

Upcurrent Classifier (Hydroclassifier)



Overview

The new UCC from Mineral Technologies separates particle assemblages according to their size and density. The separation is achieved under controlled hindered settling conditions with a controlled rise rate in a fluid medium.

Features

- High wear resistant
- Adaptability to various feed
- Inspection hatch
- Innovative spray bar design for easy clean-up and maintenance
- Dewatering cone for consistent underflow discharge
- High capacity per surface

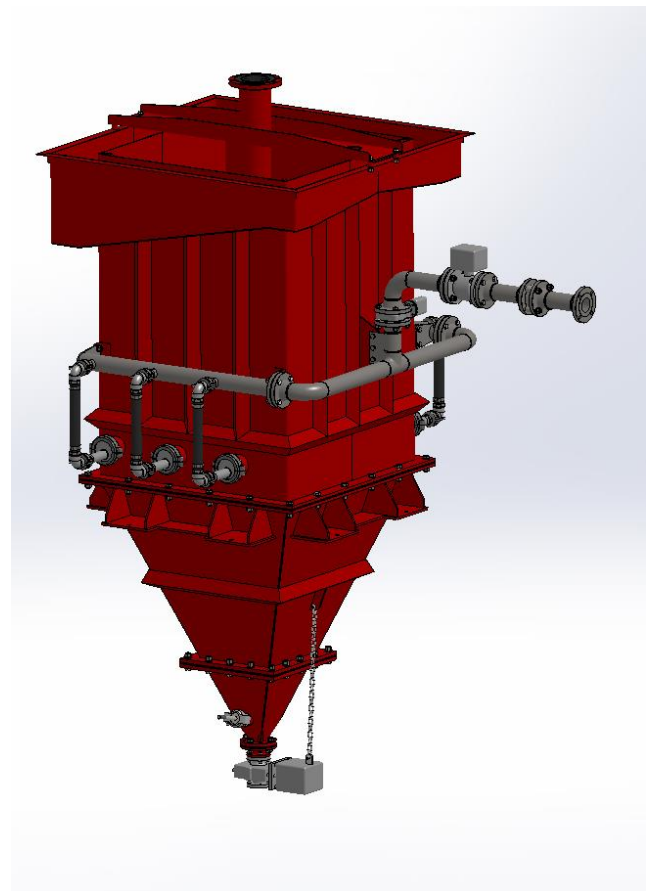
Application

UCC Separators concentrate particles based on density and sizes. Common applications include removing silica from heavy minerals, beneficiation of iron ore, coal washing.

In some applications, UCC classifiers can be used in combination with Spiral Separators to achieve high product grade and recovery.

Specific Mineral Applications

- Mineral Sands
- Silica Sand
- Titanium Minerals
- Iron Ore
- Coal

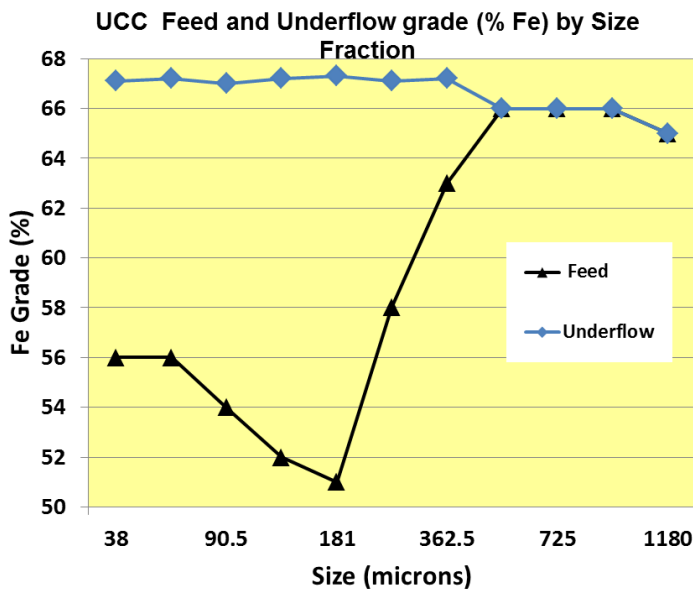
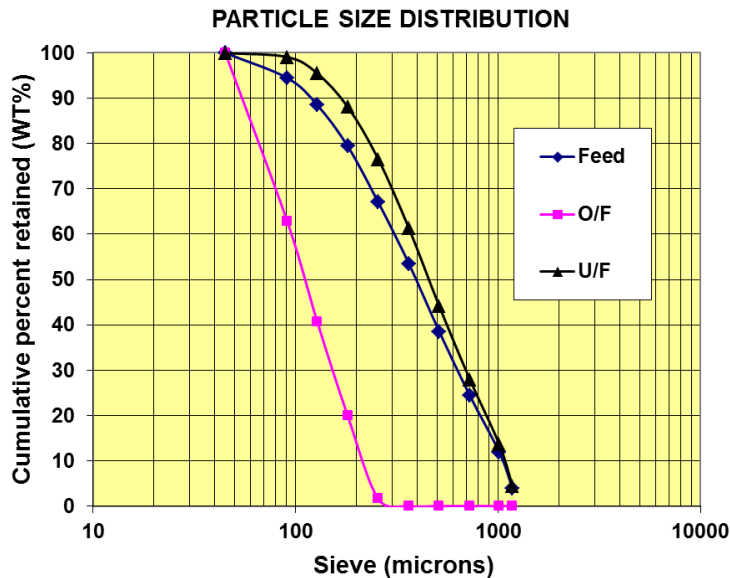


Design Data

Capacity:	Depending on particle size distribution, specific gravity of solid particles and cut point Refer to the UCC selection table
Feed % solid (suggested):	55-60% solid W/W
Size Range:	>20micron to 4.0mm

Metallurgical Performance

The charts below show the typical performance achieved with Iron Ore cleaning. The first chart present the size distribution of the UCC streams and the second chart shows the upgrade achieved by size fractions.



UCC Selection

The following parameters should be considered when selecting UCC capacity:

- Particle size distribution of the feed and cut point required;
- Solid loading per square area; and
- Volumetric loading per square area.

A general selection table is provided overleaf to assist in the initial selection stage; however it is recommended that Mineral Technologies' application specialists conduct final size selection based on in-house modelling tools to predict cut points and particle size recovery of the underflow.

UCC Selection Table For Initial Sizing

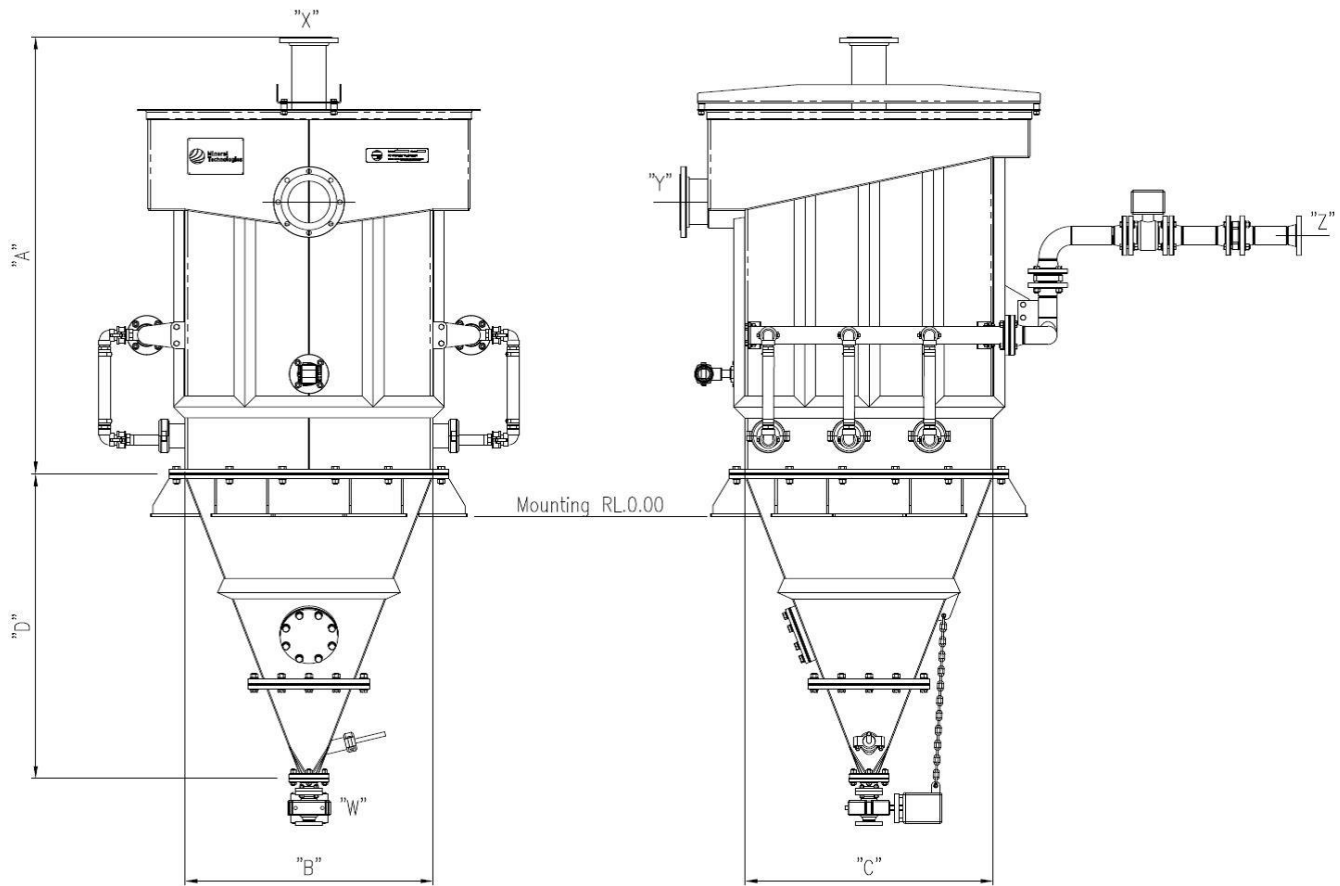
	Silica			Mineral Sands			Iron Ore		
	Solid SG of 2.7			Solid SG of 3.5			Solid SG of 4.5		
	Cut point (microns)			Cut point (microns)			Cut point (microns)		
	50	100	150	50	75	100	75	125	175
	Feed capacity t/hr (nominal)			Feed capacity t/hr (nominal)			Feed capacity t/hr (nominal)		
UCC (Square)									
UCC-600X600	2	3	5	3	5	6	12	14	16
UCC-900X900	4	8	11	7	11	13	26	31	35
UCC-1200X1200	8	14	19	13	19	23	47	54	62
UCC-1500X1500	12	22	30	20	30	36	73	85	97
UCC-1800X1800	17	31	44	29	44	52	105	122	140
UCC-2100X2100	24	43	59	40	59	71	142	166	190
UCC-2400X2400	31	56	78	52	78	93	186	217	248
UCC (Rectangular)									
UCC-1200X2400	16	28	39	26	39	47	93	109	124
UCC-1800X3600	35	63	87	59	87	105	209	244	279
UCC-2400X4800	62	112	155	105	155	186	372	434	496
Feed	Solid SG	2.7		Solid SG	3.5		Solid SG	4.5	
	%Solid w/w	50		%Solid w/w	50		%Solid w/w	50	
	Slurry SG	1.44		Slurry SG	1.55		Slurry SG	1.64	

Note:

Mineral Technologies reserves the right to alter specifications without prior notice.



Configuration – Design Details



		Square						Rectangular			
		600 x 600	900 x 900	1200 x 1200	1500 x 1500	1800 x 1800	2100 x 2100	2400 x 2400	1200 x 2400	1800 x 3600	2400 x 4800
Equipment No.		UCC9012	UCC9008	UCC9007	UCC9009	UCC9011	UCC9013	UCC9014	UCC9015	UCC9016	UCC9017
Nett Weight (kg) *		950	1200	1700	2400	2900	3300	3700	3400	5800	7400
Dimension (mm)	"A" (above floor)	1300	1830	2110	2210	2710	3050	3250	2110	2710	3250
	"B" (Underfloor)	600	900	1200	1500	1800	2100	2400	1200	1800	2400
	"C" (Width)	600	900	1200	1500	1800	2100	2400	2400	3600	4800
	"D" (Length)	860	1300	1740	2175	2600	3030	3470	1740	2600	3470
"W" – Pinch Valve		50	80	100	100	150	150	203	2 X 100	2 X 150	2 X 203
"X" – Feed Inlet		80	100	150	203	250	300	350	2 X 150	2 X 250	2 X 350
"Y" – Overflow		100	150	203	250	300	350	400	300	350	450
"Z" – Teeter Water Inlet		50	80	80	150	150	150	203	150	203	300

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For Certified Drawings suitable for Engineering Design purposes please refer to Mineral Technologies