

Fig. 2. On-off brake valve leakage with worn seal ring. Slow softening of brake when valve seal rings. Cylinder is filled in fully compressed position to point indicated by handle line "air" in "off" position. Air at 75 psi is then injected after valve is fully released.

call for a new seal ring on the plunger. Valves, springs, and plungers are inspected (only if leakage is indicated) by removing the headless plugs which close the valve chambers.

Lever should be checked at both ends of their travel to be sure that

fluid flows freely in the required direction when the lever is locked in position. The landing gear lever is locked by a spring extension of the flap which drops into holes opposing each end of its travel; but the flap lever is held by a spring-operated ball, which

should drop to a certain position. Because these hydraulic systems are all of recent manufacture it is unlikely that they will develop for some time, except for slight leakage of landing gear cylinders because of rod landing. If, however, this wear is manifested, the exterior leakage is slow "softening" of the hand pump which is operated as long as all the other units combined, slight leakage past the piston after a long period of use will not be serious, because pressure is retained by check valves immediately beyond the cylinder.

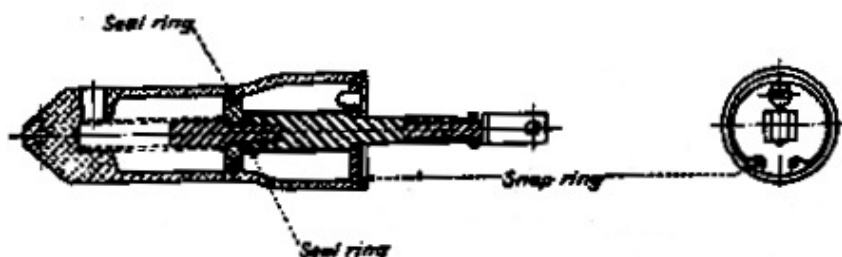
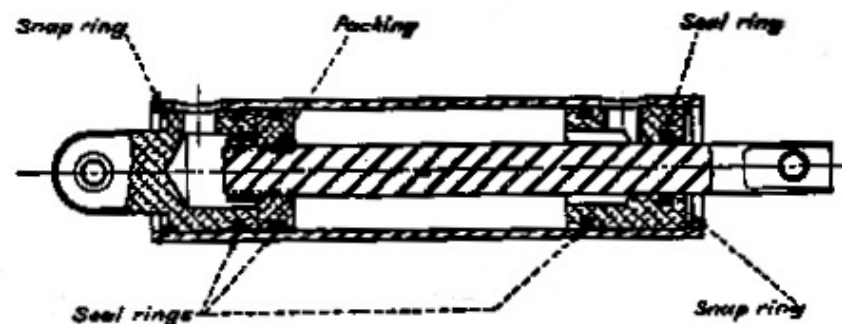
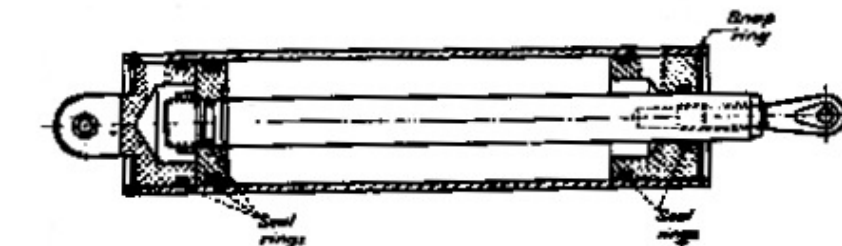


Fig. 4. Brake master cylinder is filled through screw in cover. Damaged center seal ring would permit gradual downward movement of piston when brakes are fully applied.



Figs. 5 and 6. Tailwheel, flap and landing gear cylinders should be checked for wear if external leakage or "self" action are present.



Any internal leakage can be taken as an indication of dirt in the hydraulic fluid, rather than as a mechanical defect. The system should be flushed or periodically—every engine overhauls—period—and refilled with absolute clean mineral-base fluid (AN-VV-366). Castor base fluid should not be used, because it affects the seal ring.

Landing gear cylinder (Fig 4) can be inspected when the airplane is in the water. If no external leaks are evident and if the gear can be operated in either direction with 10-11 double strokes of the pump, it requires no further attention beyond lubrication of the Alomite fittings on the seal rings.

Final step in each inspection is wiping clean all external sliding parts such as piston rods, to remove any dirt which may have accumulated during the time spent on land. Dirt will destroy the seal rings faster than years of use—in fact, the life of these seals is more dependent on cleanliness of parts and fluid than upon the amount of work they are called upon to perform. Therefore, the first rule during inspection should be: Use only clean fluid in a clean (flushed) system, and wipe every moving part clean—before and after testing.