prior to repair or
replacement of p	part.	amination such as engine coolant

(2) - Determine source of contamination, such as engine coolant, fuel, metal particles, or water. Require repair or replacement.





(3) - Includes inoperative, intermittent operation, failure to perform all functions, or out of OEM specification.

ELECTRONIC TRANSMISSION FEEDBACK DEVICES

ELECTRONIC TRANSMISSION FEEDBACK DEVICE INSPECTION

Condition	Code	Procedure
Attaching hardware		
	C	Require replacement of
Attaching hardware		hardware.
	A	Require repair or replacement of hardware.
Attaching hardware		
threads stripped (threads missing)	A	Require repair or replacement
-	3	of hardware.
Connector broken Connector (Weatherpack		Require repair or replacement.
type) leaking	A	Require repair or replacement.
Connector melted	A	(1) Require repair or replacement.
Connector missing		Require replacement.
Contaminated	A	(2) Require repair or replacement.
Inoperative	В	
		replacement. Further inspection required.
Leaking	A	
Missing	C	Require replacement.
Resistance out of specification	В	Require repair or replacement.
Restricted, affecting		
performance Terminal broken		1 1 1
Terminal burned, affect	ing	
performance	A	(1) Require repair or replacement.
Terminal burned, not affecting performance	2	Suggest repair or replacement.
Terminal corroded,	70	
affecting performance Terminal corroded, not	A	Require repair or replacement.
affecting performance	2	Suggest repair or replacement.
Terminal loose, affecti performance		Require repair or replacement.
Terminal loose, not		
affecting performance Threads damaged		 Suggest repair or replacement. Require repair or replacement.
Threads stripped (threa		Require repair of repracement.
missing)		Require replacement.
exposed	В	Require repair or replacement.
Wire lead corroded		Require repair or replacement.
Wire lead open		
Wire lead shorted	A	Require repair or replacement.
(1) - Determine cause a	and corre	ect prior to repair or

- Determine cause and correct prior to repair or
- replacement of part.

 (2) Determine source of contamination, such as engine coolant,





- fuel, metal particles, or water. Require repair or
- replacement.

 (3) Inoperative includes intermittent operation or out of OEM specification. Some components may be serviceable; check for accepted cleaning procedure.

ENGINE COOLANT TEMPERATURE SENSORS

ENGINE COOLANT TEMPERATURE SENSOR INSPECTION

Condition	Code	Procedure
Attaching hardware		
missing	. C	Require replacement of hardware.
Attaching hardware	_	
threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped		
(threads missing)	. A	Require repair or replacement
Connector broken	. A	of hardware Require repair or replacement.
Connector (Weatherpack		
type) leaking		Require repair or replacement.
Connector melted	. A	(1) Require repair or replacement.
Connector missing	. C	Require replacement.
Contaminated	. A	(2) Require repair or
Inoperative	. В	replacement(3) Require repair or
-		replacement. Further
		inspection required.
Leaking		Require repair or replacement.
Missing	. C	Require replacement.
Resistance out of specification	. В	Require repair or replacement.
Restricted, affecting	. 1	Require repair or repracement.
performance	. A	Require repair or replacement.
Terminal broken	. A	Require repair or replacement.
Terminal burned, affectir		
performance	. A	(1) Require repair or
Towning burned not		replacement.
Terminal burned, not affecting performance .	. 2	Suggest repair or replacement.
Terminal corroded,	• 2	Suggest repair or repracement.
3 I	. A	Require repair or replacement.
Terminal corroded, not	0	Q
affecting performance . Terminal loose, affecting	. 2	Suggest repair or replacement.
performance		Require repair or replacement.
Terminal loose, not		
affecting performance .	. 1	Suggest repair or replacement.
Threads damaged		Require repair or replacement.
Threads stripped (threads		Daniel and a second
<pre>missing)</pre>	. A	Require replacement.
exposed	. В	Require repair or replacement.
Wire lead corroded		Require repair or replacement.
Wire lead open		Require repair or replacement.
Wire lead shorted		Require repair or replacement.





- (1) Determine cause and correct prior to repair or replacement of part.
- (2) Determine source of contamination, such as engine coolant, fuel, metal particles, or water. Require repair or replacement.
- (3) Inoperative includes intermittent operation or out of OEM specification. Some components may be serviceable; check for accepted cleaning procedure.

ENGINE COOLING SYSTEMS

NOTE:

Overheating, poor engine performance, and insufficient cabin heat can be affected by, but are not limited to, all of the components in the engine cooling system.

ENGINE COVERS (OIL PAN, VALVE COVER, TIMING COVER)

ENGINE COVER (OIL PAN, VALVE COVER, TIMING COVER) INSPECTION

Condition	Code		Procedure
Attaching hardware incorrect	В	Require	renlacement
Attaching hardware loose		-	-
Attaching hardware		1	-
missing	. 2	Suggest repair or	replacement.
Bent, affecting performance		-	-
Bent, not affecting performance		No service	suggested or
Cracked (not leaking)	. 2	Suggest repair or	required. replacement.
Leaking externally Leaking internally, causing fluid	. A	Require repair or	replacement.
contamination Missing			
Restricted passage Threads damaged	. A		replacement.

ENGINE OIL

ENGINE OIL INSPECTION

Condition	Code		Procedure
Contaminated	. A		(1) Require replacement of oil and filter.
Level high	. В		Determine source of incorrect level and require repair.
Level low	. В	• • •	Determine source of incorrect level and require repair.
Maintenance intervals	. 3	• • •	Suggest replacement to comply with vehicle's OEM recommended service intervals.

(1) - Determine source of contamination, such as engine coolant, fuel, metal particles, or water when changing oil. Require





repair or replacement.

ENGINE OIL CANISTERS

See ENGINE OIL FILTERS AND CANISTERS.

ENGINE OIL COOLERS (EXTERNAL)

ENGINE OIL COOLER (EXTERNAL) INSPECTION

Condition	Code	Procedure
Air flow restriction Attaching hardware	. A	Require repair or replacement.
	. A	Require repair or replacement of hardware.
Attaching hardware		
_	. C	Require replacement of hardware.
Attaching hardware not		
	. A	Require repair or replacement of hardware.
Bypassed	. A	Require repair or replacement.
Connection leaking		
Corroded	. 1	
		Require repair or replacement.
	. 2	Suggest repair or replacement.
Fluid flow restrictions		
Internal restrictions,		··· ···· quality and response of
affecting performance .	. A	Require repair or replacement.
Leaking		
Missing		Require replacement.
Threads damaged		Require repair or replacement.
Threads stripped (threads		1 11 11 11 11 11
missing)		Require replacement.

ENGINE OIL DRAIN PLUGS AND GASKETS

ENGINE OIL DRAIN PLUG AND GASKET INSPECTION

Condition	Code	Procedure
Missing	. C	Require repair or replacement
		ement of drain plug gasket when pect threads in oil pan for damage.

ENGINE OIL FILTERS AND CANISTERS

ENGINE OIL FILTER AND CANISTER INSPECTION

Condition	on	Code			Procedure
Bulged		. A	 (1)	Require	replacement.





	Further inspection required.
Canister attaching hardware broken	A Require repair or replacement
Cariatan attachina	of hardware
Canister attaching hardware loose Canister attaching	A Require repair.
	C Require replacement.
	A Require repair or replacement of hardware.
	A (2) Require replacement Further inspection required.
Contaminated	A (3) Require replacement of oil and filter.
Dented	2 (4) Suggest replacement Further inspection required.
Leaking	A Require repair or replacement.
Maintenance intervals	3 Suggest replacement to comply with vehicle's OEM recommended service intervals.
(1) - Inspect pressure reli(2) - Inspect bypass.	ef valve.
(3) - Determine cause of co fuel, metal particles	ntamination, such as engine coolant, , or water when changing oil. Require
repair or replacement (4) - Determine cause, such	

ENGINE OIL GASKETS

See ENGINE OIL DRAIN PLUGS AND GASKETS.

ENGINE OIL PRESSURE GAUGES (MECHANICAL)

ENGINE OIL PRESSURE GAUGE (MECHANICAL) INSPECTION

Condition	(Code					Procedure
Indicates	out of range	В			(1)	Further	inspection required.
Inoperativ	7e	A			(2)	Further	inspection required.
	ccurately						
pres (2) - Gauc pres Inop	ge may indicate possure, or temperative may indicate possure, or temperative includes confication, or outlined to determine	cure, roble ture, inte	or em w or ermi ran	problem ith conta problem ttent ope	with amina with erati	n gauge. ated oil, n gauge. ion, out	, level,

EVAPORATIVE EMISSION (EVAP) CANISTER FILTERS

EVAPORATIVE EMISSION (EVAP) CANISTER FILTER INSPECTION

Condition Code Procedure





Attaching hardware broken	A	Require repair or replacement of hardware.
Attaching hardware missing	С	Require replacement of hardware.
Attaching hardware not		
functioning	A	Require repair or replacement of hardware.
Maintenance interval	3	Suggest replacement to comply with OEM recommended service interval.
Missing	С	Require replacement.
performance	A	Require replacement.
performance	1	Suggest replacement.
Water-contaminated	Α	Require replacement.

EVAPORATIVE EMISSION (EVAP) CANISTER PURGE DEVICES

EVAPORATIVE EMISSION (EVAP) CANISTER PURGE DEVICE INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped		
(threads missing)	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking Connector melted		<pre> Require repair or replacement(1) Require repair or</pre>
Connector missing Contaminated		Require replacement(2) Require repair or replacement.
Inoperative	. В	
Leaking		Require repair or replacement.
Missing Resistance out of		Require replacement.
specification Restricted, affecting	. В	Require repair or replacement.
performance		
Terminal broken Terminal burned, affecting		Require repair or replacement.
performance		(1) Require repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
	. A	Require repair or replacement.
	. 2	Suggest repair or replacement.





Terminal loose, affecting performance Terminal loose, not	В		Require	repair	or	replacement.
affecting performance						
Threads damaged	А		Require	repair	or	replacement.
Threads stripped (threads	7\			Dogu	iro	ronlagoment
missing)	А	• • •		. Requ	rre	repracement.
exposed	В		Require	repair	or	replacement.
Wire lead corroded			Require	repair	or	replacement.
Wire lead open			-	-		replacement.
Wire lead shorted	A	• •	Require	repair	or	replacement.
 (1) - Determine cause and c replacement of part. (2) - Determine source of c fuel, metal particles replacement. 	onta , oi	amina r wat	ation, sı ter. Requ	ıch as e ıire rep	eng: pai:	r or
(3) - Inoperative includes OEM specification. So	me d	comp	onents ma	ay be se		
check for accepted cl	ean:	ıng j	procedure	∋.		

EVAPORATIVE EMISSION (EVAP) CANISTERS

EVAPORATIVE EMISSION (EVAP) CANISTER INSPECTION

Condition	Code			Procedure
Inoperative	. A			re repair or replacement.
Leaking	. C		Require :	
(1) - Inoperative include OEM specification.	s int	ermittent ope	ration or o	out of

EVAPORATIVE EMISSION (EVAP) FEEDBACK DEVICES

EVAPORATIVE EMISSION (EVAP) FEEDBACK DEVICE INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of
Attaching hardware		hardware.
2	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped		
(threads missing)	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
		Require repair or replacement.
connector merted	. A	(1) Require repair or replacement.





Inoperative	В	(3) Require repair or replacement. Further inspection required.					
Leaking	A C	Require repair or replacement Require replacement.					
specification	В	Require repair or replacement.					
performance	A						
Terminal broken Terminal burned, affecting	Α	Require repair or replacement.					
performance	Α	(1) Require repair or replacement.					
Terminal burned, not affecting performance Terminal corroded,	2	Suggest repair or replacement.					
affecting performance	A	Require repair or replacement.					
Terminal corroded, not affecting performance Terminal loose, affecting	2	Suggest repair or replacement.					
performance Terminal loose, not	В	Require repair or replacement.					
affecting performance	1	Suggest repair or replacement.					
Threads damaged Threads stripped (threads	Α	Require repair or replacement.					
missing)	Α	Require replacement.					
exposed	В	Require repair or replacement.					
Wire lead corroded Wire lead open	A A	Require repair or replacement.Require repair or replacement.					
Wire lead shorted	A	 Require repair or replacement. Require repair or replacement.					
(1) - Determine cause and correct prior to repair or replacement of part.							
(2) - Determine source of c fuel, metal particles		camination, such as engine coolant, or water. Require repair or					
	me	ermittent operation or out of components may be serviceable; ning procedure.					

EXHAUST GAS RECIRCULATION DEVICES

EXHAUST GAS RECIRCULATION DEVICE INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped		
(threads missing)	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking		<pre> Require repair or replacement(1) Require repair or</pre>





Connector missing Contaminated	C A	
Inoperative	В	replacement(3) Require repair of replacement. Further inspection required.
Leaking	A C	Require repair or replacement.
Resistance out of		1
specification Restricted, affecting	В	Require repair or replacement.
performance	A	Require repair or replacement.
performance	1	Suggest repair or replacement.
Terminal broken Terminal burned, affecting	A	Require repair or replacement.
performance	A	(1) Require repair of replacement.
Terminal burned, not affecting performance Terminal corroded,	2	Suggest repair or replacement.
affecting performance Terminal corroded, not	A	Require repair or replacement.
affecting performance Terminal loose, affecting	2	Suggest repair or replacement.
performance	В	Require repair or replacement.
Terminal loose, not affecting performance	1	Suggest repair or replacement.
Threads damaged	Ā	Require repair or replacement.
Threads stripped (threads		
missing)	A	Require replacement.
exposed	В	Require repair or replacement.
Wire lead corroded	Α	Require repair or replacement.
Wire lead open	Α	Require repair or replacement.
Wire lead shorted	Α	Require repair or replacement.
(1) - Determine cause and creplacement of part.	orr	ect prior to repair or
(2) - Determine source of c fuel, metal particles		amination, such as engine coolant, r water. Require repair or
replacement.		
		ermittent operation or out of
		components may be serviceable;
check for accepted cl	ean	ing procedure.

EXHAUST GAS RECIRCULATION FEEDBACK DEVICES

EXHAUST GAS RECIRCULATION FEEDBACK DEVICE INSPECTION

Condition	Code		Procedure
Attaching hardware missing	C	Require	replacement of hardware.
Attaching hardware threads damaged	A	Require repair	
Attaching hardware threads stripped (threads missing)	A	Require repair	or replacement of hardware.





Connector broken Connector (Weatherpack	A		Require	repair	or	replacement.
type) leaking Connector melted	A A		Require			replacement. ire repair or replacement.
Connector missing Contaminated	C A					replacement. replacement. ire repair or replacement.
Inoperative	В	• • •	• • • • • • • •	repla	acer	ire repair or ment. Further ion required.
Leaking	Α		Require			replacement.
Missing	C					replacement.
Resistance out of	0	• • •	• • • • • • • •	· requ	IIC	repracement.
specification	В	• •	Require	repair	or	replacement.
performance	A	• •	Require	repair	or	replacement.
performance	1		Suggest	repair	or	replacement.
Terminal broken	Α					replacement.
Terminal burned, affecting			-	-		-
performance	Α	• • •	• • • • • • • •	(1) R	equ	ire repair or replacement.
Terminal burned, not	0					1
affecting performance Terminal corroded,	2	• •				replacement.
affecting performance Terminal corroded, not	Α	• •	Require	repair	or	replacement.
affecting performance Terminal loose, affecting	2	• •	Suggest	repair	or	replacement.
performance Terminal loose, not	В		Require	repair	or	replacement.
affecting performance	1		Suggest	renair	or	replacement.
Threads damaged	Ā					replacement.
Threads stripped (threads	11	• •	Require	reparr	ΟŢ	repracement.
missing)	A			. Requ	ire	replacement.
exposed	В		Require	repair	or	replacement.
Wire lead corroded	Α					replacement.
Wire lead open	Α					replacement.
Wire lead shorted	A					replacement.
(1) - Determine cause and c replacement of part.	orr	ect	prior to	repair	or	
(2) - Determine source of c fuel, metal particles						
replacement.						
(3) - Inoperative includes OEM specification. So						
ahoak for aggented al						

check for accepted cleaning procedure.

EXPANSION PLUGS

See CASTING CORE PLUGS AND EXPANSION PLUGS.

FAN CONTROL SENSORS

FAN CONTROL SENSOR INSPECTION

Condition Code Procedure





missing	С	Require replacement of hardware.
Attaching hardware threads damaged	А	Require repair or replacement
		of hardware.
Attaching hardware threads stripped		
(threads missing)	А	of hardware.
Connector broken Connector (Weatherpack	А	Require repair or replacement.
type) leaking	А	Require repair or replacement.
Connector melted	A	(1) Require repair or replacement.
Connector missing	С	Require replacement.
Contaminated	Α	(2) Require repair or replacement.
Inoperative	В	(3) Require repair or
		replacement. Further
Leaking	А	<pre>inspection required Require repair or replacement.</pre>
Missing	C	
Resistance out of		
specification Restricted, affecting	В	Require repair or replacement.
performance	А	Require repair or replacement.
Terminal broken	Α	Require repair or replacement.
Terminal burned, affecting	_	
performance	Α	(1) Require repair or replacement.
Terminal burned, not		repracement.
affecting performance	2	Suggest repair or replacement.
Terminal corroded, affecting performance	А	Require repair or replacement.
Terminal corroded, not	А	Require repair of repracement.
affecting performance	2	Suggest repair or replacement.
Terminal loose, affecting	D	Doguiro ropair or roplacement
performance Terminal loose, not	В	Require repair or replacement.
affecting performance	1	Suggest repair or replacement.
Threads damaged	А	Require repair or replacement.
Threads stripped (threads missing)	7\	Poguiro ronlagoment
Wire lead conductors	Α	Require replacement.
exposed	В	Require repair or replacement.
Wire lead corroded		Require repair or replacement.
Wire lead open	Α	Require repair or replacement.
Wire lead shorted	А	Require repair or replacement.
(1) - Determine cause and c	corr	ect prior to repair or
replacement of part.		
(2) - Determine source of o		
coolant, fuel, metal repair or replacement		ticles, or water. Require
		ermittent operation or out of
OEM specification. So	ome	components may be serviceable;
check for accepted cl	ean	ing procedure.

FUEL





Condition	Code	Procedure
Contaminated	. B(1)	Require repair or replacement.
Fuel incorrect	. в (2) F	
(1) - Determine of sourc replacement.	e of contamination. Re	quire repair or
(2) - If a fuel other tha	n specification fuel i d service is to flush	-

FUEL ACCUMULATORS AND DAMPERS

FUEL ACCUMULATOR AND DAMPER INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
	. A	Require repair or replacement (1) Require replacement Require replacement.
(1) - Inoperative include OEM specification.	s inte	ermittent operation or out of

FUEL AND COLD START INJECTORS

You are not required to replace injectors in sets. However, you may suggest replacement of all injectors for preventive maintenance. NOTE:

FUEL AND COLD START INJECTOR INSPECTION

Condition	Code	Procedure
	. В	Require replacement.
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not	_	
functioning	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking		Require repair or replacement (1) Require repair or replacement.
Connector missing	. C	Require replacement.





Flow restricted Inoperative	B B	<pre> Require repair or replacement (2) Require repair or replacement. Further inspection required.</pre>
Leaking Resistance out of	A	Require repair or replacement.
specification Terminal broken	В А	Require replacement Require repair or replacement.
Terminal burned, affecting performance	A	
Terminal burned, not affecting performance Terminal corroded,	2	Suggest repair or replacement.
affecting performance Terminal corroded, not	A	Require repair or replacement.
affecting performance Terminal loose, affecting	2	Suggest repair or replacement.
performance	В	Require repair or replacement.
Threads damaged		 Suggest repair or replacement. Require repair or replacement.
Threads stripped (threads missing)	A	Require replacement.
(1) - Determine cause and creplacement of part.	orr	ect prior to repair or
(2) - Inoperative includes		ermittent operation, out of components may be serviceable.

FUEL DAMPERS

See FUEL ACCUMULATORS AND DAMPERS.

FUEL DELIVERY CHECK VALVES

FUEL DELIVERY CHECK VALVE INSPECTION

Condition	Code	Procedure
Leaking externally Missing Pressure leaking (bleeds	A (1) Require A Require repair or C Require	replacement. replacement.
down)	. A Require repair or	replacement.
(1) - Inoperative include specification.	s intermittent operation or	out of OEM

FUEL DISTRIBUTORS (BOSCH CIS)

FUEL DISTRIBUTOR (BOSCH CIS) INSPECTION

Condition	Code	Procedure
Inoperative	. A	 (1) Require repair or replacement. Further inspection required.
Leaking Out of specification Restricted, affecting		





performance	 Α	 (2) Require repair or
		replacement. Further
		inspection required.

- (1) Inoperative includes intermittent operation.
- (2) Some components may be serviceable; check for accepted cleaning procedure.

FUEL FILLER NECKS AND RESTRICTORS

FUEL FILLER NECK AND RESTRICTOR INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
-	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Missing	. C	Require repair or replacement.Require replacement.Suggest repair or replacement.

FUEL FILTERS

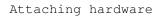
FUEL FILTER INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
		Require repair or replacement Suggest replacement to comply with OEM recommended service interval.
Missing	. С	Require replacement.
		Require replacement.
performance	. 1	23 2

FUEL INJECTORS

FUEL INJECTOR INSPECTION

Condition Code Procedure







missing	С	Require replacement of
		hardware.
Attaching hardware		
threads damaged	А	Require repair or replacement
		of hardware.
Attaching hardware		
threads stripped	7\	Doguino ropoir or replacement
(threads missing)	А	Require repair or replacement of hardware.
		or nardware.
Connector broken	А	. Require repair or replacement.
Connector (Weatherpack		· Require repair or repracement.
type) leaking	А	. Require repair or replacement.
Connector melted	Α	(1) Require repair or
		replacement.
Connector missing	С	Require replacement.
Contaminated	Α	(2) Require repair or
		replacement.
Inoperative	В	(3) Require repair or
		replacement. Further
		inspection required.
Leaking	A	. Require repair or replacement.
Missing	С	Require replacement.
Resistance out of	ъ	Describe was in an arminet
specification	В	. Require repair or replacement.
Restricted, affecting performance	А	. Require repair or replacement.
Restricted, not affecting	А	. Require repair of repracement.
performance	2	. Suggest repair or replacement.
Terminal broken	A	. Require repair or replacement.
Terminal burned, affecting		· Require repair or repracement.
performance	Α	(1) Require repair or
-		replacement.
Terminal burned, not		-
affecting performance	2	. Suggest repair or replacement.
Terminal corroded,		
affecting performance	А	. Require repair or replacement.
Terminal corroded, not	_	
affecting performance	2	. Suggest repair or replacement.
Terminal loose, affecting	ъ	Describe was in an arminet
performance	В	. Require repair or replacement.
Terminal loose, not	1	Cuggost ropair or roplacement
Threads damaged	A	Suggest repair or replacement.Require repair or replacement.
Threads stripped (threads	11	. Require repair of repracement.
missing)	А	Require replacement.
Wire lead conductors		noquito lopidoomono.
exposed	В	. Require repair or replacement.
Wire lead corroded	Α	
	Α	. Require repair or replacement.
Wire lead shorted	Α	. Require repair or replacement.
(1) - Determine cause and o	corr	rect prior to repair or
replacement of part.		and a skill a small state of the skill state of the
		camination, such as engine coolant,
	·, 0	or water. Require repair or
replacement.	int	termittent operation or out of
		components may be serviceable;
check for accepted cl		
	- Cuii	ing procedure.





FUEL LEVEL SENDER INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Inoperative	. A	(1) Require repair or replacement.
Leaking Terminal broken Terminal burned, affectin	. A	Require repair or replacement.Require repair or replacement.
performance		(2) Require repair or replacement.
Terminal burned, not affecting performance. Terminal corroded,	. 2	Suggest repair or replacement.
	. A	Require repair or replacement.
affecting performance . Terminal loose, affecting	. 2	Suggest repair or replacement.
performance	. В	Require repair or replacement.
affecting performance . Wire lead conductors		Suggest repair or replacement.
exposed	. A	Require repair or replacement.Require repair or replacement.Require repair or replacement.Require repair or replacement.
(1) - Inoperative include OEM specification.(2) - Determine cause and replacement of part	corre	ermittent operation or out of ect prior to repair or

FUEL PRESSURE REGULATORS

FUEL PRESSURE REGULATOR INSPECTION

Condition	Code		Procedure
Contaminated	. 2	 	(1) Suggest repair or replacement. Further inspection required.
Inoperative	. В	 	
Leaking (internally or externally) Pressure out of	. A	 Require	repair or replacement.
specification Vapor bypass restricted		_	± ±

(1) - Some components may be serviceable; check for accepted cleaning procedure. Determine source of contamination. Require repair or replacement.





(2) - Inoperative includes intermittent operation or out of $\ensuremath{\mathsf{OEM}}$ specification.

FUEL PUMPS (IN-TANK AND EXTERNAL, ELECTRICAL OR MECHANICAL)

FUEL PUMP (IN-TANK AND EXTERNAL, ELECTRICAL OR MECHANICAL) INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement
Attaching hardware missing	. C	of hardware Require replacement of
Attaching hardware not functioning	. A	hardware Require repair or replacement
Connector broken		of hardware Require repair or replacement.
Connector (Weatherpack type) leaking		Require repair or replacement.
Connector melted		
Connector missing Contaminated		Require replacement (2) Require replacement.
Inoperative		(3) Require repair or replacement.
Leaking externally (includes pulsator) Leaking internally	. A	Require repair or replacement.
(includes pulsator)	. A	Require repair or replacement.
Noisy		Suggest repair or replacement.
Out of specification		Require repair or replacement.
Terminal broken Terminal burned, affecting		Require repair or replacement.
performance		(1) Require repair or replacement.
Terminal burned, not affecting performance .	. 2	Suggest repair or replacement.
Terminal corroded, affecting performance .	. A	Require repair or replacement.
	. 2	Suggest repair or replacement.
Terminal loose, affecting performance		Require repair or replacement.
Terminal loose, not affecting performance .	. 1	Suggest repair or replacement.
Threads damaged		Require repair or replacement.
Threads stripped (threads	;	
missing)	. A	Require replacement.
exposed	. B	Require repair or replacement.
Wire lead corroded	. A	Require repair or replacement.
Wire lead open	. A	Require repair or replacement.
Wire lead shorted	. A	Require repair or replacement.
(1) - Determine cause and replacement of part		ect prior to repair or
		amination. Require repair or
(3) - Inoperative include	s inte	ermittent operation.





FUEL RAILS

FUEL RAIL INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Contaminated	. A	Require repair or replacement.
(1) - Determine source of replacement.	cont	amination. Require repair or

FUEL RESTRICTORS

See FUEL FILLER NECKS AND RESTRICTORS.

FUEL TANKS

FUEL TANK INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
	. A	<pre> Require repair or replacement (1) Require repair Require repair or replacement.</pre>
	. В	Require replacement.
performance		No service suggested or required.
Leaking	. A	Require repair or replacement.
(1) - Determine source of replacement.	cont	amination. Require repair or

GAS CAPS

GAS CAP INSPECTION





Condition	Code	Procedure
Application incorrect Fails to maintain proper	. В	 Require replacement.
pressure	. A	 Require replacement.
Gaskets missing	. C	 Require replacement.
Leaking	. A	 Require replacement.
Missing	. C	 Require replacement.
Plugged (vacuum and		
pressure relief)	. A	 Require replacement.
Seals missing	. C	 Require replacement.

GASKETS

GASKET INSPECTION

Condition	Code	Procedure
Leaking	A (1) Require repair or replacement.
(1) - Poo	wire increation of mating and scalin	a gurfago and

(1) - Require inspection of mating and sealing surface and repair or replace as necessary.

GROMMETS (VALVE COVER)

GROMMET (VALVE COVER) INSPECTION

Conditio	n	Code		Procedure
Leaking		. 2	 (1)	Suggest repair or replacement.

(1) - Require inspection of mating and sealing surface and repair or replace as necessary.

HARMONIC DAMPERS

HARMONIC DAMPER INSPECTION

Condition	Code	Procedure
Application incorrect Attaching hardware	. В	Require replacement.
2	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Cracked Dented (fluid	. A	Require replacement.
type only)		Require replacement Require repair or replacement.
only) Loose Noisy	. A	Require replacement.





Outer ring slipped out of		
position	Α	Require replacement.
Positioned incorrectly	Α	. Require repair or replacement.
Rubber damping material		
deteriorated	1	Suggest replacement.
Seal surface worn, causing		23 -
a leak	Α	. Require repair or replacement.
Threads damaged	Α	. Require repair or replacement.
Threads stripped (threads		
missing)	Α	Require replacement.

HEATER CONTROL VALVES

HEATER CONTROL VALVE INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Coolant leak	. A	Require replacement Require repair or replacement
Missing	. A	Require replacement Require repair or replacement.
(1) - Includes inoperative failure to perform	•	± ,

HEATER CORES

HEATER CORE INSPECTION

Condition	Code	Procedure
Air flow restriction Attaching hardware	. A	Require repair or replacement.
2	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Bypassed	. A	
- · · · · · · · · · · · · · · · · · · ·	. A	Require repair or replacement.
, ·	. 2	Suggest repair or replacement.





affecting performance	Α	 Require repair or replacement.
Leaking	Α	 Require repair or replacement.
Missing	С	 Require replacement.

HOSE AND TUBE COUPLERS, CONNECTORS AND CLAMPS

NOTE: When replacing fuel lines and hoses, replace with product that meets or exceeds OEM design specifications.

HOSE AND TUBE COUPLER, CONNECTOR AND CLAMP INSPECTION

Condition	Code	Procedure
Application incorrect Connected incorrectly Corroded, not reusable . Cracked	. 1	Require replacement. Require repair. Suggest replacement. Require replacement.
leak	. A	<pre> Require repair or replacement Require repair or replacement Require replacement.</pre>
leaking)		Require replacement of safety clip.
Stripped	. A	Require replacement.

HOSE CLAMPS

See HOSE AND TUBE COUPLERS, CONNECTORS AND CLAMPS.

HOSE CONNECTORS

See HOSE AND TUBE COUPLERS, CONNECTORS AND CLAMPS.

HOSE COUPLERS

See HOSE AND TUBE COUPLERS, CONNECTORS AND CLAMPS.

HOSES AND TUBES (FUEL LINES, RADIATOR, VACUUM, BY PASS, HEATER, RECOVERY TANK AND OIL COOLERS)

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HOSE AND TUBE (FUEL LINE, RADIATOR, VACUUM, BY PASS, HEATER, RECOVERY TANK AND OIL COOLER) INSPECTION

Condition	Code	Procedure
Connected incorrectly Corroded, not reusable . Cracked	. 1 . A . 1 . 1	Require replacement. Require repair. Suggest replacement. Require replacement. Suggest repair or replacement. Suggest repair or replacement.
damaged	. A	Require replacement.
leak	. A	Require repair or replacement.Require repair or replacement.Suggest replacement.





Melted	1	Suggest repair or replacement Require replacement.
Missing	1	
Outer covering damaged to the extent that the inner	_	33 1
fabric is visible	А	Require replacement.
Protective sleeves	0	
damaged	2	. Suggest replacement of sleeves.
missing	2	. Suggest replacement of sleeves.
Restricted, affecting	_	· baggest repracement of breeves.
performance	Α	Require repair or replacement.
Restricted, not affecting		
performance	2	Suggest repair or replacement.
Routed incorrectly	2	Suggest repair or replacement.
Safety clip missing	С	Require replacement.
Spongy	1	Suggest repair or replacement.
Stripped	A	Require replacement.
Swollen	В	Require replacement.
Threads damaged	А	Require repair or replacement.
Threads stripped (threads	7\	Doguino monlacement
missing)	A 1	Require replacement Suggest repair or replacement.
TAbe THEOTIECE	т	buggest repair of repracement.

HOUSINGS

See THERMOSTATS AND HOUSINGS.

IDLE AIR CONTROLS

IDLE AIR CONTROL INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	. A	Require repair or replacement
Connector broken Connector (Weatherpack	. A	of hardware Require repair or replacement.
•		<pre> Require repair or replacement (1) Require repair or</pre>
Inoperative	. В	
		Require repair or replacement Require replacement.
	. В	Require repair or replacement.
_		Require repair or replacement.Require repair or replacement.





Terminal burned, affecting performance	А	•••		(1) F	Requ	ire repair or replacement.
Terminal burned, not affecting performance Terminal corroded,	2		Suggest	repair	or	replacement.
•	A		Require	repair	or	replacement.
affecting performance Terminal loose, affecting	2		Suggest	repair	or	replacement.
performance Terminal loose, not	В	• •	Require	repair	or	replacement.
affecting performance	1		Suggest	repair	or	replacement.
Threads damaged	А		Require	repair	or	replacement.
Threads stripped (threads missing)	А			. Requ	iire	replacement.
exposed	В		Require	repair	or	replacement.
Wire lead corroded						replacement.
Wire lead open	Α					replacement.
Wire lead shorted	A	• •	Require	repair	or	replacement.
 (1) - Determine cause and converged replacement of part. (2) - Determine source of confuel, metal particles replacement. (3) - Inoperative includes 	ont , o	amin r wa ermi	ation, si ter. Requ ttent ope	uch as uire re eration	eng pai:	ine coolant, r or out of
OEM specification. So check for accepted cl		_		-	erv.	rceabre;

IDLE SPEED CONTROL ACTUATORS

IDLE SPEED CONTROL ACTUATOR INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	Α	Require repair or replacement
Connector broken		of hardware.
Connector (Weatherpack type) leaking Connector melted		
Connector missing Contaminated		replacement
Inoperative	. В	replacement(3) Require repair or replacement. Further
Leaking		inspection required Require repair or replacement Require replacement.
specification	. В	Require repair or replacement.





Terminal broken		• •	Require	repair	or	replacement.
Terminal burned, affectin performance				(1) R	equ.	ire repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	. 2		Suggest	repair	or	replacement.
affecting performance . Terminal corroded, not	. A	• •	Require	repair	or	replacement.
affecting performance . Terminal loose, affecting			Suggest	repair	or	replacement.
performance		• •	Require	repair	or	replacement.
affecting performance .	. 1		Suggest	repair	or	replacement.
Threads damaged Threads stripped (threads		• •	Require	repair	or	replacement.
missing)		• • •		. Requi	ire	replacement.
exposed	. A		Require	repair	or	replacement. replacement.
Wire lead open Wire lead shorted		• •				replacement. replacement.
(1) - Determine cause and replacement of part(2) - Determine source of				_		ine coolant.
fuel, metal particl replacement.						
(3) - Inoperative include OEM specification.	Some	comp	onents ma			
check for accepted	clean	ing p	procedure	€.		

IGNITION BOOTS

See

IGNITION WIRES, BOOTS, COIL TOWERS AND TERMINALS (SECONDARY).

IGNITION COIL TOWERS

See

IGNITION WIRES, BOOTS, COIL TOWERS AND TERMINALS (SECONDARY).

IGNITION COILS

IGNITION COIL INSPECTION

Condition	Code	Procedure
Arcing	. A	Require replacement.
2	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of
Attaching hardware not		hardware.
functioning	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking		Require repair or replacement (1) Require repair or





Connector missing Corroded, affecting	С	replacem Require replacem	
performance	A	Require replacem	ent.
performance	2	(2) No service suggeste requi	d or red.
Inoperative Oil leaking Out of specification Terminal broken Terminal burned, affecting	A A B A	(3) Require replacem Require replacem Require replacem Require replacem	ent. ent.
performance	A	(1) Require repai replacem	
Terminal burned, not affecting performance Terminal corroded,	2	Suggest repair or replacem	ent.
affecting performance Terminal corroded, not	Α	Require repair or replacem	ent.
affecting performance Terminal loose, affecting	2	Suggest repair or replacem	ent.
performance Terminal loose, not	В	Require repair or replacem	ent.
affecting performance Wire lead conductors	1	Suggest repair or replacem	ent.
exposed	B A	1 1 1	
Wire lead open	A	 Require repair or replacem Require repair or replacem	
Wire lead shorted	A	Require repair or replacem	
be tested.	re	sult of overheating; coil shoul	d
(3) - Inoperative includes	ınt	ermittent operation.	

IGNITION CONTROL MODULES (ICM)

IGNITION CONTROL MODULE (ICM) INSPECTION

Condition	Code	Procedure
Application incorrect Attaching hardware	. В	Require replacement.
	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	. A	Require repair or replacement of hardware.
Code set (if applicable)	. A	
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking		Require repair or replacement (2) Require repair or replacement.





Connector missing Contaminated	A A	
Leaking Malfunctioning	A A	Require repair or replacement (4) Require repair or
Missing	С	replacement Require replacement.
Terminal broken Terminal burned, affecting	A	Require repair or replacement.
performance Terminal burned, not	Α	(2) Require repair or replacement.
·	2	Suggest repair or replacement.
affecting performance Terminal corroded, not	A	Require repair or replacement.
affecting performance Terminal loose, affecting	2	Suggest repair or replacement.
performance Terminal loose, not	В	Require repair or replacement.
affecting performance		Suggest repair or replacement.
Threads damaged Wire lead conductors	А	Require repair or replacement.
exposed		
Wire lead corroded Wire lead open	A A	
Wire lead shorted		
(1) - Refer to manufacturer procedure and require component(s).		diagnostic trouble code epair or replacement of affected
(2) - Determine cause and c	orr	ect prior to repair or
coolant, fuel, metal	par	camination, such as engine cticles, or water. Require
repair or replacement (4) - Includes inoperative, perform all functions	in	ntermittent operation, or failure to

IGNITION SWITCHES

See SWITCHES.

IGNITION TERMINALS

See

IGNITION WIRES, BOOTS, COIL TOWERS AND TERMINALS (SECONDARY).

IGNITION WIRES, BOOTS, COIL TOWERS AND TERMINALS (SECONDARY)

NOTE: You are not required to replace ignition wires in sets. However, you may suggest replacement of the entire secondary wire set for preventive maintenance.

IGNITION WIRE, BOOT, COIL TOWER AND TERMINAL (SECONDARY) INSPECTION

Condition	Code		Procedure
Application incorrect Attaching hardware	. В		Require replacement.
broken	. A	Require	repair or replacement of hardware.





Attaching hardware missing	C Require replacement of hardware.
Attaching hardware not functioning	A Require repair or replacement of hardware.
Carbon-tracked Corroded Insulation leaking	A Require replacement. 1 Suggest repair or replacement.
(shorted)	A Require repair or replacement. 2 Suggest repair or replacement. C
Terminal broken Terminal burned, affecting performance	A
Terminal burned, not affecting performance Terminal corroded,	2 Suggest repair or replacement.
	A Require repair or replacement.
affecting performance Terminal loose, affecting	2 Suggest repair or replacement.
performance Terminal loose, not	B Require repair or replacement.
	1 Suggest repair or replacement.
systems, require repa	

IN-TANK FUEL STRAINERS

IN-TANK FUEL STRAINER INSPECTION

Condition	Code		Procedure
Missing	. A	Require repair or	replacement.

INERTIA FUEL SHUT-OFF SWITCHES

INERTIA FUEL SHUT-OFF SWITCH INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement





		of hardware.
Connector broken	Α	Require repair or replacement.
Connector melted	A	(1) Require repair or
Connector missing	С	replacement Require replacement.
Contaminated	Α	(2) Require replacement.
Inoperative	A	(3) Require repair or replacement.
Missing	С	
Terminal broken Terminal burned, affecting	A	Require repair or replacement.
performance	А	(1) Require repair or
		replacement.
Terminal burned, not affecting performance	2.	Suggest repair or replacement.
Terminal corroded,	_	saggest repair of repracement.
affecting performance	A	Require repair or replacement.
Terminal corroded, not affecting performance	2	Suggest repair or replacement.
Terminal loose, affecting	_	
performance Terminal loose, not	В	Require repair or replacement.
affecting performance	1	Suggest repair or replacement.
Wire lead conductors	-	D 1
exposed	B A	 Require repair or replacement. Require repair or replacement.
Wire lead open	A	Require repair or replacement.
Wire lead shorted	A	Require repair or replacement.
(1) - Determine cause and c	0.22	oot prior to repair or
replacement of part.	OLL	ect bilot to leball of
(2) - Determine source of c		amination, such as engine coolant,
fuel, metal particles replacement.	, 0	r water. Require repair or
±	int	ermittent operation or out of
OEM specification.		<u>.</u>

INTAKE AIR TEMPERATURE SENSORS

INTAKE AIR TEMPERATURE SENSOR INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. А	Require repair or replacement of hardware.
Attaching hardware threads stripped	70	De mai de la constanta de la c
(threads missing)	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
		Require repair or replacement.
Connector melted	. A	(1) Require repair or replacement.
Connector missing	. C	Require replacement.
Contaminated	. A	(2) Require repair or
Inoperative	. В	replacement (3) Require repair or





		replacement. Further inspection required.
Leaking		Require repair or replacement.
Missing	С	Require replacement.
Resistance out of specification	В	Require repair or replacement.
Restricted, affecting		
performance	A	Require repair or replacement.
Terminal broken Terminal burned, affecting	Α	Require repair or replacement.
performance	A	(1) Require repair or
Terminal burned, not		replacement.
affecting performance	2	Suggest repair or replacement.
Terminal corroded, affecting performance	А	Require repair or replacement.
Terminal corroded, not	А	Require repair or repracement.
affecting performance	2	Suggest repair or replacement.
Terminal loose, affecting		
performance Terminal loose, not	В	Require repair or replacement.
affecting performance	1	Suggest repair or replacement.
Threads damaged	Α	Require repair or replacement.
Threads stripped (threads		
missing)	A	Require replacement.
exposed	В	Require repair or replacement.
Wire lead corroded	Α	Require repair or replacement.
Wire lead open	Α	Require repair or replacement.
Wire lead shorted	А	Require repair or replacement.
(1) - Determine cause and c	orr	ect prior to repair or
replacement of part.		-
		amination, such as engine coolant, or water. Require repair or
replacement.	,	i waddi Noquiid iopaii di
		ermittent operation or out of components may be serviceable;
check for accepted cl		

INTAKE MANIFOLDS

INTAKE MANIFOLD INSPECTION

Condition	Code	Procedure
Corroded, affecting sealability Integrated air or fuel control components	. A	Require repair or replacement.
	. A	(1) Require repair or replacement.
<pre>Internal air or fuel components damaged, affecting performance .</pre>	. A	Require repair or replacement of component.
<pre>Internal air or fuel components damaged, not affecting performance .</pre>		No service suggested or required.
<pre>Internal air or fuel components missing</pre>	. C	Require replacement of





Leaking Out of specification Restricted Threads damaged Threads stripped (threads	B A		Require	. Requi repair	re	replacement. replacement.
missing)						
(1) - Inoperative includes OEM specification.	int	ermi	ttent ope	eration	or	out of

INTERCOOLERS

See CHARGE AIR COOLERS "INTERCOOLERS" (CAC).

KNOCK SENSORS

KNOCK SENSOR INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware thread damaged		Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	. A	
Connector broken Connector (Weatherpack	. A	of hardware Require repair or replacement.
type) leaking Connector melted		Require repair or replacement (1) Require repair or replacement.
Connector missing Inoperative		Require replacement. (2) Require repair or replacement. Further inspection required.
Leaking		Require repair or replacement Require replacement.
specification Terminal broken Terminal burned, affecting	. A	 Require repair or replacement. Require repair or replacement.
performance		(1) Require repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
	. A	Require repair or replacement.
	. 2	Suggest repair or replacement.
performance Terminal loose, not		Require repair or replacement.
affecting performance . Threads damaged Threads stripped (threads	. A	 Suggest repair or replacement. Require repair or replacement.
missing)		Require replacement.





Wire lead conductors						
exposed						
Wire lead corroded	Α		Require	repair	or	replacement.
Wire lead open	Α		Require	repair	or	replacement.
Wire lead shorted	A		Require	repair	or	replacement.
(1) - Determine cause and (corr	ect	prior to	repair	or	
replacement of part.						
(2) - Inoperative includes	int	ermi	ittent ope	eration	or	out of
OEM specification. So	ome	comp	onents ma	ay be se	erv	iceable;
check for accepted c	lean	ina	procedure	۷ _		

LIQUID VAPOR SEPARATORS

LIQUID VAPOR SEPARATOR INSPECTION

Condition	Code Pr	ocedure
Inoperative	A (1) Require re	pair or cement.
Missing	A Require repla C Require repla A Require repair or repla	cement.
(1) - Inoperative include specification.	es intermittent operation or out o	f OEM

MANIFOLD ABSOLUTE PRESSURE (MAP) SENSORS

MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	7\	Require repair or replacement
(chreads missing)	. A	of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking Connector melted		Require repair or replacement (1) Require repair or replacement.
Inoperative	. В	(3) Require repair or replacement. Further inspection required.
Leaking		
	. В	Require repair or replacement.
		Require repair or replacement.Require repair or replacement.





Terminal burned, affecting performance	A		(1) Require repair or replacement.
Terminal burned, not affecting performance Terminal corroded,	2		Suggest repair or replacement.
affecting performance Terminal corroded, not	A		Require repair or replacement.
affecting performance Terminal loose, affecting	2		Suggest repair or replacement.
performance Terminal loose, not	В		Require repair or replacement.
affecting performance Threads damaged			Suggest repair or replacement. Require repair or replacement.
Threads stripped (threads missing)	A		Require replacement.
exposed	B A A		Require repair or replacement. Require repair or replacement. Require repair or replacement. Require repair or replacement.
 (1) - Determine cause and c replacement of part. (2) - Determine source of c fuel, metal particles replacement. (3) - Inoperative includes 	ont, , o	amin r wa ermi comp	prior to repair or nation, such as engine coolant, eter. Require repair or ettent operation or out of conents may be serviceable;

MASS AIR FLOW (MAF) SENSORS

MASS AIR FLOW (MAF) SENSOR INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. c	Require replacement of hardware.
Attaching hardware thread damaged		Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	7\	Require repair or replacement
Connector broken		of hardware. Require repair or replacement.
Connector (Weatherpack type) leaking		Require repair or replacement.
Connector melted		(1) Require repair or replacement.
Connector missing Contaminated		Require replacement (2) Require repair or
Inoperative		replacement (3) Require repair or
inopolacivo		replacement. Further inspection required.
Leaking		Require repair or replacement Require replacement.
specification	. B	Require repair or replacement.





Restricted, affecting performance Terminal broken Terminal burned, affecting	A A		_	-		replacement. replacement.
performance	А	•••		(1) R	equ	ire repair or replacement.
Terminal burned, not affecting performance Terminal corroded,	2		Suggest	repair	or	replacement.
affecting performance Terminal corroded, not	A		Require	repair	or	replacement.
affecting performance Terminal loose, affecting	2	• •	Suggest	repair	or	replacement.
performance Terminal loose, not	В		_	_		replacement.
affecting performance Threads damaged	1 A			-		replacement. replacement.
Threads stripped (threads missing)	A			. Requ	ire	replacement.
exposed	В А					replacement. replacement.
Wire lead open	A					replacement.
Wire lead shorted	A	• •	Require	repair	or	replacement.
(1) - Determine cause and creplacement of part.	orr	ect	prior to	repair	or	
(2) - Determine source of c coolant, fuel, metal	par		•			
repair or replacement (3) - Inoperative includes OEM specification. So check for accepted cl	int me	comp	onents ma	ay be s		

METAL AIR MANIFOLDS AND PIPES

METAL AIR MANIFOLD AND PIPE INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Broken	. A	Require repair of injection tube or replacement of manifold.
Corroded, affecting structural integrity	. 1	
-		Require repair of injection tube or replacement of manifold.
Loose	. C	





Threads damaged	Α		. Require repair.
Threads stripped (threads			
missing)	A	Re	equire replacement.

METAL AIR PIPES

See METAL AIR MANIFOLDS AND PIPES.

MIX CONTROL SOLENOIDS

MIX CONTROL SOLENOID INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	± ±
Attaching hardware		hardware.
threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped		
(threads missing)		Require repair or replacement of hardware.
Connector broken Connector (Weatherpack		Require repair or replacement.
type) leaking		Require repair or replacement.
Connector melted	. A	(1) Require repair or replacement.
Connector missing	. C	Require replacement.
Contaminated	. A	(2) Require repair or replacement.
Inoperative	. В	
Leaking		Require repair or replacement.
Missing	. C	Require replacement.
Resistance out of specification	. В	Require repair or replacement.
Restricted, affecting	_	
performance	. A	Require repair or replacement.
Terminal broken Terminal burned, affecting		Require repair or replacement.
performance Terminal burned, not	. A	(1) Require repair or replacement.
	. 2	Suggest repair or replacement.
	. A	Require repair or replacement.
	. 2	Suggest repair or replacement.
performance Terminal loose, not		Require repair or replacement.
affecting performance .	. 1	Suggest repair or replacement.
Threads damaged		Require repair or replacement.
Threads stripped (threads		
missing)	. A	Require replacement.
exposed	. B	Require repair or replacement.
Wire lead corroded		Require repair or replacement.
Wire lead open	. A	Require repair or replacement.





- Wire lead shorted A .. Require repair or replacement.
- (1) Determine cause and correct prior to repair or
- replacement of part.
 (2) Determine source of contamination, such as engine coolant, fuel, metal particles, or water. Require repair or replacement.
- (3) Inoperative includes intermittent operation or out of OEM specification. Some components may be serviceable; check for accepted cleaning procedure.

MOTOR MOUNTS

MOTOR MOUNT INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Broken	. A	Require replacement.
	. A	Require replacement.
	. A	Require replacement.
		No service suggested or required.
Rubber deteriorated, affecting performance . Rubber deteriorated, not	. A	Require replacement.
·		No service suggested or required.
		Require repair or replacement.
Threads stripped (threads missing)		Require replacement.

O-RINGS, GASKETS, SEALS AND SPRING LOCKS

O-RING, GASKET, SEAL AND SPRING LOCK INSPECTION

Conditio	n Code	Procedure
Leaking	A	 (1) Require repair or replacement.

(1) - Require inspection of mating and sealing surface and repair or replace as necessary.

02 SENSORS

O2 SENSOR INSPECTION

Procedure Condition Code





Attaching hardware missing	С	Require replacement of hardware.
Attaching hardware threads damaged	А	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	А	Require repair or replacement
Connector broken	A	of hardware Require repair or replacement.
Connector (Weatherpack type) leaking Connector melted	A A	Require repair or replacement (1) Require repair or
Connector missing Contaminated	C A	replacement Require replacement(2) Require repair or
Inoperative	В	replacement. (3) Require repair or
1		replacement. Further inspection required.
Leaking	A C	Require repair or replacement Require replacement.
Resistance out of specification	В	Require repair or replacement.
Restricted, affecting performance	A	Require repair or replacement.
Terminal broken Terminal burned, affecting	Α	Require repair or replacement.
performance Terminal burned, not	A	(1) Require repair or replacement.
affecting performance Terminal corroded,	2	Suggest repair or replacement.
affecting performance Terminal corroded, not	Α	Require repair or replacement.
affecting performance Terminal loose, affecting	2	Suggest repair or replacement.
performance Terminal loose, not	В	Require repair or replacement.
affecting performance	1	Suggest repair or replacement.
Threads damaged Threads stripped (threads	A	Require repair or replacement.
missing) Wire lead conductors	Α	Require replacement.
exposed	В	Require repair or replacement.
Wire lead corroded	А	1 1
Wire lead open Wire lead shorted	A A	 Require repair or replacement. Require repair or replacement.
(1) - Determine cause and oreplacement of part.	corr	ect prior to repair or
(2) - Determine source of (amination, such as engine ticles, or water. Require
repair or replacement (3) - Inoperative includes	int int	ermittent operation or out of components may be serviceable;







OIL PRESSURE SENDING UNIT INSPECTION

Condition	Code	Procedure
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking		Require repair or replacement.
Connector melted	. A	
Connector missing		Require replacement.
Inoperative	. A	(2) Require repair or replacement.
Leaking	. A	<u> </u>
Output signal incorrect		_
Terminal broken Terminal burned, affectin		Require repair or replacement.
performance	_	(1) Require repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
	. A	Require repair or replacement.
	. 2	Suggest repair or replacement.
performance Terminal loose, not		Require repair or replacement.
	. 1	Suggest repair or replacement.
Threads damaged Threads stripped (threads		Require repair or replacement.
missing)		Require replacement.
(1) - Determine cause and replacement of part		ect prior to repair or
		ermittent operation or out of

OIL PUMP PICK-UP SCREENS

OIL PUMP PICK-UP SCREEN INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Bypass stuck Cracked Loose Missing Positioned incorrectly Restricted Screen torn	. A . A . C . A	 Require repair or replacement.





OIL PUMP INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Broken	. A	
stuck		
specifications	. В	Require repair or replacement.

PARK NEUTRAL POSITION SWITCHES

PARK NEUTRAL POSITION SWITCH INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	7)	Require repair or replacement
(threads missing)	. A	of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking Connector melted		Require repair or replacement (1) Require repair or replacement.
Connector missing Contaminated		Require replacement.
Inoperative	. В	(3) Require repair or replacement. Further inspection required.
Leaking		Require repair or replacement Require replacement.
specification Terminal broken Terminal burned, affectin	. A	Require repair or replacement.Require repair or replacement.
performance	_	(1) Require repair or replacement.
	. 2	Suggest repair or replacement.
Terminal corroded, affecting performance .	. A	Require repair or replacement.





Terminal corroded, not affecting performance Terminal loose, affecting	2		Suggest	repair	or	replacement.
performance	В	• •	Require	repair	or	replacement.
affecting performance Threads damaged						
Threads stripped (threads missing)	A			. Requi	ire	replacement.
exposed	А		Require	repair	or	replacement. replacement.
Wire lead shorted	А	• •	Require	-		replacement.
(1) - Determine cause and c replacement of part.	orr	ect]	prior to	repair	or	
(2) - Determine source of c coolant, fuel, metal repair or replacement	par					
(3) - Inoperative includes OEM specification. So check for accepted cl	int me	comp	onents ma	ay be se		

PCV BREATHER ELEMENTS

PCV BREATHER ELEMENT INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Leaking		Require replacement Suggest replacement to comply with vehicle's OEM recommended service intervals.
Melted		
performance		Require replacement.
performance	. 1	Suggest replacement. Require replacement.

PCV ORIFICES

PCV ORIFICE INSPECTION

Condition	Code	Procedure
		Require replacement Suggest repair or replacement to comply with OEM recommended service intervals.





Missing	С		Require replacement.
Restricted	Α	• •	Require repair or replacement.

PCV VALVES

PCV VALVE INSPECTION

Condition	Code	Procedure
Application incorrect Attaching hardware	. В	Require replacement.
	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement
Grommet broken	. A	of hardware Require repair or replacement of grommet.
Grommet missing Grommet not	. C	. Require replacement of grommet.
functioning	. A	Require repair or replacement of grommet.
Inoperative	. A	(1) Require replacement Require replacement.
Missing		Require replacement.
(1) - Inoperative include OEM specification.	s inte	ermittent operation or out of

PICK-UP ASSEMBLIES (INCLUDES MAGNETIC, HALL EFFECT AND $_{\tt OPTICAL)}$

PICK-UP ASSEMBLY (MAGNETIC, HALL EFFECT AND OPTICAL) INSPECTION

Condition	Code	Procedure
Adjustment incorrect Attaching hardware	. В	Require repair.
2	. A	Require repair or replacement of hardware.
Attaching hardware		
missing	. C	Require replacement of hardware.
Attaching hardware not		
functioning	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking	. A	Require repair or replacement.
Connector melted	. A	(1) Require repair or replacement.
		Require replacement.
Inoperative Oil-soaked		(2) Require replacement. Require replacement.





Terminal broken Terminal burned, affecting	A		Require	repair	or	replacement.
performance	A			(1) R	equ	ire repair or replacement.
Terminal burned, not affecting performance Terminal corroded,	2		Suggest	repair	or	replacement.
affecting performance Terminal corroded, not	A		Require	repair	or	replacement.
affecting performance Terminal loose, affecting	2		Suggest	repair	or	replacement.
performance Terminal loose, not	В		Require	repair	or	replacement.
affecting performance Wire lead conductors	1	• •	Suggest	repair	or	replacement.
exposed						
Wire lead corroded Wire lead open Wire lead shorted	Α		Require	repair	or	replacement. replacement.
(1) - Determine cause and creplacement of part.	orr	ect	prior to	repair	or	
(2) - Inoperative includes OEM specification. Re procedures.			-			

POWER STEERING PRESSURE SENSORS

POWER STEERING PRESSURE SENSOR INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped		
(threads missing)	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking Connector melted		<pre> Require repair or replacement (1) Require repair or</pre>
Connector missing Contaminated		
Inoperative	. В	(3) Require repair or replacement. Further inspection required.
Leaking		
specification	. В	Require repair or replacement.
performance Terminal broken Terminal burned, affectin	. A	Require repair or replacement.Require repair or replacement.
performance	_	(1) Require repair or





						replacement.	
Terminal burned, not affecting performance Terminal corroded,	2		Suggest	repair	or	replacement.	
affecting performance Terminal corroded, not	A		Require	repair	or	replacement.	
affecting performance	2		Suggest	repair	or	replacement.	
Terminal loose, affecting performance	В		Require	repair	or	replacement.	
Terminal loose, not affecting performance							
Threads damaged Threads stripped (threads	A	• •	Require	repair	or	replacement.	
missing)	А	• • •		Requi	ire	replacement.	
exposed							
Wire lead open	A		Require	repair	or	replacement. replacement.	
Wire lead shorted	А	• •	Require	repair	or	replacement.	
(1) - Determine cause and c replacement of part.	orre	ect p	prior to	repair	or		
(2) - Determine source of contamination, such as engine coolant, fuel, metal particles, or water. Require							
repair or replacement (3) - Inoperative includes OEM specification. So check for accepted cl	inte me o	comp	onents ma	ay be se			

POWERTRAIN CONTROL MODULES (PCM) AND PROM

POWERTRAIN CONTROL MODULE (PCM) AND PROM INSPECTION

Condition	Code	Procedure
Application incorrect Attaching hardware	. В	Require replacement.
	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	. A	Require repair or replacement
Code set (if applicable)	. A	of hardware(1) Further inspection required.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking		Require repair or replacement (2) Require repair or
		replacement
		Require repair or replacement (4) Require repair or replacement.
Missing Terminal broken		Require replacement.





Torminal burned affecting						
Terminal burned, affecting performance	A			(2) I	Requ	ire repair or replacement.
Terminal burned, not affecting performance Terminal corroded,	2		Suggest	repair	or	replacement.
affecting performance Terminal corroded, not	A		Require	repair	or	replacement.
affecting performance Terminal loose, affecting	2		Suggest	repair	or	replacement.
performance Terminal loose, not	В		Require	repair	or	replacement.
affecting performance Threads damaged						replacement. replacement.
Threads stripped (threads missing)	A			. Requ	iire	replacement.
exposed	B A A		Require Require	repair repair	or or	replacement. replacement. replacement. replacement.
(1) - Refer to manufacturer procedure and require component(s).						
(2) - Determine cause and correplacement of part.	orr	ect]	prior to	repair	or	
(3) - Determine source of confuel, metal particles,						

POWERTRAIN CONTROL PROM

replacement.

See POWERTRAIN CONTROL MODULES (PCM) AND PROM.

(4) - Includes inoperative, intermittent operation, failure to perform all functions, or out of OEM specification.

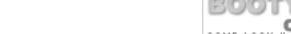
PRESSURIZED EXPANSION TANK CAPS

See RADIATOR CAPS AND PRESSURIZED EXPANSION TANK CAPS.

RADIATOR CAPS AND PRESSURIZED EXPANSION TANK CAPS

RADIATOR CAP AND PRESSURIZED EXPANSION TANK CAP INSPECTION

Condition	Code	Procedure
Application incorrect Coolant recovery check	. В	Require replacement.
_	. A	(1) Require replacement.
pressure	. C	Require replacement. Require replacement of gasket. Require replacement. Require replacement of seal.
(1) - Inoperative includes OEM specification.	s inte	ermittent operation or out of





RADIATOR FAN BLADE INSPECTION

Condition	Code	Procedure
Application incorrect Attaching hardware	. В	Require replacement.
2	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Bent Broken Cracked Loose Missing	. A . A . A	

RADIATOR FAN CLUTCHES

NOTE: Some lateral movement, measured at the fan blade tip, may be normal.

RADIATOR FAN CLUTCH INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
-		Require repair or replacement of hardware.
	. A	Require replacement Require replacement
Inoperative Leaking Seized Slips (insufficient fan	. 1	(1) Require replacement Suggest replacement.
Thermal control		 Require replacement. Require repair or replacement.
(1) - Inoperative include OEM specification.	s inte	ermittent operation or out of

RADIATORS

RADIATOR INSPECTION

Condition	Code	Procedure		
Air flow restriction	A	 Require repair.		





Application incorrect Attaching hardware	В	Require replacement.
	А	Require repair or replacement of hardware.
Attaching hardware		
missing	С	Require replacement of hardware.
Attaching hardware not		
functioning	A	Require repair or replacement of hardware.
Connection leaking	Α	Require repair or replacement.
Corroded	1	Suggest repair or replacement.
Fins damaged, affecting performance	Δ	Require repair or replacement.
Fins damaged, not	7.1	Require repair or replacement.
affecting performance	2	Suggest repair or replacement.
Internal oil cooler		
leaking	Α	Require repair or replacement.
Internal restrictions,		
affecting performance	В	Require repair or replacement.
Internal restrictions, not	_	
affecting performance		Suggest repair or replacement.
Leaking	A	
Threads damaged	A	Require repair or replacement.
Threads stripped (threads	-	D '
missing)	А	Require repair or replacement.
Tubes damaged, affecting performance	7\	Require repair or replacement.
Tubes damaged, not	A	Require repair or repracement.
affecting performance	••	No service suggested or required.

ROLL OVER VALVES

ROLL OVER VALVE INSPECTION

Condition	Code	Procedure
Inoperative Leaking Missing	. A	Require replacement.
(1) - Inoperative include: OEM specification.	s intermittent oper	ration or out of

SEALING COMPOUNDS

SEALING COMPOUND INSPECTION

Condition	n Code	Procedure
Leaking	A	(1) Require repair or replacement.

(1) - Require inspection of mating and sealing surface and repair or replace as necessary.

SEALS

SEAL INSPECTION





Condition	Code	Procedure
Leaking	A	(1) Require repair or replacement.
· · ·	spection of mating and replace as necessary.	sealing surface and

SECONDARY AIR INJECTION SYSTEM MANAGEMENT DEVICES

SECONDARY AIR INJECTION SYSTEM MANAGEMENT DEVICE INSPECTION

Condition	Code	Procedure
Attaching hardware	_	
-	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped		or naraware.
(threads missing)	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking Connector melted		Require repair or replacement (1) Require repair or
Connector missing		replacement. Require replacement.
Contaminated		
Inoperative	. В	(3) Require repair or replacement. Further
Leaking	. A	<pre>inspection required Require repair or replacement.</pre>
Missing		Require replacement.
Resistance out of specification Restricted, affecting	. В	Require repair or replacement.
performance		Require repair or replacement.
Terminal broken Terminal burned, affectin		Require repair or replacement.
performance	-	(1) Require repair or replacement.
Terminal burned, not		
affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
affecting performance . Terminal corroded, not	. A	Require repair or replacement.
affecting performance .		Suggest repair or replacement.
Terminal loose, affecting performance		Require repair or replacement.
Terminal loose, not affecting performance .	. 1	Suggest repair or replacement.
Threads damaged	. A	Require repair or replacement.
Threads stripped (threads missing)		Require replacement.
Wire lead conductors exposed	. В	Require repair or replacement.
Wire lead corroded		Require repair or replacement.





Wire lead	open	Α	 Require	repair	or	replacement.
Wire lead	shorted	Α	 Require	repair	or	replacement.

- Determine cause and correct prior to repair or replacement of part.
- (2) Determine source of contamination, such as engine coolant, fuel, metal particles, or water. Require repair or replacement.
- (3) Inoperative includes intermittent operation or out of OEM specification. Some components may be serviceable; check for accepted cleaning procedure.

SENSORS AND ACTUATORS

NOTE: Conditions pertaining to the sensors and actuators listed in this section may be found under the name of the sensor or actuator.

SENSOR ABBREVIATION TABLE

ACTUATOR ABBREVIATION TABLE

Actuator	Abbreviation
Air Injection Control Solenoid Electronic Transmission control devices Evaporative Emission Canister Purge Device Exhaust Gas Recirculation Device Fuel Injector Idle Air Control	EVAP EGR
Evaporative Emission Canister Purge Device Exhaust Gas Recirculation Device Fuel Injector	EVAP EGR





Idle Speed Control Actuator ISC
Mix Control Solenoid MC Solenoid
Secondary Air Injection System Management Device AIR, PAIR
Vacuum Regulator Solenoid
Waste Gate Control Solenoid

SHROUDS, BAFFLES AND DEFLECTORS

SHROUD, BAFFLE AND DEFLECTOR INSPECTION

Condition	Code	Procedure
Application incorrect, affecting cooling system		
3 3 1		. Require repair or replacement.
=	. A	Require repair or replacement of hardware.
Attaching hardware	C	Poguiro ronlacement of
		Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Bent, affecting cooling system performance		. Require repair or replacement.
Blocked, affecting coolin system performance Broken, affecting cooling	. A	. Require repair or replacement.
system performance Cracked, affecting coolin	. A	. Require repair or replacement.
system performance Loose, affecting cooling	_	. Require repair or replacement.
system performance Loose, not affecting	. A	Require repair.
cooling system performance		Suggest repair.
Missing, affecting coolin system performance	_	Require replacement.

SPARK PLUGS

NOTE:

You are not required to replace spark plugs in sets. However, you may suggest replacement of the other plugs for preventive maintenance.

SPARK PLUG INSPECTION

Condition	Code	Procedure
Application incorrect Electrode eroded	. 1 . A	Suggest replacement
Gap incorrect Insulation broken Insulator cracked Leaking compression Maintenance interval Threads damaged Threads stripped (threads	. A . A . A	Require repair or replacement. Require replacement Require replacement Require replacement Require repair or replacement. Require repair or replacement. Require repair or replacement.





missing)			Α			Require	replacement.
(1) - Deter	rmine cause	of fo	ouling	and	suggest	repair.	

SPRING LOCKS

SPRING LOCK INSPECTION

Condition	Code	Procedure
Leaking	A	(1) Require repair or replacement.
(1) - Require inspect	tion of mating and s ace as necessary.	sealing surface and

SUPER CHARGERS

SUPER CHARGER INSPECTION

Condition	Code	Procedure
Attaching hardware damaged, affecting operation or		
	. A .	Require repair or replacement of hardware.
Attaching hardware missing	. с.	Require replacement of hardware.
Bearing noisy Bearing worn Boost pressure	. A .	
incorrect	. А.	(1) Require repair or replacement.
Clearance out of specification Leaking Noisy	. A .	 Require repair or replacement. Suggest repair or replacement.
Threads damaged Threads stripped (threads missing)		Require repair or replacement.Require repair or replacement.
(1) - Boost pressure prob components.	lems ma	ay be caused by other systems or

SWITCHES

SWITCH INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement





D' 1' CC ' '		of hardware.
Binding, affecting performance	А	Require repair or replacement.
performance	2 A	 Suggest repair or replacement. Require repair or replacement.
performance	A	(1) Require repair or replacement.
Burned, not affecting performance	2	
Cracked, affecting		_
performance Cracked, not affecting	A	Require repair or replacement.
performance	1	Suggest repair or replacement.
Leaking	Α	Require repair or replacement.
Malfunctioning	A	(2) Require repair or replacement.
Melted, affecting	-	(1) 5
performance	Α	(1) Require repair or replacement.
Melted, not affecting	0	(1)
performance	2	(1) Suggest repair or replacement.
Missing	С	Require replacement.
Out of adjustment	В	Require repair or replacement.
Terminal broken	А	Require repair or replacement.
Terminal burned, affecting performance	А	(1) Require repair or
Terminal burned, not		replacement.
affecting performance	2	Suggest repair or replacement.
Terminal corroded, affecting performance	A	Require repair or replacement.
Terminal corroded, not	71	Require repair or repracement.
affecting performance	2	Suggest repair or replacement.
Terminal loose, affecting		
performance	В	Require repair or replacement.
Terminal loose, not	_	
affecting performance	1	
Won't return	A	
Worn	1	Suggest replacement.
(1) - Determine cause and c	orr	ect prior to repair or
replacement of part.	i ~	termittent operation, or failure
to perform all functi	Ons	
	0110	•

THERMAL VACUUM VALVES

THERMAL VACUUM VALVE INSPECTION

Condition	Code	Procedure
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
		Require repair or replacement. (1) Require repair or replacement.
		Require replacement(2) Require repair or





						replacement.
Inoperative	В	• • •		repl	acer	ire repair or ment. Further ion required.
Leaking	А		Require			replacement.
Missing	C					replacement.
Resistance out of	0	• • •		· raga		repracement.
specification	В		Require	repair	or	replacement.
Restricted, affecting			- 1-	-1 -		-1
performance	Α		Require	repair	or	replacement.
Terminal broken	Α					replacement.
Terminal burned, affecting			-	-		-
performance	Α			(1) R	equ	ire repair or
						replacement.
Terminal burned, not						
affecting performance	2		Suggest	repair	or	replacement.
Terminal corroded,						
affecting performance	Α		Require	repair	or	replacement.
Terminal corroded, not	_					_
affecting performance	2	• •	Suggest	repair	or	replacement.
Terminal loose, affecting	-		. ·			
performance	В	• •	Require	repair	or	replacement.
Terminal loose, not	1		C			
affecting performance	1 A	• •				replacement. replacement.
Threads damaged Threads stripped (threads	А	• •	Kequire	reparr	OI	repracement.
missing)	А			Pagu	iro	replacement.
Wire lead conductors	21			· Requ	IIC	repracement.
exposed	В		Require	repair	or	replacement.
Wire lead corroded	Ā					replacement.
Wire lead open	A					replacement.
Wire lead shorted	Α					replacement.
			-	-		-
(1) - Determine cause and c	orr	ect	prior to	repair	or	
replacement of part.						
(2) - Determine source of c						
fuel, metal particles	, 0	r wa	ter. Requ	uire re	pai	r or
replacement.						
(3) - Inoperative includes	ınt	ermi	ttent ope	eration	or	out of
OEM specification. So					erv	iceable;
check for accepted cl	ean	⊥ng	proceaure	≓•		

THERMOSTATIC AIR DOOR ASSEMBLIES

THERMOSTATIC AIR DOOR ASSEMBLY INSPECTION

Condition	Code	Procedure
Attaching hardware damaged, affecting operation or		
performance	. A	Require repair or replacement of hardware.
Attaching hardware		
missing	. C	Require replacement of hardware.
Binding	. A	Require repair or replacement.
Leaking		Require repair or replacement Require replacement.
Seized		





THERMOSTATS AND HOUSINGS

THERMOSTAT AND HOUSING INSPECTION

Condition	Code	Procedure
Application incorrect Attaching hardware	. В	Require replacement.
=	. A	Require repair or replacement of hardware.
Attaching hardware	_	
	. A	Require repair or replacement of hardware.
Attaching hardware	C	Require replacement of
m1331119		hardware.
Attaching hardware not	_	
functioning	. A	Require repair or replacement of hardware.
Housing corroded		
Inoperative		· · · · · · · · · · · · · · · · · · ·
Installation incorrect . Leaking		 Require repair or replacement. Require repair or replacement.
Thermostat missing		Require replacement of thermostat.
		Require repair or replacement.
Threads stripped (threads missing)		Require repair or replacement.
(1) - Inoperative include OEM specification.	s inte	ermittent operation or out of

THROTTLE BODIES

THROTTLE BODY INSPECTION

Condition	Code	Procedure
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking Connector melted		Require repair or replacement (1) Require repair or replacement.
Connector missing Contaminated		
Leaking		Require repair or replacement.
Restricted		
Terminal broken Terminal burned, affectin		Require repair or replacement.
performance		(1) Require repair or replacement.
Terminal burned, not		
affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
affecting performance .	. A	Require repair or replacement.
Terminal corroded, not affecting performance. Terminal loose, affecting		Suggest repair or replacement.
•		Require repair or replacement.
·	. 1	Suggest repair or replacement.





Threads damaged Threads stripped (threads	Α	• •	Require	repair	or	replacement.
missing)	A		Require	repair	or	replacement.
affecting performance Throttle shaft worn,	A	• •	Require	repair	or	replacement.
affecting performance Throttle shaft worn, not	A		Require	repair	or	replacement.
affecting performance Wire lead conductors	1	• •	Suggest	repair	or	replacement.
exposed	В		Require	repair	or	replacement.
Wire lead corroded			Require	repair	or	replacement.
Wire lead open	Α		Require	repair	or	replacement.
Wire lead shorted	A	• •	Require	repair	or	replacement.
(1) - Determine cause and c replacement of part.	orr	ect]	prior to	repair	or	
(2) - Determine source of c fuel, metal particles						
replacement. (3) - Some components may b cleaning procedure.	e s	ervi	ceable;	check :	for	accepted

THROTTLE CABLES

See THROTTLE LINKAGES AND CABLES.

THROTTLE LINKAGES AND CABLES

THROTTLE LINKAGE AND CABLE INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Bent		Require repair or replacement.Require repair or replacement.
performance Bracket bent, not		Require repair or replacement.
affecting performance . Bracket broken, affecting		No service suggested or required.
performance	. A	Require replacement.
affecting performance .		No service suggested or required.
Bracket corroded, affecting performance . Bracket corroded, not	. A	Require repair or replacement.
affecting performance . Bracket cracked, affectin		Suggest repair or replacement.
performance Bracket cracked, not	. A	Require repair or replacement.
affecting performance .	. 1	Suggest repair or replacement.





Bracket loose, affecting performance Bracket loose, not	Α	Require repair or replacement
affecting performance	1	Suggest repair or replacement
Bracket missing	С	Require replacement
Broken	Α	Require replacement
Cracked	Α	Require repair or replacement
Disconnected	Α	Require repair or replacement
Kinked	Α	Require repair or replacement
Melted	Α	Require repair or replacement
Missing	С	Require replacement
Noisy	2	Suggest repair or replacement
Out of adjustment	В	(1) Require repair of
		replacement
Routed incorrectly	2	Suggest repair
Seized	A	Require repair or replacement

(1) - Follow OEM recommended adjustment procedures. Require repair or replacement if out of specification.

THROTTLE POSITION SENSORS

THROTTLE POSITION SENSOR INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	. A	Require repair or replacement
Connector broken Connector (Weatherpack	. A	of hardware Require repair or replacement.
type) leaking Connector melted		Require repair or replacement (1) Require repair or replacement.
Connector missing Contaminated		Require replacement(2) Require repair or replacement.
Inoperative	. В	I.
Missing	. C	
specification Terminal broken Terminal burned, affectin	. A	Require repair or replacement.Require repair or replacement.
performance Terminal burned, not		(1) Require repair or replacement
affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
affecting performance . Terminal corroded, not	. A	Require repair or replacement.
affecting performance . Terminal loose, affecting	. 2	Suggest repair or replacement.
performance	. В	Require repair or replacement.





affecting performance Threads damaged Threads stripped (threads			22	_		-
missing)	A			. Requi	ire	replacement.
exposed	A A	• •	Require Require	repair repair	or or	replacement. replacement. replacement.
 (1) - Determine cause and converged replacement of part. (2) - Determine source of confuel, metal particles replacement. (3) - Inoperative includes OEM specification. So check for accepted cl 	ont, o int	amin r wa ermi comp	ation, su ter. Requ ttent ope onents ma	ich as e lire reperation ay be se	eng: pai: or	r or out of

THROTTLE POSITION SWITCHES

THROTTLE POSITION SWITCH INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	. A	Require repair or replacement
Connector broken Connector (Weatherpack	. A	of hardware Require repair or replacement.
type) leaking Connector melted		Require repair or replacement. (1) Require repair or replacement.
Connector missing Inoperative		
Missing	. C	inspection required Require replacement.
specification Terminal broken Terminal burned, affectin	. A	Require repair or replacement.Require repair or replacement.
performance		(1) Require repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
· · · · · · · · · · · · · · · · · · ·	. A	Require repair or replacement.
•	. 2	Suggest repair or replacement.
performance Terminal loose, not		Require repair or replacement.
affecting performance . Threads damaged		





Threads stripped (threads missing)	А			. Requi	ire	replacement.
exposed	A A	• •	Require Require	repair repair	or or	replacement. replacement.
 (1) - Determine cause and creplacement of part. (2) - Inoperative includes OEM specification. Some check for accepted class 	int me	ermi comp	ttent ope	eration ay be se	or	

TIMING BELT SPROCKETS

TIMING BELT SPROCKET INSPECTION

Condition	Code	Procedure
Alignment incorrect Attaching hardware	. В	Require repair.
2	. A	Require repair or replacement of hardware.
Attaching hardware		V = 1300 511 01 01 01 01 01 01 01 01 01 01 01 01 0
missing	. C	Require replacement of hardware.
Attaching hardware not		
functioning	. A	Require repair or replacement of hardware.
Bent	. A	Require replacement.
Cracked	. A	Require replacement.
Key damaged		Require replacement.
Loose	. A	Require repair or replacement.
Missing		Require replacement.
belt life	. A	Require replacement.
affecting belt life	. A	Require repair or replacement.
Sprocket loose Sprocket-to-shaft		
±	. В	Require repair or replacement.

TIMING BELTS

TIMING BELT INSPECTION

Condition	Code	Procedure
Broken	. A	Require replacement.
		Require repair.
		Suggest replacement.
Fluid-soaked	. 1	Suggest replacement. Further inspection required.
Frayed	. 1	Suggest replacement.
		Suggest replacement to comply
		with vehicle OEM recommended





service intervals. Missing C (3) Require replacement. Noisy 2 (4) Further inspection required. See note below.
Plies separated A Require replacement. Tension out of
specification B Require adjustment or replacement.
Teeth missing A Require replacement.
 (1) - Inspect belt tensioners, pulleys, and cover. (2) - Determine cause of incorrect alignment and require repair. (3) - CAUTION: Internal engine damage may result from timing belt damage/failure.
(4) - Determine cause of noise and suggest repair.

TORQUE STRUTS

TORQUE STRUT INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Body punctured Bushing deteriorated,	. A	Require replacement.
affecting performance . Bushing deteriorated, not		Require replacement.
		No service suggested or required.
Bushings missing Bushings separated from	. С	Require replacement.
mounting eye Damping (none) Leaking oil, enough for fluid to be running down	. A	Suggest replacement. Require replacement.
the body	. A	
Piston rod bent Piston rod broken Seized Threads damaged Threads stripped (threads missing)	. A . A . A	Require replacement. Require replacement. Require replacement. Require replacement. Require replacement. Require replacement.
(1) - Paguire replacement	0f 117	nite where dente restrict strut

- (1) Require replacement of units where dents restrict strut piston rod movement. If dents don't restrict movement, no service is suggested or required.
- (2) If noise is isolated to shock or strut, suggest replacement.





TRANSMISSION RANGE SWITCHES

TRANSMISSION RANGE SWITCH INSPECTION

G 1'''		a 1					D 1	
Condition		Code					Procedi	ure
Attaching								
missing		. C			Requir	e re		
A++ aching	hardware						hardwa	re.
Attaching threads of	damaged	. A		Require	e repai	r oi	r replaceme	ent
on out	aamagea	•		1.09411	Jopan		of hardwa:	
Attaching								
threads s		71		D =				
(threads	missing)	. A	• • •	Require	e repai		replaceme of hardwar	
Connector	broken	. A		Require	repair		replacemen	
	(Weatherpack			1	-		1	
	aking						replacemen	
Connector	melted	. A	• • •	• • • • • • • •			ire repair	
Connector	missing	. C			Regui	ire	replacement replacement	nt.
	ted				(2) F	lequ:	ire repair	or
							replacemen	nt.
Inoperativ	ve	. B					ire repair	
							ment. Furtl	
Leaking		. A		Require			ion require replacemen	
							replacemen	
Resistance	e out of							
	ation						replacemen	
	oroken ourned, affectin		• •	Require	repair	or	replacemen	nt.
	nce				(1) F	leau:	ire repair	or
1					` ,	_	replacemen	
	ourned, not						-	
Terminal of		. 2	• •	Suggest	repair	or	replacemen	nt.
	g performance .	. A		Require	repair	or	replacemen	nt.
	corroded, not	•	• •	1.094110	101011	0.2		
		. 2		Suggest	repair	or	replacemen	nt.
	loose, affecting			D !				
-	nce loose, not	. В	• •	Require	repair	or	replacemen	nt.
	g performance .	. 1		Suggest	repair	or	replacemen	nt.
Threads da	amaged	. A						
Threads st	tripped (threads							
missing)		. A	• • •		. Requ	ire	replacemen	nt.
	conductors	B		Peguire	rensir	or	replacemen	n+
	corroded						replacemen	
Wire lead	open	. A						
Wire lead	shorted	. A		Require	repair	or	replacemen	nt.
(1) Date	armina gauga ama	00.707	5.a+ :	nnion +-	ronoi	- C		
	ermine cause and lacement of part		:CL]	brior ro	reparr	O.L.		
	ermine source of		amina	ation, su	uch as	engi	ine coolant	t,
	l, metal particl							
	La a a sur a sa h							

- replacement. (3) - Inoperative includes intermittent operation or out of OEM specification. Some components may be serviceable;





check for accepted cleaning procedure.

TUBE CLAMPS

See HOSE AND TUBE COUPLERS, CONNECTORS AND CLAMPS.

TUBE CONNECTORS

See HOSE AND TUBE COUPLERS, CONNECTORS AND CLAMPS.

TUBE COUPLERS

See HOSE AND TUBE COUPLERS, CONNECTORS AND CLAMPS.

TUBES

See HOSES AND TUBES (FUEL LINES, RADIATOR, BY PASS, HEATER, RECOVERY TANK AND OIL COOLERS).

TURBO CHARGERS

TURBO CHARGER INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Boost pressure incorrect	. A	
Leaking		Require repair or replacement.
,		Require repair or replacement.Require repair or replacement.
(1) - Boost pressure prob or components.	lems r	may be caused by other systems

VACUUM CONNECTIONS

See VACUUM HOSES, TUBES AND CONNECTIONS (NON-METALLIC).

VACUUM HOSES, TUBES AND CONNECTIONS (NON-METALLIC)

VACUUM HOSE, TUBE AND CONNECTION (NON-METALLIC) INSPECTION

Condition	Code		Procedure
Leaking	. A	Require Require	replacement. replacement.





Restricted	Α	 Require	repair or	replacement.
Surface cracks (dry-				
rotted)	1	 	. Suggest	replacement.

VACUUM REGULATOR SOLENOIDS

VACUUM REGULATOR SOLENOID INSPECTION

С	Require replacement of hardware.
А	Require repair or replacement
	of hardware.
А	Require repair or replacement of hardware.
A	Require repair or replacement.
A A	Require repair or replacement (1) Require repair or
С	replacement Require replacement.
В	(3) Require repair or replacement. Further inspection required.
A C	Require repair or replacement Require replacement.
В	Require repair or replacement.
A	Require repair or replacement.
	Require repair or replacement.
A	(1) Require repair or replacement.
2	Suggest repair or replacement.
А	Require repair or replacement.
2	Suggest repair or replacement.
В	Require repair or replacement.
1 A	 Suggest repair or replacement. Require repair or replacement.
A	Require replacement.
B	Require repair or replacement.
Α	Require repair or replacement.
A A	Require repair or replacement.Require repair or replacement.
	A A A A C A B A C B A A C B A A A A B A A A A

^{(1) -} Determine cause and correct prior to repair or replacement of part.





- (2) Determine source of contamination, such as engine coolant, fuel, metal particles, or water. Require repair or replacement.
- (3) Inoperative includes intermittent operation or out of OEM specification. Some components may be serviceable; check for accepted cleaning procedure.

VACUUM TUBES

See VACUUM HOSES, TUBES AND CONNECTIONS (NON-METALLIC).

VEHICLE SPEED SENSORS

VEHICLE SPEED SENSOR INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped	_	
(threads missing)	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking Connector melted		<pre> Require repair or replacement(1) Require repair or</pre>
Connector missing Contaminated		Require replacement(2) Require repair or replacement.
Inoperative	. В	
Leaking		Require repair or replacement Require replacement.
specification Terminal broken	. A	Require repair or replacement.Require repair or replacement.
Terminal burned, affectin performance		
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
	. A	Require repair or replacement.
	. 2	Suggest repair or replacement.
performance Terminal loose, not		Require repair or replacement.
affecting performance . Threads damaged Threads stripped (threads	. A	 Suggest repair or replacement. Require repair or replacement.
missing)		Require replacement.
exposed		Require repair or replacement.Require repair or replacement.





Wire	lead	open	 Α	 Require	repair	or	replacement.
Wire	lead	shorted	 Α	 Require	repair	or	replacement.

- (1) Determine cause and correct prior to repair or replacement of part.
- (2) Determine source of contamination, such as engine coolant, fuel, metal particles, or water. Require repair or replacement.
- (3) Inoperative includes intermittent operation or out of OEM specification. Some components may be serviceable; check for accepted cleaning procedure.

VOLUME AIR FLOW SENSORS

VOLUME AIR FLOW SENSOR INSPECTION

Condition	Code	Procedure
Attaching hardware missing	C	Require replacement of hardware.
Attaching hardware threads damaged	A	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	A	
Connector broken		of hardware Require repair or replacement.
Connector (Weatherpack type) leaking		Require repair or replacement.
Connector melted		
Connector missing Contaminated		Require replacement(2) Require repair or replacement.
Inoperative	В	
Leaking		Require repair or replacement Require replacement.
specification Restricted, affecting	В	Require repair or replacement.
performance Terminal broken Terminal burned, affective	A	Require repair or replacement.Require repair or replacement.
performance		(1) Require repair or replacement.
Terminal burned, not affecting performance Terminal corroded,	2	Suggest repair or replacement.
	A	Require repair or replacement.
	. 2	Suggest repair or replacement.
performance Terminal loose, not		Require repair or replacement.
affecting performance Threads damaged	A	 Suggest repair or replacement. Require repair or replacement.
Threads stripped (thread missing)	. A	Require replacement.





Wire .	lead conductors						
expo	sed	В		Require	repair	or	replacement.
Wire .	lead corroded	Α		Require	repair	or	replacement.
Wire .	lead open	Α		Require	repair	or	replacement.
Wire .	lead shorted	Α		Require	repair	or	replacement.
(2) -	Determine cause and coreplacement of part. Determine source of confuel, metal particles replacement. Inoperative includes OEM specification. So check for accepted cl	onta , oi inte me	amin r wa ermi comp	ation, su ter. Requ ttent ope onents ma	ich as e lire reperation ay be se	eng: pai: or	r or out of

WASTE GATE CONTROL SOLENOIDS

WASTE GATE CONTROL SOLENOID INSPECTION

Condition	Code	Procedure
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware threads damaged	. A	Require repair or replacement of hardware.
Attaching hardware threads stripped (threads missing)	Α	Require repair or replacement
Connector broken		of hardware. Require repair or replacement.
Connector (Weatherpack type) leaking Connector melted		Require repair or replacement (1) Require repair or replacement.
Connector missing Contaminated		
Inoperative	. В	(3) Require repair or replacement. Further
Leaking		inspection required Require repair or replacement Require replacement.
specification	. В	Require repair or replacement.
performance Terminal broken Terminal burned, affectin	. A	Require repair or replacement.Require repair or replacement.
performance		(1) Require repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
	. A	Require repair or replacement.
	. 2	Suggest repair or replacement.
performance		Require repair or replacement.
affecting performance .	. 1	Suggest repair or replacement.





Threads damaged	А	• •	Require	repair	or	replacement.
Threads stripped (threads missing)	A			. Requi	ire	replacement.
exposed	A A	• •	Require Require	repair repair	or or	replacement. replacement. replacement.
(1) - Determine cause and converged replacement of part.(2) - Determine source of confuel, metal particles replacement.	ont	amin	ation, s	uch as	eng:	
replacement. (3) - Inoperative includes intermittent operation or out of OEM specification. Some components may be serviceable; check for accepted cleaning procedure.						

WASTE GATES AND BOOST CONTROL MECHANISMS

WASTE GATE AND BOOST CONTROL MECHANISM INSPECTION

Condition	Code	Procedure
Boost pressure incorrect	. A	(1) Require repair or replacement. Further inspection required.
Leaking	. A	Require repair or replacement.
(1) - Incorrect boost pre or out of OEM speci		includes intermittent operation

WATER PUMPS (ELECTRIC)

WATER PUMP (ELECTRIC) INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
		Require repair or replacement. (1) Require repair or replacement.
Connector missing Inoperative Leaking Missing Noisy Rotation incorrect for	. A . A . C	Require replacement. (2) Require replacement. Require repair or replacement. Require replacement. Suggest replacement.
application Terminal broken		Require repair or replacement.Require repair or replacement.





Terminal burned, affecting performance	А			(1) Re	equi	ire repair or replacement.
Terminal burned, not affecting performance Terminal corroded,	2	Sugg	gest re	epair	or	replacement.
affecting performance Terminal corroded, not	A	Requ	uire re	epair	or	replacement.
affecting performance Terminal loose, affecting	2	Sug	gest re	epair	or	replacement.
performance	В	Requ	uire re	epair	or	replacement.
Terminal loose, not affecting performance Vibration						
exposed Wire lead corroded Wire lead open Wire lead shorted	A A	Requ	aire re aire re	epair epair	or or	replacement. replacement. replacement. replacement.
(1) - Determine cause and c replacement of part.(2) - Check fan motor/contr intermittent operation	ols	. Inopera	ative :	includ	les	cion.

WATER PUMPS (NON-ELECTRIC)

WATER PUMP (NON-ELECTRIC) INSPECTION

Condition	Code	Procedure
Attaching hardware broken	. A	Require repair or replacement of hardware.
Attaching hardware corroded	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Corrosion (internal) is excessive, affecting performance		Require replacement.
performance	. 2	. Suggest cooling system service (1) Require replacement.
Leaking		Require replacement. Require replacement.
application		Require repair or replacement Require replacement.
(1) - Inoperative include OEM specification.	s inte	ermittent operation or out of





WIRING HARNESS AND CONNECTOR INSPECTION

Condition	Code	Procedure
Application incorrect Attaching hardware	. В	Require repair or replacement.
broken	. A	Require repair or replacement of hardware.
Attaching hardware missing	. C	Require replacement of hardware.
Attaching hardware not functioning	. A	Require repair or replacement of hardware.
Connector broken Connector (Weatherpack	. A	Require repair or replacement.
type) leaking Connector melted	. A	<pre> Require repair or replacement(1) Require repair or</pre>
Connector missing Insulation damaged,	. C	Require replacement.
conductors exposed Insulation damaged,	. A	Require repair or replacement.
conductors not exposed Open		Suggest replacement Require repair or replacement.
(conduit) melted	. 2	(1) Suggest repair or replacement.
Protective shield (conduit) missing Resistance (voltage drop)		Suggest repair or replacement.
out of specification Routed incorrectly Secured incorrectly Shorted	. A . B . B . A . A	 Require repair or replacement. Require repair. Require repair. Require repair or replacement. Require repair or replacement.
performance		(1) Require repair or replacement.
Terminal burned, not affecting performance . Terminal corroded,	. 2	Suggest repair or replacement.
	. A	Require repair or replacement.
	. 2	Suggest repair or replacement.
performance Terminal loose, not	. В	Require repair or replacement.
	. 1	Suggest repair or replacement.
specification	. A	Require repair or replacement.
(1) - Determine cause and replacement of part		ect prior to repair or

