

GM



CODE READER

OWNER'S MANUAL

**For General
Motors and
Saturn Vehicles
from 1982 to
1995 (excluding
Cadillac)**

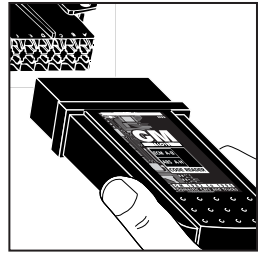


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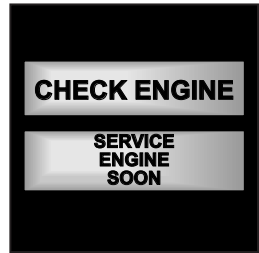
1 Plug It In

- Test connector usually found under the left side of the dashboard.
- Set Selector switch to **ECM A-B** position.
- Make sure ignition is off. Plug Code Reader into test connector.



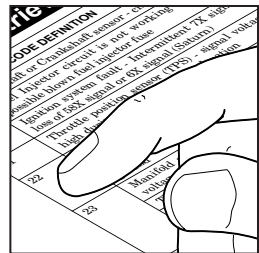
2 Read Fault Codes

- Turn on ignition. **DO NOT START ENGINE.**
- Read codes from flashing "Check Engine" or "Service Engine Soon" light.



3 Pinpoint Problems

- Locate fault code(s) in the appropriate Service Codes List.



Read manual for a complete description of the Code Reader and it's proper use and operation.

1.1 YOUR VEHICLE'S COMPUTER SYSTEM

Today's vehicles are equipped with computer self-testing abilities that can locate problems in your vehicle and store them as service codes in the vehicle's onboard computer. The Code Reader allows you access to the computer's memory and recalls the service codes.

1.1.1 Instrument Panel Indicator Lights

Your vehicle's Instrument panel has several indicator lights, such as the "Check Engine", "Service Engine Soon", "ABS", "Shift to D2" and "Temperature" indicator lights. These lights do more than tell you to check for engine, brake, or other component malfunctions. They can also transmit the service codes in the computer memory by blinking on and off.



NOTE: *If your instrument panel indicator lights do not come on when you turn on the ignition, please refer to your vehicle's service manual. You may have problems in the car's circuitry. You must fix these problems before you can obtain service codes from the vehicle's onboard computer.*

1.1.2 Service Codes

The service codes are also called "fault codes", "diagnostic codes" or "trouble codes". These codes can be used to identify systems or components which are malfunctioning.

The computer records codes for two types of problems:

- **"Hard" Codes.** "Hard" codes are stored for problems which are happening now. The instrument panel indicator light will stay on when the engine is running.
- **"Intermittent" Codes or "Continuous Memory" Codes.** Intermittent service codes are stored in the computer's memory for problems which occur intermittently, or for problems which happened in the past but are not currently present. Intermittent problems may cause the panel indicator light to flicker or to turn on intermittently. Intermittent codes are stored in the computer's memory for a set period of time (usually 50 start cycles). If an intermittent problem does not recur within this time period, the computer automatically erases the related intermittent fault code from its memory.

General Information

NOTE: For Saturn vehicles, either the "Shift to D2" light or the "Temperature" indicator light is used to transmit Saturn Electronic Transmission codes.

1.2 ABOUT YOUR CODE READER

The Code Reader is a device which connects to your vehicle's computer self-test connector. It allows the computer to output the service codes through the vehicle's instrument panel indicator lights. The Code Reader can be used to retrieve:

- Engine/Electronic Transmission codes (ECM/PCM)

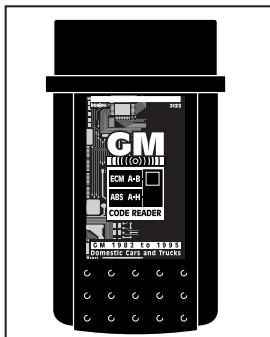
NOTE: Unless otherwise indicated, any reference to ECM throughout this manual also applies to PCM.

- Anti-Lock Brake System codes (ABS)

1.2.1 Controls and Indicators

Selector Switch – Selects operating mode for Code Reader:

- **ECM A-B** – Use to retrieve ECM codes
- **ABS A-H** – Use to retrieve ABS service codes

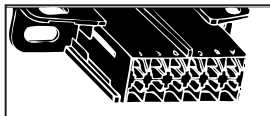


1.3 TEST CONNECTOR LOCATIONS

- The gateway to your vehicle's onboard computer.

Your vehicle test connector also known as the Assembly Line Data Link (ALDL) connector or Assembly Line Communication Link (ALCL) connector is usually black in color

and is most likely found under the left side of the dashboard. Some connectors can be found on the right kick panel, under the center of the dashboard, on the side of the fuse block or under the ashtray in the center console. The connector might have a plastic cover on it labeled "Diagnostic Connector". If you have any questions about the connector's location, please refer to your vehicle's service manual for detailed information.



1.4 SAFETY PRECAUTIONS

- Always observe safety precautions whenever working on a vehicle.
- a. Always wear safety eye protection.
- b. Only work on your vehicle in a well-ventilated area.
- c. Put transmission in “park” (for automatic) or “neutral” (for manual). Set parking brake.
- d. Put blocks on drive wheels.
- e. Avoid moving fan blades or any potentially moving parts.
- f. Avoid hot engine parts.
- g. Turn off ignition before connecting (or disconnecting) any testing equipment.
- h. Please read your vehicle’s service manual and follow its safety procedure.

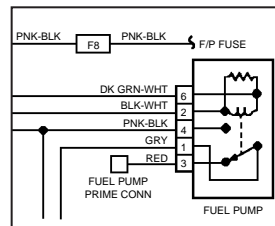
1.5 VEHICLE SERVICE MANUALS

It is recommended that you consult the manufacturer’s instructions and specifications in these service manuals before any test or tune-up procedures are performed.

IMPORTANT: You **MUST** use the **wiring diagrams** in your vehicle’s service manual to ensure proper connections during testing.

Contact your local car dealership, auto parts store, bookstore or public library for availability of these manuals. The following companies publish valuable repair manuals:

- General Motors Publications, Helm, Inc., 14310 Hamilton Ave., Highland Park, MI 48203, Phone: (800) 782-4356
- Haynes Publications, 861 Lawrence Drive, Newbury Park, California 91320, Phone: (805) 498-6703, Fax: (805) 498-2867
- Mitchell International, 14145 Danielson St., Poway, California 92064, Phone: (888) 724-6742
- Motor Publications, 5600 Crooks Road, Troy, Michigan 48098, Phone: (800) 426-6867, Fax: (313) 828-0215



**TYPICAL WIRING
DIAGRAM**

General Information

1.6 PRELIMINARY VEHICLE DIAGNOSIS WORKSHEET

The purpose of this form is to help you gather preliminary information on your vehicle before you retrieve codes. By having a complete account of your vehicle's current problem(s), you will be able to systematically pinpoint the problem(s) by comparing your answers to the fault codes you retrieve. You can also provide this information to your mechanic to assist in diagnosis and help avoid costly and unnecessary repairs. It is important for you to complete this form to help you and/or your mechanic have a clear understanding of your vehicle's problems.

NAME:	<input type="text"/>
DATE:	<input type="text"/>
VIN*:	<input type="text"/>
YEAR:	<input type="text"/>
MAKE:	<input type="text"/>
MODEL:	<input type="text"/>
ENGINE SIZE:	<input type="text"/>
VEHICLE MILEAGE:	<input type="text"/>

*VIN: Vehicle Identification Number, found at the base of the windshield on a metallic plate, or at the driver door latch area (consult your vehicle owner's manual for location).

TRANSMISSION:

- Automatic
 Manual

Please check all applicable items in each category.

DESCRIBE THE PROBLEM:

<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

WHEN DID YOU FIRST NOTICE THE PROBLEM:

- Just Started
 Started Last Week
 Started Last Month
 Other:

LIST ANY REPAIRS DONE IN THE PAST SIX MONTHS:

PROBLEMS STARTING

- No symptoms
 Will not crank
 Cranks, but will not start
 Starts, but takes a long time

ENGINE QUILTS OR STALLS

- No symptoms
 Right after starting
 When shifting into gear
 During steady-speed driving
 Right after vehicle comes to a stop
 While idling
 During acceleration
 When parking

IDLING CONDITIONS

- No symptoms
 Is too slow at all times
 Is too fast
 Is sometimes too fast or too slow
 Is rough or uneven
 Fluctuates up and down

RUNNING CONDITIONS

- No symptoms
 Runs rough
 Lacks power
 Bucks and jerks
 Poor fuel economy
 Hesitates or stumbles on accelerations
 Backfires
 Misfires or cuts out
 Engine knocks, pings or rattles
 Surges
 Dieseling or run-on

General Information

AUTOMATIC TRANSMISSION PROBLEMS (if applicable)

- No symptoms
- Shifts too early or too late
- Changes gear incorrectly
- Vehicle does not move when in gear
- Jerks or bucks

PROBLEM OCCURS

- Morning
- Afternoon
- Anytime

ENGINE TEMPERATURE WHEN PROBLEM OCCURS

- Cold
- Warm
- Hot

DRIVING CONDITIONS WHEN PROBLEM OCCURS

- Short - less than 2 miles
- 2 ~ 10 miles
- Long - more than 10 miles
- Stop and go
- While turning
- While braking
- At gear engagement
- With A/C operating
- With headlights on
- During acceleration
- Mostly driving downhill
- Mostly driving uphill
- Mostly driving level
- Mostly driving curvy roads
- Mostly driving rough roads

DRIVING HABITS

- Mostly city driving
- Highway
- Park vehicle inside
- Park vehicle outside
- Drive less than 10 miles per day
- Drive 10 to 50 miles per day
- Drive more than 50 miles per day

GASOLINE USED

- 87 Octane
- 89 Octane
- 91 Octane
- More than 91 Octane

WEATHER CONDITIONS WHEN PROBLEM OCCURS

- 32 ~ 55° F (0 ~ 13° C)
- Below freezing (32° F / 0° C)
- Above 55° F (13° C)

CHECK ENGINE LIGHT / DASH WARNING LIGHT

- Sometimes ON
- Always ON
- Never ON

PECULIAR SMELLS

- "Hot"
- Sulfur ("rotten egg")
- Burning rubber
- Gasoline
- Burning oil
- Electrical

STRANGE NOISES

- Rattle
- Knock
- Squeak
- Other

2.1 VEHICLES COVERED

This Code Reader may be used to retrieve engine service codes from most General Motors (GM) and Saturn domestic cars and trucks (EXCEPT Geo, Nova, and Sprint). Includes all models EXCEPT Cadillacs and diesel vehicles. Specific makes and models are listed below.

Model Year	Make	Model
1982-93	Buick	Century, Electra, Electra Wagon, Estate Wagon, Le Sabre, Le Sabre Wagon, Park Avenue, Reatta*, Regal, Grand National, Riviera*, Roadmaster, Skyhawk, Skylark, Somerset
	Chevrolet	Berreta, Camaro, Caprice, Cavalier, Celebrity, Chevette, Citation, Corisca, Corvette, El Camino, Impala, Lumina, Monte Carlo
	Oldsmobile	Achieva, Calais, Custom Cruiser, Cutlass Calais, Ciera, Cutlass Cruiser, Cruiser Wagon, Cutlass Supreme, Supreme Classic, Delta 88, Eighty-eight, Firenze, Ninety-eight, Omega, Toronado*, Touring Sedan, Trofeo*
	Pontiac	6000, 6000 STE, Bonneville, Fiero, Firebird, Grand Am, Grand Prix, J 2000, Lemans, J Parisienne, Phoenix, Safari, Safari Wagon, Sunbird, T 1000
	Saturn	All models
	Trucks and Vans	All one ton capacity or less with gas engines
	1994	Buick
Chevrolet		Camaro 3.4 liter/5.7 liter, Caprice 5.7 liter, Caprice 5.7 liter, Cavalier 3.1 liter, Lumina 3.1 liter
Pontiac		Firebird 3.4 liter/5.7 liter, Sunbird 2.0 liter/3.1 liter
Saturn		All models
Trucks and Vans		All one ton capacity or less with gas engines

Retrieving ECM Codes

Model Year	Make	Model
1995	Chevrolet	Caprice 4.3 liter
	Saturn	All models
	Trucks and Vans	All one ton capacity or less with gas engines (EXCEPT S/T Series vehicles)

* Not applicable to models equipped with climate control computers

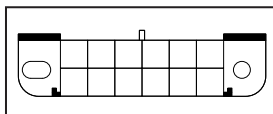
NOTE: For 1994 and 1995 vehicles, only the models listed above are compatible with the Code Reader.

The Code Reader **is not** compatible with 1996 and later model year vehicles.

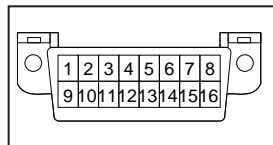
2.1.1 Vehicle Test Connector

GM and Saturn vehicles use one of two types of test connectors: 12-pin or 16-pin.

■ **12-Pin Connector:** The 12-pin connector was phased out completely in 1996. Some 1994 and 1995 vehicles still use the 12-pin connector, but because of changes in the ECM, the Code Reader is not compatible with some of these systems (see paragraph 2.1).



■ **16-Pin Connector:** The new 16-pin connector was introduced on some 1994 and 1995 models, and was made standard equipment on all 1996 and subsequent model year vehicles. **The Code Reader will not work on vehicles equipped with the 16-pin connector.**



2.2 BEFORE YOU BEGIN

- Fix any known mechanical problems before performing any test.

Make a thorough check before starting any test procedure. Loose or damaged hoses, wiring, or electrical connectors are often responsible for poor engine performance, and in some cases they may cause a “false” fault code.

