**Part I – General**

**1.01 Purpose**

**Specification Sheet for**

***e*JPX Separator**

**SECTION \_\_\_\_\_**
**Liquid-Solids Separator**

A. The removal of specific unwanted solids from a pumped/pressurized fluid flow system
shall be accomplished with a centrifugal-action vortex separator. Solids removal
efficiency is principally predicated on the difference in specific gravity between the liquid
and the solids. Fluid viscosity must be 100 SSU or less.

B. Equipment for this purpose shall be a LAKOS model *e*JPX separator as manufactured
by LAKOS Corporation.

**1.02 Performance**

A. In a single pass through the *e*JPX separator, given solids with a specific gravity of 2.6
and water at 1.0, solids removal performance will be up to 98% of 45 microns and

larger. Additionally, particles finer in size, heavier by specific gravity and some lighter by
specific gravity will also be removed.

B. Independent Testing: Separator performance must be supported by published
independent test results from a recognized and identified agency. Standard test

protocol of upstream injection, downstream capture and separator purge recovery is
allowed with the 200-325 mesh particles to enable effective, repeatable results. Single
pass test performance must be not less than 95% removal. Actual model tested must be
of the same flow design series as the specified separator.

**Part II - Products**

**2.01 Manufacturer**

A. The separator system shall be manufactured by LAKOS Corporation in Fresno, California USA. Specific model designation is:
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2.02 *e*JPX Series Liquid-Solids Separator**

A. A tangential inlet and mutually tangential internal accelerating slots shall be employed to
promote the proper velocity necessary for the removal of the separable solids. The
internal accelerating slots shall be spiral-cut (Swirlex) for optimal 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.

B. 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 stool.

C. To insure maximum particle removal characteristics, *e*JPX Series Separator shall
incorporate a enhanced vortex-induced pressure relief line *(Vortube),* drawing specific

fluid from the separator’s solids collection chamber via the outlet flow’s vortex/venturi
effect, thereby efficiently encouraging solids into the collection chamber without
requiring a continuous underflow or excessive system fluid loss.

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

E. The separator shall feature the following access capabilities for either inspection or the
removal of unusual solids/debris:

1. A hand-hole port at the collection chamber.

2. An upper chamber full sized grooved coupling, allowing complete access to the

inlet chamber, acceleration slots, and internal separation barrel.

F. The separator shall be of unishell construction with A-36, A-53B or equivalent quality
carbon steel, minimum thickness of .25 inches (6.35 mm). Unless otherwise specified,

maximum operating pressure shall be:

a. 250 psi (17.2 bar) for ANSI flanged separators
b. 232 psi (16 bar) for DIN flanged separators

c. 203 psi (14 bar) for JIS flanged separators.

G. Paint coating shall be acrylic urethane, spray-on, royal blue.

H. Pressure gauges shall be included for the inlet/outlet of the separator.

I. ***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.

J. Inlet & outlet shall be flanged, size: \_\_\_\_\_\_\_\_\_\_

K. Purge outlet shall be threaded, size: \_\_\_\_\_\_\_\_\_\_

L. The separator shall operate within a flow range of: \_\_\_\_\_\_\_\_\_\_

M. Pressure loss shall be between 5-18 psi (0.34-1.24 bar), remaining constant, varying
only when the flow rate changes.

**2.03 Purging**

A. Evacuation of separated solids shall be accomplished automatically, employing a solids
sensing probe as well as user-adjustable controller in a NEMA 4 housing. Available for
worldwide single-phase voltages of 100VAC to 240VAC. Programming options to

include a purge frequency range of every 60 seconds to every 23 hours, 59 minutes.
Purge duration options range from 6 seconds to 59 minutes, 59 seconds. Fault/time out
duration (minutes). Dwell time before system reacts to a sensor probe trigger, also

called Hysteresis (seconds). Failsafe trigger time during which three probe trigger

causes a fault and time out (seconds). Non-volatile memory. Meets CUL 508c

requirements. This solids sensing probe and controller shall automatically operate one of the following techniques:

B. Motorized Ball Valve - A full-port, electrically-actuated valve shall be programmed at
appropriate intervals and duration in order to efficiently and regularly purge solids from

the separator's collection chamber. Valve body shall be bronze (optional stainless steel
also available). Valve ball shall be stainless steel with sealant seat.

Valve size: \_\_\_\_\_\_\_

OR

C. Pneumatic Pinch Valve - Compressed air shall be provided to actuate this full- port valve

at appropriate intervals and duration in order to efficiently and regularly purge solids

from the separator's collection chamber. System shall include a pressure regulator for
proper modulation of air pressure. Valve liner is natural gum rubber (other liner materials
available). Valve size: \_\_\_\_\_\_\_

OR

D. Motorized Pinch Valve - A full-port, electrically-actuated valve shall be programmed at

appropriate intervals and duration in order to efficiently and regularly purge solids from
the separator's collection chamber. Valve liner is EPDM (other liner materials available).
Valve size: \_\_\_\_\_\_\_

**2.04 Solids Handling**

A. An appropriate solids collection device shall be provided with the separator, suitable for
capturing solids and returning all excess purged liquid to system use. Size and type of
collection device shall be determined according to the application requirements,
selected from the following options (or custom, as specified):

B. Solids Collection Drum - In conjunction with the appropriate automatic purge valve, this
package shall be employed to capture and concentrate separated solids (up to 90%
solids by volume) from the separator directly into a standard 55-gallon drum, returning
excess purged liquid to system use via an integral decant line on the drum shroud.
Solids collection capacity: 12,700 cubic inches (200 liters). Package includes two
shrouds, two shroud clamps, two drum carts for transporting the drums and a manual
liquid evacuation pump. Recommended option: A Purge Diffuser shall be installed on
the discharge of the automatic purge valve in order to reduce the velocity of the purge
flow and enhance the settling of solids within the drum.

OR

C. Solids Collection Hopper - In conjunction with the appropriate automatic purge valve, a

one cubic yard (764 liter) hopper shall be employed to capture and concentrate
separated solids (up to 90% by volume) from the separator, returning excess purged
liquid to system use via an integral decant line installed directly on the hopper. The
hopper shall feature a manually-actuated tilting mechanism for dumping accumulated
solids as necessary. Recommended option: A Purge Diffuser shall be installed on the
discharge of the automatic purge valve in order to reduce the velocity of the purge flow
and enhance the settling of solids within the hopper.

**2.05 Systemization**

A. The separator and its accessories shall be packaged as a complete system, with all
componentry from a single source. In addition to the equipment already specified, the

system shall also include an appropriate support frame for positioning the separator
accurately and effectively for solids purging/handling. If the specified purging technique
is a pneumatic pinch valve: A spare pinch valve liner shall also be included.

**2.06 Required Options**

A. A flanged connection spool piece for installation on the discharge of the separator to
allow access to the top chamber during inspection.

**Part III – Execution**

**3.01 Installation**

A. Coordinate with the installing contractor to ensure equipment is installed in conformance
with manufacturer’s recommendations and those found in the eJPX Installation Manual.

B. If deficiencies are noted by the field service representative, the contractor shall make the
necessary corrections and notify the manufacturer of these facts in writing. The
manufacturer’s field service personnel may, at their option, visit the installation site and
oversee any corrections and or modifications required.

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**Limited Warranty**

This product series is warranted to be free of defects in material or workmanship, given the following terms:

LAKOS Separator: 5 years

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 designation, 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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