Centrifugal-Action Sand Separators

Advanced and patented LAKOS design offers proven performance with low pressure loss. Removes sand and grit; new exclusive features improve performance to remove 50% more of finer particles, offering maximum protection. Independently tested. Proven superior for today’s demanding filtration requirements.

- Trouble-free operation keeps water clean and concentrates separated sand
- No screens or filter elements to clean or replace; no routine maintenance
- No backwashing; zero water loss options
- Low and steady pressure loss: 3-12 psi (0.2-0.8 bar)
- Space-saving profile
- Swirllex internal accelerating slots for optimum sand-removal performance; patented
- Vortube for enhanced sand separation/collection; patented
- Grooved inlet/outlet connections for easy installation; flange adapters available
- In-line inlet/outlet configuration for simplified piping
- Unishell construction for easy installation
- ASME Code option available

Flow range:
285 - 4,350 U.S. gpm
(65 - 988 m³/hr) per unit

Maximum standard pressure rating:
150 psi (10.3 bar)
LAKOS IHB Separators are shipped on a wooden skid with the two support legs detached. A large ring, located on the unit’s side, is provided for hoisting as necessary. A suitable foundation is necessary to accommodate the separator’s weight including water (see chart, page 3). Tie-down bolts are recommended in the base of the legs. Prior to installation, inspect the inlet, outlet and purge of each unit for foreign objects that may have entered the unit during shipping or storage.

Proper purge hardware is required to flush separated sand from the separator. This equipment should be installed before start-up.

Pipe connections to the inlet and outlet of LAKOS IHB Separator should be a straight run of at least five pipe diameters to minimize turbulence and optimize performance. Pipe size is not a factor in selecting the proper model of a LAKOS Separator. Rather, all LAKOS Separators operate within a prescribed flow range.

Use appropriate hardware to match inlet and outlet size. Grooved couplings are not included with the separator. Inlet pressure to the LAKOS Separator must be at least equal to or greater than the anticipated pressure loss through the separator, plus 15 psi (1.0 bar), plus the required downstream pressure.

LAKOS IHB Separators are typically installed on the discharge of a pumping system. Consult your LAKOS representative for suction side installation. No other pressure or power is required to operate a LAKOS Separator.

In a pressurized system (vs. open discharge), pressure gauges are recommended at both inlet and outlet to monitor pressure loss and proper system flow. If the separator is operated at open discharge, a valve is recommended at the outlet, set to create a backpressure of 5 psi (0.3 bar).

Winterizing is important if the separator is to remain idle in freezing temperatures. Drain water as necessary to avoid bursting due to water-ice expansion.

Lakos Separators are manufactured and sold under one or more of the following U.S. Patents: 3,289,608; 3,512,651; 3,568,837; 3,701,425; 3,947,364; 3,963,073; 4,027,481; 4,120,795; 4,123,800; 4,140,638; 4,147,630; 4,148,735; 4,202,543; 4,305,825; 4,338,341; 5,368,735; 5,427,481; 5,578,203; 5,622,545; 5,653,874; 5,894,995; 6,090,276; 6,143,175; 6,167,960; 6,202,543; Des. 327,693; and corresponding foreign patents, including 600 12 329.4-08 (Germany) and EP 1 198 276 B1 (EU); other U.S. and foreign patents pending.
### Dimensions

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<th>Model</th>
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<th>B (in)</th>
<th>C (in)</th>
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### Specifications

<table>
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<tr>
<th>Model</th>
<th>Flow Range (U.S. gpm)</th>
<th>Flow Range (m³/hr)</th>
<th>Inlet/Outlet Grooved Coupling</th>
<th>Purge Size (male N.P.T.)</th>
<th>Collection Chamber Capacity (gal)</th>
<th>Weight (lbs.)</th>
<th>Weight with Water (lbs.)</th>
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### Flow vs. Pressure Loss

![Flow vs. Pressure Loss Graph]

- **Inlet/Outlet Pressure Gauge Taps**: 1/4-inch NPT female; required at both inlet and outlet for proper flow verification.
- **Inspection/Drain Plug**: 1/2-inch NPT female; provides access to upper chamber for inspection of slot area; also allows for draining the upper chamber if necessary.
- **Lifting Ring**: For installation purposes.

**Note:** Maximum particle size: 3/8-inch (9 mm)

Also available with ANSI, DIN or JIS adapter flanges

Consult factory for higher flow rates.
Limited Warranty

All products manufactured and marketed by this corporation are warranted to be free of defects in material or workmanship for a period of at least one year from date of delivery. Extended warranty coverage applies as follows:

All LAKOS Separators: Five year warranty

All other components: 12 months from date of installation; if installed 6 months or more after ship date, warranty shall be a maximum of 18 months from ship date.

If a fault develops, notify us, giving a complete description of the alleged malfunction. Include the model number(s), date of delivery and operating conditions of subject product(s). We will subsequently review this information and, at our option, supply you with either servicing data or shipping instruction and returned materials authorization. Upon prepaid receipt of subject product(s) at the instructed destination, we will then either repair or replace such product(s), at our option, and if determined to be a warranted defect, we will perform such necessary product repairs or replace such product(s) at our expense.

This limited warranty does not cover any products, damages or injuries resulting from misuse, neglect, normal expected wear, chemically-caused corrosion, improper installation or operation contrary to factory recommendation. Nor does it cover equipment that has been modified, tampered with or altered without authorization.

No other extended liabilities are stated or implied and this warranty in no event covers incidental or consequential damages, injuries or costs resulting from any such defective product(s).

Separation System

Separator Type & Performance

The removal of specific unwanted sand from a pumped/pressurized water system shall be accomplished with a centrifugal-action vortex separator. Sand removal efficiency is principally predicated on the difference in specific gravity between the sand and the water. Performance is expected to be 98% removal of 74 microns and larger. Additionally, particles finer in size will also be removed, resulting in an appreciable aggregate removal of particles (up to 75%) as fine as 5 microns.

Performance Requirement

Separator performance must be supported by published independent test results from a recognized and identified test agency. Standard test protocol of upstream injection, downstream capture and separator purge recovery is allowed with 50-200 mesh particles to enable effective, repeatable results. Single-pass test performance must not be less than 95% removal. Model tested must be of the same flow-design series as specified unit.

Separator Design & Function

A tangential inlet and mutually tangential internal accelerating slots shall be employed to promote the proper velocity necessary for the removal of the separable sand. The internal accelerating slots shall be spiral-cut (Swirlex) for optimum flow transfer, laminar action and particle influence into the separation barrel. The separator’s internal vortex shall allow this process to occur without wear to the accelerating slots.

Separated particle matter shall spiral downward along the perimeter of the inner separation barrel, in a manner which does not promote wear of the separation barrel, and into the solids collection chamber, located below the vortex deflector plate.

To ensure maximum particle removal characteristics, the separator shall incorporate a vortex-induced pressure relief line (Vortube), drawing specific pressure and water from the separator’s sand collection chamber via the outlet flow’s vortex/venturi effect, thereby efficiently encouraging sand into the collection chamber without requiring a continuous underflow or excessive system water loss.

System water shall exit the separator by following the center vortex in the separation barrel and spiral upward to the separator outlet.

Purging (Specified option only)

Evacuation of separated sand shall be accomplished automatically, employing a timer-activated motorized ball valve. The timer, programming switches and motorized actuator shall be mounted directly onto the valve. Straight-through valve design, with bronze valve body (also available optionally as a stainless steel valve body) and stainless steel ball in a teflon seat. NEMA 4 housing for indoor or outdoor installation. Valve size: ________

Separator Details

Inlet & outlet shall be grooved couplings, size: ________

Purge outlet shall be threaded, size: ________

The separator shall operate within a flow range of: ________

Pressure loss shall be between 3-12 psi (0.2-0.8 bar), consistent with the above flow range.

Separator Construction

The separator shall be of unishell construction with A-36, A-53B or equivalent quality carbon steel, minimum thickness of .25 inch (6.35 mm). Maximum operating pressure shall be 150 psi (10.3 bar), unless specified otherwise.

Paint coating shall be acrylic urethane, spray-on, gloss green.

As a specified option only: The separator shall be constructed in accordance with the standards of the American Society of Mechanical Engineers (ASME), Section VIII, Division 1 for pressure vessels. Certification shall be confirmed with the registered “U-stamp” on the body of the separator.

Separator Source & Identification

The separator shall be manufactured by LAKOS Filtration Systems, a division of Claude Laval Corporation in Fresno, California USA. Specific model designation is: ________

Sample Specifications

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