

The Vibro™-I is an industrial filtration solution for applications where low energy consumption, high flux, sanitary function, low capital investment and gentle filtration are key words. The Vibro™-I delivers continuous low fouling filtration where the filter is kept clean by vibration shear.

The membrane module vibrates vertically while the patented Vibro™ technology makes the media inside the module stationary. The relative vibration of media and membrane creates turbulence on the membrane surface and thereby keeps the fouling layer at a minimum. The turbulence is only created at vertical surfaces. Thus, the energy required to create the turbulence at the membrane surfaces is minimized. Because the Vibro-I only creates turbulence at the membrane surfaces, the need to cool the retentate is reduced and most often eliminated which again adds to the energy savings.

The Vibro™-I handles the feed solution very gently as no large circulation pump is needed. A conventional circulation pump can damage cells, molecules etc. during operation. By eliminating the circulation pump Vibro™-I has become the most product gentle industrial scale MF and UF system on the market.

The elimination of the circulation pump also gives you virtually uniform trans membrane pressures throughout the unit. The uniform TMP gives you the sharpest membrane cut-offs of any industrial system.

Due to the open design of the Free Flow Plate™ Module (HP1), the Vibro™-I can handle very difficult products with high viscosity, high mass loadings and even high particulates. When extremely difficult feeds are processed, it is possible to homogenize the retentate in the Vibro™ systems by attaching a "slow" mix pump.

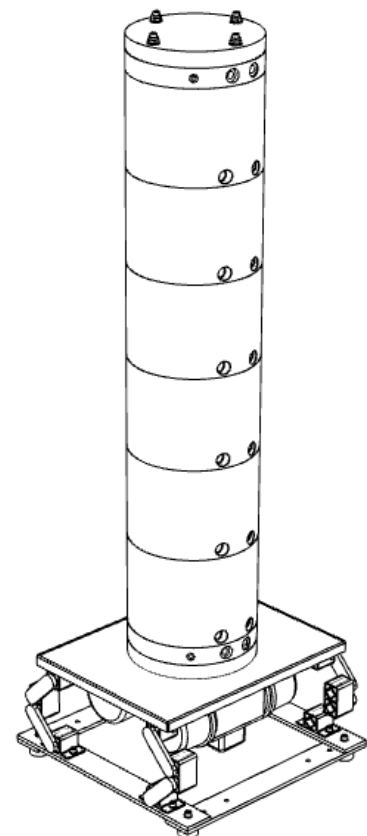
The Vibro™-I is fully drainable of both retentate and permeate. Thus, no product loss and faster CIP cycles.

The Vibro™-I utilizes the 2,5 m² Free Flow Plate™ module (HP1) and comes with 7,5; 10; 15 or 20 m² membrane as 1-tower units. The units can be connected in series or parallel depending on your needs.

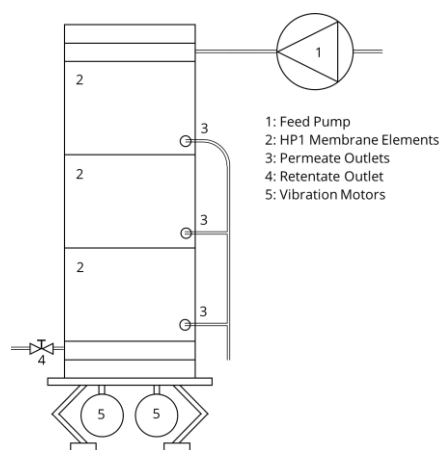
The tower configuration and the elimination of circulation pumps, cooling aggregates, booster pumps and intricate piping layout gives the Vibro™-I systems a small footprint. All media contacting parts are in durable polymeric materials or stainless steel. The Vibro™-I can conform to FDA materials and sanitary/GMP standards if required.



A 7,5 m² Vibro™-I system



A 15 m² Vibro™-I system



An example of a Vibro™-I system in operation

Vibro™-I 7.5 m² Data

Weight	120 kg
Dimensions (L x W x H)	478 mm x 400 mm x 1170 mm
Membrane	3 x 2.5 m ² Free Flow Plate Modules (HP1)
Internal Retentate volume	16 L, Fully Drainable
Internal Permeate volume	3 L, Fully Drainable
Operating Pressure	0-4 bar at 5-35°C, 0-3 bar at 5-55°C and 0-1 bar at up to 80°C
Vibration Motor	Electric, 480 W

Vibro™-I 10 m² Data

Weight	130 kg
Dimensions (L x W x H)	478 mm x 400 mm x 1430 mm
Membrane	4 x 2.5 m ² Free Flow Plate Modules (HP1)
Internal Retentate volume	20 L, Fully Drainable
Internal Permeate volume	4 L, Fully Drainable
Operating Pressure	0-4 bar at 5-35°C, 0-3 bar at 5-55°C and 0-1 bar at up to 80°C
Vibration Motor	Electric, 480 W

Vibro™-I 15 m² Data

Weight	190 kg
Dimensions (L x W x H)	659 mm x 645 mm x 1934 mm
Membrane	6 x 2.5 m ² Free Flow Plate Modules (HP1)
Internal Retentate volume	28 L, Fully Drainable
Internal Permeate volume	6 L, Fully Drainable
Operating Pressure	0-4 bar at 5-35°C, 0-3 bar at 5-55°C and 0-1 bar at up to 80°C
Vibration Motor	Electric, 900 W

Vibro™-I 20 m² Data

Weight	210 kg
Dimensions (L x W x H)	659 mm x 645 mm x 2420 mm
Membrane	8 x 2.5 m ² Free Flow Plate Modules (HP1)
Internal Retentate volume	36 L, Fully Drainable
Internal Permeate volume	8 L, Fully Drainable
Operating Pressure	0-4 bar at 5-35°C, 0-3 bar at 5-55°C and 0-1 bar at up to 80°C
Vibration Motor	Electric, 900 W

Vibro™-I Cushion Assemblies

Option 1	2 X 1" and 1 X 1/4" threaded inlets/outlets
Option 2	2 X 1/2" and 1 X 1/4" threaded inlets/outlets
Pharma and Food Option	GMP and FDA with 2 X (1" / 1/2" / blank) clamp inlets/outlets

More options are available upon request

