

COMPARISON OF POWER COSTS - CERAMIC VS. VACUUM & PRESSURE FILTER OPTIONS													
		VACUUM FILTERS						PRESSURE FILTERS					
		CERAMIC DISC FILTER		CLOTH DISC FILTER		CLOTH DRUM FILTER		HORIZONTAL BELT FILTER		RECESSED CHAMBER		MEMBRANE CHAMBER	
	UNITS	DATA	POWER ABSORBED (kw)	DATA	POWER ABSORBED (kw)	DATA	POWER ABSORBED (kw)	DATA	POWER ABSORBED (kw)	DATA	POWER ABSORBED (kw)	DATA	POWER ABSORBED (kw)
DESIGN FEED RATE	mtpH	125		125		125		125		114		137	
DESIGN FILTRATION RATE	kg/hr.m2	800		664		664		996		128		134	
FILTER AREA REQUIRED	m2	156		188		188		126		892		1026	
CAKE MOISTURE	%	20%		23%		23%		21%		18%		17%	
FILTER SIZE/MODEL													
INSTALLED AREA (Filter kW = Drive & Agitator/Fan)	m2	174	31	235	31	235	41	129	52	892	62	1026	77
ACTIVE FILTER AREA	% of Total	90%		80%		80%		97%		100%		100%	
NUMBER REQUIRED	each	1		1		1		1		1		1	
VACUUM REQUIREMENT	cfm/ft2	0.15		3.6		3.6		5.0		4.0		4.0	
VACUUM REQUIREMENT	m3/hr/m2	2.7		66		66		91		73		73	
VACUUM CONSUMPTION PER FILTER	m3/hr	476		15,494		15,494		11,832		65,256		75,045	
TOTAL ACTIVE FILTER INSTALLED AREA	m2	174		235		235		129		892		1026	
PRESSURE DROP	"kPag	-80		-65		-65		-70		1,200		1,500	
VACUUM / PRESSURE FEED PUMPS - POWER	kw	2	18	1	345	1	345	1	245		92		71
COMPRESSED AIR PER FILTER	Nm3/hr	1.0	@2.5Bar	56.5	@2.5Bar	56.5	@2.5Bar	31.1	@2.5Bar	2,071	@6Bar	1,219	@6 & 15Bar
TOTAL COMPRESSOR - POWER	kw		2		30		30		2		96		57
WATER & ACCESSORIES PER FILTER		20	m3/hr flush	5	m3/hr wash	15	m3/hr wash	48	m3/hr wash				
TOTAL WATER & ACCESSORIES POWER	kw		8.2		1.4		4.1		13.1		42		49
TOTAL POWER REQUIREMENT	kw		86		407		420		312		293		255
POWER CONSUMPTION	kwh/rmonth		0.69		3.26		3.36		2.50		2.56		1.86
POWER COST US\$ per ton @ US\$/kwh =		0.11	0.076		0.358		0.370		0.275		0.282		0.204
CX- SERIES PERCENTAGE OF POWER CONSUMPTION					21.11%		20.47%		27.56%		26.85%		37.04%
POWER COST PER HOUR	USD\$/hr.		\$ 9.46		\$ 44.81		\$ 46.21		\$ 34.33		\$ 32.19		\$ 28.02
POWER COST PER DAY	USD\$/day		\$ 227.04		\$ 1,075.43		\$ 1,109.02		\$ 823.87		\$ 772.59		\$ 672.57
POWER COST PER YEAR (@95% PLANT AVAILABILITY)	USD\$/yr.		\$ 78,726.12		\$ 372,907.01		\$ 384,554.18		\$ 285,676.85		\$ 267,894.53		\$ 233,213.77
CX-SERIES POWER COST SAVINGS PER YEAR	USD\$				\$ 294,180.89		\$ 305,828.06		\$ 206,950.73		\$ 189,168.41		\$ 154,487.65

Assumptions:

- 1 Material to be filtered responds well for both vacuum and pressure filtration
- 2 Filter Feed is at high feed density > 55% solids
- 3 Moisture levels vary according to the filter type
- 4 Vacuum Compressor Flows per filter type subject to design review & verification
- 5 Ceramic Disc filter filtration rate is similar to Disc / Drum filters
- 6 Vacuum Disc & Drum capacity 33% lower than vacuum belt filter
- 7 Pressure filter estimates considers (4 to 5 units operating in parallel) - power is average for ONE filter