



Pure Innovation.™

The Ultrascreen® Microfilter

The Ultrascreen® Microfilter (U.S. Patent No. 6,500,331) uses the patented concept of “dynamic-tangential filtration,” an innovative approach to applying disk filters for tertiary treatment. This concept easily integrates into existing wastewater treatment plants without requiring changes to your current process or any special civil work. The Ultrascreen® Microfilter comes standard with all wetted parts in AISI 304 or 316 stainless steel construction. The covers are made of durable and lightweight polyethylene to facilitate operation and maintenance.

“Dynamic-tangential filtration” is made possible by disks that continuously rotate, presenting a fresh filtration surface to the incoming flow at all times. The flow through the openings in the media occurs at angles less than 90 degrees, which when combined with the rotational speed of the disks, makes the openings in the mesh functionally smaller than when they are standing still. This is analogous to trying to throw a snow ball through an open window of a moving car. The faster the car moves, the harder it is for the smaller solid, the snowball, to pass through the larger opening. Refer to Figure No.1.

As the disks rotate, a layer of biomass accumulates on the surface of the AISI 304 stainless steel mesh and strains out increasingly finer solids. When the influent level in the feed box rises to a preset limit, a sensor actuates operation of the backwash pump. Each disk has a dedicated spray header for efficient washing. The wash water from each set of disks is collected in a common 304 stainless steel trough and exits the filter through a stainless steel drain, for return to the head of the plant or to the biological process.

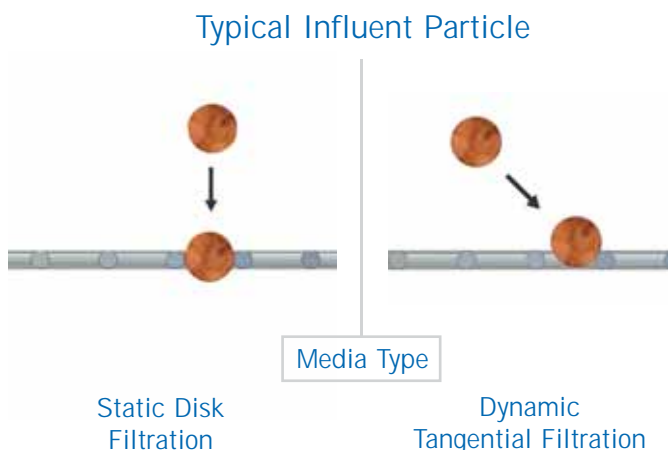


The Ultrascreen® uses woven stainless steel as a filtration medium thus eliminating the need to change filter cloths. The stainless steel weave also allows the Ultrascreen® to handle higher hydrostatic heads (see Figure No. 2), which translates to more efficient use of the total available filtering surface lowering your overall footprint.

As shown in Figure No. 3, the feed to the filter is introduced into the middle of each “disk.” As each disk is split in two halves, the internals of the filter are easily accessible if service is required. The flow passes through the disks from the inside-out and the filtered water free-falls into the collection well and exits the outlet pipe. The periphery of each disk is sealed with flexible seals, which form a positive mechanical barrier and prevents the filtered effluent from mixing with the dirty influent. Effluent integrity is assured!

Another benefit of the Ultrascreen® is performance optimization. Speed, wash cycle timing, and the level of fluid in the feed zone are all variable. The Ultrascreen® is therefore the right choice for all types of treatment plants and operating conditions. Performance optimization like this is not possible with static disk filters.

Figure No. 1



Figures No. 2 & 3

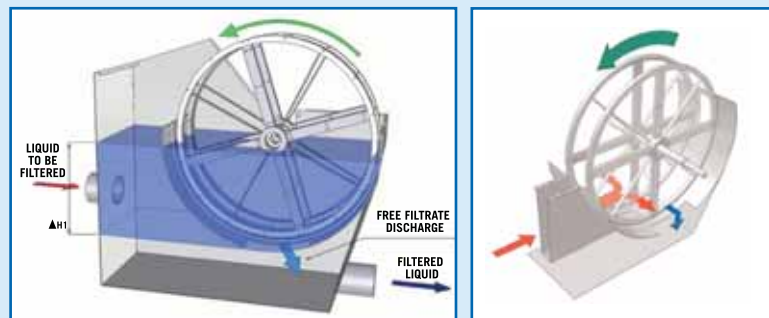


Figure No. 2

Figure No. 3

The Ultrascreen® Microfilter



Unique Features

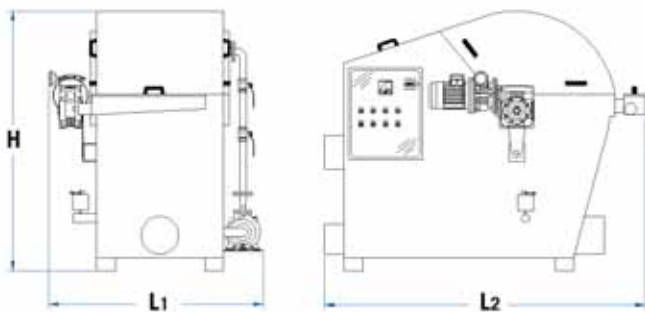
- Dynamic-tangential filtration
- Stainless steel filter media
- Continuously rotating disks
- All stainless steel construction
- Variable speed



Benefits

- Finer filtration with larger openings
- No cloths to replace
- Loading Rates as high as 12-15 gpm/sq.ft.
- Longer life with low maintenance
- Flexible operation
- Reject rates as low as 0.1-0.5% of the feed

Figure No. 4 - Refer to chart below



MODEL	H Ft.	L1 Ft.	L2 Ft.	INSTALLED HORSEPOWER		WEIGHT		TYPICAL FLOWRATES, gpm	
				Filter	Wash Pump	Empty Lbs.	Operating Lbs.	Avg.	Peak
UL 1001	4'11"	3'5"	6'1"	1	2	900	2000	102	204
UL 1351	6'2"	4'0"	7'9"	2	2	1540	3685	186	372
UL 1601	7'0"	4'7"	8'7"	3	5	2090	6160	264	528
UL 1352	6'2"	6'0"	7'9"	3	2	2080	4970	377	744
UL 1602	7'0"	6'4"	8'7"	5	5	3300	9020	528	1056
UL 1603	7'0"	8'1"	8'7"	5	7.5	4950	13860	792	1584
UL 1604	7'0"	10'1"	8'7"	7.5	7.5	5500	15400	1050	2100
UL 1605	7'0"	12'1"	8'7"	7.5	7.5	6050	16500	1320	2640
UL 1606	7'0"	13'0"	8'7"	10	7.5	6600	17600	1578	3156

Note: All dimensions are approximate. Flowrates are based on a typical activated sludge process.