

**Leave master cylinder in the zip lock bag with Caplugs in place until ready to install. Do not exercise the piston with any foreign objects, use only the brake lever. Do not exercise the piston without brake fluid in the system.**

## FRONT HYDRAULIC BRAKE RE-ASSEMBLY

Before attaching to the handlebars: remove the three caplugs and desiccant from the reservoir and install the brake lever using the proper 1/4" diameter bolt. Make sure the two set screws in the stop are snugged up. With the lever installed, place a thumb over the exit port that normally accommodates the brake switch. Blow air into the remaining port. You should be able to blow air into the exit port and have it exhaust through the reservoir. The air pressure generated by ones mouth is adequate to perform this test. **The reason for this test: Each master cylinder is tested with a brake lever attached prior to shipping. The brake lever used in testing represents most of the levers in the field. Occasionally an end user installs a lever that has a cam surface a little taller than normal, usually an after market lever. In this case the piston shuts off the reservoir port prematurely resulting in a situation that does not allow brake fluid to enter the reservoir. If, as a result of the test you just performed, you find no air is allowed through the exit port, contact "Tech support" at the phone number or E-mail address at the bottom of this page.** If air passes, slip the vinyl boot over the top end of the brake line; attach the top end of the hydraulic line to the forward master cylinder port. Care should be taken not to twist the brake line during assembly. **The brake line should be installed so that when the master cylinder is eventually re-attached to the handle bar, there is no kink in the hydraulic line. It may be necessary to re-align the hydraulic line radially by loosening, rotating and then re-tightening the bulkhead fitting at the caliper end of the system.** Next, install the brake switch to the remaining master cylinder port. Prior to bleeding the brake, make sure all fittings (switch and hydraulic line, master cylinder ports and bulkhead fittings) are tight. Attach the reservoir cap with the bellows seal and tighten the cap. As an added sealing measure, Loctite sealant 242 (blue label, medium strength) may be applied sparingly to the threads at the end of the brake line and the brake switch threads before their installation.

## RE-ATTACHING THE MASTER CYLINDER TO THE HANDLEBARS (see photo)

There are (4) socket head cap screws provided. Remove and discard the temporary hex nuts from the Socket Head Cap Screws. With a 3/32" Allan wrench, **slightly** loosen the #10-32 set screws in the stop that is captured by the rear Socket Head Cap Screws (loosen enough so the SST socket head cap screws rotate). Do not remove the rear Socket head cap screws or the Stop. Using the appropriate Allan wrench, tighten the SST Socket Head Cap Screws to the switch cluster with the handle bar sandwiched in between. After tightening all (4) Socket Head Cap Screws, tighten the #10-32 set screws in the stop with a 3/32" Allan wrench. Care must be taken to snug the screws up against the back of the cartridge sleeve. Alternately tighten the top and bottom set screws until they feel equally tight. It is not necessary to tighten beyond about 20 inch/pounds of torque. 20 inch/pounds of torque can be achieved by using the short leg of a standard Allan wrench as a lever. Do not over tighten. **The rear stop is sandwiched between the cartridge sleeve and the horizontal SST Socket Head Cap Screws. The stop prevents the cartridge assembly from backing out of the master cylinder when the brake is applied. Tightening the set screws forces the cartridge sleeve into the master cylinder and forces the stop back against the SST Socket Head Cap Screws. The SST Socket Head Cap Screws were selected because of their non-threaded shank section. Without the (2) rear Socket Head Cap Screws, the brake will not function. Replacing this hardware with any other hardware is not recommended.**



## BLEEDING THE BRAKE ASSEMBLY

**Residue inside the caliper should be removed prior to bleeding the system. Abrasive materials naturally occurring in the caliper may migrate up to the master cylinder scoring the bore and compromising the master cylinder. This situation may result in brake fluid leaking out the back of the master cylinder.**

If the brake assembly is to be bled from the top down, add brake fluid to the reservoir and replace the reservoir cap and seal prior to bleeding. The brake may be bled with the use of a vacuum bleeder or by the more traditional method of repeatedly actuating the brake lever while the bleed valve is open and letting the lever return with the bleed valve closed. The most efficient method: fill the system from the bottom using the syringe provided. No brake fluid is required in the reservoir prior to bleeding as the reservoir is filled from the bottom up. Make sure the reservoir cap and seal are in place as the hole at the bottom of the reservoir has a tendency to squirt fluid. Slip a 1/4" box wrench over the bleed valve of the caliper. Attach the short length of vinyl tube (found inside the syringe housing) to the end of the syringe (provided). Draw fresh brake fluid into the syringe until the syringe is full. Force the open end of the vinyl tube over the bleed valve. Make sure there are no air bubbles present at the open end of the vinyl tube. If air bubbles are present, remove the syringe with the vinyl tube attached, squirt a little fluid out of the syringe and then reattach the syringe and tube. Open the bleed valve slightly. Slowly inject brake fluid into the caliper. Do not fully depress the plunger of the syringe. **Stopping the plunger early will prevent injecting the always-present air at the end of the plunger. Leaving a little fluid in the syringe insures against injecting air bubbles into the caliper housing.** When almost all the fluid is gone from the syringe, close the bleed valve. Remove the syringe with the vinyl tube still attached. Reload the syringe and repeat the above operation to insure all bubbles have been displaced. **The syringe holds 12 cubic centimeters of fluid. The reservoir will comfortably hold 24 cubic centimeters. If it becomes necessary to bleed beyond two full syringes, some of the fluid may need to be removed from the reservoir.** The syringe may also be used to capture brake fluid at the bleed valve if the aforementioned traditional bleed method is used.

Regardless of which of the bleeding methods is used, when the brake handle "firms up", set the bike on the side stand or lean it to the left and turn the handlebars to the extreme left. With the brake cylinder in this "up hill" position, the last remaining bubbles will have risen to the reservoir port and will be ejected with a few actuation's of the brake lever. At completion: test the brake, if it feels spongy or the handle travel is excessive, repeat the bleeding procedure. When bleeding is complete add fluid to the reservoir as required, then replace and tighten the reservoir cap. Test the brake prior to sliding the rubber sleeve up over the end of the exit ports.

## LIMITED WARRANTY AND DISCLAIMER

This master cylinder was re-manufactured from an assembly whose original bore was compromised. Replacing the present cartridge with OEM piston and seals will result in brake fluid leakage.

There are no consumer serviceable components within this assembly. Internal seals were specifically compounded for their brake fluid compatibility. After market, consumer substituted, components may deteriorate in the presence of brake fluid, resulting in brake failure. Disassembly damages the seals. If service is required, return assembly to point of purchase.

Your new master cylinder will work with an OEM brake line but to realize the full benefit of the improved master cylinder, it is recommended that the OEM brake line be replaced with a braided, stainless steel, reinforced one, this is especially true of the Mark III master cylinders. The cartridge assembly is guaranteed for one year from date of purchase. If service is required return assembly, with proof of purchase, to point of purchase.

Any tampering, damage or dis-assembly voids warranty. Assembly is warranted for part replacement only.