

Cavitation rotor machine with vacuum treatment contains coaxially located a shaft with high-speed rotor (carrying on itself several rows of radial wedged super-cavitation blades (WSC-blades) having asymmetrical profile), entry and exit mutual chambers, a return mutual chamber, inlet and outlet branch pipes, and also several circumferential working chambers. Each of these chambers is divided along circumference by longitudinal radial divide walls on groups of working mini-chambers. WSC-blades (each row) located between neighbor working chambers are able to move very fast together with the rotor. So they can cut the flows of the treated liquid with very big relative speed and these flows are running back and forth along the longitudinal divide walls between working mini-chambers. Due to it the intensive supercavitation is generated in these zones and the liquid get intensive processing.

Most of the treated liquid from the biggest part of mini-chambers is directed to the mutual return chamber and then it goes through holes in the rotors into enter circumferential working chambers for additional cavitation processing. At the same time small part of the treated liquid from small part of exit working mini-chambers is directed to the mutual exit chamber and outside.

Each WSC-blade has an internal hallow that has an enter from the cavitation zone and has an exit connected with internal hallow of the rotor. After that there is connection this hallow with gas-vacuum branch pipe by the seal and then with outside tube of the cavitation machine. The rotor contains several rows WSC-blades located in parallel planes that are perpendicular to the rotor axis. At the same time the axial pump effects of neighbour blade rows on the rotor are opposite each other but the first row has to produce the biggest effect. The resulting axial pump effect of all blade rows has to be directed to the circumferential exit working chamber.

Besides each intermediate circumferential chamber between neighbor blade rows is the intermediate circumferential working chamber that is similar on structure to the circumferential enter working chamber and similarly is divided by longitudinal radial divide walls.