

* A/C-HEATER SYSTEM UNIFORM INSPECTION GUIDELINES *

1995 Volvo 850

GENERAL INFORMATION

A/C-Heater System Motorist Assurance Program
Standards For Automotive Repair

All Makes and Models

INTRODUCTION TO MOTORIST ASSURANCE PROGRAM (MAP)

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MOTORIST ASSURANCE PROGRAM (MAP)

OVERVIEW

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 republished. 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:

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MAP UNIFORM INSPECTION GENERAL GUIDELINES

OVERVIEW OF SERVICE REQUIREMENTS & 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.

HEATING, VENTILATION, AND AIR CONDITIONING

SERVICE PROCEDURES REQUIRED AND SUGGESTED FOR PROPER VEHICLE OPERATION

CAUTION: Before working on any air conditioning system, be sure to review current local, state, federal, and EPA regulations regarding charging, recycling, and disposal of refrigerant.

ACCUMULATORS

ACCUMULATOR 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.
Beyond vehicle manufacturer's service interval	3	Suggest replacement.
Dessicant at the end of its useful life (saturated with moisture)	1 ..	Suggest repair or replacement.
Dessicant bag deteriorated	A	(1) Require replacement. Further inspection required.
Leaking	A ..	Require repair or replacement.
Threads damaged	A ..	Require repair or replacement.
Threads stripped (threads missing)	A	Require replacement.
Tubing connection leaking	A ..	Require repair or replacement.

(1) - Inspect system to determine effects of dessicant bag deterioration.

ACTUATORS (ELECTRICAL)

ACTUATOR (ELECTRICAL) 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	A ..	Require repair or replacement.
Connector (Weatherpack type) leaking	A ..	Require repair or replacement.
Connector melted, affecting performance ..	A	(1) Require repair or replacement.
Connector melted, not affecting performance ..	2	(1) Suggest repair or replacement.
Connector missing	C	Require replacement.
Inoperative	A	(2) Require replacement.
Missing	C	Require replacement.
Noisy	2 ..	Suggest repair or replacement.
Out of adjustment	B ..	Require repair or replacement.
Terminal broken	A ..	Require repair or replacement.
Terminal burned, affecting performance	A	(1) Require repair or replacement.
Terminal burned, not affecting performance ..	1	(1) Suggest repair or replacement.
Terminal corroded, affecting performance ..	A ..	Require repair or replacement.
Terminal corroded, not affecting performance ..	1 ..	Suggest repair or replacement.
Terminal loose, affecting performance	B ..	Require repair or replacement.
Terminal loose, not affecting performance ..	1 ..	Suggest repair or replacement.

ACTUATORS (VACUUM)

ACTUATOR (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.	
Connector broken	A	..	Require repair or replacement.	
Connector (Weatherpack type) leaking	A	..	Require repair or replacement.	
Connector melted, affecting performance ..	A	.....	(1) Require repair or replacement.	
Connector melted, not affecting performance ..	2	.....	(1) Suggest repair or replacement.	
Connector missing	C	.....	Require replacement.	
Inoperative	A	.....	(2) Require replacement.	
Leaking (vacuum)	A	..	Require repair or replacement.	
Linkage bent, affecting performance	A	...	Require repair or replacement of linkage.	
Linkage bent, not affecting performance ..	2	...	Suggest repair or replacement of linkage.	
Linkage binding, affecting performance	A	...	Require repair or replacement of linkage.	
Linkage binding, not affecting performance ..	1	...	Suggest repair or replacement of linkage.	
Linkage broken	A	...	Require repair or replacement of linkage.	
Linkage loose, affecting performance	A	...	Require repair or replacement of linkage.	
Linkage loose, not affecting performance ..	1	...	Suggest repair or replacement of linkage.	
Linkage missing	C	.....	Require replacement.	
Linkage noisy	2	..	Suggest repair or replacement.	
Missing	C	.....	Require replacement.	
Noisy	2	..	Suggest repair or replacement.	
Out of adjustment	A	..	Require 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.

AIR CONDITIONING FITTINGS

See

AIR CONDITIONING METAL LINES, HOSES AND FITTING ASSEMBLIES.

AIR CONDITIONING HOSES

See

AIR CONDITIONING METAL LINES, HOSES AND FITTING ASSEMBLIES.

AIR CONDITIONING METAL LINES, HOSES AND FITTING ASSEMBLIES

AIR CONDITIONING METAL LINE, HOSE AND FITTING ASSEMBLY INSPECTION

Condition	Code	Procedure
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Abrasion damage, affecting structural integrity	A	..	Require repair or replacement.
Abrasion damage, not affecting structural integrity .....	..	.....	No service suggested or required.
Application incorrect ...	B	.....	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.
Clamp corroded, not reusable	1	.....	Suggest replacement.
Connected incorrectly ...	A	.....	Require repair.
Corroded, affecting structural integrity ...	A	.....	Require replacement.
Corroded, not affecting structural integrity ...	..	.....	No service suggested or required.
Cracked	A	..	Require repair or replacement.
Fitting type incorrect (such as compression fitting)	B	.....	Require replacement.
Flange leaking	A	..	Require repair or replacement.
Insufficient clamping force, allowing hose to leak	A	..	Require repair or replacement.
Leaking	A	..	Require repair or replacement.
Melted	1	..	Suggest repair or replacement.
Missing	C	.....	Require replacement.
Outer covering damaged to the extent that the inner fabric is visible	A	.....	Require replacement.
Protective sleeves damaged	2	.	Suggest replacement of sleeves.
Protective sleeves missing	C	.	Require replacement of sleeves.
Restricted, affecting performance	A	..	Require repair or replacement.
Routed incorrectly	2	.....	Require repair.
Swollen	1	.....	Suggest replacement.
Threads damaged	A	..	Require repair or replacement.
Threads stripped (threads missing)	A	.....	Require replacement.
Type incorrect	1	..	Suggest repair or replacement.

AIR CONTROL DOORS

See PLENUMS.

AIR DAMS (EXTERNAL)

AIR DAM (EXTERNAL) INSPECTION

Condition	Code	Procedure
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Application incorrect, affecting air conditioning system performance	A	..	Require repair or 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.
Bent, affecting air conditioning system performance	A	..	Require repair or replacement.
Blocked, affecting air conditioning system performance	A	..	Require repair or replacement.
Broken, affecting air conditioning system performance	A	..	Require repair or replacement.
Cracked, affecting air conditioning system performance	A	..	Require repair or replacement.
Loose, affecting air conditioning system performance	A	.....	Require repair.
Loose, not affecting air conditioning system performance	2	.....	Suggest repair.
Missing, affecting air conditioning system performance	C	.....	Require replacement.

AIR DISTRIBUTION SYSTEM

See PLENUMS.

BELTS

BELT INSPECTION

Condition	Code	Procedure
Alignment incorrect	B	..... (1) Further inspection required.
Cracked	1	..... Suggest replacement.
Frayed	1	..... Suggest replacement.
Missing	C	..... Require replacement.
Noisy	2	..... (2) Further inspection required.
Plies separated	A	..... Require replacement.
Serpentine belt routed incorrectly	B	..... Require repair.
Tension out of specification	B	..... Require adjustment or replacement.
Worn beyond adjustment range	B	..... Require replacement.

Worn so it contacts
 bottom of pulley A Require replacement.

- (1) - Determine cause of incorrect alignment and require repair.
- (2) - Determine cause of noise and suggest repair.

BLEND DOORS

See PLENUMS.

BLOWER FANS (BLOWER WHEEL OR SQUIRREL CAGE)

BLOWER FAN (BLOWER WHEEL OR SQUIRREL CAGE) 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.
Application incorrect ...	B ..	Require repair or replacement.
Broken	A	Require replacement.
Cracked	A	Require replacement.
Distorted	A	Require replacement.
Fins missing	C	Require replacement.
Hub separated	A	Require replacement.
Inoperative	A	(1) Require replacement.
Mounting loose	A ..	Require repair or replacement.
Noisy	2	Suggest replacement.
Out of balance	A ..	Require repair or replacement.

- (1) - Inoperative includes intermittent operation or out of OEM specification.

BLOWER MOTORS

BLOWER MOTOR 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	A ..	Require repair or replacement.
Connector (Weatherpack type) leaking	A ..	Require repair or replacement.
Connector melted, affecting performance ..	A	(1) Require repair or replacement.
Connector melted, not		

affecting performance ..	2	.....	(1) Suggest repair or replacement.
Connector missing	C	.....	Require replacement.
Current draw out of specification	B	..	Require repair or replacement.
Inoperative	A	.....	(2) Require replacement.
Missing	C	.....	Require replacement.
Motor speed insufficient	2	..	Suggest repair or replacement.
Noisy	2	.....	Suggest replacement.
Rotation incorrect for application	B	..	Require repair or replacement.
Terminal broken	A	..	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, affecting performance ..	A	..	Require repair or replacement.
Terminal corroded, not affecting performance ..	2	..	Suggest repair or replacement.
Terminal loose, affecting performance	B	..	Require repair or replacement.
Terminal loose, not affecting performance ..	1	..	Suggest repair or replacement.
Vibration	1	.....	Suggest replacement.
Wire lead conductors 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 correct prior to repair or replacement of part.
(2) - Check fan motor/controls. Inoperative includes intermittent operation or out of OEM specification.

BLOWER RESISTORS

BLOWER RESISTOR 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	A	..... Require replacement.
Connector broken	A	.. Require repair or replacement.
Connector melted, affecting performance ..	A	..... (1) Require repair or replacement.
Connector melted, not affecting performance ..	1	..... (1) Suggest repair or replacement.

Connector missing	C	.....	Require replacement.
Inoperative	A	.....	(2) Require replacement.
Insulation overheated ...	A	.....	Require replacement.
Terminal broken	A	..	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, affecting performance ..	A	..	Require repair or replacement.
Terminal corroded, not affecting performance ..	2	..	Suggest repair or replacement.
Terminal loose, affecting performance	B	..	Require repair or replacement.
Terminal loose, not 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.

BLOWER SWITCHES

See SWITCHES.

CABIN AIR FILTERS

CABIN AIR FILTER INSPECTION

Condition	Code	Procedure
Air flow obstruction	A	..... Require cleaning or replacement.
Maintenance intervals ...	3	..... Suggest replacement.
Missing	C	..... Require replacement.

CIRCUIT BREAKERS

See FUSES, FUSIBLE LINKS AND CIRCUIT BREAKERS.

COMPRESSOR CLUTCH ASSEMBLIES

COMPRESSOR CLUTCH ASSEMBLY INSPECTION

Condition	Code	Procedure
Air gap incorrect	B	.. Require repair or replacement.
Bearing seized	A	.. Require replacement of bearing or assembly.
Bearing worn, affecting performance	A	.. Require replacement of bearing or assembly.
Coil shows signs of overheating	1	.... Suggest replacement of coil.
Connector broken	A	.. Require repair or replacement.
Connector (Weatherpack type) leaking	A	.. Require repair or replacement.
Connector melted,		

affecting performance ..	A	(1) Require repair or replacement.
Connector melted, not affecting performance ..	2	(1) Suggest repair or replacement.
Connector missing	C	Require replacement.
Hub broken	A	Require replacement.
Hub cracked	B	Require replacement.
Hub loose on shaft	A	Require replacement.
Hub scored, affecting performance	A	Require replacement.
Hub warped, affecting performance	A	Require replacement.
Inoperative	A	(2) Require repair or replacement.
Noisy	2 ..	Suggest repair or replacement.
Slips	A ..	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, affecting performance ..	A ..	Require repair or replacement.
Terminal corroded, not affecting performance ..	2 ..	Suggest repair or replacement.
Terminal loose, affecting performance	B ..	Require repair or replacement.
Terminal loose, not affecting performance ..	1 ..	Suggest repair or replacement.
Will not disengage	A ..	Require repair or replacement.
Wire lead burned	A ..	Require repair or replacement.
Wire lead conductors exposed	B ..	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) - Inoperative includes intermittent operation or out of OEM specification.

COMPRESSORS

COMPRESSOR 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.
Bracket bent, affecting performance	A ..	Require repair or replacement.
Bracket bent, not affecting performance ..	.. ..	No service suggested or required.

Bracket broken, affecting performance	A	.....	Require replacement.
Bracket broken, not affecting performance .. ..	..	.....	No service suggested or required.
Bracket corroded, affecting performance ..	A	..	Require repair or replacement.
Bracket corroded, not affecting performance ..	2	..	Suggest repair or replacement.
Bracket cracked, affecting performance	A	..	Require repair or replacement.
Bracket cracked, not affecting performance ..	1	..	Suggest repair or replacement.
Bracket holes elongated, affecting performance ..	A	..	Require repair or replacement.
Bracket holes elongated, not affecting performance .....	..	.....	No service suggested or required.
Bracket loose, affecting performance	A	..	Require repair or replacement.
Bracket loose, not affecting performance ..	1	..	Suggest repair or replacement.
Bracket missing	C	.....	Require replacement.
Housing broken, affecting performance	A	..	Require repair or replacement.
Housing broken, not affecting performance .. ..	..	.....	No service suggested or required.
Housing cracked, affecting performance	A	..	Require repair or replacement.
Housing cracked, not affecting performance ..	1	..	Suggest repair or replacement.
Inoperative	A	.....	(1) Require repair or replacement.
Leaking	A	..	Require repair or replacement.
Noisy	2	.....	(2) Suggest repair or replacement.
Threads damaged	A	..	Require repair or replacement.
Threads stripped (threads missing)	A	.....	Require replacement.
Tubing connection leaking	A	..	Require repair or replacement.

(1) - Inoperative includes intermittent operation or out of OEM specification.

(2) - Compressor noise can also be caused by low oil level, state of charge, air contamination, or type of refrigerant.

CONDENSER AIR SEALS

CONDENSER AIR SEAL INSPECTION

Condition	Code	Procedure
Leaking	A	Require repair or replacement.
Missing	C	Require replacement.

CONDENSER FAN MOTORS

See COOLING FAN MOTORS.

CONDENSERS

CONDENSER INSPECTION

Condition	Code	Procedure
Abrasion damage, affecting structural integrity ...	A ..	Require repair or replacement.
Abrasion damage, not affecting structural integrity .....	..	..... No service suggested or required.
Air flow obstruction, affecting performance ..	A ..	Require repair or 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.
Bent, affecting performance	A ..	Require repair or replacement.
Bent, not affecting performance .....	..	..... No service suggested or required.
Bracket bent, affecting performance	A ..	Require repair or replacement.
Bracket bent, not affecting performance ..	..	..... No service suggested or required.
Bracket broken, affecting performance	A	Require replacement.
Bracket broken, not affecting performance ..	..	..... No service suggested or required.
Bracket corroded, affecting performance ..	A ..	Require repair or replacement.
Bracket corroded, not affecting performance ..	2 ..	Suggest repair or replacement.
Bracket cracked, affecting performance	A ..	Require repair or replacement.
Bracket cracked, not affecting performance ..	1 ..	Suggest repair or replacement.
Bracket holes elongated, affecting performance ..	A ..	Require repair or replacement.
Bracket holes elongated, not affecting performance .....	..	..... No service suggested or required.
Bracket loose, affecting performance	A ..	Require repair or replacement.
Bracket loose, not affecting performance ..	1 ..	Suggest repair or replacement.
Bracket missing	C	Require replacement.
Corroded, affecting structural integrity ...	A	Require replacement.
Corroded, not affecting structural integrity ...	..	..... No service suggested or

Fitting type incorrect (such as compression fitting)	B	.....	Require replacement.
Flange leaking	A	..	Require repair or replacement.
Leaking	A	..	Require repair or replacement.
Restricted internally ...	A	..	Require repair or replacement.
Threads damaged	A	..	Require repair or replacement.
Threads stripped (threads missing)	A	.....	Require replacement.

required.

CONNECTORS

See WIRING HARNESSSES AND CONNECTORS.

CONTROL CABLES

CONTROL 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.
Binding	A	..	Require repair or replacement.
Bracket bent, affecting performance	A	..	Require repair or replacement.
Bracket bent, not affecting performance ..	..	.....	No service suggested or required.
Bracket broken, affecting performance	A	.....	Require replacement.
Bracket broken, not affecting performance ..	..	.....	No service suggested or required.
Bracket corroded, affecting performance ..	A	..	Require repair or replacement.
Bracket corroded, not affecting performance ..	2	..	Suggest repair or replacement.
Bracket cracked, affecting performance	A	..	Require repair or replacement.
Bracket cracked, not affecting performance ..	1	..	Suggest repair or replacement.
Bracket holes elongated, affecting performance ..	A	..	Require repair or replacement.
Bracket holes elongated, not affecting performance .....	..	.....	No service suggested or required.
Bracket loose, affecting performance	A	..	Require repair or replacement.
Bracket loose, not affecting performance ..	1	..	Suggest repair or replacement.
Bracket missing	C	.....	Require replacement.
Broken	A	..	Require repair or replacement.
Cracked	2	..	Suggest repair or replacement.

Disconnected	A	..	Require repair or replacement.
Kinked	2	..	Suggest repair or replacement.
Melted	A	.....	(1) Require repair or replacement.
Missing	C	.....	Require replacement.
Out of adjustment	B	.....	(2) Require repair or replacement.
Routed incorrectly	2	.....	Suggest repair.
Seized	A	..	Require repair or replacement.

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

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

CONTROL HEADS (FUNCTION SELECTORS)

CONTROL HEAD (FUNCTION SELECTOR) 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	A	..	Require repair or replacement.
Connector (Weatherpack type) leaking	A	..	Require repair or replacement.
Connector melted, affecting performance ..	A	.....	(1) Require repair or replacement.
Connector melted, not affecting performance ..	2	.....	(1) Suggest repair or replacement.
Connector missing	C	.....	Require replacement.
Contaminated	2	....	Suggest require replacement.
Leaking	A	..	Require repair or replacement.
Malfunctioning	A	.....	(2) Require repair or replacement.
Melted, affecting performance	A	.....	(1) Require repair or replacement.
Melted, not affecting performance .....	..	.....	No service suggested or required.
Terminal broken	A	..	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, affecting performance ..	A	..	Require repair or replacement.
Terminal corroded, not affecting performance ..	2	..	Suggest repair or replacement.
Terminal loose, affecting performance	B	..	Require repair or replacement.

Terminal loose, not affecting performance ..	1	..	Suggest repair or replacement.
Wire lead burned	A	..	Require repair or replacement.
Wire lead conductors exposed	B	..	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) - Includes inoperative, intermittent operation, or failure to perform all functions.

CONTROL LINKAGES

CONTROL LINKAGE 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	A .	Require repair or replacement.
Binding	A .	Require repair or replacement.
Bracket bent, affecting performance	A .	Require repair or replacement.
Bracket bent, not affecting performance ..	.. ..	..... No service suggested or required.
Bracket broken, affecting performance	A	Require replacement.
Bracket broken, not affecting performance ..	.. ..	..... No service suggested or required.
Bracket corroded, affecting performance ..	A .	Require repair or replacement.
Bracket corroded, not affecting performance ..	2 .	Suggest repair or replacement.
Bracket cracked, affecting performance	A .	Require repair or replacement.
Bracket cracked, not affecting performance ..	1 .	Suggest repair or replacement.
Bracket holes elongated, affecting performance ..	A .	Require repair or replacement.
Bracket holes elongated, not affecting performance .....	.. ..	..... No service suggested or required.
Bracket loose, affecting performance	A .	Require repair or replacement.
Bracket loose, not affecting performance ..	1 .	Suggest repair or replacement.
Bracket missing	C	Require replacement.
Broken	A	Require replacement.
Cracked	A .	Require repair or replacement.
Disconnected	A .	Require repair or replacement.

Missing	C	.....	Require replacement.
Noisy	2	.	Suggest repair or replacement.
Out of adjustment	B	.....	(1) Require repair or replacement.
Seized	A	.	Require repair or replacement.

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

CONTROL MODULES

NOTE: Includes, but not limited to: IRCM, Coolant Fan Control Module (CFCM), AC Controller, Amplifier, Programmers, Control Heads, Power Modules, etc.

CONTROL MODULE INSPECTION

Condition	Code		Procedure
Application incorrect ...	B	.....	Require replacement.
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.
Code set (if applicable)	A	.....	(1) Further inspection required.
Connector broken	A	..	Require repair or replacement.
Connector melted, affecting performance ..	A	.....	(2) Require repair or replacement.
Connector melted, not affecting performance ..	2	.....	(2) Suggest repair or replacement.
Connector missing	A	.....	Require repair.
Contaminated	A	.....	(3) Require repair or replacement.
Inoperative	B	.....	(4) Require repair or replacement. Further inspection required.
Leaking	A	..	Require repair or replacement.
Missing	C	.....	Require replacement.
Terminal broken	A	..	Require repair or replacement.
Terminal burned, affecting performance	A	.....	(2) Require repair or 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 loose, affecting performance	B	..	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)	A	.....	Require replacement.
Wire lead conductors 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) - Refer to manufacturer's diagnostic trouble code procedure and require repair or replacement of affected component(s).
- (2) - Determine cause and correct prior to repair or replacement of part.
- (3) - Determine source of contamination, such as engine coolant, fuel, metal particles, or water. Require repair or replacement. Check for accepted cleaning procedure.
- (4) - Inoperative includes intermittent operation or out of OEM specification. Some components may be serviceable.

COOLANT

COOLANT INSPECTION

Condition	Code	Procedure
Acidity (pH) incorrect ..	1	Suggest correction or replacement.
Contaminated	B	(1) Require replacement or recycling. Further inspection required.
Level incorrect	B	(2) Require filling to proper level.
Maintenance intervals ...	3	(3) Suggest replacement.
Mixture incorrect	B	Require correction or replacement.
Type incorrect	B	Require replacement.

- (1) - Determine source of contamination and require correction prior to coolant replacement.
- (2) - Determine source of incorrect level and suggest repair.
- (3) - The system should be drained and/or flushed and refilled with correct coolant according to OEM recommended service interval and procedures.

COOLING FAN BLADES

COOLING FAN BLADE INSPECTION

Condition	Code	Procedure
Application incorrect ...	B	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.

Bent	A	Require replacement.
Broken	A	Require replacement.
Cracked	A	Require replacement.
Loose	A ..	Require repair or replacement.
Missing	C	Require replacement.

COOLING FAN CLUTCHES

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

COOLING FAN CLUTCH INSPECTION

Condition	Code	Procedure
Application incorrect ...	B	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.
Bearing noisy	A	Require replacement.
Bearing worn	A	Require replacement.
Fastener loose	A ...	Require repair or replacement of fastener.
Inoperative	A	(1) Require replacement.
Leaking	1	Suggest replacement.
Seized	A	Require replacement.
Slips (insufficient fan speed)	A	Require replacement.
Thermal control incorrect	B ..	Require repair or replacement.

(1) - Inoperative includes intermittent operation or out of OEM specification.

COOLING FAN MOTORS

COOLING FAN MOTOR 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	A ..	Require repair or replacement.
Connector (Weatherpack type) leaking	A ..	Require repair or replacement.
Connector melted, affecting performance ..	A	(1) Require repair or replacement.

Connector melted, not affecting performance ..	2	.....	(1) Suggest repair or replacement.
Connector missing	C	.....	Require replacement.
Hydraulic fan motor leaking	A	..	Require repair or replacement.
Inoperative	A	.....	(2) Require replacement.
Missing	C	.....	Require replacement.
Noisy	2	.....	Suggest replacement.
Rotation incorrect for application	B	..	Require repair or replacement.
Terminal broken	A	..	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, affecting performance ..	A	..	Require repair or replacement.
Terminal corroded, not affecting performance ..	2	..	Suggest repair or replacement.
Terminal loose, affecting performance	B	..	Require repair or replacement.
Terminal loose, not affecting performance ..	1	..	Suggest repair or replacement.
Vibration	1	.....	Suggest replacement.
Wire lead conductors 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 correct prior to repair or replacement of part.
(2) - Check fan motor/controls. Inoperative includes intermittent operation or out of OEM specification.

EVAPORATOR DRAIN TUBES

EVAPORATOR DRAIN TUBE INSPECTION

Condition	Code	Procedure
Disconnected	A	..... Require repair.
Leaking	A	..... Require replacement.
Missing	C	..... Require replacement.
Restricted	A	.. Require repair or replacement.
Routed incorrectly	B	..... Require repair.

EVAPORATOR PRESSURE REGULATORS (EPRS)

EVAPORATOR PRESSURE REGULATOR (EPR) INSPECTION

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

- (1) - Inoperative includes intermittent operation or out of OEM specification.

EVAPORATORS

EVAPORATOR INSPECTION

Condition	Code	Procedure
Abrasion damage, affecting structural integrity ...	A ..	Require repair or replacement.
Abrasion damage, not affecting structural integrity .....	.. .....	No service suggested or required.
Air flow obstruction, affecting performance ..	A ..	Require repair or 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.
Bracket bent, affecting performance	A ..	Require repair or replacement.
Bracket bent, not affecting performance ..	.. ..	No service suggested or required.
Bracket broken, affecting performance	A	Require replacement.
Bracket broken, not affecting performance ..	.. ..	No service suggested or required.
Bracket corroded, affecting performance ..	A ..	Require repair or replacement.
Bracket corroded, not affecting performance ..	2 ..	Suggest repair or replacement.
Bracket cracked, affecting performance	A ..	Require repair or replacement.
Bracket cracked, not affecting performance ..	1 ..	Suggest repair or replacement.
Bracket holes elongated, affecting performance ..	A ..	Require repair or replacement.
Bracket holes elongated, not affecting performance .....	.. .....	No service suggested or required.
Bracket loose, affecting performance	A ..	Require repair or replacement.
Bracket loose, not affecting performance ..	1 ..	Suggest repair or replacement.
Bracket missing	C	Require replacement.
Corroded, affecting structural integrity ...	A	Require replacement.
Corroded, not affecting structural integrity ...	.. ..	No service suggested or required.
Evaporator foam seal leaking	A	Require replacement.
Evaporator foam seal missing	C	Require replacement.
Fitting type incorrect		

(such as compression fitting)	B	.....	Require replacement.
Flange leaking	A	..	Require repair or replacement.
Leaking	A	..	Require repair or replacement.
Restricted internally ...	A	..	Require repair or replacement.
Threads damaged	A	..	Require repair or replacement.
Threads stripped (threads missing)	A	.....	Require replacement.

EXPANSION VALVES

EXPANSION VALVE INSPECTION

Condition	Code		Procedure
Application incorrect ...	B	.....	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.
Corroded internally	1	.....	Suggest replacement.
Filter screen torn	A	..	Require replacement of screen.
Inoperative	A	.....	(1) Require repair or replacement.
Leaking	A	.....	Require replacement.
Restricted	A	..	Require repair or replacement.
Threads damaged	A	..	Require repair or replacement.
Threads stripped (threads missing)	A	.....	Require replacement.

(1) - Expansion valve operation may be affected by capillary tube location, corrosion, and insulation tape.
Inoperative includes intermittent operation.

FUNCTION SELECTORS

See CONTROL HEADS (FUNCTION SELECTORS).

FUSES, FUSIBLE LINKS AND CIRCUIT BREAKERS

FUSE, FUSIBLE LINK AND CIRCUIT BREAKER INSPECTION

Condition	Code		Procedure
Application incorrect ...	B	.....	Require replacement.
Blown	A	.....	(1) Require replacement.
Corroded, affecting performance	A	..	Require repair or replacement.
Corroded, not affecting performance	2	..	Suggest repair or replacement.
Cracked, affecting performance	A	..	Require repair or replacement.
Cracked, not affecting performance	1	..	Suggest repair or replacement.
Inoperative	A	...	(2) Require replacement.
Insulation damaged,			

conductors exposed	A	..	Require repair or replacement.
Insulation damaged, conductors not exposed .	1	..	Suggest repair or replacement.
Missing	C	.....	Require replacement.
Routed incorrectly	B	.....	Require repair.
Secured incorrectly	B	.....	Require repair.
Terminal broken	A	..	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, affecting performance ..	A	..	Require repair or replacement.
Terminal corroded, not affecting performance ..	2	..	Suggest repair or replacement.
Terminal loose, affecting performance	B	..	Require repair or replacement.
Terminal loose, not affecting performance ..	1	..	Suggest repair or replacement.

(1) - Determine cause and correct prior to replacement of part.

(2) - Inoperative includes intermittent operation.

FUSIBLE LINKS

See FUSES, FUSIBLE LINKS AND CIRCUIT BREAKERS.

GASKETS

GASKET INSPECTION

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

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

HEATER CASES

See PLENUMS.

HEATER CONTROL VALVES

HEATER CONTROL VALVE INSPECTION

Condition	Code	Procedure
Application incorrect ...	B	..... 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

Binding	2	..	Suggest repair or replacement.
Coolant leak	A	..	Require repair or replacement.
Disconnected	A	..	Require repair or replacement.
Malfunctioning	A	.....	(1) Require repair or replacement.
Missing	C	.....	Require replacement.
Restricted	A	..	Require repair or replacement.
Seized	A	..	Require repair or replacement.
Vacuum leak	A	..	Require repair or replacement.

(1) - Includes inoperative, intermittent operation, or failure to perform all functions.

HEATER CORES

HEATER CORE INSPECTION

Condition	Code		Procedure
Air flow obstruction	A	..	Require repair or 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.
Connection leaking	A	..	Require repair or replacement.
Corroded	1	..	Suggest repair or replacement.
Disconnected	A	..	Require repair or replacement.
Fins damaged, affecting performance	A	..	Require repair or replacement.
Fins damaged, not affecting performance ..	..	.....	No service suggested or required.
Internal restrictions, affecting performance ..	A	..	Require repair or replacement.
Leaking	A	..	Require repair or replacement.
Missing	C	.....	Require replacement.

HEATER HOSES

HEATER HOSE INSPECTION

Condition	Code		Procedure
Application incorrect ...	B	.....	Require replacement.
Connected incorrectly ...	A	.....	Require repair.
Corroded, not reusable ..	1	.....	Suggest replacement.
Cracked	A	..	Require repair or replacement.
Hard (brittle)	1	..	Suggest repair or replacement.
Inner fabric (webbing) damaged	A	.....	Require replacement.
Insufficient clamping force, allowing hose to leak	A	..	Require repair or replacement.
Leaking	A	..	Require repair or replacement.
Maintenance intervals ...	3	.....	Suggest replacement.

Melted	1	..	Suggest repair or replacement.
Missing	C	.....	Require replacement.
Outer covering damaged ..	1	.....	Suggest replacement.
Outer covering damaged to the extent that the inner fabric is visible	A	.....	Require replacement.
Protective sleeves damaged	2	.	Suggest replacement of sleeves.
Protective sleeves missing	2	.	Suggest replacement of sleeves.
Restricted, affecting performance	A	..	Require repair or replacement.
Restricted, not affecting performance	2	..	Suggest repair or replacement.
Routed incorrectly	2	.....	Suggest repair.
Safety clip missing	C	.....	Require replacement.
Spongy	1	..	Suggest repair or replacement.
Stripped	A	.....	Require replacement.
Surface cracks (dry-rotted)	1	..	Suggest repair or replacement.
Swollen	B	.....	Require replacement.
Threads damaged	A	..	Require repair or replacement.
Threads stripped (threads missing)	A	.....	Require replacement.
Type incorrect	1	..	Suggest repair or replacement.

HIGH PRESSURE RELIEF VALVES (HPRV)

HIGH PRESSURE RELIEF VALVE (HPRV) INSPECTION

Condition	Code	Procedure
Inoperative	A	..... (1) Require repair or replacement.
Leaking	A	.. Require repair or replacement.
Missing	C	..... Require replacement.
Threads damaged	A	.. Require repair or replacement.
Threads stripped (threads missing)	A	..... Require replacement.

(1) - Inoperative includes intermittent operation or out of OEM specification.

IDLERS

See TENSIONERS.

IN-LINE FILTERS

IN-LINE FILTER INSPECTION

Condition	Code	Procedure
Connection leaking	B	.. Require repair or replacement.
Leaking	A	.. Require repair or replacement.
Restricted	A	..... Require replacement.
Threads damaged	A	.. Require repair or replacement.
Threads stripped (threads missing)	A	..... Require replacement.

METAL FITTINGS

See

AIR CONDITIONING METAL LINES, HOSES AND FITTING ASSEMBLIES.

METAL LINES

See

AIR CONDITIONING METAL LINES, HOSES AND FITTING ASSEMBLIES.

MIX AND AIR CONTROL DOORS (BLEND DOORS)

See PLENUMS.

O-RINGS

O-RING INSPECTION

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

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

ORIFICE TUBES

ORIFICE TUBE INSPECTION

Condition	Code	Procedure
Application incorrect ...	B	Require replacement.
Bypassing internally	A ..	Require repair or replacement.
Filter screen torn	A	Require replacement.
Installation incorrect ..	B	Require repair.
Restricted	A ..	Require repair or replacement.

PILOT-OPERATED ABSOLUTES (POAS)

PILOT-OPERATED ABSOLUTE (POA) INSPECTION

Condition	Code	Procedure
Connection damaged	B ..	Require repair or replacement.
Fitting damaged	B ..	Require repair or replacement.
Inoperative	A	(1) Require repair or replacement.
Leaking	A ..	Require repair or replacement.
Threads damaged	A ..	Require repair or replacement.
Threads stripped (threads missing)	A	Require replacement.

(1) - Inoperative includes intermittent operation or out of OEM specification.

PLENUMS

PLENUM INSPECTION

Condition	Code	Procedure
Air control door binding	A ...	Require repair or replacement
Air control door broken	A ..	Require repair or replacement.
Air control door leaking	A ..	Require repair or replacement.
Air control door seized	A ..	Require repair or 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.
Cracked	2 ..	Suggest repair or replacement.
Drain hole restricted ...	A	Require repair.
Drain plugged	A	Require repair.
Duct disconnected	A ..	Require repair or replacement.
Duct leaking	A ..	Require repair or replacement.
Duct missing	C	Require replacement.
Duct restricted	A ..	Require repair or replacement.
Leaking	A ..	Require repair or replacement.
Noisy	2	Suggest cleaning or repair.
Odor	2	Suggest cleaning or repair.
Restricted	A	Require cleaning, repair, or replacement.

PRESSURE CONTROL VALVES

See:

- * EVAPORATOR PRESSURE REGULATORS (EPRS)
- * HIGH PRESSURE RELIEF VALVES (HPRV)
- * PILOT-OPERATED ABSOLUTES (POAS)
- * SUCTION THROTTLING VALVES (STVS)
- * VALVES IN RECEIVER (VIRS)

PRESSURE SENSORS

See THERMISTORS AND PRESSURE SENSORS.

PULLEYS

PULLEY INSPECTION

Condition	Code	Procedure
Alignment incorrect	B ..	Require repair or replacement.
Application incorrect ...	B	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.
Bearing noisy	2	.....	Suggest replacement.
Bearing seized	A	..	Require repair or replacement.
Bearing worn	1	.....	Suggest replacement.
Cracked	A	.....	Require replacement.
Loose	A	..	Require repair or replacement.
Missing	C	.....	Require replacement.
Pulley damaged, affecting belt life	A	.....	Require replacement.

RADIATORS

RADIATOR INSPECTION

Condition	Code		Procedure
Air flow obstruction	A	.....	Require repair.
Application incorrect ...	B	.....	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.
Connection leaking	A	..	Require repair or replacement.
Corroded	1	..	Suggest repair or replacement.
Drain inoperative	A	..	Require repair or replacement.
Fins damaged, affecting performance	A	..	Require repair or replacement.
Fins damaged, not affecting performance ..	..	.....	No service suggested or required.
Internal oil cooler leaking	A	..	Require repair or replacement.
Internal restrictions ...	B	..	Require repair or replacement.
Leaking	A	..	Require repair or replacement.
Threads damaged	A	..	Require repair or replacement.
Threads stripped (threads missing)	A	..	Require repair or replacement.
Tubes damaged, affecting performance	A	..	Require repair or replacement.
Tubes damaged, not affecting performance ..	..	.....	No service suggested or required.

RECEIVER-DRIERS

NOTE: For VIRs, see VALVES IN RECEIVER (VIRS).

RECEIVER-DRIER 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, affecting performance	A	.....	Require replacement.
Dessicant bag deteriorated	A	.....	(1) Require replacement. Further inspection required.
Dessicant at the end of its useful life (saturated with moisture)	1	..	Suggest repair or replacement.
Fusible plug leaking	A	....	Require replacement of plug.
Leaking	A	.....	Require replacement.
Pressure relief device leaking	A	.	Require replacement of pressure relief device.
Restricted	A	..	Require repair or replacement.
Sight glass no longer transparent	2	...	Suggest replacement of drier.
Threads damaged	A	..	Require repair or replacement.
Threads stripped (threads missing)	A	.....	Require replacement.
Tubing connection leaking	A	..	Require repair or replacement.

(1) - Inspect system to determine effects of dessicant bag deterioration.

REFRIGERANT

NOTE: Refrigerants include any SNAP (Significant New Alternative Policy)-approved blends.

REFRIGERANT INSPECTION

Condition	Code	Procedure
Contaminated (other than refrigerant blends)	B	..... Require service to remove contamination.
Different types of refrigerants in the same system (other than refrigerant blends)	B	..... Require repair.
Overcharged	B	..... Require repair.
Refrigerant type does not match fittings and label	B	..... Require repair.
Undercharged	B	..... Require repair.

REFRIGERANT OIL

REFRIGERANT OIL INSPECTION

Condition	Code	Procedure
Contaminated	1	.. Require repair or replacement.
Overfilled	B	..... Require repair.

Underfilled B Require repair.

RELAYS

RELAY 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.
Housing broken	A	Require replacement.
Housing cracked	2	Suggest replacement.
Inoperative	A	(1) Require replacement.
Melted, affecting performance	A	(2) Require repair or replacement.
Melted, not affecting performance	2	(2) Suggest repair or replacement.
Missing	C	Require replacement.
Terminal broken	A ..	Require repair or replacement.
Terminal burned, affecting performance	A	(2) Require repair or 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 loose, affecting performance	B ..	Require repair or replacement.
Terminal loose, not affecting performance ..	1 ..	Suggest repair or replacement.

(1) - Inoperative includes intermittent operation or out of OEM specification.

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

SEALS

SEAL INSPECTION

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

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

SERVICE PORTS

SERVICE PORT INSPECTION

Condition	Code	Procedure
Application does not match refrigerant type	B	Require replacement.
Leaking	A ..	Require repair or replacement.
Threads damaged	A ..	Require repair or replacement.
Threads stripped (threads missing)	A	Require replacement.
Valve cap leaking	A ...	Require repair or replacement of cap.
Valve cap missing	C	Require replacement of valve cap.
Valve core sticking	B ..	Require repair or replacement.

SPRING LOCK COUPLINGS

SPRING LOCK COUPLING INSPECTION

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

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

SUCTION THROTTLING VALVES (STVS)

SUCTION THROTTLING VALVE (STV) INSPECTION

Condition	Code	Procedure
Connection damaged	B ..	Require repair or replacement.
Fitting damaged	B ..	Require repair or replacement.
Inoperative	A	(1) Require repair or replacement.
Leaking	A ..	Require repair or replacement.
Threads damaged	A ..	Require repair or replacement.
Threads stripped (threads missing)	A	Require replacement.

(1) - Inoperative includes intermittent operation or out of OEM specification.

SWITCHES (ELECTRICAL)

SWITCH (ELECTRICAL) 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.
Binding, affecting performance	A	..	Require repair or replacement.
Binding, not affecting performance	2	..	Suggest repair or replacement.
Broken	A	..	Require repair or replacement.
Burned, affecting performance	A	.....	(1) Require repair or replacement.
Burned, not affecting performance	2	.....	(1) Suggest repair or replacement.
Cracked, affecting performance	A	..	Require repair or replacement.
Cracked, not affecting performance	1	..	Suggest repair or replacement.
Malfunctioning	A	.....	(2) Require repair or replacement.
Melted, affecting performance	A	.....	(1) Require repair or replacement.
Melted, not affecting performance	2	.....	(1) Suggest repair or replacement.
Missing	C	.....	(3) Require replacement.
Out of adjustment	B	..	Require repair or replacement.
Pressure switch leaking ..	A	..	Require repair or replacement.
Terminal broken	A	..	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, affecting performance ..	A	..	Require repair or replacement.
Terminal corroded, not affecting performance ..	2	..	Suggest repair or replacement.
Terminal loose, affecting performance	B	..	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)	A	.....	Require replacement.
Won't return	A	..	Require repair or replacement.
Worn	1	.....	Suggest replacement.

- (1) - Determine cause and correct prior to repair or replacement of part.
- (2) - Includes inoperative, intermittent operation, or failure to perform all functions.
- (3) - Missing includes high pressure cut-off switches not installed during a retrofit from R12 to R134a.

TENSIONERS

TENSIONER INSPECTION

Condition	Code	Procedure
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Alignment incorrect	B	..	Require repair or replacement.
Application incorrect ...	B	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.
Bearing worn	1	.....	Suggest replacement.
Belt tension incorrect ..	B	...	Require adjustment or repair.
Bracket cracked	A	..	Require repair or replacement.
Housing cracked	A	..	Require repair or replacement.
Missing	C	.....	Require replacement.
Noisy	2	.....	Suggest replacement.
Pulley damaged, affecting belt life	A	.....	Require replacement.
Seized	A	..	Require repair or replacement.

THERMISTORS AND PRESSURE SENSORS

NOTE: Includes, but not limited to, In-Car Temperature, Ambient Air Temperature, Sun Load Sensor, etc.

THERMISTOR AND PRESSURE SENSOR 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.
Calibration incorrect ...	B	..	Require repair or replacement.
Connector broken	A	..	Require repair or replacement.
Connector (Weatherpack type) leaking	A	..	Require repair or replacement.
Connector melted, affecting performance ..	A	.....	(1) Require repair or replacement.
Connector melted, not affecting performance ..	2	.....	(1) Suggest repair or replacement.
Connector missing	C	.....	Require replacement.
Inoperative	A	.....	(2) Require repair or replacement.
Missing	C	.....	Require replacement.
Terminal burned, affecting performance	A	.....	(1) Require repair or 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 loose, affecting performance	B	..	Require repair or replacement.
Terminal loose, not affecting performance ..	1	..	Suggest repair or replacement.
Wire lead burned	A	..	Require repair or replacement.
Wire lead conductors exposed	B	..	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) - Inoperative includes intermittent operation or out of OEM specification.

THERMOSTATS AND HOUSINGS

THERMOSTAT AND HOUSING INSPECTION

Condition	Code		Procedure
Application incorrect ...	B	.....	Require replacement.
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.
Cracked	A	.....	Require replacement.
Housing corroded	1	.....	Suggest replacement of housing.
Inoperative	A	.....	(1) Require replacement.
Installation incorrect ..	B	..	Require repair or replacement.
Leaking	A	..	Require repair or replacement.
Thermostat missing	C	.....	Require replacement of thermostat.
Threads damaged	A	..	Require repair or replacement.
Threads stripped (threads missing)	A	..	Require repair or replacement.

- (1) - Inoperative includes intermittent operation or out of OEM specification.

VACUUM HOSES AND TUBES

VACUUM HOSE AND TUBE INSPECTION

Condition	Code		Procedure
Disconnected	A	.....	Require repair.
Leaking	A	..	Require repair or replacement.
Melted	A	.....	Require replacement.
Missing	C	.....	Require replacement.
Oil-soaked (spongy)	1	.....	Suggest replacement.
Restricted	A	..	Require repair or replacement.

Routing incorrect	B	.....	Require repair.
Surface cracks (dry-rotted)	1	.....	Suggest replacement.

VACUUM RESERVOIRS

VACUUM RESERVOIR 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.
Check valve leaking internally	A	..... Require replacement.
Leaking	A	.. Require repair or replacement.
Missing	C	..... Require replacement.
Restricted	A	.. Require repair or replacement.

VACUUM TUBES

See VACUUM HOSES AND TUBES.

VALVES IN RECEIVER (VIRS)

VALVE IN RECEIVER (VIR) INSPECTION

Condition	Code	Procedure
Application incorrect ...	B	..... 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.
Bracket bent, affecting performance	A	.. Require repair or replacement.
Bracket bent, not affecting performance ..	..	..... No service suggested or required.
Bracket broken, affecting performance	A	..... Require replacement.
Bracket broken, not affecting performance ..	..	..... No service suggested or required.
Bracket corroded, affecting performance ..	A	.. Require repair or replacement.
Bracket corroded, not affecting performance ..	2	.. Suggest repair or replacement.
Bracket cracked, affecting performance	A	.. Require repair or replacement.

Bracket cracked, not affecting performance ..	1	..	Suggest repair or replacement.
Bracket holes elongated, affecting performance ..	A	..	Require repair or replacement.
Bracket holes elongated, not affecting performance ..	.....	.....	No service suggested or required.
Bracket loose, affecting performance ..	A	..	Require repair or replacement.
Bracket loose, not affecting performance ..	1	..	Suggest repair or replacement.
Bracket missing ..	C	.....	Require replacement.
Connection damaged ..	B	..	Require repair or replacement.
Contaminated, affecting performance ..	A	.....	Require replacement.
Corroded internally ..	1	.....	Suggest replacement.
Dessicant bag deteriorated ..	A	.....	(1) Require replacement. Further inspection required.
Dessicant at the end of its useful life (saturated with moisture) ..	1	..	Suggest repair or replacement.
Filter screen torn ..	A	..	Require replacement of screen.
Fitting damaged ..	B	..	Require repair or replacement.
Fusible plug leaking	A	....	Require replacement of plug.
Inoperative ..	A	.....	(2) Require repair or replacement.
Leaking ..	A	..	Require repair or replacement.
Pressure relief device leaking ..	A	.	Require replacement of pressure relief device.
Restricted ..	A	..	Require repair or replacement.
Sight glass no longer transparent ..	2	...	Suggest replacement of drier.
Threads damaged ..	A	..	Require repair or replacement.
Threads stripped (threads missing) ..	A	.....	Require replacement.
Tubing connection leaking ..	A	..	Require repair or replacement.

(1) - Inspect system to determine effects of dessicant bag deterioration.

(2) - Inoperative includes intermittent operation or out of OEM specification.

WATER PUMPS (ELECTRIC AUXILIARY)

WATER PUMP (ELECTRIC AUXILIARY) 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	A	..	Require repair or replacement.
Connector (Weatherpack type) leaking	A	..	Require repair or replacement.
Connector melted, affecting performance ..	A	..... (1)	Require repair or replacement.
Connector melted, not affecting performance ..	2	..... (1)	Suggest repair or replacement.
Connector missing	C	.....	Require replacement.
Inoperative	A	..... (2)	Require replacement.
Leaking	A	..	Require repair or replacement.
Missing	C	.....	Require replacement.
Noisy	2	.....	Suggest replacement.
Terminal broken	A	..	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, affecting performance ..	A	..	Require repair or replacement.
Terminal corroded, not affecting performance ..	2	..	Suggest repair or replacement.
Terminal loose, affecting performance	B	..	Require repair or replacement.
Terminal loose, not affecting performance ..	1	..	Suggest repair or replacement.
Vibration	1	..	Suggest replacement.
Wire lead conductors 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 correct prior to repair or replacement of part.
(2) - Inoperative includes intermittent operation or out of OEM specification.

WIRING HARNESSES AND CONNECTORS

WIRING HARNESS AND CONNECTOR INSPECTION

Condition	Code	Procedure
Application incorrect ...	B ..	Require repair or 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	A ..	Require repair or replacement.
Connector (Weatherpack type) leaking	A ..	Require repair or replacement.
Circuit open	A ..	Require repair or replacement.
Circuit resistance (voltage drop) out of		

specification	A	..	Require repair or replacement.
Circuit shorted	A	..	Require repair or replacement.
Connector melted, affecting performance ..	A	.....	(1) Require repair or replacement.
Connector melted, not affecting performance ..	2	.....	(1) Suggest repair or replacement.
Connector missing	C	.....	Require replacement.
Diode open	A	..	Require repair or replacement.
Diode shorted	A	..	Require repair or replacement.
Insulation damaged, conductors exposed	A	..	Require repair or replacement.
Insulation damaged, conductors not exposed .	1	.....	Suggest replacement.
Protective shield (conduit) melted	B	.....	(1) Require replacement.
Protective shield (conduit) missing	C	.....	Require replacement.
Routed incorrectly	B	.....	Require repair.
Secured incorrectly	B	.....	Require repair.
Terminal broken	A	..	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, affecting performance ..	A	..	Require repair or replacement.
Terminal corroded, not affecting performance ..	2	..	Suggest repair or replacement.
Terminal loose, affecting performance	B	..	Require repair or replacement.
Terminal loose, not affecting performance ..	1	..	Suggest repair or replacement.
Voltage drop out of specification	A	..	Require repair or replacement.

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