

# HydroDoc™

Rotary Distributors



**WESTECH®**

# HydroDoc™ Distributor



Controlling the dosing rate of the trickling filter is the key feature of the HydroDoc. WesTech has successfully provided hundreds of distributors that offer these process advantages.

## Why Choose HydroDoc?

Regulating the flow through a trickling filter assures the health of the biomass through the depth of the media. A daily flushing cycle cleans the media and flushes loose dead biomass, leaving an optimally reactive film on the media. These improvements are achieved by controlling speed of the distributor using PLC controls.

The HydroDoc turns the tremendous momentum and torque contained in the rotary arms into a mechanical and operational advantage. No longer is there a need to add energy or speed control using a center drive unit. The HydroDoc simply uses the hydraulic energy already present in the trickling filter to control the speed of the distributor.

## How it Works

The HydroDoc has automatically adjusting gates which are pneumatically controlled to open and close the orifices in equal proportion on both sides of the distributor arms. A sensor on the center assembly transmits speed readings to the control box, which automatically adjusts the speed to match the preset operational or flushing program. As flow to the trickling filter varies, the speed is maintained by automatically adjusting the gates over the orifices.

By regulating the dosing through the filter media, the biomass becomes healthy throughout the depth of the trickling filter. A daily flushing cycle cleans the media and flushes dead biomass, leaving an optimally active film on the media. Healthy media results in optimal treatment process.

## Proven Process Benefits

- Improved Oxygenation
- Improved Nitrification
- Higher BOD Reduction
- Extended Media Life and Service
- Odor Reduction/Elimination
- Significant Snail and Filer Fly Reduction



# HydroDoc™ Advantages

## **Advantages Over Other Control Systems**

There are no associated mechanical drive problems or maintenance.

The spreader ports covered by the gates are less apt to become blocked because the valve gates wipe the ports periodically to move or clear any obstructions.

The HydroDoc maintains an optimal distributor speed. The arms will continue to rotate at low flows and will not over rotate at higher flows.

If the control system fails, power is lost, or air is unavailable, the distributor will continue to rotate at a preset default speed. When the problem is fixed, the controller will automatically resume the programmed rotational speed.

HydroDoc is equipped with an "E-stop" push button that will automatically bring the arms to an immediate stop without turning off the flow. This feature benefits the safety and maintenance efforts of the operators. Without shutting off the water or pumps, maintenance personnel can go to the center assembly and conduct normal maintenance tasks.

The HydroDoc controls are preprogrammed to fully open and close the gates periodically to clear obstructions that might exist. If spreaders do plug, the controls will automatically compensate for the imbalance and keep the arms rotating at the programmed optimal speed.

Proper operation does not depend on establishing or maintaining neutral thrust on the arms.

## **HydroDoc Mechanical and Operational Benefits**

- No extra energy is required to rotate distributor
- Operation is maintained, even in power outages
- The rotary distributor is hydraulically driven
- On ice, wind or environment damage
- Flow uninterrupted during maintenance (pumps are not shut down)
- The arms can be stopped with full flow
- Gates automatically clean orifices of debris
- Retrofit to existing distributors



## **WesTech offers additional benefits to plants that have installed the HydroDoc System**

- Recommendation and evaluation of initial trickling filter setup and SK rates
- Evaluation of the trickling filter performance (up to five times in the first five years)
- WesTech will provide updated operational and process information as it becomes available



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