

Supply and Installation of High Pressure Die Casting Machine

NOTICE INVITING DOMESTIC TENDER



Materials Engineering,
Indian Institute of Science, Bangalore

December 09, 2024

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1. Bid Schedule

1	Tender No	MTE/PD/2024/HPDC
2	Tender Date	09-Dec-2024
3	Item Description	Supply and Installation of High Pressure Die Casting Machine System
	Tender Type	Two bid system (i) Technical Bid (Part A) (ii) Commercial Bid (Part B)
5	Place of tender submission	Chairperson Office Materials Engineering Indian Institute of Science, Bangalore 560012, India
6	Last Date & Time for submission of tender	30-Dec-2024, 5 PM.
7	For further clarification	Dr. Prosenjit Das Room No: A111 Materials Engineering Indian Institute of Science, Bangalore 560012 Email: prosenjitdas@iisc.ac.in Phone: +91-8022933776

2. Eligibility Criteria

Prequalification criteria:

1. The bidder must have supplied similar systems to at least 10 educational institutes/universities and/or research organizations and at least five to the CFTI's in India along with contact details.
2. The Bidder should belong to either class 1 or class 2 supplier distinguished by their "local content" as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter.
 - a. Class 1 supplier: Goods and services should have local content of equal to or more than 50%.
 - b. Class 2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.) (please refer to the attached public procurement order I annex)
 - c. Bidders offering imported products will fall under the category of non-local suppliers. They cannot claim themselves as Class-1 local suppliers/Class-2 local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training, and other sales service support like AMC/CMC, etc., as local value addition.
3. Purchase preference as defined by the recent edits to GFR (within the "margin of purchase preference") will be given to Class-1 supplier.
4. MSME can seek exemption to some qualification criteria. IISc follows GFR2017 for such details
5. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per - Annexure 4.
6. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect has to be given as per Annexure 3.
7. Original Invoice, Original Warranty Certificate, Original Test Reports should be produced for all imported items from OEM (Original Equipment Manufacturer) at the time of supply of the equipment.
8. System Catalogue should be produced with the Technical Bid.
9. Manufacturers should have ISO or equivalent international standard certificate. Please attach the required certificate with the bid.
10. Supplier will support the user with all the spares for a minimum period of 5 years.
11. Details of an experienced service engineer including contact details should be provided in tender document.
12. Bidder shall have to submit audited accounts (Balance sheet profit and loss account) of last three financial years. Audited statements must be signed and stamped by a qualified chartered accountant.
13. Bidder must submit Income Tax return for last three financial assessment years.
14. Bidder must submit up to date sales tax or GST clearance certificate.
15. **CE Certification must be provided for the proposed system. The CE certificate should be provided with the Unit.**
16. **The Bidder should have supplied similar equipment in Central Universities, preferably in centrally Funded Technical Institutes (IITs, IISC, IISER, NIT). Please provide the details and contact information.**

Vendor Eligibility Criteria:

1. Motorised poppet valve design and picture should be provided.
2. Vendors should have necessary characterization facilities at the factory for film characterization during the PDI. Details of the equipment need to be furnished along with the bid documents.
3. The thickness uniformity should be $\pm 5\%$ over 100mm (4 inch) diameter substrate. A measurement certificate of thickness uniformity of any metal (for example Al/Cu/Ag) should be provided with Technical Bid
4. Local Service should be available. Details of an experienced service engineer including contract detail should be provided in tender document.

3. Terms and Conditions

A) Submission of Tender:

1. All documentations in the tender should be in English.
2. Tender should be submitted in two envelopes (two bid system).
 - a. Technical Bid (Part-A) – Technical bid consisting of all technical details and check list for conformance to technical specifications.
The technical proposal should contain a technical compliance table with 5 columns.
 - I. The first column must list the technical requirements, in the order that they are given in the technical requirement below.
 - II. The second column should provide specifications of the instrument against the requirement. Please provide quantitative responses wherever possible with technical details in annexure.
 - III. The third column should describe your compliance with a “Yes” or “No” only. Ensure that the entries in column 2 and column 3 are consistent.
 - IV. The fourth column should state the reasons/explanations/context for deviations, if any.
 - V. The fifth column can contain additional remarks from the OEM. You can use this opportunity to highlight technical features, qualify response of previous columns, or provide additional details.
 - b. Commercial Bid (Part-B) – Indicating item wise price for the items mentioned in the technical bid, **as per the format of quotation provided in tender**, and other commercial terms and conditions.
3. The technical bid and price bid should each be placed in separate sealed covers, superscripting on both the envelopes the tender no. and the due date. Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly superscripted with the Tender No, Tender Description & Due Date.
4. The SEALED COVER superscripting tender number / due date & should reach Chairperson Office, Instrumentation and Applied Physics, Indian Institute of Science, Bangalore – 560012, India on or before due date mentioned in the tender notice. In case due date happens to be holiday the tender will be accepted and opened on the next working day. If the quotation cover is not sealed, it will be rejected.

All queries are to be addressed to the person identified in “Section 1 – Bid Schedule” of the tender notice.
5. The price must be quoted in INR (Indian Rupee). Quote should come only from Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor. The quotations should be on FOR-IISc Bangalore basis in INR only.
6. If price is not quoted in Commercial Bid as per the format provided in tender document the bid is liable to be rejected.
7. The Institute reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without there by incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders.
8. Incomplete bids will be summarily rejected.

B) Cancellation of Tender:

Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:

- a. To accept OR reject lowest tender or any other tender or all the tenders.
- b. To accept any tender in full or in part.
- c. To reject the tender, offer not confirming to the tender terms.

C) Validity of the Offer:

The offer shall be valid atleast 90 Days from the date of opening of the commercial bid.

D) Evaluation of Offer:

1. The technical bid (Part A) will be opened first and evaluated.
2. Bidders meeting the required eligibility criteria as stated in Section 2 of this document shall only be considered for Commercial Bid (Part B) opening. Further, agencies not furnishing the documentary evidence as required will not be considered.
3. Pre-qualification of the bidders shall not imply final acceptance of the Commercial Bid. The agency may be rejected at any point during technical evaluation or during commercial evaluation. The decision in regard to acceptance and / or rejection of any offer in part or full shall be the sole discretion of IISc Bangalore, and decision in this regard shall be binding on the bidders.
4. The award of contract will be subject to acceptance of the terms and conditions stated in this tender.
5. Any offer which deviates from the vital conditions (as illustrated below) of the tender is liable to be rejected:
 - a. Non-submission of complete offers.
 - b. Receipt of bids after due date and time and or by email / fax (unless specified otherwise)
 - c. Receipt of bids in open conditions.
6. In case any BIDDER is silent on any clauses mentioned in these tender documents, IISc Bangalore shall consider that the BIDDER had accepted the clauses as of the tender and no further claim will be entertained. Further if the BIDDER is silent or does not give detail justification of their claim regarding those mentioned in technical specifications, IISc Bangalore reserves the full right to reject the tender due to non-compliance without any further discussion.
7. No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.
8. Lowest bid will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, operation, preprocessing and post processing, optional items, recommended spares, warranty, annual maintenance contract.

E) Pre-requisites:

The bidder will provide the prerequisite installation requirement of the equipment along with the technical bid.

F) Warranty:

The complete system is to be under warranty period of minimum 1 year-including free supply of consumables, spare parts and data analysis software from the date of functional installation. If the instrument is found to be defective, it has to be replaced or rectified at the cost of the bidder within 30 days from the date of receipt of written communications from IISc, Bangalore. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

G) Annual Maintenance Contract:

An annual maintenance contract for a period of at least 3 years post warranty should be provided on completion of warranty period. The AMC costs will not be considered towards classifying the domestic nature (class 1 or class 2) of the vendor (see eligibility criteria in section 2). In the bid AMC charge should also be provided.

H) Purchase Order:

1. The order will be placed on the bidder whose bid is accepted by IISc based on the terms & conditions mentioned in the tender document.
2. The quantity of the items in tender is only indicative. IISc, Bangalore reserves the right to increase /decrease the quantity of the items depending on the requirement.
3. If the quality of the product and service provided is not found satisfactory, IISc, Bangalore reserves the right to cancel or amend the contract.

I) Delivery, Installation and Training:

The bidder shall provide the lead time to delivery, installation and made functional at IISc, Bangalore from the date of receipt of purchase order. The system should be delivered, installed and made functional **within 180 days** from the date of receipt of purchase order. The supply of the items will be considered as effected only on satisfactory installation and inspection of the system and inspection of all the items and features/capabilities tested by the IISc, Bangalore. After successful installation and inspection, the date of taking over of entire system by the IISc, Bangalore shall be taken as the start of the warranty period. No partial shipment is allowed. The bidder should also arrange for technical training to the local facility technologists and users.

J) Payment Terms:

100% payments (except AMC) will be released after completion delivery and satisfactory installation subject to TDS as per rules. AMC cost (if ordered), after completion of warranty period) will be released on half - yearly basis at the end of each six months subject to satisfactory services. The AMC will be comprehensive. Price basis must be on FOR-IISc Bangalore basis only. As per GFR, no advance payment can be made to domestic vendors unless an equal amount of bank guarantee is provided.

K) Statutory Variation:

Any statutory increase in the taxes and duties subsequent to bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc Bangalore subject to the claim being supported by documentary evidence. However, if any decrease takes place the advantage will have to be passed onto IISc, Bangalore.

L) Disputes and Jurisdiction:

Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Bangalore, India.

M) General:

1. All amendments, time extension, clarifications etc., within the period of submission of the tender will be communicated electronically. No extension in the bid due date/time shall be considered on account of delay in receipt of any document(s) by mail.
2. The bidder may furnish any additional information, which is necessary to establish capabilities to successfully complete the envisaged work. It is however, advised not to furnish superfluous information.
3. The bidder may visit the installation site before submission of tender, with prior intimation.
4. Any information furnished by the bidder found to be incorrect, either immediately or at a later date, would render the bidder liable to be debarred from tendering/taking up of work in IISc, Bangalore.

4. Technical Specifications

Specifications for High Pressure Die Casting machine system

1. Specification

	Item	Unit	Range		
Die Open/Close	Clamping Force	kN	4000 ~4500 KN		
	Platen Dimensions (HxW)	mm	900 x 1000		
	Space between Tie Bars	mm	600 x 600		
	Tie Bar Diameters	mm	100 ~ 120		
	Platen Stroke	mm	400		
	Mold Thickness Range	mm	350~700		
	Solenoid Valve for Core	piece	2 Nos		
	Hydraulic Outlet for Core	set	3 Nos		
Injection	Injection Force	kN	300+		
	Plunger Stroke	mm	400+		
	Plunger-tip Projection Distance	mm	150+		
	Injection Position	mm	-130~150		
	Dry Shot Speed	m/s	6 ~ 7		
	Plunger-tip Diameter	mm	Min.	Sta.	Max.
			60	70	80
	Maximum Casting Pressure	Mpa	100+	75+	60+
	Maximum Casting Area	cm ²	300	400	550
450			650	850	
Actual Shot Weight	Kg	2	3	4	
Ejection	Ejection Force	kN	180+		

	Ejection Stroke	mm	85 to 100
Others	Hydraulic Motor	kW	20+
	Amount of Hydraulic Oil capacity	L	450 and above
	Amount of Water for Oil Cooling	L/min	22+
	Amount of Water for Mold Cooling	L/min	25~45
	Machine Weight	ton	12+
	Basic Machine Size within	mm	6500 x 2000 x 3000

2. Major Parts Brand

	Item	Brand	Remark
1	HMI Touch Screen		
2	PLC Controller		
3	Relay		
4	Inverter		
5	Conductor		
6	Speed Measure System		For Injection Stroke
7	Accumulator		
8	Solenoid Valve		
9	Hydraulic Pump		
10	Main Motor		
11	Pneumatic Solenoid Valve		

3. Machine Standard Spare Part

	Item	QTY	Remark
1	Shot Sleeve	Minimum spare QTY 2	
2	Plunger Tip	Minimum spare QTY 2	FCD-45
3	Ladler Cup (Casting Iron)	Minimum spare QTY 3 / Ladler	Casting iron
4	Sprayer Manifold	Minimum 2 Pcs / Sprayer	Copper tube
5	Safety Door	1 Set	Full-covered
6	Accumulator	2 Pc	
7	Tool Kit	1 Set	

4. Standard Equipment

Item	Function	Item	Function
Control Part	Color Touchscreen	Core Part	Selection of Core Movement Timer
			Selection of Core Pressure During Injection
	Error Message Display		Movable Core x 2
	Injection Criteria Calculator	Hydraulic & Cooling Part	Hydraulic chine Oil Temperature Sensor
Single-Cycle Timeout Alarm	Bigger Sized Cooler		
	Hydraulic Oil Filter		
Platen Part	Lubrication Settings by Die Open Cycles	Safety Part	Full-Covered Safety Door
	Ejection Stroke Settings on HMI	Others	Fan-Cooled Radiator for Control Console
		Movable Platen Adjustment	Auxiliaries
	Auto Toggles Lubricating System	Auto Ladler	Molten Metal Volume Calculator
Motorized Injection Valve	Auto Adjustment for Molten Metal Supply Standby Timer		
	Injection Curve Display		Ladle Descending Position Settings
	Die Casting Criteria Management	Molten Metal Volume Settings on HMI	
Injection Part	Injection Speed Display	Auto Extractor	Motorized Lateral Movement Adjustment
	Injection Pressure Display		Motorized Die Height Adjustment
	Injection Data Display		Motorized Lateral Movement Adjustment

Plunger-Tip Projection Settings	Auto Sprayer	Up-Down Moving Spraying
Shot Sleeve Cleaning Settings		Spraying Settings for Male, Female Mold
Plunger-Tip Lubrication Settings		Spraying Sequence Settings with Core
Injection Stroke Settings on HMI		Motorized Die Height Adjustment
Magnetic Non-Contact Sensor		Fast Auto Production Settings

5. Supplier Criteria

Supplier Years of Experience	25+ years
ISO Certified Manufacturing	25+ years
Global Presence	5+ countries
Supplier Innovation & Technology	Research centre with innovation awards / Recognition / Patents
Peripherals: Auto Ladler / Auto Sprayer / Auto Extraction	Same Brand with Manufacturing setup and service centre within India
Machine Feature	Machine should be close loop with real time display
Machine Platen	Platen should be FCD Cast Iron
Durability	Machine should have High stability and durability
Injection delicacy	Machine should be Powerful and Speedy with swift acceleration
Maintenance	Machine should be easy to maintain with no breakdown
Sales Confirmation	Vendor company should provide comprehensive detail regarding their sales of the similar equipment in last 5 years in India to multinational companies, PSUs and government organisations. Furthermore, they must substantiate their claims by furnishing relevant supporting documents
Machine operation confirmation	Vendor should facilitate an in-person visit of IISc personals (2-3 nos.), allowing the specified machine to be observed in operational condition, prior to the issuance of the purchase order. The vendor should bear the transport and logistics cost in this regard.

6. Training and demonstration

1. Complete installation of clean room needs to be provided
2. Training for users by the company personnel present 'on site' immediately after the installation.
3. All pre-installation requirements to have the system installed in ideal room conditions should be included in the quote.

7. Others

- 1 The system with similar specifications must submit references from previous installations.

- 2 The names and contact addresses of the referees must be submitted with the proposal, so the purchase committee can contact them independently.
- 3 The system should require minimal maintenance.
- 4 Mention the recommended preventive maintenance schedule for the system. Any accessories needed for periodic preventive maintenance for 3 years, should be mentioned in separately the itemized quote.
- 5 Can the preventive maintenance be done by a trained on-site engineer or requires a specialist from the OEM? If the latter, please provide cost of a 3 year AMC with required kit/consumables.
- 6 CE Certification must be provided for the proposed system. The CE certificate should be provided with the Unit.
- 7 Operation Manual to be given after installation and acceptance of equipment
- 8 The system should be supported by a trained local representative and should have a minimum of 72 hour window of response.

5. Technical Bid

The technical bid should furnish all requirements of the tender along with all annexures in this section and submitted to

The Chairperson,
Attn: Dr. Prosenjit Das
Materials Engineering,
Indian Institute of Science
Bangalore – 560012, India

Annexure-1

Details of the Bidder

The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

Details of the Bidder

Sl. No	Items	Details
1.	Name of the Bidder	
2.	Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)	
3.	Registration No/ Trade License, (attach attested copy)	
4.	Registered Office Address	
5.	Address for communication	
6.	Contact person- Name and Designation	
7.	Telephone No	
8.	Email ID	
9.	Website	
10.	PAN No. (attach copy)	
11.	GST No. (attach copy)	

Signature of the Bidder

Name
Designation, Seal

Date:

Annexure-2

Declaration regarding experience

To,
The Chairperson,
Materials Engineering,
Indian Institute of Science
Bangalore – 560012, India

Ref: Tender No: XXXXXXXXX
Dated: XXXXX

Supply and installation of High Pressure Die Casting Machine system

Sir,

I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm has XXXXXX years of experience in supplying and installing High Pressure Die Casting machine system

(Signature of the Bidder)
Printed Name
Designation, Seal Date:

Annexure-3

Declaration regarding track record

To,
The Chairperson,
Materials Engineering,
Indian Institute of Science
Bangalore – 560012, India

Ref: Tender No: XXXXXXXX
Dated: XXXXX

Supply and installation of High Pressure Die Casting Machine system

Dear Sir,

I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company/ firm is not currently debarred /blacklisted by any Government / Semi Government organizations / institutions in India or abroad. I further certify that I'm competent officer in my company / firm to make this declaration.

Or

I declare the following

Sl.No	Country in which the company is Debarred /blacklisted / case is Pending	Blacklisted / debarred by Government / Semi Government/Organizations /Institutions	Reason	Since when and for how long

(NOTE: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

Yours faithfully
(Signature of the Bidder)

Name
Designation, Seal

Date:

Annexure-4

Declaration for acceptance of terms and conditions

To,
The Chairperson,
Materials Engineering,
Indian Institute of Science
Bangalore – 560012, India

Ref: Tender No: XXXXXX
Dated: XXXX

Supply and installation of High Pressure Die Casting Machine system

Dear Sir,

I've carefully gone through the Terms & Conditions as mentioned in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)
Name
Designation, Seal

Date:

Annexure-5

Details of items quoted:

a. Company Name	
b. Product Name	
c. Part / Catalogue number	
d. Product description / main features	
e. Detailed technical specifications	
f. Remarks	

Instructions to bidders:

1. Bidder should provide technical specifications of the quoted product/s in detail.
2. Bidder should attach product brochures along with technical bid.
3. Bidders should clearly indicate compliance or non-compliance of the technical specifications provided in the tender document.

6. Commercial bid

The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned under:

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total
1.	Essential items noted in the technical specification				
1.a	... (details of essential items)				
1.b	...				
2.	Optional items noted in the technical specification				
2.a	... (details of Optional items)				
2.b	...				
3.	Accessories for operation and installation				
4.	All Consumables, spares and software to be supplied locally				
5.	Warranty (1 year)				
6.	AMC 2 years beyond warranty				

Any additional items

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total

Addressed to

The Chairperson,
 Attn: Dr. Prosenjit Das
 Materials Engineering,
 Indian Institute of Science
 Bangalore – 560012, India

7. Checklist

(This should be enclosed with technical bid- Part A)

The following items must be checked before the Bid is submitted:

1. Sealed Envelope "A": Technical Bid

1. Section 5- Technical Bid (each page signed by the authorized signatory and sealed) with the below annexures:
 - a. Annexure 1: Bidders details
 - b. Annexure 2: Declaration regarding experience
 - c. Annexure 3: Declaration regarding clean track record
 - d. Annexure 4: Declaration for acceptance of terms and conditions
 - e. Annexure 5: Details of items quoted
2. Copy of this tender document duly signed by the authorized signatory on every page and sealed.

2. Sealed Envelope "B": Commercial Bid

Section 6: Commercial Bid

Your quotation must be submitted in two envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date and both of these in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No., Tender description & Due Date.