IHC FLOATING CALIPER SINGLE PISTON DISC

International Harvester
1010 (1971-73)

DESCRIPTION

Floating caliper disc brake assembly uses a single piston caliper mounted to an anchor plate which is bolted to steering spindle. As brake pedal is depressed, hydraulic pressure is passed through a proportioning valve to brake caliper piston. This force is transmitted to inboard brake pad and against braking surface of rotor or disc. Pressure then moves outer caliper housing and pad inward on caliper mounting pins, thus forcing outer pad against outer braking surface of rotor. When brake is released, pressure is removed from cylinders and inherent rotor runout moves piston back into cylinder to maintain sufficient rotor-to-pad clearance.

ADJUSTMENT & SERVICING

DISC PAD ADJUSTMENT

Automatic adjustment is provided by outward relocation of piston as lining wears.

BLEEDING SYSTEM

See Hydraulic Brake Bleeding in this Section.

REMOVAL & INSTALLATION

DISC BRAKE PADS & CALIPER

Removal – 1) To avoid overflow, remove 2/3 brake fluid from master cylinder reservoir which serves front brakes. *NOTE – Do not drain completely.* Raise vehicle on suitable support and remove front wheels. Clean area around caliper to avoid contamination during installation. Remove caliper guide pins and positioners which attach caliper to anchor plate on steering knuckle.

2) Remove caliper from brake rotor by sliding caliper assembly out and away from rotor. Use a heavy wire hook to hang caliper from vehicle suspension. Slide inboard shoe and lining assembly out of anchor plate, and outboard shoe and lining assembly out of caliper. Slide inner bushings and positioners off guide pins and discard.

Installation – 1) Inspect disassembled parts. Inspect caliper assembly for fluid leaks or other damage. If boot is damaged or fluid is evident, it will be necessary to overhaul caliper assembly and install new piston seal, boot and piston. Inspect machined mating surfaces on caliper and anchor plate. If corroded or rusty, clean with wire brush. If caliper and rotor do not require service, proceed with shoe replacement.

2) Slowly and carefully push piston back into bore. Install new inner guide bushings in caliper with flanged end on inboard side. Compress flanges of outboard bushing with fingers and work into position in hole from outboard side of caliper. Slide new pads into position in anchor plate and caliper. *NOTE – Metal portion of shoe should be fully in recess of caliper and anchor plate.*

3) *NOTE – Before installing caliper assembly over rotor, check rotor for runout and parallelism.* Holding inboard shoe and lining assembly in position, carefully slide caliper into anchor plate and over brake rotor. Align guide pin holes of anchor plate, caliper, and inboard and outboard shoes. Install new positioners over guide pins with open ends toward outside. Install assembled guide pins from inboard side.

4) Press in on end of guide pins, then thread pin into anchor plate. Tighten to specifications. Locate tabs of positioners over machined surfaces of caliper. Pump brake pedal several times until a firm pedal has been obtained. Check and refill master cylinder reservoirs as required. It should not be necessary to bleed system after shoe and lining replacement; however, if firm pedal cannot be obtained, bleed brake system.

5) Pump brake pedal several times to actuate piston seals and position pads. Check for fluid leakage at all connections under maximum pedal pressures. Install wheel and tighten wheel stud nuts. Road test vehicle and make several heavy stops from speeds of 20-40 mph. This will wear off any foreign material on rotor and pads and seat shoes. *CAUTION – Vehicle may pull to one side on first applications of brakes after any service procedures. If condition does not correct itself* quickly, recheck installation procedure.

OVERHAUL

BRAKE CALIPER

Disassembly – Remove caliper. Remove outer bushings from caliper bore, drain fluid and mount caliper in soft jawed vise. Remove piston from bore, allowing dust boot to remain on caliper as piston is withdrawn. It may be necessary to apply air pressure through bleeder screw hole to remove piston. If so, protect piston from damage with cloths as it pops out of bore. *CAUTION – To avoid injury as air is being applied, keep fingers away from piston face.* Remove caliper from vise and remove dust boot from caliper. Using a plastic or wooden probe, work piston seal out of its groove in piston bore. Discard old seal. Do not use a screwdriver for this procedure; damage to piston bore or burring of seal grove may result.

Reassembly – 1) Clean all parts with brake fluid and wipe dry with clean, lint-free cloth. Blow out drilled passages and bores with clean dry air. Inspect cylinder bore for scoring, pitting or corrosion. A corroded or deeply scored caliper should be replaced; however, light scores and stains may be removed with crocus cloth. Do not use other form of abrasive. Black stains on bore wall are caused by piston seal and do no harm.

2) Check piston to see if it is pitted, scored, or worn; replace as required. Check clearance of piston-in-bore using a feeler gauge. Clearance should be .002"-.006". If clearance exceeds allowance with new piston, caliper must be replaced.

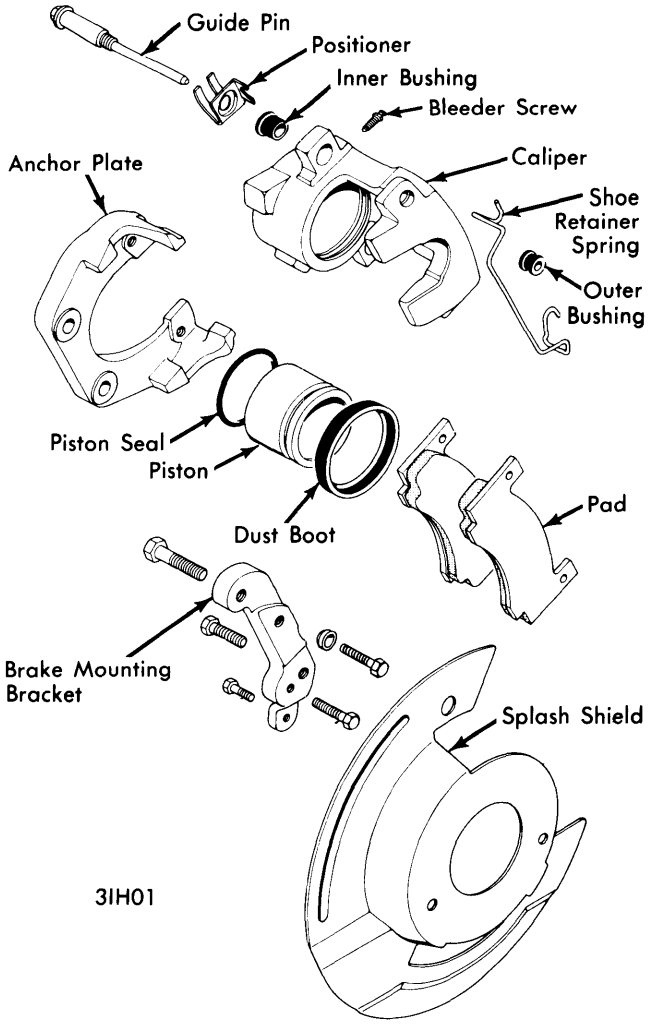
IHC FLOATING CALIPER SINGLE PISTON DISC (Cont.)

3) Dip new piston seal in clean fluid and install in groove of caliper bore. Position seal at one area in groove and gently work around groove with clean fingers until properly seated. Never use old seal. Be sure seal is not twisted or rolled. Coat new dust boot with clean fluid and install in caliper with fingers only. Slide finger around inside boot to make sure that it is seated.

4) Plug high pressure inlet to caliper and bleeder screw hole, then coat piston with a generous amount of brake fluid to serve as a lubricant. With fingers spreading boot, work piston into boot and press down on piston. Entrapped air below piston will force boot around piston and into its groove as piston is depressed. Remove plug and carefully push piston down into bore until bottomed. *NOTE – Apply force to piston evenly to avoid cocking.* Install bleeder screw and outer bushings.

ROTOR

Runout & Parallelism – Temporarily adjust wheel bearings for zero end play and mount dial indicator on bearing adjusting nut. Indicator stylus should contact rotor one inch from rotor edge. Rotate wheel to check runout (see specifications). Readjust bearings after runout check. Measure rotor thickness at four equal points with a micrometer, one inch in from edge (see specifications). Light scoring or wear on rotor is acceptable. If scoring is deep, runout or thickness variation is beyond specifications, and rotor is above minimum allowable thickness, reface rotor on brake lathe equipped for rotor machining. Always machine both sides of brake rotor simultaneously in order to maintain necessary parallelism. Do not remove more than .035" from each side of rotor.



FLOATING CALIPER ASSEMBLY

BRAKE SPECIFICATIONS

Application	Dimension
Rotor Diameter	11.72"
Rotor Thickness	
New	1.230-1.250"
Minimum	1.180"
Parallelism	.0005"
Lateral Runout	.004"
Pad Thickness	
New	.590-.610"
Minimum	.250"
Piston Clearance In Bore	.002-.006"

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. Bright Zinc	Black Phosphate
Caliper Mounting Bolts	110-120	70-80
Bracket-To-Knuckle Bolts		
3/8-16	45-50	30-35
9/16-12	135-155	105-115
Guide Pins	25-35	25-35
Caliper Bleed Screw	8-15	8-15
Wheel Stud Nut	70-90	70-90