

Circular Vibroscreen design summary

Inquiry details:

Inquiry ID and date: 1 and 18-Oct-2005	Marketing Representative: Mr. Nilesh Sahani
Customer: Parekh Chemical Products	Program user: DESIGN
Remarks:	

Material details:

Material: Rice	Bulk density (kg / cu m): 835.00
Co-efficient of friction: 0.32	Explosive ? NO

Desired performance:

Flow rate (ton per hour): 2.50	Separation efficiency: 80-90%
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Particle size distribution and bed thickness at each deck:

Deck	Mesh size *	Wire SWG	% Mass Separated	Bed thickness (mm)
Discharge Dome	14.00	25.00	50.00	22.53
Deck 2	10.00	22.00	30.00	13.52
Deck 3	5.00	20.00	20.00	9.01

* Mesh size of particle at discharge dome and mesh size of screen at all other decks

Desired vibration parameters:

Induced material flow speed from the discharge spout (m per hour):	521.00
Realized material flow speed from the discharge spout (m per hour):	442.97
Peak-to-peak amplitude of horizontal vibrations in the plane of screen (mm):	5.82
Peak-to-peak amplitude of vertical vibrations at the screen OD (mm):	3.18
Resultant centrifugal force (N):	4,433.52

Vibroscreen design parameters :

Vibration frequency i.e. vibromotor rated RPM (5% slip in the rated RPM considered for calculation):	1,000
Spout opening (mm):	150.00
Vibromotor make and model:	G P T L 0.25 HP 1000RPM
Phase shift (deg):	19.00
Vibromotor mounting table model :	0.25S834

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Vessel details:

34" Ring + Gasket + Clamp	
34" x 3" Discharge dome	
34" Screen + Gasket + Clamp	
34" x 3" Spacing frame	
34" Screen + Gasket + Clamp	
34" x 3" Spacing frame	
34" Ring + Gasket + Clamp	
34" Standard dust cover	
Vibromotor weight (kg): 33.50	Vibromotor mounting table weight (kg): 27.00
Material weight (kg): 19.94	Vessels weight (kg): 73.50
Total vibrating weight (kg): 153.94	
CG of the vibrating mass from motor flange butting face (mm) :	117.07
Inertia of the vibrating mass about its CG (kg sq m) :	1,742,297.00
Spring mounting PCD (mm): 733.00	No of Springs : 20.00
Spring Wire Dia (mm) : 5.80	Spring coil ID (mm): 27.20
Number of active coils: 5.00	Total number of coils: 7
Stiffness of single spring (N / mm): 54.52	