1971

Colorized Mustang Wiring & Vacuum Diagrams

(with Electrical Illustrations)

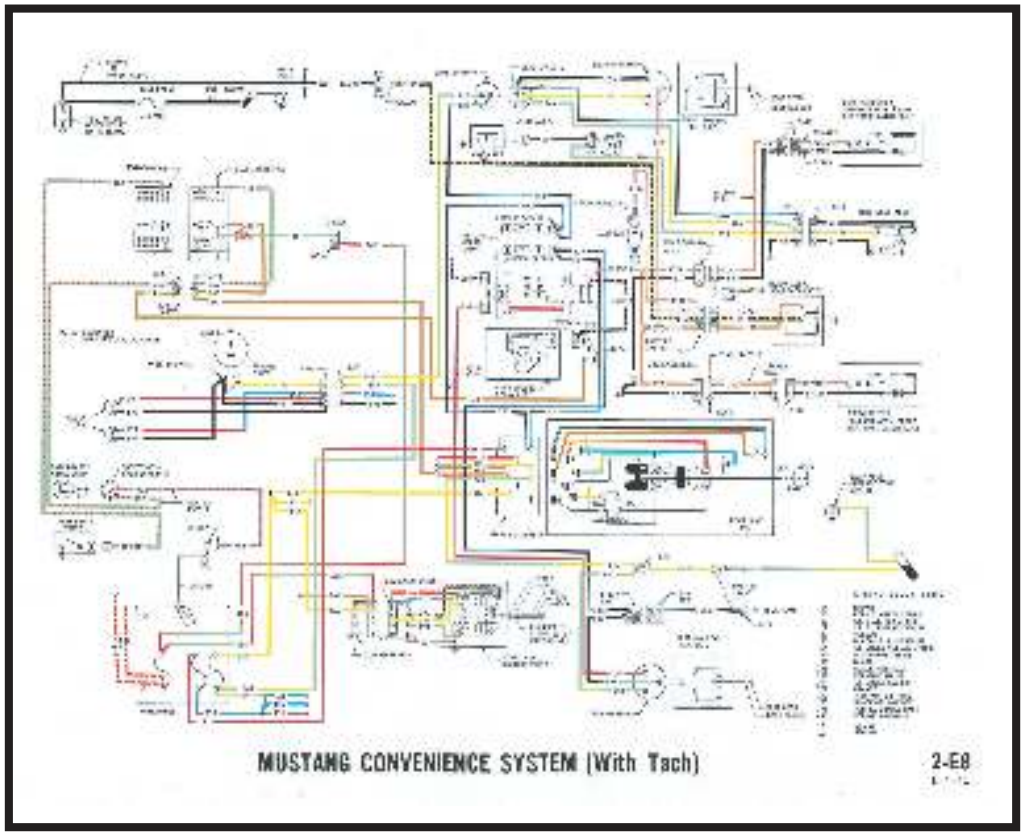
Free Bonus!
30-Minute Video
Ford Training
Course 13001, Vol 68 S7
"How to Read Wiring Diagrams"
Included!

A consolidated collection of original Ford electrical & vacuum diagrams with illustrations

Color diagrams for:

Convenience System; Exterior Lights; Interior Lights; Heater and Air Conditioner Horns; Convertible Top Ignition, Starting and Charging Heated Backlite, Cigar Lighter, Clock, Power Windows; Radio AM, FM and Stereo Tape; Windshield Wiper and Washer; Intermittent Wipers; Key Warning Buzzer; Mustang Emission Control

...and much more!!



Example of colorized diagrams

Ford Publishing Company, LLC

1971 Colorized Mustang Wiring and Vacuum Diagrams
(Extracted from Form FD-7795P-71, Form 7098-71-3, FP-7635B, and FD-7943-G)
EAN: 978-1-60371-030-5
ISBN: 1-60371-030-2

Forel Publishing Company, LLC
3999 Peregrine Ridge Ct.
Woodbridge, VA 22192
Email address: webmaster@ForelPublishing.com
Website: http://www.ForelPublishing.com

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: ***1971 Wiring and Vacuum Diagrams*** (Form FD-7795P-71), ***1965/1972 Ford Car Master Parts and Accessory Catalog*** (Form FP-7635B), 1971 Car Shop Manual (Volume III, FORM 7098-71-3), and ***How to Read Wiring Diagrams*** (FD-7943-G, January 1968).

Disclaimer

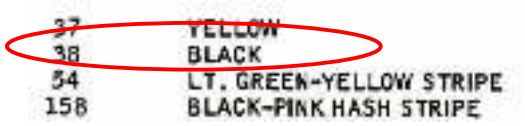
Although every effort was made to ensure the accuracy of this book, no representations or warranties of any kind are made concerning the accuracy, completeness or suitability of the information, either expressed or implied. As a result, the information contained within this book should be used as general information only. The author and Forel Publishing Company, LLC shall have neither liability nor responsibility to any person or entity with respect to any loss or damage caused, or alleged to be caused, directly or indirectly by the information contained in this book. Further, the publisher and author are not engaged in rendering legal or other professional services. If legal, mechanical, electrical, or other expert assistance is required, the services of a competent professional should be sought.

ATTENTION

Please Read This

It is important to note that there may be errors in the diagrams, even though they are original Ford publications. Below are two examples of possible errors because the color code on the page diagram does not match the master Car Standard Wire Code Chart. 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 possible errors

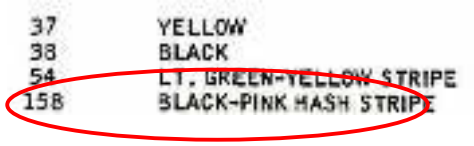


In the wiring diagrams from the Ford publication Form 7795P-71, the Key Warning Buzzer Wiring Color Code shows:

38 Black

However, the Car Standard Wire Color Code Chart lists:

38 Black-Orange Stripe



In the wiring diagrams from the Ford publication Form 7795P-71, the Key Warning Buzzer Wiring Color Code shows:

158 Black-Pink HASH STRIPE

However, the Car Standard Wire Color Code Chart lists:

158 Black- Pink HASH

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.

Source Document
Ford Publication Form 7795P-71

1971

COURSE 13003 and 1703

WIRING and VACUUM DIAGRAMS

Ford

SERVICE TRAINING

FORM 77

FOREWORD

This book contains wiring and vacuum diagrams for all Ford and Lincoln-Mercury car lines and all Ford trucks.

Both wiring and vacuum diagram replacement sheets will be released as required to keep the book current.

All vacuum systems are contained in a separate section.

This book is divided by vehicles. Refer to the applicable section as follows:

- Pinto
- Maverick and Comet
- Mustang and Cougar
- Torino
- Montego
- Ford and Meteor
- Mercury
- Thunderbird
- Mark III
- Lincoln
- Bronco, Econoline and P-Series
- B and F 100 750 Series
- C and CT-Series
- W-Series
- L-Series

Ford

SERVICE TRAINING

The illustrations contained in this book were in effect at the time the book was approved for printing. Ford Motor Company, whose policy is one of continuous improvement, reserves the right to discontinue models at any time, or to change specifications or design, without notice and without incurring obligation.

HOW TO USE THE WIRING DIAGRAMS

Two styles of wiring diagrams are contained in this book.

I — Cars (Except Mustang, Cougar and Lincoln) and L-Series Truck.

II — Mustang, Cougar, Lincoln and Truck (Except L-Series

I — CARS (Except Mustang, Cougar and Lincoln) AND L-SERIES TRUCKS

Each electrical circuit is illustrated in a clear and easy to follow style.

There are 7 steps that should be followed to use this diagram to diagnose electrical problems.

- Verify the complaint
- Refer to the Index
- Locate inoperative system
- Identify other systems on the circuit
- Isolate the problem area
- Correct the problem
- Operate the corrected system

VERIFY THE COMPLAINT

To diagnose a customer complaint "Back Up Lights Don't Work" the first thing we should do is verify the complaint.

If both lights do not work, refer to the INDEX on page 1 of the vehicle schematic.

1 to locate the

See LAMPS — BACK-UP on the INDEX. The INDEX lists the location of the part on the drawing.

The drawing is set up like a road map. For example: the Pinto Back-up lights are located at B-27. To locate B-27 on the schematic, find the number 27 at the top of the illustration.

Now, find the letter B on the side of the illustration. Follow the number and the letter until they intersect. The part will be within an inch or two of the intersection.

LOCATE INOPERATIVE SYSTEM

Generally, the power supply for all components on this drawing comes from the top of the page and over to the battery at the left.

The ground for each component is always toward the bottom of the drawing.

There are symbols used on this drawing that are explained as follows:

- Ground symbols are shown in Figure 1. A ground wire connected away from the component is identified by a code G1 or G2, etc. The location of the remote ground is listed in the GROUND CODES chart and the bottom of the page.

Fig. 1 — Ground Symbols

- Wire color code is shown in Fig. 2. Wiring Color Codes are listed at the bottom of the drawing. New Standard Wiring Color Codes are listed be hind these instructions.

Fig. 2 — Wire Color Code

CORRECT THE PROBLEM

Use standard continuity tests for open circuits and short circuit tests to find the specific problem.

Repair or replace the electrical component that is malfunctioning.

OPERATE CORRECTED SYSTEM

It is a good practice to operate the system after a repair has been made to see if it now works.

BULB AND FUSE CHART

A bulb and fuse chart is included on the first page of this schematic for your convenience.

II – MUSTANG, COUGAR, LINCOLN AND TRUCKS (Except L-Series)

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 9 (Wire No. 140 to No. 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 ced. Pictorial drawings of a component will include pecific location of some components in cases f the component is r in the engine

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.

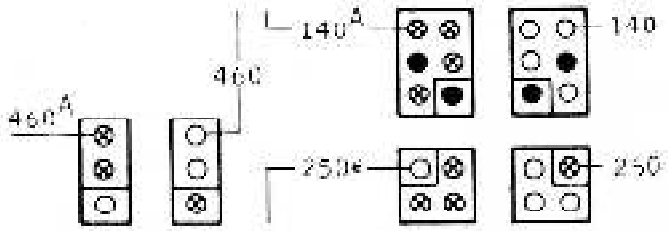
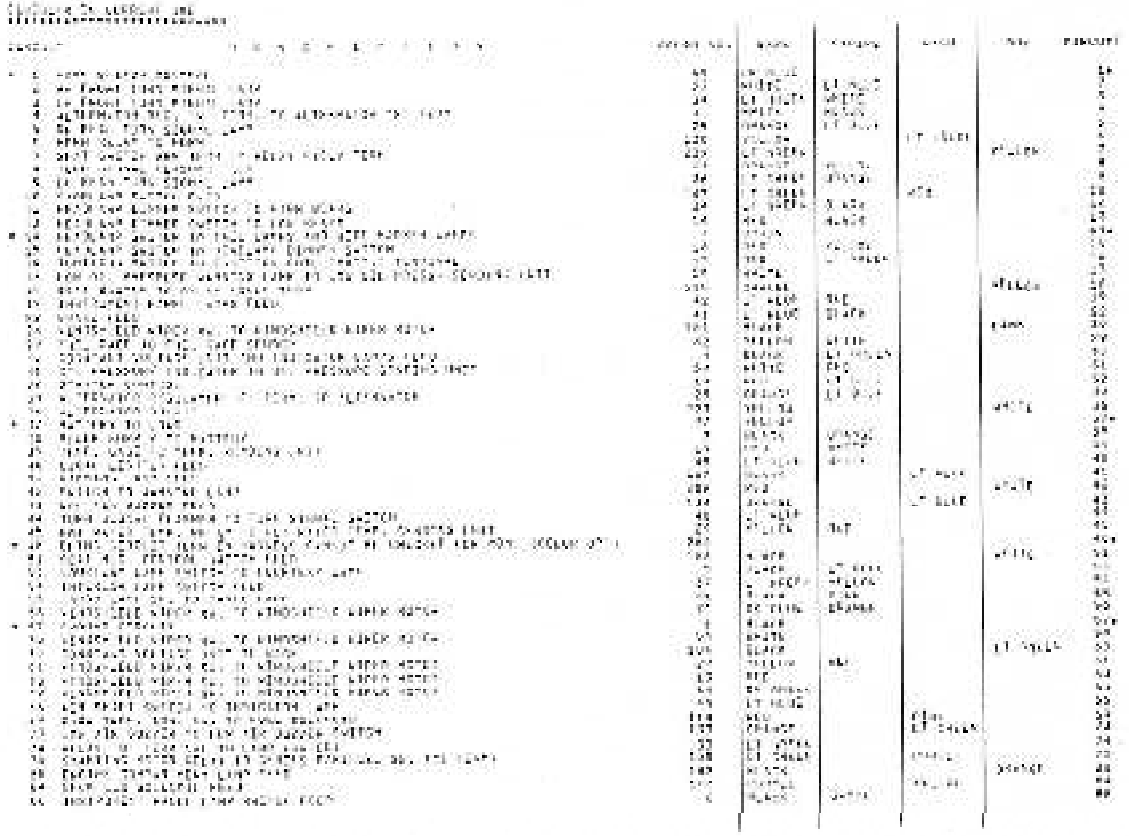
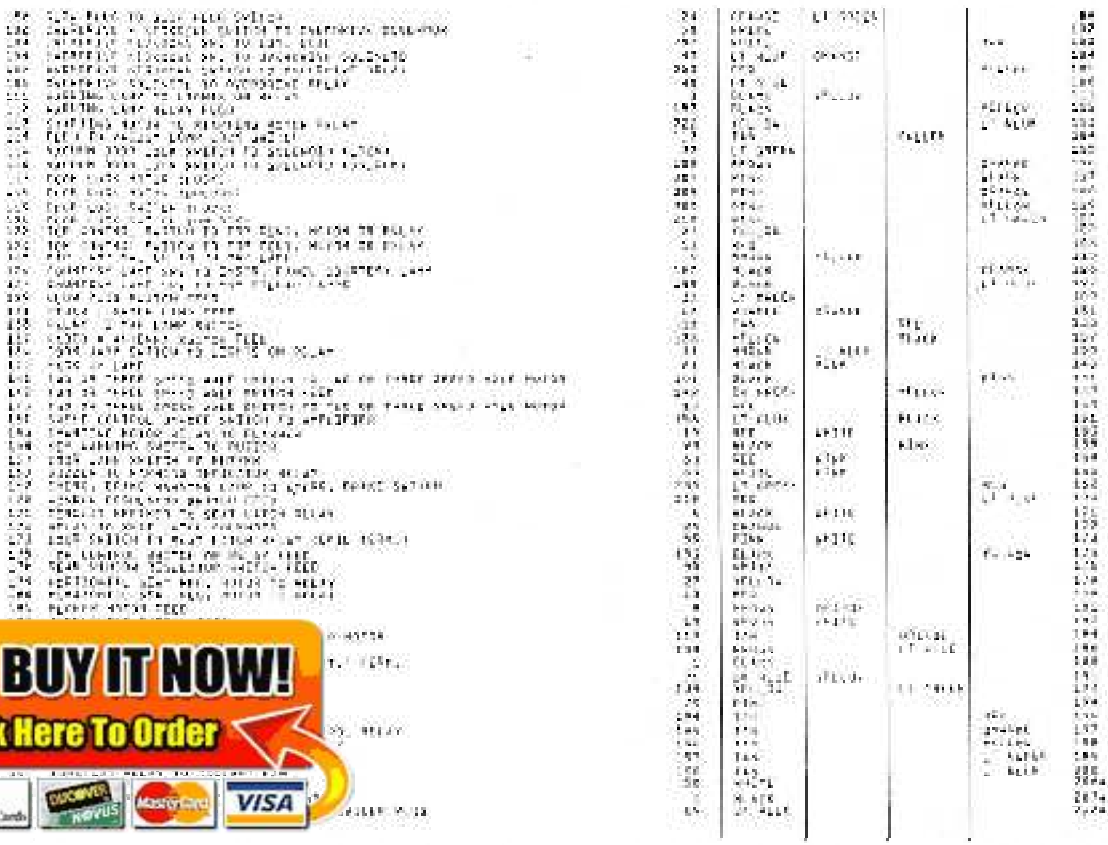


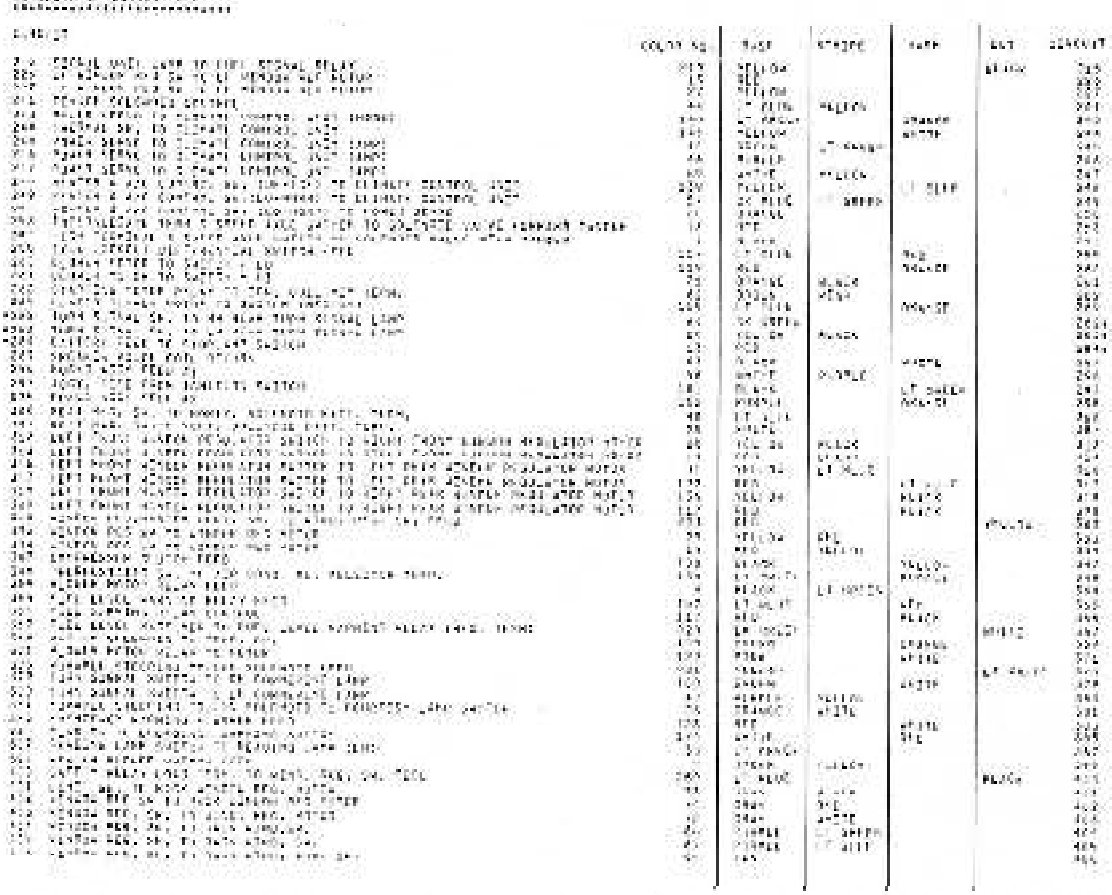
Fig. 9 – Connectors

CAR STANDARD WIRE COLOR CODE CHART
(1 OF 3)



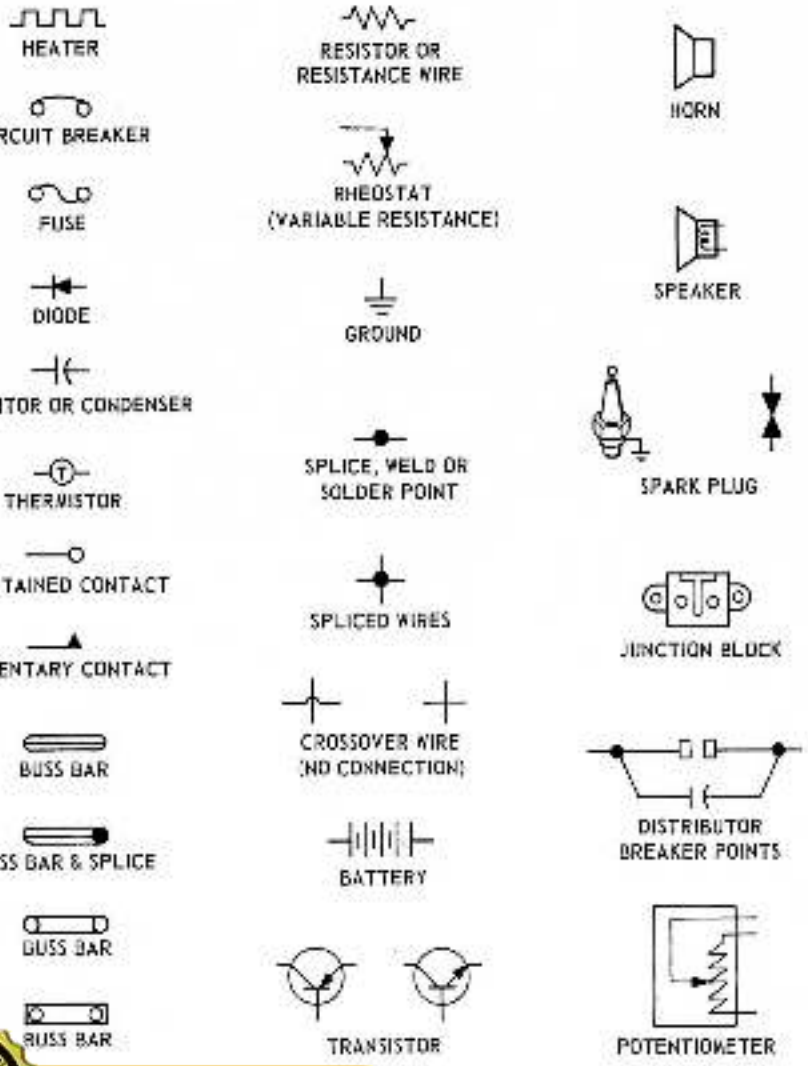


CAR STANDARD WIRE COLOR CODE CHART
(2 OF 3)

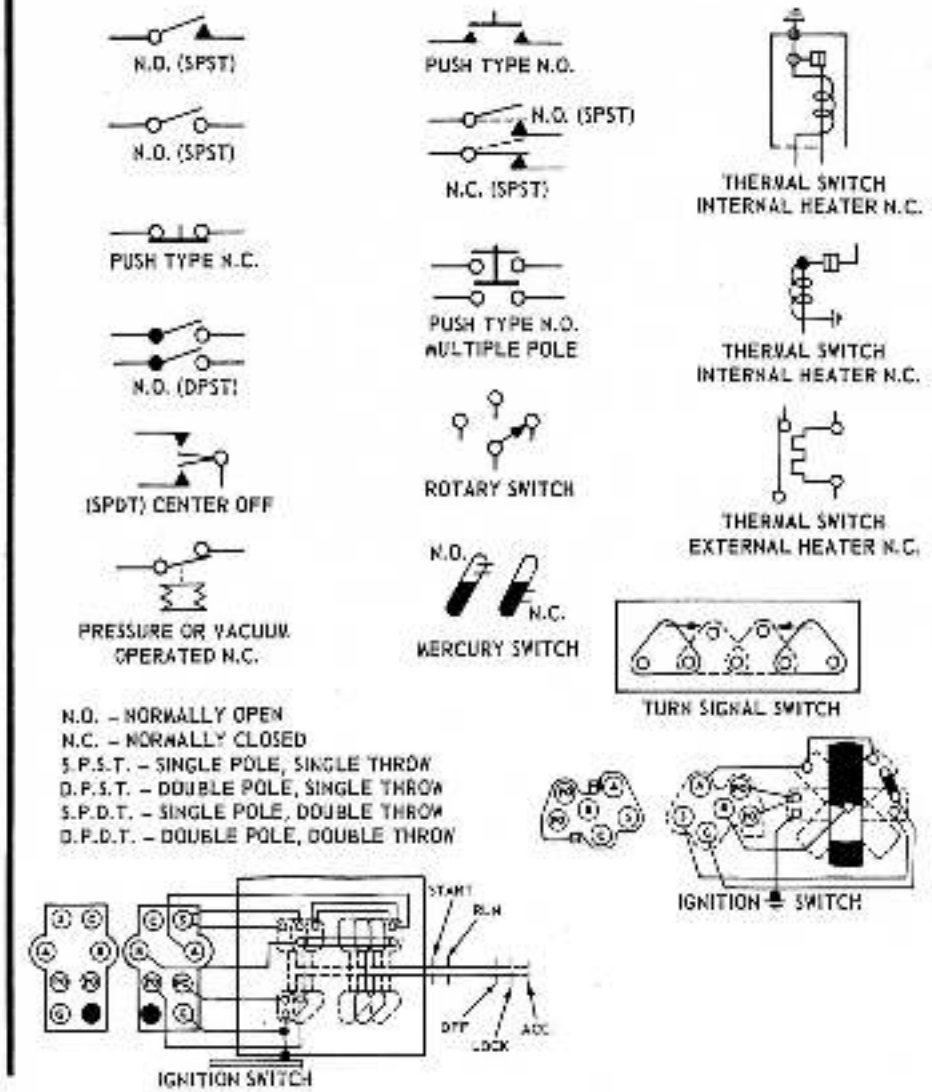


CAR STANDARD WIRE COLOR CODE CHART
(3 OF 3)

CIRCUIT SYMBOLS

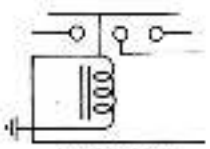


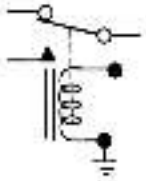
SWITCHES

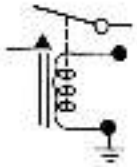


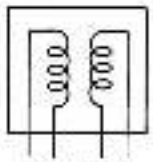
N.O. – NORMALLY OPEN
N.C. – NORMALLY CLOSED
S.P.S.T. – SINGLE POLE, SINGLE THROW
D.P.S.T. – DOUBLE POLE, SINGLE THROW
S.P.D.T. – SINGLE POLE, DOUBLE THROW
D.P.D.T. – DOUBLE POLE, DOUBLE THROW

RELAYS

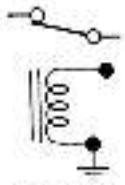

N.O. (DPST)

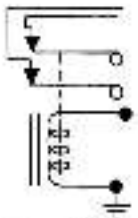

(SPDT)


N.O. (SPST)

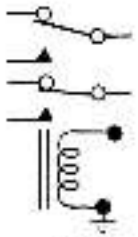

SOLENOID

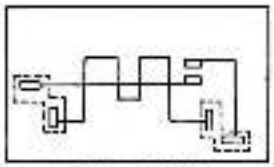

SOLENOID


N.C. (SPST)


N.C. (DPST)


IGNITION COIL


DPDT


MAP LAMP RELAY


COIL AIR CORE

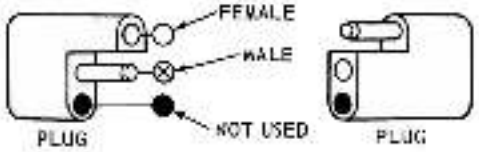
N.O. – NORMALLY OPEN
N.C. – NORMALLY CLOSED
S.P.S.T. – SINGLE POLE, SINGLE THROW
D.P.S.T. – DOUBLE POLE, SINGLE THROW
S.P.D.T. – SINGLE POLE, DOUBLE THROW
D.P.D.T. – DOUBLE POLE, DOUBLE THROW

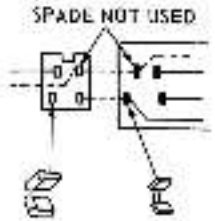
LAMPS

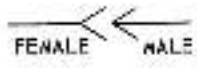

SINGLE FILAMENT

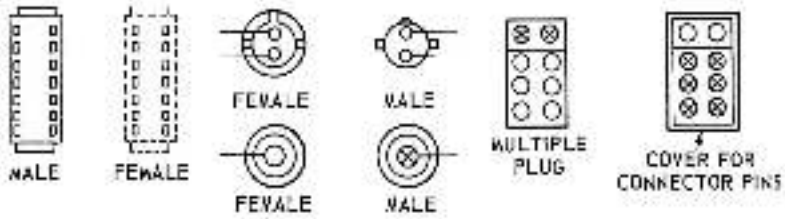
DOUBLE FILAMENT

CONNECTORS

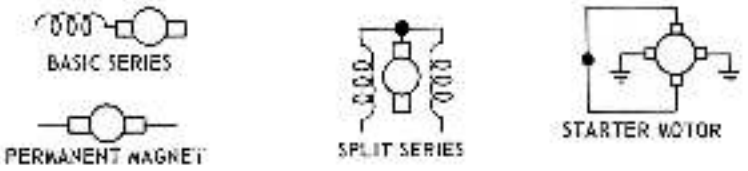








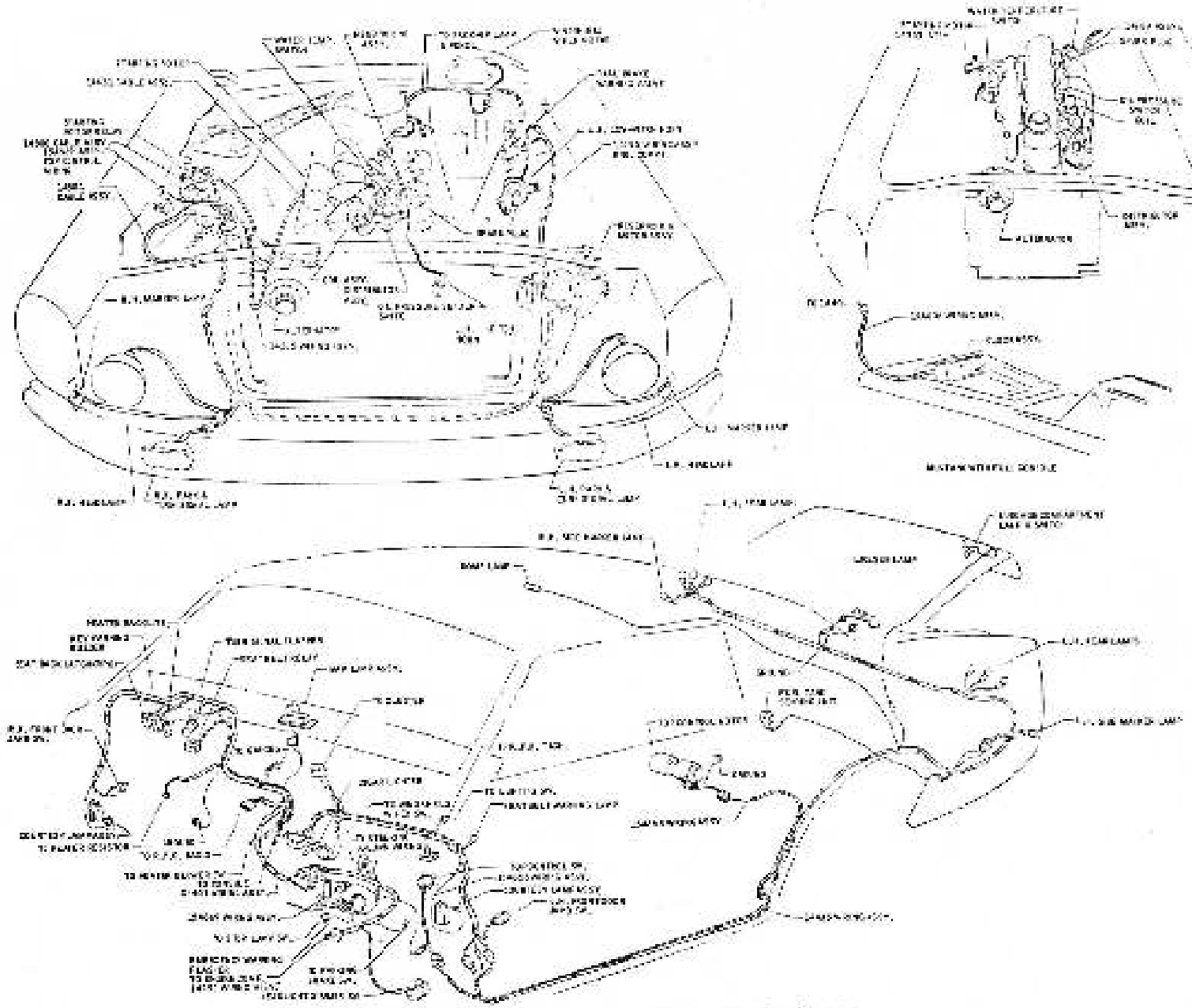
MOTORS



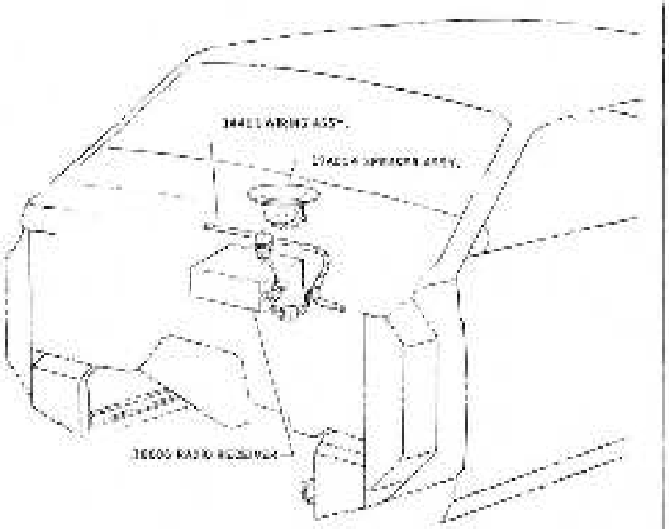
GAUGES

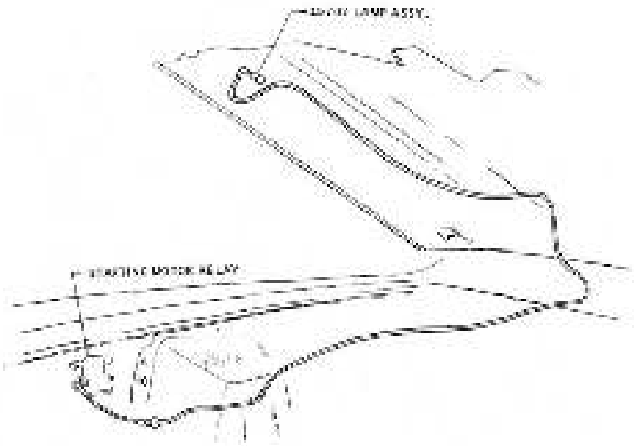
1971 MUSTANG AND COUGAR ELECTRICAL DRAWINGS

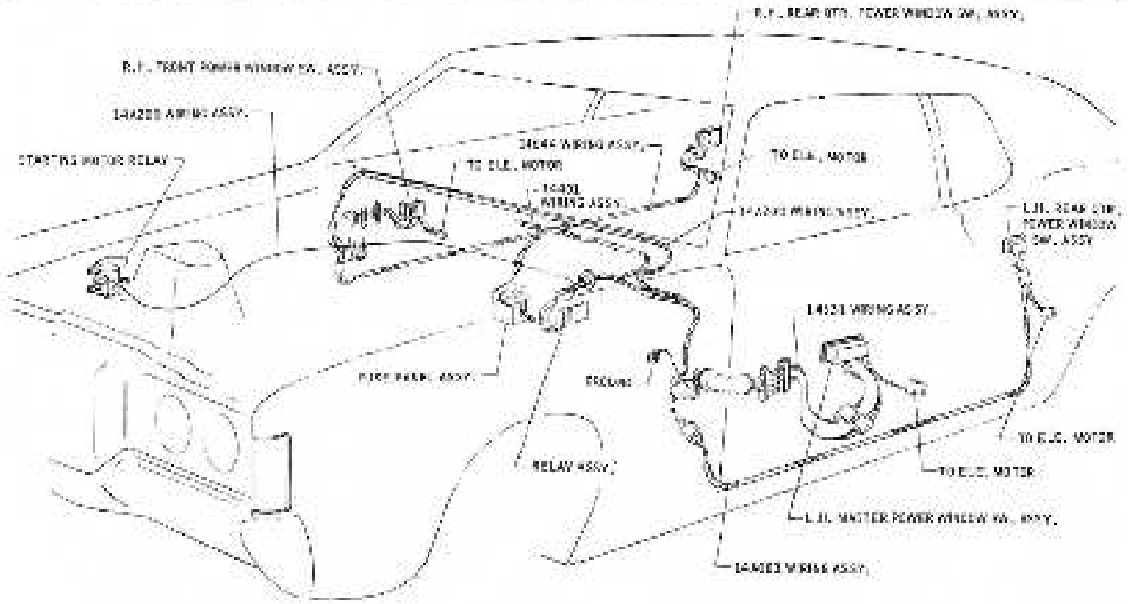
SECTION 2 INDEX



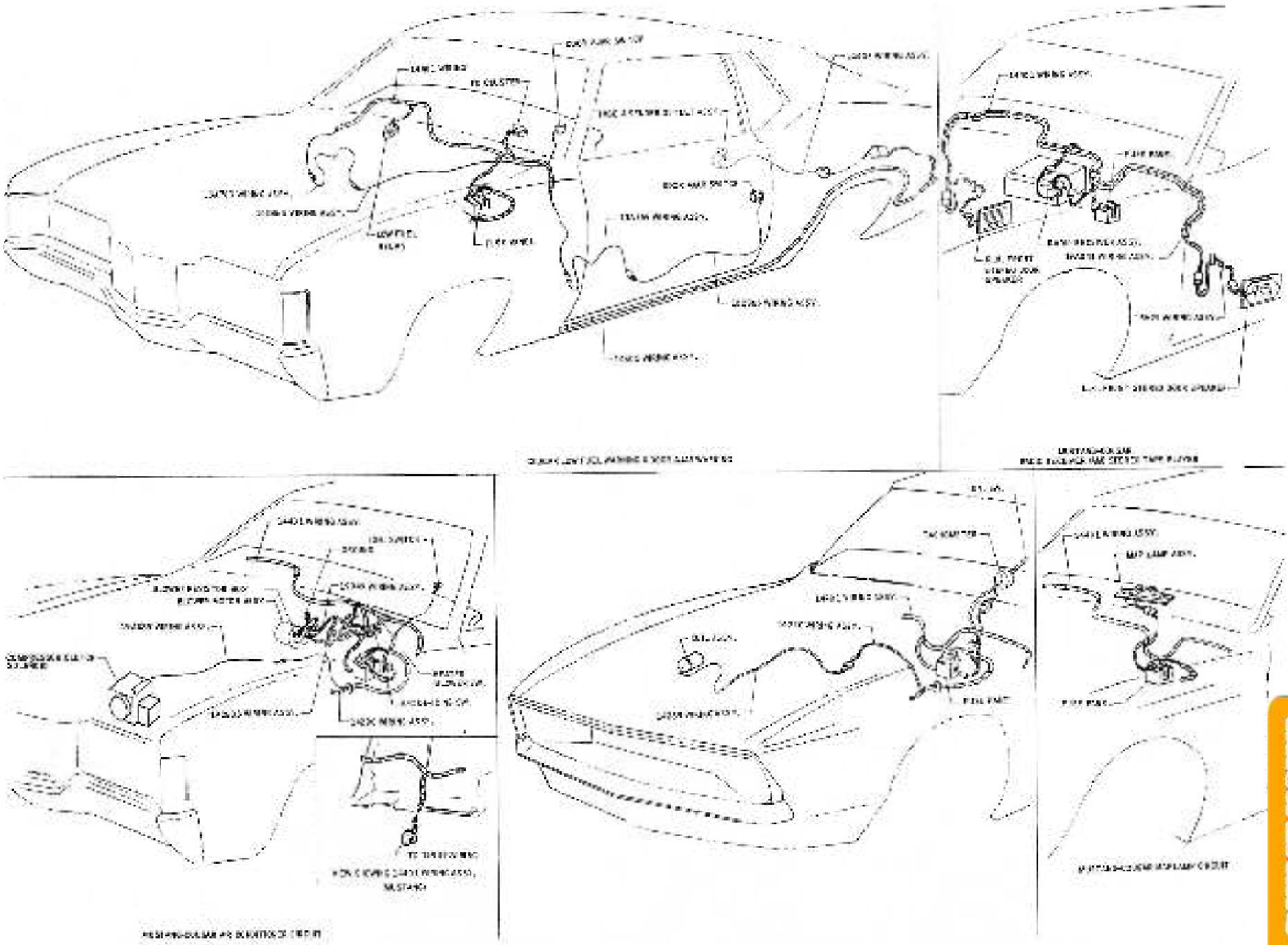
MUSTANG OVERALL VIEW PICTORIAL



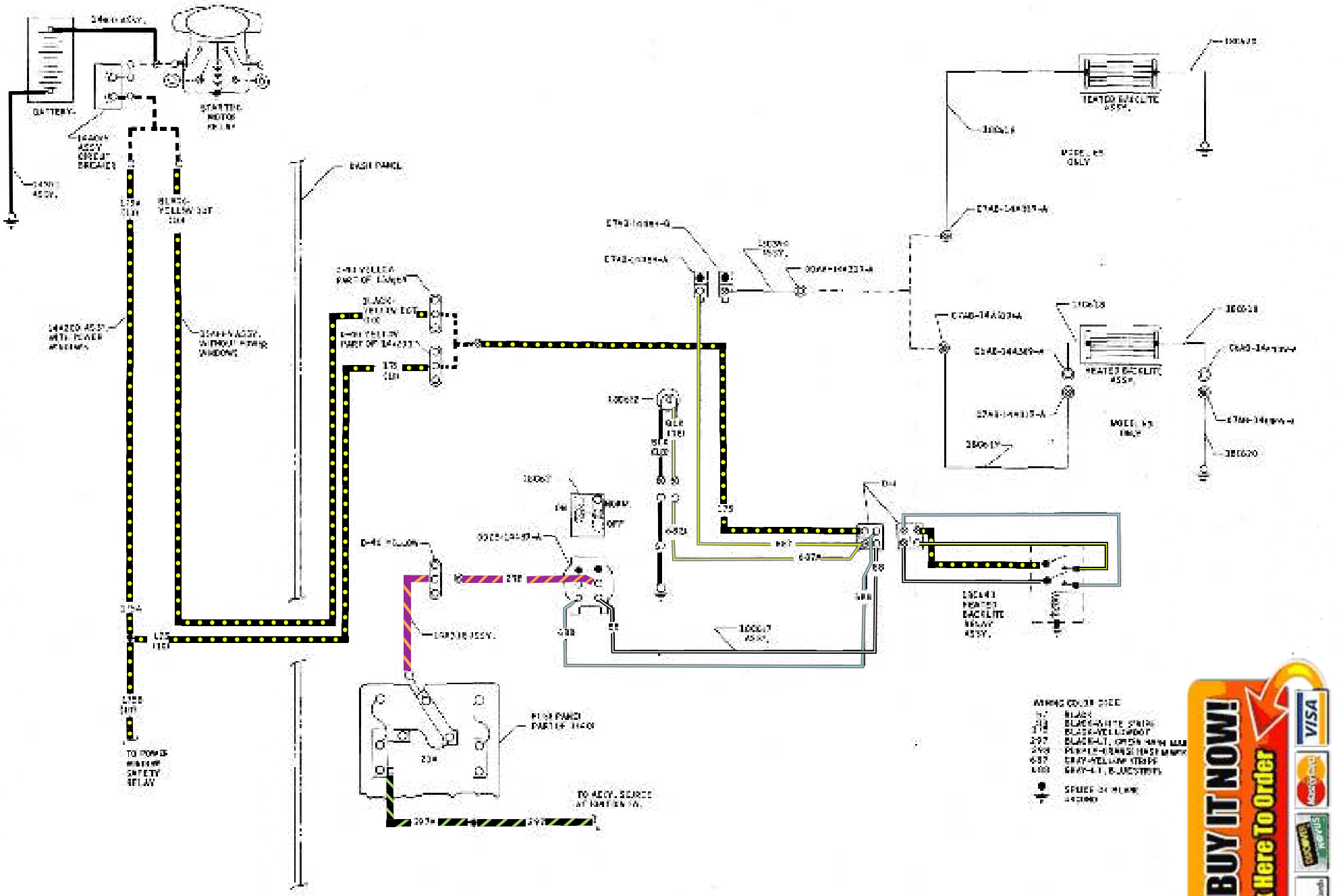




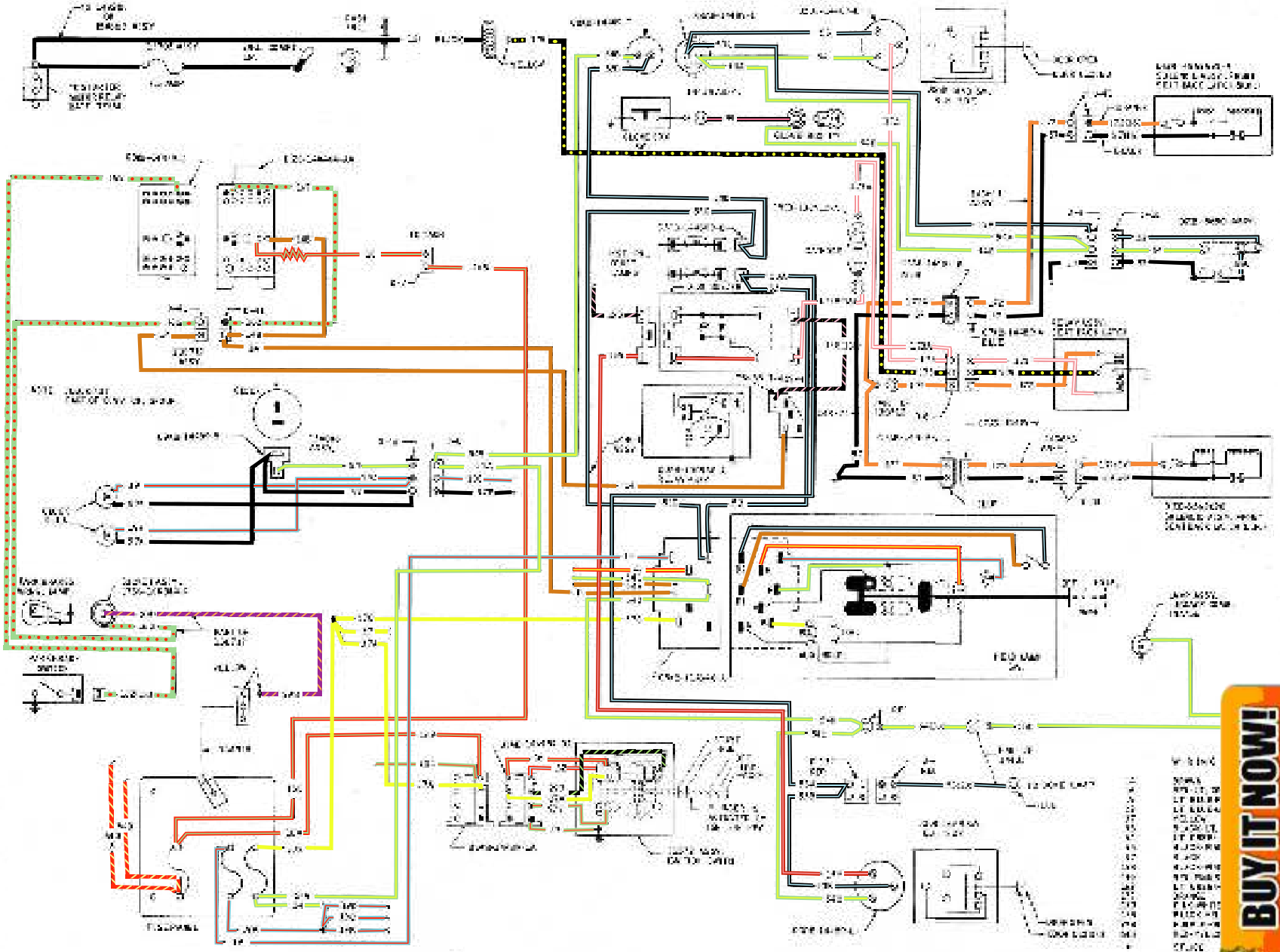
MUSTANG AND COUGAR PICTORIALS



MUSTANG AND COUGAR PICTORIALS



MUSTANG HEATED BACKLITE



MUSTANG CONVENIENCE SYSTEM (With Tach)

Source Document
Ford Publication Form 7795P-71

1971

COURSE 13003 and 1703

WIRING and VACUUM DIAGRAMS

Ford

SERVICE TRAINING

FORM 77

1971 VACUUM SYSTEMS
INDEX

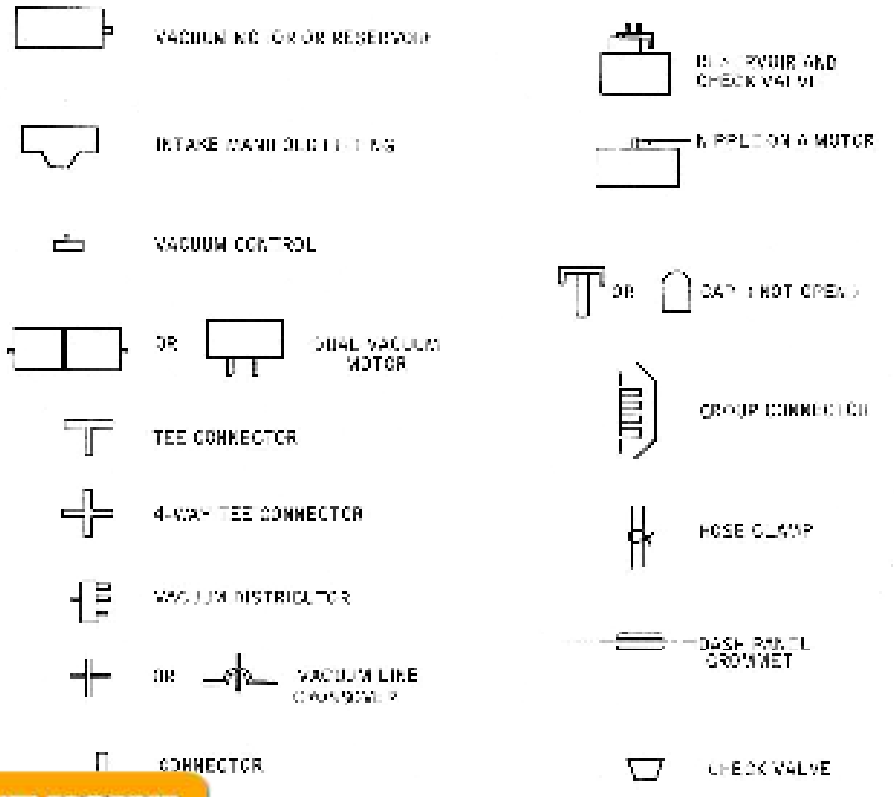
HOW TO USE THE VACUUM DIAGRAMS

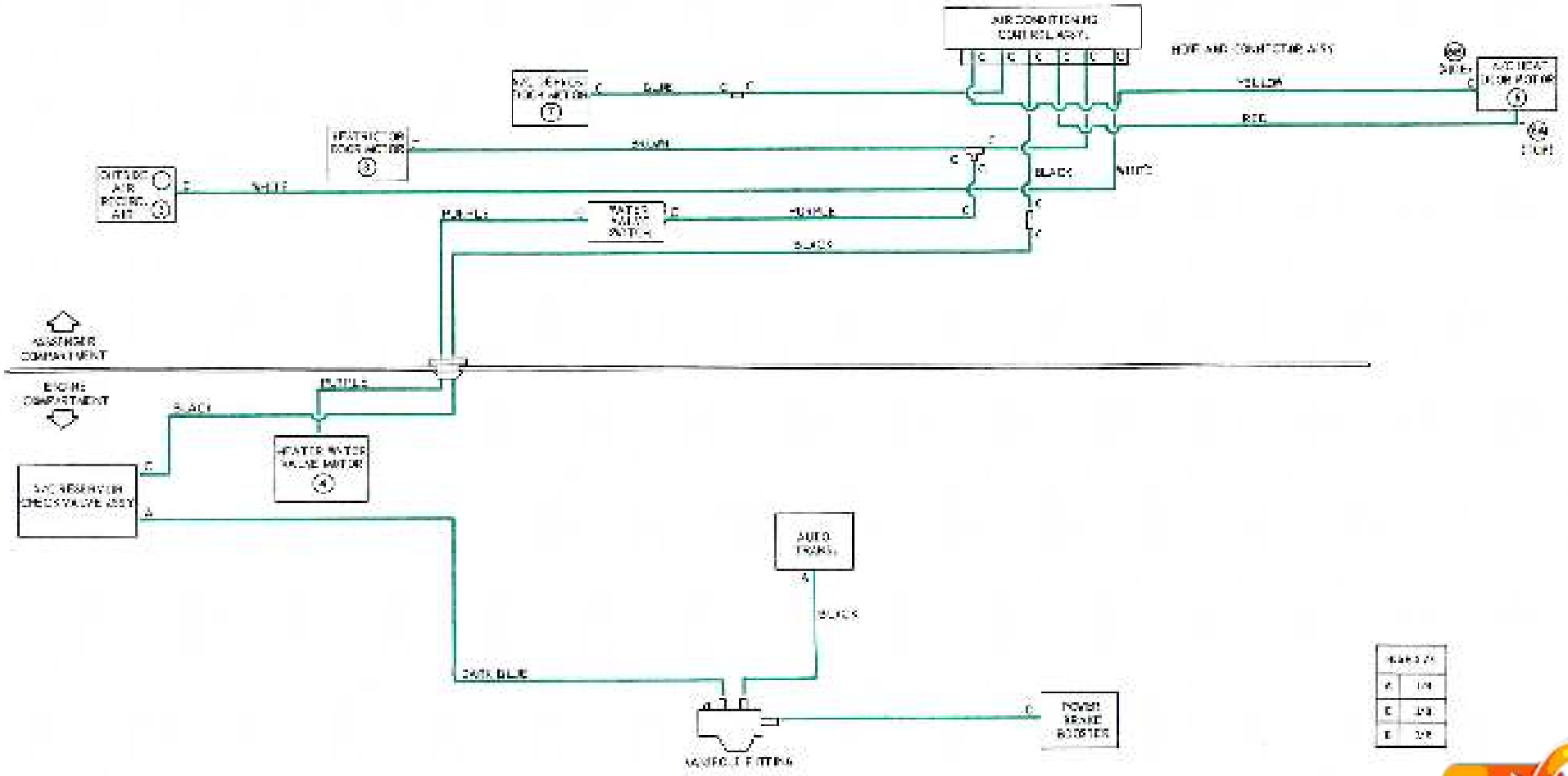
IF IT IS A FORD CAR LINE VACUUM SYSTEM, THE TECHNICIAN WILL FIND A PAGE FOR THE TOTAL SCHEMATIC SYSTEM AS WELL AS A LISTING FOR A SCHEMATIC AND PICTORIAL OF EACH SUBSYSTEM ON EACH SECTION INDEX PAGE. IT IS RECOMMENDED THAT THE TECHNICIAN FIRST TURN TO THE TOTAL SYSTEMS SCHEMATIC TO DETERMINE IF THERE 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





MUSTANG-COUGAR VACUUM SYSTEMS

1971

CAR

SHOP

MANUAL

Includes all Five Volumes:

Volume I - Chassis
Volume II - Engine
Volume III - Electrical
Volume IV - Body
Volume V - Pre-Delivery

MAVERICK
TORINO
MUSTANG
FORD
THUNDERBIRD
MONTEGO
COUGAR
COMET
METEOR
MERCURY
LINCOLN CONTINENTAL
CONTINENTAL MARK III

GROUP INDEX

FIRST PRINTING—SEPTEMBER, 1970

FOREWORD

This manual is divided into five volumes: 1 – Chassis, 2 – Engine, 3 – Electrical, 4 – Body, 5 – Maintenance and Lubrication. These volumes should provide Service Technicians with complete information covering normal service repairs on all 1971 model passenger cars (except Pinto) built by the Ford Companies in the U. S. and Canada. Service procedures for the Pinto are covered in the Pinto Car Shop Manual. As changes in the product occur, this information will be updated by Technical Service Bulletins. When issued, TSB information always supersedes that published herein.

Within each volume, information is grouped by system or component plus "General Service" parts which contain information which is common to several similar components.

The table of contents on the first page of each volume indicates the general content of the book and provides a handy tab locater to make it easy to find the first page of each "Group". That page will contain an index to "Parts" and the first page of each "Part" contains a detailed index which gives page location for each service operation covered. Page numbers are consecutive in each "Part".

To make reference easier, information has been broken down into smaller units so that essentially there is now one "Part" for each component or system. Group numbers indicate the volume in which the group may be found.

Indicates:

42 – 04 – 23

Volume 4 – Group 42 – Part 4 – Page 23

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

Ford **SERVICE PUBLICATIONS**

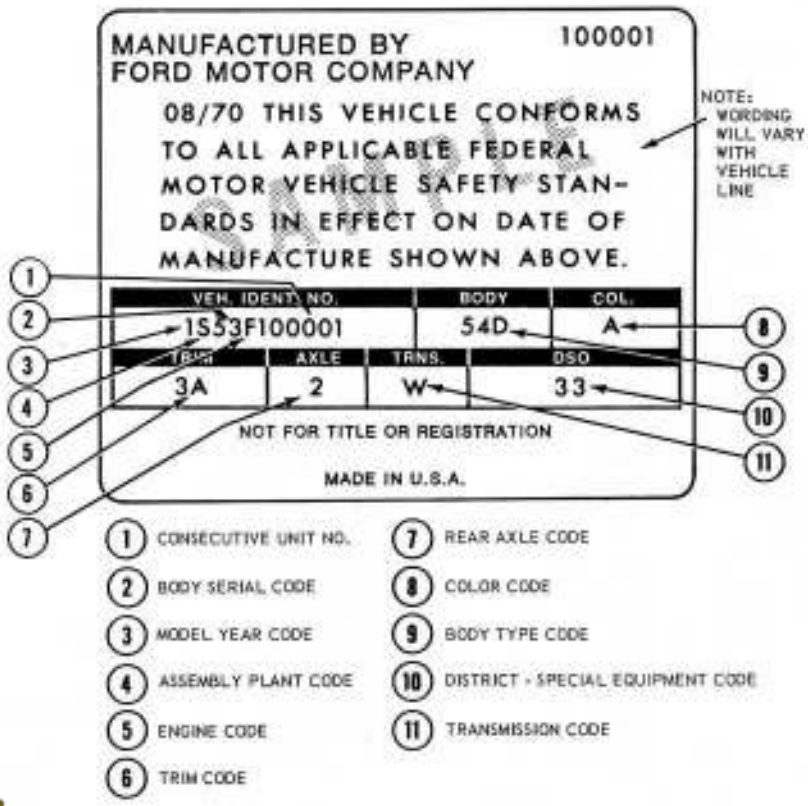
Identification Codes

GROUP 30

PART 30-01 *Car Identification Codes*

OFFICIAL VEHICLE IDENTIFICATION NUMBER

The official Vehicle Identification Number (VIN) for title and registration purposes is stamped on a metal tab that is riveted to the instrument panel close to the windshield on the driver's side of the car and is visible from outside (Fig. 1).



Y 1298-A

...l and Identification Number

VEHICLE CERTIFICATION LABEL

The Vehicle Certification Label (V.C. Label) is attached to the rear face of the driver's door. The upper half of the label contains the name of the manufacturer, the month and year of manufacture and the certification statement. The V.C. label also contains the Vehicle Identification Number. This number is also used for Warranty identification of the vehicle. The first number indicates the model year. The letter following the model year number indicates the manufacturing assembly plant. The next two numbers designate the Body Serial Code followed by a letter expressing the Engine Code. The last six digits of the Vehicle Identification Number indicate the Consecutive Unit Number.

The remaining information on the V.C. Label consists of pertinent vehicle identification codes. The **BODY** code is two numerals and a letter identifying the body style. The **COL** (color) code is a number or letter (or both) indicating the exterior paint color code. The **TRIM** code consists of a number-letter combination designating the interior trim. The axle code is a number or letter indicating the rear axle ratio and standard or locking type axles. The **TRNS.** code is a number or letter indicating the type of transmission, numerals for manual and letters for automatic. The **DSO** code consisting of two numbers designates the district in which the car was ordered and may appear in conjunction with a Domestic Special Order or Foreign Special Order number when applicable. Ford of Canada **DSO** codes consist of a letter and a number.

MODEL YEAR CODE

The number 1 designates 1971.

CONSECUTIVE UNIT NUMBER

Starting Serial Numbers—1971 Passenger Cars

100,001—Ford, Torino, Mustang, Thunderbird, Maverick

500,001—Mercury, Meteor, Montego, Cougar, Comet

800,001—Lincoln Continental & Continental Mark III

ASSEMBLY PLANT CODES

Code Letter	
A	Atlanta
B	Oakville (Canada)
E	Mahwah
F	Dearborn
G	Chicago
H	Lorain
J	Los Angeles
K	Kansas City
N	Norfolk
P	Twin Cities
R	San Jose
S	Allen Park
T	Metuchen
U	Louisville
W	Wayne
X	St. Thomas
Y	Wixom

CY-1299-A

DATE CODES

A number signifying the date precedes the month code letter. A second-year code letter will be used if the model exceeds 12 months.

Month	Code First Year	Code Second Year
January	A	N
February	B	P
March	C	Q
April	D	R
May	E	S
June	F	T
July	G	U
August	H	V
September	J	W
October	K	X
November	L	Y
December	M	Z

DISTRICT CODES (DSO)

Units built on a Domestic Special Order, Foreign Special Order, or other Special orders will have the complete order number in this space. Also to appear in this space is the two-digit code number of the District which ordered the unit. If the unit is a regular production unit, only the District code number will appear.

FORD

Code	District
11	Boston
13	New York
15	Newark
16	Philadelphia
17	Washington
21	Atlanta
22	Charlotte
24	Jacksonville
25	Richmond
28	Louisville
32	Cleveland
33	Detroit
35	Lansing
37	Buffalo
38	Pittsburgh
41	Chicago
43	Milwaukee
44	Twin Cities
46	Indianapolis
47	Cincinnati
51	Denver
53	Kansas City
54	Omaha
55	St. Louis
56	Davenport
61	Dallas
62	Houston
63	Memphis
64	New Orleans
65	Oklahoma City
71	Los Angeles
72	San Jose
73	Salt Lake City
74	Seattle
75	Phoenix
83	Government
84	Home Office Reserve
85	American Red Cross
89	Transporation Services
90-99	Export

LINCOLN-MERCURY

Code	District
11	Boston
15	New York
16	Philadelphia
17	Washington
21	Atlanta
22	Dallas
23	Jacksonville
26	Memphis
31	Buffalo
32	Cincinnati
33	Cleveland
34	Detroit
41	Chicago
42	St. Louis
46	Twin Cities
51	Denver
52	Los Angeles
53	Oakland
54	Seattle
84	Home Office Reserve
90	Export

FORD OF CANADA

Code	District
B1	Central
B2	Eastern
B3	Atlantic
11 thru 17	Export
B4	Midwestern
B6	Western
B7	Pacific

Note: Canadian Lincoln-Mercury units use prefix "A" in place of "B".

CK2456-B

Charging System

GROUP 31

PART 31-01 *Charging System General Service*

1 DESCRIPTION AND OPERATION

CHARGING SYSTEM FUSE LINK

The fuse link is a short length of insulated wire integral with the engine compartment wiring harness. It is several wire gages smaller than the circuit that it protects. Production fuse links are black. Service fuse links are green or black depending on usage. All fuse links have the words FUSE LINK printed on the insulation. Fig. 1 shows fuse link installations.

The fuse link burns out, thus protecting the alternator or wiring, when heavy current flows, such as when a booster battery is connected incorrectly or a short to ground occurs in the wiring harness.

A burned out link may have bare wire ends protruding from the insulation, or it may only have expanded or bubbled insulation with illegible identification. If it is hard to determine if the link is burned out, perform a continuity test.

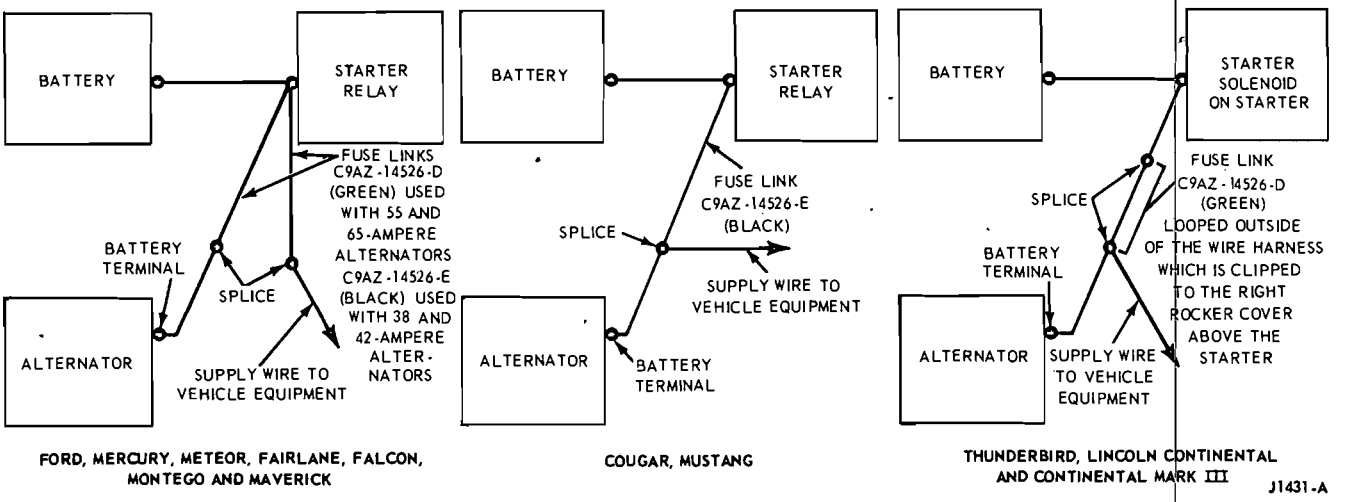


FIG. 1 Fuse Link Installation

2 TESTING

CHARGING SYSTEM

The alternator and alternator regulator are precision built units, and the equipment to make tests in the charging system must be accurate. Voltmeters must be accurate within 0.1 (one tenth) volt within the range of 12 to 16 volts and ammeters within one ampere at 30 to 65 amperes to permit correct measurement of the alternator and regulator. The meters on Rotunda equipment should be calibrated once a year and the date of calibration stamped on the meter face. It is recommended that this practice be followed by technicians with other than approved equipment in order to maintain their meters at acceptable accuracy.

Certain tests outlined in this section are illustrated in schematic and in pictorial form. The schematic illustrates the internal connections of the Rotunda equipment so that these connections can be duplicated when this equipment is not available. The Rotunda test units are a combination of accepted instruments incorporated into a single unit. The various circuits involved in the tests can be selected by means of switches without the necessity of changing connections. This reduces the time required to test units and circuits on the vehicle.

Where applicable, the tests are divided into On The Vehicle and On The Test Bench procedures. Either procedure can be followed depending on the equipment available for the tests.

Trouble shooting or diagnosis is required before actual repairs can be made in the electrical system. Even where an obvious fault makes the replacement of a unit necessary, you must still find out why the unit failed. The trouble shooting procedures given in the Electrical Systems Diagnosis Manual will aid in making a correct diagnosis. When a trouble is diagnosed correctly, unnecessary repairs are prevented, the time the vehicle is out of service will be decreased, and the repairs that are made will be permanent.

FUSE LINK CONTINUITY TEST

1. On the Cougar, Mustang, Thunderbird, Lincoln Continental and Continental Mark III, make certain first that the battery is OK, then turn on the headlights or any accessory. If the headlights or accessory do not operate, the fuse link is probably burned out.

2. On the Ford, Mercury, Meteor, Torino, Montego, Maverick and Comet, there are two fuse links (Fig. 1). Use the same procedure as in step 1 to test the fuse link that protects the vehicle equipment.

To test the fuse link that protects the alternator, make certain that the battery is OK then check with a voltmeter for voltage at the BAT terminal of the alternator. No voltage indicates that the fuse link is probably turned out.

4 REMOVAL AND INSTALLATION

stud on one end. When the terminal is not required, cut off the fuse link as close to the terminal as possible and strip approximately 3/8-inch of insulation from the cut end.

2. Disconnect the battery ground cable.

3. Disconnect the fuse link and/or fuse link eyelet terminal from the battery terminal of the starter

relay. On the Thunderbird, Lincoln Continental and the Continental Mark III, the fuse link is looped outside of the wire harness behind the point at which the harness is clipped to the right rocker cover above the starter.

4. Cut the fuse link and the splice(s) from the wire(s) to which it is attached.

5. Splice and solder the new fuse link to the wire(s) from which the old link was cut. Use rosin core solder. Wrap the splice(s) completely with vinyl electricians tape.

6. Securely connect the eyelet terminals (if any) to the battery stud on the starter relay.

7. Install the repaired wiring as before using existing clips if provided.

8. Connect the ground cable to the battery.

PART 31-02 *Batteries*

1

2 TESTING

Tests are made on a battery to determine the state of charge and also the condition. The ultimate result of these tests is to show that the battery is good, needs recharging, or should be replaced.

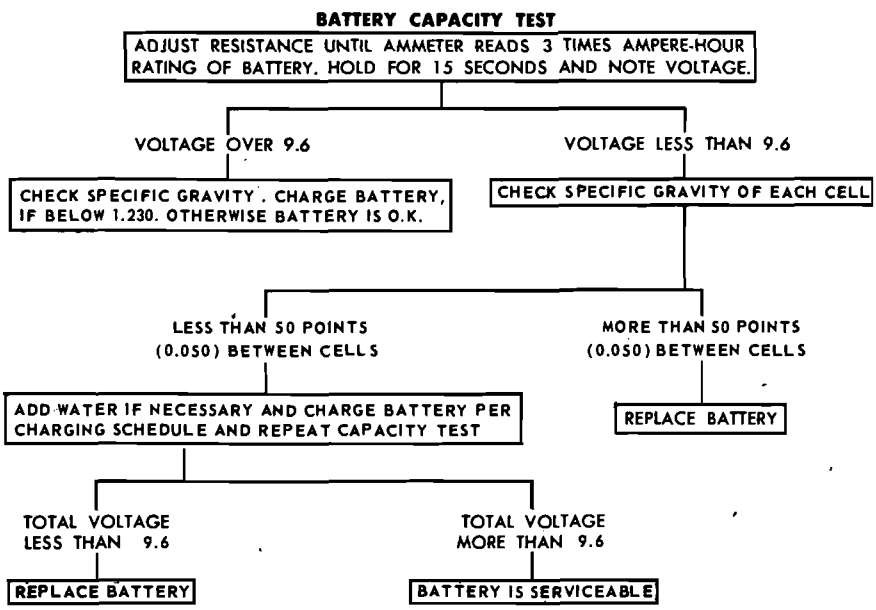
If a battery has failed, is low in charge, or requires water frequently, good service demands that the reason for this condition be found. It may be necessary to follow trouble shooting procedures to locate the cause of the trouble. Refer to the Ford Car and Truck Diagnosis Manual for battery diagnosis procedures.

Hydrogen and oxygen gases are produced during normal battery operation. This gas mixture can explode if flames or sparks are brought near the vent openings of the battery. The sulphuric acid in the battery electrolyte can cause a serious burn if spilled on the skin or spattered in the eyes. It should be flushed away with large quantities of clear water.

Particular care should be used when connecting a booster battery in order to prevent sparks. Be certain to connect positive terminal to positive terminal and negative terminal to negative terminal.

Before attempting to test a battery, it is important that it be given a thorough visual examination to determine if it has been damaged. The presence of moisture on the outside of the case and/or low electrolyte level in one or more of the cells are indications of possible battery damage.

Autolite batteries have a single one-piece cover which completely seals the top of the battery and the individual cell connectors. This cover must not be pierced with test probes to perform individual cell tests.



J 1039-F

TESTS USING THE ROTUNDA CELL ANALYZER (SRECA-200)

The Rotunda Cell Analyzer (SRECA-200) measures the individual cell voltages by inserting probes into the cell openings. Follow the instructions provided with the unit.

A battery can also be tested by determining its ability to deliver current. This may be determined by conducting a Battery Capacity Test. Fig. 1 shows the battery capacity test in outline form.

TESTS USING THE ROTUNDA BATTERY—STARTER TESTER ARE 16-31

Battery Capacity Test

A high rate discharge tester (Rotunda Battery-Starter Tester ARE 16-31) in conjunction with a voltmeter is used for this test.

1. Turn the control knob on the BatteryStarter Tester to the OFF position.

2. Turn the voltmeter selector switch to the 20-volt position.

3. Connect both positive test leads to the positive battery post and both negative test leads to the negative battery post. **The voltmeter clips must contact the battery posts and not the high rate discharge tester clips. Unless this is done, the actual battery terminal voltage will not be indicated.**

4. Turn the load control knob in a clockwise direction until the ammeter reads three times the ampere hour rating of the battery. (A 45 ampere-hour battery should be tested at 135 amperes load).

5. With the ammeter reading the required load for 15 seconds, note the voltmeter reading. **Avoid leaving the high discharge load on the battery for periods longer than 15 seconds.**

6. If the voltmeter reading is 9.6 volts or more, the battery has good output capacity and will readily accept a charge, if required. Check the specific gravity. If the specific gravity reading is 1.230 or below, add water if necessary and charge the battery until it is fully charged (Fig. 1). **Always disconnect the battery ground cable when charging the battery.**

Specific Gravity Reading	Charge Rate Amperes	Battery Capacity – Ampere Hours				
		45	55	70	80	85
1.125–1.150 ①	35	65 min.	80 min.	100 min.	115 min.	125 min.
1.150–1.175	35	50 min.	65 min.	80 min.	95 min.	105 min.
1.175–1.200	35	40 min.	50 min.	60 min.	70 min.	75 min.
1.200–1.225	35	30 min.	35 min.	45 min.	50 min.	55 min.
Above 1.225	5	②	②	②	②	②

① If the specific gravity is below 1.125, use the indicated high rate of charge for the 1.125 specific gravity, then charge at 5 amperes until the specific gravity reaches 1.250 at 80° F.

② Charge at 5 ampere rate only until the specific gravity reaches 1.250 at 80° F.

At no time during the charging operation should the electrolyte temperature exceed 130° F.

J 1355-C

FIG. 2 Allowable Battery High Rate Charge Time Schedule

The battery is fully charged when the cells are all gassing freely and the specific gravity ceases to rise for three successive readings taken at hourly intervals. Additional battery testing will not be necessary after the battery has been properly charged.

7. If the voltage reading obtained during the capacity test is below 9.6 volts, check the specific gravity of each cell.

8. If the difference between any two cells is more than 50 points (0.050), the battery is not satisfactory for service and should be replaced.

9. If the difference between cells is less than 50 points (0.050), the battery should be charged according to the charging schedule in Fig. 2. In some cases the electrolyte level may be too low to obtain a specific gravity reading. In such cases water should be added until the electrolyte level just covers the ring in the filler well, then charge the battery at 35 amperes for the maximum charging time indicated in Fig. 2 for the capacity of the battery being tested.

10. After the battery has been charged, repeat the capacity test. If the capacity test battery voltage is still less than 9.6 volts, replace the battery. If the voltage is 9.6 volts or more, the battery is satisfactory for service.

11. If the battery is found to be discharged only, check for a loose fan belt, loose electrical connections and charging system performance.

9 SPECIFICATIONS

BATTERIES

Allowable Battery High Rate Charge Time Schedule						
Specific Gravity Reading	Charge Rate Amperes	Battery Capacity–Ampere Hours				
		45	55	70	80	85
1.125–1.150①	35	65 min.	80 min.	100 min.	115 min.	125 min.
1.150–1.175	35	50 min.	65 min.	80 min.	95 min.	105 min.
1.175–1.200	35	40 min.	50 min.	60 min.	70 min.	75 min.
1.200–1.225	35	30 min.	35 min.	45 min.	50 min.	55 min.
Above 1.225	5	②	②	②	②	②

①If the specific gravity is below 1.125, use the indicated high rate of charge for the 1.125 specific gravity, then charge at 5 amperes until the specific gravity reaches 1.250 at 80° F.
②Charge at 5 ampere rate only until the specific gravity reaches 1.250 at 80° F.
At no time during the charging operation should the electrolyte temperature exceed 130° F.

Battery Freezing Temperatures			
Specific Gravity	Freezing Temp	Specific Gravity	Freezing Temp
1.280	–90°F	1.150	+5°F
1.250	–62°F	1.100	+19°F
1.200	–16°F	1.050	+27°F

Battery Ampere Hours		Number Of Plates
45		54
55		66
70		66
80		78

CJ1447-A

1965/72
FORD CAR

FINAL ISSUE

Master Parts a[illegible] and Accessories CATALOG

Form FP 7635-A & B

Supersends All Previous Issues, Changes and Revisions

Official Licensed Product

5236

May 1975

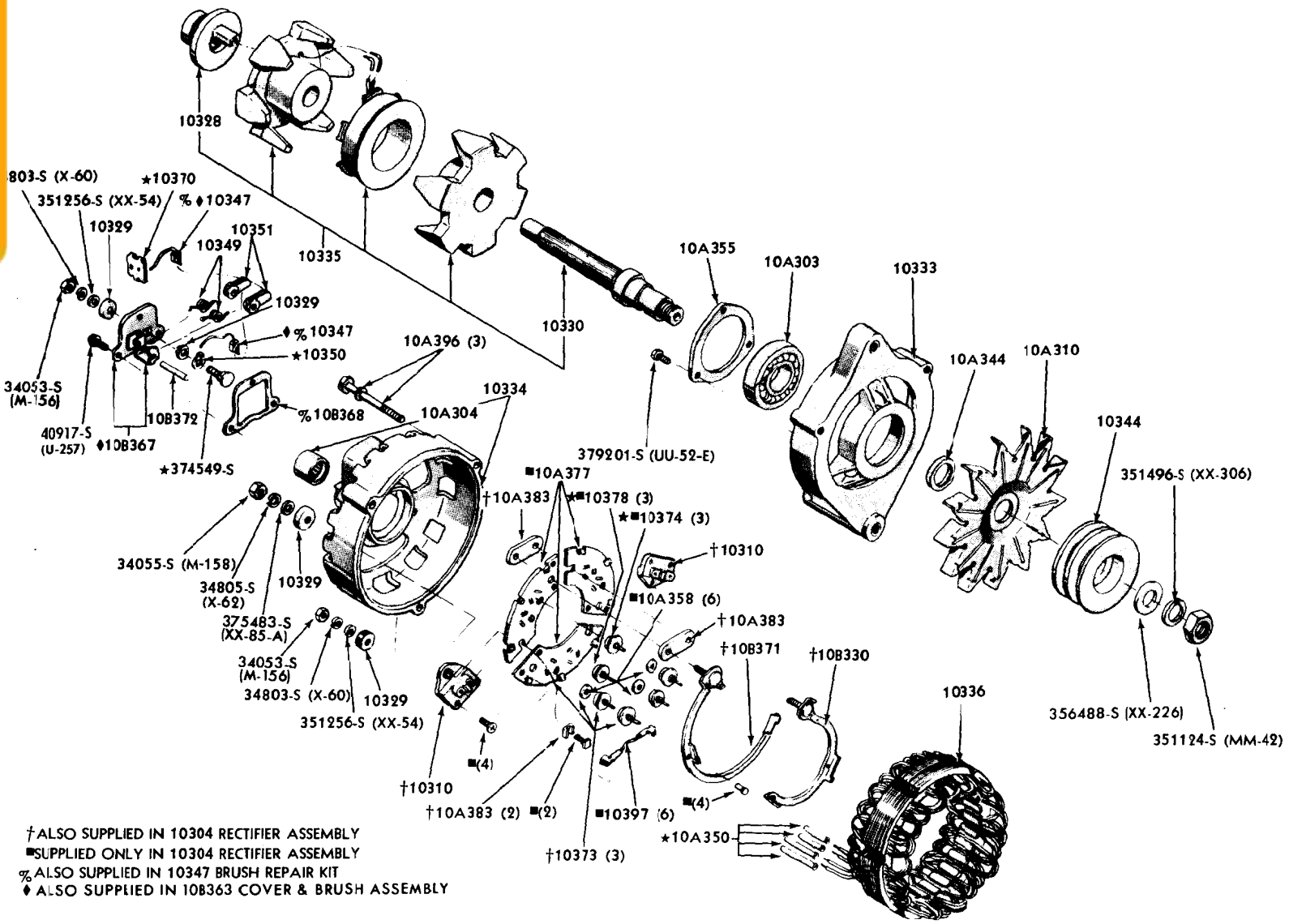
FINAL ISSUE

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

P-4508

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

ALTERNATOR (FORD 15 VOLT - 65 AMP.) 1967/72

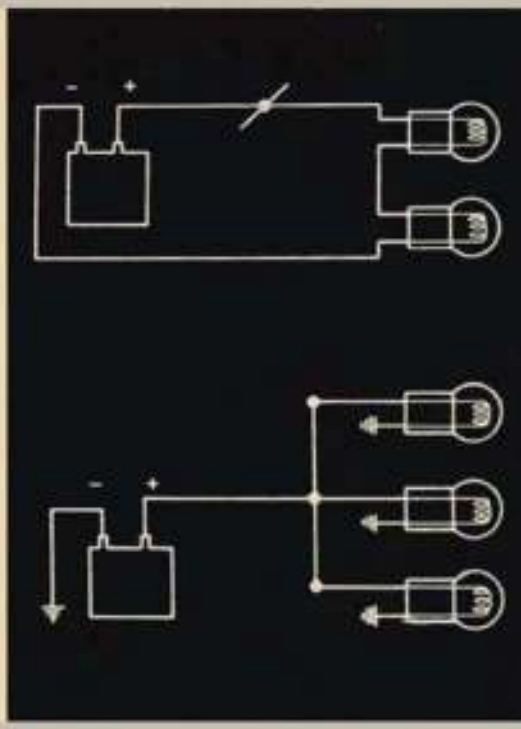


†ALSO SUPPLIED IN 10304 RECTIFIER ASSEMBLY
■SUPPLIED ONLY IN 10304 RECTIFIER ASSEMBLY
%ALSO SUPPLIED IN 10347 BRUSH REPAIR KIT
♦ALSO SUPPLIED IN 10B363 COVER & BRUSH ASSEMBLY

P-5394

READY REFERENCE 13001

HOW TO READ WIRING DIAGRAMS



Ford
REGISTERED TECHNICIAN

VOL 68 S7 L2A

HOW TO READ WIRING DIAGRAMS

COURSE 13001 • VOL. 68 S7 L2A

TABLE OF CONTENTS

The descriptions, testing procedures, and specifications in this handbook were ...as approved for printing. Ford Motor Com- ...ue models at any time, or change specifica- ...es without notice and without incurring

NATIONAL SERVICE OFFICE
FORD DIVISION

FIRST PRINTING – JANUARY, 1968

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.

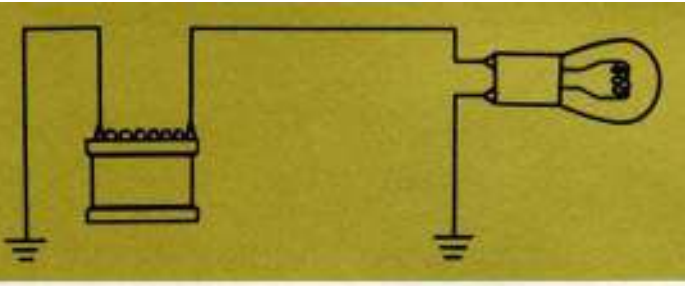
The Purpose of this Booklet . . .

. . . 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.*

unit *may* be the
nay not. Snap
ssional.

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.