1968

COUGAR
FAIRLANE
FALCON
MONTEGO
MUSTANG

SHOP MANUAL

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Ford SERVICE PUBLICATIONS

FIRST PRINTING—NOVEMBER, 1967

GROUP INDEX

SPECIFICATIONS AND SPECIAL SERVICE TOOLS AT END OF EACH GROUP

FOREWORD

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.

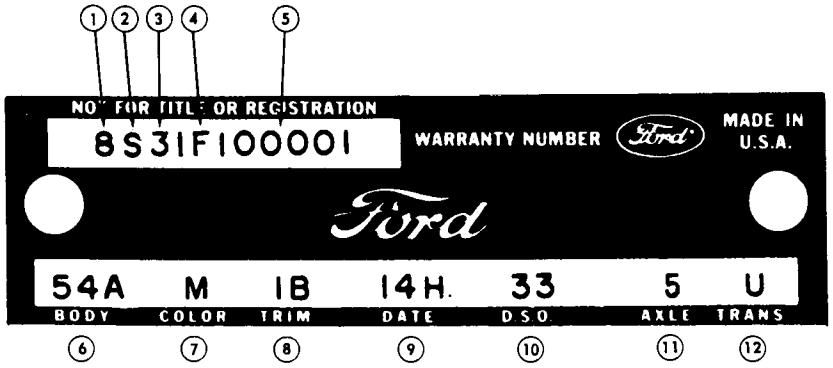
Refer to the opposite page for important vehicle identification data.

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.

Ford SERVICE PUBLICATIONS

Vehicle Identification

GROUP 1



1. MODEL YEAR CODE
2. ASSEMBLY PLANT CODE
3. BODY SERIAL CODE
4. ENGINE CODE
5. CONSECUTIVE UNIT NO.
6. BODY TYPE CODE
7. COLOR CODE
8. TRIM CODE
9. DATE CODE
10. DISTRICT-SPEC. EQUIP. CODE
11. REAR AXLE CODE
12. TRANSMISSION CODE

N 1672-A

FIG. 1—Typical Warranty Plate — Fairlane Shown

N 1673-A

FIG. 2—Typical Vehicle Identification Number (VIN) Tab—Fairlane Shown

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.

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 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).

OFFICIAL VEHICLE IDENTIFICATION NUMBER

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 and will be visible from outside (Fig. 2).

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

Body Serial Code	Body Style Code	Body Type	Model
01	65A	Sports Coupe (1)	Comet
02	54A	Sports Sedan (1)	Montego
06	54B	4-Door Sedan (1)	
07	65B	2-Door Hardtop (1) (3)	
10	54D	4-Door Sedan (1)	Montego MX
11	65D	2-Door Hardtop (1) (3)	
12	76D	2-Door Convertible (1)	
11	65E	2-Door Hardtop (2) (3)	
12	76B	2-Door Convertible (2)	
10	54C	4-Door Sedan	Brougham
11	65C	2-Door Hardtop (3)	
15	63A	2-Door Hardtop (1)	Cyclone
17	65F	2-Door Hardtop (1) (3)	
15	63C	2-Door Hardtop (2)	
17	65G	2-Door Hardtop (2) (3)	
15	63H	2-Door Hardtop GT (2)	
17	65H	2-Door Hardtop GT (2) (3)	
03	71B	4-Door Wagon (1)	Montego MX
08	71C	4-Door Wagon (1)	

(1) Bench Seat
(2) Bucket Seat
(3) Formal Roof

FAIRLANE

Body Serial Code	Body Style Code	Body Type	Model
31	54A	4-Door Sedan (1)	Fairlane
30	65A	2-Door Hardtop (1) (3)	
34	54B	4-Door Sedan (1)	Fairlane 500
33	65B	2-Door Hardtop (1) (3)	
35	63B	2-Door Hardtop (1)	
36	76B	2-Door Convertible (1)	
35	63E	2-Door Hardtop (2)	
33	65E	2-Door Hardtop (2) (3)	
36	76E	2-Door Convertible (2)	
40	65C	2-Door Hardtop (1) (3)	Torino
41	54C	4-Door Sedan (1)	
42	63D	2-Door Hardtop (2)	Torino GT
44	65D	2-Door Hardtop (2) (3)	
43	76D	2-Door Convertible (2)	
32	71D	4-Door Wagon (1)	Fairlane
37	71B	4-Door Wagon (1)	Fairlane 500
38	71E	4-Door Wagon (1)	Torina Squire
47	66A	2-Door (1)	Ranchero
48	66B	2-Door (1)	
48	66B	2-Door (2)	
49	66D	2-Door (2)	

(1) Bench Seat (2) Bucket Seat (3) Formal Roof

COUGAR

Body Serial Code	Body Style Code	Body Type
91	65A	2-Door Hardtop (Bucket Seat)
91	65B	2-Door Hardtop (Bucket Seat)
91	65C	2-Door Hardtop (Bench Seat)

(1) Luxury Model

MUSTANG

Body Serial Code	Body Style Code	Body Type
02	63A	2-Door Fastback (1)
01	65A	2-Door Hardtop (1)
03	76A	2-Door Convertible (1)
02	63B	2-Door Fastback (1) (2)
01	65B	2-Door Hardtop (1) (3)
03	76B	2-Door Convertible (1) (2)
01	65C	2-Door Hardtop (2)
02	63C	2-Door Fastback (2)
01	65D	2-Door Hardtop (2) (3)
02	63D	2-Door Fastback (2) (3)

(1) Bucket Seat
(2) Bench Seat
(3) Luxury Model

FALCON

Body Serial Code	Body Style Code	Body Type	Model
10	62A	2-Door Club Coupe (1)	Standard
11	54A	4-Door Sedan (1)	
20	62B	2-Door Club Coupe (1)	Futura
21	54B	4-Door Sedan (1)	
22	62C	2-Door Sports Coupe (2)	
12	71A	4-Door	Wagon (Std.)
23	71B	4-Door	Wagon (Deluxe)

(1) Bench Seat
(2) 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

Code	Type
U ..... 6 Cyl.	170 Cu. In. (1V)
T ..... 6 Cyl.	200 Cu. In. (1V)
2 ..... 6 Cyl. (1)	200 Cu. In. (1V)
C ..... 8 Cyl.	289 Cu. In. (2V)
F ..... 8 Cyl.	302 Cu. In. (2V)
6 ..... 8 Cyl. (1)	302 Cu. In. (2V)
J ..... 8 Cyl.	302 Cu. In. (4V)
Y ..... 8 Cyl.	390 Cu. In. (2V)
X ..... 8 Cyl.	390 Cu. In. (2V) Prem. Fuel
S ..... 8 Cyl.	390 Cu. In. (4V) GT
W ..... 8 Cyl.	427 Cu. In. (4V) Hi-Perf.

(1) Low Compression

TRANSMISSION CODES

Code	Type
1	3-Speed Manual
5	4-Speed Manual
W	Automatic (C-4)
U	Automatic (C-6)

REAR AXLE RATIO CODES

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

Code	Ratio	Code	Ratio
1	2.75:1		
2	2.79:1		
4	2.83:1		
5	3.00:1	E	3.00:1
6	3.20:1	F	3.20:1
7	3.25:1	G	3.25:1
8	3.50:1	H	3.50:1
9	3.10:1		

DATE CODES

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

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

ASSEMBLY PLANT CODES

Code Letter		Code Letter	
A	Atlanta	L	Michigan Truck
B	Oakville (Canada)	N	Norfolk
C	Ontario Truck	P	Twin Cities
D	Dallas	R	San Jose
E	Mahwah	S	Pilot Plant
F	Dearborn	T	Metuchen
G	Chicago	U	Louisville
H	Lorain	W	Wayne
J	Los Angeles	X	St. Thomas
K	Kansas City	Y	Wixom
		Z	St. Louis

DISTRICT CODES (DSO)

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

FORD

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

MERCURY

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

FORD OF CANADA

Code	District	Code	District
B1	Central	B4	Midwestern
B2	Eastern	B6	Western
B3	Atlantic	B7	Pacific
I1 thru I7	Export		

Note: Lincoln-Mercury units will use suffix "A" in place of "B".

EXTERIOR PAINT COLOR CODES

CODE	M-30-J M-32-J	Color
A	1724-A	Black
B	3059-A	Maroon
D	3077-A	Bright Blue Met.
F	3065-A	Bright Aqua Met.
I	2041-A	Lime Green Met.
M	1619-A	White
N	921-A	Diamond Blue
O	2040-A	Light Green
Q	1624-A	Med. Blue Met.
R	3067-A	Dk. Green Met.
T	2008-A	Red
U	1070-A	Med. Aqua Met.
W	3120-A	Yellow
X	3061-A	Dark Blue Met.
Y	3073-A	Gold Met.
3	1730-A	Vermillion
5	1724-G	Low Gloss Black
6	1631-A	Lt. Beige

INTERIOR TRIM CODES

Code	Trim Scheme
1A	Black Cloth and Black Vinyl
1B	Med. Blue Cloth and Lt. Blue Vinyl
1G	Med. Ivy 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 (Falcon)
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	Lt. 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
6G	Med. & Lt. Ivy Gold 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)

INTERIOR TRIM CODES—(continued)

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	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
DU	Pastel Parchment Vinyl
EU	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
KB	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
QA	Black Vinyl
QB	Dk. & Lt. Blue Vinyl
QU	Pastel Parchment Vinyl
RA	Black Vinyl
RB	Lt. Blue Vinyl
RD	Dk. Red Vinyl
RU	Pastel Parchment Vinyl
TU	Pastel Parchment Vinyl
UA	Parchment Vinyl with Black
UB	Parchment Vinyl with Blue
UD	Parchment Vinyl with Red
UF	Parchment Vinyl with Saddle
UG	Parchment Vinyl with Ivy Gold
UK	Parchment Vinyl with Aqua
UU	Pastel Parchment Vinyl
UY	Parchment Vinyl with Nugget Gold
YU	Pastel Parchment Vinyl
ZU	Pastel Parchment Vinyl

Brakes

GROUP 2

PART 2-1— *General Brake Service*

1 DIAGNOSIS AND TESTING

BRAKE SYSTEM TESTS

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.

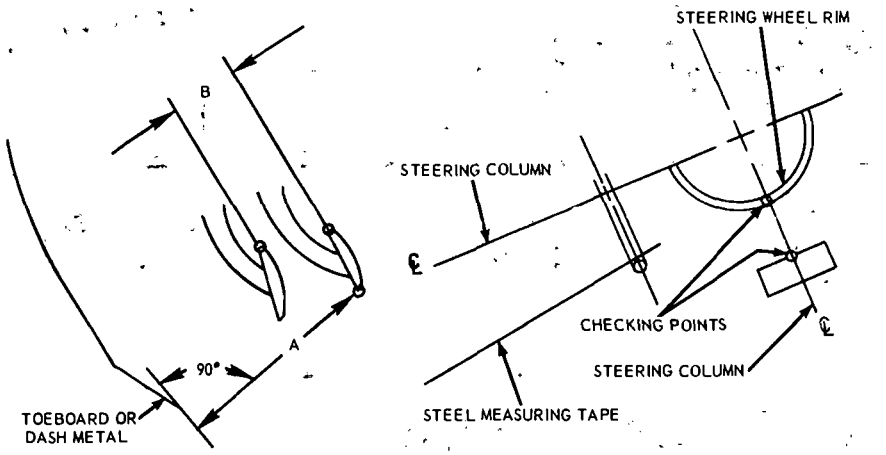
3. If the pedal free height is still out of specification, check the brake pedal booster push rod (if so equipped) or master cylinder to be sure the correct parts are installed. Replace the defective parts as necessary.

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-



VEHICLE	TYPE	PEDAL FREE HEIGHT A	PEDAL TRAVEL B
FALCON– MONTEGO –FAIRLANE	NON-POWER DRUM	8.13 6.91	2.73
FALCON– MONTEGO –FAIRLANE	POWER DISC	7.20 5.82	2.10
MUSTANG–COUGAR	NON-POWER DRUM	7.32 6.37	2.68
MUSTANG–COUGAR	POWER DISC	6.20 5.33	1.85

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. 1—Brake Pedal Height and Travel Measurements

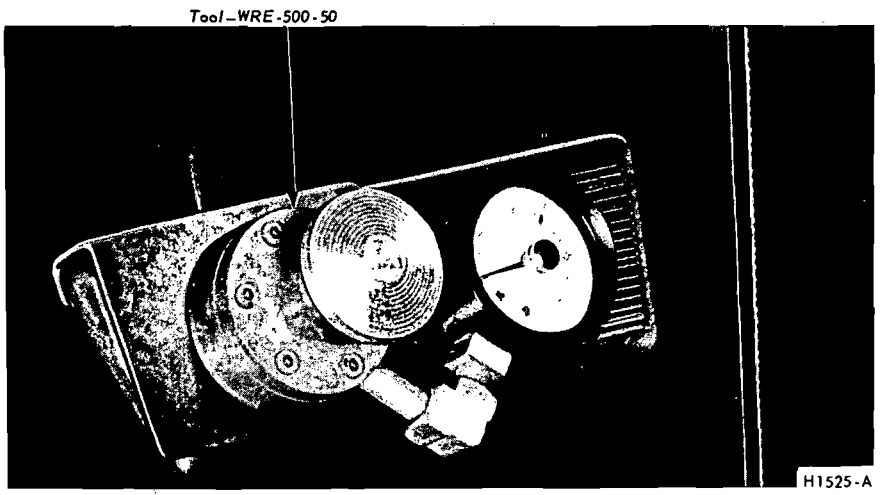


FIG. 2—Brake Pedal Effort Gauge Installed— Typical

allel to the centerline of the steering column.

4. The difference between the brake pedal free height and the depressed pedal measurement under a 50 pound load should be within the specified maximum pedal travel service specification B in Fig. 1.

5. If the pedal travel is more than the specified maximum shown in Fig. 1, dimension B, make several sharp reverse stops (equivalent to 50 pounds pedal pressure) with a forward stop before each. Move the car in reverse and forward for a distance of approximately ten feet; then apply the brakes sharply and hold the brake pedal down until the car is completely stopped. This will actuate the brake self-adjusters. If these stops do not bring the brake pedal travel within specification, make several additional forward and reverse stops as outlined above.

6. If the second series of stops do not bring the brake pedal travel within specification, remove the brake drums and check the brake adjusters to make sure they are functioning. Check the brake linings for 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).

7. If all the brake adjusters, brake drums and linings are functional and the brake pedal travel is not within specifications, check the pedal linkage for missing, worn or damaged bushings, or loose attachments. Bleed the brake and centralize the differential valve.

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.

If the brake pedal movement feels spongy, bleed the hydraulic system to remove air from the system. Refer to Hydraulic System Bleeding, Part 1, Section 2. Also, check for leaks or insufficient fluid.

3. With the engine shut off and all vacuum in the system exhausted, depress the pedal and hold it in the applied position. Start the engine. If the vacuum system is operating, the pedal will tend to fall away under foot pressure and less pressure will be required to hold the pedal 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

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 praking 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.

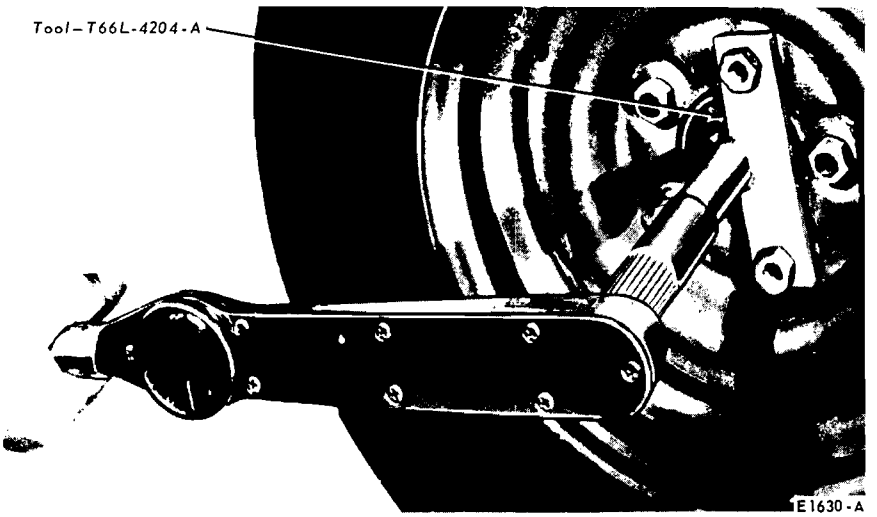


FIG. 3—Checking Parking Brake Break-Away Torque

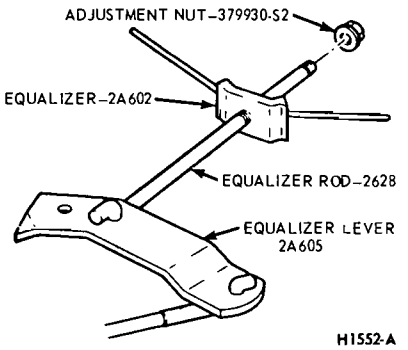


FIG. 4—Parking Brake Linkage Adjustment — Mustang and Cougar

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.

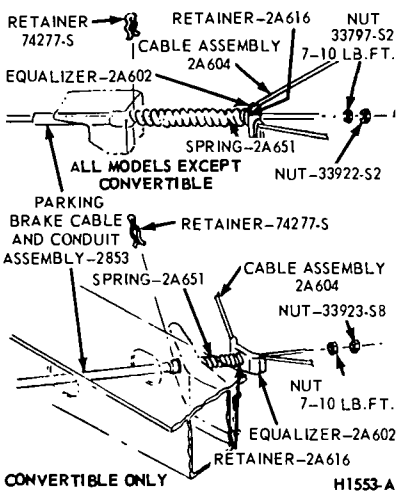


FIG. 5—Parking Brake Linkage Adjustment—Montego, Fairlane and Falcon

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.

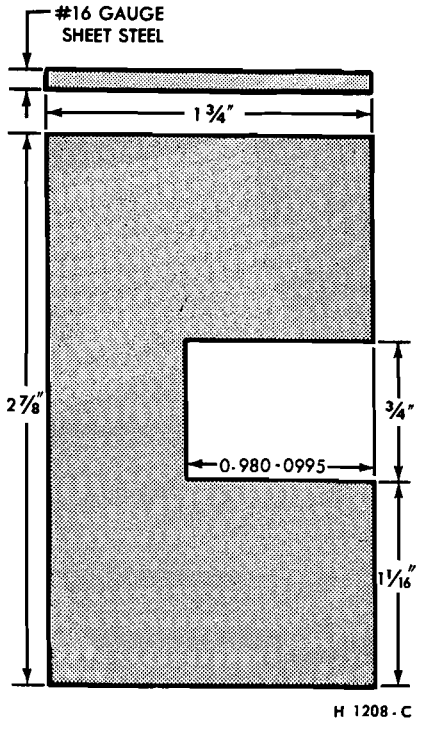


FIG. 6—Push Rod Gauge Dimensions

To check the adjustment of the screw, fabricate a gauge of the dimension shown in Fig. 6. Then place the gauge against the master cylinder mounting surface of the booster body as shown in Figs. 7 or 8. The push rod screw should be adjusted so that the end of the screw just touches the inner edge of the slot in the gauge. Do not set up side forces on the push rod. Side forces may break

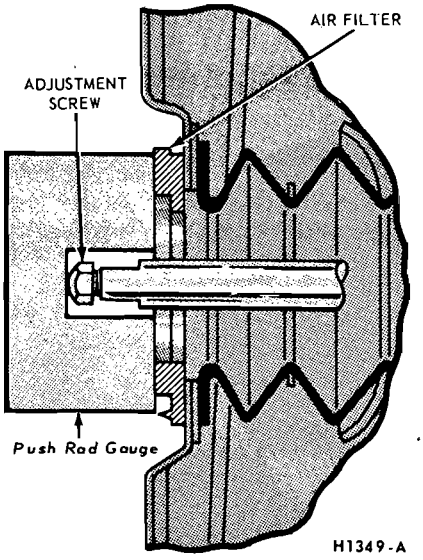


FIG. 7—Push Rod Adjustment—Midland-Ross

the valve plunger.

This is an approximate adjustment only. The push rod should not move more than 0.015 inch as it contacts the master cylinder piston. No movement (exact contact) is ideal.

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**

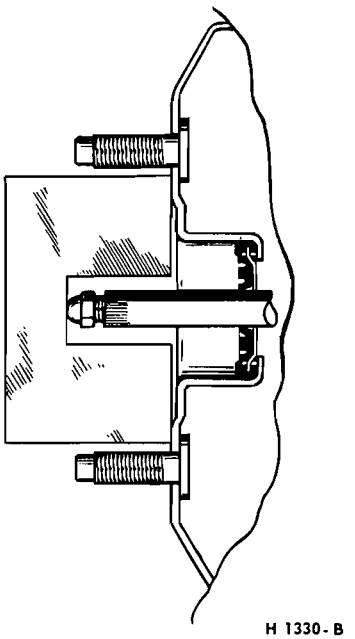


FIG. 8—Push Rod Adjustment—Bendix

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.**

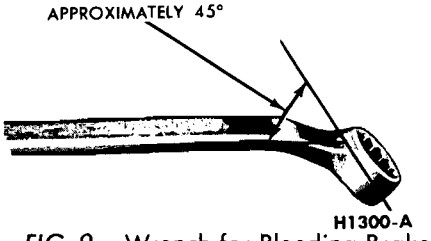


FIG. 9—Wrench for Bleeding Brake Hydraulic System

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 valve 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

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 outhoard 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 required.

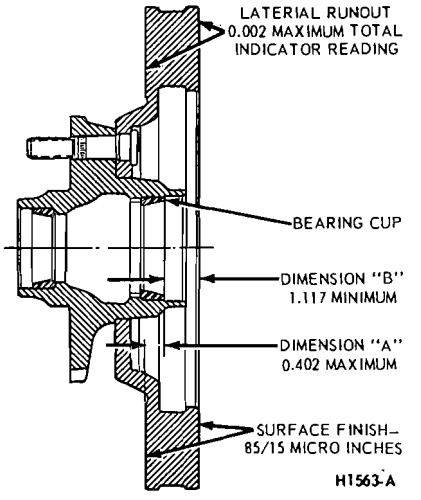


FIG. 10—Disc Brake Rotor Service Limits—Typical

7. Visually check the caliper. If excess leakage is evident, it should be replaced. Slight leakage around the piston or a seized piston indicates the need for removal and disassembly.

8. If upon disassembly the caliper is found to be distorted or damaged, or if the cylinder bore is scored or excessively worn, replace the assembly.

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.**

Possible Causes Of Trouble	Trouble Symptoms												
	Excessive Pedal Travel	Brake Roughness or Chatter (Pedal Pumping)	Excessive Pedal Effort	Grinding or Grating	Rattle or Click	Brakes Heat Up During Driving and Fail to Release	Leaky Caliper	Grabbing or Uneven Braking Action	No Braking Effect When Pedal is Depressed	Brakes Drag	Pedal Gradually Moves Toward Floor or Dashpanel	Warning Lamp Stays Lit	Warning Lamp Does Not Light
Shoe and Lining Knock-back after Violent Cornering or Rough Road Travel	X												
Shoe and Lining Assembly not Properly Seated or Positioned	X				X				X	X			
Air Leak or Insufficient Fluid in System or Caliper	X		X						X		X		
Loose Wheel Bearing Adjustment or Damaged Bearings	X			X									
Damaged or Worn Caliper Piston Seal	X						X		X				
Improper Power Booster Push Rod Adjustment	X									X			
Excessive Rotor Runout or Out of Parallel		X											
Incorrect Tire Pressure				X				X					
Frozen or Seized Pistons			X	X		X		X		X			
Brake Fluid, Oil or Grease on Linings			X	X				X					
Shoe Not Flat to Specifications			X										
Proportioning Valve Malfunction			X					X					
Booster Inoperative			X										
Caliper Out of Alignment with Rotor				X				X					
Loose Caliper Attachment	X	X		X	X			X					
Booster Link Not Connected to Brake Pedal	X								X				
Booster Check Valve Leaking			X										
Shoe Hold Down Clips Missing or Improperly Positioned					X								
Rear Brake Drum Out-of-Round		X											
Worn or Cut Insulators or Broken Stabilizers				X	X								
Corrosion Built-Up in the Cylinder Bore or on the Piston Surface			X	X		X	X						
Bleeder Screw Still Open or Loose Brake Hose							X		X		X		
Caliper Out of Parallel with Rotor				X									
One Section of Dual Brake System is Inoperative										X		X	
Differential Pressure Valve Is Not Centered												X	
Wiring To Warning Lamp or Switch Is Grounded												X	
Warning Lamp Switch Is Grounded												X	
Warning Lamp Is Burned Out													X
Warning Lamp or Switch Has An Open Circuit													X
Warning Lamp Switch Is Inoperative													X
Wiring To Warning Lamp Has Open Circuit													X

FIG. 11—Front Wheel Disc Brake Trouble Symptoms and Possible Causes

Possible Causes Of Trouble	Trouble Symptoms															
	One Brake Drags	All Brakes Drag	Hard Pedal	Spongy Pedal	Car Pulls to One Side	One Wheel Locks	Brakes Chatter	Excessive Pedal Travel	Pedal Gradually Goes to Floor	Brakes Uneven	Shoe Click After Release	Noisy or Grabbing Brakes	Brakes Do Not Apply	Brakes For The Respective System Do Not Apply	Warning Lamp Stays Lit	Warning Lamp Does Not Light
Mechanical Resistance at Pedal or Shoes		X	X													
Brake Line Restricted	X	X	X		X											
Leaks or Insufficient Fluid				X				X	X				X			
Improper Tire Pressure					X					X						
Distorted or Improperly Adjusted Brake Shoe	X	X	X		X	X		X				X				
Faulty Retracting Spring	X				X											
Drum Out of Round	X				X		X									
Lining Glazed or Worn			X		X	X	X	X				X	X			
Oil or Grease on Lining					X	X	X			X		X	X			
Loose Carrier Plate	X					X	X									
Loose Lining							X									
Scored Drum										X		X				
Dirt on Drum-Lining Surface												X				
Faulty Brake Cylinder	X				X	X						X				
Dirty Brake Fluid	X	X								X			X			
Faulty Master Cylinder		X						X	X				X			
Air in Hydraulic System	X			X				X					X			
Self Adjusters Not Operating					X			X								
Insufficient Shoe-to-Carrier Plate Lubrication	X										X	X				
Tire Tread Worn						X										
Poor Lining to Drum Contact							X									
Loose Front Suspension							X									
Threads Left by Drum Turning Tool Pulls Shoes Sideways											X					
Cracked Drum								X								
One Section of Dual Brake System Is Inoperative														X	X	
Differential Pressure Valve Is Not Centered															X	
Wiring To Warning Lamp or Switch Is Grounded															X	
Warning Lamp Switch Is Grounded															X	
Warning Lamp Is Burned Out																X
Warning Lamp or Switch Has An Open Circuit																X
Wiring to Warning Lamp Has Open Circuit																X
Warning Lamp Switch Is Inoperative																X

FIG. 12—Drum Brake and General System Trouble Symptoms and Possible Causes

PART 2-2—Brake System

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 casting (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.

A brake pressure differential valve assembly (Fig. 3) incorporating an hydraulically operated mechanical switch is utilized to operate a dual-brake warning light, located on the instrument panel.

Hydraulic pressure for both front wheel brakes is provided from the primary system (front) brake outlet port and line, located opposite the primary system inlet port of the differential valve.

Hydraulic pressure for both rear wheel brakes is provided from the single secondary (rear brake) outlet line, located opposite the secondary system inlet port of the differential valve. On disc brake equipped vehicles, a proportioning valve is located in the secondary (rear brake) system line that leads to the brake hose bracket on the rear axle housing. The brake hose bracket serves as a junction point for the individual brake lines that lead to the wheel cylinders of right and left rear brake components.

When the brake pedal is depressed, both the primary (front brake) and secondary (rear brake) master cylinder pistons are moved simultaneously to exert hydraulic fluid pressure on their respective independent hydraulic system. The fluid displacement of the dual-master cylinders is proportioned to fulfill the requirements of each of the two independent hydraulic brake systems (Fig. 1).

If a failure of the rear (secondary) brake system should occur, initial

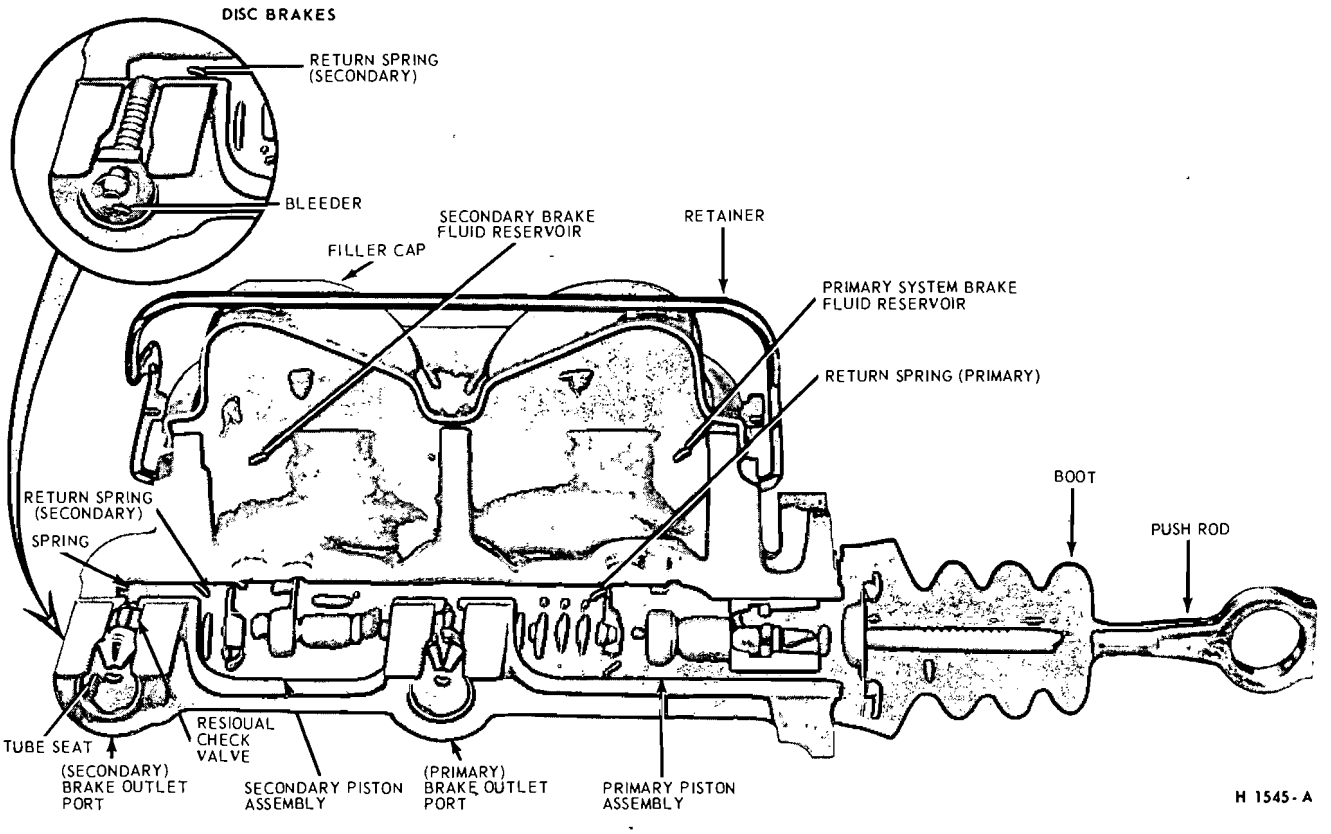


FIG. 1—Dual-Master Cylinder

brake pedal movement causes the unrestricted secondary piston to bottom in the master cylinder bore. Primary piston movement deplaces 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.

On 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 a warning that a partial brake system failure has occured. When the ignition switch is turned to the START position, a dual-brake warning light provides a visual indication the warning lamp is functional. When the ignition switch is turned to the ON or ACC 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.

Should a failure of either the front or rear brake hydraulic system occur, the hydraulic fluid pressure differential resulting from the pressure loss of the failed brake system forces the valve toward the low pressure area to illuminate the brake warning light (Fig. 3).

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.

Should a failure of the rear 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.

Car Model	Type Of Brake	Identification Code
Fairlane and Falcon	Power Disc	B
	Standard Drum	T
Mustang	Power Disc	M
	Standard Drum	T
Montego	Power Disc	B
	Standard Drum	T
Cougar	Power Disc	M
	Standard Drum	T

FIG. 2 Dual Master Cylinder Identification

RELATION AND FUNCTION OF COMPONENT PARTS

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

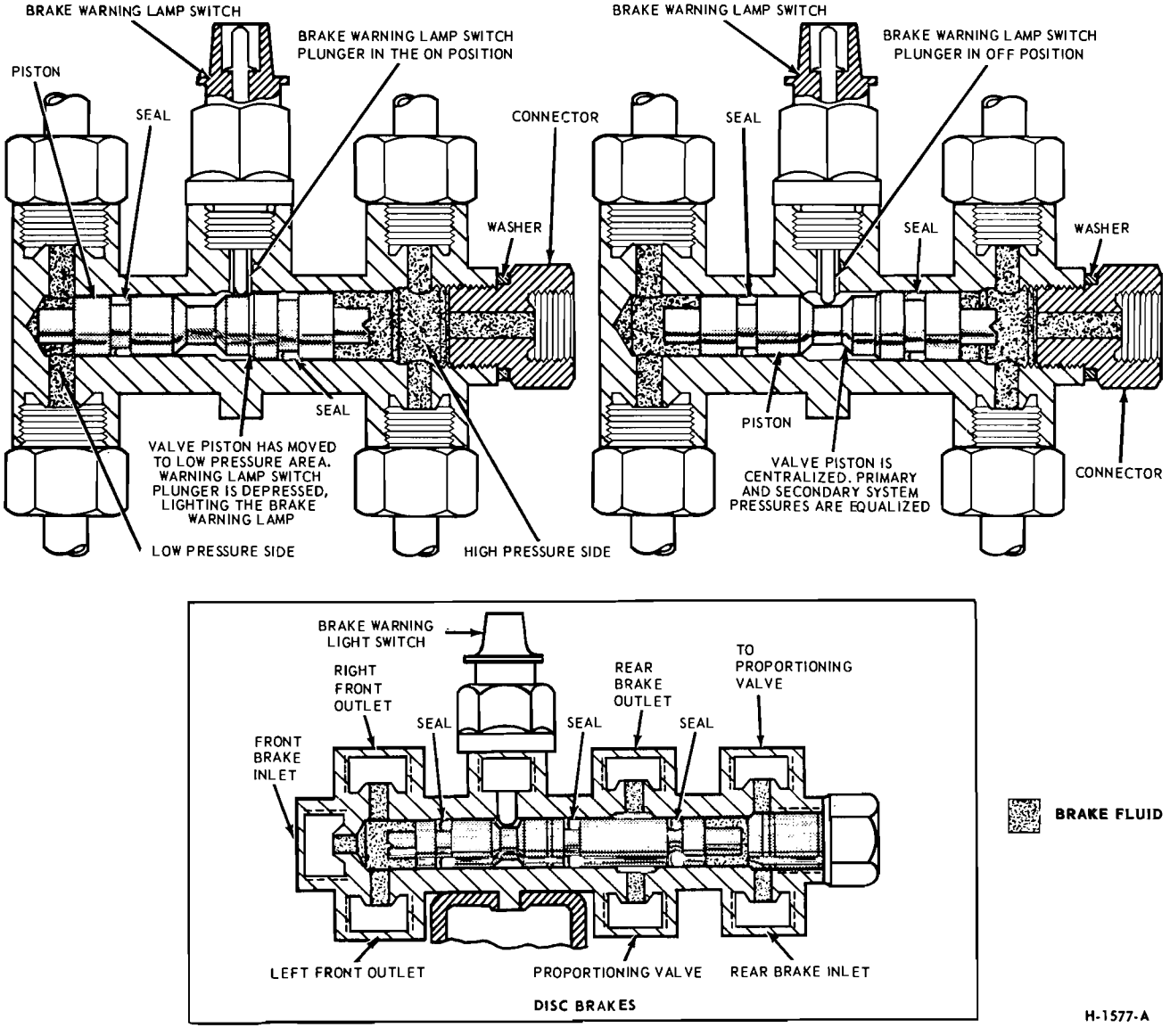
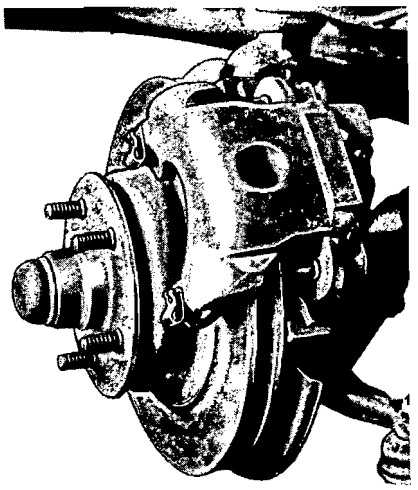


FIG. 3 Pressure Differential Valve and Brake Warning Lamp Switch Operation



H 1567-A

FIG. 4—Typical Disc Brake Assembly

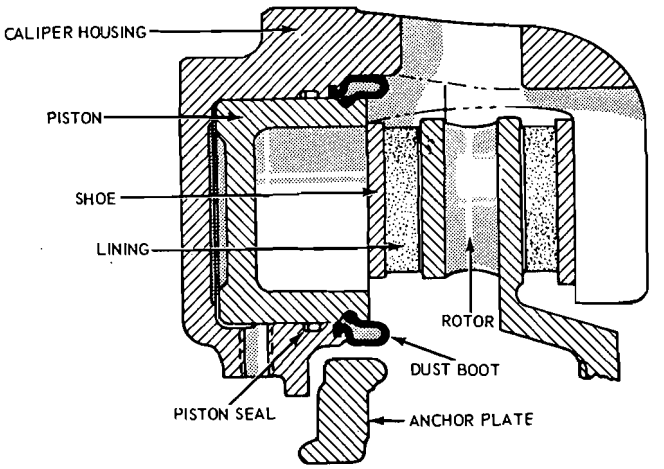


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FIG. 5—Typical Caliper Assembly— Sectional View

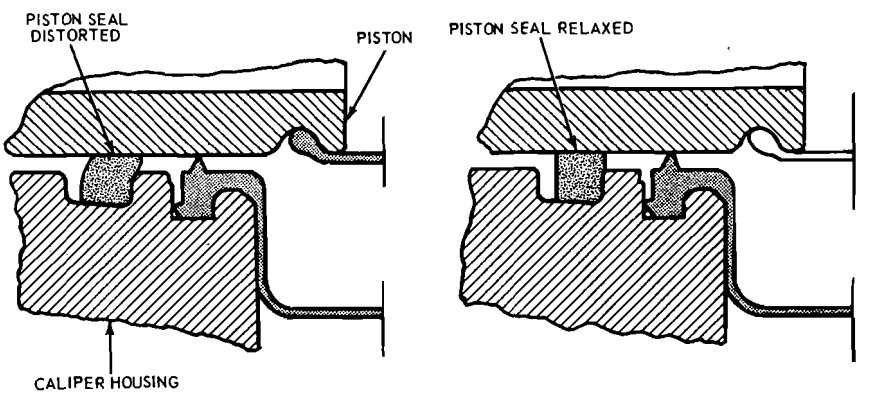

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FIG. 6—Function of Piston Seal

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-