

CHRYSLER CORP. ELECTRONIC INSTRUMENT CLUSTER

Imperial

DESCRIPTION

Chrysler Imperial models have a fully electronic instrument cluster which includes a speedometer, odometer, fuel gauge, brake and door ajar warnings, fasten seat belt and low washer fluid reminders and indicators for oil level, voltage and engine temperature. The four upper level pods are lit with vacuum fluorescent displays and the lower level indicators are conventional lamps. Nine pushbuttons located on the instrument panel brow allow the driver to call up information from a microcomputer for use in the instrument cluster.

The microcomputer functions are as follows: Displays on the instrument panel can be switched from metric to U.S. standard. The electronic chronometer can display time, day of month, month, and ignition "ON" elapsed time. The odometer can show distance traveled and average speed. The fuel gauge can display miles to empty, present fuel economy and trip fuel efficiency. In addition, an integral cluster diagnostic system permits rapid item by item testing for technicians.

OPERATION

Fuel Gauge — A specially designed in-tank mounted sending unit provides information on remaining fuel in tank. When there is 14 or more gallons of fuel in the tank, the gauge will register full. When fuel supply drops below 14 gallons, display will show amount of fuel remaining in numerical gallons. When two gallons or less are in tank, display will show a "LOW FUEL" warning. This will stay on until fuel is used up, or until more than two gallons are in tank. The "LOW FUEL" warning will flash on and off at two second intervals. When "RANGE" button is pressed on control panel, fuel gauge will display predicted number on miles that can be traveled on remaining fuel in tank. This display will show for five seconds, and then revert to fuel level reading. When PRESENT button is pressed, fuel gauge will show vehicle's current fuel economy. When TRIP button is pressed, fuel gauge will show current fuel efficiency for five seconds, and then revert to fuel level reading.

Brake Warning Lamp — The brake warning lamp will light when the following conditions exist: When ignition key is turned to START position, when ignition is on and either half of the dual hydraulic brake system is defective, and when parking brake and ignition are on.

Engine System Indicators — Warning indicators monitor the engine temperature, oil level and battery voltage. The oil pressure lamp will light if engine oil pressure falls below normal. A computer controlled battery voltage indicator will light up to show the following conditions: Battery voltage below 11.2 volts, battery requires charging, battery charging system has problems. The engine coolant temperature indicator will light when coolant temperature rises above normal.

TESTING

SELF-DIAGNOSTIC TEST

- 1) Remove lower left bezel retaining screws and remove bezel. Push red button on cluster located to right of steering wheel.
- 2) Cluster will simultaneously activate one common segment in each character for two seconds. The lighted segments will be

changed in the characters in a logical fashion. A visual inspection is required to locate shorted or inoperative segments.

3) Cluster will now proceed to conduct internal checks of the microcomputer system. If there is any detected faults, the odometer will display a "FAIL 2" or "FAIL 3", and the self-test will stop. If no failures are located, "PASS 1", "PASS 2" or "PASS 3" will be indicated on the odometer.

4) If there are no failures detected, all displays will be turned on to indicate inoperative segments. The cluster will remain in this state until the ignition is turned "ON".

CLUSTER GENERAL TEST

1) Perform self-diagnostic test. If diagnostic test fails, replace defective module. If test is okay, check senders, switches and sensors. If any failures, replace defective part. If no failures, check wiring circuits.

2) If wiring circuits are faulty, repair or replace defective circuit. If wiring okay, illuminate and cover photo transistor. Turn marker lamps and dimmer on and off. If lights fail to work, check headlight switch. If lights fail all inputs, replace defective module.

TROUBLE-SHOOTING

NOTE — The following trouble-shooting procedures apply to the switch module. Wire locations are shown in Fig. 2.

NO RESET, TRIP, PRESENT OR RANGE FUNCTIONS

Check for open in wire or connection to wire "J".

NO DATE, ELAPSED TIME, TRIP, ODOMETER OR AVG. SPEED FUNCTIONS

Check for open in wire or connections to wire "H".

NO U.S./METRIC, RESET OR CLOCK FUNCTIONS

Check for open in wire or connections to wire "D".

NO ZERO RESET, DATE OR U.S./METRIC FUNCTIONS

Check for open in wire or connections to wire "C".

NO TRIP, ELAPSED TIME OR RESET FUNCTIONS

Check for open in wire or connections to wire "E".

NO PRESENT, TRIP, ODOMETER, OR HOURS/MONTH FUNCTION

Check for open in wire or connections to wire "G".

NO RANGE, AVG. SPEED OR MINUTES/DAYS FUNCTION

Check for open in wire or connections to wire "I".

NOTE — The following trouble-shooting procedures apply to the Electronic Cluster only.

NO DISPLAYS WHEN ENTERING VEHICLE, DRIVER'S SEAT UNOCCUPIED

Blown fuse in cavity 6. Dead battery. Defective door switch. Defective ignition lamp time delay relay. Defective wiring connection to cluster module. Defective electronic module.

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NO DISPLAYS AFTER VEHICLE STARTED

Blown fuse in cavity 11. Defective ignition switch. Defective wiring to module. Defective module.

DISPLAYS FLICKER WHEN CRANKING ENGINE

Low voltage due to discharged battery. Low voltage due to excessive cranking.

LOSS OF DISPLAYS WHEN VEHICLE STARTED AND DIMMER SWITCH PULLED OUT

Blown fuse in cavity 13. Dimmer switch knob rotated too far. Defective dimmer switch.

VOLTAGE INDICATOR ON CONTINUOUSLY

Low battery. Defective charging system. Defective power wiring, excessive voltage drop to cluster. Defective electronic module.

IMPROPER GEAR SELECTOR DISPLAYED

Misaligned gear select switch on steering column. Crossed or shorted wire connections on gear select switch or connector on electronic module.

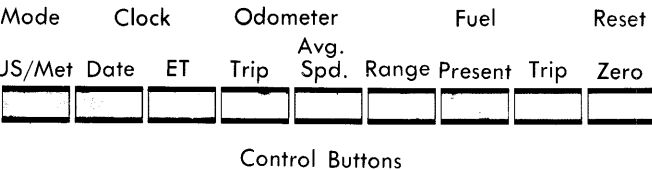
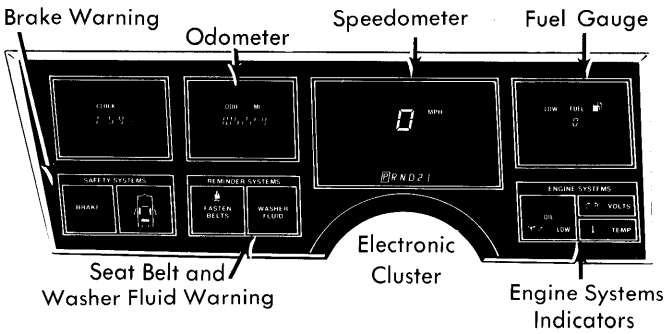
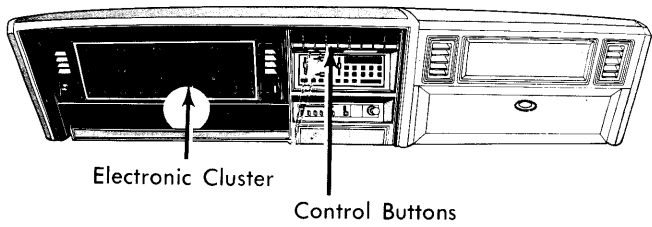


Fig. 1 Chrysler Imperial Electronic Instrument Panel

GEAR SELECTOR LIGHTS, BUT NO GEAR INDICATED

Defective gear select switch. Defective module. Open in wire from module to gear select switch.

FUEL ECONOMY READS 99.9, OR UNUSUALLY HIGH

Check wiring from fuel flow sensor to module and repair if necessary. If wiring okay, check fuel flow sensor. If sensor okay, replace module.

ERRATIC OR UNREALISTIC FUEL CAPACITY READINGS

Check wiring from fuel tank sending unit. Check tank sending unit.

REMOVAL & INSTALLATION

NOTE — Removal and installation procedures were not available from Chrysler Corp. at time of publication.

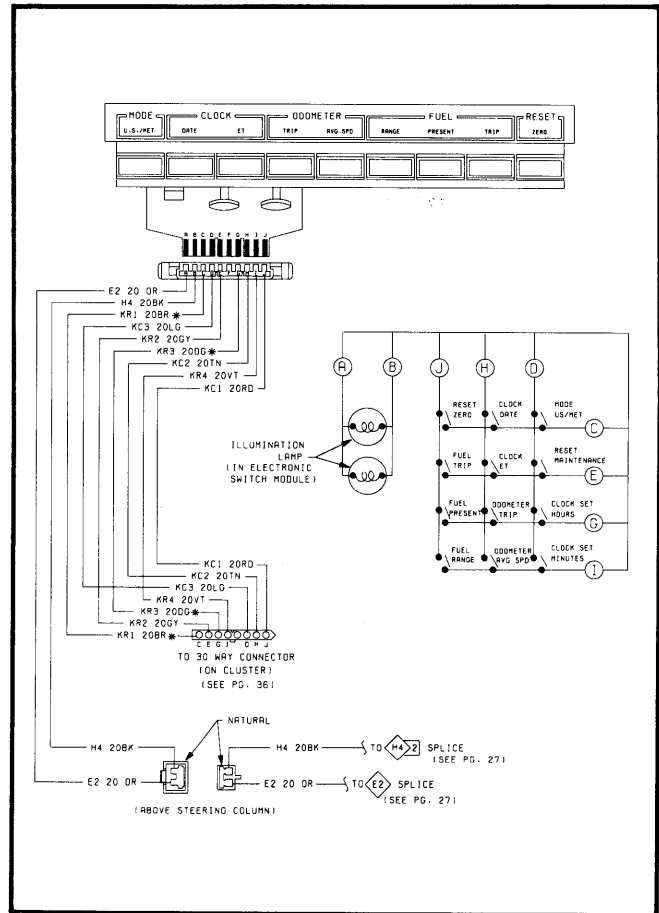


Fig. 2 Chrysler Imperial Electronic Switch Module Wiring Diagram