

Our Ref. No.: **19/KP/00731(R2)**

(To be quoted for all correspondence)

Date: **14-05-2019**

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To: M/s.

Fax No.:

Attention:

SUBJECT: **QUOTATION FOR "MAIN CIRCULATION PUMP"**

We intend to purchase goods as detailed and specified bellow Kindly send us your best offer in accordance with the following General Conditions as stated below:-.

General Conditions

- (a) Submission of Quotation Quotation may be sent immediately through Fax or E-mail but **Original Pro-forma Invoice** along with detailed technical brochures / literature must reach us by mail before the last date mentioned below:
- (b) Last Date of Quotation **10-06-2019**
- (c) Validity At least 90 days
- (d) Price Basis Firm and fixed C & F Prices
- (e) Payment Mode
- We accept payment through L/C with condition that all domestic bank charges will be borne by us while all bank charges in beneficiary's country including all L/C conformation (if desired by the supplier) charges will be borne by the beneficiary.
 - We accept Pre-payment only against unconditional & irrevocable Bank Guarantee through First Class bank.

Sr. No	Description	Qty
01	Main Circulation Pump (Detail specification attached at page 02)	01
02	VFD Controller	01
03	Spares	05 years

Detailed Technical Specifications

Sr. No.	Description	Qty.
01.	Main Circulation Pump for TMO test loop	01
	Stages	01
	Type	Canned motor pump (Centrifugal)
	Location/Orientation	Indoor/ Horizontal
	Working Fluid	R-134a
	Flow Rate	0 - 1 m ³ /hr. (0 - 0.3 kg/s)
	Design Pressure	5 MPa (50 bar)
	Design Temperature	150 °C
	Operating Pressure Range	1.5 to 4 MPa (15 to 40 bar)
	Operating Temperature Range	20 - 90 °C
	Discharge Pressure (Max.)	Upto 4 MPa (40 bar)
	Differential Pressure	0.4 MPa
	Motor Data	
	Motor Type:	VFD Controlled (Compatible with Pump Model)
	Phase / Voltage / Frequency	3 Ph / 400V / 50 Hz
	Motor type/Connection	3 phase/DOL
	Type of Starting	Direct Online
	Permissible Phase Unbalance in Supply Voltage	< 5%
	Degree of Protection	IP-65
	Material of Construction	
	Casing	SS-316
	Impeller	SS-316
	Pump Shaft	SS-316 (May be of Duplex Steel)
	Sleeves	SS-316
	Motor Body	SS-304
	All wetted parts	SS-304/higher grades
02.	VFD Controller	01
03.	Counter Flanges & Base Plate	Required
04.	Terms and conditions – documentation required	
i. To be designed and manufactured according to API-685 ii. Certificate of Origin. iii. 3.1 Certificate of hydrostatic pressure test and pump material tests for pressure retaining parts and main components. iv. Pump characteristic curves. v. General arrangement drawings.		vi. Standard QA certificate should be provided & QCP Pump and motor data sheet. vii. Instrumentation details. viii. Electrical test (type and routine procedure) ix. Dynamic balance test procedure and report x. Hydraulic performance test 3.1 B according to ISO 9906 class 2B
05.	Inspection	Certificates of inspection & performance testing, noise level monitoring along-with inspection of QCP documents as per above quoted standards by third party, <i>Pre-shipment inspection at vendor premises</i>
06.	Spares	05 Years (included)
07.	Make	Hermetic-Pumpen GmbH, Teikoku Elec. Mfg Co. Ltd., Nikkiso Non-Seal Pumps, Optimex, Hayward Tyler, Hermag Pumps, Gruppe Rutschi etc. European/ American/Japanese / Chinese