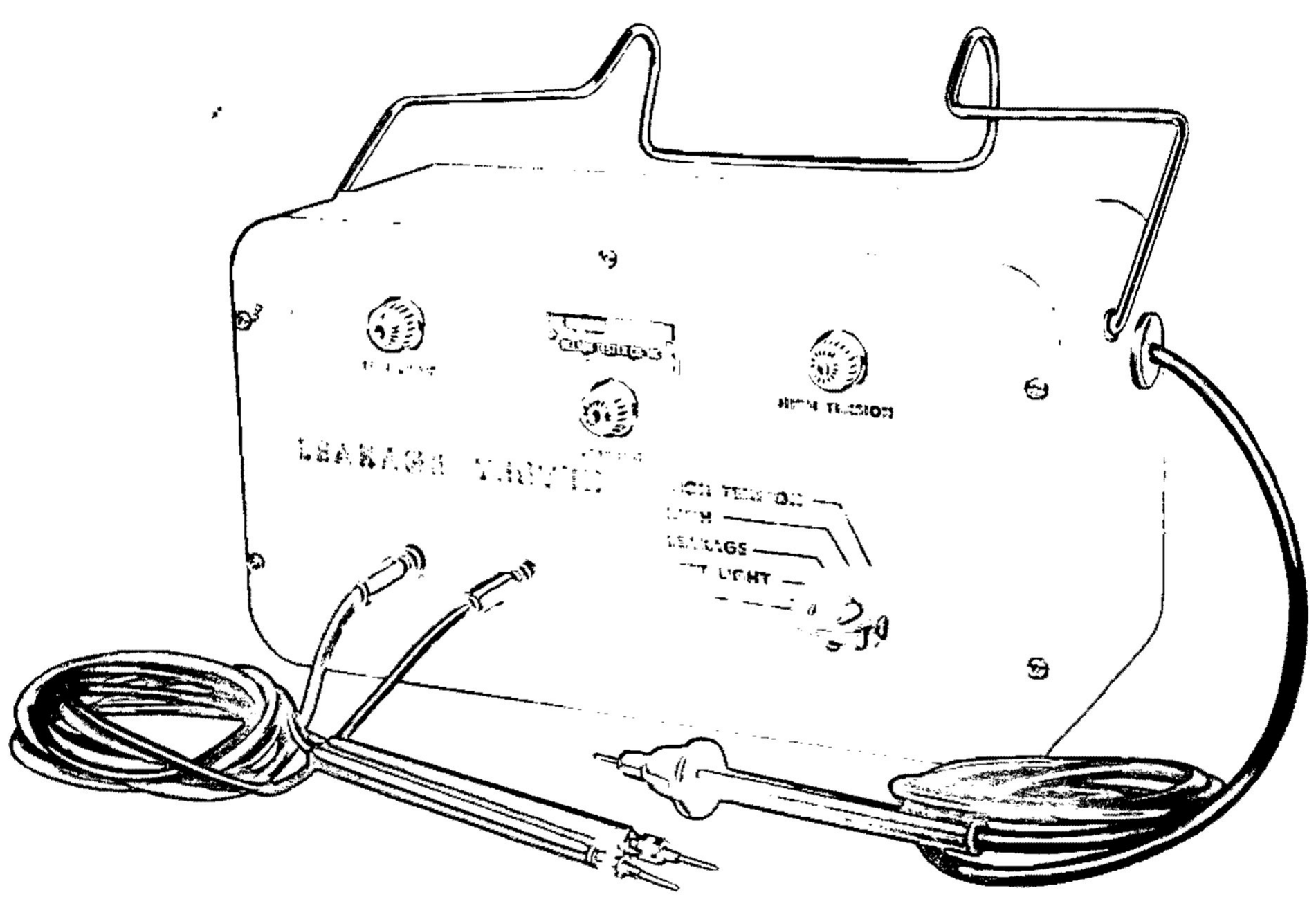
INSTRUCTIONS
FOR
NELSON'S



Leakage Tester

NELSON TESTER CORPORATION

1322 DAVID STREET WATERLOO, IOWA 50705

INSTRUCTIONS

FOR

NELSON ELECTRICAL LEAKAGE TESTER

WHEN TESTING ELECTRONIC COMPONENTS ON ELECTRICAL SYSTEMS, CHECK MANUFACTURERS SPECIFICATIONS FOR PROPER TEST PROCEDURE.

CAUTION HIGH VOLTAGE USE WITH CARE

READ INSTRUCTION BOOK BEFORE MAKING TESTS

Place short end of test leads in test Jacks, long ends are for making contact with items or circuit to be tested.

Test light position uses approximately 100 volts.

Leakage and High Test Positions supplies several hundred volts, this is used to break down intermittent shorts and grounds.

Use care in handling test prods. Do not make bodily contact with metal tip of test prods or circuit under test.

Test voltages are such that no harm is done to wiring or parts that are in normal condition.

WE HAVE HAD A NUMBER OF COMPLAINTS ABOUT THE SERVICE GIVEN AT MANY OF THE SERVICE CENTERS.

THEY ARE INDEPENDENT SERVICE PEOPLE AND WE HAVE NO CONTROL OVER THEIR ACTIONS.

HERE AT THE FACTORY WE GIVE ONE DAY SERVICE AND CAN ASSURE YOU THAT WE HAVE THE CORRECT PARTS IN STOCK.

SEND TESTER TO NELSON TESTER CORP.,1322 DAVID ST.,WATERLOO,IOWA 50705

BEFORE SENDING UNIT TO A SERVICE CENTER,WRITE AND GET A REPLY.

NELSON TESTER COMPANY INC.

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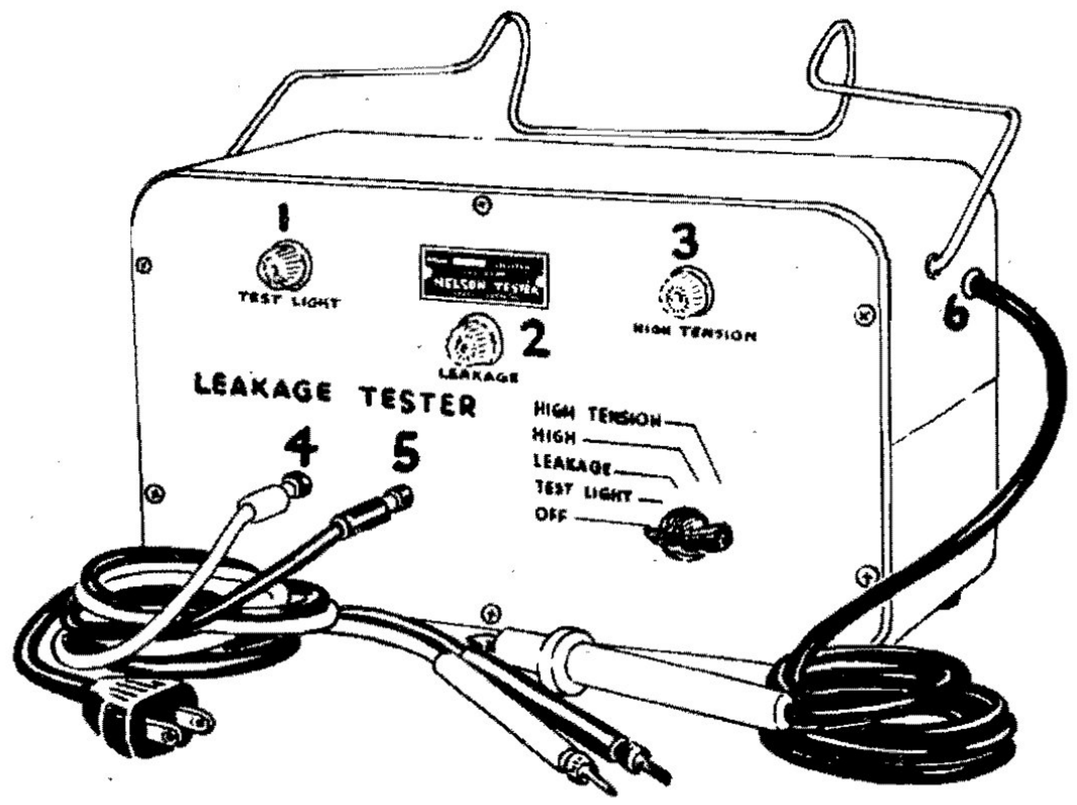
Instructions for Nelson's Deluxe Leakage Tester

110 VOLT AC OR 6 VOLT BATTERY MODEL



CAUTION HIGH VOLTAGE— ON LEAKAGE AND HIGH POSITIONS— USE WITH CARE

MODEL A OPERATES ON ANY 110 AC 60 CYCLE CURRENT.
MODEL C OPERATES ON ANY 6 VOLT BATTERY.

1— Test Light bulb (GE NE-51) on 110 volt AC model. On 6 Volt battery model (MAZDA NO. 47-Six Volt bulb).

2 & 3— Leakage test tubes (GE NE-51) on 110 volt AC and also on six volt battery model. To replace tubes unscrew plastic cap. Tubes have bayonet base.

4— Red test lead jack.

5— Black test lead jack.

6— High tension lead. (use either 4 or 5 ground test lead for off the Vehicle High Tension test).

TURN SWITCH TO OFF POSITION WHEN NOT IN USE.

THIS UNIT WILL TEST CIRCUITS OF ANY VOLTAGE-6-12-24 & etc.

USE TEST LEADS NUMBERS 4 and 5 ON FIRST THREE TEST POSITIONS OF ROTARY SWITCH.

HIGH TENSION POSITION USE TEST LEAD NUMBER 6

BEFORE AND AFTER EACH POSITION OF SWITCH, TOUCH END OF PRODS TOGETHER TO FAMILIARIZE YOURSELF WITH TYPE OF TEST DESIRED.

USE TEST LIGHT for continuity check and to show solid grounds.

LEAKAGE TEST indicates partial grounds or defective insulation. ALL PRIMARY CIRCUITS, Battery lines, Ignition lines, Armatures, Fields, and Coils (with metal cases) have a normal amount of capacity leakage. They will show a faint steady glow, on leakage tube, if good. A bright or jumpy glow on any of these parts indicates defective insulation. If insulation is defective, turn "Rotor to high" to see if it will "Smoke or Buzz" out. If it does not locate defective insulation turn to test light position for ground check. If circuit is grounded unhook and check parts separately.

ALL HIGH TENSION PARTS SUCH AS PLUGS, WIRES, CAPS, ROTORS, ANY CHANGE OF GLOW (ON LEAKAGE TUBE) INDICATES DEFECTIVE PART OR PARTS.

ALL LEAKAGE TUBES are shunted out when Rotor switch is on high position.

HIGH POSITION is used to smoke out defective insulation.

DO NOT USE ON HIGH OVER FIVE SECONDS ON SOLID GROUNDS

HIGH TENSION position is used on all high tension wiring and parts. (distributor caps, rotors, coils, plugs and wires) To have indicator No. 3 show hidden spark jumps use ground test lead to motor and contact number 6 prod to wire under test. Flashing or steady light indicates defective insulation.

This position may be used to show primary wires that have broken insulation and intermittently touches the frame.

DO NOT USE HIGH TENSION TEST MORE THAN 10 MINUTES AT A TIME.

ALLOW HIGH TENSION TEST TO COOL FOR 10 MINUTES AFTER 10 MINUTES USE. SHORTER PERIODS OF USE WILL NOT CALL FOR COOLING PERIOD.

SUGGESTED PROCEDURE FOR MOTOR TUNE UP

All automotive electrical wiring, both high tension (secondary) and low tension (primary) must have continuity of circuit in order to assure normal operation of the motor or component parts of the vehicle.

The three most common causes of continuity failure, all of which are equally important, are electrical leakage, open circuits (broken wires) and resistance.

THE NELSON HIGH TENSION LEAKAGE TESTER is designed to test and pinpoint these electrical troubles and the following is a suggested routine for testing the high tension circuits of a motor.

TESTING WITH THE HIGH TENSION PROD ONLY.

(Exceptions No's 8 & 9 Leakage Test Position)

1- Coil tower - Page 4-B.

2- Coil wire from coil to distributor cap - PageIO-D.

3- Center tower of distributor cap - Page 4-A.

4- Lift distributor cap.

5- Distributor cap - inside test all towers - Page 6-B.

6- Rotor - Page 6-C.

7- Shell of distributor cap - Page 6-A.

8- Porous cap - Page 8 -B.

9- Fouled plugs - Page 8 -A.

10- Distributor cap - all outside towers - Page 4-A.

11- High Tension wires - Page 10-A.

OPEN WIRES

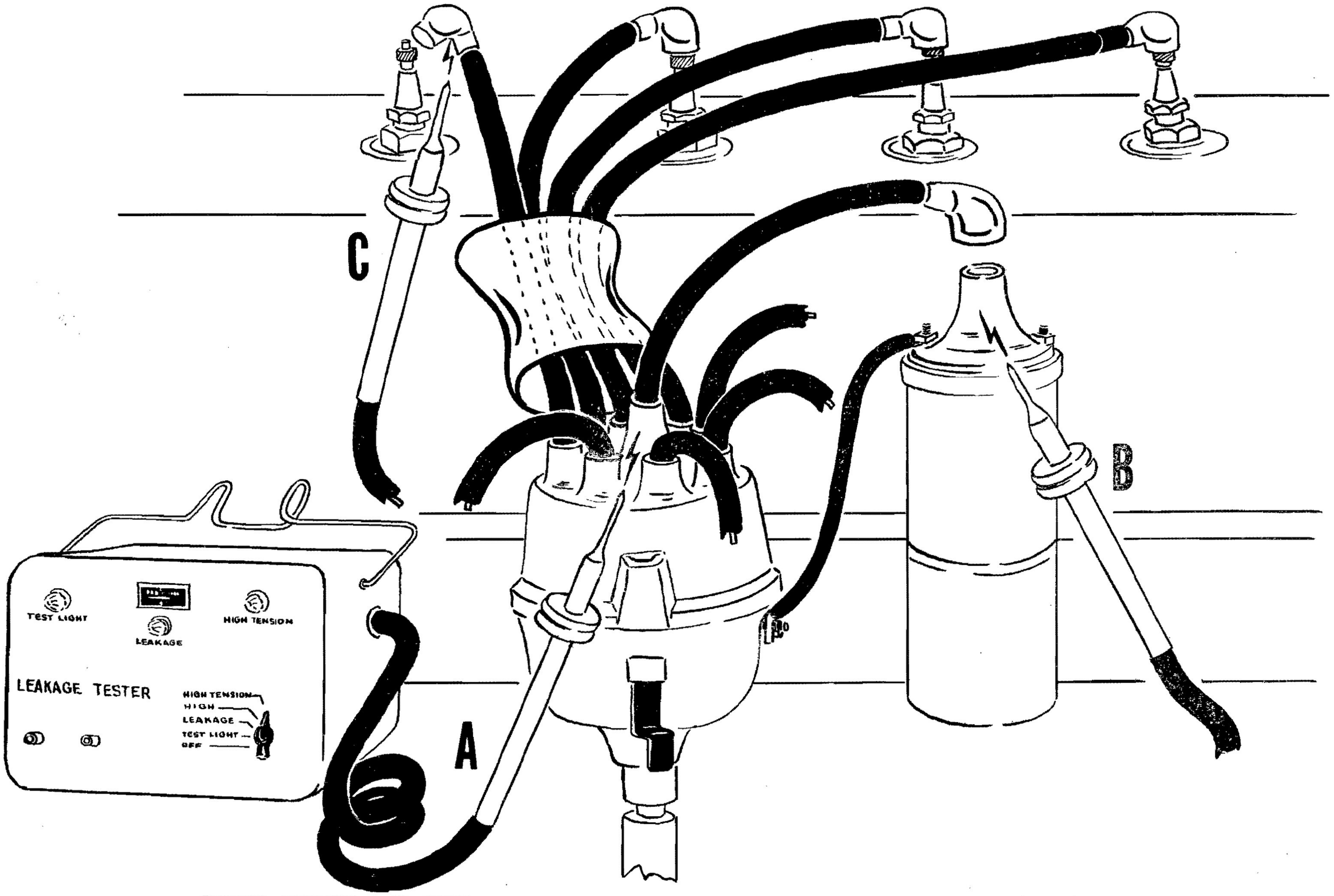
1- High Tension wires - Page 12.

RESISTANCE

1- High Tension wires - Page 12.

2- Testing resistance in any of the primary circuits use a volt meter.

TESTING FOR HIGH TENSION LEAKS ON THE VEHICLE



TESTING FOR HIGH TENSION LEAKS OR CRACKS ON THE VEHICLE

NOTE: You will always get a slight blue spark to all normal high tension parts. (This is corona discharge.)

White spark going through material or following a definite carbon track shows defective insulation.

For all the following tests place rotor switch in high tension position.

USE HIGH TENSION PROD ONLY, (AS ILLUSTRATED) NO GROUND PROD NEEDED AS MOTOR ACTS AS GROUND WHEN ON THE VEHICLE TESTS ARE MADE.

ILLUSTRATION A TESTING THE DISTRIBUTOR CAP ON VEHICLE.

I - RUN HIGH TENSION PROD AROUND OUTSIDE OF CAP, ESPECIALLY NEAR HIGH TENSION POSTS THAT ARE NEXT TO METAL CLIPS. (LEAVE ALL WIRES ON CAP).

2 - LOOK FOR SPARK FOLLOWING A CARBON TRACK OR JUMPING THROUGH DEFECTIVE CAP.

ILLUSTRATION B TESTING HIGH TENSION POST OF COIL.

I - RUN HIGH TENSION PROD AROUND HIGH TENSION POST OF COIL.

2 - LOOK FOR SPARK JUMPING THROUGH DEFECTIVE POST OR FOLLOWING CARBON TRACK.

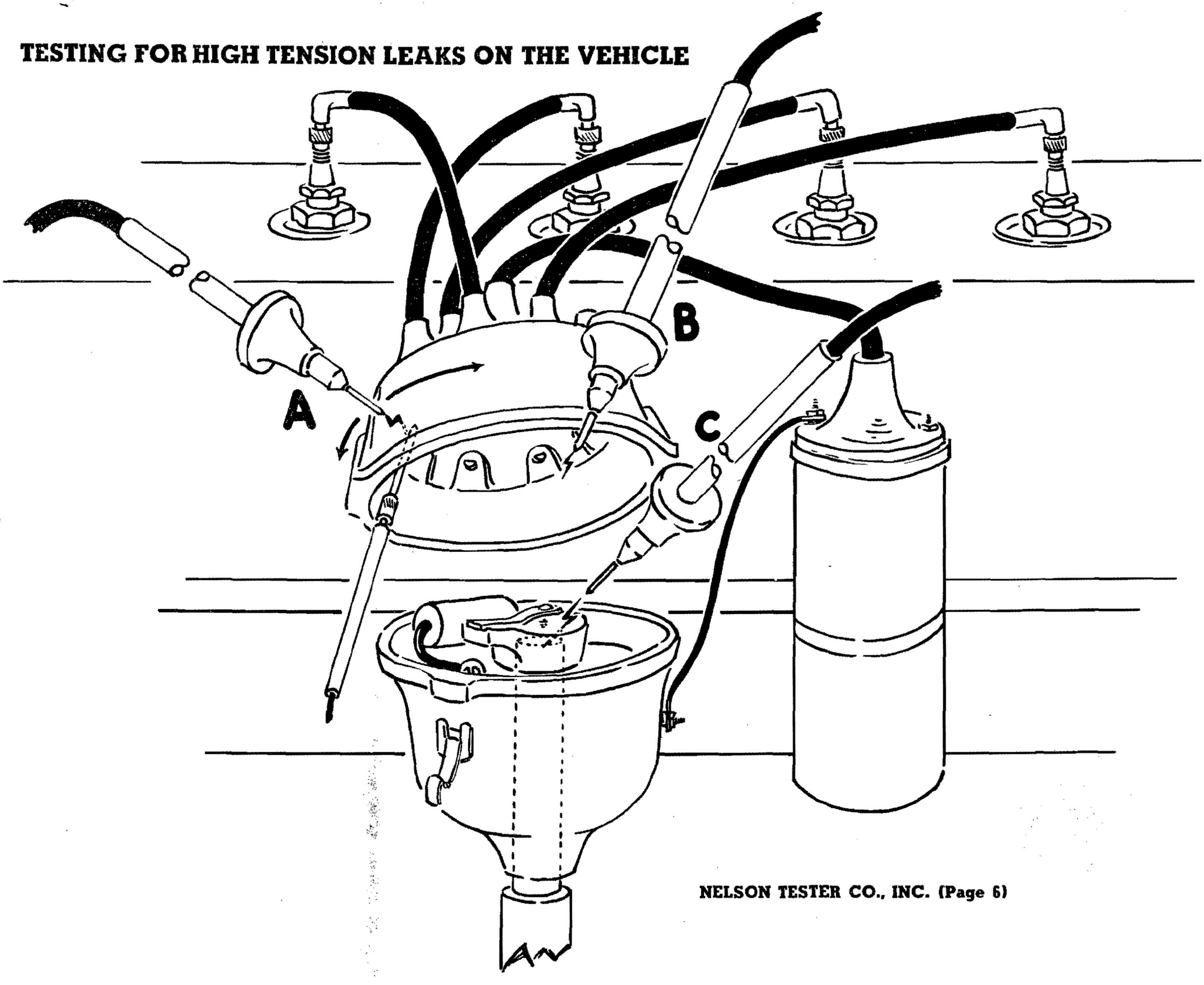
ILLUSTRATION C TESTING INSULATOR ON END OF HIGH TENSION WIRE

I - RUN HIGH TENSION PROD AROUND INsulator.

2 - SPARK JUMPING THROUGH INSULATOR SHOWS DEFECTIVE PART.

FOR FURTHER HIGH TENSION TESTS ON CAR TURN TO PAGE 6.

TESTING FOR HIGH TENSION LEAKS ON THE VEHICLE



TESTING FOR HIGH TENSION LEAKS ON THE VEHICLE

LIFT THE DISTRIBUTOR CAP FROM THE DISTRIBUTOR, PLACE THE ROTOR SWITCH IN HIGH TENSION POSITION.

ILLUSTRATION A CHECKING THE SHELL AND CLIP HOLDER OF THE DISTRIBUTOR CAP FOR DEFECTIVE INSULATION. SHOWN BY A WHITE SPARK FOLLOWING A CARBON TRACK OR JUMPING THROUGH THE MATERIAL.

1— PLACE EITHER SMALL PROD ON THE INSIDE OF THE CAP AND THE HIGH TENSION ON THE OUT SIDE (THICKNESS OF CAP BEING ALL THAT SEPARATES THE PRODS).

2— MOVE THE TWO PRODS TOGETHER AROUND THE ENTIRE CAP. CHECK CAREFULLY AT THE CLIP HOLDERS FOR SPARK JUMP THROUGH.

ILLUSTRATION B TESTING INTERNAL POSTS OF THE DISTRIBUTOR CAP.

1— RUN HIGH TENSION PROD AROUND EACH POST.

2— LOOK FOR SPARK FOLLOWING A CARBON TRACK OR JUMPING THROUGH DEFECTIVE MATERIAL.

3— NO SMALL PROD IS NECESSARY IN THIS TEST AS THE MOTOR ACTS AS A GROUND.

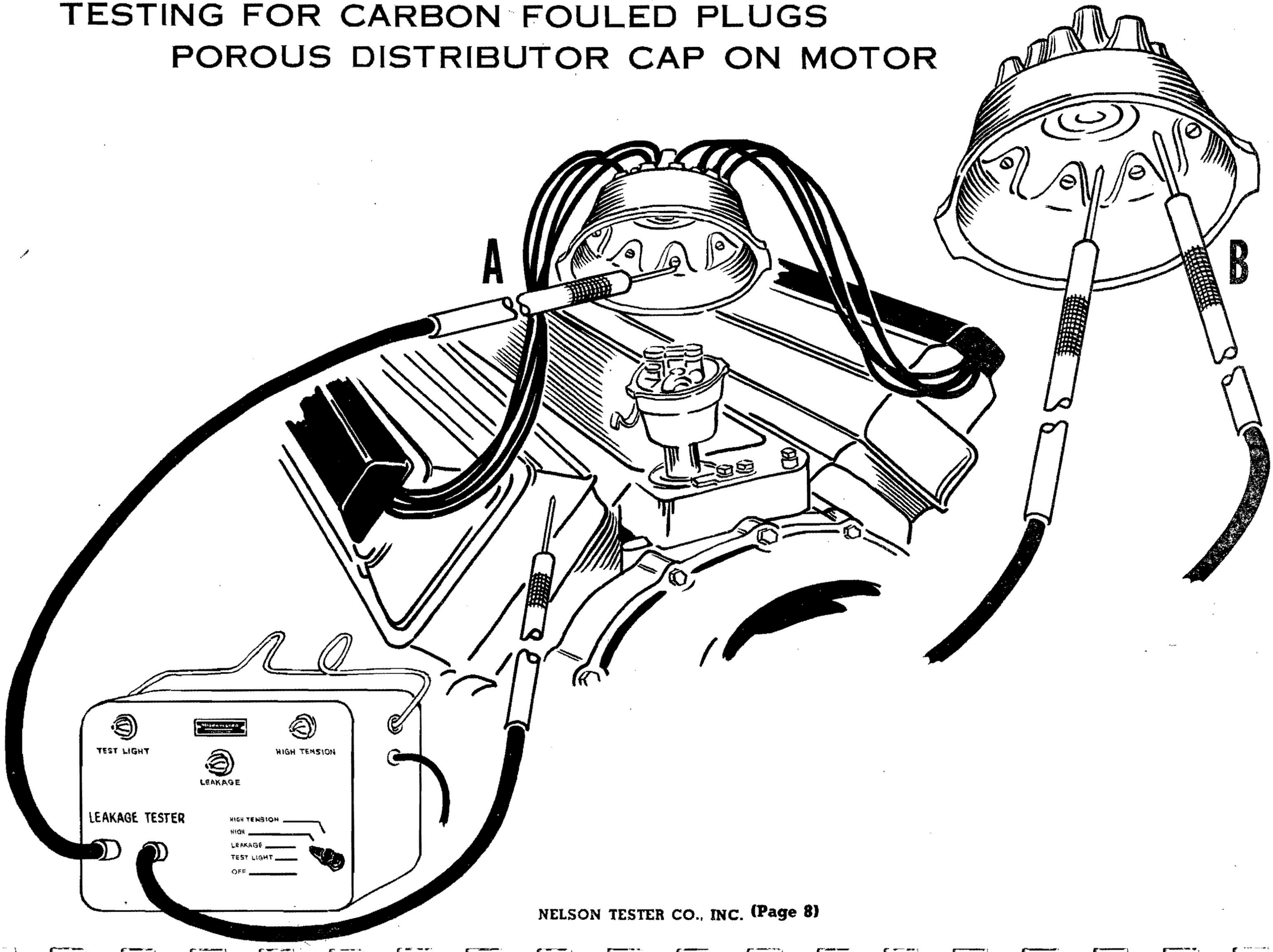
ILLUSTRATION C TESTING ROTOR ON CAR.

1— USE HIGH TENSION PROD AROUND ENTIRE SURFACE OF ROTOR.

2— WATCH FOR SPARK FOLLOWING A CARBON TRACK OR JUMPING THROUGH DEFECTIVE MATERIAL. (NO SMALL PROD NECESSARY)

FOR FURTHER HIGH TENSION TESTS
TURN TO PAGE EIGHT

TESTING FOR CARBON FOULED PLUGS
POROUS DISTRIBUTOR CAP ON MOTOR



TESTING FOR CARBON FOULED PLUGS - POROUS DISTRIBUTOR CAP - ON MOTOR (ELECTRICAL LEAKAGE)

ILLUSTRATION A. TESTING SPARK PLUGS FOR ELECTRICAL LEAKAGE (FOULED PLUG), ON THE VEHICLE.

1- LIFT DISTRIBUTOR CAP.

2- PLACE ROTARY SWITCH IN LEAKAGE POSITION.

3- PLACE EITHER SMALL PROD TO GROUND.

4- WITH OTHER SMALL PROD TOUCH EACH METAL TERMINAL ON INSIDE OF DISTRIBUTOR CAP.

5- LEAKAGE LIGHT FLASHING OR INCREASE OF GLOW INDICATES LEAKAGE IN PLUG.

6- (LEAKAGE INDICATED) LIFT HIGH TENSION WIRE FROM PLUG AND CHECK PLUG AND WIRE SEPARATELY.

ILLUSTRATION B. TESTING FOR POROUS DISTRIBUTOR CAP, ON OR OFF VEHICLE.

1- PLACE ROTARY SWITCH IN LEAKAGE POSITION.

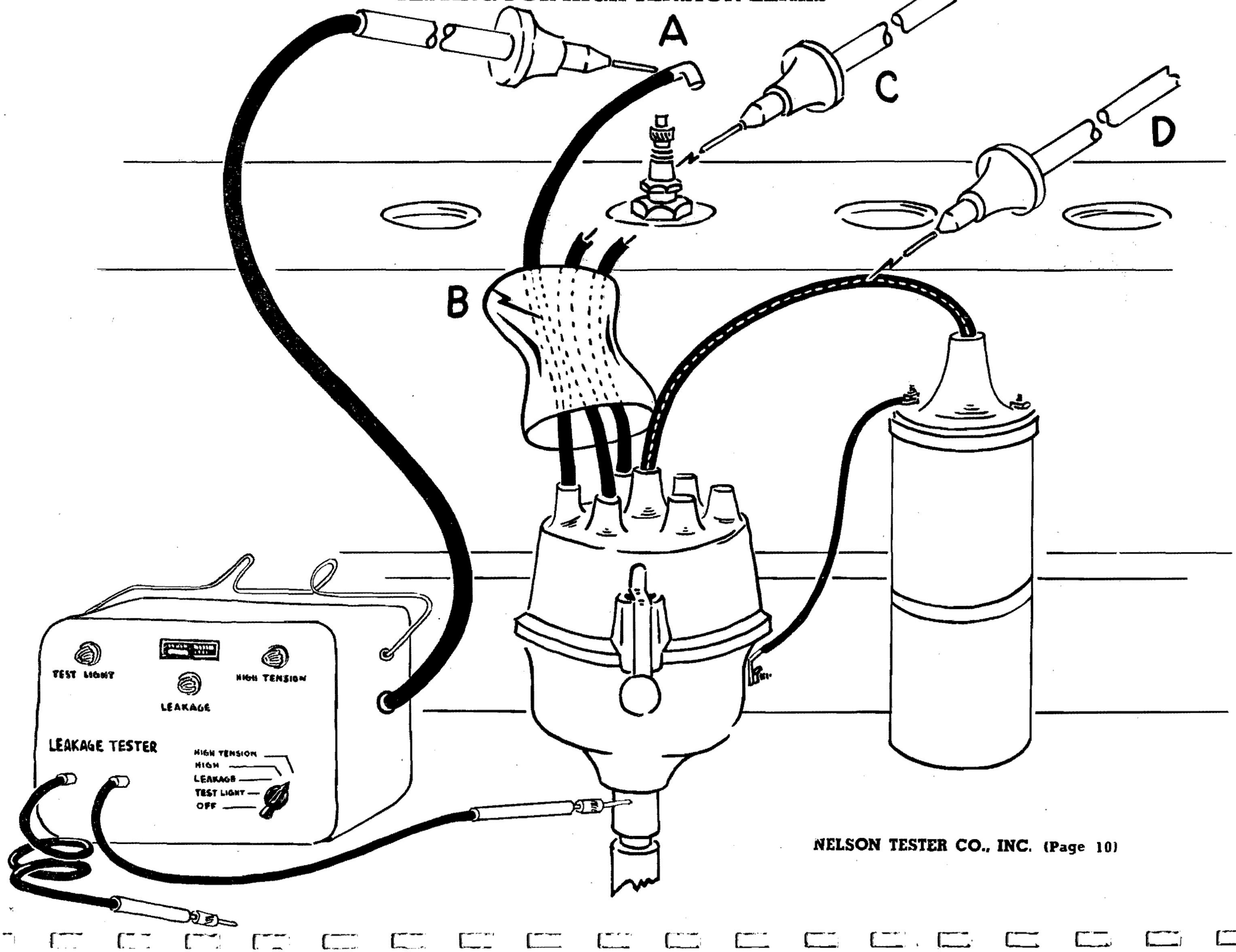
2- PLACE BOTH SMALL PRODS INSIDE OF DISTRIBUTOR CAP. (BOTH PRODS MUST TOUCH CAP)

3- LEAKAGE LIGHT SHOULD NOT CHANGE GLOW.

4- CHANGE OF GLOW INDICATES POROUS CAP.

5- BLOW BREATH IN CAP SEVERAL TIMES AND RECHECK.

TESTING FOR HIGH TENSION LEAKS



TESTING FOR HIGH TENSION LEAKS OR CRACKS ON THE VEHICLE

ILLUSTRATION A— TESTING HIGH TENSION WIRES FOR LEAKAGE.

I— LIFT HIGH TENSION WIRES FROM PLUGS.

2— PLACE HIGH TENSION PROD ON END OF WIRE.

3— GROUND EITHER SMALL PROD TO THE MOTOR. THIS ENABLES THE HIGH TENSION INDICATOR TO LIGHT OR FLASH IF THERE ARE ANY DEFECTIVE WIRES INSIDE METAL CLIPS OR CONDUIT. CHECK EACH WIRE SEPARATELY.

ILLUSTRATION B— OFTEN TIMES THE SPARK JUMP CAN BE SEEN OR HEARD, AS IN THE ABOVE ILLUSTRATION.

ILLUSTRATION C— TESTING SPARK PLUGS FOR POROUS OR CRACKED PORCELAIN.

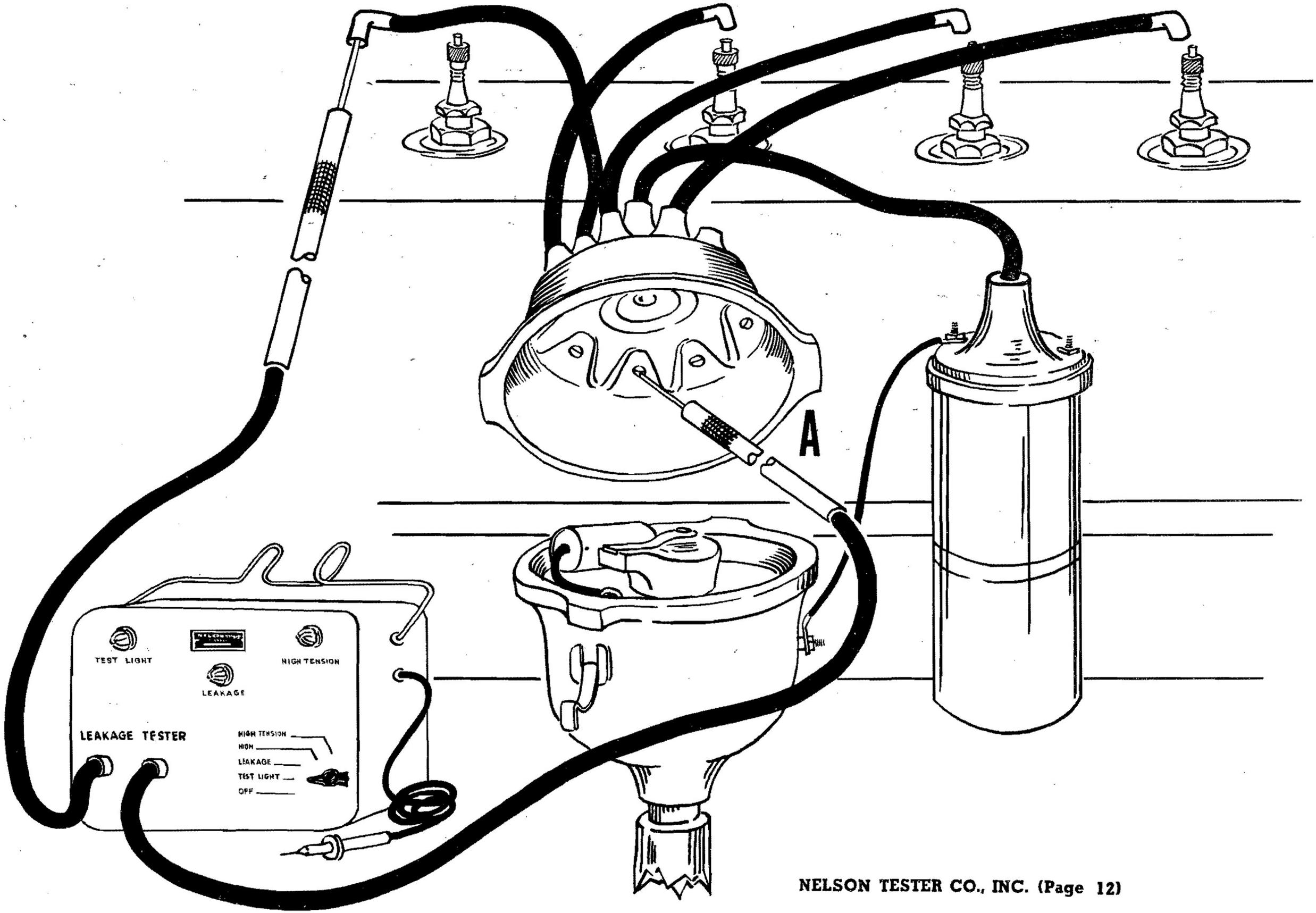
I— RUN HIGH TENSION PROD AROUND PORCELAIN OF PLUG. LOOK FOR SPARK JUMPING THROUGH PORCELAIN.

ILLUSTRATION D— TESTING PORTION OF WIRES NOT ENCLOSED IN METAL CLAMPS OR CONDUIT.

I— RUN THE HIGH TENSION PROD ALONG THE WIRES

2— LOOK FOR WHITE SPARK JUMPING THROUGH THE DEFECTIVE INSULATION(no ground needed).

TESTING CARBON AND METAL HIGH TENSION WIRES FOR OPENS



TESTING CARBON AND METAL HIGH TENSION WIRES FOR OPENS

ILLUSTRATION A. TESTING WIRES:

1- REMOVE SPARK PLUG WIRES FROM PLUGS, LIFT DISTRIBUTOR CAP.

2- PLACE ROTARY SWITCH IN TEST LIGHT POSITION.

3- PLACE EITHER SMALL PROD ON END OF SPARK PLUG WIRE.

4- PLACE THE OTHER SMALL PROD ON EACH METAL TERMINAL INSIDE OF DISTRIBUTOR CAP.

5- TEST LIGHT SHOULD LIGHT ON ONE TERMINAL OF CAP.

   (a) NO LIGHT INDICATES WIRE UNDER TEST IS OPEN.

   (b) REAL FAINT LIGHT ON CARBON WIRE INDICATES TOO HIGH RESISTANCE.

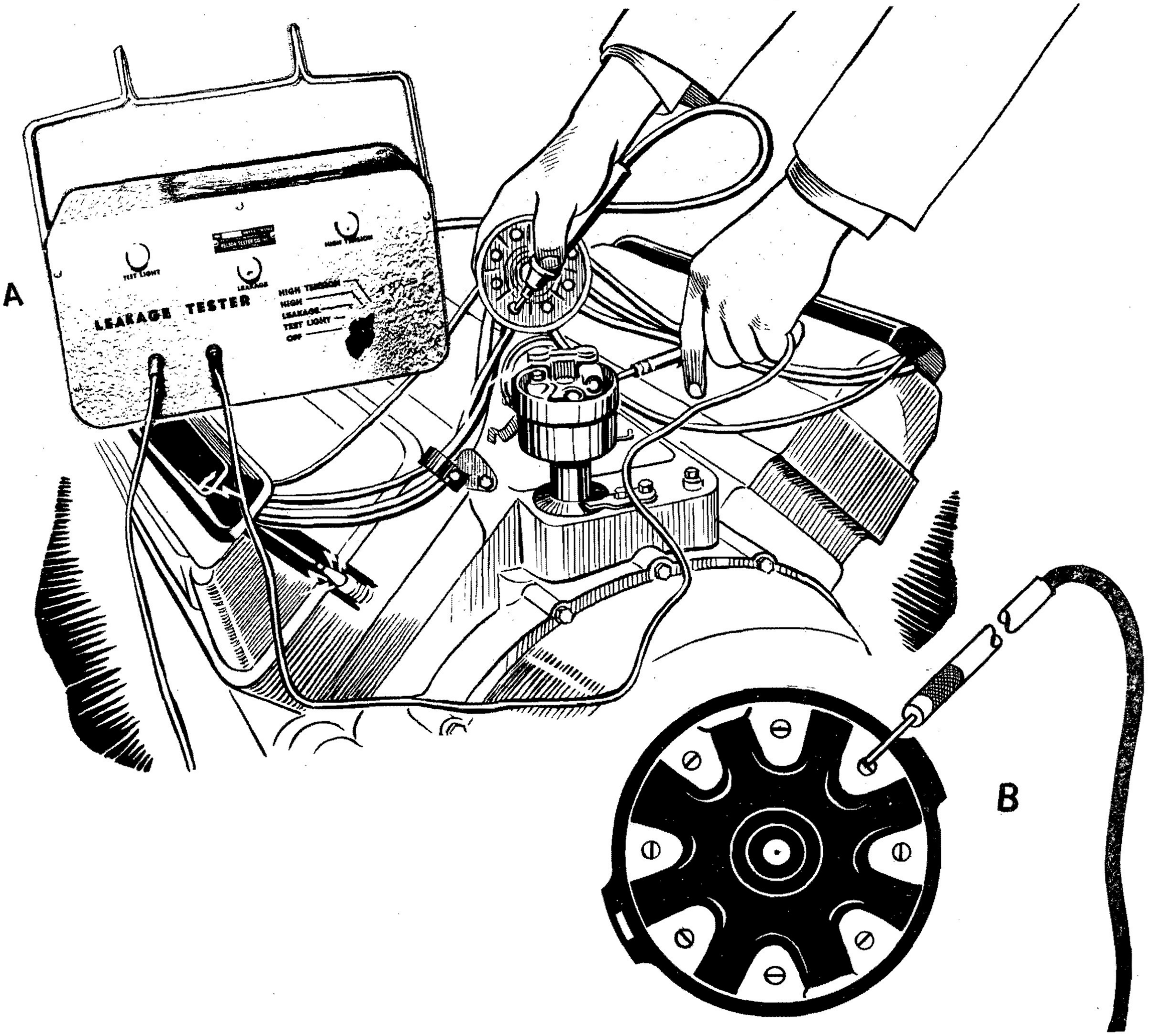
NOTE: TESTING WIRES OFF MOTOR.

TO TEST WIRE OFF MOTOR PLACE ONE SMALL TEST PROD ON EACH END OF WIRE.

TEST LIGHT SHOULD LIGHT.

NO LIGHT INDICATES OPEN WIRE. REAL FAINT LIGHT ON CARBON WIRE INDICATES TOO HIGH RESISTANCE.

CHECKING WIRES AND PLUGS ON CHRYSLER MOTOR USING RESISTOR TYPE PLUGS



TESTING FOR HIGH TENSION LEAKS ON MOTORS USING RESISTOR PLUGS

ILLUSTRATION A — TESTS BEING MADE ON CHRYSLER V-8 MOTOR

1— PLACE ROTOR SWITCH IN HIGH TENSION POSITION.

2— LIFT THE DISTRIBUTOR CAP.

3— PLACE EITHER SMALL PROD TO GROUND.

4— PLACE THE HIGH TENSION PROD ON EACH OUTSIDE TERMINAL INSIDE THE DISTRIBUTOR CAP.

5— HIGH TENSION INDICATOR LIGHT FLASHING (or steady glow) INDICATES LEAKY WIRE OR PLUG.

6— OFTEN TIMES THE SPARK CAN BE HEARD JUMPING THROUGH THE DEFECTIVE INSULATION.

ILLUSTRATION B — TESTING FOR FOULED OR LEAKY SPARK PLUG.

I — PLACE ROTOR SWITCH IN LEAKAGE POSITION.

2— PLACE EITHER SMALL PROD TO GROUND.

3— PLACE THE OTHER SMALL PROD ON EACH OUTSIDE TERMINAL OF THE DISTRIBUTOR CAP.

4— FLASHING OR MORE THAN NORMAL GLOW OF LEAKAGE LIGHT INDICATES LEAKY PLUG.

5— REMOVE PLUG AND RECHECK WIRE AS PER ILLUSTRATION A.

TESTING PARTS FOR HIGH TENSION LEAKS OR CRACKS OFF THE VEHICLE

FOR ALL THE FOLLOWING TESTS, PLACE ROTOR SWITCH IN HIGH TENSION POSITION.

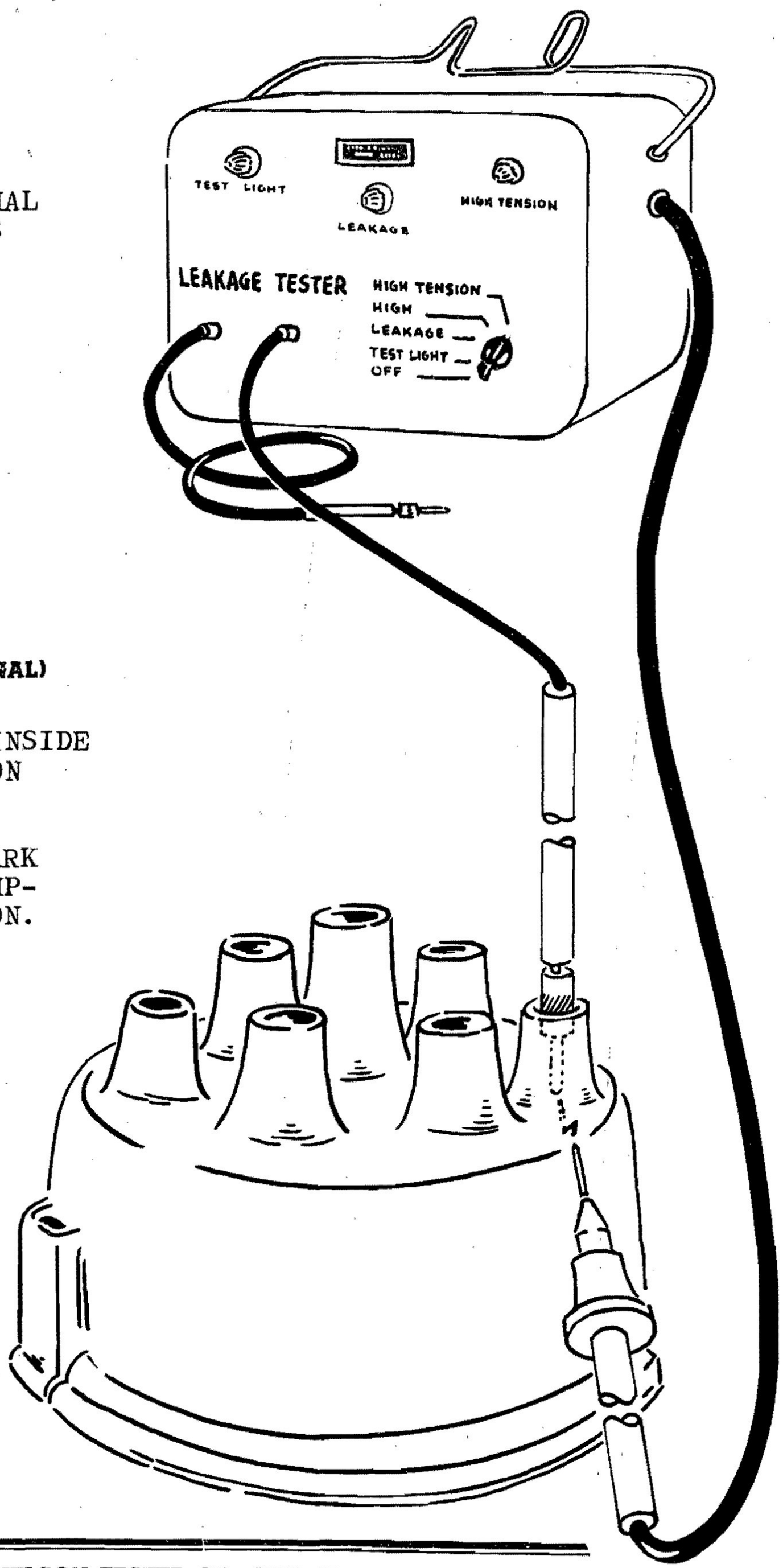
NOTE: YOU WILL ALWAYS GET A SLIGHT BLUE SPARK TO ALL NORMAL HIGH TENSION PARTS. (THIS IS CORONA DISCHARGE)

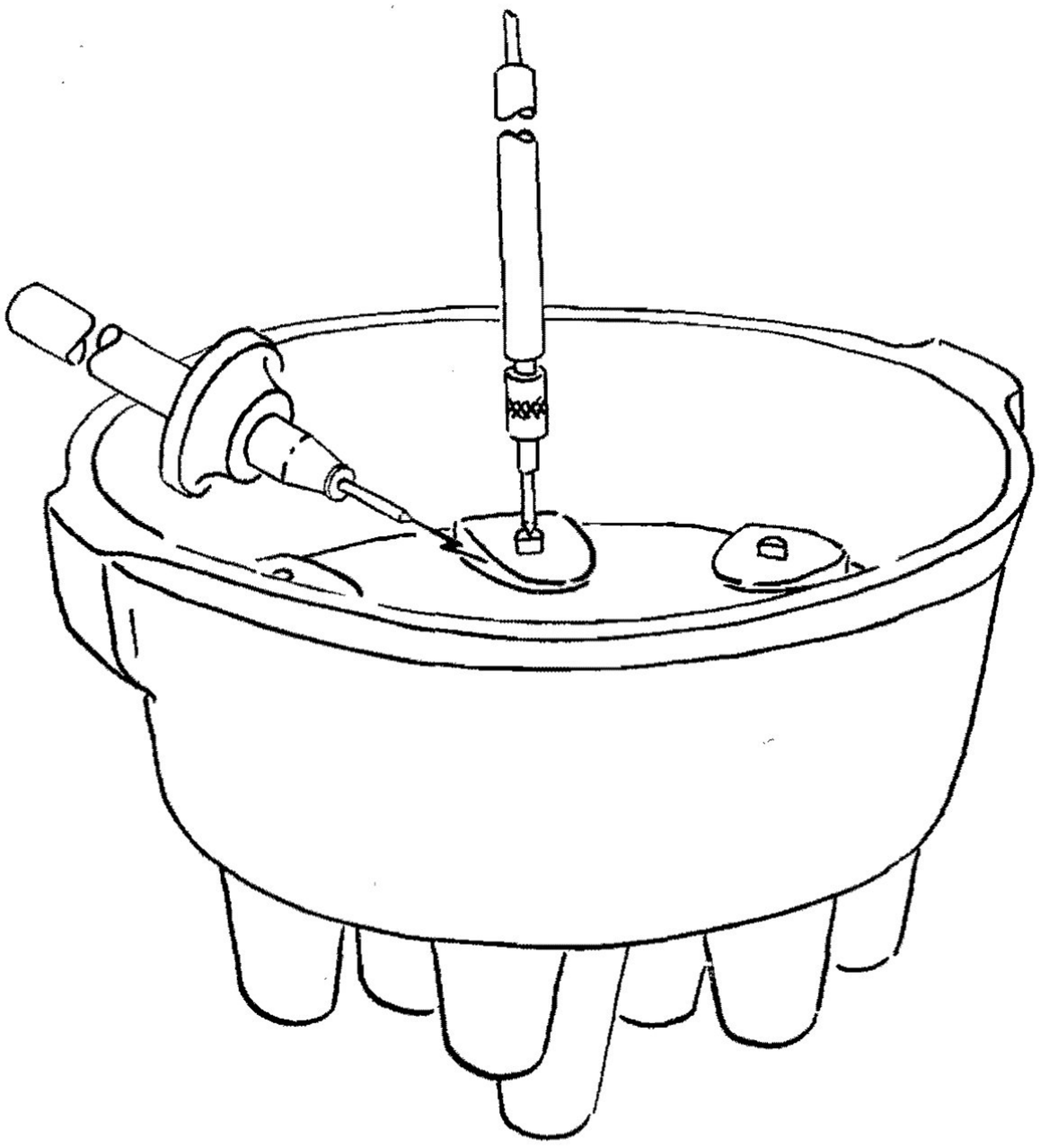
WHITE SPARK GOING THROUGH MATERIAL OR FOLLOWING A DEFINITE CARBON TRACK SHOWS DEFECTIVE INSULATION.

TESTING DISTRIBUTOR CAP (EXTERNAL)

1— PLACE EITHER SMALL PROD INSIDE EACH POST AND RUN HIGH TENSION PROD AROUND EACH POST.

2— LOOK FOR HIGH TENSION SPARK FOLLOWING CARBON TRACK OR JUMPING THROUGH CRACKED INSULATION.



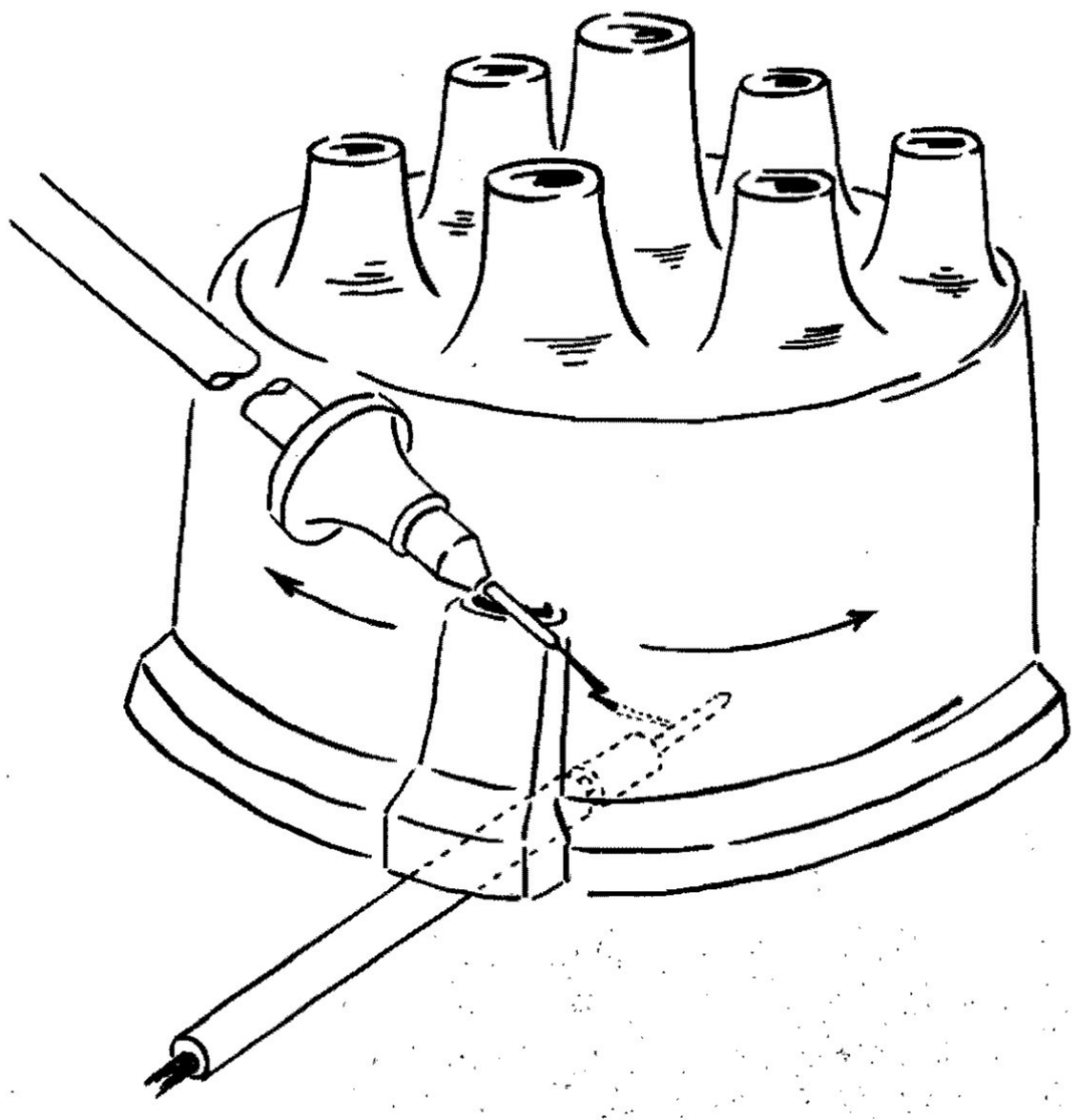


TESTING DISTRIBUTOR CAP (INTERNAL)

1— PLACE EITHER SMALL PROD ON METAL POST INSIDE CAP.

2— RUN HIGH TENSION PROD AROUND EACH CORRESPONDING POST.

3— LOOK FOR SPARK FOLLOWING A CARBON TRACK OR JUMPING THROUGH DEFECTIVE INSULATION.



TESTING DISTRIBUTOR CAP (EXTERNAL)

1— PLACE SMALL PROD ON INSIDE OF CAP NEAR CLIP.

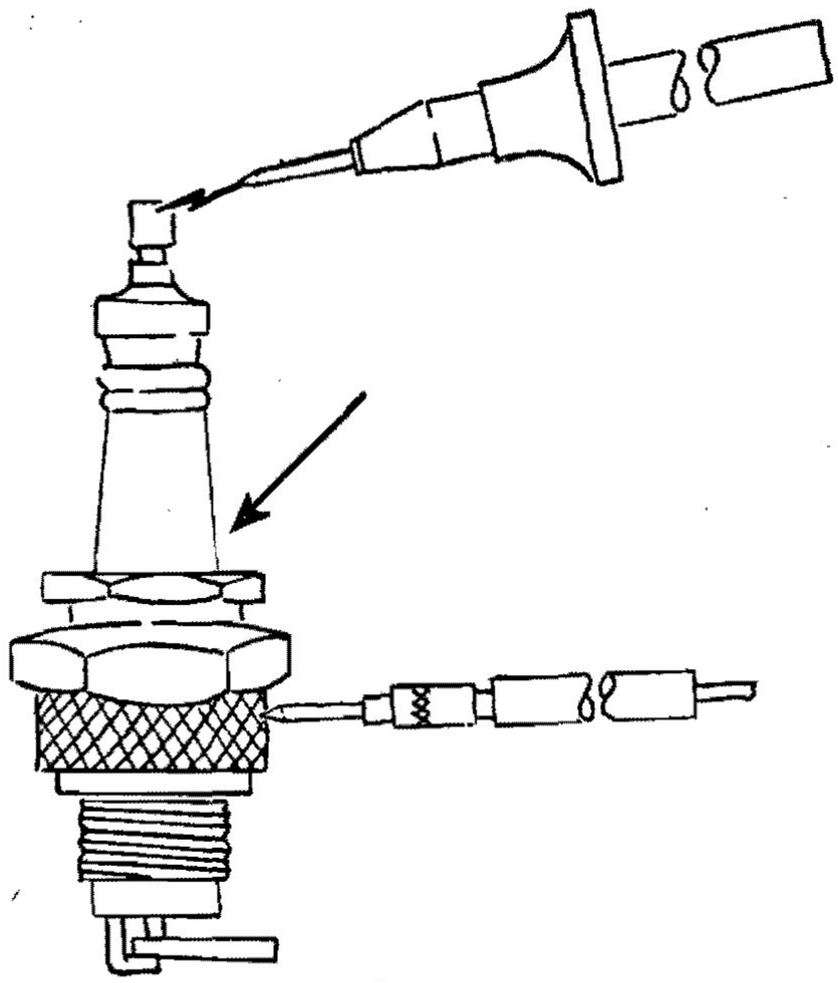
2— RUN HIGH TENSION PROD ON THE OUT SIDE ALL AROUND CLIP.

3— CHECK AROUND THE WHOLE SHELL OF CAP IN THE ABOVE MANNER.

4— LOOK FOR SPARKS JUMPING THROUGH DEFECTIVE MATERIAL OR FOLLOWING A CARBON TRACK.

FOR FURTHER HIGH TENSION TEST TURN TO PAGE 18

FOR ALL THE FOLLOWING TESTS, PLACE ROTOR SWITCH IN HIGH TENSION POSITION.

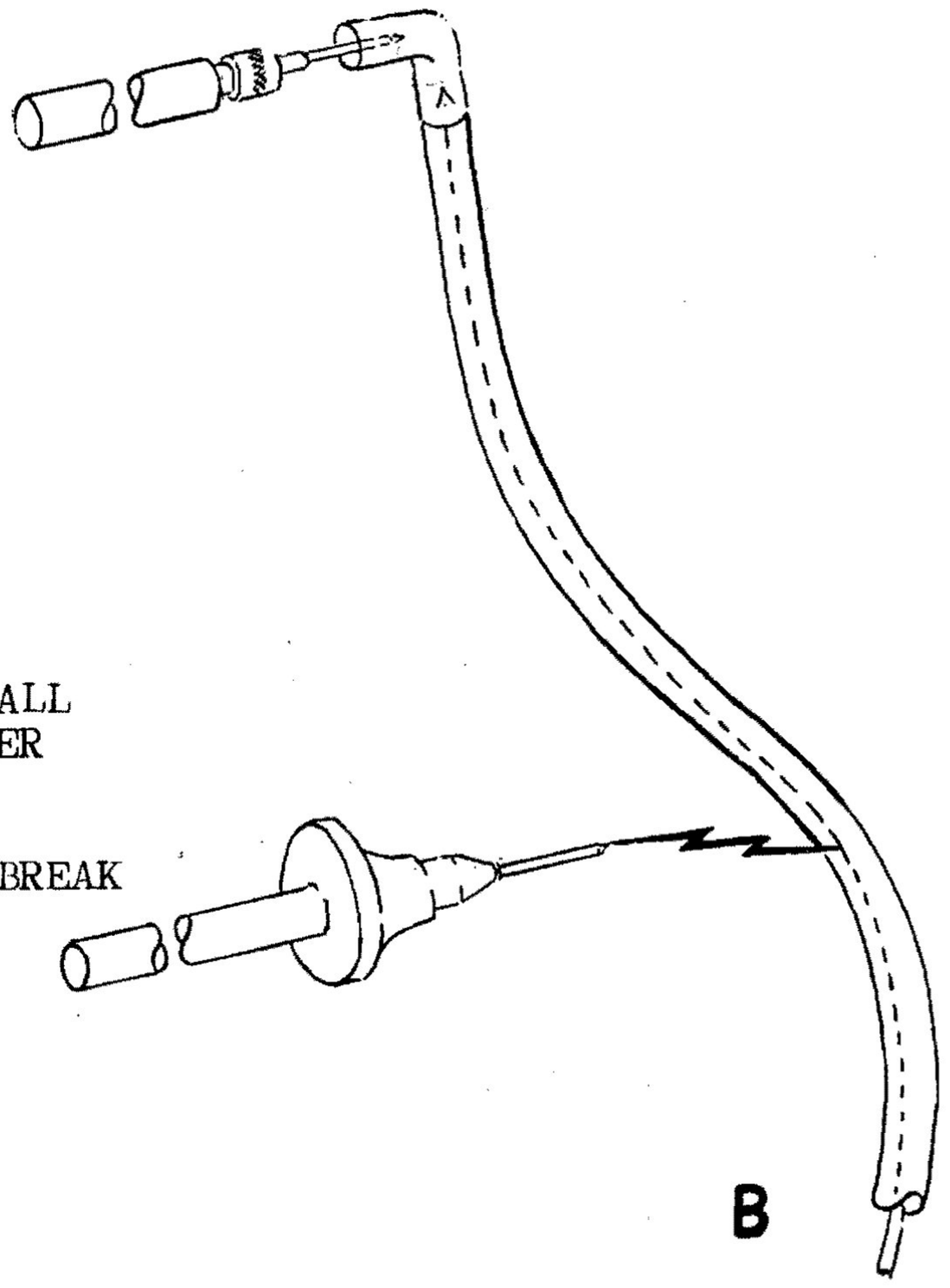


A

ILLUSTRATION A—TESTING SPARK PLUG

1— PLACE PIECE OF PLASTIC BETWEEN POINTS OF PLUGS.

2— PLACE EITHER SMALL PROD (GROUND) ON BASE OF PLUG AND HIGH TENSION PROD ABOUT 1/4 INCH FROM TOP OF PLUG. LOOK FOR SPARK JUMPING THROUGH THE PORCELAIN TO METAL CASING OF PLUG. (NOTE ARROW ON ABOVE ILLUSTRATION)



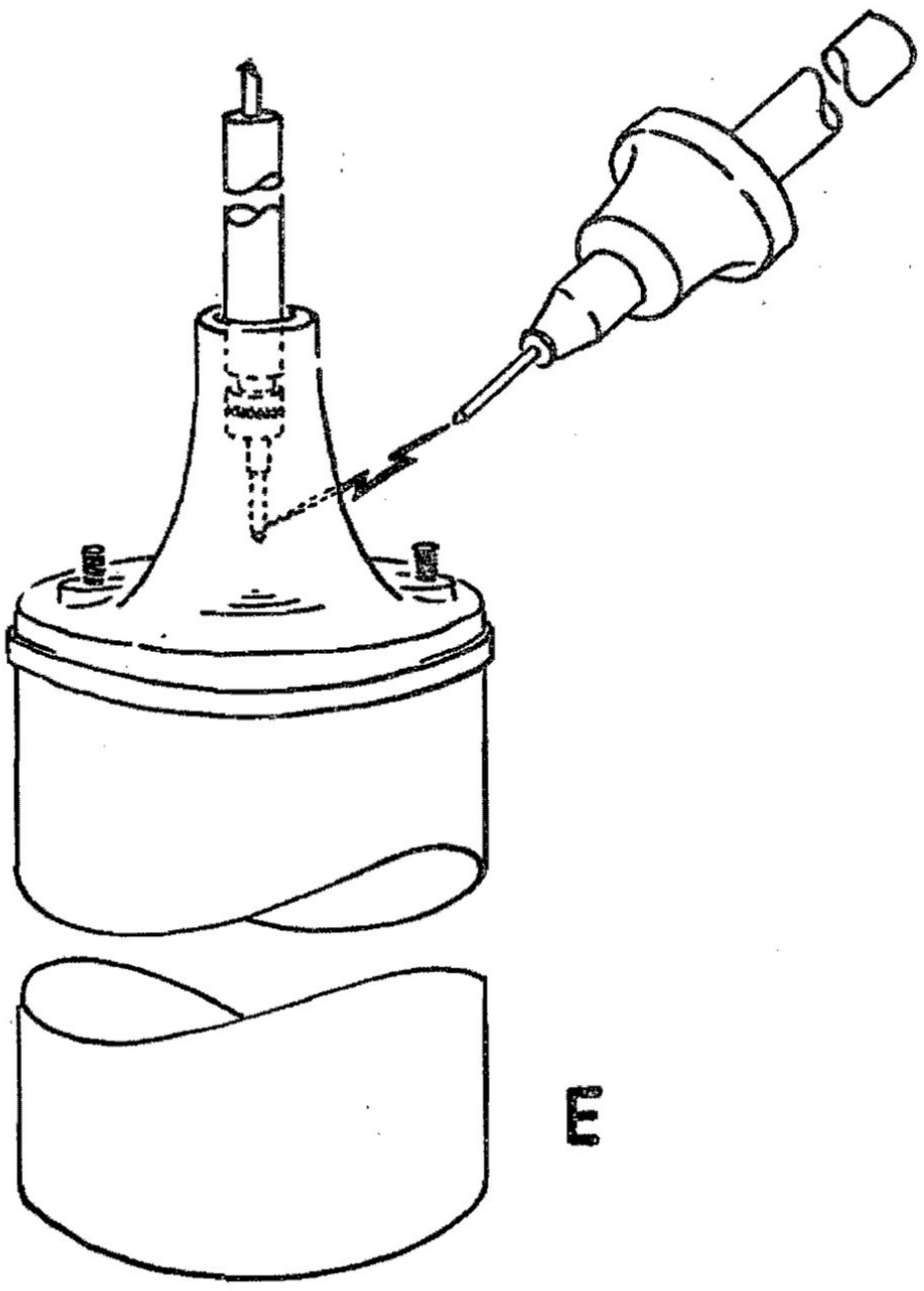
B

ILLUSTRATION B—HIGH TENSION IGNITION WIRE TEST

1— PLACE HIGH TENSION OR EITHER SMALL PROD ON END OF WIRE AND RUN THE OTHER ALONG CLOSE TO THE WIRE.

2— LOOK FOR SPARK JUMPING THROUGH BREAK OR PIN HOLE OF INSULATION.

NOTE: YOU WILL ALWAYS GET A SLIGHT BLUE SPARK TO ALL NORMAL HIGH TENSION PARTS. (THIS IS CORONA DISCHARGE.) WHITE SPARK GOING THROUGH MATERIAL OR FOLLOWING A DEFINITE CARBON TRACK SHOWS DEFECTIVE INSULATION.

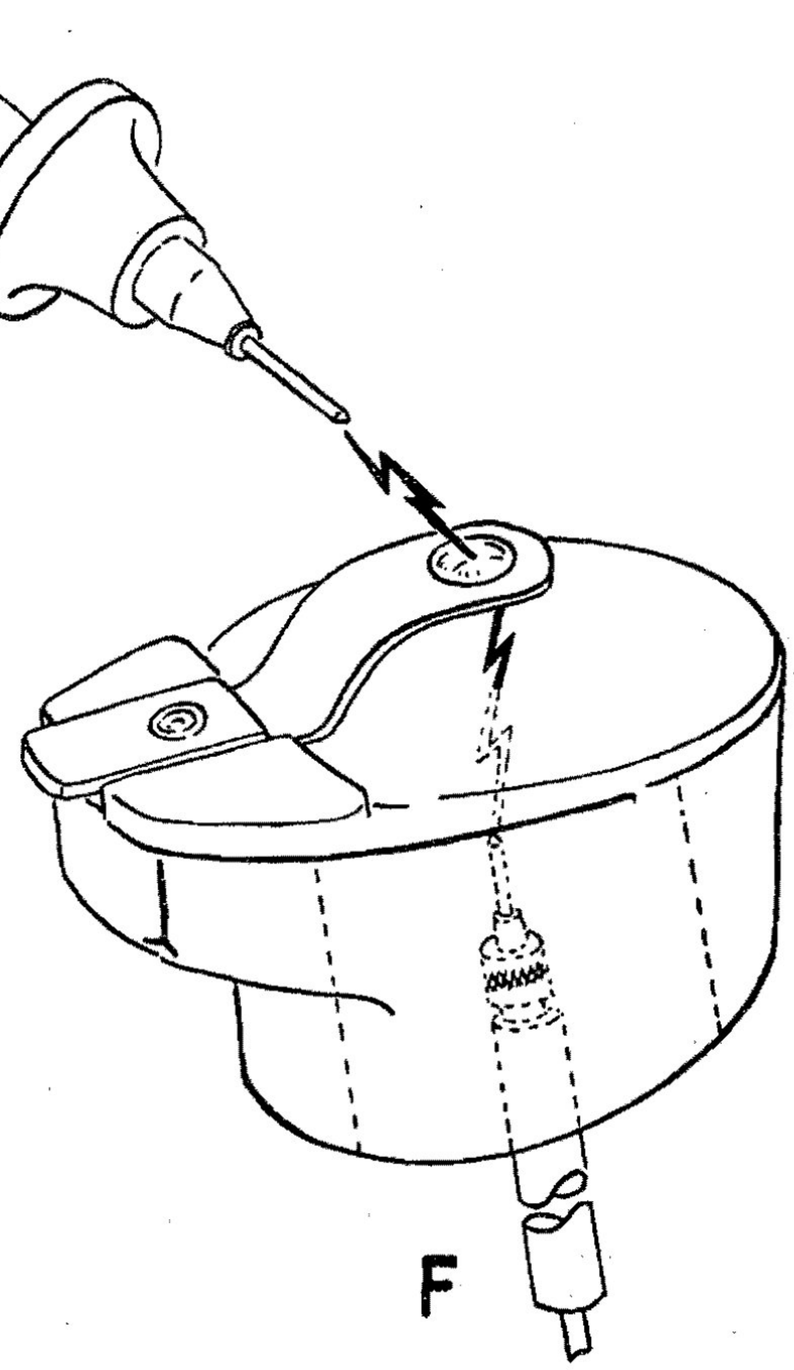


E

ILLUSTRATION E—TESTING HIGH TENSION POST OF COIL

1— PLACE EITHER SMALL PROD INSIDE HIGH TENSION POST AND RUN HIGH TENSION PROD AROUND THE SAME POST.

2— LOOK FOR A HIGH TENSION SPARK FOLLOWING A CARBON TRACK OR JUMPING THROUGH DEFECTIVE INSULATION.



F

ILLUSTRATION F—
TESTING DISTRIBUTOR ROTOR

1— PLACE EITHER SMALL PROD IN OPENING OF ROTOR AND HIGH TENSION PROD TO METAL OF ROTOR. (can also be checked on the car)

2— LOOK FOR HIGH TENSION SPARK JUMPING THROUGH THE INSULATION OR FOLLOWING A CARBON TRACK.

NOTE: HIGH TENSION TEST MAY BE USED TO START A MOTOR.

1— LIFT HIGH TENSION WIRE OUT OF DISTRIBUTOR CAP.

2— PLACE SCREW DRIVER OR ANY PIECE OF METAL, INTO HIGH TENSION POST TOUCHING METAL IN CAP.

3— WITH IGNITION SWITCH OFF TURN MOTOR WITH STARTER.

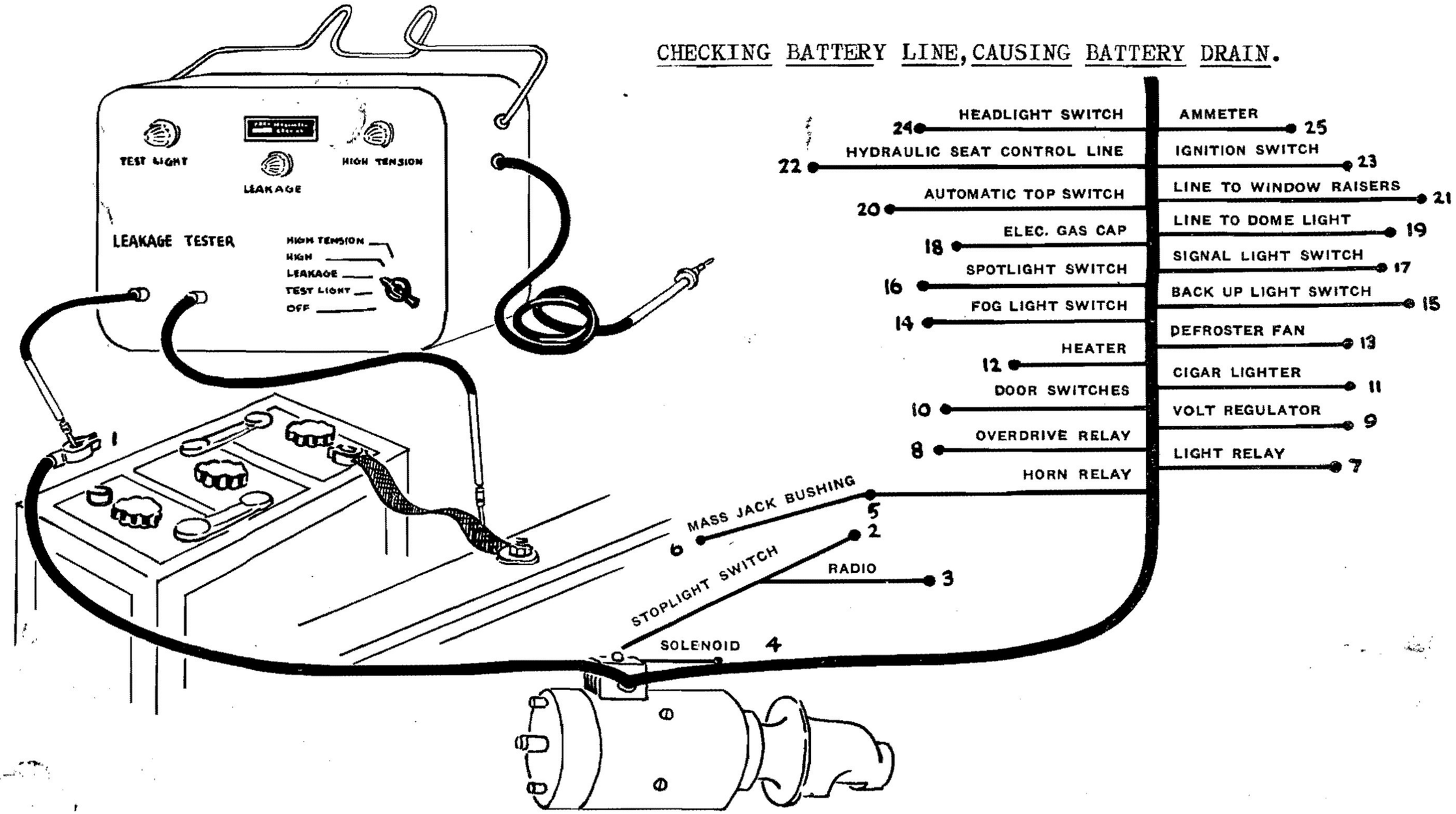
4— PLACE HIGH TENSION PROD (Rotor switch on high tension) AGAINST METAL IN CAP.

5— IF GAS IS GETTING TO PLUGS THE MOTOR WILL RUN.

6— IF MOTOR DOESN'T RUN YOU HAVE NO GAS TO CYLINDERS OR POOR COMPRESSION.

A— DISTRIBUTOR CAP OR ROTOR MIGHT BE LEAKY.

CHECKING BATTERY LINE, CAUSING BATTERY DRAIN.



BATTERY LEAKAGE CHECK: CRACKED AND POROUS CASES

REMOVE BOTH CABLES FROM BATTERY, PLACE ONE PROD ON EITHER BATTERY TERMINAL AND THE OTHER PROD ON FRAME OF CAR. ALSO CHECK TOP OF BATTERY. IF HEAVY LEAKAGE IS SHOWN CLEAN WITH BAKING SODA AND WATER. DRY BATTERY AND RECHECK. THIS LEAKAGE HERE WILL SHORTEN LIFE OF BATTERY, RETARD STARTING, CAUSE THE BATTERY TO RUN DOWN, AND IN SOME CASES WILL NOT TAKE A FULL CHARGE, AND THE REGULATOR CANNOT CUT THE GENERATOR BACK

VEHICLES WITH ALTERNATORS

DISCONNECT ALL WIRES ON ALTERNATOR (EXCEPT GROUND) BEFOR MAKING THE ABOVE TESTS.

CHECKING BATTERY LINE FOR LEAKAGE

FIRST MAKE CERTAIN GENERATOR, REGULATOR, AND BATTERY ARE NORMAL. BEFORE ANY TESTS ARE MADE ON BAT TERY LINE, BE SURE ALL SWITCHES IN CAR ARE TURNED OFF. FIND OUT IF HORN, RADIO, SPOT LIGHT ETC. ARE HOOKED DIRECT TO BATTERY LINE, OR IF HOOKED THROUGH IGNITION SWITCH. ANYTHING HOOKED ON THE DEAD SIDE OF THE IGNITION SWITCH, CANNOT CAUSE TROUBLE ON THE BATTERY LINE UNLESS THE SWITCH IS TURNED ON, SO THEY CAN BE DISREGARDED FOR BATTERY LINE CHECK. THEY WILL BE CHECKED WITH IGNITION.

PULL HOOD LIGHT BULB, CARS WITH RADIO WILL USUALLY HAVE AT LEAST ONE CONDENSER ON BATTERY LINE. THIS MUST BE REMOVED, AS A CONDENSER WILL SHOW A LEAK WITH THIS TESTER. UNHOOK THE CLOCK, AS CLOCKS ARE A DIRECT DRAW ON THE BATTERY WHEN THEY WIND.

NOW REMOVE CABLE FROM BATTERY THAT GOES TO THE STARTER SWITCH AND CHECK. (AS ILLUSTRATION ABOVE USING LEAKAGE) IF A BRIGHT GLOW (INDICATING BAD) HIT BATTERY CABLE TO FRAME AND WATCH FOR SPARK (DISCHARGE OF HIDDEN CONDENSER). IF IT SHOWS CONDENSER, UNHOOK RADIO (SOME RADIOS HAVE CONDENSER AT OFF AND ON SWITCH) RECHECK FOR HIDDEN CONDENSER. (OFTEN ONE IS HIDDEN UNDER DASH). WHEN YOU ARE CERTAIN CONDENSERS ARE ALL UNHOOKED FROM BATTERY LINE TURN TESTER ON HIGH AND SEE IF THE LEAK WILL SMOKE OR BUZZ OUT. IF THE HIGH TEST CLEARS THE LINE, THE STOP LIGHT SWITCH IS USUALLY BAD.

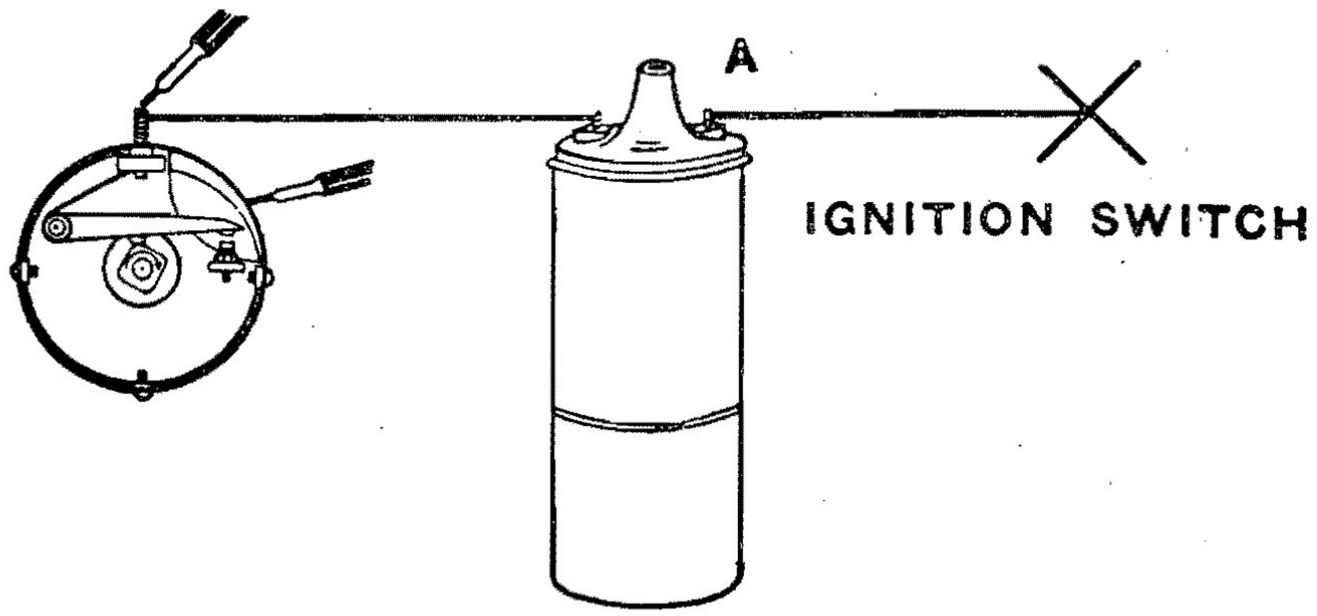
DO NOT USE ON HIGH OVER FIVE SECONDS. IF IT HAS NOT SHOWN WHERE IT IS, IT WILL NOT SHOW AND TO HOLD IT THERE WILL POSSIBLY DAMAGE THE TESTER. IF IT WILL NOT SHOW ON HIGH, UNHOOK STOP LIGHT SWITCH AND RECHECK. IF STILL BAD DISCONNECT RADIO. IF STILL BAD AND WILL NOT SHOW WHERE, USE 1000 WATT CONE SHAPED HEATER ELEMENT IN SERIES. THIS WILL USUALLY EITHER SHOW WHERE IT IS, OR TAKE IT INTO A SOLID GROUND SO THAT THE BATTERY WILL SMOKE IT OUT, OR BRING IT BACK TO THE LEAK STAGE WHERE THE TESTER MAY SMOKE IT OUT. IF TROUBLE IS NOT LOCATED UNHOOK AS PER ABOVE DIAGRAM.

SPECIAL NOTICE NO. 1 WHEN BATTERY LINE SHOWS CLEAR, RECHECK LINE AFTER EACH UNIT IS REHOOKED. LEAVE CLOCK AND RADIO UNTIL LAST. WHEN CLOCK IS HOOKED ON, HIT BATTERY CABLE TO BATTERY TO WIND CLOCK. RECHECK LINE FOR LEAKY CLOCK. WINDING CLOCKS SHOW CLEAR WHEN WOUND, IF GOOD. PULSATING CLOCKS WILL PULSATE ON LEAKAGE TUBE. THIS IS NORMAL.

SPECIAL NOTICE NO. 2 UNHOOK WIRES FROM GENERATOR AND REGULATOR, CHECK FROM LINE TO LINE, AND LINE TO GROUND FOR LEAKAGE, CHECK CONDENSER ON GENERATOR, OR REGULATOR.

DO NOT USE HIGH ON CLOCK. CHECK ANY CONDENSERS ON BATTERY LINE.

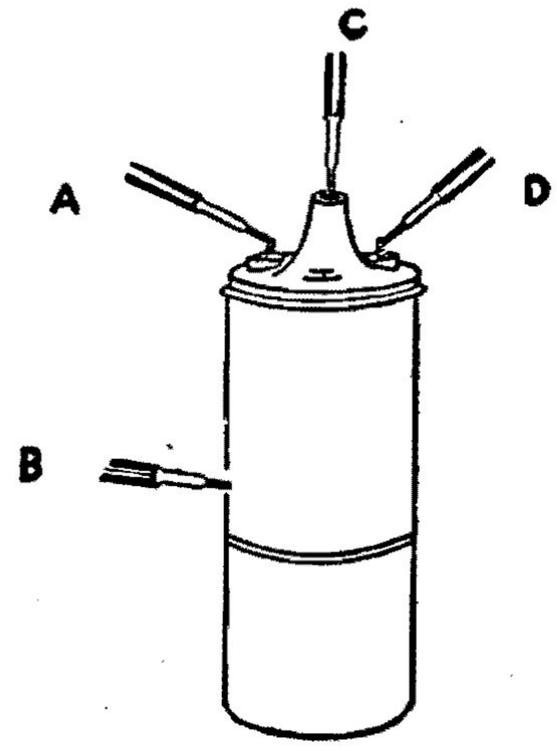
IGNITION LINE CHECK



UNHOOK CONDENSER, TURN MOTOR TO OPEN POINTS, AND CHECK DISTRIBUTOR TERMINAL POST AND BREAKER ARM FOR LEAKAGE. THIS WILL ALSO CHECK LINE TO COIL AND COIL, LINE TO IGNITION SWITCH AND IGNITION SWITCH. SOME CARS HAVE TWO TERMINAL IGNITION SWITCHES THAT HAVE ELECTRICAL GAS AND HEAT GAUGES. THESE MUST BE UNHOOKED AS THEY WILL SHOW A FAINT GLOW ON A TEST LIGHT. (see accessory line check page 29.)

FOR QUICK CHECK UNHOOK IGNITION WIRE FROM COIL ILLUSTRATION A.

SOME CARS HAVE A CONDENSER ON THE IGNITION COIL, IT MUST BE DISCONNECTED FOR THE ABOVE CHECK. TEST ALL CONDENSERS.



LEAKY AND OPEN IGNITION COILS

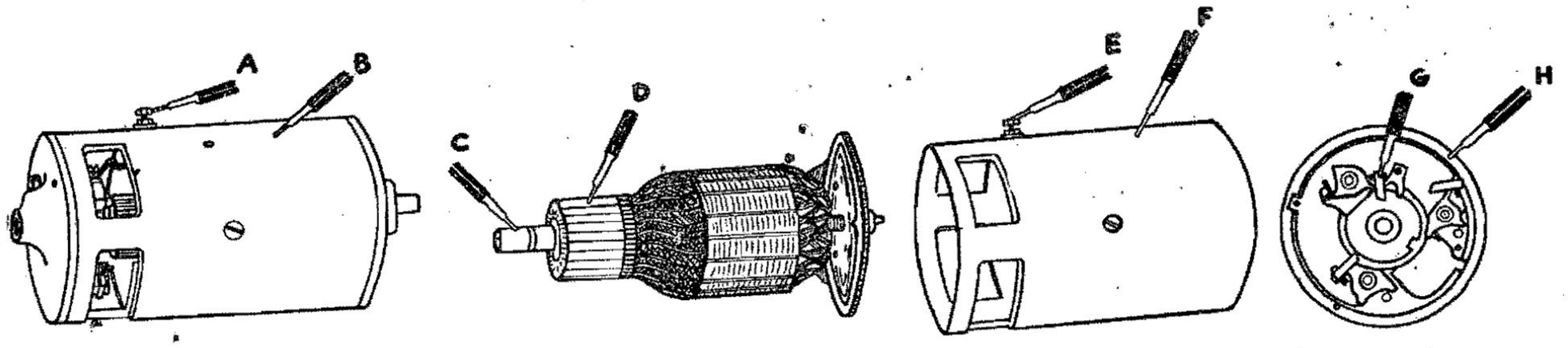
ILLUSTRATION A & B (USE LEAKAGE TEST) TEST COIL PRIMARY (A) AND TO CASE (B) FOR LEAKAGE.

ILLUSTRATION A & C (USE LEAKAGE TEST) TEST HIGH TENSION OUTLET FOR LEAKS OR CRACKS BY PLACING TEST PROD (C) IN OPENING AND GO AROUND OUTLET.

ILLUSTRATION A & C (USE TEST LIGHT) TOUCH PRODS TO TERMINALS (A) AND (C) AND IF COIL IS OPEN BETWEEN THE PRIMARY AND SECONDARY TEST LIGHT WILL NOT LIGHT. FAINT LIGHT INDICATES CONTINUITY.

ILLUSTRATION A & D (USE TEST LIGHT) CONTINUITY OF PRIMARY WINDING OF COIL.

CHECKING A GENERATOR FOR LEAKAGE



CAUTION - REMEMBER ALL PRIMARY CIRCUITS HAVE NORMAL GLOW ON LEAKAGE TEST (REFER TO PAR. 3, PAGE 2).

GENERATORS WITHOUT GROUNDED FIELDS CAN BE CHECKED WHILE ASSEMBLED BY RAISING GROUNDED CARBON BRUSH AND DISCONNECTING WIRES TO VOLTAGE REGULATOR, THEN CHECK FROM TERMINAL TO GROUND AS A AND B IN ILLUSTRATION. OPEN FIELDS CAN BE CHECKED BY USING TEST LIGHT ON TWO FIELD LEADS.

GENERATOR WITH EXTERNALLY GROUNDED FIELDS, UNHOOK EXTERNAL GROUND AND CHECK SAME AS ABOVE.

GENERATOR WITH INTERNALLY GROUNDED FIELDS, ARMATURE, BRUSH HOLDER AND ARMATURE TERMINAL CAN BE CHECKED WHEN ASSEMBLED. RAISE GROUNDED BRUSH ON LATE MODELS, GROUND AND FIELD BRUSH ON THREE BRUSH MODELS AND CHECK FROM COMMUTATOR TO FRAME.

WITH GENERATOR DISMANTLED, CHECK ARMATURE C. D. ALSO CHECK ON GROWLER AS THE GROWLER SHOWS SHORTS IN WINDINGS THAT LEAKAGE TEST WILL NOT SHOW. THE LEAKAGE TEST SHOWS LEAKS THAT THE GROWLER DOES NOT SHOW.
CHECK FIELDS E. F. AND CARBON BRUSH HOLDERS AS G. H.

TO CHECK ANY ARMATURE FOR SHORTS IN WIND, PLACE ARMATURE ON GROWLER. TURN GROWLER ON AND PLACE HACK SAW BLADE ON TOP OF ARMATURE WHILE YOU TURN THE LATTER. DRAWING ON THE BLADE TO ARMATURE INDICATES SHORT. NO DRAW INDICATES NO SHORT.

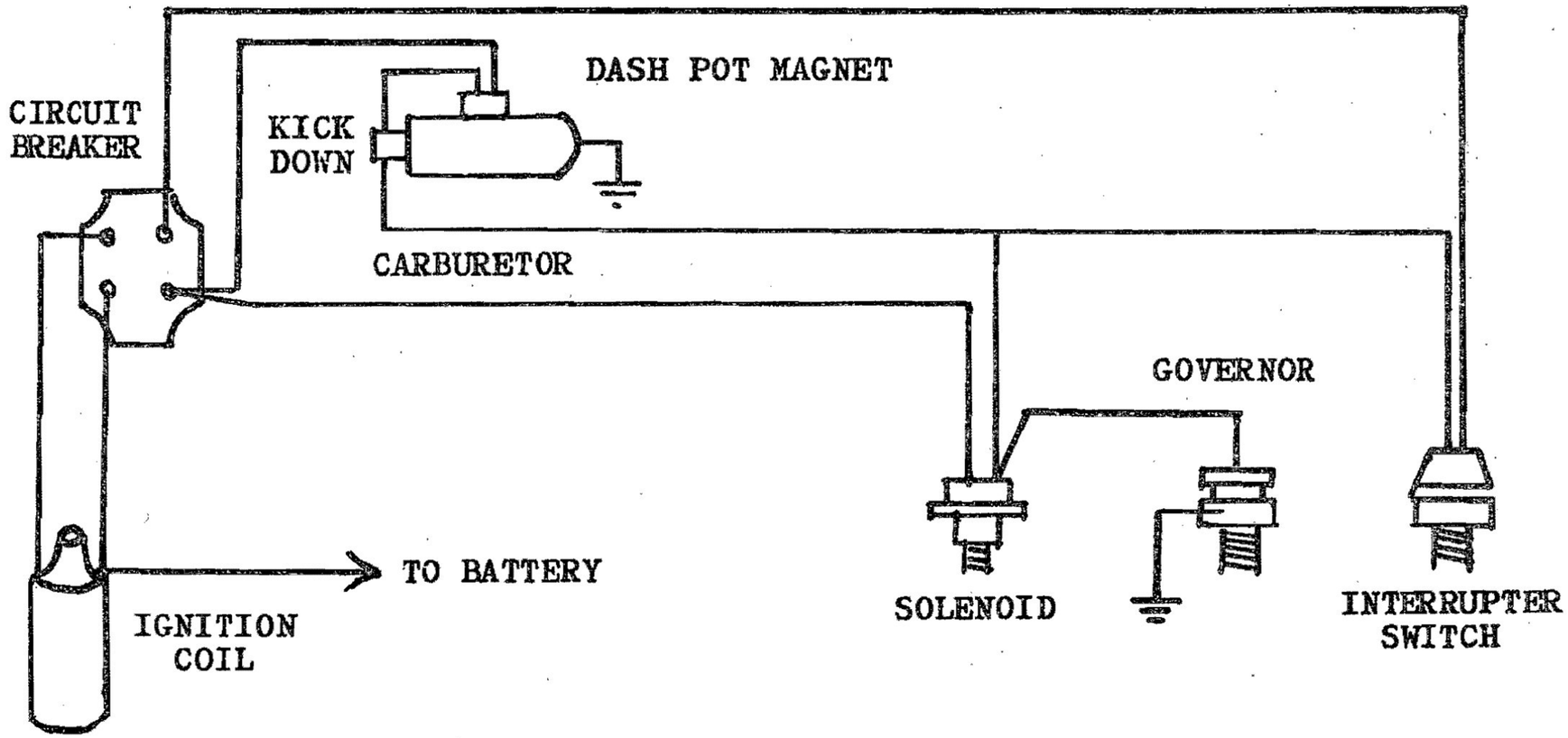
CHECK BETWEEN BARS, AT END OF COMMUTATOR HALF WAY BETWEEN TOP AND BOTTOM ON SIDE WITH HACK SAW BLADE, OR LOW VOLTAGE BULB. SPARK OR LIGHT SHOULD BE EQUAL ON ALL BARS. NO LIGHT OR SPARK INDICATES OPEN CIRCUIT.

CHECKING A STARTER ASSEMBLED FOR LEAKAGE

RAISE GROUNDED CARBON BRUSHES, PLACE ONE PROD ON FIELD LEAD OR INSULATED HOLDER AND OTHER TO FRAME. CHECK STARTER SWITCH TO FRAME FOR LEAKAGE AND GROUND. OTHER-WISE CHECK SAME AS GENERATORS.

NOTE:CHECK MFG. SPECIFICATIONS-SOME STARTER FIELDS ARE GROUNDED

CHRYSLER AUTOMATIC TRANSMISSION



CHECKING CHRYSLER, DESOTO AND DODGE AUTOMATIC TRANSMISSIONS

EACH CASE OF TROUBLE SHOULD BE GIVEN CONSIDERABLE THOUGHT. THE TYPE OF TROUBLE ENCOUNTERED WILL IN MANY CASES INDICATE THE POSSIBLE DEFECTIVE PARTS THAT SHOULD BE TESTED FIRST.

TESTING CONTINUITY OF THE ELECTRICAL UNITS.

USE THE TEST LIGHT POSITION. REMOVE WIRES BEFORE TESTING UNITS.

CHECK MANUFACTURERS SPECIFICATIONS TO DETERMINE WHETHER UNIT UNDER TEST IS NORMALLY OPEN OR CLOSED WHEN TRANSMISSION IS NOT IN OPERATION.

TESTING LEAKAGE OF THE ELECTRICAL UNITS.

USE LEAKAGE TEST POSITION. REMOVE WIRES BEFORE TESTING UNITS.

TEST EACH INSULATED TERMINAL TO GROUND.

TEST CONTINUITY OF WIRING.

USE TEST LIGHT POSITION.

REMOVE BOTH ENDS OF WIRE AND TEST FOR CONTINUITY.

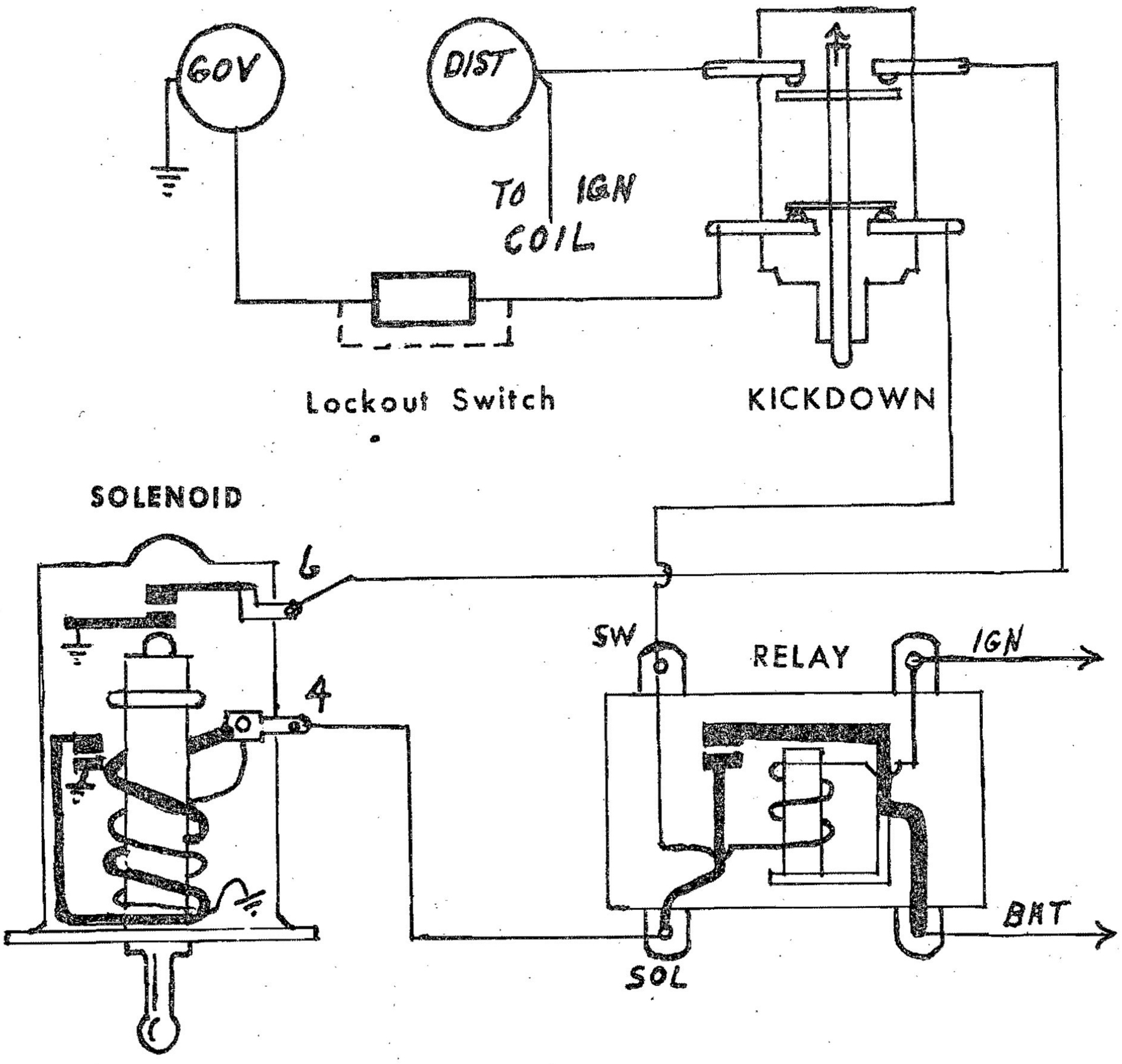
TESTING LEAKAGE OF WIRING.

USE LEAKAGE POSITION.

WHILE WIRE IS DISCONNECTED FOR CONTINUITY TEST PLACE ONE SMALL PROD ON WIRE AND THE OTHER TO GROUND.

MORE THAN NORMAL GLOW SHOWS DEFECTIVE INSULATION.

WARNER R10 & 11 OVERDRIVE



SEE INDIVIDUAL CAR WIRING FOR CONNECTION OF IGN. & BAT TERMINALS ON RELAY.

LOCKOUT SWITCH HAS BEEN DISCONTINUED ON SOME LATE MODEL CARS.

TESTING OVERDRIVE

1- WITH IGNITION SWITCH ON USE JUMPER FROM IGN. TO SOL. OF RELAY. SOLENOID SHOULD CLICK.

2- WITH IGNITION SWITCH ON USE JUMPER FROM SW. TERMINAL OF RELAY , TO GROUND OF RELAY. BOTH RELAY AND SOLENOID SHOULD CLICK.

3- UNHOOK LINE NO. 4 AT SOLENOID, LINE AT DISTRIBUTOR TO KICKDOWN SWITCH, IGNITION LINE AND BATTERY LINE AT RELAY. ALL LINES SHOULD SHOW NO LEAKAGE TO GROUND.

4- CHECK ALL WIRES FOR CONTINUITY.

5- CHECK IGNITION LINE AND DISTRIBUTOR CIRCUIT FOR LEAKAGE.

6- CHECK BATTERY LINE FOR LEAKAGE. (LOW BATTERY WILL CAUSE OVERDRIVE TROUBLE)

7- CHECK POSITION OF KICKDOWN SWITCH ADJUSTMENT.

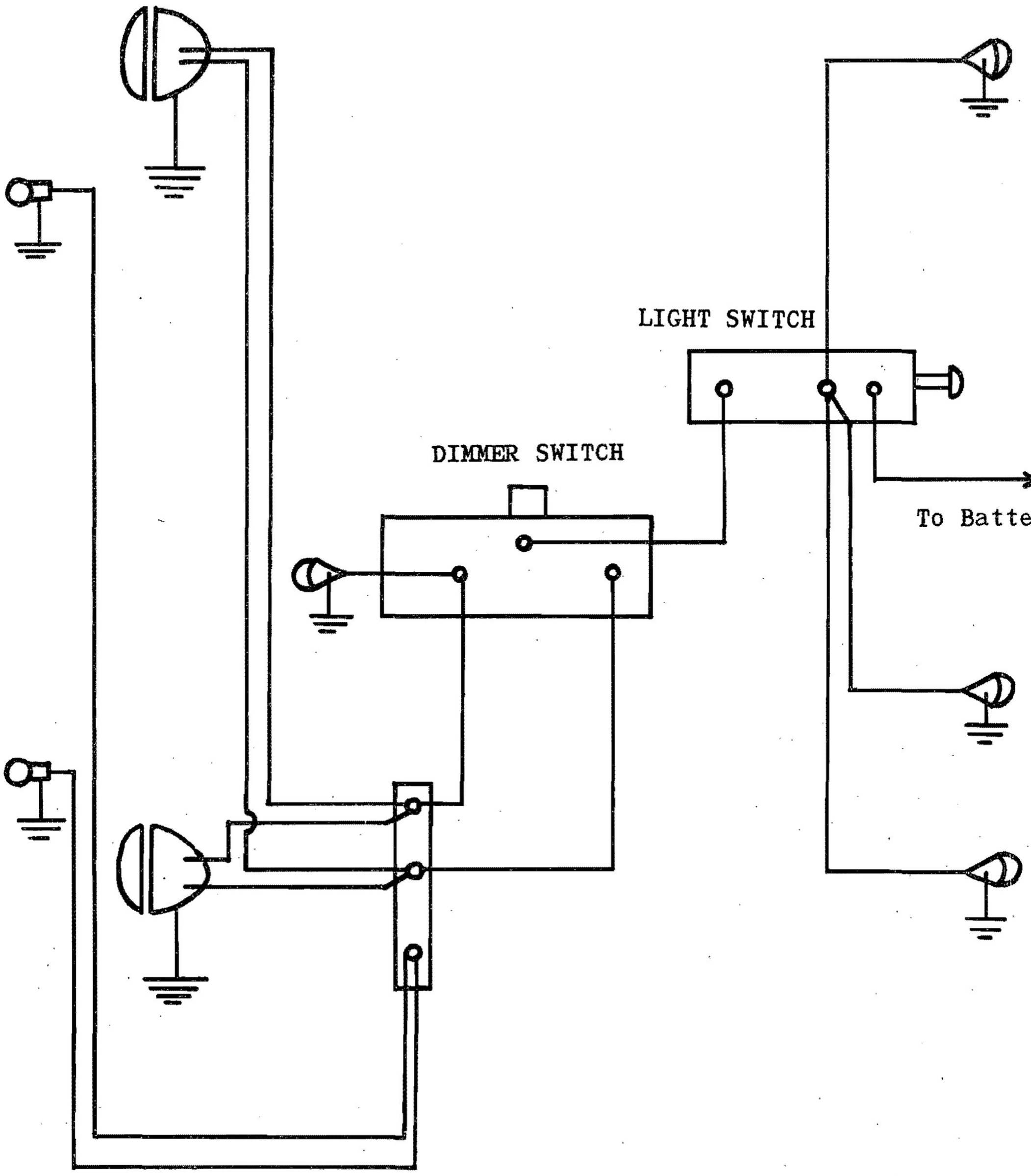
8- UNHOOK WIRE TO GOVERNOR AND JACK UP REAR WHEELS AND RUN IN GEAR TO ABOUT 25 TO 28 MILES PER HOUR AND USE TEST LIGHT ON LINE TO GROUND AT GOVERNOR. TEST LIGHT SHOULD LIGHT.

9- USE TEST LIGHT ON TWO UPPER TERMINALS OF KICKDOWN SWITCH. THESE TWO TERMINALS SHOULD SHOW CONTINUITY WHEN SWITCH IS IN NORMAL POSITION.
PRESS KICKDOWN SWITCH DOWN AND TEST ACROSS THE OTHER TWO TERMINALS. IN THIS POSITION THE LOWER TWO TERMINALS SHOULD SHOW CONTINUITY.

10- REMOVE BOTH WIRES FROM SOLENOID. SOLENOID LINE NO. 4 SHOULD SHOW CONTINUITY TO GROUND. SOLENOID NO. 6 SHOULD SHOW NO GROUND OR LEAKAGE.

11. REMOVE ALL WIRES FROM RELAY, THEN ALL TERMINALS SHOULD SHOW NO CONTINUITY OR LEAKAGE TO GROUND.

LIGHT LINE CHECK



LIGHT LINE CHECK

WHEN FUSE OR BREAKER BREAKS WITH HIGH OR LOW BEAM LIGHTS ON OR WITH JUST PARKING LIGHTS ON, SHORT OR TROUBLE IS IN TAIL LIGHT CIRCUIT.

FUSE OR BREAKER NOT BREAKING WHEN LIGHTS ARE IN HIGH OR LOW BEAM POSITION, BUT DOES BREAK IN PARKING LIGHT POSITION: SHORT OR TROUBLE IS IN FRONT PARKING LIGHT SECTION.

WHEN FUSE OR BREAKER BREAKS ON HIGH AND LOW BEAM, BUT NOT IN PARKING LIGHT POSITION, TROUBLE IS BETWEEN LIGHT SWITCH AND HIGH OR LOW BEAM SOCKETS. DISCONNECT SEAL BEAMS AND RECHECK.

WHEN LIGHT SWITCH IS OFF THERE IS USUALLY NO CONNECTION BETWEEN HEAD AND TAIL LIGHT SECTION.

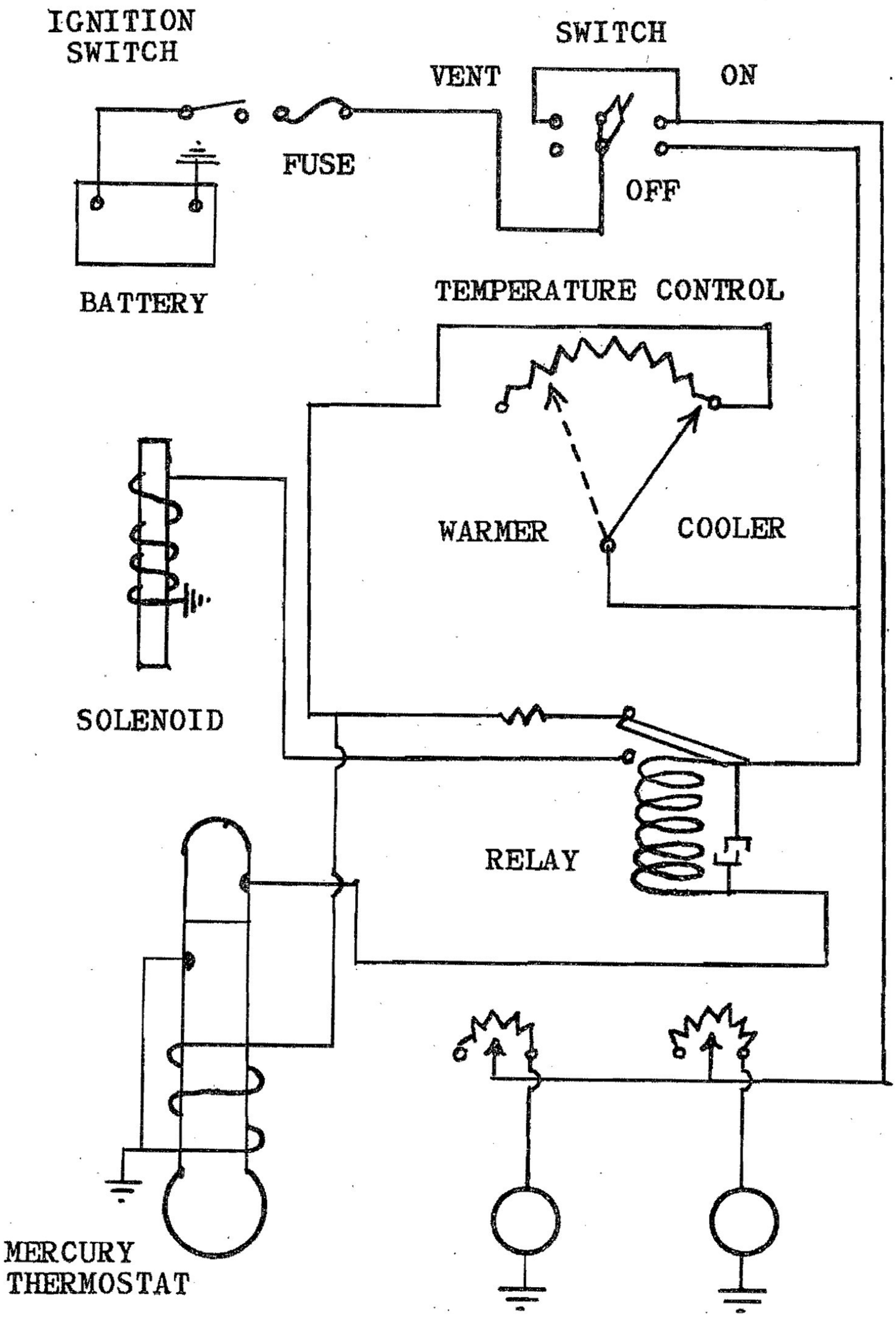
NOTE: REMOVE ALL BULBS, SOCKETS OR COMMON GROUNDS HOOKED IN THE LINES AND CHECK FROM LINE TO GROUND FOR LEAKAGE (USE LEAKAGE POSITION ON TESTER.) (USE HIGH POSITION TO SMOKE OUT THE SHORT.) IF LEAKAGE IN LINE IS NOT LOCATED UNHOOK SWITCH AND RECHECK. IF STILL BAD, UNHOOK FROM TERMINAL CONNECTORS, CHECK SOCKETS.

USE HIGH TENSION ON HOT WIRE TO LOCATE BARE WIRE NOT TOUCHING GROUND. NOTE: USE SMALL PROD ON FRAME OF CAR, HIGH TENSION INDICATOR WILL INDICATE IF THERE IS A LEAKY WIRE.

<u>CHECKING ACCESSORIES HOOKED ON ACCESSORY TERMINAL OF IGNITION SWITCH.</u>

UNHOOK GAS GAUGE AT TANK, AND REMOVE WIRE FROM BLOCK UNIT OF HEAT GAUGE AND CHECK FROM THE END OF THE WIRE REMOVED FROM THE HEAT GAUGE. (IGNITION SWITCH IN THE OFF POSITION.) IF LEAKY USE HIGH TO LOCATE. IF THIS DOES NOT LOCATE THE TROUBLE, UNHOOK AND CHECK LINES SEPARATELY FROM THE ACCESSORY TERMINAL AT THE IGNITION SWITCH.

NOTE: SOME LATE MODEL CARS HAVE DASH UNITS GROUNDED. THIS WILL GIVE A FALSE TEST ON ACCESSORY LINE.


IGNITION SWITCH
SWITCH
VENT
ON
FUSE
OFF
BATTERY
TEMPERATURE CONTROL
WARMER
COOLER
SOLENOID
RELAY
MERCURY THERMOSTAT
BLOWER MOTORS

TESTING AUTOMOTIVE AIR CONDITIONING

FOR ALL LEAKAGE TESTS USE LEAKAGE POSITION.

FOR ALL CONTINUITY TESTS USE TEST LIGHT.

CHECK FUSE AND CLIP HOLDERS.

REMOVE GROUNDS ON BLOWER AND MOTORS.

PLACE SWITCH IN VENT POSITION AND MAKE THE FOLLOWING CHECKS.

1— CHECK BATTERY LINE FOR LEAKAGE.

THIS CHECKS THE SWITCH, LINE TO VARIABLE SPEED MOTORS, VARIABLE SPEED MOTORS AND LINES FOR LEAKAGE TO GROUND.

2— CHECK THE SAME CIRCUITS FOR CONTINUITY.

REMOVE GROUND ON THERMOSTAT AND SOLENOID.

PLACE SWITCH TO ON POSITION.(OPPOSITE VENT) AND MAKE THE FOLLOWING CHECKS.

1— CHECK LINE FOR LEAKAGE TO GROUND.

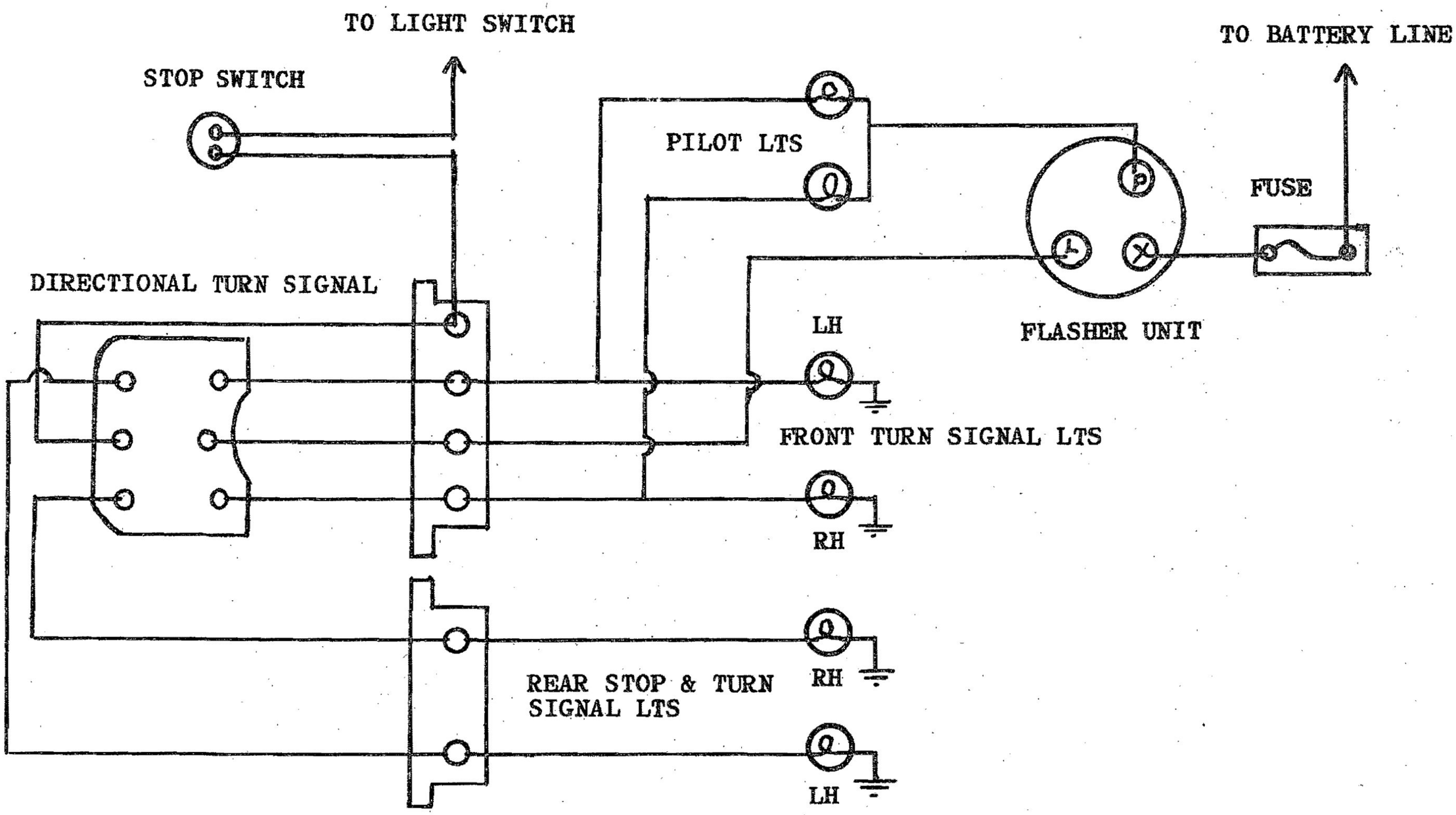
THIS CHECKS LINE TO AND TEMPERATURE CONTROL, LINE TO AND MERCURY THERMOSTAT AND THERMOSTAT SIDE OF THE RELAY.

CHECK THE SOLENOID SIDE OF RELAY FOR LEAKAGE IN CASE THE POINTS ARE OPEN TO SOLENOID.

2— CHECK THE SAME CIRCUITS FOR CONTINUITY.

MAKE CAREFULL VISUAL INSPECTION OF ALL RELAY POINTS AND TERMINAL CONNECTIONS.

DIRECTIONAL TURN SIGNAL CHECK



TESTING DIRECTIONAL TURN SIGNALS

IN SOME CASES WHERE JUST ONE SECTION OR INDICATOR LIGHT FAILS IT IS BEST TO FIRST RUN A JUMPER WIRE DIRECT FROM THE BATTERY TO THE LEAD WIRE OF THE DEFECTIVE SECTION.

THIS PROVES WHETHER THE TROUBLE IS BEYOND THE FLASHER AND SWITCH.

THE FOLLOWING TESTS MAY BE MADE FOR CERTAIN SECTIONS WHERE THE TROUBLE HAS BEEN LOCALIZED.

FOR ALL LEAKAGE TESTS USE LEAKAGE POSITION.

FOR ALL CONTINUITY TESTS USE TEST LIGHT.

CHECK FUSE AND FUSE CLIP HOLDERS.

REMOVE BOTH RIGHT AND LEFT INDICATOR LIGHTS IN DASH.

REMOVE BOTH RIGHT AND LEFT FLASH BULBS IN TAIL LIGHT SECTION.

REMOVE BOTH RIGHT AND LEFT FLASH BULBS IN FRONT SECTION.

WITH FUSE REMOVED CHECK CIRCUIT FOR LEAKAGE.

THIS CHECKS FUSE BLOCK AND BATTERY SIDE OF FLASHER UNIT.

PLACE DIRECTIONAL SWITCH IN RIGHT TURN POSITION.

CHECK CIRCUIT FOR LEAKAGE TO GROUND.

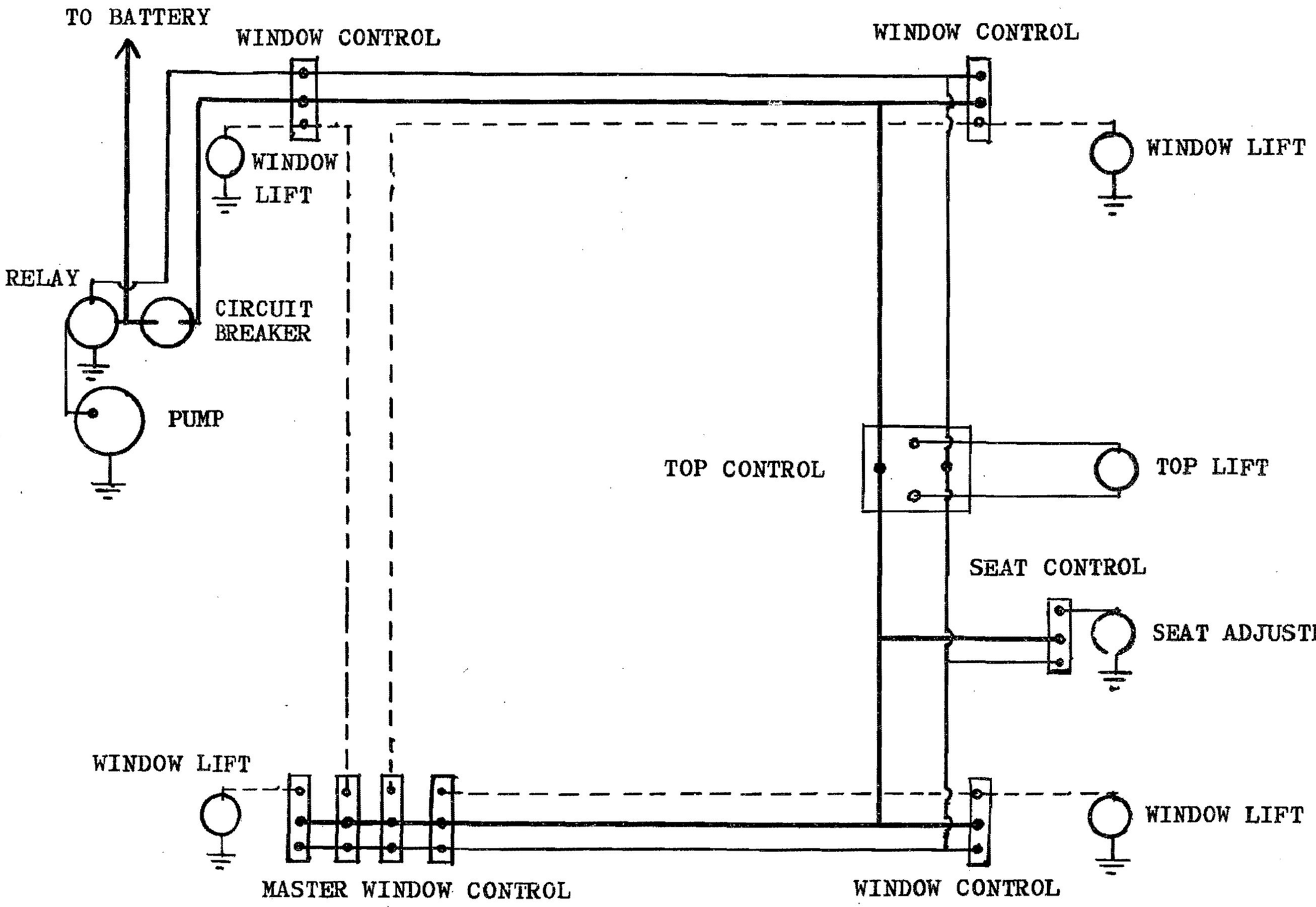
PLACE DIRECTIONAL SWITCH IN RIGHT TURN POSITION.

CHECK CIRCUIT FOR LEAKAGE TO GROUND.

TEST ALL BULB SOCKETS FROM INSIDE OF TERMINAL TO GROUND FOR LEAKAGE.

CHECK ALL CIRCUITS FOR CONTINUITY.

HYDRO-LECTRIC WINDOW CONTROL



CHECKING HYDRAULIC OPERATED WINDOW LIFTS

FOR ALL LEAKAGE TESTS USE LEAKAGE POSITION.

FOR ALL CONTINUITY TESTS USE TEST LIGHT.

CHECK DOOR SWITCHES TO SEE IF THEY ENERGIZE THE MOTOR AND PUMP.

IF THE PUMP IS NOT ENERGIZED THE SOLENOID OR MOTOR MUST BE CHECKED. RUN JUMPER WIRE DIRECT FROM BATTERY TO MOTOR. IF MOTOR RUNS THE SOLENOID IS BAD OR HAS A BAD CONNECTION.

WHEN THE MOTOR AND SOLENOID ARE OPERATING THE LINE OR SWITCH IS EITHER GROUNDED, LEAKY OR OPEN.

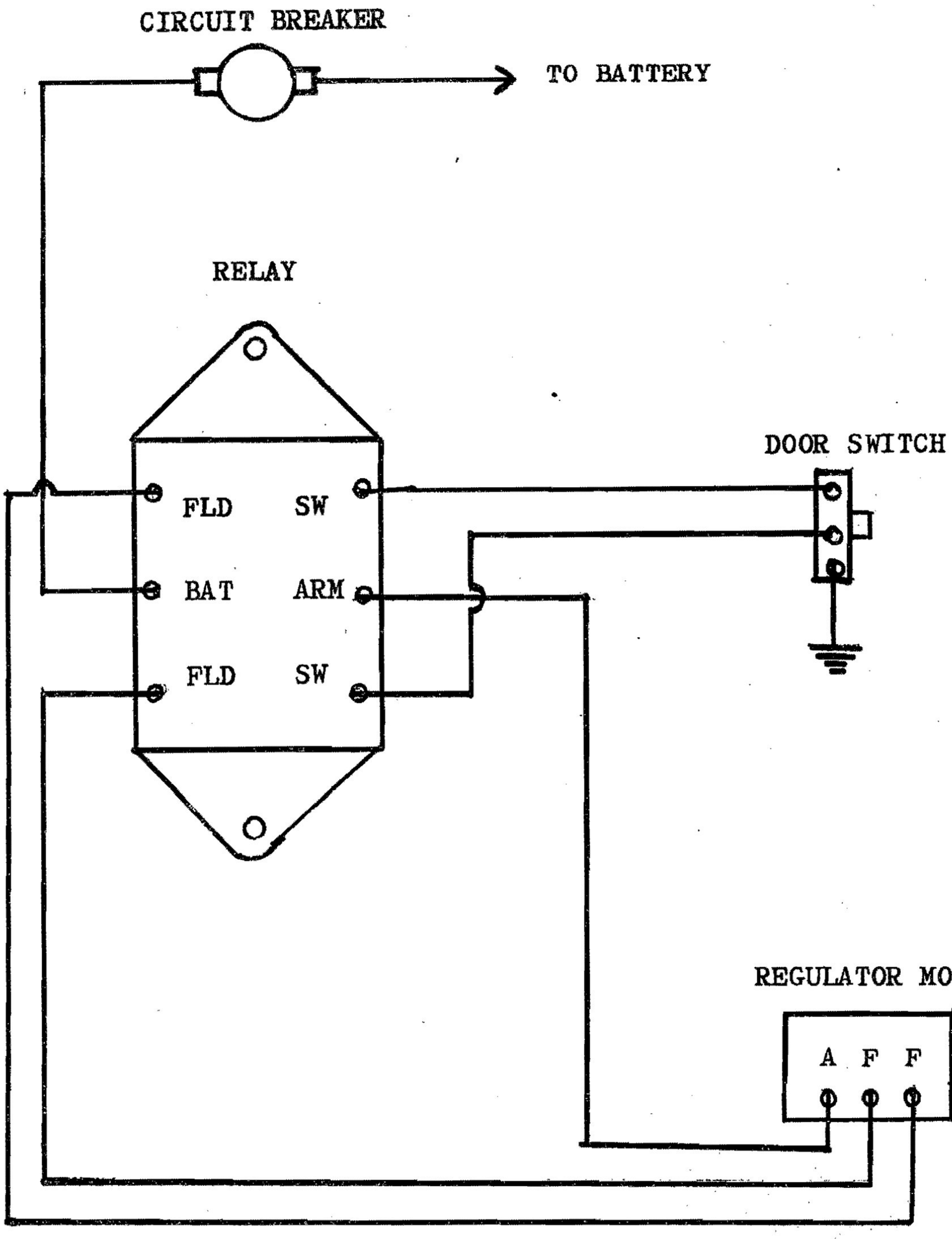
LIFT THE HOT WIRE FROM THE SOLENOID GOING TO THE WINDOW SWITCHES AND CHECK THIS CIRCUIT FOR LEAKAGE. THIS CHECKS ALL WIRING AND SWITCHES UP TO AND INCLUDING THE HOT SIDE OF THE DOOR SWITCHES. (USE LEAKAGE TESTS)

TEST WIRES FOR CONTINUITY

FAILURE OF A WINDOW TO LOWER CALLS FOR CHECKING OF THE SWITCH, LINE AND ELECTRICAL OPERATED VALVE IN THE DOOR OR SEAT.

CHECK ALL CIRCUITS FOR LEAKAGE AND CONTINUITY.

ELECTRIC WINDOW CONTROL



CHECKING ELECTRIC WINDOW LIFTS

FAILURE OF ELECTRIC WINDOWS TO OPERATE DENOTES LOW BATTERY, LEAKY OR OPEN CIRCUITS, FAULTY MOTOR OR RELAY.

FOR ALL LEAKAGE TESTS USE LEAKAGE POSITION.

FOR ALL CONTINUITY TESTS USE TEST LIGHT.

REMOVE WIRE FROM CIRCUIT BREAKER OR FUSE AND CHECK CIRCUIT FOR LEAKAGE.

TEST CIRCUIT FOR OPENS.

VISUAL INSPECTION OF RELAY. (POINTS BURNED OR NOT MAKING CONTACT).

CHECKING WHEN INDIVIDUAL WINDOW DOES NOT OPERATE

EACH WINDOW MOTOR MAY BE CHECKED BY USING A JUMPER WIRE FROM BATTERY TO ARMATURE POST AND ONE FIELD CONNECTION. CONNECT THE OTHER FIELD WIRE WITH THE ARMATURE POST TO REVERSE THE MOTOR.

IF SWITCH FAILS TO OPERATE MOTOR, CHECK SWITCH AND WIRING FOR CONTINUITY AND LEAKAGE.

CHECKING ELECTRIC WINDOW LIFTS ON FORD PRODUCTS

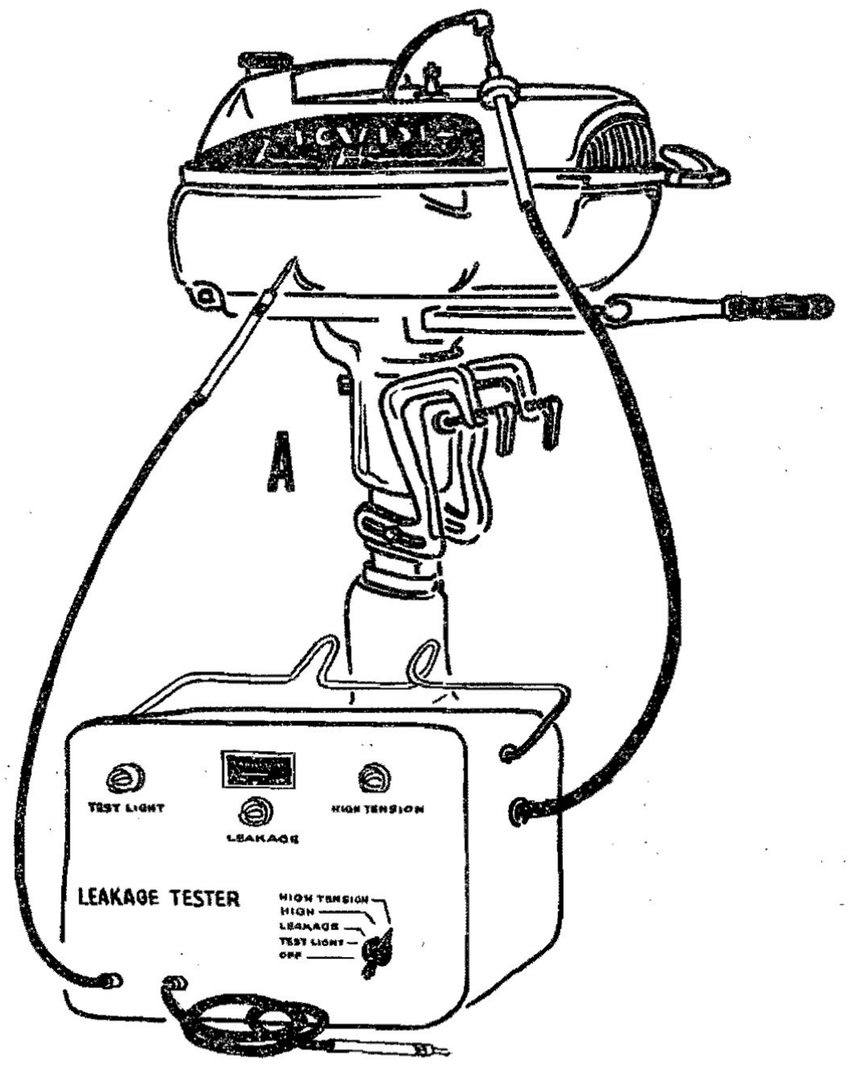
ALL TESTS ARE MADE IN THE SAME MANNER EXCEPT THE TESTS MADE ON THE ELECTRIC MOTOR.

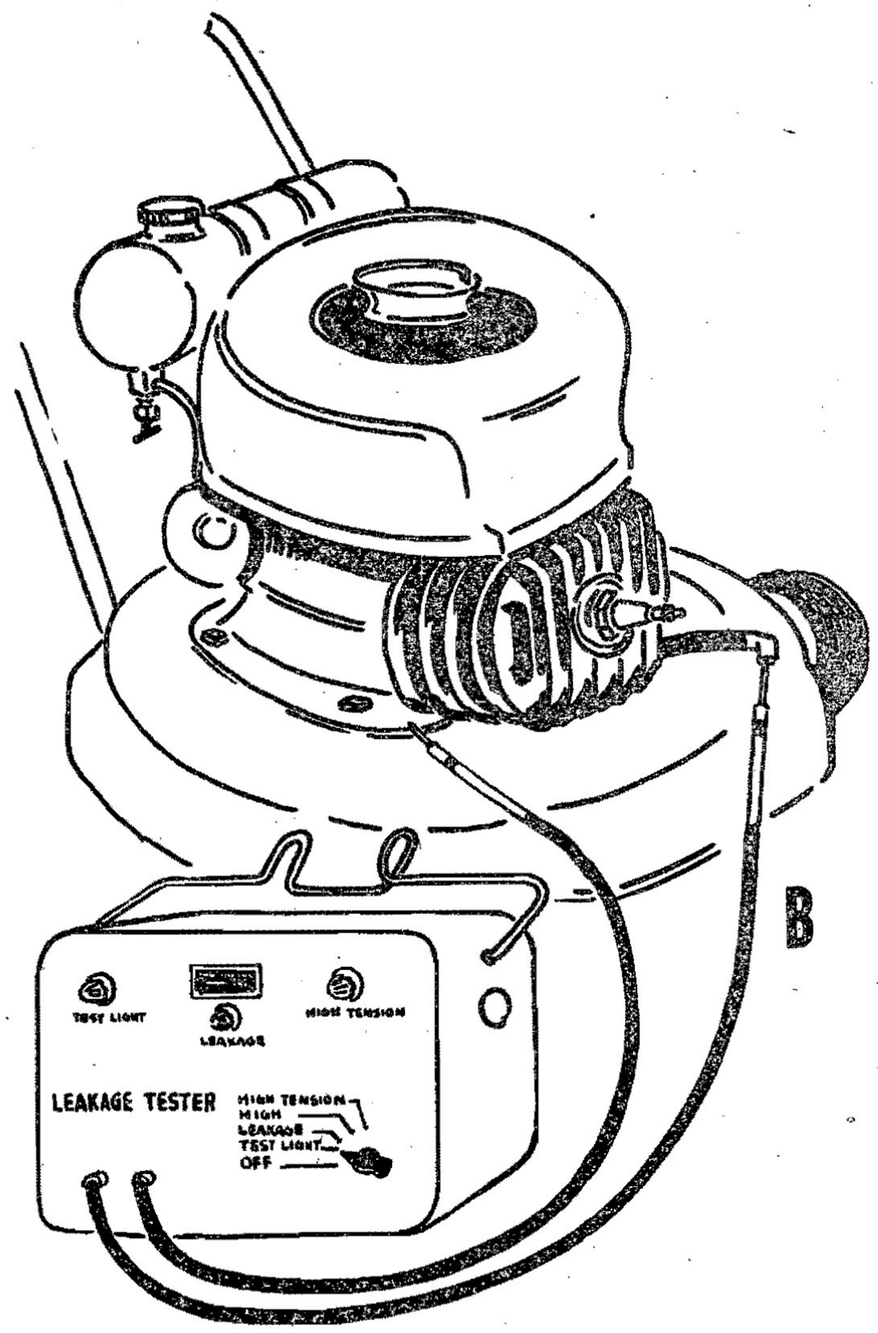
TESTING INDIVIDUAL ELECTRIC MOTOR.

USE JUMPER WIRE FROM BATTERY TO ONE TERMINAL OF MOTOR.

CONNECT THE JUMPER WIRE TO THE OTHER TERMINAL TO REVERSE THE MOTOR.

TESTING OUTBOARD AND SMALL GASOLINE MOTORS FOR LEAKAGE





TESTING OUTBOARD AND SMALL GASOLINE MOTORS FOR LEAKAGE

ILLUSTRATION A—TESTING HIGH TENSION CIRCUIT.

I - REMOVE HIGH TENSION WIRE FROM PLUG.

2 - PLACE ROTOR SWITCH IN HIGH TENSION POSITION.

3 - PLACE EITHER SMALL PROD TO GROUND.

4 - PLACE HIGH TENSION PROD ON END OF SPARK PLUG WIRE.

5 - HIGH TENSION INDICATOR LIGHT WILL FLASH IF WIRE OR COIL IS LEAKING TO GROUND.

6 - APPLY SAME TESTS TO ALL SMALL GASOLINE MOTORS.

7 - REFER TO PAGES I6,I7,I8,I9,22 and 40 FOR LEAKAGE TESTS ON DISSEMBLED UNITS.

ILLUSTRATION B— TESTING FOR OPENS IN HIGH TENSION CIRCUIT.

I - REMOVE WIRE FROM SPARK PLUG.

2 - PLACE ROTOR SWITCH IN TEST LIGHT POSITION.

3 - PLACE EITHER SMALL PROD TO GROUND.

4 - PLACE THE OTHER SMALL PROD TO END OF SPARK PLUG.WIRE.

5 - TEST LIGHT SHOULD LIGHT.

6 - NO LIGHT INDICATES OPEN WIRE OR COIL.

7 - APPLY SAME TEST TO ALL SMALL MOTORS.

8 - REFER TO PAGES I2,22,and 40 FOR FURTHER TESTS OF DISSEMBLED UNITS.

TRACTOR IGNITION AND MAGNETO CHECKING

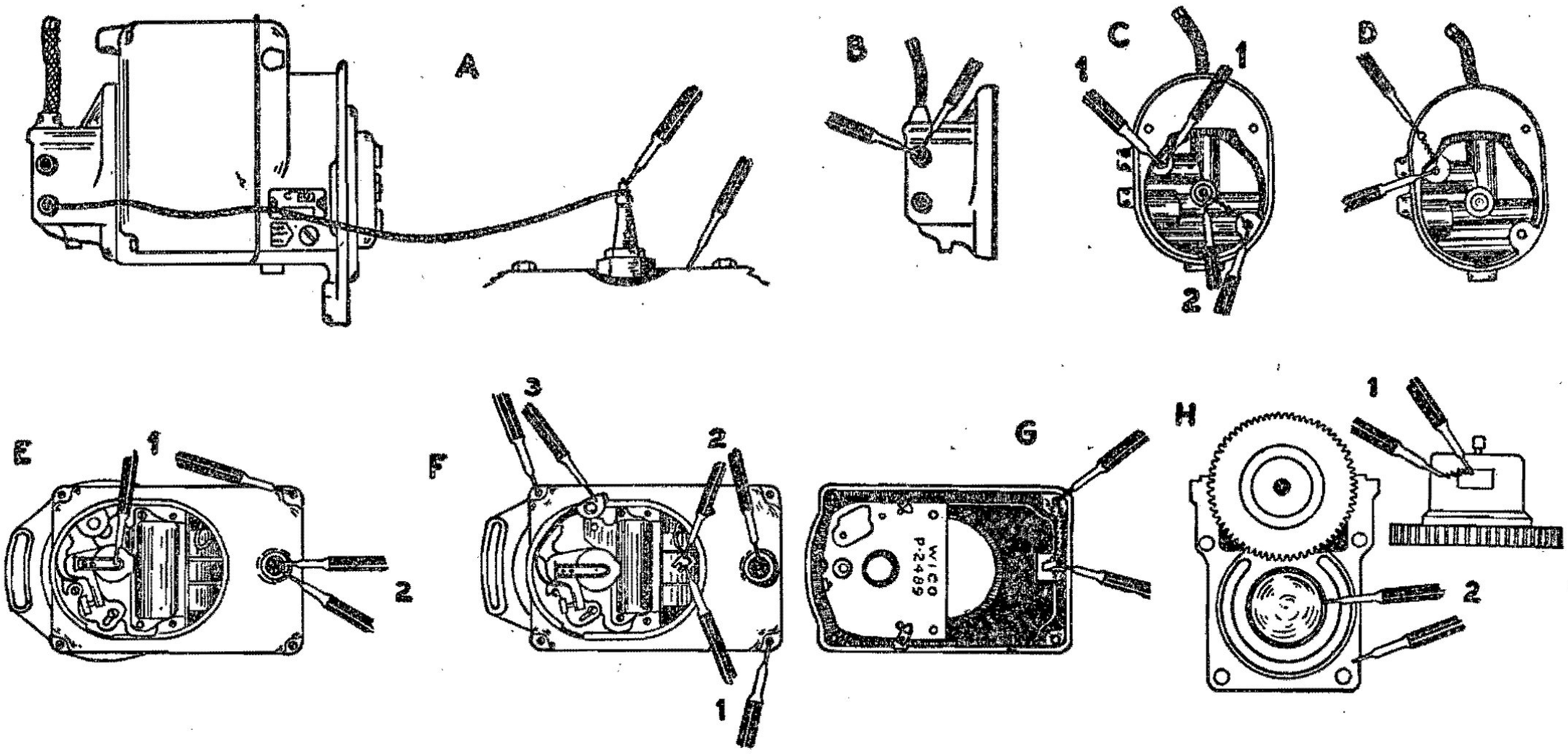


ILLUSTRATION A (LEAKAGE POSITION) CHECK SPARK PLUGS FROM TOP OF PLUG TO MOTOR. THIS CHECKS PLUG, WIRE AND CAP FOR LEAK TO FRAME.

ILLUSTRATION B (LEAKAGE POSITION) PLACE ONE PROD INSIDE POST TOUCHING METAL AND RUN THE OTHER PROD AROUND THE INSIDE AND TOP OF EACH POST.

ILLUSTRATION C FIG.— I— (LEAKAGE POSITION) PLACE ONE PROD ON TERMINAL POST INSIDE OF CAP AND THE OTHER AROUND THE SAME FOR CRACKS.
FIG. 2— CHECK FROM POST TO POST FOR LEAKS.

ILLUSTRATION D (LEAKAGE POSITION) CHECK TERMINAL POST TO SCREWS INSIDE FOR CAP CRACKS.

ILLUSTRATION E FIG.I— (LEAKAGE POSITION) CHECK DISTRIBUTOR ARM FOR CRACKS BY PLACING ONE PROD ON METAL OF SAME AND ONE TO FRAME OF MAG.
FIG.2— (LEAKAGE POSITION) ONE PROD INSIDE HIGH TENSION POST TOUCHING THE METAL AND THE OTHER PROD AROUND THE INSIDE AND TOP OF POST.

ILLUSTRATION F FIG. I— (TEST LIGHT) PLACE ONE PROD ON COIL LEAD AND OTHER TO FRAME FOR GROUND AND CONTINUITY CHECK.
FIG. 2— (TEST LIGHT) PLACE ONE PROD ON COIL LEAD AND OTHER ON HIGH TENSION POST. IF COIL IS OPEN THE TEST LIGHT WILL NOT LIGHT. FAINT LIGHT INDICATES CONTINUITY. (MOST ARE COMPLETE. COMPARE NEW ONE SAME TYPE)
FIG. 3— (LEAKAGE POSITION) UNHOOK CONDENSER, TURN ROTOR TO OPEN POINTS AND CHECK BREAKER ARM TO FRAME FOR LEAKAGE.

ILLUSTRATION G (LEAKAGE POSITION) INSIDE OF COVER CAP PLACE ONE PROD ON HIGH TENSION OUTLET AND OTHER PROD TO EACH CORNER SCREW FOR CRACKS.

NOTE: USE HIGH TENSION TESTS ON ALL HIGH TENSION PARTS AS ON PAGES FOUR TO THIRTEEN INCLUSIVE.

TESTING DELCOTRONS & ALTERNATORS FOR OPENS & LEAKS

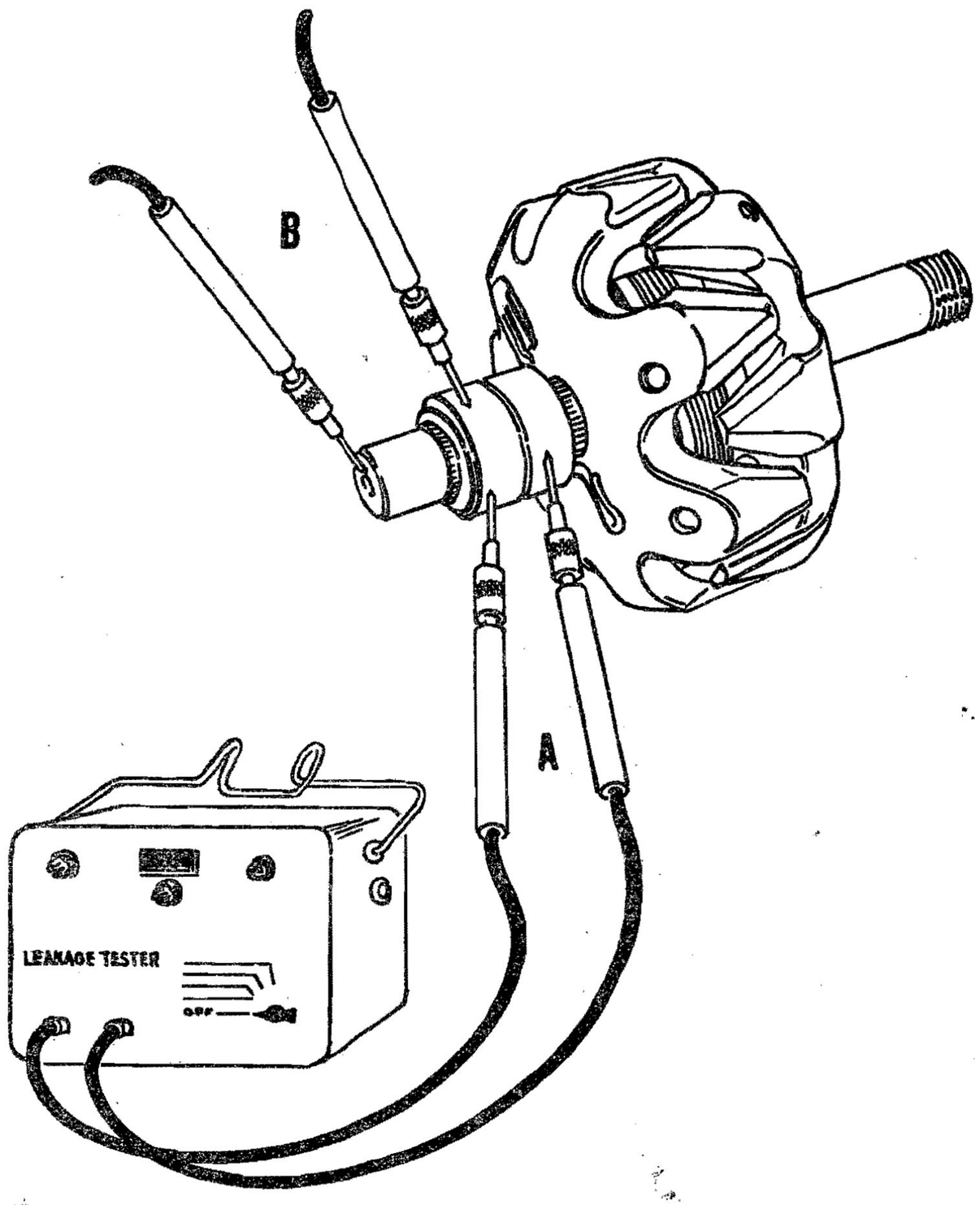


ILLUSTRATION-A-TESTING ROTOR WINDINGS FOR OPENS

1-PLACE ROTOR SWITCH IN TEST LIGHT POSITION.
2-PLACE ONE TEST PROD ON EACH SLIP RING.
3-TEST LIGHT SHOULD LIGHT.
4-NO LIGHT INDICATES OPEN WINDING.

ILLUSTRATION-B-TESTING ROTOR FOR LEAKAGE

1-PLACE ROTOR SWITCH IN LEAKAGE POSITION.
2-PLACE ONE TEST PROD ON ROTOR SHAFT AND ONE TO EITHER SLIP RING.
3-BRIGHT LIGHT INDICATES LEAKY OR GROUNDED WINDING OR SLIP RING.
4-FAINT LIGHT INDICATES NORMAL WINDING.

SERVICE ON NELSON TESTER CO.,INC.EQUIPMENT CAN
BE OBTAINED AT ANY ONE OF THE FOLLOWING PLACES.

GUARANTEE MUST ACCOMPANY EQUIPMENT BEING REPAIRED UNDER GUARANTEE

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SARCO INC.	2420 2nd AVE.	SEATTLE. WASH. 98121
ZUBERS RADIO SERVICE	1916 W.FRANKLIN	EVANSVILLE,IND.47712
GOLDEN RULE ELECTRIC	808 ELM	CINCINNATA,OHIO 45202
MAKUH ELECTROLAB	4787 MEMPHIS AVE.	CLEVELAND,OHIO 44109
CONTE APPLIANCE	716 CEDAR AVE.	SCRANTO, PA. 18505
C.A. LEPPERT	914 EYE ST.	WASHINGTON,D.C.20001
FORTUNATO ELECT.APPL.SER.	808 BUTTERNUT ST.	SYRACUSE,N.Y. 13208
THE RUSSELL CO.	46 DEVERAUX	UTICA, N.Y. 13501
P.SCHELLIS ELECT.SER.	602 J ST.	MANITOWAC,WISC.54220
WOODALL ELECT.SER.	1024 BLVD. N.E.	ATLANTA, GA. 30308
HUNTER ELECT.CO.INC.	1411 S. TRYON	CHARLOTTE,N.C.28203
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BOISE SMALL APPL.SER.	912 JEFFERSON	BOISE, IDAHO 83702
FRANK EDWARDS CO.	551 E.STATE	SALT LAKE CITY,UTAH
FLINT EQUIP.& SER.	577 WASHINGTON	BOSTON,MASS. 02111
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SHIELD BROS.	1410 MAIN ST.	BUFFALO, N.Y. 14209
NORTHEAST RADIO & CHARGER	239 CUMBERLAND AVE.	PORTLAND, MAINE 04111
CITY APPL. SER.	994 MAIN ST.	SPRINGFIELD,MASS.01103
HARMON AUTOMOTIVE	16 CHARLOTTE ST.	ROCHESTER,N.Y. 14607
VISTA RADIO	860 LOOP RD.	ANCHORAGE,ALASKA
ZARCO INC.	2420 2nd AVE.	SEATTLE, WASH. 98121
WESTCON	1910 N. KILLINGSWORTH St.	PORTLAND,ORE. 92717

TESTING DELCOTRONS & ALTERNATORS FOR OPENS & LEAKS

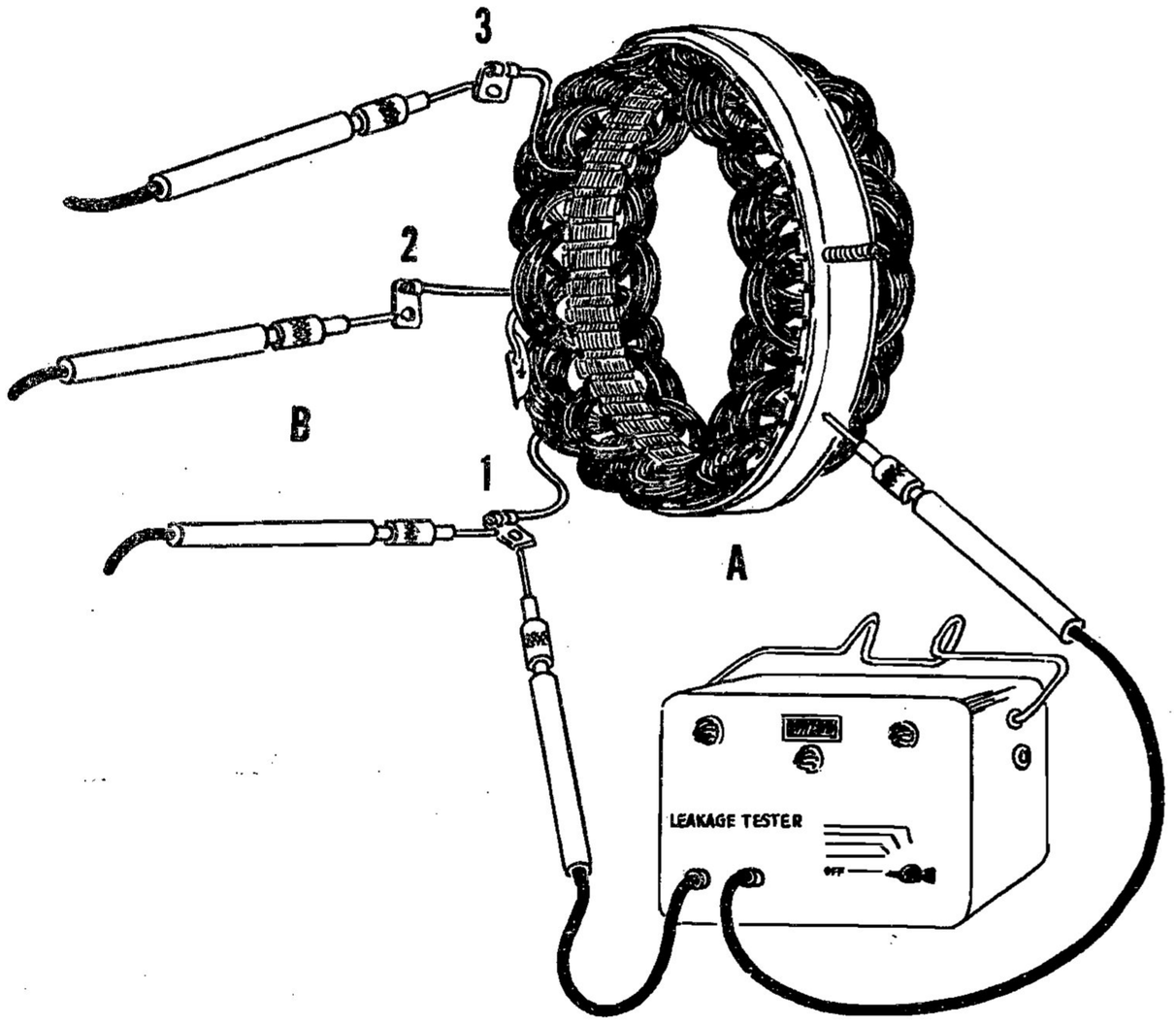

ILLUSTRATION-A-TESTING STATOR FOR LEAKAGE TO GROUND

1-PLACE ROTOR SWITCH IN LEAKAGE POSITION.
2-PLACE ONE TEST PROD TO GROUND AND ONE TO WINDING LEAD.
3-BRIGHT LIGHT INDICATES GROUNDED WINDING.
4-FAINT LIGHT INDICATES NORMAL WINDING.

ILLUSTRATION-B-TESTING STATOR WINDINGS FOR OPENS

1-PLACE ROTOR SWITCH IN TEST LIGHT POSITION.
2-PLACE TWO TEST LEADS BETWEEN TWO STATOR LEADS AT A TIME AND IN SUCCESSION.(1-2) (2-3)
3-TEST LIGHT SHOULD LIGHT.
4-NO LIGHT INDICATES OPEN WINDING.

TESTING INSULATED BRUSH HOLDER

WITH TESTER IN LEAKAGE POSITION,TEST FROM INSULATED BRUSH HOLDER TO GROUND.
FAINT LIGHT INDICATES INSULATION SATISFACTORY.