



REAR BRAKE MASTER CYLINDER

INFORMATION SHEET



When the brake pedal is operated the piston moves along the bore to displace hydraulic fluid under pressure to operate the caliper pistons. On releasing the brakes, the return spring moves the piston back faster than the fluid can return and this causes the lip of the main rubber cup to relax. Fluid then passes over the cup from behind, through the holes drilled in the piston head for this purpose.

When the piston is fully back against the circlip stop a small by-pass port just in front of the main cup is uncovered which releases all fluid pressure within the cylinder. This port also allows for the expansion or contraction of the fluid caused by temperature changes during operation.

The check valve at the bottom of the cylinder bore assists in purging air from the system during bleeding by ensuring a fresh charge of fluid each time the piston is stroked.

DISMANTLING THE MASTER CYLINDER

Disconnect the brake hose from the metal brake pipe at the bracket connection. Remove and plug the brake fluid pipe, disconnect the pushrod from the trunnion lever then unbolt the master cylinder from the machine. Finally, unscrew the brake hose from the master cylinder outlet and retrieve the copper gasket.

Operate the pushrod several times to completely empty all brake fluid from the master cylinder. Plug the exposed outlet port to prevent the entry of dirt.

Slacken and remove the small Allen screw from underneath the assembly so that the cylinder can be unscrewed from the mounting bracket. Remove the rubber boot from the pushrod and the mounting bracket. However, it is not necessary to separate the pushrod from the bracket.

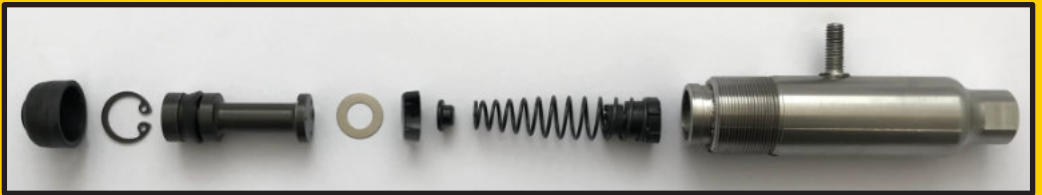
REMOVING THE INLET CONNECTION

Hold the cylinder barrel in a soft jawed vice, bend back the tab washer and unscrew and remove the mounting nut. Lift off the inlet connection and retrieve the 'O' ring seal from underneath. Carefully remove the small 'O' ring seal from the mounting nut. This will allow the tab washer to be released.



STRIPPING THE PISTON

Remove the rubber boot and the circlip from the bore mouth, then withdraw all the internal parts, carefully noting their positions. Remove the secondary seal from the piston taking care not to damage the seal groove.



INSPECTION OF PARTS

Clean the parts to be reused with new brake fluid and lay them out in order on a clean sheet of paper. Make sure the hands are clean and free from oil and grease. Absolute cleanliness is essential in the rebuilding operation.

Inspect the bore of the cylinder for scoring or corrosion. If it is not in perfect condition, or if the cylinder or piston is damaged in any way, a new replacement assembly should be fitted.

REASSEMBLING THE MASTER CYLINDER

Lubricate the bore and the new rubber seals prior to assembly with new brake fluid. Using the fingers only, fit the new secondary seal into the piston groove with the lip facing towards the drilled head of the piston. In the positions previously noted, refit the parts into the cylinder, taking care not to bend back the lips of the seals when entering the bore mouth. Finally refit the circlip making sure that it is securely seated into its groove and seat the new rubber boot over the cylinder mouth

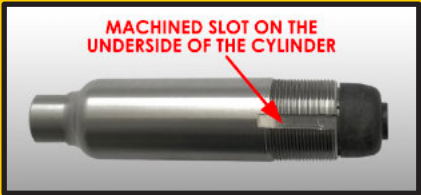
INLET CONNECTION REPLACEMENT

Position the 'O' ring seal into its groove on the underside of the inlet connection. Fit the tab washer to the mounting nut then insert the 'O' ring into the groove just under the nut head. Seat the inlet connection on to the cylinder barrel with the spout facing towards the bore mouth and screw the mounting nut with tab washer on to the stud. Ensure that the tab washer is correctly located, then tighten the nut to 6-7Nm (4-5lb.ft). **DO NOT OVERTIGHTEN**. Finally, bend up the tab washer to the nearest flat on the nut.

Please Note It may be necessary to first re-fit the mounting bracket to the master cylinder before replacing the reservoir inlet on to the stud.

PROCEDURE FOR RESETTNG THE PUSH ROD

1. Take note of the slot machined in the centre of the underside of the cylinder barrel.



2. Making sure that the pushrod enters the hole in the boot, screw the cylinder onto the cast body, moving the pushrod slightly so as to feel when all the lost movement is eliminated. Do this very carefully so that all lost movement is **JUST** removed.

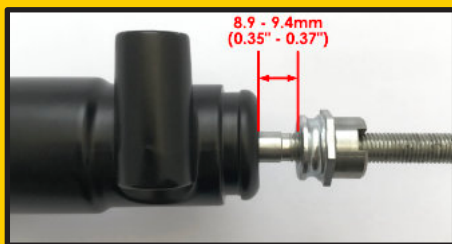


PROCEDURE FOR RESETTING THE PUSH ROD (continued)

3. With all lost movement eliminated, note the position of the cylinder inlet pipe in relation to the cast body (Diagram A). From this position screw the cylinder in one complete turn so that the inlet pipe finishes up in the same previously noted position (Diagram B).
4. Continue screwing in the cylinder the part of a turn necessary to bring the inlet pipe vertical and the Allen screw in the body into alignment with the centre of the slot on the underside of the cylinder barrel (Diagram C). DO NOT UNSCREW the cylinder to line up - always screw IN the part turn necessary even if it is almost a complete turn of 360°



5. Fit the Allen screw (ideally apply Loctite CV), making sure that the screw properly locates in the slot. Remove the boot and check the distance between the end of the cast mounting bracket and the face of the pushrod nut. This dimension must be adjusted if necessary to 8.9 - 9.4mm (0.35" - 0.37").



IMPORTANT

As a final check, pour clean brake fluid into the reservoir until the locknut inside is covered (keep the cylinder inclined with the threaded outlet port above the horizontal otherwise the fluid will run out!). With a foot pump, gently blow air into the threaded port in the end of the cylinder. Air should bubble up through the fluid in the reservoir.

NOTE Brake fluid is a powerful paint stripper so be careful not to spill any onto a painted surface.