
ELECTRICAL - 55

PARTS CATALOG,
SERVICE MANUAL &
SERVICE TIME
SCHEDULE CODE

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IGNITION

Firing order 1 - 3 - 4 - 2

IGNITION DISTRIBUTOR (to 1978)

Type	MARELLI S144CAY
Static advance	0°
Centrifugal advance	36° ± 1° 30'
Contact gap	0.015 to 0.017 in.
Terminal-to-ground insulation at 500 Vd.c., more than	10 megohm
Condenser capacity at 50 to 1000 Hz	0.20 to 0.25 microfarad
Breaker contact pressure	19.4 ± 1.8 oz. (550 ± 50 gr)
Opening angle	35° ± 3°
Closing angle	55° ± 3°

Additional breaker points

— advance of	10° ± 1°
— contact gap	0.015 to 0.017 in.
— opening angle	35° ± 5°
— closing angle	55° ± 5°
— breaker contact pressure	14.1 ± 1.8 oz. (400 ± 50 gr)

IGNITION DISTRIBUTOR (1979 and on)

Type	MARELLI 877AX
Static advance	10°
Centrifugal advance	28° ± 2°
Vacuum advance	
California (carburetor)	10° ± 2° at 12 in. Hg
49 States (carburetor)	14° ± 2° at 12 in. Hg
All (fuel injection)	15° ± 2° at 14 in. Hg
Air gap	0.012 to 0.016 in. (0.30 to 0.40 mm)
Control module input voltage	6 to 18 volts
Current limiter output	4.5 to 6.0 amps
Rotor arm resistance	5,000 ohms

IGNITION COIL (to 1978)

Type	MARELLI BES200A	MARTINETTI G 37 SU
Primary winding ohmic resistance at 68°F (20°C)	2.59 to 2.81 ohms	2.60 to 2.95 ohms
Secondary winding ohmic resistance at 68°F (20°C)	6,750 to 8,250 ohms	7,000 to 8,500 ohms

IGNITION COIL (1979 and on)

Type	MARELLI AEI200A
Primary winding ohmic resistance at 68°F (20°C)	0.75 to 0.81 ohms
Secondary winding ohmic resistance at 68°F (20°C)	10,000 to 11,000 ohms

SPARK PLUGS

Thread diameter and pitch, metric	M14 x 1.25		
	(to 1976)	(1977 and on)	
Type: AC	41-2XLS	NORMAL 42XLS	RESISTOR R42XLS
BOSCH		W175T30	W175TR30
CHAMPION	N7Y	N9Y	RN9Y
MARELLI	CW78LP	CW7LP	CW7LPR
Gap (inch)	0.019 to 0.027	0.023 to 0.027	0.027 to 0.031

*NOTE: Distributor used on Spider Turbo has a limited centrifugal advance.

STARTING MOTOR
(All Except Automatic Transmission, 1981 and on)

Type	MARELLI E 100-1.3/12
Voltage	12 V
Rated output	1,3 kW
Direction of rotation, pinion side	clockwise
Number of poles	4
Field winding	series-parallel
Engagement	free-wheel
Drive	solenoid
Diameter inside pole shoes	2.675" to 2.677" (67.95 to 68.00 mm)
Diameter of armature	2.634" to 2.638" (66.85 to 66.90 mm)

Bench Testing Data

Running test at 77° F (25° C):

Current	280 A
Torque developed	5.78 ± .24 ft. lb. (0.8 ± 0.02 kgm)
Speed	1600 ± 100 rpm
Voltage	9.5 V

Stall torque test at 77° F (25° C):

Current	530 A
Voltage	7 ± 0.3 V
Torque developed	12.58 ± .7 ft. lb. (1.74 ± 0.1 kgm)

No-load test at 77° F (25° C):

Current	28 A or less
Voltage	12 V
Speed	5200 ± 500 rpm

Check of Mechanical Characteristics

Brush pressure (unworn)	2.2 ± .2 lb. (1 ± 0.1 kg)
End clearance, armature shaft003" to .027" (0.07 to 0.70 mm)
Mica undercut depth019" to .027" (0.5 to 0.7 mm)
Free wheel efficiency: static torque to rotate pinion slowly ..	2 to 2.4 in. lb. (2.3 to 2.8 kgcm)

Solenoid

Coil resistance at 68° F (20° C)	0.39 ± 0.02 ohm
Contact stroke113" to .158" (2.87 to 4.03 mm)
Core stroke538" to .638" (13.68 to 16.20 mm)

Lubrication

Drive unit splines	FIAT VS ⁺ 10 W oil (SAE 10 W)
Contact face of pinion sleeve	FIAT MR 3 grease

STARTING MOTOR (Automatic Transmission, 1981 and on)

Type	BOSCH 0 - 001 - 208 - 408
Voltage	12 V
Rated output	0.95 kW
Direction of rotation, pinion side	clockwise
Number of poles	4
Field winding	series
Engagement	free-wheel
Drive	solenoid

Bench Testing Data

Running test at 77° F (25° C):

Current	268 A
Torque developed	5.07 ft. lb. (0.7 kgm)
Speed	1560 rpm
Voltage	9.3 V

Stall torque test at 77° F (25° C):

Current	496 A
Voltage	7.1 V
Torque developed	10.8 ft. lb. (1.5 kgm)

No-load test at 77° F (25° C):

Current	40 ± 5 A
Voltage	11.6 V
Speed	9600 ± 500 rpm

Check of Mechanical Characteristics

End clearance, armature shaft0059" to .017" (0.15 to 0.45 mm)
Mica undercut depth	mica undercutting not necessary

Solenoid

Coil resistance at 68° F (20° C):

Pull-in	0.375 ± 0.01 ohm
Hold-in	1.65 ± 0.05 ohm

Lubrication

Drive unit splines	FIAT VS ⁺ 10 W oil (SAE 10 W)
Contact face of pinion sleeve	FIAT MR 3 grease

ALTERNATOR (1975 and 1976)

Alternator Specifications

Type	MARELLI A 12 M 124/12/42 M
Rated voltage	12 V
Maximum output	770 W
(*) Cut-in speed at 12 V (68°F [20°C])	1,000 ± 50 rpm
(*) Current output at 14 V to battery at 7,000 rpm at thermal rate, equal to or more than	44 A
(*) Maximum current output	53 A approx.
Speed { continuous	13,000 rpm
	peak for 15 min
Field winding resistance at 68°C (20°C): across the two slip rings	4.3 ± 0.2 ohm
Rotation, drive side	clockwise
Drive ratio, engine to alternator	1 to 1.8

Rectifier Diode Specifications

Type	{ Positive diodes { E 11 { Negative diodes { E 12
Permanent direct current at 266°F (130°C), power diodes . . .	
Reverse voltage, equal to or more than	150 V
Maximum operating temperature	302°F (150°C)
Voltage drop with 25 A at 77°F (25°C)	1.1 V or less
Reverse current, 150 V dc, at 266°F (130°C)	2 mA or less

Checking and Setting Voltage Regulator

Type	RC 2/12 B
Alternator speed for test and setting	5,000 rpm
Battery capacity	40 to 50 A/h
Current for temperature stabilization	7 A
Current for checking 2nd stage	2 to 12 A
Regulating voltage, 2nd stage	14.2 ± 0.3 V
Current for checking 1st stage	25 to 35 A
Regulating voltage for the 1st stage, lower than the voltage read for the 2nd stage by	0.2 to 0.7 V
Resistance between plug 15 and ground at 77° ± 18°F (25° ± 10°C)	27.7 ± 2 ohm
Resistance between plug 15 and plug 67 with contacts open . . .	5.65 ± 0.3 ohm
Armature-to-core air gap059" ± .002" (1.5 ± 0.05 mm)
2nd stage contact gap018" ± .004" (0.45 ± 0.1 mm)

(*) Readings to be taken with properly bedded-in brushes.

ALTERNATOR (1977 to 1980)

Alternator Specifications

Type	BOSCH K1 - 14 V - 55A20
Rated voltage	12 V
Maximum output	945 W
(* Cut-in speed at 12 V (68°F [20°C])	1000 ± 50 rpm
(* Current output at 14 V to battery at 7,000 rpm at thermal rate, equal to or more than	55 A
(* Maximum current output	70 A approx.
Speed continuous	12,000 rpm
peak for 15 min	15,000 rpm
Field winding resistance at 68°F (20°C): across the two slip rings	3.36 ± 0.3 ohm
Rotation, drive side	clockwise
Drive ratio, engine to alternator	1 to 1.8

Rectifier Diode Specifications

Reverse voltage, equal to or more than	150 V
Maximum operating temperature	302°F (150°C)
Voltage drop with 25 A at 77°F (25°C)	1.1 V or less
Reverse current, 150 V dc, at 266°F (130°C)	2 mA or less

Voltage Regulator Specifications (Integral with Alternator)

Regulating voltage, at 68°F (20°C) and at 30 A	13.6 to 14.1 V
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ALTERNATOR (1981 and on)

Alternator Specifications

Type	BOSCH K1 - 14 V - 65 A 21
Rated voltage	12 V
Maximum output	1170 W
(* Cut-in speed at 12 V (68°F [20°C])	1100 ± 50 rpm
(* Current output at 14 V to battery at 7,000 rpm at thermal rate, equal to or more than	65 A
(* Maximum current output	80 A approx.
Speed continuous	12,000 rpm
peak for 15 min	15,000 rpm
Field winding resistance at 68°F (20°C): across the two slip rings	3.36 ± 0.3 ohm
Rotation, drive side	clockwise
Drive ratio, engine to alternator	1 to 1.8

Rectifier Diode Specifications

Reverse voltage, equal to or more than	150 V
Maximum operating temperature	302°F (150°C)
Voltage drop with 25 A at 77°F (25°C)	1.1 V or less
Reverse current, 150 V dc, at 266°F (130°C)	2 mA or less

Voltage Regulator Specifications (Integral with Alternator)

Regulating voltage, at 68°F (20°C) and at 30 A	13.6 to 14.1 V
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(* Readings to be taken with properly bedded-in brushes.

LIGHTING EQUIPMENT

	FIAT Std. Part No.	SAE Standard
Bulbs		
Headlamps (high beam and low beams)	"Sealed Beam" headlamp unit 4002	
Front lamps		
turn signal	Norm. 1/41460/90	No. 1034 (32 cp)
Rear lamps		
turn signal	Norm. 1/41469/90	No. 1073 (32 cp)
back-up		
stop		
Front lamps		
parking	Norm. 1/41459/90	No. 67 (4 cp)
Rear lamps		
tail		
license plate		
Courtesy lamp	12 V - 5 W Norm. 1/08630/90	—
Gear selector indicator light (automatic transmission)	12 V - 3 W	—
"EX. GAS SENSOR" indicator	Norm. 1/41431/90	—
Ideogram illumination optical fiber light source	12 V - 5 W Norm. 1/41441/90	—
Turn signal indicator	Norm. 1/41439/90 or Norm. 1/41458/90	No. 158 (2cp)
Headlight high beam indicator		
Battery charge indicator		
Insufficient oil pressure indicator		
Fuel reserve indicator		
Parking and tail lights indicator		
Instrument cluster lights		
Fasten belts indicator		
Vehicular hazard warning signal indicator		
Low brake fluid level and hand brake "ON" indicator		
Side marker lights		
Vehicular hazard warning signal switch light		
EGR indicator (25,000 miles)		
Trunk lamp	12 V - 4 W	—
Cigar lighter housing indicator	Norm. 1/41423/90	—

FUSES (1975 and 1976)

Nine 8-Amp fuses and one 25 Amp fuse, contained in a box located under instrument panel to the left of steering post. Cover is of the snap-on type. Two 3 Amp fuses, one 8 Amp fuse and one 16 Amp fuse in separate holders.

Before replacing a blown fuse trace the cause and remedy accordingly.

Unprotected Circuits

Ignition, starting, ignition coil, battery charge indicator and relay (regulation section excluded), starter relay, engine fan relay winding and headlight high beam relay.

Protected Circuits

- A (24 Amps)
 - Electropneumatic horns
 - Engine fan motor
- B (8 Amps)
 - Windshield wiper
 - Heater fan motor
 - Windshield washer pump
- C (8 Amps)
 - Left headlight high beam
 - High beam indicator
- D (8 Amps)
 - Right headlight high beam
- E (8 Amps)
 - Right headlight low beam
- F (8 Amps)
 - Left headlight low beam
- G (8 Amps)
 - Front left parking lamp
 - Parking and tail lights indicator
 - Rear right tail light
 - Front left/rear right side marker lamps
 - License plate lamp (left)
 - Cigar lighter housing indicator
 - Trunk light
 - Instrument cluster lights
 - Ideogram illumination optical fibers light source
 - Vehicular hazard warning signal switch light
- H (8 Amps)
 - Front right parking lamp
 - Rear left tail light
 - Front right/rear left side marker lamps
 - License plate lamp (right)

- I (8 Amps)
 - Turn signal lights and indicator
 - Stop lights
 - Oil pressure gage and insufficient pressure indicator
 - Engine water temperature gage
 - Fuel gage, with reserve indicator
 - Engine tachometer
 - Brake system effectiveness and hand brake-ON indicator
 - Back-up lights
 - Fast idle electrovalve
 - Fasten belts indicator and relay for buzzer
 - Starter/Belt interlock electronic control unit (1975 only)
 - Idle stop solenoid
 - Electrovalve for diverter valve
 - Relay winding of electrovalve for diverter valve
 - EGR indicator relay winding
 - EGR warning system (25,000 miles)
 - EGR indicator (25,000 miles)
- L (8 Amps)
 - Voltage regulator
 - Alternator field winding
- In separate holder (3 Amps)
 - Remove key and fasten belts buzzer
 - Starter/Belt interlock electronic control unit (1975 only)
- In separate holder (3 Amps)
 - EGR indicator reset device (25,000 miles)
- In separate holder (16 Amps)
 - Cigar lighter
 - Clock
 - Courtesy light
 - Hazard warning and indicator
 - Inspection lamp receptacle
- In separate holder (8 Amps)
 - Fuel pump and relay

FUSES (1977 and 1978)

Eight 8-Amp, one 16-Amp and one 25-Amp fuse, contained in a box located under instrument panel to the left of steering post. Cover is of the snap-on type.

Before replacing a blown fuse trace the cause and remedy accordingly.

Unprotected Circuits

Alternator, starting motor, ignition coil, battery charge indicator and relay (regulation section excluded), starter

relay, headlight high beam relay and idle stop solenoid.

Protected Circuits

- A (8 Amps)
 - Turn signal lamps and indicator
 - Stop lamps
 - Oil pressure gage and insufficient pressure indicator
 - Engine water temperature gage
 - Fuel gage, with reserve indicator
 - Engine tachometer
 - Low brake fluid level and hand brake ON indicator
 - Back-up lamps
 - Fast idle electrovalve
 - Fasten belts indicator and relay for buzzer
 - Delay circuit for fasten seat belts indicator and buzzer
 - EGR cut-out electrovalve
- B (8 Amps)
 - Windshield wiper
 - Heater fan motor
 - Windshield washer pump
- C (8 Amps)
 - Left headlight high beams
 - High beam indicator
- D (8 Amps)
 - Right headlight high beams
- E (8 Amps)
 - Right headlight low beam

- F (8 Amps)
 - Left headlight low beam
- G (8 Amps)
 - Front left parking lamp
 - Parking and tail lamps indicator
 - Rear right tail lamp
 - Front left/rear right side marker lamps
 - License plate lamp (left)
 - Cigar lighter housing indicator
 - Trunk light
 - Instrument cluster lights
 - Ideogram illumination optical fibers light source
 - Vehicular hazard warning signal switch light
- H (8 Amps)
 - Front right parking lamp
 - Rear left tail lamp
 - Front right/rear left side marker lamps
 - License plate lamp (right)
- I (16 Amps)
 - Horns
 - Engine fan motor
- L (25 Amps)
 - Cigar lighter
 - Quartz crystal clock
 - Courtesy light
 - Hazard warning flasher and indicator
 - Inspection lamp receptacle
 - Remove key and fasten belts buzzer
 - Radio aerial motor (where fitted)

FUSES (1979 to 1981)

Nine 8-Amp and three 16-Amp fuses in a box under dash, driver's side. One 8-Amp and one 16-Amp fuse (fuel injection pump) in separate holder.

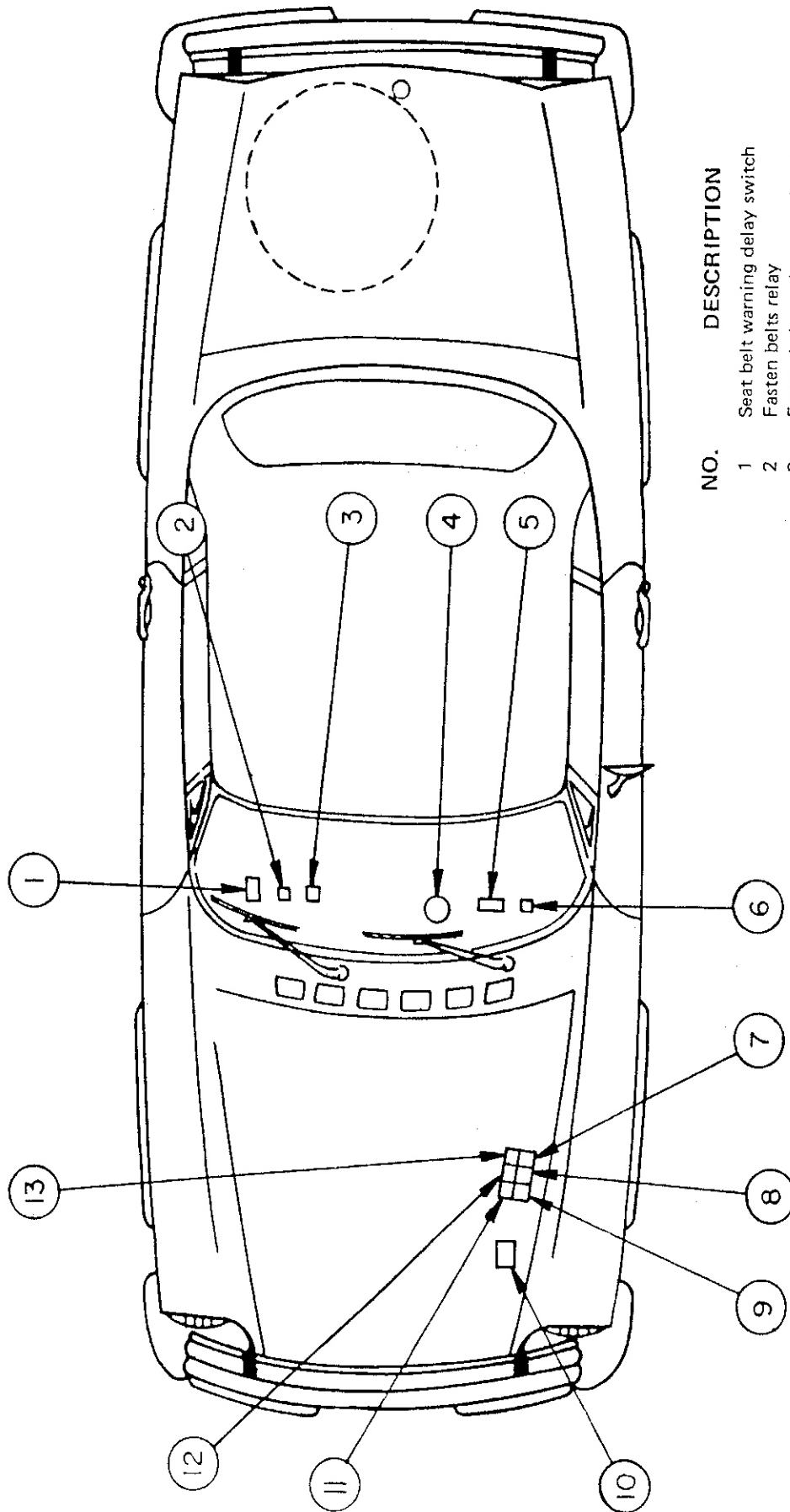
Before replacing a blown fuse trace the cause and remedy accordingly.

Unprotected Circuits

Alternator, ignition, starting, battery charge indicator, idle stop solenoid (carburetor), gulp valve electrovalve (carburetor), starting motor relay coil (automatic transmission), power windows relay coil (where fitted), fuel injection system.

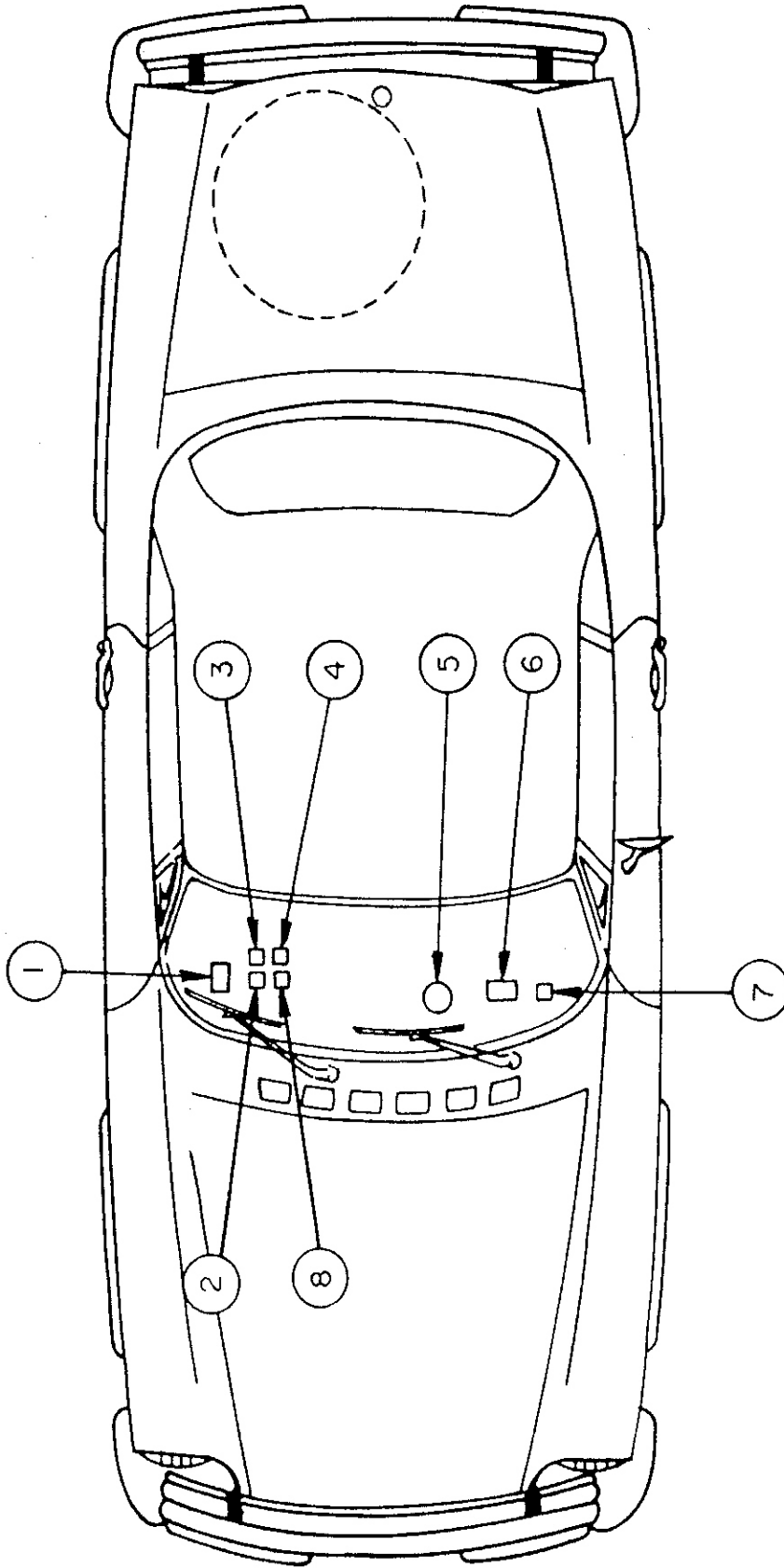
Protected Circuits

- | | |
|---|--|
| <p>A (8 Amps)
Turn signal lamps and indicator
Stop lamps
Oil pressure gage and insufficient pressure indicator
Engine coolant temperature gage
Fuel gage, with reserve indicator
Engine tachometer
Low brake fluid level and hand brake ON indicator
Back-up lamps
Fast idle electrovalve
Fasten belts indicator and relay for buzzer
Delay circuit for fasten seat belts indicator and buzzer
Selected gear indicator light (automatic transmission)
30,000 miles pick-up and indicator (fuel injection)</p> <p>B (8 Amps)
Windshield wiper
Heater fan motor
Windshield washer pump
Windshield wiper sweep rate rheostat</p> <p>C (8 Amps)
Left headlight high beams
High beam indicator</p> <p>D (8 Amps)
Right headlight high beams</p> <p>E (8 Amps)
Left headlight low beam</p> <p>F (8 Amps)
Right headlight low beam</p> | <p>G (8 Amps)
Front right parking lamp
Rear left tail lamp
Front right/rear left side marker lamps
License plate lamp (right)</p> <p>H (8 Amp)
Front left parking lamp
Parking and tail lamps indicator
Rear right tail lamp
Front left/rear right side marker lamps
License plate lamp (left)
Cigar lighter housing indicator
Trunk light
Instrument cluster lights
Ideogram illumination optical fibers light source
Vehicular hazard warning signal switch light</p> <p>I (25 Amps)
Quartz crystal clock
Courtesy light
Hazard warning flasher and indicator
Inspection lamp receptacle
Remove key and fasten belts buzzer</p> <p>L (16 Amps)
Horns
Engine fan motor</p> <p>M (16 Amps)
Power window motor (Left - if fitted)</p> <p>N (16 Amps)
Power window motor (Right - if fitted)</p> <p>In separate holder (8 Amps)
Cigar lighter</p> <p>In separate holder (16 Amps)
Fuel pump - supplementary air valve (fuel injection)</p> |
|---|--|



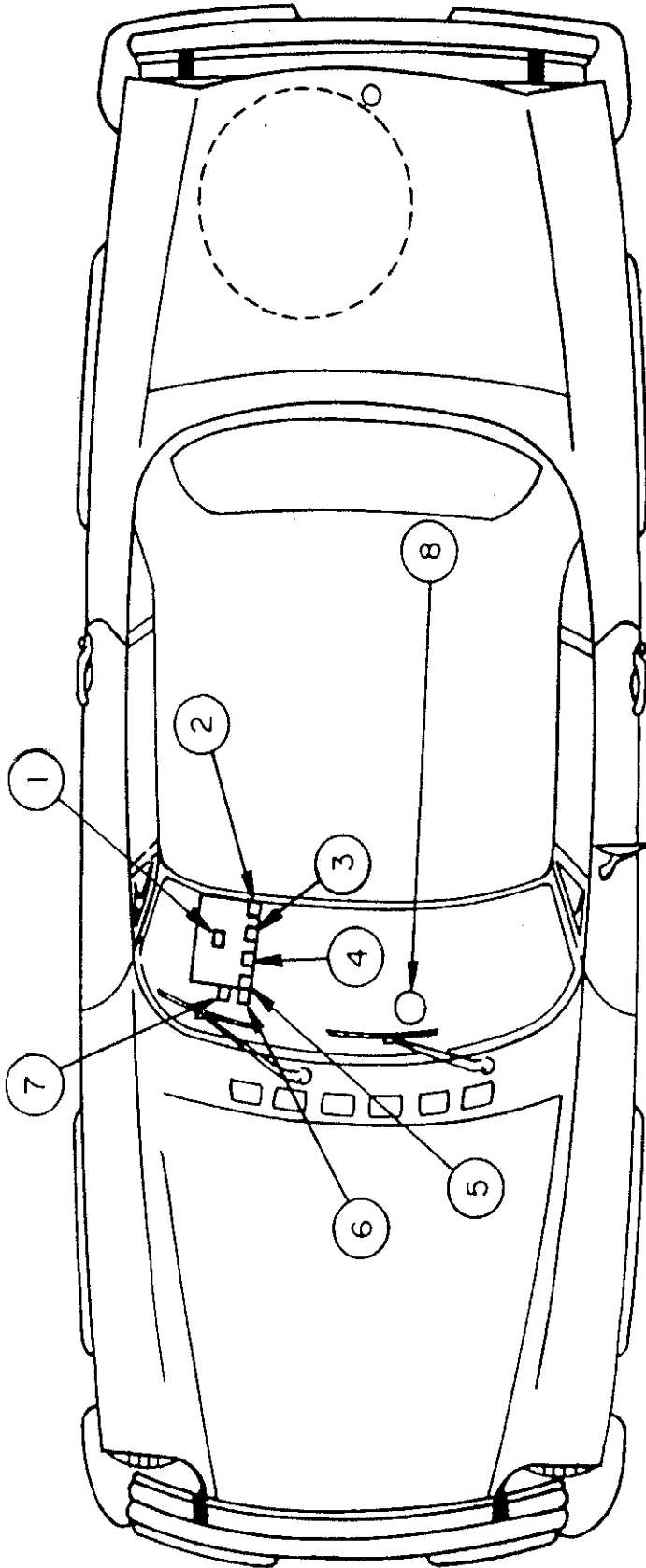
NO.	DESCRIPTION
1	Seat belt warning delay switch
2	Fasten belts relay
3	Fasten belts and remove key buzzer
4	Turn signal flasher
5	Windshield wiper intermittent switch
6	Hazard warning flasher
7	Battery charge relay
8	Fuel/pump relay
9	Ignition mode relay
10	Voltage regulator
11	Diverter valve by-pass relay
12	Engine fan relay
13	Horn relay

RELAY LOCATION 1975 & 1976



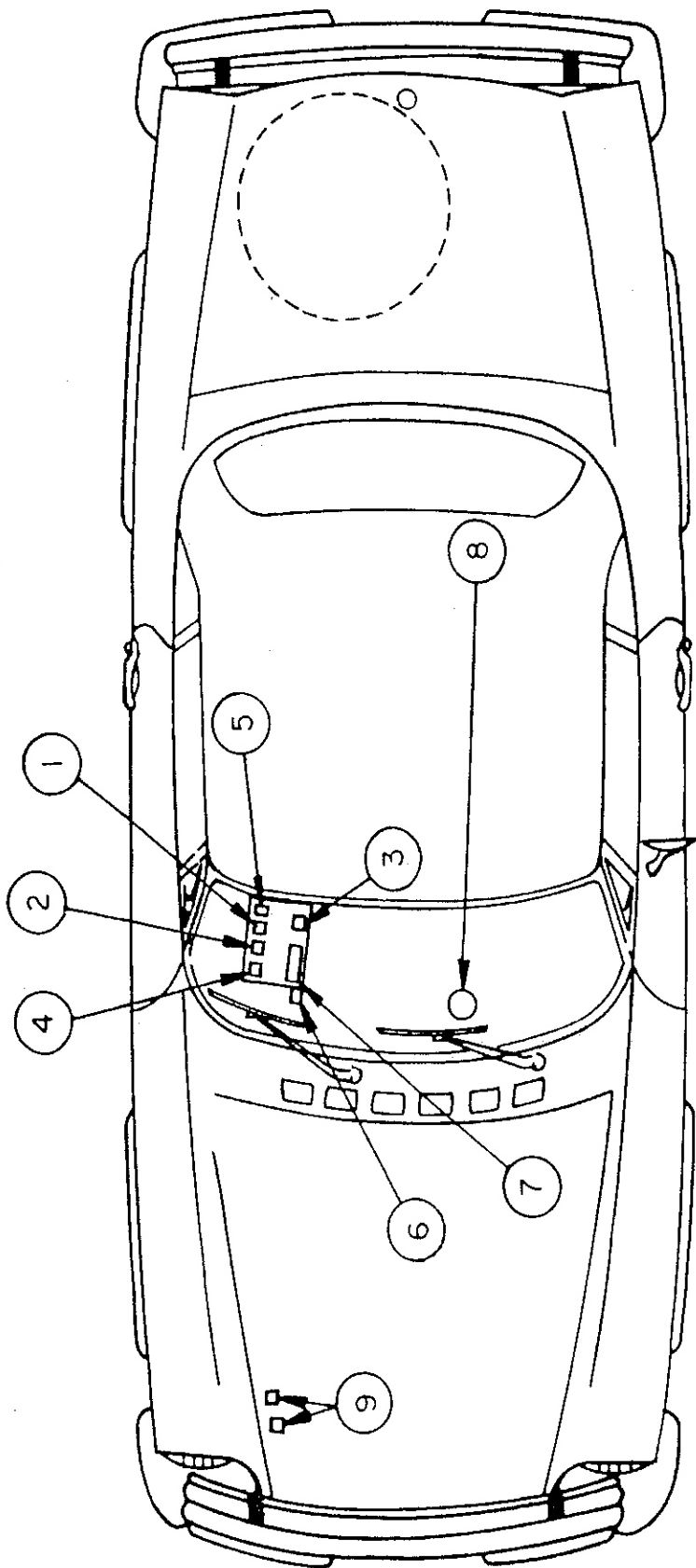
NO.	DESCRIPTION
1	Seat belt warning delay switch
2	Fasten belts relay
3	Ignition mode relay
4	Diverter valve by-pass relay (Calif. only)
5	Turn signal flasher
6	Windshield wiper intermittent switch
7	Hazard warning flasher
8	Horn relay

RELAY LOCATION 1977



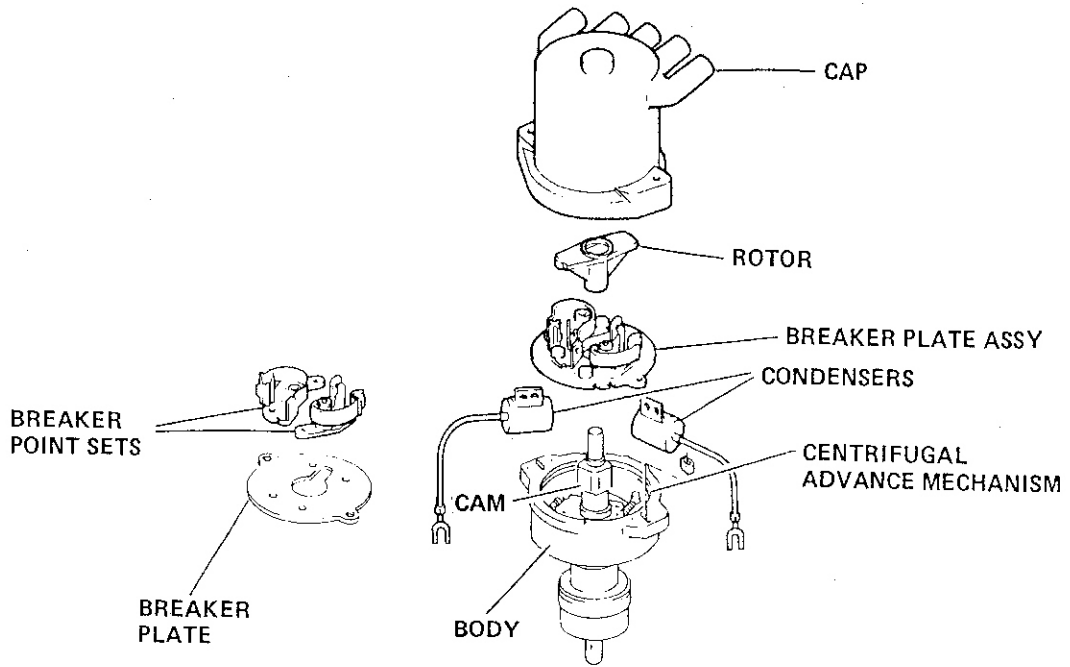
NO.	DESCRIPTION
1	Seat belt warning delay switch
2	Fasten belts relay
3	Ignition mode relay
4	Horn relay
5	Diverter valve by-pass relay (Calif. only)
6	Windshield wiper intermittent switch
7	Hazard warning flasher
8	Turn signal flasher

RELAY LOCATION 1978



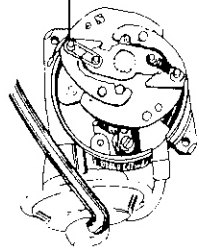
NO.	DESCRIPTION
1	Seat belt warning delay switch
2	Fasten belts relay
3	Automatic transmission starter relay
4	Horn relay
5	Power windows relay
6	Windshield wiper intermittent switch
7	Fuel injection relay set
8	Turn signal and hazard warning flasher
9	Air conditioning relays

RELAY LOCATION 1979, 1980 & 1981

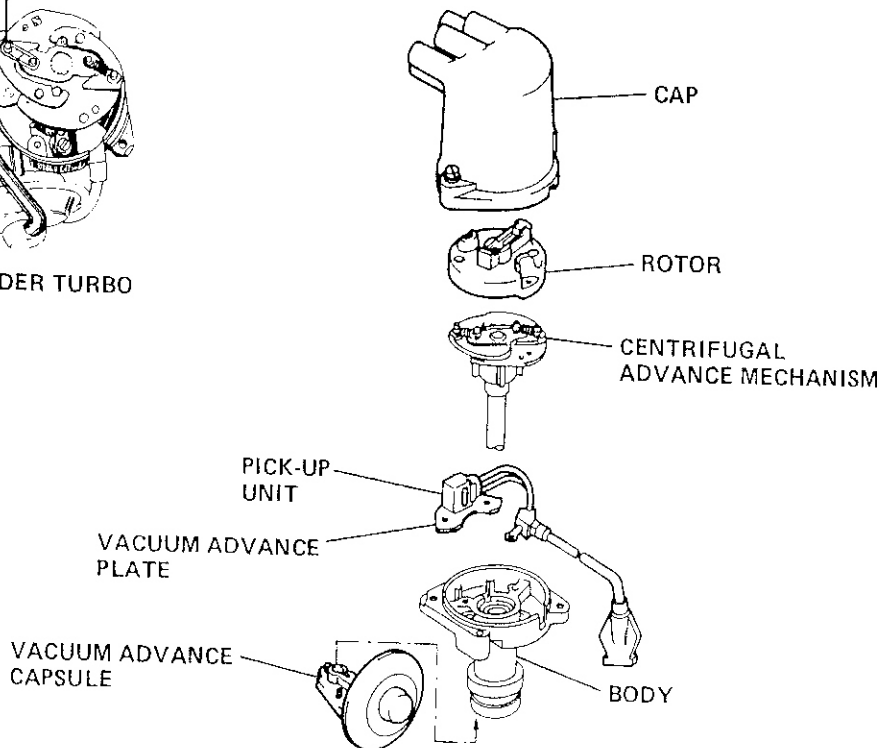


BATTERY IGNITION DISTRIBUTOR (to 1978)

ADVANCE LIMITER



SPIDER TURBO



ELECTRONIC IGNITION DISTRIBUTOR (1979 and on)

IGNITION SYSTEM (to 1978)

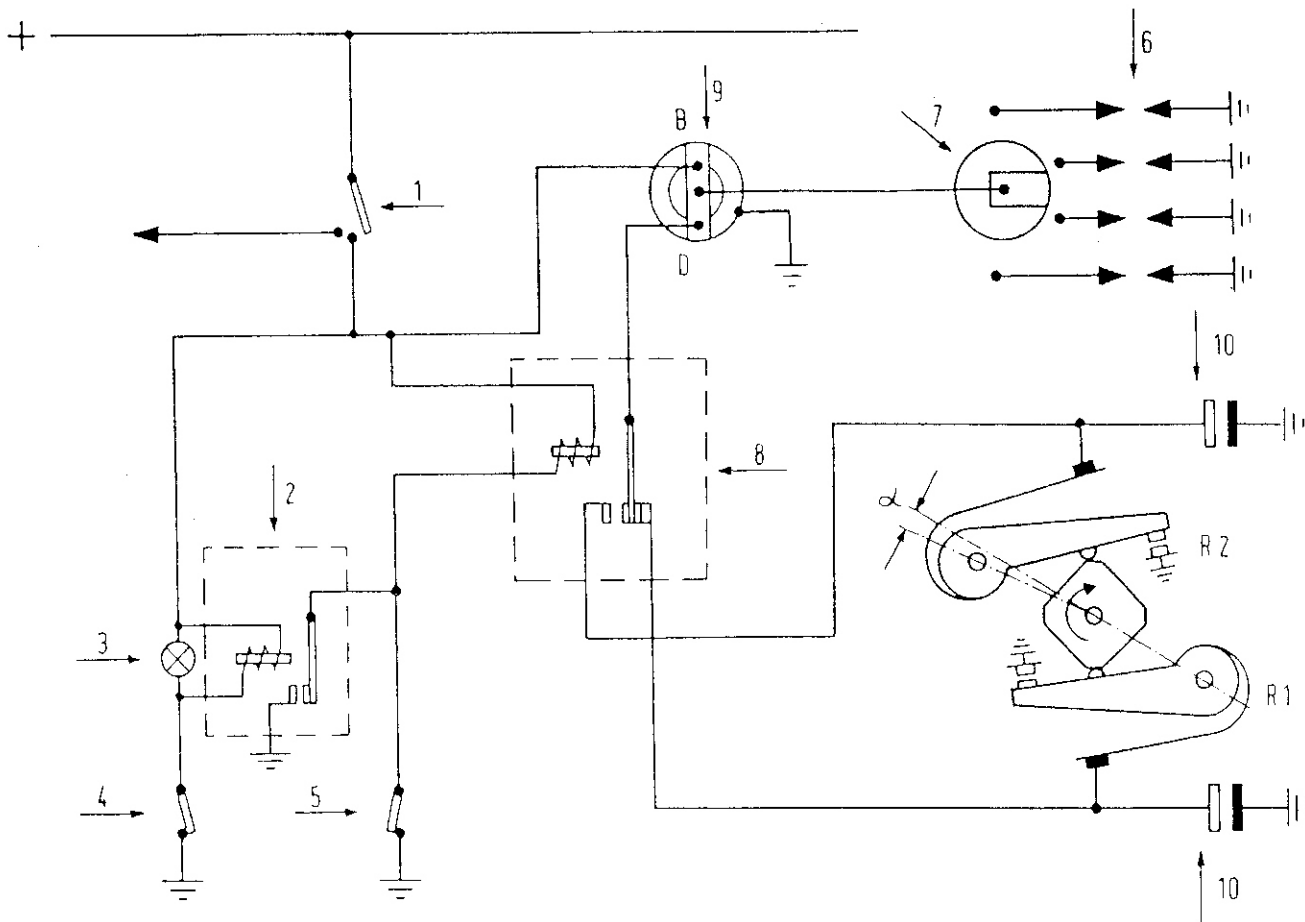
DESCRIPTION

The ignition system used up to 1978 is the standard battery ignition type, except that it uses two sets of breaker points. The auxiliary set provides an additional 10° of timing advance and is used for starting and running until engine reaches about 60°F (15°C), at which point ignition is switched over to the normal running points. This arrangement allows for compliance to emissions standards while providing for good operation during starting and cold running.

For cold starting and running, the system operates as follows:

With ignition switch (1) on, and temperature below 40°F (5°C), current flows through change-over relay (8), engine thermoswitch (5), start relay (2), oil pressure indicator (3) and oil pressure switch (4). With current through change-over relay, ignition system operates on auxiliary points R2. Oil pressure opens switch (4) shutting off start relay, but current is still provided to change-over relay through thermoswitch. System operates on auxiliary points until engine warms up and opens thermoswitch, at which point change-over relay is de-activated and ignition is switched to running points R1.

During starting when engine is warm, ignition is provided by auxiliary points R2 until oil pressure opens switch (4). Start relay and change-over relay are then de-activated and ignition is switched to running points R1.



- | | |
|---------------------------|---|
| 1. Ignition switch | 8. Change-over relay |
| 2. Start relay | 9. Spark coil |
| 3. Oil pressure indicator | 10. Capacitor |
| 4. Oil pressure switch | R ₁ . Running breaker points |
| 5. Engine thermoswitch | R ₂ . Auxiliary breaker points |
| 6. Spark plugs | $\alpha = 10^\circ$ engine |
| 7. Distributor | |

Ignition System

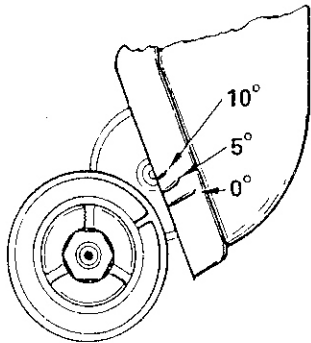
551.01

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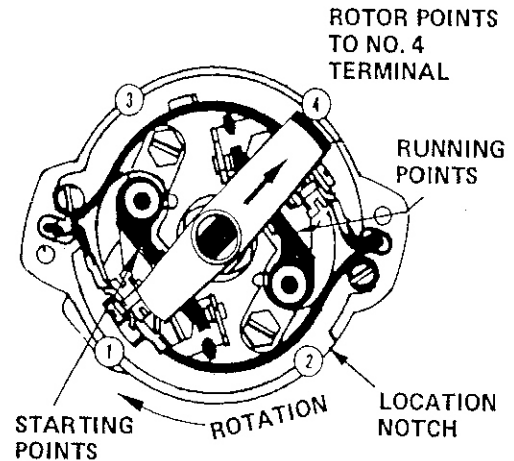
SETTING IGNITION TIMING (to 1978)

Position crank pulley notch to index with 0° mark on cover. Remove two screws securing distributor cap to body. Rotor will be positioned at No. 1 or No. 4 terminal as shown.

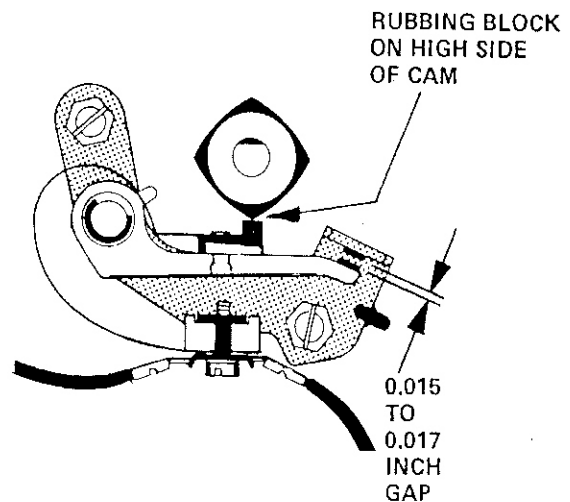
ENGINE POSITION



DISTRIBUTOR POSITION

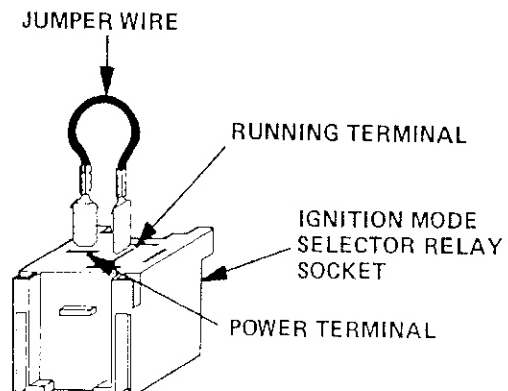


Loosen nut holding distributor body to engine. Turn body until one point set is at maximum opening. Adjust point gap at .015 to .017 in. Repeat with other point set. Then turn distributor body until running points just start to open. Tighten distributor hold-down nut.



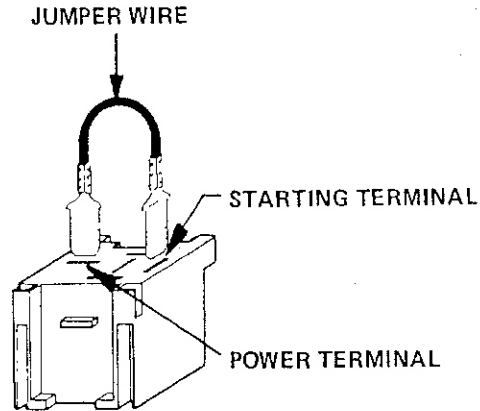
Locate ignition change-over relay (refer to Relay Location Charts). Remove relay.

Connect jumper wire between POWER and RUNNING on plastic base as shown. Connect dwellmeter to running points (green distributor lead). Crank engine. Adjust points to 55° dwell.



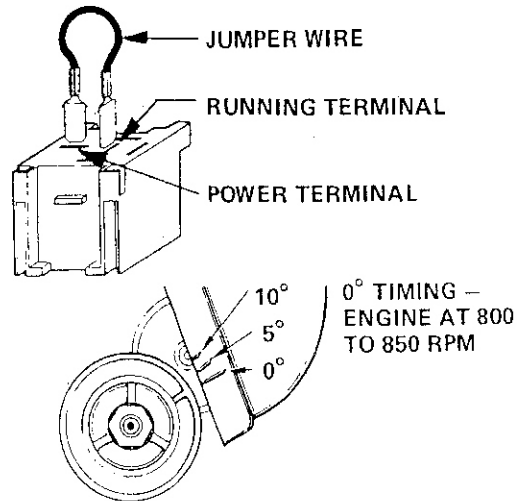
Leave one end of jumper on POWER. Connect other end to STARTING as shown.

Connect dwellmeter to starting points (green/black lead). Crank engine. Adjust points to 55° dwell.



Move jumper wire back to RUNNING as shown. Install rotor and cap. Connect timing light. Start engine and warm it up.

Check ignition timing at idle (850 rpm). Rotate distributor as necessary to obtain 0° (TDC) reading. Tighten distributor hold-down nut.



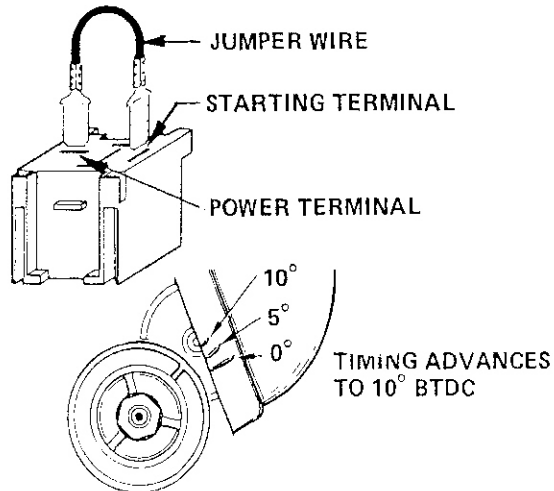
Temporarily reconnect jumper to STARTING as shown. Check that ignition advances to 10°. If not, adjust amount of advance by changing dwell angle of starting points, do not move distributor.

If less than 10°, increase gap to decrease dwell.

If more than 10°, decrease gap to increase dwell.

Remove jumper wire and install relay.

Check maximum centrifugal advance with timing light (36 + 2° at 3600 rpm = about 2 in. on pulley). Disconnect equipment.



DISTRIBUTOR (to 1978)

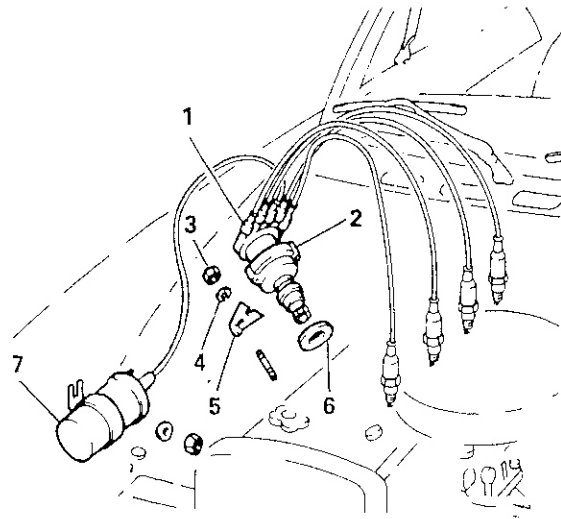
REMOVAL AND INSTALLATION

Remove two screws securing distributor cap (1) to body (2). Place cap to one side.

Crank engine until crankshaft pulley timing mark indexes with timing pointer.

Noting rotor position for installation, remove nut (3), washer (4) and clamp (5). Remove distributor and gasket (6).

1. Cap 2. Body 3. Nut 4. Washer 5. Clamp 6. Gasket
7. Ignition coil



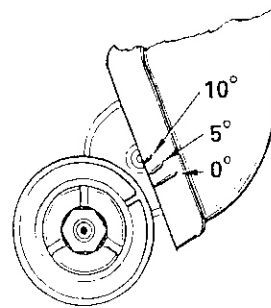
Installation is reverse of removal. Before installing distributor, place rotor in same position as was noted during removal.

Set timing as described in this section.

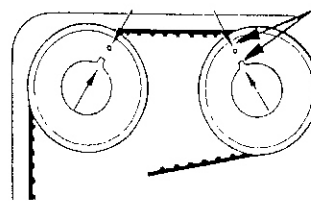
If engine was cranked over during distributor removal, resetting timing of engine and distributor will have to be performed as follows:

Position crank pulley notch to index with 0° mark on cover.

Check that camshaft pulley marks are aligned with indicators on cam housings, if not, rotate crank pulley one full turn to 0° mark (cams turn at 1/2 crank speed).

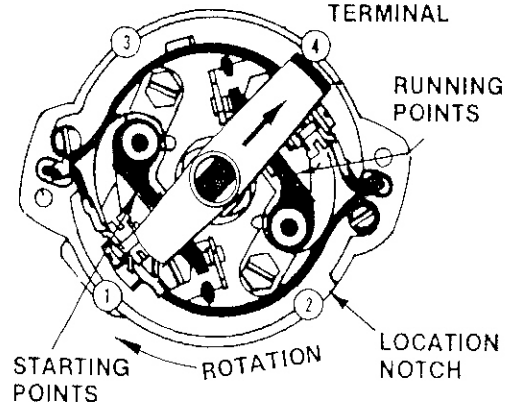


PULLEY TIMING MARK IS AT 0° (TDC)



ALIGN CAMSHAFT TIMING MARKS WITH CAM HOUSING MARKS

Place distributor into engine so that with it fully seated, rotor lines up with No. 4 terminal as shown. Set timing as described in this section.



ROTOR POINTS TO NO. 4 TERMINAL

RUNNING POINTS

STARTING POINTS

ROTATION

LOCATION NOTCH

DISASSEMBLY AND REASSEMBLY

Remove two screws securing cap to body.

Remove rotor by pulling it off of shaft.

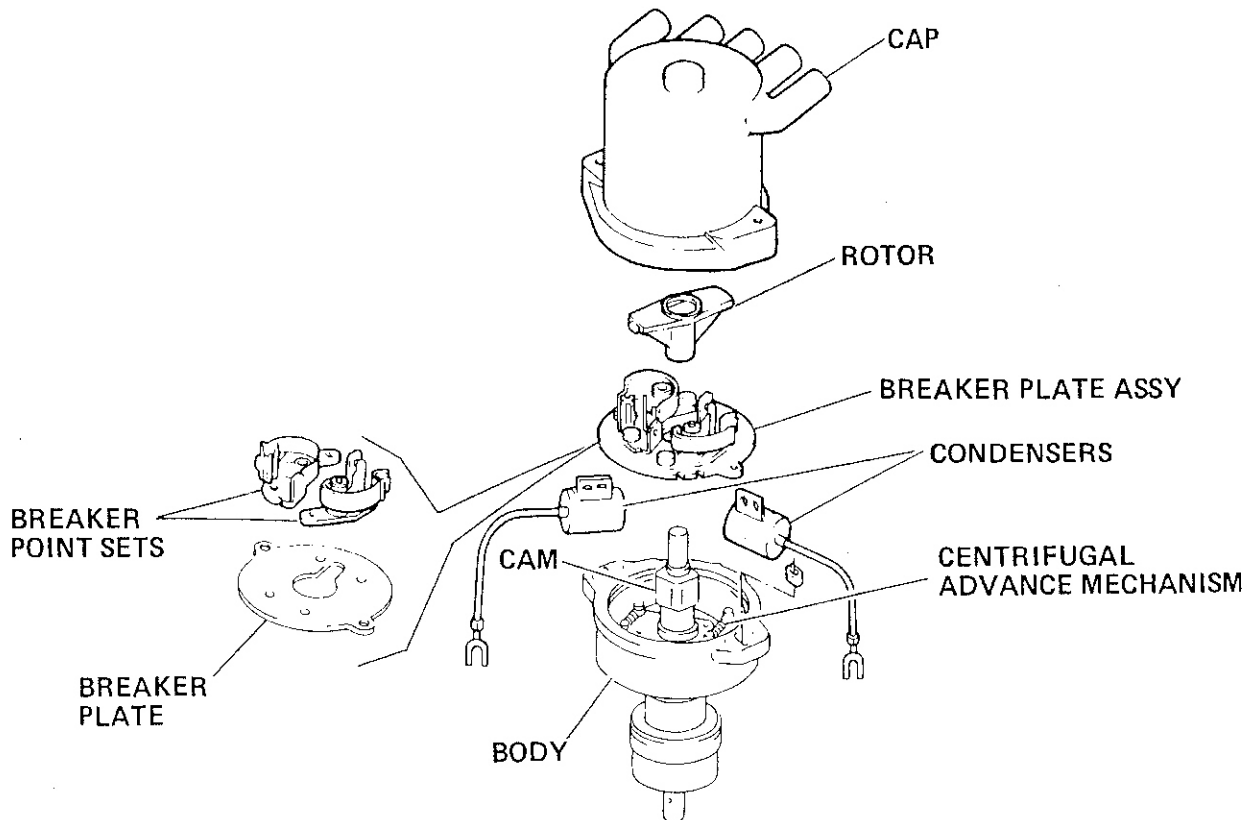
Remove terminal screws at breaker point sets to remove wires. Note where terminal wires are connected.

Remove four screws securing breaker point sets. Remove two screws holding breaker plate to body.

Remove screw holding both condensers to body.

Remove circlip fixing cam and centrifugal advance mechanism to shaft.

Reassembly is reverse of disassembly. Apply a small amount of grease to moving parts of centrifugal advance mechanism. Apply a very light coat of grease to cam surface.

**INSPECTION**

Check distributor cap for cracks, breaks, or corroded terminals. For light corrosion, clean terminals, otherwise replace.

Check rotor for cracks, breaks, or corrosion.

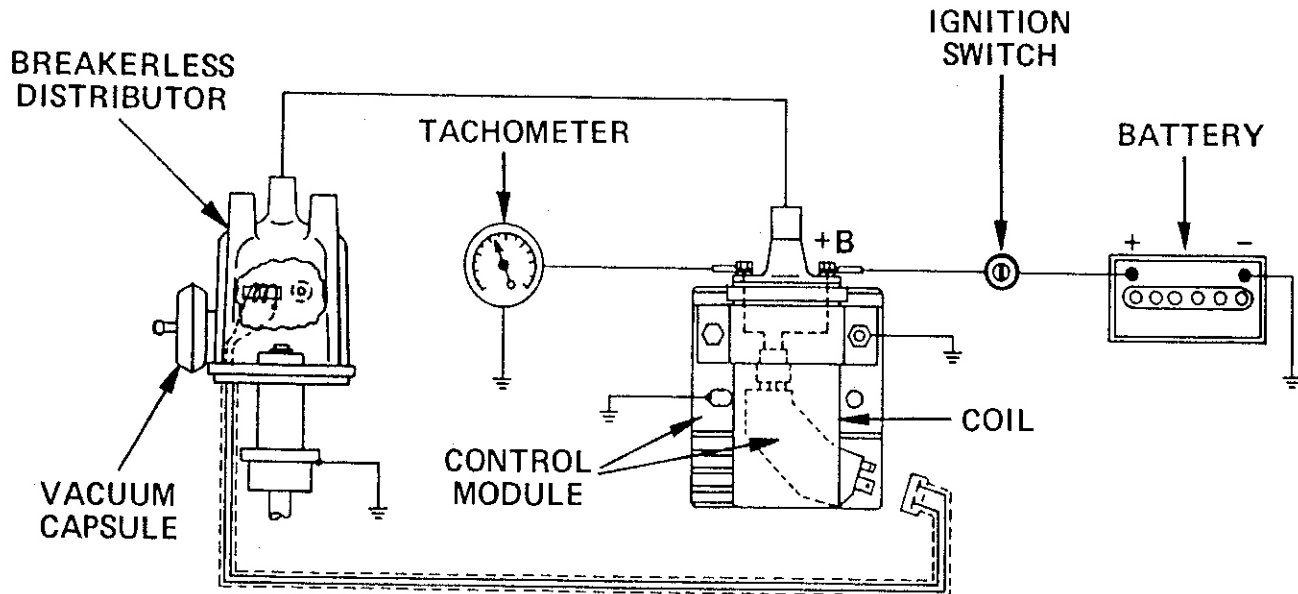
Check body for worn or sticky shaft.

Check breaker points for pitting or corrosion.

IGNITION SYSTEM (1979 and on)

DESCRIPTION

The ignition system used for 1979 and on is an electronic ignition type. The system consists of an ignition coil, an electronic control module on a cast support, and a breakerless distributor. Primary voltage is applied to coil from battery through the ignition switch. This voltage is regulated by the control module to supply a regulated current to primary windings of ignition coil. The control module is triggered by an impulse generated in the distributor. This turns coil primary circuit on and off. Each time primary circuit is broken, a high voltage is induced in coil secondary windings. This is distributed to spark plugs through distributor rotor and cap in conventional manner.



SERVICE

Before performing any service, observe the following:

Do Not

- Energize ignition unless coil support base is properly grounded.
- Crank engine with high voltage wire disconnected from coil.
- Disconnect high voltage wire from coil when engine is running.
- Start or crank engine when instrument panel is disconnected.
- Ground primary circuit or use diagnostic equipment to ground primary circuit.
- Test for current or voltage by flashing terminals with each other or to ground.
- Disconnect battery cables when engine is running. The electronic voltage regulator will be damaged.

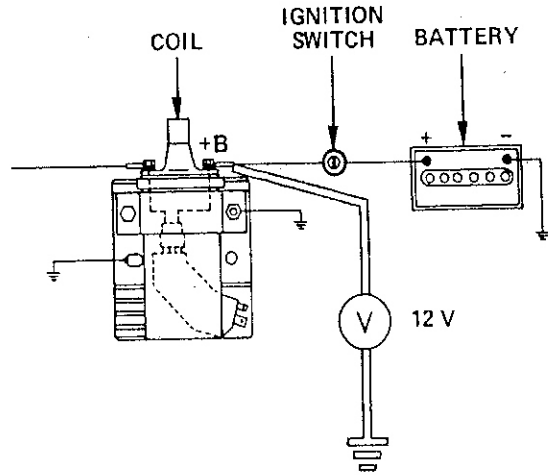
Do

- When required, distributor pick-up assembly may be disconnected when engine is running, or when cranking for compression testing.

IGNITION SYSTEM CHECKS

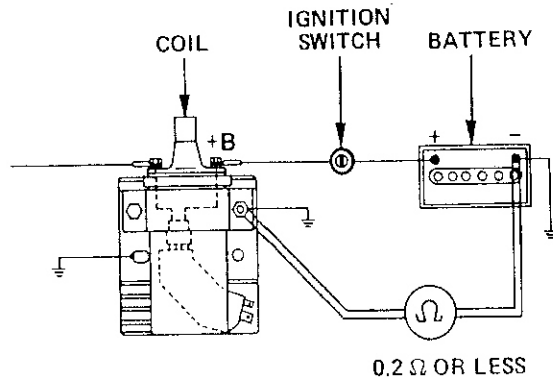
Primary Input Check

Connect voltmeter from coil +B terminal to ground.
 With ignition switch on, check for 12 (battery) volts.
 If not, check for faulty battery, ignition switch, wiring, or connections.



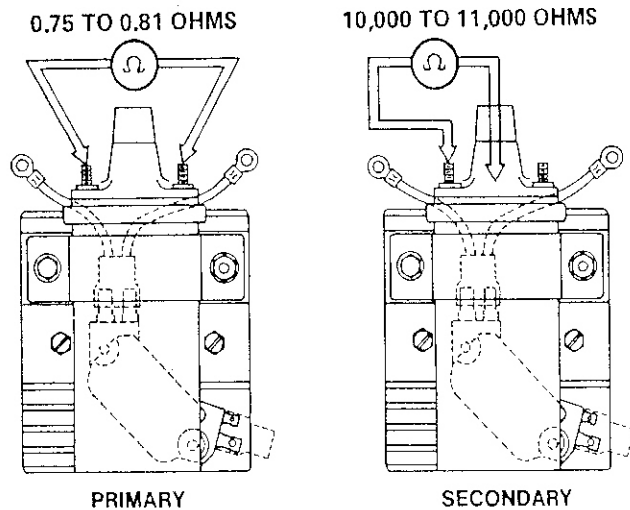
Ground Check

With ignition switch off, connect ohmmeter from coil ground stud to battery ground (-) terminal.
 Check for less than 0.2 ohms.
 If not, check support, mounting, and battery ground connections.
 Also check that control module casing is clean, and that mounting hardware is clean and tight.



Coil Resistance Check

Disconnect primary leads from coil, then connect ohmmeter to coil.
 Check for 0.75 to 0.81 ohms.
 Reconnect one ohmmeter lead to coil high voltage terminal.
 Check for 10K to 11K ohms.
 Replace coil if not within specifications.



Pick-Up Assembly Check

Disconnect pick-up assembly from control module.

Connect ohmmeter to pick-up assembly connector.

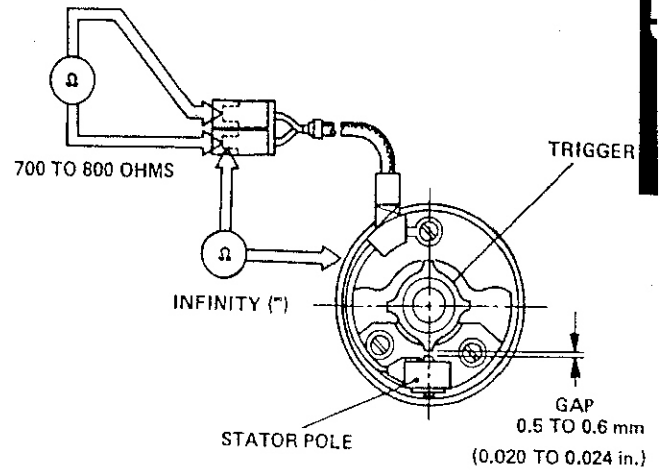
Check for 700 to 800 ohms.

Reconnect one ohmmeter lead to distributor body.

Check for infinity ohms.

Replace pick-up assembly if not within specification.

Using a nonmagnetic feeler gauge, check gap between stator pole and trigger. Adjust as required.



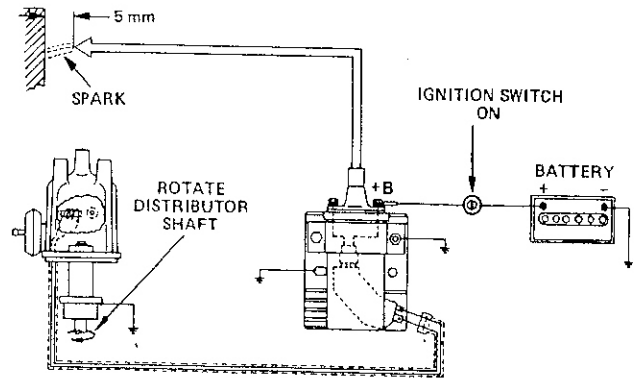
Control Module Check

Reconnect primary leads to coil, and pick-up assembly to control module.

Disconnect high voltage wire from distributor. Do not disconnect from coil.

While holding (use insulated holder) high voltage wire about 5 mm from ground, crank engine and check for spark.

Replace control module if no spark appears.



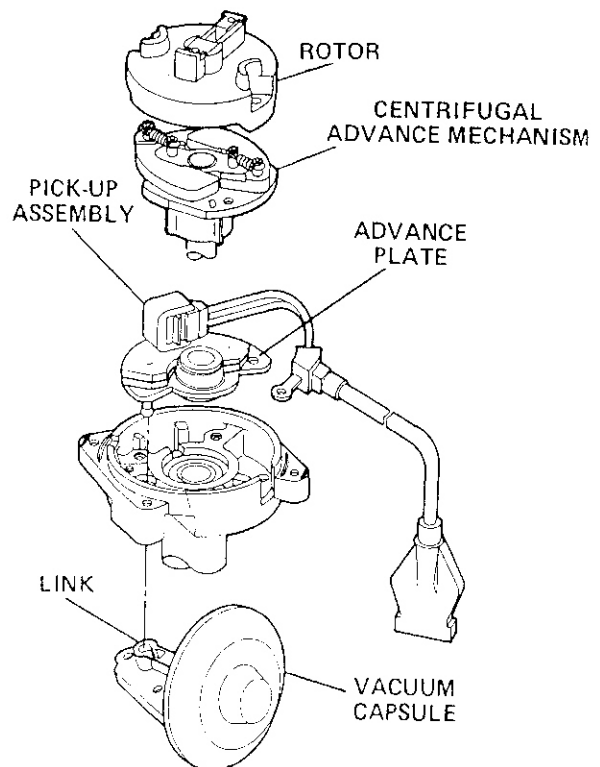
System Parts Check

Check all parts for cracks, wear, or breaks that may affect system operation.

Check cap for corroded terminals.

Clean or replace cap as required.

Using an ohmmeter, check rotor for 4K to 6K ohms. Replace if not within specifications.



DISTRIBUTOR (1979 and on)**REMOVAL AND INSTALLATION**

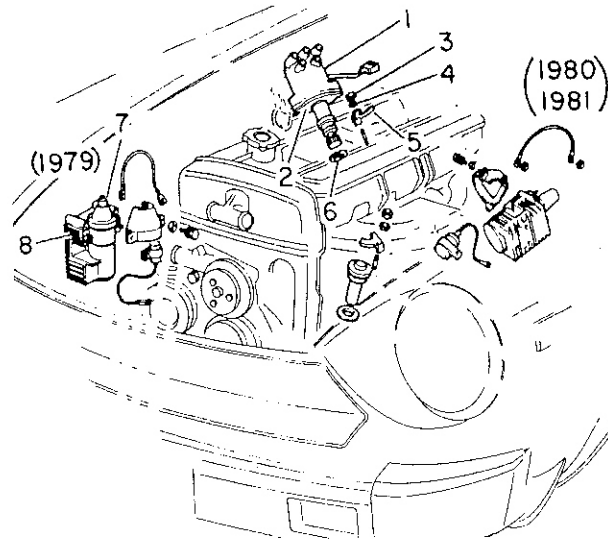
NOTE: The ignition distributor used on vehicles with turbo-charger is not interchangeable with non-turbocharger distributor.

Disconnect pick-up assembly ignition connector at control module.

Disconnect vacuum line at vacuum capsule. Remove two screws securing distributor cap (1) to body (2). Place cap to one side.

Crank engine until crankshaft pulley timing mark indexes with timing pointer.

Noting rotor position for installation, remove nut (3), washer (4) and clamp (5). Remove distributor and gasket (6).



1. Cap 2. Body 3. Nut 4. Washer 5. Clamp 6. Gasket
7. Ignition coil 8. Control module

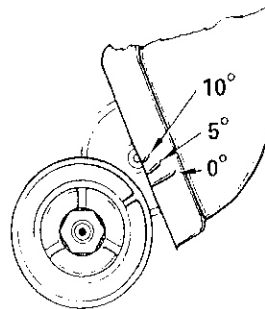
Installation is reverse of removal. Before installing distributor, place rotor in same position as was noted during removal.

Set timing with a timing light.

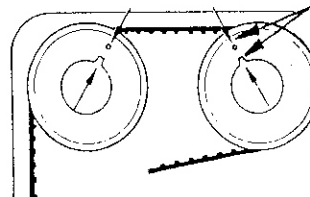
If engine was cranked over during distributor removal, resetting timing of engine and distributor will have to be performed as follows:

Position crank pulley notch to index with 0° mark on cover.

Check that camshaft pulley marks are aligned with indicators on cam housings, if not, rotate crank pulley one full turn to 0° mark (cams turn at ½ crank speed).



PULLEY TIMING MARK IS AT 0° (TDC)

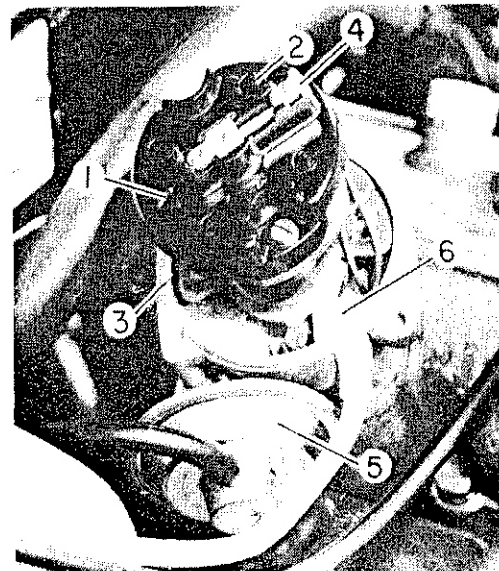


ALIGN CAMSHAFT TIMING MARKS WITH CAM HOUSING MARKS

Place distributor into engine so that with it fully seated, pointer (1) which is molded into rotor (2), points to notch (3) on distributor body. Rotor metal contactor (4) will be pointing to No. 4 terminal.

Set timing at 10° BTDC with timing light.

Tighten distributor hold-down nut.



1. Rotor pointer 2. Rotor 3. Notch 4. Metal contactor
5. Vacuum capsule 6. Pick-up assembly

DISASSEMBLY AND REASSEMBLY

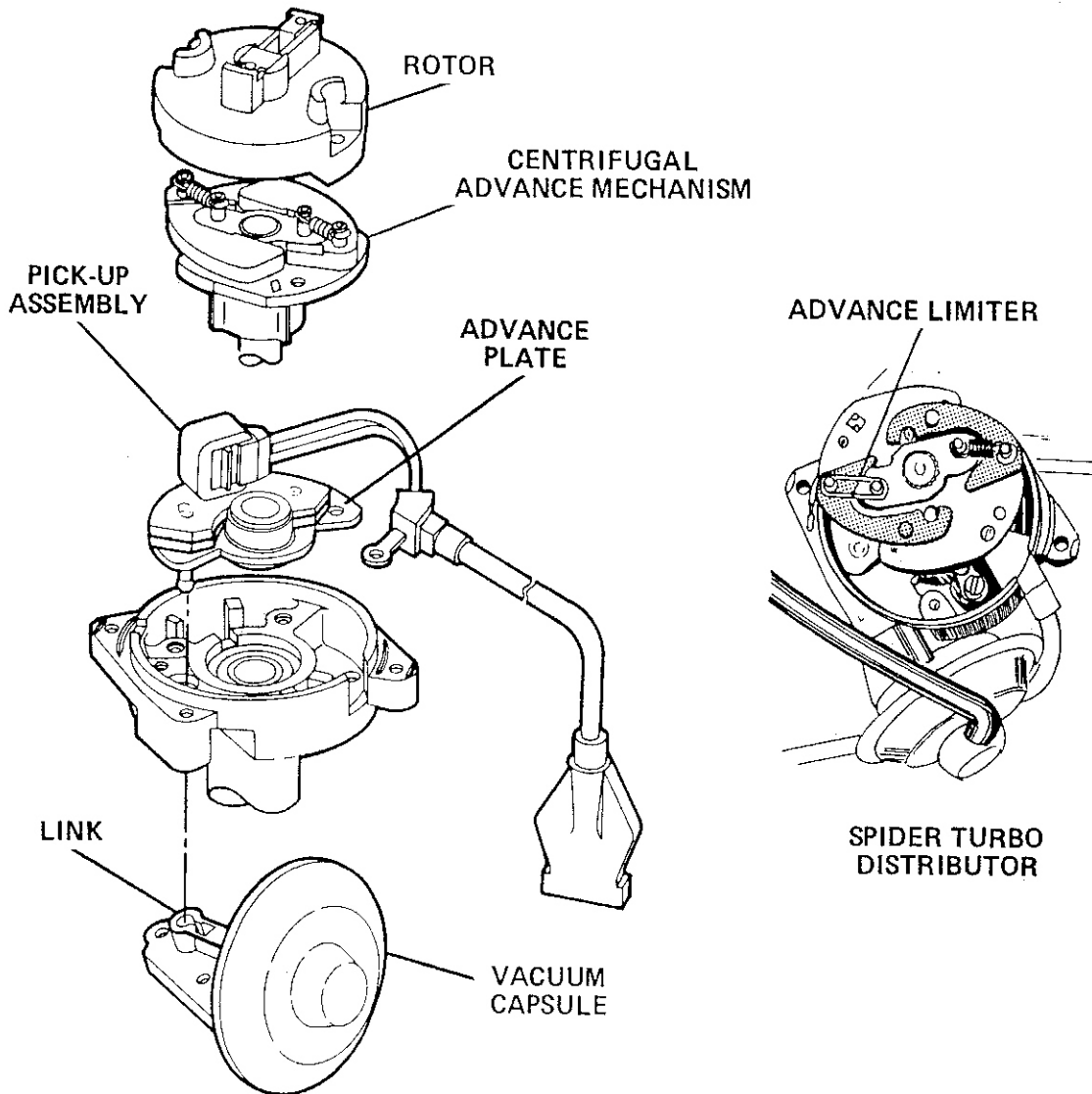
Remove two screws securing cap to body.

Remove two screws holding rotor to advance mechanism.

Remove screw holding pick-up assembly to body.

Remove three screws holding vacuum capsule to body and disconnect link from advance plate.

Reassembly is reverse of disassembly.



INSPECTION

Check distributor cap for cracks, breaks, or corroded terminals. For light corrosion, clean terminals, otherwise replace.

Check rotor for cracks, breaks, or corrosion.

Check pick-up assembly for damaged parts.

Check vacuum capsule for leakage.

Check body for worn or sticky shaft.

IGNITION SWITCH

REMOVAL AND INSTALLATION

Disconnect battery ground lead located in trunk.

Remove five screws securing upper and lower steering shaft covers (1) together.

Disconnect two electrical connectors (4) from ignition switch (3).

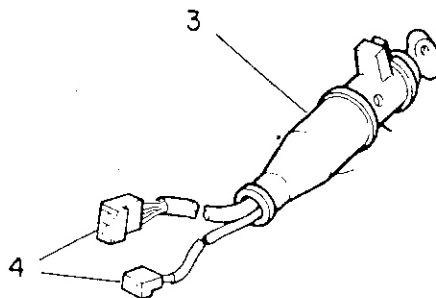
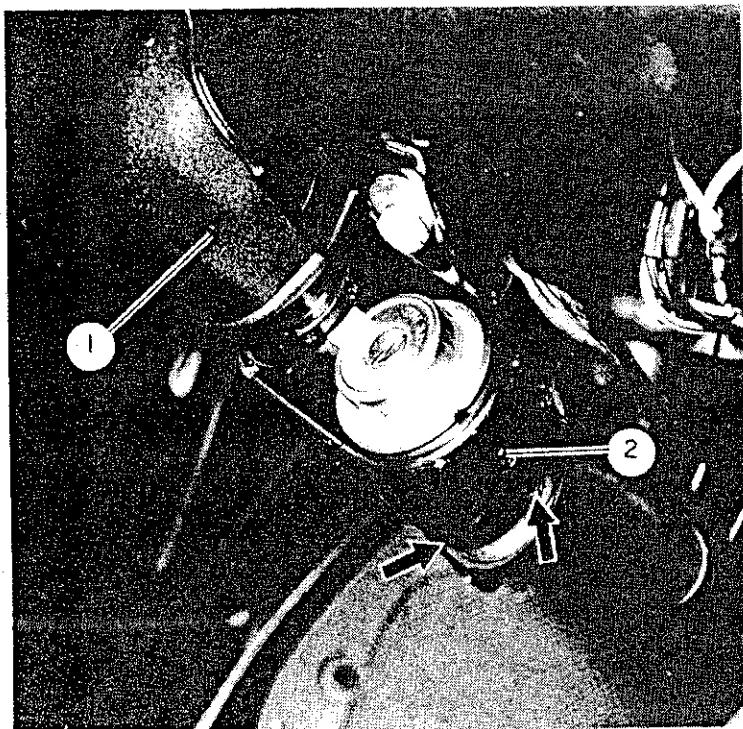
Remove two set screws at base of switch (arrows).

Place ignition key into switch and turn it to arrow mark on switch face.

Insert a thin bladed screwdriver or similar tool into opening (2) on right side of switch and push in to unlock. Pull switch assembly out.

Installation is reverse of removal.

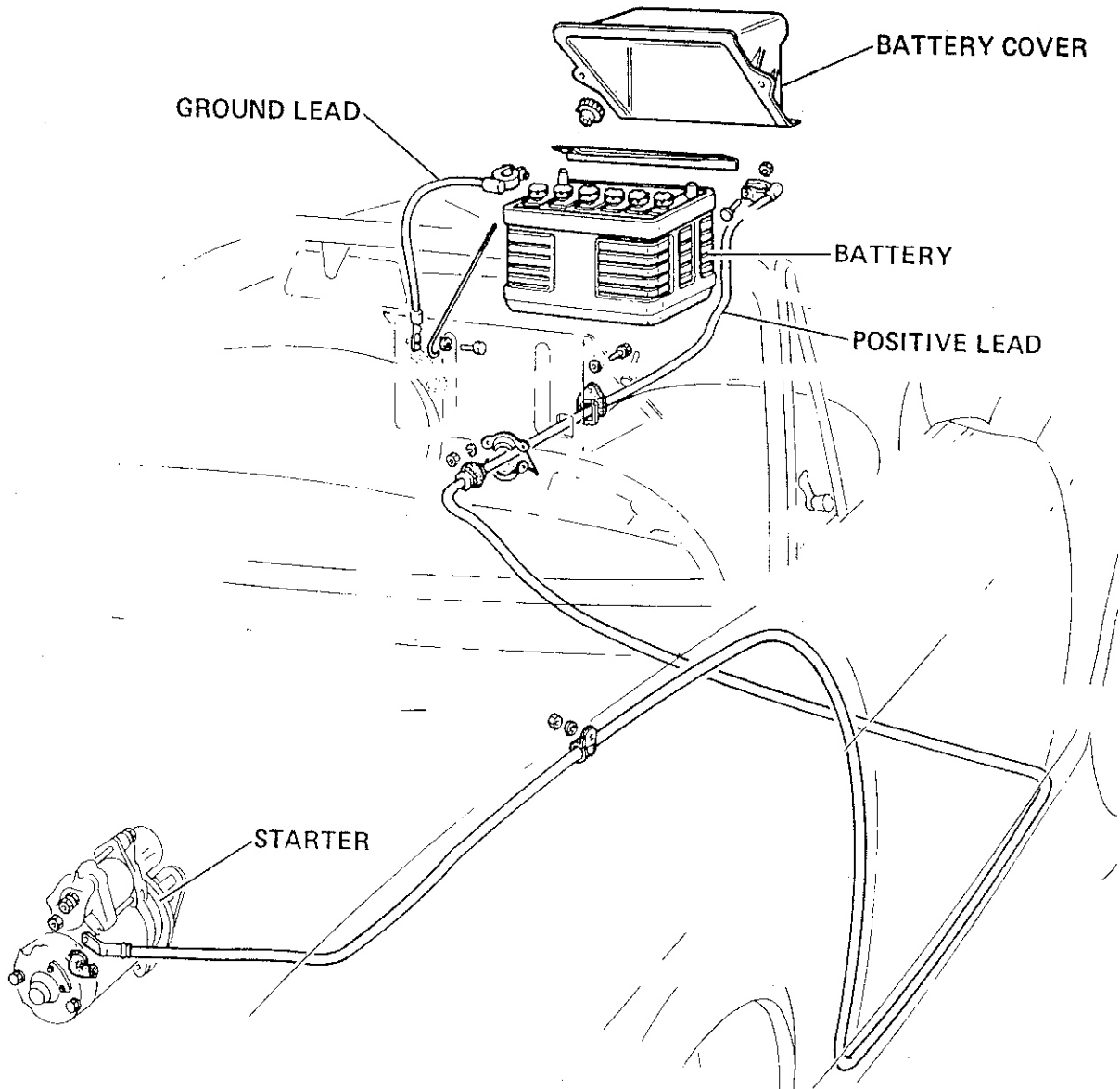
1. Steering shaft cover 2. Unlock opening 3. Ignition switch 4. Electrical connectors



Starter System

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STARTER AND BATTERY PLACEMENT

STARTER**REMOVAL AND INSTALLATION**

Disconnect battery ground lead in trunk.

From engine compartment, disconnect electrical leads from starter solenoid. Remove bolt (1) attaching front of starter to engine mount.

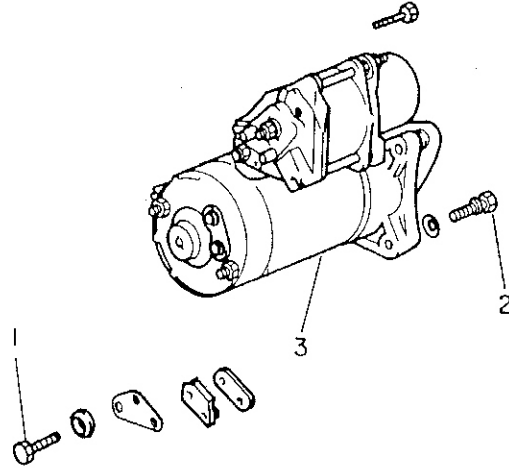
Raise vehicle on lift. Disconnect clutch cable and place to one side. Turn road wheels to right to position steering linkage for clearance during removal. Remove three bolts (2) attaching starter (3) to bell housing.

NOTE: Access to top bolt is best accomplished with a long socket extension and U-joint.

Remove starter.

Installation is reverse of removal.

1. Bolt 2. Bolt 3. Starter

**DISASSEMBLY AND REASSEMBLY (MARELLI)**

Remove nut (16) and washers holding terminal and disconnect terminal from solenoid (1). Remove three bolts (17) securing solenoid to housing.

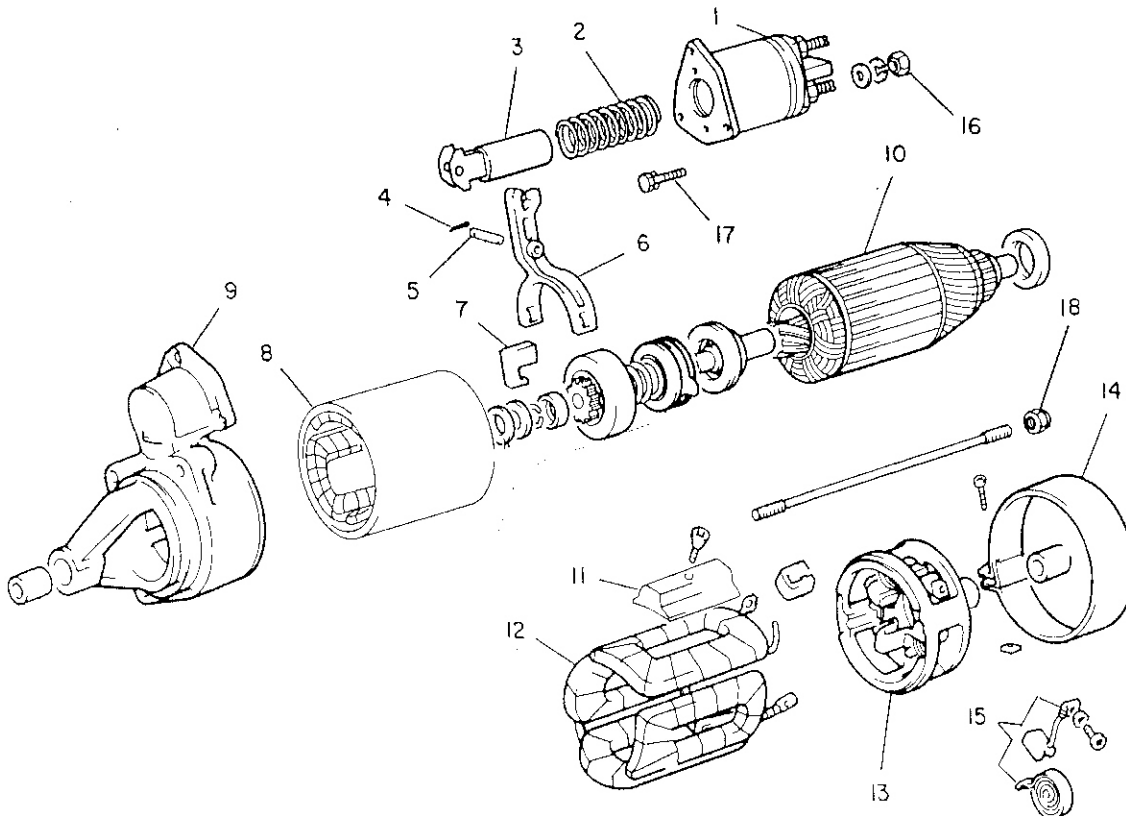
Loosen screw on end frame cover (14) and slide cover off. Remove three screws holding brushes (15) and three field coil leads. Remove two nuts (18) holding commutator end frame (13) and separate frame from field coil housing (8).

Separate field coil housing from drive end frame (9). Remove rubber insert (7) from drive end frame. Remove cotter pin (4) on shift fork pivot pin (5). Drive out pivot pin. Withdraw armature (10) from frame.

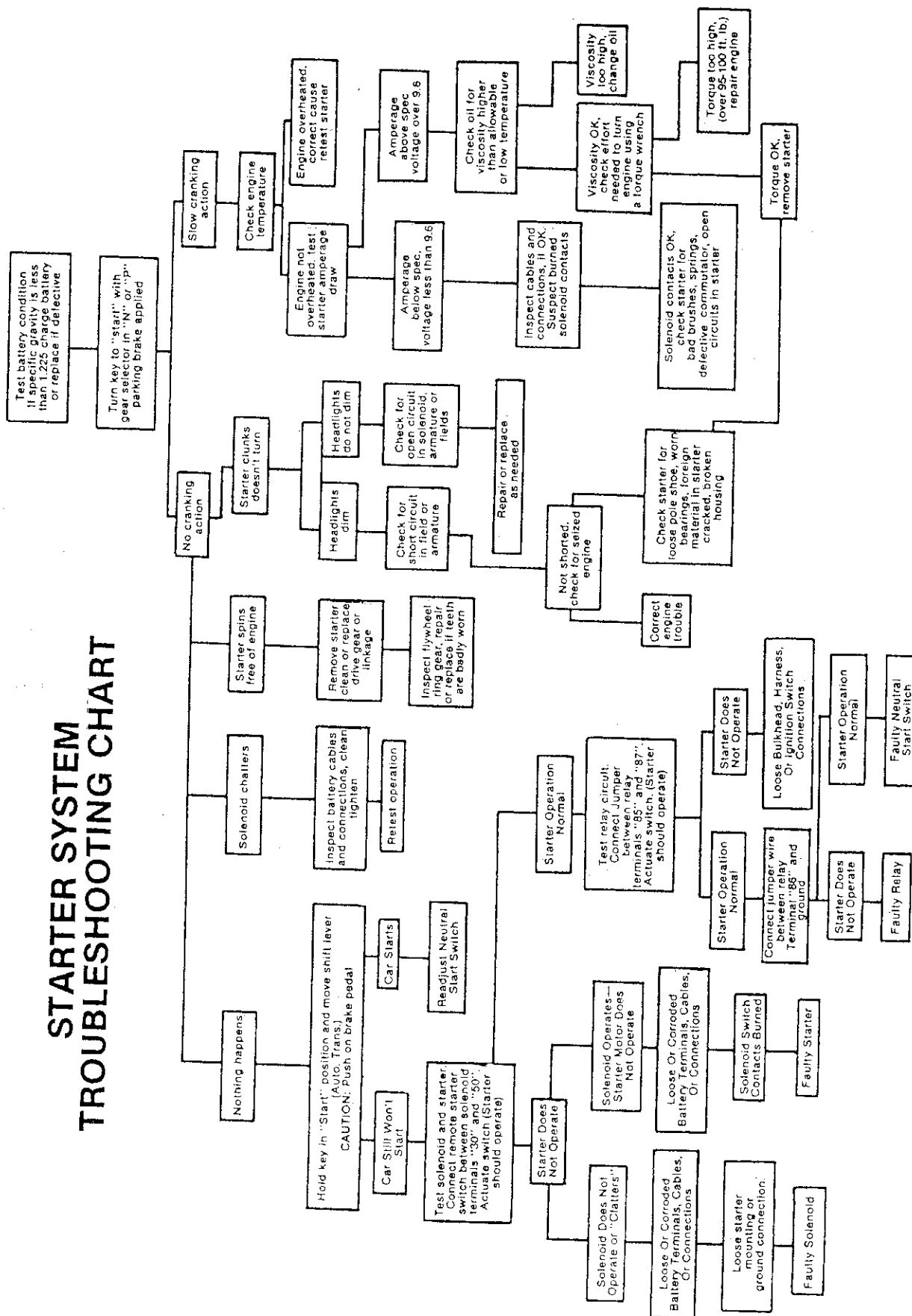
To remove field coil assembly (12), remove four screws and stator cores (11). Carefully slide coil assembly from housing.

Assemble in reverse order of disassembly. If a new coil is installed, preheat to about 120°F (49°C). This will aid fitting in housing.

1. Solenoid 2. Return spring 3. Plunger 4. Cotter pin 5. Pivot pin 6. Shift fork 7. Rubber insert 8. Field coil housing 9. Drive end frame 10. Armature 11. Stator core 12. Field coil 13. Commutator end frame 14. Frame cover 15. Brush assembly 16. Nut 17. Bolt 18. Nut



STARTER SYSTEM TROUBLESHOOTING CHART



STARTER SYSTEM TROUBLESHOOTING CHART

STC

ALTERNATOR

GENERAL

Marelli (44A) with external regulator – On 1975 and 1976.

Bosch (55A) with integral regulator – On 1977 to 1980.

Bosch (65A) with integral regulator – On 1981 and on.

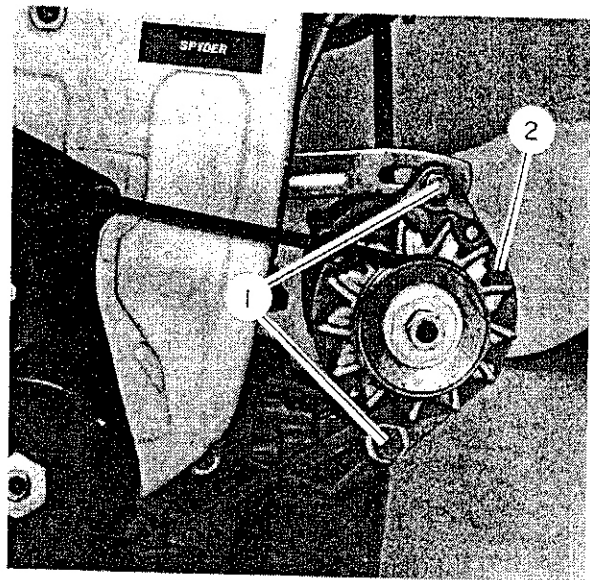
REMOVAL AND INSTALLATION (All)

Disconnect battery ground cable. Mark to identify, then disconnect electrical leads. Remove two nuts and bolts (1) and remove alternator (2).

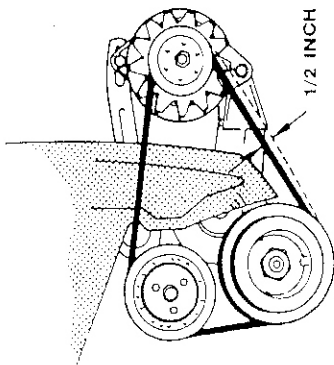
Installation is reverse of removal.

Adjust belt tension.

1. Bolt 2. Alternator

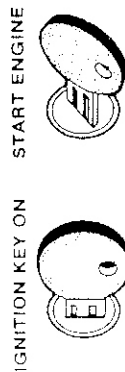


BELT TENSION



- Check belt tension. Adjust as required.

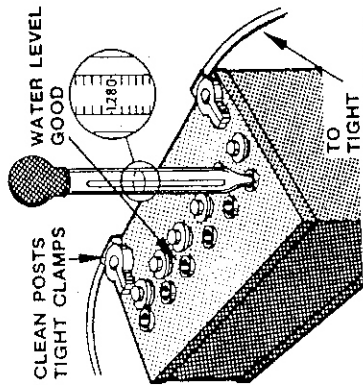
EXCITOR SYSTEM CHECK



BATTERY CHARGE INDICATOR GOES OUT

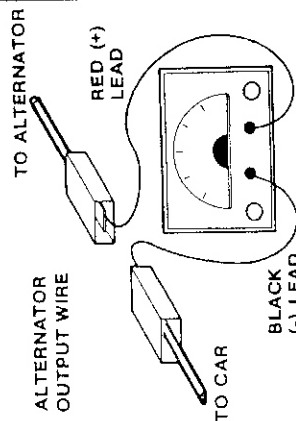
- Turn on ignition. If battery charge indicator (on dash) does not light, check for faulty indicator, wiring or alternator brushes. Repair and repeat Voltage Test.
- If indicator lights, start engine. Check that indicator goes out.
- If indicator does not go out, check for possible short in excitor system wiring.
- If indicator goes out, stop engine and go to next step.

BATTERY CHECK



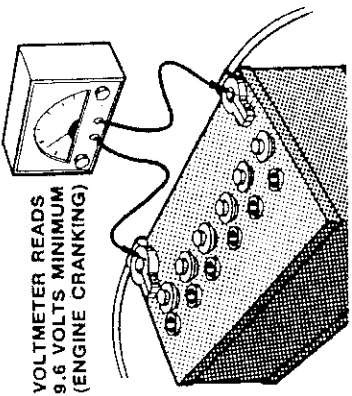
- Check battery condition, water level. Use load tester or hydrometer. Charge, if required.
- Check that battery posts are clean.
- Check that cables are in good condition with tight connections on both ends.

CURRENT TEST SETUP



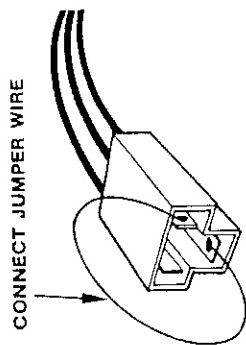
- Disconnect battery ground cable.
 - At alternator output wire plug (see wiring diagram for location), connect ammeter red (+) lead to alternator side, and black (-) lead to car side.
- CAUTION:** Do not allow wires to ground or touch.
- Disconnect connector at voltage regulator.
 - Check test setup connections, then reconnect battery ground cable.

ENGINE CRANK TEST



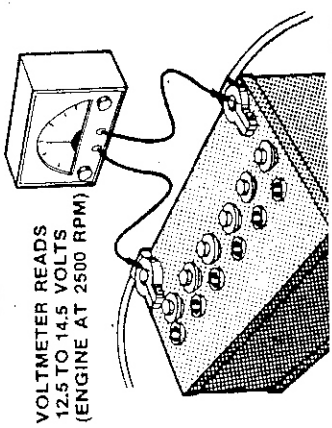
- Disconnect high voltage cable from ignition coil.
- Connect voltmeter to battery.
- Crank engine 3 to 4 seconds. Note voltmeter reading.
- If voltmeter reads less than 9.6 volts, check for faulty battery.
- Reconnect high voltage cable to ignition coil.

CURRENT TEST



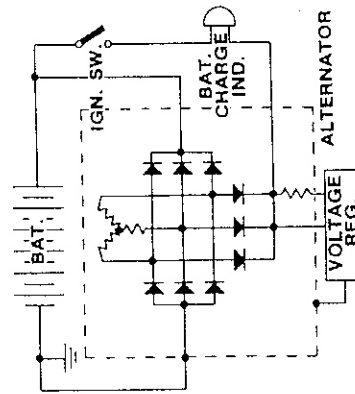
- CAUTION: ALTERNATOR MAY BE DAMAGED IF CONNECTION EXCEEDS 5 SECONDS**
- Set engine at 2500 RPM, all lights and accessories off.
 - Momentarily (5 seconds maximum) connect a jumper wire as shown. Note ammeter reading.
 - If ammeter reads 50 or more amps, replace voltage regulator.
 - If ammeter reads less than 50 amps, repair or replace alternator.

VOLTAGE TEST



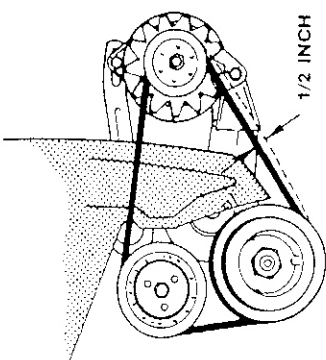
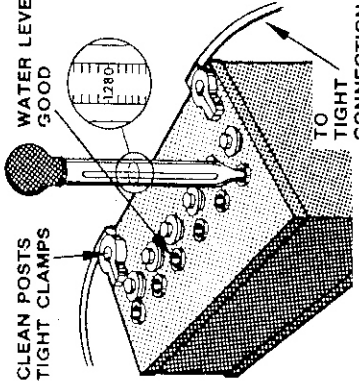
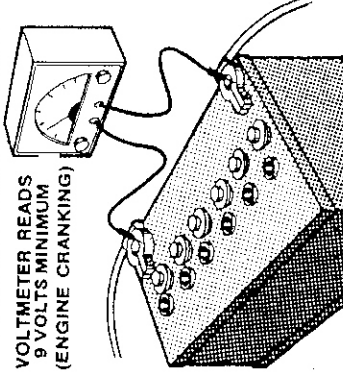
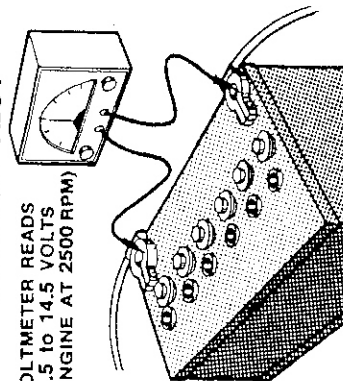
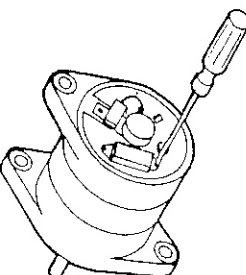

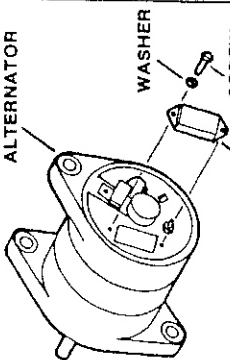
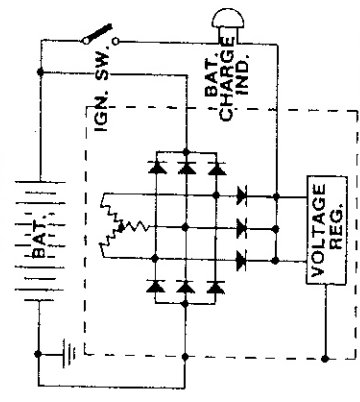
- Set engine at 2500 RPM, (low beam lights on, heater fan on high speed). Note voltmeter reading.
- If voltmeter reads 12.5 to 14.5 volts, alternator and voltage regulator are good.
- If voltmeter reads greater than 14.5 volts, replace voltage regulator.
- If voltmeter reads less than 12.5 volts, stop engine and proceed to next step.

RETEST



- After repairs are made, repeat Voltage and Current Tests.
- Remove test equipment.
- Reconnect alternator and voltage regulator wiring. Make sure all connections are tight.

ALTERNATOR SYSTEM CHECK (Marelli)

<h3>BELT TENSION</h3>  <p>1/2 INCH</p> <ul style="list-style-type: none"> • Check belt tension. Adjust as required. 	<h3>BATTERY CHECK</h3>  <ul style="list-style-type: none"> • Check battery condition, water level. Use lead tester or hydrometer. Charge if required. • Check that battery posts are clean. • Check that cables are in good condition with tight connections on both ends. 	<h3>ENGINE CRANK TEST</h3>  <p>VOLTMETER READS 9 VOLTS MINIMUM (ENGINE CRANKING)</p> <ul style="list-style-type: none"> • Disconnect high voltage cable from ignition coil. • Connect voltmeter to battery. • Crank engine 3 to 4 seconds. Note voltmeter reading. • If voltmeter reads less than 9 volts, check for faulty battery. • Reconnect high voltage cable to ignition coil. 	<h3>VOLTAGE TEST</h3>  <p>VOLTMETER READS 12.5 TO 14.5 VOLTS (ENGINE AT 2500 RPM)</p> <ul style="list-style-type: none"> • Set engine at 2500 RPM. (low beam lights on, heater fan on high speed). Note voltmeter reading. • If voltmeter reads 12.5 to 14.5 volts, alternator and voltage regulator are good. • If voltmeter reads greater than 14.5 volts, replace voltage regulator. • If voltmeter reads less than 12.5 volts, stop engine and proceed to next step. 	<h3>MOUNTING CHECK</h3>  <ul style="list-style-type: none"> • CHECK FOR CLEAN AND TIGHT MOUNTING SCREWS • Remove shield at alternator rear (10mm hardware). • Check that mounting screws for voltage regulator are not corroded, and are tight. 	<h3>EXCITOR SYSTEM CHECK</h3>  <p>IGNITION KEY ON START ENGINE</p> <p>BATTERY CHARGE INDICATOR GOES OUT</p> <ul style="list-style-type: none"> • Turn on ignition. If battery charge indicator (on dash) does not light, check for faulty indicator, wiring or alternator brushes. Repair and repeat Voltage Test. • If indicator lights, start engine. Check that indicator goes out. • If indicator does not go out, check for possible short in excitor system wiring. • If indicator goes out, stop engine and go to next step. 	<h3>REGULATOR/ALTERNATOR CHECK</h3>  <p>ALTERNATOR WASHER SCREW</p> <p>INSTALL KNOWN GOOD VOLTAGE REGULATOR</p> <ul style="list-style-type: none"> • Disconnect battery ground cable. • Remove voltage regulator from alternator. • Install a known good voltage regulator. • Connect battery cable, then repeat voltage test. • If voltage is within specifications, the original voltage regulator is defective. • If voltage is below specifications, repair or replace alternator. 	<h3>RETEST</h3>  <p>BAT. CHARGE IND. IGN. SW. VOLTAGE REG. ALTERNATOR</p> <ul style="list-style-type: none"> • After repairs are made, repeat Voltage and Current Tests. • Remove test equipment. • Reinstall alternator shield (10-mm hardware).
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DISASSEMBLY AND REASSEMBLY (MARELLI)

Remove drive pulley and fan from rotor shaft.

Remove brush holder (29), complete with brushes, by removing screw (28).

Remove Woodruff key (22) from shaft.

Remove four thru-bolt nuts (36) holding end frames together.

Remove drive end frame (23) and rotor assembly (21).

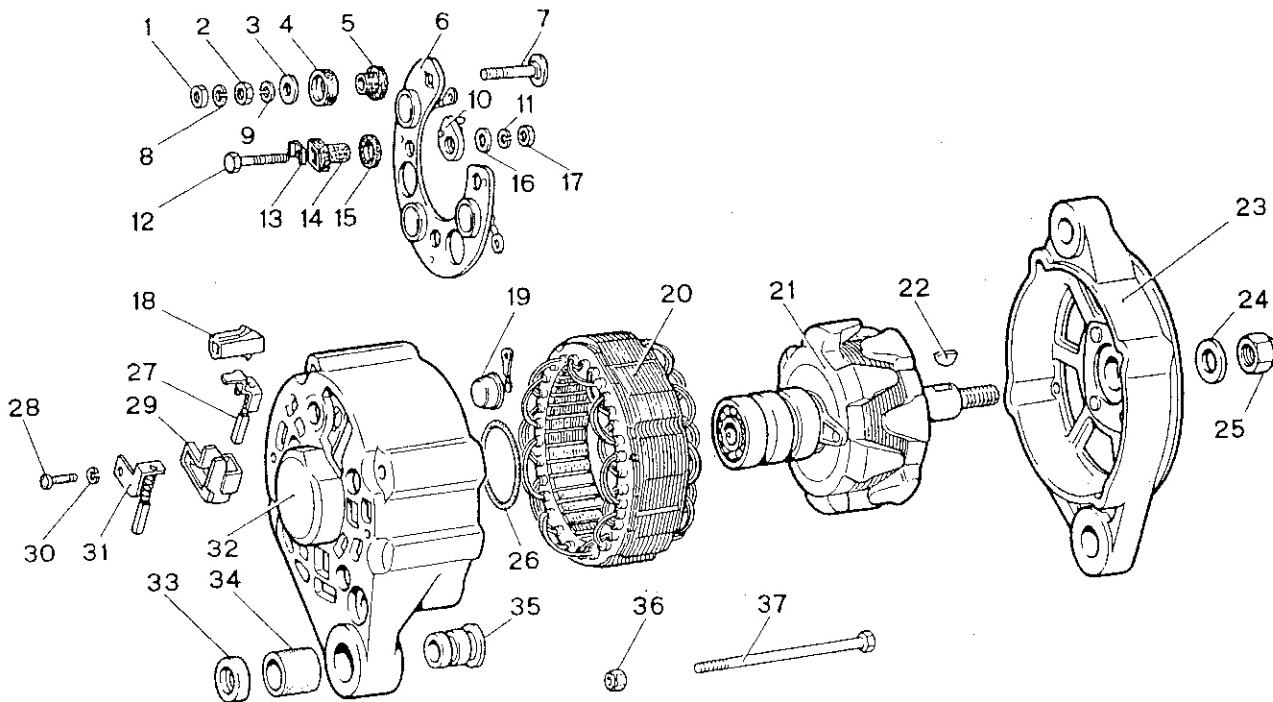
Using a small screwdriver, pry out blade plug from plastic connector (18) on diode end frame (32).

Remove three nuts (17) and bolts (12) attaching stator coil (20) phases to diode ends. Remove stator.

To remove diode plate (6) unscrew nut (2) on terminal "30."

Assemble in reverse order of disassembly.

Apply a small amount of grease to diode end bearing.



- | | | |
|---|---|---------------------------------------|
| 1 and 2. Nuts | 14 and 15. Insulators | 25. Pulley nut |
| 3. Flat washer | 16. Flat washer | 26. Rubber seal, bearing outer race |
| 4 and 5. Positive clamp insulators | 17. Nut | 27. Positive brush |
| 6. Positive diode plate | 18. Plastic connector for charge indicator blade plug | 28. Screw |
| 7. Screw, positive clamp | 19. Negative diode | 29. Brush holder |
| 8 and 9. Spring washers | 20. Stator | 30. Spring washer |
| 10. Diode terminal connector insulator | 21. Rotor | 31. Negative brush |
| 11. Spring washer | 22. Key | 32. Diode end frame |
| 12. Screw, positive diode terminals and stator phases ends attachment | 23. Drive end frame | 33, 34, 35. Rubber bushing components |
| 13. Plate | 24. Spring washer | 36. Nut |
| | | 37. Thru-bolt |

ALTERNATOR, MARELLI A 12 M 124/12/42 M

Charging System

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DISASSEMBLY AND REASSEMBLY (BOSCH)

Disconnect electrical plug and remove screw and lockwasher to remove condenser (7).

Remove two screws to remove voltage regulator/brush assembly (8 & 9).

Remove nut to remove pulley (1), fan (5), spacers and key (13).

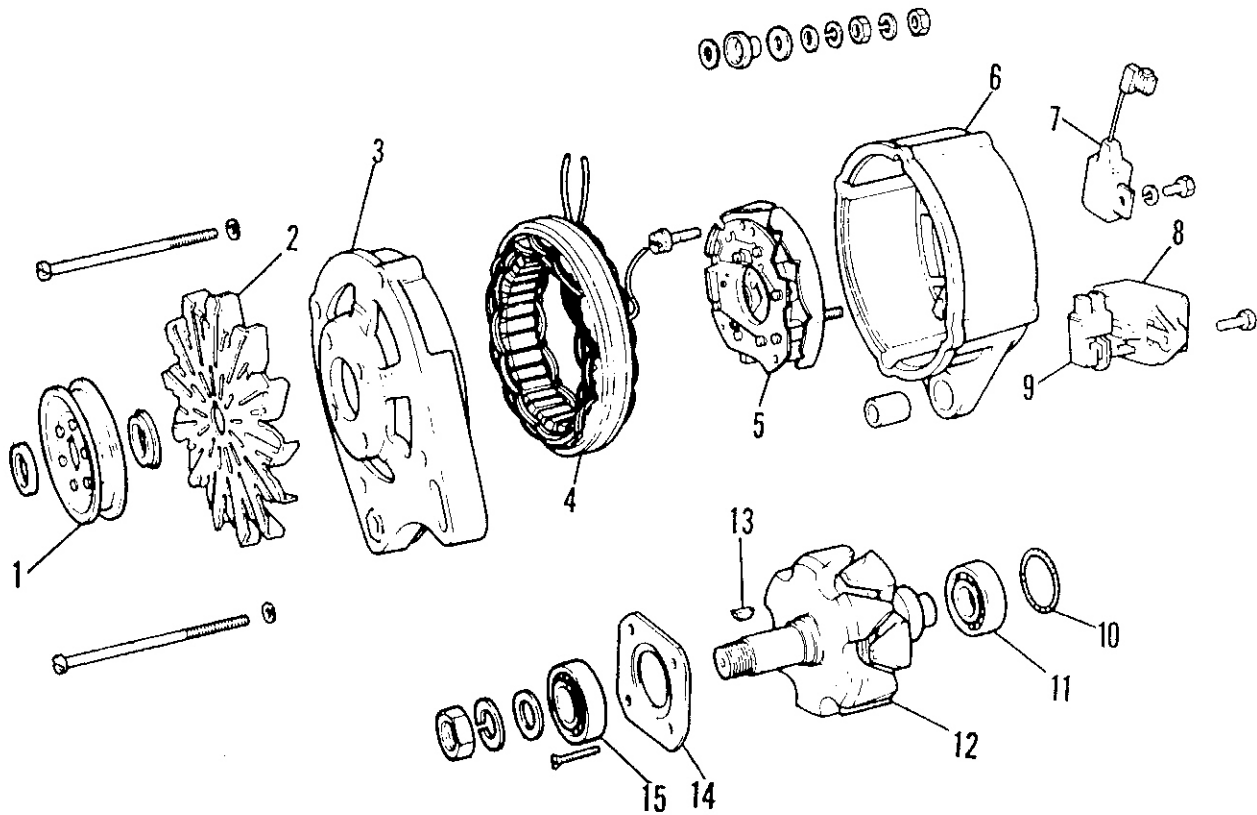
Remove four short screws on front frame (3) to free bearing retainer (14).

Remove four long screws to separate front frame from rear frame (6).

Remove rotor assembly (12) from rear frame by pulling rotor out.

Remove stator assembly (4) and rectifier assembly (5) as a unit by removing three screws. Remove three stator wires from rectifier to separate rectifier.

Reassemble in reverse order of disassembly.



- | | | |
|--------------|----------------------|----------------------|
| 1. Pulley | 6. Frame | 11. Bearing |
| 2. Fan | 7. Condenser | 12. Rotor |
| 3. Frame | 8. Voltage regulator | 13. Key |
| 4. Stator | 9. Brush assembly | 14. Bearing retainer |
| 5. Rectifier | 10. Seal | 15. Bearing |

ALTERNATOR, BOSCH K1 - 14V - 55A - 21 AND K1 - 14V - 65A - 21

ALTERNATOR COMPONENT CHECKS (All)

With alternator disassembled, the following components may be tested.

Rotor Short-to-Ground Test

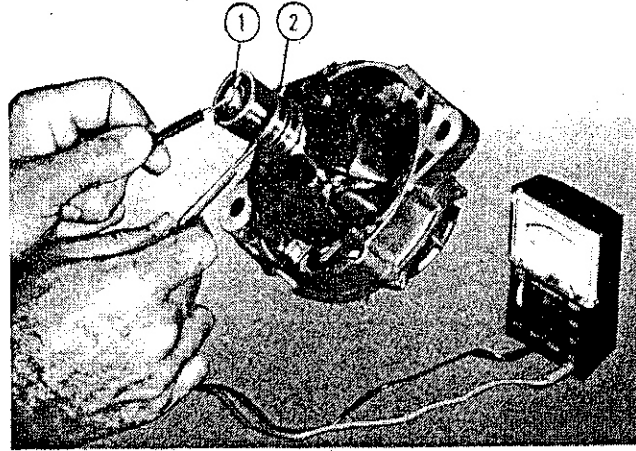
Set ohmmeter to x1000 scale.

Hold one test lead on rotor shaft (1) and other lead on either slip ring (2). Note ohmmeter reading, then put test lead on other slip ring.

In both cases, reading should be infinity (no needle movement). If not, check soldered connections at slip ring and that excess solder is not grounding rotor coil.

Replace rotor if damaged.

1. Rotor shaft 2. Slip ring

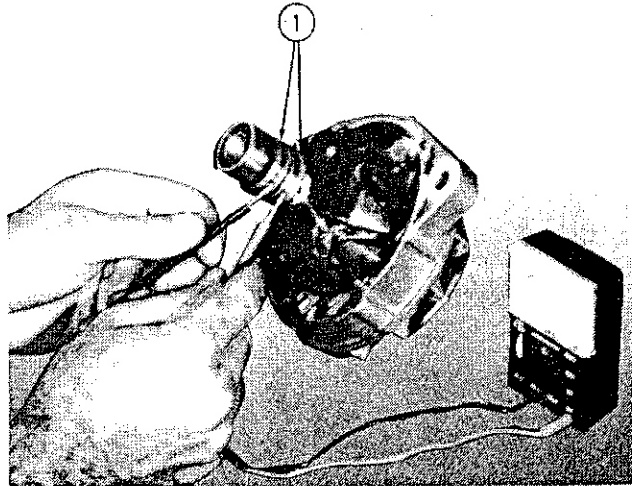
**Rotor Open Test**

Set ohmmeter to x1 scale.

Hold one test lead on one slip ring and other test lead on other slip ring. Reading should be 3.0 to 3.7 ohms. If not, rotor is open.

Replace rotor.

1. Slip rings

**Stator Short to Ground Test**

Remove stator leads (1) from rectifier board.

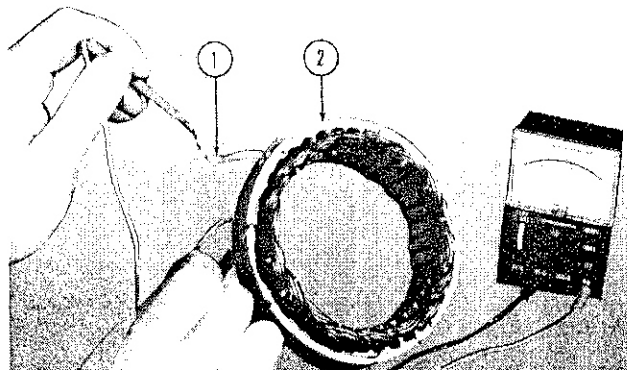
Set ohmmeter to x1000 scale.

Touch one test lead to stator core (2) bare metal and other test lead to any stator lead.

Reading should be infinite (no needle movement). If any needle movement is shown, stator is grounded.

Replace stator.

1. Stator lead 2. Stator core



Stator Continuity Test

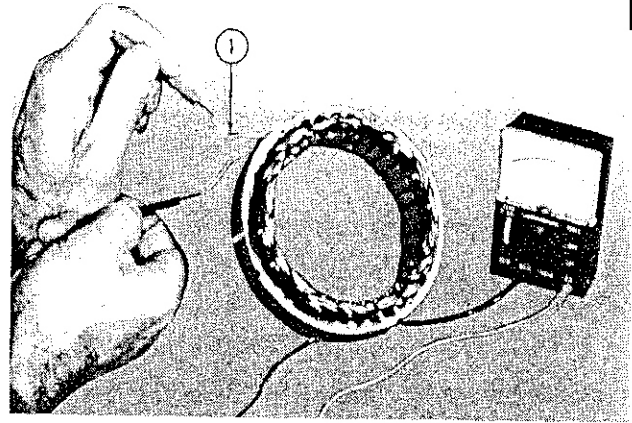
Set ohmmeter to x1 scale.

Touch one test lead to any stator lead (1). Touch other test lead to any other stator lead. Note reading. Repeat at all pairs of test leads.

Equal readings should be obtained at each pair of stator leads. A reading of infinity indicates poor connection at neutral junction.

Repair connection or replace stator.

1. Stator lead



Diode Test

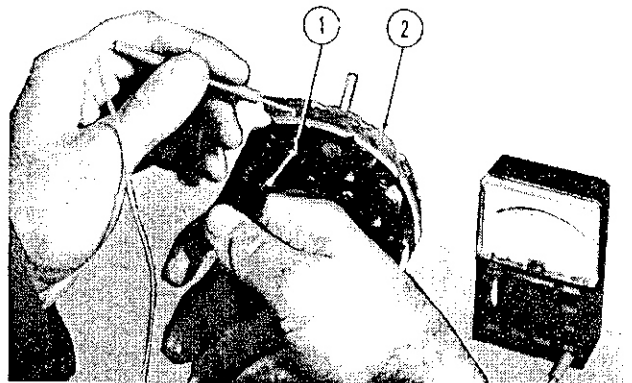
Remove stator leads from rectifier board.

Set ohmmeter to x1 scale.

Touch one test lead to a diode junction (1). Touch other test lead to heat sink (2). Note reading. Reverse test lead positions and note reading. Repeat for remaining diodes.

One high and one low reading should be obtained for each diode. If proper readings are not obtained, replace diode plate.

1. Diode junction 2. Heat sink



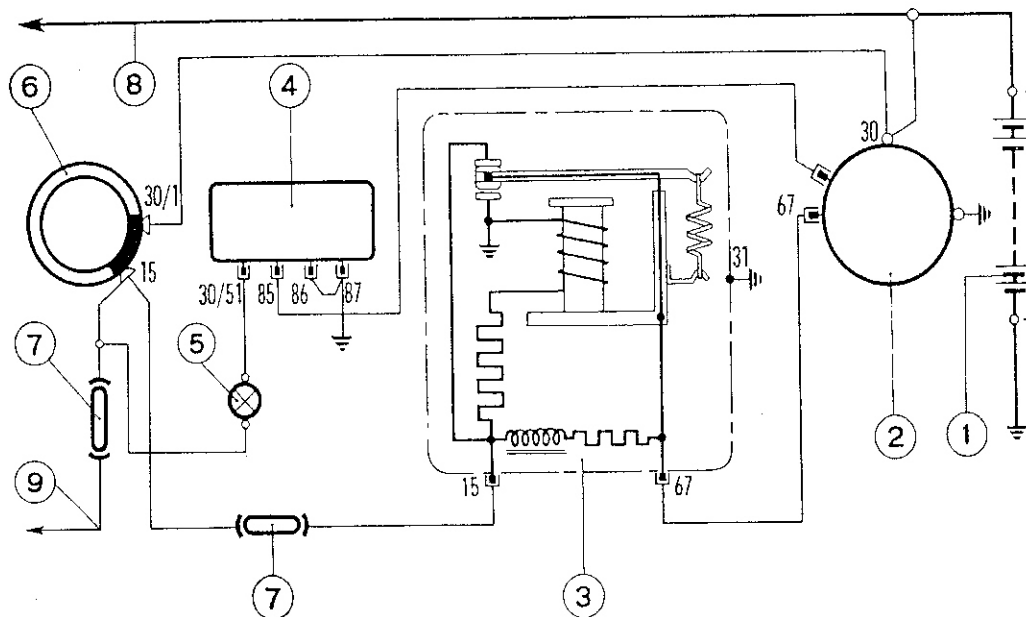
VOLTAGE REGULATOR (1975 and 1976)

SERVICE PROCEDURES

Corrective repairs on faulty voltage regulators should only be attempted if a replacement regulator is not available. In general, it is safer to replace a defective regulator rather than attempt repairs or adjustments. Only the following repairs are recommended:

- replacing cover and gasket
- soldering open electrical connections
- cleaning contacts and other regulator components.

CAUTION: Open connections should be soldered using smallest possible amount of rosin-core solder and taking care not to over-heat insulating material. After soldering, remove excess rosin.



- | | |
|---------------------------------|---------------------------|
| 1. Battery | 6. Slip ring |
| 2. Alternator | 7. BA fuses |
| 3. Voltage regulator | 8. Lights and instruments |
| 4. Charge indicator relay | 9. Signaling equipment |
| 5. Charge indicator relay light | |

CHARGING SYSTEM WIRING WITH DETAILED VOLTAGE REGULATOR

ADJUSTMENTS

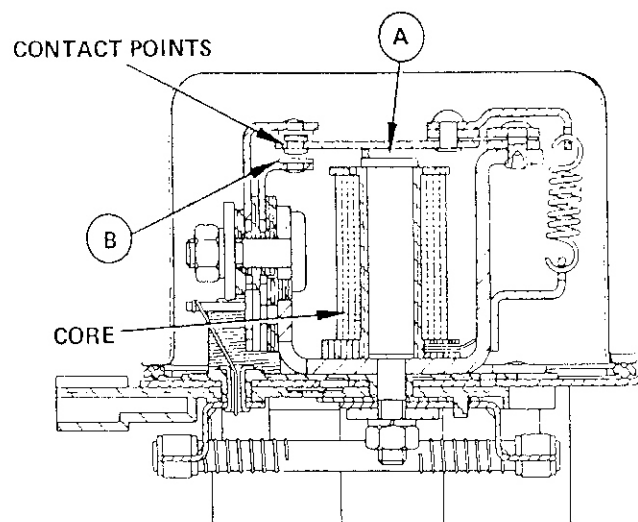
Disconnect positive battery cable. Remove two screws holding dust cover on voltage regulator.

Inspect contact points for pitting and burn marks. Clean minor pitting and burn marks. Extreme damage to points necessitates voltage regulator replacement.

Check core for damage and broken wires. With use of a clean feeler gauge, check following measurements:

(A) 0.055 to 0.063" (B) 0.014 to 0.022"

If measurements are incorrect, remove voltage regulator from vehicle.



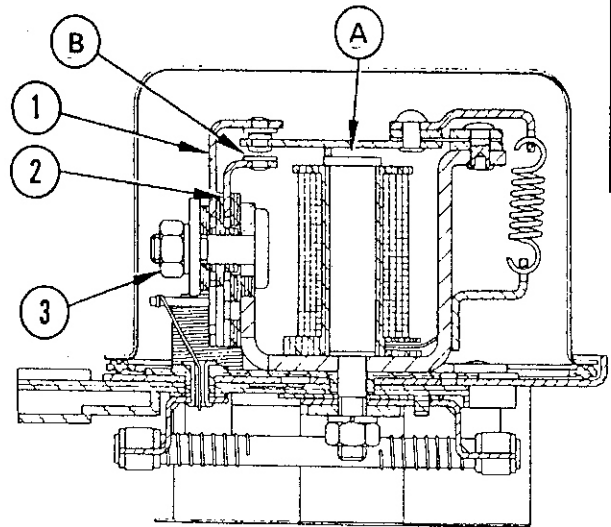
To make necessary adjustments, loosen 8 mm nut (3) to allow proper gapping. Both gaps A & B must be set simultaneously. To adjust gap A, move slotted arm (1) until gap is 0.055 to 0.063". To adjust gap B, move slotted arm (2) until gap is 0.014 to 0.022". After adjustments are completed, retighten 8 mm nut (3). Recheck gaps.

Install regulator in vehicle. Reconnect battery cable.

NOTE: Check that battery is fully charged.

Run engine until normal operating temperature is reached. Connect voltmeter positive lead to positive battery pole. Connect negative lead to a ground.

1. Slotted arm 2. Slotted arm 3. Nut



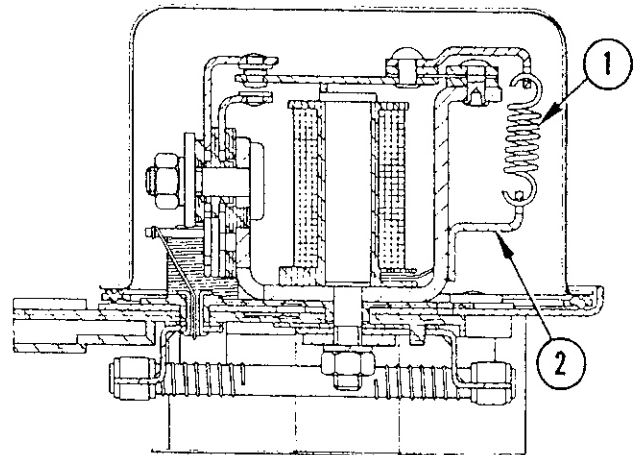
CAUTION: In next step, do not ground spring bracket with pliers while making adjustment.

Voltmeter should read 13.9 to 14.5 VDC at 2500 engine RPM with all electrical components off.

If this reading is incorrect, *carefully apply slight pressure* to lower spring bracket (2) in either direction to get desired reading. Bend bracket down to add volts and vice versa. Disconnect voltmeter. Reinstall regulator dust cover. Recheck charging system.

NOTE: Bending bracket changes tension on spring (1). A slight change in tension changes voltage. Bend bracket very slightly to increase or decrease voltage.

1. Spring 2. Spring bracket



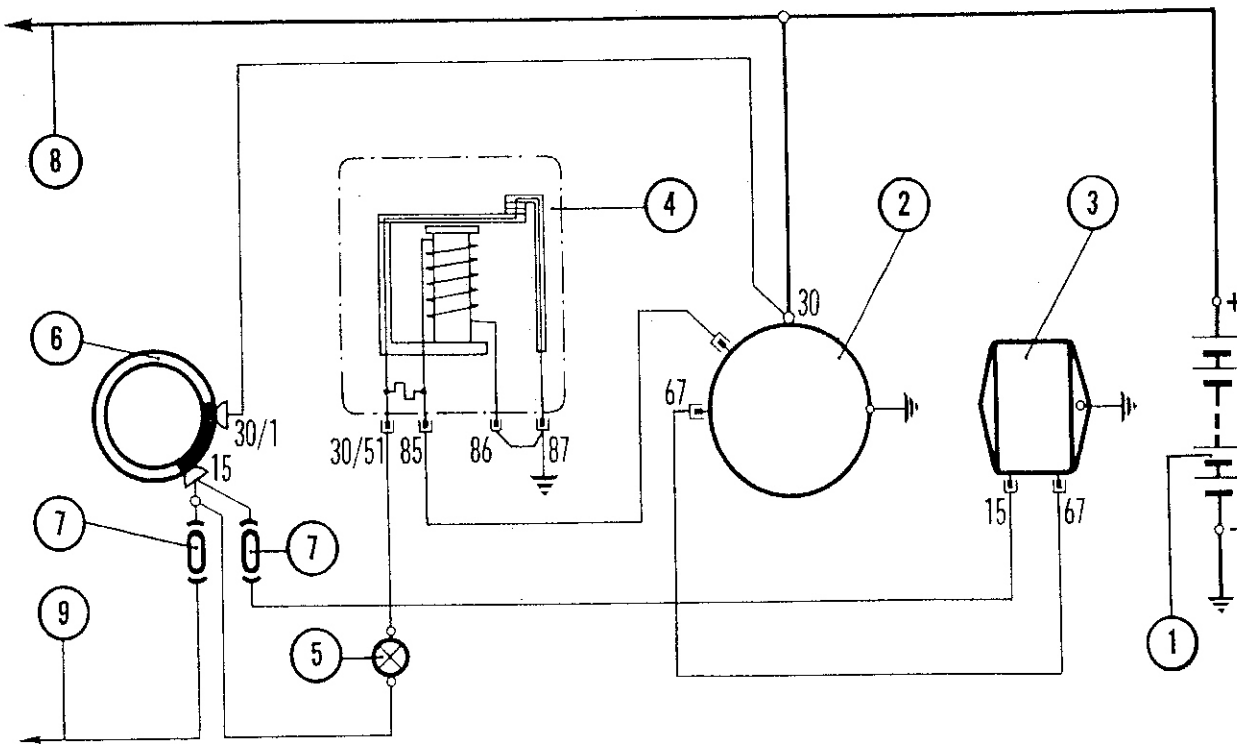
CHARGE INDICATOR RELAY (1975 and 1976)

DESCRIPTION

The charge indicator relay serves the purpose of signaling any malfunction in alternator charging system by turning on a red light in the instrument panel.

Data shown in specifications table can be used to check relay. If test readings fail to meet specifications, replace charge indicator relay.

Field winding resistance	29 ± 2 ohm
Desensitizing resistor	220 ± 22 ohm
Contact opening voltage	5.3 ± 0.4 V
Contact closing voltage	0.2 to 0.9 V



- | | | |
|----------------------|---------------------------------|---------------------------|
| 1. Battery | 4. Charge indicator relay | 7. 8A fuses |
| 2. Alternator | 5. Charge indicator relay light | 8. Lights and instruments |
| 3. Voltage regulator | 6. Slip ring | 9. Signaling equipment |

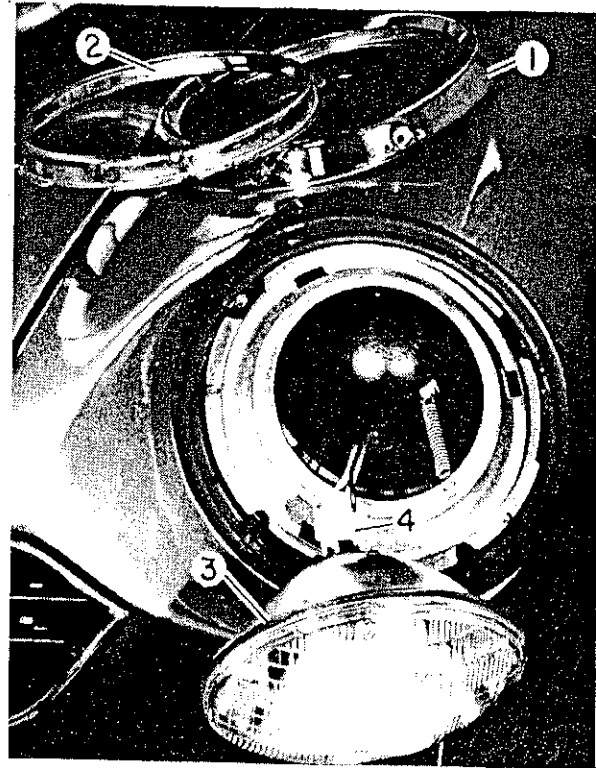
CHARGING SYSTEM WIRING WITH DETAILED CHARGE INDICATOR RELAY

HEADLIGHT

REMOVAL AND INSTALLATION

Remove screw on bottom of trim ring (1) to remove ring. Loosen three screws on inner ring (2) and twist ring off. Withdraw headlight (3) and disconnect electrical connector (4). Installation is reverse of removal.

1. Trim ring 2. Inner ring 3. Headlight 4. Electrical connector

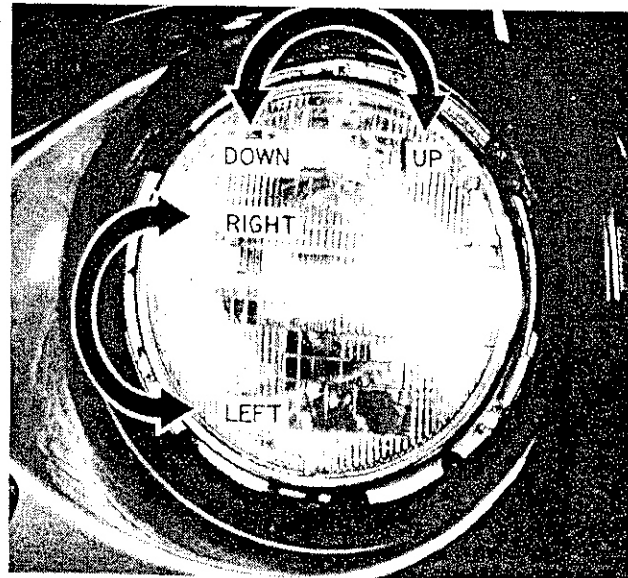


ADJUSTMENT

Remove trim ring.

Turn upper adjustment screw clockwise to raise light beam and counterclockwise to lower it.

Turn side adjustment screw clockwise to move beam to right and counterclockwise to move it to left.



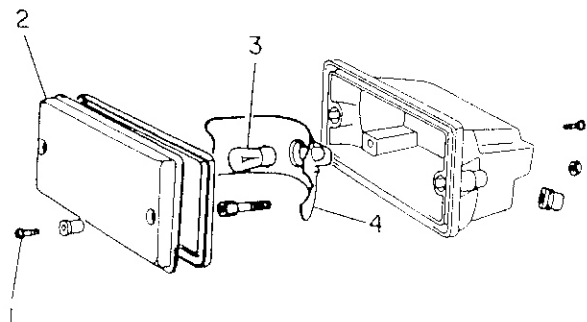
FRONT PARKING/DIRECTIONAL/HAZARD LIGHT

REMOVAL AND INSTALLATION

Remove two screws (1) to remove lens (2). Remove bulb by twisting it out.

Installation is reverse of removal.

1. Screw 2. Lens 3. Bulb 4. Reflector



TAIL LIGHT ASSEMBLY**REMOVAL AND INSTALLATION**

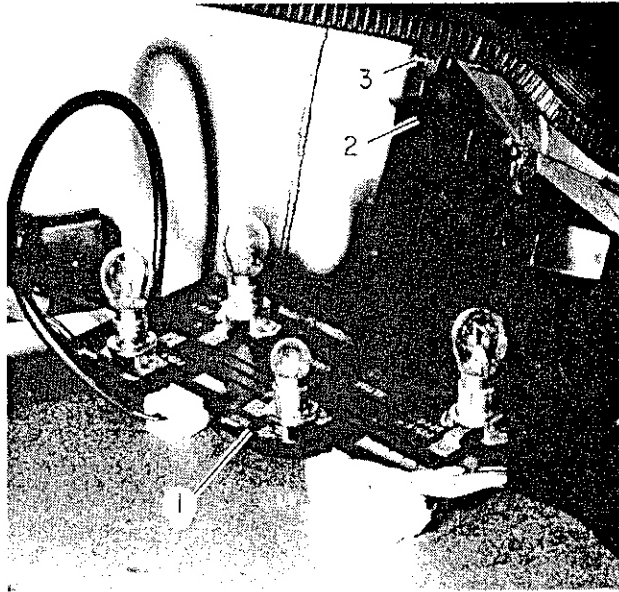
Open trunk. Place floor covering near light assembly out of way.

Unclip four clips holding light assembly (1) to lens assembly (2). Withdraw light assembly. Remove bulbs by twisting out.

To remove lens assembly, remove four nuts (3) securing it to body.

Installation is reverse of removal.

1. Light assembly 2. Lens assembly 3. Nut

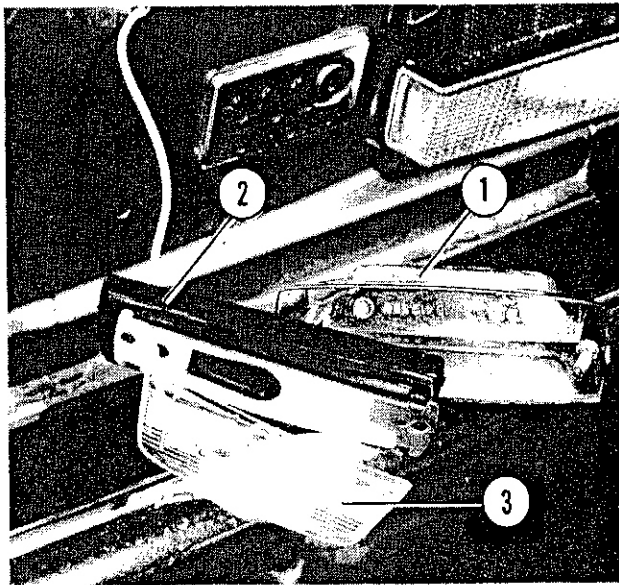
**LICENSE PLATE LIGHT****REMOVAL AND INSTALLATION**

Open trunk. Place floor covering near light assembly out of way.

Remove two nuts securing light assembly to body. Withdraw light assembly and separate cover (1) from light base (2). Remove bulb by twisting out.

Installation is reverse of removal.

1. Light cover 2. Light base 3. Lens

**SIDE MARKER LIGHTS****REMOVAL AND INSTALLATION**

For rear fender light, open trunk and place floor covering out of way.

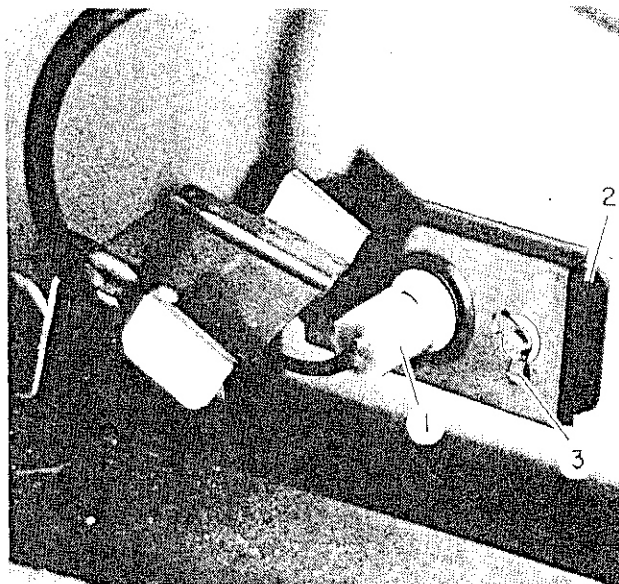
Twist connector (1) to remove light. Remove bulb by pulling it straight out.

To remove lens assembly from fender, remove two wingnuts (3).

For front fender light, first remove wheel well splash shield to gain access to rear of light. Removal is same as for rear light.

Installation is reverse of removal.

1. Electrical connector 2. Lens assembly 3. Wingnut



HORN/DIRECTIONAL/LIGHT SWITCH ASSEMBLY

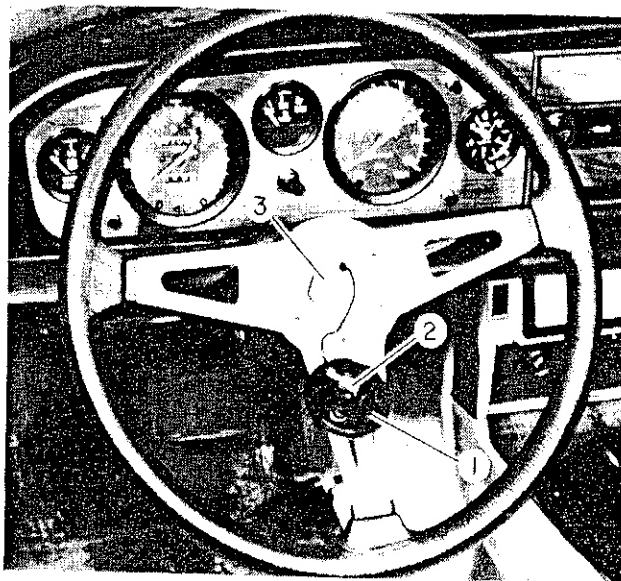
REMOVAL AND INSTALLATION

Disconnect battery ground lead located in trunk.

Remove horn button (1) by pulling it straight out. Disconnect horn electrical connector (2).

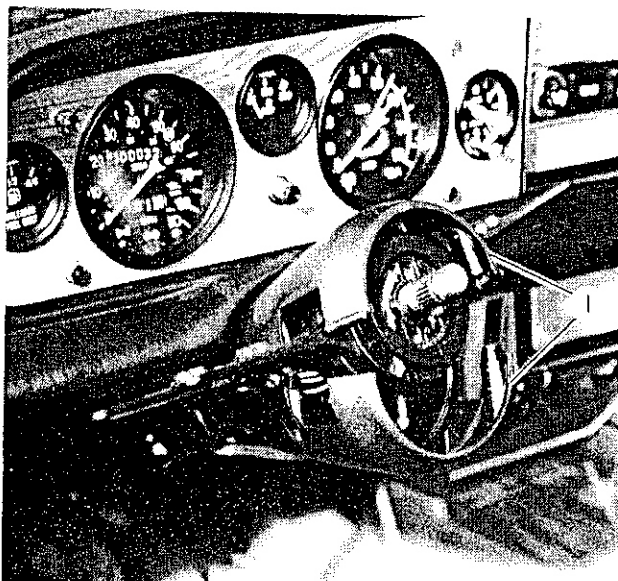
Remove steering shaft nut (3). Mark shaft and steering wheel for reinstallation in same position. Pull steering wheel off.

1. Horn button 2. Electrical connector 3. Steering shaft nut



Remove five screws securing upper and lower cover halves (1) together.

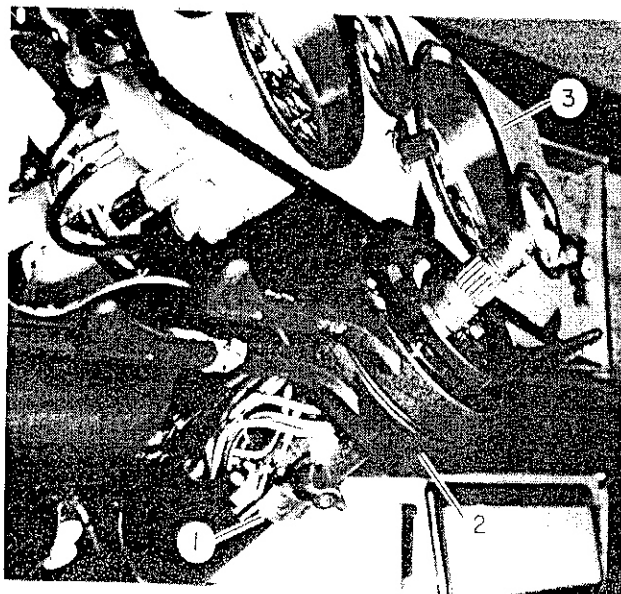
1. Cover halves



Loosen clamp bolt (1) holding switch assembly (2) to steering column.

Remove four knobs holding instrument group (3) to dash panel. Carefully pull instruments out far enough to gain access to signaling wire harnesses.

1. Steering column clamp bolt 2. Switch assembly 3. Instrument group



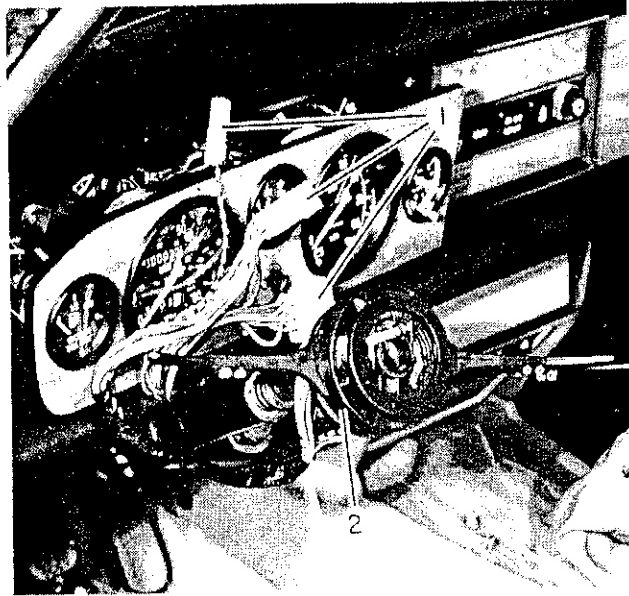
From under dash, disconnect three connectors (1).

Remove switch assembly (2) while carefully pulling wire harnesses and connectors through dash panel.

Installation is reverse of removal.

Torque steering column shaft nut to 36 ft. lb. (5 kgm).

1. Electrical connectors 2. Switch assembly



HORNS

REMOVAL AND INSTALLATION

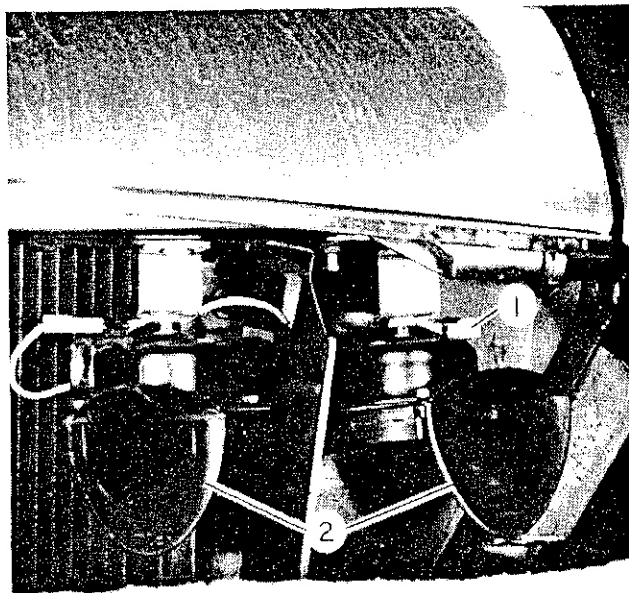
Remove six screws holding radiator trim and grill.

Disconnect electrical connectors (1) on horns (2).

Remove two nuts securing horn assembly to body. Remove horns through front grill opening.

Installation is reverse of removal.

1. Electrical connector 2. Horn assembly



WINDSHIELD WIPER ASSEMBLY

REMOVAL AND INSTALLATION

NOTE: Wiper blades should be in Park position.

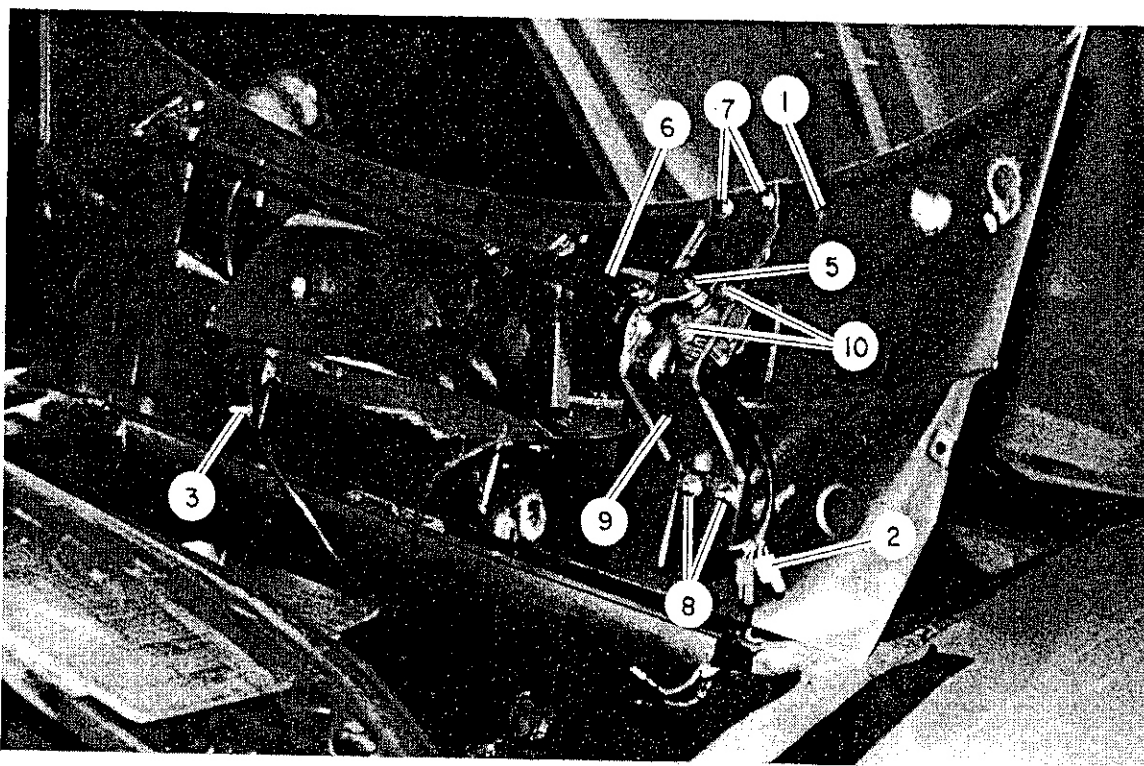
Pivot wiper arms up away from windshield and pull them off drive shafts.

Raise hood. Remove six screws securing cowl (1) to body. Lift cowl up on body as shown, being careful not to damage finish. Disconnect electrical connectors (2), first noting to which connectors they are attached, for reinstallation. Disconnect windshield washer line at "T" fitting (3).

Place cowl on bench. Remove two nuts (11) on drive shafts. Remove two bolts (7) and two nuts (8) holding motor mount bracket (9) to cowl. Remove entire wiper assembly from cowl.

Remove motor drive shaft nut (5) holding linkage (6) to shaft. Pull link end off. Remove three bolts (10) holding motor assembly (4) to bracket.

Installation is reverse of removal.



- | | | |
|--------------------------|------------------|------------------------------|
| 1. Cowl | 5. Nut | 9. Mounting bracket assembly |
| 2. Electrical connectors | 6. Drive linkage | 10. Bolt |
| 3. "T" fitting | 7. Bolt | 11. Nut |
| 4. Wiper motor assembly | 8. Nut | |

