

CHEVROLET

All Models

DESCRIPTION & OPERATION

Fuel Gauge — Circuit consists of an electrically operated indicator in instrument cluster and a float-type sending unit in fuel tank. Gauge pointer operation is controlled by the changing resistance in sending unit variable rheostat float mechanism.

Oil & Temperature Indicator — If oil pressure drops below a safe level or coolant temperature reaches 258°F, electrically operated sending units on engine will complete circuit to ground causing appropriate indicator light to come on.

Oil Pressure & Temperature Gauge — Both gauges show actual readings and require a minimum of maintenance. The oil pressure gauge uses a direct tube from engine to gauge and if it becomes restricted, remove the tube at both ends and blow out the line. The temperature gauge is electric and uses a sending unit to transmit engine temperature. Do not repair either unit, replace the units when required.

Alternator Indicator — Warning light circuit is designed to turn light on when ignition is on and engine is not running, or if a malfunction in the charging circuit occurs after engine has been started and accelerated above 900 RPM.

Wait Indicator — Diesel engine models use a "WAIT" indicator light to show when the glow plugs have warmed the engine sufficiently enough for starting.

Water In Fuel Indicator — Diesel engine models use a "WATER IN FUEL" indicator with a bulb check circuit. The indicator should light with ignition on and engine off. The light should go off after the engine has started. If there is water in the fuel, the indicator will come back on after a delay of about 15-20 seconds.

TESTING

FUEL GAUGE

Use suitable Gas Gauge Tester (J-22344 or equivalent). Disconnect feed wire from the gas tank terminal and connect 1 test lead to the wire and ground the other lead. Switch tester to "EMPTY" and "FULL" positions and fuel gauge should read the same as the tester. If not, proceed with the following tests with ignition in "ON" position.

Gauge Never Reads Empty or Reads Full At All Times — Check for disconnected or loose tank unit feed wire at tank. If good, check for proper connections at the printed circuit.

Gauge Always Reads Empty — Disconnect tank unit feed wire and gauge should indicate full. If not at "FULL" position, check connections to printed circuit or for an open in the printed circuit.

Gauge Never Reads Full — Check system with Gas Gauge Tester, positioned in line between feed wire and tank terminal. If gauge reads full, fill the gas tank. Using an ohmmeter, check resistance of tank sending unit which should read between 88 and 92 ohms. If ohm reading is low, check tank mounting area for damage. If gauge does not read full, check connections to printed circuit or for an open within the printed circuit.

Gauge Dead — Check feed wire voltage to the tank which should read 3-4 volts. If it does not, check for open on hot side

of the gauge, or proper connections at the printed circuit. If voltage is correct, remove and check fuel gauge.

INDICATOR WARNING LIGHTS

Oil Pressure — If light does not come on with ignition on and engine not running, check for burned out bulb, light circuit open, or defective sending unit. If light remains on when engine is running above idle speed, check for grounded wire between bulb and sending unit, defective sending unit, or low oil pressure.

Coolant Temperature — If "HOT" indicator fails to light when cranking engine, check for burned out bulb, open light circuit, or defective ignition switch. If indicator light remains on with engine running, check for ground in wire between bulb and sending unit, a defective sending unit or ignition switch, or excessive coolant temperature.

Alternator Indicator — If light remains on when ignition is off, check for shorted alternator positive diode. If light remains off when ignition is on, but the engine is not running, check for burned out indicator bulb, an open light circuit, or an open in alternator field. If light comes on with engine running above idle RPM, check alternator output, check for a shorted alternator negative diode or loose or broken alternator belt.

STOP LIGHT SWITCH

If all stop lights fail to come on, or fail to turn off, check White wire terminal in steering column connector with test light. If test light does not come on, check switch for proper adjustment. If adjusted correctly, replace stop light switch.

REMOVAL & INSTALLATION

NOTE — Removal procedures for steering column mounted switches are covered in the Steering Column Switches article in STEERING Section.

STOP LIGHT SWITCH

Removal — Disconnect wiring harness from switch, remove switch retaining nut (if equipped), and unscrew switch from bracket.

Installation — To install, reverse removal procedure and adjust.

CLUTCH START SWITCH

Vehicles with manual transmissions use a clutch start switch which prevents engine start unless the clutch pedal is depressed. The switch mounts on clutch pedal bracket.

Removal (All Models Exc. Corvette) — To remove switch, unplug electrical connector from switch, compress actuating shaft retainer and disconnect shaft from clutch pedal. Remove switch and/or bracket for service as required.

Installation — To install, reverse removal procedure, no adjustment necessary.

Removal (Corvette) — To remove switch unplug electrical connector from switch. Remove retainer from link on clutch arm. Remove screw fastening switch to pedal support and lift off switch.

Installation — To install, reverse removal procedure.

CHEVROLET (Cont.)

WINDSHIELD WIPER/WASHER SWITCH

NOTE — Windshield wiper switch removal procedures are covered in the appropriate Wipers/Washers article in this Section.

HEADLIGHT SWITCH

Removal (Caprice, Chevette, Impala) — Disconnect battery and pull switch to on position. Reach behind instrument panel and depress shaft release button, then pull shaft and knob off switch. On Chevette, remove 3 screws and trim plate. On Caprice and Impala, remove wiper switch. On all models, remove switch ferrule nut, disconnect electrical connection and remove switch.

Installation — To install, reverse removal procedure.

Removal (Malibu, Monte Carlo, El Camino, Caballero) — Disconnect battery. Remove 6 screws and instrument panel bezel. Pull switch to "ON" position, then remove 3 screws retaining switch plate to cluster. Pull plate back, depress release button, and pull shaft and knob out of switch. Remove ferrule nut, wiring connector, and switch.

Installation — To install, reverse removal procedure.

Removal (Camaro) — Disconnect battery. Remove steering column lower cover. Reach up under panel and depress switch shaft retainer, while pulling on shaft. Remove nut securing switch to carrier. Remove cluster carrier, 4 screws in front, 2 screws from back of cluster lower edge (either side of steering column) and tilt right side of cluster out. Unplug connector from lighting switch and remove switch.

Installation — To install, reverse removal procedure and make sure all ground connections are refastened.

Removal (Citation) — Disconnect battery and pull switch out to on position. Remove spring clip retainer on knob shaft and remove shaft. Disconnect all accessory switch connections, and remove ferrule nut on switch. Push switch out of mounting hole. Lift switch up and out through opening in dash and disconnect electrical connection.

Installation — To install, reverse removal procedure.

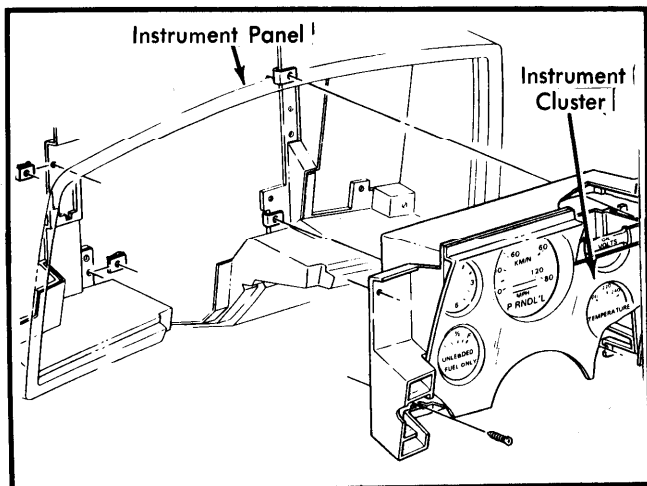


Fig. 1 Citation Instrument Cluster

Removal (Corvette) — 1) Disconnect battery and remove left air conditioning duct. Remove instrument cluster screws and

pull cluster back. Disconnect speedometer cable and wiring connectors, then remove cluster.

2) Remove 2 screws retaining panel to left door pillar, and pull left side of panel back for access. Press release button and pull switch knob and shaft out. Remove ferrule nut, disconnect and tag vacuum lines, then remove wiring connector.

Installation — To install, reverse removal procedure.

SPEEDOMETER, INSTRUMENT CLUSTER & GAUGES

Removal (Camaro) — 1) Disconnect battery. Remove screws (2 above ash tray) securing trim cover beneath steering column. Reach under cluster left side and depress headlight switch shaft retainer button, while pulling on switch knob. Remove headlight switch retaining nut, cigar lighter and housing.

2) From rear of panel remove screw on either side of steering column. Remove 4 screws on front of carrier and 1 screw retaining ground wire for wiper switch. Tilt carrier out (for access) and remove connector plugs on wiper and headlight switches.

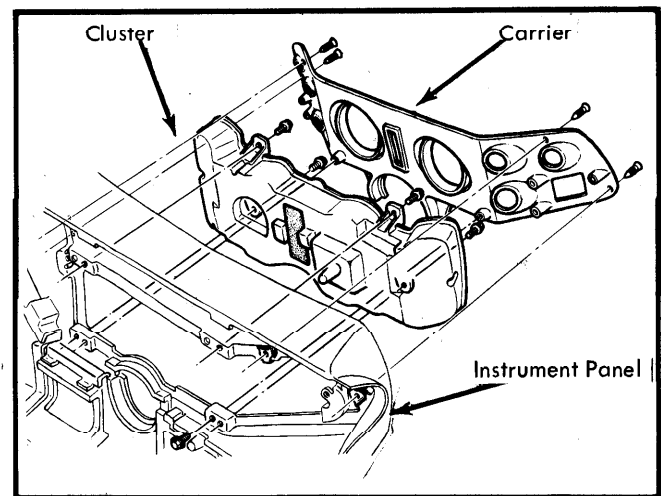


Fig. 2 Camaro Instrument Cluster Assembly

3) Disconnect speedometer cable and wiring. Remove cluster from vehicle. Remove bulbs and gauge mounting nuts, then remove printed circuit and instruments.

Installation — To install, reverse removal procedure.

Removal (Caprice, Impala) — 1) Disconnect battery ground cable. Remove 4 screws from lower steering column cover and remove cover. If equipped with automatic transmission, disconnect shift indicator cable from steering column. Remove 2 screws between steering column and instrument panel and lower steering column.

2) Remove 6 screws and 3 fasteners from cluster lens, then 2 screws from trim plate. Remove 2 nuts in lower corners of cluster, pull cluster back and disconnect speedometer cable. Remove cluster by pulling outward.

3) Instruments and speedometer are mounted on front of cluster and can be removed after lens is removed.

CHEVROLET (Cont.)

Installation — To install, reverse removal procedure.

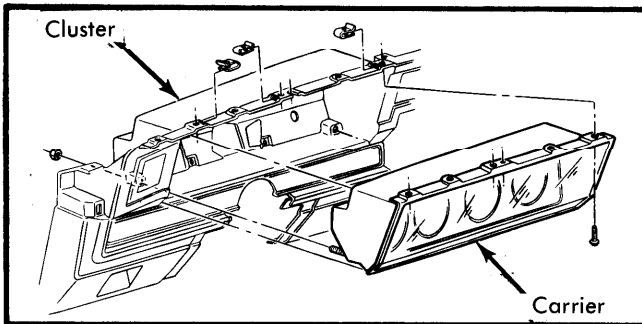


Fig. 3 Caprice & Impala Instrument Cluster

Removal (Malibu, Monte Carlo, El Camino, Caballero) —
 1) Disconnect battery and remove clock knob. Remove instrument bezel retaining screws. Pull bezel out to disconnect rear defogger (if equipped). Remove 2 screws at shift indicator and lower indicator assembly.

2) Disconnect shift cable. Remove 3 screws at wiper/headlight switch mounting plate. Pull assembly out to gain access to lower left cluster attaching nut. Remove nut, then remove remaining nuts attaching cluster to instrument panel. Pull cluster out and disconnect wiring.

3) Remove cluster. Remove lamp socket and mounting fasteners and remove printed circuit.

Installation — To install, reverse removal procedure.

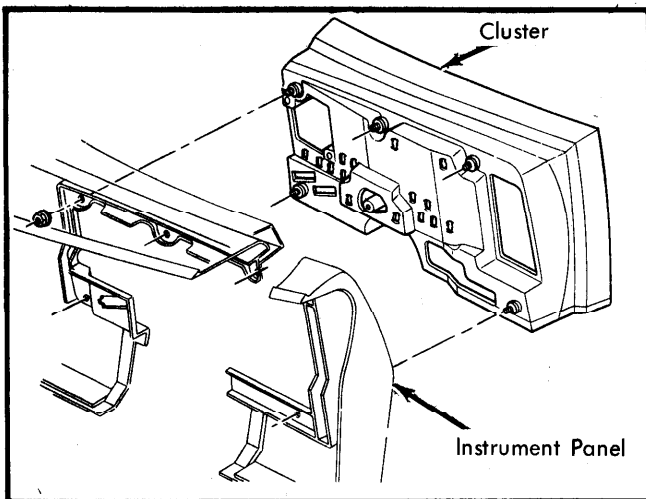


Fig. 4 Caballero, El Camino & Malibu Instrument Cluster

Removal (Corvette Left Cluster) — Disconnect battery. Remove left air duct, then remove bezel attaching screws and pull lens off. Remove cluster screws, pull cluster forward, and disconnect speedometer cable and wiring. Remove cluster. Remove retaining screws and gauges.

Installation — To install, reverse removal procedure.

Removal (Corvette Center Cluster) — Disconnect battery, then remove console tunnel side panels. Remove radio knobs and console trim plate. Remove defogger switch and 4 cluster

screws. Pull cluster back, disconnect wiring, and remove cluster. Remove gauges and printed circuit.

Installation — To install, reverse removal procedures.

Removal (Chevette) — Disconnect battery ground cable. Remove clock stem knob and 4 screws retaining cluster bezel and lens. Remove 2 nuts retaining cluster to panel, pull cluster outward, disconnect electrical connectors and speedometer cable, then remove cluster.

Installation — To install, reverse removal procedure.

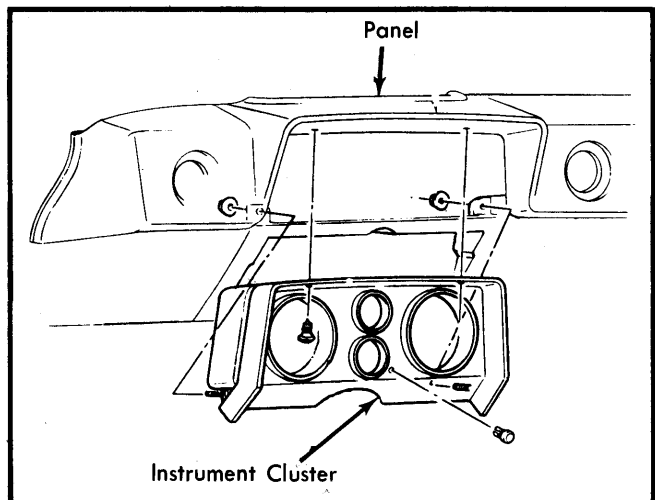


Fig. 5 Chevette Instrument Cluster

Removal (Citation) — 1) Disconnect battery. Remove radio and clock knobs and retaining nuts. Remove bezel screws and pull bezel back for access to headlight switch release button. Press button and pull out switch shaft and knob.

2) Disconnect all accessory switch wiring, then remove bezel. Remove 4 cluster screws, disconnect shift indicator cable, and pull cluster back. Disconnect wiring and speedometer cable, then remove cluster. Remove bulbs and instruments to service printed circuit.

Installation — To install, reverse removal procedure.

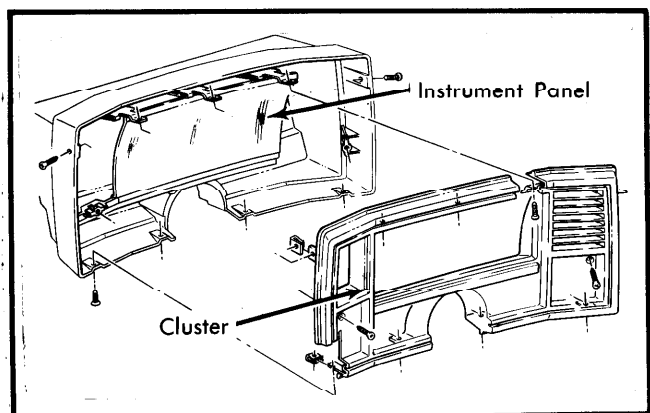


Fig. 6 Monte Carlo Instrument Cluster