

GAMMON CONTAMINATION TEST KITS

Introduction

The ASTM specification for Aviation Turbine Fuels, D1655, calls for the fuel to be ‘visually free of undissolved water, sediment, and suspended matter’, and the standard tests for determining the level of dirt/particulate contamination are ASTM D2276/IP216 and D3830. A known quantity of fuel (normally 5 litres) is passed through standard 37 mm diameter discs of 0.8 micron filter paper under field conditions. The discs are contained in Tenite plastic capsules, or monitors, along with a 34 mm diameter support pad.

The Colormetric test is used as a qualitative assessment of particulate contamination. In this test a single membrane is assembled into the monitor on site, but in a clean area, and after testing it’s colour is rated against a standard scale to identify changes in fuel cleanliness. This test is instant and can be fully completed under site conditions. It is particularly useful in establishing trends in fuel cleanliness, so tested membranes are dried and stored for later comparison.

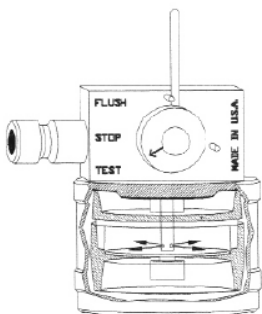
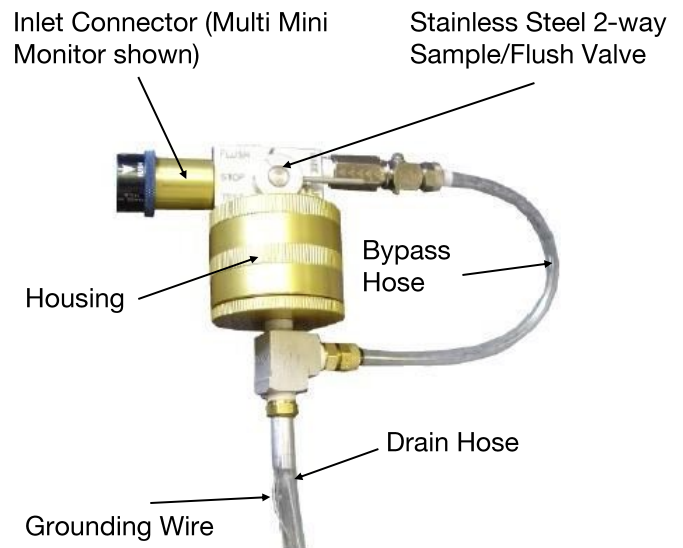
The Gravimetric test is used to give a quantitative assessment of particulate contamination, and in this test two factory matched weight membranes are assembled into the monitor under clean laboratory conditions. After testing the laboratory re-weighs the two membranes and establishes the increase in weight by deducting the weight of the downstream membrane from that of the upstream membrane.



GTP-1172 Mark II

Description

The Mini Monitor kit was developed specifically for aviation fuel testing using standard field monitors. It comprises an Inlet Connector which interfaces with the sampling point in the pipework, a Stainless Steel 2 way valve to control the Flush and Sample operations, a Bypass Hose for flushing the line contents, and a Housing which holds the pre-assembled plastic monitor. Bonding leads and clips are provided to connect to the pipework and container into which the fuel is measured.



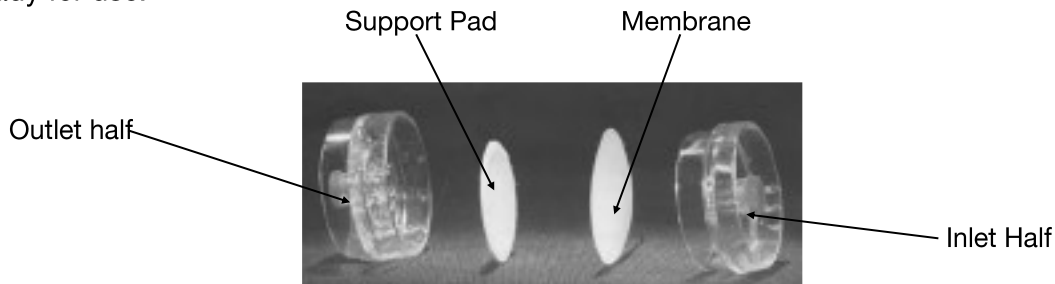
Designed to avoid “white spot”

All previously manufactured test kits, regardless of brand, make a white spot in the centre of the filter membrane if the inlet pressure is high and the fuel sample is contaminated.

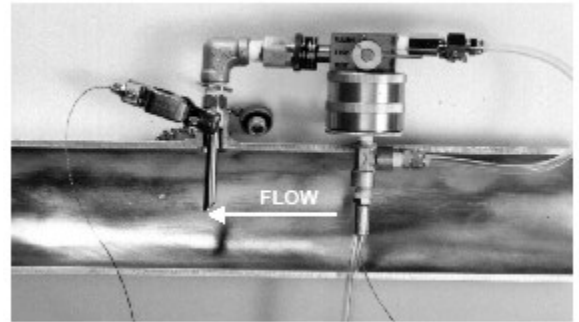
The Mark II version eliminates the white spot by uniformly dispersing the fuel laterally with a new discharge pattern.

Method of Operation

The Gammon Mini Monitor/Multi Mini Monitor uses standard plastic monitors as defined by the ASTM for test method D2276/IP216. The plastic monitor is assembled with the support pad located under the membrane. Use the tweezers to handle the membrane and pad so as not to contaminate them prior to the test. Push fit the inlet and outlet halves of the plastic monitor together and remove the red and blue stopper. Insert the monitor into the housing and screw together hand tight. The loaded plastic monitor is now ready for use.



Before starting set the Valve to STOP. Check the Bypass Hose connections for firm seating. Couple the Inlet Connector to the Sampling Point in the pipework. After checking all connections set the Valve to FLUSH and allow 5 litres (or other specified volume) to collect in a measuring container. Then move the Valve to TEST in order to direct flow through the filter membrane. The test volume is normally 5 litres but depends on local operating regulations, and when the specified volume has been passed through the membrane set the Valve to STOP and disconnect from the Sampling Point. After removal of the membrane and support pad the membrane colour is then rated using the GTP-1074-1 color rating booklet which is included in the kit. The darker the membrane, the dirtier the fuel. Some contracts require the weight of the contaminant to be determined. The same apparatus can be used but arrangements must be made with a laboratory.



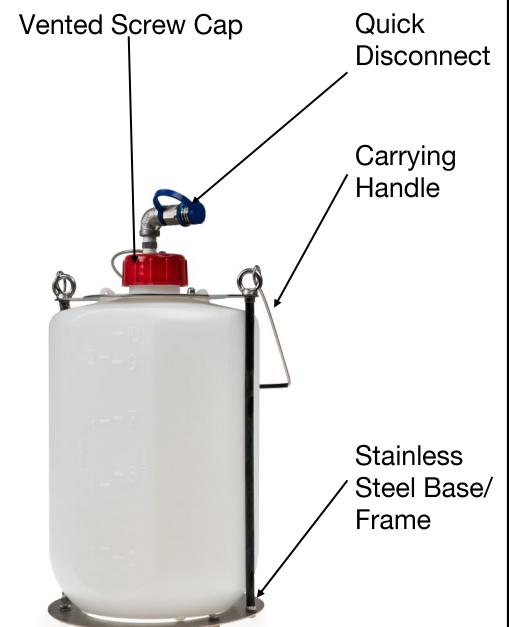
Electrical bonding is a safety requirement of ASTM Method D2276. The bonding and grounding hose assembly clips to the metal measuring container (not shown) and also to pipe fitting as shown in the photograph.

Fuel Sampling Bottle

The traditional method of collecting and measuring the fuel volume which has been flushed or sampled has been to use a graduated Stainless Steel bucket (bonded to the test kit). However, this is not ideal when the fuel has to be processed after completing the test. The fuel can easily spill when the bucket is moved and the bucket is open to the elements and so the fuel may become contaminated (and so not able to be returned to the fuel system). Also, the graduations on Stainless Steel buckets are sometimes not easy to read.

We have a 10 litre graduated, semi transparent, impact resistant Polyethylene Fuel Sampling Bottle to collect, measure and move the fuel in a more user friendly manner. It has a quick disconnect coupling which connects to the Gammon kit drain hose and the fuel level can be seen through the side of the bottle and easily compared with the graduations. The Bottle has a Stainless Steel base and frame which is connected to an internal Stainless Steel grounding wire. The wire collects any static charges inside the fuel itself and allows them to dissipate to ground through the frame and base. The Bottle has an integral Carrying Handle so that it can be easily moved around and a vented screw cap which can be removed to drain the fuel from the bottle.

Fuel Sampling Bottle Part Number: 08PP18569



Gammon Mini Monitor/Multi Mini Monitor Contamination Test Kit

The Gammon Test Kit comes in 2 variants. The Mini Monitor has a male inlet connection and is suitable for use as it stands with the Gammon, Millipore or Snaptite sampling points ONLY. However, the Multi Mini Monitor is intended for locations where a range of different sampling points are in use. It has a female self locking quick disconnect inlet connection and can be fitted with a range of reversible adapters to accommodate the sampling points on site. The available options are shown below.

**GTP-172 Mark II.
Mini Monitor.**
Part Number:
6002017200

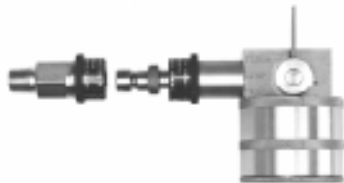


**GTP-1172 Mark II.
Multi Mini Monitor.**
Part Number: 6002117200

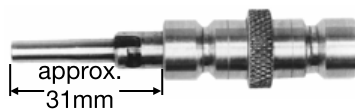


Option A

GTP-988.
Part Number: 6002098800



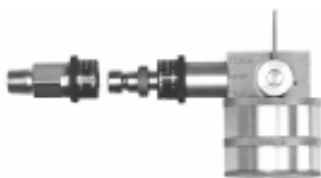
Fits Gammon QD,
Millipore, Snap Tite etc.



Fits Gammon Jet Test QD,
Carter, Parker/Thiem/
Whittaker couplings.

Option B

GTP-988-1.
Part Number: 6002098801



Fits Gammon QD,
Millipore, Snap Tite etc.



Same as GTP-988 except it
fits the short (S) or AH
Models of Gammon Jet Test
QD, Avery-Hardoll couplings.

Option C

Fits Flight Refuelling 4127335 and 4127365
Adapter (Howden Wade/Thermal Controls),
3/4 inch BSPP thread, 26.4mm diameter.
Part Number: 60021170A0



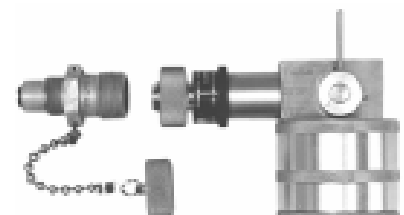
GTP-1170A



Option D

Fits Flight Refuelling 4127320, 4127345 and
4127350 Adapter (Type Shell International), 1/2
inch BSPP thread, 20.9mm diameter.
Part Number: 60021170B0

GTP-1170B



Option E

GTP-988-2.
Part Number: 6002098802



Fits Gammon Jet Test QD.



Fits the short (S) or AH
models of Gammon Jet Test QD.

