

# High performance liquid-solids separation systems

# JPX

Exclusive internal acceleration creates maximum performance to achieve maximum protection of fluid handling systems from unwanted solids (see illustration inside for details). Its advanced & patented design, building upon the performance LAKOS is known for, now also removes 50% more of the finer solids (< 40 microns), resulting in higher aggregate solids removal. Independently tested. Proven superior for today's demanding filtration requirements. For settleable solids only.

Trouble-free operation & advanced purging/solids-handling concepts keep fluids clean and concentrate separated solids

No screens or filter elements to clean or replace; no messy servicing routines

No backwashing; zero fluid loss options

Low & steady pressure loss

Choice of profiles to accommodate space/piping limitations

Rigid couplings for fast and easy internal access

Swirlex internal accelerating slots for optimum solids-removal performance; patented; optional annular transfer ring for handling larger solids/fibrous materials

Vortube for enhanced solids separation/collection; patented

Grooved inlet/outlet connections for easy installation; optional flanged connections also available

In-line inlet/outlet configuration for simplified piping (low-profile models only)

Unishell construction for easy installation

Optional material construction & ASME code



LAKOS is a proud member of the U.S. Green Building Council



Flow range:  
4 - 12,750 U.S. gpm  
(1 - 2895 m<sup>3</sup>/hr) per unit

Maximum standard  
pressure rating:  
150 psi (10.3 bar)



JPX Series includes inlet/outlet pressure gauges with petcock valves.



Also available with weld-on flanges. See page 3 for other details.

How-it-Works Illustration

Model Specifications

Installation & Operating Instructions

Maintenance & Purging

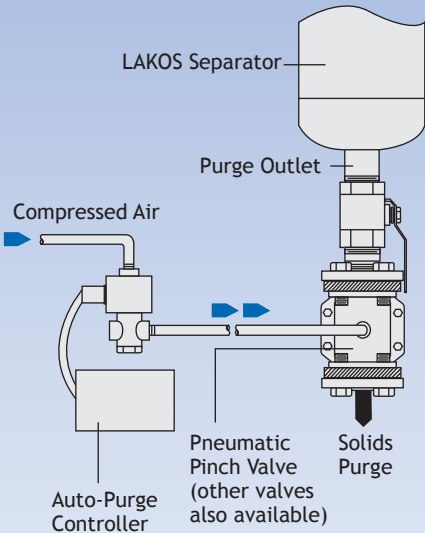
Engineering Specifications

# LAKOS

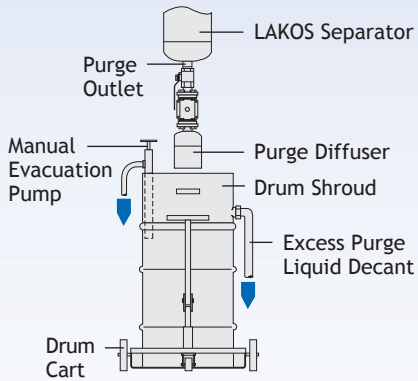
Separators and Filtration Solutions

## How It Works

### Automatic Purging

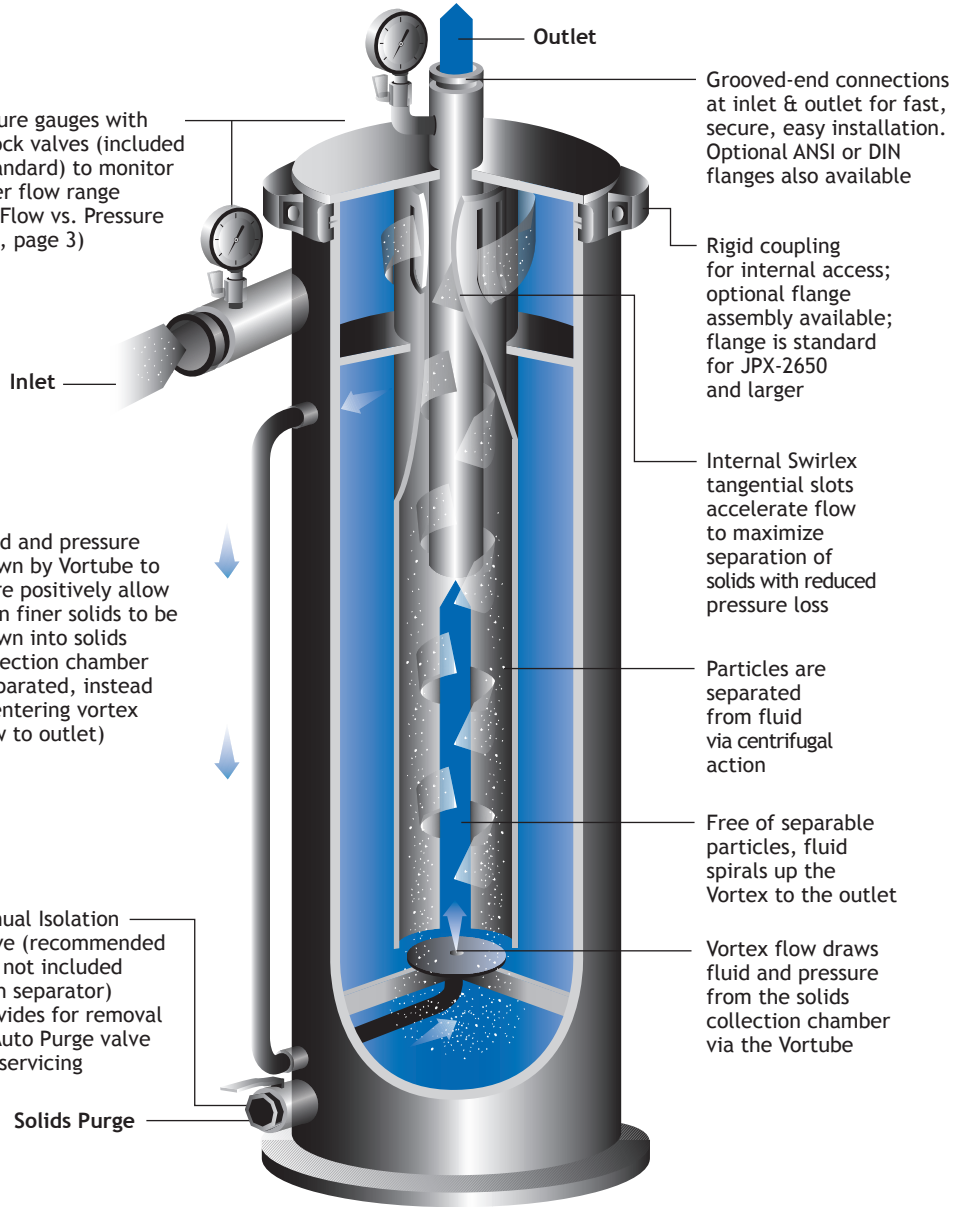


### Solids Handling Options

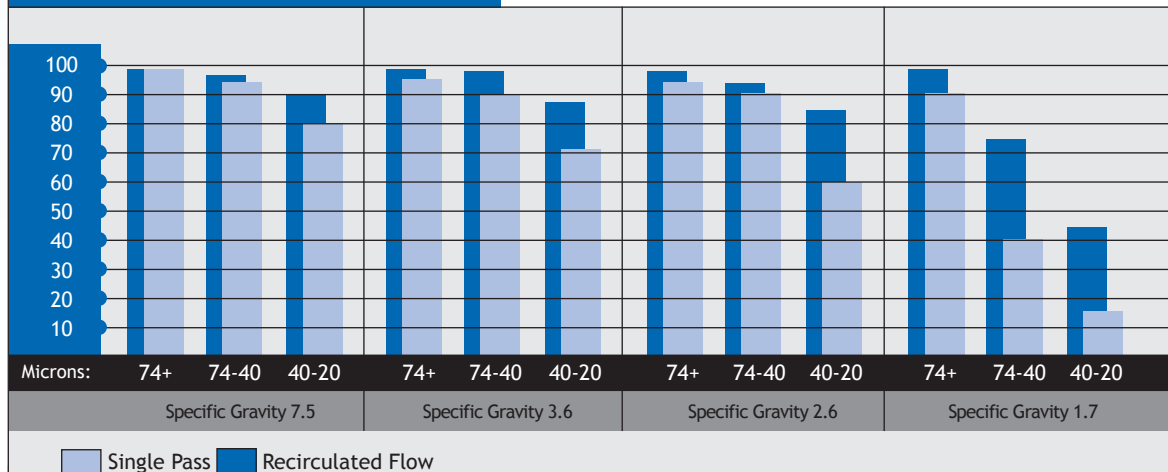


Systems also available with a tilt-style hopper.

Lakos Separators are manufactured and sold under one or more of the following U.S. Patents:  
 5,320,747; 5,338,341; 5,368,735;  
 5,425,876; 5,571,416; 5,578,203;  
 5,622,545; 5,653,874; 5,894,995;  
 6,090,276; 6,143,175; 6,167,960;  
 6,202,543; 7,000,782; 7,032,760 and  
 corresponding foreign patents, other  
 U.S. and foreign patents pending.



## Performance



## Specifications

| Model*     | Flow Range |                    | Inlet/Outlet<br>Grooved<br>Coupling** | Purge Size<br>Male N.P.T. | Collection<br>Chamber Capacity |        | Weight<br>Empty |        | Weight<br>with Water |        |
|------------|------------|--------------------|---------------------------------------|---------------------------|--------------------------------|--------|-----------------|--------|----------------------|--------|
|            | U.S. gpm   | m <sup>3</sup> /hr |                                       |                           | gal                            | liters | lbs.            | kg     | lbs.                 | kg     |
| JPX-0004   | 4-10       | 1-2.5              | 1/2" NPT**                            | 1"                        | 0.09                           | 0.3    | 23              | 10.4   | 37                   | 16.8   |
| JPX-0010   | 10-20      | 2.5-4.5            | 3/4" NPT**                            | 1"                        | 0.11                           | 0.4    | 48              | 21.8   | 61                   | 27.7   |
| JPX-0016   | 16-30      | 4-7                | 1"                                    | 1"                        | 0.15                           | 0.6    | 53              | 24.0   | 68                   | 30.8   |
| JPX-0028   | 28-45      | 7-10               | 1-1/4"                                | 1-1/2"                    | 0.27                           | 1.0    | 84              | 38.1   | 101                  | 45.8   |
| JPX-0038   | 38-65      | 9-15               | 1-1/2"                                | 1-1/2"                    | 0.4                            | 1.5    | 107             | 48.5   | 140                  | 63.5   |
| JPX-0060   | 60-100     | 14-23              | 2"                                    | 1-1/2"                    | 0.8                            | 3.0    | 188             | 85.3   | 259                  | 117.5  |
| JPX-0085   | 85-145     | 19-33              | 2-1/2"                                | 1-1/2"                    | 0.8                            | 3.0    | 229             | 103.9  | 313                  | 142.0  |
| JPX-0130   | 130-225    | 30-51              | 3"                                    | 1-1/2"                    | 0.8                            | 3.0    | 241             | 109.3  | 329                  | 149.2  |
| JPX-0200-L | 200-325    | 45-74              | 4"                                    | 1-1/2"                    | 1.6                            | 6.1    | 448             | 203.2  | 640                  | 290.3  |
| JPX-0200-V |            |                    |                                       |                           | 4.4                            | 16.7   | 384             | 174.2  | 605                  | 274.4  |
| JPX-0285-L | 285-525    | 65-120             | 4"                                    | 1-1/2"                    | 2.1                            | 7.9    | 579             | 262.6  | 898                  | 407.3  |
| JPX-0285-V |            |                    |                                       |                           | 5.4                            | 20.5   | 488             | 221.4  | 781                  | 354.3  |
| JPX-0450-L | 450-825    | 102-187            | 6"                                    | 1-1/2"                    | 2.8                            | 10.6   | 763             | 346.1  | 1203                 | 545.7  |
| JPX-0450-V |            |                    |                                       |                           | 6.7                            | 25.4   | 690             | 313.0  | 1132                 | 513.5  |
| JPX-0650-L | 650-1200   | 150-275            | 6"                                    | 1-1/2"                    | 4.3                            | 16.3   | 966             | 438.2  | 1664                 | 754.8  |
| JPX-0650-V |            |                    |                                       |                           | 10.4                           | 39.4   | 921             | 417.8  | 1578                 | 715.8  |
| JPX-1160-L | 1160-2150  | 265-490            | 8"                                    | 1-1/2"                    | 8.6                            | 32.6   | 1388            | 629.6  | 2704                 | 1226.5 |
| JPX-1160-V |            |                    |                                       |                           | 20.5                           | 77.6   | 1378            | 622.3  | 2627                 | 1191.6 |
| JPX-1850-L | 1850-3400  | 420-775            | 10"                                   | 2"                        | 15.0                           | 56.8   | 2141            | 971.1  | 4008                 | 1818.0 |
| JPX-1850-V |            |                    |                                       |                           | 31.5                           | 119.2  | 2255            | 1022.9 | 3977                 | 1803.9 |
| JPX-2650-L | 2650-4900  | 600-1115           | 12"                                   | 2"                        | 23.5                           | 89.0   | 3664            | 1662.0 | 7732                 | 3507.2 |
| JPX-2650-V |            |                    |                                       |                           | 51.1                           | 193.4  | 3186            | 1445.1 | 6532                 | 2962.9 |
| JPX-4200-L | 4200-7800  | 950-1775           | 16"                                   | 3"                        | 52.2                           | 197.6  | 6024            | 2732.4 | 13102                | 5942.9 |
| JPX-4200-V |            |                    |                                       |                           | 99.3                           | 375.9  | 5761            | 2613.1 | 12867                | 5836.3 |
| JPX-6700-L | 6700-12750 | 1520-2895          | 20"                                   | 3"                        | 81.0                           | 306.6  | 8476            | 3844.6 | 19612                | 8895.8 |
| JPX-6700-V |            |                    |                                       |                           | 162.3                          | 614.4  | 8092            | 3670.5 | 19339                | 8772.0 |

\* Models ending with "L" are low profile; "V" for vertical profile

\*\* Inlet/Outlet may also be specified with ANSI flanges or DIN flanges; JPX-0004 and JPX-0010 are standard male, N.P.T. (BSP or JIS threads available); other models also available with optional threading

Maximum pressure rating: 150 psi (10.3 bar); consult factory for higher pressure requirements

Pressure loss range: 3 - 12 psi (.2- .8 bar)

Maximum temperature rating: 180°F (82.2°C) Consult factory for higher temperatures

Maximum particle size: JPX-0016 and smaller - .25 inch (6 mm); all other models - .375 inch (9 mm)

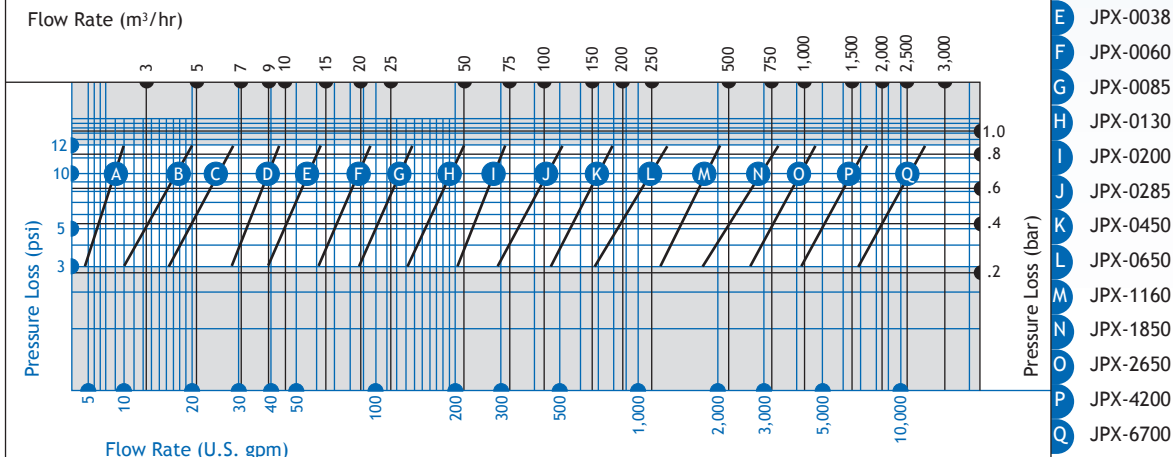
Material (standard carbon steel): Domes - A 285C/516 GR70, .25 inch (6 mm) minimum thickness

Other parts - A-36, A-53B or other quality grade, .25 inch (6 mm) minimum thickness; special

coatings and other materials available - consult factory

Paint coating: Acrylic urethane, spray-on royal blue

## Flow vs. Pressure Loss



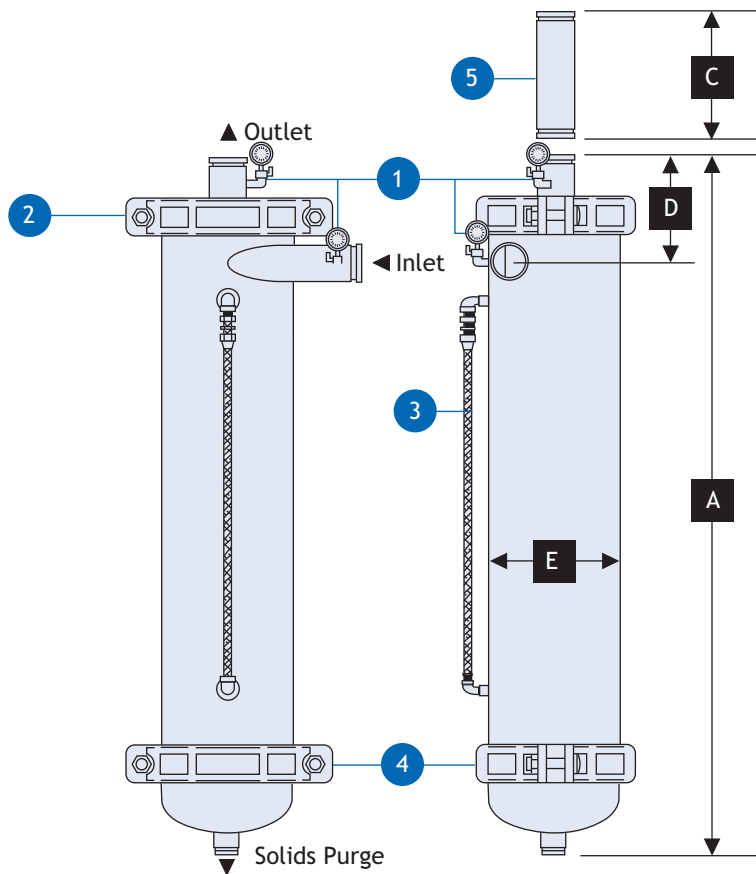
## Installation Instructions

### Maintenance/Purging

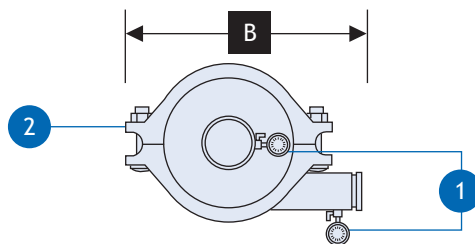
1. LAKOS JPX Separators must be purged regularly to remove the separated solids from the temporary collection chamber.
2. All purge hardware should be installed prior to any elbows or turns in the purge piping. Avoid “uphill” purging, which can clog purge piping and hinder effective solids evacuation.
3. For best results, purging is recommended while the LAKOS Separator is in operation, utilizing system pressure to enhance solids evacuation.
4. LAKOS provides a full selection of rugged, durable automatic purging and solids-handling systems to optimize the performance of your separation system.  
CAUTION: Economy-type valves typically fail prematurely in the harsh/abrasive environment of solids purging.
5. Be sure to install a manual isolation valve (provided with LAKOS AutoPurge kits) prior to the automatic valve (available from LAKOS at additional cost) in order to facilitate servicing of the automatic valve without system shutdown.
6. Internal Access Feature:  
To inspect or clear an unusual blockage in the upper or lower chamber, interrupt flow to the LAKOS Separator and relieve pressure (via the purge valve). For upper chamber access, remove the spool from the separator’s outlet (or, if no spool has been installed, disconnect and remove piping on the outlet) to make space for removing the separator’s upper section. Disconnect the rigid coupling or flange and carefully pull out the separator’s vortex outlet assembly. Inspect or clean the inlet chamber as necessary. Lubricate the coupling’s seal before re-installing the vortex assembly. Re-install piping and gaskets as necessary.

- 1 LAKOS JPX Separators are shipped on skids or in wooden crates. Support legs (when applicable) are detached for shipping. A large ring, located on the unit’s side or upper chamber, is provided for hoisting as necessary.
- 2 A suitable foundation is necessary to accommodate the LAKOS Separator’s weight including liquid (see data, page 3). Anchor bolts are recommended in the base of the legs (low profile) or skirt (vertical profile).
- 3 Prior to installation, inspect the inlet/outlet/purge connections for foreign objects incurred during shipping/storage.
- 4 Inlet/outlet pipe connections to the LAKOS Separator should be a straight run of at least five pipe diameters to minimize turbulence and enhance performance. Separator should not support piping.
- 5 Proper purge hardware and/or solids-handling equipment is required to flush separated solids from the separator (see details, page 2).
- 6 All LAKOS Separators operate within a prescribed flow range (see data, page 3). Pipe size is not a factor in model selection. Use appropriate hardware to match the inlet/outlet size. Grooved couplings are not included with the separator. Optional flanged connections are available upon request.
- 7 Inlet pressure to the LAKOS Separator must be at least equal to or greater than the anticipated pressure loss through the separator (see pressure loss chart, page 3) plus 15 psi (1 bar) plus whatever downstream pressure is required.
- 8 Pressure gauges (provided as standard, with petcock valves) are required at both the inlet and outlet of the separator in order to monitor pressure loss and proper system flow (see “Flow vs. Pressure Loss” chart, page 3). If separator operates with an open discharge, a valve should be installed to create a back pressure of at least 5 psi (.3 bar).
- 9 Winterizing is important if the LAKOS Separator is to remain idle in freezing temperatures. Drain liquid as necessary to avoid expansion of water to ice and related damages.
- 10 See I & O Manual for additional information of standard units.

## Low Flow Rates



Top View



## Dimensions

| Model    | A        |      | B       |     | C  |     | D       |     | E      |     |
|----------|----------|------|---------|-----|----|-----|---------|-----|--------|-----|
|          | in       | mm   | in      | mm  | in | mm  | in      | mm  | in     | mm  |
| JPX-0004 | 27-9/16  | 699  | 7-1/2   | 191 | 6  | 152 | 7-5/8   | 194 | 3-1/2  | 89  |
| JPX-0010 | 31-13/16 | 808  | 8-15/16 | 227 | 7  | 178 | 7-5/8   | 194 | 4-1/2  | 114 |
| JPX-0016 | 33-1/8   | 842  | 6       | 152 | 7  | 178 | 7-15/16 | 202 | 4-1/2  | 114 |
| JPX-0028 | 36-15/16 | 938  | 10-7/8  | 276 | 7  | 178 | 8-1/16  | 205 | 5-9/16 | 141 |
| JPX-0038 | 39-1/2   | 1003 | 11      | 279 | 8  | 203 | 8-1/8   | 206 | 6-5/8  | 168 |
| JPX-0060 | 48-13/16 | 1239 | 14-3/16 | 360 | 11 | 279 | 8-7/8   | 225 | 8-5/8  | 219 |
| JPX-0085 | 56-5/8   | 1438 | 14-3/16 | 360 | 15 | 381 | 9-5/8   | 244 | 8-5/8  | 219 |
| JPX-0130 | 59-3/4   | 1518 | 14-3/16 | 360 | 16 | 406 | 10-1/2  | 267 | 8-5/8  | 219 |

### Inlet/Outlet Pressure Gauges with Petcock Valves

Included as standard; Install at both inlet and outlet for proper flow verification (see "Flow vs. Pressure Loss", page 3)

### Rigid Coupling Connection

Provides for complete access to the upper chamber, acceleration slots and internal separation barrel; 2-piece; standard EPDM gasket - also available in Nitrile, Silicone, Fluoroelastomer or White Nitrile

### Vortube

Piping provided by LAKOS

### Rigid Coupling Access

Provides full access to collection chamber area for inspection/servicing; standard EPDM gasket - also available in Nitrile, Silicone, Fluoroelastomer or White Nitrile

### Connection Spool

When removed, provides space for accessing internals of separator via rigid coupling. Not included with separator, available separately

Note: These units may also be specified with optional support skirt or legs. Consult factory for details.

*Dimensions for reference only.  
Consult factory when pre-plumbing.*

## Low Profile

## High Flow Rates

### Inlet/Outlet Pressure Gauges with Petcock Valves

Included as standard; Install at both inlet and outlet for proper flow verification (see "Flow vs. Pressure Loss", page 3)

### 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

### Rigid Coupling Connection

Provides for complete access to the upper chamber, acceleration slots and internal separation barrel; standard EPDM gasket - also available in Nitrile, Silicone, Fluoroelastomer, Black Neoprene or White Nitrile; model JPX-2650 and larger uses flange

### Lifting Ring

For installation purposes

### Connection Spool

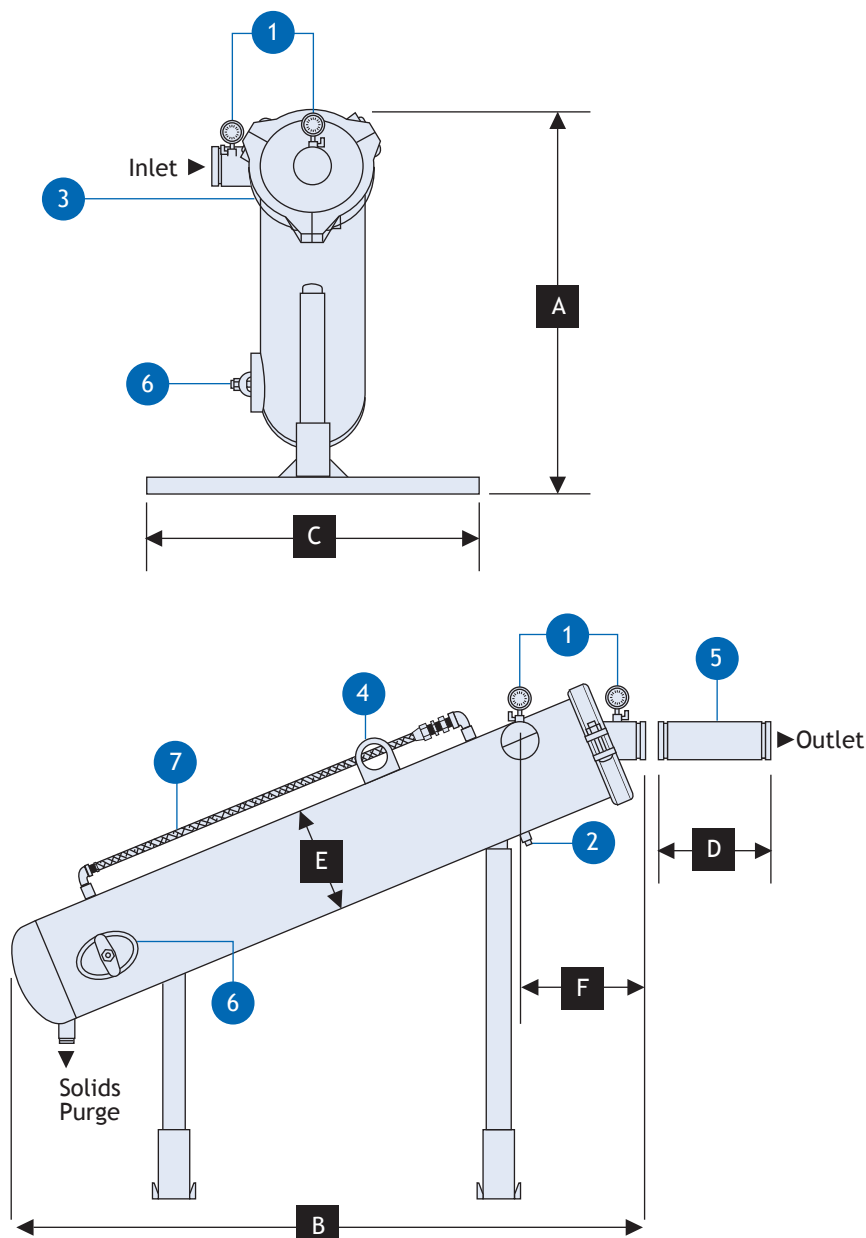
When removed, provides space for accessing internal of separator via rigid coupling. Not included with separator, available separately

### Hand-Hole Inspection Port

Provides access to collection chamber; Neoprene gasket

### Vortube

Piping provided by LAKOS



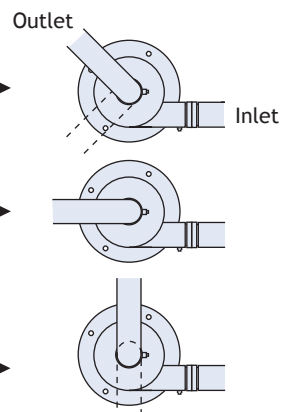
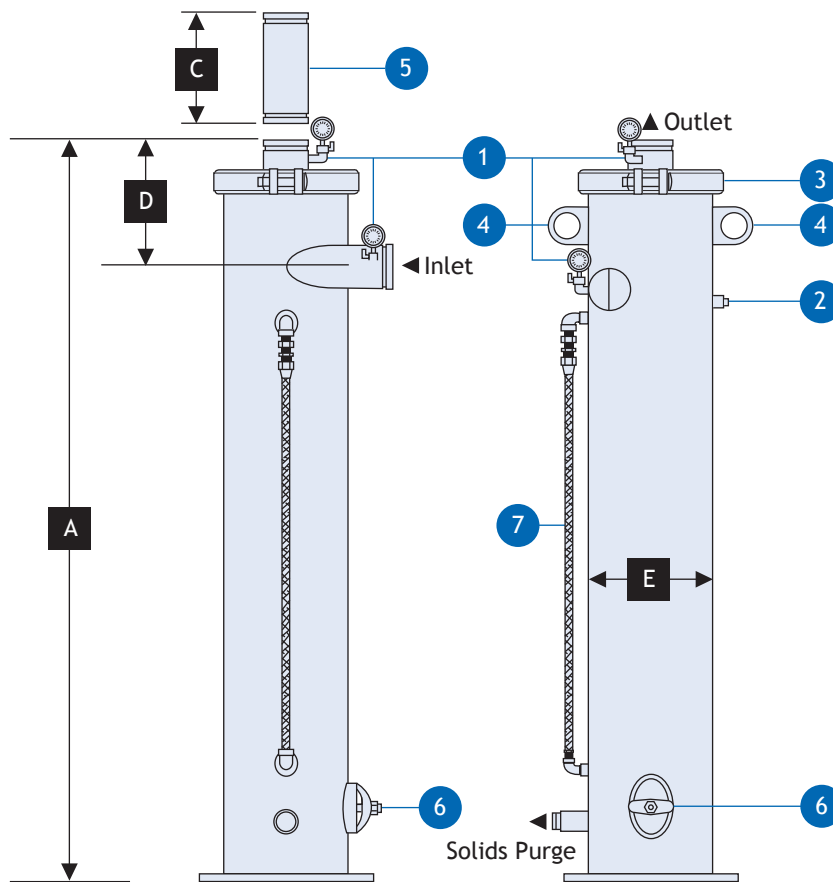
## Dimensions

| Model      | A        |      | B         |      | C  |      | D  |      | E      |      | F        |      |
|------------|----------|------|-----------|------|----|------|----|------|--------|------|----------|------|
|            | in       | mm   | in        | mm   | in | mm   | in | mm   | in     | mm   | in       | mm   |
| JPX-0200-L | 71       | 1803 | 65-1/4    | 1657 | 40 | 1016 | 21 | 533  | 10-3/4 | 273  | 13       | 330  |
| JPX-0285-L | 78-1/2   | 1994 | 79-5/8    | 2022 | 40 | 1016 | 21 | 533  | 12-3/4 | 324  | 15-7/8   | 403  |
| JPX-0450-L | 85-11/16 | 2176 | 94-5/16   | 2396 | 40 | 1016 | 24 | 610  | 14     | 356  | 15-1/4   | 387  |
| JPX-0650-L | 92       | 2337 | 106-1/8   | 2696 | 40 | 1016 | 24 | 610  | 16     | 406  | 17-7/8   | 453  |
| JPX-1160-L | 104-3/4  | 2661 | 127-3/16  | 3231 | 40 | 1016 | 30 | 762  | 20     | 508  | 21-13/16 | 554  |
| JPX-1850-L | 113-7/16 | 2881 | 150-3/8   | 3820 | 40 | 1016 | 33 | 838  | 24     | 610  | 34-1/8   | 867  |
| JPX-2650-L | 126-1/2  | 3213 | 165-13/16 | 4212 | 60 | 1524 | 38 | 965  | 28     | 711  | 37       | 940  |
| JPX-4200-L | 149-1/4  | 3791 | 208       | 5283 | 60 | 1524 | 51 | 1295 | 36     | 914  | 47-5/8   | 1210 |
| JPX-6700-L | 168-1/4  | 4274 | 244-1/2   | 6210 | 60 | 1524 | 60 | 1524 | 42     | 1067 | 53-1/2   | 1360 |

*Dimensions for reference only.  
Consult factory when pre-plumbing.*

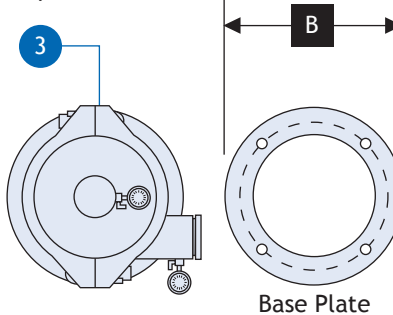
## High Flow Rates

## Vertical Profile



Recommended  
Direction  
of Inlet/Outlet  
Piping to Control  
Vibration

Top Views



### Dimensions

| Model      | A        |      | B  |      | C  |      | D       |      | E      |      |
|------------|----------|------|----|------|----|------|---------|------|--------|------|
|            | in       | mm   | in | mm   | in | mm   | in      | mm   | in     | mm   |
| JPX-0200-V | 73-13/16 | 1875 | 16 | 406  | 21 | 533  | 11-1/2  | 292  | 10-3/4 | 273  |
| JPX-0285-V | 79-9/16  | 2021 | 18 | 457  | 21 | 533  | 14-3/16 | 360  | 12-3/4 | 324  |
| JPX-0450-V | 94-5/8   | 2403 | 20 | 508  | 24 | 610  | 13-3/8  | 340  | 14     | 356  |
| JPX-0650-V | 107-3/8  | 2727 | 22 | 559  | 24 | 610  | 15-3/4  | 400  | 16     | 406  |
| JPX-1160-V | 128-1/8  | 3254 | 26 | 660  | 30 | 762  | 18-7/8  | 479  | 20     | 508  |
| JPX-1850-V | 148-5/16 | 3767 | 32 | 813  | 33 | 838  | 28      | 711  | 24     | 610  |
| JPX-2650-V | 168-3/4  | 4286 | 36 | 914  | 38 | 965  | 31      | 787  | 28     | 711  |
| JPX-4200-V | 205-3/16 | 5212 | 44 | 1118 | 51 | 1295 | 39-1/8  | 994  | 36     | 914  |
| JPX-6700-V | 244-3/8  | 6207 | 52 | 1219 | 60 | 1524 | 43      | 1092 | 42     | 1067 |

#### 1 Inlet/Outlet Pressure Gauges with Petcock Valves

Included as standard; Install at both inlet and outlet for proper flow verification (see "Flow vs. Pressure Loss", page 3)

#### 2 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

#### 3 Rigid Coupling Connection

Provides for complete access to the upper chamber, acceleration slots and internal separation barrel; standard EPDM gasket - also available in Nitrile, Silicone, Fluoroelastomer, Black Neoprene or White Nitrile; model JPX-2650 and larger uses flange

#### 4 Lifting Rings

For installation purposes

#### 5 Connection Spool

When removed, provides space for accessing internal of separator via rigid coupling. Not included with separator, available separately

#### 6 Hand-Hole Inspection Port

Provides access to collection chamber; Neoprene gasket

#### 7 Vortube

Piping provided by LAKOS

*Dimensions for reference only.  
Consult factory when pre-plumbing.*



## 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).

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## Sample Specifications

Sample specifications can be downloaded from the LAKOS website at [www.LAKOS.com](http://www.LAKOS.com).

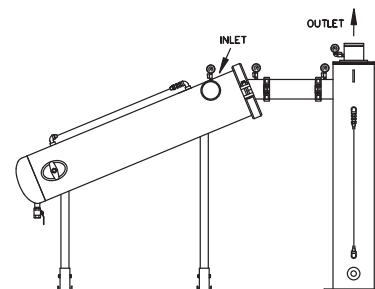
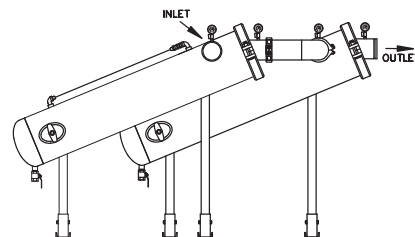
## Two-Stage Separators

**Effectively handles higher solids concentrations.  
Improves fine particle removal performance.**

Combining LAKOS Separators in a "Super Separator" configuration, the first-stage separator will always most effectively remove larger solids, which are easily influenced by centrifugal action. Often, it is the larger solids that make up a great percentage of the overall solids volume. When finer, yet separable solids are also present and larger solids have limited the space available on the perimeter of the separation barrel, the second-stage separator then performs to remove even more of the finer solids.

Essentially, removing the larger solids in the first-stage separator effectively reduces the overall solids concentration, allowing the second-stage separator to more easily handle the lower solids concentration and the smaller particles. And, in applications where the particle geometry is flakes, rods and/or irregular shapes, two-stage separators have been utilized to successfully increase overall particle-removal.

**JPX Low Profile**



**JPX Low Profile with  
JPL Vertical Profile**

## Annular Transfer Ring

**For larger solid particles. Used in applications where fibrous solids require alternative internal acceleration. Available for JPX-0200 and larger.**

When large or fibrous solids are present, the Annular Transfer Ring offers an alternative means for internal acceleration to achieve maximum centrifugal action performance. The full-around annular open area resists clogging by large or stringy contaminants.

