

Flow Control Structures

Proprietary Flow Control Devices

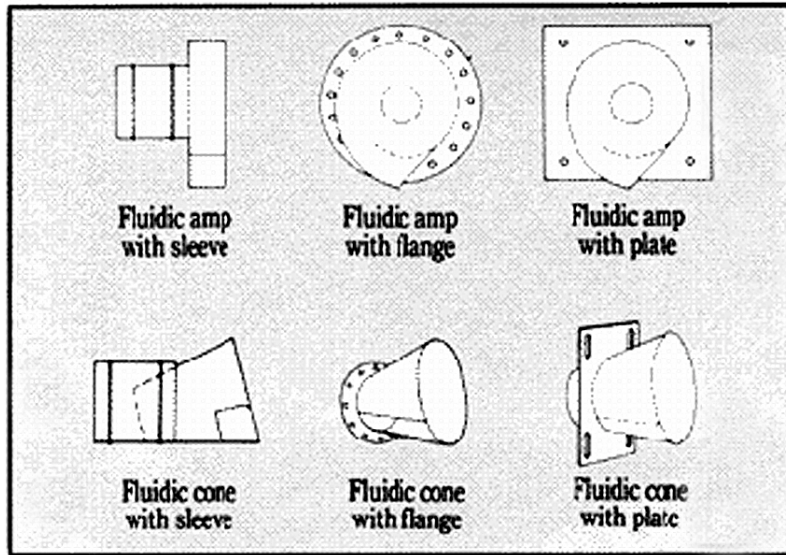


Figure 1: Hydro-Brake™

Description

Hydro-Brakes™ and Reg-U-Flow™

Hydro-Brakes™ and Reg-U-Flow™ (manufactured by Vortech, Inc. and H.I.L. Technology, respectively) are stainless steel vortex valves used to reduce the flow rate of water through stormwater structures or combined sewer systems.* (See diagram above.) This outlet design essentially acts as an orifice, restricting the flows leaving a pond or storm sewer. The Hydro-Brake design is shown above in Figure 1. The Reg-U-Flow design is shown in Figure 2.

The design of these devices is simple, consisting of an intake, a volute and an outlet. Flow is directed tangentially into a volute to form a vortex. High peripheral velocities induce an air-filled core with a resulting back pressure that reduces the discharge. According to their manufacturers, these designs (as opposed to a regular orifice outlet) minimize clogging, because the velocity of the water caught in this vortex pattern is so high that most debris is pulled through the opening under high force. This can be a useful feature when retrofitting a clog-prone standpipe outlet.

System Features

- Clog resistance
- At the same flow rate, they provide openings up to four times larger than non-vortexing "plug flow" regulators

Purpose

	Water Quantity	Water Quality
Flow attenuation	■	
Runoff volume reduction	□	
Pollution prevention		
Pollutant removal		N/A

■	Primary design benefit
◻	Secondary design benefit
□	Little or no design benefit

* Mention of these products does not constitute an endorsement.

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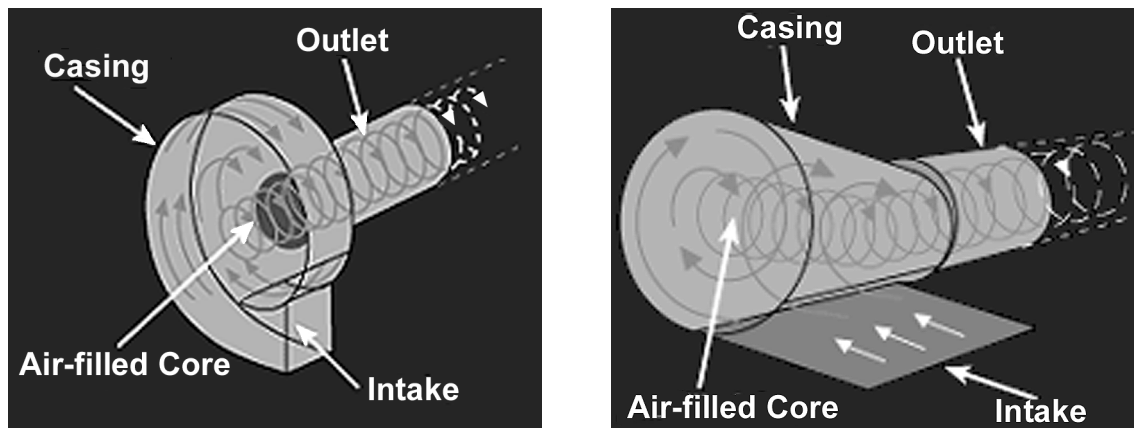


Figure 2: Reg-U-Flow™

Sources

1. H.I.L. Technology, Inc. 94 Hutchins Dr. Portland, ME 04102. www.hil-tech.com
2. Vortechncs, Inc. 41 Evergreen Drive. Portland, ME 04103. www.vortechncs.com