

4000 Series

Applications

The Kadant AES 4000 Series Gravity Strainer is the best choice for the filtering of process whitewater that contains relatively high levels of fiber. Applications include the filtering of vacuum pump seal water, clear-leg save-all water, overflow from cylinder vats, stock washers, and removal of felt hairs from press section water.

Features

- ▶ High flow rates with relatively high solids loading
- ▶ Gravity feed capability can eliminate pumps
- ▶ Continuous media cleaning with rotating showers
- ▶ Rotating shower is only moving part
- ▶ Corrosion-free fiberglass or stainless steel construction

Benefits

- ▶ Lower cost per gallon processed
- ▶ Minimal power cost and low maintenance
- ▶ Maximum throughput, minimal downtime, high efficiency
- ▶ No fresh water requirements
- ▶ BTU savings by reuse of warm process water



How it works

Water to be filtered is piped into and channeled around the periphery of the tank. It flows upward and over a weir assembly for even distribution over a fine screen (75 to 355 μm – 40 to 200 mesh.). The water is filtered here leaving fibers and solids on the screen. Clean water is then collected in the strainer's bottom and flows from the unit. A continually rotating shower above the screen washes the rejects toward the center opening and the reject pipe for discharge.

Proven reliability

Kadant AES Gravity Strainers have been the industry standard in pulp and paper mills for over 25 years. Over 1,000 of these highly reliable and efficient units are installed worldwide. Ideally suited for a wide range of applications, they are non-pressurized, easy and economical to operate, have few moving parts, and are capable of handling flow rates in excess of 45 m^3/h (2,800 GPM).

Process advantages

The 4000 Strainer can effectively remove long and short fibers, felt hair, and granular solids from process water without the stapling of fiber to the filter media often associated with the use of pressure filters. It can also handle system upsets and slugs, without sacrificing the filtered water quality. In many applications, upsets to equipment or process upstream of the gravity unit will result in a large increase in fibrous contaminants. The 4000 Strainer continues to deliver strained water downstream, with a possible temporary rise in reject flow.

Designed for efficiency

The very high efficiency of the 4000 Strainer is due to the controlled flow over the media surface and the gentle separation forces. Filtered solids are continuously washed inward to the center of the screen by the rotating showers and discharged into the center reject port. The screen is returned to full effectiveness without manual attention even after an upset condition is encountered.

Easy performance monitoring

The low pressure shower and drive are easily accessible from the top of the strainer and its construction allows quick and easy monitoring of media conditions and performance. Optional patented removable flow distributors assure an even flow of the influent onto the stationary screen.

Applications: paper machine, press sections, cylinder machine, etc.

Occasional save-all upsets frequently prevent the effective reuse of paper machine white water in shower applications. The Gravity Strainer is designed to handle such upsets, assuring that a source of high quality water is available for the showers. Effluent from press save-all pans, wringers, guard board trays and felt cleaning equipment is heavily contaminated with felt hairs. The gravity strainer is specifically designed to capture felt hairs, allowing efficient reuse of press section water. Clarified white water from a cylinder machine save-all generally cannot be reused without additional treatment. A Gravity Strainer will polish this water removing suspended solids that would otherwise blind the coarse bottom felts and plug shower nozzles.

GRAVITY STRAINER

| Gravity Strainer Model | Flow Capacity Range * | | Nominal Diameter | | Nominal Height** | | Inlet/Reject Connection | | Accept Connection | | Gross Weight Dry - Wet | | Shower Flow at 40 psi *** | |
|------------------------|-----------------------|--------------|------------------|-----|------------------|-----|-------------------------|----|-------------------|----|------------------------|------------|---------------------------|-----|
| | GPM | lpm | Inch | cm | Inch | cm | Inch | cm | Inch | cm | Lbs. | kg | GPM | lpm |
| 4005 | 96 - 610 | 365 - 2310 | 61 | 155 | 59 | 150 | 6 | 15 | 10 | 25 | 800 - 4500 | 363 - 2040 | 63 | 238 |
| 4015 | 163 - 1037 | 615 - 3925 | 73 | 185 | 69 | 176 | 8 | 20 | 12 | 30 | 975 - 7150 | 442 - 3243 | 90 | 341 |
| 4025 | 241 - 1537 | 910 - 5820 | 85 | 215 | 72 | 183 | 10 | 25 | 14 | 35 | 1300 - 9000 | 590 - 4082 | 108 | 409 |
| 4035 | 338 - 2153 | 1280 - 8150 | 97 | 245 | 75 | 190 | 12 | 30 | 16 | 40 | 1425 - 11050 | 646 - 5011 | 135 | 511 |
| 4045 | 511 - 3257 | 1935 - 12330 | 115 | 290 | 78 | 198 | 14 | 35 | 18 | 45 | 1760 - 16500 | 798 - 7483 | 162 | 613 |

* Capacity can vary depending on inlet loading and screen mesh.

** Height of support legs can vary to suit application.

*** Shower water is usually accept water from the gravity strainer supplied at 25-40 psig.

These figures are given only for information. For further details and expert recommendations, consult your Kadant Sales or Applications Engineer.



Inflatable gasket on ring and airline connection.

"Slip-On" Screen

Kadant's patented slip-on gravity strainer screen system is designed for rapid screen replacement for a wide range of gravity strainer applications.

- ▶ Rapid screen replacement in 15 minutes or less
- ▶ Inflatable seal designed for easy visual inspection
- ▶ No sieve assembly to remove or disassemble
- ▶ No shower arms to disconnect, no screws to turn



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