HydroGuard Stormwater Treatment Systems

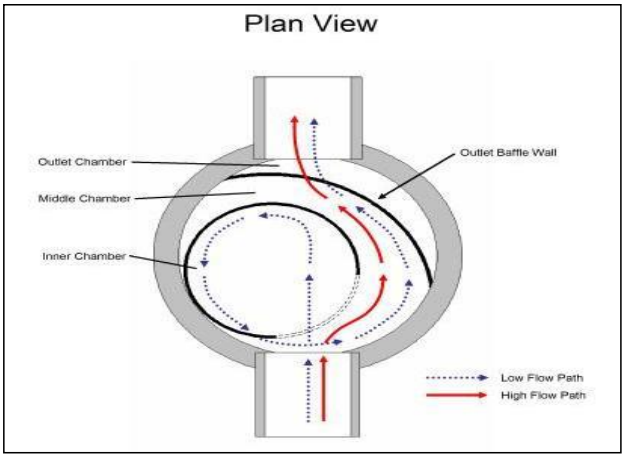
The Hydroworks Hydroguard (HG) separator is an innovation in oil/grit separator design. The HG separator removes suspended solids, oil, and trash from storm water runoff. It is unique since it treats both low and high flows, but in separate treatment areas. This allows the HG separator to treat higher flows but also minimize scour and resuspension of previously captured fines. It is the only design on the market that recognizes the need to treat low flows differently from higher flows since the transport and pollutants of concern vary with flow rate.

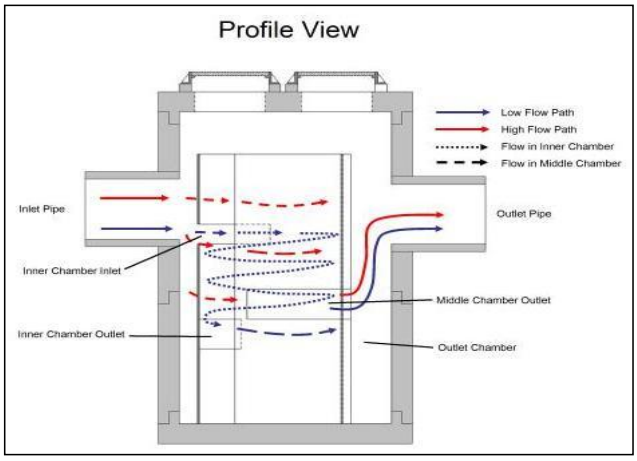
Designed with the ultra-urban environment in mind, the HG series offers many benefits to urban planners and civil engineers:

- Small footprint minimizing conflicts with other utilities
- Supports Smart Growth principles since the HG is installed underground maximizing development density
- Easily maintained once per year for typical applications
- Minimal elevation difference between inlet and outlet pipe
- Sized based on local hydrology and continuous simulation
- Technical support to assist with design and approval issues
- Treats both low and high flows
- Separate low flow path minimizes scour potential at high flows
- Removes trash, oil spills and suspended solids
- Lower cost compared to similar structural BMPs

Typical applications where the HG series would be used include:

- Parking lots
- Gas stations
- Roads/Highways
- Transfer stations
- Industrial sites





Under normal or low flows, water is conveyed into the inner chamber by momentum. Since the inner chamber is offset to one side of the structure the water strikes the wall of the inner chamber at a tangent creating a vortex within the inner chamber. The vortex motion forces solids and floatables to the middle of the inner chamber. The water spirals down the inner chamber to the outlet of the inner chamber which is located below the inlet of the inner chamber and adjacent to the wall of the structure but above the floor of the structure. Floatables are trapped since the outlet of the inner chamber is submerged. The design maximizes the retention of solids since solids are forced to the center of the inner chamber by the vortex motion of water while the outlet of the inner chamber draws water from the wall of the inner chamber.

The water leaving the inner chamber continues into the middle chamber, again at a tangent to the wall of the structure. The water is then conveyed through an outlet baffle wall (high and low baffle). This enhances the collection of any floatables or solids not removed by the inner chamber. Water flowing through the baffles then enters the outlet chamber and is discharged into the downstream storm drain.

During high flows, the flow rate entering the inner chamber is restricted by the size of the inlet opening to the inner chamber. The flow control minimizes the potential for the scour and resuspension of solids from the inner chamber during periods of high flow. The excess flow is conveyed directly into the middle chamber where it receives treatment for floatables and solids via the baffle system. This treatment of the higher flow rates is important since trash and heavier solids are typically conveyed during periods of higher flow rates. The Hydroworks HG separator is revolutionary since it incorporates low and high flow treatment in one device while maintaining separate low and high flow paths to prevent the scour and resuspension of fines.

Contact the Con Cast Pipe Sales Team for more information about the Hydroguard Product Line