

### Equipment Bid Tabulation

Equipment No:

Equipment Type: Centrifuge

Revision #	1		
Date			
Manufacturer	<b>Krauss-Maffei</b>		
Model	<b>HZ 125/3.2Si</b>		
Specification			
Item #	Criteria		
	Basket Diameter, mm:	1250	
	Basket Length, mm:	800	
	Filter Cake Volume, Cu. Ft.	11.65 Nominal/10.77 Active	
	Basket Speed, rpm (Operating):	1295	
	Basket Speed, rpm (Maximum):	1295	
	Max Centrif Force, G-Factor:	1165	
	Feed Pressure Required, psig:	7	
	Housing Design Press, psig:	0.6	
	Nitrogen Purge Press, psig:	3 - 10	
	Nitrogen Purge Flow, scfm:	1 - 5	
	Wash Liquid Press, psig:	30-45	
	Materials of Construction:		
	Housing:	Hastelloy – C22	
	Main Shaft:	25 Cr Mo 4 (ASTM 4130)	
	Filter Media:	Hastelloy – C22	
	Feed Pipe:	Hastelloy – C22	
	Wash Pipe:	Hastelloy – C22	
	Peeler Knife:	Hastelloy – C22	
	Discharge Screw:	Hastelloy – C22	
	Connection Sizes, Inches (ANSI/150#)		
	Feed Inlet:	3	
	Cake Wash:	1 ½	
	Backwash:	2	
	Nitrogen Purge:	½ NPT w/1" ANSI 150# RF Adapter	
	Solids Discharge:	10	
	Filtrate Discharge:	3	
	Housing Drain:	6	
	Vent:	3	
	Centrifuge Drive Equipment:		
	Drive Motor:		
	Manufacturer:	TECO	
	Enclosure:	TEFC/Mill-Chem	
	Frame No.:	365T	
	HP/rpm:	100/1800	
	V-Belt Drive:		
	No. of Belts:	6	
	Belt Size:	5VX1180	
	Service Factor:	1.3	
	Drive Sheave, In	11.8	
	Driven Sheave, In	15.7	
	Bearings:		
	Manufacturer/Model:	FAG	
	Bearing Type:	Roller/Ball	
	Bearing Size:	NU244	
	Lubrication:	Oil	
	L10 Life:	40000	
	Shaft Seal:		
	Type/Size:	Sealing Disk	
	Materials:	PTFE Graphite	
	Purge Press, psig:	3	
	Purge Flow, cfm:	0.6-1.0	
	Discharge Screw:		
	Screw Diameter, inches:	10	
	Screw Speed, rpm:	Approx. 100	
	Drive Motor:		
	Manufacturer:	TECO	
	Enclosure:	TEFC/Mill-Chem	
	Frame No.:	184T	
	HP/rpm:	5/1800	
	Lubrication Unit:		
	Reservoir Size, Gallons:	20	
	Pump Rating, gpm:	1.8	
	Pump Disch Press, psig:	65	
	Drive Motor:		

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	Manufacturer:	TECO	
	Enclosure:	TEFC/Mill-Chem	
	Frame No.:	143TC	
	HP/rpm:	1.0/1800	
	Hydraulic Power Unit:		
	Reservoir Size, Gallons:	20	
	Pump Rating, gpm:	2.9	
	Drive Motor:		
	Manufacturer:	TECO	
	Enclosure:	TEFC/Mill-Chem	
	Frame No.:	145TC	
	HP/rpm:	2.0/1800	
1.3	The vendor shall furnish Horizontal Peeler Centrifuges complete with:		
1.3.1	Hastelloy C-22 filtration media.	Hastelloy C-22	
1.3.2	Main shaft seal with purge.	Meets all requirements	
1.3.3	Feed pipe with distributor mouth.	Meets all requirements	
1.3.4	Thermal feed controller (TFKR) with level and temperature analog outputs.	Meets all requirements	
1.3.5	Wash pipe with nozzles.	Meets all requirements	
1.3.6	Broad peeler mechanism with hard faced knife.	Meets all requirements	
1.3.7	Solids discharge screw conveyor.	Meets all requirements	
1.3.8	Inert gas purge connection.	Meets all requirements	
1.3.9	Door lock with zero speed monitor.	Meets all requirements	
1.3.10	Sight glass with rinse.	Meets all requirements	
1.3.11	ANSI flanged connections.	Meets all requirements	
1.3.12	Rear housing vent connection.	Meets all requirements	
1.3.13	Overflow/housing drain pipe.	Meets all requirements	
1.3.14	Vibration isolation elements.	Meets all requirements	
1.3.15	Lubrication unit.	Meets all requirements	
1.3.16	Hydraulic power unit.	Meets all requirements	
1.3.17	Vibration monitor.	Meets all requirements	
1.3.18	Transport lock.	Meets all requirements	
1.3.19	Variable frequency drive system with drive motor and v-belt drive with guard.	Meets all requirements	
1.3.20	Instrumentation and wiring as described in Section 3.0.	See Section 3.0	
1.3.21	One set of special tools.	Meets all requirements	
1.3.22	Provisions to install heel removal system in the future. This includes a port in the door and space on the hydraulic manifold to add two hydraulic control valves in the future.	Meets all requirements	
1.3.23	Clean In Place (CIP) system for in-situ cleaning of housing shell, housing/basket rear, basket interior, and door components.	Meets all requirements	
3.2.1	The Electrical Area Classification for the area where the equipment will be located will be: Class 1, Division 2, Group D.	All equipment meets Electrical Area Classification	
3.4	Motors, Variable Frequency Drives, and Starters		
3.4.1	Motors shall meet the requirements of the attached motor specification.	Meets all requirements	
3.4.3	The vendor shall supply all variable frequency drives as required by the equipment.	ABB PWM Regenerative VFD Model 800	
3.4.4	Motors shall include, but not be limited to:		
3.4.4.1	Centrifuge Main Drive motor	Meets all requirements	
3.4.4.2	Centrifuge Screw Conveyor motor	Meets all requirements	
3.4.4.3	Hydraulic Pump motor	Meets all requirements	
3.4.4.4	Lubrication Pump motor	Meets all requirements	
3.6.4	Junction boxes shall be non-metallic construction, rated NEMA 4X, and rated for the electrical classification of the area.	Meets all requirements	

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3.9	Instrumentation			
3.9.1	<u>Centrifuge Unit</u> : The vendor shall provide the following field devices pre-wired to the centrifuge field junction box:			
3.9.1.1	Pepperl+Fuchs Namur-type inductive proximity sensors.	Meets all requirements		
3.9.1.2	Thermal Feed Controller System potentiometer.	Meets all requirements		
3.9.1.3	Thermal Feed Controller System temperature	Meets all requirements		
3.9.1.4	Safety Door Lock solenoid (24VDC coil)	Meets all requirements		
3.9.1.5	Vibration Transducer and cable for termination in centrifuge field junction box.	Meets all requirements		
3.9.1.6	The vendor shall provide mounting brackets for Berthold nuclear density source and sensors mounted to provide an unobstructed view through the basket of the centrifuge.	Meets all requirements		
3.9.2	<u>Hydraulic Unit</u> : The vendor shall provide the following field devices pre-wired to the hydraulic unit field junction box as follows:			
3.9.2.1	Hydraulic control pressure switch.	Meets all requirements		
3.9.2.2	Hydraulic filter Not Clogged switch.	Meets all requirements		
3.9.2.3	Hydraulic Tank Level switch.	Meets all requirements		
3.9.2.4	Tank Temperature switch.	Meets all requirements		
3.9.2.5	The vendor shall provide a dry contact interface rated for 24VDC for all switch devices.	Meets all requirements		
3.9.3	<u>Lubrication Unit</u> : The vendor shall provide the following field devices pre-wired to the lubrication unit field junction box:			
3.9.3.1	Front Bearing oil flow switch.	Meets all requirements		
3.9.3.2	Rear Bearing oil flow switch.	Meets all requirements		
3.9.3.3	Oil Filter Not Clogged switch.	Meets all requirements		
3.9.3.4	Lube Tank Level switch.	Meets all requirements		
3.9.3.5	Lube Tank Temperature switch.	Meets all requirements		
3.9.3.6	The vendor shall provide a dry contact interface rated for 24VDC for all switch devices.	Meets all requirements		
3.9.4	<u>Loose Devices</u> : The vendor shall provide the following devices loose in shipment ready for installation by Owner into Owner's "safe area" control room:			
3.9.4.1	VFD Drive system for centrifuge unit.	ABB PWM Regenerative VFD Model 800		
3.9.4.2	Thermal Feed Controller System (TFKR unit):	Meets all requirements		
3.9.4.3	Vibration switch and signal converter	Schenck Vibrocontrol 920		
3.9.4.4	Intrinsic Safe barriers for vibration signal.	Meets all requirements		
3.9.4.5	Screw conveyor zero speed switch/intrinsic safe barrier.	Meets all requirements		
3.9.4.7	Centrifuge speed sensor signal converter/intrinsic safe barrier. Safe area speed signal shall be 4-20ma.	Not required with ABB drive		
	Delivery(weeks)	<b>Drawings submitted 6 weeks ARO. Centrifuges ship 44 weeks AAD and resolution of all technical/commercial issues.</b>		
	Shipping -- FOB	Kansas City		
Alternates		Use of ABB Certified Technician for start-up extends drive warranty from 1 year to 2 years.		
& Extras				

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Date				
Overall		Technically Acceptable		