

Wyatt COMET® Hardware Manual

The instructions are divided into three categories: Connections, Basic Usage, and Maintenance. They apply to both the miniDAWN as well as the EOS COMET Assemblies. The electronics box is common to both, as is the RF Cable (214016).

Connections

1. Clean the top surface of the glass portion of the flow cell with small 1/8" Q-Tip and alcohol. Also clean the top of the flow cell manifold and the top of the read head where the Cell Cleaner Assembly will mount.
2. Align the cell cleaner assembly's plunger assembly longitudinally to chromatography's fitting holes, as shown in Fig. 1.
3. Gently clean the bottom surface of the plunger assembly with a tissue and alcohol. Apply a very thin layer of silicone (high temperature) grease to the bottom surface of the plunger assembly, making sure it covers the entire surface, see Fig. 1.
4. Make sure the top of the read head is clean as well as the top of the flow cell manifold and the top glass portion of the flow cell. Position the cell cleaner assembly on top of the EOS or miniDAWN read head and secure with four M3 Screws.
5. Connect the electronics box to a 100VAC or 220VAC outlet and connect the 6' RF cable to the box and to the cell cleaner assembly, using the right angle connector at this end, Fig. 3.

Basic Usage

1. Modes of operation:
 - *Power On* – Electronics Box Power On, Sonicator OFF, Standby mode
Front panel light = *orange*
 - *Sonicating* – Electronics Box Power On, Sonicator ON, Cleaning mode
Front panel light = *green*
 - *Bad Connection* – Electronics Box Power On, Sonicator ON, Operating mode indicates bad RF cable connection or malfunctioning Cell Cleaner Assembly.
Front panel light = flashing *orange/green*.
 - *Off-Vapor Alarm* – Electronics Box Power On, Sonicator OFF, Standby mode indicates a vapor alarm input (vapor interlock) was detected shutting off the Operating mode.
Front panel light = *red*

Note: When the vapor alarm input terminates the unit will go into the *Power On mode*
2. Turn ON the power switch at the rear of the Electronics Box and the front panel light will glow *orange*. Depress the front panel switch once and Sonicating will begin indicated by the light turning *green*. If the light flashes *orange/green*, the RF cable is improperly connected, the Cell Cleaner Assembly, or RF cable is malfunctioning. Since power is applied during this mode the problem should be resolved before further operation is continued.
3. The Sonicator will run uninterrupted for a period of 2-hours, and then automatically switch to the *Power On* mode (Sonicator OFF). Sonication can be manually shut OFF any time by depressing the front panel switch, and restarted, again, by depressing this switch.
4. A vapor interlock connector is provided on the rear panel which will turn off the Sonicator if pins 1 and 3 are shorted, or a TTL level LOW is applied at pin 3 with respect to pin 1, see Fig. 2. This connector is designed to directly connect to the Dawn EOS rear panel VAPOR INTERLOCK output, with an interface cable. If the vapor interlock is activated (pins 1 to 3 shorted, or pin 3=TTL LOW), the front panel light will turn *red* during the activation, the unit will immediately stop cleaning and go into the standby mode. After the detection has stopped, the front panel light will turn orange and further cleaning must be initiated by again depressing the front panel switch.

Maintenance

1. It is recommended that the Cell Cleaner Assembly be cleaned approximately every 400 hours of operation. The Cell Cleaner Assembly needs to be removed from the read head, and the 4 top cover screws removed. All the pieces inside the Assembly, including the assembly housing, should be removed and Sonicated in isopropyl, then reassembled in a clean environment, see Fig. 4a and 4b.
2. Neither Electronics Box nor the RF Cable should require maintenance.

