VORTEX

Centrifugal separator filter for drinking and industrial water

Rev. 0 - 03/24

CHARACTERISTICS

The VORTEX series filters are centrifugal separator filters (hydrocyclones) particularly suitable for treating water containing sand and/or suspended solids with a specific weight higher than that of water (Ps ≥ 1). VORTEX is able to remove up to 99% of sand with dimensions greater than 75 microns and up to 65% with dimensions greater than 50 microns. The separation of the particles occurs through the action of centrifugal force: the particular internal configuration of the filter transforms the pressure energy into centrifugal kinetic energy which accelerates the heavier particles towards the walls of the filter, where they fall towards the bottom and settle.

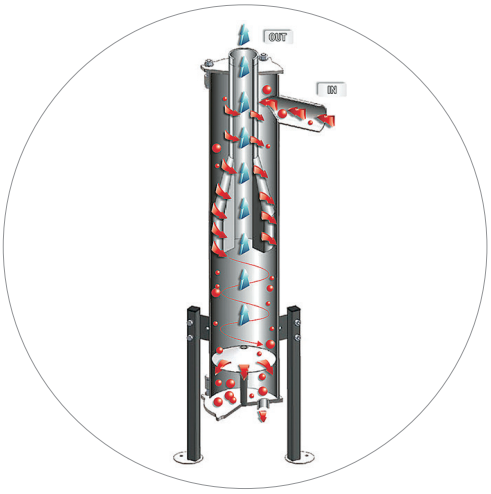
Designed to minimize pressure losses while maintaining excellent separation efficiencies, VORTEX filters work continuously, have no moving mechanical parts or filtering elements inside them, can be inspected and the bottom drain takes place from a special opening located on the bottom of the filter and can be done continuously or discontinuously.

Depending on particular needs, it is advisable to install a protective filter cartridge downstream of the VORTEX filter.

The filter body is made of AISI304 steel (AISI316 on request). The internal cone is made of PVC while the gaskets are made of EPDM. The filter works continuously without the need for periodic maintenance or cleaning, as it does not contain filtering elements or moving parts.

VORTEX can be completely dismantled for quick and easy inspection. The separation occurs only as a result of the centrifugal force given to the water by the particular internal conformation of the filter. Centrifugal force involves a simple separation by gravity: the difference in specific weight between the water and the material to be separated constitutes the effective driving force of the process. The higher is this difference, the higher is the separation efficiency of the VORTEX centrifugal separator. Dirt tends to accumulate at the bottom of the filter, while clean water comes out from the top. In optimal working conditions, VORTEX filters can achieve a separation efficiency of up to 90% against particles with a hydrodynamic radius greater than 75 microns and a density greater than 2.6 Kg/dm^3.

In the VORTEX filter the manual bottom drain valve can be automated (see in the various options).



MAX PRESSURE
10 bar

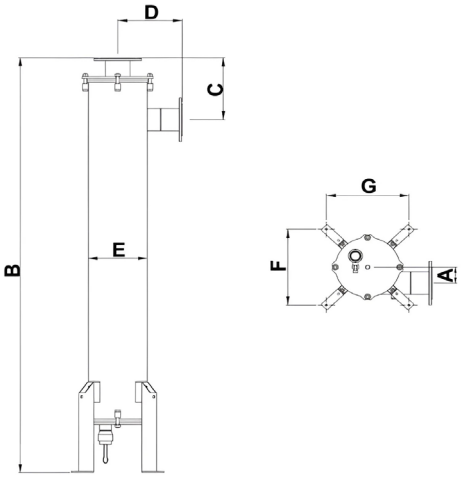
FILTRATION RATING
50-75 µ

MAX FLOW RATE
2-96 m^3/h

TECHNICAL DATA

Code		VRTX0005	VRTX0010	VRTX0020	VRTX0030	VRTX0040	VRTX0050
Model		**VORTEX 5**	**VORTEX 10**	**VORTEX 20**	**VORTEX 30**	**VORTEX 40**	**VORTEX 50**
In/Out connections		¾"	1"	1" ½	2"	3"	DN100
Drain connections		¾"	¾"	1"	1"	1"	1" ½
Min. flow rate	m^3/h	2 - 4	4 - 9	8 - 18	15 - 30	25 - 60	54 - 105
Min./max. water temperature	°C	5 - 60					
Min./max. working pressure	bar	1,5 - 10					
Seals		EPDM					
Body material		AISI304					

OVERALL DIMENSIONS



Code	A	B	C	D	E	F	G	Weight
	mm	mm	mm	mm	mm	mm	mm	Kg
VRTX0005	30	735	155	110	89	252	219	10,0
VRTX0010	40	1050	155	120	114	274	227	18,0
VRTX0020	46	1080	195	160	140	267	286	24,0
VRTX0030	55	1380	205	190	168	328	286	32,0
VRTX0040	65	1800	265	230	219	374	324	52,0
VRTX0050	80	2100	313	300	273	384	384	85,0

EQUIPMENT AND SUPPLY SPECIFICATIONS

VORTEX is supplied complete with an instruction manual for use - maintenance in Italian (including declaration of conformity).

Shipping managed on pallets.

OPTIONAL ACCESSORIES

The kit to automate the drain of the VORTEX filter is available on request; it can be supplied in two versions:

- hydraulic automatic drain kit
- pneumatic automatic drain kit

The kit includes all the elements necessary for installation and operation.

For the operation of the drain kit, in both versions, it is necessary to adopt the electronic control unit for the control and management of the cleaning cycles.

• HYDRAULIC KIT

COD. 32042001	**hydraulic kit for Vortex ¾"**
COD. 32042002	**hydraulic kit for Vortex 1"**
COD. 32042003	**hydraulic kit for Vortex 1" ½ - 2" - 3"**
COD. 32042004	**hydraulic kit for Vortex DN 100**
COD. 32042050	**Control unit for Vortex**

• PNEUMATIC KIT

COD. 32042033	**pneumatic kit for Vortex 1" ½ - 2" - 3"**
COD. 32042034	**pneumatic kit for Vortex DN 100**
COD. 32042050	**Control unit for Vortex**

REFERENCE STANDARDS

Art. 4 Par. 3 Of Directive 2014/68/EU (PED).

PRECAUTIONS AND WARNINGS

It is necessary to protect the filter from the direct action of the sun and away from frost. Do not expose to temperatures above 80°C. Do not exceed the maximum working pressure indicated. If the supply pressure is higher, install a pressure reducer upstream of the filter. Periodically check the correct operation of the filter. The weight of the hydraulic connections and the filter must be supported with special structures so as not to stress the connections. Make sure that the filter is mounted in such a way as to have sufficient space around it for maintenance operations.

MAINTENANCE

The impurities sedimented in the lower part of the VORTEX filter must be drained, continuously or at time intervals, via the appropriate connection located in the lower cover. The filter requires the presence of a drain for the continuous or discontinuous adduction of the accumulated dirt. VORTEX filters are not equipped with an anti-flooding device capable of detecting and intervening in the event of breakages or blockages of the device and, therefore, avoiding possible flooding or uncontrolled water consumption. The frequency of maintenance depends on the conditions of the environment in which the filter is installed and the severity of the work to which it is subjected. Periodically check the correct operation of the filter. Maintenance must be carried out by qualified personnel, who must guarantee the necessary conditions to safeguard their own safety and that of the people directly involved. Respect all the instructions given in the Use and Maintenance Manual.

INSTALLAZIONE

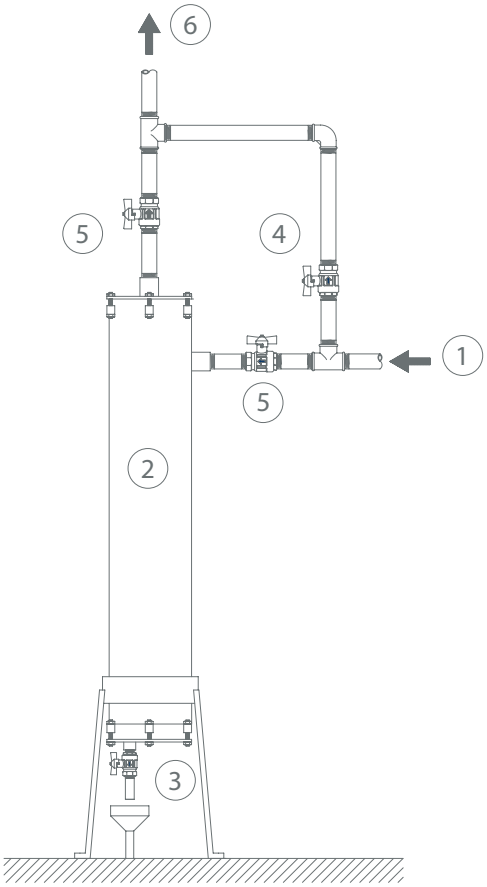
L'installazione del filtro deve essere eseguita esclusivamente da personale qualificato nel pieno rispetto delle normative locali. Installare un adeguato sistema di valvole che consenta di escludere il filtro in caso di malfunzionamento senza impedire l'erogazione dell'acqua (by-pass).

Prevedere un adeguato scarico a vista sotto il filtro.

É consigliabile l'installazione di rubinetti preleva campione a monte e a valle del filtro.

Rispettare tutte le indicazioni riportate nel Manuale di Uso e Manutenzione.

INDICATIVE INSTALLATION DIAGRAM



1. Ingresso acqua grezza; 2. Filtro; 3. Scarico; 4. Valvola by-pass; 5. Valvola di intercettazione; 6. Uscita acqua filtrata.

change SPARE PARTS

Spare parts for the equipment are available on request in the dedicated price list.

AVERAGE DELIVERY TIMES

2-3 settimane

GENERAL EXCLUSIONS

- Special dedicated packaging, where required - wooden crates
- Equipment start-up and final testing: management not necessary by an Authorized Assistance Center See the manual for correct installation of the product
- Lifting and handling means
- Hydraulic and electrical connections to our plant and to our utilities
- Masonry, carpentry and foundation works
- Chemical analyses
- Structural calculations
- Anything not expressly mentioned in the offer