# GLASTAR SERVICE BULLETIN 36, SUPPLEMENT A

## MANDATORY

**Note** This publication **supplements** GlaStar Service Bulletin 36, which remains in effect; it **does not** supersede it.

**Subject:** Auxiliary fuel tank sump drains

**Applicability:** Auxiliary fuel tank installations shipped prior to 11/12/97

**Discussion:** As described in Service Bulletin 36, a special sump drain fitting has been designed for retrofit into existing auxiliary fuel tanks to provide the ability to drain the tank sumps. These fittings, the sump drain valves and various other required parts are included in the Rev. 01–02 Addendum to the Auxiliary Fuel Tank Installation (P/N 013-09331-01). The contents of this addendum are listed below.

**Required Action:** This service bulletin supplement explains the steps for installing the sump drains in installed auxiliary tanks. However, the procedures are substantially the same even if you have not yet installed your tanks. **Installation of the drains in accordance with these procedures is mandatory within three months of receipt of this supplement or within three months of first use of the auxiliary tanks, whichever comes first**.

### PARTS LIST — ADDENDUM P/N 013-09331-01

| Key No.: | Part Name: | Qty: | Part No.: |
|---|---|---|---|
| 1 | Auxiliary tank sump drain fitting | 2 | 201-41003-01 |
| 2 | Auxiliary tank sump drain fitting nut | 2 | 201-41004-01 |
| 3 | Fuel drain valve | 2 | 320-0334-001 |
| 4 | Aluminum washer | 4 | AN960D1016 |
| 5 | Thin aluminum washer | 6 | AN960D1016L |
| 6 | GlaStar Service Bulletin 36, Supplement A | 1 | GSSB 36A |
| 7 | O-ring, .669” I.D. X .100” thickness | 2 | MS28775-115 |

**Caution** If you have already used your auxiliary tanks, be sure that they are as empty of fuel as possible before embarking on the following procedures. We recommend the use of a flexible siphon hose to remove as much of the fuel as possible. Further, use only pneumatic or hand tools for the cutting and drilling procedures; use of an electric drill motor could ignite fuel vapor.

## *Step 1: Drill the Sump Drain Hole in the Lower Wing Skin and Tank*

The sump drain must be located at the lowest point of the fuel tank when the aircraft is in the ground attitude. Therefore, tricycle-gear and taildragger GlaStars will require different sump drain locations. Figure 1 shows the location appropriate for each configuration.

**Note** Builders who intend to switch their GlaStars back and forth between landing gear configurations have two choices. They can install the drains in the taildragger (aft) locations and simply lower the tail of the aircraft to fully drain the aux tanks, or they can install two drains in each aux tank. To accommodate the second choice, we offer the **Auxiliary Fuel Tank Drain Valve Installation** (P/N 933-01010-01), which includes an extra pair of drain valves, fittings and other necessary hardware.

Mark one or both of the hole locations and drill a **3/16"** or a **#10** pilot hole at each mark through the wing skin and the bottom of the fuel tank. Take great care to keep the bit perpendicular to the wing skin, especially after the bit has drilled through the skin but before it has gotten into the tank.

The pilot hole must be enlarged to **5/8"** diameter in the tank and **1-1/4"** diameter in the wing skin; the smaller tank hole accommodates the **sump drain fitting** [1], while the larger skin hole accommodates the washers required by the fitting. Use one or more Unibits to drill the holes. Take care **not** to let the next larger size shoulder of the bit bite into the tank bottom; the hole must be 5/8" in diameter but no larger through the whole thickness of the tank bottom. (The tank wall thickness is 1/8".)

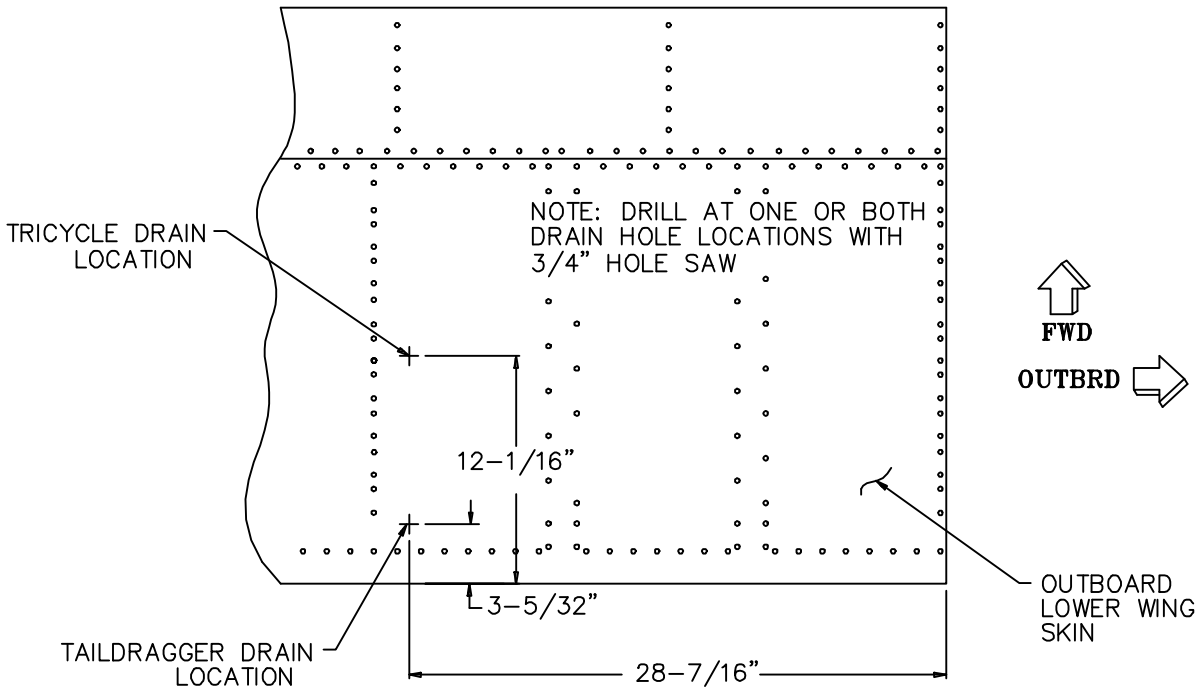


**Figure 1: Sump Drain Hole Locations**

**Note** If you don't have a Unibit large enough to drill the 1-1/4" skin hole, you can use a rotary file or sanding drum in a die grinder to enlarge the hole.

After both holes have been drilled, use a deburring tool to gently remove any burr on the inside of the tank, as well as to deburr the skin hole. Then use a shop vac to remove any shavings or chips from inside the tank.

**Note** If your tanks have been in use, it is very important that you allow any residual fuel left in the tanks to completely evaporate before vacuuming chips and shavings from the tank. If the tank is not completely dry, this debris could be difficult to remove.

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## *Step 2: Install the Sump Drain Fitting and Valve*

Figure 2 shows the arrangement of the hardware that makes up the sump drain installation. An **O-ring** [7] is used between the flange of the sump drain fitting and the tank bottom to seal the fitting. Install an O-ring on each fitting, making sure that the ring is snugged up all the way into the groove under the fitting flange.

Getting the fitting into the tank hole can be a bit of a trick. One good method is to thread the **fuel drain valve** [3] into the fitting, drop the fitting/valve assembly into the tank through the filler opening, and then use a strong magnet to guide the assembly to the sump hole. (The drain valve is necessary because it's steel.)

Don't have a strong magnet? Then your best bet is probably to first guide a piece of string through the hole and then to slide the fitting down the string and into place. You can use two pieces of thin, moderately stiff wire (like thin coat hangers) to feed the string through the filler opening on top of the tank and out through the fitting hole. Put a small hook on one end of each piece of wire. Insert one piece hook-first through the filler opening and then catch it with the other hooked piece inserted from below through the fitting opening. Tie or tape your string to the un-hooked end of the upper wire and then pull the whole mess through. Once the string is strung through the tank, it's relatively simple to thread the sump drain fitting (with the O-ring in place) onto the string and work it down to the hole. You can grab the flats on the threaded end of the fitting with a pair of needle-nose pliers to pull it into final position.

Use at least one AN960D1016 **aluminum washer** [4] between the bottom of the tank and the **sump drain fitting nut** [2], and add as many more AN960D1016s or AN960D1016L **thin aluminum washers** [5] as are necessary to allow the nut to be tightened on the fitting. Thread the nut onto the fitting and finger-tighten it against the washers. No, you're not going crazy—the fitting has **left-handed threads**! The reason for this is to allow you to tighten the nut and the fuel drain valve **against** one another. Thread the drain valve into the fitting and tighten both the nut and the valve. Use thread sealant on the drain valve.

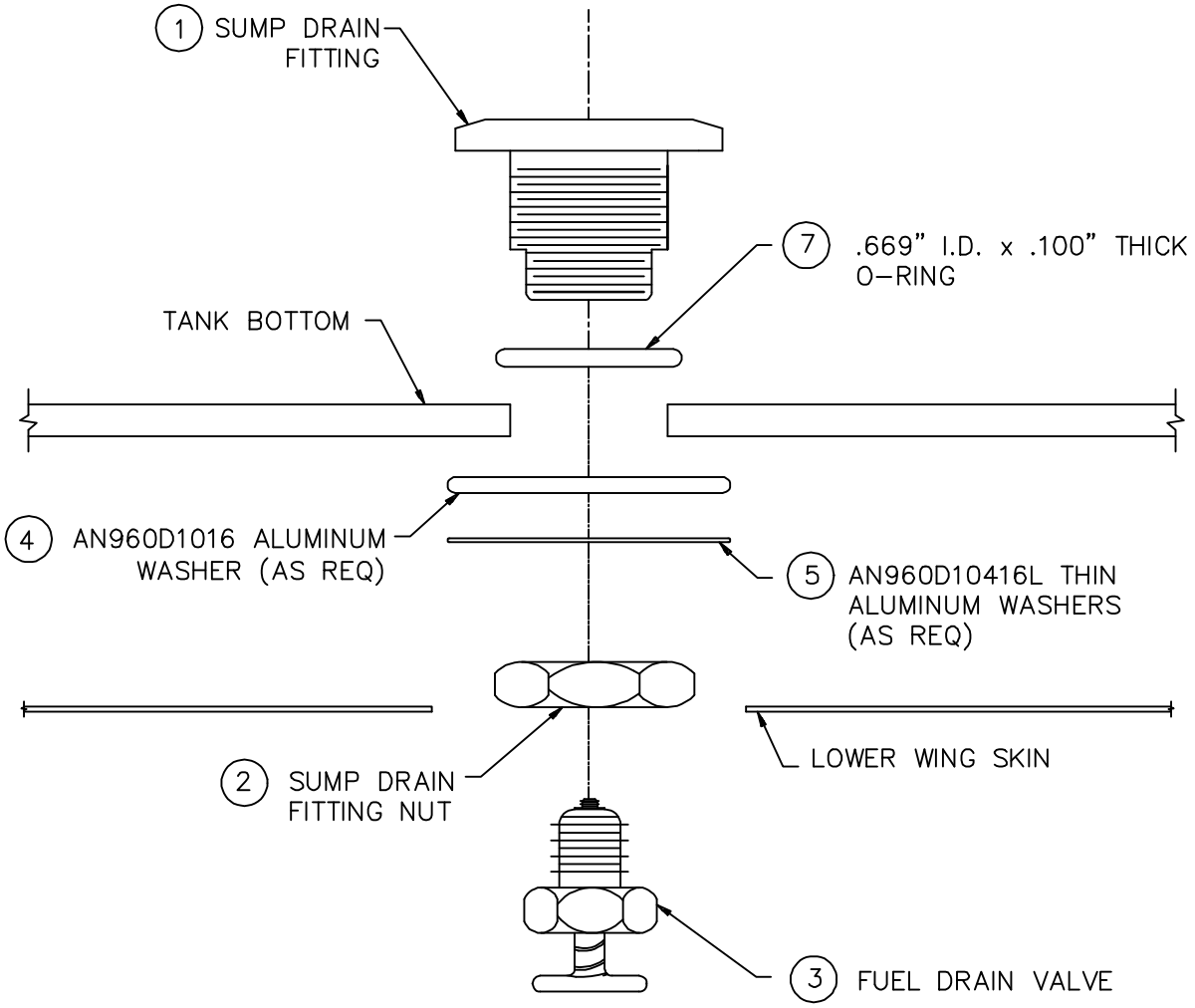


**Figure 2: Installing the Sump Drain Hardware**

**Hint** A neat way to tighten the nut and drain valve is to use a short 1/2" socket with a 1/4" drive extension on the drain valve and a deep 3/4" socket with a 1/2" drive on the nut. The 1/4" extension fits through the 1/2" drive hole of the larger socket, so you can turn the smaller socket one way and the larger one the other simultaneously. (Simply turn the 3/4" by hand—this provides plenty of torque for this application.)

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