

# BRAKES

## CONTENTS OF THIS SECTION

SUBJECT	PAGE	SUBJECT	PAGE
Standard Brakes . . . . .	5-1	Brake Pedal . . . . .	5-5
Master Cylinder . . . . .	5-1	Brake Pedal Removal . . . . .	5-5
Parking Brake . . . . .	5-2	Brake Pedal Installation . . . . .	5-5
Pedal Removal and Installation . . . . .	5-2	Stoplight Switch Replacement . . . . .	5-5
Front Cable Removal . . . . .	5-3	Pedal Free Travel Adjustment . . . . .	5-5
Front Cable Installation . . . . .	5-3	Delco-Moraine Power Brake . . . . .	5-6
Center Cable Removal and Installation . . . . .	5-3	Adjustment of Push Rod . . . . .	5-6
Rear Cables Removal and Installation . . . . .	5-3	Disc Brakes . . . . .	5-7
Parking Brake Adjustment . . . . .	5-4	Proportioning Valve Removal and Installation . . . . .	5-7

The information in this section applies only to brake specifications and service procedures which differ from that contained in the 1967 Pontiac Service

Manual. Unless otherwise noted, the Tempest specifications and procedures contained in the 1967 Pontiac Service Manual will also apply to the Firebird.

## STANDARD BRAKES

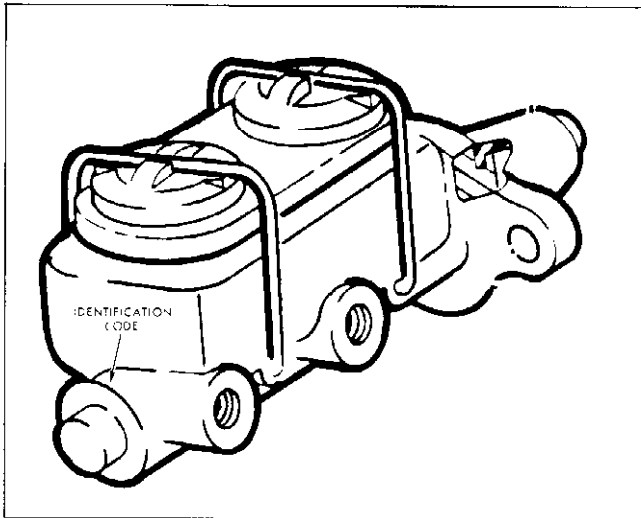


Fig. 5-1 Master Cylinder Identification Code

## MASTER CYLINDER

The master cylinder used on the 1967 Firebird (Fig. 5-1) is basically the same as that used on the Pontiac and Tempest. The main difference lies in the deep socket of the rear piston. The master cylinder used with the disc brake is 1-1/8" dia. while the drum brake master cylinder is 1" dia. The cylinders may be identified by two letters stamped on the upper end of the master cylinder.

Drum brakes . . . . . BS

Disc brakes . . . . . WT

The fluid level of the master cylinder should be maintained as shown in Fig. 5-2.

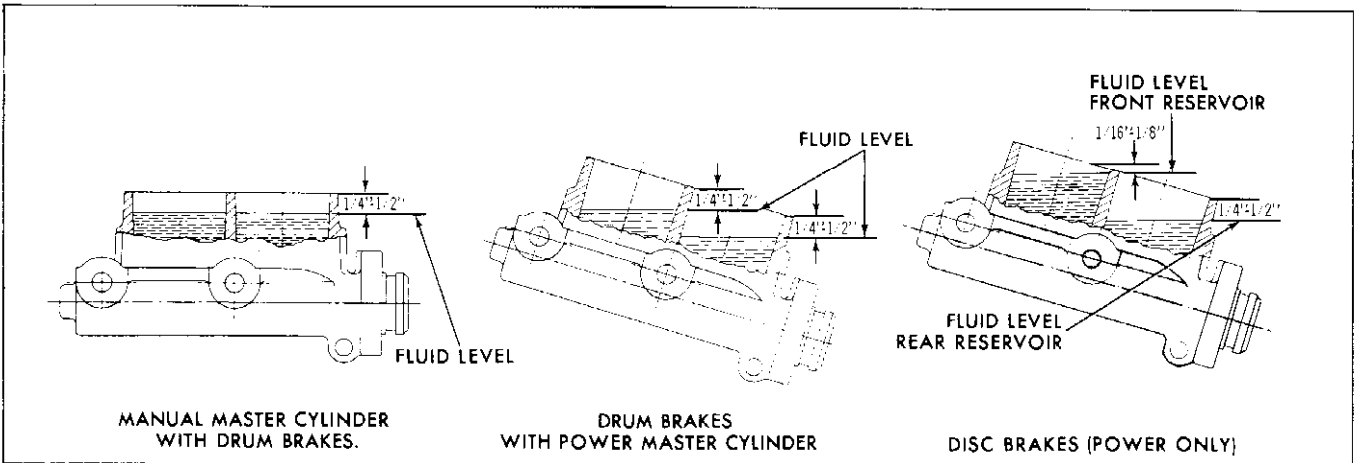


Fig. 5-2 Fluid Levels

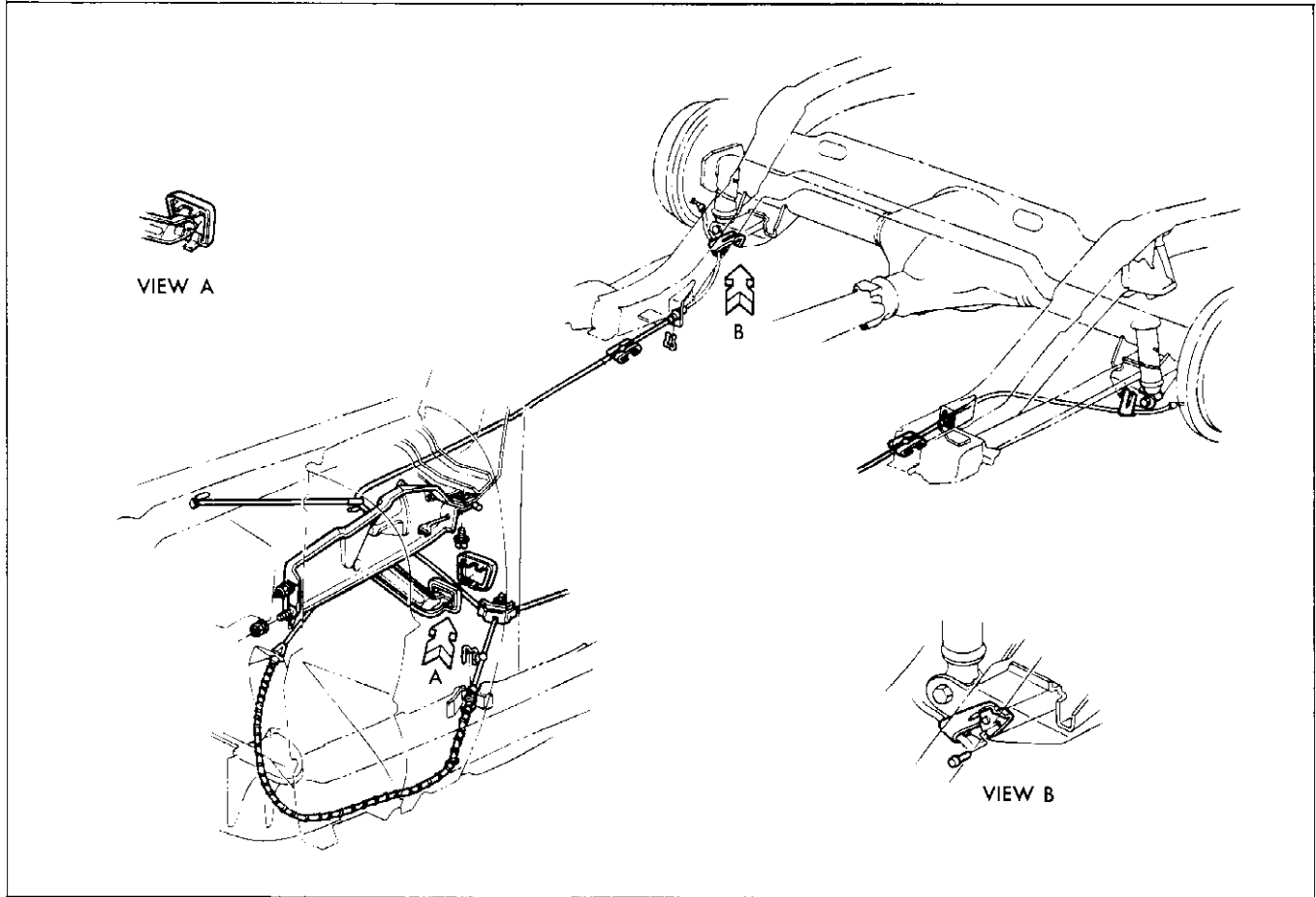


Fig. 5-3 Parking Brake System

## PARKING BRAKE

### BRAKE PEDAL REMOVAL

*NOTE: Remove positive cable from battery to eliminate the possibility of creating short circuits under dash.*

1. Place parking brake pedal in released position. (Fig. 5-3).
2. Remove equalizer check nut and separate cable stud from equalizer.
3. Remove two attaching nuts from mounting studs located in engine compartment.
4. Remove front cable ball end from pedal swivel by removing clip.
5. Remove pedal to dash brace attaching screw.
6. Remove brake pedal switch wire.
7. Remove pedal assembly by lowering rear slightly to avoid scratching dash, and pulling it out of the firewall.

### BRAKE PEDAL INSTALLATION

1. Place pedal in position with the two mounting studs protruding through the holes provided in the firewall.
2. Position front cable ball end into pedal swivel and install clip.
3. Install and tighten pedal to dash brace attaching screw.
4. Install parking brake switch wire.
5. Install and tighten two attaching nuts on mounting studs located in engine compartment.
6. Place equalizer in position on center cable and insert front cable stud through equalizer and secure with check nut.
7. Adjust parking brake as outlined under Parking Brake Adjustment.
8. Connect positive battery cable.

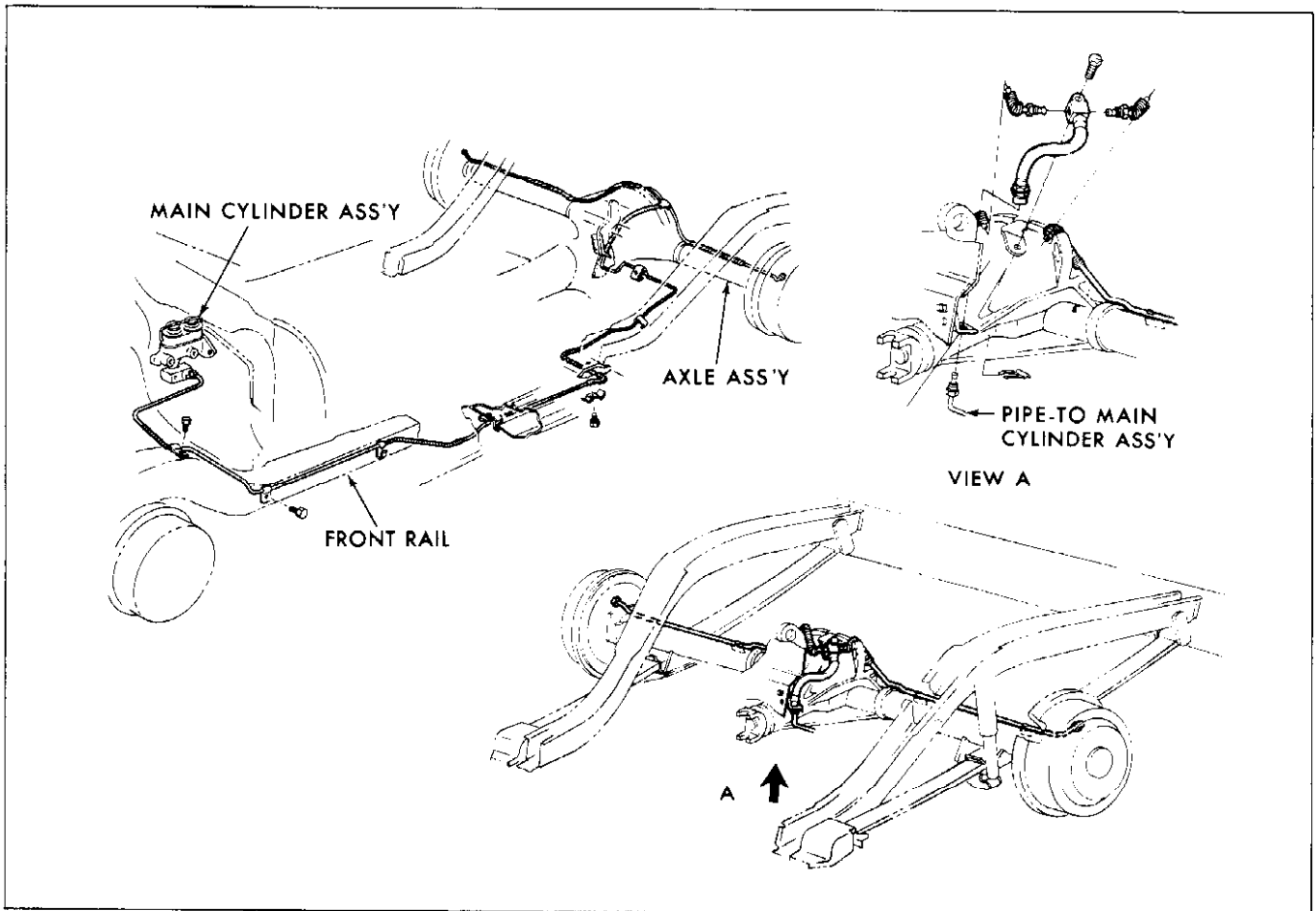


Fig. 5-4 Rear Brake Lines

### FRONT CABLE REMOVAL

*NOTE: Remove positive cable from battery to eliminate the possibility of creating short circuits under dash.*

1. Place parking brake pedal in released position.
2. Remove equalizer check nut, and separate cable stud from equalizer.
3. Remove retainer from cable at inner side of frame rail.
4. Remove ball end of cable from pedal swivel by removing clip.
5. Compress expanded conduit locking fingers at toe pan and withdraw cable from under car.

### FRONT CABLE INSTALLATION

1. Position cable ball and conduit tip through cut-out in firewall. Make sure conduit locking fingers are fully expanded and secured in cutout, then position cable ball into pedal swivel.
2. Feed stud end of cable through frame rail and secure with retainer on inner side of frame.

3. Place one check nut on cable stud and insert stud through equalizer (make sure center cable is in position), then place check nut on stud.

4. Adjust parking brake as outlined under Parking Brake Adjustment.

5. Connect positive battery cable.

### CENTER CABLE REMOVAL AND INSTALLATION

1. Place parking brake pedal in released position.
2. Remove equalizer check nut and remove equalizer from cable.
3. Remove cable from cable guides.
4. Disconnect center cable from rear cables at connectors.

5. To install, reverse above procedures and adjust as outlined under Parking Brake Adjustment.

### REAR CABLES REMOVAL AND INSTALLATION

1. Place parking brake pedal in released position.
2. Remove equalizer check nut and remove equalizer from cable.

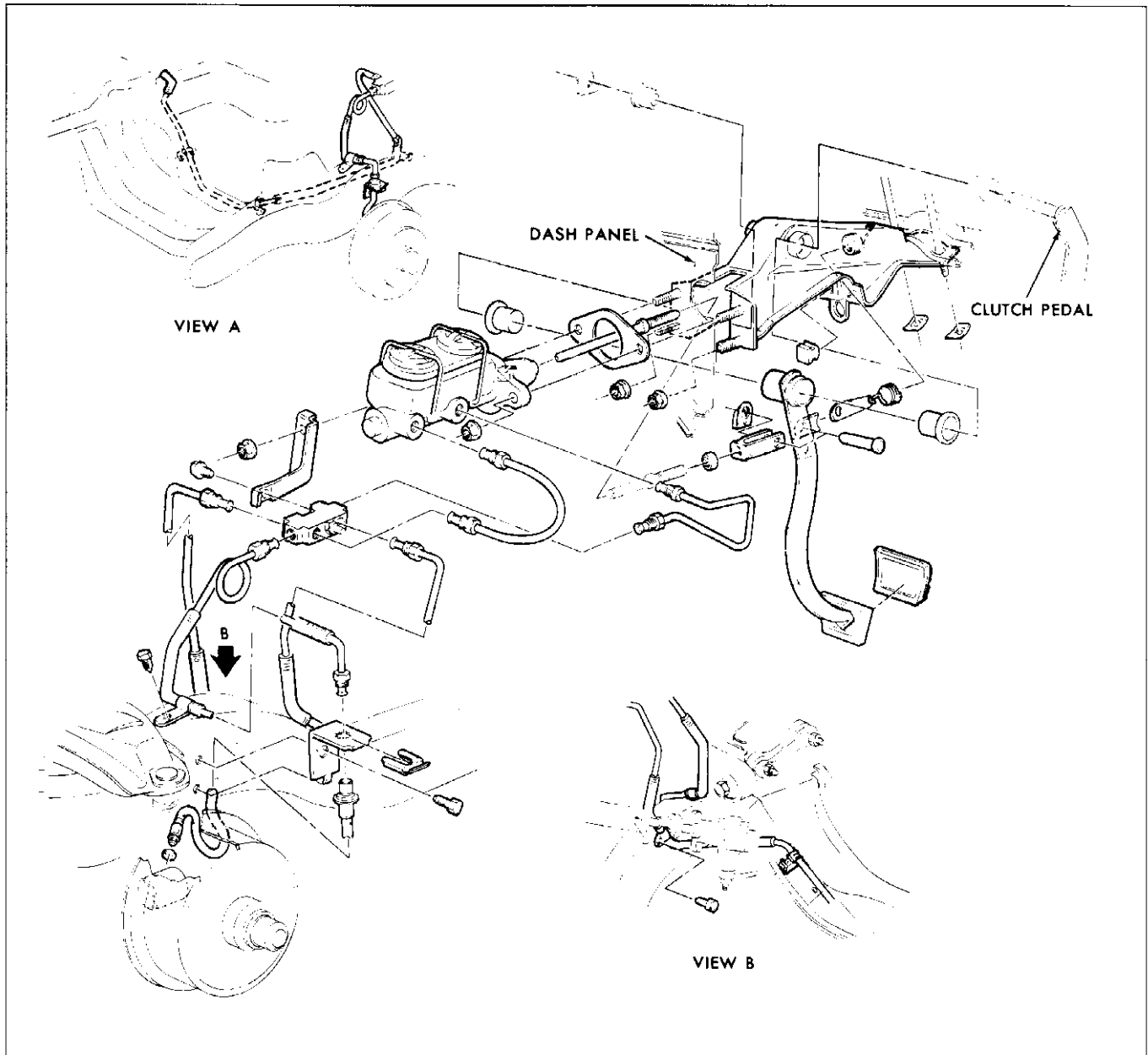


Fig. 5-5 Front Brake System

3. Remove rear cable from connector.
4. Remove retainer from rear cable at frame bracket. Pull cable out of bracket.
5. Remove rear brake drums as outlined in 1967 Pontiac Service Manual.
6. Remove rear brake shoes as outlined in 1967 Pontiac Service Manual.
7. Remove cable end from parking brake actuating lever.
8. Compress expanded conduit locking fingers at flange plate entry hole and withdraw cable.

9. To install, reverse above procedure and adjust as outlined under Parking Brake Adjustment.

#### **PARKING BRAKE ADJUSTMENT**

1. Jack up both rear wheels.
2. Apply parking brake, **two** notches from fully released position.
3. Loosen the equalizer forward check nut, and tighten or loosen the rear nut until a light-to-moderate drag is felt when rear wheels are rotated.
4. Tighten check nuts securely.
5. Fully release parking brake and rotate rear wheels. No drag should be present.

## BRAKE PEDAL

### BRAKE PEDAL REMOVAL

*NOTE: Refer to Section 1B for removal of air conditioning components if necessary.*

1. Disconnect clutch pedal return spring (manual transmission models only).
2. Disconnect clutch push rod at pedal.
3. Remove stoplight switch and rubber bumper.
4. Disconnect brake pedal return spring.
5. Remove brake pedal clevis pin retainer.
6. Remove retainer from right side of pedal pivot shaft.
7. Slide clutch pedal assembly to the left and remove from support brace.
8. Remove clevis pin and withdraw brake pedal with all nylon bushings.

### BRAKE PEDAL INSTALLATION

1. Lubricate and install nylon bushings on pedal pivot shaft, right side of support brace cutout, and through both ends of brake pedal bore.
2. Place pedal assembly in support brace installing clevis pin and brake return spring clip.
3. Slide pedal pivot shaft through support brace and brake pedal bore.
4. Install retainer to right side of pedal pivot shaft.
5. Install clevis pin retainer.
6. Install brake pedal return spring.
7. On manual transmission models, connect clutch pedal push rod to pedal bracket and install retainer. Install clutch pedal return spring.
8. Install stoplight switch and rubber bumper.

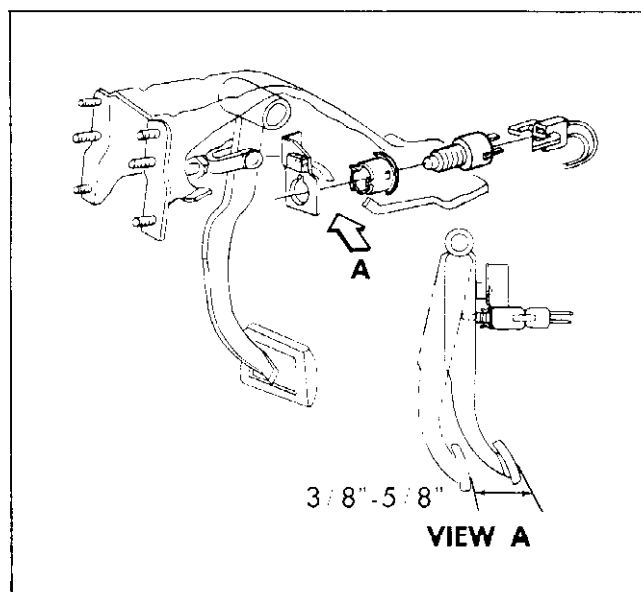


Fig. 5-6 Stoplight Switch Assembly

### STOPLIGHT SWITCH REPLACEMENT

1. Disconnect retaining fingers, disconnect wiring harness connector from switch and unscrew switch from mounting clip (Fig. 5-6).
2. Depress brake pedal and push new switch into clip until shoulder bottoms out against clip.
3. Check switch position for proper operation. Electrical contact should be made when the brake pedal is depressed  $3/8''$  to  $5/8''$  from fully released position.

### PEDAL FREE TRAVEL ADJUSTMENT

The brake pedal has a definite stop which is permanent and not adjustable. This stop consists of a rubber bumper at the release end of pedal travel. Before adjusting push rod to master cylinder clearance, make sure pedal returns to the fully released position freely and that the pedal retracting spring has not lost its tension, then proceed as follows:

1. Loosen check nut on push rod.
2. Turn push rod as required to provide correct adjustment. Movement of pedal pad before push rod contacts master cylinder pistons must be  $1/16''$  to  $1/8''$ .
3. Tighten check nut against clevis and recheck movement.

## DELCO-MORAINE POWER BRAKE

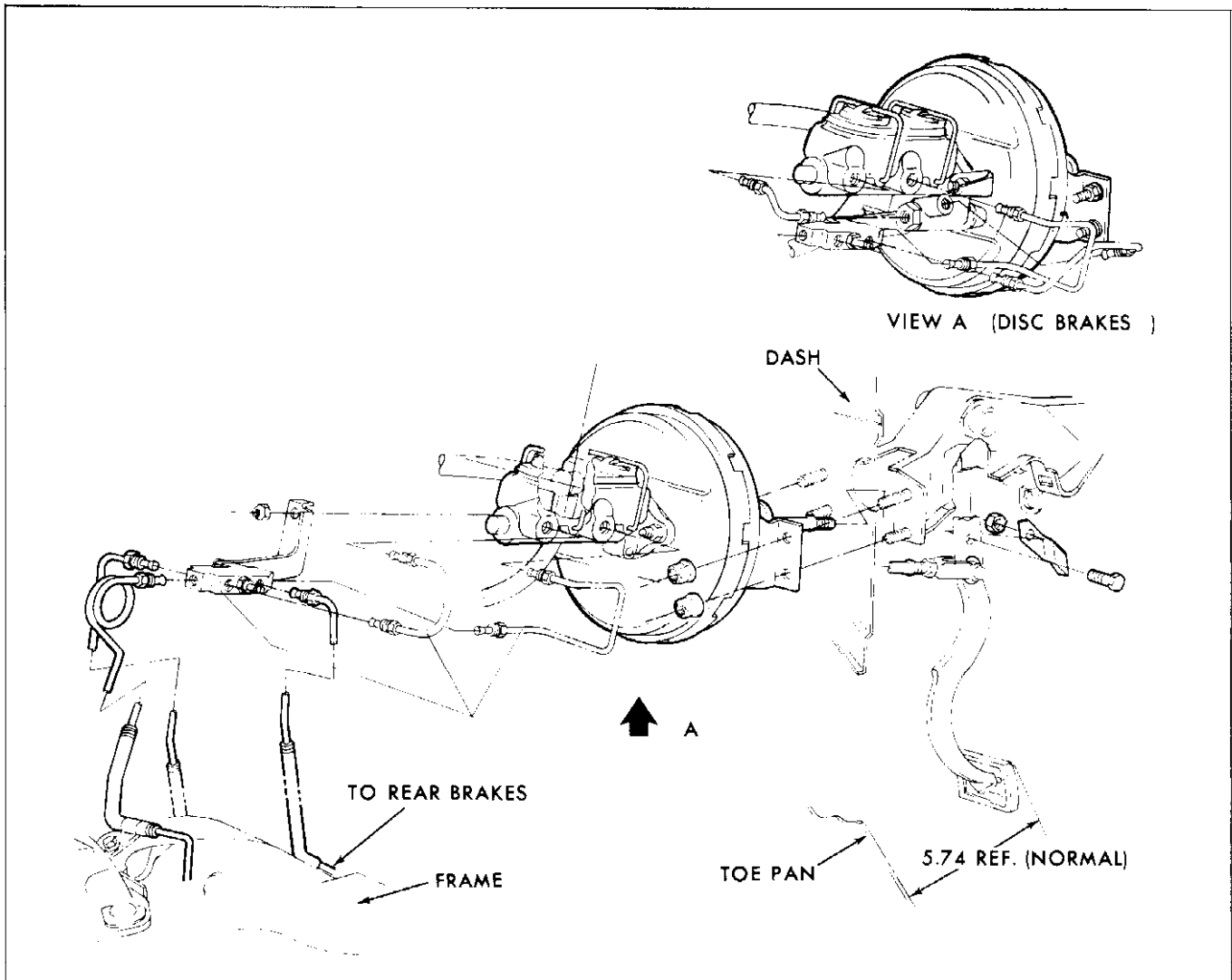


Fig. 5-7 Power Brake Installation

The repairs, specifications, and service procedures that apply to the Pontiac power brake unit in the 1967 Pontiac Chassis Shop Manual may also be used in servicing the Firebird power brake unit. The only exception is in the push rod adjustment procedure listed herein.

### ADJUSTMENT OF PUSH ROD

Place tool J 7723-01 over the push rod so that it fits between the studs on front housing. Gauge should be parallel to studs resting on surface of housing. The cutout portion of the gauge should never be lower than the end of the piston rod, and the gap should never be more than .010 inch (Fig. 5-8).

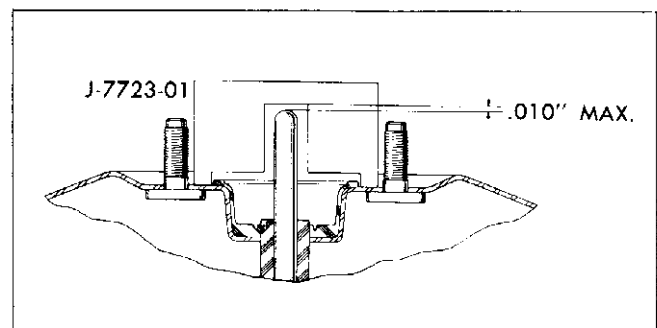


Fig. 5-8 Push Rod Adjustment

## DISC BRAKES

The repairs, specifications, and service procedures that apply to the Tempest disc brake unit in the 1967 Pontiac Chassis Shop Manual may also be used in servicing the Firebird disc brake unit. Although the service procedure for the metering valve is contained in the 1967 Pontiac Chassis Shop Manual, this unit is not serviced and will also not be serviced on the Firebird.

Unlike Pontiac and Tempest, the disc brake option on Firebird will be available with or without power brakes. Consequently, when servicing the disc brake system refer to the standard brake section of this manual or to the power brake section (if so equipped) for additional information.

The proportioning valve, Fig. 5-9 is used on disc brake cars with V-8 engine and air conditioning. Basically the valve works to limit hydraulic pressure to the rear wheels. Up to 380-420 psi the inlet, or master cylinder pressure will equal the outlet or rear wheel cylinder pressure. Above this figure the

outlet pressure will rise slower in relation to the inlet pressure. Consequently, above 380-420 psi inlet pressure, braking effect of the rear wheels is reduced in comparison to the front wheels.

### PROPORTIONING VALVE REMOVAL AND INSTALLATION

1. Place dry rags below valve to absorb any fluid spilled during removal of valve.
2. Disconnect hydraulic brake lines from both sides of switch. Cover open lines with clean, lint-free material to prevent foreign matter from entering the system.
3. Remove mounting screw and remove switch from vehicle.
4. To install, reverse above procedure and bleed brakes as outlined in 1967 Pontiac Service Manual.

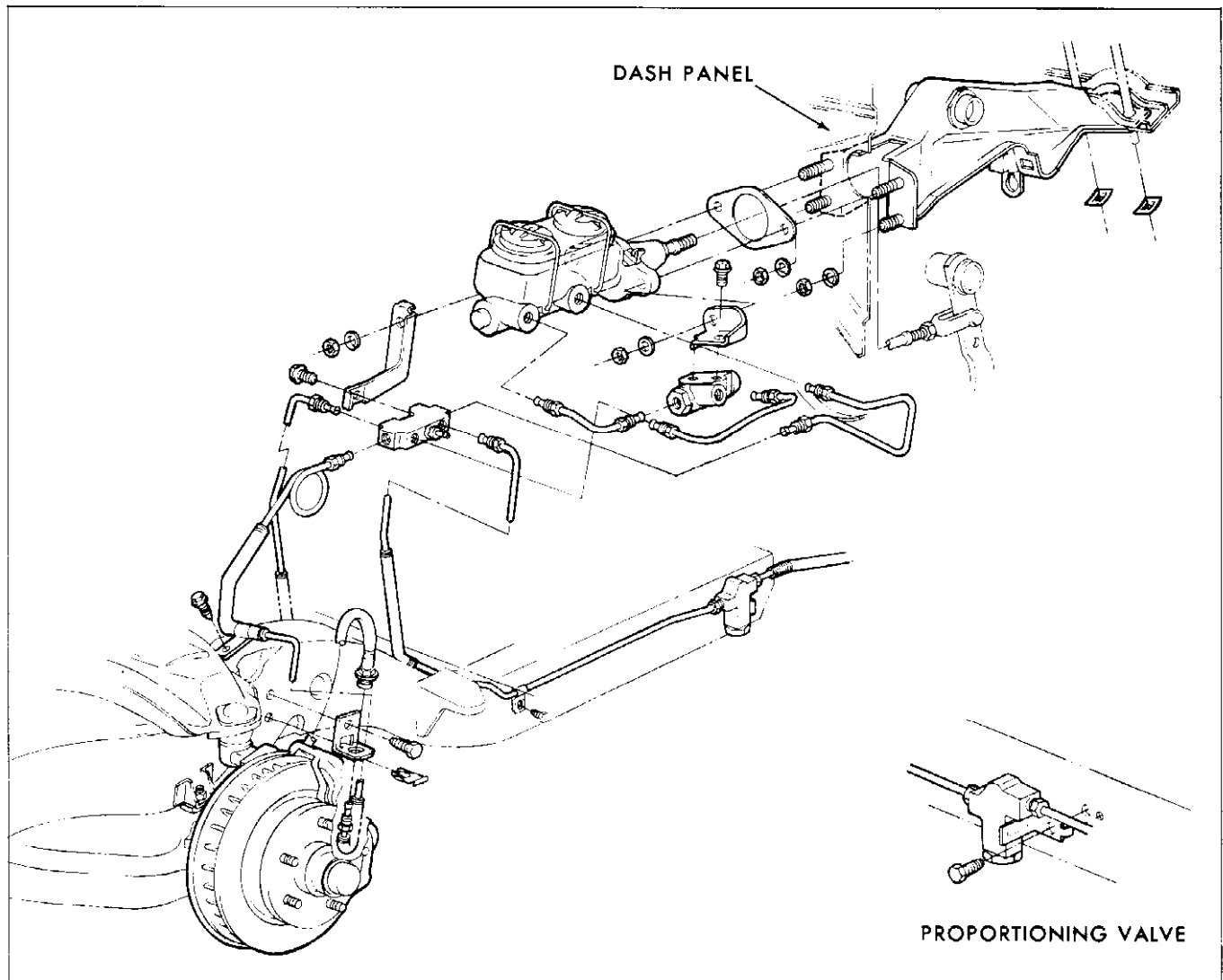


Fig. 5-9 Disc Brake System