

3 Phase Flow Jet Pump

3 Phase Flow Jet Pump is a type of jet pump which introduces air into water jet nozzle (via natural suction), possible to transport solid objects, for which the interior of the pipe contains a 3-phase-flow of solid, gas, and liquid.

< Characteristics >

1. The “cavitation phenomenon”, which occurs during high-speed rotation upon using only water pump, does not occur.
2. Due to utilizing pipe structure, it is possible to transport mixtures of multiple substances, such as sludge, muddy water, etc. which consist of solid matter and fluid.
3. Since no impeller is used for the pump, there is no concern about solid matter would get entangled with impeller causing “clogging”, or mixed substances would cause “damage”.
4. It is possible to perform suction at a narrow location if the location is wide enough to place a single suction pipe.
5. With the principle of sucking solid objects, as a “washing machine”, it is extremely effective to clean those objects in series flowing inside of the narrow tube.

< Application >

- Civil Engineering: Conveyance of gravel and soil for reclamation work (Able to convey materials having heavy specific gravity or rope-like objects without causing clogging.)
- Civil Engineering: Excavation work (Able to convey and transfer underground gravel, soil, and stones in a vertical manner.)
- Civil Engineering: Dredging operations for seabed, lakebed, and dam bottom (As the jet effect provides great separation for extracted gravel and soil, the speed of sedimentation is fast.)
- Civil Engineering: Pumping-up operations of sediment for sewer pipes and U-shaped gutters (It is possible to perform such operations at a narrow location or deep area on or under the ground.)
- Water treatment: Filtering device (Internal circulation of filter tank and separation of materials from sand)
- Fish Culturing: Feeding (Feed does not get deformed, crushed, and clogged up.)
- Washing Machine: Able to perform jet cleaning to vessels and tanks as well as collecting sludge (Cleaning and pumping-up sludge can be performed at a time.)
- Food Production: Fluid flow cleaning (Focusing on grain, it is able to clean fluid flow objects within a short period of time.)
- Food Production: Pneumatic Conveyance (Suction is performed by the air generated from a vacuum state via water circulation, and fine particles do not scatter.)
- Food Production: Water Conveyance (Water is sucked via a vacuum state. As there is a lesser chance of clogging comparing to the pressure feeding, damage to the food is much smaller.