



Honda CRV Shop Manual

Introduction.....	00-3
Table Of Contents	00-6
Index	00-31

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

The CR-V SRS includes a driver's airbag in the steering wheel hub, a passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, seat belt buckle tensioners in the front seat belt buckles, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items will require special precautions and tools, and should be done only by an authorized Honda dealer.



WARNING



- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, all SRS service work must be performed by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS could lead to personal injury caused by unintentional deployment of the airbags and side airbags.
- Do not bump the SRS unit. Otherwise, the system may fail in a collision, or the airbags may deploy when the ignition switch is ON (II).
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, front console, dashboard, dashboard lower panel, in the dashboard above the glove box, in the front seats, and around the floor. Do not use electrical test equipment on these circuits.

Introduction

How to Use This Manual

The 2002 CR-V Shop Manual is divided into 23 sections. The first page of each section is marked with a black tab that lines up with its corresponding thumb index tab on this page.

You can quickly find the first page of each section without looking through a full table of contents. The symbols printed at the top corner of each page can also be used as a quick reference system.

Each section includes:

1. A table of contents, or an exploded view index showing:
 - Parts disassembly sequence.
 - Bolt torques and thread sizes.
 - Page references to descriptions in text.
2. Disassembly/assembly procedures and tools.
3. Inspection.
4. Testing/troubleshooting.
5. Repair.
6. Adjustments.

Safety Messages

Your safety, and the safety of others, is very important. To help you make informed decisions, we have provided safety messages, and other safety information throughout this manual. Of course, it is not practical or possible to warn you about all the hazards associated with servicing this vehicle. You must use your own good judgement.

You will find important safety information in a variety of forms including:

- **Safety Labels** - on the vehicle.
- **Safety Messages** - preceded by a safety alert symbol and one of the three signal words, DANGER, WARNING, or CAUTION.

These signal words mean:

**DANGER**

You Will be KILLED or SERIOUSLY HURT if you don't follow instructions.

**WARNING**

You CAN be Killed or SERIOUSLY HURT if you don't follow instructions.

**CAUTION**

You CAN be HURT if you don't follow instructions.

- **Instructions** - how to service this vehicle correctly and safely

All information contained in this manual is based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. This includes text, figures, and tables.

As you read this manual, you will find information that is preceded by a **NOTICE** symbol. The purpose of this message is to help prevent damage to your vehicle, other property, or the environment.

First Edition 11/2001
1,834 pages
All Rights Reserved

HONDA MOTOR CO.,
LTD.
Service Publication Office

As sections with * include SRS components;
special precautions are required when servicing.

General Info



Specifications

specs

Maintenance



Engine Electrical



Engine



Cooling



Fuel and Emissions



*Transaxle



*Steering



Suspension



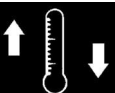
*Brakes (Including ABS)



*Body



*Heating, Ventilation and Air Conditioning



*Body Electrical



*Restraints



A Few Words About Safety

Service Information

The service and repair information contained in this manual is intended for use by qualified, professional technicians. Attempting service or repairs without the proper training, tools, and equipment could cause injury to you or others. It could also damage the vehicle or create an unsafe condition.

This manual describes the proper methods and procedures for performing service, maintenance, and repairs. Some procedures require the use of specially designed tools and dedicated equipment. Any person who intends to use a replacement part, service procedure or a tool that is not recommended by Honda, must determine the risks to their personal safety and the safe operation of the vehicle.

If you need to replace a part, use genuine Honda parts with the correct part number or an equivalent part. We strongly recommend that you do not use replacement parts of inferior quality.

FOR YOUR CUSTOMER'S SAFETY

Proper service and maintenance are essential to the customer's safety and the reliability of the vehicle. Any error or oversight while servicing a vehicle can result in faulty operation, damage to the vehicle, or injury to others.

**WARNING**

Improper service or repairs can create an unsafe condition that can cause your customer or others to be seriously hurt or killed.

Follow the procedures and precautions in this manual and other service materials carefully.

FOR YOUR SAFETY

Because this manual is intended for the professional service technician, we do not provide warnings about many basic shop safety practices (e.g., Hot parts - wear gloves). If you have not received shop safety training or do not feel confident about your knowledge of safe servicing practices, we recommend that you do not attempt to perform the procedures described in this manual.

**WARNING**

Failure to properly follow instructions and precautions can cause you to be seriously hurt or killed.

Follow the procedures and precautions in this manual carefully.

Some of the most important general service safety precautions are given below. However, we cannot warn you of every conceivable hazard that can arise in performing service and repair procedures. Only you can decide whether or not you should perform a given task.

A Few Words About Safety

IMPORTANT SAFETY PRECAUTIONS

- Make sure you have a clear understanding of all basic shop safety practices and that you are wearing appropriate clothing and using safety equipment. When performing any service task, be especially careful of the following:
 - Read all of the instructions before you begin, and make sure you have the tools, the replacement or repair parts, and the skills required to perform the tasks safely and completely.
 - Protect your eyes by using proper safety glasses, goggles or face shields any time you hammer, drill, grind, or work around pressurized air or liquids and springs or other stored-energy components. If there is any doubt, put on eye protection.
 - Use other protective wear when necessary, for example gloves or safety shoes. Handling hot or sharp parts can cause severe burns or cuts. Before you grab something that looks like it can hurt you, stop and put on gloves.
 - Protect yourself and others whenever you have the vehicle up in the air. Any time you lift the vehicle, either with a hoist or a jack, make sure that it is always securely supported. Use jack stands.
- Make sure the engine is off before you begin any servicing procedures, unless the instruction tells you to do otherwise. This will help eliminate several potential hazards:
 - Carbon monoxide poisoning from engine exhaust. Be sure there is adequate ventilation whenever you run the engine.
 - Burns from hot parts or coolant. Let the engine and exhaust system cool before working in those areas.
 - Injury from moving parts. If the instruction tells you to run the engine, be sure your hands, fingers, and clothing are out of the way.
- Gasoline vapors and hydrogen gases from batteries are explosive. To reduce the possibility of a fire or explosion, be careful when working around gasoline or batteries.
 - Use only a nonflammable solvent, not gasoline to clean parts.
 - Never drain or store gasoline in an open container.
 - Keep all cigarettes, sparks, and flames away from the battery and all fuel-related parts.

Table Of Contents

Honda CRV Shop Manual00-1

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) 00-2

Introduction 00-3

 How to Use This Manual 00-3

 Safety Messages 00-3

A Few Words About Safety 00-4

 Service Information 00-4

 FOR YOUR CUSTOMER'S SAFETY 00-4

 FOR YOUR SAFETY 00-4

 IMPORTANT SAFETY PRECAUTIONS 00-5

Table Of Contents 00-6

Index 00-31

General Information01-1

Chassis and Engine Numbers 01-2

 Vehicle Identification Number 01-2

 Engine Number 01-2

 Transmission Number 01-2

Identification Number Locations 01-4

Warning/Caution Label Locations 01-5

Lift and Support Points 01-7

 Frame Hoist 01-7

 Safety Stands 01-7

 Floor Jack 01-7

Towing 01-8

Service Precautions 01-9

 4WD model Information 01-9

 Precautions on using free rollers: 01-9

 Speedometer Testing Procedures 01-9

 General 01-10

Service Precautions (cont'd) 01-12

 Electrical Troubleshooting Information 01-12

 Five-step Troubleshooting 01-15

 Wire Color Codes 01-15

Abbreviations 01-16

Specifications02-1

Standards and Service Limits 02-2

 Engine Electrical 02-2

 Engine Assembly 02-2

Table Of Contents

Cylinder Head	02-3
Engine Block	02-4
Engine Lubrication	02-5
Cooling.....	02-6
Fuel and Emissions	02-6
Clutch.....	02-6
Manual Transmission and M/T Differential	02-7
Automatic Transmission and A/T Differential.....	02-9
Rear Differential.....	02-15
Steering	02-15
Suspension	02-15
Brakes.....	02-16
Air Conditioning	02-16
Design Specifications	02-17
Body Specifications	02-21
Maintenance	03-1
Lubricants and Fluids	03-2
Maintenance Schedule for Normal Conditions	03-4
Listed by Maintenance Item.....	03-4
Maintenance Schedule for Severe Conditions	03-6
Listed by Maintenance Item.....	03-6
Maintenance Schedule for Normal Conditions	03-8
Listed by Maintenance Item.....	03-8
Maintenance Schedule for Severe Conditions	03-10
Listed by Maintenance Item.....	03-10
Maintenance Schedule	03-12
Listed by Maintenance Item.....	03-12
Engine Electrical	04-15
Special Tools	04-16
Starting System	04-17
Component Location Index.....	04-17
Circuit Diagram	04-18
Starter Circuit Troubleshooting	04-19
Starter Solenoid Test	04-20
Starter Performance Test	04-21
Starter Replacement.....	04-23
Starter Overhaul	04-24
Ignition System	04-32
Component Location Index.....	04-32
Circuit Diagram	04-33
Ignition Timing Inspection	04-34
Ignition Coil Removal/Installation.....	04-35
Ignition Coil Troubleshooting	04-35

Spark Plug Inspection	04-37
Charging System	04-38
Component Location Index	04-38
Circuit Diagram	04-39
Charging Circuit Troubleshooting	04-40
Drive Belt Inspection	04-43
Drive Belt Replacement	04-44
Drive Belt Auto-tensioner Inspection.....	04-44
Drive Belt Auto-tensioner Replacement.....	04-45
Alternator Replacement	04-46
Alternator Overhaul.....	04-48
Cruise Control	04-53
Component Location Index	04-53
Circuit Diagram	04-54
Symptom Troubleshooting Index	04-55
Cruise Control Communication Circuit Troubleshooting	04-57
Control Unit Input Test.....	04-58
Main Switch Test/Replacement	04-60
Set/Resume/Cancel Switch Test/Replacement	04-60
Actuator Test.....	04-61
Actuator/Cable Replacement.....	04-62
Actuator Cable Adjustment	04-63
Clutch Pedal Position Switch Test	04-63
Engine Mechanical	05-1
Engine Assembly	05-2
Special Tools	05-2
Engine Removal.....	05-3
Engine Installation.....	05-10
Engine Mechanical	06-1
Cylinder Head	06-2
Special Tools	06-2
Component Location Index	06-3
Engine Compression Inspection	06-6
VTEC Rocker Arm Test	06-7
VTC Actuator Inspection	06-8
Valve Clearance Adjustment.....	06-9
Crankshaft Pulley Removal and Installation	06-11
Cam Chain Removal.....	06-12
Cam Chain Installation.....	06-15
Auto-Tensioner Removal/Installation	06-19
Chain Case Oil Seal Installation	06-21
Cam Chain Inspection.....	06-22
Cylinder Head Cover Removal	06-23
Cylinder Head Removal	06-24
VTC Actuator, Exhaust Camshaft Sprocket Replacement.....	06-25
Cylinder Head Inspection for Warpage	06-26

Table Of Contents

Rocker Arm Assembly Removal	06-27
Rocker Arms and Shafts Disassembly/Reassembly	06-28
Rocker Arms and Shafts Inspection	06-29
Camshaft Inspection	06-30
Valves, Springs and Valve Seals Removal.....	06-32
Valve Inspection	06-33
Valve Stem-to-Guide Clearance Inspection.....	06-33
Valve Guide Replacement	06-34
Valve Seat Reconditioning.....	06-36
Valves, Springs and Valve Seals Installation.....	06-38
Rocker Arm Assembly Installation	06-39
Cylinder Head Installation.....	06-40
Cylinder Head Cover Installation	06-42

Engine Mechanical07-1

Engine Block	07-2
Special Tools	07-2
Component Location Index.....	07-3
Connecting Rod and Crankshaft End Play Inspection.....	07-5
Crankshaft Main Bearing Replacement	07-6
Connecting Rod Bearing Replacement	07-8
Oil Pan Removal	07-11
Crankshaft and Piston Removal	07-12
Crankshaft Inspection	07-14
Block and Piston Inspection.....	07-15
Cylinder Honing	07-17
Piston, Pin and Connecting Rod Replacement.....	07-18
Piston Ring Replacement	07-21
Piston Installation.....	07-23
Connecting Rod Bolt Inspection	07-24
Crankshaft Installation	07-24
Oil Pan Installation.....	07-27

Engine Mechanical08-1

Engine Lubrication	08-2
Special Tools	08-2
Component Location Index.....	08-3
Oil Pressure Switch Test	08-4
Oil Pressure Test	08-4
Engine Oil Replacement	08-5
Engine Oil Filter Replacement	08-6
Oil Filter Holder Replacement.....	08-9
Oil Pump Overhaul	08-10
Oil Pressure Switch Replacement	08-18

Engine Mechanical09-1

Intake Manifold and Exhaust System	09-2
Intake Manifold Removal and Installation	09-2

Exhaust Manifold Removal and Installation	09-8
Exhaust Pipe and Muffler Replacement.....	09-9
Engine Cooling	10-1
Cooling System	10-2
Component Location Index	10-2
Radiator Cap Test.....	10-3
Radiator Test	10-3
Fan Motor Test.....	10-4
Thermostat Test.....	10-4
Water Pump Inspection.....	10-5
Water Pump Replacement.....	10-5
Coolant Check	10-6
Coolant Replacement	10-6
Thermostat Replacement.....	10-8
Water Passage Installation	10-9
Water Outlet Installation.....	10-9
Radiator and Fans Replacement	10-10
Fan Controls	10-11
Component Location Index	10-11
Symptom Troubleshooting Index	10-12
Circuit Diagram	10-13
Radiator Fan Circuit Troubleshooting	10-14
Radiator Fan Switch Circuit Troubleshooting (Open)	10-16
Radiator Fan Switch Circuit Troubleshooting (Short).....	10-16
Radiator Fan Switch Test.....	10-17
Radiator Fan Switch Replacement	10-17
Fuel and Emissions	11-1
Fuel and Emissions Systems	11-2
Special Tools	11-2
General Troubleshooting Information	11-3
DTC Troubleshooting Index.....	11-6
Symptom Troubleshooting Index	11-8
System Descriptions	11-10
PGM-FI System	11-59
Component Location Index	11-59
DTC Troubleshooting.....	11-62
MIL Circuit Troubleshooting.....	11-102
DLC Circuit Troubleshooting.....	11-114
Injector Test	11-116
Injector Replacement	11-117
Primary HO2S Replacement.....	11-119
CKP Sensor Replacement.....	11-119
ECT Sensor Replacement	11-120
TDC Sensor Replacement.....	11-120
IAT Sensor Replacement.....	11-121
Knock Sensor Replacement	11-121

Table Of Contents

Secondary HO2S Replacement.....	11-122
VTEC/VTC	11-123
Component Location Index.....	11-123
DTC Troubleshooting.....	11-124
VTC Oil Control Solenoid Valve Test.....	11-137
CMP Sensor Replacement	11-138
VTEC Solenoid Valve Removal/Inspection.....	11-138
Idle Control System	11-139
Component Location Index.....	11-139
DTC Troubleshooting.....	11-140
A/C Signal Circuit Troubleshooting	11-142
Alternator FR Signal Circuit Troubleshooting	11-143
PSP Switch Signal Circuit Troubleshooting	11-145
Brake Pedal Position Switch Signal Circuit Troubleshooting	11-146
Idle Speed Inspection	11-148
Fuel Supply System	11-149
Component Location Index.....	11-149
Fuel Pump Circuit Troubleshooting	11-151
Fuel Pressure Relieving.....	11-154
Fuel Pressure Test	11-154
Fuel Line Inspection.....	11-156
Fuel Tube/Quick-Connect Fittings Precaution	11-160
Fuel Tube/Quick-Connect Fittings Removal	11-161
Fuel Tube/Quick-Connect Fittings Installation	11-162
Fuel Pressure Regulator Replacement.....	11-165
Fuel Filter Replacement.....	11-166
Fuel Pump/Fuel Gauge Sending Unit Replacement.....	11-167
Fuel Tank Replacement.....	11-169
Fuel Gauge Sending Unit Test	11-173
Low Fuel Indicator Light Test.....	11-175
Intake Air System	11-176
Component Location Index.....	11-176
IMRC System Troubleshooting	11-177
Throttle Body Test	11-180
Intake Air Bypass Control Thermal Valve Test.....	11-181
Air Cleaner Replacement.....	11-182
Air Cleaner Element Replacement	11-182
Throttle Cable Adjustment	11-183
Throttle Cable Removal/Installation.....	11-184
Throttle Body Removal/Installation	11-185
Throttle Body Disassembly/Reassembly	11-186
IMRC Valve Replacement	11-187
Catalytic Converter System	11-188
DTC Troubleshooting.....	11-188
Catalytic Converter Inspection.....	11-188
Tailpipe Emissions Test.....	11-189
PCV System	11-190
PCV Valve Inspection and Test	11-190

Evaporative Emission Control System	11-191
Component Location Index	11-191
DTC Troubleshooting	11-193
Evaporative Emission (EVAP) System Troubleshooting.....	11-195
EVAP Two Way Valve Test	11-198
EVAP Canister Replacement.....	11-199
 Clutch	 12-1
Special Tools	12-2
Component Location Index	12-3
Clutch Pedal and Clutch Pedal Position Switch Adjustment	12-4
Clutch Master Cylinder Replacement	12-5
Clutch Master Cylinder Overhaul	12-6
Exploded view.....	12-6
Slave Cylinder Replacement	12-8
Slave Cylinder Overhaul	12-10
Clutch Replacement	12-11
 M/T - M/T Differential	 13-1
Manual Transmission	13-2
4WD (Four-wheel Drive) Model Precautions	13-2
Special Tools	13-3
Transmission Fluid Inspection and Replacement	13-4
Back-Up Light Switch Test.....	13-4
Transmission Removal	13-5
Transmission Installation	13-10
Transmission Disassembly	13-15
Reverse Shift Fork Clearance Inspection	13-21
Shift Lever Clearance Inspection	13-22
Change Lever Assembly Disassembly/Reassembly.....	13-23
Shift Forks Clearance Inspection	13-24
Shift Forks Disassembly/Reassembly.....	13-25
Mainshaft Assembly Clearance Inspection	13-26
Mainshaft Disassembly	13-28
Mainshaft Inspection	13-29
Mainshaft Reassembly.....	13-31
Countershaft Assembly Clearance Inspection	13-34
Countershaft Disassembly	13-36
Countershaft Inspection	13-37
Countershaft Reassembly.....	13-38
Synchro Sleeve and Hub Inspection and Reassembly	13-43
Synchro Ring and Gear Inspection	13-43
Mainshaft Bearing and Oil Seal Replacement	13-45
Countershaft Bearing Replacement.....	13-46
Mainshaft Thrust Clearance Adjustment.....	13-47
Transmission Reassembly.....	13-50

Table Of Contents

Gearshift Mechanism Replacement.....	13-55
M/T Differential	13-56
Component Location Index.....	13-56
Backlash Inspection.....	13-58
Driven Gear/Carrier Replacement	13-58
Carrier Bearings Replacement	13-59
Oil Seal Replacement.....	13-60
Differential Thrust Clearance Adjustment.....	13-61
Transfer Assembly	13-63
Backlash Inspection on Car	13-63
Transfer Removal	13-64
Transfer Installation	13-64
Transfer Overhaul.....	13-65
Transfer Inspection.....	13-67
Transfer Disassembly.....	13-68
Transfer Holder Disassembly	13-70
Transfer Holder Tapered Roller Bearing Outer Race Replacement	13-71
Transfer Drive Gear Bearing Replacement	13-71
Transfer Driven Gear Bearing Replacement	13-72
Transfer Housing Bearing Outer Race Replacement	13-72
Transfer Reassembly.....	13-73
 Automatic Transmission	 14-1
 A/T	 14-1
 Automatic Transmission	 14-2
Service Precautions for 4WD Model.....	14-2
Special Tools	14-3
General Troubleshooting Information	14-4
DTC Troubleshooting Index.....	14-7
Symptom Troubleshooting Index.....	14-8
System Description.....	14-19
DTC Troubleshooting.....	14-66
Over-drive (O/D) Switch Circuit Troubleshooting.....	14-106
Road Test	14-107
Stall Speed Test	14-109
Pressure Tests.....	14-110
Shift Solenoid Valves Test.....	14-112
Shift Solenoid Valves Replacement.....	14-114
A/T Clutch Pressure Control Solenoid Valve A Test.....	14-116
A/T Clutch Pressure Control Solenoid Valve A Replacement	14-117
A/T Clutch Pressure Control Solenoid Valves B and C Test	14-118
A/T Clutch Pressure Control Solenoid Valves B and C Replacement	14-119
Mainshaft and Countershaft Speed Sensors Replacement.....	14-120
2nd Clutch Pressure Switch Replacement	14-121
3rd Clutch Pressure Switch Replacement	14-121
ATF Temperature Sensor Test/Replacement.....	14-122
O/D Switch Test/Replacement.....	14-124
ATF Level Check	14-130

ATF Replacement.....	14-131
Transfer Assembly Inspection.....	14-132
Transfer Assembly Removal.....	14-133
Transfer Assembly Installation.....	14-134
Transmission Removal	14-135
Transmission Installation	14-143
ATF Cooler Hoses Replacement	14-151
Shift Lever Removal.....	14-152
Shift Lever Installation.....	14-154
Shift Lever Disassembly/Reassembly.....	14-156
Shift Cable Replacement	14-157
Shift Cable Adjustment	14-162
A/T Gear Position Indicator	14-165
Component Location Index	14-165
Circuit Diagram	14-166
Indicator Input Test	14-167
Transmission Range Switch Test	14-168
Transmission Range Switch Replacement	14-169
Indicator Bulb Replacement.....	14-171
A/T Interlock System	14-172
Component Location Index	14-172
Circuit Diagram	14-173
Shift Lock System Circuit Troubleshooting	14-175
Reverse Lock System Circuit Troubleshooting	14-178
Key Interlock System Circuit Troubleshooting	14-179
Interlock Control Unit Input Test	14-180
Key Interlock Solenoid Test	14-181
Shift Lock Solenoid Test/Replacement.....	14-182
Park Pin Switch Test/Replacement.....	14-187
Transmission End Cover	14-192
End Cover Removal.....	14-192
Park Lever Stop Inspection and Adjustment.....	14-195
Idle Gear Shaft Bearing Replacement.....	14-196
Control Shaft Oil Seal Replacement	14-196
Control Shaft Bearing Replacement	14-197
ATF Feed Pipes Replacement.....	14-197
Transmission Housing	14-198
Housing and Shaft Assemblies Removal.....	14-198
Bearing Removal	14-202
Bearing Installation	14-203
Reverse Idle Gear Removal and Installation	14-204
Valve Body	14-205
Valve Bodies and ATF Strainer Removal	14-205
Valve Body Repair	14-207
Valve Body Valve Installation.....	14-208
Main Valve Body Disassembly, Inspection, and Reassembly	14-209
ATF Pump Inspection	14-210
Regulator Valve Body Disassembly, Inspection, and Reassembly.....	14-211
Servo Body Disassembly, Inspection, and Reassembly.....	14-212

Table Of Contents

Shift Solenoid Valves Installation.....	14-213
Torque Converter Housing	14-214
Mainshaft Bearing and Oil Seal Replacement	14-214
Countershaft Bearing Replacement.....	14-215
Secondary Shaft Bearing Replacement.....	14-216
Control Shaft Oil Seal Replacement	14-217
Shafts and Clutches	14-218
Mainshaft Disassembly, Inspection and Reassembly.....	14-218
Mainshaft 3rd Gear Clearance Inspection	14-219
Countershaft Disassembly, Inspection and Reassembly.....	14-221
Selector Hub and 4th Gear Collar Removal	14-223
Selector Hub and 4th Gear Collar Installation	14-224
Reverse Selector Hub and 1st Gear Removal.....	14-225
Reverse Selector Hub and 1st Gear Installation.....	14-226
Secondary Shaft Disassembly, Inspection and Reassembly.....	14-227
Secondary Shaft Ball Bearing, Idler Gear Removal and Installation	14-228
Secondary Shaft 2nd Gear Clearance Inspection	14-229
Secondary Shaft 1st Gear Clearance Inspection.....	14-231
Idler Gear Shaft Removal and Installation	14-233
Idler Gear/Idler Gear Shaft Replacement	14-234
Clutch Disassembly	14-235
Clutch Inspection	14-240
Clutch Waved-plate Phase Difference Inspection	14-241
Clutch Clearance Inspection.....	14-242
Clutch Reassembly	14-247
Valve Body	14-252
Valve Bodies and ATF Strainer Installation	14-252
Transmission Housing	14-254
Shaft Assemblies and Housing Installation.....	14-254
Transmission End Cover	14-259
End Cover Installation.....	14-259
A/T Differential	14-264
Component Location Index.....	14-264
Backlash Inspection	14-265
Carrier Bearing Replacement	14-265
Differential Carrier/Final Driven Gear Replacement	14-266
Oil Seal Replacement	14-267
Carrier Bearing Outer Race Replacement.....	14-268
Carrier Bearing Preload Inspection.....	14-270
Transfer Assembly	14-273
Inspection	14-273
Disassembly	14-274
Transfer Holder Disassembly	14-277
Transfer Holder Roller Bearing Replacement.....	14-278
Transfer Holder Tapered Roller Bearing Outer Race Removal/Installation.....	14-278
Transfer Drive Gear Bearing Replacement	14-279
Transfer Driven Gear Bearing Removal/Installation	14-279

Transfer Housing Tapered Roller Bearing Outer Race Replacement.....	14-280
Reassembly	14-281
Rear Differential	15-1
Special Tools	15-2
System Description	15-3
Dual Pump System Function Test	15-9
Automatic Transmission.....	15-9
Manual Transmission.....	15-10
Automatic Transmission/Manual Transmission	15-11
Symptom Troubleshooting Index	15-12
Differential Fluid Inspection and Replacement	15-13
Differential Removal	15-14
Differential Housing Assembly Removal and Installation	15-15
Oil Seal Replacement	15-16
Differential Disassembly	15-18
Differential Reassembly	15-21
Differential Installation	15-25
Differential Mount Replacement	15-27
Driveline/Axle	16-1
Special Tools	16-2
Driveshaft Inspection	16-3
Front Driveshafts Removal	16-3
Front Driveshafts Disassembly	16-5
Dynamic Damper Replacement	16-8
Front Driveshafts Reassembly	16-9
Front Driveshafts Installation	16-17
Intermediate Shaft Removal	16-19
Intermediate Shaft Disassembly	16-20
Intermediate Shaft Reassembly	16-21
Intermediate Shaft Installation	16-23
Rear Driveshafts Removal	16-24
Rear Driveshafts Disassembly	16-25
Rear Driveshafts Reassembly	16-27
Rear Driveshafts Installation	16-31
Propeller Shaft Inspection	16-32
Propeller Shaft Removal	16-33

Table Of Contents

Propeller Shaft Installation	16-34
Steering	17-1
Power Steering	17-2
Special Tools	17-2
Component Location Index.....	17-3
Symptom Troubleshooting Index.....	17-4
Hard Steering Troubleshooting.....	17-6
Steering Wheel Rotational Play Check.....	17-7
Power Assist Check.....	17-7
Steering Linkage and Gearbox Inspection.....	17-8
Pump Pressure Test.....	17-9
Fluid Leakage Inspection.....	17-10
Fluid Replacement.....	17-11
Hoses and Lines Replacement.....	17-12
Pump Replacement	17-13
Pump Overhaul.....	17-14
Steering Wheel Removal	17-21
Steering Wheel Disassembly/Reassembly	17-22
Steering Wheel Installation	17-23
Steering Column Removal and Installation.....	17-24
Steering Column Tilt Operation Check	17-25
Steering Column/Tilt Lever Inspection/Adjustment.....	17-26
Steering Lock Replacement.....	17-27
Rack Guide Adjustment	17-28
Steering Gearbox Removal	17-29
Steering Gearbox Overhaul	17-33
Steering Gearbox Installation	17-51
Tie-rod Ball Joint Boot Replacement	17-55
Suspension	18-1
Front and Rear Suspension	18-2
Special Tools	18-2
Component Location Index.....	18-3
Wheel Alignment.....	18-4
Wheel Bearing End Play Inspection	18-8
Wheel Runout Inspection.....	18-9
Ball Joint Removal	18-10
Damper Disposal	18-11
Front Suspension	18-12
Knuckle/Hub/Wheel Bearing Replacement.....	18-12
Ball Joint Boot Replacement.....	18-17
Stabilizer Link Replacement	18-18
Stabilizer Bar Replacement	18-19
Lower Arm Replacement	18-20
Damper/Spring Replacement	18-21
Rear Suspension	18-27
Knuckle/Hub/Wheel Bearing Replacement.....	18-27

Stabilizer Bar Replacement 18-32

Stabilizer Link Replacement 18-33

Upper Arm Replacement 18-34

Trailing Arm Replacement 18-35

Damper/Spring Replacement..... 18-36

Brakes 19A-1

Conventional Brake Components 19A-2

Special Tools 19A-2

Component Location Index 19A-3

Brake System Operation and Leakage Check..... 19A-4

Brake Pedal and Brake Pedal Position Switch Adjustment 19A-5

Parking Brake Check and Adjustment 19A-6

Brake System Bleeding..... 19A-9

Brake System Indicator Circuit Diagram 19A-10

Parking Brake Switch Test..... 19A-11

Brake Fluid Level Switch Test..... 19A-11

Front Brake Pads Inspection and Replacement 19A-12

Front Brake Disc Inspection..... 19A-18

Front Brake Caliper Overhaul 19A-19

Master Cylinder Replacement..... 19A-21

Master Cylinder Disassembly 19A-22

Master Cylinder Reassembly 19A-23

Brake Booster Pushrod Clearance Adjustment 19A-26

Brake Booster Inspection..... 19A-27

Brake Booster Replacement 19A-29

Rear Brake Pads Inspection and Replacement..... 19A-30

Rear Brake Disc Inspection 19A-32

Rear Brake Caliper Overhaul..... 19A-33

Parking Brake Drum Inspection 19A-34

Parking Brake Shoes Replacement..... 19A-36

Lining Surface Break-in..... 19A-39

Brake Hoses and Lines Inspection 19A-40

Brake Hose Replacement 19A-41

Parking Brake Cable Replacement..... 19A-42

Brakes 19B-1

ABS Components 19B-2

Special Tools 19B-2

Component Location Index 19B-3

General Troubleshooting Information 19B-4

DTC Troubleshooting Index..... 19B-10

Symptom Troubleshooting Index 19B-11

System Description 19B-12

Circuit Diagram 19B-20

System Connectors..... 19B-22

DTC Troubleshooting..... 19B-23

ABS Indicator Circuit Troubleshooting 19B-32

Brake System Indicator Circuit Troubleshooting..... 19B-34

Table Of Contents

ABS Modulator-Control Unit Removal and Installation	19B-36
Wheel Sensor Inspection	19B-38
Wheel Sensor Replacement	19B-39
Body	20-1
Doors	20-2
Component Location Index - Front Door	20-2
Component Location Index - Rear Door	20-6
Front Door Panel Removal/Installation	20-9
Front Door Outer Handle Replacement	20-11
Front Door Latch Replacement	20-14
Front Door Glass and Regulator Replacement	20-16
Front Door Glass Outer Weatherstrip Replacement	20-17
Front Door Weatherstrip Replacement	20-18
Front Door Channel Tape Replacement	20-19
Rear Door Panel Removal/Installation	20-21
Rear Door Outer Handle Replacement	20-23
Rear Door Latch Replacement	20-25
Rear Door Glass and Regulator Replacement	20-27
Rear Door Glass Outer Weatherstrip Replacement	20-30
Rear Door Weatherstrip Replacement	20-30
Rear Door Center Pillar Seal Replacement	20-31
Rear Door Channel Tape Replacement	20-32
Front and Rear Door Glass Adjustment	20-34
Front and Rear Door Position Adjustment	20-36
Front and Rear Door Striker Adjustment	20-37
Mirrors	20-38
Component Location Index	20-38
Power Mirror Replacement	20-39
Mirror Holder Replacement	20-40
Side Under Mirror Replacement	20-40
Rearview Mirror Replacement	20-41
Glass	20-43
Component Location Index	20-43
Windshield Replacement	20-45
Windshield Side Trim Retainer Installation	20-50
Quarter Glass Replacement	20-50
Hatch Glass/Hatch Glass Support Strut Replacement	20-55
Hatch Glass Disassembly/Reassembly	20-57
Hatch Glass Adjustment	20-58
Rear Window Molding Replacement	20-59
High Mount Brake Light Bracket/Wire Harness Trim Replacement	20-61
Hatch Glass Weatherstrip Replacement	20-62
Sunroof	20-63
Component Location Index	20-63
Symptom Troubleshooting Index	20-64
Glass Height Adjustment	20-65
Glass Replacement	20-65
Drain Channel Replacement	20-66

Sunshade Replacement.....	20-67
Motor Replacement.....	20-68
Frame and Drain Tube Replacement.....	20-69
Drain Channel Slider and Cable Assembly Replacement.....	20-71
Position Switch Adjustment.....	20-73
Closing Force and Opening Drag Check	20-74
Interior Trim	20-75
Component Location Index	20-75
Trim Removal/Installation - Door Area	20-76
Trim Removal/Installation - Rear Side Area.....	20-77
Trim Removal/Installation - Rear Side Pillar Area.....	20-78
Trim Removal/Installation - Cargo Area.....	20-79
Trim Removal/Installation - Tailgate Area.....	20-80
Headliner Removal/Installation	20-81
Carpet Replacement	20-85
Dashboard	20-87
Instrument Panel Removal/Installation	20-87
Driver's Dashboard Lower Cover Removal/Installation.....	20-88
Driver's Dashboard Under Cover Removal/Installation.....	20-89
Dashboard Center Panel Removal/Installation	20-89
Dashboard Center Tray Removal/Installation	20-90
Heater Control Panel Removal/Installation	20-91
Dashboard Center Lower Cover Removal/Installation - A/T	20-91
Dashboard Center Lower Cover Removal/Installation - M/T	20-93
Passenger's Dashboard Under Cover Removal/Installation.....	20-95
Glove Box Removal/Installation	20-95
Dashboard Side Vent Removal/Installation	20-96
Dashboard Removal/Installation	20-96
Steering Hanger Beam Replacement	20-99
Seats	20-102
Component Location Index	20-102
Front Seat Removal/Installation.....	20-103
Front Seat Center Table Replacement	20-106
Front Seat Armrest Replacement	20-107
Front Seat Disassembly/Reassembly - With Manual Height Adjustable.....	20-108
Front Seat Disassembly/Reassembly - Without Manual Height Adjustable.....	20-109
Front Seat Cover Replacement	20-110
Rear Seat Removal/Installation	20-114
Rear Seat Armrest Replacement.....	20-115
Rear Seat Armrest Cover Replacement	20-116
Right Rear Seat Cover Replacement.....	20-117
Left Rear Seat Cover Replacement	20-123
Right Rear Seat-back Lock Control Cable Replacement.....	20-127
Rear Seat-back Latch Lever Replacement	20-128
Bumpers	20-130
Front Bumper Removal/Installation.....	20-130
Rear Bumper Removal/Installation	20-131
Hood	20-132
Adjustment.....	20-132

Table Of Contents

Hood Seal Replacement.....	20-133
Hood Insulator Replacement	20-134
Tailgate	20-135
Tailgate Adjustment.....	20-135
Tailgate Striker Adjustment.....	20-136
Tailgate Wedge Adjustment.....	20-136
Tailgate Support Strut Replacement.....	20-137
Tailgate Weatherstrip Replacement	20-137
Fuel Fill Door	20-138
Adjustment.....	20-138
Exterior Trim	20-139
Front Grille Replacement.....	20-139
Cowl Covers Replacement	20-140
Windshield Side Trim Replacement.....	20-142
Roof Side Front Trim Replacement	20-142
Roof Side Rear Trim Replacement.....	20-144
Front Wheel Arch Protector Replacement	20-145
Rear Wheel Arch Protector Replacement.....	20-146
Door Moldings Replacement	20-147
Door Lower Trim Replacement.....	20-148
Side Sill Panel Replacement	20-149
Tailgate Lower Trim Replacement.....	20-150
Rear Window Wiper Lifter Replacement.....	20-151
Rear Window Wiper Protection Tape Replacement	20-152
Emblem/Sticker Replacement	20-153
Fenderwell	20-155
Front Inner Fender Replacement.....	20-155
Front Fender Fairing Replacement.....	20-156
Fuel Pipe Protector Replacement.....	20-157
Rear Air Outlet Replacement.....	20-157
Openers	20-158
Component Location Index.....	20-158
Hood Opener Cable Replacement.....	20-159
Fuel Fill Door Opener Cable Replacement.....	20-160
Hood Latch Replacement	20-162
Tailgate Handle Replacement	20-163
Tailgate Latch Replacement.....	20-164
Tailgate Stopper Assembly Replacement.....	20-165
Hatch Glass Latch Replacement	20-166
Hatch Glass Actuator Replacement.....	20-167
Frame	20-168
Sub-frame Replacement.....	20-168
Frame Stiffener Replacement.....	20-170
Frame Repair Chart	20-171
HVAC	21-1
Heating	21-2

Special Tools	21-2
SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If HVAC maintenance is required).....	21-2
Component Location Index	21-3
General Troubleshooting Information	21-4
DTC Troubleshooting Index	21-5
Symptom Troubleshooting Index	21-6
System Description	21-7
Circuit Diagram	21-8
DTC Troubleshooting	21-9
Recirculation Control Motor Circuit Troubleshooting	21-18
Heater Control Power and Ground Circuits Troubleshooting.....	21-20
Air Mix Control Motor Test	21-21
Air Mix Control Motor Replacement	21-21
Mode Control Motor Test	21-22
Mode Control Motor Replacement	21-22
Recirculation Control Motor Test	21-23
Recirculation Control Motor Replacement	21-23
Power Transistor Test.....	21-24
Heater Control Panel Removal and Installation	21-24
Heater Control Panel Bulb Replacement	21-25
Dust and Pollen Filter Replacement (With Air Conditioning)	21-25
Blower Unit Removal and Installation	21-26
Blower Unit Components Replacement	21-27
Heater Unit/Core Replacement.....	21-28
Heater Valve Cable Adjustment.....	21-30
Air Conditioning	21-31
Component Location Index	21-31
A/C Service Tips and Precautions	21-33
A/C Refrigerant Oil Replacement.....	21-33
Symptom Troubleshooting Index	21-35
System Description	21-36
Circuit Diagram	21-37
Condenser Fan Circuit Troubleshooting	21-38
Radiator and Condenser Fans Common Circuit Troubleshooting	21-39
Compressor Clutch Circuit Troubleshooting	21-40
A/C Pressure Switch Circuit Troubleshooting	21-42
Evaporator Temperature Sensor Replacement	21-44
Evaporator Temperature Sensor Test	21-44
Evaporator Core Replacement	21-45
Compressor Replacement	21-46
Compressor Clutch Check.....	21-47
Compressor Clutch Overhaul.....	21-48
Compressor Thermal Protector Replacement	21-50
Compressor Relief Valve Replacement	21-50
Condenser Replacement	21-51
Receiver/Dryer Desiccant Replacement	21-52
Refrigerant Recovery	21-53
System Evacuation	21-54
System Charging	21-55
Refrigerant Leak Test	21-56
A/C System Tests	21-57

Table Of Contents

Climate Control	21-60
Component Location Index.....	21-60
General Troubleshooting Information	21-63
DTC Troubleshooting Index.....	21-64
Symptom Troubleshooting Index.....	21-65
System Description.....	21-66
Circuit Diagram	21-67
DTC Troubleshooting.....	21-69
Recirculation Control Motor Circuit Troubleshooting	21-83
Climate Control Power and Ground Circuits Troubleshooting	21-85
A/C Pressure Switch Circuit Troubleshooting.....	21-86
ECT Sensor Circuit Troubleshooting	21-87
In-car Temperature Sensor Replacement	21-88
In-car Temperature Sensor Test.....	21-88
Outside Air Temperature Sensor Replacement.....	21-89
Outside Air Temperature Sensor Test	21-89
Sunlight Sensor Replacement	21-90
Sunlight Sensor Test	21-90
Climate Control Unit Removal and Installation	21-91
Climate Control Unit Bulb Replacement	21-91
 Body Electrical	 22A-1
Special Tools	22A-2
General Troubleshooting Information	22A-3
Tips and Precautions	22A-3
5-step Troubleshooting	22A-6
Wire Color Codes	22A-6
Relay and Control Unit Locations	22A-7
Engine Compartment.....	22A-7
Dashboard	22A-8
Rear	22A-11
Door	22A-12
Seat	22A-13
Wire Harness and Ground Locations	22A-14
Engine Compartment.....	22A-14
Dashoard	22A-19
Floor	22A-24
Door	22A-26
Roof	22A-28
Rear/Tailgate	22A-30
Seat	22A-32
Blower	22A-34
Fuse/Relay Boxes	22A-35
Connector to Fuse/Relay Box Index	22A-35
Power Distribution	22A-37
Fuse to Component Index	22A-37
Circuit Identification	22A-40

Ground Distribution	22A-48
Circuit Identification.....	22A-48
Under-dash Fuse/Relay Box	22A-58
Removal and Installation.....	22A-58
Battery	22A-59
Battery Test.....	22A-59
Relays	22A-60
Power Relay Test.....	22A-60
Ignition Switch	22A-63
Test.....	22A-63
Gauges	22A-64
Component Location Index	22A-64
Self-diagnostic Procedure	22A-66
Circuit Diagram	22A-68
Gauge Bulb Replacement	22A-73
Gauge Assembly Replacement	22A-74
Coolant Temperature Gauge Troubleshooting	22A-74
Vehicle Speed Signal Circuit Troubleshooting	22A-75
VSS Replacement	22A-77
Outside Air Temperature Indicator Test	22A-78
Exterior Lights	22A-79
Component Location Index.....	22A-79
Circuit Diagram - With Daytime Running Lights	22A-82
Circuit Diagram - Front/Rear Fog Lights	22A-84
Circuit Diagram	22A-86
Circuit Diagram - Front Fog Lights	22A-87
Circuit Diagram - Rear Fog Light	22A-88
Circuit Diagram - Headlights Adjuster	22A-89
Circuit Diagram - Brake Lights	22A-90
Circuit Diagram - Back-up Lights	22A-91
Combination Light Switch Test/Replacement	22A-92
Headlight Adjuster Unit Troubleshooting	22A-94
Headlight Adjuster Switch Test	22A-95
Headlight Replacement	22A-96
Headlight Adjustment	22A-96
Damaged Headlight Alignment Pin Procedure	22A-97
Taillight Replacement	22A-98
High Mount Brake Light Replacement	22A-98
License Plate Light Replacement	22A-99
Brake Pedal Position Switch Test	22A-99
Front Fog Lights Replacement	22A-100
Front Fog Lights Adjustment	22A-100
Side Turn Signal Lights Replacement	22A-101
Turn Signal/Hazard Flasher	22A-102
Component Location Index.....	22A-102
Circuit Diagram	22A-103
Turn Signal/Hazard Relay Input Test	22A-104

Table Of Contents

Hazard Warning Switch Test	22A-105
Interior Lights	22A-106
Component Location Index.....	22A-106
Circuit Diagram	22A-107
Spotlights Test/Replacement	22A-108
Ceiling Light Test/Replacement	22A-109
Glove Box Light Test/Replacement	22A-109
Hatch Glass Latch Switch Test	22A-110
Tailgate Switch Test/Replacement	22A-110
Entry Light Control System	22A-111
Component Location Index.....	22A-111
Circuit Diagram	22A-112
Ignition Key Switch Test	22A-113
Ignition Key Light Test	22A-113
Control Unit Input Test	22A-114
Stereo Sound System	22A-116
Component Location Index.....	22A-116
Circuit Diagram	22A-117
Audio Unit Removal/Installation	22A-118
Audio Unit Connector Replacement	22A-119
Speaker Replacement	22A-120
Roof Antenna Replacement	22A-121
Rear Window Defogger	22A-122
Component Location Index.....	22A-122
Circuit Diagram	22A-123
Function Test	22A-124
Defogger Wire Repair	22A-124
Noise Condenser Capacity Test	22A-125
Sunroof	22A-126
Component Location Index.....	22A-126
Circuit Diagram	22A-127
Motor Test	22A-128
Switch Test/Replacement	22A-129
Power Mirrors	22A-130
Component Location Index.....	22A-130
Circuit Diagram	22A-131
Circuit Diagram - With Retract Power Mirror	22A-132
Function Test	22A-133
Power Mirror Switch Test/Replacement	22A-135
Power Mirror Actuator Test	22A-136
Power Mirror Actuator Replacement	22A-137
Cigarette Lighter	22A-139
Circuit Diagram	22A-139
Replacement.....	22A-139
Horns	22A-140
Component Location Index.....	22A-140
Circuit Diagram	22A-141

Horn Test/Replacement	22A-141
Horn Switch Test	22A-142
Power Windows	22A-143
Component Location Index	22A-143
Circuit Diagram - With UP-AUTO Function	22A-144
Circuit Diagram - Without UP-AUTO Function	22A-146
Master Switch Input Test - With UP-AUTO Function	22A-148
Master Switch Input Test - Without UP-AUTO Function	22A-150
Master Switch Test/Replacement	22A-152
Passenger's Window Switch Test/Replacement	22A-153
Driver's Window Motor Test - With UP-AUTO Function	22A-154
Driver's Window Motor Test - Without UP-AUTO Function	22A-155
Passenger's Window Motor Test	22A-156
Resetting the Power Window Control Unit	22A-157
Keyless/Power Door Lock System	22A-158
Component Location Index	22A-158
Circuit Diagram - With Super Locking	22A-160
Circuit Diagram - Without Super Locking	22A-163
Keyless Receiver Unit Input Test	22A-165
Control Unit Input Test - Without Super Locking	22A-166
Control Unit Input Test - With Super Locking	22A-169
Super Locking Control Unit Input Test	22A-172
Door Lock Actuator Test	22A-174
Transmitter Test	22A-176
Transmitter Programming	22A-176
Door Lock Switch Test	22A-177
Tailgate Lock Actuator Test	22A-178
Hatch Glass Opener Actuator Test	22A-178
Hatch Glass Opener	22A-179
Component Location Index	22A-179
Circuit Diagram	22A-180
Hatch Glass Latch Switch Test	22A-181
Hatch Glass Opener Switch Test/Replacement	22A-181
Seat Heaters	22A-182
Component Location Index	22A-182
Circuit Diagram	22A-183
Seat Heater Test	22A-184
Seat Heater Relay Test	22A-184
Seat Heater Switch Test/Replacement	22A-185
Immobilizer System	22A-186
Component Location Index	22A-186
System Description	22A-187
Circuit Diagram	22A-189
Troubleshooting	22A-190
Immobilizer Control Unit-Receiver Replacement	22A-191
Security Alarm System	22A-192
Component Location Index	22A-192
System Description	22A-195

Table Of Contents

Circuit Diagram	22A-196
Security Control Unit Input Test	22A-199
Door Lock Knob Switch Test	22A-202
Hood Switch Test	22A-204
Door Key Cylinder Switch Test	22A-204
Tailgate Lock Knob Switch Test	22A-205
Security Horn Test	22A-205
Wipers/Washers	22A-206
Component Location Index.....	22A-206
System Description	22A-209
Circuit Diagram - Windshield	22A-210
Circuit Diagram - Headlight Washer	22A-211
Circuit Diagram - Rear Window	22A-212
Washer Motor Test	22A-213
Wiper/Washer Switch Test/Replacement	22A-214
Control Unit Input Test	22A-216
Headlight Washer Control Unit Input Test	22A-218
Rear Wiper Control Unit Input Test	22A-220
Wiper Motor Test	22A-222
Wiper Motor Replacement	22A-223
Washer Reservoir Replacement	22A-224
Washer Tubes Replacement	22A-225
Multiplex Control System	22A-227
Component Location Index.....	22A-227
Circuit Diagram	22A-228
System Description	22A-230
Troubleshooting	22A-231
Multiplex Control Unit Input Test	22A-235
Accessory Power Socket	22A-238
Circuit Diagram	22A-238
Test/Replacement	22A-239
Navigation System	22B-1
Special Tools	22B-2
Component Location Index	22B-3
General Troubleshooting Information	22B-4
General Operation	22B-4
Anti-theft Feature	22B-4
Symptom Diagnosis.....	22B-4
Self-Inertial Navigation Limitations	22B-4
Global Positioning System (GPS) Limitations.....	22B-4
LCD Display Unit Limitations	22B-5
Symptom Duplication	22B-5
Service Precautions.....	22B-5
Symptom Troubleshooting Index	22B-6
System Description	22B-7
Connector Locations.....	22B-7

AVN Unit Inputs and Outputs for Connector A (12P).....	22B-8
AVN Inputs and Outputs for GPS antenna 2P Connector	22B-9
Overview	22B-10
Navigation Function	22B-11
Circuit Diagram	22B-15
Symptom Troubleshooting	22B-16
No picture is shown on the display	22B-16
The picture is missing a Red, Green or Blue color or tone	22B-17
Satellite mark in the GPS mark is not indicated.....	22B-18
Audio driving instructions cannot be heard	22B-18
Vehicle position does not move on the map	22B-19
Picture Diagnosis Test	22B-20
Start-up procedure	22B-20
Operation keys.....	22B-20
Diagnosis items:.....	22B-20
Cyclic Diag	22B-20
Vehicle Position	22B-20
Start demo mode	22B-20
In-line Diag.....	22B-20
System Links.....	22B-21
Monitor Check.....	22B-21
Unit Check	22B-23
Disp.....	22B-23
GPS	22B-23
Navi ECU	22B-23
System History.....	22B-23
Car Status	22B-24
Yaw Rate	22B-24
Forced Starting of Display	22B-25
DVD-ROM Replacement	22B-25
AVN Unit Removal/Installation	22B-26
GPS Antenna Removal/Installation	22B-26
Clock Display Size and Location Adjustment	22B-27
Restraints	23-1
Restraints	23-2
Special Tools	23-2
Seat Belts	23-3
Component Location Index.....	23-3
Front Seat Belt Replacement.....	23-4
Rear Seat Belt Replacement	23-8
Inspection.....	23-12
SRS	23-14
Component Location Index.....	23-14
Precautions and Procedures.....	23-16

Table Of Contents

General Troubleshooting Information	23-25
DTC Troubleshooting Index	23-31
Symptom Troubleshooting Index	23-38
System Description	23-39
Circuit Diagram	23-41
Connectors	23-43
DTC Troubleshooting.....	23-45
SRS Indicator Circuit Troubleshooting.....	23-124
Component Replacement/Inspection After Deployment.....	23-134
Driver's Airbag Replacement	23-135
Front Passenger's Airbag Replacement	23-136
Side Airbag Replacement	23-137
Airbag Disposal.....	23-138
Cable Reel Replacement.....	23-141
SRS Unit Replacement.....	23-144
Side Impact Sensor Replacement	23-145
OPDS Unit Replacement	23-146
Front Sensor Replacement.....	23-147

Supplement77-1

Fuel and Emissions Systems 77-2

Special Tools	77-2
General Troubleshooting Information	77-3
DTC Troubleshooting Index.....	77-5
DTC Troubleshooting.....	77-6
MIL Circuit Troubleshooting	77-33
Throttle Body Test	77-45

Automatic Transmission 77-46

DTC with [D] Indicator Light Troubleshooting Procedures.....	77-46
DTC Troubleshooting Index	77-47

Wiring diagrams78-1

Starting System, Charging System, Ignition System 78-2

Gauge Assembly (Gauges, Indicator Lights, Dash Lights Brightness Control 78-6

Gauge Assembly (Indicator Lights, Warning Lights) 78-10

Gauge Assembly (A/T Gear Position Indicator), Cruise Control System 78-14

Exterior Lights (With Front Fog Lights, Without Front Fog Lights or Rear Fog Lights 78-18

Exterior Lights (With Rear Fog Lights) 78-22

Exterior Lights (With Front and Rear Fog Lights) 78-26

Exterior Lights (With Daytime Running Lights and Rear Fog Light) 78-30

Exterior Lights (Back-up Lights, Brake Lights, Turn Signal/Hazard Flasher) 78-34

Exterior Lights (Headlight Adjuster System), Interior Lights, Horns 78-38

Power Mirror 78-42

Sunroof, Power Windows 78-46

Power Window, Cigarette Lighter, Accessory Power Socket	78-50
Navigation System, Stereo Sound System	78-54
Seat Heater, Wipers/Washers (Headlight Washer)	78-58
Wipers/Washers (Windshield Rear)	78-62
Multiplex Control System (Fog Light Control, Immobilizer Control, Interlock Control, Intermittent Wiper Control, Entry Lights Control)	78-66
Keyless/Power Door Lock System (With Super locking System)	78-70
Keyless/Power Door Lock System (Without Super locking System)	78-74
Security Alarm System (With Super Locking System)	78-78
Security Alarm System (Without Super Locking System)	78-82
Interlock System, ABS	78-86
SRS	78-90
Fan Controls, HVAC	78-94
PGM-FI System, Immobilizer System	78-98
PGM-FI System	78-102
PGM-FI System (A/T)	78-106

Index

Numerics

2nd Clutch Pressure Switch

Replacement 14-121

3rd Clutch Pressure Switch

Replacement 14-121

3rd/4th Clutch Assembly

Disassembly 14-235

Inspection 14-240

Reassembly 14-247

A

A/C

Circuit Diagram 21-37

Component Location Index 21-31

Description 21-36

Test 21-57

A/C Compressor

Replacement 21-46

A/C Compressor Clutch

Inspection 21-47

Overhaul 21-48

A/C Compressor Clutch Circuit

Troubleshooting 21-40

A/C Compressor Relief Valve

Replacement 21-50

A/C Compressor Thermal Protector

Replacement 21-50

A/C Condenser

Replacement 21-51

A/C Condenser Fan Circuit

Troubleshooting 21-38

A/C Pressure Switch Circuit

Troubleshooting 21-42, 21-86

A/C Signal Circuit

Troubleshooting 11-142

A/T Assembly

Installation 14-143

Removal 14-135

A/T Clutch End Plate

Inspection	14-242
A/T Clutch Pressure Control Solenoid Valves	
Replacement	14-117, 14-119
Test	14-116, 14-118
A/T Clutch Waved-plate	
Inspection	14-241
A/T Countershaft Assembly	
Disassembly/Inspection/Reassembly	14-221
A/T Differential	
Component Location Index	14-264
A/T Gear Position Indicator	
Input Test	14-167
Replacement	14-171
A/T Gear Position Indicator System	
Circuit Diagram	14-166
Component Location Index	14-165
A/T Hydraulic Controls	
Test	14-110
A/T Mainshaft Assembly	
Disassembly/Inspection/Reassembly	14-218
A/T Reverse Idler Gear	
Removal/Installation	14-204
A/T Secondary Shaft Assembly	
Disassembly/Inspection/Reassembly	14-227
A/T Shift Cable	
Adjustment	14-162
Replacement	14-157
A/T Shift Lever	
Disassembly/Reassembly	14-156
Installation	14-154
Removal	14-152
ABS Indicator Circuit	
Troubleshooting	19B-32
ABS Modulator-Control Unit	
Removal/Installation	19B-36
ABS/TCS Components	
Circuit Diagram	19B-20
Component Location Index	19B-3
Description	19B-12
Accessory Power Socket, Front	
Test/Replacement	22A-239
Accessory Power Sockets	
Circuit Diagram	22A-238

Index

Air Cleaner	
Replacement	11-182
Air Cleaner Element	
Replacement	11-182
Air Mix Control Motor	
Replacement	21-21
Test	21-21
Airbag, Driver's	
Repair	23-138
Replacement	23-135
Airbag, Front Passenger's	
Replacement	23-136
Alternator	
Overhaul	04-48
Replacement	04-46
Alternator FR Signal Circuit	
Troubleshooting	11-143
Antenna	
Replacement	22A-121
ATF	
Inspection	14-130
Replacement	14-131
ATF Cooler Lines and Hoses	
Replacement	14-151
ATF Feed Pipes, End Cover	
Replacement	14-197
ATF Pump	
Inspection	14-210
ATF Temperature Sensor	
Test/Replacement	14-122
Audio Unit	
Removal/Installation	22A-118
Audio Unit Connector	
Replacement	22A-119
Audio/Entertainment	
Circuit Diagram	22A-117
Component Location Index	22A-116
Automatic Climate Control	
Circuit Diagram	21-67
Component Location Index	21-60
Description	21-66
Automatic Transaxle	
Description	14-19

Test	14-107
B	
Back-Up Light Switch	
Test	13-4
Back-up Lights	
Circuit Diagram	22A-91
Ball Joints	
Removal	18-10
Battery	
Test	22A-59
Blower Motor	
Replacement	21-27
Blower Power Transistor	
Test	21-24
Blower Unit	
Removal/Installation	21-26
Brake Booster	
Adjustment	19A-26
Inspection	19A-27
Replacement	19A-29
Brake Calipers	
Overhaul, Front	19A-19
Overhaul, Rear	19A-33
Brake Discs	
Inspection, Front	19A-18
Inspection, Rear	19A-32
Brake Fluid Level Switch	
Test	19A-11
Brake Lights	
Circuit Diagram	22A-90
Brake Lines and Hoses	
Inspection	19A-40
Replacement	19A-41
Brake Master Cylinder	
Disassembly	19A-22
Reassembly	19A-23
Replacement	19A-21
Brake Pads	
Inspection/Replacement, Front	19A-12
Inspection/Replacement, Rear	19A-30
Brake Pedal	

Index

Adjustment	19A-5
Brake Pedal Position Switch	
Test	22A-99
Brake Pedal Position Switch Signal Circuit	
Troubleshooting	11-146
Brake System Indicator Circuit	
Circuit Diagram Conventional Brake Components	19A-10
Troubleshooting ABS/TCS Components	19B-34
Bulb, Gauge	
Replacement	22A-73
Bumper, Front	
Removal/Installation	20-130
Bumper, Rear	
Removal/Installation	20-131
C	
Cable Reel	
Replacement	23-141
Camshaft	
Inspection	06-30
Carpet	
Replacement	20-85
Catalytic Converter	
Inspection	11-188
Catalytic Converter System	
Test	11-189
Ceiling Light	
Test/Replacement	22A-109
Charging System	
Circuit Diagram	04-39
Component Location Index	04-38
Troubleshooting	04-40
Cigarette Lighter	
Circuit Diagram	22A-139
Replacement	22A-139
CKP (Crankshaft Position) Sensor	
Replacement	11-119
Climate Control Power and Ground Circuits	
Troubleshooting	21-85
Climate Control Unit	
Removal/Installation	21-91

Climate Control Unit Bulb

Replacement 21-91

Clutch

Component Location Index 12-3

Replacement 12-11

Clutch Master Cylinder

Overhaul 12-6

Replacement 12-5

Clutch Pedal

Adjustment 12-4

Clutch Slave Cylinder

Overhaul 12-10

Replacement 12-8

CMP (Camshaft Position) Sensor

Replacement 11-138

Combination Light Switch

Test/Replacement 22A-92

Connecting Rod Bearings

Replacement 07-8

Connecting Rod Bolts

Inspection 07-24

Connecting Rods

Inspection 07-5

Connector and Wire Harness Indexes

Component Connectors (to harness) 22A-14

Control Shaft Bearing

Replacement 14-197

Control Shaft Oil Seal, End Cover

Replacement 14-196

Control Shaft Oil Seal, Torque Converter Housing

Replacement 14-217

Conventional Brake Components

Component Location Index 19A-3

Inspection 19A-4

Repair 19A-9

Coolant

Inspection 10-6

Replacement 10-6

Coolant Temperature Gauge

Troubleshooting 22A-74

Cooling System

Component Location Index 10-2

Index

Countershaft Bearing, Torque Converter Housing

Replacement 14-215

Countershaft Bearings

Replacement 13-46

Countershaft Reverse Selector Hub

Installation 14-224, 14-226

Removal 14-223, 14-225

Cowl Cover

Replacement 20-140

Crankshaft

Inspection 07-14

Installation 07-24

Removal 07-12

Crankshaft Main Bearings

Replacement 07-6

Crankshaft Pulley

Removal/Installation 06-11

Cruise Control Actuator

Replacement 04-62

Test 04-61

Cruise Control Actuator Cable

Adjustment 04-63

Cruise Control Communication Circuit

Troubleshooting 04-57

Cruise Control Main Switch

Test/Replacement 04-60

Cruise Control Set/Resume/Cancel Switch

Test/Replacement 04-60

Cruise Control System

Circuit Diagram 04-54

Component Location Index 04-53

Cruise Control Unit

Input Test 04-58

Cylinder Head Assembly

Component Location Index 06-3

Inspection 06-6

Installation 06-40

Removal 06-24

Cylinder Head Cover

Installation 06-42

Removal 06-23

Cylinder Head, Bare

Inspection 06-26

D**Dampers, Front**

Repair	18-11
Replacement	18-21

Dampers, Rear

Replacement	18-36
-------------------	-------

Dash Vents

Removal/Installation	20-96
----------------------------	-------

Dashboard

Removal/Installation	20-96
----------------------------	-------

Dashboard Center Lower Cover

A/T Removal/Installation	20-91
M/T Removal/Installation	20-93

Dashboard Center Panel

Removal/Installation	20-89
----------------------------	-------

Dashboard Center Tray

Removal/Installation	20-90
----------------------------	-------

Dashboard Lower Cover

Removal/Installation	20-88
----------------------------	-------

Dashboard Under Cover

Driver's Removal/Installation	20-89
Passenger's Removal/Installation	20-95

Differential Carrier Bearing Outer Races, A/T

Replacement	14-268
-------------------	--------

Differential Carrier Bearings, A/T

Inspection	14-270
Replacement	14-265

Differential Carrier Bearings, M/T

Replacement	13-59
-------------------	-------

Differential Carrier, A/T

Inspection	14-265
Replacement	14-266

Differential Fluid, Rear

Inspection/Replacement	15-13
------------------------------	-------

Differential Housing, Rear

Removal/Installation	15-15
----------------------------	-------

Differential Mount, Rear

Replacement	15-27
-------------------	-------

Differential Oil Seal, Rear

Replacement	15-16
-------------------	-------

Differential Oil Seals, A/T

Index

Replacement	14-267
Differential Oil Seals, M/T	
Replacement	13-60
Differential Pinion Gears, M/T	
Inspection	13-58
DLC Circuit	
Troubleshooting	11-114
Door Channel Tapes, Outer	
Replacement Front Doors	20-19
Replacement Rear Doors	20-32
Door Glass	
Adjustment	20-34
Replacement Front Doors	20-16
Replacement Rear Doors	20-27
Door Glass Weatherstrips	
Replacement Front Doors	20-17
Replacement Rear Doors	20-30
Door Key Cylinder Switches	
Test	22A-204
Door Latches	
Replacement Front Doors	20-14
Replacement Rear Doors	20-25
Door Lock Actuators	
Test	22A-174
Door Lock Knob Switches	
Test	22A-202
Door Lock Switches	
Test	22A-177
Door Lower Trim	
Replacement	20-148
Door Moldings	
Replacement	20-147
Door Outer Handles	
Replacement Front Doors	20-11
Replacement Rear Doors	20-23
Door Panels	
Removal/Installation Front Doors	20-9
Removal/Installation Rear Doors	20-21
Door Seals	
Replacement	20-31
Door Strikers	
Adjustment	20-37

Door Weatherstrips

Replacement Front Doors	20-18
Replacement Rear Doors	20-30

Drive Belt

Inspection	04-43
Replacement	04-44

Drive Belt Auto-tensioner

Inspection	04-44
Replacement	04-45

DTC Troubleshooting Indexes

ABS/TCS Components	19B-10
Automatic Climate Control	21-64
Automatic Transaxle	14-7, 77-47
Fuel and Emissions	11-6, 77-5
Heating/Ventilation	21-5
SRS	23-31

Dust and Pollen Filter

Replacement	21-25
-------------------	-------

E**ECM**

How-to Information	77-3
--------------------------	------

ECT Sensor

Replacement	11-120
-------------------	--------

ECT Sensor Circuit

Troubleshooting	21-87
-----------------------	-------

Emblems

Replacement	20-153
-------------------	--------

End Cover, A/T

Installation	14-259
Removal	14-192

Engine Assembly

Installation	05-10
Removal	05-3

Engine Block Assembly

Component Location Index	07-3
--------------------------------	------

Engine Block, Bare

Inspection	07-15
Repair	07-17

Entry Light Control System

Circuit Diagram	22A-112
Component Location Index	22A-111

EVAP Canister

Replacement	11-199
-------------------	--------

Index

EVAP Control System

Component Location Index	11-191
Troubleshooting	11-195

EVAP Two Way Valve

Test	11-198
------------	--------

Evaporator Temperature Sensor

Replacement	21-44
Test	21-44

Exhaust Manifold

Removal/Installation	09-8
----------------------------	------

Exhaust Pipe

Replacement	09-9
-------------------	------

F

Fan Controls

Circuit Diagram	10-13
Component Location Index	10-11

Fender Fairing, Front

Replacement	20-156
-------------------	--------

Fender Moldings

Replacement	20-145
-------------------	--------

Final Driven Gear, M/T

Replacement	13-58
-------------------	-------

Fog Lights

Adjustment	22A-100
Circuit Diagram	22A-84
Replacement	22A-100

Frame

Repair Chart	20-171
--------------------	--------

Frame Pipes

Replacement	20-170
-------------------	--------

Front Corner Mirror

Replacement	20-40
-------------------	-------

Front Doors

Adjustment	20-36
Component Location Index	20-2

Front Driveshaft Assembly

Disassembly	16-5
Inspection	16-3
Installation	16-17
Reassembly	16-9
Removal	16-3

Front Impact Sensors

Replacement	23-147
Front Speakers	
Replacement	22A-120
Front Suspension	
Component Location Index	18-3
Fuel and Emissions	
Description	11-10
Fuel Fill Door	
Adjustment	20-138
Fuel Fill Door Opener Cable	
Replacement	20-160
Fuel Filter	
Replacement	11-166
Fuel Gauge Sending Unit	
Test	11-173
Fuel Injection System (PGM-FI)	
Component Location Index	11-59
Fuel Injectors	
Replacement	11-117
Troubleshooting	11-116
Fuel Lines and Hoses	
Inspection	11-156
Installation	11-162
Removal	11-161
Fuel Pipe Protector	
Replacement	20-157
Fuel Pressure Regulator	
Replacement	11-165
Fuel Pump	
Replacement	11-167
Fuel Pump Circuit	
Troubleshooting	11-151
Fuel Supply System	
Adjustment	11-154
Component Location Index	11-149
Test	11-154
Fuel Tank	
Replacement	11-169
Fuse/Relay Indexes	
Power Distribution	22A-37
Under-dash Fuse/Relay Box	22A-36
Under-hood Fuse/Relay Box, Main	22A-35

Index

G

Gauge Assembly

Replacement 22A-74

Gauges

Circuit Diagram 22A-68

Component Location Index 22A-64

How-to Information 22A-66

General Information Section 01-

Glove Box

Removal/Installation 20-95

Glove Box Light

Test/Replacement 22A-109

GPS Antenna

Removal/Installation 22B-26

Grille

Replacement 20-139

Ground Distribution

Circuit Diagram 22A-48

H

Hatch Glass

Adjustment 20-58

Circuit Diagram 22A-180

Component Location Index 22A-179

Disassembly/Reassembly 20-57

Replacement 20-55

Hatch Glass Latch

Replacement 20-166

Hatch Glass Latch Switch

Test, Hatch Glass 22A-181

Test, Tailgate Light 22A-110

Hatch Glass Opener Solenoid

Replacement Hatch Glass 20-167

Test, Keyless Entry/Security Alarm System 22A-178

Hatch Glass Opener Switch

Test/Replacement 22A-181

Hatch Glass Weatherstrip

Replacement 20-62

Hazard Warning Switch

Test 22A-105

Headlight

Adjustment 22A-96

How-to Information	22A-97
Replacement	22A-96
Headlight Adjuster Switch	
Test	22A-95
Headlight Adjuster Unit	
Troubleshooting	22A-94
Headlight Washer Control Unit	
Input Test	22A-218
Headlights	
Circuit Diagram	22A-82, 22A-86, 22A-89
Headliner	
Removal/Installation	20-81
Heater Control Panel	
Removal and Installation Heating/Ventilation	21-24
Removal/Installation Dashboard	20-91
Heater Control Panel Bulb	
Replacement	21-25
Heater Control Power and Ground Circuits	
Troubleshooting	21-20
Heater Unit	
Replacement	21-28
Heater Valve Cable	
Adjustment	21-30
Heating/Ventilation	
Circuit Diagram	21-8
Component Location Index	21-3
Description	21-7
High Mount Brake Light	
Replacement	22A-98
High Mount Brake Light Bracket	
Replacement	20-61
HO2S, Primary	
Replacement	11-119
HO2S, Secondary	
Replacement	11-122
Hood	
Adjustment	20-132
Hood Insulator	
Replacement	20-134
Hood Latch	
Replacement	20-162

Index

Hood Opener Cable

Component Location Index	20-158
Replacement	20-159

Hood Seal

Replacement	20-133
-------------------	--------

Hood Switch

Test	22A-204
------------	---------

Horn

Test/Replacement	22A-141
------------------------	---------

Horn Switch

Test	22A-142
------------	---------

Horns

Circuit Diagram	22A-141
Component Location Index	22A-140

I

IAT (Intake Air Temperature) Sensor

Replacement	11-121
-------------------	--------

Idle Control System

Component Location Index	11-139
Inspection	11-148

Idler Gear

Replacement	14-234
-------------------	--------

Idler Gear Shaft

Removal/Installation	14-233
----------------------------	--------

Idler Gear Shaft Bearing

Replacement	14-196
-------------------	--------

Ignition Coil(s)

Removal/Installation	04-35
Troubleshooting	04-35

Ignition Key Light

Test	22A-113
------------	---------

Ignition Key Switch

Test	22A-113
------------	---------

Ignition Switch

Test	22A-63
------------	--------

Ignition System

Circuit Diagram	04-33
Component Location Index	04-32
Inspection	04-34

Immobilizer Control Unit-Receiver

Replacement	22A-191
-------------------	---------

Immobilizer System

Circuit Diagram

Component Location Index

Description

Troubleshooting

22A-189

22A-186

22A-187

22A-190

IMRC (Intake Manifold Runner Control) Valve

Replacement

11-187

In-car Temperature Sensor

Replacement

Test

21-88

21-88

Inner Fender, Front

Replacement

20-155

Inside Rearview Mirror

Replacement

20-41

Instrument Panel

Removal/Installation

20-87

Intake Air Bypass Control Thermal Valve

Test

11-181

Intake Air System

Component Location Index

Troubleshooting

11-176

11-177

Intake Manifold

Removal/Installation

09-2

Interlock Control Unit

Input Test

14-180

Interlock System

Circuit Diagram

Component Location Index

14-173

14-172

Intermediate Shaft Assembly

Disassembly

Installation

Reassembly

Removal

16-20

16-23

16-21

16-19

K

Key Interlock Solenoid

Test

14-181

Key Interlock System Circuit

Troubleshooting

14-179

Keyless Entry Transmitter

Repair

Test

22A-176

22A-176

Keyless Entry/Security Alarm System

Index

Circuit Diagram	22A-196
Component Location Index	22A-158, 22A-192
Description	22A-195

Keyless Receiver Unit

Input Test	22A-165
------------------	---------

Knock Sensor

Replacement	11-121
-------------------	--------

Knuckles

Replacement, Front Suspension	18-12
Replacement, Rear Suspension	18-27

L

License Plate Light

Replacement	22A-99
-------------------	--------

Lights, Exterior

Component Location Index	22A-79
--------------------------------	--------

Lights, Interior

Circuit Diagram	22A-107
Component Location Index	22A-106

Low Fuel Indicator

Test	11-175
------------	--------

Lower Arms

Replacement	18-20
-------------------	-------

Lubrication System

Component Location Index	08-3
Test	08-4

M

M/T Assembly

Disassembly	13-15
Installation	13-10
Reassembly	13-50
Removal	13-5

M/T Countershaft Assembly

Disassembly	13-36
Inspection	13-34
Reassembly	13-38

M/T Differential

Adjustment	13-61
Component Location Index	13-56

M/T Mainshaft Assembly

Adjustment	13-47
Disassembly	13-28
Inspection	13-26

Reassembly	13-31
M/T Reverse Shift Fork	
Inspection	13-21
M/T Shift Lever	
Disassembly/Reassembly	13-23
Inspection	13-22
Replacement	13-55
Main Valve Body	
Disassembly/Inspection/Reassembly	14-209
Installation	14-208, 14-252
Removal	14-205
Repair	14-207
Mainshaft 3rd Gear	
Inspection	14-219
Mainshaft Bearing, A/T Housing	
Installation	14-203
Removal	14-202
Mainshaft Bearing, Torque Converter Housing	
Replacement	14-214
Mainshaft Bearings	
Replacement	13-45
Mainshaft Speed Sensor	
Replacement	14-120
Maintenance section	03-
Map Light/Spotlight	
Test/Replacement	22A-108
MIL Circuit	
Troubleshooting	11-102, 77-33
Mirrors	
Component Location Index	20-38
Mode Control Motor	
Replacement	21-22
Test	21-22
Moonroof/Sunroof	
Circuit Diagram	22A-127
Component Location Index	20-63, 22A-126
Test	20-74
MTF	
Inspection/Replacement	13-4
Multiplex Control System	
Circuit Diagram	22A-228
Component Location Index	22A-227
Description	22A-230
Troubleshooting	22A-231

Index

Multiplex Control Unit

Input Test, Entry Light Control System	22A-114
Input Test, Keyless Entry/Security Alarm System	22A-166, 22A-169
Input Test, Multiplex Control System	22A-235
Input Test, Wiper/Washer	22A-216

N

Navigation

Adjustment	22B-27
Circuit Diagram	22B-15
Component Location Index	22B-3
Description	22B-7
How-to Information	22B-4
Repair	22B-25
Test	22B-20
Troubleshooting	22B-16

Navigation Display Unit

Removal/Installation	22B-26
----------------------------	--------

Navigation Unit DVD-ROM

Replacement	22B-25
-------------------	--------

Noise Reduction Condenser

Test	22A-125
------------	---------

O

O/D Switch

Test/Replacement	14-124
------------------------	--------

O/D Switch Circuit

Troubleshooting	14-106
-----------------------	--------

Oil Filter

Replacement	08-6
-------------------	------

Oil Filter Feed Pipe

Replacement	08-9
-------------------	------

Oil Pan

Installation	07-27
Removal	07-11

Oil Pressure Switch

Replacement	08-18
Test	08-4

Oil Pump, Engine

Overhaul	08-10
----------------	-------

Oil, Engine

Replacement	08-5
-------------------	------

OPDS Unit

Replacement	23-146
Outside Air Temperature Display	
Test	22A-78
Outside Air Temperature Sensor	
Replacement	21-89
Test	21-89
Outside Mirror Holders	
Replacement	20-40
Outside Power Mirror Actuators	
Replacement	22A-137
Test	22A-136
Outside Power Mirror Switch	
Test/Replacement	22A-135
Outside Power Mirrors	
Circuit Diagram	22A-131, 22A-132
Component Location Index	22A-130
Replacement	20-39
Test	22A-133

P

Park Lever Position Stop	
Inspection/Adjustment	14-195
Park Pin Switch	
Test/Replacement	14-187
Parking Brake	
Inspection/Adjustment	19A-6
Parking Brake Cable	
Replacement	19A-42
Parking Brake Drum	
Inspection	19A-34
Parking Brake Shoes	
Repair	19A-39
Replacement	19A-36
Parking Brake Switch	
Test	19A-11
PCM	
How-to Information	77-46
PCV Valve	
Test	11-190
Piston Rings	
Replacement	07-21
Pistons	

Index

Installation	07-23
Replacement	07-18
Power Distribution	
Circuit Diagram	22A-40
Power Relay	
Test	22A-60
Power Steering Fluid	
Replacement	17-11
Power Steering Lines and Hoses	
Replacement	17-12
Power Steering Pump	
Overhaul	17-14
Replacement	17-13
Test	17-9
Power Window Motor, Driver's	
Test	22A-154
Power Window Motors, Passenger's	
Test	22A-156
Power Window Switch, Master	
Input Test	22A-148, 22A-150
Repair	22A-157
Power Window Switch, Passenger's	
Test/Replacement	22A-153
Power Window Switch, Master	
Test/Replacement	22A-152
Power Windows	
Circuit Diagram	22A-144, 22A-146
Component Location Index	22A-143
Propeller Shaft	
Inspection	16-32
Installation	16-34
Removal	16-33
PSP (Power Steering Pressure) Switch Signal Circuit	
Troubleshooting	11-145

Q

Quarter Window Glass

Replacement	20-50
-------------------	-------

R

Radiator

Replacement	10-10
-------------------	-------

Test	10-3
Radiator and Condenser Fans Common Circuit	
Troubleshooting	21-39
Radiator Cap	
Test	10-3
Radiator Fan Assembly	
Test	10-4
Radiator Fan Circuit	
Troubleshooting	10-14
Radiator Fan Switch	
Replacement	10-17
Test	10-17
Radiator Fan Switch Circuit	
Troubleshooting	10-16
Realtime 4WD System	
Description	15-3
Test	15-9
Rear Air Outlet	
Replacement	20-157
Rear Differential	
Disassembly	15-18
Installation	15-25
Reassembly	15-21
Removal	15-14
Rear Doors	
Component Location Index	20-6
Rear Driveshaft Assembly	
Disassembly	16-25
Installation	16-31
Reassembly	16-27
Removal	16-24
Rear Window Defogger	
Circuit Diagram	22A-123
Component Location Index	22A-122
Rear Window Defogger Wires	
Repair	22A-124
Test	22A-124
Rear Window Molding	
Replacement	20-59
Rear Window Wiper Control Unit	
Input Test	22A-220
Receiver/Dryer Desiccant	
Replacement	21-52

Index

Recirculation Control Motor

Replacement	21-23
Test	21-23

Recirculation Control Motor Circuit

Troubleshooting	21-18, 21-83
-----------------------	--------------

Refrigerant

Replacement	21-53
Test	21-56

Refrigerant Oil

Replacement	21-33
-------------------	-------

Regulator Valve Body

Disassembly/Inspection/Reassembly	14-211
---	--------

Reverse Lock System Circuit

Troubleshooting	14-178
-----------------------	--------

Rocker Arm Assembly

Disassembly/Reassembly	06-28
Installation	06-39
Removal	06-27

Rocker Arms

Inspection	06-29
Test	06-7

Roof Side Trim

Replacement Front	20-142
Replacement Rear	20-144

S

Seat Armrest Cover, Rear

Replacement	20-116
-------------------	--------

Seat Armrest, Front

Replacement	20-107
-------------------	--------

Seat Armrest, Rear

Replacement	20-115
-------------------	--------

Seat Belts

Component Location Index	23-3
--------------------------------	------

Seat Belts, Front

Inspection	23-12
Replacement	23-4

Seat Belts, Rear

Replacement	23-8
-------------------	------

Seat Center Table, Front

Replacement	20-106
-------------------	--------

Seat Cover, Front

Replacement	20-110
Seat Cover, Rear	
Replacement Left	20-123
Replacement Right	20-117
Seat Heater Elements	
Test	22A-184
Seat Heater Relay	
Test	22A-184
Seat Heater Switches	
Test/Replacement	22A-185
Seat Heaters	
Circuit Diagram	22A-183
Component Location Index	22A-182
Seat, Front	
Disassembly/Reassembly With Manual Height Adjustable	20-108
Disassembly/Reassembly Without Manual Height Adjustable	20-109
Removal/Installation	20-103
Seat, Rear	
Removal/Installation	20-114
Seat-back Latch Lever, Rear	
Replacement	20-128
Seat-back Lock Control Cable, Rear	
Replacement	20-127
Seats	
Component Location Index	20-102
Secondary Shaft 1st Gear	
Inspection	14-231
Secondary Shaft 2nd Gear	
Inspection	14-229
Secondary Shaft Bearing, Torque Converter Housing	
Replacement	14-216
Secondary Shaft Bearings	
Removal/Installation	14-228
Security Control Unit	
Input Test	22A-199
Security Horn	
Test	22A-205
Servo Body	
Disassembly/Inspection/Reassembly	14-212
Shift Control Solenoid Valves	
Installation A/T Electronic Control System	14-213
Replacement A/T Electronic Control System	14-114

Index

Test A/T Electronic Control System	14-112
Test Torque Converter	14-109
Shift Forks	
Disassembly/Reassembly	13-25
Inspection	13-24
Shift Lock Solenoid	
Test/Replacement	14-...
Shift Lock System Circuit	
Troubleshooting	14-175
Side Airbag, Driver's	
Replacement	23-137
Side Impact Sensors	
Replacement	23-145
Side Sill Panels	
Replacement	20-149
Spark Plugs	
Inspection	04-37
Specifications section	02-
SRS	
Circuit Diagram	23-41
Component Location Index	23-14
Description	23-39
Inspection/Replacement	23-134
SRS Indicator Circuit	
Troubleshooting	23-124
SRS Unit	
Replacement	23-144
Stabilizer Bar	
Replacement, Front Suspension	18-19
Replacement, Rear Suspension	18-32
Stabilizer Links	
Replacement, Front Suspension	18-18
Replacement, Rear Suspension	18-33
Starter	
Overhaul	04-24
Replacement	04-23
Test	04-21
Starter Solenoid	
Test	04-20
Starting System	
Circuit Diagram	04-18
Component Location Index	04-17
Troubleshooting	04-19
Steering	

Component Location Index	17-3
Inspection	17-7
Troubleshooting	17-6
Steering Column	
Inspection	17-25
Inspection/Adjustment	17-26
Removal/Installation	17-24
Steering Gearbox	
Installation	17-51
Overhaul	17-33
Removal	17-29
Steering Hanger Beam	
Replacement	20-99
Steering Linkage	
Inspection	17-8
Steering Lock	
Replacement	17-27
Steering Rack Guide	
Adjustment	17-28
Steering Wheel	
Disassembly/Reassembly	17-22
Inspection	17-7
Installation	17-23
Removal	17-21
Sub-frames	
Replacement	20-168
Sunlight Sensor	
Replacement	21-90
Test	21-90
Sunroof Drain Channel	
Replacement	20-66
Sunroof Drain Channel Slider	
Replacement	20-71
Sunroof Frame	
Replacement	20-69
Sunroof Glass	
Adjustment	20-65
Replacement	20-65
Sunroof Motor	
Replacement	20-68
Test	22A-128
Sunroof Position Switch	
Adjustment	20-73
Sunroof Sunshade	

Index

Replacement	20-67
Sunroof Switch	
Test/Replacement	22A-129
Super Locking Control Unit	
Input Test	22A-172
Suspension	
Adjustment	18-4
Symptom Troubleshooting Indexes	
A/C	21-35
ABS/TCS Components	19B-11
Automatic Climate Control	21-65
Automatic Transaxle	14-8
Cruise Control System	04-55
Fan Controls	10-12
Fuel and Emissions	11-8
Heating/Ventilation	21-6
Moonroof/Sunroof	20-64
Navigation	22B-6
Realtime 4WD System	15-12
SRS	23-38
Steering	17-4
Synchro Ring, Dual-cone	
Inspection	13-43
Synchro Sleeve	
Inspection/Reassembly	13-43
T	
Tailgate	
Adjustment	20-135
Tailgate Actuator	
Test	22A-178
Tailgate Handle	
Replacement	20-163
Tailgate Latch	
Replacement	20-164
Tailgate Lock Knob Switch	
Test	22A-205
Tailgate Lock Linkage	
Replacement	20-165
Tailgate Lower Trim	
Replacement	20-150
Tailgate Striker	
Adjustment	20-136
Tailgate Support Struts	

Replacement	20-137
Tailgate Switch	
Test/Replacement	22A-110
Tailgate Weatherstrip	
Replacement	20-137
Tailgate Wedge	
Adjustment	20-136
Taillight	
Replacement	22A-98
TDC Sensors	
Replacement	11-120
Thermostat	
Replacement	10-8
Test	10-4
Throttle Body	
Disassembly/Reassembly	11-186
Removal/Installation	11-185
Test	11-180, 77-45
Throttle Cable	
Adjustment	11-183
Removal/Installation	11-184
Tie-rod Ball Joint Boots	
Replacement	17-55
Timing/Cam Chain	
Inspection	06-22
Installation	06-15
Removal	06-12
Timing/Cam Chain Auto-Tensioner	
Removal/Installation	06-19
Timing/Cam Chain Case Oil Seal	
Installation	06-21
Trailing Arms	
Replacement	18-35
Transfer Assembly	
Disassembly Automatic Transaxle	14-274
Disassembly Manual Transaxle	13-68
Inspection Automatic Transaxle	14-132, 14-273
Inspection Manual Transaxle	13-63
Installation Automatic Transaxle	14-134
Installation Manual Transaxle	13-64
Overhaul Manual Transaxle	13-65
Reassembly Automatic Transaxle	14-281
Reassembly Manual Transaxle	13-73
Removal Automatic Transaxle	14-133
Removal Manual Transaxle	13-64

Index

Transfer Drive Gear

Inspection 13-67

Transfer Drive Gear Bearing

Replacement Transfer Assembly 13-71, 14-279

Transfer Driven Gear Bearing

Removal/Installation Transfer Assembly 14-279

Replacement Transfer Assembly 13-72

Transfer Holder

Disassembly Transfer Assembly 13-70, 14-277

Transfer Holder Tapered Roller Bearing

Replacement 14-278

Transfer Holder Tapered Roller Bearing Outer Race

Removal/Installation Transfer Assembly 14-278

Replacement Transfer Assembly 13-71

Transfer Housing Tapered Roller Bearing Outer Race

Replacement Transfer Assembly 13-72, 14-280

Transmission Housing

Installation 14-254

Removal 14-198

Transmission Range Switch

Replacement 14-169

Test 14-168

Trim

Component Location Index 20-75

Removal/Installation 20-76

Turn Signal Light

Replacement 22A-101

Turn Signal/Hazard Relay

Input Test 22A-104

Turn Signal/Hazard Warning Lights

Circuit Diagram 22A-103

Component Location Index 22A-102

Tweeters

Replacement 22A-120

U

Under-dash Fuse/Relay Box

Removal/Installation 22A-58

Upper Arms

Replacement 18-34

V

Valve Guides

Inspection	06-33
Replacement	06-34

Valve Seats

Repair	06-36
--------------	-------

Valves

Adjustment	06-9
Inspection	06-33
Installation	06-38
Removal	06-32

Vehicle Speed Signal Circuit

Troubleshooting	22A-75
-----------------------	--------

VSS

Replacement	22A-77
-------------------	--------

VTC Actuator

Inspection	06-8
Replacement	06-25

VTC Oil Control Solenoid Valve

Test	11-137
------------	--------

VTEC Solenoid Valve

Removal	11-138
---------------	--------

VTEC System

Component Location Index	11-123
--------------------------------	--------

W

Washer Fluid Reservoir

Replacement	22A-224
-------------------	---------

Washer Motor, Windshield

Test	22A-213
------------	---------

Washer Tube, Windshield

Replacement	22A-225
-------------------	---------

Water Outlet

Installation	10-9
--------------------	------

Water Passage

Installation	10-9
--------------------	------

Water Pump

Inspection	10-5
Replacement	10-5

Wheel Bearings

Inspection	18-8
------------------	------

Index

Wheel Speed Sensors

Inspection	19B-38
Replacement	19B-39

Wheels and Tires

Inspection	18-9
------------------	------

Windows

Component Location Index	20-43
--------------------------------	-------

Windshield Glass

Replacement	20-45
-------------------	-------

Windshield Side Trim

Replacement	20-142
-------------------	--------

Windshield Side Trim Retainers

Installation	20-50
--------------------	-------

Wiper Lifter, Rear Window

Replacement	20-151
-------------------	--------

Wiper Motor, Rear Window

Replacement	22A-224
Test	22A-222

Wiper Motor, Windshield

Replacement	22A-223
Test	22A-222

Wiper Protection Tape, Rear Window

Installation	20-152
--------------------	--------

Wiper/Washer

Circuit Diagram	22A-210, 22A-211, 22A-212
Component Location Index	22A-206
Description	22A-209

Wiper/Washer Switch

Test/Replacement	22A-214
------------------------	---------

Wiring Diagrams

Exterior Lights (Back-up Lights, Brake Lights, Turn Signal/Hazard Flasher)	78-34
Exterior Lights (Headlight Adjuster System), Interior Lights, Horns	78-38
Exterior Lights (With Daytime Running Lights and Rear Fog Light)	78-30
Exterior Lights (With Front and Rear Fog Lights)	78-26
Exterior Lights (With Front Fog Lights, Without Front Fog Lights or Rear Fog Lights)	78-18
Exterior Lights (With Rear Fog Lights)	78-22
Fan Controls, HVAC	78-94
Gauge Assembly (A/T Gear Position Indicator), Cruise Control System	78-14
Gauge Assembly (Gauges, Indicator Lights, Dash Lights Brightness Control)	78-6
Gauge Assembly (Indicator Lights, Warning Lights)	78-10
Interlock System, ABS	78-86
Keyless/Power Door Lock System (With Super locking System)	78-70
Keyless/Power Door Lock System (Without Super locking System)	78-74
Multiplex Control System (Fog Light Control, Immobilizer Control, Interlock Control, Intermittent Wiper Control, Entry Lights Control)	78-66
Navigation System, Stereo Sound System	78-54
PGM-FI System	78-102
PGM-FI System (A/T)	78-106

PGM-FI System, Immobilizer System	78-98
Power Mirror	78-42
Power Window, Cigarette Lighter, Accessory Power Socket	78-50
Seat Heater, Wipers/Washers (Headlight Washer)	78-58
Security Alarm System (With Super Locking System)	78-78
Security Alarm System (Without Super Locking System)	78-82
SRS	78-90
Starting System, Charging System, Ignition System	78-2
Sunroof, Power Windows	78-46
Wipers/Washers (Windshield Rear)	78-62
 Wiring System	
How-to Information	22A-3
Relay and Control Unit Locations	22A-7, 22A-8, 22A-11, 22A-12, 22A-13