1968 COUGAR FAIRLANE FALCON MONTEGO MUSTANG

SHOP MANUAL
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This shop manual provides the Service Technician with information for the proper servicing of the 1968 Cougar, Fairlane, Falcon, Montego and Mustang cars.

The maintenance schedule and procedures for maintenance operations are published in the 1968 Passenger Car Maintenance and Lubrication Manual.

The information in this manual is grouped according to the type of work being performed, such as diagnosis and testing, frequently performed adjustments and repairs, in-vehicle adjustments, overhaul, etc. Specifications and recommended special tools are included.

Refer to the opposite page for important vehicle identification data.

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.
VEHICLE WARRANTY NUMBER

The vehicle warranty number is the first line of numbers and letters appearing on the Warranty Plate (Fig. 1). The Warranty Plate is riveted to the left front door lock face panel. 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 group of six digits remaining on the first line indicate the Consecutive Unit Number. The Date Code indicating the date the vehicle was manufactured. A two-digit number next 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. The final two spaces indicate the Rear Axle Ratio (numbers for regular axles, letters for locking-types) and the Transmission type (numbers for manual, letters for automatic).

VEHICLE DATA

The vehicle data appears on the second or lower line on the Warranty Plate. The first two numbers and a letter identify the Body Style. A letter or a number appears next indicating the Exterior Paint Color followed by a number-letter combination designating the Interior Trim. To the right of this code appears the Official Vehicle Identification Number (VIN) for title and registration purposes will be stamped on an aluminum tab that will be riveted to the instrument panel close to the windshield on the passenger side of the vehicle.
**GROUP 1 — Vehicle Identification**

**MODEL YEAR CODE**
The number 8 designates 1968.

**BODY SERIAL AND STYLE CODES**
The two-digit numeral which follows the assembly plant code identifies the body series. This two-digit number is used in conjunction with the Body Style Code, in the Vehicle Date, which consists of a two-digit number with a letter suffix. The following charts list the Body Serial Codes, Body Style Codes and the models.

### MONTEGO

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<thead>
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<th>Body Type</th>
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<td>Comet</td>
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<td>Sports Sedan</td>
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</tr>
<tr>
<td>06</td>
<td>54B</td>
<td>2-Door Sedan</td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>65B</td>
<td>2-Door Hardtop</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>54D</td>
<td>4-Door Sedan</td>
<td>Montego MX</td>
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<td>65O</td>
<td>2-Door Hardtop</td>
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<td>76D</td>
<td>2-Door Convertible</td>
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</tr>
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<td>2-Door Hardtop</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>76B</td>
<td>2-Door Convertible</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>54C</td>
<td>4-Door Sedan</td>
<td>Brougham</td>
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<tr>
<td>11</td>
<td>65C</td>
<td>2-Door Hardtop</td>
<td></td>
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<td>63A</td>
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<td>Cyclone</td>
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<td>17</td>
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<tr>
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<td>63H</td>
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</tr>
<tr>
<td>03</td>
<td>71B</td>
<td>4-Door Wagon</td>
<td>Montego MX</td>
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<tr>
<td>08</td>
<td>71C</td>
<td>4-Door Wagon</td>
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- Bench Seat
- Bucket Seat
- Formal Roof

### MUSTANG

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<th>Body Type</th>
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<td>2-Door Hardtop</td>
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<td>03</td>
<td>76A</td>
<td>2-Door Convertible</td>
<td></td>
</tr>
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<td>63B</td>
<td>2-Door Fastback</td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>65B</td>
<td>2-Door Hardtop</td>
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</tr>
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<td>03</td>
<td>76B</td>
<td>2-Door Convertible</td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>65C</td>
<td>2-Door Hardtop</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>63D</td>
<td>2-Door Fastback</td>
<td></td>
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- Bucket Seat
- Bench Seat
- Luxury Model

### FALCON

<table>
<thead>
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<th>Body Style Code</th>
<th>Body Type</th>
<th>Model</th>
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</thead>
<tbody>
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<td>2-Door Club Coupe</td>
<td>Standard</td>
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<td>54A</td>
<td>4-Door Sedan</td>
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<td>62B</td>
<td>2-Door Club Coupe</td>
<td>Futura</td>
</tr>
<tr>
<td>21</td>
<td>54B</td>
<td>4-Door Sedan</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>63C</td>
<td>2-Door Sports Coupe</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>71A</td>
<td>4-Door</td>
<td>Wagon (Std.)</td>
</tr>
<tr>
<td>23</td>
<td>71B</td>
<td>4-Door</td>
<td>Wagon (Deluxe)</td>
</tr>
</tbody>
</table>

- Bench Seat
- Bucket Seat

### CONSECUTIVE UNIT NUMBER

Each model year, each assembly plant begins production with number 500001 (Montego or Cougar) or 100001 (Fairlane, Falcon, Mustang) and continues on for each unit built.

### ENGINE CODES

<table>
<thead>
<tr>
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<th>Type</th>
</tr>
</thead>
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<td>6 Cyl. 170 Cu. In. (1V)</td>
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</tr>
<tr>
<td>F....</td>
<td>6 Cyl. 170 Cu. In. (1V)</td>
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</tr>
<tr>
<td>L....</td>
<td>6 Cyl. 200 Cu. In. (1V)</td>
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</tr>
<tr>
<td>C....</td>
<td>8 Cyl. 269 Cu. In. (2V)</td>
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</tr>
<tr>
<td>J....</td>
<td>8 Cyl. 302 Cu. In. (2V)</td>
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</tr>
<tr>
<td>E....</td>
<td>8 Cyl. 302 Cu. In. (2V)</td>
<td></td>
</tr>
<tr>
<td>U.....</td>
<td>8 Cyl. 390 Cu. In. (2V)</td>
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</tr>
<tr>
<td>X....</td>
<td>8 Cyl. 390 Cu. In. (2V) Pre. Fuel</td>
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</tr>
<tr>
<td>S....</td>
<td>8 Cyl. 390 Cu. In. (4V) GT</td>
<td></td>
</tr>
</tbody>
</table>

- Low Compression
ASSEMBLY PLANT 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.

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<th>Code Letter</th>
<th>Plant Location</th>
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<td>A</td>
<td>Atlanta</td>
</tr>
<tr>
<td>B</td>
<td>Oakville (Canada)</td>
</tr>
<tr>
<td>C</td>
<td>Ontario Truck</td>
</tr>
<tr>
<td>D</td>
<td>Dallas</td>
</tr>
<tr>
<td>E</td>
<td>Dearborn</td>
</tr>
<tr>
<td>F</td>
<td>Chicago</td>
</tr>
<tr>
<td>G</td>
<td>Lorain</td>
</tr>
<tr>
<td>H</td>
<td>Kansas City</td>
</tr>
<tr>
<td>I</td>
<td>Los Angeles</td>
</tr>
<tr>
<td>J</td>
<td>St. Louis</td>
</tr>
<tr>
<td>K</td>
<td>Michigan Truck</td>
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<tr>
<td>L</td>
<td>Norfolk</td>
</tr>
<tr>
<td>N</td>
<td>Twin Cities</td>
</tr>
<tr>
<td>P</td>
<td>San Jose</td>
</tr>
<tr>
<td>Q</td>
<td>Pilot Plant</td>
</tr>
<tr>
<td>R</td>
<td>Wayne</td>
</tr>
<tr>
<td>S</td>
<td>Detroit</td>
</tr>
<tr>
<td>T</td>
<td>St. Thomas</td>
</tr>
<tr>
<td>U</td>
<td>Louisville</td>
</tr>
<tr>
<td>W</td>
<td>Wixom</td>
</tr>
<tr>
<td>Y</td>
<td>Wayneside</td>
</tr>
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<td>Z</td>
<td>St. Louis</td>
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TRANSMISSION CODES

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<tr>
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<td>3-Speed Manual</td>
</tr>
<tr>
<td>5</td>
<td>4-Speed Manual</td>
</tr>
<tr>
<td>W</td>
<td>Automatic (C-4)</td>
</tr>
<tr>
<td>U</td>
<td>Automatic (C-6)</td>
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REAR AXLE RATIO CODES

A number designates a conventional axle, while a letter designates a locking differential.

<table>
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<tr>
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<th>Ratio</th>
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<tr>
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<tr>
<td>2</td>
<td>2.79:1</td>
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<tr>
<td>4</td>
<td>2.83:1</td>
</tr>
<tr>
<td>5</td>
<td>3.00:1</td>
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<tr>
<td>6</td>
<td>3.20:1</td>
</tr>
<tr>
<td>7</td>
<td>3.25:1</td>
</tr>
<tr>
<td>8</td>
<td>3.50:1</td>
</tr>
<tr>
<td>9</td>
<td>3.10:1</td>
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</table>

DISTRIBUTION 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.

<table>
<thead>
<tr>
<th>Code</th>
<th>District</th>
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<tbody>
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<td>Charlotte</td>
</tr>
<tr>
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</tr>
<tr>
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<td>Richmond</td>
</tr>
<tr>
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<td>Cincinnati</td>
</tr>
<tr>
<td>28</td>
<td>Louisville</td>
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<tr>
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<td>Cleveland</td>
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</tr>
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<td>37</td>
<td>Buffalo</td>
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<td>Fargo</td>
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<tr>
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<td>Twin Cities</td>
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FORD

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MERCURY

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<td>33</td>
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FORD OF CANADA

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<td>87</td>
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Note: Lincoln-Mercury units will use suffix "A" in place of "B".
## EXTERIOR PAINT COLOR CODES

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<th>M-32-1</th>
<th>Color</th>
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</tr>
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<td>355-A</td>
<td></td>
<td>Maroon</td>
</tr>
<tr>
<td>D</td>
<td>807-A</td>
<td></td>
<td>Bright Blue</td>
</tr>
<tr>
<td>F</td>
<td>805-A</td>
<td></td>
<td>Bright Aqua</td>
</tr>
<tr>
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<td>284-A</td>
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<td>Lime Green</td>
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<td>M</td>
<td>831-A</td>
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<td>Med. Aqua</td>
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<td>Gold Met.</td>
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<td>1631-A</td>
<td></td>
<td>Lt. Beige</td>
</tr>
</tbody>
</table>

## INTERIOR TRIM CODES

### Code | Trim Scheme
--- | ---
1A | Black Cloth and Black Vinyl
1B | Med. Blue Cloth and Lt. Blue Vinyl
1C | Med. Gold Cloth and Lt. Ivy Gold Vinyl
1K | Lt. Aqua Vinyl
1U | Lt. Parchment Cloth and Pastel Parchment Vinyl
1Y | Lt. Nugget Gold Vinyl
2A | Black Vinyl
2B | Dk & Lt. Blue Vinyl
2D | Red Vinyl
2F | Med. Saddle Vinyl
2G | Lt. Ivy Gold Vinyl
2K | Lt. Aqua Vinyl
2U | Pastel Parchment Vinyl
2Y | Lt. Nugget Gold Vinyl
3A | Black Vinyl (Montego)
3A | Black Cloth and Black Vinyl (Fairlane)
3B | Lt. Blue Vinyl (Montego)
3B | Med. Blue Cloth and Lt. Blue Vinyl (Falcon, Fairlane)
3D | Dk. Red Vinyl
3G | Med. Ivy Gold Cloth and Lt. Ivy Gold Vinyl
3K | Med. Aqua Cloth and Lt. Aqua Vinyl
3U | Pastel Parchment Vinyl (Montego)
3U | Lt. Parchment Cloth and Pastel Parchment Vinyl (Fairlane)
3Y | Lt. Nugget Cloth and Lt. Nugget Vinyl
4A | Black Vinyl
4B | Lt. Blue Vinyl
4D | Dk. Red Vinyl
4G | Lt. Ivy Gold Vinyl
4K | Lt. Aqua Vinyl
4U | Pastel Parchment Vinyl
4Y | Lt. Nugget Gold Vinyl
5A | Black Cloth and Black Vinyl (Montego)
5A | Black Vinyl (Fairlane)
5B | Med. Blue Cloth and Lt. Blue Vinyl (Montego)
5B | Dk. & Lt. Blue Vinyl (Fairlane)
5D | Dk. Red Cloth and Dk. Red Vinyl (Montego)
5D | Dk. Red Vinyl (Fairlane)
5G | Lt. Ivy Gold Cloth and Lt. Ivy Gold Vinyl
5K | Med. Aqua Cloth and Lt. Aqua Vinyl (Montego)
5K | Dk. & Lt. Aqua Vinyl (Fairlane)
5U | Pastel Parchment Cloth and Pastel Parchment Vinyl (Montego)
5U | Pastel Parchment Vinyl (Fairlane)
5Y | Lt. Nugget Gold Cloth and Lt. Nugget Gold Vinyl (Montego)
5Y | Lt. Nugget Gold Vinyl (Fairlane)
6A | Black Vinyl
6B | Dk. & Lt. Blue Vinyl
6D | Dk. Red Vinyl
6F | Med. Saddle Vinyl
6K | Dk. & Lt. Aqua Vinyl
6U | Pastel Parchment Vinyl
6Y | Lt. Nugget Gold Vinyl
7A | Black Vinyl (Cougar)
7A | Black Cloth and Black Vinyl (Fairlane, Montego)
7A | Black Cloth and Black Vinyl (Fairlane, Montego)

### Code | Trim Scheme
--- | ---
7B | Lt. Blue Vinyl (Cougar)
7B | Med. Blue Cloth and Lt. Blue Vinyl (Fairlane)
7B | Dk. Blue Cloth and Dk. Blue Vinyl (Montego)
7D | Dk. Red Cloth and Dk. Red Vinyl
7G | Med. Ivy Gold Cloth and Lt. Ivy Gold Vinyl
7K | Med. Aqua Cloth and Lt. Aqua Vinyl
7Y | Nugget Gold Cloth and Nugget Gold Vinyl
8A | Black Vinyl
8B | Dk. Blue Vinyl
8D | Dk. Red Vinyl
8F | Med. Saddle Vinyl with Black
8G | Med. & Lt. Ivy Gold Vinyl
8K | Dk. & Lt. Aqua Vinyl
8U | Pastel Parchment Vinyl
8Y | Nugget Gold Vinyl
9A | Black Vinyl
9B | Dk. Blue Vinyl
9D | Dk. Red Vinyl
9U | Pastel Parchment Vinyl
9Y | Lt. Nugget Gold Vinyl
AA | Pastel Parchment Vinyl with Black
AB | Pastel Parchment Vinyl with Blue
AD | Pastel Parchment Vinyl with Red
AF | Pastel Parchment Vinyl with Saddle
AG | Pastel Parchment Vinyl with Ivy Gold
AK | Pastel Parchment Vinyl with Aqua
AY | Pastel Parchment Vinyl with Nugget Gold
BU | Pastel Parchment Vinyl
CU | Pastel Parchment Vinyl
BU | Pastel Parchment Vinyl
CU | Pastel Parchment Vinyl
FA | Pastel Parchment Vinyl with Black
FB | Pastel Parchment Vinyl with Blue
FD | Pastel Parchment Vinyl with Red
FF | Pastel Parchment Vinyl with Saddle
FG | Pastel Parchment Vinyl with Ivy Gold
FK | Pastel Parchment Vinyl with Aqua
FU | Pastel Parchment Vinyl
FY | Pastel Parchment Vinyl with Nugget Gold
HA | Black Vinyl
HB | Dk. & Lt. Blue Vinyl
HD | Dk. Red Vinyl
HG | Med. & Lt. Ivy Gold Vinyl
HK | Dk. & Lt. Aqua Vinyl
HU | Pastel Parchment Vinyl
HY | Lt. Nugget Gold Vinyl
JU | Pastel Parchment Vinyl
KJ | Med. Blue Cloth and Lt. Blue Vinyl
KG | Med. Ivy Gold Cloth and Lt. Ivy Gold Vinyl
KU | Lt. Parchment Cloth and Pastel Parchment Vinyl (Montego)
KU | Pastel Parchment Vinyl (Fairlane)
LA | Black Vinyl
LB | Lt. Blue Vinyl
LD | Dk. Red Vinyl
LU | Pastel Parchment Vinyl
MA | Black Vinyl
MB | Dk. & Lt. Blue Vinyl
MD | Dk. Red Vinyl
MU | Pastel Parchment Vinyl
OU | Pastel Parchment Vinyl
OV | Pastel Parchment Vinyl
PB | Med. Blue Cloth and Lt. Blue Vinyl
PU | Pastel Parchment Vinyl
QY | Pastel Parchment Vinyl
RA | Black Vinyl
RB | Lt. Blue Vinyl
RD | Dk. Red Vinyl
RU | Pastel Parchment Vinyl
TU | Pastel Parchment Vinyl
UA | Pastel Parchment Vinyl with Black
UB | Parchment Vinyl with Blue
UD | Parchment Vinyl with Red
UF | Parchment Vinyl with Saddle
UK | Parchment Vinyl with Ivy Gold
UK | Parchment Vinyl with Aqua
UU | Pastel Parchment Vinyl
UY | Parchment Vinyl with Nugget Gold
UY | Pastel Parchment Vinyl
1 DIAGNOSIS AND TESTING

BRAKE FLUID LEVEL AND HYDRAULIC SYSTEM

1. Always check the fluid level in the brake master cylinder reservoirs before performing the test procedures. If the fluid level is not within 1/4 inch of the top of the master cylinder reservoirs, add the specified brake fluid. Add Ford Brake Fluid—Extra Heavy Duty—Part Number C6AZ-19542-A (ESA-M6C25-A) equivalent for all brake applications. The extra heavy duty brake fluid is colored blue for identification purposes. Do not mix low temperature brake fluids with the specified brake fluid.

DUAL MASTER CYLINDER BRAKE SYSTEM

1. Turn the ignition switch to the ACC or ON position. If the light on the brake warning lamp remains on, the condition may be caused by a defective switch, grounded switch wires or the differential pressure valve is not centered. Centralize the differential pressure valve as outlined under Hydraulic System Bleeding and Centralizing of the Differential Valve in this section of the manual. If the warning light remains on, check the switch connector and wire for a grounded condition and repair or replace the wire assembly.

If the condition of the wire is good, replace the brake warning lamp switch.

2. Turn the ignition switch to the start position. If the brake warning lamp does not light, check the light and wiring for defects and replace or repair wiring.

3. If the brake warning lamp does not light when a pressure differential condition exists in the brake system, the warning lamp may be burned out, the warning lamp switch is inoperative or the switch to lamp wiring has an open circuit. Check the bulb and replace it, if required. Check the switch to lamp wires for an open circuit and repair or replace them, if required. If the warning lamp still does not light, replace the switch.

BRAKE PEDAL FREE HEIGHT AND TRAVEL MEASUREMENTS

With the engine running for full power brake operation, measure the brake pedal free height, and check the brake pedal travel with the use of the Brake Pedal Pressure Gauge, Tool WRE-500-50 as follows:

Brake Pedal Free Height Measurement

1. Insert a slender, sharp pointed prod through the carpet and sound deadner to the dash panel metal and measure the distance to the brake pedal (Fig. 1).

2. If the position of the pedal is not within specification, check the brake pedal linkage for missing, worn or damaged bushings or loose attaching bolts and replace them, if required.

3. If the pedal free height is still out of specification, check the brake pedal booster push rod (if so equipped) or master cylinder to be sure the correct parts are installed. Replace the defective parts as necessary.

Brake Pedal Travel Measurement

1. Install a Brake Pedal Pressure Gauge on the brake pedal pad (Fig. 2).

2. Hook a steel measuring tape to the brake pedal as shown in Fig. 1. Measure and record the distance from the brake pedal free height position to the reference point, which is at the six o'clock position on the steering wheel rim.

3. With the steel tape still hooked to the brake pedal depress the brake by pressing downward on the brake pedal effort gauge. Apply a 50 pound load to the center of the pedal by observing the pressure gauge, and measure the distance from the brake pedal to the fixed reference point on the steering wheel rim, par-
GROUP 2—Brakes

STEERING COLUMN

STEERING COLUMN

TOEBRIOAD OR
DASH METAL

STEERING WHEEL RIM

STEEL MEASURING TAPE

FIG. 1—Brake Pedal Height and Travel Measurements

<table>
<thead>
<tr>
<th>VEHICLE</th>
<th>TYPE</th>
<th>PEDAL FREE HEIGHT A</th>
<th>PEDAL TRAVEL B</th>
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</thead>
<tbody>
<tr>
<td>FALCON—MONTego—FAIRLANE</td>
<td>NON-POWER DRUM</td>
<td>8.13</td>
<td>2.73</td>
</tr>
<tr>
<td>FALCON—MONTego—FAIRLANE</td>
<td>POWER DISC</td>
<td>7.20</td>
<td>2.10</td>
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<tr>
<td>MUSTANG—COUGAR</td>
<td>NON-POWER DRUM</td>
<td>7.32</td>
<td>2.68</td>
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<td>MUSTANG—COUGAR</td>
<td>POWER DISC</td>
<td>6.20</td>
<td>1.85</td>
</tr>
</tbody>
</table>

NOTE: A DIMENSION TO BE MEASURED TO SHEET METAL

B DIMENSION TO BE MEASURED PARALLEL TO THE VERTICAL CENTERLINE OF THE STEERING COLUMN WITH A 50 POUND LOAD APPLIED TO THE CENTERLINE OF THE BRAKE PEDAL PAD. (CHECKS ON POWER BRAKE VEHICLES MADE WITH ENGINE RUNNING) H 1551 - B

FIG. 2—Brake Pedal Effort Gauge Installed—Typical

![Brake Pedal Effort Gauge](H1525-A)

POWER BRAKE FUNCTIONAL TEST

1. With the transmission in neutral, stop the engine and apply the parking brake. Depress the brake pedal several times to exhaust all vacuum in the system.

2. With the engine shut off, depress the brake pedal and hold it in the applied position. If the pedal gradually falls away under this pressure, the hydraulic system is leaking. Check all tubing, hoses, calipers (if so equipped), wheel cylinders and connections for leaks.

3. With the engine shut off and all vacuum in the system exhausted, depress the pedal and hold it in the applied position. If no action is felt, the vacuum booster system is not functioning.

LOCKED WHEEL BRAKE

Should one of the wheel brakes be locked and the vehicle must be moved, open the bleeder screw long enough to let out a few drops of brake fluid. This bleeding operation will release the brakes but will not correct the cause of trouble.

PARKING BRAKE

Visually check the operation of the parking brake linkage as the parking brake controls are moved to the applied position. Then, check the operation of the brake linkage when the parking brake controls are moved to

wear or damage. Repair or replace all worn or damaged parts and non-functioning adjusters. Adjust the brake lining outside diameter to the approximate inside diameter of the brake drum with Rotunda Tool HRE 8650 (Figs. 11 and 12, Part 2-2).
the released position. These checks should indicate whether the manual parking brake control linkage is operating properly or requires repair or adjustment due to inability of the parking brake to hold against moderate vehicle movement.

**ROAD TEST**

A road test should only be conducted when the operator is sure the brakes will stop the vehicle. During a road test, apply the vehicle's brakes at a road speed of 20 mph for all problem conditions listed in Figs. 11 and 12 with the exception of those resolved in the Brake System Tests and brake chatter. To check for brake chatter or surge, apply the brakes lightly at 50 mph. For each of the symptoms encountered, check and eliminate the causes which are listed in Figs. 11 and 12.

If the road test reveals one or more problem conditions listed in Figs. 11 and 12, correct all malfunctions of the vacuum system, brake booster and hydraulic system prior to removing brake drums, brake calipers (if so equipped), brake shoes and linings or backing plates.

### 2 COMMON ADJUSTMENTS AND REPAIRS

**PARKING BRAKE LINKAGE ADJUSTMENT**

**MUSTANG—COUGAR**

Check the parking brake cables when the parking brakes are fully released. If the cables are loose, adjust them as follows:

1. Fully release the parking brake by turning the handle counterclockwise and pushing it inward.
2. Pull the parking brake handle outward to third notch from its normal released position.
3. Raise the vehicle. Remove the wheel cover. Install Tool T66L-4204-L on the rear wheel (Fig. 3).
4. Turn the locking adjustment nut forward against the cable guide on the equalizer (Fig. 4) until there is 100 ft-lbs break-away torque at the rear wheel when turning the rear wheels in the direction of forward rotation with a torque wrench (Fig. 3). The torque measurement must be made relative to the centerline of the wheel.
5. Release the parking brake and make sure the brake shoes return to the fully released position and no drag is felt when turning the rear wheels.
6. Remove Tool T66L-4204-L. Install the wheel attaching bolts and torque them to specification. Install the wheel cover. Lower the vehicle.

**MONTEGO—FALCON—FAIRLANE**

Check the parking brake cables when the brakes are fully released.

If the cables are loose, adjust them as follows:

1. Fully release the parking brake pedal.

---

**FIG. 3—Checking Parking Brake Break-Away Torque**

**FIG. 4—Parking Brake Linkage Adjustment — Mustang and Cougar**

2. Push the parking brake pedal to the first notch from the normal released position.
3. Raise the vehicle. Loosen the equalizer lock nut (Fig. 5) and turn the nut forward against the cable guide on the equalizer until there is 75–100 pounds tension on the left rear cable or there is 100 ft-lbs break-away torque when turning the rear wheels in the direction of forward rotation with a torque wrench and Tool T66L-4204-L as shown in Fig. 3.
The torque measurement must be made relative to the centerline of the wheel. Tighten the lock nut.

4. Make sure there is no drag when turning the rear wheels.

5. Lower the vehicle. Remove the torque wrench and Tool T66L-4204-L, if required. Install the wheel attaching nuts and torque them to specification. Install the wheel cover.

**POWER BRAKE MASTER CYLINDER PUSH ROD ADJUSTMENT**

The push rod is provided with an adjustment screw to maintain the correct relationship between the booster control valve plunger and the master cylinder pistons. Failure to maintain this relationship will prevent the master cylinder piston from completely releasing hydraulic pressure and can cause the brakes to drag, or cause excessive brake pedal travel.

**HYDRAULIC SYSTEM BLEEDING AND CENTRALIZING OF THE DIFFERENTIAL VALVE**

When any part of the hydraulic system has been disconnected for repair or replacement, air may enter the system and cause spongy pedal action. Bleed the hydraulic system after it has been properly connected, to be sure that all air is expelled.

**MANUAL BLEEDING**

The primary and secondary (front and rear) hydraulic brake systems are individual systems and are bled separately. Bleed the longest line first on the individual system being serviced. During the complete bleeding operation, DO NOT allow the reservoir to run dry. Keep the master cylinder reservoirs filled with Rotunda Fluid—Extra Heavy Duty—Part Number C6AZ-19542-A. The extra heavy duty brake fluid is colored blue for identification purposes. Do not mix low temperature brake fluids with the specified fluid during the bleeding operations. Never re-use brake fluid which has been drained from the hydraulic system.

1. Loosen the bleed screw located on the side of the master cylinder. Do not use the secondary piston stop screw, located on the bottom of the master cylinder to bleed the brake system. Loosening or removing this screw could result in damage to the secondary piston or stop screw.

2. To bleed the secondary (rear) brake system, position a suitable 3/8 inch box wrench (Fig. 9) on the bleeder fitting on the brake wheel cylinder. Attach a rubber drain tube to the bleeder fitting. The end of the tube should fit snugly around the bleeder fitting.

3. Submerge the free end of the tube in a container partially filled with clean brake fluid, and loosen the bleeder fitting approximately 3/4 turn.

4. Push the brake pedal down slowly through its full travel. Close the bleeder fitting, then return the pedal to the fully-released position. Repeat this operation until air bubbles cease to appear at the submerged end of the bleeder tube.

5. When the fluid is completely free of air bubbles, close the bleeder fitting and remove the bleeder tube.

6. Repeat this procedure at the brake wheel cylinder on the opposite side. Refill the master cylinder reservoir after each wheel cylinder is bled.
and install the master cylinder cover and gasket. Be sure the diaphragm type gasket is properly positioned in the master cylinder cover. When the bleeding operation is completed, the fluid level should be filled to within 1/4 inch from the top of the reservoirs.

7. If the primary (front brake) system is to be bled, repeat steps 2 through 6 at the right front brake caliper or cylinder and ending at the left front brake caliper or cylinder.

8. On disc brake equipped vehicles be sure that the front brake pistons are returned to their normal positions and that the shoe and lining assemblies are properly seated by depressing the brake pedal several times until normal pedal travel is established.

9. Centralize the pressure differential valve. Refer to the Centralizing the Pressure Differential Valve Procedures which follow.

**PRESSURE BLEEDING**

Bleed the longest lines first. The bleeder tank should contain enough new Ford Brake Fluid to complete the bleeding operation. Use Ford brake fluid—Extra Heavy Duty. Part Number C6AZ-19542-A or equivalent for all brake applications. The brake fluid is colored blue for identification purposes. Do not mix low temperature brake fluid with specified brake fluid during the bleeding operations. Never re-use brake fluid that has been drained from the hydraulic system. The tank should be charged with approximately 10 to 30 pounds of air pressure. Never exceed 50 pounds pressure.

1. Clean all dirt from the master cylinder reservoir cover.

2. Remove the master cylinder reservoir cover and rubber gasket, and fill the master cylinder reservoir with the specified brake fluid. Install the pressure bleeder adapter tool to the master cylinder, and attach the bleeder tank hose to the fitting on the adapter.

*Master cylinder pressure bleeder adapter tools can be obtained from the various manufacturers of pressure bleeding equipment.* Follow the instructions of the manufacturer when installing the adapter.

3. Loosen the primary and secondary tube nuts at the master cylinder and bleed the master cylinder until the fluid flow is free of air bubbles, then tighten the tube nuts to the specified torque. Refer to Figs. 20 and 21, Part 2-2. Do not overtighten the nuts.

4. If the rear wheel cylinders, secondary brake system, are to be bled, position a 3/8 inch box wrench (Fig. 9) on the bleeder fitting on the right rear brake wheel cylinder. Attach a bleeder tube to the bleeder fitting. The end of the tube should fit snugly around the bleeder fitting.

5. Open the valve on the bleeder tank to admit pressurized brake fluid to the master cylinder reservoir.

6. Submerge the free end of the tube in a container partially filled with clean brake fluid, and loosen the bleeder fitting.

7. When air bubbles cease to appear in the fluid at the submerged end of the bleeder tube, close the bleeder fitting and remove the tube.

8. Repeat steps 3 through 7 at the left rear wheel cylinder.

9. If the vehicle is equipped with disc brakes, repeat steps 4 through 7, starting at the right front disc caliper and ending at the left front disc caliper.

10. If the vehicle contains drum-type front brakes and the primary (front) brake system is to be bled, repeat steps 4 through 7, starting at the right front wheel cylinder and ending at the left wheel cylinder.

11. When the bleeding operation is completed, close the bleeder tank valve and remove the tank hose from the adapter fitting.

12. On disc brake equipped vehicles, be sure that the front brake pistons are returned to their normal positions and that the shoe and lining assemblies are properly seated by depressing the brake pedal several times until normal pedal travel is obtained.

13. Remove the Pressure Bleeder Adapter Tool. Fill the master cylinder reservoirs to within 1/4 inch from the top. Install the master cylinder cover and gasket. Be sure the diaphragm type gasket is properly positioned in the master cylinder cover.

14. Centralize the pressure differential valve as follows:

**CENTRALIZING THE PRESSURE DIFFERENTIAL VALVE**

After a failure of the primary (front brake) or secondary (rear brake) system has been repaired and bled, the dual-brake warning light will usually continue to be illuminated due to the pressure differential valve remaining in an off-center position.

To centralize the pressure differential valve and turn off the warning light after a repair operation, a pressure differential or unbalance condition must be created in the opposite brake system from the one that was repaired and bled last.

1. Turn the ignition switch to the ACC or ON position. Loosen the differential assembly brake tube nut at the outlet port on the opposite side of the brake system that was repaired and/or bled last. Depress the brake pedal slowly to build line pressure until the pressure differential valve is moved to a centralized position and the brake warning light goes out; then, immediately tighten the outlet port tube nut to the specified torque. Refer to Fig. 18 and 19.

2. Check the fluid level in the master cylinder reservoirs and fill them to within 1/4 inch of the top with the specified brake fluid, if necessary.

3. Turn the ignition switch to the OFF position.

4. Before driving the vehicle, check the operation of the brakes and be sure that a firm pedal is obtained.

### 3 CLEANING AND INSPECTION

**DISC (FRONT) BRAKES**

1. Remove the wheel and tire and the shoe and lining assemblies as outlined in Part 2-2, Section 2.

2. Make a thickness measurement with a micrometer across the thinnest section of the shoe and lining. If the assembly has worn to a thickness of 0.230 inch (shoe and lining together) or 0.030 inch (lining material only) at the thinnest point or if the brake lining shows evidence of brake fluid contamination, replace all four shoe and lining assemblies on both front wheels.

3. Check the caliper to spindle attaching bolt and torque. Tighten them to the specified torque, if required.

4. To check rotor runout, first
GROUP 2—Brakes

eliminate the wheel bearing end play by tightening the adjusting nut. After tightening the nut check to see that the rotor can still be rotated.

5. Clamp a dial indicator to the caliper housing so that the stylus contacts the rotor at a point approximately 1 inch from the outer edge. Rotate the rotor and take an indicator reading. If the reading exceeds 0.002 inch total lateral runout on the indicator, replace or resurface the disc brake rotor. The following requirements must be met when resurfacing disc brake rotors:

Rotunda Disc Brake Attachment FRE-2249-2 is the only approved tool to be used to refinish the disc brake rotors. The step-by-step resurfacing procedure provided with the tool must be adhered to.

The finished braking surfaces of the rotor must be flat and parallel within 0.0007 inch; lateral runout must not exceed 0.002 inch total indicator reading, and the surface finish of the braking surfaces are to be 85/15 micro inches. The minimum limiting dimensions (Fig. 10) from the inboard bearing cup to the outboard rotor face (dimension A) and from the inboard bearing cup to the inboard rotor face (dimension B) must be observed when removing material from the rotor braking surfaces.

When the runout check is finished, be sure to adjust the bearings as outlined in Group 3, in order to prevent bearing failure.

6. Check the rotor for scoring. Minor scores can be removed with a fine emery cloth. If the rotor is excessively scored, refinish it as outlined in step 5 or replace the rotor, if replaced. Replace any lining that has been contaminated with oil, grease or brake fluid. Replace lining, in axle sets. Prior to replacement of lining, the drum diameter should be checked to determine if oversize linings must be installed.

4. Check the condition of the brake shoes, retracting springs, and drum for signs of overheating. If the springs show any loss of load or change in free length indicating overheating, replacement of the retracting and hold down springs and the parking brake cable is necessary. Overheated springs lose their pull and could cause the new lining to wear prematurely if they are not replaced.

5. If the vehicle has 30,000 or more miles of operation, or signs of extreme overheating are present when relining brakes, the wheel cylinders should be disassembled and inspected for wear and dirt in the cylinder. The cylinder cups and other parts contained in the overhaul kit should be replaced thus avoiding future problems.

6. Inspect all other brake parts and replace any that are worn or damaged.

7. Inspect the brake drums and, if necessary, refinish. Refer to Part 2-2, Section 4 for refinishing.

DRUM BRAKES

1. Remove the wheel from the drum, then remove the drum as outlined in Part 2-2, Section 2.

2. Brush all dust from the backing plates and interior of the brake drums.

3. Inspect the brake shoes for excessive lining wear or shoe damage. If the lining is worn to within 1/32 inch of the rivet heads or if the shoes are damaged, they must be replaced. Replace any lining that has been contaminated with oil, grease or brake fluid. Replace lining, in axle sets. Prior to replacement of lining, the drum diameter should be checked to determine if oversize linings must be installed.

4. Check the condition of the brake shoes, retracting springs, and drum for signs of overheating. If the springs show any loss of load or change in free length indicating overheating, replacement of the retracting and hold down springs and the parking brake cable is necessary. Overheated springs lose their pull and could cause the new lining to wear prematurely if they are not replaced.

5. If the vehicle has 30,000 or more miles of operation, or signs of extreme overheating are present when relining brakes, the wheel cylinders should be disassembled and inspected for wear and dirt in the cylinder. The cylinder cups and other parts contained in the overhaul kit should be replaced thus avoiding future problems.

6. Inspect all other brake parts and replace any that are worn or damaged.

7. Inspect the brake drums and, if necessary, refinish. Refer to Part 2-2, Section 4 for refinishing.

BOOSTER UNIT

Check the booster operation as noted in Part 2-1, Section 1, Power Brake Functional Test. If the brake booster is damaged or defective, replace it with a new booster. The booster is serviced only as an assembly.
<table>
<thead>
<tr>
<th>Possible Causes Of Trouble</th>
<th>Excessive Pedal Travel</th>
<th>Brake Roughness or Chatter (Pedal Pumping)</th>
<th>Excessive Pedal Effort</th>
<th>Grinding or Grating</th>
<th>Rattle or Click</th>
<th>Brakes Heat Up During Driving and Fail to Release</th>
<th>Leaky Caliper</th>
<th>Grabbing or Uneven Braking Action</th>
<th>No Braking Effect When Pedal is Depressed</th>
<th>Brakes Drag</th>
<th>Pedal Gradually Moves Toward Floor of Dash Panel</th>
<th>Warning Lamp Stays Lit</th>
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<td>Shoe and Lining Knock-back after Violent Cornering or Rough Road Travel</td>
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<td>Improper Power Booster Push Rod Adjustment</td>
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FIG. 11—Front Wheel Disc Brake Trouble Symptoms and Possible Causes
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<th>Spongy Pedal</th>
<th>Car Pulls to One Side</th>
<th>One Wheel Locks</th>
<th>Brakes Chatter</th>
<th>Excessive Pedal Travel</th>
<th>Pedal Gradually Goes to Floor</th>
<th>Brakes Uneven</th>
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**FIG. 12—Drum Brake and General System Trouble Symptoms and Possible Causes**
1 DESCRIPTION AND OPERATION

Disc brakes are available as optional equipment for the front wheels on all models.

The dual-master cylinder equipped hydraulic brake system employs single-anchor, internal expanding and self-adjusting drum brake assemblies on the rear wheels of vehicles with disc brakes, and on the front and rear wheels of all others.

DUAL-MASTER CYLINDER BRAKE SYSTEM

The dual-master cylinder brake system has been incorporated in all models to provide increased safety. The system consists of a dual-master cylinder, pressure differential valve assembly and a switch. The switch on the differential valve activates a dual-brake system warning light, located on the instrument panel.

The dual-master cylinder brake system is similar to a conventional (single) brake master cylinder system. In the dual-system, two master cylinders are combined in a single cast iron cylinder housing (Fig. 1). One portion actuates the front brake system and the other actuates the rear brake system (Figs. 18 and 19). Hydraulic fluid leakage or failure of one of the systems does not impair the operation of the other portion of the dual-brake system. A dual-brake warning light signals a failure of either the front or rear brake system.

The dual-master cylinder used on Fairlane, Falcon and Montego vehicles equipped with power brakes have the master cylinder outlet ports for the rear brake system located on the bottom of the master cylinder body. Master cylinder hydraulic system bleed screws are located in the outboard side of those master cylinders having secondary (rear brake) system outlet ports in the bottom of the master cylinder castings (Fig. 21).

All Fairlane, Falcon and Montego vehicles equipped with standard drum brakes and all Mustang and Cougar vehicles equipped with power disc, and standard drum brakes have both the primary (front) and secondary (rear) brake system outlet ports located on the outboard side of the dual-master cylinder body castings. These master cylinders do not require master cylinder bleed screws (Figs. 20 and 21).

The external appearance of the dual master cylinders for the various vehicles also differ in configuration of the covers. All vehicles having standard drum brake systems have primary and secondary master cylinder cover domes of equal size. Dual master cylinders for all other vehicles equipped with power disc brake systems have large primary (front brake) and smaller secondary (rear brake) cover domes.

A code letter is stamped on the side or outer end of each master cylinder body casting for easy service identification. The vehicle application, type of brakes and the identification code are shown in Fig. 2.
Brake pedal movement causes the unrestricted secondary piston to bottom in the master cylinder bore. Primary piston movement displaces hydraulic fluid in the primary section of the dual-master cylinder to actuate the front brake system.

Should the front (primary) brake system fail, initial brake pedal movement causes the unrestricted primary piston to bottom out against the secondary piston. Continued downward movement of the brake pedal moves the secondary piston to displace hydraulic fluid in the rear brake system, actuating the rear brakes.

Oh disc brake equipped vehicles, the pressure differential valve will move to the low pressure area of the front system. This movement uncovers the rear brake system outlet passage and provides a direct passage from the rear inlet passage to the outlet passage, by passing the proportioning valve. This provides full hydraulic pressure to the rear brake system.

The increased pedal travel and the increased pedal effort required to compensate for the loss of the failed portion of the brake system provides warning that a partial brake system failure has occurred. When the ignition switch is turned to the START position, a dual-brake warning light on the instrument panel also provides a visual indication if one portion of the dual-brake system has become inoperative.

A mechanically operated electrical switch is located on the side of the pressure differential valve assembly. The inner-end of the spring loaded switch plunger contacts the bottom of a tapered shoulder groove in the center of the valve (Fig. 3). O-ring seals are retained in the seal ring lands of the valve.

A mechanically operated switch is located on the side of the pressure differential valve assembly. The inner-end of the spring loaded switch plunger contacts the bottom of a tapered shoulder groove in the center of the valve (Fig. 3). O-ring seals are retained in the seal ring lands of the valve.

Should a failure of the front brake system occur, hydraulic fluid pressure in the rear brake system would drop. During brake pedal operation the fluid pressure build-up of the front brake system forces the valve to move toward the low pressure area or toward the rear brake system outlet port (Fig. 3). Movement of the differential valve forces the switch plunger upward over the tapered shoulder of the valve to close the switch electrical contacts and light the dual brake warning lamp, signalling a brake system failure.

In the event a front brake system failure should occur, greater pressure from the rear brake system during brake pedal operation forces the valve forward moving the switch plunger upward onto the valve ramp to light the brake system warning lamp. However, failure of either the front or rear system does not impair operation of the other brake system.

**DISC BRAKE ASSEMBLIES**

Disc brakes are available as optional equipment for the front wheels. The hydraulic brake system employs single anchor, internal expanding and self-adjusting drum brake assemblies on the rear wheels of vehicles with disc brakes, and on the front and rear wheels of all others.

A vacuum booster is available as optional equipment.

The master cylinder converts physical force from the brake pedal (and booster if so equipped) into hydraulic pressure against the pistons in the calipers (disc brakes) or in the wheel cylinders (drum brakes). The pistons in turn convert hydraulic pressure back into physical force at the brake shoes.
The disc brake is a floating caliper, single piston, ventilated disc-type, actuated by a hydraulic system. Fig. 4.

The caliper assembly is made up of a floating caliper assembly and an anchor plate. The anchor plate is bolted to the wheel spindle arm by two bolts. The floating caliper is attached to the anchor plate through a spring steel stabilizer. The floating caliper slides on two guide pins which also attach to the stabilizer. The floating caliper contains the single cylinder and piston assembly. The cylinder bore contains a piston with a molded rubber dust boot to seal the cylinder.

**FIG. 2 Dual Master Cylinder Identification**

<table>
<thead>
<tr>
<th>Car Model</th>
<th>Type Of Brake</th>
<th>Identification Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairlane and Falcon</td>
<td>Power Disc</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Standard Drum</td>
<td>T</td>
</tr>
<tr>
<td>Mustang</td>
<td>Power Disc</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>Standard Drum</td>
<td>T</td>
</tr>
<tr>
<td>Montego</td>
<td>Power Disc</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Standard Drum</td>
<td>T</td>
</tr>
<tr>
<td>Cougar</td>
<td>Power Disc</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>Standard Drum</td>
<td>T</td>
</tr>
</tbody>
</table>

**FIG. 3—Pressure Differential Valve and Brake Warning Lamp Switch Operation**
bore from contamination and also to return the piston to the released position when hydraulic pressure is released. Also a rubber piston seal is used to provide sealing between the cylinder and piston (Fig. 5).

The shoe and lining assemblies are mounted in two different ways. The outboard shoe and lining is fixed to the floating caliper and is retained by two pins and spring clips. The inboard shoe and lining attaches to the end of the cylinder piston and is retained by two hold-down clips (Fig. 16). The shoe and lining assembly consists of friction material bonded to a metal plate called the shoe. It is replaced as a unit.

The cast iron disc is of the ventilated rotor type incorporating forty fins and is attached to, and rotates with the wheel hub. The outside diameter of the rotor is 11 1/4 inches and the inside diameter is 7 3/8 inches. This type of design increases cooling area and permits circulation of air through the rotor resulting in more rapid cooling of the brake. A splash shield bolted to the spindle is used primarily to prevent road contaminants from contacting the inboard rotor and lining surfaces. The wheel provides protection for the outboard surface of the rotor.

As the brake pedal is depressed, hydraulic pressure from the master cylinder forces the piston out of the bore. The inboard shoe and lining, being attached to the piston, is forced against the rotor. When the inboard shoe is against the rotor hydraulic pressure equalizes and moves the entire floating caliper assembly inward. The outboard shoe and lining assembly attached to the floating caliper assembly is thereby forced against the rotor. Hydraulic pressure forcing the piston-mounted shoe and lining outward and the caliper-mounted shoe and lining inward creates a squeezing action against the rotor, effecting braking action.

During braking action the rubber seal stretches as the piston moves outward (Fig. 6). When hydraulic pressure is released the seal relaxes and pulls the inboard shoe and lining away from the rotor. When brakes are applied, hydraulic pressure moves the floating caliper, overcoming the tension of the stabilizer. When hydraulic pressure is released, the stabilizer moves the caliper back to its normal position. Since the outboard shoe and lining is attached to the caliper it is moved away from the rotor. In addition, inherent rotor runout will aid in maintaining running clearances between the rotor and the shoe and lining assemblies.

Automatic adjustment is achieved by the piston sliding in the seal outward from the cylinder bores. The piston gradually changes its position relative to the seal as the lining wears and, thus, maintains the correct adjustment location at all times.

When the brakes are in the un-
FIG. 7—Disc Brake Proportion Valve

FIG. 8—Self-Adjusting Brake Assemblies — 9 Inch Drum

applied position, there is no hydraulic pressure to the calipers because there is no residual check valve in the front brake system.

A disc brake pressure control valve located between the pressure differential valve and the rear brake wheel cylinders provides balanced braking action between the front and the rear brakes under a wide range of braking conditions (Fig. 7). By regulating the hydraulic pressure applied to the rear wheel cylinders, the valve limits rear braking action when high pressures are required at the front brakes. In this manner, premature rear wheel skid is prevented.

HYDRAULIC SELF-ADJUSTING BRAKE SYSTEM

The self-adjusting brake mechanism consists of a cable, cable guide, adjusting lever, and adjuster spring (Figs. 8 and 9). The cable is hooked over the anchor pin at the top and is connected to the lever at the bottom. The cable is routed along the web of the secondary brake shoe by means of the cable guide. The adjuster spring is hooked to the primary brake shoe and to the lever. The automatic adjuster operates only when the brakes are applied while the car is moving rearward and only when the secondary shoe is free to move toward the drum on a predetermined point.

With the vehicle moving rearward and the brakes applied, the wrap-around action of the shoes following the drum forces the upper end of the primary shoe against the anchor pin. The action of the wheel cylinder moves the upper end of the secondary shoe away from the anchor pin. The movement of the secondary shoe causes the cable to pull the adjusting lever upward and against the end of a tooth on the adjusting screw star-wheel. The upward travel of the lever increases as lining wear increases. When the lever can move upward far enough, it passes over the end of the tooth and engages the tooth. When the brakes are released, the adjuster spring pulls the lever downward causing the star-wheel to turn and expand the shoes. The star-wheel is turned one tooth at a time as the linings progressively wear.

With the vehicle moving forward and the brakes applied, the secondary shoe is against the anchor pin and the primary shoe is moved toward the drum. Therefore, the adjuster
FIG. 9—Self Adjusting Brake Assemblies—10 Inch Drum

The rear brake assembly is basically the same as the front brake. The conventional parking brake lever, link and spring are used in the rear brake.

The anchor pins on all brakes are fixed and are non-adjustable.

BRAKE BOOSTER SYSTEM

The diaphragm-type brake booster is a self-contained vacuum-hydraulic braking unit mounted on the engine side of the dash panel. The brake booster is of the vacuum suspended type which utilizes engine intake manifold vacuum and atmospheric pressure for its power.

Adjustment of the push rod is the only service permitted on a brake booster. The booster unit is to be exchanged when it is inspected, checked and found to be defective.

PARKING BRAKES—MUSTANG AND COUGAR

An independent hand-operated parking brake control actuates the rear wheel brake shoes through a cable linkage. The operating cable is routed from the parking brake control assembly to the equalizer pivot lever assembly to the equalizer. The rear brake cables connect the equalizer assembly to the parking brake lever at each rear secondary shoe (Fig. 8).

When the pedal is depressed the primary and secondary brake shoes are forced against the rear brake drums. The pedal is held in the applied position by the engagement of a spring-loaded pawl with a ratchet in the control assembly (Fig. 32).

The parking brake control assembly is mounted to the cowl inner side panel. The pedal pivots on a stationary pedal mount. A spring-loaded pawl and a release lever are assembled to the pedal. A ratchet is assembled to the upper end of the pedal. The pawl contacts the ratchet at such an angle that the ratchet teeth will slide over the pawl as the pedal is depressed; however, when the applying motion stops and the pedal starts to release, the pawl engages the ratchet and thus locks the brakes in the applied position.

When the manual release lever is pulled back (Fig. 32), the cam action of the lever on the pawl cam pin will disengage the pawl from the ratchet to release the brakes.
2 IN-VEHICLE ADJUSTMENTS AND REPAIRS

After any brake service work, obtain a firm brake pedal before moving the vehicle. Riding the brake pedal (common on left foot applications) should be avoided when driving the vehicle.

BRAKE SHOE ADJUSTMENTS—DRUM BRAKE

The hydraulic service brakes are self-adjusting and require a manual adjustment only after the brake shoes have been relined, replaced, or when the length of the adjusting screw has been changed while performing some other service operation. The manual adjustment is performed with the drums removed, using the tool and the procedure detailed below.

FIG. 10—Measuring Drum

When adjusting the rear brake shoes, check the parking brake cables for proper adjustment. Refer to Parking Brake Linkage Adjustment, Part 2-1, Section 2. Make sure that the equalizer operates freely.

To adjust the brake shoes:
1. Using Rotunda Tool HRE 8650, (Fig. 10) determine the inside diameter of the drum braking surface.
2. Reverse the tool as shown in Fig. 11 and adjust the brake shoe diameter to fit the gauge. Hold the automatic adjusting lever out of engagement while rotating the adjusting screw, to prevent burring the screw slots. Make sure the adjusting screw rotates freely. If necessary, lubricate the adjusting screw threads with a thin, uniform coating of CIAZ-19590-B Grease.
3. Rotate Tool HRE 8650 around the brake shoes to be sure of the setting.
4. Apply a small quantity of high temperature grease to the points where the shoes contact the backing plate and anchor pin, being careful not to get the lubricant on the linings.
5. Install the drums. Install the Tinnerman nuts and tighten securely. Install the wheel on the drum and tighten the mounting nuts to specification.
6. Complete the adjustment by applying the brakes several times with a minimum of 50 lbs pressure on the pedal while backing the car. After each stop, the vehicle must be moved forward.
7. After the brake shoes have been properly adjusted, check the operation of the brakes by making several stops while operating in a forward direction.

FRONT BRAKE DRUM

REMOVAL

1. Raise the vehicle until the wheel and tire clear the floor. Remove the wheel cover or hub cap, and remove the wheel and tire from the drum.
2. Remove the grease cap from the hub. Remove the cotter pin, nut lock, adjusting nut, and flat washer from the spindle. Remove the outer bearing cone and roller assembly.
3. Pull the hub and drum assembly off the wheel spindle.
4. If the drum will not come off, pry the rubber cover from the brake backing plate. Insert a narrow screwdriver through the slot and disengage the adjusting lever from the adjusting screw. While holding the adjusting lever away from the screw, back off the adjusting screw with the brake adjusting tool (Fig. 12). Be very careful not to burr, chip, or damage the notches in the adjusting screws; otherwise the self-adjusting mechanism will not function properly.

INSTALLATION

If the drum is being replaced, remove the protective coating from the new drum with carburetor degreaser; then, sand lightly and wipe with a cloth soaked with denatured alcohol. Install new bearings and grease seal. Apply a light coat of wheel bearing grease to the new seal prior to installing it. Pack the wheel bearings, install the inner bearing cone and roller assembly in the inner cup, and install the new grease seal. See Part 3-5, Section 4 for procedure.

If the original drum is being installed, make sure that the grease in the hub is clean and adequate.
2. Adjust the brakes and install the drum assembly as outlined under Brake Shoe Adjustments in this section.
3. Install the outer wheel bearing, washer and adjusting nut.
4. Adjust the wheel bearing as outlined in Part 3-5, Section 2, then install the grease cap. Install the wheel and hub cap or cover.

REAR BRAKE DRUM

REMOVAL

1. Raise the vehicle so that the tire is clear of the floor.
2. Remove the hub cap and wheel. Remove the three Tinnerman nuts and remove the brake drum. If the drum will not come off pry the rubber cover from the backing plate. Insert a narrow screwdriver through the hole in the backing plate, and disengage the adjusting lever from the adjusting screws. While holding
the adjusting lever away from the adjusting screw, back off the adjusting screw with the brake adjusting tool (Fig. 12). Be very careful not to burr, chip or damage the notches in the adjusting screw; otherwise, the self-adjusting mechanism will not function properly.

**INSTALLATION**

1. Remove the protective coating from a new drum with carburetor degreaser; then, sand lightly and wipe with a cloth soaked in denatured alcohol.

2. Adjust the brakes as outlined under Brake Shoe Adjustments in this section.

3. Place the drum over the brake assembly and into position. Install the three Tinnerman nuts and tighten them securely. Install the wheel on the axle shaft flange studs against the drum, and tighten the attaching nuts to specifications.

**BRAKE SHOES AND ADJUSTING SCREW**

**REMOVAL**

1. With the wheel and drum removed, install a clamp over the ends of the wheel cylinder as shown in Fig. 13.

2. Remove the brake retracting springs using Tool 2035-N or 2086-L (Fig. 13).

3. Disconnect the brake shoe hold-down springs and remove the brake shoe assemblies along with the complete automatic adjustment mechanism.

4. Disassemble the brake shoes.

5. On rear brakes, remove the parking brake link and spring from the brake assemblies. Disconnect the parking brake cable from the parking brake lever.

6. After removing the rear brake shoes disassemble the parking brake lever from the secondary shoe by removing the retaining clip and spring washer (Figs. 8 and 9).

**INSTALLATION**

1. Before installing the rear brake shoes, assemble the parking brake lever to the secondary shoe and secure it with the spring washer and retaining clip.

2. Apply a light coating of high-temperature grease at the points where the brake shoes contact the backing plate.

3. Position the brake shoes on the backing plate and secure them with the hold down springs. On the rear brake, install the parking brake link and spring. Connect the parking brake cable to the parking brake lever (Figs. 8 and 9).

4. Install the cable guide on the secondary shoe web with the flanged hole properly fitted into the hole in the secondary shoe web. Install the secondary spring (secondary shoe to anchor spring) (Figs. 8 and 9).

5. Place the cable eye over the anchor pin with the cramped side toward the backing plate. Install the primary shoe to anchor spring with the tool shown in Fig. 14.

6. Thread the cable around the cable guide groove.

7. It is imperative that the cable be positioned in this groove and not between the guide and the shoe web. Be certain that the cable eye is not cocked or binding on the anchor pin when installed. All parts should be flat on the anchor pin. Remove the brake cylinder clamp.

8. Apply a small amount of high-temperature grease (Part Number C1AZ-19580-B) to the threads and the socket end of the adjusting screw. Turn the adjusting screw into the adjusting pivot nut to the limit of the threads and then back off 1/2 turn.

9. Interchanging the brake shoe adjusting screw assemblies from one side of the vehicle to the other would cause the brake shoes to retract rather than expand each time the automatic adjusting mechanism operated. To prevent accidental installation of the adjusting screw on the wrong side of the vehicle the socket end of the adjusting screw is stamped with an R or L (Fig. 15). The adjusting pivot nuts can be distinguished by the number of grooves machined around the body of the nut. Two grooves indicate a right-hand nut; one groove indicates a left-hand nut.

10. Place the adjusting socket on the screw and install this assembly between the shoe ends with the adjusting screw toothed wheel nearest the secondary shoe.

11. Hook the cable hook into the hole in the adjusting lever. The adjusting levers are stamped with an R or L to indicate their installation on a right or left brake assembly (Fig. 15).

12. After installation, check the action of the adjusting by pulling the section of the cable between the cable guide and the anchor pin toward the secondary shoe web far enough to lift the lever past a tooth on the adjusting screw wheel. The lever should snap into position behind the next tooth, and release of the cable should cause the adjuster spring to return the lever to its original position. This return action of the lever will turn the adjusting screw one tooth.
in the adjusting screw wheel, and the screw will not be turned as the lever is actuated by the cable.

To determine the cause of this condition:

- Check the cable end fittings. The cable should completely fill or extend slightly beyond the crimped section of the fittings. If it does not meet this specification, possible damage is indicated and the cable assembly should be replaced.

- Check the cable length. The cable should measure 8 13/32 inches on 9 inch brakes or 9 3/4 inches on 10 inch brakes from the end of the cable anchor to the end of the cable hook.

- Check the cable guide for damage. The cable groove should be parallel to the shoe web, and the body of the guide should lie flat against the web. Replace the guide if it shows damage.

- Check the pivot hook on the lever. The hook surfaces should be square with the body of the lever for proper pivoting. Replace the lever if the hook shows damage.

- See that the adjusting screw socket is properly seated in the notch in the shoe web.

**DISC BRAKE CALIPER ASSEMBLY**

**DISC BRAKE SERVICE PRECAUTIONS**

1. After any brake service work, pump the brake pedal to obtain a firm pedal before moving the car. Riding the brake pedal (common on left foot applications) should be avoided when driving the car.

2. Grease or any other foreign material must be kept off the caliper assembly, surfaces of the rotor and external surfaces of the hub during service operations. Handling of the rotor and caliper assemblies should be done in a way to avoid deformation of the brake rotor and nicking or scratching of brake linings.

3. If the piston is removed for any reason, the piston seal must be replaced.

4. During removal and installation of a wheel assembly, exercise care not to interfere with and damage the caliper splash shield, or the bleeder screw fitting.

5. Front wheel bearing end play is critical and must be within specifications.

6. Be sure the vehicle is centered on the hoist before servicing any front end components, to avoid bending or damaging the rotor splash shield on full right or left wheel turns.

7. The proportioning valve should not be disassembled or adjustments attempted on it.

8. The wheel and tire must be removed separately from the brake rotor, unlike drum brakes where the wheel, tire and drum are removed as a unit.

9. Whenever the caliper is removed, the caliper guide pin insulators and the stabilizer should be inspected for wear or damage.

10. The caliper assembly must be removed from the spindle prior to removal of the shoe and lining assemblies.

11. Do not attempt to clean or restore oil or grease soaked brake linings. When contaminated linings are found, they must be replaced in complete axle sets.

**REMOVAL**

Refer to Fig. 16.

1. Remove the wheel and tire from the hub and rotor assembly.

2. Disconnect the brake line from the caliper.
3. Remove the safety wire from the caliper to spindle attaching bolts, then remove the bolts.
4. Carefully lift the caliper assembly off the hub and rotor.

**INSTALLATION**

1. Position the caliper assembly on the hub and rotor.
2. Mount the caliper assembly on the spindle. Install the attaching bolts and torque them to specification. The upper bolt must be tightened first.
3. Install the safety wire securing the attaching bolts and twist the wire ends at least five turns.
4. Install a new copper washer on each side of the brake hose connector and position it on the caliper. Install the attaching bolt and torque it to specification.
5. Bleed the brake system and centralize the differential valve as outlined in Part 2-1. Check the master cylinder fluid level and add the specified fluid as required. Pump the brake several times to actuate the piston seal and to position the shoe and lining assemblies.
6. Install the wheel and tire assembly and wheel cover.
7. Road test the vehicle.

**DISC BRAKE SHOE AND LINING REPLACEMENT**

1. Remove the wheel and tire from the hub and rotor assembly.
2. Remove the caliper from the hub and rotor following the procedures outlined under Disc Brake Caliper Assembly.
3. Slide the inner brake shoe outward until it is clear of the hold-down spring, then remove the brake shoe.
4. Slide the two outer shoe retaining clips off the retaining pins (Fig. 16).
5. Remove the two retaining pins from the outer shoe, then remove the shoe from the caliper.
6. Remove the caliper guide pins and stabilizer attaching bolts from the anchor plate. Remove the stabilizer and discard it.
7. Remove the caliper guide pin insulators from the anchor plate.

**INSTALLATION**

1. Install new caliper guide pin insulators in the anchor plate.
2. Position the caliper assembly in the anchor plate.
3. Position a new stabilizer on the anchor plate and install the retaining bolts.
4. Apply the specified fluid to the caliper guide pins and install them loosely in the anchor plate. Be sure the guide pins are free of oil, grease or dirt.
5. Position the outer brake shoe on the caliper and install the two retaining pins and clips.
6. Install the inner brake shoe so that the ears of the shoe are on top of the anchor plate bosses and under the shoe hold-down springs.
7. Position the shoe and lining assemblies so that the caliper assembly can be placed over the rotor. Rotate a hammer handle between the linings to provide the proper clearance.
8. Install the caliper as detailed in Caliper Assembly Installation.
9. With moderate pressure applied to the brake pedal, torque the stabilizer attaching bolts and caliper guide pins to specification.
10. Install the wheel and tire assembly.
11. Road test the vehicle.

**FRONT WHEEL HUB AND ROTOR ASSEMBLY—DISC BRAKES**

**REMOVAL**

1. Remove the wheel and tire from the hub and rotor assembly (Fig. 16). Be careful to avoid damage or interference with the caliper splash shield or bleeder screw fitting.
2. Remove the caliper assembly from the spindle and the rotor. If the caliper does not require servicing, it is not necessary to disconnect the brake hose or remove the caliper from the vehicle. Position the caliper out of the way, and support it with a wire to avoid damaging the caliper or stretching the hose. Insert a clean cardboard spacer between the linings to prevent the piston from coming out of the cylinder bore while the caliper is removed.

Handle the rotor and caliper assemblies in such a way as to avoid deformation of the rotor and nicking, scratching or contamination of the brake linings.

1. Remove the grease cap from the hub. Remove the cotter pin, nut lock, adjusting nut, and flat washer from the spindle. Remove the outer bearing cone and roller assembly.
2. Remove the hub and rotor assembly from the spindle.

**INSTALLATION**

1. If the rotor is being replaced, remove the protective coating from the new rotor with carburetor degreaser. Pack a new set of bearings with specified grease, and install the inner bearing cone and roller assembly in the inner cup. Pack grease lightly between the lips of a new grease seal and install the seal (Fig. 16).

If the original rotor is being installed, make sure that the grease in the hub is clean and adequate, that the inner bearing and grease retainer are lubricated and in good condition, and that the rotor braking surfaces are clean.
2. Install the hub and rotor assembly on the spindle.
3. Lubricate and install the outer wheel bearing, washer and adjusting nut.
4. Adjust the wheel bearings to specification, and then install the nut lock, cotter pin, and grease cap. The wheel bearing adjustment is especially important with disc brakes.
5. Mount the caliper assembly on the spindle and torque the two attaching bolts to specification. If necessary, push the caliper piston into the cylinder bore to obtain clearance between the shoe and lining assemblies and the rotor. Be sure that the shoe and lining assemblies are seated on the bridges. Check the flexible hose for correct routing.
6. Install the wheel, tire and cover on the hub and rotor assembly.
7. Pump the brake pedal as required to establish the proper pedal height.
8. Fill the master cylinder to the proper level with the specified fluid.

**DISC BRAKE ROTOR SPLASH SHIELD REMOVAL**

1. Remove the caliper and the hub and rotor assembly as outlined under Removal in the foregoing procedure.
2. Remove the three nuts that attach the splash shield to the spindle and remove the shield (Fig. 16).
3. Remove the gasket.

**INSTALLATION**

1. Install the gasket.
2. If the shield is bent, straighten it out before installation. Position the shield to the spindle, install the attaching nuts, and torque to specification (Fig. 16).
3. Install the hub and rotor assembly and the caliper as outlined under Installation in the foregoing procedure.
PROPORIONING VALVE

The proportioning valve is serviced as an assembly and is never adjusted or overhauled.

Refer to View P of Fig. 18 for the Fairlane, Falcon and Montego disc brake pressure control valve installation. View R of Fig. 19 shows the installation of the Mustang and Cougar disc brake pressure control valve.

REMOVAL

1. Disconnect the brake tubes at the proportioning valve. On a Mustang and Cougar vehicle, remove the control valve.
2. On a Fairlane, Falcon or Montego vehicle, remove the attaching bolt and clip and remove the proportioning valve.

INSTALLATION

1. On a Fairlane, Falcon or Montego vehicle, position the disc brake pressure control valve, clip and attaching bolt as shown in Fig. 19, View P, and tighten the attaching bolt.
2. Connect the brake lines to the proportioning valve, and torque the connector nuts to specification (Figs. 18 and 19).
3. Bleed the brake system and centralize the differential pressure valve. Refer to Part 2-1, Section 2 for the correct procedure.

WHEEL CYLINDER REPAIR

Wheel cylinders should not be disassembled unless they are leaking or unless new cups and boots are to be installed.

It is not necessary to remove the wheel cylinder from the backing plate to disassemble, inspect and overhaul it. Removal is necessary only when the cylinder is damaged or scored beyond repair.

DISASSEMBLE

1. With the wheel in a raised position, remove the wheel and the drum.
2. Place a clamp over the ends of the brake cylinder as shown in Fig. 13.
3. Remove the brake shoe assemblies following procedure outlined in this section.
4. The 6-cylinder Falcon and Mustang models are not provided with links. Remove the rubber boots from the ends of the pistons.
5. On 8-cylinder models and on all Montego and Fairlanes, remove the brake shoe assemblies from the ends of the pistons. Remove the attached return spring cups, and return spring from the cylinder bore (Fig. 17).
6. Remove the bleeder screw from the cylinder.

INSPECTION

1. Wash all parts in clean specified brake fluid. Dry with compressed air.
2. Check all the internal parts for excessive wear or damage. Replace scored pistons. Always replace the rubber cups and dust boots. If any of the internal parts require replacing, all should be replaced.
3. Inspect the cylinder bore for score marks or rust. If either condition is present, the cylinder bore must be honed. However, the cylinder should not be honed more than 0.003 inch beyond its original diameter. A baffle in the front wheel cylinder of the 6-cylinder Falcon and Mustang models prevents honing; therefore, the cylinder must be replaced.
4. Check the bleeder hole to be sure that it is open.

ASSEMBLY

1. Apply a light coating of heavy-duty brake fluid to all internal parts.
2. Thread the bleeder screw into the cylinder and tighten securely.
3. Insert the return spring, cups, and pistons into their respective positions in the cylinder bore (Fig. 17). Place a boot over each end of the cylinder. On 8-cylinder model Mustangs, Cougars, Falcons and all Montego and Fairlanes, install the links in the ends of the brake cylinders.
4. Install the shoe and adjuster assemblies, then adjust the shoes as outlined in this section.
5. Install the brake drum and wheel, then bleed the brakes and centralize the differential valve (Part 2-1, Section 2).

WHEEL CYLINDER REPLACEMENT

REMOVAL

1. With the wheel in a raised position, remove the wheel and the drum.
2. Place a clamp over the ends of the wheel cylinder as shown in Fig. 13.
3. Remove the brake shoe assemblies following procedure outlined in this section.
4. Disconnect the brake line from the brake cylinder.

To disconnect the hose at a front cylinder, remove the tube fitting that connects the opposite end of the hose to the brake tube at a bracket on the side rail. Remove the hose-shoe-type retaining clip from the hose and bracket, disengage the hose from the bracket, then unscrew the entire hose assembly from the front wheel cylinder.

At a rear cylinder, unscrew the tube fitting that connects the tube to the cylinder. Do not pull the metal tube away from the cylinder. Pulling the tube out of the cylinder connection will bend the metal tube and make installation difficult. The tube will separate from the cylinder when the cylinder is removed from the backing plate.
5. Remove the wheel cylinder attaching bolts and lock washers and remove the cylinder.

INSTALLATION

Wipe the end(s) of the hydraulic line to remove any foreign matter before making connections.

To install a front cylinder:
1. To install a front wheel cylinder position the cylinder in place against the backing plate. Install the two lock washers and attaching bolts. Torque them to specifications.
2. Install a new copper gasket over the hose fitting. Thread the hose assembly into the cylinder and tighten it to specified torque (Figs. 18 and 19).
3. Engage the opposite end of the hose to the bracket on the frame. The stripe on the hose assembly must show no evidence of twist. The brake hose must not touch any other parts during a turn, jounce or rebound. Install the horseshoe-type retaining clip, and connect the brake tube to the hose with the tube fitting nut. Tighten the nut to specifications with Tool 1112-144.
4. To install a rear wheel cylinder position the rear wheel cylinder in place against the backing plate. Enter the tubing into the cylinder, and start the tube fitting nut into the threads of the cylinder.
5. Secure the cylinder to the backing plate with the attaching bolts and lock washers.
6. Tighten the tube fitting nut to specifications.
7. Install the links in the ends of the wheel cylinder (8-cylinder models only on Falcon, Mustang, Cougar and all Montego and Fairlane Models).
8. Install the brake shoes as detailed in this section.
9. Adjust the brakes as detailed in Part 2-2, Section 2.
10. Install the brake drums and wheels.
11. Bleed the brakes and centralize the differential valve as detailed in Part 2-1, Section 2.

BRAKE BACKING PLATE REPLACEMENT

REMOVAL

1. Remove the wheel and brake drum. Disconnect the brake line from the brake cylinder.
2. Remove the brake shoe and adjuster assemblies and the wheel cylinder as outlined in this section. On the rear wheels, disconnect the parking brake lever from the cable.
3. If the rear backing plate is being replaced, rotate the axle shaft so that the hole in the axle shaft flange lines up with the carrier plate retaining nuts and remove the nuts. Pull the axle shaft assembly out of the housing with tool 4235-C and a slide hammer (Part 4-2), then remove the backing plate. Use care to prevent damage to the rear axle bearing seal.
4. If the front backing plate is being replaced, remove the bolts and nuts that secure the plate to the front wheel spindle and remove the plate.

INSTALLATION

1. Position a new rear backing plate on the attaching bolts in the axle housing flange. Insert the axle shaft into the housing so that the splines engage the differential side gear with the bearing retainer sliding onto the retaining bolts and against the backing plate. Use care to prevent damage to the rear axle bearing seal.
2. Install the attaching nuts through the access hole in the axle shaft flange.
3. Refer to Group 4, Part 4-2 for the proper installation procedure.
4. Position a new front backing plate to the wheel spindle and install the attaching bolts and nuts.
5. Install the wheel cylinder and connect the brake line as outlined in this section.
6. Install the brake shoe and adjuster assemblies as outlined in this section. On a rear brake, connect the parking brake cable to the lever.
7. Adjust the brake shoes (Section 2).
8. Install the brake drum and wheel. Bleed the brake system and centralize the differential valve as outlined in Part 2-1, Section 2.

BRAKE TUBE REPLACEMENT

Steel tubing is used throughout the brake system with exception of the flexible hoses at the front wheels and at the rear axle brake hose connector (Figs. 18 and 19).

Always bleed the applicable primary (front) or secondary (rear) brake system after a primary or secondary brake system hose or line replacement. Centralize the differential valve after bleeding the brake system because vibration will cause tube failure. When bending brake tubing to fit underbody or rear axle contours, be careful not to kink or crack the tube.

All brake tubing should be properly double-flared at both ends to provide good leak-proof connections. Clean the brake tubing by flushing with clean brake fluiding before installation.

When connecting a tube to a hose, tube connector, disc caliper, or brake cylinder, tighten the tube fitting nut to specified torque (Figs. 18 and 19) with Milbar tool 1112-144 or equivalent.

BRAKE HOSE REPLACEMENT

When installing a new front brake hose, make certain it is replaced with the proper hose assembly. Install a new gasket over the hose fitting and torque the hose assembly to the wheel cylinder or caliper connection as noted in Figs. 18 and 19. Install the hose into the bracket on the side rail. Make sure the stripe on the hose shows no evidence of twist. Install the retaining clip. Connect the tube assembly to the hose, and torque the connector to specification (Figs. 18 and 19).

A rear brake hose should be installed so that it does not touch the muffler outlet pipe or shock absorber.

Since the rear brake hose is integral with the rear brake tube connector, the entire hose and connector is replaced as an assembly. Mount the connector to the rear axle housing with the attaching bolt (axle vent) and lock washer. Connect the two rear wheel brake tubes to the connector. Install the hose in the D slot in the rear hose bracket. Install clip. Connect the tube assembly to the hose, and torque the connector to specification (Figs. 18 and 19).
PART 2-2—Brake System

2-21

FIG. 18—Hydraulic Brake System—Montego—Fairlane and Falcon
TIGHTEN ALL HYDRAULIC LINE CONNECTIONS AS FOLLOWS:

<table>
<thead>
<tr>
<th>Thread Type</th>
<th>Foot Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8-24</td>
<td>8-15</td>
</tr>
<tr>
<td>7/16-24</td>
<td>10-18</td>
</tr>
<tr>
<td>1/2-20</td>
<td>12-20</td>
</tr>
<tr>
<td>9/16-18</td>
<td>15-25</td>
</tr>
</tbody>
</table>

TOGGLE TO 27-37 FOOT POUNDS

TUBE ASSEMBLY-2265
SCREW-37947-52
CLIP-379745-53
VIEW IN CIRCLE T

CLIP-37937-52 2 REQUIRED
SCREW-37498-5B 2 REQUIRED
VIEW IN CIRCLE Y
TYPICAL 2 PLACES

INSTALLATION—DISC BRAKES ONLY
VIEW IN CIRCLE W TYPICAL 2 PLACES

INSTALLATION—STANDARD, POWER DRUM BRAKES ONLY

CONNECTOR-87583-S
FOR INSTALLATION ON POWER DRUM AND STANDARD BRAKES ONLY
TUBE-2263
GROMMET-379524-5

CHECK BRAKE HOSE CLEARANCE TO ALL COMPONENTS IN METAL/METAL JOUNCE, METAL/METAL REBOUND AND FULL INSIDE AND OUTSIDE TURNS.

HOSE-2263-2264
CLIP-379031-52 2 REQUIRED
SCREW-379288-52 2 REQUIRED
TUBE-2263
CLIP-78-2814-43 2 REQUIRED
VIEW IN CIRCLE Y
TYPICAL 2 PLACES

TUBE-2263 R.H. -2264 L.H.
CLIP-78-2814-43 2 REQUIRED

VIEW X TYPICAL 2 PLACES

* BRAKE HOSE MUST BE ASSEMBLED WITH WHEELS STRAIGHT AHEAD.

Strip on hose assembly must show no evidence of twist.

FIG. 19—Hydraulic Brake System—Mustang and Cougar
3 REMOVAL AND INSTALLATION

DUAL MASTER CYLINDER—STANDARD BRAKES

REMOVAL

Refer to Figs. 25 and 26.
1. Working from inside the vehicle below the instrument panel, disconnect the master cylinder push rod from the brake pedal assembly. The push rod cannot be removed from the master cylinder.
2. Disconnect the stoplight switch wires at the connector. Remove the hairpin retainer. Slide the stop light switch off the brake pedal pin just far enough to clear the end of the pin, then lift the switch straight upward from the pin. Use care to avoid switch damage during removal.
3. Slide the master cylinder push rod and the nylon washers and bushings of the brake pedal pin.
4. Remove the brake tubes from the primary and secondary outlet ports of the master cylinder.
5. Remove the lock nuts or screws that secure the master cylinder to the dash panel and lift the cylinder forward and upward from the car.

INSTALLATION

Refer to Figs. 20 and 21.
1. Position the boot on the push rod and secure the boot to the master cylinder. Carefully insert the master cylinder push rod and boot through the dash panel opening.
2. On Fairlane, Falcon or Montego models, position the master cylinder on the mounting studs on the dash panel. Install the lock nuts on the studs at the dash panel and torque them to specification.
3. On Mustang or Cougar models, position the master cylinder on the dash panel. Install the retaining screws and torque them to specification. Coat the nylon bushings with SAE 10W oil. Install the nylon washer and bushing on the brake pedal pin.
4. Position the stop light switch on the brake pedal pin, install the nylon bushing and washer and secure them in position with the spring retainer.
5. Connect the wires at the stop light switch connector.
6. Connect the brake lines to the master cylinder leaving the brake line fittings loose.
7. Fill the master cylinder with the specified brake fluid to within 1/4 inch of the top of the dual reservoirs. Use Ford Brake Fluid — Extra Heavy Duty — Part Number C6AZ-19542-A for all brake applications. The brake fluid is colored blue for identification. Do not mix low temperature brake fluids with the specified fluid for the brake system.
9. Operate the brakes several times, then check for external hydraulic leaks.

DUAL MASTER CYLINDER—POWER BRAKES

Refer to Figs. 25 and 26.

REMOVAL

1. Remove the brake tubes from the primary and secondary outlet ports of the master cylinder.
2. Remove the two nuts attaching the master cylinder to the brake booster assembly.
3. Slide the master cylinder forward and upward from the vehicle.

INSTALLATION

1. Before installing the master cylinder, check the distance from the outer end of the booster assembly push rod to the master cylinder mounting surface. Turn the push rod adjusting screw in or out as required to obtain the specified length. Refer to Part 2-1, Section 2, Power Brake Master Cylinder Push Rod Adjustment for the proper procedure.
2. Position the master cylinder assembly over the booster push rod and onto the two studs on the booster assembly.
3. Install the attaching nuts and torque them to specifications.
4. Install the primary (front) and secondary (rear) brake tubes to the master cylinder outlet fittings, and torque them to specification.
5. Fill the master cylinder with the specified brake fluid to within 1/4 inch of the top of the dual reservoirs. Use Ford Brake Fluid — Extra Heavy Duty — Part Number C6AZ-19542-A for all brake applications. The brake fluid is colored blue for identification. Do not mix low temperature brake fluids with the specified fluid for the brake system.
7. Operate the brakes several times, then check for external hydraulic leaks.

PRESSURE DIFFERENTIAL VALVE ASSEMBLY

Refer to Figs. 18 and 19.

REMOVAL

1. Disconnect the brake warning light wire from the pressure differential valve assembly switch. To prevent damage to the brake warning switch wire connector, expand the plastic lugs to allow removal of the shell-wire connector from the switch body.
2. Loosen the tube nut connecting the primary (front brake) system inlet tube at the top of the pressure differential valve assembly and disconnect the tube.
3. Disconnect the primary system left front brake outlet tube from the top side of the pressure differential valve assembly.
4. Disconnect the primary system right front brake outlet tube from the top side of the differential valve assembly.
5. Disconnect the secondary (rear brake) system inlet tube at the lower side of the pressure differential valve assembly.
6. Disconnect the secondary system rear brake outlet tube from the lower side pressure differential valve assembly.
7. Remove the screw retaining the pressure differential valve assembly to the vehicle and remove the differential valve assembly.
8. If the differential valve is to be replaced, remove the brake warning lamp switch and install the switch in the new differential valve. The pressure differential valve assembly and the brake warning lamp switch are separate units and each is serviced as a separate assembly only.
9. On disc brake equipped vehicles, place the pressure differential valve assembly and mounting bracket in a vise. Loosen the proportioning valve tube nuts at the differential valve and at the proportioning valve. Remove the proportioning valve from the mounting.

**INSTALLATION**

1. On disc brake equipped vehicles, connect the proportioning valve inlet and outlet tubes to the proportioning valve and differential valve bodies. Tighten the tube nuts to specification.
2. Mount the pressure differential valve assembly on the vehicle and tighten the attaching screw.
3. Connect the rear brake system inlet tube to the pressure differential valve assembly and tighten the tube nut to the specified torque.
4. Connect the rear brake system outlet tube to the pressure differential valve assembly. Tighten the tube nut to the specified torque.
5. Connect the front brake system inlet tube to the pressure differential valve assembly and tighten the tube nut to the specified torque.
6. Connect the right front brake outlet tube to the pressure differential valve assembly. Tighten the tube nut to the specified torque.
7. Connect the left front brake outlet tube to the pressure differential valve assembly. Tighten the tube nut to the specified torque.
8. Connect the shell-wire connector to the brake warning lamp switch. Make sure the plastic lugs on the connector hold the connector securely to the switch.
9. Bleed the brakes and centralize the pressure differential valve (Part 2-1, Section 2).
10. On disc brake equipped cars, install front wheel and tire assemblies, and torque the retaining nuts to specification. Install wheel covers.

**BRAKE BOOSTER**

Refer to Figs. 27 and 28.

**REMOVAL**

1. Working from inside the vehicle below the instrument panel, disconnect the booster push rod link from the brake pedal assembly. To do this, proceed as follows:
   - Disconnect the stop light switch wires at the connector. Remove the hairpin retainer. Slide the stop light switch off from the brake pedal pin just far enough for the switch outer hole to clear the pin, and then lift the"
PART 2-2—Brake System

2-24

switch straight upward from the pin. Be careful not to damage the switch during removal. Slide the booster push rod and the nylon washers and bushing off the brake pedal pin.

2. Open the hood. Disconnect the master cylinder outlet front and rear tubes from the master cylinder and the differential valve. Remove the master cylinder from the booster. Secure it to one side without disturbing the hydraulic lines.

3. Disconnect the manifold vacuum hose from the booster unit. If the vehicle is equipped with an automatic transmission disconnect the transmission vacuum unit hose.

4. On Falcon, Fairlane and Montego vehicles, remove the four bracket-to-dash panel attaching nuts or bolts. Remove the booster and bracket assembly from the dash panel, sliding the push rod link out from the engine side of the dash panel.

5. Remove the push rod link boot from the dash panel.

INSTALLATION

1. Install the push rod link boot in the hole in the dash panel.

2. On Falcon, Mondeo, Fairlane vehicles, mount the booster and bracket assembly to the dash panel by sliding the bracket onto the mounting studs and the push rod link in through the hole and boot in the dash panel. Install the bracket-to-dash panel attaching locknuts and torque them to specification.

3. On Mustang and Cougar vehicles, mount the booster and bracket assembly to the dash panel by sliding the push rod link and boot through the hole and boot in the dash panel. Install the screw through the booster mounting bracket to the dash panel and torque it to specification. Install the four nuts on the booster mounting bracket to dash panel attaching bolts and torque them to specifications. When installing the booster, take care not to hit the booster input shaft and guide as internal damage to the booster can result. Connect the manifold vacuum hose to the booster. If the vehicle is equipped with an automatic transmission, connect the transmission vacuum unit hose.

4. Before installing the master cylinder, check the distance from the outer end of the booster assembly push rod to master cylinder surface. Turn the screw in or out to obtain the specified length. Refer to Part 2-1, Section 2, Power Brake Master Cylinder Push Rod Adjustment. Install the master cylinder and torque the attaching nuts to specifications.

5. Working from inside the vehicle below the instrument panel, connect the booster push rod link to the brake pedal assembly. To do this, proceed as follows:

Apply a coating of SAE 10 engine oil to the bushings. Install the inner nylon washer, the Booster push rod, and the bushing on the brake pedal pin. Position the switch so that it straddles the push rod with the switch slot on the pedal pin and the switch outer hole just clearing the pin. Slide the switch completely onto the pin, and install the nylon washer. Be careful not to bend or deform the switch. Secure these parts to the pin with the hairpin retainer. Connect the stop light switch wires to the connector and install the wires in the retaining clip.

6. Connect the master cylinder outlet front and rear tubes to the master cylinder and the differential valve. Torque the brake tube fittings to specification (Figs. 18 and 19). Bleed the brake system and centralize the pressure differential valve.

7. Check the brake booster for proper operation. Check the vacuum lines for leakage.

BRAKE PEDAL

REMOVAL—MANUAL SHIFT TRANSMISSION

1. On a Falcon, Montego or Fairlane, remove the clutch pedal assist spring.

On a Mustang, remove the pedal bumper and bracket assembly from the pedal support bracket to relieve the tension on the assist spring, and then remove the spring.

FIG. 22—Removing Snap Ring—Typical

FIG. 23—Caliper Assembly—Disassembled
2. Disconnect the clutch pedal-to-
   equalizer rod at the clutch pedal by
   removing the retainer and bushing.
3. Disconnect the stop light switch
   wires at the connector.
4. Remove the switch retainer, and
   slide the stop light switch off the
   brake pedal pin just far enough for
   the switch outer hole to clear the pin.
   Then lower the switch away from
   the pin.
5. Slide the master cylinder or
   booster push rod and the nylon
   washers and bushing off from the
   brake pedal pin (Figs. 25 and 26).
6. Remove the self-locking pin
   and washer from the clutch and
   brake pedal shaft, then remove the
   clutch pedal and shaft assembly, the
   brake pedal assembly, and the bush-
   ings from the pedal support bracket
   (Figs. 25 and 26).

INSTALLATION

1. Apply a coating of SAE 10 en-
   gine oil to the bushings and locate
   all bushings in their proper places on
   the clutch and brake pedal assem-
   blies.
2. Position the brake pedal to the
   support bracket, then install the
   clutch pedal and shaft assembly
   through the support bracket and
   brake pedal assembly. Install the
   spring clip (Figs. 25 and 26).
3. Install the split bushing in the
   spring groove of the clutch pedal.
   Hook the clutch assist spring to the
   groove and to the spring retainer.
4. Connect the clutch pedal to
   equalizer rod to the clutch pedal as-
   semblry with the bushing and the spring
   clip retainer. Apply SAE 10 engine
   oil to the bushing.
5. Install the inner nylon washer,
   the master cylinder or booster push
   rod, and the bushing on the brake
   pedal pin. Position the switch so that
   it straddles the push rod with the
   switch slot on the pedal pin and the
   switch outer hole just clearing the pin.
   Slide the switch completely onto
   the pin, and install the outer nylon washer
   as shown in Figs. 25 and 26. Secure these
   parts to the pin with the self-locking pin.
6. Connect the stop light switch
   wires to the connector, and install the
   wires to the retaining clip.
7. Adjust the clutch pedal free
   play (Group 5) to specification, if
   required.
8. Check the Brake Pedal Free
   Height and Travel Measurements
   (Part 2-1, Section 1).

REMOVAL—AUTOMATIC
   TRANSMISSION

1. Disconnect the stop light switch
   wires at the connector.
2. Remove the self-locking pin and
   slide the stop light switch off the brake
   pedal pin just far enough for the
   switch outer hole to clear the pin.
   Then lower the switch away from
   the pin. Slide the master cylinder or
   booster push rod and the nylon
   washers and bushing off from the
   brake pedal pin (Fig. 25 and 26).
3. On all vehicles except Mustang
   and Cougar with power brakes, re-
   move the equalizer rod to the clutch pedal as-
   sembly to the support bracket. then in-
   stall the support bracket and brake pedal
   assembly. Install the pedal assembly from the
   support bracket.

REMOVAL—FAIRLANE,
   FALCON AND MONTEGO

Refer to Fig. 30.
1. Make sure the parking brake is
   completely released.
2. Remove the left cowl side
   (kick) panel. Disconnect the wire lead
   at the parking brake light switch.
3. Remove the parking brake
cable ball hair-pin retainer. Disconnect
   the cable ball from the brake
   assembly.
4. Remove the parking brake light
   switch and the attaching screw.
5. Remove the three screws that
   attach the control assembly to the
   left cowl inner side panel.
6. Pull the control away from the
   cowl panel. Remove the hair-pin re-
   tainer securing the cable housing to the
   control assembly. Remove the con-
   trol assembly.

INSTALLATION

1. Connect the ball-end of the park-
   ing brake cable to the control, and in-
   stall the hair-pin retainer.
2. Position the control assembly to
   the cowl inner side panel and install the
   three attaching screws. Torque the
screws to specification.
3. Position the parking brake light switch and install the attaching screw. Connect the switch wire lead.
4. Position the cable ball in the brake assembly.
5. Install the cowl side (kick) panel.
6. Check the operation of the parking brake switch and the parking brake. Adjust the parking brake, as required (Part 2-1, Section 2).

PARKING BRAKE EQUALIZER TO CONTROL CABLE

REMOVAL—MUSTANG AND COUGAR

1. Remove the attaching screws and insulator-bracket from the dash panel (Fig. 30).
2. Remove the parking brake control assembly and disengage the cable from the handle as outlined under Parking Brake Control in this section.
3. Pull the cable down through the hole in the dash panel.
4. Raise the vehicle on a hoist. Remove the hairpin retainer, and disengage the cable and conduit assembly from the bracket on the inner side rail.
5. Disconnect the cable stepped-rod from the equalizer lever. Pull the cable forward through the crossmember and remove the cable from the vehicle.

INSTALLATION

1. Pass the stepped-rod rearward through the crossmember and connect it into the equalizer lever.
2. Engage the cable and conduit assembly to the bracket on the inner side rail and secure with the spring clip retainer.
3. Push the upper end of the cable up through the hole in the dash panel.
4. Connect the cable upper ball to the parking brake control assembly, and install the control assembly as outlined in this section.
5. Position the cable insulator in the dash panel cable hole and secure the insulator to the dash panel with two attaching screws.

REMOVAL—FAIRLANE, MONTEGO, FALCON

Refer to Fig. 30.
1. Working from inside the vehicle, position the floor cover back and remove the retaining screws securing the cable shield plate to the dash panel.
2. Position the parking brake in the ON position.
3. Position the parking brake in the OFF position and remove the cable ball from the notch in the brake control assembly.
4. Remove the hairpin retainer and remove the cable housing from the brake assembly.

FIG. 24—Removing Piston

FIG. 25—Dual-Brake System Master Cylinder Installation—Mustang and Cougar Without Power Brakes
PARKING BRAKE EQUALIZER TO REAR WHEEL CABLE

A single cable passing through the equalizer and cable guides connects both parking brake assemblies on Montego and Fairlane station wagons and on Falcon vehicles. Separate cables for each parking brake are used on Mustang, Cougar, Montego and Fairlane passenger models.

FAIRLANE AND MONTEGO PASSENGER MODELS

Removal

1. Remove the equalizer lock nut and adjusting nut, equalizer, spring and spring seat.
2. With the cables slack, disconnect the ball-ends from the connector (Fig. 30).
3. Remove the cable from the retaining hooks (station wagon models) and the underbody guide (convertible models) if required.
4. Remove the hairpin lock retaining the cable housing to the side rail bracket.
5. Remove the wheel cover, wheel and tire and the rear brake drum as outlined in Section 2.
6. Remove self-adjuster springs to allow clearance to remove the cable retainer from the backing plate. Disconnect the rear end of the cable from the parking brake lever on the brake shoe.
7. Disengage the cable housing with the referring type retainer from the backing plate and withdraw the cable and housing from the inboard side of the backing plate. Remove the cable from the vehicle.

Installation

1. On convertible models, insert the rear end of the cable through the underbody crossmember guide holes.
2. Insert the rear end of the cable and housing through the hole in the backing plate from the inboard side.
3. Connect the cable to the parking brake lever on the brake shoe and install the cable housing retaining grommet or steel-pronged Hi-Hat in the backing plate.
4. Install the self-adjuster springs. Position the cable housing in the side rail bracket and install the hairpin type retainer.
5. Install rear hub and drum assembly, wheel and tire assemblies and wheel cover as outlined in Section 2.
6. Position the cable retainer hooks (station wagon models) in the underbody guide (convertible models) and install the connector, thus hooking the two cables together.
7. Insert the cable into the equalizer and install the equalizer, spring seat, spring, adjusting nut and lock nut to the front, parking brake control cable.
8. Adjust the parking brake as directed in Part 2-1, Section 2.

FAIRLANE AND MONTEGO STATION Wagons and Falcon Passengers Models

Removal And Installation

Generally follow the procedure given above, omitting separation of the cables, since the parking brake rear cable assemblies supplied for these models is in one piece. Removal and installation of both rear wheels, tires and drums will also be required.

MUSTANG AND COUGAR

Refer to Fig. 29.

Removal

1. Raise the vehicle on a hoist.
2. Position the parking brake in the OFF position.
3. Loosen the adjusting nut and remove rear parking brake cable ball end from the connector.
4. Remove the adjusting nut from the equalizer rod and remove the cable from the equalizer.
5. Remove the hairpin retainer securing the rear cable to the frame bracket. Remove the cable from the bracket.
6. Remove the wheel cover, wheel and tire, and rear brake drum as outlined in Section 2.
7. Remove the self-adjuster springs to allow clearance to remove the cable retainer from the backing plate. Disconnect the rear end of the cable from the parking brake lever on the brake shoe.
8. Disengage the cable housing pronged-retainer grommet from the backing plate and withdraw the cable and housing from the inboard side of the backing plate. Remove the cable from the vehicle.

MAJOR REPAIR OPERATIONS

BRAKE DRUM REFINISHING

The 6-cylinder Falcon and Mustang models are equipped with 9-inch brake drums. All other models are equipped with 10-inch drums.

Minor scores on a brake drum can be removed with a fine emery cloth. A drum that is excessively scored or shows a total indicator runout of over 0.007 inch should be turned down. Remove only enough stock to eliminate the scores and true up the drum. The refinished diameter must not exceed 0.060 inch oversize.

If the drum diameter is less than 0.030 inch oversize, 8.030 inches 6-cylinder, Falcon or Mustang, or 10.030 inches on other models after refinishing, standard lining may be installed. If the drum diameter is...
more than 9.030 inches or 10.030 inches, oversize linings must be installed.

After a drum is turned down, wipe the refined surface with a cloth soaked in denatured alcohol. If one drum is turned down the opposite drum on the same axle should also be cut down to the same size.

**ROTOR REFINISHING**

Rotunda Disc Brake Attachment, FRE2249-2, is the only recommended tool to be used to refinish disc brake rotors. The step-by-step resurfacing procedure provided with the tool must be adhered to.

The finished braking surfaces of the rotor must be flat and parallel within 0.0007 inch; lateral runout must not exceed 0.002 inch total indicator reading, and the surface finish of the braking surfaces are to be 85/15 micro inches. The minimum limiting dimensions (Fig. 1, Part 2-1) from the inboard bearing cup to the outboard rotor face (dimension A) and from the inboard rotor face (dimension B) must be observed when removing material from the rotor braking surfaces.

**BRAKE SHOE RELINING**

Brake linings that are worn to within 1/32 inch of any rivet or have been contaminated with brake fluid, grease or oil should be replaced. Failure to replace worn linings will result in a scored drum. When it is necessary to replace linings on one side, they must also be replaced on the wheel on the opposite side of the vehicle.

Inspect brake shoes for distortion, cracks, or looseness. If this condition exists, the shoe must be discarded. Do not attempt to repair a defective brake shoe.

1. Wash the brake shoes thoroughly in a clean solvent. Remove all burrs or rough spots from the shoes.
2. Check the inside diameter of the brake drum with a brake drum micrometer (tool FRE-1431). If the diameter is less than 0.030 oversize, standard lining may be installed. If the diameter is 0.060-0.090 oversize, oversize lining should be installed.
3. Position the new lining on the shoe. Starting in the center, insert and secure the rivets, working alternately towards each end. Replacement linings are ground and no further grinding is required.
4. Check the clearance between the shoe and lining. The lining must seat tightly against the shoe with not more than 0.008 inch clearance between any two rivets.

**DUAL MASTER CYLINDER DISASSEMBLY**

1. Clean the outside of the master cylinder and remove the filler cover and diaphragm. Pour out any brake fluid that remains in the cylinder.
2. Remove the secondary piston stop bolt from the bottom of the cylinder (Figs. 20 and 21).
3. Remove the bleed screws, if required.
4. Remove the snap ring from the retaining groove at the rear of the master cylinder bore (Fig. 20). Remove the push rod and the primary piston assembly from the master cylinder bore. Do not remove the screw that retains the primary return spring retainer, return spring, primary cup retainer, primary cup and protector on the primary piston. This assembly is factory pre-adjusted and should not be disassembled.
5. Remove the secondary piston, assembly.

**INSPECTION AND REPAIR**

1. Clean all parts in clean denatured alcohol, and inspect the parts for chipping, excessive wear or damage. Replace them as required. When using a master cylinder repair kit, install all the parts supplied.
2. Check all recesses, openings and internal passages to be sure they are open and free of foreign matter. Use an air hose to blow out dirt and cleaning solvent. Place all parts on a clean pan or paper.
3. Inspect the master cylinder bore for signs of etching, pitting, scoring or rust. If it is necessary to hone the master cylinder bore to repair damage, do not exceed allowable hone specifications.

**ASSEMBLY**

1. Dip all parts except the master cylinder body in clean Ford Extra Heavy Duty Brake Fluid.
2. Carefully insert the complete secondary piston and return spring assembly in the master cylinder bore.
3. Install the primary piston and return spring assembly in the master cylinder bore.
4. Install the push rod retainer on the push rod, if so equipped. Install the push rod assembly in the cylinder bore. Make sure the retainer is properly seated and holding the push rod securely.
5. Depress the primary piston and install the snap ring in the cylinder bore groove.
6. Position the inner end of the push rod boot (if so equipped) in the master cylinder body retaining groove.
7. Install the secondary piston stop bolt and gasket in the bottom of the master cylinder.
8. Install the bleed screw (if so equipped). Install the gasket (diaphragm) in the master cylinder filler cover. Position the gasket as shown in Figs. 20 and 21. Make sure the gasket is securely seated.
9. Install the cover and gasket on the master cylinder and secure the cover into position with the retainer.

**DISC BRAKE CALIPER DISASSEMBLY**

1. Remove the caliper assembly from the vehicle as outlined in Section 2.
2. Remove the caliper guide pins from the caliper assembly and lift the anchor plate from the caliper.
3. Slide the two outer shoe retaining clips off the retaining pins (Fig. 23).
4. Remove the two retaining pins, then remove the outer brake shoe from the caliper.
5. Slide the inner brake shoe outward until it is free of the hold-down springs, then remove the brake shoe.
6. Apply air pressure to the fluid port in the caliper as shown in Fig. 29 to remove the piston. Place a cloth over the piston before applying air pressure to prevent damage to the piston. If the piston is seized and cannot be forced from the caliper, tap lightly around the piston while applying air pressure. Care should be taken because the piston can develop considerable force due to pressure build-up.
7. Remove the dust boot from the caliper assembly.
8. Remove the rubber piston seal from the cylinder and discard it.

**CLEANING AND INSPECTION**

Clean all metal parts with brake fluid or a suitable solvent. Use clean, dry, compressed air to clean out and dry the grooves and passageways. Be sure that the caliper bore and...
component parts are completely free of any foreign material.

Check the cylinder bores and pistons for damage or excessive wear. Replace the piston if it is pitted, scored, or the chrome plating is worn off.

ASSEMBLY

1. Apply a film of clean brake fluid to the new caliper piston seal and install it in the cylinder bore. Be sure the seal does not become twisted and that it is seated fully in the groove.

2. Install a new dust boot by setting the flange squarely in the outer groove of the caliper bore.

3. Coat the piston with the specified fluid and install the piston in the cylinder bore. Spread the dust boot over the piston as it is installed. Seat the dust boot in the piston groove.

4. Position the inner brake shoe so that the ears of the shoe rests on the top of the anchor plate bosses and beneath the hold-down springs.

5. Install new caliper guide pin insulators in the anchor plate.

6. Install new caliper guide pin insulators in the anchor plate.

7. Position the caliper on the anchor plate and install a new stabilizer.

8. Apply the specified fluid (C6AZ-19542-A) to the caliper guide pins and install them loosely in the anchor plate. Be sure the guide pins are free of oil, grease or dirt.

9. Install the caliper on the spindle as outlined under Disc Brake Caliper Assembly.

10. With moderate pressure applied to the brake pedal, torque the stabilizer attaching bolts and caliper guide pins to specification.

11. Install the wheel and tire assembly.

12. Road test the vehicle.
FIG. 29—Parking Brake Linkage—Mustang and Cougar
FIG. 30—Parking Brake Linkage—Fairlane Falcon and Mercure Intermediate
## PART 2-3— Specifications

### CHECKS AND ADJUSTMENT—INCHES

<table>
<thead>
<tr>
<th>Description</th>
<th>Montego, Falcon, Fairlane</th>
<th>Cougar, Mustang</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brake Pedal Height and Travel Measurements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Brake Push Rod Adjustment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bendix 0.980—0.995</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midland Ross 0.980—0.995</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lining Maximum Wear Limit (From Top of Rivets or Shoe Rim)</td>
<td>1/32</td>
<td>1/32</td>
</tr>
<tr>
<td>Lining Maximum Clearance to Shoe</td>
<td>0.008</td>
<td>0.008</td>
</tr>
<tr>
<td>Drum Diameter</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Self Adjustment Cable Length—End Cable Anchor to End of Cable Hook</td>
<td>9 3/4 †</td>
<td>9 3/4 ‡</td>
</tr>
<tr>
<td>Refer to Part 2-1, Section 1, Brake Pedal Free Height and Travel Measurements for the specifications and measurement procedures.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### BORE DIAMETERS—BRAKE DRUM, WHEEL CYLINDER AND MASTER CYLINDER

<table>
<thead>
<tr>
<th>Models</th>
<th>Montego and Fairlane</th>
<th>Falcon and Mustang</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass. except Conv. (200 &amp; 289 CID Engines)</td>
<td>10.000</td>
<td>9.000</td>
</tr>
<tr>
<td>Pass. and Conv. (390 CID Engine)</td>
<td>10.000</td>
<td>9.000</td>
</tr>
<tr>
<td>Convertible (Except 390 CID Engine)</td>
<td>10.000</td>
<td>9.000</td>
</tr>
<tr>
<td>Station and Ranch Wagons (Except 390 CID)</td>
<td>10.000</td>
<td>9.000</td>
</tr>
<tr>
<td>9 Inch Brake (200 CID Engine)</td>
<td>10.000</td>
<td>9.000</td>
</tr>
<tr>
<td>10 Inch Brake—Station Wagon</td>
<td>10.000</td>
<td>9.000</td>
</tr>
<tr>
<td>10 Inch Brake—Passenger Car</td>
<td>10.000</td>
<td>9.000</td>
</tr>
<tr>
<td>6 Cylinder—Mustang Only</td>
<td>9.000</td>
<td>9.000</td>
</tr>
<tr>
<td>8 Cylinder—390 CID Engine</td>
<td>10.000</td>
<td>9.000</td>
</tr>
<tr>
<td>289 CID Engine</td>
<td>10.000</td>
<td>9.000</td>
</tr>
</tbody>
</table>

### LINING DIMENSIONS—DRUM BRAKES—INCHES

<table>
<thead>
<tr>
<th>Models</th>
<th>Position</th>
<th>Front</th>
<th>Rear</th>
<th>Color Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falcon</td>
<td>Primary</td>
<td>2.25 x 7.62</td>
<td>1.50 x 7.62</td>
<td>Red-Blue</td>
</tr>
<tr>
<td>Sedan and Hardtop 6-Cyl.</td>
<td>Secondary</td>
<td>2.25 x 9.77</td>
<td>1.50 x 9.77</td>
<td>Green</td>
</tr>
<tr>
<td>Station Wagon 6-Cyl.</td>
<td>Primary</td>
<td>2.50 x 8.43</td>
<td>2.00 x 8.43</td>
<td>Yellow-Black</td>
</tr>
<tr>
<td>Sedan and Hardtop 8-Cyl.</td>
<td>Secondary</td>
<td>2.50 x 10.82</td>
<td>2.00 x 10.82</td>
<td>Blue-Blue</td>
</tr>
<tr>
<td>Station Wagon 8-Cyl.</td>
<td>Primary</td>
<td>2.25 x 8.43</td>
<td>1.75 x 8.43</td>
<td>Yellow-Black</td>
</tr>
<tr>
<td>Mustang And Cougar</td>
<td>Secondary</td>
<td>2.50 x 10.82</td>
<td>2.50 x 10.82</td>
<td>Blue-Blue</td>
</tr>
<tr>
<td>6-Cylinder</td>
<td>Primary</td>
<td>2.25 x 7.62</td>
<td>1.50 x 7.62</td>
<td>Red-Blue</td>
</tr>
<tr>
<td>8-Cylinder (Except 390 CID)</td>
<td>Secondary</td>
<td>2.25 x 9.77</td>
<td>1.50 x 9.77</td>
<td>Green</td>
</tr>
<tr>
<td>8-Cylinder 390 CID</td>
<td>Primary</td>
<td>2.25 x 8.43</td>
<td>1.75 x 8.43</td>
<td>Yellow-Black</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>2.50 x 10.82</td>
<td>1.75 x 10.82</td>
<td>Blue-Black</td>
</tr>
</tbody>
</table>
## LINING DIMENSIONS—DRUM BRAKES—INCHES (CONTINUED)

<table>
<thead>
<tr>
<th>Montego and Fairlane</th>
<th>Position</th>
<th>Front</th>
<th>Rear</th>
<th>Color Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Car (200, 289 &amp; 302 CID Engine)—Except Convertible</td>
<td>Primary</td>
<td>2.25 x 8.43</td>
<td>1.75 x 8.43</td>
<td>Yellow-Black</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>2.25 x 10.82</td>
<td>1.75 x 10.82</td>
<td>Blue-Blue</td>
</tr>
<tr>
<td>Passenger Car (390 CID Engine), Station Wagon and Convertible (200, 289 &amp; 302 Engines), LPO Police—Max Fade Resistance</td>
<td>Primary</td>
<td>2.50 x 8.43</td>
<td>2.00 x 8.43</td>
<td>Yellow-Black</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>2.50 x 10.82</td>
<td>2.00 x 10.82</td>
<td>Blue-Blue</td>
</tr>
<tr>
<td>Fairlane-Montego LPO Taxi—Maximum Wear Resistance (Bonded)</td>
<td>Primary</td>
<td>2.50 x 9.18</td>
<td>2.00 x 9.18</td>
<td>Red</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>2.50 x 10.82</td>
<td>2.00 x 10.82</td>
<td>White</td>
</tr>
<tr>
<td>Station Wagon (390 CID Engine)</td>
<td>Primary</td>
<td>2.50 x 8.43</td>
<td>2.50 x 8.43</td>
<td>Yellow-Black</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>2.50 x 10.82</td>
<td>2.50 x 10.82</td>
<td>Blue-Blue</td>
</tr>
</tbody>
</table>

## SHOE AND LINING DIMENSIONS—DISC BRAKES—INCHES

<table>
<thead>
<tr>
<th></th>
<th>Fairlane Montego, Falcon Bonded FoMoCo</th>
<th>Cougar, Mustang Bonded FoMoCo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lining Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lining Size</td>
<td>4.82 x 1.84</td>
<td>4.82 x 1.84</td>
</tr>
<tr>
<td>Lining Area-Square Inches per Segment</td>
<td>9.11</td>
<td>9.11</td>
</tr>
<tr>
<td>Lining Thickness—Nominal</td>
<td>0.362</td>
<td>0.362</td>
</tr>
<tr>
<td>Lining Wear Limit (Front Surface of Shoe) — Max</td>
<td>0.030</td>
<td>0.030</td>
</tr>
</tbody>
</table>

## CALIPER CYLINDER BORE DIAMETER—INCHES

| Mustang, Cougar, Falcon, Fairlane and Montego | 2.375 |

## ROTOR

<table>
<thead>
<tr>
<th>Car Line</th>
<th>Thickness</th>
<th>Outside</th>
<th>Inside</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mustang, Cougar, Fairlane, Falcon, Montego</td>
<td>0.810</td>
<td>11.29</td>
<td>7.35</td>
</tr>
</tbody>
</table>

Rotor Runout-Maximum Allowable-0.0025 for Mustang, Cougar, Fairlane, Falcon and Montego

## TORQUE LIMITS—DISC BRAKES (FT-LBS)

<table>
<thead>
<tr>
<th>Description</th>
<th>Ft-Lbs</th>
<th>Description</th>
<th>Ft-Lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caliper Assembly to Spindle</td>
<td>Upper 110-140</td>
<td>Hub and Rotor Assembly to Front Wheel Spindle</td>
<td>Rotate rotor while torquing to 17-25 ft-lbs. Back off the adjusting nut 1/2 turn and retighten to 10-15 inch pounds while rotating wheel. Selectively position nut retainer on adjusting nut so that a set of slots are in line with cotter pin hole. Adjusting nut should not be rotated in this operation. Lock adjusting nut and nut retainer with cotter pin so that the cotter pin end does not interfere with seating of wheel static collector in spindle hole.</td>
</tr>
<tr>
<td>Caliper Guide Pins</td>
<td>25-35</td>
<td>Lower 60-70</td>
<td></td>
</tr>
<tr>
<td>Caliper Bleeder Screw</td>
<td>6-15 Max (Must be leakproof)</td>
<td>6-10</td>
<td></td>
</tr>
<tr>
<td>Caliper Brake Shoe Clips</td>
<td>6-10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotor Splash Shield to Spindle</td>
<td>9-14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheel Assembly to Front Wheel Hub and Rotor Assembly</td>
<td>70-115</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake Tube fitting Nuts to Proportioning Valve</td>
<td>70 in-lbs (Max. Must be leakproof)</td>
<td>8-11</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
- Adjusting nut should not be rotated in this operation. Lock adjusting nut and nut retainer with cotter pin so that the cotter pin end does not interfere with seating of wheel static collector in spindle hole.
## TORQUE LIMITS (FT-LBS)—GENERAL

<table>
<thead>
<tr>
<th>Description</th>
<th>Montego Fairlane</th>
<th>Falcon</th>
<th>Cougar Mustang</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Brake Control Assembly Mounting Bolt</td>
<td>15-20</td>
<td>15-20</td>
<td>15-20</td>
</tr>
<tr>
<td>Master Cylinder to Dash Panel Bolts</td>
<td>15-20</td>
<td>18-25</td>
<td>18-25</td>
</tr>
<tr>
<td>Brake Pedal Support Bracket to Instrument Panel</td>
<td>9-13</td>
<td>9-13</td>
<td>9-13</td>
</tr>
<tr>
<td>Wheel to Hub and Drum Nut</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-Lug</td>
<td>55-85</td>
<td>55-85</td>
<td></td>
</tr>
<tr>
<td>5-Lug</td>
<td>70-115</td>
<td>70-115</td>
<td>70-115</td>
</tr>
<tr>
<td>Hydraulic Line Connections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nut Sizes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/8-24</td>
<td>8-15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/16-24</td>
<td>10-18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2-20</td>
<td>12-20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9/16-18</td>
<td>15-25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake Hose Connections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheel Cylinder</td>
<td>17-25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caliper</td>
<td>27-32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front Brakes—Drum Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backing Plate to Spindle Nut</td>
<td>28-42</td>
<td>28-42</td>
<td>28-42</td>
</tr>
<tr>
<td>Wheel, Hub and Drum Assembly to Wheel Spindle Nut</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear Brake—Drum Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drum to Axle Shaft Speed Nut</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake Cylinder to Brake Backing Plate Bolt</td>
<td>10-20</td>
<td>5-7</td>
<td>(9 inch brake)</td>
</tr>
<tr>
<td>Brake Backing Plate to Axle Housing 6-Cyl</td>
<td>30-40</td>
<td></td>
<td>(10 inch brake)</td>
</tr>
<tr>
<td>8-Cyl</td>
<td>30-40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake Line Connection to Axle Housing Bolt</td>
<td>12-18</td>
<td>12-18</td>
<td></td>
</tr>
<tr>
<td>POWER BRAKES: Master Cylinder to Booster Body</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake Booster to Pedal Support Bracket or Dash</td>
<td>18-25</td>
<td>18-25</td>
<td></td>
</tr>
</tbody>
</table>

- All hydraulic line connections (nuts) must be torqued to the specified value and free of fluid leakage.
- Purchased as an assembly.

### SERVICE TOOLS

<table>
<thead>
<tr>
<th>Ford Tool No.</th>
<th>Former No.</th>
<th>Description</th>
<th>Tool No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotunda HRE 8650</td>
<td>LM-119</td>
<td>Brake Adjusting Gauge</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2018-A</td>
<td>Brake Cylinder Retaining Clamp</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2162</td>
<td>Brake Adjusting Tool</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2035-N</td>
<td>Adapter Cap</td>
<td></td>
</tr>
<tr>
<td>Tool 33621</td>
<td>33621</td>
<td>Internal Snap Ring Pliers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Milbar</td>
<td>Inch-lb torque wrench</td>
<td></td>
</tr>
<tr>
<td>Tool 4235-C</td>
<td>4235-C</td>
<td>Axle Shaft Remover</td>
<td></td>
</tr>
<tr>
<td>Rotunda FRE 1431</td>
<td></td>
<td>Brake Drum Micrometer</td>
<td></td>
</tr>
</tbody>
</table>
This is only a Demo of the product!  
Only a few pages are included.

**Description:** The Ford Shop Manual is the original manual used by the Ford dealership mechanics at to guide them through repairs and maintenance. Each section provides information on the operation of major systems, diagnostics, troubleshooting, overhaul, as well as the removal and installation of major components. Written in an easy to understand format, this manual contains step-by-step instructions designed for the novice and the expert. In addition, this manual is filled with illustrations, photographs, and diagrams that help in the identification of parts and proper assembly.

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► Zoom - Zoom in to over 1200% to see the exact details.
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