CHEVROLET

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.

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 (Chevrolet, Monza, Chevette) — Disconnect battery and pull switch to "ON" position. From under instrument panel press switch retainer button and pull knob and shaft out of switch. On Chevette, remove 3 screws and trim panel. Remove ferrule nut on all models, pull switch below panel and remove wiring connector.

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 bezel screws, clock and radio knobs and retaining nuts. Pull bezel back, depress release button and pull out shaft and knob. Remove accessory switch wiring and bezel, then remove ferrule nut. Pull switch up and remove wiring connector.

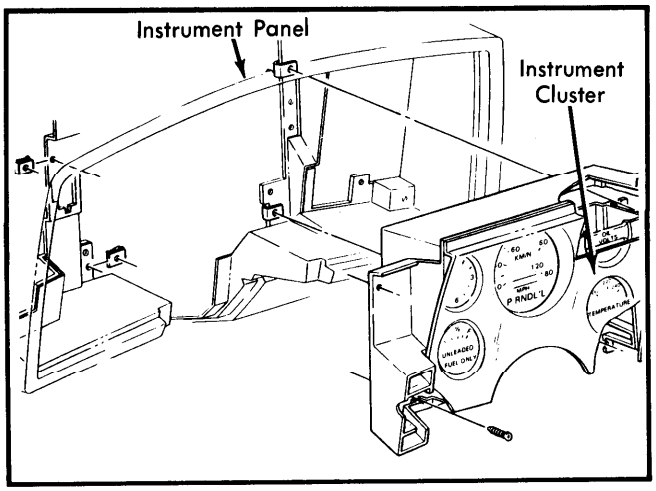

Fig. 1 Citation Instrument Cluster

Installation — To install, reverse removal procedure.

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.

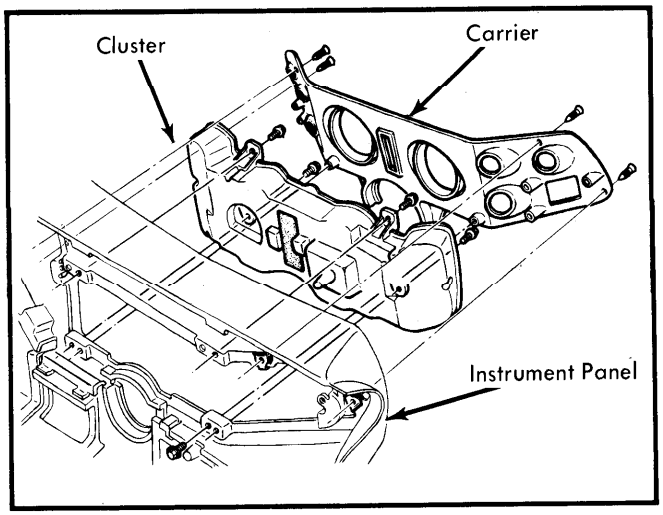

Fig. 2 Camaro Instrument Cluster Assembly

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

2) Remove 6 screws and 3 fasteners from cluster lens, then 2 screws from trim plate. Remove 2 nuts in lower corners of

CHEVROLET (Cont.)

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.

Installation – To install, reverse removal procedure.

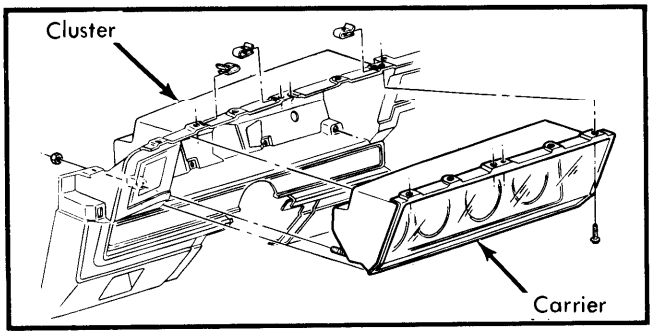

Fig. 3 Chevrolet Instrument Cluster

Removal (Malibu, Monte Carlo, El Camino, Caballero) – **1)** Disconnect battery and remove clock and radio knobs. Remove instrument bezel retaining screws. Pull bezel out to disconnect accessory switches and rear view mirror control (if equipped).

2) Remove retaining screws to speedometer head and lift head out. Remove clock mounting screws and lift out clock. Disconnect transmission shift indicator cable from steering column. Disconnect wiring and speedometer cable.

3) Remove instrument cluster case, fuel gauge, transmission indicator and cluster. Remove bulbs and retaining nuts, then carefully remove printed circuit.

Installation – To install, reverse removal procedure.

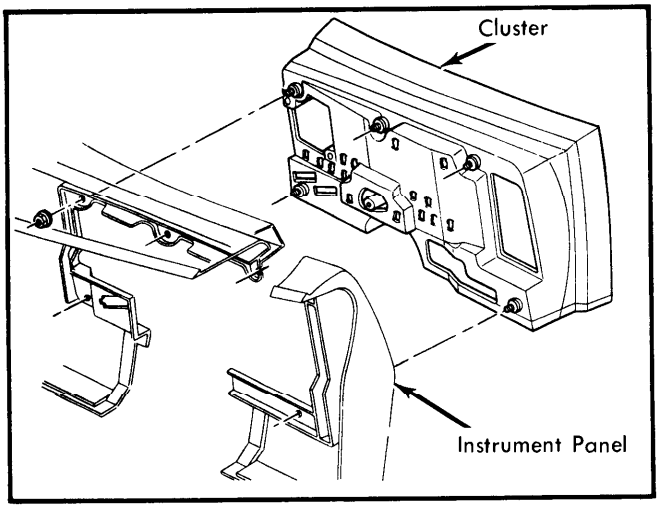

Fig. 4 Malibu and Monte Carlo Instrument Cluster Assembly

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.

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.

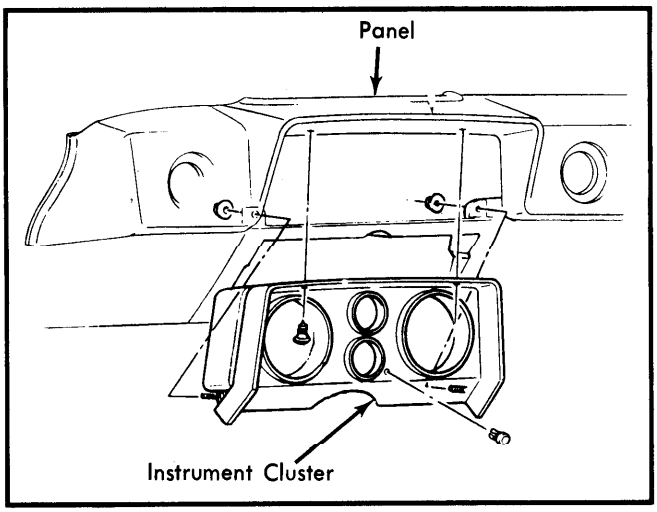

Fig. 5 Chevette Instrument Cluster

Removal (Monza) – Disconnect battery. Remove cluster lens screws. Pull bezel and lens from cluster, then service instruments by removing screws and wiring connector.

Installation – To install, reverse removal procedure.

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.