

**Warning:** Before proceeding to the next step see that the actuator assembly is firmly seated and will not fall out of the separator assembly while the tester is being tipped or else remove it altogether while the fuel is being poured back into the aircraft fuel tank , to avoid dropping the actuator into the tank.

6. While visually checking the last fuel tank level, pour all the collected fuel samples back into the airplane's fuel tank, through the bottom screen segments of the separator screen in the GATS jar, taking care not to tip the GATS jar too far, thereby over-pouring the separator screen.
7. Pour the **water** that has been separated out and trapped in the collection jar onto the ground through one of the by-pass holes.
8. **AVGAS users only** - Gently blow on the separator screen for at least 30 seconds observing the evaporation of the sample fuel from in between the screen fibres. Except for any water drops, all screen openings should be free of liquid within about 60 seconds. After the initial wave of evaporation the remaining fuel trapped in the screen openings is most likely to be jet fuel, or some other inappropriately heavy fuel.

**Note:** If only one fuel tank is refueled, test the tank for jet fuel contamination separately.

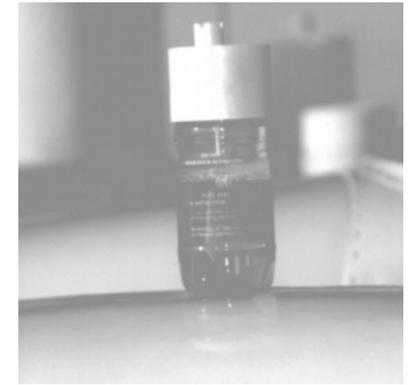
## Warranty

*The GATS jar is guaranteed against defects in workmanship for as long as you own your tester.*

## Care

The GATS jar is made of materials that are resistant to the effects of distilled petroleum fuels. These materials however, are reactive to many other solvents. To clean the GATS jar use a soft bristled artist's paint brush and charcoal lighter fluid, taking care not to damage the imbedded screen material. With proper care and handling the GATS jar will give many years of unflinching service.

# The GATS Jar



## Instructions

**Important:** Read all instructions thoroughly before using this product.

Thank you for purchasing the Aviation GATS jar fuel tester.

The GATS jar tester is the first, finest and best fuel analysis tester capable of separating non-petroleum contaminants and thereby cleaning water and debris from contaminated AVGAS and jet fuel. This allows extracted fuel to be put back into the aircraft fuel tank and not on the ground, without the fear of reintroducing contaminants back into the fuel system. It also gives a visual display of jet fuel contaminated AVGAS and can be used with any petroleum fuel grade and octane, including Jet A fuel, automotive gasoline and diesel fuel.



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## Storage

The GATS jar comes packaged in a reusable plastic bag. Save this bag to put the tester into after each use, when it is stored in the cabin during flight.

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## How the GATS Jar Works

### The Screen Separator

The separator screen is made of a material that when coated with petroleum based fuels resists the passage of water through it, but remains no obstacle to the flow of fuel. It is important to tip the tester only far enough to pour fuel out through the bottom screens, but not so far that the liquid level ever goes above the top of the bottom openings. To work properly the separator screen must be coated with fuel *before* it is exposed to water. ***If water should impregnate the screen it must be removed before it can be used for fuel purification.*** To clear the separator screen of water, use a dry absorbent tissue or cloth and wipe the top of the screen surface thoroughly. The separator screen works equally well with jet fuel or AVGAS. The screen mesh also provides particulate debris filtration to approximately 200 microns.

***Warning: If the separator screen is damaged, do not use the tester.***

### Reversible Sump Actuator

The sump actuator is reversible in order to operate all styles of sump valves. The actuator fits in the hole provided, with the slightly curved side of its collar against the inside wall of the separator housing. This registers the actuator probe to its most central position and keeps it from turning while its being used.

### The Liquid Seal

The GATS jar employs an O-ring, which seals between the inside base of the separator top and the mouth of the collection jar to prevent unwanted leakage. This O-ring must be in place to achieve a positive seal. To reinstall the O-ring, place it into the separator top above the threads and flat against the screen partition. So not use any lubricant. Screw the separator top and the collection jar together tight enough to prevent leakage, but not overly tight.

## Testing for Jet Fuel Contamination in AVGAS

The most accurate and reliable method of testing for jet fuel in AVGAS depends on the difference in the way they evaporate. AVGAS evaporates quickly and completely at moderate temperatures leaving no residue. Jet fuel at the same temperature evaporates much more slowly and will leave an oily film.

To test for jet fuel contamination with the GATS jar, coat the separator screen with the fuel sample. This is done when the extracted fuel is returned to the aircraft fuel tank. After emptying the tester turn the screen upright, so it can be blown on gently with one's breath at a distance to avoid breathing in gas fumes. The heat in the exhaled breath will evaporate the AVGAS within roughly 30 seconds regardless of the ambient temperature. AVGAS alone will leave the holes of the screen empty and the screen looking dry. Jet fuel, if present, will remain in some of the screen holes in a random pattern after the AVGAS has evaporated, in approximately the same proportion as the fuel mixture inside the fuel tank. With a little practice as little as 5% jet fuel contamination can be detected with this method, in any environment, and in any season. A safe percentage of jet fuel mixed into AVGAS has never been established. Therefore, if it can be detected, it should be considered too much.

***Warning: Do not use any form of specific gravity testing ball or device for detecting jet fuel contamination in AVGAS with, or within this tester, doing so will void any manufacturer responsibility or warranties stated or implied.***

## Operation

***Note: Catch all fuel samples in the GATS jar. Never discharge fuel from your aircraft onto the ground.***

1. Check the condition of the separator screen for tears, larger than normal holes or damage of any kind.
2. Select the appropriate sump valve actuator tip.
3. Draw, examine and retain all fuel samples in the normal course of the pre-flight inspection, observing colour for proper octane.
4. Check for water sitting on the top surface of the separator screen. Use a by-pass hole to get any excess water droplets inside the separation jar.
5. Clean the top surface of the separator screen with a dry, absorbent tissue or cloth.