

RapidKleen™ Auto-Strainer

PULP & PAPER

*Mill process water, intake river water,
paper machine shower protection*

AUTOMOTIVE

Process water, cooling water, fire protection

CHEMICAL/PETROCHEMICAL

Process, fire protection and cooling water

HVAC

*Cooling water air conditioning systems,
computer rooms*

MINING

Process and cooling water

OIL & GAS/OFFSHORE

Injection water for oil rigs

POWER GENERATION

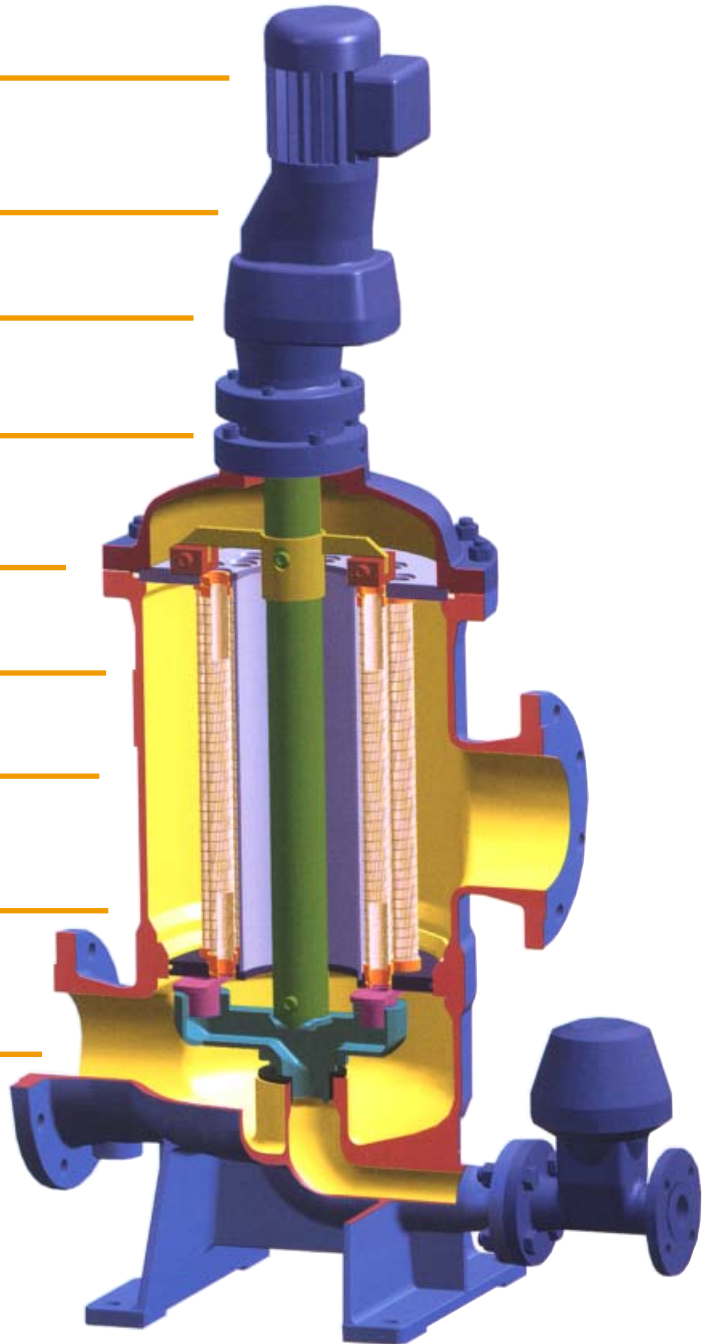
*Cooling water for turbines and
oil circuits, sealing water*

SEWAGE TREATMENT

*Effluent for use as process water, and
prior to discharge into open waters*

STEEL

*Caster: Spray nozzle cooling water,
internal machine (IM)
Hot Strip Mill: Laminar flow, workroll,
descale water
Cold Mill: Make-up water for
hydraulic systems, emulsions*



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AN ACCENT ON INNOVATION

RapidKleen™ Auto-Strainer

Design Features

- Flow capacities from 35—40,000
- Compact and space-saving design
- Highly efficient back-flushing system
- Large filter surface area
- Minimal back-flushing quantity
- Low pressure drops
- Rugged design for long filter service life
- Low operating costs
- Extended maintenance intervals
- Available with 2"—36" flanges
- Filter elements and tube sheets are removable as one assembly

The Design

The Kadant AES RapidKleen™ Auto-strainer features simple, yet rugged construction. Kadant AES housings are manufactured either in cast iron, carbon steel or stainless steel. Kadant AES strainers are available in flange sizes up to 40" for flow rates up to 40,000 gpm. Filter elements and all internal components are stainless steel. The only moving parts are the flushing and throttling arms. All contact parts are self-adjusting.

Filtration Operation

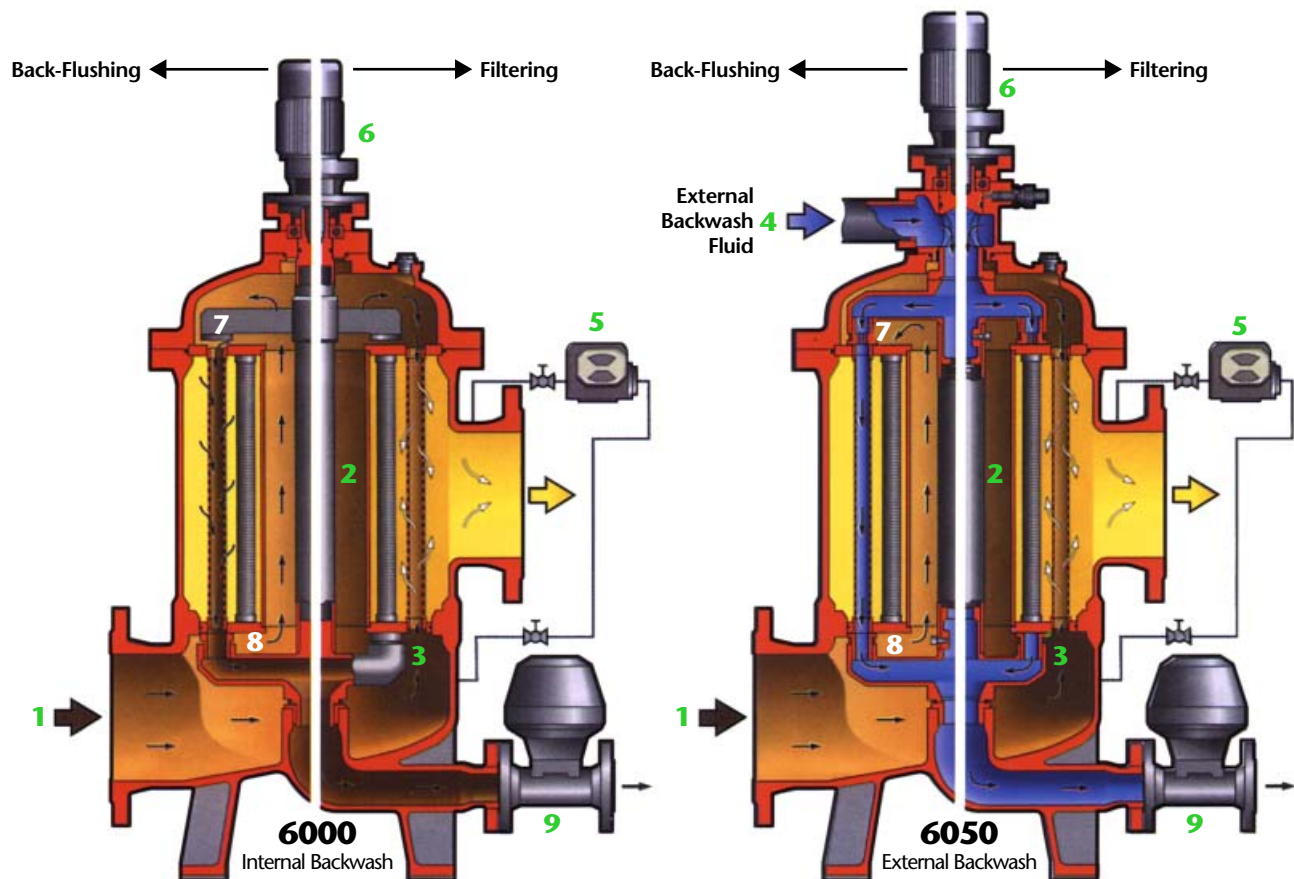
1 During the straining process, fluid flows through the inlet flange into the bottom of the filter housing. **2** A partial flow, approximately 50% of the unfiltered fluid, is fed through a central riser

in the filter element assembly to the top of the filter housing and into the open filter elements. **3** The remaining fluid flows through the bottom of the filter elements.

The fluid flows through the elements from the inside out.

During the cleaning cycle, each element is cleaned in succession, with no interruption of the straining process. Backflow is achieved with filtered process fluid (type 6000) or an **4** external fluid (type 6050), for operating pressures less than 30 psi, or when straining sticky contaminants. High-pressure water or steam can be used as the external fluid in the type 6000.

Back flushing is control automatically based on either inlet/outlet differential or pre-set time intervals.



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Backwash Cycle

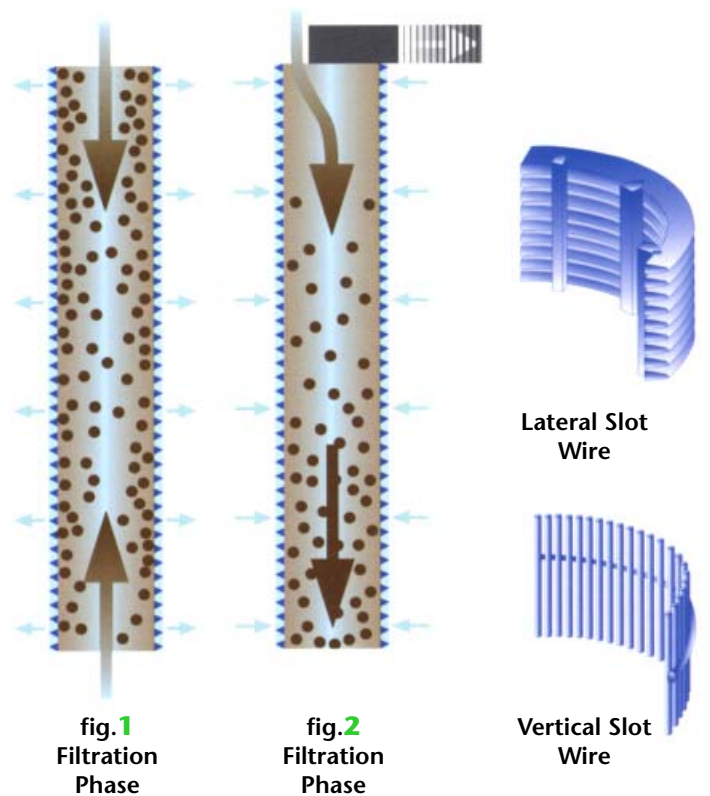
The Kadant AES RapidKleen™ Auto-Strainer uses open-ended cylindrical filter elements. As fluid flows through both ends of the elements, particles in suspension are trapped along the entire length of the elements. This ensures that contaminants are distributed uniformly over the entire filter surface area.

As deposits accumulate fig. 1, differential pressure across the elements rises and a differential pressure switch triggers a back-flushing cycle automatically.

A gear motor starts the cycle by sliding the upper throttling arm on a 6000 series (or rotating the upper flushing arm on a 6050 series) over the upper end of each filter element.

Simultaneously, the lower flushing arm is rotated, sealing the bottom end of each element, and the backwash valve is automatically opened flushing contaminants to the drain.

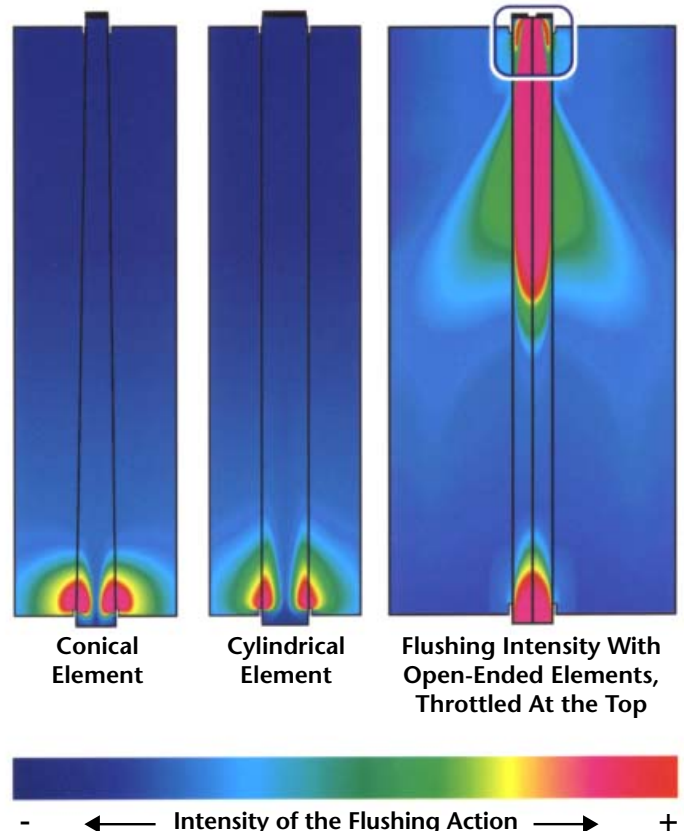
The pressure gradient generated between system pressure and atmospheric pressure allows a small quantity of fluid to flow from the outside through the elements, detaching the particles from the elements. At the upper end of the filter elements, the throttling arm provides a cross flow, flushing down the detached particles. This combination of axial and cross flows provides a high effective flushing action, uniform across the entire filter surface area.



The Open-ended Element Advantage

Because the filter elements are cylindrical and open at both ends, the RapidKleen™ Auto-Strainer elements are flushed with a much greater energy intensity compared to other strainer designs. The high energy backwash allows for a very efficient screen cleaning resulting in fewer backwashes and less backwash water use.

Unlike conical or expanding disc filter elements, Kadant AES elements can be fitted with either lateral slot wedge wire or vertical slot wire. This option provides improved release characteristics during backwash for difficult contaminants.



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AES

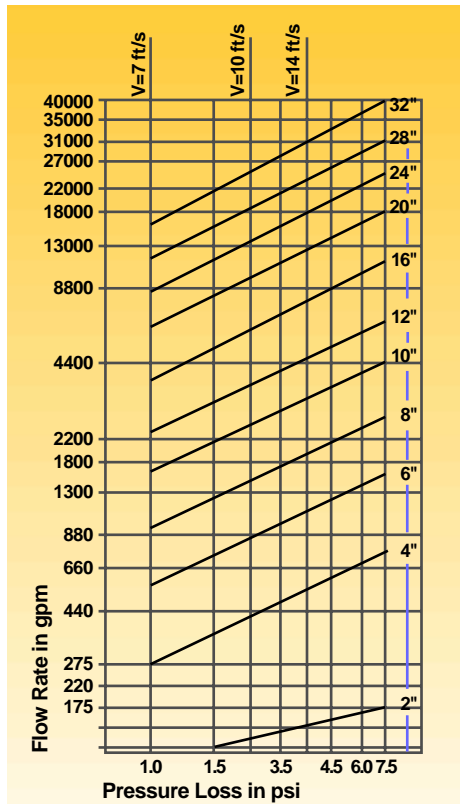
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6000 Specifications

- Back-Flushing Liquid
Filtered process fluid
- Capacity
35—40,000 gpm
- Particle Size Removed
50—500 microns
- Flange Size
2" to 36"
- Design Pressures
145 psig, 230 psig standard,
to 580 psig on some models
- Housing Material
Cast iron, carbon steel, 316 Stainless
Steel (pickling and passivating
optional), rubber-lined steel
- Back-Flushing Control
Differential pressure timer override
- Filter Element Type
Open-ended cylindrical elements
- Element Construction
Lateral or vertical slotted wedge wire
- Control Panel
Standard scope of supply
220, 460, 575V/3Ph/60Hz
- ASME "U" Stamp
Optional



WATER FLOW RATES PER STRAINER
SIZE AT 500 MICRON STRAINING,
AS A FUNCTION OF
PRESSURE LOSS

System data necessary to
size a Kadant AES RapidKleen™
Auto-Strainer:

- flow rate
- water contamination (PPM)
- particle size to be removed
- operation pressure
- maximum allowable
pressure loss in the strainer



6050 Specifications

- Back-Flushing Liquid
External fluid
- Capacity
35—11,000 gpm
- Particle Size Removed
50—500 microns
- Flange Size
2" to 16"
- Design Pressures
145 psig, 230 psig standard,
to 360 psig on some models
- Housing Material
Cast iron, carbon steel, 316 Stainless
Steel (pickling and passivating
optional), rubber-lined steel
- Back-Flushing Control
Differential pressure timer override
- Filter Element Type
Open-ended cylindrical elements
- Element Construction
Lateral or vertical slotted wedge wire
- Control Panel
Standard scope of supply
220, 460, 575V/3Ph/60Hz
- ASME "U" Stamp
Optional

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