Bharat Heavy Electricals Limited
(High Pressure Boiler Plant)
Tiruchirappalli – 620014, TAMIL NADU, INDIA
MATERIALS MANAGEMENT / CAPITAL EQUIPMENT

An ISO 9001 Company

ENQUIRY **NOTICE INVITING TENDER**	Phone: +91 431 257 7653 Fax : +91 431 252 0719 Email : skaruna@bheltry.co.in Web : www.bhel.com

TWO PART BID Tender to be submitted in Two Parts	**Enquiry Number:** **2711100027**	**Enquiry Date:** **28.09.2011**	**Due date for submission of quotation :** **28.10.2011**

You are requested to quote the Enquiry number date and due date in all your correspondences. This is only a request for quotation and not an order.

Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 Hrs on the date of tender opening

Item No.	Item Description	Quantity
10	Supply of Motor for Transport Conveyor to Cooling Bed at SSTP BHEL, Trichy as per the technical Specification, & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	64 Nos.

Important Points to be taken care during the submission of offer:-

1. Check list to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
2. Guarantee for the Items to be 18 months from the date of supply or 12 months from the date of commissioning of the.

BHEL's General guidelines /instructions including bank guarantee formats and list of consortium banks, commercial terms checklist can be downloaded from BHEL web site http://www.bhel.com or from the government tender website http://tenders.gov.in (public sector units > Bharat Heavy Electricals Limited page) Tender Enquiry reference "2711100027"

Tenders should reach us before 14:00 hours on the due date Tenders will be opened at 14:30 hours on the due date Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present	Yours faithfully, For **BHARAT HEAVY ELECTRICALS LIMITED** Manager / MM / Capital Equipment

S.KARUNANIDHY
Manager
MM / Capital Equipment
BHEL. TRICHY-620 014

01 **Demands of the mechanical equipment on the Roller Conveyor Motor**

02 Purpose of Drive : Transport of tubes on conveyor to CB
02.1 (e.g. location and function of equipment)
02.2

03 Quantity required : 64 (1x12, 4x13) Supplied by : Customer
04 Type of Drive : group drive, speed variable (5 groups)

05 Handled Product Datas :
05.1 - Type : round tubes (hot)
05.2 - Type of delivery : outlet of Rotary Saw
05.3
05.3.1 - Type of Stop (e.g. stopper) :
05.4 - Surface condition :
05.5 - Unit weight (max./min.) [kg] : 395 / 165
05.6 - Lenght (max./min.) [m] : 94 / 9,6
05.7 - Cross section or diameter (max./min.) [mm] : 133 / 26,7
05.8 - Temperature [°C] : approx. 1280 (max.)
05.9 - Distance to motor (assuming hot material) [mm] : ≈ 500 mm (see at drawing)

06 Datas regarding conveyor rolls :
06.1 - Shape (1: V-rolls 2: plain rolls) : 2
06.2 - Transporting diameter [mm] : 200
06.3 - Rolls diameter (outside / inside) [mm] : 200 / 200
06.4 - Rolls width [mm] : 345
06.5 - Moment of Inertia [kgm²] : ≈ 0,5
06.6 - driven rolls Quantity : 64 Spacing [mm] : 1250
06.7 - non-driven rolls Quantity : Spacing [mm] :
06.8 - Distribution of driven (X) and non-driven (0) Rollers

06.8.1	1	2	3	4	5	6	7	8	...			56	57	58	59	60	61	62	63	64
06.8.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

06.9 - are any spinning of rolls allowed? (1: Yes 2: No) : 1
06.10 - are the rolls intended to spin? (1: Yes 2: No) : 2

07 Datas regarding Velocity and Rotational Speed
07.1 - transporting speed (min./max.) [m/s] : 0,5 / 7,0
07.2 - rotational speed (gearbox to rolls) [rpm] :
07.3 - rotational speed (motor to gearbox) [rpm] : 48 ... 668
07.4 - Gearbox transmission ratio (i) : 1

08 Required Starting Torque [Nm] : 29

09 Duty Type (S1...S9) : S 6
09.1 - Relative operating time (S3...S6) [%] : 80
09.2 - Duration of Operation/Cycle (S2; S6) [min.] : 0,33 (20 sec.)
09.3 - Cycles per hour (S4; S5; S7) [c/h] : 180
09.4 - Inertia factor (S4; S5; S7; S8) [FI] : ≈

10 Direction of Rotation (1: right 2: left 3: both) : 3
11 Number of Starts/Stops in case of Reversing Operation reverse only in manual mode
11.1 - Forward [c/h] :
11.2 - Backward [c/h] :

12	Datas for Stopping Operations			
12.1	- Method of braking		:	regenerative
12.2	- Braking torque	[Nm]	:	29
12.3	- Braking time	[s]	:	3,5
12.4	- Number of stopping operations	[c/h]	:	occasionally
13	Type of Construction	(IEC-Code 1)	:	IM B5
14	Degree of Protection	(IEC 144)	:	IP 65
15	Method of Cooling/Coolant		:	IC 411
16	Location of Terminal box (1: right 2: left 3: top)		:	1
17	Second Shaft Extension (1: Yes 2: No)		:	2
18	Design of Shaft Ends (1: conical 2: cylindrical)		:	2
19	Forces acting on Drive shaft	axial [N]	:	radial [N] :
20	Ambient Temperature	[°C]	:	+5 ...+55
21	Installation Height	[m]	:	<1000
22	Power Supply Datas			
22.1	- Nominal Voltage	[V]	:	415
22.2	- Nominal Frequency	[Hz]	:	50
22.3	- Power Supply Source:	frequency converter for each group		
22.4				
22.5	- Polechangeable	(yes / no)	:	no

23 Design/Dimensional requirements :
24 The starting torque is calculated as follows: only 50% of the rollers are in contact
25 with the tube.
26
27
28

29 Specifications regarding operating functions (abridged edition) :
30 The transport roller conveyor to CB serves for transporting the tubes to the
31 ejctor in front of the cooling bed.
32 The conveyor is always running with the Rotary Saw outlet speed.
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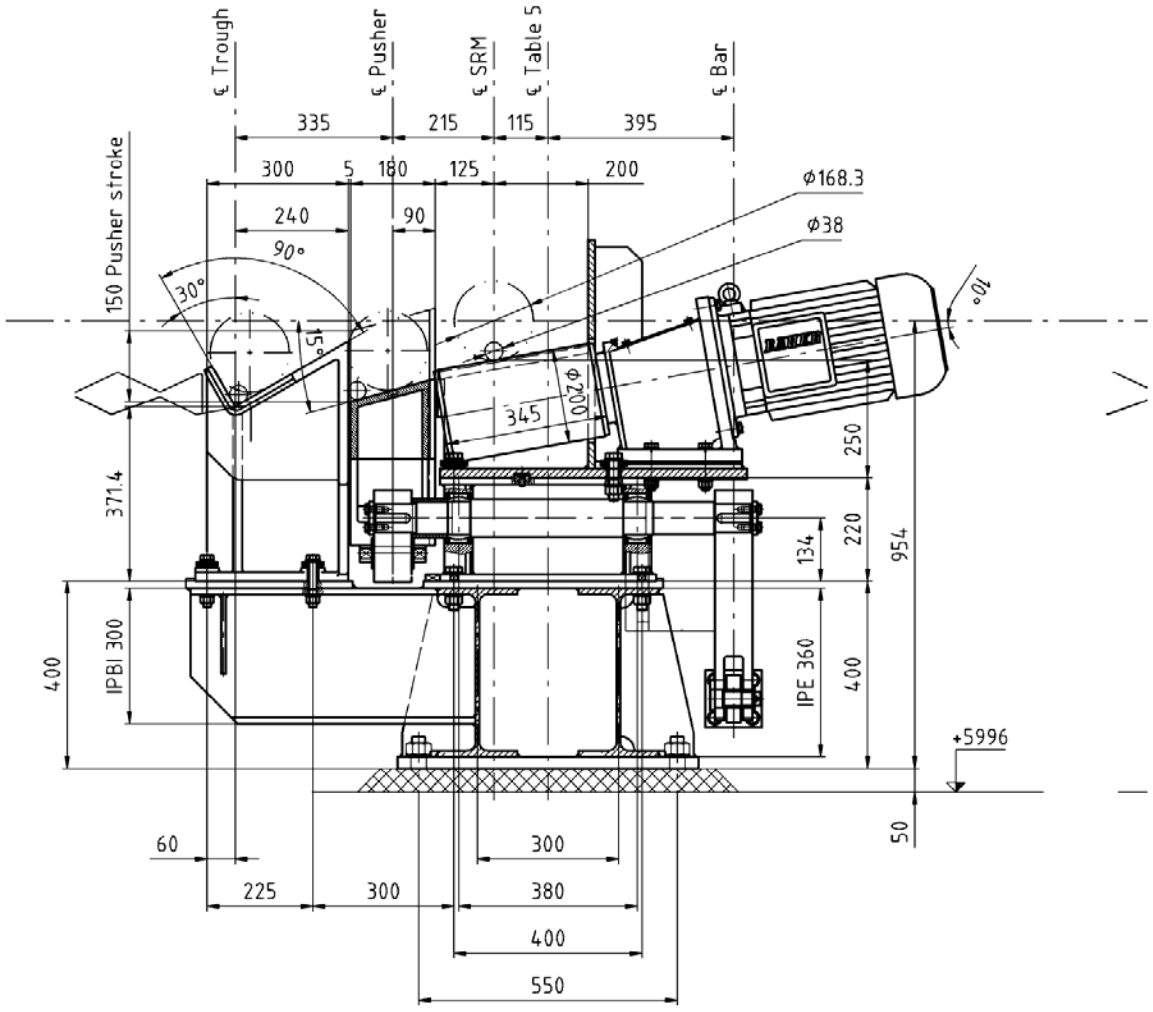
42 Other declarations :
43 Energy effiency class IE2
44 Colour RAL 6011
45


℄ Trough
℄ Pusher
℄ SRM
℄ Table 5
℄ Bar
335
215
115
395
300
5
180
125
200
240
90
90°
30°
15°
150 Pusher stroke
ϕ168.3
ϕ38
10°
ϕ200
345
371.4
250
220
134
954
400
IPBI 300
IPE 360
400
+5996
50
60
225
300
300
380
400
550

01	**Datas of choosen conveyor drive:**					**(only for reference!)**
02	Manufacturer	: Danfoss Bauer				
03	Type	: DNFPE1XA6-TF				
03.1						
03.2	Supplier	: Customer				
04	Nominal torque		(motor)	[Nm]	:	53
04.1			(gearbox)	[Nm]	:	
04.2	Maximum torque		(motor)	[Nm]	:	85
04.3			(gearbox)	[Nm]	:	
05	Nominal Voltage			[V]	:	415
05.1	Nominal Frequency			[Hz]	:	50
06	Rated Speed		(motor)	[rpm]	:	970
06.1			(gearbox)	[rpm]	:	
06.2	Gear ratio (i)				:	
06.3	Service factor fB				:	
07	Nominal current			[A]	:	11
08	Max. current			[A]	:	
09	B_value		(S7 / 100% ED)	[kgm²/h]	:	
10	Locked-rotor immobilization time			[min.]	:	
11	Power efficiency			[%]	:	89,0
12	Power factor				:	0,78
13	Moment of Inertia (J)			[kgm²]	:	
14	Frame Size				:	
15	Type of construction			(IEC-Code 1)	:	IM B5 (Rotated 10 ° -> V5)
16	Type of enclosure				:	IP 65
17	Insulation class				:	F
18	Weight			[kg]	:	approx. 123
19	Duty-type rating		(S1...S9)		:	S 6
19.1	cyclic duration factor		(S2...S6)	[%]	:	80
19.2	rated operating time/duty cycle time		(S2/S6)	[s]	:	20
19.3	operating cycles per hour		(S4,S5,S7)	[c/h]	:	180
19.4	Inertia factor		(S4,S5,S7,S8)	[Fl]	:	
20	Thermistor motor protection	(0:none 1:triple 2:sextuple)			:	1
21	Starting method	(1:direct 2:Y/D 3:rotor starter)			:	frequency converter
22	Method of Cooling/Coolant				:	IC 411
23	Location of terminal box	(1:right 2:left 3:top)			:	1 (I/A, see motor drawing)
24	Second shaft extension	(1: Yes 2: No)			:	2
25	Ambient temperature	(if > 40°C)		[°C]	:	+5 … +55
26	Installation height	(if > 1000m)		[m]	:	<1000
27	Energy effiency class					IE2
28	Colour					RAL 6011
29	Build-on Accessories	:				
30	Corrosion protection: CORO2					
31	Other Informations	:				
32		5	**50**			Hz
33		61	**415**			V
34		0,325	**5,5**			kW
35		100	**1000**			rpm.
36		31,5	**53**			Nm

Dimension drawing (only for reference!):