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# Colorized Mustang Wiring & Vacuum Diagrams

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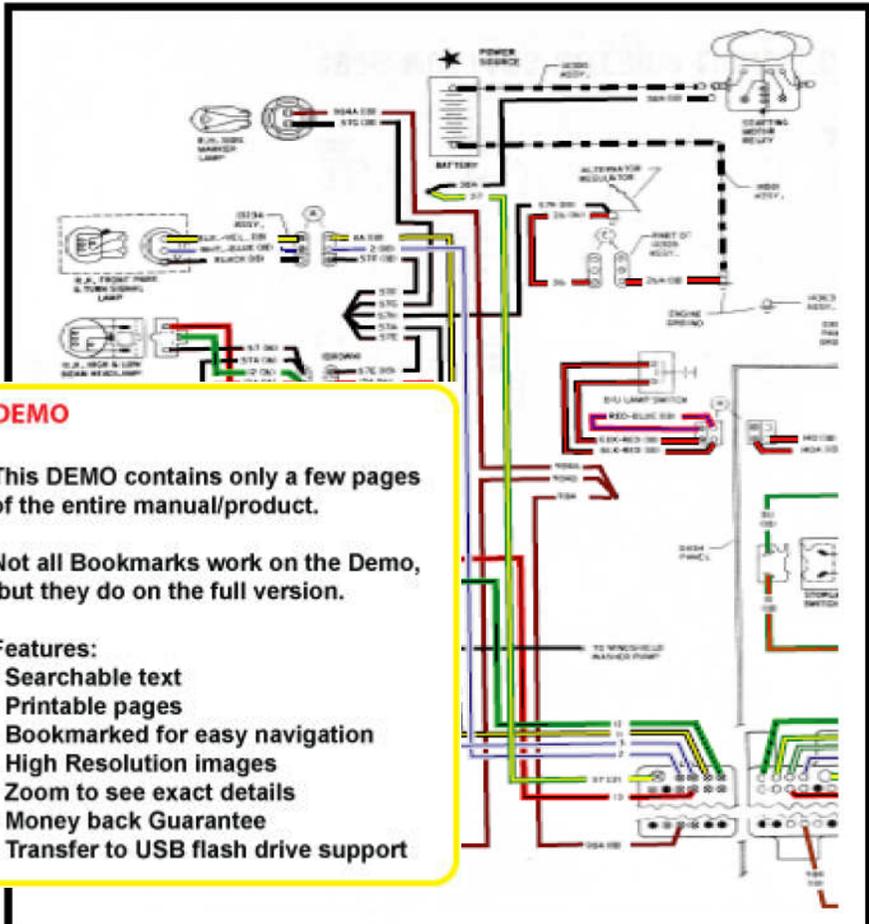
## Color diagrams for:

- Air Conditioner/Heater/Defroster
  - Convertible Top
  - Exterior Lights/Turn Signals/Brakes
  - Ignition, Starting and Charging
  - Instrument Panel
  - Interior Lights/Clock/Cigar Lighter
  - Radio, Stereo and Speakers
  - Seat Belt Warning Light and Horns
  - Speed Control
  - Tilt Wheel
  - Windshield Wiper and Washer
- ...and much more!!

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Example of colorized diagrams

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1969 Colorized Mustang Wiring and Vacuum Diagrams  
(Extracted from Form 7098-69-3, Form FD-7795P-69, FD-7943-69,  
FP-7635B, and FD-7943-G)  
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## **Note from the Editor**

This product was compiled using several original Ford Motor Company publications. In some cases, there are slight differences between publications, so it is important to compare between diagrams, schematics, or illustrations. The contents of this product were extracted from: *1969 Car Shop Manual* (Form 7098-69-1/5, November 1968), *1965/1972 Ford Car Master Parts and Accessory Catalog* (Form FP-7635B, May 1975, and *1969 Wiring Diagrams* (Form FD-7795P-69 & FD-7943-69) and *How to Read Wiring Diagrams* (FD-7943-G).

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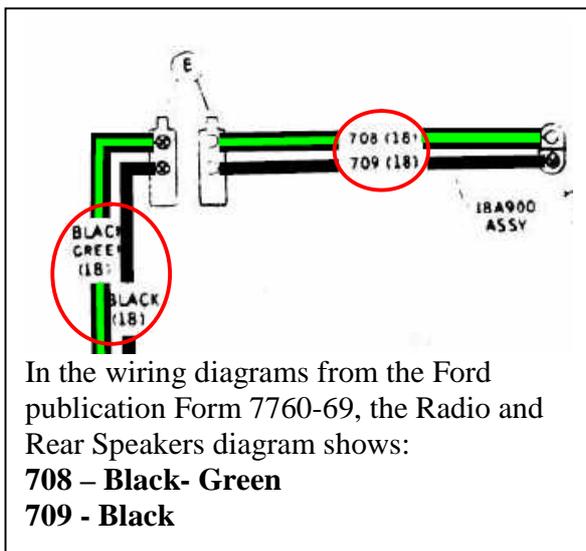
## ATTENTION

### Please Read This



It is important to note that differences exist between similar or like wiring diagrams even though they are original Ford publications. It is for this reason there may be multiple versions of what appears to be the same wiring diagram. If your vehicle has a color coded wire that does not match a diagram you should consult the other diagrams contained in the manual for a possible match.

#### *Example of differences*



| WIRING COLOR CODE |               |
|-------------------|---------------|
| 6                 | RED - GREEN   |
| 6A                | PINK          |
| 71                | YELLOW        |
| 762               | BROWN         |
| 640               | RED - YELLOW  |
| 708               | BLACK         |
| 709               | BLACK - GREEN |
| 904               | VIOLET        |

In the Wiring Color Code section of the exact same page shows:

- 708 – Black**
- 709 – Black-Green**

The color coded wiring diagrams are provided for illustration purposes only. Only the wire number should be used for the identification of the wire itself. The color coding of the wires in the product may not match the actual colors of the wires in the vehicle. In some cases, the colors have been altered to provide a visual contrast (i.e. the color white has been shaded to make it more visible). As stated in the paragraph above, there are some variation and/or differences between the original Ford wiring diagrams. If your vehicle has a color coded wire that does not match a diagram you should consult the other diagrams contained in the manual for a possible match.

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## 1969 Color Wiring Codes

| Number     | Wire Description           | Source              |
|------------|----------------------------|---------------------|
| 2          | WHITE-BLUE STRIPE          | Form 7760-69        |
| 3          | GREEN-WHITE STRIPE         | Form 7760-69        |
| 4          | WHITE-BLACK STRIPE         | Form 7760-69        |
| 5          | ORANGE-BLUE STRIPE         | Form 7760-69        |
| 8          | ORANGE-YELLOW STRIPE       | Form 7760-69        |
| 9          | GREEN-ORANGE STRIPE        | Form 7760-69        |
| 10         | GREEN-RED STRIPE           | Form 7760-69        |
| <b>11</b>  | <b>GREEN-YELLOW STRIPE</b> | <b>FD-7795P-69</b>  |
| <b>11</b>  | <b>BLACK-YELLOW STRIPE</b> | <b>FD-7795P-69</b>  |
| 11A        | BLACK-YELLOW STRIPE        | FD-7795P-69         |
| 12         | GREEN-BLACK STRIPE         | FD-7795P-69         |
| 12A        | RED-BLUE STRIPE            | FD-7795P-69         |
| 12B        | RED-BLUE STRIPE            | FD-7795P-69         |
| 13         | RED-BLACK STRIPE           | FD-7795P-69         |
| 14         | BLACK                      | FD-7795P-69         |
| 15         | RED-YELLOW STRIPE          | FD-7795P-69         |
| <b>16</b>  | <b>RED-GREEN STRIPE</b>    | <b>Form 7760-69</b> |
| <b>16</b>  | <b>PINK</b>                | <b>Form 7760-69</b> |
| 16A        | PINK                       | Form 7760-69        |
| 19         | BLUE-RED STRIPE            | Form 7760-69        |
| 19A        | BLUE-RED STRIPE            | Form 7760-69        |
| 19B        | BLUE-RED STRIPE            | Form 7760-69        |
| 19C        | BLUE-RED STRIPE            | Form 7760-69        |
| 19D        | BLUE-RED STRIPE            | Form 7760-69        |
| 19E        | BLUE-RED STRIPE            | Form 7760-69        |
| 21         | YELLOW                     | Form 7760-69        |
| 22         | BLUE-BLACK STRIPE          | Form 7760-69        |
| 25         | BLACK-ORANGE STRIPE        | Form 7760-69        |
| 26         | BLACK-RED STRIPE           | Form 7760-69        |
| <b>26A</b> | <b>BLACK-RED STRIPE</b>    | <b>Form 7760-69</b> |
| <b>26A</b> | <b>BLACK</b>               | <b>Form 7760-69</b> |
| 28         | BLACK                      | Form 7760-69        |
| 29         | Unknown                    | Form 7760-69        |
| <b>30</b>  | <b>BLACK-GREEN STRIPE</b>  | <b>Form 7760-69</b> |
| <b>30</b>  | <b>VIOLET</b>              | <b>Form 7760-69</b> |
| 30A        | VIOLET (Resistance Wire)   | Form 7760-69        |
| 31         | WHITE-RED STRIPE           | Form 7760-69        |
| 32         | RED-BLUE STRIPE            | Form 7760-69        |
| 32A        | RED-BLUE STRIPE            | Form 7760-69        |
| 32B        | Unknown                    | Form 7760-69        |
| 34         | GREEN-BLACK STRIPE         | Form 7760-69        |

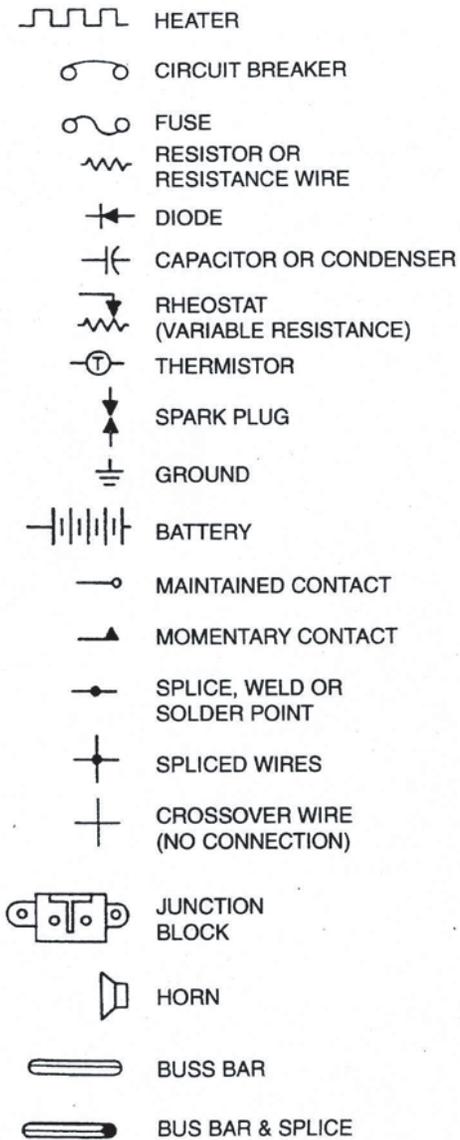
| Number     | Wire Description           | Source              |
|------------|----------------------------|---------------------|
| 35         | ORANGE                     | Form 7760-69        |
| <b>37</b>  | <b>BLACK-YELLOW STRIPE</b> | <b>Form 7760-69</b> |
| <b>37</b>  | <b>GREEN-YELLOW STRIPE</b> | <b>Form 7760-69</b> |
| 37A        | BLACK-YELLOW STRIPE        | Form 7760-69        |
| 38         | BLACK                      | Form 7760-69        |
| 38A        | BLACK                      | Form 7760-69        |
| 38B        | BLACK                      | Form 7760-69        |
| 39         | RED-WHITE STRIPE           | Form 7760-69        |
| 40         | BLUE-WHITE STRIPE          | Form 7760-69        |
| 44         | BLUE                       | FD-7795P-69         |
| 48         | Unknown                    | Form 7760-69        |
| 49         | WHITE-BLUE STRIPE          | Form 7760-69        |
| 50         | GREEN-WHITE STRIPE         | Form 7760-69        |
| 53         | BLACK-BLUE STRIPE          | Form 7760-69        |
| 53A        | BLACK-BLUE STRIPE          | Form 7760-69        |
| 53B        | BLACK-BLUE STRIPE          | Form 7760-69        |
| 53C        | BLACK-BLUE STRIPE          | Form 7760-69        |
| 53D        | BLACK-BLUE STRIPE          | Form 7760-69        |
| 53E        | BLACK-BLUE STRIPE          | Form 7760-69        |
| 53F        | BLACK-BLUE STRIPE          | Form 7760-69        |
| 54         | GREEN-YELLOW STRIPE        | Form 7760-69        |
| <b>54A</b> | <b>GREEN-YELLOW STRIPE</b> | <b>Form 7760-69</b> |
| <b>54B</b> | <b>GREEN-YELLOW STRIPE</b> | <b>Form 7760-69</b> |
| <b>54C</b> | <b>GREEN-YELLOW STRIPE</b> | <b>Form 7760-69</b> |
| <b>54D</b> | <b>GREEN-YELLOW STRIPE</b> | <b>Form 7760-69</b> |
| <b>54A</b> | <b>YELLOW-GREEN STRIPE</b> | <b>Form 7760-69</b> |
| <b>54B</b> | <b>YELLOW-GREEN STRIPE</b> | <b>Form 7760-69</b> |
| <b>54C</b> | <b>YELLOW-GREEN STRIPE</b> | <b>Form 7760-69</b> |
| <b>54D</b> | <b>YELLOW-GREEN STRIPE</b> | <b>Form 7760-69</b> |
| <b>54E</b> | <b>YELLOW-GREEN STRIPE</b> | <b>Form 7760-69</b> |
| 54F        | YELLOW-GREEN STRIPE        | Form 7760-69        |
| 57         | BLACK                      | Form 7760-69        |
| 57A        | BLACK                      | Form 7760-69        |
| 57B        | BLACK                      | FD-7795P-69         |
| 57C        | BLACK                      | FD-7795P-69         |
| 57D        | BLACK                      | FD-7795P-69         |
| 57E        | BLACK                      | FD-7795P-69         |
| 57F        | BLACK                      | FD-7795P-69         |
| 57H        | BLACK                      | FD-7795P-69         |
| 58         | WHITE                      | Form 7760-69        |
| 63         | RED                        | Form 7760-69        |

| Number     | Wire Description           | Source              |
|------------|----------------------------|---------------------|
| 87         | GREEN-ORANGE STRIPE        | Form 7760-69        |
| 122        | YELLOW                     | Form 7760-69        |
| 123        | RED                        | Form 7760-69        |
| 137        | YELLOW-BLACK STRIPE        | Form 7760-69        |
| 140        | BLACK-RED STRIPE           | Form 7760-69        |
| 140A       | BLACK-RED STRIPE           | Form 7760-69        |
| <b>152</b> | <b>YELLOW</b>              | <b>Form 7760-69</b> |
| <b>152</b> | <b>GREEN-BLACK STRIPE</b>  | <b>Form 7760-69</b> |
| 152A       | YELLOW                     | Form 7760-69        |
| 161        | GREEN-RED STRIPE           | Form 7760-69        |
| 162        | GREEN                      | Form 7760-69        |
| 175        | BLACK                      | Form 7760-69        |
| 257        | YELLOW                     | Form 7760-69        |
| 262        | BROWN                      | Form 7760-69        |
| 268        | RED                        | Form 7760-69        |
| 269        | BLUE                       | Form 7760-69        |
| 270        | BLACK                      | Form 7760-69        |
| 296        | RED                        | Form 7760-69        |
| <b>297</b> | <b>BLACK-GREEN STRIPE</b>  | Form 7760-69        |
| <b>297</b> | <b>BLUE-GREEN STRIPE</b>   | Form 7760-69        |
| <b>297</b> | <b>YELLOW-GREEN STRIPE</b> | Form 7760-69        |
| 297A       | BLACK-GREEN STRIPE         | Form 7760-69        |
| 375        | YELLOW-BLACK STRIPE        | Form 7760-69        |
| 375A       | YELLOW-BLACK STRIPE        | Form 7760-69        |
| 383        | RED-WHITE STRIPE           | Form 7760-69        |
| 385        | WHITE-RED STRIPE           | Form 7760-69        |
| 442        | GREEN-ORANGE STRIPE        | Form 7760-69        |
| 443        | GREEN-RED STRIPE           | Form 7760-69        |
| 444        | GREEN-BLACK STRIPE         | Form 7760-69        |
| 445        | ORANGE-BLUE STRIPE         | Form 7760-69        |
| 446        | ORANGE-WHITE STRIPE        | Form 7760-69        |
| 447        | ORANGE-RED STRIPE          | Form 7760-69        |
| 448        | GREEN-WHITE STRIPE         | Form 7760-69        |
| 449        | WHITE-BLUE STRIPE          | Form 7760-69        |
| 460        | YELLOW                     | Form 7760-69        |
| 469        | Unknown                    | Form 7760-69        |
| 482        | BLUE-YELLOW STRIPE         | Form 7760-69        |
| 482A       | BLUE-YELLOW STRIPE         | Form 7760-69        |
| 490        | BLUE-RED STRIPE            | Form 7760-69        |
| 511        | GREEN                      | Form 7760-69        |
| 520        | Unknown                    | Form 7760-69        |

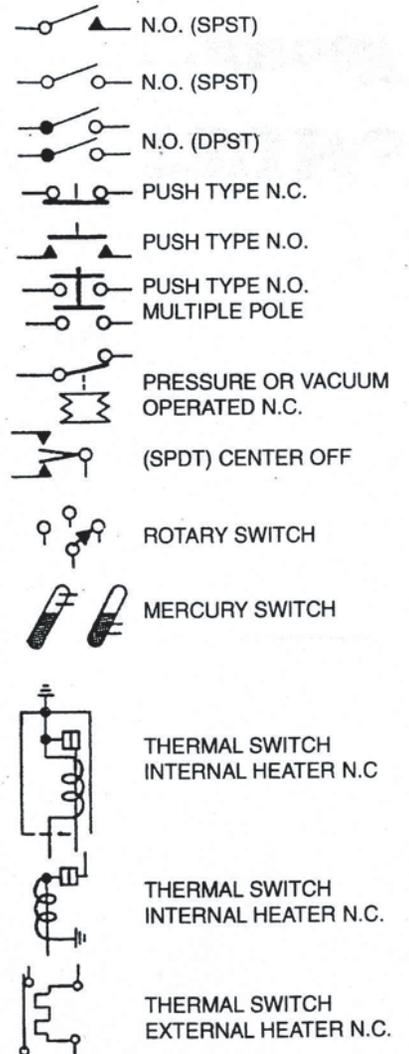
| Number | Wire Description    | Source       |
|--------|---------------------|--------------|
| 591    | BLACK-ORANGE STRIPE | Form 7760-69 |
| 592    | BLUE-WHITE STRIPE   | Form 7760-69 |
| 593    | YELLOW              | Form 7760-69 |
| 640    | RED-YELLOW STRIPE   | Form 7760-69 |
| 640A   | RED-YELLOW STRIPE   | Form 7760-69 |
| 643    | YELLOW-BLACK STRIPE | Form 7760-69 |
| 654    | YELLOW              | Form 7760-69 |
| 655    | RED                 | Form 7760-69 |
| 704    | VIOLET              | Form 7760-69 |
| 708    | BLACK               | Form 7760-69 |
| 709    | GREEN-BLACK STRIPE  | Form 7760-69 |
| 763    | ORANGE-WHITE STRIPE | Form 7760-69 |
| 806    | WHITE               | Form 7760-69 |
| 807    | ORANGE              | Form 7760-69 |
| 904    | VIOLET              | Form 7760-69 |
| 904    | GREEN-RED STRIPE    | Form 7760-69 |
| 923    | VIOLET              | Form 7760-69 |
| 914    | Unknown             | Form 7760-69 |
| 924    | RED                 | Form 7760-69 |
| 925    | WHITE               | Form 7760-69 |
| 950    | WHITE-BLACK STRIPE  | Form 7760-69 |
| 951    | GREEN               | Form 7760-69 |
| 977    | Unknown             | Form 7760-69 |
| 984    | BROWN               | Form 7760-69 |

Note – wire color codes highlighted in **RED** designate a difference either between the original Ford wiring publications or within the same publication. Those highlighted have the same wire number but have different color codes.

### CIRCUIT SYMBOLS

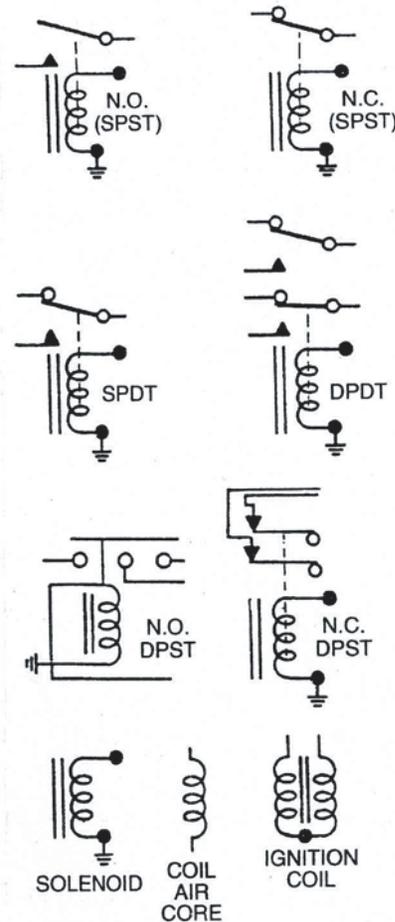


### SWITCHES

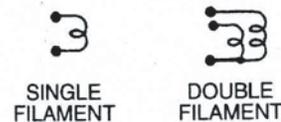


N.O. - NORMALLY OPEN  
 N.C. - NORMALLY CLOSED  
 S.P.S.T. - SINGLE POLE, SINGLE THROW  
 D.P.S.T. - DOUBLE POLE, SINGLE THROW  
 S.P.D.T. - SINGLE POLE, DOUBLE THROW  
 D.P.D.T. - DOUBLE POLE, DOUBLE THROW

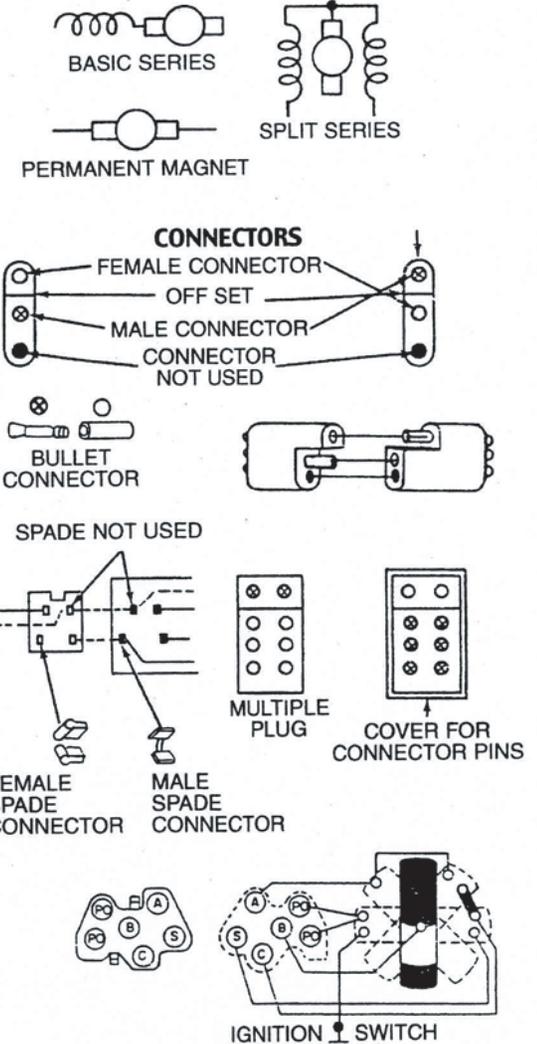
### RELAYS



### LAMPS



### MOTORS



- AND/OR \* WIRE FUNCTION NOT APPLICABLE TO THIS CIRCUIT  
 (14), (16) ETC. ALL NUMBERS IN  
 Ⓐ, Ⓑ, ETC. ALL LETTERS CIRCLED  
 INDICATE CONNECTION LOCATION.  
 ★ TO POWER SOURCE

Source Document  
Ford Publication Form 7795P-69

1969

COURSE 13003 and 1703

**WIRING and VACUUM  
DIAGRAMS**



**SERVICE  
TRAINING**

FORM 7795P-69

# 1969 MUSTANG AND COUGAR ELECTRICAL DRAWINGS

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# HOW TO USE THE WIRING DIAGRAMS

THE INDEX PAGE IS THE FIRST PAGE IN EACH SECTION. EACH ELECTRICAL SCHEMATIC WILL HAVE A NOTATION AS TO THE SOURCE OF POWER FOR THAT SYSTEM. ALL WIRES WILL BE SHOWN AS SINGLE LINES TO PROVIDE A CLEAR UNDERSTANDING OF THE DIAGRAMS. TO TRACE A CIRCUIT, IT IS RECOMMENDED TO START AT THE GROUND CIRCUIT OF THE INOPERATIVE COMPONENT, TRACE IT THROUGH ALL CONNECTORS TO THE SOURCE, AND NOTE THE POSSIBLE TROUBLE AREAS AND POINTS OF MOST CONVENIENT ACCESS. WIRE CONNECTORS WILL BE IDENTIFIED ON THE SCHEMATIC AND THE PICTORIAL DRAWINGS, THIS WILL SHOW THE TECHNICIAN THE LOCATION OF THE CONNECTORS. MOST WIRE CONNECTORS ARE SHOWN IN OPEN BOOK FASHION. A WIRE ON THE TOP RIGHT OF A CONNECTOR (OPEN SIDE BY SIDE) WILL BE ON THE TOP LEFT SIDE OF THE OTHER HALF OF THE CONNECTOR. SEE FIGURE 1 (WIRE #140 TO #140A, ETC.).

WIRE DISCONNECTS AND CONNECTORS WILL ALL BE BLACK UNLESS A COLOR CODE IS NOTED ON THE DIAGRAM. THE COLORED DISCONNECTS AND CONNECTORS ARE TO AID THE TECHNICIAN IN FINDING THE PROPER CIRCUIT TO BE TESTED OR TRACED. THE ELECTRICAL SYMBOLS AND THEIR MEANINGS ARE NOTED ON EACH DIVIDER PAGE TO PROVIDE A CLEARER UNDERSTANDING OF THE DIAGRAMS. PICTORIAL DRAWINGS OF A COMPONENT WILL INCLUDE THE SPECIFIC LOCATION OF SOME COMPONENTS IN CASES WHERE IT IS DIFFICULT TO DETERMINE IF THE COMPONENT IS UNDER THE INSTRUMENT PANEL OR IN THE ENGINE COMPARTMENT.

RELAYS AND SWITCHES ARE SHOWN IN THE "SYSTEM OFF" POSITION. IF A VEHICLE SPECIFIC WIRE COLOR IN A CONNECTOR DOES NOT MATCH THE DIAGRAM SHOWN, IT CAN USUALLY BE IDENTIFIED BY COMPARING THE OTHER COLORS SHOWN AT THE WIRE CONNECTORS. SPECIFIC WIRE COLOR DEVIATIONS IN THE MANUFACTURING OF A WIRE HARNESS ARE USUALLY FOR A SHORT DURATION.

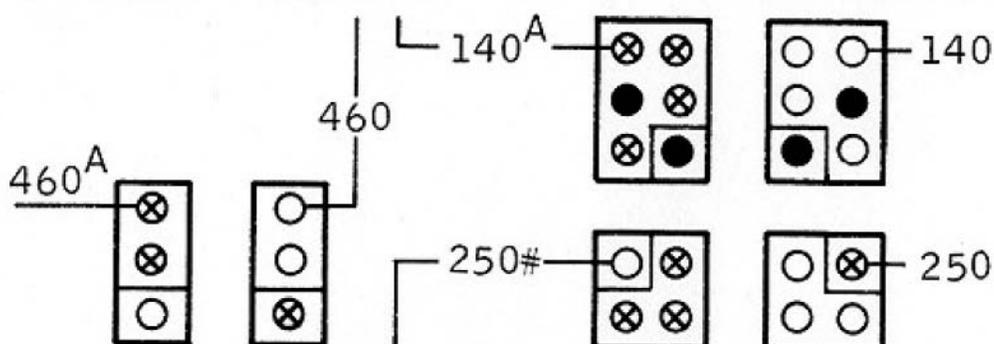
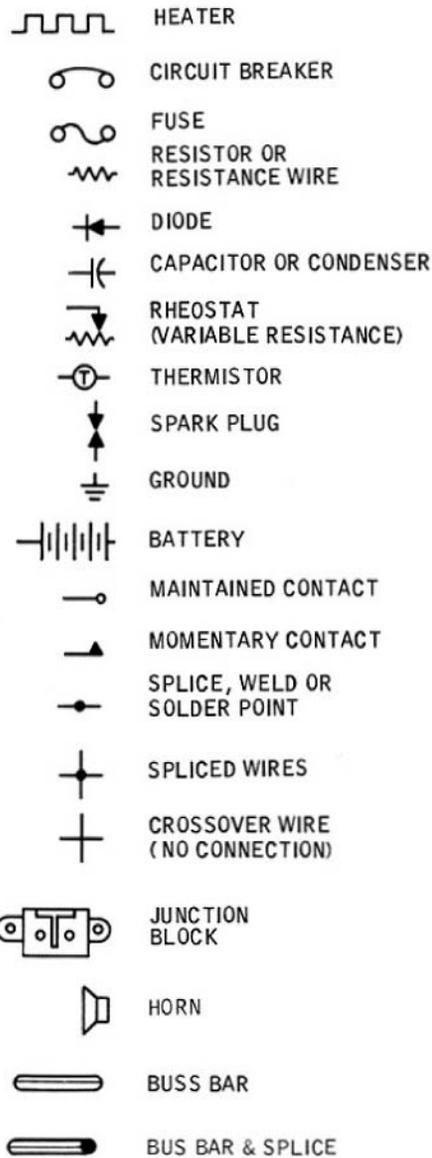
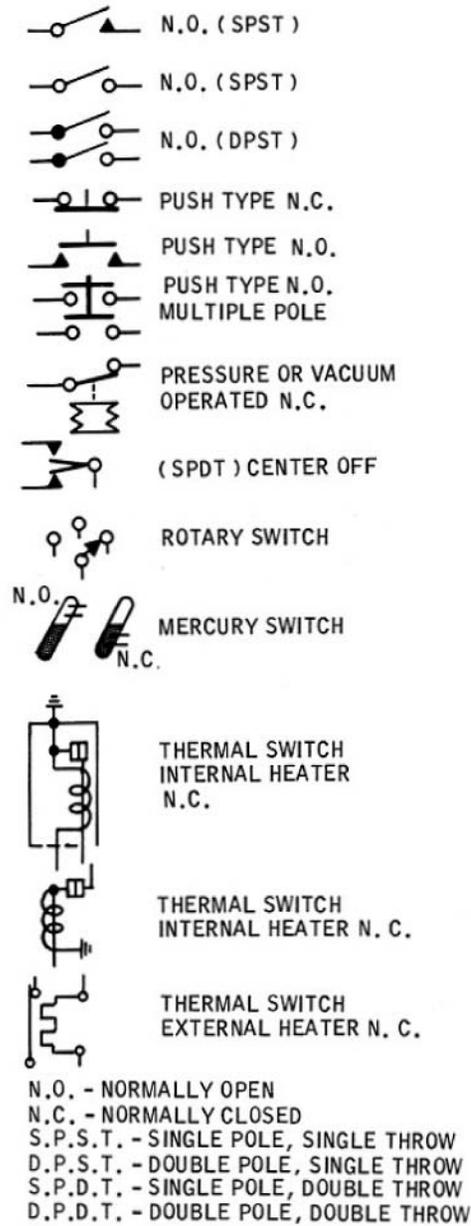


Figure 1

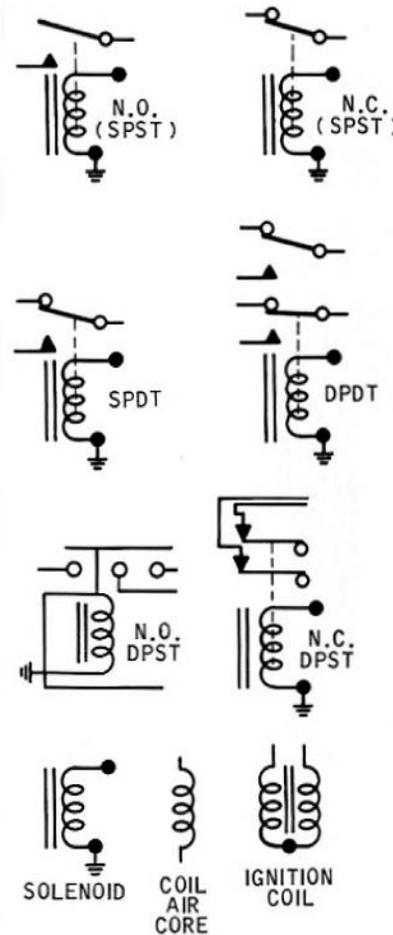
### CIRCUIT SYMBOLS



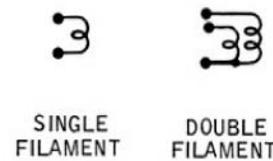
### SWITCHES



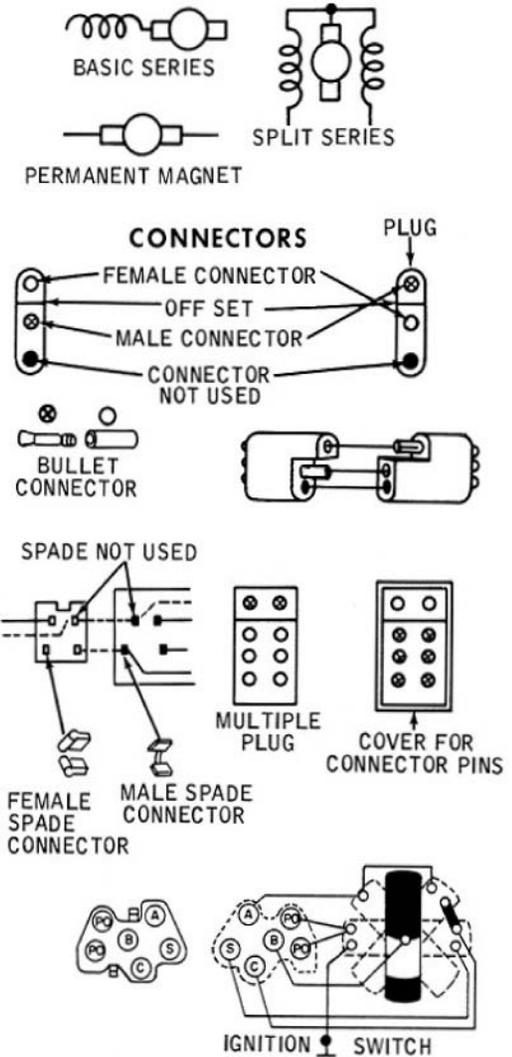
### RELAYS



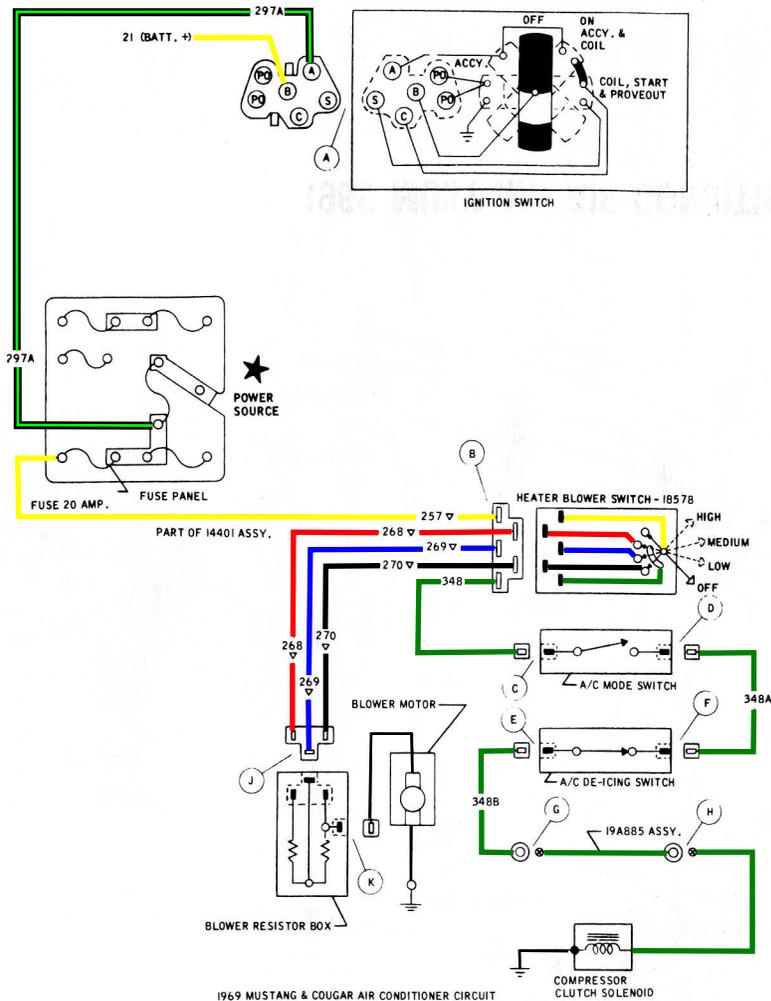
### LAMPS



### MOTORS



~ AND/OR \* WIRE FUNCTION NOT APPLICABLE TO THIS CIRCUIT  
(14), (16) ETC. ALL NUMBERS IN PARENTHESIS ( ) INDICATE WIRE GAGES  
(A), (B), ETC. ALL LETTERS CIRCLED INDICATE CONNECTION LOCATION.  
★ TO POWER SOURCE

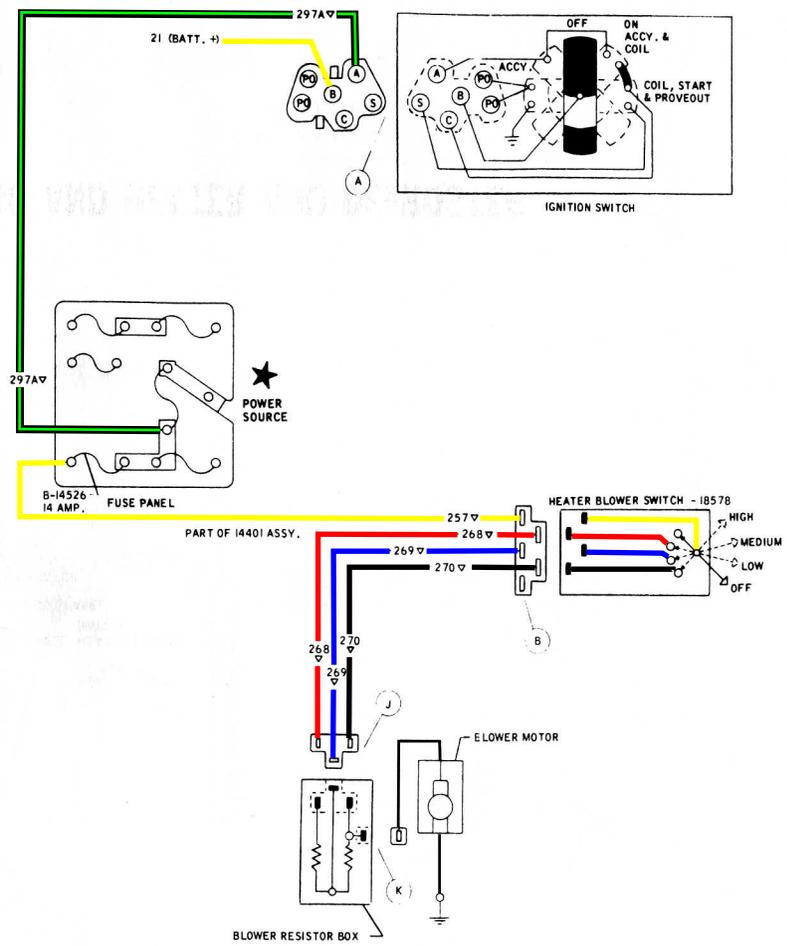


1969 MUSTANG & COUGAR AIR CONDITIONER CIRCUIT

NOTE: DETAIL & ITEM REFERENCE SHOWN ON PRODUCT DRAWING UNLESS OTHERWISE SPECIFIED ALL CONNECTORS ARE BLACK  
 ▽ FMVSS STANDARDS APPLY WHERE NOTED.  
 ● SPLICE  
 ⊕ GROUND  
 (A) ALL LETTERS CIRCLED AS SHOWN INDICATE CONNECTORS

WIRING COLOR CODE

|         |             |
|---------|-------------|
| 21      | YELLOW      |
| 257     | YELLOW      |
| 268     | RED         |
| 269     | BLUE        |
| 270     | BLACK       |
| 297A    | BLACK-GREEN |
| 348-A-B | GREEN       |



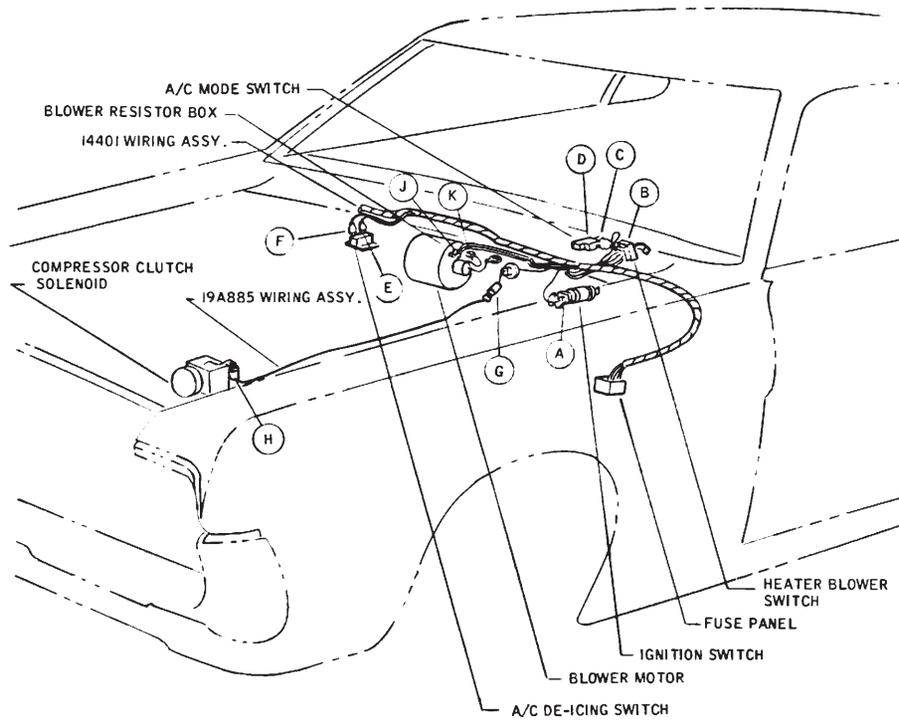
1969 MUSTANG & COUGAR HEATER CIRCUIT

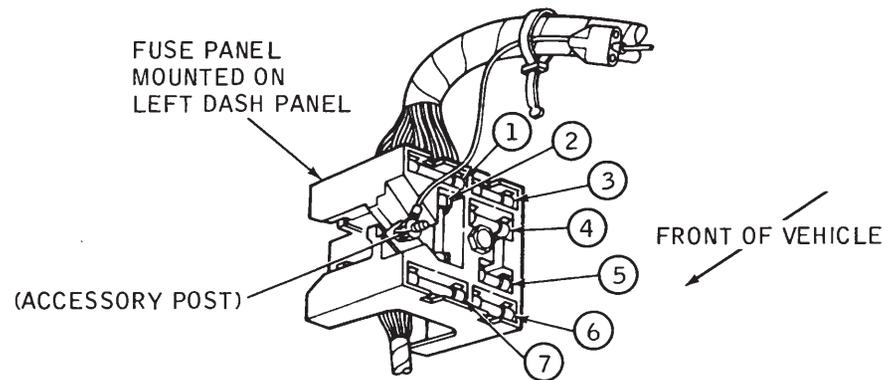
NOTE: DETAIL & ITEM REFERENCE SHOWN ON PRODUCT DRAWING UNLESS OTHERWISE SPECIFIED ALL CONNECTORS ARE BLACK  
 ▽ FMVSS STANDARDS APPLY WHERE NOTED.  
 ● SPLICE  
 ⊕ GROUND  
 (A) ALL LETTERS CIRCLED AS SHOWN INDICATE CONNECTORS

WIRING COLOR CODE

|      |             |
|------|-------------|
| 21   | YELLOW      |
| 257  | YELLOW      |
| 268  | RED         |
| 269  | BLUE        |
| 270  | BLACK       |
| 297A | BLACK-GREEN |

# 1969 MUSTANG AIR CONDITIONING AND HEATER AND DEFROSTER

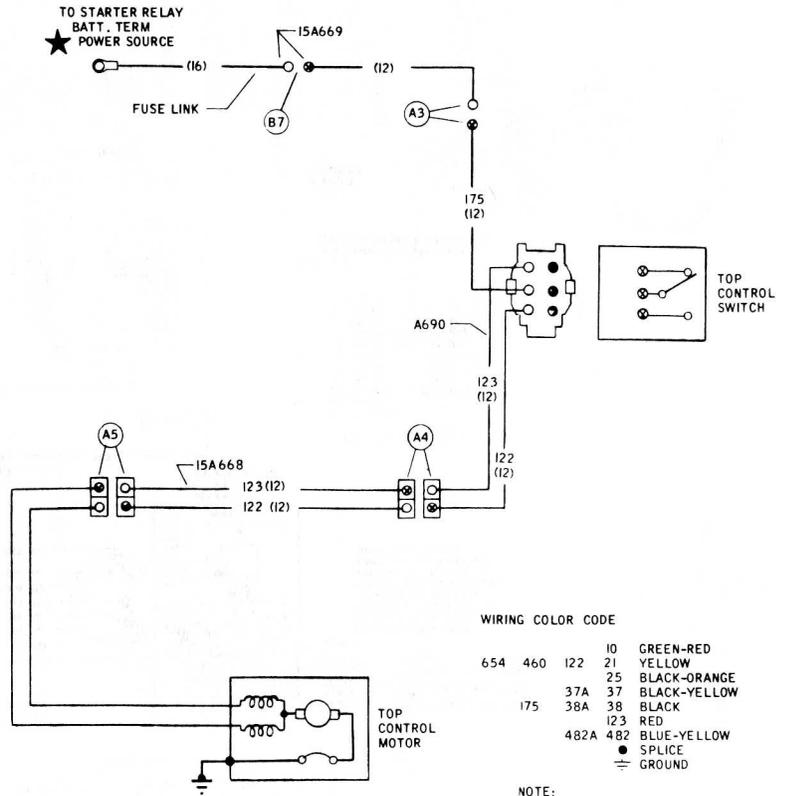
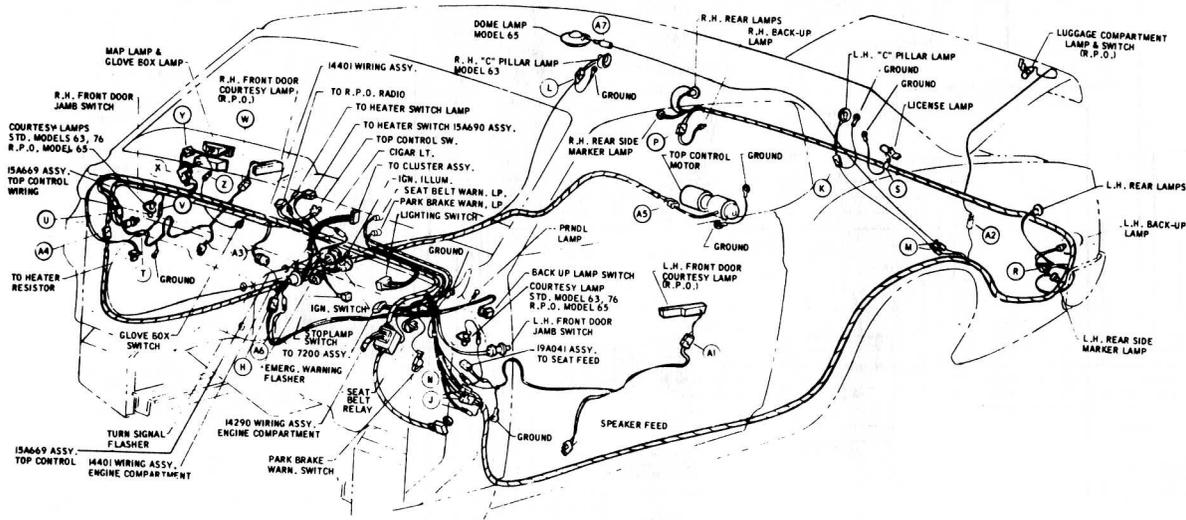




- ① (20 AMP.) TURN SIGNALS, BACK-UP LAMPS, WINDSHIELD WASHER, RADIO FEED AND PRNDL LAMP (AUTO. TRANS.)
  - ② (20 AMP.) (ACCESSORY FEED) SEAT BELT WARNING (RPO), SWING TILT COLUMN (RPO) SAFETY CONVENIENCE CIRCUIT-DOOR AJAR, LOW FUEL, POWER WINDOW SAFETY RELAY FEED, SPEED CONTROL
  - ③ (14 AMP.) HEATER AND DEFROSTER  
(30 AMP.) AIR CONDITIONER
  - ④ (SPARE)
  - ⑤ (4 AMP.) INSTRUMENT AND CLUSTER LAMPS, RADIO, HEATER CONTROLS, CLOCK, ASH TRAY LAMP
  - ⑥ (14 AMP.) COURTESY, INSTRUMENT, DOOR, DOME, MAP, GLOVE BOX, "C" PILLAR, LUGGAGE COMPARTMENT LAMP, CLOCK FEED, CIGAR LIGHTER
  - ⑦ (20 AMP.) EMERGENCY WARNING
- NOTE: (30 AMP. REQUIRED FOR AIR/COND.)

## 1969 MUSTANG AND COUGAR CIRCUIT PROTECTION

1969 MUSTANG CONVERTIBLE TOP



WIRING COLOR CODE

|     |     |     |      |              |
|-----|-----|-----|------|--------------|
| 654 | 460 | 122 | 10   | GREEN-RED    |
|     |     |     | 21   | YELLOW       |
|     |     |     | 25   | BLACK-ORANGE |
|     |     |     | 37A  | BLACK-YELLOW |
|     |     |     | 38A  | BLACK        |
| 175 |     |     | 123  | RED          |
|     |     |     | 482A | BLUE-YELLOW  |
|     |     |     | 482  | SPLICE       |
|     |     |     | ⊖    | GROUND       |

NOTE:  
 ALL NUMBERS IN PARENTHESIS INDICATE WIRE GAUGES.  
 UNLESS OTHERWISE SPECIFIED ALL CONNECTORS ARE BLACK.  
 (A) ALL LETTERS CIRCLED AS SHOWN INDICATE CONNECTORS

# 1969 MUSTANG CONVERTIBLE TOP



Source Document  
Ford Publication Form 7795P-69

1969

COURSE 13003 and 1703

**WIRING and VACUUM  
DIAGRAMS**



**SERVICE  
TRAINING**

FORM 7795P-69

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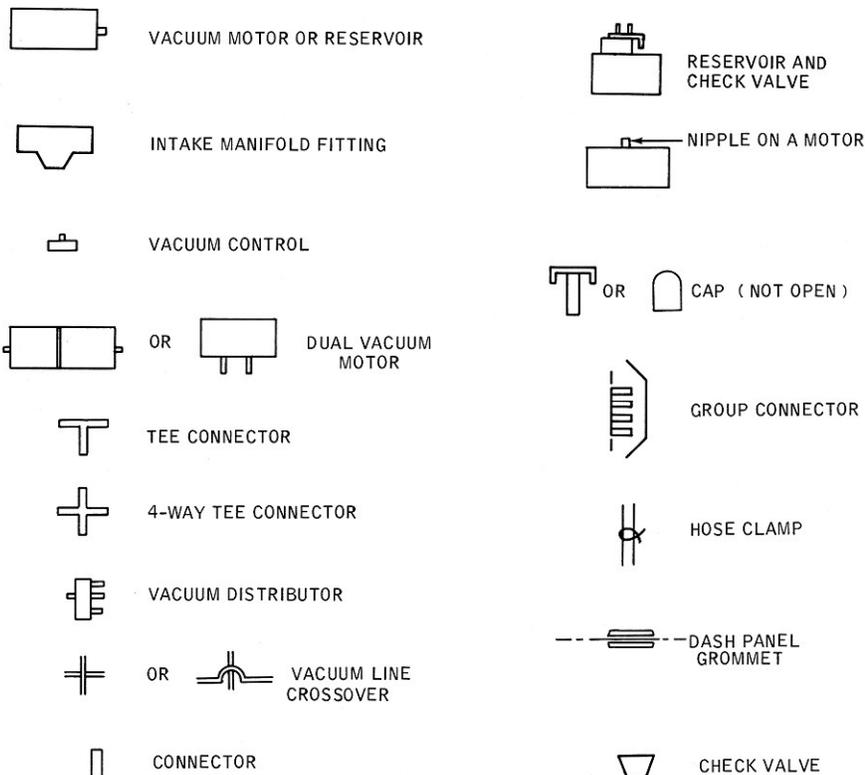
# HOW TO USE THE VACUUM DIAGRAMS

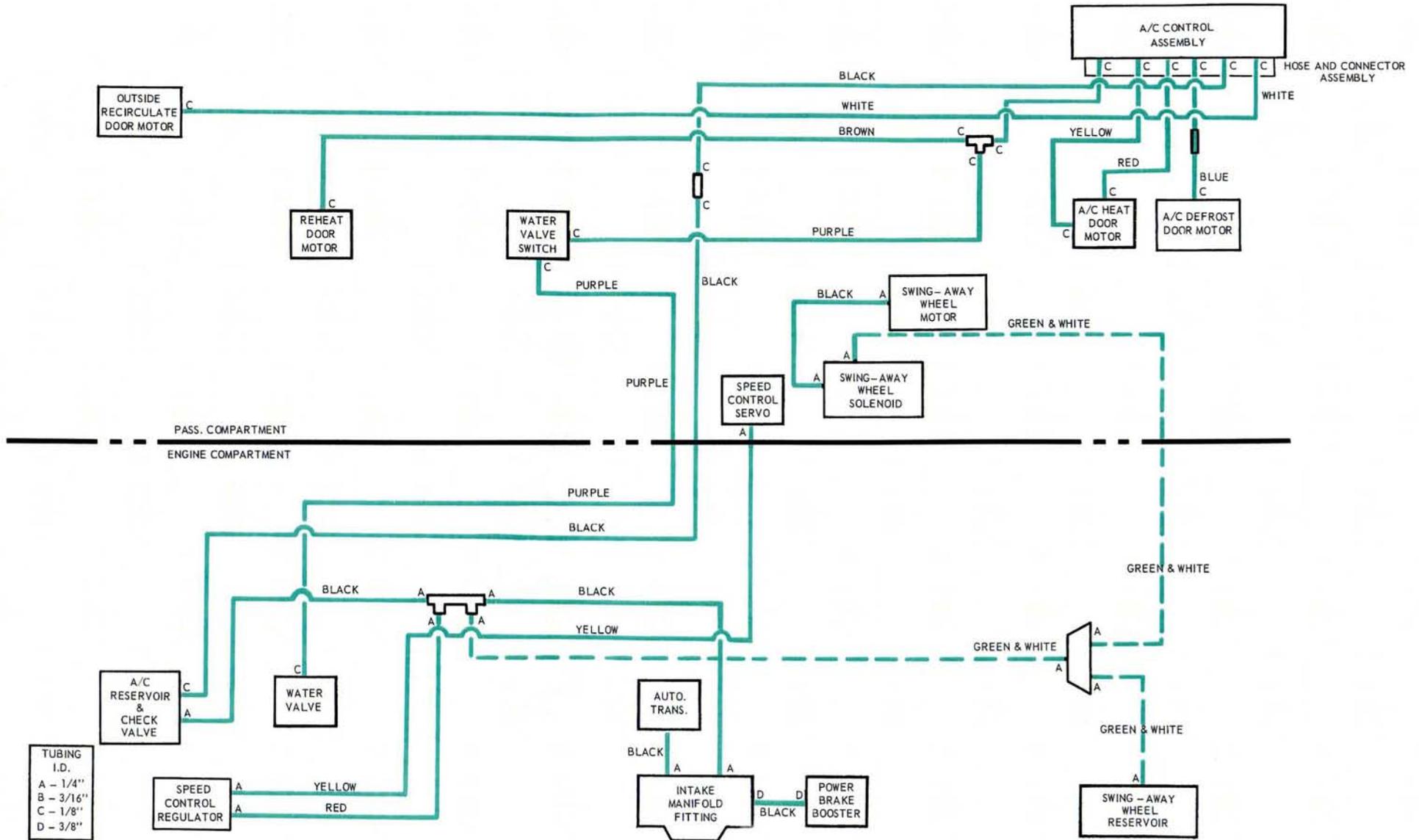
IF IT IS A FORD CAR LINE VACUUM SYSTEM, THE TECHNICIAN WILL FIND A PAGE FOR THE TOTAL SCHEMATIC SYSTEM AS WELL AS A LISTING FOR A SCHEMATIC AND PICTORIAL OF EACH SUBSYSTEM ON EACH SECTION INDEX PAGE. IT IS RECOMMENDED THAT THE TECHNICIAN FIRST TURN TO THE TOTAL SYSTEMS SCHEMATIC TO DETERMINE IF THERE ARE ANY BRANCH SYSTEMS OPERATING FROM THE SAME SOURCE. THIS WILL ASSIST IN LOCATING SYSTEM TROUBLES. HE WILL THEN BE ABLE TO TURN TO A PAGE TO FIND DETAILED INFORMATION ON A PARTICULAR SYSTEM. IN TRACING VACUUM SYSTEMS, IT IS RECOMMENDED THAT A CIRCUIT BE TRACED FROM ITS CONTROL UNIT TO ITS SOURCE OF VACUUM, AND THEN FROM THE CONTROL UNIT TO THE OPERATING UNIT, NOTING POINTS OF POSSIBLE MALFUNCTION AND ACCESSIBILITY.

THE VACUUM SYMBOLS AND THEIR MEANINGS ARE NOTED ON EACH DIVIDER PAGE TO PROVIDE A CLEAR UNDERSTANDING OF THE DIAGRAMS.

## VACUUM

### CIRCUIT SYMBOLS





1969 MUSTANG TOTAL VACUUM SCHEMATIC

# 1969 CAR SHOP MANUAL

Source Document  
Ford Publication Form 7098-69-3

## VOLUME THREE ELECTRICAL

CHARGING, LIGHTING, HORNS, INSTRUMENTS, HEATING  
VENTILATING, AIR CONDITIONING, SPEED CONTROL,  
WINDSHIELD WIPERS and WASHERS, ACCESSORIES



FALCON

FAIRLANE

MUSTANG

FORD

THUNDERBIRD

MONTEGO

COUGAR

METEOR

MERCURY

LINCOLN  
CONTINENTAL

CONTINENTAL  
MARK III

# 1969 CAR SHOP MANUAL

## VOLUME THREE ELECTRICAL

CHARGING, LIGHTING, HORNS, INSTRUMENTS, HEATING,  
VENTILATING, AIR CONDITIONING, SPEED CONTROL,  
WINDSHIELD WIPERS and WASHERS, ACCESSORIES



SERVICE PUBLICATIONS

FIRST PRINTING—NOVEMBER, 1968

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### VEHICLE IDENTIFICATION

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AT END OF EACH GROUP

## FOREWORD

*The five volumes of this shop manual provide the Service Technician with complete information for the proper servicing of all the 1969 line of Ford Passenger Cars.*

*The information is grouped according to the type of work being performed, such as frequently performed adjustments and repairs, in-vehicle adjustments, major repair, etc. Specifications, maintenance information and recommended special tools are included.*

*The descriptions and specifications in this manual were in effect at the time this manual was approved for printing. Ford Motor Company reserves the right to discontinue models at any time, or change specifications or design, without notice and without incurring obligation.*



**SERVICE PUBLICATIONS**

## **GENERAL INFORMATION**

Individual carline shop manuals have been combined in one Car Shop Manual divided into five volumes for 1969.

The 1969 Car Shop Manual has been organized into general Groups as in previous shop manuals. All Groups are listed in the Group index on the first page of each Volume. Groups not contained in a given Volume are listed with a solid gray background.

To locate the beginning page of any particular Group, first select the Volume containing that Group. Bend the manual until the black mark on the first page of the Group can be seen in line with the Group title on the first page of the Volume.

The first page of each Group lists the material contained in the Group under Part headings and also lists the beginning page of each Part.

On the beginning page of each Part, there is a Part index which lists in detail all information appearing in the Part, the page where the information is given, and the vehicles to which the information applies.

All pages carry a six-digit number which indicates the Group, Part and Page number.

For Example: Page 14-02-01 indicates  
Group 14, Part 2, Page 1

Part Indexes will use only the Part and Page reference numbers.  
For Example: Page 14-02-01 will appear in the Part Index as 02-01.

Each Part will start with Page 01.

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## PART 14-1 Autolite Alternators

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| 42-Ampere Alternator  |                   | 01-11 | 01-11   | 01-11  | 01-11  | 01-11    | N/A    | 01-11   | 01-11   | N/A                 | N/A         | N/A                  |
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| 55-Ampere Alternator With Integral<br>Voltage Regulator           |                   | N/A   | N/A     | N/A    | N/A    | N/A      | N/A    | N/A     | N/A     | N/A                 | 01-11       | 01-11                |
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A page number indicates that the item is for the vehicle listed at the head of the column.  
N/A indicates that the item is not applicable to the vehicle listed.

# 1 DESCRIPTION AND OPERATION

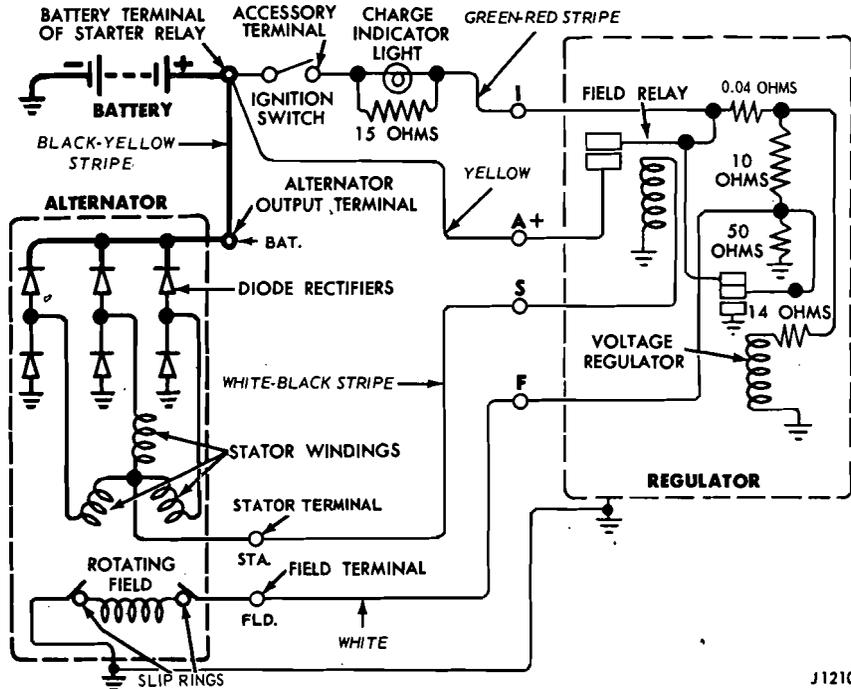
The alternator charging system is a negative (-) ground system, and consists of an alternator, a regulator, a charge indicator, a storage battery and associated wiring. Refer to Wiring Diagram Manual Form 7795-P-69 for schematics and locations of wiring harnesses.

## ALTERNATOR

The alternator is belt driven from the engine. Energy is supplied from the alternator-regulator system to the rotating field of the alternator through two brushes to two slip rings.

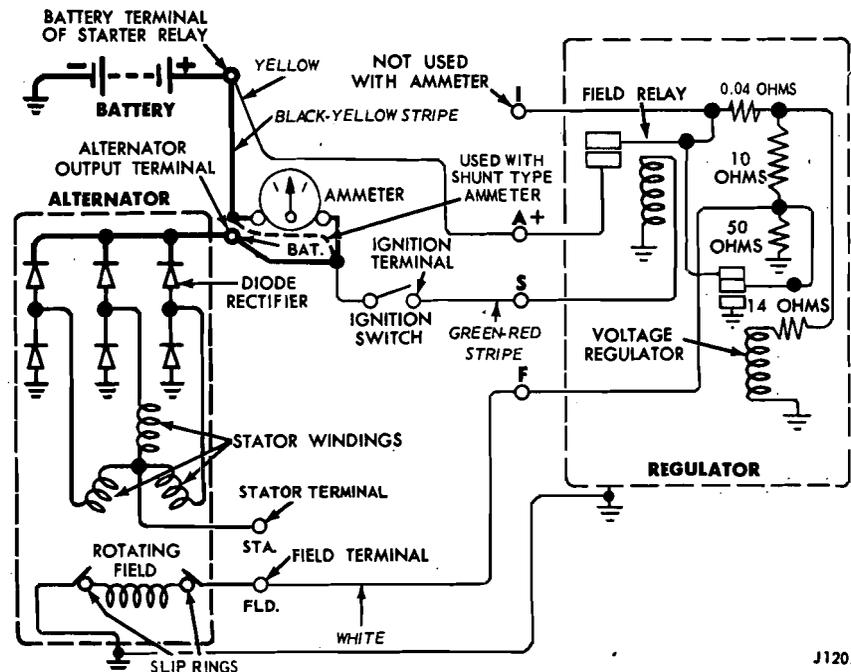
The alternator produces power in the form of alternating current. The alternating current is rectified to direct current by six diodes for use in charging the battery and supplying power to the electrical system. The alternator is self current limiting.

Figs. 1; 2 and 3 show the alternator system schematics.



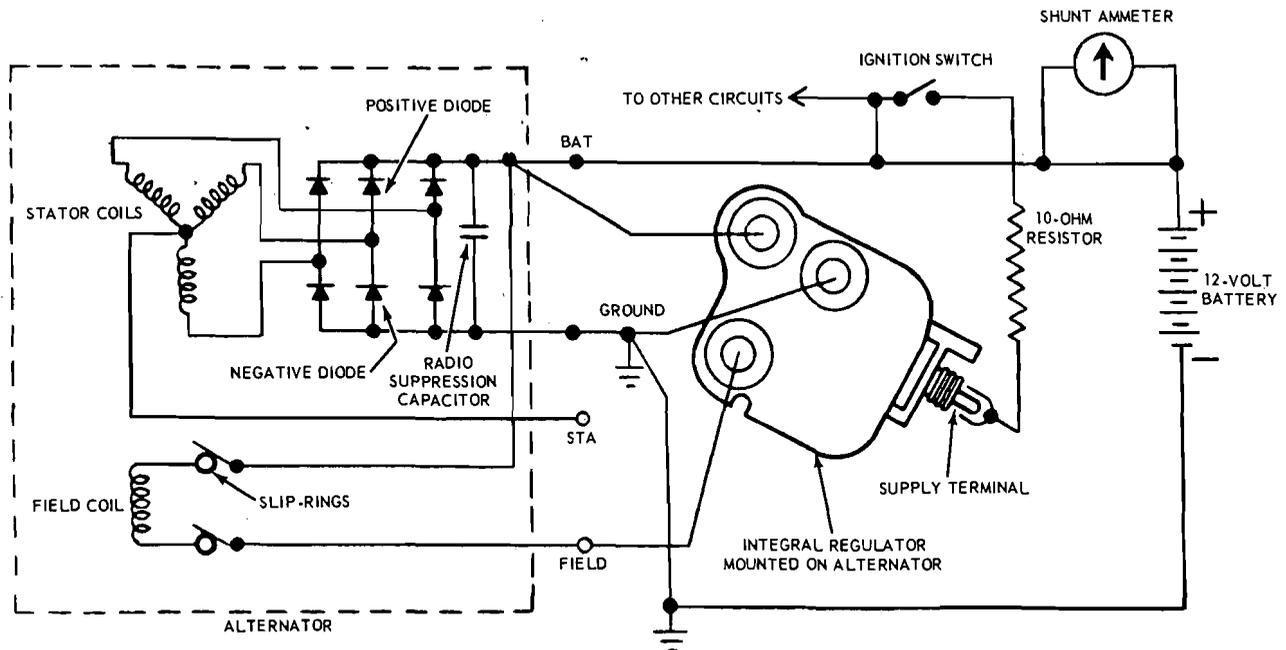
J1210-G

FIG. 1—Autolite Alternator System—Indicator Light



J1205-F

FIG. 2—Autolite Alternator System—Ammeter



J1409-A

FIG. 3—Autolite Alternator System—With Integral Regulator

## 2 AUTOLITE ALTERNATOR TESTING

Refer to the Ford Car and Truck Diagnosis Manual for diagnosis of the Autolite alternator system.

Check the alternator drive belt and adjust it to specification (Part 13-6), before proceeding with any tests. Check and tighten all connectors at the starter relay and battery.

### TESTS USING THE ROTUNDA ARE 20-22 ALTERNATOR REGULATOR TESTER

The general procedure is to connect the tester (Fig. 4), to the charging system, start the engine, make two tests, and then compare the pattern of lights that appear on the tester to each set of patterns shown on two charts (Figs. 5 and 6). Follow the instructions given with the ARE 20-22 tester. The ARE 20-22 tester cannot be used to test the alternator with the integral regulator.

### TESTS USING THE ROTUNDA ARE 27-38 VOLT-AMP-ALTERNATOR TESTER

The following test procedures make use of the Rotunda Volt Amp-Alternator Tester ARE 27-38,

Refer to Wiring Diagram Manual Form 7795-P-69 for schematics and locations of wiring harnesses. Use care when connecting any test equipment to the alternator system, as the alternator output terminal is connected to the battery at all times.

### ALTERNATOR OUTPUT TEST ON ENGINE

When the alternator output test is conducted off the car, a test bench must be used. Follow the procedure given by the test bench equipment manufacturer. When the alternator is removed from the vehicle for this purpose always disconnect the battery ground cable as the alternator output connector is connected to the battery at all times.

To test the output of the alternator on the vehicle, proceed as follows:

1. Place the transmission in neutral or park and apply the parking brake. Make the connections and tester knob adjustments as shown in Figs. 7 or 8 Output Test. Be sure that the field rheostat knob is at the OFF position at the start of this test. Follow the instructions given with the ARE 27-38 tester.

### AUTOLITE STATOR NEUTRAL VOLTAGE TEST—ON ENGINE

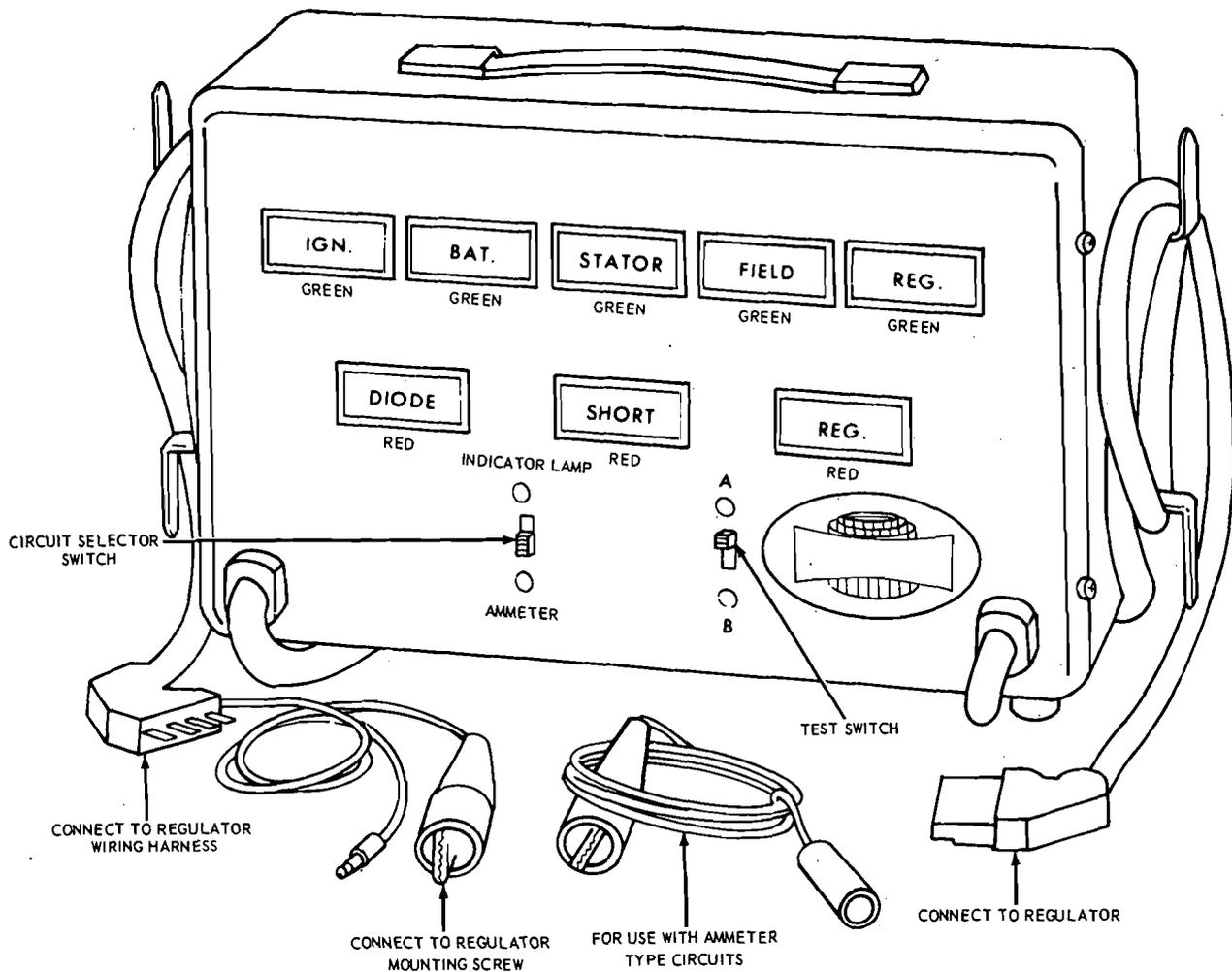
The Autolite alternator STA terminal is connected to the stator coil neutral; or center point of the alternator windings (see Figs. 1 and 2). The voltage generated at this point is used to close the field relay in the Autolite charge indicator light system except alternators with an integral regulator.

To test for the stator neutral voltage, disconnect the regulator connector plug from the regulator. Make the connections and tester knob adjustments as shown in Fig. 9. Follow the instructions given with the ARE 27-38 tester.

### FIELD OPEN OR SHORT CIRCUIT TEST—ON BENCH

#### Alternators Without An Integral Regulator

Make the connection as shown in Fig. 7 Field Open or Short Circuit Test. The current draw, as indicated



J 1398-A

FIG. 4—ARE 20-22 Tester

by the ammeter, should be to specifications (Part 13-6). If there is little or no current flow, the field or brushes have a high resistance or are open. A current flow considerably higher than that specified above, indicates shorted or grounded field turns or brush leads touching. If the test shows that the field is shorted or open and the field brush assembly or slip rings are not at fault, the entire rotor must be replaced.

If the alternator has output at low rpm and no output at high rpm, centrifugal force may be causing the rotor windings to short to ground. Put the alternator on a test stand and repeat the preceding test. Run the alternator at high speed during the test.

### Alternators With An Integral Regulator

#### Field Voltmeter Test

1. Turn the ignition switch to OFF. Remove the wire from the regulator supply terminal.

2. Connect the ARE 27-38 tester, and make the tester knob adjustments as shown in Fig. 8, Field Voltmeter Test.

3. The voltmeter reading should be 12 volts. If there is no voltage reading, the field circuit is open or grounded.

4. If the voltmeter reading in Step 3 is more than one volt but less than battery voltage, there is an indicated partial ground in the alternator field

circuit. Perform the Alternator Field Ohmmeter Tests.

#### Field Ohmmeter Tests

1. Disconnect the battery ground cable.

2. Remove the regulator from the alternator.

3. Connect the ARE 27-42 ohmmeter leads as shown in Fig. 12, Ohmmeter Field Circuit Tests. Set the ohmmeter multiply-by knob at 1, and calibrate the ohmmeter as indicated inside the ohmmeter cover.

4. Three conditions are checked in these tests as shown in Fig. 12: A grounded field, a shorted field and an open field.

# 1965/72 FORD CAR

**FINAL ISSUE**

**Master Parts and Accessories**

**Source Document  
Ford Publication Form FP-7635-B**

Form FP 7635-A & B

Supersends All Previous Issues, Changes and Revisions

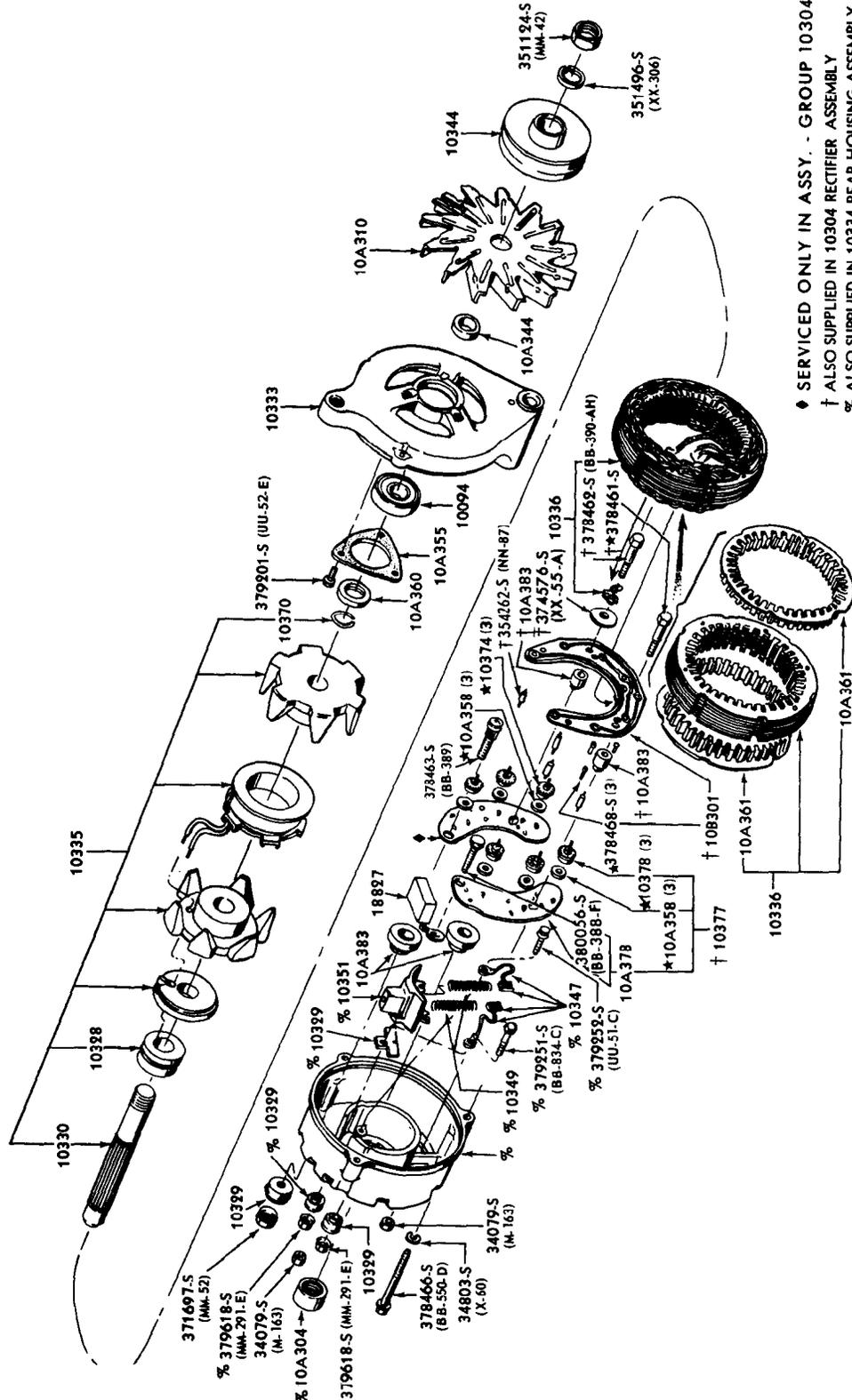


5236

May, 1975

**FINAL ISSUE**





ALTERNATOR (FORD 15 VOLT - 38,42,45,55,60,61 AMP.)  
1965/72

◆ SERVICED ONLY IN ASSY. - GROUP 10304  
 † ALSO SUPPLIED IN 10304 RECTIFIER ASSEMBLY  
 % ALSO SUPPLIED IN 10334 REAR HOUSING ASSEMBLY



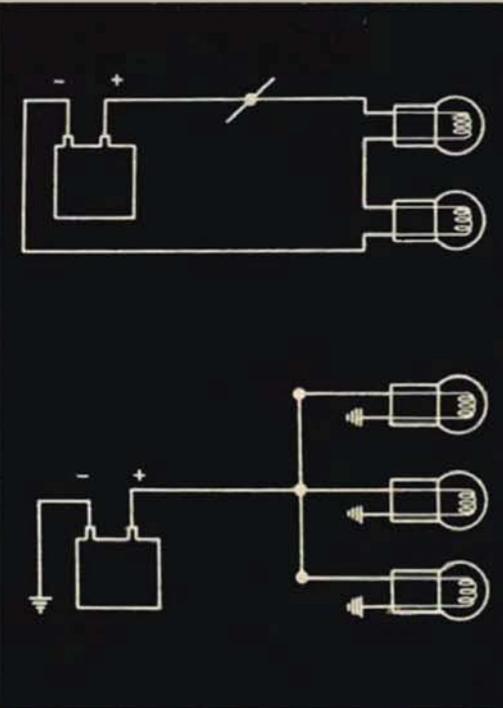
READY REFERENCE

13001

# HOW TO READ WIRING DIAGRAMS



VOL 68 S7 L2A



# HOW TO READ WIRING DIAGRAMS

COURSE 13001 • VOL. 68 S7 L2A

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The descriptions, testing procedures, and specifications in this handbook were in effect at the time the handbook was approved for printing. Ford Motor Company reserves the right to discontinue models at any time, or change specifications, design, or testing procedures without notice and without incurring obligations.

NATIONAL SERVICE OFFICE  
FORD DIVISION



FIRST PRINTING – JANUARY, 1968

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DEARBORN, MICHIGAN

# INTRODUCTION

## *The Why and Wherefore of Wiring Diagrams*

To the uninformed, a wiring diagram — or a wiring assembly — looks like it might take a genius to figure out.

Not so — as you'll find out when you get better acquainted with these subjects.

There're as understandable and logical as a road map and road markers, when you're finding your way on a cross-country drive.

The ability to read a wiring diagram and relate it to a vehicle's wiring system is, of course, an essential part of a modern service technician's skill. And it's growing in relative importance, too, due to owner's increasing demands for the comforts and conveniences supplied by electrically-operated options and accessories. This opens up greater opportunities, for the forward-looking technician.

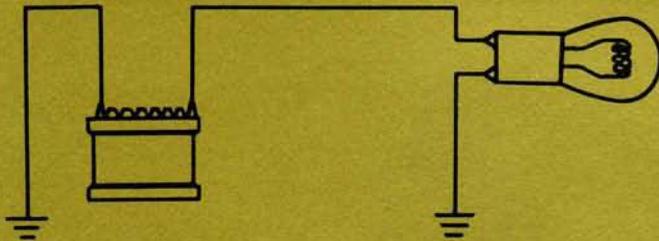
## *The Purpose of this Booklet . . .*

. . . is to acquaint you with the systems by which electrical circuits are traced on vehicles. Specifically, it is designed to help you acquire the ability to make your own power checks, quickly and accurately.

## *Scope of the Booklet*

Basically, this is a printed version of the film, "How to Read a Wiring Diagram." It is in no sense a manual of the shop methods by which electrical repairs are made.

It *can* be a helpful guide that can introduce you to the principles of wiring diagrams and vehicle wiring. As you gain experience in reading wiring diagrams, you'll accumulate your own know-how in this important skill. When it becomes "second nature" to you, these pages will have served their purpose — and yours.



To show how to read wiring diagrams — and to explain how they can be used to help you troubleshoot problems in the electrical system — is what this booklet is all about. Obviously, these are important subjects.

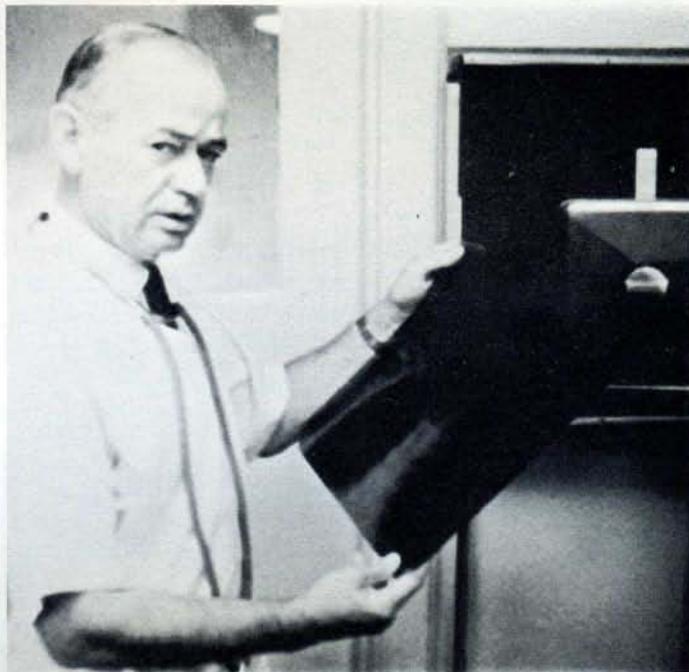
## A LOGICAL APPROACH TO ELECTRICAL DIAGNOSIS



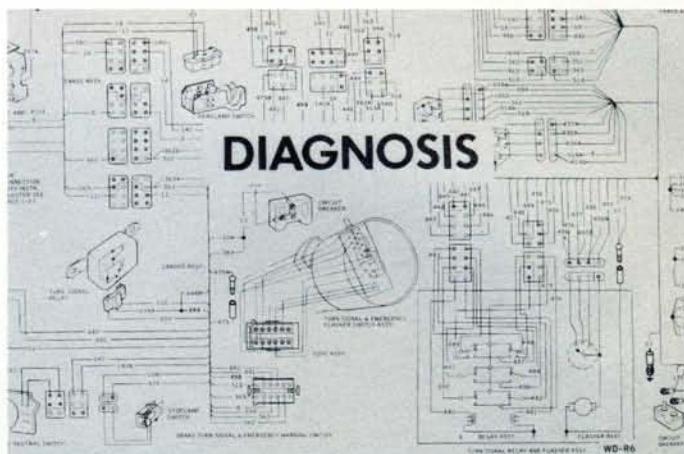
If a customer comes in because his headlights aren't working, you can't just make a snap decision. That's not the *professional way*.



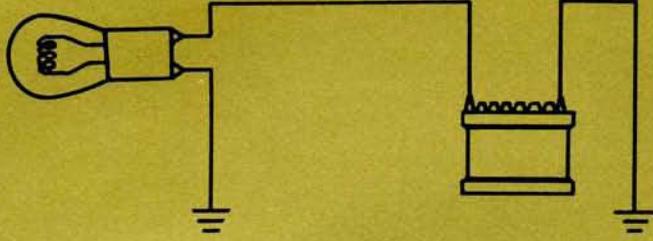
Putting in a new sealed-beam unit *may* be the answer . . . but then again, *it may not*. Snap decisions are *out*. They're *not professional*.



When you go to a doctor, for example, he tries to find out what's *really* wrong with you. He looks beyond the aches and pains you feel, to see what's *causing* the trouble. We call this, *diagnosis*.

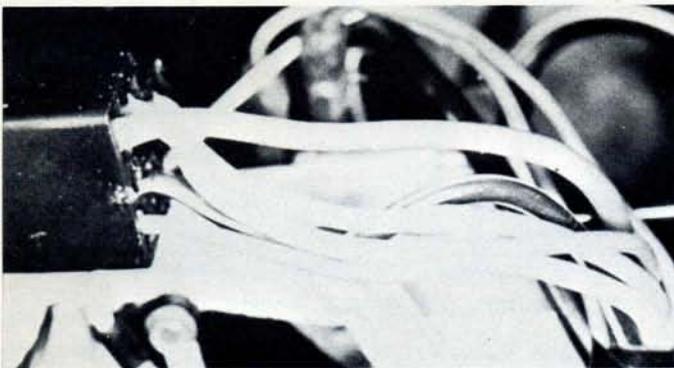


Troubleshooting an electrical system calls for diagnosis, too — *Your* diagnosis. *You're* the doctor. You must find out what's causing the trouble, and fix it.

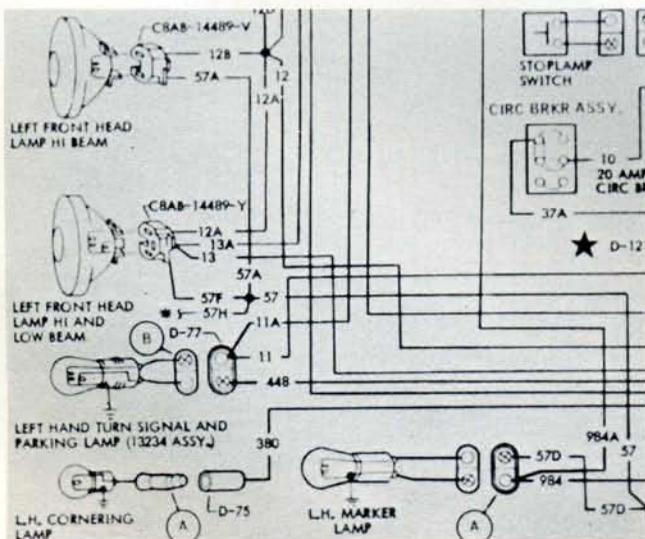


## LOGICAL APPROACH

The easiest way is to begin with a *logical approach* — you check things out. You find out what parts of the electrical system are still working okay. You narrow it down to one part — one wire — one switch.

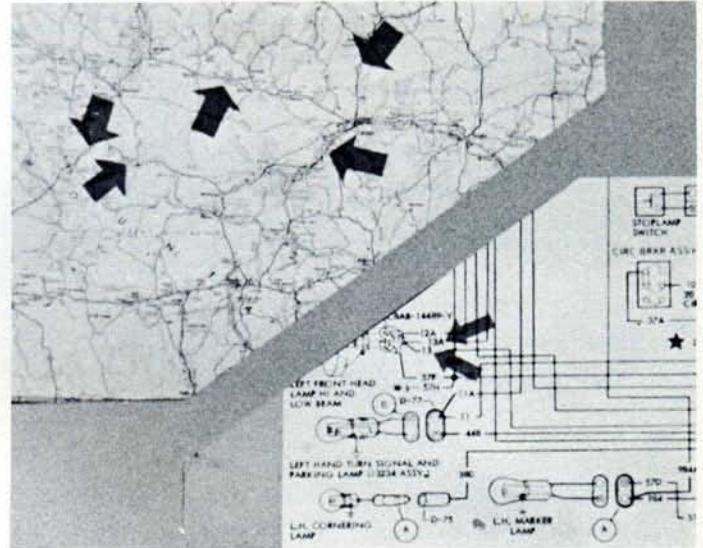


Sure, you may feel a little confused when you face a jumble of wires for the first time. But there's a way to make sense out of this. There *is* a logical approach.



It starts with a *diagram* that shows all electrical parts — switches, wires, splices, connections, the battery — everything you need to know.

## LIKE READING A ROAD MAP



Reading a wiring diagram is something like reading a road map. The map shows routes that connect one place with another . . . and a diagram shows routes, too. The lines represent actual wires, and these wires are identified by numbers . . . much like highways are identified by number.

## HOW WIRES ARE NUMBERED AND COLOR-CODED



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