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Room NO: 26,
Dhruva, RRMD
BARC, Trombay-400085

सत्यमेव जयते
GOVERNMENT OF INDIA
BHABHA ATOMIC RESEARCH CENTRE
RESEARCH REACTOR MAINTENANCE DIVISION

TENDER NOTICE

Tender Notice No: RRMD/TN-535/2017

Date: 02/08/2017

To,
(Company name)

Sub: Tender enquiry for fabrication, assembly, testing and supply of Electro-Magnetic Clutch Assembly as per attached technical specifications

Sealed tenders are invited for and on behalf of the President of India by the Maintenance Suptd. (I), RRMD BARC, Trombay, and Mumbai-400085 from experienced vendors for Fabrication, testing and supply of Electro-Magnetic Clutch as per attached technical specifications for Dhruva, BARC.

1.0 Description of the work:

Scope of work includes Fabrication, assembly, testing and supply of Electro-Magnetic Clutch Assembly as per attached technical specifications.

2.0 Terms and conditions:

- 2.1 The offer should be valid for consideration for 60days from due date of the offer.
- 2.2 On completion of the work to our satisfaction, payment would be released on submission of bills in triplicate along with an advance stamped receipt.
- 2.3 The vendor should also clearly reply in his tender to “whether the contractor / vendor has any relative working in BARC or the contractor himself is an ex-employee of BARC or the contractor has any ex- employee of DAE on his payroll”.
- 2.4 The workmanship shall be of the highest quality giving an excellent finish to the job. High-class standard shall be maintained throughout.
- 2.5 Successful bidder shall submit detailed drawings for fabrication based on our detailed drawings which will be provided after placement of work order. Fabrication & manufacturing shall be started only after final approval on drawings by approving authorities from RRMD, BARC.

3.0 Instructions to Tenders:

- 3.1 Tenders should submit documents in support of their technical capabilities.
- 3.2 Price quoted shall be filled up in the same format given in Schedule: B with GST if any and no other charges will be payable.
- 3.3 Tender shall be submitted in the sealed cover in the vendor’s standard company format quoting our **Tender no.** on the envelope and addressed to Maintenance Suptd. (I), RRMD, BARC, Trombay, Mumbai-400085 and submitted in the RRMD office, Dhruva’.
The offer should be submitted so as to reach RRMD office, Dhruva on or before

14/08/2017 up to 1500 hrs. Tender is to be sent only through registered post or speed post and delivery or courier of tenders will not be accepted.

3.4 Tenders shall be opened the next (working) day at 1100 Hrs. in RRMD office, DHRUVA, Trombay, BARC.

3.5 The acceptance of the tenders will rest with Maintenance Suptd. (I), RRMD who does not bind himself to accept the lowest offer, and reserves to him the authority to reject any or all the tenders received without assigning any reason.

3.6 Quotation received after the due date and time shall be summarily rejected.

3.7 **CONFIDENTIALITY CLAUSES**

i. Confidentiality :

No party shall disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as "Proprietary" in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party.

This clause shall apply to the sub-contractors, consultants, advisers or the employees engaged by a party with equal force.

ii. "Restricted information" categories under section 18 of the Atomic Energy Act, 1962 and "Official Secrets" under Section 5 of the Official Secrets Act, 1923 :-

Any contravention of the above mentioned provisions by any contractor, sub-contractor, consultant, adviser or the employees of a contractor will invite penal consequences under the aforesaid legislation.

iii. Prohibition against use of BARC's name without permission for publicity purposes :-

The contractor or sub-contractor, consultant, adviser or the employees engaged by the contractor shall not use BARC's name for any publicity purpose through any public media like Press, Radio, T.V. or Internet without the prior written approval of BARC.

3.8 **Payment Terms and conditions:**

- No advance or part payment is admissible. The full and final payment will be made within 60 days after completion of the job in all respects.
- Income tax and other taxes as per the prevailing rates will be deducted from the amount.
- For payment the following shall be provided
 - Original Bill in duplicate
 - Taxes need to be shown separately in the bill.
 - Advance stamped receipt.
 - GST registration number, PAN number to be indicated in the stamped invoice.
- Payment will be made **only** through ECS/Core Banking System. Hence, please furnish the bank details such as Bank's name & address, A/c No. and IFSC code in the invoice.

3.9 **Completion schedule:**

- The job shall be completed within **10 weeks** from the receipt of the work order.
- Time is the essence of the contract. If you fail to comply with this condition you shall be liable to pay compensation.
- Penalty clause: Any delay in the completion of the job which is attributable to the vendor, is liable for a penalty @ ½ % of the work-order value per week (max. 5%).

- In case extension in the job completion period is required, the vendor has to write to Maintenance Suptd. (I), RRMD, BARC for approval.

3.10 **Guarantee**

Material and Equipment supplied as per table below are guaranteed for material, workmanship and against any defects for period of 12 month from the date of receipt of material.

Thanking you,

Yours faithfully,

SD/-

Maintenance Superintendent - (Instruments)
RRMD, BARC
(For and on behalf of the President of India)

Schedule –A

Tender Notice No: RRMD/TN/ /2017

Dated 02/08/2017

Name of Work: -Fabrication, assembly, testing and supply of Electro-Magnetic Clutch
Assembly as per attached technical specifications

Table for free issue materials

Sl. No.	Description	Qty	Unit	Rate
1.	Gear G5	2	Nos.	Free
2.	Gear G6	2	Nos.	Free
3.	Leaf spring	2	Nos.	Free
4.	Fiction Plate	2	Nos.	Free
5.	Shaft	2	Nos.	Free
6.	Ball bearings SKF3201	2	Nos.	Free
7.	Ball bearings SKF6000-2Z	4	Nos.	Free
8.	Bush	2	Nos.	Free

Schedule – B

Tender Notice No: RRMD/TN/ /2017

Dated: 02/08/2017

Name of Work: -Fabrication, assembly, testing and supply of Electro-Magnetic Clutch
Assembly as per attached
technical specifications

1	2	3	4	5
Sr. No	Name of items	Qty	Rate (₹)	Total Cost (₹)
1	Fabrication, assembly, testing and supply of Electro-Magnetic Clutch Assembly as per attached technical specifications	2 nos.		
2	Total Basic Cost of Supply			
3	Packing and Forwarding			
4	Taxes on Basic Cost of Supply (GST @ 18%)			
5	Freight/ Transportation			
6	Total Cost (Including all charges)			

Signature of the contractor with seal

Note: The prices shall be quoted in numerals and words as well. All pages of this form shall be signed with seal. No correction/ over writing is acceptable.

TECHNICAL SPECIFICATIONS

1 Scope of the work

- Fabrication, assembly, testing & supply of two nos. of Electromagnetic Clutch Assembly as per Annexure-A and B, of this document at vendor's premises. Scope of work includes fabrication of sub-assemblies mentioned in the BOM in Annexure-B except for items listed in Schedule A of Tender Notice as free issue material. The scope also includes assembly of the Electromagnetic Clutch Assembly using the fabricated sub-assemblies and the free issue items as per the drawing in Annexure B and its subsequent testing.

The contractor shall carry out following jobs:

- (i) Preparation and submission of drawing, bill of material, QA plan and testing procedures.
- (ii) Insurance on free issue items (approximate cost of free issue items is Rs. 10,000/-).
- (iii) Assembly of the EM Clutches with all fabricated and free issue materials as per drawing in Annexure B of specifications.
- (iv) Any components required for full assembly shall be responsibility of vendor except the free issue material provided by BARC.
- (v) Testing shall be carried out at vendor's premises.
- (vi) Transportation & delivery at site.
- (vii) Submission of QA certificates, acceptance test results, warranty certificates and other documents such as maintenance/operating manuals, of the supply items, as applicable.

2 General Instructions for bidders:

- Required documents like detailed drawings, etc. shall be supplied to the successful bidder after placing work order.
- Supply and Free issue C& I components shall be installed on the EM Clutches prior to dispatch

3 Pre-dispatch inspection & testing:

Inspection & testing as per technical specifications shall be carried out on the EM Clutches at supplier's premises and witnessed by purchaser or his representative prior to dispatch. Test shall be carried out on 100% items as per Annexure A.

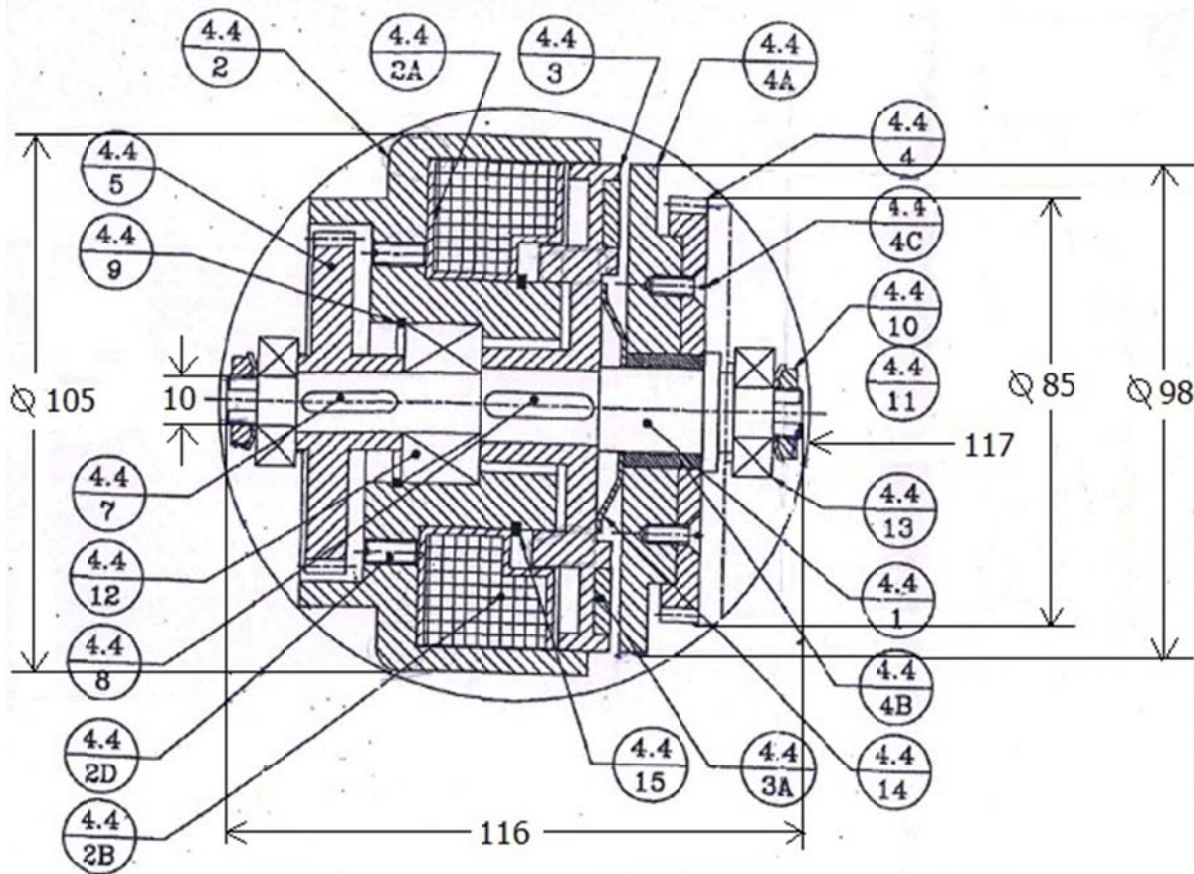
4 Packaging & transport:

Packaging and transportation without any damage to the components will be supplier's responsibility.

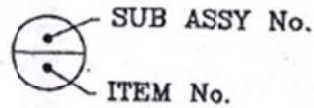
Annexure A

Clutch Design Specifications

Sl No:	Description	Specification
1	General	48VDC operated Electro-Magnetic Clutch
2	Fabrication of clutch	As per drawing attached
3	Operating torque	3 Kg-m
4	Max Speed	3000 rpm (20 rpm at energized condition)
5	Operating voltage	48+/- 3 VDC
6	Minimum holding voltage (with 0.6 Kg-m torque)	22 VDC @ ambient temperature of 30 ⁰ C
7	Operating current	300 mA (nominal)
8	Coil built-up	150 ms (typ)
9	Coil decay	50 ms (typ)
10	Coil insulation class	Class H
11	Clutch shaft diameter	10 mm
12	Clutch size (Maximum)	108 mm (dia)X98 mm (height). The whole assembly should be within a circle of 117 mm dia.
13	Coil	Insulated copper conductor
14	No of turns	2900
15	Wire used	29 SWG
16	Termination	Flying lead
17	Potting of the coil	Using Epoxy Resin with Silica filler
18	Lead Wires	Fibre Glass Single Core Flexible cable
19	Material	Soft Iron. Alloy class: SAE-AISI 1010 or C-10, as per EN 10227-2, 2008
	a) Clutch housing, rotor and armature	
	b) Shaft and gears	SS 17-4 PH
	c) Bush	Bronze, Model No. OILS-SP1-SL1, Part No. SPB-172315
	d) Leaf spring	Phosphor bronze
	e) Friction linear	Compo-WASM-80
20	Surface Treatment	Zinc passivation/flash hard Chrome plating for soft iron parts
21	Free issue materials	Shaft, gears, bush, leaf spring, friction linear and ball bearings
22	Testing & qualification	Winding resistance, Insulation resistance test using Megger, Burnishing of Friction linear plates & Torque measurement.
23	Test certificate & material testing	Material test certificate is to be provided for all the materials used in the clutch. A test specimen from the soft iron shall be provided by vendor for testing as per IEC standard to check the magnetic properties by BARC.
24	Fabrication	Soft iron to be used in the clutch should be in fully annealed condition.



LEGEND :-



ANNEXURE B

BILL OF MATERIAL (SEE NOTE 3)

SUB-ASSY.No. ITEM No.	DESCRIPTION	MATERIAL	QTY.	REMARKS
4.4	ELECTRO MAGNETIC CLUTCH SUB-ASSEMBLY	-	1	SH 1 OF 14
-1 ★	SHAFT #22 x 118 Lg.	SS 17.4 PH	1	SH 2 OF 14
-2	CLUTCH HOUSING #100x50.5 Lg.	SOFT IRON	1	SH 3 OF 14
-2A	CLUTCH SPOOL	BRASS/ PH BRONZE	1	SH 4 OF 14
-2B	COIL	COPPER WIRE	1	(SEE NOTE 9)
-2C	-	-	-	-
-2D	SLOTTED GRUB SCREW (M5x12)	CARBON STEEL	2	-
-3	CLUTCH PLATE #90x27 THK.	SOFT IRON	1	SH 5 OF 14
-3A ★	FRICTIONAL PLATE	FERRODO LINDG	1	SH 6 OF 14
-4 ★	SPUR GEAR G6 #46.5x8 Lg.	SS 17.4 PH	1	SH 7 OF 14
-4A	ARMATURE #90x11 Th.	SOFT IRON	1	SH 8 OF 14
-4B ★	BUSH #22x16 Lg.	AL.BRONZE	1	SH 9 OF 14
-4C	CHEK SCREW (M4x10)	SS 304	8	-
-5 ★	SPUR GEAR G6 (#49x211 THK)	SS 17.4 PH	1	SH 10 OF 14
-6	-	-	-	-
-7	PARALLEL KEY TYPE A (4x4x19)	SS 304	1	SH 14 OF 14
-8	PARALLEL KEY TYPE A (5x5x22)	SS 304	1	SH 14 OF 14
-9	INTERNAL CIRCLIP, LIGHT B-32	SPRING STEEL	1	-
-10	LOCK NUT SKF KM 0	CARBON STEEL	2	SH 12 OF 14
-11	LOCK WASHER SKF MS 0	CARBON STEEL	2	SH 13 OF 14
-12 ★	DOUBLE ROW ANGULAR CONTACT BALL BEARING SKF 3201	CARBON STEEL	1	(12x32x15.9)
-13 ★	BALL BEARING SKF 6000-02	CARBON STEEL	2	(10x28x8)
-14 ★	RELEASE SPRING	PH BRONZE	1	SH 11 OF 14
-15	EXTERNAL CIRCLIP LIGHT A-50	SPRING STEEL	1	-

★ - FREE ISSUE ITEMS