

“E Series” Filter Model

How It Works

Dirty water enters the inlet flange (3) then passes through the coarse screen (1) from outside-in removing large hard objects. The pre-screened water then flows to the inside of the multi-layer fine screen (2).

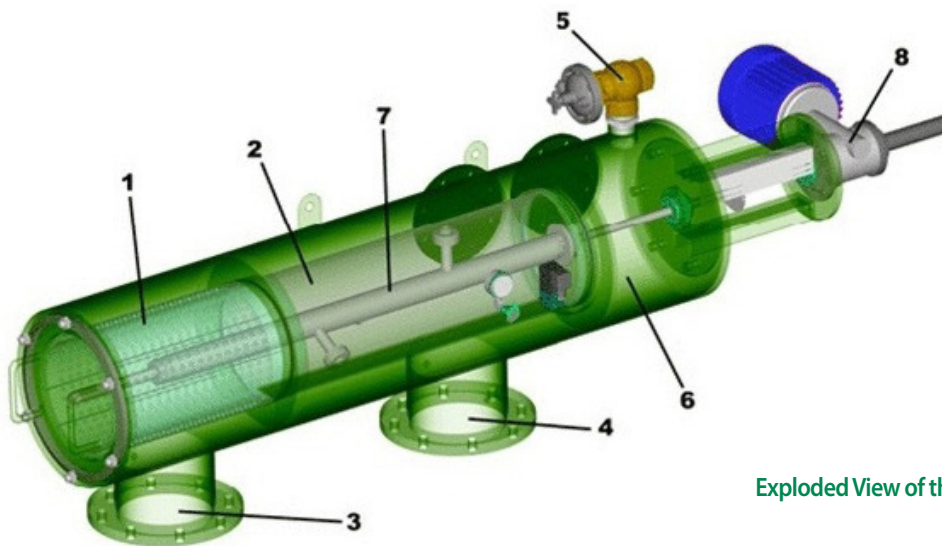
As water passes from inside-out in the fine screen, suspended solids are blocked if they are too large to pass through the screen openings. Clean filtered water then leaves the filter through the outlet flange (4). As more and more material builds up on the inside surface of the fine screen a pressure drop in the system begins to build. When the preset pressure drop threshold (normally 7 psi) is reached across the fine screen, the controller is signaled to initiate a cleaning cycle.

The first step in the cleaning cycle is to open the rinse valve (5) to atmospheric pressure which quickly drops the pressure in the rinse chamber (6). As the hollow dirt collector (7) connects the end openings in the nozzles to the flush chamber, water quickly moves from the nozzle opening through the dirt collector (7), into the flush chamber (6) and out the rinse valve (5) to drain.

Since the self-adjusting nozzles allow each opening to touch the screen surface, water rushes backward through the screen (outside-in) into a small area about 15 mm in diameter at a velocity exceeding 50 ft/sec (15 m/sec). This intense energy releases the stickiest material and expels it from the system through the rinse valve (5).

The gear motor drive assembly (8) then slowly rotates the dirt collector. This causes the dirt collector to slowly move linearly while rotating. The slow spiral movement of each nozzle on the dirt collector (7) assures that every square inch of fine screen surface is vacuumed clean of all debris in 20 to 30 seconds. The reversing mechanism allows the dirt collector to oscillate back and forth while the unidirectional motor is operating.

There are no limit switches to fail or multiple motor starters and overload protectors 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. The next cleaning cycle will begin when the pressure drop threshold is met again or until a preset time interval has been reached.



Exploded View of the “E Series” filter

Rain Bird Corporation
6991 E. Southpoint Road
Tucson, AZ 85756
Phone: (520) 741-6100
Fax: (520) 741-6522

Rain Bird Technical Services
(800) RAINBIRD (1-800-724-6247)
(U.S. and Canada)

Rain Bird Corporation
970 West Sierra Madre Avenue
Azusa, CA 91702
Phone: (626) 812-3400
Fax: (626) 812-3411

Specification Hotline
800-458-3005 (U.S. and Canada)

Rain Bird International, Inc.
1000 West Sierra Madre Ave.
Azusa, CA 91702
Phone: (626) 963-9311
Fax: (626) 852-7343

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www.rainbird.com