

GROUP 1

ACCESSORIES, RADIOS, HEATERS, MIRRORS, ETC.

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GROUP 1

ACCESSORIES, RADIOS, HEATERS, MIRRORS, ETC.

RADIOS

All Chrysler vehicles are equipped with radio models 327 and 410 (Figs. 1, 2, 3, and 4). All Imperial vehicles are equipped with radio model 409 (Figs. 2 and 4) which is electrically identical to the model 410. The radio receivers feature a two transistor push-pull audio output, a transistor drive stage and panelescent lighting.

Model 327 is a push button type radio with continuously variable tone and rear speaker control. Radio models 409 and 410 are search tuned radios with a step position tone and a rear speaker control.

RADIO CONTROLS (Figs. 5 and 6).

On the push button radios, tuning is controlled by five push buttons and the manual tuning knob is to the right of the radio dial. On the search tuned radios Models 409 and 410 the tuning is controlled manually by five push buttons and the tuning knob. The search tuning is controlled by two additional push buttons and a foot switch.

The volume, tone and the on-off switch are controlled by the dual knob to the left of the radio dial. The rear speaker fader control and the tuning knob are located to the right of the radio dial (If so equipped).

SERVICE PROCEDURES

a. Removal (Chrysler vehicles only with Air conditioning).

NOTE: Be sure that the battery is disconnected before removal of the radio.

The radio is attached to the instrument panel with

two mounting nuts and with a support at the rear of the set. (Figs. 1, 2 and 3).

CAUTION

Do not operate the radio with the speaker detached;

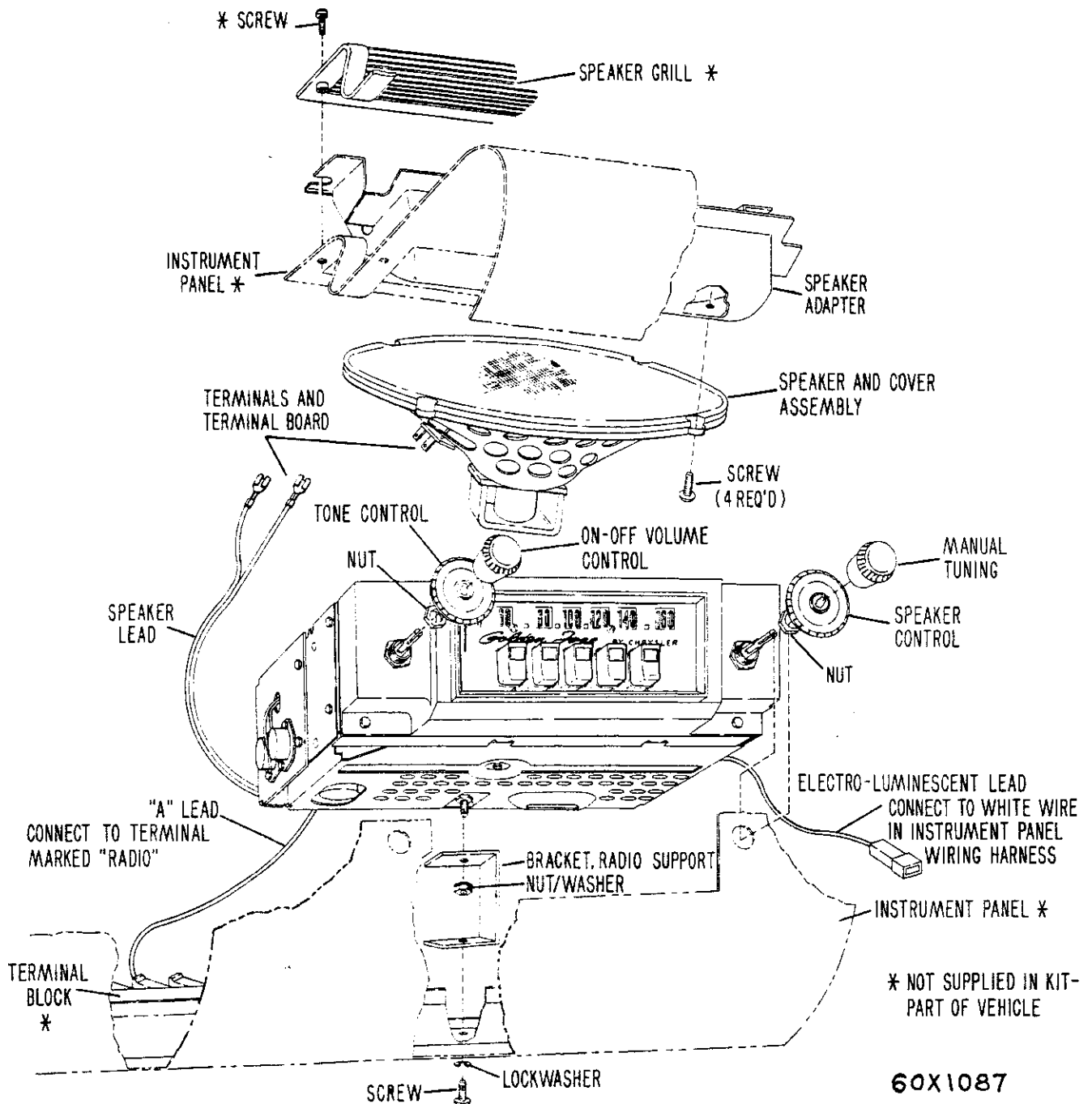


Fig. 1—Radio Installation (Model 327)

since damage to the transistors may result. If the rear seat speaker is disconnected from the radio, insert a jumper wire to the rear seat speaker socket to allow the receiver to operate. (Fig. 7).

Time and effort can be saved by removing the radio and speaker assembly up through the speaker

opening instead of from the underside of the instrument panel.

- (1) Disconnect the battery.
- (2) Remove the control knobs and shaft mounting nuts.
- (3) Remove the radio-to-dash support brackets.

(4) Disconnect the "A" lead, light lead, front and the rear speaker leads, antenna lead and foot selector switch (if so equipped).

(5) Remove the speaker attaching screws and the grille from the top side of the instrument panel.

(6) Remove speaker and radio assembly up through the opening of the instrument panel.

**b. Removal (Chrysler Vehicles)
(Without Air Conditioning)**

(1) Disconnect the battery.

(2) Remove the control knobs and shaft mounting bolts.

(3) Remove the radio-to-dash support bracket.

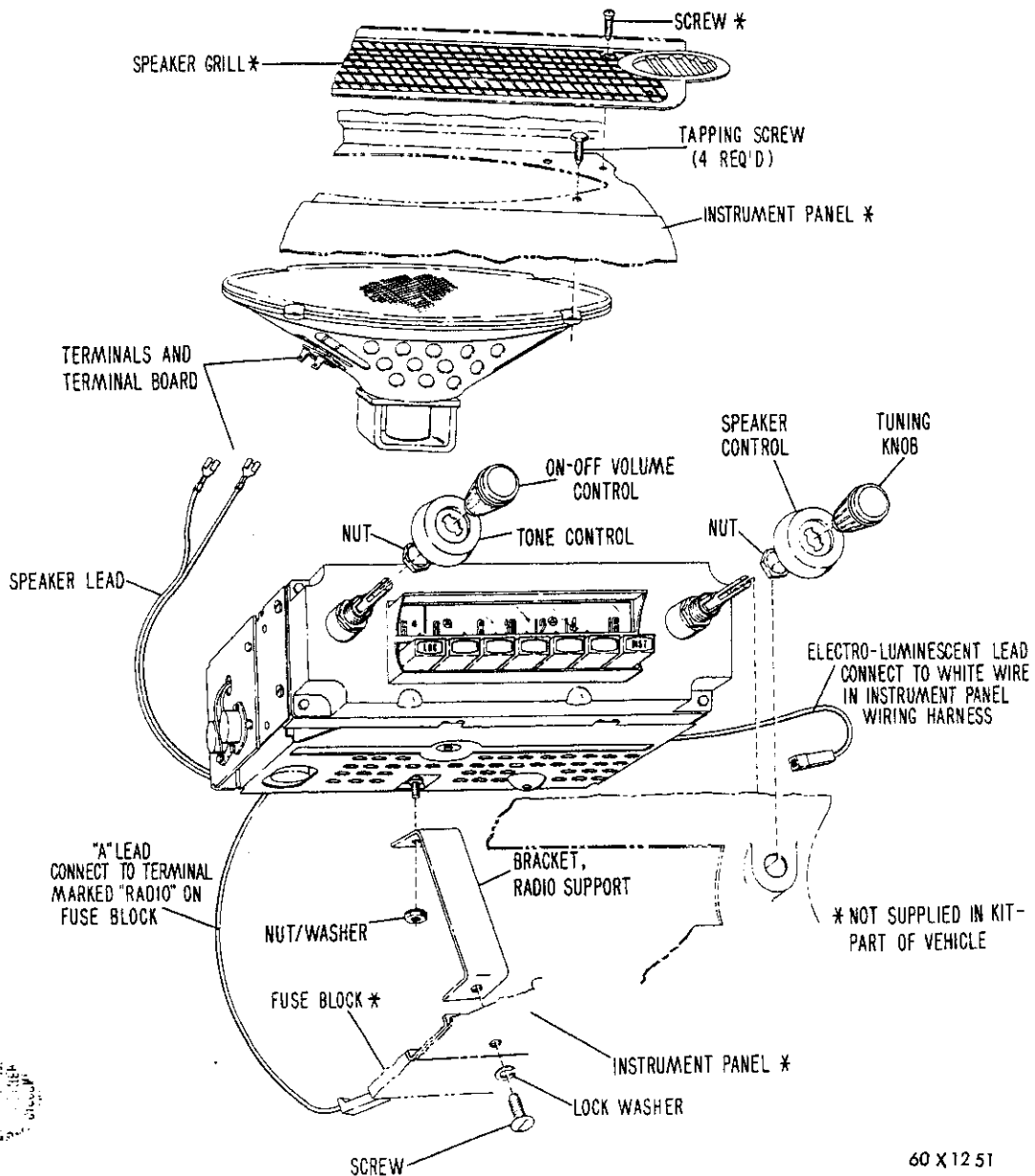
(4) Disconnect the "A" lead, light lead, front and rear speaker leads, antenna lead and foot selector switch connector.

(5) Withdraw the radio assembly from the underside of the instrument panel.

c. Removal (Imperial Models)

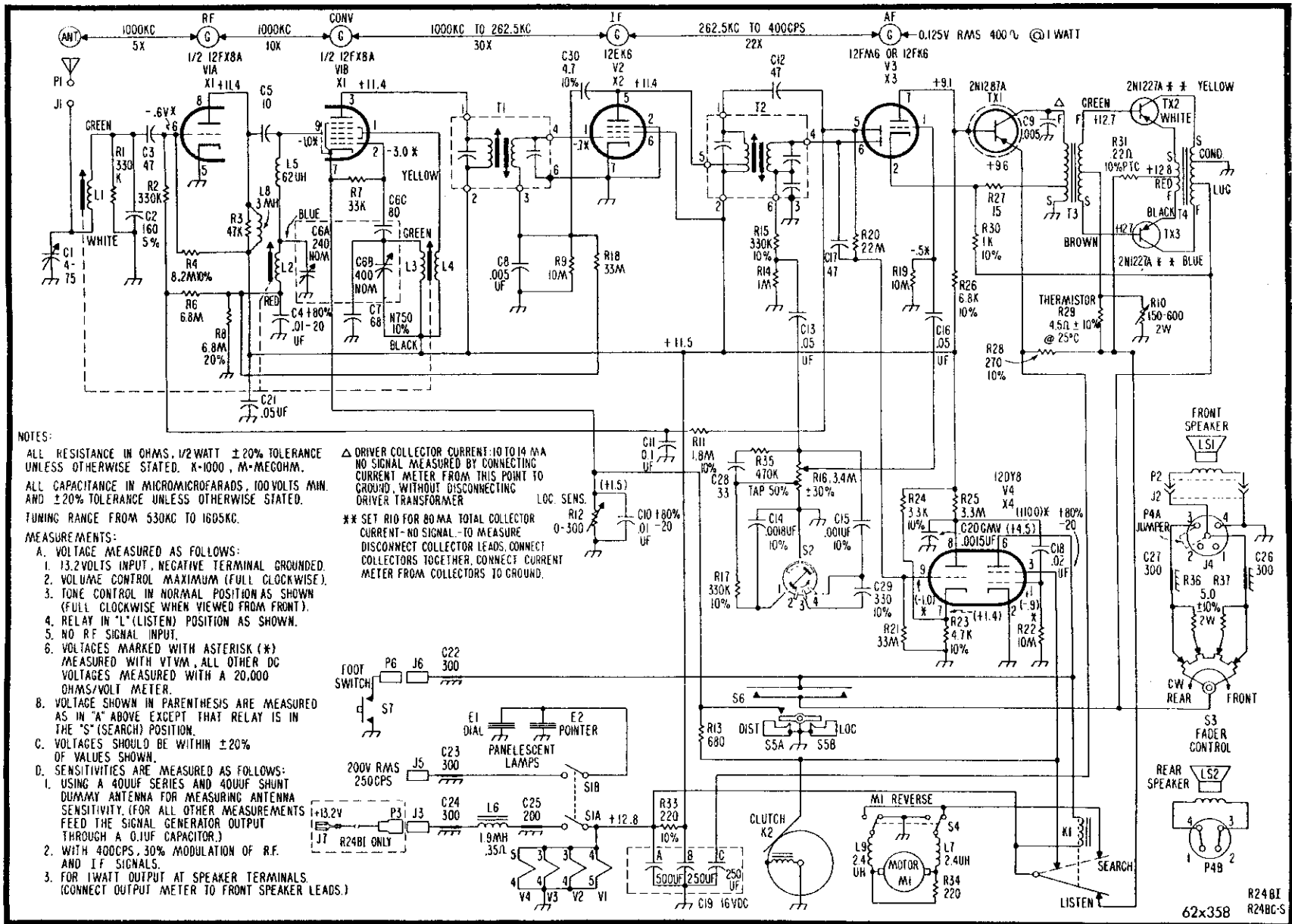
(With or Without Air Conditioning)

(1) Disconnect the battery negative terminal.



60 X 12 51

Fig. 2—Radio Installation (Models 409 and 410)



NOTES:

ALL RESISTANCE IN OHMS. 1/2 WATT ±20% TOLERANCE UNLESS OTHERWISE STATED. X-1000, M-MEGOHM.

ALL CAPACITANCE IN MICROMICROFARADS, 100 VOLTS MIN. AND ±20% TOLERANCE UNLESS OTHERWISE STATED.

TUNING RANGE FROM 530KC TO 1605KC.

MEASUREMENTS:

A. VOLTAGE MEASURED AS FOLLOWS:

- 13.2 VOLTS INPUT, NEGATIVE TERMINAL GROUND.
- VOLUME CONTROL MAXIMUM (FULL CLOCKWISE).
- PHONE CONTROL IN NORMAL POSITION AS SHOWN (FULL CLOCKWISE WHEN VIEWED FROM FRONT).
- RELAY IN "L" (LISTEN) POSITION AS SHOWN.
- NO RF SIGNAL INPUT.
- VOLTAGES MARKED WITH ASTERISK (*) MEASURED WITH VTVM, ALL OTHER DC VOLTAGES MEASURED WITH A 20,000 OHMS/VOLT METER.

B. VOLTAGE SHOWN IN PARENTHESIS ARE MEASURED AS IN "A" ABOVE EXCEPT THAT RELAY IS IN THE "S" (SEARCH) POSITION.

C. VOLTAGES SHOULD BE WITHIN ±20% OF VALUES SHOWN.

D. SENSITIVITIES ARE MEASURED AS FOLLOWS:

1. USING A 40UF SERIES AND 40UF SHUNT DUMMY ANTENNA FOR MEASURING ANTENNA SENSITIVITY. (FOR ALL OTHER MEASUREMENTS FEED THE SIGNAL GENERATOR OUTPUT THROUGH A 0.1UF CAPACITOR.)
2. WITH 400CPS, 30% MODULATION OF RF. AND IF SIGNALS.
3. FOR 1WATT OUTPUT AT SPEAKER TERMINALS. (CONNECT OUTPUT METER TO FRONT SPEAKER LEADS.)

△ DRIVER COLLECTOR CURRENT: 10 TO 14 MA
NO SIGNAL MEASURED BY CONNECTING CURRENT METER FROM THIS POINT TO GROUND, WITHOUT DISCONNECTING DRIVER TRANSFORMER

** SET RIO FOR 80 MA TOTAL COLLECTOR CURRENT—NO SIGNAL—TO MEASURE DISCONNECT COLLECTOR LEADS, CONNECT METERS TO GROUND.

Fig. 4—Wiring Diagram Radio Models (409 and 410)

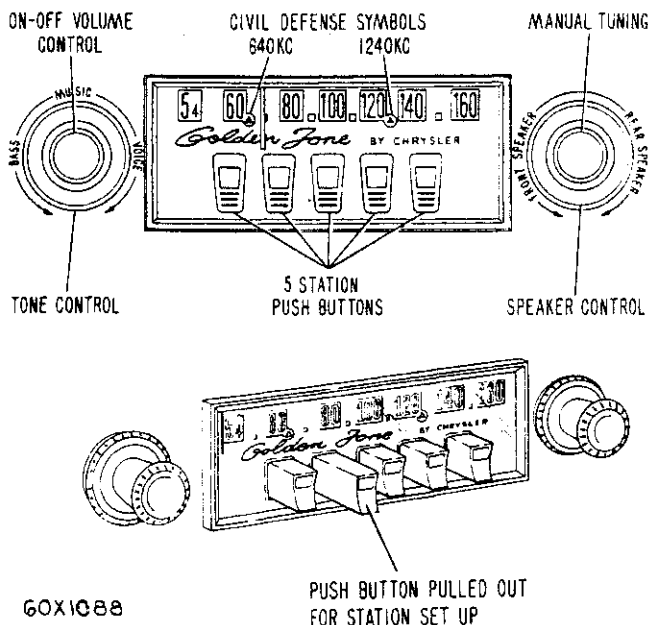


Fig. 5—Radio Controls (Model 327)

- (2) Remove the radio-to-dash support bracket.
- (3) Remove the 2 screws attaching the fuse block to the instrument panel and lower the fuse block to facilitate removal of the radio.
- (4) Disconnect the "A" lead, light lead, front and rear speaker leads, antenna leads and foot control switch connectors.
- (5) Withdraw the radio assembly from the underside of the instrument panel.

d. Installation (Imperial Models) (With or Without Air Conditioning)

- (1) Install the radio assembly from the underside of the instrument panel.

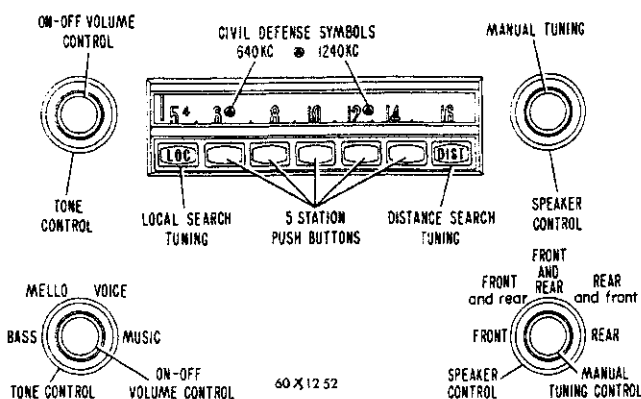


Fig. 6—Radio Controls (Model 409)

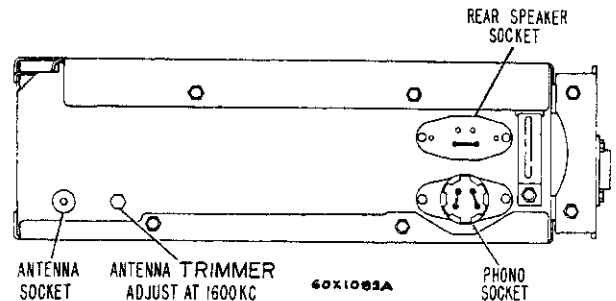


Fig. 7—Antenna Trimmer

- (2) Install the radio-to-dash support bracket and radio attaching nuts.
- (3) Connect the antenna light "A" lead, speaker leads and rear seat speaker leads and foot selector switch connector.
- (4) Connect the battery.

e. Installation (Chrysler Without Air Conditioning)

- (1) Enter the radio from underside of instrument panel and install the two shaft mounting nuts.
- (2) Install the radio-to-dash support bracket and attaching nuts.
- (3) Connect the antenna, light, "A" and speaker leads. (To connect rear speaker leads remove jumper wire from the rear speaker socket).
- (4) Connect the foot selector switch lead.
- (5) Connect the battery.

f. Installation (Chrysler With Air Conditioning)

- (1) Enter the radio assembly through the instrument panel speaker opening.
- (2) Install the radio assembly in the instrument panel.
- (3) Install the mounting bracket to the dash panel and the underside of the radio assembly.
- (4) Mount the speaker to the speaker grille.
- (5) Install the speaker grille.
- (6) Connect the battery feed, antenna and speaker leads.
- (7) Connect the light and foot selector switch connector.
- (8) Connect the battery.

ANTENNA TRIMMER ADJUSTMENT (Fig. 7)

CAUTION

The antenna compensator must be properly adjusted for the satisfactory operation of the radio.

The antenna trimmer receives its original adjustment at the time the set is manufactured; however, a final adjustment must be made so that the radio can be matched exactly to the specific antenna used in each vehicle. Generally a quarter of a turn of this trimmer in either direction will match the antenna to the radio. With antenna fully extended, tune the radio to the general area of 1600 KC on the dial — preferably off station — and turn up the volume until a hissing sound is heard. Then, with the antenna fully extended adjust the antenna compensator (located on the rear of the radio chassis) by carefully rotating it back and forth until a position is found that gives peak response and maximum volume. Unless the receiver is properly aligned to the antenna optimum performance cannot be obtained. This is particularly true in the case of the search tuner where the signal strength materially affects the over-all efficiency of the radio receiver. The same procedure can be followed when using a weak station to adjust the compensator for maximum signal volume. When this hissing sound is at its maximum or the station volume is greatest, the antenna compensator is properly adjusted and should be left in this position.

ON-OFF SWITCH AND VOLUME CONTROL (Figs. 5 and 6)

The on-off switch and volume control are combined and operative from the left-hand knob.

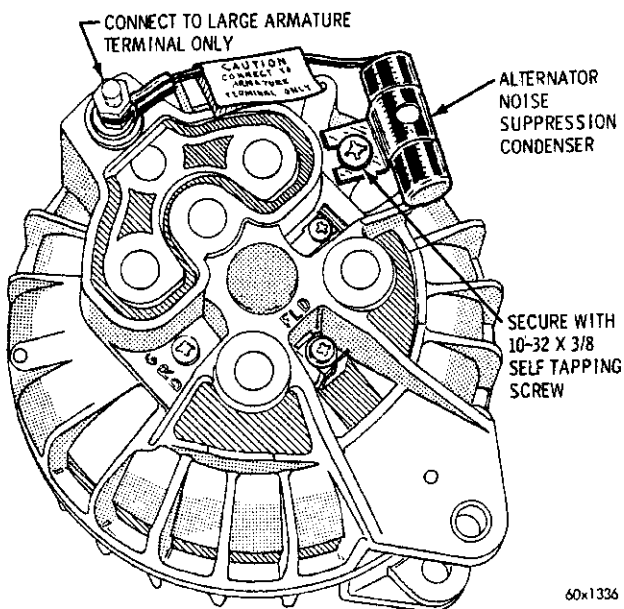


Fig. 8—Alternator Condenser Location

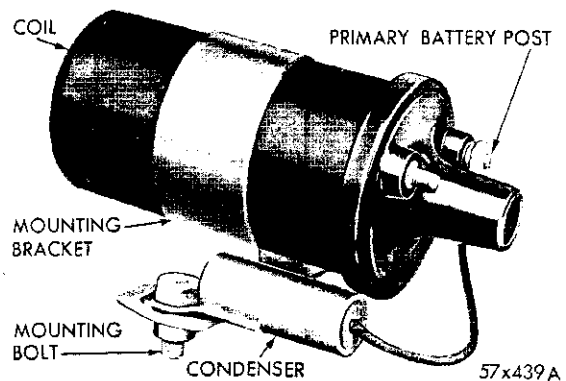


Fig. 9—Ignition Coil Condenser

INTERFERENCE ELIMINATION

When installing suppression items, make certain that all paint and dirt have been removed from the grounding area between the condensers and the engine or body components. Tighten all nuts and bolts securely.

The high tension portion of the engine ignition system uses radio resistance wire as standard equipment. The balance of the suppression equipment is installed as follows:

Connect the alternator condenser lead to the armature terminal of the alternator, (Fig. 8).

Install the ignition coil condenser, as shown in Figure 9.

FADER CONTROL PERFORMANCE

This control is used only when the vehicle is equipped with a rear seat speaker. Positioning the control in one extreme position allows operation of the rear seat speaker. Rotating the control to the extreme opposite position allows both speakers to operate with varying volume as desired, or with equal volume at mid-position.

On the 409-410 Models, a five position switch speaker fader control is used in conjunction with the rear speaker. This new feature provides an extremely wide range of sound level variation between the front and rear compartments without the usual degree of precise tuning required of the normal variable controls.

PUSH BUTTON ADJUSTMENT

- (1) Extend the antenna fully and turn the radio on for fifteen minutes.
- (2) Unlock the push button by pulling it out and manually tune in the desired station.

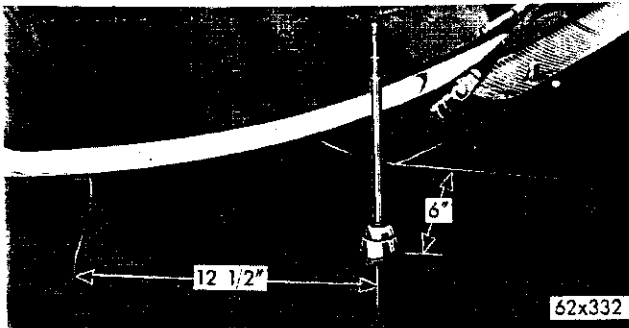


Fig. 10—Antenna Location (Imperial)

(3) Push the button back into position to lock the adjustment.

(4) Repeat the operation on the other push buttons.

LOCAL AND DISTANT PUSH BUTTONS

Local push button will tune the receiver to only strong signal stations. Distant push button will tune the receiver to most of the stations within range of the radio. For weak stations, manual control should be used for precise tuning.

FOOT SWITCH FOR SEARCH TUNING

The foot switch for search tuning, on Models 409 and 410 is located on the left forward end of the floor panel. By depressing the foot switch, it will select a station on the radio.

The foot switch activates the tuner mechanism in the same manner as the search-tuning buttons (LOC and DIST). Therefore, the foot switch will cause the search-tuner to operate at a sensitivity pre-determined by which of the two search-tuning buttons was last depressed.

MANUAL ANTENNA EQUIPPED VEHICLES

a. Removal

(1) On the front fender antenna equipped models

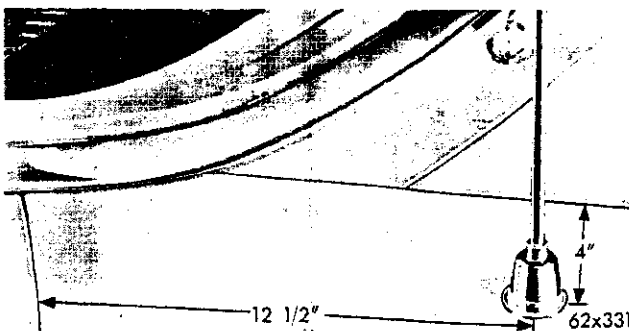


Fig. 11—Antenna Location (Chrysler)

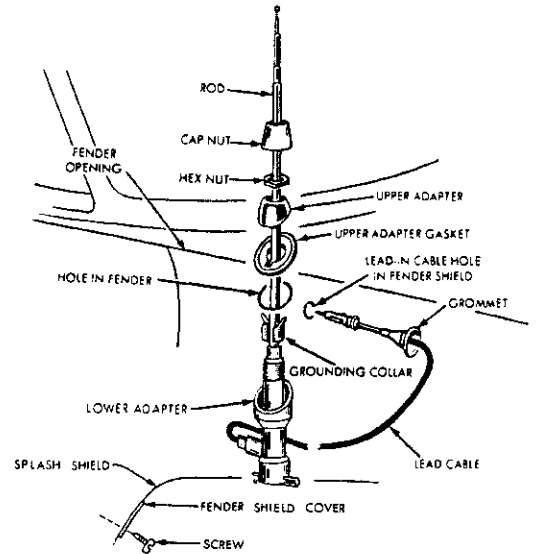


Fig. 12—Manual Antenna Installation (Front)

(Figs. 10, 11 and 12) unplug the antenna lead-in wire from radio set at instrument panel. On rear mounted antennas, unplug the antenna short lead from the extension cable at the "Y" connector located in the trunk compartment.

(2) Lower the antenna.

(3) Remove the plastic cap and nut attaching the antenna to rear wheel housing.

(4) Remove the nut, plastic adapter, gasket and ground collar.

(5) Remove the antenna assembly.

When installing the antenna, care should be taken to route the "lead-in" cable over the glove box compartment to allow for ample cable length when plugging the "lead-in" cable into the radio receptacle.

b. Installation

(1) Install the antenna rod, lower adapter and mount the antenna to quarter panel or front fender.

(2) Install the gasket, upper adapter and attaching nut.

(3) Tighten the attaching nut and install the nut plastic cap.

(4) Install the lead-in cable to "Y" connector on rear mounted antenna and in radio set on front fender equipped models.

(5) Test the radio for proper operation.

THE ELECTRIC ANTENNA

The electric radio antenna (Fig. 13) used on Chrysler and Imperial vehicles is a telescoping type antenna, extended and retracted by a coiled nylon cord powered by a two direction electric motor. The main components of the electric antenna are the motor and drive assembly, the mast assembly and the support tube assembly. The antenna is serviced as a mast assembly, motor and the drive assembly, connector, pad and pin assembly, "lead-in" assembly and the necessary switches.

GENERAL DIAGNOSIS

If the antenna fails to operate satisfactorily, the problems can be divided into two general categories: (a) reception, (b) operational.

(a) Weak, intermittent, noisy, or no reception: Generally caused by a broken "lead-in" wire, poor connection, faulty insulation or the mast or "lead in" wire, or moisture in the antenna body tube.

(b) Failure of the antenna to raise or lower: Generally can be traced to a blown fuse, faulty electrical connections at the switch or switch lead terminals, bent antenna mast rods, or a faulty motor and drive assembly.

Before an antenna is removed, the antenna performance should be tested to determine whether it is a reception problem or an operational problem.

MAINTENANCE

Many antenna problems may be avoided by frequent cleaning of the antenna mast telescoping sections. This may be performed when the car is being washed by cleaning the antenna mast sections with a clean soft cloth. In the winter, wipe the clean antenna sections with a cloth moistened with light oil.

PRELIMINARY TESTS

Clean the antenna and drive assembly before test or disassembly.

(1) With a source of 12 volt (D.C.) power, test the operation of the drive mechanism by grounding the negative (-) lead to the drive housing and with the positive (+) lead, contact the "yellow" (up) lead terminal to extend the antenna, and contact the "brown" (down) lead terminal to retract the antenna.

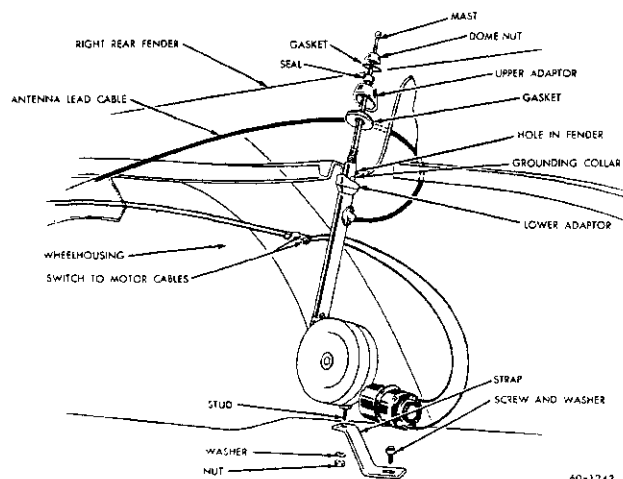


Fig. 13—Motorized Antenna Location (Front)

If the motor will not operate, replace the motor and drive assembly. If the motor runs freely and the antenna does not extend or retract, the mast assembly is at fault and should be replaced by a new mast. If the motor labors and the antenna extends and retracts very slowly, it may be caused by excessive dirt on the telescoping sections or bent telescoping mast rods. Clean and straighten the telescoping mast rods.

(2) Sometimes poor reception can be corrected by proper adjustment of the radio antenna trimmer. If this fails to produce the desired results, a substitute antenna known to be satisfactory may be plugged into the radio with the extended mast held out of the car window. (Do not ground the mast).

Upon establishing that the fault is in the antenna assembly, it may be traced to one or more of the following:

- (a) Broken "lead-in" wire or shielding.
- (b) Shorted "lead-in" wire or mast assembly.
- (c) Moisture in the support tube or "lead-in" assembly.
- (d) Poor connection (antenna "lead-in" assembly or shielding ground.)

The preliminary check may indicate that removing the antenna from the vehicle is necessary for further checking, repairs or parts replacement. In this event, follow the procedure for antenna removal.

SERVICING PROCEDURES

Removal

- (1) Fully lower the antenna.
- (2) Disconnect the motor leads at the connectors.
- (3) Disconnect the antenna "lead-in" wire at the antenna.
- (4) Remove the antenna mounting escutcheon nut. Remove the fender shield lower hole cover.
- (5) Remove the nut attaching the drive housing to the antenna lower mounting bracket.
- (6) Remove the antenna assembly, being careful not to bend the mast rod.

BENCH TEST FOR RECEPTION MALFUNCTION

(a) With the test lamp and battery in the circuit, attach one test lead to the concentric pin on the "lead-in" connector and the other test lead to the mast sections. The lamp should "light" indicating continuity.

(b) Keeping the one lead on the connector pin, clip the other lead on the antenna support tube assembly. The lamp should "not light". If it does, look for a ground between the mast and support tube or inner conductor from the pin and pad.

(c) Remove the clip lead from the connector pin and clip it on the outer shell of the connector. Connect the other clip lead to the antenna support tube

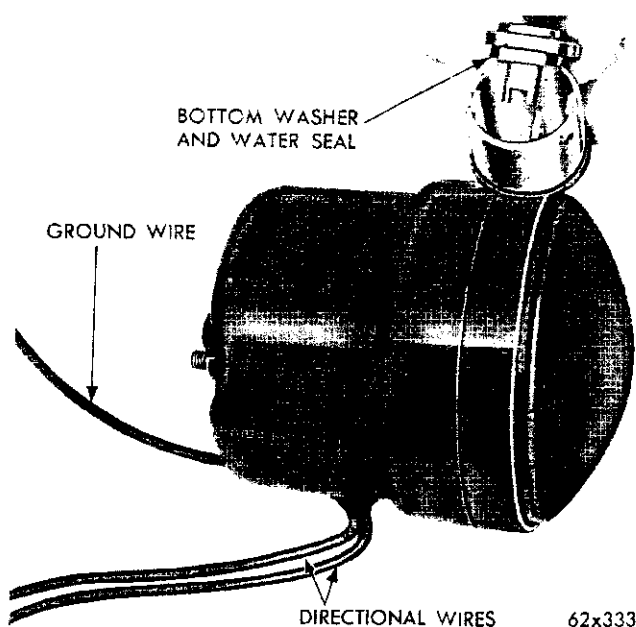


Fig. 14—Removing Bottom Insulator and Water Seal Washer

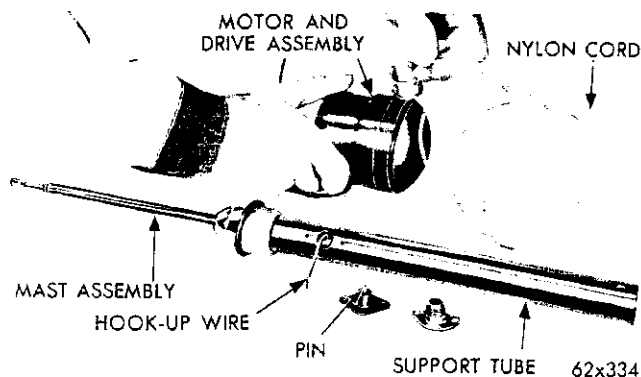


Fig. 15—Assembling Power Antenna

assembly. The lamp should "light" again. If it does not "light", the antenna shielding has an open circuit.

(d) Locate the ground or open circuit and repair or replace component parts as required.

NOTE: DO NOT attempt to service the details of the Motor and Drive Assembly. This sub-assembly must be serviced as a complete unit.

To Remove the Motor and Drive Assembly or Mast Assembly

- (1) Remove the (2) screws holding the "lead-in" receptacle.

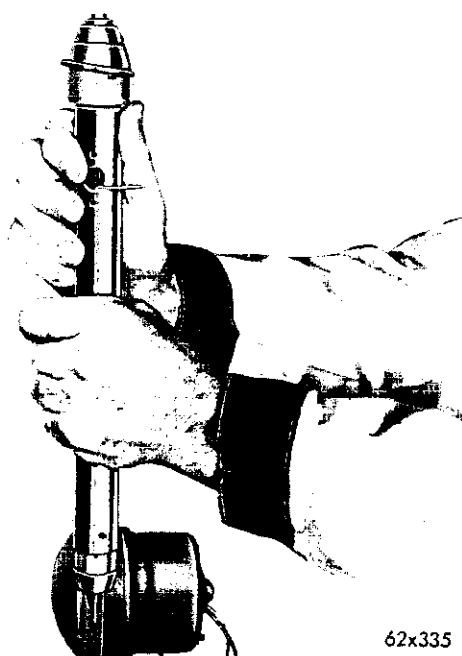


Fig. 16—Installing Mast Support

(2) Unsolder the pin from the wire.

(3) Remove the (3) screws which hold the "support tube" to the motor and drive assembly.

(4) Holding the motor and drive assembly in one hand and the "support tube" in the other hand, pull (applying back and forth rotary motion at the same time) until the support tube assembly is removed from antenna.

(5) Holding the motor and drive assembly in one hand and mast assembly in the other hand (grasp near bottom of mast assembly), rock the mast assembly back and forth and pull at the same time. This will remove the "insulator bushing" from "tubular fitting" and "outer mast section" from remainder of antenna assembly.

(6) Apply 12 volts D.C. to the "yellow" (up) power lead and ground, until the entire length of the "nylon cord" has been expelled from the drive. To prevent a kink or bend in the "nylon cord", keep it taut by pulling on the Mast.

NOTE: If motor and drive assembly is inoperative it will be necessary to manually remove the "nylon cord" from the drive.

CAUTION

DO NOT DISASSEMBLE THE MOTOR AND DRIVE ASSEMBLY FOR ANY PURPOSE.

In order to remove the "nylon cord" from the disabled motor and drive assembly, place the assembly in a vise so that the normal plane of the "nylon cord" is parallel with the floor, then using both hands pull on the "nylon cord" until it is completely expelled from the drive.

(7) Remove the "bottom insulator" and "water seal washer" (Fig. 14) from the "tabular fitting" using a wire hook and long nose pliers.

To Install the Mast Assembly or Motor and Drive Assembly

(1) If the original mast assembly is reused, thread the "nylon cord" through the "bottom insulator" with the tubular projection down (Fig. 15). Then thread the "nylon cord" through the "water seal washer".

NOTE: The "bottom insulator" and "water seal washer" are included on the service replacement mast assembly.

(2) Apply 12 volts D.C. to the "brown" (down) power lead and ground. Feed approximately 12 inches of the nylon cord into the drive. Push the "water seal washer" and "bottom insulator" all the way down into the "tubular fitting." Apply 12 volt D.C. power until "nylon cord" disappears.

(3) Push the "outer mast section" down into the "tubular fitting". Make sure that the upper edge of the flange on the "insulator bushing" is below center of the 3 holes in the "tubular fitting".

(4) Install the support tube assembly in proper position making sure the hook-up wire is extended through the large hole in the body (Fig. 16).

(5) Install the (3) screws to attach the support tube assembly to the motor and drive assembly.

(6) Solder the "hook-up wire" to the "pin".

(7) Assemble the "lead-in" receptacle with the (2) screws.

(8) Apply 12 volt power to the "yellow" and "brown" antenna leads and test for up and down operation.

(9) Install the antenna and connect the leads.

(10) Test the radio operation.

NOTE: On the field installed dual rear antennas, care should be taken to route the rear antenna cable around the rear wheel housing behind the trunk liner to the "Y" connector located behind the rear slot in the luggage compartment so as to avoid interference from the hinges when opening and closing the lid.

HEATER

The hot water heating system (Fig. 17) used on all 1962 models for heating and defrosting is controlled by four push buttons and a temperature control lever (Fig. 18). A fifth push button independently controls the summer ventilation system.

The Temperature Control Lever—operates the water valve through a bowden cable. It is important that the bowden cable be adjusted to provide full opening and closing of the water valve for efficient functioning of the system.

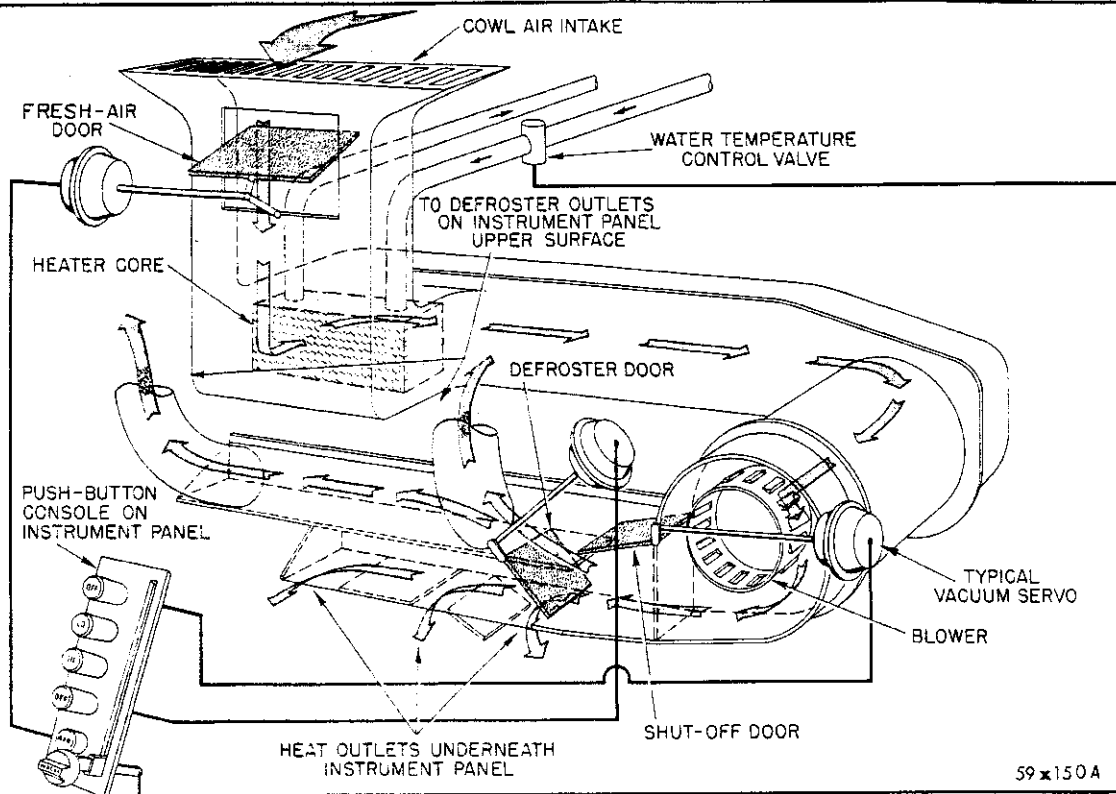


Fig. 17—Push Button Operated Heater (Schematic View)

Summer Ventilation—is controlled by opening of the ventilator air damper (Fig. 17).

For Heating—air enters through the cowl intake (Fig. 18) passes through the heater core into the blower and distribution duct through the opened shut-off damper (Fig. 17).

Defrosting—is controlled by the defroster damper (Fig. 17). For maximum defrosting or deicing, the temperature control lever must be set in the full warm position.

Temperature Control Lever—selects the temperature of the air discharged through the lower and

upper outlets. When the lever is to the left, air is not being heated. Air temperature is increased by moving the lever toward "WARM" position.

OFF Button—When "OFF" button is pushed in, the system will not operate. The "OFF" button cuts off the current from the control lever switch and blower motor. The ventilation doors are closed, preventing outside air from entering car.

VENT Button—Opens the ventilation door to allow outside air to enter the car directly. It does not operate the blower.

DEF Button—Causes a major portion of the air to be forced onto the windshield through air outlets on top of instrument panel for defrosting or defogging.

"HI" Button—Causes major portion of air to be directed toward the car floor, at high blower speed.

"LO" Button—Provides gentle heat at low blower speed.

Heating the Car

Until the engine warms up, make sure the "OFF" button is pushed in and the temperature control lever is in the "WARM" position. Then, push in the "HI" button and leave the temperature control lever in the "WARM" position for fast initial car warm-

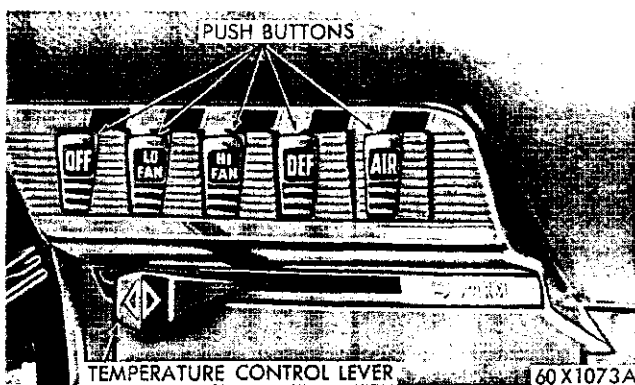


Fig. 18—Temperature Controls

up. After warm-up use the "LO" button to adjust the speed as desired, and adjust the position of the temperature control lever to maintain desired temperature. When the "HI" button is pushed in, sufficient warm air will be forced onto windshield through the upper air outlets for adequate defogging during average driving conditions.

Defrosting or Defogging the Windshield

Push the "DEF" button for maximum defrosting move the temperature control lever to "WARM" position.

Summer Ventilation

Push in the "VENT" button to open the ventilation door. Move the temperature control lever to the extreme left. The ventilation door may be left open during rain.

Rear Window Defroster (When So Equipped)

A toggle switch (at left and under the instrument panel) operates a blower which circulates air over the rear window to prevent fogging.

SERVICE PROCEDURES

HEATER BLOWER

a. Removal (Fig. 19)

- (1) Disconnect the battery ground cable.
- (2) Disconnect the heater ground wire at windshield wiper motor mounting bracket.
- (3) Disconnect the heater wires from harness connectors.
- (4) Disconnect the vacuum hoses at each vacuum unit.
- (5) Remove the hoses from their attaching clips.
- (6) Remove the heater valve capillary coil from the opening in the heater housing (driver's compartment, passenger side).
- (7) Remove the clips from the housing.
- (8) Remove the three screws attaching the heater distribution duct to dash panel, (one is located to

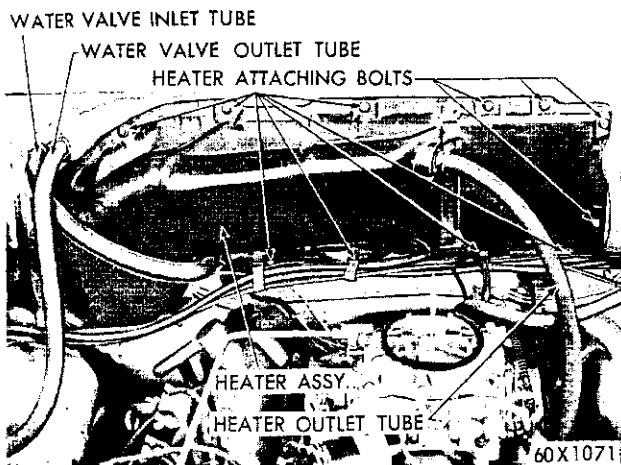


Fig. 19—Heater Removal

the left of vent door and to the right of brake pedal bracket; one below the heater at passenger side and one screw is located at the windshield wiper motor right link pivot). To facilitate removal, disconnect the windshield wiper right link at pivot to expose the housing screws.

(9) Remove the housing and blower by pulling down and out of the driver's compartment.

(10) Remove the blower, mounting plate and motor.

b. Installation

If the blower motor was removed from the mounting plate be sure the mounting grommets are installed at the attaching bolts. If blower wheel has been removed from motor shaft, be sure to use new Tinnerman clips when reassembling wheel to shaft.

(1) Install the blower motor and mounting plate to the heater housing. Be sure the blower wheel is free and does not rub.

(2) Position the housing on dash panel and install the three attaching screws. There is a spacer at each attaching screw, be sure these spacers are installed between the heater housing and the dash panel when installing housing; otherwise, the housing could be damaged when tightening the screws.

(3) Reposition the heater water valve capillary coil in the heater housing and install attaching clips.

(4) Connect the vacuum hoses at vacuum unit and install the attaching clips.

(5) Connect the heater wire at harness connectors and install the black ground wire at windshield wiper motor bracket.

(6) Attach the windshield wiper motor pivot link (if disconnected).

(7) Connect the battery ground cable.

HEATER VACUUM ACTUATOR REPLACEMENT

To replace a vacuum actuator proceed as follows:

(1) Disconnect the vacuum hoses.

(2) Remove the two nuts and lockwashers attaching the vacuum unit to housing, and one clip attaching the vacuum unit rod to the actuated unit.

VENT DEFLECTOR—REPLACEMENT

The vent deflector is held to the heater housing by three screws. This deflector should be removed whenever the radio is to be removed.

HEATER CORE

a. Removal

(1) Disconnect the battery ground strap.

(2) Drain the cooling system as necessary.

(3) Disconnect the heater hoses at heater.

(4) Remove the screws attaching the heater core housing to the dash panel.

(5) Remove the housing and core as an assembly.

(6) Remove the mastic to expose the plastic rivets.

(7) Remove the heater core from outer housing.

NOTE: The core is held in position in the outer housing with plastic rivets. Care should be used when pressing out these rivets to avoid damaging the housing or the rivets.

b. Installation

(1) Place the heater core in the heater outer housing and install the plastic rivets.

(2) Install new mastic.

(3) Position the heater housing and core assembly on the dash panel.

(4) Install all screws before tightening to insure proper alignment.

(5) Connect the heater hoses at heater.

(6) Refill the cooling system as necessary.

REAR WINDOW DEFROSTER

The rear window defroster (optional on all Models) is located on and under the rear shelf panel of the car, and consists of a blower, flexible hose and nozzle. A switch, located on the instrument panel, controls the blower for defrosting the rear window. The rear window defroster operates independently from the car heater. The air recirculated on the rear window glass is drawn by the defroster blower from air inside the car.

AUTOMATIC BEAM CHANGER

The automatic beam changer is an automatic headlight control unit which senses the headlight intensity from other vehicles and automatically adjusts the headlights to a bright or dim setting.

A scanner and base assembly is mounted on top of the instrument panel (Fig. 20). The control unit is mounted on a convenient structural part (grounding purposes) of the vehicle's body, see Figure 21.

OPERATION

The automatic beam changer will dim the headlights when an oncoming car is seen at a distance of approximately 1200 feet. The unit will reset the headlights on "bright" within approximately $\frac{1}{2}$ second after the approaching car has passed.

The headlight setting can be interrupted by using the conventional dimmer switch. If the unit has a "bright" setting and the driver feels that a "dim"

setting is required, he can override the automatic control by depressing the dimmer switch to obtain the "dim" condition. Automatic operation is restored

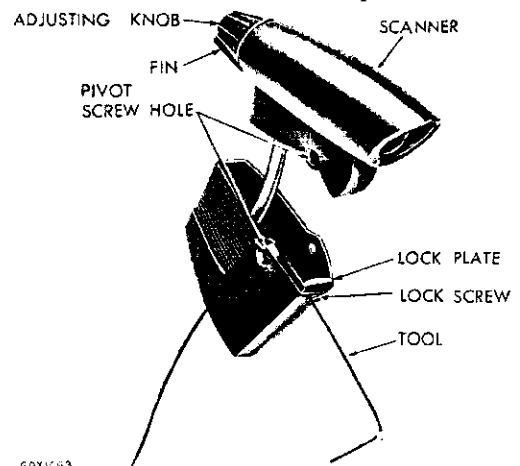


Fig. 20—Scanner Assembly

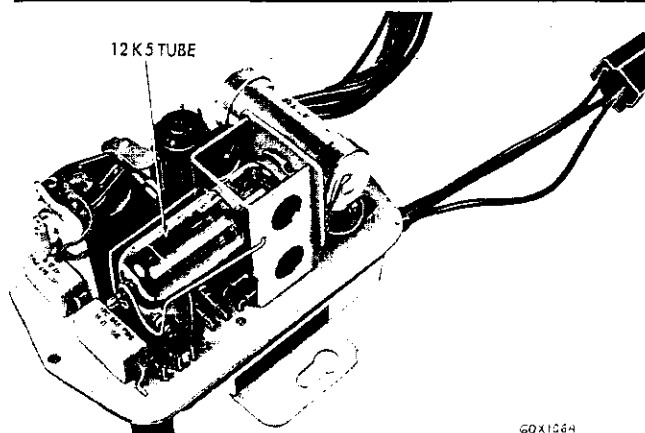


Fig. 21—Scanner Control Box Assembly

when the driver again depresses the dimmer switch.

DRIVER ADJUSTMENTS

A knob, located at the rear of the scanner unit, Figure 20, provides a sensitivity adjustment. If the headlights do not “dim” quickly enough upon approaching another car, it is an indication that sensitivity is set too “low” and correction is made by turning the scanner knob clockwise (to the right). If the headlights “dim” too soon, sensitivity can be decreased by turning the scanner knob counterclockwise (to the left).

AIMING THE AUTOMATIC BEAM CHANGER

Pre-aiming instructions—Before attempting to aim the automatic beam changer, complete the following: Place the vehicle on a level floor. Measure the front spring height. Adjust to specifications, if necessary. Check tire inflation. Tire pressure should not vary more than 3-5 pounds. Rock the vehicle sideways to allow the spring shackles and other suspension parts to assume normal position. If the gasoline tank is not full, place an equivalent weight in the trunk of vehicle. There should be no other load in the vehicle, other than the driver.

AIMING THE SCANNER

Mount the “scanner” aimer leveling Tool C-3697, on

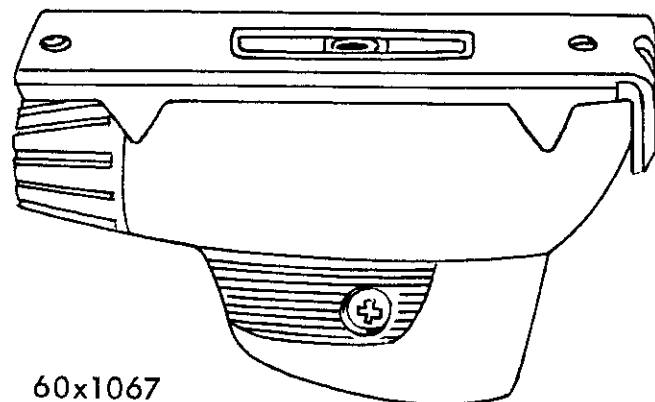
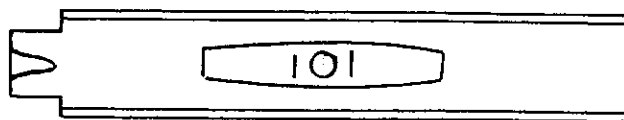
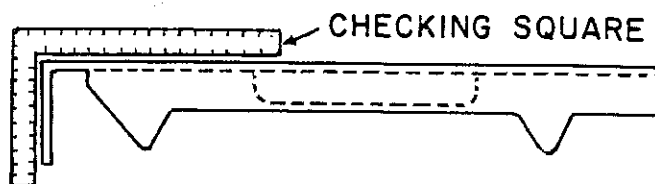


Fig. 22—Scanner Leveling Tool

the “scanner” unit, as shown in Figure 22. Make sure that all conditions listed under “pre-aiming instructions” have been met, before proceeding with the aiming operation.

Loosen the phillips head pivot locking screw Figure 20, just enough to permit free movement of the “scanner” through its arc, as controlled by the mounting base. (Total angular deflection of the “scanner” unit is 14 degrees.)

Pivot the “scanner” forward or backwards on base (through arc) until the leveler assumes a level position. Tighten the pivot and locking screws.

SERVICE PROCEDURES

a. Removal (Scanner Unit)

- (1) Disconnect the battery.
- (2) Disconnect the feed wires.
- (3) Remove the pivot and locking screws.
- (4) Remove the scanner assembly.

b. Installation (Scanner Unit)

- (1) Mount the scanner to scanner base.
- (2) Install the pivot and locking screw.
- (3) Connect the feed wires.
- (4) Connect the battery.
- (5) Perform the operations listed under "Aiming the Scanner."

c. Removal (Control Unit)

- (1) Disconnect the battery.
- (2) Disconnect the control box wires at the connectors.

- (3) Remove the control box attaching screws.

- (4) Remove the control box assembly.

d. Installation (Control Unit)

- (1) Clean the area around the body where the control box spacer is attached to the dash panel to obtain proper metal to metal ground.

- (2) Mount the control box assembly to the body and install the attaching screws.

- (3) Connect the control box wires to the connectors.

- (4) Connect the battery.

MIRRO-MATIC ELECTRONIC REAR VIEW MIRROR

The electronically operated mirror-matic rear view mirror, as shown in Figure 23, is a self-dimming automatic device which provides maximum rearward vision at night. The mirror assembly reflects images from a silvered surface in the bright position utilizing the optical characteristics of a prism to reduce glare when the lights of an overtaking vehicle directed at the mirror reaches a certain intensity and actuates the mirror. The electronic glare detecting and mirror actuating mechanism is housed entirely within the mirror assembly (Fig. 24). The automatic tripping mechanism is a tiny photo-electric cell which "sees" through a small aperture in the silvered mirror surface. Light striking the cell generates a small current which increases with increasing light intensity.

When the light intensity becomes high enough to cause annoying glare, the current is enough to activate a miniature amplifier and solenoid assembly which tilts the prism mirror slightly upward. In this position, the image seen by the driver is a dim

one off the front surface of the glass, (Fig. 25). As long as glare is present, the mirror will remain in its "dim" position, returning immediately to its normal "bright" position when the glare drops below a preset level.

The sensitivity of the sensing device is easily adjusted, to cause the automatic controls to actuate the mirror at whatever light intensity the driver finds most satisfactory.

DRIVER ADJUSTMENT (Positioning Mirror)

When adjusting the position of mirror-matic for best visibility, the headlights must be turned off to prevent the headlight circuit from energizing the photo-electric cell and creating a false reading.

An adjustment wheel (Fig. 23) protruding from the bottom of the mirror assembly is marked with an "off" position and numbered through the turn-

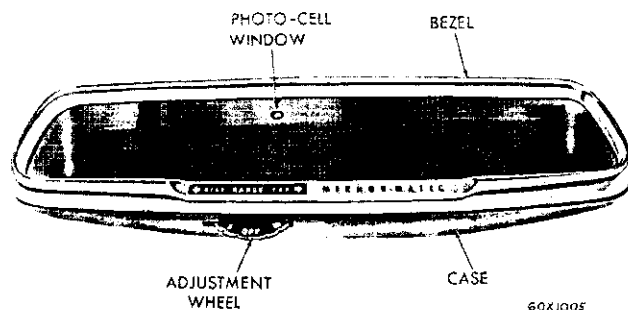


Fig. 23—Electronic Rear View Mirror

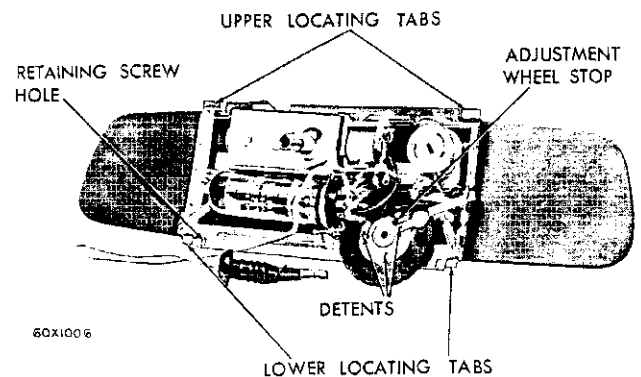


Fig. 24—Mirror Actuating Mechanism

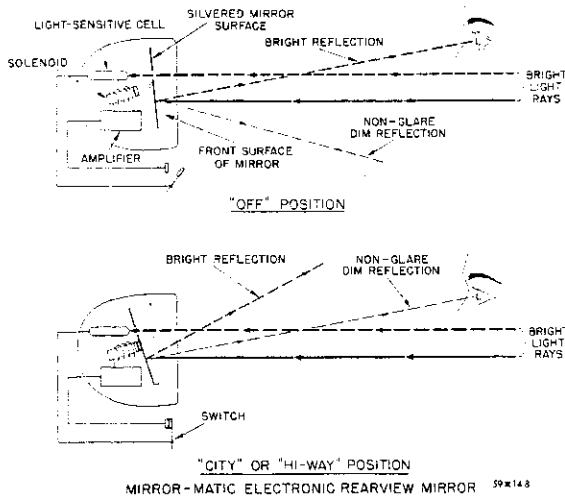


Fig. 25—Electronic Rear View Mirror Operation

ing range from "one" to "ten," with number "three" "six" and "ten" detented to facilitate adjustment by feel.

The adjustment wheel must be turned "counterclockwise" to reach the "off" position on the wheel. When the mirror is set at the number "three" notch (normal city driving), the mirror will be actuated by low beams from an overtaking car within approximately 80 feet. When the mirror is set at the number "six" notch (normal highway driving) the beams will be actuated within 250 feet, when set at the number "ten" notch the beam will be effective at 400 to 500 feet.

REMOVAL AND DISASSEMBLY

- (1) Remove the mirror assembly from the attaching pedestal.
- (2) Carefully pull the bezel from the case assembly.

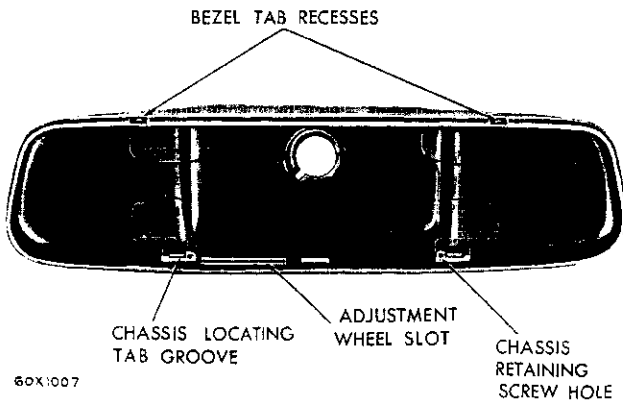


Fig. 26—Locating the Grooves

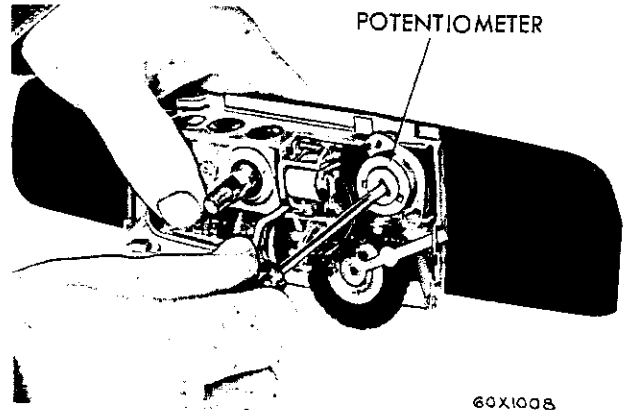


Fig. 27—Adjusting the Potentiometer

- (3) Locate the ball joint in the down position towards the adjustment wheel.
- (4) Bend the top of the case upwards to disengage each of the upper tabs from the case retaining grooves (Fig. 26).
- (5) Press on the ball joint extension so as to tip the mirror assembly out of case.
- (6) Pivot the adjusting wheel in the slot of the case until the upper part of the electronic chassis is outside of the upper forward edge of case.

INSPECTION AND TROUBLE SHOOTING

a. Before Disassembly

In case the mirror does not function properly the following inspection operations should be performed:

- (1) Test the fuse and replace if necessary.
- (2) Inspect the lead wire, ground and other connections to make sure current is flowing to the mirror.
- (3) Note the flip angle of mirror through which the image moves, when the mirror is actuated by

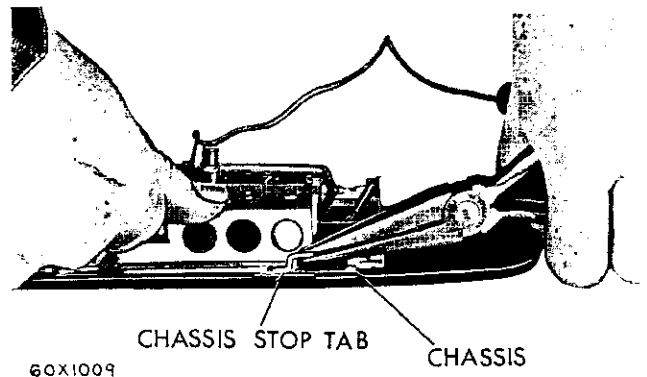


Fig. 28—Aligning the Chassis Tabs

sighting at some object through the rear window while actuating the mirror. If the image changes position when mirror is actuated the flip angle is incorrect.

b. After Disassembly

(1) Measure the spring load on the mirror chassis using a spring scale. Attach the scale to the chassis at the photo cell opening. Hold the assembly firmly and measure the spring load. The spring load should be at least 8 ounces. If less than 8 ounces the tension can be increased by shortening the two return springs at the lower corner of the chassis assembly. **The small coil spring located on top of the relay along side the potentiometer should not be tampered with since this spring is pre-set to specific dimensions.**

(2) If the sensitivity was incorrect adjust potentiometer by turning clockwise to increase, counter-clockwise to decrease, (Fig. 27).

(3) If the flip angle was incorrect, bend the chassis top tab (Fig. 28) rear of the solenoid, toward the glass to reduce the flip angle or away from glass to increase the flip angle. Do not bend the tab more

than **one or two degrees** or the solenoid will not operate properly.

(4) Should it be necessary to separate the glass from the chassis it can be done by releasing the chassis return springs and disengaging the mirror from the chassis pivots.

REASSEMBLY AND INSTALLATION

With the ball joint end in the down position:

(1) Install the lead wire through the hole in the rear of case.

(2) Position the lower edge of the mirror in the case to allow for easy entrance to the adjustment wheel in the slot.

(3) Engage the chassis lower locating tabs in the case recess.

(4) Bend up the upper edges of the outer case slightly to allow for clearance of the upper locating tabs of the chassis.

(5) Assemble the mirror in case by slightly tipping the assembly.

(6) Engage the locating tabs in the case recesses.

(7) Install the bezel on the case.

ELECTRIC CLOCK

All models are equipped with a solenoid actuated self regulating clock, using a two ampere fuse located at the lower end of the clock. The clock can be

regulated by pulling out the regulating stem below the clock face and turning until the correct setting is accomplished.

SERVICE PROCEDURES

a. Removal (Chrysler)

(1) Remove the screw attaching the clock to the instrument panel, and the other two screws attaching the clock retainer to the rear of the instrument panel.

(2) These screws can be reached, after removing the glove box door, and the glove box assembly.

b. Removal (Imperial)

(1) Remove the three screws attaching the instrument cluster bezel to the instrument panel.

(2) Pull the cluster forward from the instrument panel, just far enough to allow for disconnecting of the reset cable, clockwire and illumination wire. Remove the clock attaching screws.

c. Installation (Chrysler)

(1) Install the clock retainer screws.

(2) Connect the bowden cable clockwire and clock lamp wire.

(3) Install the bezel retainer screw.

(4) Install the glove box assembly and glove box door.

d. Installation (Imperial)

(1) Install the clock and retainer screws.

(2) Install the reset cable, clockwire, and lamp wire.

(3) Install the instrument cluster bezel screws.

REMOTE CONTROL OUTSIDE MIRROR

OPERATION

The remote control outside mirror is controlled by stainless steel wires attached to wobble plates and a lever within the mirror assembly and is operated by a toggle lever located on the instrument panel (Fig. 29). Adjustment of the mirror to meet driving requirements can be made without moving from the normal driving position.

a. Removal

- (1) Remove the toggle lever assembly bezel.
- (2) Remove the (2) screws attaching mirror to fender.

- (3) Remove the mirror, gasket, cable and lever assembly.

b. Installation

- (1) Install the gasket, mirror and cable assembly in the fender opening.
- (2) Route the cable and lever assembly up through the body to the instrument panel opening.
- (3) Attach the bezel to the cover assembly and tighten.
- (4) Test and adjust the operation of mirror.

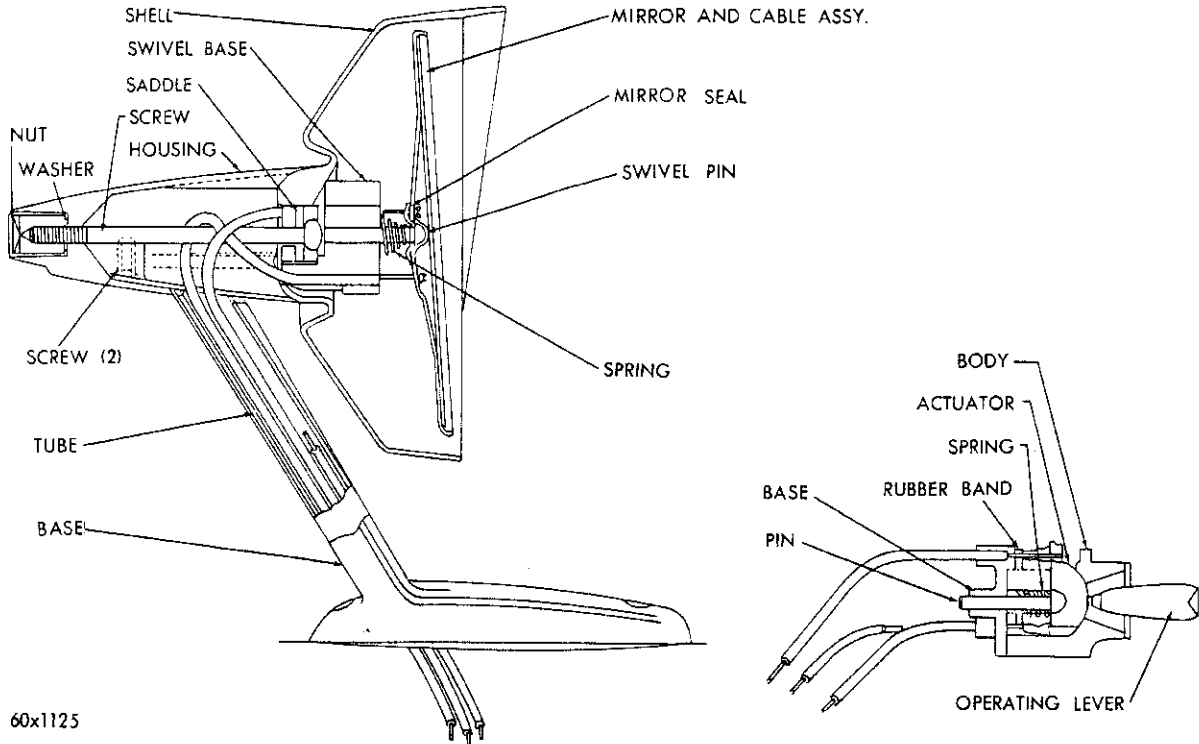


Fig. 29—Mirror Operating Lever

WINDSHIELD WASHER

The electrically-operated windshield washer is standard equipment on all Chrysler and Imperial models.

It is located on the engine side of the radiator support at the lower right corner (Fig. 30). This

new unit is a permanent magnet type motor, coupled to a plastic gear pump that supplies fluid through rubber tubing to dual nozzle jets mounted in the fresh air intake grille of the cowl ventilator. The motor is a permanently lubricated sealed unit and

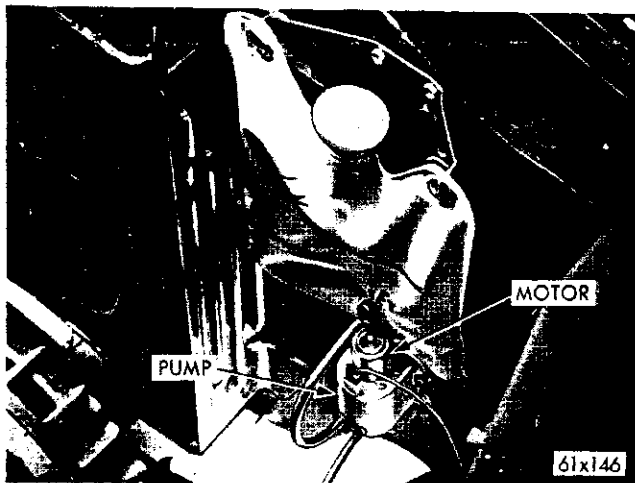


Fig. 30—Windshield Washer

needs no servicing. A circuit breaker in the unit protects the motor from overheating in the event of continuous operation or stalling of the pump. The pump and motor will be serviced as an assembly only.

TWO GEAR PUMP

A plastic bag type reservoir is mounted directly above the pump and the fluid is gravity fed from the bottom of the bag directly to the plastic two gear pump. The pump is a sealed unit and needs no service.

The outlet of the pump is attached by a rubber tubing to dual adjustable brass nozzles. Adjustment of the nozzle may be made by inserting a small screwdriver into the opening of the grille and rotating the nozzle in the direction of the spray is desired.

OPERATION

Depressing a small button in the center of the windshield wiper knob actuates the motor and pump and a continuous stream of fluid is ejected as long as the button is depressed and fluid remains in the reservoir. The windshield washer operates independently of the windshield wipers.

AUTO-PILOT

The auto-pilot (Fig. 31) is a driver operated voluntary speed control. It can be used either as a warning signal to indicate that a pre-set vehicle speed has been reached, or as a fully automatic vehicle speed regulator. In either operation it helps to reduce driver fatigue, contribute to highway safety, and improve fuel economy.

SPEED WARNING OPERATION

A convenient dial selector knob located on the dash (Fig. 32) is used to set the auto-pilot to the desired speed the driver selects for the existing driving conditions. When the car reaches the preset speed, the auto-pilot provides a reaction pressure to the accelerator pedal pressure. Since the reaction pressure is five to seven pounds, the driver can exceed this speed by pressing the accelerator pedal through the reaction pressure and obtain the desired additional speed.

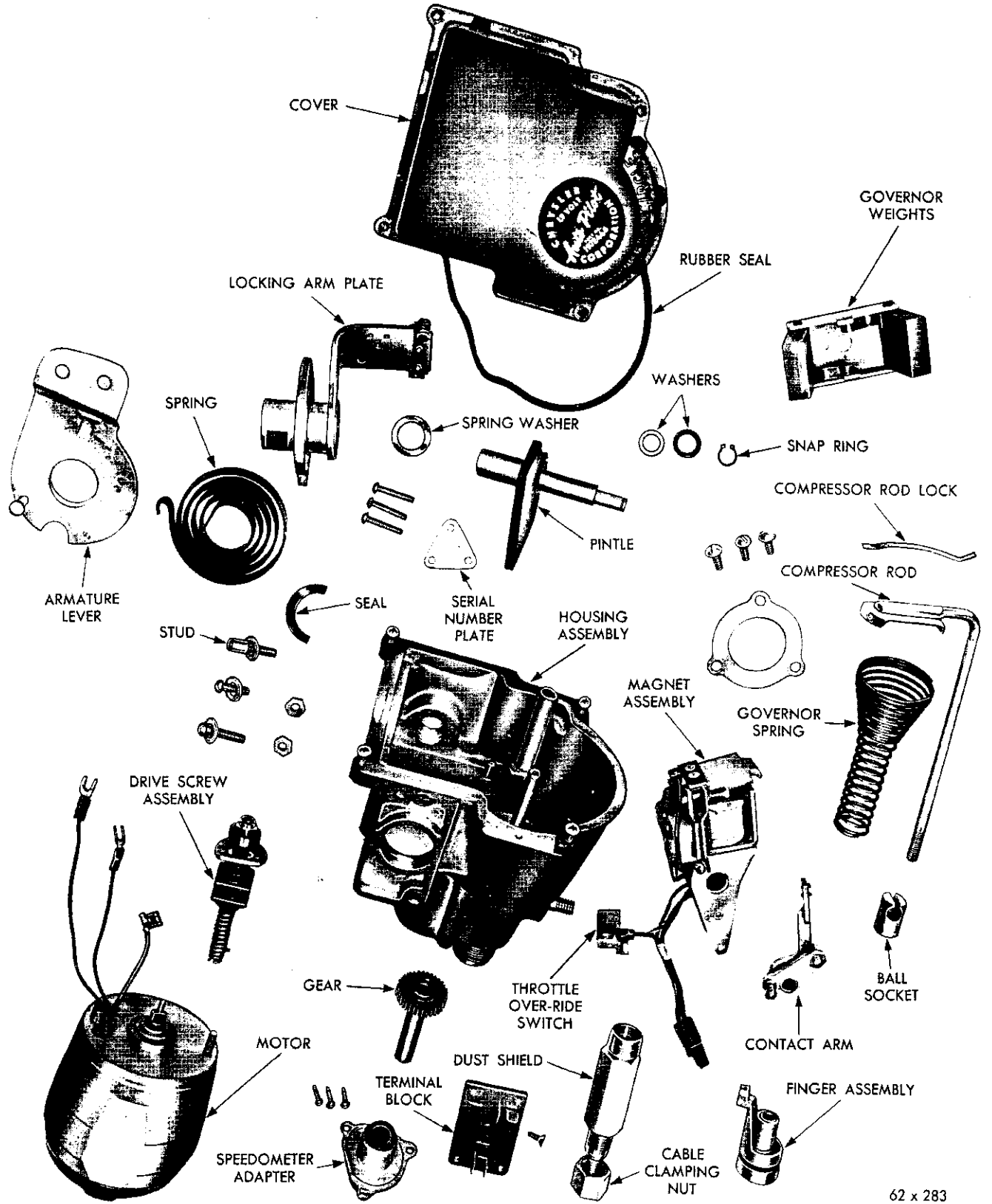
AUTOMATIC OPERATION

With the selector knob set to the desired speed, and

the button in the center of the knob pulled out (Fig. 32), the driver can accelerate the car to the speed where the reaction pressure is felt and the auto-pilot will engage itself. Then relaxing the accelerator pedal pressure, the auto-pilot will be in automatic regulation of the accelerator. The accelerator will automatically advance on uphill and retard on down grade operation. Automatic control ceases instantly with the slightest brake pedal movement and the accelerator will revert to manual control. Disengagement of the automatic control may also be accomplished by pushing "IN" the center button of the selector knob or turning the ignition switch to "OFF".

LUBRICATION

Internal working parts of the auto-pilot are equipped with self-lubricated bearings, shielded ball bearings, or have been factory lubricated for the service life of the unit. When any internal service is performed, the drive screw worm (Fig. 33) and compressor rod (Fig. 34) should be lubricated lightly with MoPar lubriplate.



62 x 283

Fig. 31—Auto-Pilot (Disassembled)

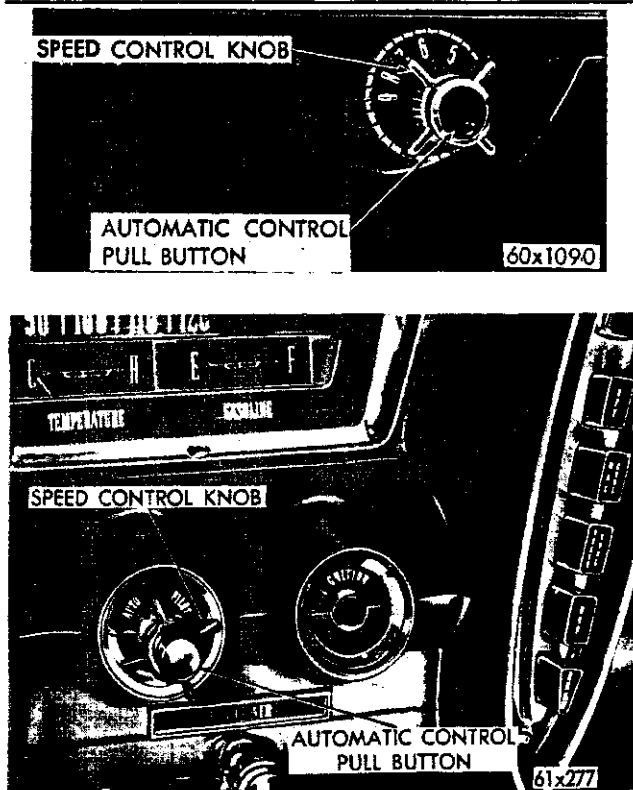


Fig. 32—Auto-Pilot Controls (Chrysler & Imperial)

MAINTENANCE, EXTERNAL ADJUSTMENTS, LINKAGE ADJUSTMENTS AND TESTS

Service Adjustment

There are five service adjustments for the Auto-Pilot: 1. Linkage Adjustment; 2. Control cable Adjustment; 3. Locking arm latch adjustment; 4. Point

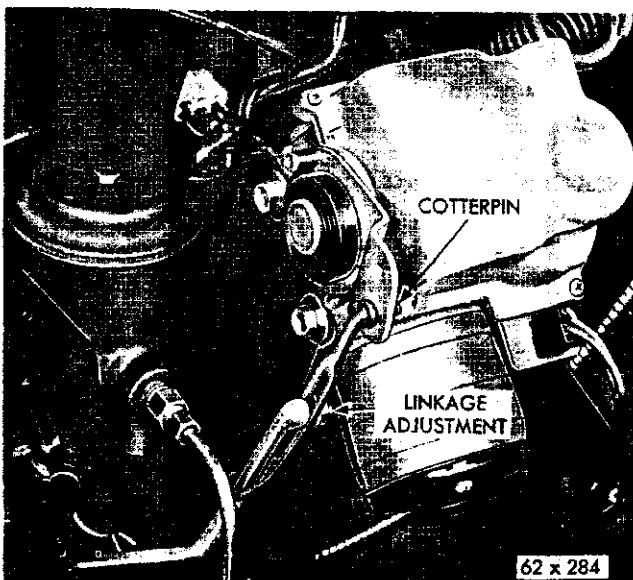


Fig. 33—Linkage Adjustments

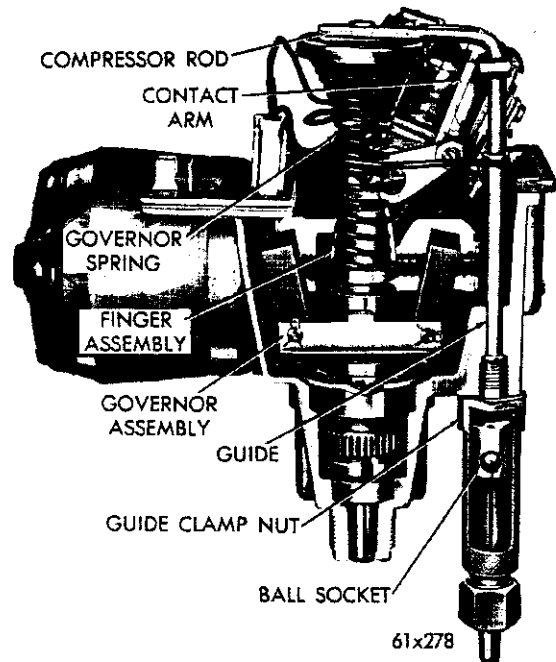


Fig. 34—Governor Assembly (Cut Away View)

adjustment; 5. Brake switch test and adjustment.

Linkage Adjustment

CAUTION: The carburetor must be on slow idle with the choke off for this adjustment.

- (1) Remove the cotter pin from the link stud and remove the link stud from the armature lever (Fig. 33.)
- (2) Insert the sleeve gauge Tool C-3844 over the gauge bolt and hold the armature lever securely against the sleeve gauge (Fig. 33).

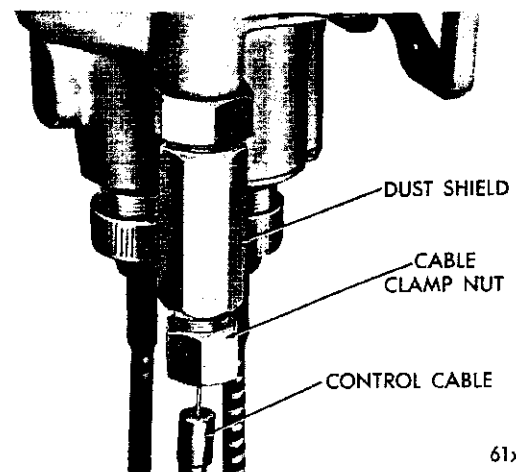


Fig. 35—Control Cable Adjustment

- (3) Adjust the link length until the stud will freely enter the hole in the armature lever.
- (4) Replace the cotter pin.
- (5) Remove the sleeve gauge.

Control Cable Adjustment

- (1) Rotate the selector knob counterclockwise as far as it will go without forcing.
- (2) Hold the dust shield so that it will not rotate while unscrewing the clamp nut. Let the nut slide down the control cable. (This nut retains the control cable in the bottom of the dust shield.) (Fig. 35.)
- (3) Remove the clamp nut, and pull the control cable out of the dust shield until the ferrule on the end of the cable is free from the bottom of the dust shield (Fig. 35.)

NOTE: If the ferrule is tight in the dust shield, carefully pry the four fingers apart until the ferrule slides out freely. In some cases, it may be necessary to unscrew the dust shield from the unit in order to pry the four fingers apart.

CAUTION: Hold the hex fitting at the top of the dust shield so it cannot turn when unscrewing the dust shield.

- (4) Reinsert the ferrule in the dust shield. Push in lightly on the control cable until it stops.

CAUTION: Do not force the cable beyond this position. The fingers of the dust shield must clamp the ferrule on its largest diameter.

- (5) Again try to rotate the selector knob **counterclockwise only**, in order to make certain it is at the low setting.

- (6) Tighten the clamp nut on the bottom of the dust shield securely.

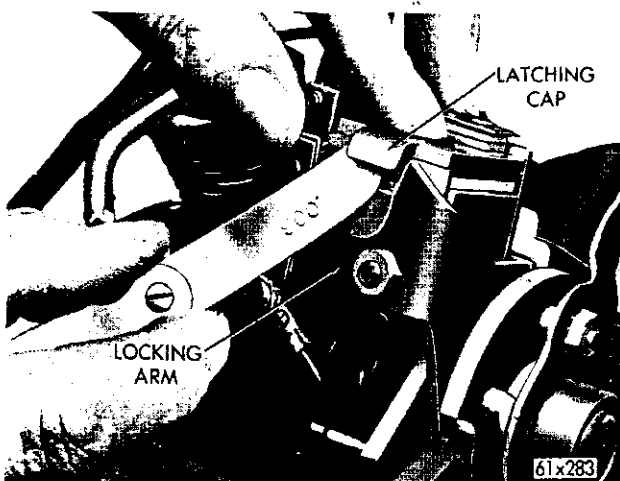


Fig. 36—Measuring Clearance Between Locking Arm

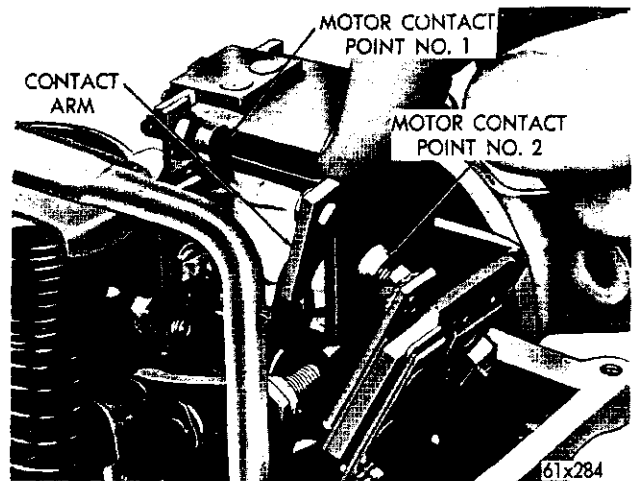


Fig. 37—Electrical Contact Points and Latch Cap

INTERNAL ADJUSTMENTS

Locking Arm Latch Adjustment

- (1) Disconnect the accelerator linkage rod from the armature lever (Fig. 33).
- (2) Remove the Auto-Pilot drive mechanism cover.
- (3) Turn the ignition "ON". Do not start the engine.
- (4) Move the locking arm against the magnet and push the latching cap down to lock the magnet assembly and locking arm together.

(5) Use a feeler gauge to measure the clearance between the locking arm and latching cap (Fig. 36). The clearance should be .001" to .006". If less than .001" clearance, loosen the lock nut. (Fig. 36.) Turn the adjusting screw "counterclockwise" to obtain proper clearance. If more than .006" turn the adjusting screw "clockwise". Tighten the lock nut.

- (6) Turn the ignition "OFF" and replace the cover.

Point Gap Adjustment

The four electrical contact points provide forward and reverse control of the drive mechanism electric motor. They are: Motor contact #1 on the magnet assembly; two points on the contact arm; and motor contact point #2 on the locking arm (Fig. 37).

NOTE: Unlike distributor points, these points are still operative when blackened or pitted and need not be filed. Any buildup material, however, on the contact points should be removed.

To Measure the Point Gap Setting

- (1) Turn the selector knob "counterclockwise" to the low position.

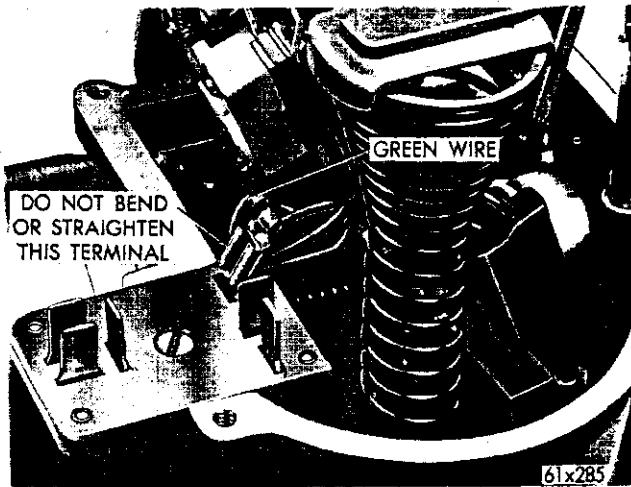


Fig. 38—Electrical Terminals

(2) Disconnect the drive cable at the base of the unit. Remove the cover. Disconnect the green wire from the terminal block (Fig. 38).

NOTE: Do not bend this terminal, as it has an angle to prevent grounding on the housing cover.

(3) Remove any material buildup from the contact points.

(4) Install the sleeve gauge over the gauge bolt (Fig. 5).

(5) Turn the governor weights until they are parallel with the drive screws.

(6) Spread the weights and place the point gap checking gauge Tool C-3842 between them. Press the gauge down.

NOTE: If the checking gauge tends to jump out of

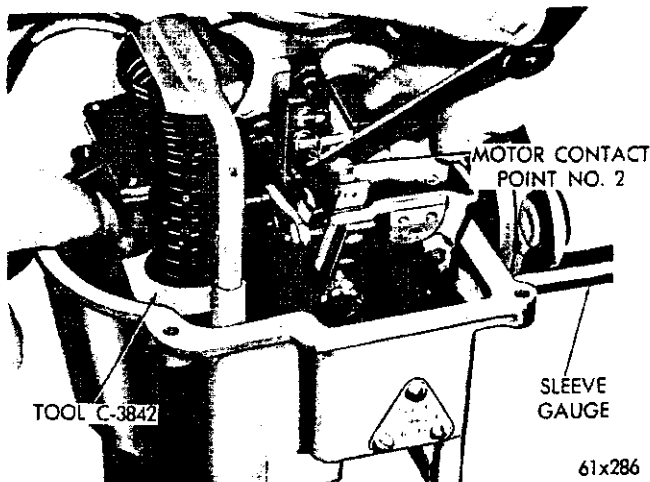


Fig. 39—Point Gap Setting

the weights, roughen the two angled surfaces of the gauge with emery cloth.

(7) Hold the armature lever against the sleeve gauge and use a feeler gauge to check the clearance between the contact arm point and motor contact point #2 (Fig. 39).

NOTE: This clearance must be .030"-.045". If the gap is not within the specifications, loosen the lock nut on the motor contact point #2 and adjust to required clearance.

(8) Remove the sleeve gauge and checking gauge.

(9) Turn the ignition switch "ON". Do not start engine.

(10) Push the locking arm up against the magnet and push down on the latching cap to latch the magnet and locking arm together.

(11) With the contact arm point against the motor contact point #2, measure the clearance between the motor contact point #1 and the contact arm (Fig. 40). The clearance must be .050" to .070".

(12) To adjust, loosen the lock nut on the motor contact point #1 and adjust with a screwdriver .050" to .070" clearance. Retighten the lock nut.

(13) Turn the ignition "OFF". Replace the green wire. Connect the drive cable and recheck the accelerator linkage adjustment. Replace the Auto-Pilot cover.

TESTS

DRIVER MOTOR TORQUE TEST

(1) Remove the Auto-Pilot drive mechanism cover.

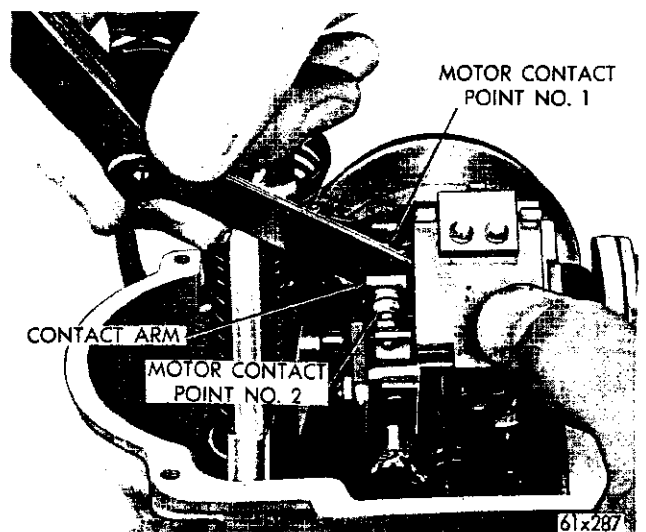


Fig. 40—Measuring Contact No. 1 and Contact Arm Clearance

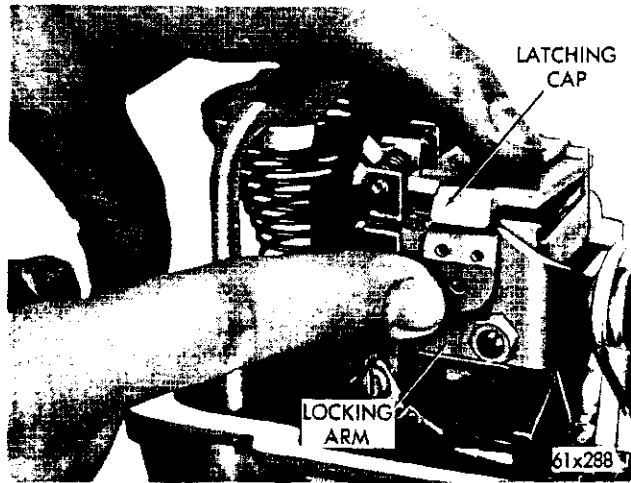


Fig. 41—Latching Arm to Magnet Assembly

(2) Turn the ignition "ON", but do not start the engine.

(3) Move the locking arm against the magnet and push the latching cap down to lock the magnet assembly and lock together (Fig. 41).

CAUTION

Move the contact arm with one finger, on top of the arm only, to prevent pinching or injuring the fingers as the magnet assembly moves when the contact points are in contact.

(4) Move the contact arm to touch the motor contact point #2 on the locking arm. The motor should rotate the drive screw and close the throttle.

(5) Move the contact arm to touch the motor contact point #1 on the magnet assembly. The motor should rotate the drive screw and open the throttle. If the motor does not open and close the throttle, perform the following operations:

(6) Remove the nuts holding the motor to the housing. Lift the motor away from the housing to disengage the motor shaft from the slot in the drive screw.

CAUTION

Do not damage or pull out the electrical connections.

(7) Hold the motor in one hand and repeat steps (4) and (5).

(8) If the motor operates in both directions and the drive mechanism does not operate, the drive screw is damaged and must be replaced.

(9) If the motor does not operate in both directions, replace the motor.

BRAKE SWITCH TEST

(1) Turn the ignition "ON", but do not start the engine.

(2) Ground one lead of a test lamp and connect the other lead to terminal #2 (Fig. 42).

(3) If the lamp lights, the circuit is normal. If the lamp does not light, inspect for full brake pedal return. The brake pedal must return to normal for switch to operate. If the lamp still does not light, inspect for an improperly positioned or faulty brake switch.

(4) Remove the switch from its mounting bracket and lift it away from the brake pedal arm without disconnecting the wires. If the test lamp lights, the switch was improperly positioned. If the lamp does not light, the switch is faulty and must be replaced.

(5) To properly position the switch, it must be located so the test light will "go out" within the first $\frac{1}{2}$ inch of brake pedal pad travel.

ELECTRICAL TESTS

(1) Turn the ignition "ON", but do not start engine.

(2) Terminal #1—Ground one end of the test lamp lead and test terminal #1 with the other test lamp lead. (Fig. 43). If the lamp lights, the circuit is normal. If the lamp fails to light, the fuse is blown or the wiring harness is open or grounded.

(3) Terminal #2—Ground one end of the test

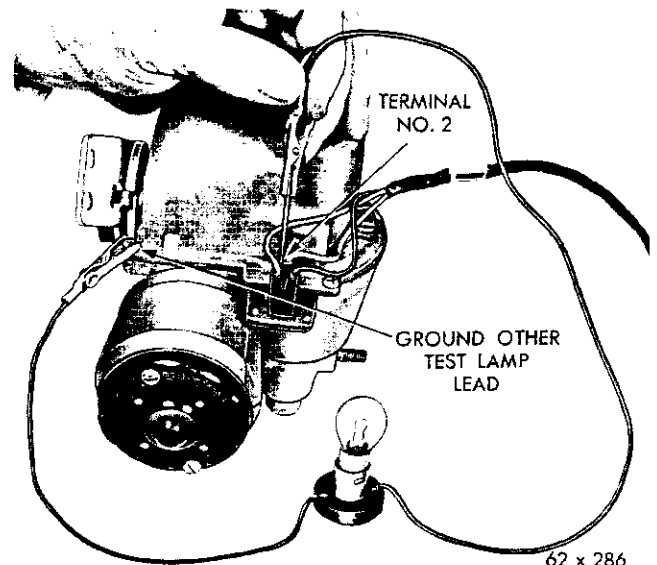


Fig. 42—Electrical Test (Terminal 2)

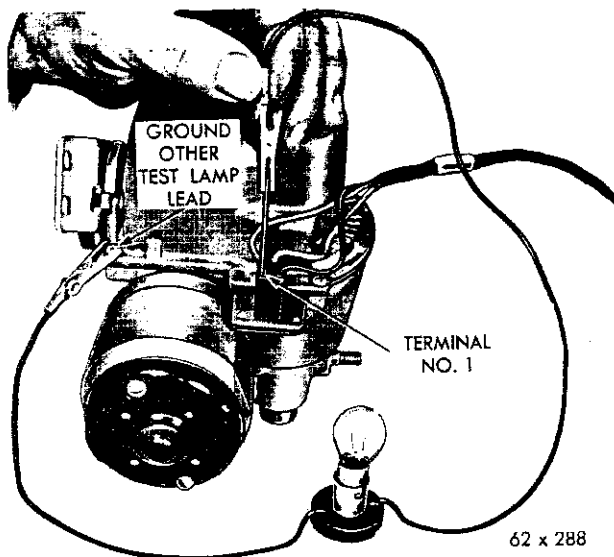


Fig. 43—Electrical Test (Terminal 1)

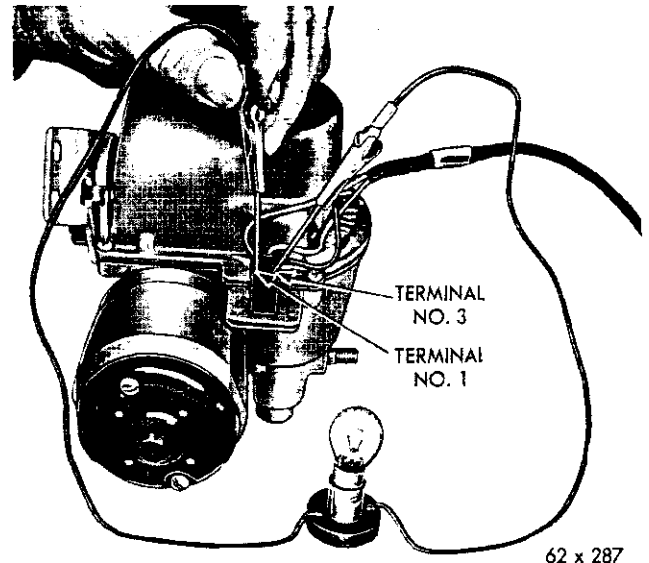


Fig. 44—Electrical Test (Terminal 3)

lamp lead and test terminal #2 with the other test lamp lead. (Fig. 42). If the lamp lights, the circuit is normal. If the lamp fails to light, the brake switch is faulty or improperly positioned. Test for full brake pedal return.

(4) Terminal #3—Insert one test lamp lead in terminal #1 and the other in terminal #3 (Fig. 44).

No light indicates a normal circuit. The test lamp, however, should light when the button in the speed selector is pulled out. If the lamp fails to light, the wire from the terminal #3 to the speed selector is loose or disconnected. Correctly connect the wire and retest with the lamp. If the lamp still does not light, replace the selector head assembly.

SERVICE PROCEDURES

REMOVAL OF THE SELECTOR CONTROL ASSEMBLY

Removal of the Selector Control Assembly (Chrysler):

(1) Disconnect the control cable from bottom of

the Auto-pilot by removing the clamp nut and dust shield, and unhook the ball on the end of the wire from the ball socket. (Fig. 34).

(2) Loosen the Allen screw in the selector knob

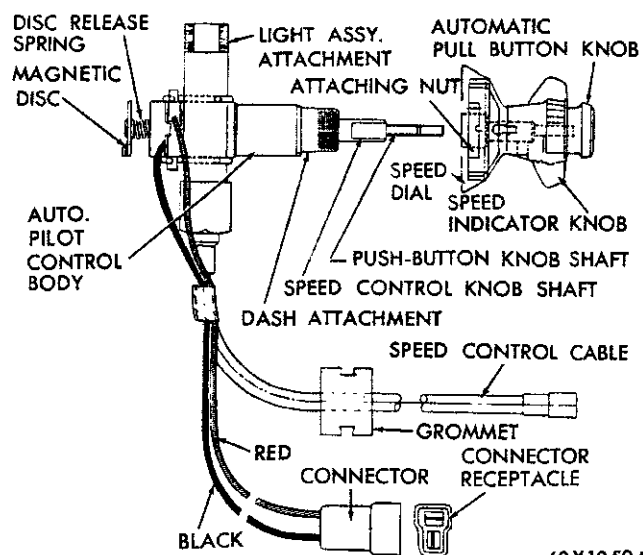


Fig. 45—Auto-Pilot Selector Control Assembly (Schematic View)

and pull button knob. Remove both knobs from the shaft (Fig. 45).

(3) Disconnect the double plug connected to the wire harness.

(4) Unscrew the attaching nut. Remove the selector head from the instrument panel.

(5) Pull the cable through the dash panel from the passenger side.

Removal of the Selector Control Assembly (Imperial):

(1) Repeat steps (1), (2), (3) under "Removal of the Selector Control Assembly (Chrysler)".

(2) Unscrew the attaching nut.

(3) Remove the steering column lower dust shield.

(4) Remove the steering column clamp.

(5) Lower the steering column.

(6) Disconnect the double plug connected to the wiring harness.

(7) Pull the cable through the dash panel from the passenger side.

INSTALLATION OF THE SELECTOR CONTROL ASSEMBLY (CHRYSLER)

(1) Route the control cable through the dash panel from the passenger side.

(2) Install the selector head in instrument panel.

(3) Connect the ground wire and double plug.

(4) Install the attaching nut.

(5) Install the selector knob and the dial shaft and tighten the set screw.

(6) Install the pull button knob on the shaft and tighten the set screw.

(7) Connect the control cable to the Auto-Pilot unit. Adjust the control cable as described under Paragraph "Control Cable Adjustments."

INSTALLATION OF THE SELECTOR CONTROL ASSEMBLY (IMPERIAL)

(1) Route the control cable through the dash panel from the passenger side.

(2) Install the selector head in steering column.

(3) Connect the ground wire and double plug.

(4) Install the attaching nut.

(5) Install the selector knob and the dial on the shaft and tighten the set screw.

(6) Install the pull button knob on the shaft and tighten the set screw.

(7) Raise the steering column into position and install the steering column clamp. Tighten the clamp nuts.

(8) Install the steering column lower dust shield.

(9) Connect the control cable to the Auto-Pilot unit. Adjust the control cable as described under Paragraph "Control Cable Adjustments".

REMOVAL OF THE DRIVE MECHANISM

(1) Disconnect the terminal plug at the drive mechanism.

(2) Disconnect the drive cable and speedometer cable from the bottom of the drive mechanism.

(3) Loosen the cable clamping nut at the lower end of the dust shield.

(4) Hold the guide clamp nut at the top of the dust shield and unscrew the dust shield. Slide the cable clamping nut and dust shield down the control cable. Slip the ball end of the control cable out of the socket.

(5) Disconnect the accelerator link ball joint from the armature lever.

(6) Remove the brace nut. Remove the two mounting bracket bolts and remove the drive mechanism leaving the mounting bracket attached to the fender splash shield.

DISASSEMBLY OF THE DRIVE MECHANISM

(1) Remove the four screws attaching the cover and remove the cover.

CAUTION

Be careful not to lose the gaskets in the cover groove.

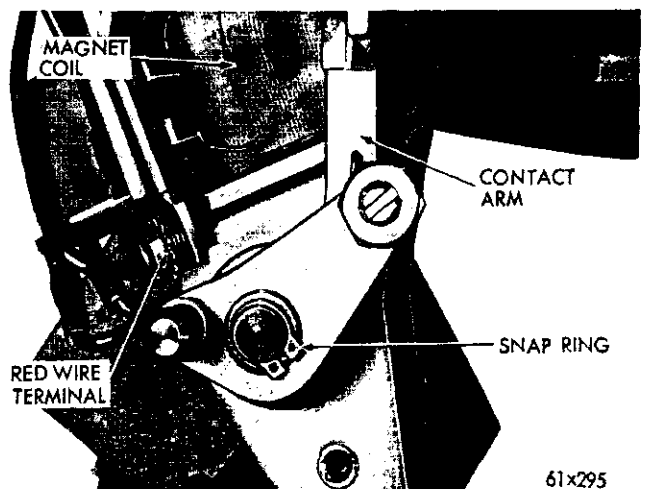


Fig. 46—Snap Ring, Contact Arm, Pintle Shaft

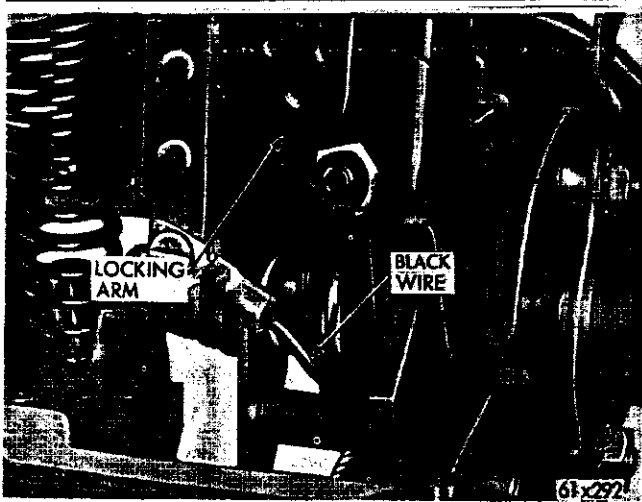


Fig. 47—Remove the Black Wire From Locking Arm Magnetic Coil and Terminal 1

(2) Disconnect the green motor wire from the terminal block (Fig. 38).

NOTE: Do not straighten the terminal fitting, as it has an angle to prevent grounding on the housing cover (Fig. 38).

(3) Disconnect the red motor wire at the bottom of the contact point #1 on the magnet assembly (Fig. 46).

(4) Disconnect the black wire from the terminal on the locking arm contact point #2 (Fig. 47).

(5) Remove the nuts attaching the motor to the housing and remove the motor.

NOTE: One nut is inside of housing, the other outside. When pulling the wires through the opening in housing, bring red and black wires through first; then the green wire.

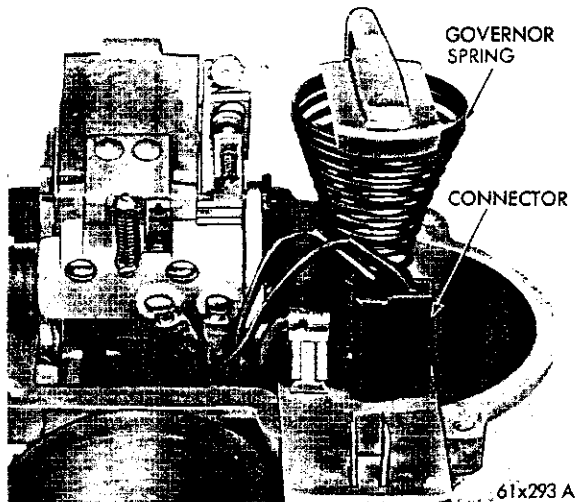


Fig. 48—Remove the Connector From the Terminal Block

(6) Disconnect the double plug-in connector from the terminal block (Fig. 48).

(7) Remove the governor spring (Fig. 48).

(8) Remove the ball socket from the end of the compressor rod and remove the compressor rod from the housing.

(9) Remove the guide clamp nut from the housing.

(10) Remove the compressor rod guide.

(11) Disconnect the spring from the armature lever and remove the armature lever.

(12) Remove the gauge bolt and washer. Remove the two pintle screws and washers located under the locking arm (Fig. 49).

(13) Lift the pintle assembly out of the housing.

CAUTION

Be careful not to lose the seal in the groove in the housing.

NOTE: The finger assembly will come out with the pintle assembly.

(14) Remove the locking arm and spring washer from the pintle shaft.

(15) Remove the snap ring from the end of the pintle shaft and remove the contact arm from the shaft (Fig. 46).

(16) Remove the magnet and throttle over-ride switch assembly from the pintle shaft.

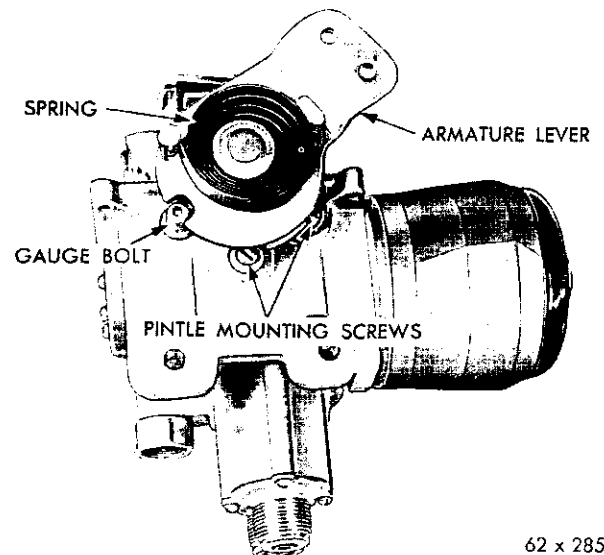


Fig. 49—Removing the Pintle Screws and Gauge Bolt

CAUTION

Do not remove the switch on the magnet assembly, as the two electrical contact points in the switch are not serviceable, nor adjustable.

(17) Remove the screw attaching the terminal block to the housing and remove the terminal block.

(18) In order to remove the drive screw assembly, remove the three screws from the serial number plate and remove the plate. Remove the drive screw assembly from the motor end of the housing.

CAUTION

When handling the drive screw assembly, keep the parts clean, as dirt particles can become wedged between the small ball bearings in the nut and cause the nut to stick.

(19) Remove the three screws attaching the speedometer adapter to the housing and remove the adapter and nylon gear.

NOTE: The governor assembly and drive mechanism housing are serviced as a single unit. Do not disassemble.

ASSEMBLY OF THE DRIVE MECHANISM

(1) Lubricate the nylon gear with MoPar Lubriplate, and insert the gear in the housing on the bottom of the drive mechanism. Install the speedometer adapter and attach with the three screws (Fig. 50).

(2) Lubricate the drive worm and nut assembly with MoPar Lubriplate and install the assembly in in the motor end of the housing (Fig. 51). Install the serial number plate. Attach the plate and drive screw assembly with the three screws. Do not over-tighten the screws.

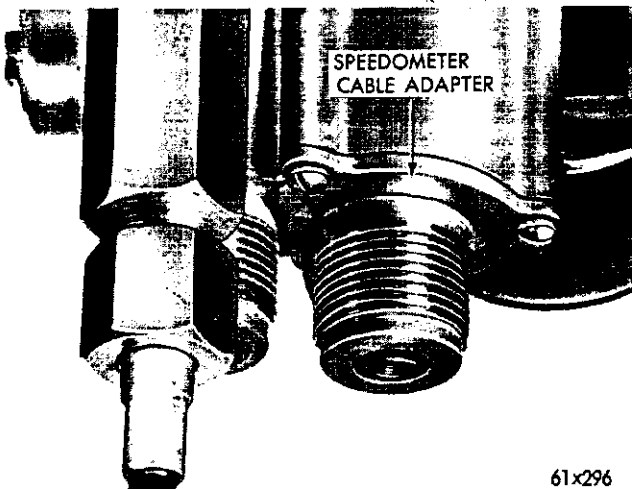


Fig. 50—Assembling the Speedometer Cable Adapter

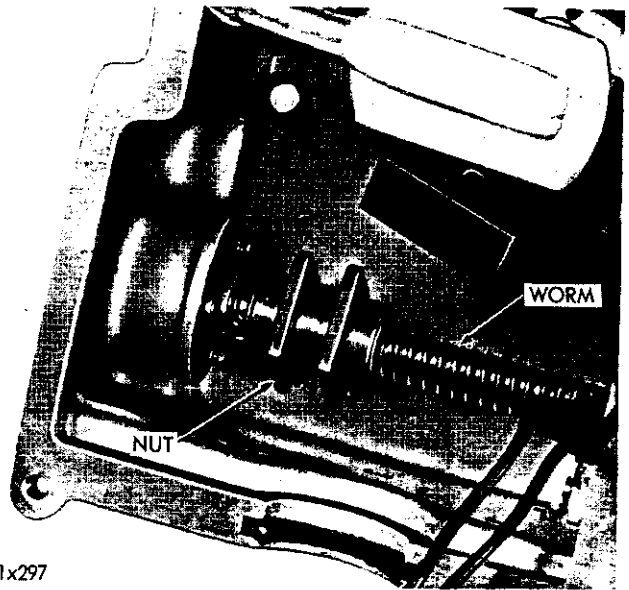


Fig. 51—Drive Worm and Nut Assembly

(3) Install the pintle shaft in the collar end of the bushing in the magnet assembly.

(4) Install the contact arm on the end of the pintle shaft and attach with the snap ring.

(5) Install the locking arm on the pintle shaft.

(6) Install the finger assembly on the ball joint of the contact arm.

(7) Install the complete assembly in the housing (Fig. 52). Position the finger assembly over the governor shaft, align the bracket tangs on the bottom of the magnet assembly with the grooves in the drive screw nut. Press down on the complete assembly until it seats itself in the housing.

(8) Install the throttle over-ride switch (Fig.

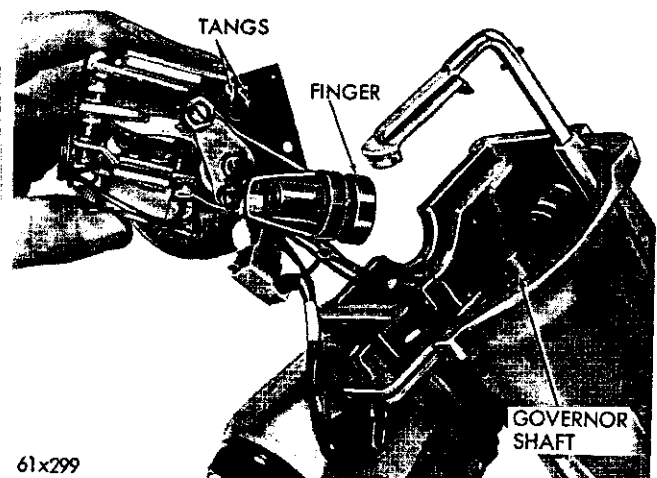


Fig. 52—Installing the Complete Pintle Assembly

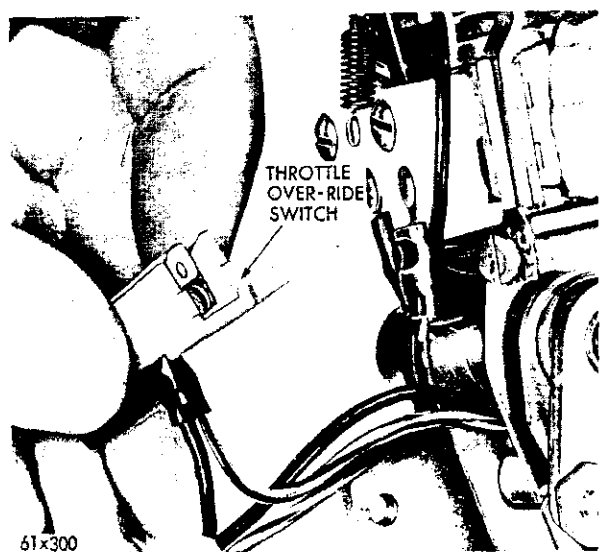


Fig. 53—Installing the Over-ride Switch

53). Install the two pintle screws and washers to attach the pintle assembly in the housing.

NOTE: The longer of the two pintle screws attaches the throttle over-ride switch, and is located in the foremost location.

(9) Install the gauge stud and washer.

(10) Install the armature lever on the locking arm.

(11) Install the armature lever spring.

(12) Install the terminal block on the housing with the numbered connector blades toward the outside of the housing. Attach the terminal block with

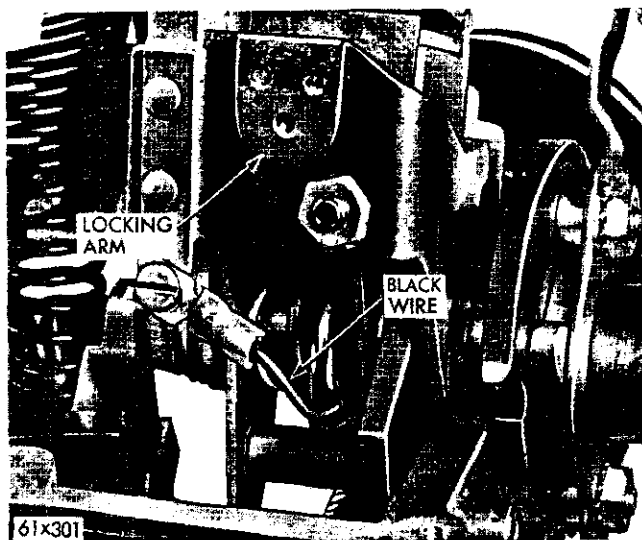


Fig. 54—Attaching the Wire to Contact Point No. 2

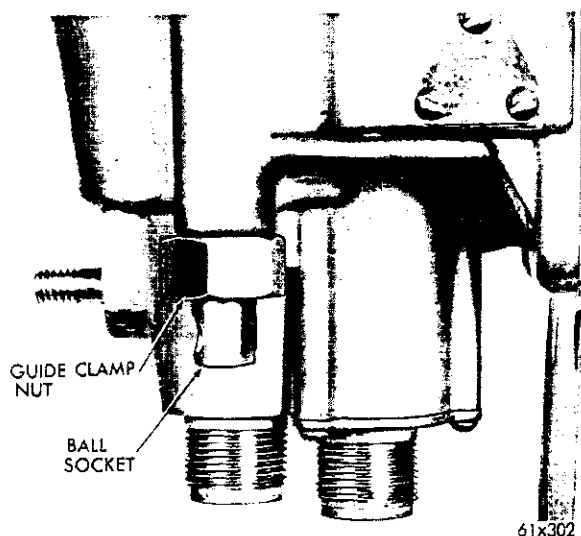


Fig. 55—Install the Ball Socket on the Compressor Rod

the flat head screw. Plug the connector onto the terminal block.

(13) Rotate the drive screw until the magnet is in an upright position. Install the motor on the housing. Make certain that the end of the motor shaft engages in the slot of the drive screw. Install the motor mounting nuts and tighten.

CAUTION

Do not tighten by the use of a screwdriver on slotted bolt heads as this may result in binding of the motor bearings.

(14) Route the black motor wire over the pintle

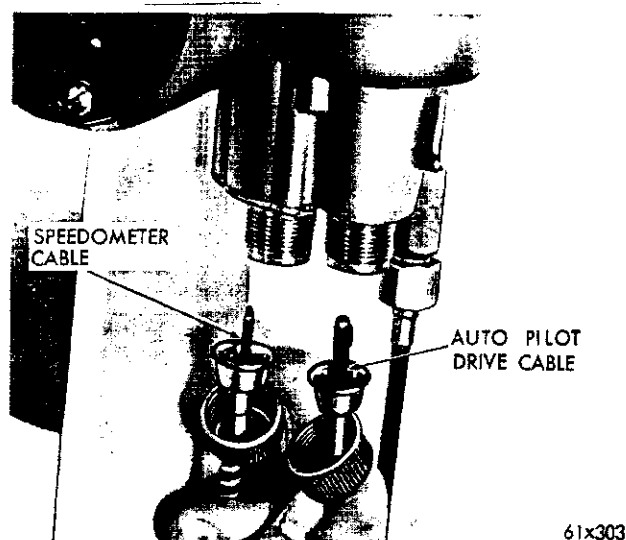


Fig. 56—Installing the Drive and Speedometer Cables

shaft between the legs of the magnet assembly, and connect the wire to the terminal on the locking arm (Fig. 54).

(15) Route the red motor wire **under** the pintle shaft, loop the wire back over the pintle shaft and connect the wire at the bottom of the contact point #1. Attach it with a screw and washer.

(16) Connect the green motor wire to the single connector on the terminal block.

(17) Install the compressor rod guide in the housing with the dimple in the rod guide facing the finger assembly.

(18) Install the guide clamp nut on the housing and tighten.

(19) Lubricate the compressor rod with MoPar Lubriplate and install the compressor rod in the guide. Install the governor spring.

(20) Install the ball socket on the end of the compressor rod. While holding the housing in an upright position, tighten the ball socket until it touches the bottom of the guide clamp nut (Fig. 55).

NOTE: Do not tighten the ball socket so far as to

allow the compressor rod cap to compress on the governor spring.

(21) Loosen the ball socket two complete turns. (This provides the correct low speed calibration for the drive mechanism).

(22) Install the cover, making certain that the rubber and felt gaskets are properly seated in the grooves of the cover and housing. Attach the cover with the four screws.

INSTALLATION OF THE DRIVE MECHANISM

(1) Attach the drive mechanism to the mounting bracket.

(2) Connect the accelerator link ball joint to the armature lever. Adjust the accelerator linkage as described under "Linkage Adjustments".

(3) Install the ball end of the control cable in the ball socket on the bottom of the drive mechanism. Install the dust shield. Adjust the control cable.

(4) Connect the drive cable and the speedometer cable (Fig. 56).

(5) Connect the terminal plug.

SERVICE DIAGNOSIS

RADIO

Condition	Possible Cause	Correction
Radio is Inoperative	(a) Blown fuse.	(a) Replace the fuse.
	(b) Broken, loose or shorted antenna lead-in.	(b) Test with an auxiliary antenna and replace lead-in if necessary.
	(c) Loose battery cable.	(c) Test the voltage at the fuse and tighten all connections.
	(d) Burned out tube.	(d) Test all tubes and replace weak ones.
	(e) Faulty speaker.	(e) Replace the speaker.
	(f) Faulty antenna.	(f) Test the antenna and repair.
Radio Reception is Weak	(a) Unbalanced antenna trimmer.	(a) Adjust the antenna trimmer.
	(b) Loose antenna lead-in.	(b) Tighten the antenna lead-in.
	(c) Shorted antenna lead-in.	(c) Test with an auxiliary antenna and replace lead-in if necessary.
	(d) Weak radio tube.	(d) Test and replace weak tubes.
	(e) Faulty antenna.	(e) Test the antenna and correct.

SERVICE DIAGNOSIS CONT'D

RADIO

Condition	Possible Cause	Correction
Radio Reception is Noisy (Engine Running)	(a) Outside electrical interferences.	(a) Move the car or shut off interference.
	(b) Insufficient or faulty radio suppressors.	(b) Install suppressors in ignition system.
	(c) Faulty radio tube.	(c) Test and replace faulty tube.
Radio Reception is Noisy (Car in Motion)	(a) Static build up in tires.	(a) Ground the tires to the wheels with powdered graphite.
	(b) Loose antenna or lead-in wire.	(b) Tighten the antenna attaching nut. Inspect the fit of the antenna lead-in plug in the socket.
Radio is Noisy When Equipment is Operated	(a) Loose antenna ground.	(a) Clean and tighten the antenna connections.
Radio Reception is Distorted	(a) Speaker coil rubbing on voice core.	(a) Install an auxiliary speaker and compare. Replace if improved.
	(b) Torn speaker cone.	(b) Replace the speaker.
	(c) Faulty radio tubes.	(c) Test and replace any faulty tubes.
Search Tuner Runs Continuously	(a) Car located in a weak signal area	(a) Move the car to a strong signal area.
	(b) Faulty radio tube.	(b) Test and replace any faulty tubes.
Intermittent Reception	(a) Broken lead-in wire.	(a) Test with a substitute antenna. Repair the lead-in wire.
	(b) Grounded lead-in wire.	(b) Test with a substitute antenna. Repair the lead-in wire or replace.
	(c) Faulty radio tube.	(c) Test the radio tubes and replace as necessary.

HEATER

Insufficient Heat	(a) Coolant too low.	(a) Fill the radiator.
	(b) Temperature valve not opening.	(b) Inspect the valve and repair as needed.
	(c) Engine thermostat open.	(c) Replace the thermostat.
	(d) Damaged vacuum line to shut-off damper.	(d) Replace the vacuum line.
	(e) Obstructed heater hose.	(e) Replace the heater hose.
	(f) Leaking lower radiator hose.	(f) Correct the leak, and bleed the system.
Too Much Heat	(a) Temperature valve stuck in open position.	(a) Free up the temperature valve and cable.
	(b) Disengaged cable.	(b) Connect or replace the cable.
	(c) Thermostat stuck in closed position.	(c) Replace the thermostat.
	(d) Damaged vacuum line to damper.	(d) Replace the vacuum line to damper.

SERVICE DIAGNOSIS CONT'D
HEATER

Condition	Possible Cause	Correction
Blower Motor not Operating	(a) Blown fuse.	(a) Replace the fuse.
	(b) Faulty electrical connection.	(b) Tighten all electrical connections.
	(c) Faulty blower switch.	(c) Replace the blower switch.
	(d) Faulty motor.	(d) Replace the motor.

AUTOMATIC BEAM CHANGER

Unit Not Operating	(a) Poor grounding of control units.	(a) Clean and tighten all control units.
	(b) Electrical circuit not properly wired.	(b) Trace the schematic diagram.
	(c) Faulty dimmer switch.	(c) Replace the dimmer switch.
	(d) Faulty tube.	(d) Replace the tube.
	(e) Faulty scanner.	(e) Replace the scanner.
	(f) Faulty control units.	(f) Replace the faulty control units.
	(g) Improperly focused scanner unit.	(g) Focus the scanner unit.
	(h) Loose cover screws.	(h) Tighten the cover screws as they also ground the unit.
Tube Not Lighted	(a) Faulty dimmer switch.	(a) Replace the dimmer switch.
	(b) Poor grounding of control units.	(b) Remove, clean and reinstall the control units.
	(c) Faulty tube.	(c) Replace the faulty tube.
	(d) Poor electrical connection.	(d) Clean and tighten all electrical connections.

ELECTRONIC REAR VIEW MIRROR

Mirror Does Not Tilt	(a) Broken wire or loose connection.	(a) Trace wiring and clean and tighten all electrical connections.
	(b) Burned out tube or transistor.	(b) Test the tube and transistor and replace if defective.
	(c) Mirror not grounded.	(c) Clean and tighten the mirror and attaching screws.
Flip Angle Inadequate or Excessive	(a) Chassis stop tab angle incorrect.	(a) Bend the stop tab to proper position.
Tube Does Not Light	(a) Low battery voltage.	(a) Recharge the battery.
	(b) Faulty tube.	(b) Test and replace if weak.
	(c) Broken circuit.	(c) Test the circuit for open leads and repair.
Sensitivity Not Within Specified Limits	(a) Potentiometer out of adjustment.	(a) Recalibrate the potentiometer.
	(b) Possible difference of sensitivity of a new tube on replacement.	(b) Test and compare several new tubes and select a tube within specifications.

SERVICE DIAGNOSIS CONT'D
ELECTRIC WINDSHIELD WASHER

Condition	Possible Cause	Correction
Motor Does Not Run	(a) Loose wiring terminals.	(a) Tighten the terminals.
	(b) Corroded terminals.	(b) Clean and tighten the terminals.
	(c) Broken wires.	(c) Replace the wires.
	(d) Faulty switch.	(d) Replace the switch.
	(e) Shorted motor.	(e) Replace the assembly.
	(f) Poor ground.	(f) Clean the housing and tighten.
Fluid from only One Nozzle	(a) Dirt in the nozzle.	(a) Blow out the nozzle with compressed air.
	(b) Broken or torn hose.	(b) Replace the hose.
	(c) Pinched or kinked hose.	(c) Replace the hose.
	(d) Hose disconnected from nozzle.	(d) Install the hose on the nozzle.
Pump Does Not Operate	(a) Motor does not operate.	(a) Replace the unit.
	(b) Broken coupling.	(b) Replace the unit.
	(c) Faulty pump.	(c) Replace the unit.
	(d) Reservoir dry.	(d) Fill the reservoir.

AUTO PILOT

NOTE: It is recommended that the diagnosis be performed in the sequence outlined. Do not disassemble the Auto-Pilot unit, or the control assembly, until all the diagnosis and adjustment operations are performed and it is proven beyond any doubt that the control assembly or Auto-Pilot unit is at fault.

Speedometer Noise	(a) Cables bent or kinked.	(a) Straighten or replace the cables.
	(b) Lack of cable lubrication.	(b) Lubricate the cables.
	(c) Noisy speedometer head assembly.	(c) Remove and repair the speedometer.
	(d) Noisy nylon gear or metal drive gear.	(d) Replace the nylon gear or housing assembly.
Blowing Fuses	(a) Short or ground in wiring circuit.	(a) Test for short or ground. Repair or replace as required.
	(b) Locked drive screw.	(b) Inspect the drive screw for dirt or damage. Replace if necessary.
No Speed Control Response	(a) Accelerator linkage broken or disconnected.	(a) Connect or replace the linkage and adjust.
	(b) Drive cables broken or disconnected.	(b) Connect or replace the cables.
	(c) Damaged nylon gear or drive gear.	(c) Replace the nylon gear or the housing assembly.
	(d) Blown fuse.	(d) Replace and locate and correct the cause.
	(e) Loose connections or broken wires (internal or external).	(e) Test for current at the unit. Repair the wires or tighten the wiring connections as required.

SERVICE DIAGNOSIS CONT'D

AUTO PILOT

Condition	Possible Cause	Correction
Constant Pressure on Accelerator Pedal Regardless of Selector Setting	(a) Blown fuse. (b) No current at #1 terminal. (c) Control cable improperly adjusted. (d) Inoperative motor or locked drive screw.	(a) Replace the fuse. Locate and correct the cause of blowing fuse. (b) Test for current at #1 terminal. (c) Properly adjust the cable. (d) Test the operation of motor. Correct as required. If the drive screw is locked, test the motor for possible damage.
Automatic Control Does Not Engage When Button is Pulled Out	(a) Driver riding the brake pedal. Driver does not hold accelerator against back pressure when pulling the button. (b) No current at the #2 terminal. (c) Loose or disconnected ground wire between the selector assembly and terminal #3. (d) Inoperative switch in the selector assembly. (e) Magnet assembly does not latch. (f) Inoperative magnet.	(a) Instruct the owner of Auto-Pilot operation and demonstrate. (b) Perform the electrical test and correct as required. (c) Tighten or connect the ground wire. (d) Test the switch and current at terminal #3. (e) Inspect and adjust the locking arm latch. (f) Replace the magnet assembly.
Automatic Selector Engages at Selected Speed Without Pulling Pull Button Knob	(a) Ground wire (#3 to selector) is grounded. (b) Inoperative grounding switch in the selector assembly.	(a) Test for ground in the circuit and repair as required. (b) Test at terminal #3, and install a new control if necessary.
Automatic Control Remains Engaged When Brake Pedal is Touched	(a) Inoperative brake switch.	(a) Test at terminal #2. Adjust brake switch.
Pulsating Accelerator Pedal	(a) Speedometer cable or drive cable linked. (b) Lack of lubrication. (c) Improper accelerator linkage adjustment. (d) Improper locking arm latch adjustment. (e) #1 and #2 contact points improperly adjusted.	(a) Straighten and align the cables. Replace if necessary. (b) Lubricate the cables. (c) Adjust the accelerator linkage properly. (d) Inspect and adjust the locking arm latch. (e) Inspect and adjust the point clearance.
Carburetor Does Not Return to Normal Idle	(a) Improper carburetor or accelerator linkage adjustment.	(a) Adjust the throttle control and accelerator linkage.

SERVICE DIAGNOSIS CONT'D**AUTO PILOT**

Condition	Possible Cause	Correction
Speedometer Does Not Register or Unit Does Not Operate	(a) Speedometer drive pinion in the transmission damaged. (b) Broken speedometer cable. (c) Broken drive cable from transmission to the drive mechanism. (d) Faulty speedometer. (e) Damaged drive gear or nylon gear in the drive mechanism.	(a) Replace the speedometer drive pinion. (b) Replace the speedometer cable. (c) Replace the drive cable. (d) Remove and repair the speedometer. (e) Replace the nylon gear. If the metal drive gear is damaged, replace the housing assembly.
