

## **BRAKE-06, Brakes - Master Cylinder Replacement**

### **Tools**

- Metric Wrench Set
- Catch Rags
- Hand Vacuum Pump

### **Parts**

<b>Part No.</b>	<b>Model</b>	<b>Year</b>	<b>Description</b>
477 611 015 A	924	1977-79	Master Cylinder
928 355 011 04	924	1979	Master Cylinder - With M471
477 611 017	924/T	1980	Master Cylinder
477 611 017 A	924/T	1981-82	Master Cylinder
944 355 011 00	924S	1987-88	Master Cylinder - Girling
944 355 011 01	924S	1987-88	Master Cylinder - ATE
944 355 011 00	944	1983-86	Master Cylinder - Girling
944 355 011 01	944/T	1983-86	Master Cylinder - ATE
944 355 011 10	944/S	1987-91	Master Cylinder - Girling
944 355 011 01	944/S/T	1987-91	Master Cylinder - ATE
211 611 243	924/944	ALL	O-Ring (between Master Cylinder and Brake Booster)
211 611 817 A	924	1977-79	Grommet for Reservoir to Master Cylinder
911 355 922 00	924/944	1980-88	Grommet for Reservoir to Master Cylinder

### **Introduction**

Porsche uses master cylinders and brake boosters on 944s which were manufactured by two companies (Teves and Girling). You may actually have a master cylinder and brake booster from different manufacturers. Girling master cylinders are stamped with a "G" while Teves master cylinders are stamped with "Ate". Also the stops screws are in different locations. On the Teves, the stop screw is on top of the master cylinder between the ports for the reservoir tank. On the Girling, the stop screw is on the side.

If you are merely replacing the master cylinder, it doesn't really matter which master cylinder you have or which one you get as a replacement. It really only matters if you decide to rebuild the unit yourself in which case the rebuild kits will be different. Before deciding on whether to rebuild or replace, first check the prices on a new or rebuilt unit as compared to a rebuild kit. If the replacement unit is not significantly more expensive than the rebuild kit, it may be worth your while to simply replace since the replacement unit will probably come with at least a one year and possibly a two year warranty (two year warranty if it comes from Porsche).

### **Removal**

1. Place catch rags underneath the brake master cylinder. Attempt to keep brake fluid from coming in contact with painted surface.
2. While not absolutely necessary, I normally drain as much fluid from the brake reservoir as possible before beginning as it minimizes the mess and cleanup afterwards. I normally use a hand vacuum pump to drain the reservoir.
3. After you drain the reservoir (if you chose to do so), remove the reservoir by pulling straight up on it. It may be necessary to rock it back and forth slightly to free it from the rubber grommets which mount the reservoir to the master cylinder. Be sure to catch any residual brake fluid which escapes from the reservoir using the catch rags.
4. Place the reservoir over to the side on the fender well (leaving the slave cylinder line and level sensor wires attached). Place rags underneath to catch any remaining fluid
5. Remove the two retaining nuts that hold the master cylinder to the brake booster and remove the master cylinder from the car.

### **Installation**

1. Most master cylinders will come with instructions for filling the unit prior to installation. This usually involves installing the reservoir tank onto the master cylinder and installing nipples into the brake line ports with clear tubing routed back to the reservoir.
2. Fill the reservoir with fresh brake fluid.
3. Press on the master cylinder piston to force fluid through the clear plastic lines. Continue to do this until no more bubbles appear in the lines.
4. Attach the master cylinder to the brake booster using the two retaining nuts.
5. Attach the brake lines to the master cylinder.
6. Bleed the brakes and clutch. Check for leaks while operating the brakes and that the brakes and clutch are functioning properly.

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