

Net-Zero Waste &  
Resource Recovery



# WAVE SEPARATOR

## Advanced Sludge Treatment Solutions



*EFFICIENT SLUDGE THICKENING*

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## Introduction

The Trident Wave Separator is an advanced thickening and separation technology that provides excellent solid-liquid separation for a variety of municipal and industrial applications. Slow-rotating elliptical discs gently move the material through the separation surface achieving high capacities and excellent capture rates. The affordable Wave Separator combines effective material separation with a small footprint and very low operational costs, consistently outperforming other technologies such as screw thickener or filter belt equipment. The system can be operated in batch processing mode or continuously 24/7. The Wave Separator technology is scalable to meet any capacity needs, for small commercial treatment operations to large municipal wastewater treatment plants.



## Technology Advantages

### Non clogging:

Continuously rotating discs perform self-cleaning.

### Stable, reliable treatment capacity:

Continuous self-cleaning process ensures consistent throughput of material.

### Large throughput capacity, with a small footprint:

Material moves in waves, advanced by oval plates.

### Simple, low energy operation:

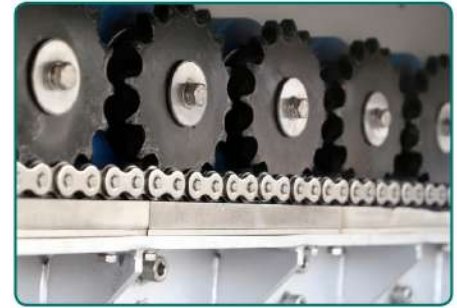
Efficient, variable speed drives, optimizing the material handling process.

### Durable construction:

Stainless steel construction ensuring long-life operation.

### Easy maintenance:

Simple drive with minimal parts, located internally, away from the material being processed. The operation is quiet and vibration free.



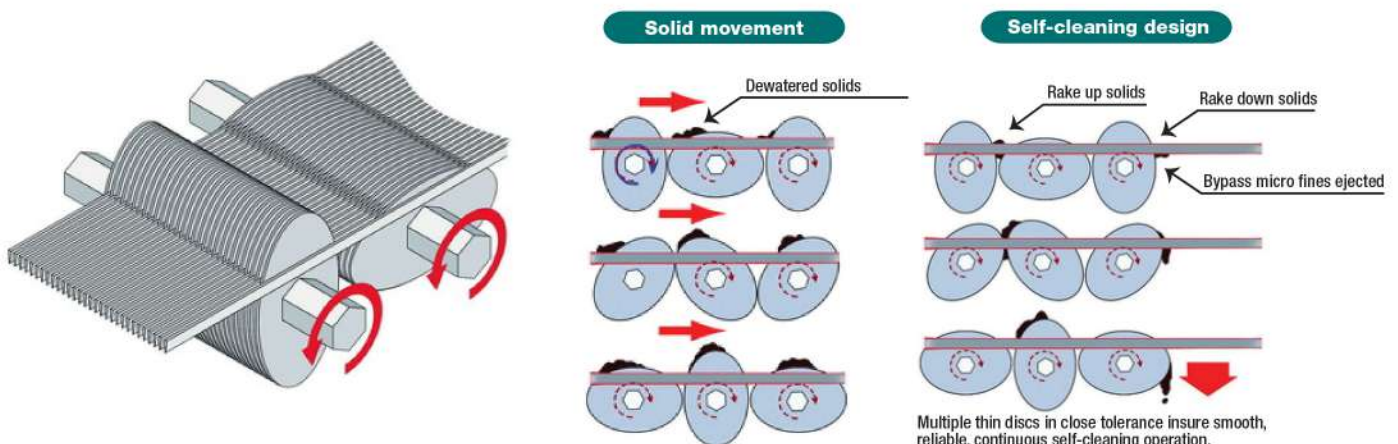
## Separation Process

The Wave Separator's simple and robust working principle is based on the slow-moving oval discs that are mounted on columns. The stainless steel discs, which rotate in an offset elliptical pattern, convey the material over the separation screen allowing liquid to escape through the wedge wire construction. The low-impact sludge handling reduces the risk of collapsing flocculate and allows a more flexible polymer optimization. The Trident Wave Separator is typically used for applications that require 2-10% output sludge concentration. Specifically configured Dewatering models with an air actuated pressure plate are available if higher dry matter results is required.

Trident Wave Separators are offered in a wide range of models to suit every required capacity. The units are available with different disc spacing and can be built to order with variations. An optional flocculation & mixing tank and custom automation with VFD components are available.

## Low Operational Costs

Trident's Wave Separator is a very affordable technology both from a capital cost and operational perspective. The system can be operated fully automated 24/7 with minimal operator attendance. Its self-cleaning design eliminates the need for a spray bar or frequent backwash procedures. The equipment is powered by a low-horsepower motor ensuring low operational expenses.



## Excellent Separation Results

The Trident Wave Separator provides efficient separation in a variety of applications like sewage sludge or food processing and agricultural wastes. The sludge volume is significantly reduced, resulting in cost savings for material handling, transport or storage.



Raw feedstock of liquids and suspended solids becomes:

Thickened sludge

Significantly clarified liquid

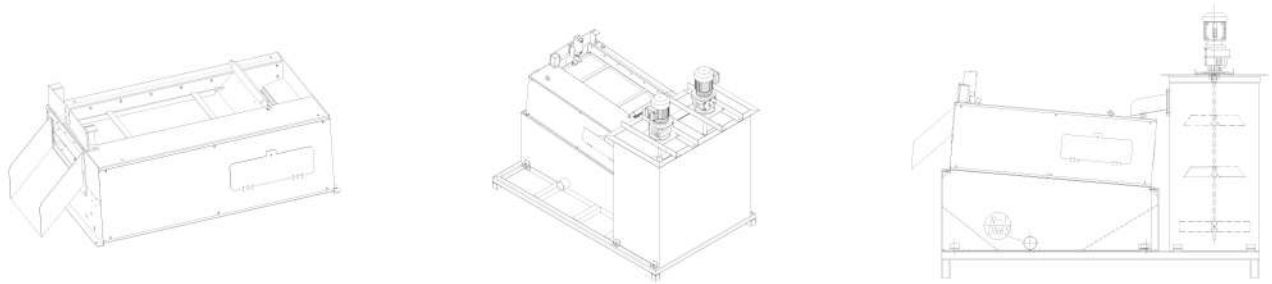
\*Note input feedstock used in demonstration pictures was a mix of vegetables, fish and meat. Maceration was performed by the food processor client.

## Applications

This equipment is successfully used in a wide range of applications, e.g. municipal wastewater treatment, paint and coatings effluents, tanneries, metal processing industries, algae harvesting (primary and sediment sludge treatment).

- Headworks (pre-treatment) of municipal wastewater operations
- Waste activated sludge, DAF aerobic digested sludge
- Food processing applications
- Oil & gas applications
- Primary treatment of grease trap wastes
- Agricultural waste and livestock manure

# Trident Wave Separator



## Wave Thickener Models

Model	DN		Oval discs column numbers	Capacity (clean water)		Sludge (reference)		Power	Weight	
	mm	in		m3/hr	gal/min	kg-ds/hr	lbs-ds/hr		kg	lbs
SS-310	300	11.8	10	18	79	41	90	0.1kw	100	220
SS-312	300	11.8	12	23	101	49	108	0.2kw	110	243
SS-48	400	15.7	8	20	88	45	99	0.2kw	130	287
SS-410	400	15.7	10	25	110	56	123	0.2kw	150	331
SS-412	400	15.7	12	30	132	67	148	0.2kw	200	441
SS-510	500	19.7	10	31	136	70	154	0.2kw	200	441
SS-512	500	19.7	12	38	167	83	183	0.2kw	210	463
SS-516	500	19.7	16	50	220	109	240	0.4kw	240	529
SS-610	600	23.6	10	38	167	85	187	0.4kw	210	463
SS-612	600	23.6	12	45	198	100	220	0.4kw	230	507
SS-616	600	23.6	16	60	264	130	287	0.4kw	300	661
SS-618	600	23.6	18	67	295	145	320	0.4kw	315	694
SS-712	700	27.6	12	74	326	160	353	0.4kw	380	838
SS-716	700	27.6	16	100	440	215	474	0.4kw	410	904
SS-812	800	31.5	12	86	379	185	408	0.75kw	410	904
SS-816	800	31.5	16	114	502	245	540	0.75kw	440	970
SS-912	900	35.4	12	98	431	210	463	0.75kw	440	970
SS-916	900	35.4	16	128	564	275	606	0.75kw	470	1036
SS-1012	1000	39.4	12	107	471	230	507	0.75kw	470	1036
SS-1016	1000	39.4	16	144	634	310	683	1.5kw	600	1323
SS-1212	1200	47.2	12	130	572	280	617	1.5kw	600	1323
SS-1216	1200	47.2	16	172	757	370	816	1.5kw	640	1411

## Wave Dewatering Models

Model	DN		Oval discs column numbers	Capacity (1.5%SS)		Sludge (reference)		Power	Weight	
	mm	in		m3/hr	gal/min	kg-ds/hr	lbs-ds/hr		kg	lbs
SS-311D	300	11.8	11	1.3-2.0	6-9	20-30	44-66	0.4kw	120	265
SS-411D	400	15.7	11	1.8-2.6	8-11	27-40	60-88	0.4kw	200	441
SS-511D	500	19.7	11	2.2-3.4	10-15	34-51	75-12	0.4kw	240	529
SS-611D	600	23.6	11	2.6-4.0	11-18	40-60	88-32	0.4kw	320	705
SS-711D	700	27.6	11	3.1-4.6	14-20	47-70	104-154	0.75kw	380	838
SS-811D	800	31.5	11	3.8-5.3	17-23	57-80	126-176	0.75kw	410	904
SS-1011D	1000	39.4	11	4.5-6.8	20-30	68-102	150-225	1.5kw	570	1257
SS-1211D	1200	47.2	11	5.3-8.0	23-35	80-120	176-265	1.5kw	750	1653

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Distributor/Dealer