



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

MAINTANANCE SERVICE

TITLE CORRIGENDUM for NIT_23196	Phone: +91 431 2577765 Fax : +91 431 252 0719 Email : sjkannan@bheltry.co.in
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	Reference Number: Enquiry 1801500655	Enquiry Date: 30.06.15	Due date for submission of quotation: 30.07.2015
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			

CORRIGENDUM

A) Revised Specification for Sump Pump as attached TOS:2001/Rev.02 (applicable for both North Karanpura & Darlipalli projects)

B) Due date for offer submission is extended up to 30.07.2015

Vendors are requested to submit the offers accordingly.

BHEL commercial terms & conditions with Price Bid formats and all annexure can be downloaded from BHEL web site http://www.bhel.com or from the Government tender website http://tenders.gov.in (public sector units) Bharath Heavy Electricals Limited) under enquiry reference "1801500655"	
Tenders should reach us before 14:00 hours on the due date Technical bid 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 Bharath Heavy Electricals Limited

**Bharat Heavy Electricals Limited
Tiruchirappalli-620 014**

Fuel Systems/PE(FB)



Title Sheet

Specification for

Effluent Sump Pump And Motor Assy

Specification Number: TOS:2001

Revision No. : 02

02	15.07.15	Motor RPM changed from 1450 RPM to 3000RPM. Generally revised	VS/MAN
01	10/03/14	LDO added in Cl.3, LDO specific gravity added in Cl. 3.3 & Sl. No 1.2 of datasheet, Cooling water requirement applicability added as Sl. No. 7 in datasheet.Cl 4.6 added. Drawing in pg8 revised.	GSK
Rev. No.	Date	Revision statement	Checked & Approved

	Name	Signature	Date
Prepared	S.Selvaraju	-sd-	13.01.2009
Checked	S.Selvaraju	-sd-	13.01.2009
Approved	M.Thandapani	-sd-	13.01.2009



**Specification For
Effluent Sump Pump And Motor Assy**

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1. Intent:

To design, manufacture, test and supply of the Vertical submerged pump with motor.

2. Scope:

The complete Sump pump with drive and required accessories as per the specification furnished below.

3. Functional and technical conditions:

The pump shall be designed to handle the LDO/HFO/LSHS/HPS and work in the environment as furnished.

Performance as per VDMA standard.

3.1	Fluid handled	:	Fuel oil / Sludge
3.2	Pumping Temperature	:	50-80Deg. C
3.3	Sp.gravity	:	0.83/0.925/1.05
3.4	Capacity	:	10 Cum/Hr.
3.5	Head (Diff) @ duty Point	:	50MLC (Minimum)
3.6	R.P.M	:	3000 Clockwise (As seen from motor end)
3.7	Minimum Submergence	:	Vendor to State
3.8	Ht. below Discharge Flange	:	3000mm (Approximately)

4. Constructional features and special requirements:

The pump shall be Vertical mounted, steel body

Delivery Flange shall be drilled as per ANSI B 16.5 Class 150 lbs.

Drive motor and base frame are by the vendor and shall be as per the specification enclosed for L.T. motor.

Materials:

4.1	Pump Casing	:	C.I , 2-3% Ni with Min 180 BHN Hardness
4.2	Pump Impeller	:	C.I , 2-3% Ni with Min 180 BHN Hardness
4.3	Pump Shaft	:	EN 8
4.4	Bearing	:	Vendor to State
4.5	Fasteners in Liquid	:	M.S. Galvanised / Cadmium plated
4.6	Gaskets	:	Shall be of non-asbestos type



**Specification For
Effluent Sump Pump And Motor Assy**

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5. Marking:

Stainless steel nameplates with the following boldly engraved shall be firmly fixed to the body; Maker's name & production serial number, Full pump designation: Flow, Viscosity, Minimum allowable suction pressure, discharge pressure.

Each spare shall be individually tagged with part name, maker's name & spare code and BHEL material code.

6. Painting:

At interior surfaces supplied with rust preventive oil following hydraulic test & drying. At exposed surfaces degreased, derusted & epoxy coated over red oxide primer.

7. Packing:

All openings shall be firmly capped against ingress of water or dust. Shall be seaworthy packed in wooden boxes with waterproof under cover. Liberal packing material & struts shall be used to arrest rolling to protect from transmit damages.

8. Inward inspection:

Verify the works test certificate, marking particulars, nameplates of each accessory and the scope of supply. Watch for damages. Perform random check on all mounting dimensions, terminal connections and coupling details.

9. Applicable drawings:

GA Drg. With Overall Dimensions
Sectional Drg. With BOM

10. Inspection & testing:

Dimensional checks as per the approved drawing.

Performance test on each pump on standard oil over the entire operating range, with curves extrapolated for this specific application.

Body hydraulic tested for at 1.5 times body rating.

All tests envisaged shall be as per the approved Quality Plan.



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Effluent Sump Pump And Motor Assy

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11. Information to be furnished:

Foundation details, cross sectional drawing and the pump designation with description of designation.

Performance data sheet of the Pump/Filled in data sheet

Flow Vs Power,

Flow Vs Head,

Flow Vs Efficiency in %age

Calculation for

Pump Capacity, Power rating in Kw(motor),Hydraulic length, velocity & total pressure drop in MLC

O&M manuals in electronic form in compact discs.

Spares quotation for 3 years operation with description, Part No. etc.



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Effluent Sump Pump And Motor Assy

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Effluent Sump Pump And Motor Assy.
Data Sheet

BHEL MATERIAL CODES: L172014220007001
ENQUIRY No.:

Sl. No.	Characteristics	Requirement	Supplier's Compliance
1.0	Liquid Data		
1.1	Liquid	Fuel Oil / Sludge	
1.2	Specific gravity	0.83/0.925/1.05	
1.3	Liquid Ambient temp.	50 Deg.C	
2.0	Pump Data		
2.1	Pump Type	Vertical Submerged	
2.2	Make & Model No.		
2.3	Quantity	Two Nos / Contract	
2.4	Height Below Discharge Flange	3000mm(Approximately)	
2.5	Flow	10Cum./Hr.	
2.6	Differential Head @ duty point	50MLC	
2.7	Minimum Safe Flow	Vendor to State	
2.8	Minimum Submergence	Vendor to State	
2.9	Delivery Flange Drilling Std	ANSI B 16.5 Class 150	
2.10	Pump Efficiency	Vendor to State	



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Sl. No.	Characteristics	Requirement	Supplier's Compliance
2.11	Power BKw @ duty point	Vendor to Furnish	
2.12	Recommended Motor rating	Vendor to Furnish	
2.13	Motor Speed	3000rpm	
2.14	Impeller type	Closed	
2.15	Shaft Sealing	Gland Packing	
2.16	Motor Coupling	Rubber Spider	
3.0	Material of Construction		
3.1	Casing	CI +Ni 2-3% with Min. 180BHN	
3.2	Casing Wear Ring	CI +Ni 2-3% with Min. 180BHN	
3.3	Impeller (Closed)	CI +Ni 2-3% with Min. 180BHN	
3.4	Impeller (Wear Ring)	CI +Ni 2-3% with Min. 180BHN	
3.5	Shaft	En8	
3.6	Imp.Sleeve	AISI-410	
3.7	Int.Sleeve	AISI-410	
3.8	G.B.Bush	CA-15 Hardened	
3.9	Head Sleeve	AISI-410	
3.10	Column Pipe-L	M.S.ERW CL-C Galvanised/ ASTMA106.GR-B	



**Specification For
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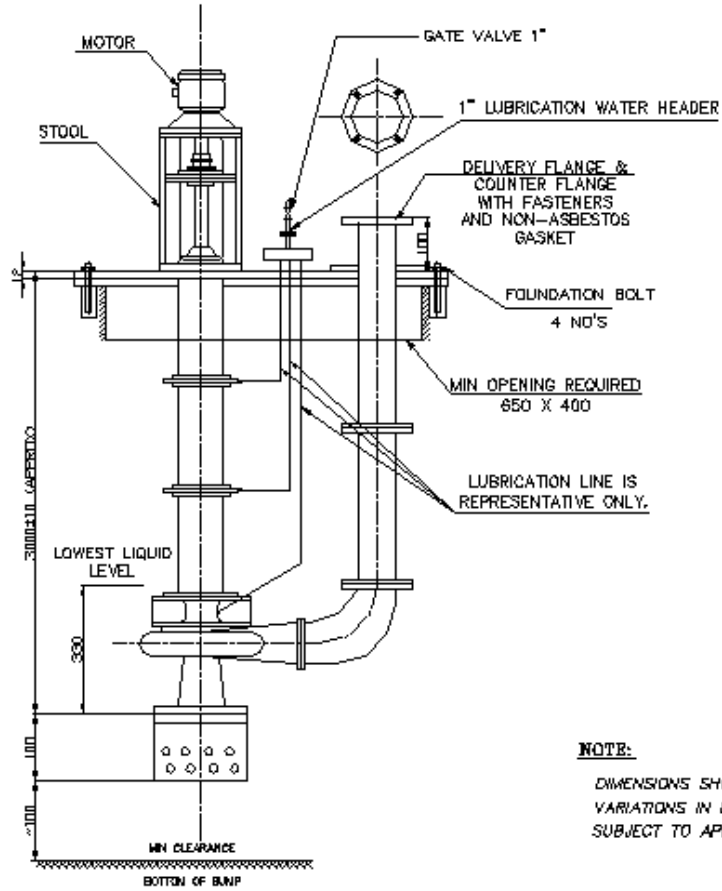
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SI No	Characteristics	Requirement	Supplier's Compliance
3.11	Del.Pipe (DP)	M.S.ERW CL-C Galvanised / ASTM A106.GR-B	
3.12	Discharge Elbow	M.S.ERW CL-C Galvanised/ ASTM A106.GR-B	
3.13	Rect.Sup.Plate (RSP)	Mild Steel	
3.14	Rsp Mounting Bolts	M.S.Galvanised	
3.15	SB Gland Packing	Vendor to Furnish	
3.16	Bearing	Vendor to Furnish	
3.17	Fasteners in Liquid	M.S.Galvanised/Cadmium plated	
4.0	Accessories		
4.1	Flexible Coupling	Cast Steel	
4.2	Strainer (STR)	AISI-316	
4.3	Delivery Flange & Counter Flange	M.S.Galvanised	
5.0	Testing and Inspection	As per approved QP	
6.0	Motor Data	As per TDC:TCl:141: Rev.:Latest	
7.0	Cooling Water		
7.1	Cooling Water requirement	Yes/No	
7.2	If yes, water flow reqd.		
7.3	Water parameters reqd. (Temp, pressure)		
7.4	Line size required (To be terminated with isolation valve)(TP details to be indicated in GA drawing)	NB 25	



Specification For Effluent Sump Pump And Motor Assy

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NOTE:

DIMENSIONS SHOWN ARE SUGGESTIVE ONLY.
VARIATIONS IN DIMENSIONS ARE ACCEPTABLE.
SUBJECT TO APPROVAL.

