

## “E-Series” Electric Suction Scanning Screen Filter

MADE IN THE U.S.A.

### High Performance Precision Scanning

Rain Bird’s “E-Series” Suction Scanning Screen Filter provides worry free high-flow rate 300 micron (standard) filtered water quality. Powered by source line water pressure and an electrical drive motor, the filter’s backwash system produces a concentrated high velocity reverse water flow to precisely clean the screen of any entrapped contaminants. Unique to this design, Rain Bird has eliminated potentially troublesome limit switches (for reversing the drive mechanism) and implemented a reversing mechanism that is simple and higher in reliability than other units on the market today. Models are available as a filter unit only, or as a filter assembly including bypass plumbing and valves for fast and easy installation on site.

#### Operation (see illustration to the right)

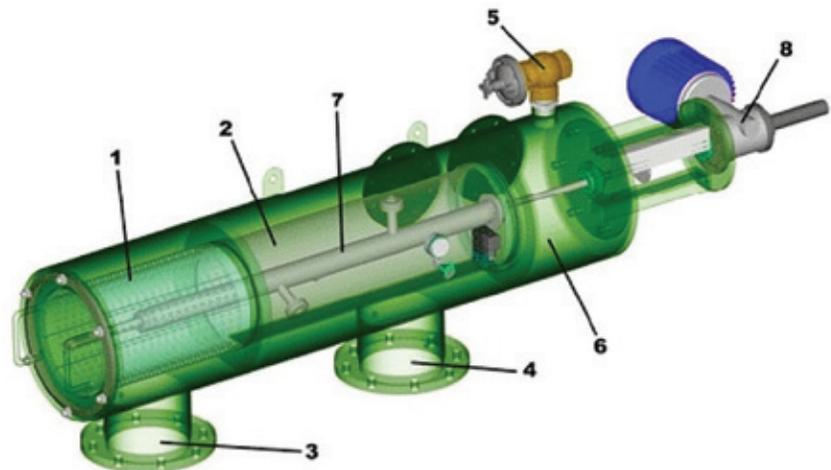
Dirty water enters the inlet flange (3) and passes through the coarse screen (1). The water then flows to the inside of the multi-layer fine screen (2) filtering suspended solids that are too large to pass through the screen. Clean filtered water then leaves the filter through the outlet flange (4). Suspended solids accumulate on the inner surface of the fine screen, eventually restricting the filter and creating an increasing pressure differential at which point a cleaning cycle is initiated. The controller opens the rinse valve (5) which quickly drops the pressure in the rinse chamber (6). Water moves from the nozzle opening, through the dirt collector (7) into the flush chamber and out the rinse valve (5). Self-adjusting nozzles allow each nozzle to lightly contact the screen surface for increased efficiency. The drive assembly (8) slowly rotates the dirt collector (7) in a tight spiral motion at a fixed speed to clean every square inch of screen. The reversing mechanism allows the dirt collector to oscillate back and forth as long as the uni-directional motor is operating. There are no limit switches to fail or multiple motor starters in the control box. The controller stops the drive assembly (8) when the screen is clean and closes the rinse valve (5) completing the cleaning cycle without interruption of system flow.

#### Monitoring and Controls

The standard Rain Bird control system consists of a programmable logic controller, a differential pressure switch, electric drive motor, and a solenoid actuated flush valve. The differential pressure switch monitors inlet and outlet



(shown as filter only)  
ES-E-08-PS-G



pressures and comes factory preset to 7 psi. The housing mounted solenoid actuated flush valve and electric drive motor are activated by the controller when the differential pressure exceeds 7 psi. The filtration system is automatically monitored and controlled either on elapsed time since the last cleaning cycle or pressure differential (user definable). If timed cleaning cycles are utilized, the system will automatically default to a backwash based on differential pressure if a 7 psi differential pressure is reached before the next timed cleaning cycle. Standard Rain Bird automatic controls are available for 115 VAC and 230 VAC, 50 / 60 Hz (user-configurable) single phase power.

*Note: “E-Series” filters integrated with a Rain Bird Pump Station utilize 115 VAC solenoids.*

#### Construction

Rain Bird “E-Series” filters are built for years of durable, trouble-free service. The housing and covers of standard filters are made from

thick wall high-grade, low-carbon steel. All exposed surfaces, both inside and out, are polyester powder coated over a zinc phosphate primer coat. Easy maintenance access to the internal components of the filter is through a removable front cover with handles that is secured to the front end of the filter housing. All wetted components are constructed of either engineered plastics or non-corrosive metals. All Rain Bird “E-Series” filters are also available in Stainless Steel construction, for the most demanding water quality applications.

#### Basic Specifications

- Available as filter only (no bypass plumbing) or as a complete assembly with bypass plumbing and valves for easy installation
- Heavy-duty, durable, SS multi-layer sintered screens supplied standard.
- Standard SS multi-layer sintered screens are supplied as 300 micron.

(continued)

## Basic Specifications (cont.)

- Optional SS screen sizes available for 50, 80, 100, 150 or 200 micron
- Standard flow rates from 200 to 4,000 GPM
- Standard maximum operating pressure of 150 PSI (higher pressures optionally available)
- Filtered, clean water backwashing initiated automatically by time or pressure differential via integrated Rain Bird controller
- Flanged inlet and outlet standard. Grooved inlet and outlet configuration optionally available

## Models

See chart below for all standard models available. Consult factory for options and custom configurations.



Economical design with integrated bypass assembly for fast and easy installation.

## "E-Series" Suction Scanning Screen Filter Performance Data

Powder Coated Carbon Steel Model Number	Stainless Steel Model Number	Maximum Flow US GPM	m <sup>3</sup> /Hour	Max Pressure (psi)	Inlet / Outlet Flange Size (in)	Flush Line Size (in)	Minimum Inlet Pressure During Rinse Cycle (psi)
<b>Filter Only</b>							
ES-E-03-PS-M	ES-E-03-PS-S-M	200	45.4	150	3	3	30
ES-E-04-PS-G	ES-E-04-PS-S-G	425	96.5	150	4	3	30
ES-E-08-PM-G	ES-E-08-PM-S-G	1050	238.5	150	8	3	30
ES-E-08-PS-G	ES-E-08-PS-S-G	1500	340.7	150	8	4	30
ES-E-10-PS-G	ES-E-10-PS-S-G	2000	454.3	150	10	4	30
<b>Filter Assembly with Bypass Manifold</b>							
ES-E-03-PS-B-M	ES-E-03-PS-S-B-M	200	45.4	150	3	3	30
ES-E-04-PS-B-G	ES-E-04-PS-S-B-G	425	96.5	150	4	3	30
ES-E-08-PM-B-G	ES-E-08-PM-S-B-G	1050	238.5	150	8	3	30
ES-E-08-PS-B-G	ES-E-08-PS-S-B-G	1500	340.7	150	8	4	30
ES-E-10-PS-B-G	ES-E-10-PS-S-B-G	2000	454.3	150	10	4	30
DS-E-08-PM-B-G	DS-E-08-PM-S-B-G	2100	477.0	150	10	4	30
DS-E-08-PS-B-G	DS-E-08-PS-S-B-G	3000	681.5	150	12	4	30
DS-E-10-PS-B-G	DS-E-10-PS-S-B-G	4000	908.6	150	14	4	30

\*Filter flow is based on 200 micron filtration of clear irrigation water. Appropriate flow de-rating is required for excessive debris loads (silt, organics, algae, etc.), reclaim water and finer screens. Contact Rain Bird for filter selection assistance for these applications.

-M denotes Commercial model number, -G denotes Golf model number      Contact Rain Bird for drawings or visit [www.rainbird.com](http://www.rainbird.com) to download.

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