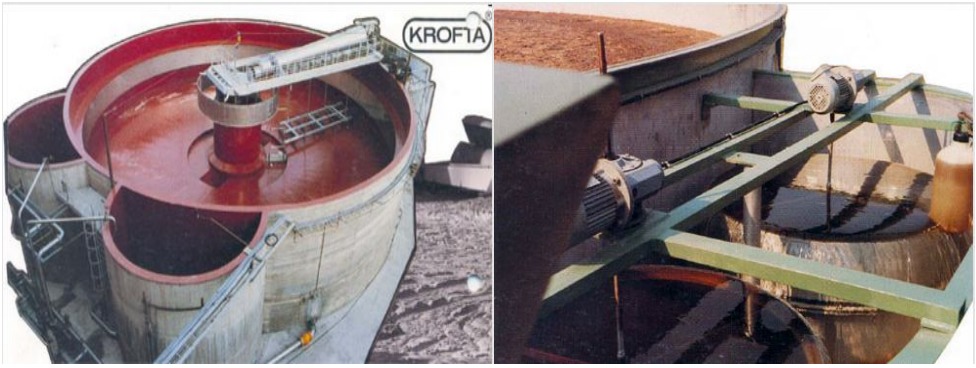
Floated Sludge



The untreated effluent (1) is fed by gravity or pump to the center distributor (2) where it mixes with the air released from the recycled air carrier water and then enters the tank. Fine air bubbles lift the suspended, flocculated solids to the water surface (3) Heavier particles settle rapidly to the tank floor (4). The zone of clear water formed between the floated and settled solides is then discharged into the outlet annulus (5) where it overflows through an adjustable outlet weir (6). Adjustment of this weir controls the water level in the tank.

Floated matter is removed by the rotating spiral scoop (7) which discharges the sludge through the sludge pipe in the center distributor (2) to a sludge well (8) at the tank periphery.

A suspended bottom scraper (9) is supported from the structure and moved forward by the scoop drive. The settled sludge is scraped to the center of the tank and into a sludge pit (14) constructed in the foundation. From here, the sludge is removed intermittently through an automatically operated pneumatic valve (10). The scraper is so constructed as to allow it to rise and slip over any excessive obstructing sludge build-up in order to prevent any damage to the scoop drive.

The recycled air carrier water is pumped (11) at a pressure of about 80 psi into the retention tank (12). Compressed air (13) enters the retention tank directly. The air carrier water is then released into the center distributor after mixing with the raw influent. For small installations, it may be more economical to pressurize the whole of the effluent inflow.

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ype (ft ~)	Measurements A		B		C		Capacity M3/mln	US GPM	M3/h
	In	mm	In	mm	In	mm			
8	94.5	2400	112	2850	30	760	0.36	95	22
10	126	3200	112	2850	30	760	0.63	165	38
12	153.5	3900	112	3100	39	1000	0.95	250	57
15	177	4500	112	3100	39	1000	1.26	335	78
18	216.5	5500	112	3100	59	1500	1.90	500	114
20	240	6100	130	3300	59	1500	2.32	610	139
22	263.5	6700	130	3300	59	1500	2.80	740	168
24	283.5	7200	130	3300	59	1500	3.20	845	192
27	319	8100	130	3300	59	1500	4.13	1090	248
30	354	9000	130	3300	59	1500	5.00	1320	300
36	433	11000	130	3300	59	1500	7.60	2000	456
40	480	12200	130	3300	59	1500	9.10	2400	546
44	527.5	13400	130	3300	90	2300	11.20	2960	672
49	582.5	14800	141.5	3600	90	2300	13.90	3670	834
55	657.5	16700	141.5	3600	90	2300	17.50	4620	1050
65	775.5	19700	141.5	3600	90	2300	25.00	6605	1500

Perrormance

High Clarification and reduction of filterable suspended solids are obtained to meet Pollution Control Authority requirements.

Sludge Consistency, maintained by the intermittent operation of the scoop along with adjustments of the tank water level, average 3-6%

Flocculating Chemicals can be added in several places depending on the effluent. Removals of 80-90% can sometimes be obtained without chemicals. However, removals of 95% or better, (20-30 PPM of suspended solids), are usually obtained with adequate chemical treatment.

Spiral Scoop u.s. and foreign Patents

The above diagram describes the function of the patented KROFTA Spiral Scoop. The scoop is suspended over the tank and supported by rollers on the tank rim. A gear motor drives the scoop assembly around the tank while, at the same time, rotating the scoop on its horizontal axis. As the scoop assembly moves around the tank over the floated sludge, the scoop continuously dips into the floated material, lifting it up to flow down the pipe and be discharged into the central floated sludge collector.