

INSTALLATION INSTRUCTIONS FOR 95 SERIES BRAKE PEDAL ASSEMBLIES

Please read these instructions prior to installing your Grove 95 series master cylinders as there are critical steps that you must take to ensure proper operation of the brake system.

The Grove 95 series brake pedal assemblies consist of a master cylinder which is housed in the brake pedal frame. Typically, the 95-1 assembly is installed on the left side of the aircraft, and the 95-2 assembly on the right. These assemblies are basically the same, with the exception of the orientation of the outlet port of the master cylinder and the orientation of the pedals.

Normally the outlet ports of the master cylinders face outboard of the aircraft, with the brake pedals also facing outboard. However, if you wish, you may interchange the master cylinders in the brake pedal frame by removing the two attachment bolts and installing so that the outlet ports still face outboard and the pedals face inboard.

Installing the Grove 95 Master Cylinders in the Aircraft

1. Attach the master cylinders to the airframe using AN3 bolts.
2. Install brake lines from the master cylinders to the brake calipers. Because the Grove 95 series brake pedal assemblies are capable of producing 1,000 psi., it is imperative that the brake lines are of aircraft quality and are rated at 1,500 psi or more.
3. Attach the brake lines to the master cylinder using aircraft quality fittings. Each installation is unique and will require appropriate fittings, 90°, 45°, etc.

Bleeding the Brakes

This is a two-step process. First remove the air from the system by bleeding from the bottom up, then bleed the master cylinder to remove any remaining air in the master cylinder.

Grove master cylinders use Buna-N (Nitrile) O-Rings. For compatibility, use only MIL-H-5606 (MIL-PRF-5606) hydraulic fluid or its newer replacements: MIL-PRF 83282 or MIL-PRF-87257. All of these fluids are miscible and can be used with each other.

1. Remove the vent plug from the master cylinder reservoir. You should also place a rag under the master cylinder to catch any spilled hydraulic fluid.
2. Connect a clean hydraulic pressure source such as a hydraulic hand pump to the bleeder valve on the lower end of the brake caliper.
3. Open the bleeder valve one-half turn.
4. Pump hydraulic fluid into the system while observing the level in the master cylinder reservoir. When the reservoir is nearly full, tighten the bleeder fitting and remove the hydraulic pressure source.
5. Place a rag under the outlet fitting of the master cylinder to catch any spilled hydraulic fluid.
6. Hold pressure on the brake pedal by hand while cracking open the fitting between the master cylinder and the brake line. Watch for air bubbles to escape from the "cracked outlet fitting". After a full stroke, tighten the fitting BEFORE releasing the brake pedal. Continue this process until the discharge from the bleeder valve is free from any air bubbles.
7. Fill the master cylinder reservoir with hydraulic fluid to approximately 3/8" from the top.
8. Replace the master cylinder reservoir vent cap.
9. Apply foot pressure to each master cylinder and check for a "soft pedal" or any fluid leaks in the system. If you experience a "soft pedal" repeat the bleeding process.
10. If you have also installed new brake linings, ensure that you follow the instructions for seating new linings.