



**GAMMON TECHNICAL PRODUCTS, INC.**  
P.O. BOX 400 - 2300 HWY 34  
MANASQUAN, N.J. 08736

PHONE 732-223-4600  
FAX 732-223-5778  
WEBSITE [www.gammontech.com](http://www.gammontech.com)  
STORE [www.gammontechstore.com](http://www.gammontechstore.com)

**MINI & MULTI  
MINIMONITOR®  
INSTRUCTIONS**

**BULLETIN 101  
(04-24)**

## **MINIMONITOR® AND MULTI MINIMONITOR® KIT INSTRUCTIONS**

**DEVELOPED SPECIFICALLY FOR AIRCRAFT FUEL SAMPLING WITH  
STANDARD FIELD MONITORS PER ASTM METHODS D-2276 AND D-3830**

**“SECTION 1: THE SAMPLING  
CONNECTION”**The Sampling Connection

**“SECTION 2: Preparing the MiniMonitor®  
Kit for testing”** for Testing

**“SECTION 3: The Flushing Procedure”**

**“SECTION 4: Contamination Test  
Procedure”**

**“SECTION 5: After-Test Procedure - Safety”**

**“SECTION 6: Evaluation of Test Results”**

**“SECTION 7: Discussion”**

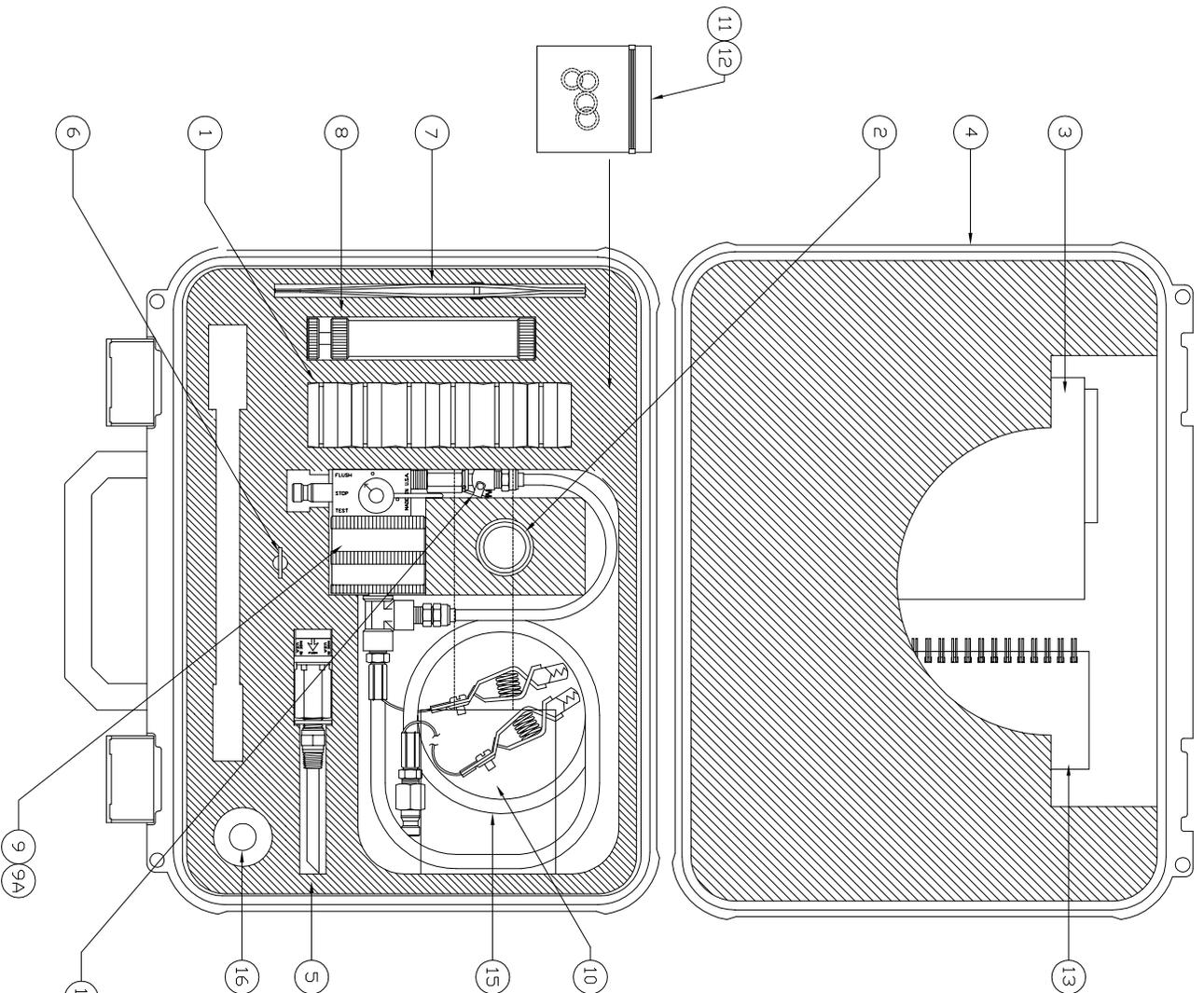


### **RELATED PRODUCTS & LITERATURE**

Bulletin 3 describes sampling kits for permanent installation.

Jet Test QD® coupler (see Bulletin 14) - a miniature quick disconnect suitable for permanent installation on fueling nozzles. Use for performing contamination tests, Aqua-Glo® tests, and to check fuel pressure.

Aqua-Glo Series V water detector kit (see Bulletin 86) - a highly accurate, fast test for the presence of water in aviation fuels. Measures from 1-60ppm.



ITEM	DESCRIPTION	PART NO.	QTY.
1	PLASTIC MONITORS	GTP-8116	6
2	PTFE PIPE SEALANT TAPE	GTP-813	1
3	INSTRUCTION BOOKLET	BULLETIN 101	1
4	CASE	GTP-9466	1
5	SAMPLING KIT WITH PROBE	GTP-KIT #5	1
6	MONITOR OPENING DEVICE	GTP-9182	1
7	TWEEZER	GTP-2099	1
8	SYRINGE	GTP-165	1
9	MINI-MONITOR HOUSING W/ FLUSHING VALVE	GTP-172H	1
* 9A	MULTI MINI-MONITOR	GTP-1172H	1
10	MINI BAGS	GTP-1267-15	1
11	O-RING	GTP-2200-006 V	2
12	D-RING	GTP-2200-012V	2
13	COLOR RATING BOOK	GTP-1074-1	1
14	BY-PASS QUICK DISCONNECT ASSEMBLY	GTP-1250	1
15	BONDING AND GROUNDING HOSE	GTP-1110	1
* 16	COMBINATION ACTUATOR	GTP-988	1

\* - MULTI MINI-MONITOR ONLY

**MINI MONITOR KIT - GTP-172  
AND  
MULTI MINI MONITOR KIT - GTP-1172**

**BEFORE OPERATION**, inspect all components. Replace the bypass hose (GTP-1250) if it shows signs of wear or deterioration. If you observe a leak during operation, repair or replace the leaking hose, seal, or plastic monitor. Do **NOT** seal the large thread between the housing and the bottom cap. If you have a leak in this area, it is caused by either a bad o-ring inside, a worn-out plastic monitor, or the screws that secure the housing to the valve are loose.

## SECTION 1: THE SAMPLING CONNECTION

The most frequent cause of poor results is an incorrect sampling connection. We recommend permanently installed stainless steel connections as described in Bulletin 3.

Keep in mind that any branch connection in a piping system is a perfect **dirt trap** and in the case of a sampling connection, no flow takes place, except when a contamination test is run. Therefore, the internal flow passages must be small in diameter so that a reasonably high velocity will take place while flushing. Metal surfaces must be corrosion resistant so that no rust will be generated in the sampling connection,

If a permanently installed sampling connection is not present where a test is to be run, use the parts from the MiniMonitor® Kit:

1. Install the probe on the sampling kit (5) in a convenient pipe fitting with the FLOW arrow (stamped on one hex flat) pointing in the direction of pipeline flow. Use PTFE pipe thread sealant tape (2). Wrap one layer around the thread, without covering the first few threads. Pull harder and it tears apart at the end of one wrap. Then screw the threaded joint together.
2. After installation, flush the new sampling connection to thoroughly flush all fittings.

## SECTION 2: PREPARING THE MINIMONITOR® KIT FOR TESTING

1. Disconnect the bypass quick disconnect hose assembly at the top of the flushing head.
2. Open the monitor housing (9) by unscrewing the bottom cap.
3. Removed colored plastic plugs from the plastic monitor (1) and install it on the bottom cap of the MiniMonitor® housing. An o-ring in the bottom cap seals around the small hub of plastic monitor. **Be sure the spoked or gridded side of the plastic monitor is towards the bottom cap.**
4. Screw the bottom cap on the monitor housing (9) but be certain that the small o-ring is in position around the short tube in the monitor housing.
5. Now connect the bypass quick disconnect assembly

## SECTION 3: THE FLUSHING PROCEDURE

Although the sampling connection was flushed in Section 1, Step 2, it is necessary to flush the ports in the monitor housing while the piping system is pressurized.

1. Turn the selector valve handle so the arrow points to STOP.
2. Place the end of the bonding and grounding hose (15) in a container such as a metal pail.
3. Attach the clip on the bonding and grounding hose to the pail.

(continued on next page)

(continued from preceding page)

4. Connect the MiniMonitor® to the quick disconnect coupler which is connected to the probe (5).

**NOTE:** Connection to the sampling coupler can be made without risk of spraying fuel by following this procedure:

1. Slide the collar of the coupler all the way, as far as it will go, towards its threaded end. Remember that the collar does not open the internal valve.
  2. Insert the connecting nipple in the open port of the coupler as far as it will go without depressing the internal valve, but continue to hold the collar.
  3. Quickly press the nipple straight in with a force of about 25 lbs. and pull the collar back to its original position. This 25-lb. force causes the internal valve to open.
  4. A dry disconnection can be made by simply depressing the collar while pulling outward on the nipple.
5. Attach the grounding clip from the inlet end of the hose (15) to the pipe fitting where the sample is being taken. Slowly turn the valve to the FLUSH position and allow a minimum of one gallon to pass through.

## **SECTION 4: CONTAMINATION TEST PROCEDURE**

1. Turn the valve to the TEST position to allow fuel to pass through the membrane in the plastic monitor. Various specifications require different amounts of fuel to pass through the membrane. We recommend three gallons but if a different volume is used, it must always be the same amount if results are to be comparable.
2. Turn the valve to the STOP position, release the quick disconnect, and follow the procedure recommended in Section 5, below.

## **SECTION 5: AFTER-TEST PROCEDURE - SAFETY**

When the MiniMonitor® is disconnected, **DO NOT** remove the bottom cap for five minutes to allow static charges to dissipate. At least one major oil company has adopted this practice on a worldwide basis. Accidents are extremely rare, but we know of at least three fires caused by arcing when the two halves of a monitor housing have been separated.

1. When the plastic monitor has been removed from the housing, place it with the spoked or gridded side toward the tubular fitting on the side of the syringe (8). Press it firmly in place, making certain that the syringe handle is first pressed all the way in.
2. Pull outward on the syringe handle one time only to extract fuel from the plastic monitor. Remove the plastic monitor and push the handle in again to expel the fuel into a safe container.
3. Additional extractions can be made if desired, but the plastic monitor must be removed each time to expel fuel.
4. Replace the colored plastic plugs.

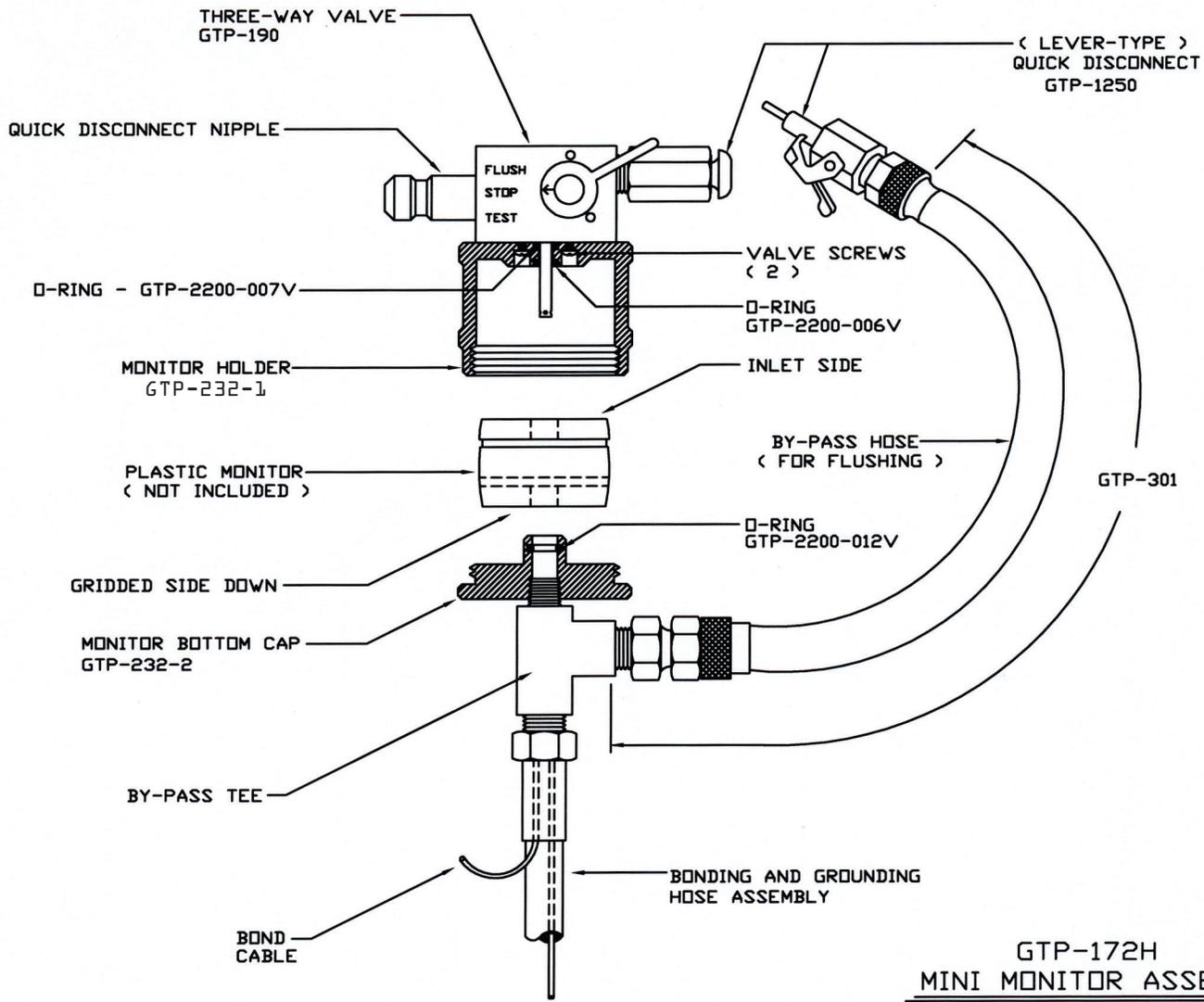
## SECTION 6: EVALUATION OF TEST RESULTS

The evaluation of results should be in accordance with one of the procedures in ASTM D2276/IP 216 and D3830.

- If the COLOR METHOD is to be used, open the plastic monitor by inserting and twisting the plastic monitor key (12) in the groove on the quick disconnect. Invert the holder onto a paper towel to free the membrane and discard the backing pad. Use tweezers (13) and compare the color of the thin membrane with the ASTM color standard chart (22). Report the color rating, volume throughput, and state whether evaluated wet or dry. A dry rating is preferred.
- If a GRAVIMETRIC determination is to be made, the membrane must be pre-weighed on a laboratory balance and then weighed again after the test in strict accordance with ASTM procedures.
- If MATCHED WEIGHT plastic monitors are used, there will be two membranes of equal weight in the plastic monitor. Pre-weighing is unnecessary. A laboratory simply weighs both membranes after the test and reports contamination as the difference in weight between the top and bottom membranes. ASTM procedures must be followed.

## SECTION 7: DISCUSSION

- Before replacing components of the MiniMonitor® Kit in the carrying case, force all fuel out of the syringe by operating it through several strokes.
- For best results, maintain constant flow in the piping system being tested. Never move upstream valves during a test.
- If system pressure is very low, the test can be accelerated by partially closing a valve downstream of the sample point.
- The standard test membrane for testing kerosene fuels has a pore size of 0.8 microns.
  - GTP-1983 includes a package of 100 membranes and 100 support pads.
  - GTP-1985 includes a box of 48 pre-loaded plastic monitors ready to use.
- The color chart for Method D3830 can be obtained from us by specifying GTP-1074-1. This is now included in the kit. See Bulletin 133 for SGTP-3940 color chart.



FIELD MONITOR ASSEMBLY

