1966-72 KELSEY-HAYES (CHRYSLER CORP.) 4-PISTON DISC

Dodge Dart (1966-72)
Dodge Challenger (1971)
Plymouth Valiant (1966-72)
Plymouth Barracuda (1966-69)
Plymouth Signet (1968-70)

►CHANGES, CAUTIONS, CORRECTIONS

►*HUB REMOVAL CAUTION:* Do not attempt to remove hub with wheel and tire attached. Wheel, tire, and caliper must be removed before removal of hub and disc assembly.

►*WHEEL REMOVAL CAUTION:* During wheel removal or installation use care not to damage caliper splash shield, bleeder screw, or transfer tube.

DESCRIPTION

Disc brake is a fixed caliper, opposed piston, non-energized, ventilated type, actuated by hydraulic system. Caliper assembly consists of two caliper housings, bolted together. Each half contains two cylinder bores and pistons are sealed by "rectangular section" rubber seals, positioned in cylinder bore grooves. Each caliper assembly has bleeder screw and inlet fitting. During brake applications, piston seals are deflected by hydraulic pressure. When pressure is released, seals relax or retract, pulling pistons back from shoe and lining assemblies approximately .005" to provide running clearance. Pistons adjust automatically by sliding outward from cylinder bores as lining wears. Master cylinder does not have a check valve, and there is no hydraulic pressure to calipers when brakes are not applied. A residual check valve in hydraulic line to rear brakes maintains pressure to hold rear cylinder pistons in contact with shoes. Proportioning valve in line to rear wheel cylinders regulates pressure to prevent premature rear wheel skid .

ADJUSTMENT

No adjustments are required on brakes or proportioning valve. Disc brakes are self-adjusting.

SERVICING

Bleeding System

See "Hydraulic Brake Bleeding" in this section.

Lining Replacement

►*LINING REPLACEMENT NOTE:* Metal tabs on ends of brake shoes make a loud, metallic, scraping noise when linings are worn enough for replacement. These tabs contact the disc but are not injurious to brake function.

Removal - Remove wheel and tire assemblies. Remove shoe retainer assemblies. Using two pair of pliers, grasp tabs on outer ends of shoes, remove shoe and lining by pulling outward. Due to ridge of rust that may build up on outer rotor surface, pistons may have to be forced back into bores. This can be done by forcing shoe back with water pump pliers placed on corner of shoe and caliper housing.

Cleaning & Inspection - Measure shoe and lining thickness with micrometer. Minimum thickness at any one of three locations is .180" (shoe and lining), .031" (lining only).

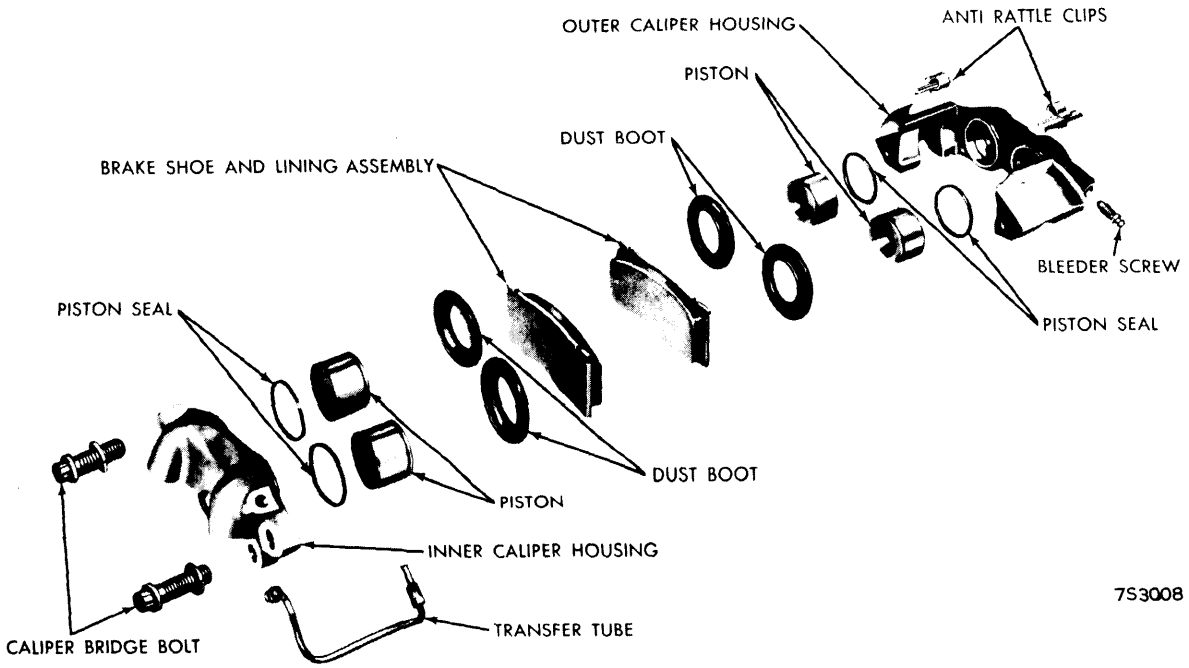
Installation - Reverse removal procedure, making sure that tabs on shoe flanges are seated against caliper bridges. Pump brake pedal several times to seat linings. It should not be necessary to bleed the brakes. *CAUTION - Road test car and make several heavy 40 MPH stops to wear off foreign material on brakes and seat units. Cars may pull to side if not done.*

REMOVAL & INSTALLATION

Brake Caliper

Removal - With wheel removed, disconnect flexible hose from brake tube at bracket on frame, and remove caliper-to-spindle bolts. *CAUTION - Do not remove or loosen bolts holding caliper halves together.* Lift caliper assembly off rotor

Installation – Place caliper on rotor with mounting bolt holes aligned with holes on spindle (push pistons into



KELSEY-HAYES CALIPER ASSEMBLY

1966-72 KELSEY-HAYES (CHRYSLER CORP.) 4-PISTON DISC (Cont.)

for clearance), and make sure shoe and lining assemblies are properly seated on bridges. Install caliper-to-spindle retaining bolts, and be sure rotor runs squarely and centrally between halves of caliper (.090-.120" clearance between caliper and rotor). Connect flexible hose, bleed system, and pump brakes several times to actuate piston seals and position shoe and lining assemblies.

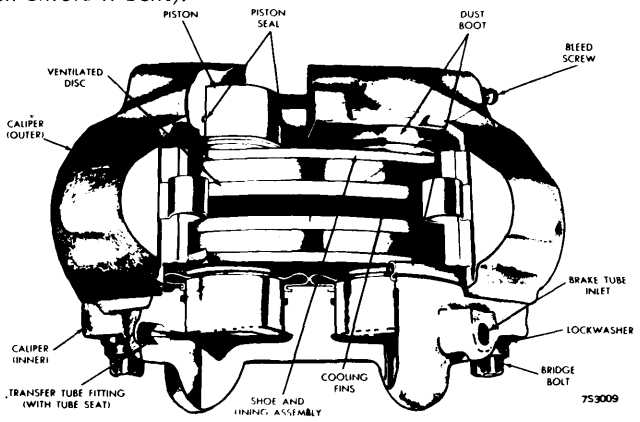
Rotor Assembly

Remove caliper assembly (not necessary to disconnect brake hose or remove caliper from car if service not required). Support caliper out of way for clearance and to protect hose from damage. *CAUTION - Insert clean cardboard between linings to prevent pistons from coming out of bores.* Remove grease cap from hub, cotter pin, nut lock, adjusting nut and flat washer from spindle, and outer bearing cone and roller assembly, then remove hub and rotor assembly from spindle. To install, reverse removal procedure. *NOTE - Adjust wheel bearings to specifications. Wheel bearing adjustment is very critical to prevent* disc wobble and disc damage. *See "Front Wheel Bearing Adjustment" in Wheel Alignment Section.*

DISC RUNOUT NOTE - Check lateral runout of disc on car. Adjust wheel bearing to zero end play. Use dial indicator approximately 1" from edge of disc. If runout exceeds .0025" replace disc. Do not attempt to reface disc.

Rotor Splash Shield

With caliper and hub and rotor assemblies removed, remove splash shield mounting bolts. Remove splash shield and gasket. To install, reverse removal procedure (straighten shield if bent).



KELSEY-HAYES CALIPER ASSEMBLY

DISC BRAKE LINING SPECIFICATIONS

Lining Thickness	.400"
Minimum Thickness (Shoe and Lining)	.180"
Width	1.84"
Length	4.82"
Braking Area	8.50"

Proportioning Valve

Valve not serviceable. Replace if defective. However, the brake warning switch terminal unit may be removed from the proportioning valve body and replaced if necessary. If a new terminal unit is installed, bleed the brake system.

OVERHAUL

Brake Caliper

Disassembly - With caliper off car, remove splash shield, jumper tube, shoe retainer, transfer tube, and brake shoes. Remove bridge bolts, separate caliper halves, peel dust boots from housing and pistons, and remove pistons with suitable tool (C-3999). Pry piston seals from groove in cylinder bore with wood or plastic tool so bore won't be scratched. Piston bore may be honed if necessary, but diameter must not be increased more than .002" and baffle must be used in end of bore to keep from breaking hone.

Reassembly – Always use new piston seals. Coat seals and pistons with brake fluid, and reassemble, reversing disassembly procedure. Install a new dust boot in groove in caliper and in piston. Be sure dust boot is properly seated. Install remaining boots in same manner. *CAUTION – Bridge bolts should never be replaced by an inferior bolt. Use of other bolts can cause caliper failure and an accident.*

Proportioning Valve

To test proportioning valve, install pressure gauge in hydraulic line between master cylinder and proportioning valve, and another gauge between proportioning valve and rear brakes. Use "T" fittings and *make all joints fluid tight.* Depress brake pedal until master cylinder pressure is 500 psi and hold. Pressure to rear brakes should be 360-405 psi. If not, replace valve.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Caliper Mounting (1966-68)	45-60
(1969-72)	50-80
Caliper Assembly Bridge Bolts	70-80
Disc Splash Shield	200-220 INCH Lbs.
Caliper Bleeder Screw	100 INCH Lbs.
Shoe Clips (Retainers)	7-9
Wheel Stud Nuts	55

BRAKE DISC SPECIFICATIONS

Diameter	11.04"
Parallelism	.0005"
Runout	.0025"
Surface, Micro-Inches	15-80
Minimum Thickness	① .810"

① – Not to be refaced. If not within specifications, replace.