



# A3-USA Grit Treatment

*Separation | Classification | Washing*

*[www.a3-usa.com](http://www.a3-usa.com)*

**Wastewater Equipment**

# A3 Vortex Grit Separator

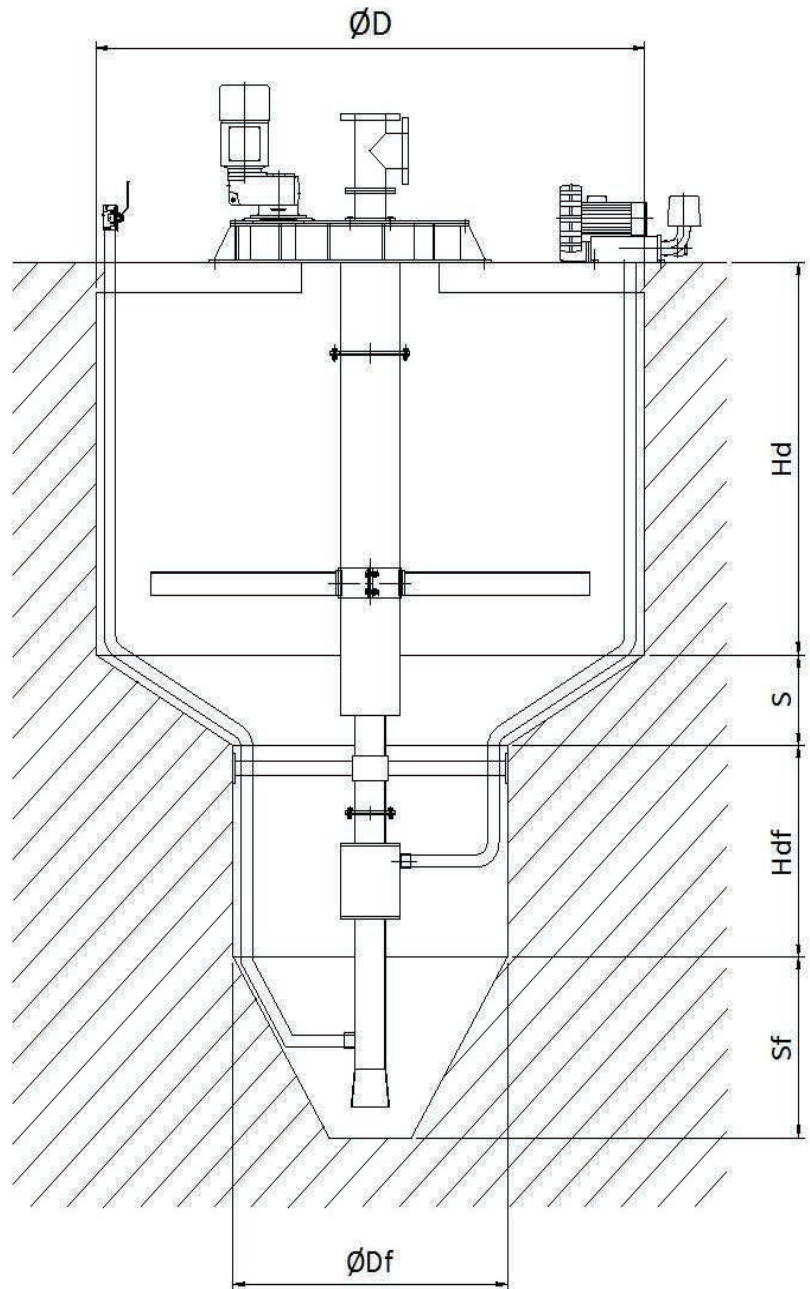
*Cost-effective cyclonic grit separator*

The A3 vortex grit separator is a vertical cyclonic separator designed to remove grit from process flows in a cost effective manner. The unit is to be installed inside the cylindrical section of a concrete tank that has a cylindrical section on top of a smaller conical section (see sketch next page).

The Vortex Separator consists of a motor, gearbox, stainless rotating tube, vortex paddles, a stationary suction tube concentric and inside the rotating tube, and tube support. The size ranges from 6 to 20 feet in diameter

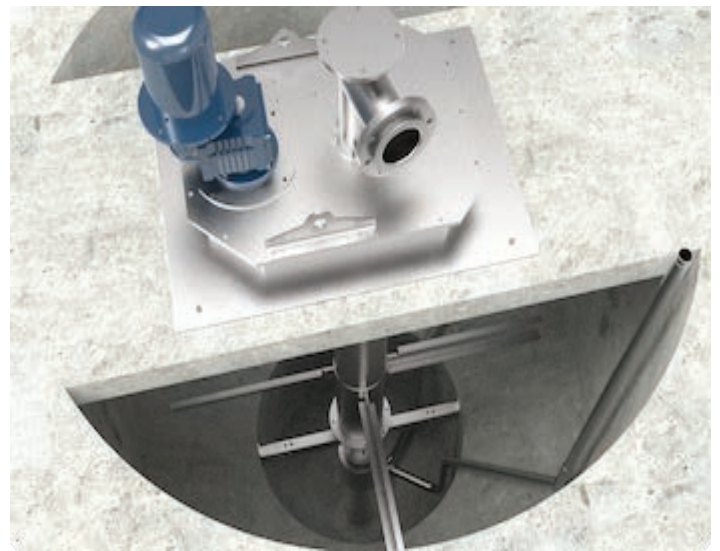
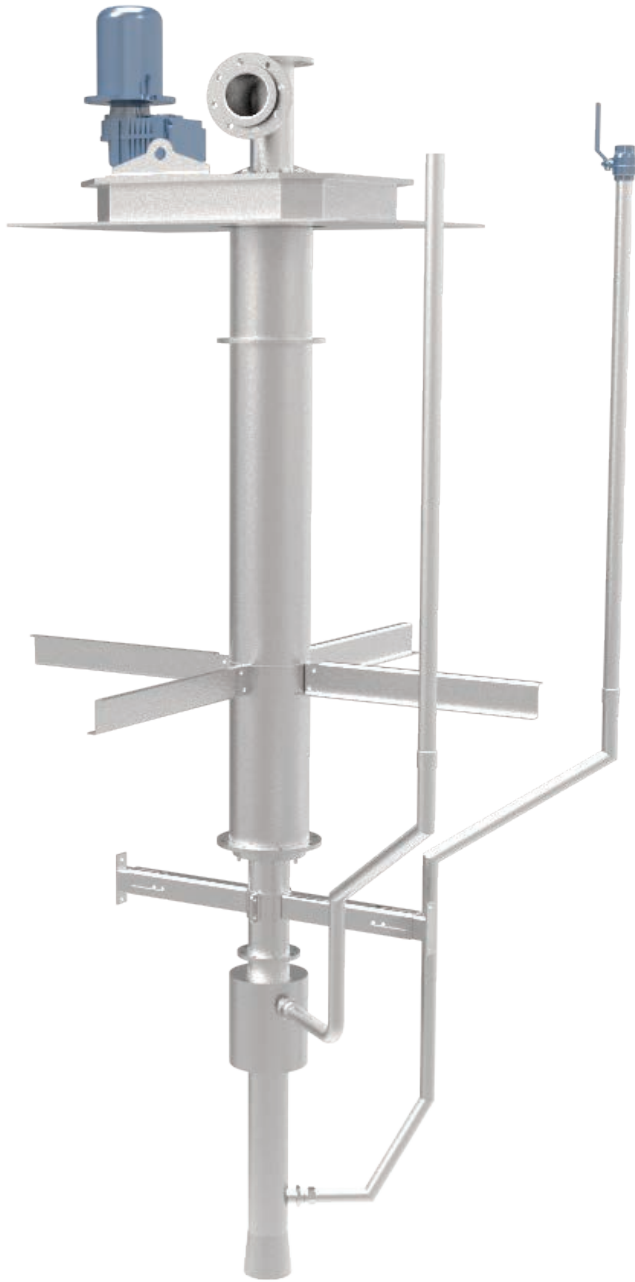
Screened influent enters the tank at the top via a channel. Paddles rotate inside the cylindrical section at a rate of 15 to 30 rpm to create a vortex which settles the grit to the bottom of the conical hopper. Air is introduced into the bottom section of the air lift tube, concentric to the tank. This creates a suction that transports the grit and some liquid up through the tube to the discharge of the unit. Clean effluent leaves the unit via an outlet channel at the top of the unit. An alternative to the air lift is to connect a suction line to the bottom of the conical hopper.

The size ranges from 6 to 20 feet in diameter to accommodate capacities listed in the table on the next page.





# A3 Vortex Grit Separator



Model	VOR-1	VOR-2	VOR-3	VOR-4	VOR-5	VOR-6	VOR-7
Inlet Flow (GPM)	1,893	3,346	5,372	8,234	13,913	22,015	36,545
Hopper Capacity (ft <sup>3</sup> )	106	177	300	459	706	1,201	1,942
Air Lift Diameter	3	3	3	3	4	4	4
<i>Dimensions</i>							
Max Diameter - ØD	79	98	118	138	157	197	236
Lower Diameter - ØDf	39	39	59	59	59	59	59
Hd	51	53	57	61	67	73	77
S	12	16	18	24	31	39	51
Hdf	28	28	39	51	51	63	63
Sf	24	24	31	39	39	47	47

*all dimensions in inches*

# A3 Grit Classifier

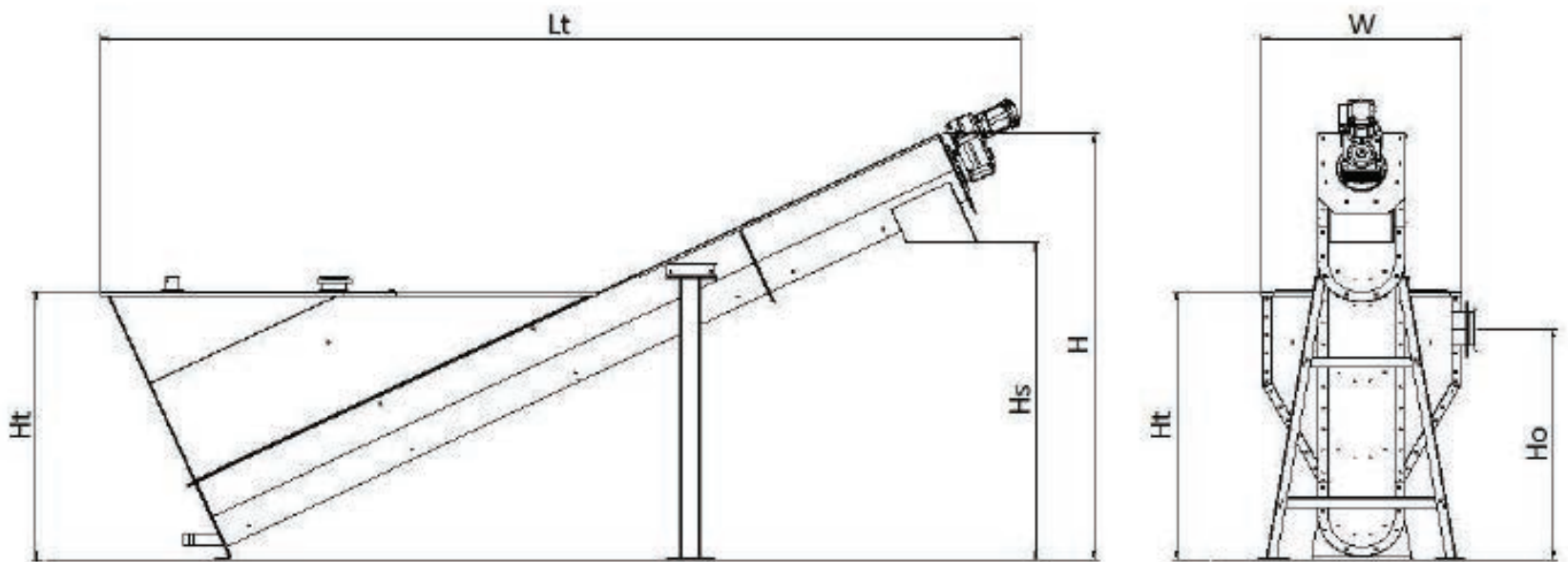
## *Screw classifier for grit removal*

The A3 screw grit classifier is a simple and cost effective device used to reduce grit content from a liquid stream. The classifier consists of a hopper and a shaftless screw conveyor. The process stream is fed into the top of the hopper. The grit settles to the bottom and is transported and compacted by the shaftless screw through a tube to the discharge. The liquid, including any floating solids, is discharged through a nozzle located at the top of the hopper.



Model	CLA-1	CLA-2	CLA-3	CLA-4	CLA-5
Liquid Flowrate (GPM)	88	132	264	352	440
Hopper Capacity (ft <sup>3</sup> )	14	32	53	71	106
Sand Removal (ft <sup>3</sup> /h)	9	14	14	14	14

# A3 Grit Classifier



Model	Lt	H	W	Ht	Ho	Hs	Inlet (NPS)
CLA-1	146	79	48	55	50	59	3"
CLA-2	176	84	42	52	45	62	4"
CLA-3	191	91	45	54	47	69	6"
CLA-4	210	97	60	67	61	75	6"
CLA-5	246	114	60	82	74	92	8"

*all dimensions in inches*



# A3 Grit Washer

## *Screw grit separator plus organic solids removal*

The A3 grit washer is comprised of a conical hopper and a shafted auger. Water enters the hopper via a primary inlet near the top of the hopper. An internal agitator keeps this water in motion and facilitates the suspension of organic material while allowing sedimentation of the sand.

As sand settles, it is cleaned via an inlet that injects clean water at a cross-current angle. The cleaning water also serves to help further clean organics from the sand.

Organic substances are removed at regular intervals via a dedicated exhaust duct.

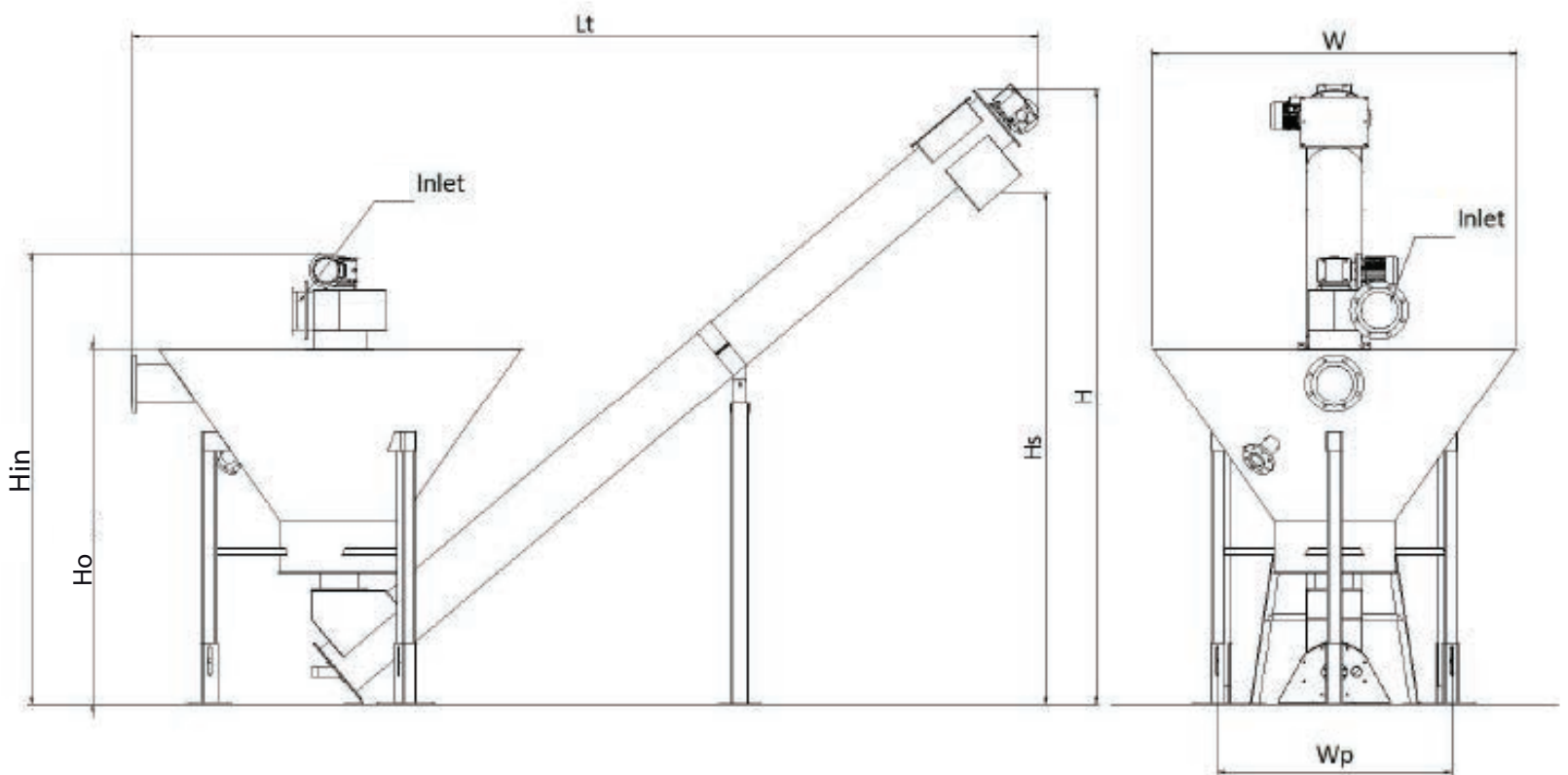
Clarified water is removed via a secondary flange at the top of the hopper.

Cleansed sand falls to the bottom of the hopper and is removed via the auger to a discharge chute.



Model	WSH - 1	WSH - 2	WSH - 3
Liquid flowrate (GPM)	1,059	2,119	3,178
Hopper Capacity (ft <sup>3</sup> )	3	4	7
Sand Removal (ft <sup>3</sup> /h)	2	2	2

# A3 Grit Washer



Model	Lt	H	Wp	W	Hs	Hin	Ho	Outlet (NPS)
WSH - 1	166	115	54	80	89	78	63	6"
WSH - 2	207	142	54	84	117	90	74	8"
WSH - 3	207	142	54	84	117	102	85	8"

*all dimensions in inches*



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