



**BHARAT HEAVY ELECTRICALS
LIMITED**

Heavy Power Equipment Plant, Ramachandrapuram,

Hyderabad - 502 032. INDIA.

Phones :23182189

Fax Nos : 040 - 23021910 & 23022243

E-mail :

Date :

Due Date :

Supplier Qtn. No.:

Date :

**TENDER DOCUMENTS TO BE FILLED BY THE SUPPLIER FOR SUPPLY OF MOULDING MACHINE WITH JOLTING
CUM SQUEEZING FACILITY**

NOTE:-

1. Vendor must submit complete information asked against clause no. 15.0, 16.0 and 18.0. The offer meeting these clauses would only be processed.
2. The "Offered" Column and where applicable, the "Deviations" & "Remarks" Column of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications / requirements shall be treated as non-compliance.
3. The offer and all documents enclosed with offer should be in English language only.

ADDRESS OF THE SUPPLIER :

TELEPHONE NOS.:

FAX NOS.:

E-MAIL ADDRESS :


अनुपम दास
ANUPAM DAS
उप महा प्रबंधक / उत्पादन (फ & प)
Dy. General Manager/Prod. (F & P)
बी.एच.ई.एल., / BHEL, Hyd-32.


पी. सत्यनारायण
P. SATYANARAYANA
असिस्टेंट महा प्रबंधक / फ & प
Sr. Dy. General Manager / F&P
बी.एच.ई.एल., / B.H.E.L., Hyd-502 032

SL.NO.	DESCRIPTION FOR BHEL REQUIREMENT	OFFERED	DEVIATIONS	REMARKS	BHEL COMMENTS
1.0	PURPOSE / APPLICATION				
	This machine is required for machine moulding of sand castings up to piece weight of 200 kgs in BHEL Hyderabad				
2.0	TECHNICAL PARAMETERS SHALL BE AS PER SPECIFICATION NO:HY/F&P/002/07-08 REV.00 (ATTACHED)				
2.1	HY/F&P/002/07-08 REV.00 Clause 1.0				
2.2	HY/F&P/002/07-08 REV.00 Clause 2.0				
2.3.1	HY/F&P/002/07-08 REV.00 Clause 3.1				
2.3.2	HY/F&P/002/07-08 REV.00 Clause 3.2				
2.3.3	HY/F&P/002/07-08 REV.00 Clause 3.3				
2.3.4	HY/F&P/002/07-08 REV.00 Clause 3.4				
2.3.5	HY/F&P/002/07-08 REV.00 Clause 3.5				
2.3.6	HY/F&P/002/07-08 REV.00 Clause 3.6				
2.3.7	HY/F&P/002/07-08 REV.00 Clause 3.7				
2.3.8	HY/F&P/002/07-08 REV.00 Clause 3.8				
2.3.9	HY/F&P/002/07-08 REV.00 Clause 3.9				
2.3.10	HY/F&P/002/07-08 REV.00 Clause 3.10				
2.4	HY/F&P/001/07-08 REV.00 Clause 4.0				
2.5	HY/F&P/001/07-08 REV.00 Clause 5.0				
2.6.1	HY/F&P/001/07-08 REV.00 Clause 6.1				
2.6.2	HY/F&P/001/07-08 REV.00 Clause 6.2				
2.7	HY/F&P/001/07-08 REV.00 Clause 7.0				

Page 2 of 9


 P. SATYANARAYANA
 Sr. Dy. General Manager / F&P
 बी.एच.एल., / B.H.E.L., Hyd-502 032


 ANUPAM DAS
 Dy. General Manager / उत्पादन (का व पे)
 बी.एच.एल., / BHEL Hyd-32

SL. NO.	DESCRIPTION FOR BHEL REQUIREMENT	OFFERED	DEVIATIONS	REMARKS	BHEL COMMENTS
3.0	SAFETY ARRANGEMENTS				
3.1	Machine should have adequate and reliable safety interlocks / devices to avoid damage to the machine, work piece and the operator due to malfunctioning or mistakes				
3.2	All the pipes and cables etc., on the machine shall be well supported and protected. These should not create any hindrance to machine operators' movement for effective use of the machine				
4.0	ENVIRONMENTAL PERFORMANCE				
4.1	Maximum noise level shall be less than 85 dB (A) at normal load condition. Any other norms duly approved by Statutory regulatory authority may be considered subject to documentary evidence alongwith the offer.				
4.2	If any safety / environmental protection enclosure is required it should be built in the machine by the vendor				
5.0	LEVELLING AND ANCHORING SYSTEM				
	Complete anchoring system including foundation bolts , anchoring materials , fixtures, leveling shoes etc, should be supplied by the vendor.				
6.0	ASTHETICS : Machine shall be painted with light green colour and shall not peel off due to heat and pollution of the sand foundry environment				

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Dy. General Manager/Prod. (F & P)

Page 3 of 9
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बीएचएल, / B.H.E.L.,Hyd-502 032

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SL. NO.	DESCRIPTIVE FOR BHEL REQUIREMENT	OFFERED	DEVIATIONS	REMARKS	BHEL COMMENTS
7.0	TOOLS FOR ERECTION, OPERATION & MAINTENANCE Special tools and equipment required for erection of the machine shall be brought by the vendor. Necessary tools like Torque Wrench, Spanners, Keys, grease guns etc. for operation and maintenance of the machine should be supplied. List of such tools should be submitted with offer.				
8.0	SPARES				
8.1	Itemized breakup of mechanical and hydraulic spares used on the machine in sufficient quantity as per recommendation of Vendor for 2 years of trouble free operation on three shifts continuous running basis should be offered by vendor.				
8.2	All types of spares for total machine and accessories should be available for atleast ten years after supply of the machine. If machine is likely to become obsolete in this period, the vendor should inform BHEL sufficiently in advance and provide drawings of parts / details of spares & suppliers to enable BHEL to procure these in advance, if required				
8.3	Vendor to confirm that complete list of spares for machine and accessories, along with specification / type / model, and name & address of the spare supplier shall be furnished along with documentation to be supplied with the machine				

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Page 4 of 9

SL. NO.	DESCRIPTION FOR BHEL REQUIREMENT	OFFERED	DEVIATIONS	REMARKS	BHEL COMMENTS
9.0	DOCUMENTATION : Five sets of following documents (Hard copies) in English language should be supplied along with the machine				
9.1	Operating manuals of Machine				
9.2	Detailed Maintenance manual of machine with all drawings of machine assemblies/sub-assemblies/parts including Pneumatic/ Coolant / Hydraulic circuit diagrams. All Assembly/ Sub Assembly Drawings shall be supplied with the part list also				
9.3	Catalogues, O&M Manuals of all bought out items including drawings, wherever applicable.				
9.4	One additional set of all the above documentation on CD ROM.				
10.0	FOUNDATION				
10.1	Vendor shall submit the preliminary layout drawing for getting BHEL's approval within one WEEK from the date of Letter of Intent (LOI) / P.O. whichever is earlier. Complete Foundation Design including details viz. static / dynamic load details etc. and Final Layout drawings shall be submitted by the supplier within ONE WEEK after getting BHEL's approval. The layout should consist of all requirements pertaining to complete machine including space requirement for any other accessories. BHEL shall construct complete foundation for the machine under supervision of supplier and at supplier's responsibility. Vendor should arrange equipments required for the testing of foundation, if required by the vendor. The vendor shall also indicate detailed specifications of grouting compound and Grouting procedure etc. for foundation bolts of the machine.				

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SL. NO.	DESCRIPTION FOR BHEL REQUIREMENT	OFFERED	DEVIATIONS	REMARKS	BHEL COMMENTS
11.0	ERECTION AND COMMISSIONING				
11.1	Supplier to take full responsibility for carrying out the erection, start up, testing of machine, it's control & all types of other supplied equipment. etc. Service requirement like power, air & water shall be provided by BHEL at only one point to be indicated by supplier in their foundation/layout drawings. Other requirements like crane and helping personnel shall also be provided by BHEL. Details of these requirements should be informed by vendor in advance.				
11.2	Successful proving of BHEL components by the supplier shall be considered as part of commissioning.				
11.3	Schedule of Erection and Commissioning shall be submitted with the offer.				
11.4	Charges, duration, terms & conditions for E&C should be furnished in detail separately by vendor along with offer.				
11.5	Portion, if any, of the machine, accessories and other supplied items where paint has rubbed off or peeled during transit or erection should be repainted and merged with the original surrounding paint by the vendor. For this purpose, the vendor should supply sufficient quantity of touch-up paint of various colours of paint used.				
12.0	AMBIENT CONDITIONS & STABILITY :				
12.1	The machine and accessories, should be suitable for 24 hrs. continuous operation to its full capacity for 24 hour a day and 7 days a week throughout. Vendor to ensure and confirm the same.				

Approved

अनुपम पाटिल
ANUPAM PATIL
सहकारी प्रबंधक / सहकारी (आ.प्र.सं.)
General Manager / BHEL (F & P)
अनुपम पाटिल, BHEL, Hyd-32

SL. NO.	DESCRIPTION FOR BHEL REQUIREMENT	OFFERED	DEVIATIONS	REMARKS	BHEL COMMENTS
12.2	Stability of the complete machine keeping in view of general ambient conditions of sand foundry plant for the requirements of BHEL components and trouble free operation of the machine should be ensured by vendor. (Vendor to confirm that machine is suitable for above environment and details of provisions on the machine for the same should be furnished by Vendor)				
13.0	PACKING: Rigid packing for all items of complete machine and all accessories and other supplied items to avoid any damage / loss in transit.				
14.0	GUARANTEE : 24 MONTHS FROM THE DATE OF ACCEPTANCE OF THE MACHINE				
15.0	GENERAL: Following documents shall be submitted along with the offer				
15.1	Vendor to submit, along with offer, reference list of customers where similar machines have been supplied mentioning broad specifications of the supplied machine.				
15.2	Detailed catalogues, sketch/ photographs of the m/c and accessories/ attachments should be submitted with the offer.				
16.0	REFERENCE LIST / QUALIFYING CONDITIONS :				

Page 7 of 9

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SL. NO.	DESCRIPTION FOR BHEL REQUIREMENT	OFFERED	DEVIATIONS	REMARKS	BHEL COMMENTS
16.1	Only those vendors, who have supplied and commissioned at least three machines of same or higher capacity for similar applications in the past three years and such machines are presently working satisfactorily for more than one year after commissioning, should quote. However, if such machine(s) has/had been supplied to BHEL, then such machine should be presently working satisfactorily for more than six months after its commissioning and acceptance in BHEL, should quote. The information such as contact person (name, e-mail id, mobile / phone number) should be submitted by the vendor about the companies where similar machines have been supplied. This is required from all the vendors for qualification of their offer.				
16.2	Performance certificate from the customers regarding satisfactory performance of machine supplied to them.				
17.0	TRAINING AND INSPECTION AT SUPPLIER WORKS BEFORE DESPATCH: Two Engineers and two operators of BHEL shall be provided training on operations and maintenance of the machine at free of cost by the vendor				
18.0	SPECIAL REMARKS: Suppliers quoting for the equipment shall fulfill the following				
18.1	They shall be the original equipment manufactures (OEM) and should be in continuous business of manufacture and supply for minimum past five years				

SL. NO.	DESCRIPTION FOR BHEL REQUIREMENT	OFFERED	DEVIATIONS	REMARKS	BHEL COMMENTS
18.2	All the bought out items shall be of reputed make. Make and type of each of these shall be indicated and relevant catalogues enclosed with the offer				
18.3	The offered machine should be of proven design.				
18.4	Past performance related to unfavorable experiences if any of BHEL with the equipment's supplied by the bidder will have negative connotation.				
18.5	BHEL reserves the right to reject any or all the offers without assigning any reason whatsoever thereof.				
18.6	Two part bid system shall be followed				

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Page 9 of 9

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**BHARAT HEAVY ELECTRICALS LIMITED
RAMACHANDRAPURAM HYDERABAD: 32**

FOUNDRY AND PATTERN SHOP

SPECIFICATION NO: HY/F&P/002/07- 08 REV.00

SPECIFICATION FOR THE PROCUREMENT OF FOUNDRY MOULDING MACHINE WITH JOLTING CUM SQUEEZING FACILITY.

MACHINING

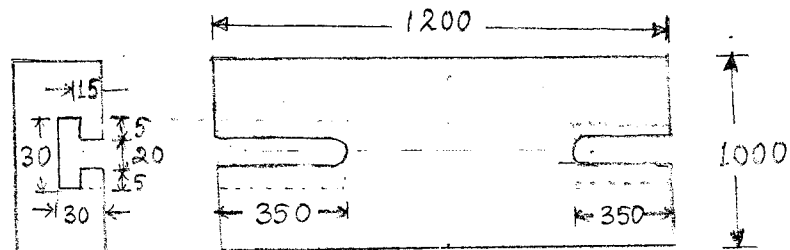
1.0 GENERAL:

This specification describes the requirements of "Foundry moulding machine ^{having} Jolting cum squeezing facility."

2.0 APPLICATION: This machine is required for the production of moulds used for manufacture of castings like Hi-chrome liners in Foundry shop.

3.0 MACHINE DESCRIPTION:

- | | | |
|---|---|---------------------|
| 3.1 Simultaneous Jolt Squeeze load | : | 1000 kgs (minimum) |
| 3.2 Squeezing pressure | : | 25000 kgs (minimum) |
| 3.3 Squeezing stroke | : | 200 mm |
| 3.4 Squeezing plate adjustment | : | 280 mm |
| 3.5 Max. Height between Squeeze plate and table | : | 610 mm |
| 3.6 Pattern Draw | : | 350 mm (minimum) |
| 3.7 Table size (with the T slot grove as per sketch given below): | : | 1200 mm x 1000 mm |



(Not to scale)

This T - slot is required for locating and fixing of the mould box and match plate on the table.

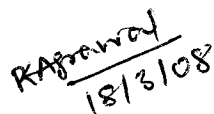
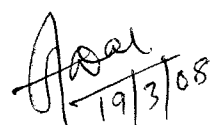
- | | | |
|---|---|----------------------|
| 3.8 Maximum mould box size (Outside dimensions) | : | 1150mm x 1000 mm |
| 3.9 Table height from floor | : | 600 to 760 mm approx |
| 3.10 Net Weight (approx) | : | 3000 kgs |

Note 1) Small variations in the table size are permissible provided it is capable of handling the maximum mould box size mentioned at 3.8 above.

4.0 OPERATION MODE: Pneumatically Operated, Pin Lift, Push Button Valve operated

Ramana

- 5.0 **OPERATION PARAMETERS:** Effective jolting process and squeezing pressure shall be achieved with an air pressure of 4 to 6.3 kg/cm² (delivered with a line pipe of ¾") at the maximum load.
- 6.0 **MEASURING AND CONTROL INSTRUMENTS:** The moulding machine shall be equipped with the following instruments:
- 6.1 **Filter Lubricator and Regulator:** At the compressed air inlet of ¾" pipe.
- 6.2 **Suitable Pressure gauge for measuring inlet air pressure.**
- 7.0 **MINOR VARIATIONS:** BHEL reserves the right to consider minor variations in all the above mentioned parameters provided the functional effectiveness of the machine is not hampered.

Prepared BY	Checked by	Approved by
 18/3/08	 19/3/08	 19/3/08
PRANJAN K. KOTESWAR Dy. General Manager/Prod. (F & P) BHEL, R.C. Puram, HYD-32.	के. कोटेश्वर राव K. KOTESWAR RAO प्रबंधक (एफ & पी) Manager (F & P) BHEL, R.C. Puram, HYD-32.	अनूपम दास ANUPAM DAS उप महा प्रबंधक / उत्पादन (एफ & पी) Dy. General Manager/Prod. (F & P) बी.एल.एल. / BHEL, HYD-32.