

Technical Bulletin

Inlet Cleaning & Maintenance US EPA PM10 VSCC (very sharp cut cyclone)

Bulletin # TS0065**Rev 06/2016**

The purpose of this Technical Bulletin is to describe the periodic maintenance procedures that should be performed on the inlet assemblies and inlet tubing to ensure optimal performance. Since usage and environmental conditions vary greatly, you should inspect the components frequently until an appropriate maintenance schedule is determined.

US EPA PM10 INLET

PN. 57-000596



PM2.5 VSCC (VERY SHARP CUT CYCLONE)

PN. 57-008740

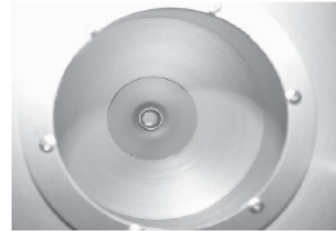


Cleaning schedules and routine maintenance of assembly components should be in accordance with a good quality assurance plan. To clean the unit you will need an ammonia-based general purpose cleaner, cotton swabs, a small soft-bristle brush, paper towels, distilled water, silicone-based stopcock grease, a small screwdriver, a small adjustable wrench. The inlet assemblies should be cleaned with a mild soap solution, a thorough rinsing, and dried with a lint free cloth. If any impaction surfaces require impactor grease, it should be applied prior to reassembly. Furthermore, a general inspection, and replacement as necessary, of o-rings should be done.

PM10 Inlet Cleaning

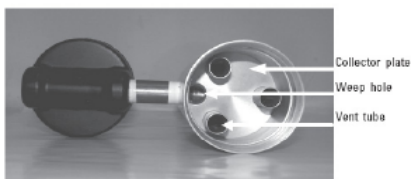


Separate body from
impaction chamber

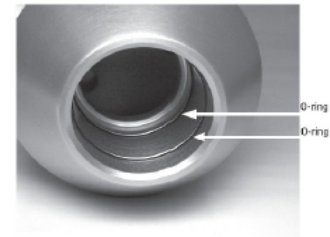


Remove the inlet plates
and clean screen

Wipe out inside of body



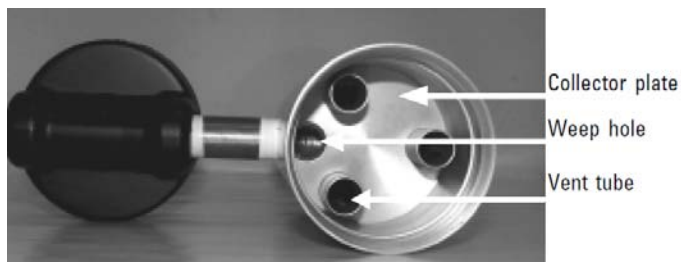
Clean impaction
chamber, impaction
plate and raised tubes



Check all orings and seals

U.S. EPA PM10 Inlet

- The rain jar (**PN. 32-000625**) located on the PM10 inlet should be inspected at least every five sampling days. Remove any accumulated water, clean the interior of the bottle, inspect the seals (**22-000648**), and replace the bottle in the holder.
- Unscrew the top acceleration assembly from the lower collector assembly mark the top plate deflector cone and lower plate with a pencil to facilitate proper orientation when reassembling
- Clean the insect screen (**38-004866**) with brush & water then dry.
- Using a general-purpose cleaner and paper towel clean the deflector cone on the inside of the top plate.
- Clean the internal wall surface of the acceleration assembly. Ensure the acceleration nozzle is clean. If not, use a cotton swab and cleaner to remove any contamination.
- Inspect the large diameter, impactor nozzle O-ring (**22-000485-1036**) for damage or wear. Replace it, if necessary. Apply a thin film of silicone grease to the O-ring. Also, apply a light coating of silicone grease to the aluminum threads of the upper acceleration assembly.
- Using a general-purpose cleaner with a paper towel, clean the collector assembly walls and plate. Most of the contamination in the inlet is usually found on the collector plate.



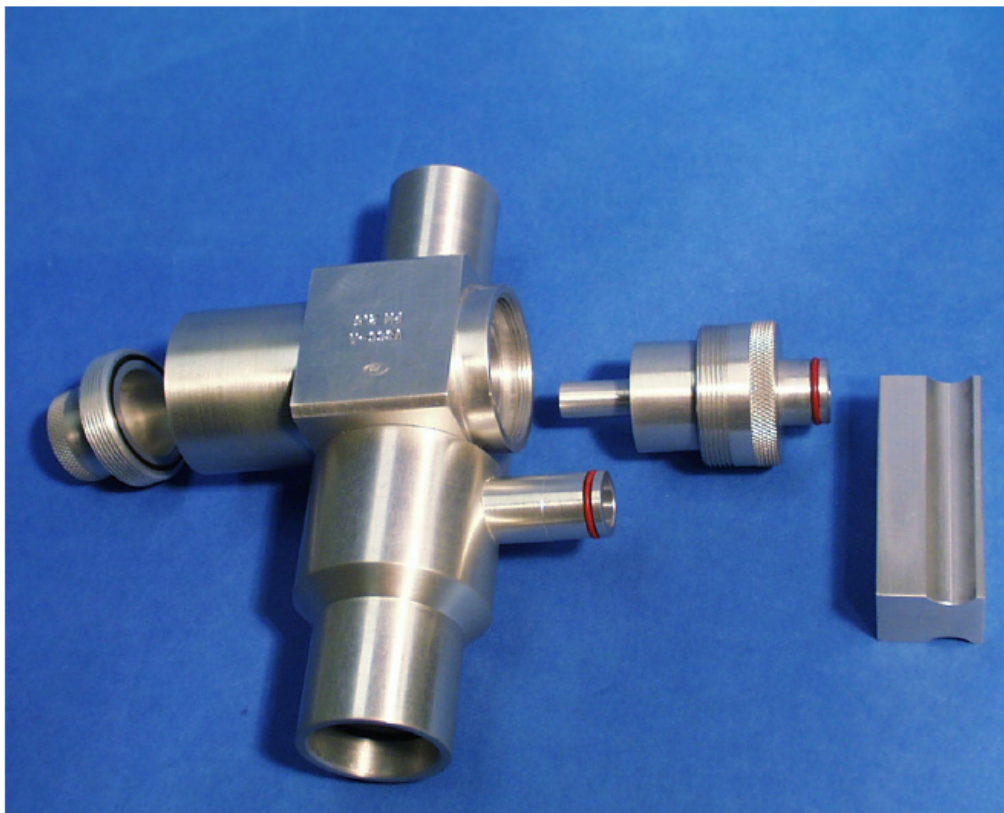
- Clean the three vent tube. You may need to use a cotton swab to clean these vent tubes.
- Clean the bottom side of the collector assembly. Inspect the two inlet tube-sealing O-rings (**22-002853-3026**) for damage or wear. If necessary, replace the O-rings.
- Clean the weep hole in the collector plate where the moisture runs out to the moisture trap.
- Apply a light coating of silicone grease to the O-rings to ensure that a seal is made when they are reinstalled on the flow splitter.
- Clean the lower collector assembly's threads to ensure a tight seal when the two halves are reassembled.
- Reassemble the top and bottom inlet assemblies until the threads tighten. Hand-tighten only.
- Reinstall the insect screen and align the top plate markings with the lower plate markings. Install the top plate onto the lower plate and tighten the four pan-head screws.
- Place a light coating of silicone grease on the gasket inside the cap of the rain jar. This will ensure a leak-free fit. Reinstall the rain jar.
- Place the inlet on the flow splitter. Take care not to damage the internal O-rings.

The sampler inlet should be dismantled and cleaned. Mark each assembly point of the sampler inlet with a pen or pencil to provide reference marks during reassembly. If the assembly screws are frozen, apply penetrating oil or commercial lubricant to make removal easier. Clean all interior surfaces and the bug screen with a general purpose cleaner or compressed air, paying particular attention to small openings and cracks. Cotton swabs and/or a small brush are helpful. Completely dry all components.

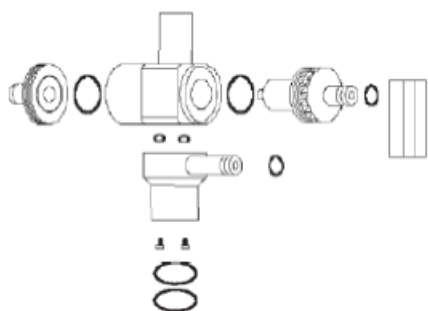
Also check the O-rings for distortion, cracks, fraying, or other problems and replace as necessary. Apply small amounts of grease to the rings before assembling the unit.

Reassemble the unit in accordance with the previously scribed match marks. Particular care should be taken to ensure that all O-ring seals are properly seated and that all screws are uniformly tightened.

Very Sharp Cut Cyclone (VSCC) Inlet Cleaning



- VSCC Seal Package PN: 59-008986
- Adapter Seal/Lower Sampling Seal PN: 22-005957
- Upper Sampling Seal PN: 22-010318
- Rev B Exit O-Ring PN: 22-005564-6328



- Remove the VSCC from its installed position in the instrument.
- Pull off the side transfer tube. If it is too tight to remove by hand, pry it off with a rigid plastic lever.
- Care should be taken to not damage the two “O” ring seals.
- Remove the top cap and grit pot by unscrewing.
- Wet a lint free wipe with water and remove all visible deposits. These are most likely to be found at the bottom of the cone and inside the grit pot.
- Inspect all “O” rings for shape and integrity. If at all suspect, replace.

Lubricate all “O” rings with light grease. It is important to well lubricate the transfer tube to avoid difficult disassembly.