Cleaning and Inspection

Check all parts for wear or damage and replace any found to be defective.

1. Clean all parts with denatured alcohol and wipe dry with a clean, lint free cloth.
2. Using compressed air, blow out the drilled passages and bores.
3. Inspect casting cylinder bore for scoring, pitting or corrosion. A corroded or deeply scored casting should be replaced. Light scores and stains may be removed by polishing with a *crocus cloth only.* Use finger pressure and rotate the crocus cloth in the cylinder bore. Do not slide the cloth in and out of the bore under pressure. Do not use any other kind of abrasive cloth. Black stains on the piston are caused by the seal and do no harm.
4. Check piston to see if it is pitted, scored or worn. If so, discard and replace the piston. **CAUTION:** Do not attempt to polish or sand piston.
5. Clean piston with denatured alcohol and wipe dry with a clean, lint free cloth. Using compressed air, blow dry.
6. Check inlet and bleeder hole threads for damage.
7. Inspect seat insert for damage and replace if necessary.

Assembly

1. Reassemble by reversing disassembly process. Be sure all parts are clean and serviceable before reassembling the unit.
2. Coat a new piston seal in clean DOT 3 brake fluid and place in groove in the cylinder bore. Seal should be positioned at one point in groove and then gently worked around the groove by hand until properly seated. **CAUTION:** Never reuse an old seal.
3. Coat piston thoroughly with brake fluid and work down into bore by hand carefully until bottomed. **CAUTION:** Apply even pressure to avoid cocking the piston in the bore.
4. Examine pads for wear or damage. If pad thickness is less than 1/32″ (.08 cm) install new pad holder assemblies. If pads are not worn or damaged, they may be reused. Be sure pads are reinstalled in their original positions. If pads are replaced, replace in sets and make sure the new pads have the same friction material type code number as the old set.
5. Connect hose or line to caliper.
6. Place new pads with friction material facing each other into housing. Hold in place using clips.
7. Slide brake assembly into bracket until both clips snap into grooves in bracket.
8. Separate pads for installation over disc.
9. Place brake assembly over disc and push bracket into chaincase.
10. Install coolant lines and hose clamps and tighten securely.
11. Replace 3/8″ bolts, rope guide, and washers. Torque to 25-30 ft. lbs. (3.45-4.14 kg/m).
12. Actuate brake several times to set brake pads to proper operating position.
13. Make sure master cylinder reservoir brake fluid level is 1/4″ (.6 cm) from the top of the reservoir.

Bleeding

Each hydraulic brake is fitted with a bleeder valve. This is a special valve which seals when turned in tight, but which allows air or fluid to pass out through a hole in the valve nipple when the valve is loosened one turn.

1. Clean any dirt from master cylinder cover and remove cover.
2. Attach a flexible tube to nipple of bleeder screw on caliper.
3. Place other end of flexible tube into a jar containing a small amount of clean brake fluid. See that end of tube is below fluid surface to prevent air from getting back into the system.
4. Loosen bleeder screw.
5. Slowly operate brake and check for air bubbles rising in fluid, indicating air is being forced out of the system.
6. Tighten bleeder screw as master cylinder is being depressed and reaching end of stroke.
7. Repeat steps 4 through 6 until air bubbles stop, adding new fluid to reservoir as needed.
8. Add new DOT 3 brake fluid to reservoir to bring level back up to within 1/4″ (.6 cm) of top. Replace diaphragm and cap.
9. Re-check system for proper operation and for leaks.
10. Discard fluid in jar. This fluid contains air and should not be reused.
11. Be sure to bleed coolant system by opening cap lever and running unit until all air in system has been displaced. Fill reservoir and close cap lever.
12. **WARNING:** Upon completion of brake service, test vehicle at low speeds before putting vehicle in regular service.

A thorough brake check should be made every ten days under normal conditions. This check should be made more often as the pads wear down. Under hard usage, check the fluid level often. As the brake pads wear, fluid fills the area behind the piston, lowering the fluid level in the reservoir.

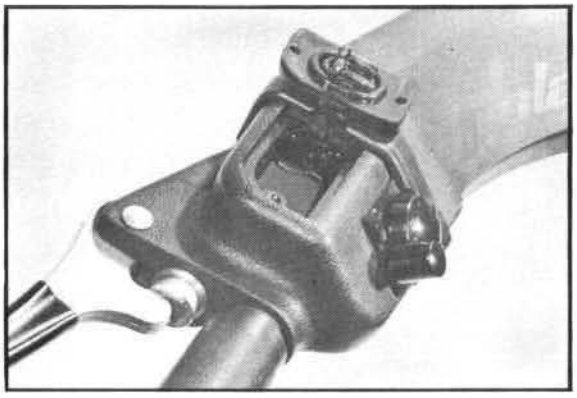
BRAKES / FINAL DRIVE
Bleeding Procedures for Polaris Brake Systems

The Polaris hydraulic brake mechanism consists of the following components or assemblies: handlebar mounted master cylinder, hydraulically operated plunger assembly (slave cylinder) integrally mounted in chaincase rear cover, adjustable brake pad, and self-aligning brake disc mounted in chaincase.

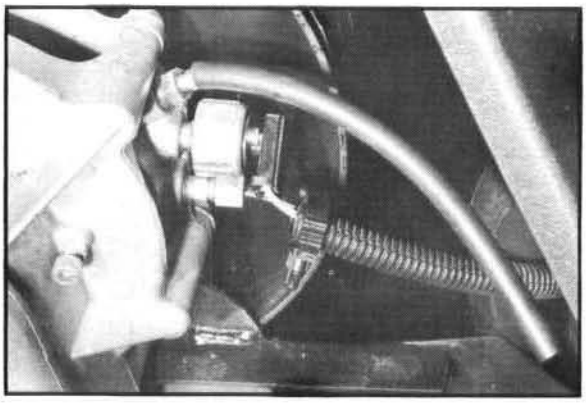
The master cylinder contains a fluid reservoir and a cylindrical pressure chamber. Force applied to the brake lever is transmitted to the fluid, which actuates the plunger assembly in the chaincase rear cover. A coil spring located in the master cylinder holds the piston assembly against the actuating force of the brake lever. The piston assembly consists of a piston, U-seal and rubber O-Ring.

SERVICE

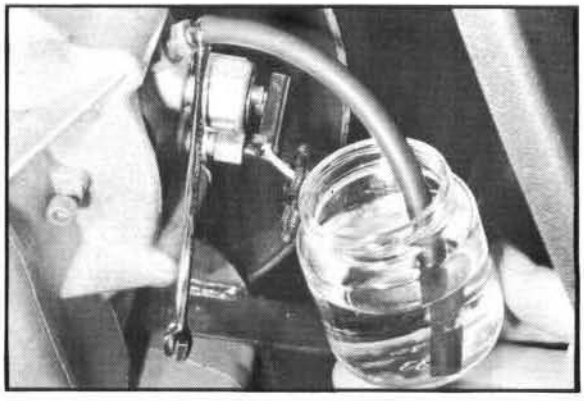
Air in the hydraulic system will cause a springy or spongy action of the brake lever. Follow directions below for bleeding.



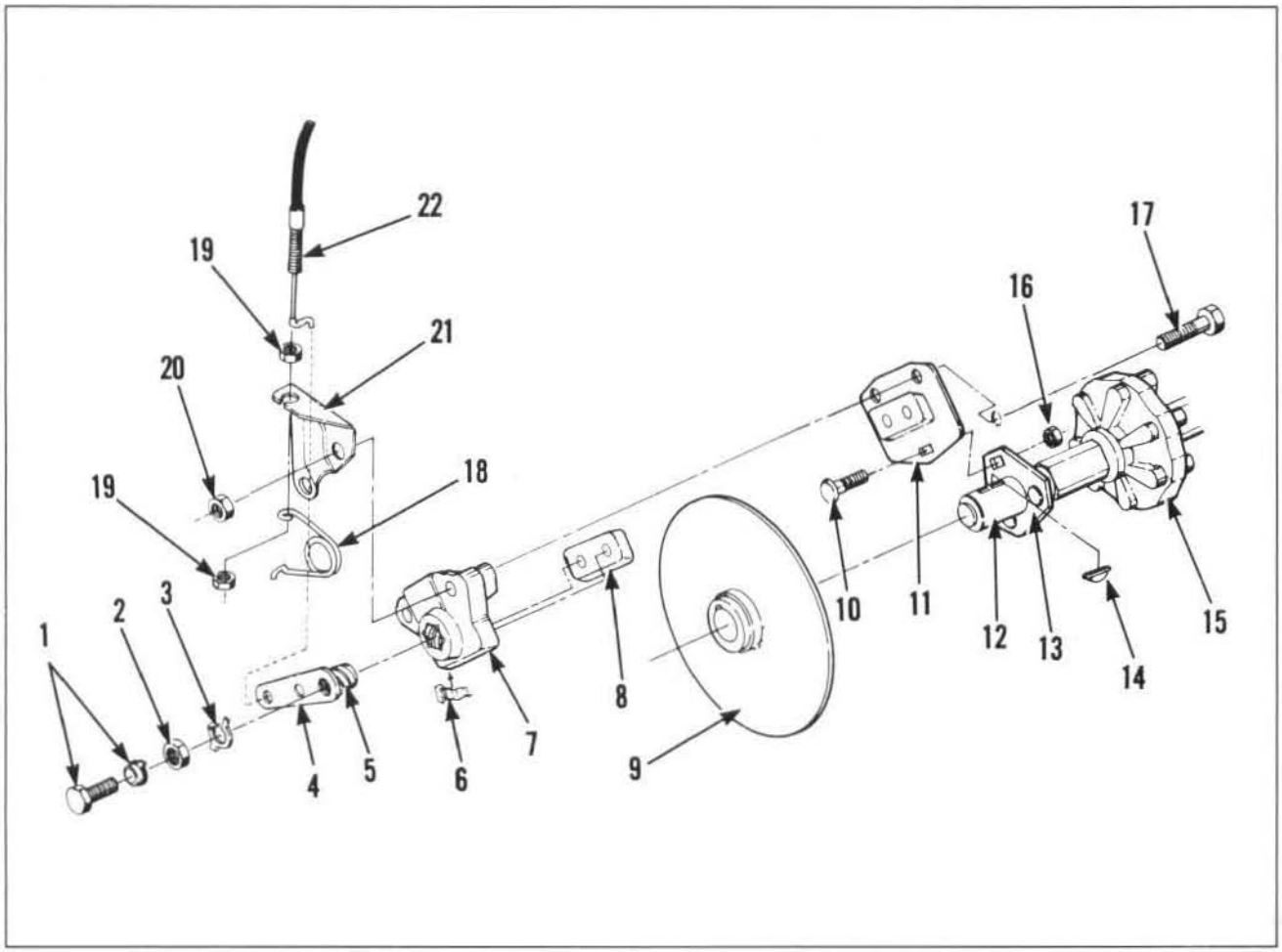
1. Fill master cylinder reservoir to recommended level with DOT 3 brake fluid PN 2870990: Type 1 Master Cylinder 1/8" (.3 cm) below lip of reservoir opening; Type 2 Master Cylinder 1/4" (.6 cm) below lip of reservoir opening; Type 3 Master Cylinder 1/4"- 5/16" (.6 - .8 cm) below lip of reservoir opening.



2. Slip a flexible rubber tube over ball of bleeder valve and direct fluid away from painted areas. **CAUTION:** Brake fluid will damage finished surfaces. Do not allow brake fluid to come in contact with finished surfaces.



3. Slowly squeeze brake lever a full stroke and hold. Unscrew bleeder valve 3/4 turn to release air. Close bleeder valve. Release brake lever. Repeat this procedure until fluid flows from bleeder valve in a solid stream, free of air. Re-check fluid level in reservoir.



1. Adjuster Bolt and Stop
2. Jam Nut
3. Jam Nut Locking Tab
4. Actuating Lever
5. Helix Shaft
6. Brake Pad Retainer
7. Caliper Casting
8. Moveable Brake Pad
9. Brake Disc
10. Carriage Bolt
11. Stationary Pad Assembly
12. Front Drive Shaft
13. Drive Shaft Bearing Flangette
14. Brake Disc Key
15. Front Drive Sprocket
16. Nut, 5/16″
17. Caliper Attaching Bolt (2)
18. Return Spring
19. Cable Sleeve Jam Nut (2)
20. Caliper Attaching Nut (2)
21. Brake Cable Bracket
22. Brake Cable

1. Open adjuster bolt jam nut locking tab (A).
2. Loosen jam nut and remove adjuster bolt (B).
3. Remove actuating lever (C) and return spring.
4. Remove two brake caliper attaching nuts (D).
5. Remove cable bracket and caliper assembly. Check cable condition at both ends. Frayed or binding brake cables must be replaced.