

2. Draw the tap and sleeve straight out of the bore with a sharp quick pull.

3. Clean the relief valve bore thoroughly with petroleum solvent and a suitable bristle brush, taking care to see that all metal particles are removed. The sleeve seat in particular must be entirely free from foreign matter, or new sleeve will not seat properly.

4. Place a new relief valve sleeve into the crankcase bore with the seat end of the sleeve toward the crankcase. Make sure that the sleeve is centered in the bore, insert sleeve driver (ST-215) in the sleeve and drive sleeve into place with light hammer blows on the driver.

5. If the sleeve does not make a 0.001 press fit with the crankcase, but is loose, remove the standard size sleeve and install an 0.003 inch oversize sleeve exactly as described in Step "4" above.

CAUTION

In the event the hole in the crankcase is too small for installation of the 0.003 inch oversize sleeve, place the sleeve in a lathe and lap it sufficiently to fit the hole in the crankcase. Never ream the oil relief valve sleeve hole in the crankcase.

7-57. Oil Pressure Relief Valve (adjustable). The latest edition of Service Instruction No. 1172 contains the information relative to replacing the non-adjustable oil pressure relief valve assembly with the adjustable oil pressure relief valve assembly if required.

7-58. Crankcase - Fretting. Consult the latest edition of Service Instruction No. 1112 for information relative to inspection and repair of crankcases damaged by fretting.

7-59. Crankcase - Fretting. The latest edition of Service Instruction No. 1123 contains all the requirements necessary to modify the crankcase to prevent fretting.

7-60. Crankshaft Idler Gear Shaft Recess. Damaged or worn idler gear shaft recesses in the crankcase can be repaired as described in Service Instruction No. 1197.

REASSEMBLY

7-61. Crankshaft Sludge Tube Assembly (Where applicable). Support the crankshaft in a nearly vertical position and install new sludge tubes. Place a new sludge tube on the applicable drift, P/N 64547 for six and eight cylinder engines and P/N 64548 for four cylinder engines, and drive sludge tube to its correct depth. See figure 7-17 for four cylinder engines and figure 7-18 for six and eight cylinder engines.

NOTE

Sludge tubes are not employed in later model crankshafts. However, this is not to imply that sludge tubes can be removed and not replaced in those crankshafts originally using sludge tubes.

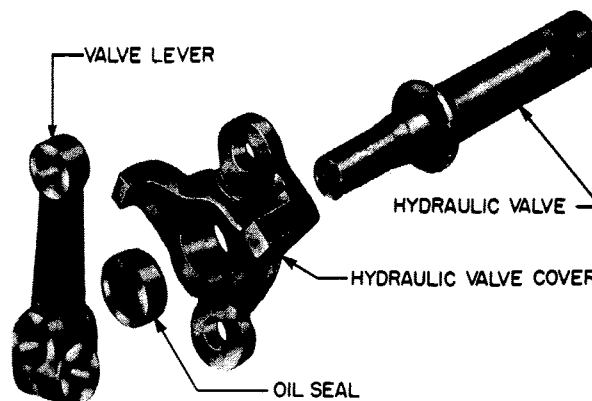


Figure 7-15. Hydraulic Valve Assembly

7-62. Expansion Plug. On engines equipped for fixed pitch propeller use the expansion plug installation drift (P/N 64681) to install a new expansion plug in place in the front of the crankshaft (see figure 7-17) with the convex side toward the front. Be sure the plug fits firmly against the shoulder provided for it on the inside diameter of the crankshaft.

7-63. Plug. On engines equipped for controllable pitch propeller, a plug is installed at the rear of the bore in the front of the crankshaft. If this plug has been removed during overhaul, install a new plug by sliding it sideways past the crankshaft propeller oil tube (see figure 7-17). When the plug is properly positioned in the rear of the bore (flange forward) insert the oil plug drift (P/N 64770 for 1-3/4 inch plug, P/N ST-46 for 1-3/8 inch plug) and seat the plug with several sharp hammer blows on the drift.

NOTE

Some crankshaft employ a 1-1/4 inch plug. This size plug cannot be replaced in the field. The crankshaft must be returned to Lycoming for repair.

7-64. Propeller Flange Bushings. If the propeller flange bushings have been removed from the crankshaft, new bushings must be installed. Use the crankshaft flange bushing replacement tool (ST-115) to install new bushings. Consult the applicable Parts Catalog for proper location of the bushings.

7-65. Crankshaft Gear. Assemble the gear to the crankshaft using both a new lockplate and bolt. Refer to Figure 7-12F. The correct bolt, lockplate and dowel for each gear are shown in Table 7-4. Tighten the bolt to 125 inch lbs. torque, then with a hammer and brass drift, tap lightly around the pilot flange of the gear and listen for sharp solid sounds from the hammer blows that would indicate that the gear is seated against the crankshaft. As a check on seating against the crankshaft, attempt to insert a pointed .001 inch thick feeler gage or shim stock between the gear and crankshaft at each of the three scallops. The .001 feeler gage, or any smaller feeler gage, must NOT fit between the two sur-