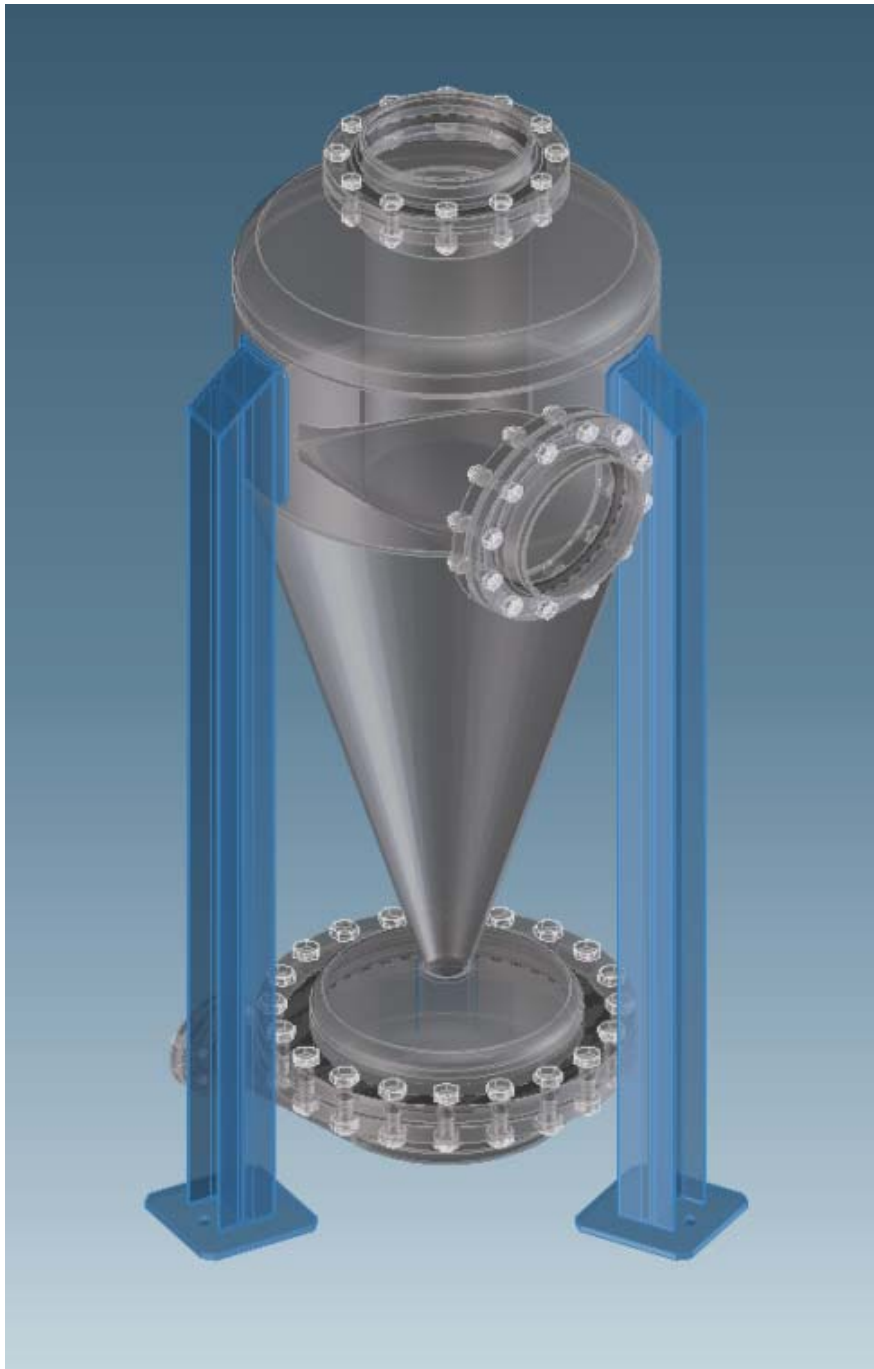




Water and Mechanical Technology s.r.l.



STATIC SEPARATORS CYCLONES and HYDROCYCLONES

Cyclones

Industrial cyclones are static separators which, based on differences in density, separate the various components present in a two-phase fluid body.

Hydrocyclones

Unlike dry or powder cyclones, which separate solids or liquids from gases, hydrocyclones separate solids from fluids or fluids of different nature contained in the liquid body to be treated.

Components

A hydrocyclone includes a cylindrical-shaped feed part with tangential inlet; an overflow outlet with vortex generator; a conical part with a waste or separated discharge tip and possibly a collection part for the latter.

Working principle

The product is fed tangentially into the hydrocyclone at a pressure and speed given by the feeding system.

The introduction of the fluid phase creates a centrifugal movement pushing the heavier component outwards and downwards along the wall of the conical part.

The decreasing diameter in the conical part increases the speed and therefore improves the separation between the desired components.

Finally, the concentrated part with the highest density is discharged through the discharge tip.

The vortex maker in the outlet part generates a rapidly rotating upward spiral movement of the fluid in the center of the conical-shaped housing.

The fluid with a lower density is discharged, separated, through the overflow outlet.

Cyclone parameters

The following parameters are decisive for the good functioning of the cyclone:

- the design,
- the difference in specific weight between the two phases of the product to be separated,
- the shape of the product to be separated,
- the forward velocity of the fluid,
- the density of the components of the two phases,
- the viscosity of the product to be treated,
- the supply pressure and the counterpressures necessary at the overflow outlet and at the discharge tip.

Application areas

The main areas of application for hydrocyclones are:

Industrial separation processes - Hydrocyclones are often used in industry for the separation of particles present in a fluid body.

Mineral processing industry - Hydrocyclones are frequently utilized in the metallurgical and mineral processing industry for the classification of fine particles and dewatering of slurries.

Sand separation and classification - Hydrocyclones used for sand separation and classification and as a separator of sand from water or sludge.

Oil-water separation - Separation of oil and water in, among other things, the offshore industry.

Dewatering - Concentration of slurry and dewater sludge for disposal.

Microplastic separation - Removal of microplastics from wastewater.

Main characteristic data of our hydrocyclones

Flow: from 1,22 to 37.000 gpm. - Inlet and outlet diameters: from 1/8" to 40".

Separation class depending on the fluids treated.

Version / Accessories

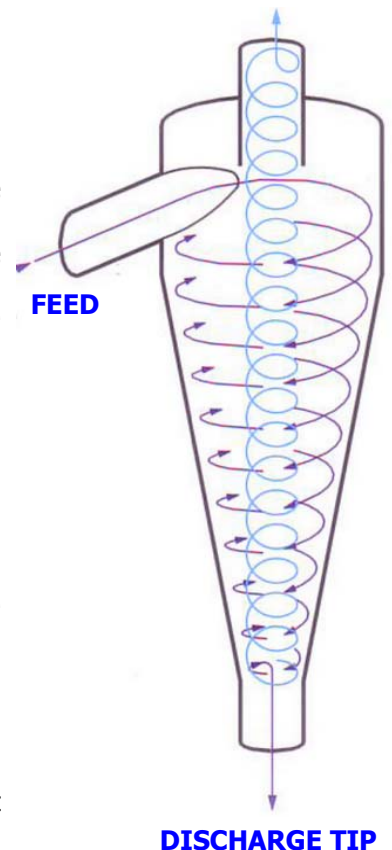
ISO, ANSI, JIS, standards. - Closed or inspectable versions.

Materials: carbon steels, silicon steels, manganese steels, stainless steels, Monel, Hastelloy.

Calibrated diaphragms for fine adjustment of flow rates. - Shut-off valves: inlet, outlet and by-pass.

Discharge: continuous or timed with accumulation tank. - Accumulation tank washing system.

WORKING DIAGRAM
OVERFLOW OUTLET



W.M.T. - Water and Mechanical Technology s.r.l.

33, Giacomo Brodolini I - 20032 Cormano MI

Phone: +39 02 610 1342 Fax: +39 02 610 2518

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url: <http://www.wmt.it>

Cyclones separator

e-mail: wmt@wmt.it

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