

Operating Principle

During normal operation, the inlet sump (sand trap) separates pollutants by gravity and buoyancy. Coarse sediment, sand, and grit settle into the removable sediment tray and the sump beneath it, while floatable pollutants such as litter, leaves, organic matter, oils, and hydrocarbons remain on the water surface. The relatively cleaner water between these two layers flows beneath the outlet baffle and discharges through the outlet pipe.

This process creates three distinct treatment zones within the inlet sump:

Upper Zone: Floating pollutants, including litter, leaves, organic debris, oils, hydrocarbons, and other gross pollutants.

Middle Zone: A relatively clean water layer that flows beneath the outlet baffle and into the outlet pipe.

Lower Zone: Settled sediment, sand, and grit retained within the removable silt tray and, over time, within the sump beneath and around the tray.

Over time, fine sediment will gradually migrate through the clearance gap around the removable silt tray and accumulate in the sump. Routine maintenance should therefore remove pollutants from all three zones to ensure the catch basin continues to operate as designed.

1. Preparation

- Wear appropriate personal protective equipment (PPE).
- Isolate the work area using suitable barriers and warning signage where required.
- Ensure safe access to the inlet sump.
- Assemble the required maintenance equipment, including grate lifting keys, skimming net, oil absorbent pads, vacuum unit or sludge pump, nylon brush, and suitable waste containers.

2. Remove the Grate

- Remove the stainless steel grate.
- Carefully place the grate on a clean, stable surface to prevent damage.

3. Remove Surface Floatables

- Before removing the sediment tray, remove all floating contaminants from the water surface like leaves, litter, plastics, and other floating debris using a skimmer or scoop.
- Remove any oil or hydrocarbon sheen using approved absorbent pads.
- Dispose of all recovered material in accordance with local environmental regulations.

4. Remove and Clean the Sediment Tray

- Carefully lift the removable sediment tray vertically from the inlet sump.
- Empty all accumulated sediment, sand, gravel, leaves, and debris into an approved waste container.
- Wash the tray with clean water and, if required, a mild pH-neutral detergent suitable for stainless steel.
- Remove compacted deposits using a nylon brush or non-metallic scraper.

5. Clean and Inspect the Inlet Sump

Although the removable sediment tray captures most coarse sediment, fine sediment will gradually migrate through the clearance gap around the tray and settle in the sump beneath it.

- Remove all accumulated sediment and debris from the sump, around the perimeter of the sediment tray, and from the outlet area using a vacuum unit, sludge pump, scoop, or shovel.
- Inspect the outlet pipe and remove any obstructions that may restrict flow.
- An inspection cover is provided on the outlet baffle to allow access to the outlet pipe for clearing blockages. If this cover is removed during maintenance, it must be correctly refitted and securely fastened before the inlet sump is returned to service.
- Failure to reinstall the inspection cover will create a bypass around the outlet baffle, allowing floating debris, hydrocarbons, and other pollutants to pass directly into the stormwater drainage system, rendering the inlet sump ineffective.
- Inspect the outlet baffle, inspection cover, and all stainless steel components for damage, excessive wear, or loose fasteners.

6. Flush the Inlet Sump

- Flush the inlet sump with clean water.
- Verify that water flows freely through the outlet without restriction.
- If drainage is restricted, investigate and clear any downstream pipework blockages before returning the inlet sump to service.

7. Reassemble

- Reinstall the cleaned sediment tray, ensuring it is fully seated and level on its support ledges.
- Refit the stainless steel grate and secure any locking devices or fasteners where applicable.

8. Final Inspection

Confirm that:

- The sediment tray is correctly installed.
- The outlet baffle inspection cover is securely refitted.
- The grate is properly seated and secure.
- The inlet sump is free from sediment and debris.
- Water drains freely through the outlet.
- All waste has been removed from the work area and disposed of in accordance with local environmental regulations.

Maintenance frequency should be determined by site conditions and sediment loading.

Regular removal of floating debris, accumulated sediment within the tray, and fine sediment from the sump beneath the tray will ensure optimum hydraulic performance, maximise pollutant retention, and maintain the effectiveness of the inlet sump throughout its service life.

