

SERVICE BULLETIN 41

SUBJECT: OILDYNE HYDRAULIC PUMP PRESSURE INCREASE

APPLICATION: ALL GLASAIR I RG MODELS

DESCRIPTION: The "up" side of the hydraulic system in the Glasair aircraft is designed with the intention that the pressure switch deactivates the hydraulic pump when the system reaches 1400 psi. This pressure is only reached when the landing gear is firmly in the up position.

The oildyne hydraulic pumps delivered with the Glasair kit have had the high pressure relief valve of the pump preset by the manufacturer to an operating pressure of 1550 psi (\pm 200 psi) at which point it begins to bypass pressure internally.

If the hydraulic pump happens to be preset at the low side of its tolerance range, it is possible for the hydraulic pump to reach its preset high pressure point and begin to bypass fluid internally before the pressure reaches a point sufficient for the hydraulic pressure switch to deactivate the hydraulic pump. This condition will allow the hydraulic pump to operate continuously and will reduce the life of the up solenoid and pump.

SOLUTION:

A. AIRCRAFT PRESENTLY IN SERVICE:

If your aircraft is flying, during the next flight check the hydraulic system to verify that the hydraulic pressure switch is turning the hydraulic pump off rather than the pump operating continuously and bypassing internally.

This can be checked by carefully listening to the hydraulic pump (with landing gear retracted in flight) to determine if the hydraulic pump is operating continuously. If the hydraulic pump and pressure switch are found to be operating properly, it is left to your discretion whether or not to comply with Procedure C of this Service Bulletin.

If the pressure switch and hydraulic pump internal relief valve are not operating in the proper sequence, accomplish Procedure C of this Service Bulletin to avoid reducing the life of the pump.

B. AIRCRAFT PRESENTLY BEING ASSEMBLED:

If the aircraft is presently being assembled we recommend compliance with Procedure C of this Service Bulletin before the first flight.



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TESTING HYDRAULIC PUMP HIGH PRESSURE SETTING:

Test the high pressure output of the Oildyne hydraulic pump, as described in the following procedures, to determine whether the output pressure falls within the required range of 1750 ± 200 psi at the high pressure port.

If the pressure gage is reading above 1500 psi and the pump is still running a problem exists with the hydraulic pressure switch rather than with the pump.

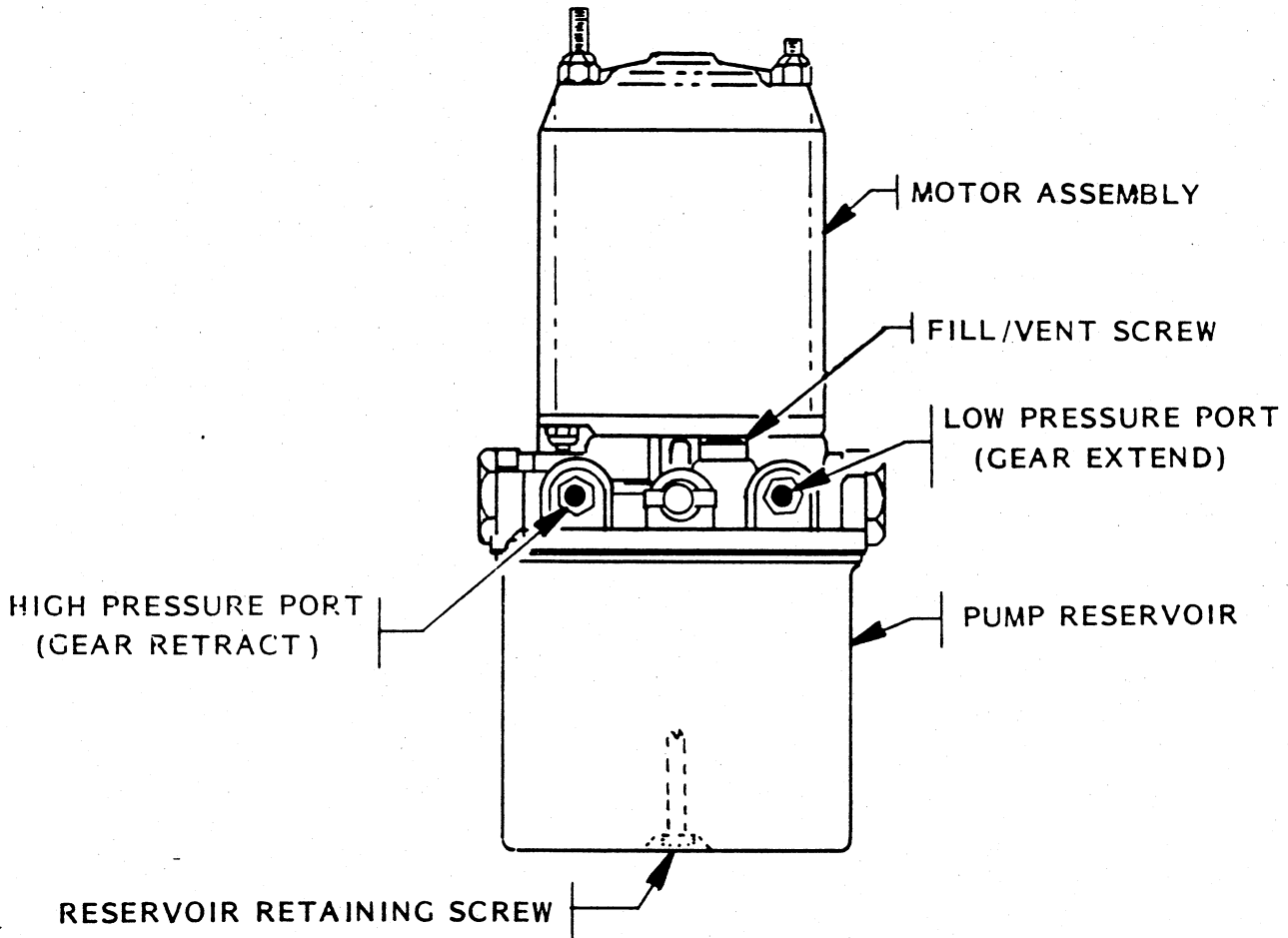


FIGURE (1)

NOTE: To test the hydraulic pump high pressure setting, it is easiest to remove the hydraulic pump from the aircraft.

1. Remove the hydraulic pump from the aircraft.
2. Connect a hydraulic pressure gauge to the high pressure port of the hydraulic pump. Fill the hydraulic pressure line with fluid prior to connecting to the pressure gage. Use an accurate hydraulic pressure gage that measures the correct pressure range (the pressure gage from the aircraft is suitable).

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3. Confirm that the proper amount of hydraulic fluid is in the pump reservoir prior to pump operation.

4. Connect the positive lead (black) to the positive terminal of a 12 volt/28 volt (depending on system used) battery. Touch the negative (orange) lead to the negative battery terminal and note the final hydraulic system pressure.

NOTE: On hydraulic pumps which have three wires leading to the pump, connect the blue and white wire to the positive battery terminal. Connect the black (negative) lead to the negative battery terminal. Leave the green and white wire unconnected.

A. If the highest pressure reading is between 1550 psi and 1950 psi, the pump is properly adjusted and can be reinstalled in the aircraft.

B. If the highest pressure reading is less than 1550 psi or greater than 1950 psi, adjust the pump to achieve a 1750 psi \pm 200 psi reading on the hydraulic pressure gage, as described in pump adjustment procedure which follows.


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TO ADJUST THE HIGH PRESSURE OUTPUT OF THE PUMP

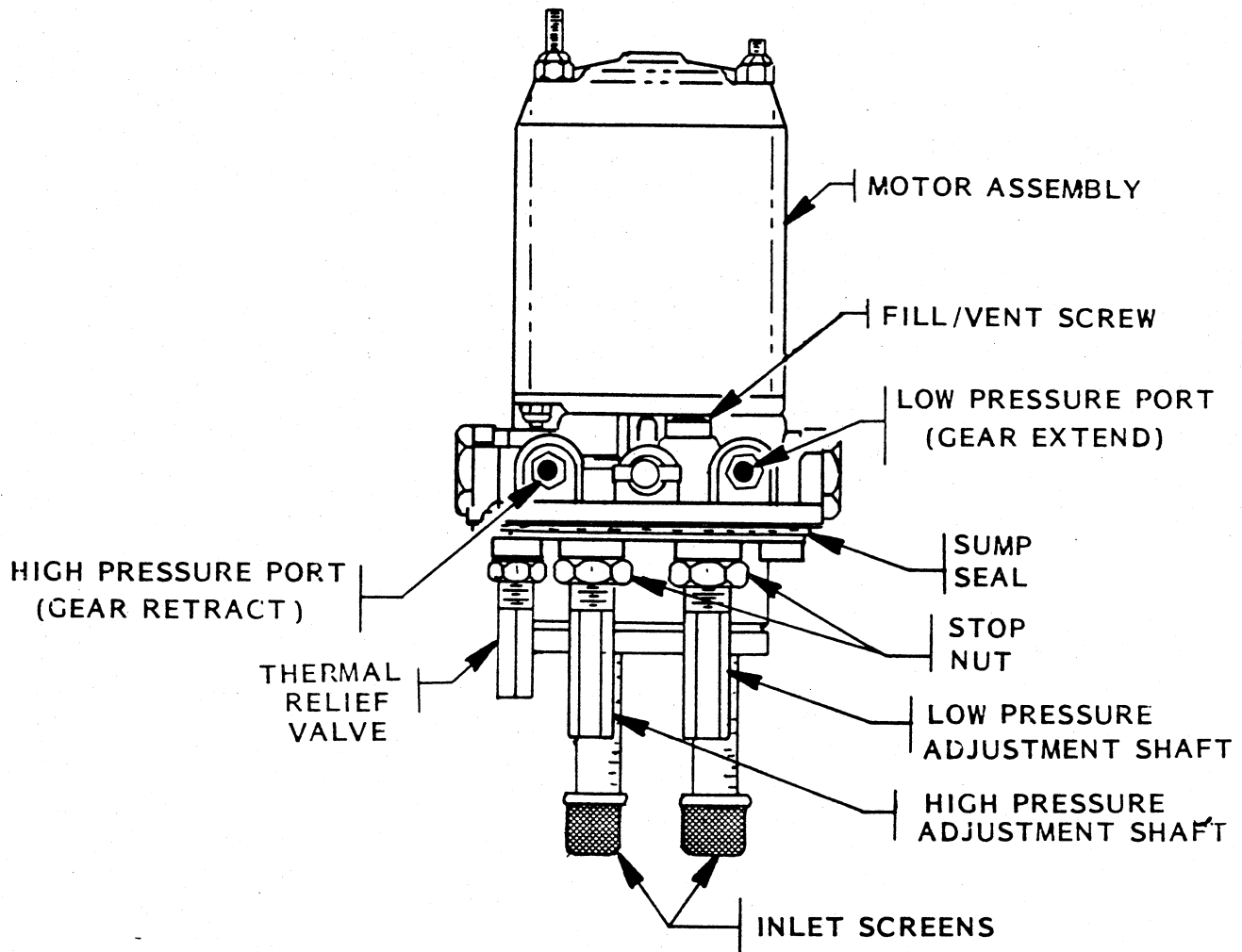


FIGURE (2)

1. Drain the fluid from the pump reservoir. Remove the reservoir retaining screw and remove the reservoir. Take care not to damage the seal between the pump and the reservoir.
2. Loosen the stop nut on the high pressure adjustment shaft. See Fig. (2).

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3. Turn the adjustment shaft "in" to increase pressure, and "out" to decrease pressure. A 1/4 turn of the adjustment shaft will change the pressure reading by approximately 200 psi. Several adjustments may be required before the proper pressure readings are achieved. Tighten the stop nut after each adjustment prior to testing the pump pressure.

4. Reinstall the reservoir on the hydraulic pump, fill the reservoir with sufficient fluid to cover the inlet screens, and retest the high pressure output of the pump as described in Procedure C.

5. When the correct operating range has been achieved, reinstall the hydraulic pump in the aircraft and fill the reservoir with the proper amount of fluid.

6. Jack the aircraft and cycle the landing gear several times to purge any air from the system, and check for proper operation.



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