

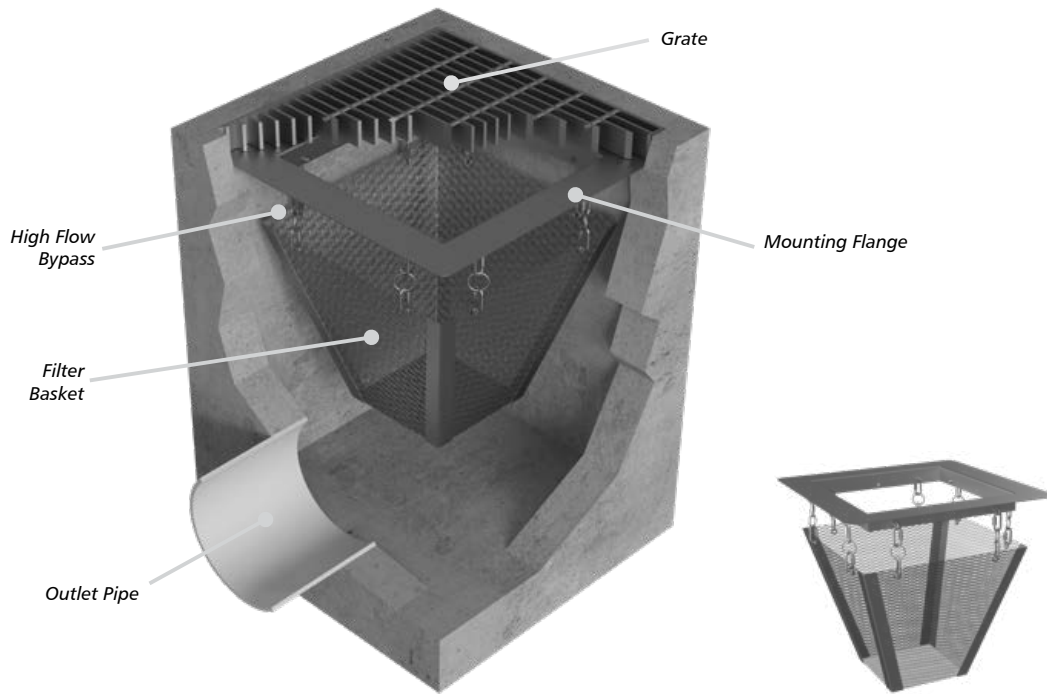
Bio Clean<sup>®</sup> Grate Inlet Filter  
Full Capture Type  
Operation & Maintenance Manual



## Operation & Maintenance

Contech's Bio Clean® Grate Inlet Filter is a stormwater catch basin filter designed to remove trash, debris, sediments, particulates, and hydrocarbons (with hydrocarbon boom add-on). Constructed of 100% stainless steel, the filters are available at various sizes and depths, allowing them to fit in any grated catch basin inlet. The heavy duty construction allows for cleaning with any vacuum truck. The filter can also easily be cleaned by hand.

As with all stormwater BMPs, inspection and maintenance on the Grate Inlet Filter is necessary. Stormwater regulations require BMPs be inspected and maintained to ensure they are operating as designed to allow for effective pollutant removal and provide protection to receiving water bodies. It is recommended that inspections be performed multiple times during the first year to assess site-specific loading conditions. This is recommended because pollutant loading can vary greatly from site to site. Variables such as nearby soil erosion or construction sites, winter sanding of roads, amount of daily traffic, and land use can increase pollutant loading on the system. The first year of inspections can be used to set inspection and maintenance intervals for subsequent years. Without appropriate maintenance, a BMP can exceed its storage capacity which can negatively affect its continued performance in removing and retaining captured pollutants.



*Filter Diagram*

## Inspection Equipment

Following is a list of equipment to allow for simple and effective inspection of the Grate Inlet Filter:

- Contech Inspection Form (page 7 of this O&M Manual).
- Manhole hook or appropriate tools to remove access hatches and covers.
- Appropriate traffic control signage and procedures.
- Protective clothing and eye protection.
- Note: entering a confined space requires appropriate safety procedures, PPE, and certification. It is generally not required for routine inspections or maintenance of the system.



## Inspection Steps

The core to any successful stormwater BMP maintenance program is routine inspections. The inspection steps required on the Grate Inlet Filter are quick and easy. As mentioned above the first year should be seen as the maintenance interval establishment phase. During the first year more frequent inspections should occur in order to gather loading data and maintenance requirements for that specific site. This information can be used to establish a base for long-term inspection and maintenance interval requirements.

The Grate Inlet Filter can be inspected through visual observation without entry into the catch basin. All necessary pre-inspection steps must be carried out before inspection occurs, such as safety measures to protect the inspector and nearby pedestrians from any dangers associated with an open access hatch or manhole. Once the manhole has been safely opened the inspection process can proceed, as follows:

- Prepare the inspection form by writing in the necessary information including project name, location, date & time, unit number and other details as noted (page 7 of this O&M Manual).
- Observe the inside of the catch basin through the manhole. If minimal light is available and vision into the unit is impaired utilize a flashlight to see inside the catch basin.
- Look for any out of the ordinary obstructions in the catch basin, trough, weir, filter basket, basin floor or outlet pipe. Write down any observations on the inspection form.
- Through observation and/or digital photographs estimate the amount of trash, foliage and sediment accumulated inside the filter basket. Record this information on the inspection form.
- Observe the condition and color of the hydrocarbon boom. Record this information on the inspection form.
- Finalize inspection report for analysis by the maintenance manager to determine if maintenance is required.

## Maintenance Indicators

Based upon observations made during inspection, maintenance of the system may be required based on the following indicators:

- Missing or damaged internal components.
- Obstructions in the filter basket and/or its bypass.
- Excessive accumulation of trash, foliage and sediment in the filter basket. Maintenance is required when the basket is greater than half-full.
- The following chart shows the 50% and 100% storage capacity of each filter height:

Basket Model	Height <sup>1</sup> (inches)	Top Width (inches)	Top Length (inches)	Bottom Width (inches)	Bottom Length (inches)	50% Storage Capacity (CF)	100% Storage Capacity (CF)
BC-GRATE-FULL-12-12-12	6.00	10.00	10.00	8.31	8.31	0.15	0.30
BC-GRATE-FULL-18-18-12	6.00	15.00	15.00	12.50	12.50	0.33	0.66
BC-GRATE-FULL-24-24-12	6.00	20.00	20.00	16.69	16.69	0.59	1.18
BC-GRATE-FULL-24-24-24	18.00	20.00	20.00	10.00	10.00	1.22	2.44
BC-GRATE-FULL-24-40-12	6.00	20.00	30.00	16.69	25.00	0.88	1.76
BC-GRATE-FULL-24-40-24	18.00	20.00	30.00	10.00	15.00	1.82	3.64
BC-GRATE-FULL-36-36-24	18.00	30.00	30.00	15.00	15.00	2.73	5.46

*1 Refers to basket height. Total system height is equal to basket height plus 6 inches for bypass.*

## Maintenance Equipment

Following is a list of equipment to allow for simple and effective maintenance of the Grate Inlet Filter. It is recommended that a vacuum truck be utilized to minimize the time required to maintain the Grate Inlet Filter, though it can easily be cleaned by hand.

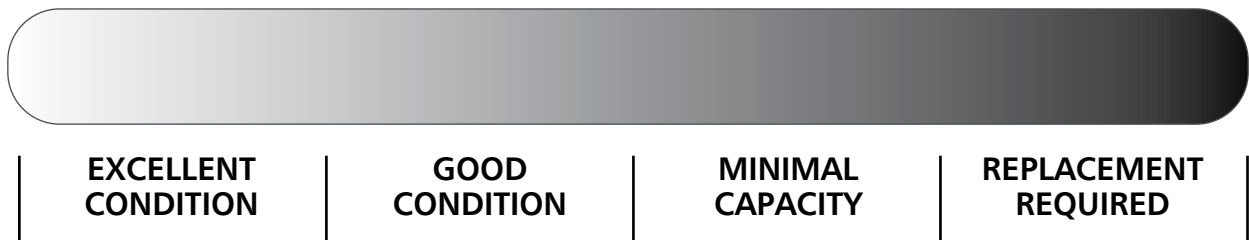
- Contech Maintenance Form (page 7 of this O&M Manual).
- Manhole hook or appropriate tools to access hatches and covers.
- Appropriate safety signage and procedures.
- Protective clothing and eye protection.
- Small or large vacuum truck (with pressure washer attachment preferred).
- Note: entering a confined space requires appropriate safety procedures, PPE, and certification. It is generally not required for routine maintenance of the system.

## Maintenance Procedures

It is recommended that maintenance occurs at least two days after the most recent rain event to allow debris and sediments to dry out. Maintaining the system while flows are still entering it will increase the time and complexity required for maintenance.

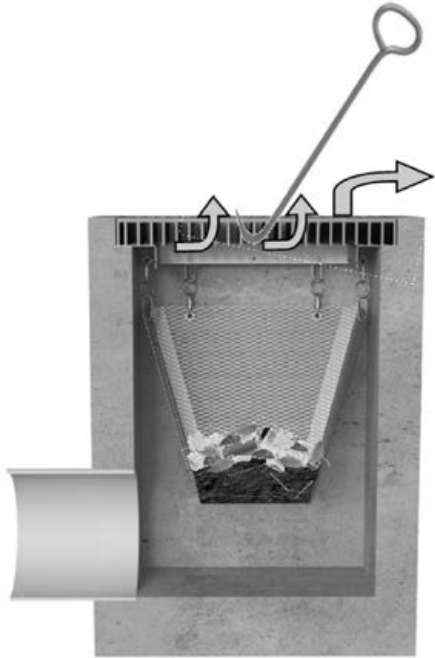
Cleaning of the Grate Inlet Filter can be performed from finish surface without entry into catch basin utilizing a vacuum truck. Some unique and custom configurations may create conditions which would require entry for some or all of the maintenance procedures. All necessary pre-maintenance steps must be carried out before maintenance begins, such as safety measures to protect the maintainer and nearby pedestrians from any dangers associated with an open access hatch or manhole. Once the manhole has been safely removed, the maintenance process can proceed:

- Inspect the Grate Inlet Filter as detailed under Inspection Steps above (page 3 of this O&M Manual).
- Using an extension on a vacuum truck, position the hose over the opened catch basin. Insert the vacuum hose down into the filter basket and suck out trash, foliage, and sediment. Pressure wash the sides and bottom of the filter basket to remove any stuck debris.
- Remove the optional hydrocarbon boom that is attached to the inside of the filter basket (if present). The hydrocarbon boom is fastened to vertical rails on two opposite sides of the basket. Assess the color and condition of the boom using the diagram below. If replacement is required, install and fasten on a new hydrocarbon boom. Booms can be ordered directly from the manufacturer.
- Below is a replacement indication color chart for the hydrocarbon booms.

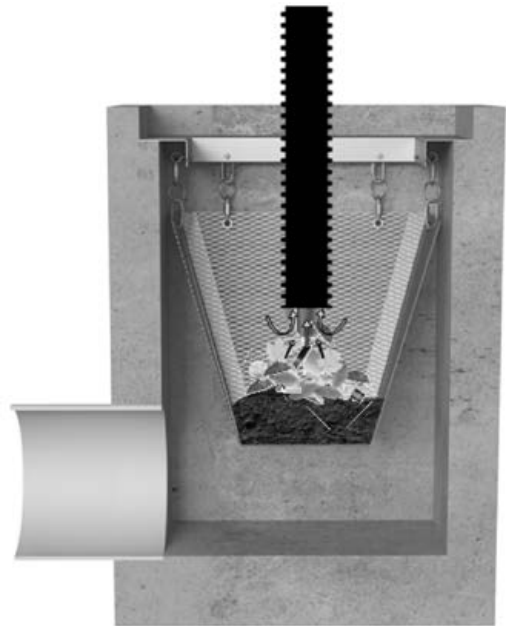


- When maintenance is complete, replace the grate and remove all traffic control.
- All removed debris and pollutants shall be disposed of following local and state requirements.
- Disposal requirements for recovered pollutants may vary depending on local guidelines. In most areas the sediment, once dewatered, can be disposed of in a sanitary landfill. It is not anticipated that the sediment would be classified as hazardous waste.
- In the case of damaged components, replacement parts can be ordered from the manufacturer. Hydrocarbon booms can also be ordered directly from the manufacturer as previously noted.

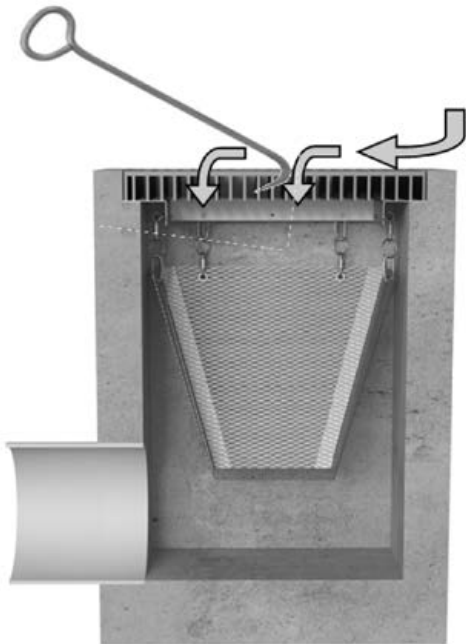
# Maintenance Sequence



1. Remove grate and set up vacuum truck to clean the filter basket.



2. Insert the vacuum hose down into the filter basket and suck out debris. Pressure wash the sides and bottom of the filter basket to remove any stuck debris.



3. Replace the grate and remove all traffic control. All removed debris and pollutants shall be disposed of following local and state requirements.



## Inspection and Maintenance Report Catch Basin Only

Project Name \_\_\_\_\_

For Office Use Only

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(Reviewed By) \_\_\_\_\_

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(Date) \_\_\_\_\_  
Office personnel to complete section to the left.

Project Address \_\_\_\_\_ (city) (Zip Code)

Owner / Management Company \_\_\_\_\_

Contact \_\_\_\_\_

Phone (     ) -     -    

Inspector Name \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Time \_\_\_\_\_ AM / PM

Type of Inspection     Routine     Follow Up     Complaint     Storm    Storm Event in Last 72-hours?     No     Yes

Weather Condition \_\_\_\_\_

Additional Notes \_\_\_\_\_

Site Map #	GPS Coordinates of Insert	Catch Basin Size	Evidence of Illicit Discharge?	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Signs of Structural Damage?	Functioning Properly or Maintenance Needed?
1	Lat: _____							
	Long: _____							
2	Lat: _____							
	Long: _____							
3	Lat: _____							
	Long: _____							
4	Lat: _____							
	Long: _____							
5	Lat: _____							
	Long: _____							
6	Lat: _____							
	Long: _____							
7	Lat: _____							
	Long: _____							
8	Lat: _____							
	Long: _____							
10	Lat: _____							
	Long: _____							
11	Lat: _____							
	Long: _____							
12	Lat: _____							
	Long: _____							

Comments: \_\_\_\_\_

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