

the bleed port and pressure tank shutoff are closed, and the pressure tank hose is removed. The hose at the reservoir is also removed. Fluid quantity may need to be adjusted to assure the reservoir is not over filled. Note that it is absolutely necessary that the proper fluid be used to service any brake system including when bleeding air from the brake lines.

Brakes with master cylinders may also be gravity bled from the top down. This is a process similar to that used on automobiles. [Figure 13-119] Additional fluid is supplied to the aircraft brake reservoir so that the quantity does not exhaust while bleeding, which would cause the reintroduction of more air into the system. A clear hose is connected to the bleed port on the brake assembly. The other end is submersed in clean fluid in a container large enough to capture fluid expelled during the bleeding process. Depress the brake pedal and open the brake assembly bleed port. The piston in the master cylinder travels all the way to the end of the cylinder forcing air fluid mixture out of the bleed hose and into the container. With the pedal still depressed, close the bleed port. Pump the brake pedal to introduce more fluid from the reservoir ahead of the piston in the master cylinder. Hold the pedal down and open the bleed port on the brake assembly. More fluid and air is expelled through the hose into the container. Repeat this process until the fluid exiting the brake through the hose no longer contains any air. Tighten the bleed port fitting and ensure the reservoir is filled to the proper level.

Whenever bleeding the brakes, ensure that reservoirs and bleed tanks remain full during the process. Use only clean, specified fluid. Always check the brakes for proper operation, any leaks when bleeding is complete, and assure that the fluid quantity level is correct.

Bleeding Power Brake Systems

Top down brake bleeding is used in power brake systems. Power brakes are supplied with fluid from the aircraft hydraulic system. The hydraulic system should operate without air in the fluid as should the brake system. Therefore, bottom up pressure bleeding is not an option for power brakes. The trapped air in the brake system would be forced into the main hydraulic system, which is not acceptable.

Many aircraft with power brake systems accept the connection of an auxiliary hydraulic mule that can be used to establish pressure in the system for bleeding. Regardless, the aircraft system must be pressurized to bleed power brake systems. Attach a clear hose to the brake bleed port fitting on the brake assembly and immerse the other end of the hose in a container of clean hydraulic fluid. With the bleeder valve open, carefully apply the brake to allow aircraft hydraulic

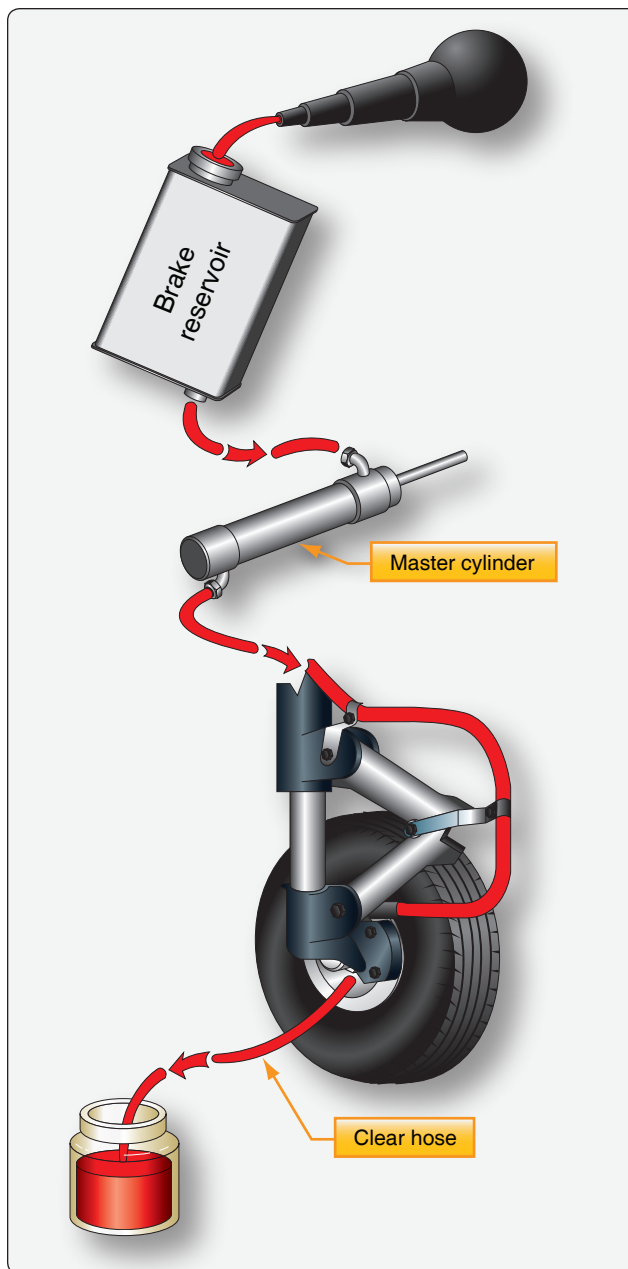


Figure 13-119. Arrangement for top down or gravity bleeding of aircraft brakes.

fluid to enter the brake system. The fluid expels the fluid contaminated with air out of the bleed hose into the container. When air is no longer visible in the hose, close the bleed valve and restore the hydraulic system to normal operation configuration.

Power brake systems on different aircraft contain many variations and a wide array of components that may affect the proper bleeding technique to be followed. Consult the manufacturer's maintenance information for the correct