Additional methods of maintenance beyond those prescribed by the manual for the R&P Partisol Plus Model 2025 Sequential Air Sampler.

When operating the R&P Partisol Plus Model 2025 Sequential Air Sampler (herein referred to as R&P Sequential or "sampler"), it is necessary to adhere to procedures prescribed by the operating manual for consistent and correct operation. This write-up will suggest additional measures that one may take in order to further insure proper operation and provide more preventative maintenance.

It is important that the operator be familiar with the characteristics of their monitor both in terms of programming and in a mechanical sense. Every individual sampler should always be as current, or updated, as possible. The operator should be aware of issues concerning their sampler model and should watch out for parts or software upgrades from the manufacturer. These upgrades may correct or improve the functional capability of the sampler, likely making the sampler easier to operate and maintain. Beyond software and parts improvement by the manufacturer, it is the operators responsibility to stay on top of what consumables and equipment they might need and the time tables set forth for the proper upkeep of the monitor. In most every case, the time table for inspection and maintenance is directly from, or derived from the U.S. EPA 2.12 Quality Assurance Handbook, Section 8.

Additional Maintenance Recommendations:

The first recommendation to made is that operators with internet access should go to the R&P website at http://www.rpco.com and request for access to the customer area of the website, which requires a username and password, by emailing R&P at info@rpco.com .
Inside the customer area is all the update information, technical notices, and other information pertaining to their instrumentation.

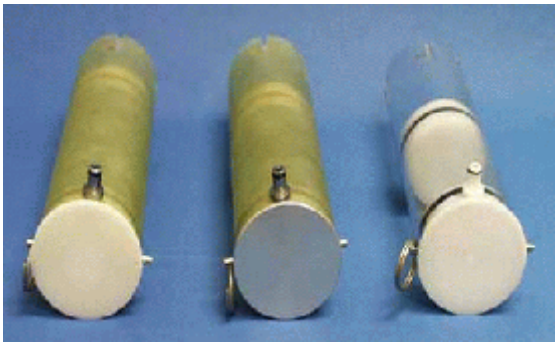
Another valuable resource for sampler operators is the U.S. EPA website called the Ambient Monitoring Technology Information Center (AMTIC), located at http://www.epa.gov/ttn/amtic/. AMTIC contains information and files on ambient air quality monitoring programs, details on monitoring methods, relevant documents and articles, information on air quality trends and non-attainment areas, and federal regulations related to ambient air quality monitoring. Specifically, the PM2.5 forum provides a place where operators may post observations, opinions, and questions (and answers) for the whole monitoring community to respond to, in regard to most any PM2.5 issue.

Please note that in this write-up, any reference to a particular problem (or lack of reference) does not indicate that the problems in question or other problems have not been identified and addressed by the vendor.

Filter Cassette Magazine : The filter cassette magazine should be the most current type available. According to the R&P website, the latest style of filter magazine was set forth in February of 1999, and magazines should be made of green translucent (not clear) material with a silver, aluminum bottom manifold. The older magazines had a clear tube and a white plastic bottom manifold and will be exchanged free of charge by R&P (See Figure 1 below). When changing out magazines, take note of

the condition of the o-rings, looking for wear and tear, on the bottom manifold where the pneumatic tubing attaches.

Figure 1. Compares newest magazine style (center) to older versions of filter magazines (left and right).



Filter Cassette : Filter cassettes are to be inspected for contamination and damage prior to installation into the sampler cassette magazine. It may also be necessary to ensure that the cassette is firmly compressed or assembled, as a loose top may mean that the cassette is thicker (in the vertical sense), and may not pass as easily through the filter cassette exchange mechanism.

O-Rings and "V" seals : They are to be checked at least monthly. It is a good idea to check o-rings and v-seals whenever a WINS is changed or any other time that these parts are exposed, for cracks, damage, or dirtiness. The o-rings may be lightly greased (at operators discretion) when they appear dry, but not cracked, or when connecting parts do not assemble very easily. The lubricant recommended is a high vacuum grease, applied sparingly. The v-seals (there are 3 seals) also need to be checked for cracking, damage, and dirtiness. These seals may wear out faster than o-rings, since they are subjected to more movement by the passage of cassettes through the filter exchange assembly and from the exposure due to removal of the WINS assembly (see Figure 2 below).
The operator needs to watch for cracks and for "flashing" or particles on the seals. If cracks are observed the seal should most likely be replaced. If flashing is observed, the operator may want to clean the seal with a lint-free alcohol wipe or swab. It has been noted that some operators have decided on replacing all seals on an annual basis.

Figure 2. Top v-seal exposed when the top hatch is opened. The top v-seal covers the top of the WINS.

Other miscellaneous suggestions:

- It is a good idea to regularly check all outside parts of the sampler, such as hinges (Figure 3), handles, latches (Figure 4), etc. for weathering and wear, as these parts may eventually crack or rust, and will need to be replaced.

Figure 3.

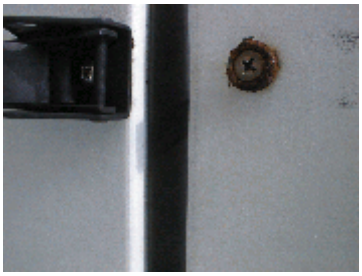


Figure 4.

- All samplers should be secured to their location so that in the event of being bumped, hit, or subjected to severe weather (high winds), the sampler will not tip over and cause damage.

- The operator needs to check at least semi-annually on the moving parts of the filter exchange mechanism, particularly the cassette push-rod, which may rust over time with exposure to moisture. A rusty rod may prevent proper filter exchange. The operator also needs to check that all the pneumatic tubing from pump to filter exchange mechanism and vacuum tubing from main pump to filter exchange mechanism fit snugly to their respective ports (see Figure 5).

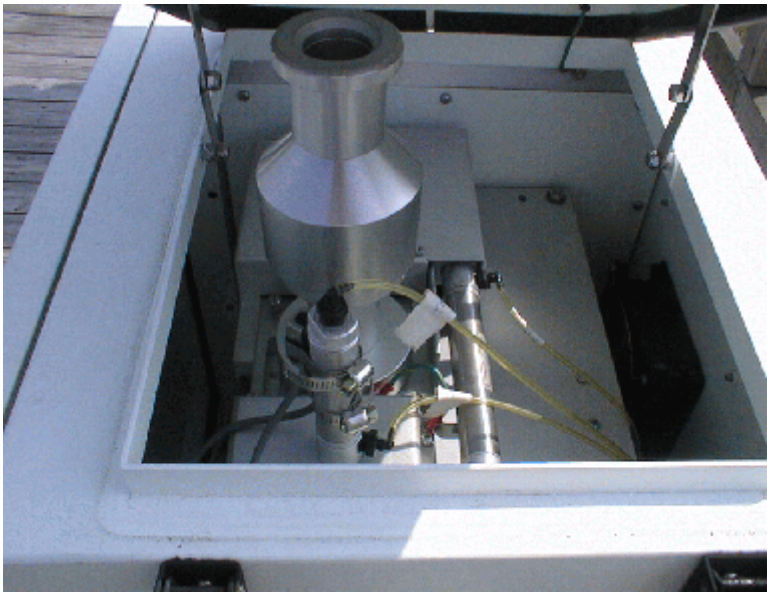


Figure 5. Showing the top of the filter exchange mechanism. Note the pneumatic tubing connected in the center of the mechanism and strung down to the bottom right.