



GOVERNMENT OF INDIA
CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE
(MIN. OF AGRIL. & FARMERS WELFARE, DEPTT.OF AGRIL. ,COOPN. & FARMERS WELFARE)
P.O. TRACTOR NAGAR, BUDNI (M.P.) 466 445
Phone-07564-234729, 234988, Fax- 07564-234743
 Web.http:// fmttibudni.gov.in
 Email- fmti-mp@ nic.in

FNo.:3-4/2016-17 CPS(T) *301

Date:21-05-2020

TENDER NOTICE

An e-tender under two bid system, namely technical & commercial are invited through e-tendering process by online bidding on the CPP portal <https://eprocure.gov.in/eprocure/app> the Director; C.F.M.T.T.I. Budni from IS/I.S.O. certified manufacturers or the firms having experience for satisfactory fabrication, supply, installation & commissioning of following test set-up and equipment, accessories for drawbar performance testing of an agricultural tractor under a turnkey project as mentioned in the technical specifications enclosed against each item. The item shall be able to carry out the tests as per procedure contained in Indian standards: IS-12226 & OECD Test Code-2.

S. No.	Description of Equipment Capacity	Qty.	Referred to Test procedure
1.	Self- Propelled Traction Load Car –Pull 80 kN(Maximum) -Eddy Current Coupling Based	1Set	IS-12226-1995 & OECD Test Code-2
Consignee: DIRECTOR, Central Farm Machinery Training & Testing Institute, Budni (M.P.).			
Desirable:			
<ol style="list-style-type: none"> e-Tenders must be submitted in the prescribed tender format only, otherwise these are liable to be rejected. Tenders must be submitted in sealed covers super-scribing the File Number as mentioned above and the description of equipment or as per the instructions / guidelines laid down in the Central Public Procurement Portal (https://eprocure.gov.in/eprocure/app) and due date which in this case is 06-07-2020 at 1.0pm Two bid system will be followed. e-tender are invited from manufacturer/authorized dealers for supply of Self- Propelled Traction Load Car –Pull 80 kN(Maximum) through online bidding on the website https://eprocure.gov.in/eprocure/app having digital signature certificate (DSC). The tender document can also be downloaded from http:// fmttibudni.gov.in under the link - Tender Notice 2020-21 on the home page. All the foreign vendors who are resident of countries other than India for participating in online tendering activity should follow the procedure as given in an Annexure-C. Pre-bid Consultation:- The firms those who are interested for consultation before to bid, a pre-bid Consultation will be given to them on 08-06-2020 at 11.0AM regarding information on the requirements, specifications, drawings and demonstration of existing set-ups etc. The interested bidder may bring any demonstration by way of media, CD, pen drive etc. The Government/Purchaser reserves all rights to cancel/reject any or all the tenders without assigning any reason whatsoever. 			
DIRECTOR			

TENDER FORM

Reference No.:

Date:

To be submitted on or before due date, i.e06-07-2020 1.0PM

Tender Document No:

Date : -- / -- /----

From: **M/s.** _____

To,

The Director,
Central Farm Machinery Training & Testing Institute,
PO- Tractor Nagar, BUDNI (M.P.) 466 445
INDIA

Sir,

With reference to your Tender Notice dated _____ we offer our rates for the supply, installation and commissioning of Self Propelled Traction Load car-Pull 80kN (Eddy current Dynamometer Coupling Based)

Objective: Drawbar performance testing of general purpose agriculture tractor as per IS – 12226 & O.E.C.D. Test Code-2, (Copy enclosed as Annexure –D)

Features: The tractor test load car offered should be well compact designed on Tandem axle truck chassis, well-furnished flat floor front cabin air conditioner, to meet stringent norms under free field condition. The front cabin inside will be Sound proof, tinted glazed doors/windows access, direct glazed door access to the 'eddy current coupling cell' in the middle of the load car and should be equipped with the silent run generator set mounted in the rear section of the load car will be at par and above with the equipped equipment specified in the tender document

S. No.	Name & Description of Test Setups/Equipment-each & every items framed by the Institute	Make/Model & Type of equipment	Name & Description of Test Setups/Equipment-each & every items quoted by the bidder	To be filled by the bidder		
				Make /Model & Type of equipment	Unit Rate	Total Cost
1.	Loading Device/ Power absorption System	Capacity: 80 kN(Max.), with suitable heavy duty eddy current based coupling,interconnecting shaft, floating axle.	Loading Device/Power absorption System			
2.	Chassis/ Underframe/ Structure of the load car	Ashok Leyland 1920 Series, 4x2 Haulage. Engine: H-Series BS VI, 6 Cylinder CRS with iGen-6 technology. Max Power: 200 HP @ 2400 rpm Max Torque(Nm): 700 @ 1200-2000rpm Gear Box: 6 speed synchromesh-3 options Number of cylinders: 6 Piston displacement: 5660cc Chassis/Frame structure: Cowl & Chassis, HSS	Chassis/Underframe /Structure of the load car			

		material with new improved design Load body size: 20 ft General dimensions: Overall length: 8510mm Overall width: 2570mm Overall height: 3165mm Wheel base: 5050mm Turning circle dia:17.2mm				
3.	Cooling System	The cooling system should be suitable for above loading device/ power absorption system. Suitable up to ambient temperature of 50°C	Cooling System			
4.	-Maximum Drawbar Pull to be measured -Minimum drawbar Pull to be measured	80 kN (Maximum) Negative Pull (to be obtained by self-propelling load car to tractor)	-Maximum Drawbar Pull to be measured -Minimum drawbar Pull to be measured			
5.	Hitch of the load car: (Height to be adjusted manually by rotating handle provided)	Suitable tow bar of adjustable length will be provided to hitch the tractor with the load car. The tow bar will be provided with a facility to adjust any step less height of hitch in the range of 150 to 1000 mm from ground level and will be coupled to the steering system of load car for turning ability of complete combination of load car -tractor around the test track as the tractor turns.	Hitch of the load car: (Height to be adjusted manually by rotating handle provided)			
6.	Controls of the loading device of load car	Step less, Automatic/ Manual controls will be provided to achieve a set load for drawbar performance measurements. The control arrangement will have provision for observation corresponding to rated engine speed, 15% wheel slip and maximum sustained pull etc.	Controls of the loading device of load car			
7.	Throttle actuator for tractor engine	-Digitally controlled throttle actuator with application software automation to control the tractor throttle inside the	Throttle actuator for tractor engine			

		control cabin.				
Note:- The automation system will be as per the requirement of test specifications of test code IS-12226 & O.E.C.D. Test code-2 and the procedure contained therein and amended time-to-time.						
I. Front Compartment: The forefront compartment will be equipped as follows:						
8.	Control Cabin:	<p>The control cabinet will be equipped with fully air conditioned and adequately insulated to minimize heat / sound/vibration with modern Instrumentation panel for rapid analysis of drawbar performance of an agriculture tractor. Sufficient space provided for accommodation of all instrumentation and data acquisition system along with the seating arrangement for Engineers and skilled Staff. The Control cabin is to be designed in the front of the vehicle chassis.</p> <p>i. Air conditioner will be roof duct mounted of suitable Capacity</p> <p>ii. Seating arrangement for testing Staff : 04 persons</p> <p>iii. Separate door access either side in the coupling section-</p> <p>iv. Proper arrangement of LED lights, Backup lightings.</p> <p>v. Canopy over the cabin to protect the duct mounted AC equipped.</p> <p>vi. The control cabinet will have separate access door for engineer Operator and separate door on LHS for visitor.</p> <p>vii. CCTV will be provided at Front, Back & Bottom of loadcar. A monitor will be provided to view the CCTV images.</p>	Control Cabin:			
II. Middle Compartment: The eddy current coupling will be installed in the middle compartment of the chassis.						
9.	Eddy Current Coupling:	The eddy current coupling of type water cooled type (Heenan WCS2193)	Eddy Current Coupling:			

10.	Roller chain Coupling (Chain drive box) (Rear Axle – Coupling)	Suitable flexible coupling along with chain box adapter will be provided for power transmission (8-16Hrs or more) to rear axle of the vehicle chassis.	Roller chain Coupling (Chain drive box)(Rear Axle– Coupling)			
11.	Propeller shaft - Rear	Companion flange, tubular shaft. Needle roller bearing, universal joint, sliding coupling	Propeller shaft - Rear			
12.	Rear Axle	5.83: 1 is provided for Ashok Leyland 1920 Series 4x2 Haulage	Rear Axle			
13.	Compressor	Separate local blower is considered for traction axle tyres cooling	Compressor			
14.	Water Cooling System	The water cooling system will be equipped with the following safety devices: - (The display of all process control value be incorporated in the application software window) 1. Pressure switch 2. Solenoid valve 3. Bypass 4. Temperature switch 5. Strainer 6. Water outlet Temperature sensor 7. Water Filter 8. Water Pump-Self priming type	Water Cooling System			

Note: One set items (1-8) equipped are required in spare to keep standby for immediate maintenance.

15.	Radiators: (Of Suitable size)	Maximum continuous heat dissipation capacity suitable as per load car heat dissipation requirement	Radiators: (Of Suitable size)			
16.	Heat Exchanger	Shell & tube type parallel flow type heat exchanger with coolant.	Heat Exchanger			
17.	Cooling Fan: Roof Mounted:	Of suitable capacity for load car heat dissipation requirement - 1No. Protection: Circular mesh ½” beneath the roof over `eddy current coupling.	Cooling Fan: Roof Mounted:			

-This fan moves out hot air upward of the compartment equipped, `eddy current coupling` in the momentum.

18.	III.Automation System- Data Acquisition System of load car	<p>The Data acquisition system of the load car will comprised of I/O module based 16 channel (analog/digital) input of transducers & sensors equipped with Tractor/Load car for measuring field parameters as per : IS – 12226 & O.E.C.D. Test Code-2.</p> <p>The PC based `Data Acquisition System` will be compact & reliable to work in harsh environment.</p> <p>Qty.-1Set</p>	III.Automation System- Data Acquisition System of load car			
19.	Industrial PC	<p>Industrial PC (Latest Configuration) with min. dual LAN Card; RAM-8 GB; HDD: 1 TB; Monitor LED-24"; U.S.B. port -2.0 high definition - 4Nos., MS Window Latest Version Licensed; MS Office-latest licensed;</p> <p>Printer: 80 Column-Dot-Matrix; make: Wipro/canon/ HP:</p> <p>Qty.- 2 Set.</p>	Industrial PC			
20.	Application Software	<p>Complete CD media with hard copy of the testing application software will need to be designed as per the requirement of test cycle, test menu at site as desired up to the extent of satisfaction of running test cycle. The test result to be represented in the desired datasheets, characteristic</p>	Application Software			

		<p>curves will be provided at the time of software development at site as per test code referred above. In addition Suitable software program for measuring nominal speed of tractor needs to be designed as per the requirement.</p> <p>The Data Acquisition and automation cum testing software will have the facility of on line graphical representation of following parameters and other testing parameters as IS 12226/OECD Test Code-2 ;</p> <ol style="list-style-type: none"> Drawbar pull(kN) Vs. Drawbar power(kW) Drawbar pull (kN) Vs. Forward speed(kmph) Drawbar pull(kN) Vs. Percent wheel slip Drawbar pull(kN) Vs. Specific fuel consumption (g/kWh) 				
<p>Note: The application software will display C.FMTTI, Budni,- on each page of report window</p>						
21.	Front Tow Bar	<p>The front towing bar should exactly be the as equipped with the existing load car attached for which dimensions may be collected by visiting at site of the Institute.</p> <p>Qty.1No.</p>	Front Tow Bar			
22.	Characteristics curve of the load car	<p>Max Pull (kN / speed (m/sec)/power (kW) curve of load car will be provided</p>	Characteristics curve of the load car			
<p>Note: The entire requirement while designing the load car, mounting of major/ process control equipment will be fully to the consent / agreement at each & every stage of the Institute.</p>						

23.	IV. Power Supply Compartment-Genset	62.5 KVA DG set having engine of make Cummins with suitably modified canopy to accommodate in the load car	IV. Power Supply Compartment-Genset			
24.	Genset Cabin	The genset cabin must be with acoustic panels to minimize the noise.	Genset Cabin			
25.	Utility Equipment	Maintenance kit (necessary special tools & spanners), Service Jack etc.,	Utility Equipment			
26.	Uninterruptible Power Supply	A UPS of suitable capacity or at least (2.5 kVA)-pure sine wave should also be provided for back-up of control panel and Data Acquisition System. Qty.1No.	Uninterruptible Power Supply			

Representative List of sensors & Transducers

Supply, Installation & Commissioning of Self Propelled Load Car (Eddy Current Coupling based) for Testing of an Agricultural Tractors – (Pull – 80kN)

The representative list of sensors and transducers to be connected on Load Car / Tractor side:

(I)Instrumentation System-Transducers & Sensors to be equipped in the Load car for signal communication to Data acquisition System. (1-9) ↘

27.	Strain Gage Load Cell- Qty. 2 No.	10T, bonded strain gage type, Bridge resistance (350Ω), universal	Strain Gage Load Cell- Qty. 2 No.			
28.	Atmospheric Pressure transmitter- Qty. 2 No.	Duct mounted	Atmospheric Pressure transmitter- Qty. 2 No.			
29.	Atmospheric temperature Sensor- Qty. 2 No.	Duct mounted	Atmospheric temperature Sensor- Qty. 2 No.			
30.	Relative Humidity transmitter –Qty. 2 No.	Duct mounted	Relative Humidity transmitter–Qty.2No.			
31.	Optical spot light sensor – Qty. 2 Sets.	With on / off switching facility for wheel Distance Run measurement(0-10V) An alternative pneumatic tyre wheel (circumference 1.0 m ±0.01m should be attached.	Optical spot light sensor– Qty. 2 Sets.			
32.	Fuel Flow Sensor	0.25cc (Oval Gear	Fuel Flow Sensor –			

	- Qty. 2 No.	System based)-preferably gravimetric mass flow	Qty. 2 No.			
33.	Digital Sound level Meter- Qty. 1 Set.	(IEC 651 Type – I) Connected to DAQ System and integrated to the software for display & recording of sound pressure levels. Sound level meter calibrator- Type Class-I	Digital Sound level Meter- Qty. 1 Set.			
34.	Pre-polarized condenser Microphone (½”); Microphone Extension- Qty. 2 No.	15Metres cable, Half size helmet (1No.) to (Connect the Microphone at Operator’s ear level).Provision for attachment of microphone need to made as per IS -12180 code.	Pre-polarized condenser Microphone (½”); Microphone Extension- Qty. 2 No.			
35.	Intercom system	(0.35Hz to 3.5kHz.)	Intercom system			
(II) Instrumentation System -Transducers & Sensors to be equipped to the Tractor side for signal communication to Data Acquisition System.						
Note: All the temperature sensors should be type (Pt-100Ω); Range (0-200 °C); Length-as per requirement,						
36.	Temperature Sensors:- Qty. 2 No. each	1.Lubricant Temperature Sensor 2.Transmission oil temperature sensor 3.Air intake temperature Sensor 4.Air inlet temperature sensor 5.Air outlet temperature sensor 6.Coolant Temperature Sensor 7.Fuel temperature Sensor	Temperature Sensors:- Qty. 2 No.			
(III) Other process control Sensors & Transducers(1-4) –						
37.	Tractor`s front drive wheel sensor- Qty. 2 No.	(optical)-Proximity Type	Tractor`s front drive wheel sensor- Qty. 2 No.			
38.	Tractor`s rear drive wheel sensor – Qty. 2 No.	(optical)- Proximity Type	Tractor`s rear drive wheel sensor – Qty. 2 No.			
39.	Tractor`s Power Take Off (P.T.O.) shaft speed sensor- Qty. 2 No.	Optical shaft encoder type	Tractor`s Power Take Off (P.T.O.) shaft speed sensor- Qty. 2 No.			
40.	Tractor`s cooling fan speed sensor –	(Optical): as per OECD code.	Tractor`s cooling fan speed sensor – Qty.			

	Qty. 2 No.		2 No.		
41.	The bidder may furnish additional technical detail as per their product.				
Note :- The quantity of items mentioned above (all transducers & sensors) in actual (1+1=2No.), one should get equipped and one will be spare. All the cable, adapter, fixtures, connectors, sleeves, tags, thimbles signal labels, etc., will be supplied with the above items.					

N.B. If required, separate sheets may be added to give more technical details of equipments. These should be on the letter heads of the firm duly stamped and signed.

The above requirements and quantities have been assessed after actually visiting the site of installation & proposed for the systems and its layout plan. It is understood that the project is to be completed on turn key basis.

The cost of transportation, installation & commissioning and training of the systems has been included in the total cost of the Tender- Nil

Detailed leaflets / technical literature of proposed equipment have been enclosed.

The guarantee / warrantee for the smooth functioning of the supplied systems shall be two years against any manufacturing defects.

Authorized Signatory

Name:-

Designation:-

(*Authorized Signatory should be the same at all places in the Tender/Offer)

P.T.O



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INSTRUCTIONS TO THE BIDDERS

1. The e-tender is to be submitted online in two parts i.e. **TECHNICAL AND COMMERCIAL TENDER/BID**, separately in two sealed envelopes. The sealed envelopes containing "Technical and Commercial" tenders/bid should be put in another large envelope super scribing "**Technical and Commercial Tender**" or as per the instructions / guidelines laid down in the Central Public Procurement Portal (<http://eprocure.gov.in/eprocure/app>) and addressed to the **Director, Central Farm Machinery Training & Testing Institute, Tractor Nagar, BUDNI (M.P.) 466 445,India.**
2. **Technical Tenders:**
 - 2.1 This tender should contain the technical specifications/ details of the offered equipment only.
 - 2.2 The registered supplier on D.G.S&D./GeM, rate may clearly mention the items of rate contract in their tender enclosing copy of their rate contract.
 - 2.3 **The bidder are requested not to furnish commercial detail in the technical bid. The commercial detail in the technical bid liable to be rejected.**
3. **Commercial Tender:** This tender should indicate rates and other commercial terms & conditions. The rates should invariably be quoted for delivery at F.O.R. destination including the charges for installation and commissioning at consignee's site. All packing, forwarding, freight and insurance if applicable and other charges such as Taxes, duties etc. should also be clearly indicated along with commercial bid.
4. Price of the equipment offered should be firm till completion of installation and commissioning of the equipment.
5. The transit insurance, if applicable, will be the responsibility of the supplier and no separate charges will be paid for it.
6. The validity of offer should be for a minimum period of one year from the date of opening of commercial tenders and it must be expressed and specifically be indicated in tender. The validity of tender can be extended if needed.
7. The preferred time schedule/limit for installation and commissioning of each of the equipment at the respective consignee's premises should be clearly indicated in the tender.
8. **The successful bidder will be required to furnish a non-interest bearing Performance Security Deposit in the form of Bank Guarantee issued from the nationalized commercial bank in favor of Director, Govt. of India, CFMTTI, BUDNI, MP amounting to 5% of the total cost of order value (please see para 7 of Part-I of this document for details).**
9. **Pre-Bid Consultation:-** The firms those who are interested for consultation before the bid, a pre-bid consultation will be arranged on **08-06-2020 11.0AM** at CFMTTI, BUDNI to supply the information on technical requirements, specifications, drawings and demonstration of existing test setups etc.
10. **Failure and Termination:**
 - a) If the supplier fails to install and commission the required equipment within the stipulated/scheduled time period, the Govt. of India, may without any prejudice to his right recover damages for breach of the contract or damages occurred during installation of equipment, recover from the supplier for damages by way of penalty, a sum equivalent to 2% (subject to

- maximum 10%) of the order. The contract would also be liable to be terminated accordingly.
- b) If any equipment / stores or part thereof is found to be below the required specification or different as mentioned in the quotation, it will be summarily rejected and returned to the supplier at his expenses. If rejected material is not lifted within one month from the date of issue of the communication of rejection, the supplier will have to bear godown rent at the rates prescribed by the consignee.
 - c) Any dispute, arising out of the supply order / contract will be dealt as per terms & conditions of contract.
11. No negotiation will be carried out; however, the Purchaser/ Government reserves the right to resort to negotiation on price after completing the evaluation of commercial bids.
 12. The Commercial bids of those tenderers/bidders who are technically qualified only be opened in the presence of interested bidders. The date and time of opening of Commercial bid will be intimated later.
 13. Commercial bids prescribing any departure from the conditions set forth; conditional and also PRIMA FACIE ambiguous will be rejected.
 14. Government reserves the right to reject any or all the tenders and also to cancel the entire process without assigning any reason whatsoever. **Government does not pledge to accept the lowest tender and reserves the right for accepting any tender without assigning any reason.** Late tenders and tenders prescribing any departure from the conditions set forth above are liable to be rejected.

Note: The bidder may thoroughly study the setup by way of visiting the respective site & consignee, technical specifications. Accessories necessary to be included in the offer prior to quote the items.

DUE DATE AND TIME SCHEDULE FOR RECEIPT AND OPENING OF TENDERS:

- | | | |
|----|--|---------------------------------------|
| 1. | Date of Publication of Tender | 21-05-2020 |
| 2. | Date of Pre – bid consultation | 08-06-2020 at 11.0AM at CFMTTI, BUDNI |
| 3. | Due / last date of receipt of both technical and commercial bids | 06-07-2020 up to 1.00PM |
| 4. | Date of opening of Technical bids | 07-07-2020 at 2.00 PM |
| 5. | Date of opening of commercial bids | 14-07-2020 at 10:00 AM |

Venue: C.F.M.T.T.I. BUDNI, M.P.

**(J. J. R. NARWARE)
DIRECTOR**

Part-I

GENERAL TERMS AND CONDITIONS OF THE CONTRACT:

1. TWO BID SYSTEM:

The e-tender is to be submitted online in two parts i.e. **TECHNICAL AND COMMERCIAL TENDER/BID**, separately in two sealed envelopes. The sealed envelopes containing "Technical and Commercial" tenders/bid should be put in another large envelope super scribing "**Technical and Commercial Tender**" or as per the instructions / guidelines laid down in the Central Public Procurement Portal (<http://eprocure.gov.in/eprocure/app>) and addressed.

TO,

DIRECTOR, GOVERNMENT OF INDIA

CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE

(MIN. OF AGRI. & FARMERS WELFARE, DEPTT OF AGRI, COOPN. & FARMERS WELFARE)

TRACTOR NAGAR, P.O. BUDNI (M.P.) 466 445 (INDIA).

Technical Tender: This tender should include the technical specifications/ details of the offered Equipment only. The item should conform to the Technical Specifications enclosed as **Annexure-A**.

Commercial Tender: This tender should indicate cost/price/rates and other commercial terms & conditions. The rates should invariably be quoted for delivery at F.O.R. destination including installation and commissioning at site on turn-key basis and inclusive of packing, forwarding, freight and insurance wherever applicable. Taxes, duties and other charges on the above rates if any should clearly indicated along with commercial bid. The commercial bid and rate schedule should be submitted as per **Annexure-B**.

2. QUALIFYING REQUIREMENTS OF TENDERERS

The tenderer or the bidder shall provide satisfactory evidence to show that: -

- (a) The Bidder should be a registered firm/ agencies in the field of design and development of agricultural equipments & machines.
- (b) The Bidder has adequate plant and manufacturing capacity to manufacture and supply the items offered within the delivery schedule offered by him.
- (c) The Bidder has established quality control system and organization to ensure adequate control at all stages of the manufacturing process (ISO Certification available may be provided)
- (d) The Bidder is the authorized dealer/agent of the manufacturer who fulfills aforesaid requirement
- (e) The bidder should have adequate experience of manufacturing the ordered item. The Proprietary Article Certificate if any , may be provided along with the list of customers for whom the item has manufactured and equipped.

3. SUBMISSION OF OFFERS

All offers shall be either type-written or written neatly in indelible ink. Any individual(s) signing the tender or other documents connected therewith should specify whether he is signing as: —

- (i) Sole proprietor of the concern or as attorney of the sole proprietor;
- (ii) Partner or partners of the firm;
- (iii) Director, Manager or Secretary in the case of a limited company duly authorized by a resolution passed by the Board of Directors or in pursuance of the authority conferred by Memorandum of Association.

In the case of a firm not registered under the Indian Partnership Act, all the partners or the attorney duly authorized by all of them should sign the tender and all other connected documents: The original power of attorney or other documents empowering the individual or individuals to sign should be furnished to the Purchaser for verification, if required. All prices and other information like discounts etc. having a bearing on the price shall be written both in figures and words in the prescribed offer form.

It would be submitted in double envelope in 2 complete sets marked original and duplicate. The outer envelope should indicate the Tender No. and due date of its opening and should also indicate the tenderer's complete address. or as per the instructions / guidelines laid down in the Central Public Procurement Portal (eprocure.gov.in)

The inner envelope containing the offer should be sealed and marked:

“OFFER FOR TENDER NO.....
OPENING DATE

The inner envelope should be placed in outer envelope and both the envelopes should be addressed to:

**DIRECTOR, GOVERNMENT OF INDIA
CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE
(MIN. OF AGRICULTURE & FARMERS WELFARE, DEPTT OF AGRI.,COOPN. & FARMERS WELFARE)
TRACTOR NAGAR, P.O. BUDNI (M.P.) 466 445 (India).**

Offers shall be as per the proforma given in the Bid Document. However, the tenderer shall indicate his acceptance or otherwise against each clause and sub-clause of the bid document. For this purpose, the tenderer shall enclose a separate statement indicating only the deviations from any clause or sub-clause of the bid document, which he proposes with full justification for such deviations. The Purchaser, however, reserves the right to accept or reject these deviations and his decision thereon shall be final.

Offers are required from the actual manufacturers of the stores or their authorized agents, who should submit a letter of authority from their Principals. Offers from other agents, brokers and middle men will not be accepted. One agent cannot represent two suppliers or quote on their behalf in a particular tender.

Each page of the offer must be numbered consecutively, should bear the tender number and should be signed by the tenderer at the bottom. A reference to the total number of pages comprising the offer must be made at the top right hand corner of the first page.

5. LAST DATE OF RECEIPT OF THE TENDERS

The offers complete in all respects should be electronically submitted on CPP Portal on or before the stipulated date and time specified in the “Tender Notice”. The processing of e-tenders received shall be as per the time schedule provided in the Central Public Procurement Portal (<http://eprocure.gov.in/eprocure/app>).

6. EFFECT AND VALIDITY OF OFFER

The submission of any offer connected with these specifications and documents shall constitute an agreement that the tenderer shall have no causes of action or claim, against the Purchaser for rejection his offer. The Purchaser shall always be at liberty to reject or accept any offer or offers at his sole discretion and any such action will not be called into question and the tenderer shall have no claim in that regard against the Purchaser. The offer shall be kept valid for acceptance for a minimum period of **180 (one hundred and eighty)** calendar days from the date set for opening of tenders.

Offers shall be deemed to be under consideration immediately after they are opened and until such time the official intimation of award of contract is made by the Purchaser to the tenderer. While the offers are under consideration, tenderers and or their representatives or other interested parties are advised to refrain from contacting the Purchaser by any means. If necessary, the Purchaser will obtain clarifications on the offers by requesting for such information from any or all the tenderers, either in writing or through personal contacts, as may be considered necessary. Tenderers will not be permitted to change the substance of their offers after the offers have been opened.

7. PERFORMANCE SECURITY

After Letter of Acceptance is issued by the Purchaser, the Contractor shall furnish a Performance Security Bond from a Nationalized Indian Bank within 30 days from the issue of the Letter of Acceptance by the Contractor for an amount equivalent to **5% of the value of the contract**. Security Bonds should be any one of these forms viz. Guarantee Bonds issued by Nationalized or Scheduled Commercial Banks, fix deposit receipt from a

commercial bank, bank guarantee from a commercial bank or online payment in an acceptable form.

If the Contractor, having been called upon by the Purchaser to furnish Performance security Bond fails to furnish the same, it shall be lawful for the Purchaser:—

- a) To recover from the Contractor the amount of Performance Guarantee Bond by deducting the amount from the pending bills of the Contractor under any contract with the Purchaser or the Government or any person contracting through the Purchaser or otherwise howsoever, Or,
- b) To cancel the contract or any part thereof and to purchase or authorize the purchase of the stores at the risk and cost of the Contractor

On the performance and completion of the contract in all respects the Performance Security Bond will be returned to the Contractor without any interest.

The Purchaser shall be entitled and it shall be lawful on his part to forfeit the amount of the Performance Guarantee Bond in whole or in part in the event of any default, failure or neglect on the part of the Contractor in the fulfillment or performance in all respects of the contract under reference or any other contract with the Purchaser or any part thereof to the satisfaction of the Purchaser and the Purchaser shall also be entitled to deduct from the amount of the Performance Guarantee Bond any loss or damage which the Purchaser may suffer or be put by reason of or due to any act or other default, recoverable by the Purchaser from the Contractor in respect of the contract under reference or any other contract and in either of the events aforesaid to call upon the Contractor maintain the amount of the Performance Guarantee Bond at its original limit by furnishing fresh Bank Guarantee of additional amount, provided further that the Purchaser shall be entitled to recover any such claim from any sum then due or which at any time thereafter may become due to the Contractor under this or any other contracts with the Purchaser.

The Performance Guarantee Bond shall remain in full force and effect during the period that would be taken for satisfactory performance and fulfillment in all respects of the contract i.e. expiry of warranty period, which would normally be **24 months** after commissioning of the equipment(s) at consignee's works and issue of Proving Test Certificate. However, period of warranty can be extended by the equivalent period the equipment remains out of order during warranty period.

The Contractor on being called upon by the Purchaser from time to time shall obtain from the Guarantor Bank, extension of time for validity thereof for a period of six months, on each occasion. The extension or extensions aforesaid, executed on non-judicial stamp paper of appropriate value must reach the Purchaser at least thirty days before the date of expiry of the Performance Guarantee Bond on each occasion.

The Performance Security Bond and or any amendment thereto shall be executed on a stamped paper of requisite money value in accordance with the laws of the country in which the same is/are executed by the party competent to do so. The Performance Guarantee Bonds executed in India shall also be got endorsed by the Collector under section 32 of the Indian Stamp Act, 1899 for adequacy of the Stamp Duty, by the Contractor.

8. LOCAL CONDITIONS

It will be imperative on each tenderer to fully acquaint him of all the local conditions and factors which would have any effect on the performance of the contract and cost of the items/stores. In his own interest, the foreign tenderer should familiarize himself with the Income Tax Act 1961, the Companies Act 1956, the Customs Act 1962 and related Laws in force in India. The Purchaser shall not entertain any request for clarifications from the tenderer regarding such local conditions. No request for the change of price, or time schedule of delivery of stores shall be entertained after the offer is accepted by the Purchaser.

9. SPARE PARTS

The tenderer should quote, apart from main equipment, separately for the mandatory spares as well as for recommended spares required for two years' operation. The rates for spares should be FOR destination with complete break up of different costs. The Purchaser reserves the right to order any or all the spares as quoted in quantity considered reasonable by him at the prices quoted by the tenderer and on the terms and conditions quoted for the main equipment. The responsibility of the tenderer under the Warranty Clause will not be diluted in any way on this account.

10. DRAWINGS/SPECIFICATIONS

When tenderers are called for in accordance with the drawing/specification, the Contractor's tender to supply in accordance with such drawing specification shall be deemed to be an admission on his part that he had fully acquainted himself with the details thereof and, in no circumstances, will any claim on his part which may arise on account of his insufficient examination of the said drawing/ specification be considered.

The Contractor shall be responsible for and shall pay for any alternations for the works due to any discrepancies, errors or omissions in the drawings or other particulars supplied by him whether such drawings or particulars have been approved by the Purchaser or not provided that such discrepancies, errors or omissions be not due to inaccurate information or particulars furnished to the Contractor on behalf of the Purchaser. If any dimensions figuring upon a drawing differ from those obtained by scaling the drawing, the dimensions as figured upon the drawing shall be taken as correct.

Any drawings, tracings or descriptions specified shall, unless otherwise directed, be furnished by the Contractor with the first consignment of the work to which they relate and no payment whatsoever will be made until such drawings, tracings or descriptions have been furnished to the satisfaction of the Purchaser.

11. AUTHORITY OF PERSON SIGNING OF PERSON SIGNING THE CONTRACT ON BEHALF OF THE CONTRACTOR

A person signing the tender or any other document in respect of the contract on behalf of the Contractor without disclosing his authority to do so shall be deemed to warrant that he has authority to bind the Contractor. If it is discovered at any time that the person so signing has no authority to do so, the Purchaser may, without prejudice to any other right or remedy of the Purchaser, cancel the contract and make or authorize the making of a purchase of the stores at the risk and cost of such person and hold such person liable to the Purchaser for all costs and damages arising from the cancellation of the contract including any loss which the Purchaser may sustain on account of such purchase.

12. ADDRESS OF THE CONTRACTOR AND NOTICES AND COMMUNICATIONS ON BEHALF OF THE PURCHASER

For all purposes of the contract, including arbitration there under, the address of the Contractor mentioned in the tender shall be the address to which all communications addressed to the Contractor shall be sent, unless the Contractor has notified change by a separate letter containing no other communication and sent by registered post acknowledgement due to the Purchaser. The Contractor shall be solely responsible for the consequence of an omission to notify a change of address in the manner aforesaid.

13. INSPECTION AND INSPECTION CERTIFICATE

The consignee will arrange for the Inspection. When Inspection during manufacture or before delivery or dispatch is required, notice in writing shall be sent by the Contractor to the Consignee when the stores or material to be supplied are ready for inspection and test, and no stores shall be delivered or dispatched until the Inspecting Officer as deputed by the Consignee has certified in writing that such stores have been inspected and approved by him. At least four weeks' notice must be given to the Inspecting Officer to enable him to arrange the necessary inspection. The examination of stores will be made as soon as practicable after the same have been submitted for inspection and the result of the examination will be notified to the Contractor. The Contractor shall provide, without any extra charge, all materials, tools, labour and assistance of every kind which the inspecting Officer may demand of him for any test, and examination, other than special or independent test, which he shall require to be made on the Contractor's premises and the Contractor shall bear and pay all costs attendant thereon.

On the stores being found acceptable by the Inspecting Officer, he shall furnish the Contractor with necessary copies of the Inspection certificates duly completed for being attached to the Contractor's bill in support thereof. No Stores will be considered ready for delivery until the Purchaser or the Inspecting Officer nominated by him shall have certified in writing that they have been inspected and approved by him. It shall be the responsibility of the contractor to ensure that only such goods as have been duly inspected and approved by the Inspecting Authority, are offered for arranging shipment.

If on the stores being rejected by the Inspecting Officer or Interim Consignee or Consignees at the destination, the Contractor fails to make satisfactory supplies within the stipulated period of delivery, the

Purchaser shall be at liberty to : —

- a) Require the Contractor to replace the rejected stores forthwith but in any event not later than a period of 21 days from the date of rejection and the Contractor shall bear all cost of such replacement including freight, if any, on such replacing and replaced stores but without being entitled to any extra payment on that or any other account; or
- b) Cancel the contract and purchase or authorize the purchase of the stores at the risk and cost of the Contractor.

14. DELIVERY

The Contractor shall as may be required by the Purchaser deliver free at the place/places detailed in the contract; the quantities of the stores detailed therein and the stores shall be delivered or dispatched not later than the dates specified in the contract. The delivery will not be deemed to be complete until and unless the stores are inspected and accepted by the Inspecting Officer as provided in the contract.

Notwithstanding any inspection and approval by the Inspecting Officer on the Contractor's premises, property in the stores shall not pass on to the Purchaser until the stores have been received, inspected and accepted by the consignee. The Purchaser shall not be liable to render assistance to the Contractor in securing or to arrange for or provide transport to the Contractor. *The schedule of Delivery is at Schedule-IV of Annexure-A.*

15. PENALTY FOR DELAY IN COMMISSIONING

The Contractor or his agents shall commission the equipment within the stipulated time as shown in the contract. This time frame will be applicable from the date of intimation from the consignee in respect of readiness and installation of the equipment in cases where the equipment is to be installed by the consignee. The time schedule includes the time for installation in cases where installation is also to be undertaken by the supplier.

The time allowed for commissioning of equipment by the Contractor or his agent shall be deemed to be the essence of the contract. In case of delay in commissioning of the equipment on the part of Contractor, the Purchaser shall be entitled to recover and the Contractor shall be liable to pay liquidated damage at the rate of 2% of the total contract value for each and every month or part thereof for which commissioning is delayed. Provided, always that the entire amount of liquidated damages to be paid under the provision of this clause shall not exceed 10% of the total contract value. After expiry of 5 months period from the date of default i.e. from the date of commissioning provided in the contract, purchaser will be at liberty to invoke the Performance Security bond submitted by the supplier. Continuance of commissioning work after expiry of stipulated time will also not absolve the Contractor from the penalty as stated above. The decision of the Purchaser, whether the delay in commissioning has taken place on account of reasons attributed to the Contractor shall be final.

16. WARRANTY

The Contractor shall warrant that everything to be furnished hereunder shall be free from defects and faults in design, material, workmanship and manufacture and shall be of the highest grade and consistent with the established and generally accepted standards for goods of the type ordered and in full conformity, with the contract specifications and samples if any and shall if operable, operate properly.

This warranty shall survive inspection of, payment for and acceptance of the goods and shall expire after **24 months** from the date of commissioning and proving test of equipment at ultimate destination. Any approval of acceptance by purchaser of the Stores or of the material incorporated here in shall not in any way limits the contractor's liability.

The contractor's liability in respect of any complaints defects and or claims shall be limited to the furnishing and installation of replacement parts free of any charge or the repair or defective parts only to the extent that such replacement or repairs are attributable to or arise from faulty workmanship or material or design in the manufacture of the stores, provided that the defects are brought to the notice of Contractor within **6 (six)** months of their being first discovered during the guarantee period of **6 (six)** months from the date of expiry of warranty period or at the option of the Purchaser to the payment of the value, expenditure and damage as hereafter mentioned.

The contractor shall, if required, replace or repair the goods or such portion thereof as is rejected by the Purchaser free of cost at the ultimate destination or at the option of the purchaser, the contractor shall pay to the purchaser value thereof at the contract price or in the absence of such price at price decided by the Purchaser, and such other expenditure and damages as may arise by reason of the breach of the condition herein specified.

All replacement and repairs that the purchaser shall call upon the contractor to deliver or perform under this warranty shall be delivered and performed by the contractor within 2 (Two) weeks, promptly and satisfactorily. The warranty period will be extended by the number of days the equipment remains under breakdown during the warranty period, the warranty period for such part(s) replaced and/or repaired and parts immediately connected there to shall extend to a period of 24 months from the date of such replacement and/or repair. This will mean effective the warranty period will go up to 48 months for replaced/repaired parts and Bank Guarantee can be released only after that.

If the Contractor so desires, the replaced parts can be taken over by him or his representative for disposal as he deems fit at the time of replacement of goods/parts. No claim whatsoever shall be lie on the Purchaser for the replaced parts thereafter.

The warranty herein contained shall not apply to any material which shall have been repaired or altered by the Purchaser, or on his behalf in any way without the consent of the Contractor, so as to effect the strength, performance or reliability or to any defects to any part due to misuse, negligence or accident,

The decision of the Purchaser in regard to Contractor' liability and the amount, if any, payable under this warrant)' shall be final and conclusive.

17. FAILURE AND TERMINATION OF CONTRACT

If the Contractor fails to deliver the stores or any installment thereof within the period fixed for such delivery in the contract or as extended or at any time repudiates the contract before the expiry of such period, the Purchaser may without prejudice to his other rights :—

(a)	Recover from the Contractor as agreed liquidated damages and not by way of penalty a sum equivalent to 2 per cent of the price of any stores (including elements of taxes, duties, freight etc.) which the Contractor has failed to deliver within the period fixed for delivery in the contract or as extended for each month or part of a month during which the delivery of such stores may be in arrears where delivery thereof is accepted after expiry of the aforesaid period subject to max. or 10% OR
(b)	Cancel the contract or a portion thereof and if so desired purchase or authorize the purchase of the stores not so delivered or others of a similar description (where stores exactly complying with particulars are not, in the opinion of the Purchaser, which shall, be final, readily procurable) at the risk and cost of the Contractor. It shall, however, be in the discretion of the Purchaser to obtain or not the Performance Guarantee Bond from the firm/firms on whom the contract is placed at the risk and expense of the defaulting firm.

18. PAYMENT TERMS

The following Payment terms shall be followed:

1. **20% advance payment to the successful tenderer against Bank Guarantee of equal amount.**
2. **30% payment on submission of inspection report together with design & drawing of the Load Car & its approval by the purchaser.**
3. **40% after final inspection & proving test certificate by the purchaser at site.**
4. **10% after successful operation of Load Car for Three months.**

19. ARBITRATION

In the event of any question, dispute or difference arising under these conditions or Instructions of Tenderers' or in connection with this contract {except as to any matters the decision of which is specifically provided for by these Conditions or Instructions to Tenderers'} the same shall be referred to the sole arbitration of a Gazetted Officer of Govt. of India appointed to be the Arbitrator by the Joint Secretary (M&T), Dept. of Agriculture and Cooperation, Ministry of Agriculture, Govt. of India, New Delhi, India. The Gazetted Officer to be appointed as Arbitrator, however, will not be one of those who had an opportunity to deal with the matters to which the contract relates or who in the course of their duties as Government servants had expressed views on all or any-of the matters under dispute or difference. The award of the Arbitrator shall be final and binding on the parties to this contract. Subject as aforesaid, the Arbitration Act, 1996 and the rules there under and any statutory

modifications thereof for the time being in force shall be deemed to apply to the arbitration proceedings under this clause.

20. ANNUAL MAINTENANCE CONTRACT (AMC)

Tenderers are required to quote for post warranty Annual Maintenance for a period of **5 years** after expiry of the warranty period of the Equipment along with their offers. Tenderers are also required to mention such AMC schedule of such Annual periodic maintenance along with offers giving the charges for AMC maintenance schedule and other details of items to be used in such preventive maintenance. Tenderers are required to give the cost of essential spares and service charges for each items of work of repair of Equipment(s) outside preventive maintenance contract. These charges will not be included in the price of Equipment(s) for the purpose of comparative evaluation of offers. The Details of AMC is at Schedule-III of **Annexure-A**.

21. GENERAL AND OTHER CONDITIONS

21.1 Safety Measures

The Contractor should take all precautionary measures in order to ensure the protection of his own personnel moving about or working on the consignee's premises, and should conform to the rules and regulations of the Govt. of India. The Contractor should ensure that unauthorized, careless or inadvertent operation of installed equipment which may result in accident to staff and/or damage to equipment does not occur.

The Contractor should indemnify and keep the Purchaser indemnified and harmless against all actions, suits, claims, demands costs charges or expenses arising in connection with any accident, death or injury, sustained by any person or persons within the consignee's premises and any loss or damage to consignee's property sustained due to the acts or omissions of the Contractor irrespective of whether such liability arises under the workman's compensation act or the fatal accidents act or any other statute in force from time to time.

21.2 Contractual Conditions

The tenderers must ensure that the conditions laid down for submission of offers detailed in the preceding paras, are completely and correctly fulfilled. Tenders, which are not complete in all respects as stipulated above, may be summarily rejected.

This contract is for the supply of the stores of the description, specifications and drawings, and in the quantities set forth in the contract on the date or dates specified therein. Unless otherwise specified, the stores shall be entirely brand new and of the best quality and workmanship to the satisfaction of the Inspecting Officer. The whole contract is to be executed in the most approved, substantial and workmanlike manner, to the entire satisfaction of the Purchaser or his nominee, who, both personally and by his deputies, shall have full power, at every stage of progress, to inspect the stores at such times as he may deem fit and to reject any of the stores, which he may disapprove, and his decision thereon, and on any question of the true intent and meaning of the specifications shall be final and conclusive.

Any variation or amendment of the contract shall not be binding on the Purchaser unless and until the same is duly endorsed on the contract or incorporated in a formal instrument or in exchange of letters and signed by the parties.

ANNEXURE-A

Description of Item: 1. SUPPLY, INSTALLATION & COMMISSIONING OF SELF PROPELLED LOAD CAR (Eddy Current Coupling Based) FOR TESTING OF AGRICULTURAL TRACTOR, Pull – 80 kN

Consignee and place of Delivery:- DIRECTOR,
GOVERNMENT OF INDIA
CENTRAL REGION FARM MACHINERY TRAINING & TESTING INSTITUTE,
MIN. OF AGRICULTURE & FARMERS WELFARE, (DEPARTMENT OF AGRICULTURE & COOPERATION & FARMERS WELFARE), OF
P.O. TRACTOR NAGAR, BUDNI (M.P.) 466445 India

IMPORTANT NOTE:

- (i) Bidders are required to give clause wise comments on the following technical specifications, Schedules and Annexure enclosed confirming compliance/non-compliance with details of deviations.
- (ii) Offers are likely to be ignored in case of non-compliance of these instructions for furnishing the information.
 - (iii) The bidders should quote for sub-systems of makes as specified in these specifications. Other makes of sub-systems will not normally be acceptable. In case, for reasons to be indicated by the bidder, it becomes necessary for him to quote for makes other than those specified, the alternative makes may be accepted only, on merit.
 - (iv) The bidders should quote for sub-systems of makes as specified in these specifications. Other makes of sub-systems will not normally be acceptable.
- (v) The bidders must offer and quote the price of all the concomitant accessories specified, as these considered essential for commissioning and utilization of the equipment. Offers received deficient of price of any of the concomitant accessories specified, are liable to be considered as incomplete.
- (vi) The bidders are requested to visit the consignee's site where required, before submission of the offer.

1. PURPOSE FOR WHICH REQUIRED AND CAPABILITY**1.1 Purpose****(A)-Performance Testing of Agricultural Tractor as per test specifications of IS: 12226 & OECD Test code-2**

1.1.1 The load car should be of 'Self Propelled' Type;

1.2 Capability

The load car (80 kN) should be capable of testing Draw Bar Power and Noise Level as per IS:12180; ISO 7216:1992.

1.2.1 The load car and its associated equipment shall be capable of working in severe ambient condition of dust, with temperature ranging between 0 degree centigrade to 50 degree centigrade and relative humidity up to 98%.

1.3 Leading Parameters and Specifications

The equipment shall be supplied to leading parameters and Specifications as per **Schedule-I Enclosed**).

A. Specifications of `Load Car` – Pull 80kN
Schedule-I

2. DESCRIPTION & SCOPE OF SUPPLY

2.1 The scope includes design, supply, erection and commissioning and prove-out of the load car at consignee's premises. The supply shall include all concomitant accessories and other equipment as detailed in this specification. Any other equipment which the manufacturer considers essential to make the equipment operational (When installed and connected to power source) shall be quoted separately.

2.2 Concomitant accessories

2.2.1 The load car shall be supplied along with following concomitant accessories.

Sl. No.	Description	Qty.
2.2.1.1	Consumable/ perishable and non-consumable/non-perishable spares required for normal maintenance to cover complete range of mechanical, hydraulic, electrical and electronic equipment including controls and instrumentations for 2 Years	1 set
2.2.1.2	Maintenance tools kit (Bidder to submit list)	2 sets

2.2.2 Any other concomitant accessories required to make the plant fully operational on installation when connected to main power source must also be included in the scope of supply and the cost of such accessories shall be included in the above list.

Note: The bidder should provide the details of the items and their quantity offered in one set each.

2.3 Optional Accessories:

The following accessories should be quoted as optional. The prices of the same shall be indicated separately.

Sl. No.	Description
2.3.1	Annual Maintenance Contract for 5 years. Details at Schedule-III
2.3.2	Any accessory which in the opinion of tenderer/bidder can contribute to higher production rates or better precision levels should be clearly indicated and quoted for separately

Note: -The Bidder should provide the details of the items and their quantity offered in one set.

3. GENERAL CHARACTERISTICS

The general characteristics of the equipment shall be as per **Schedule- II, Technical specifications of Load car -80kN**

4. TECHNICAL LITERATURE

- 4.1 One copy of the printed illustrative catalogue showing features of various components and its elements must be enclosed with each copy of the bid.
- 4.2 The successful tenderer/bidder will also have to furnish, for 2 copies of spare parts catalogue giving the part list number of each component with exploded views and assembly drawings of major assembly, maintenance manual, trouble shooting guide, operational manual, repair manual/workshop manual of the equipment and all electrical circuit diagrams to the consignee directly within 3 months of the placement of LOA.
- The bidder should provide a list of literature, they will supply along with the equipment. The technical literature shall be provided for complete equipment including imported and indigenously purchased components/sub-assemblies.

5. SPARES:

5.1 Two lists of recommended perishable/consumable and non-perishable/consumable spares required for normal maintenance to cover complete range of mechanical, hydraulic, electrical and electronic equipment including controls on double shift working basis should be furnished and quoted for separately. Shelf life should be indicated with the quotation for spares. A complete catalogue giving the part list number of each component and assembly drawings shall also be provided with each equipment in duplicate.

5.2 Firm should confirm spare support for 10 years for the equipment.

6.0 SPECIAL FEATURES:

6.1 Special features incorporated in the equipment, if any, shall be indicated separately by the tenderer/bidder, clearly indicating advantages of the features.

7.0 DEVIATIONS

7.1 The tenderer should certify that the equipment offered fully meets the specifications. Various design features incorporated in the equipment to fulfill different technical performance requirement shall be fully explained in the offer. The tenderer such shall clearly indicate the details of deviations and their implications.

8.0 INSPECTION OF EQUIPMENT AND TESTING AT MANUFACTURER'S WORKS

8.1 A no load test will be carried out at the manufacturer's works for testing of individual equipment and not for the complete plant. Rigidity of the equipment shall be demonstrated to the satisfaction of appointed inspector or inspecting agency.

8.2 Manufacturer must have suitable facilities at their works for carrying out various performance tests on sub system. The tenderer should clearly confirm that all the facilities exist and shall be made available to the inspecting authority.

8.3 The tenderer will submit quality assurance plan, if any, being followed at the manufacturer's works for ensuring quality of the products offered. The QAP should include the process of design, manufacture of sub units with stage wise testing, erection including sub assembly-wise testing and commissioning inclusive of performance testing of safety features. The successful bidder shall provide for interaction with consignee at each stage to ensure that it would meet the broad requirements of specifications. The offer shall give details of the quality assurance plan. This shall be mutually agreed upon before the placement of order.

9.0 TRAINING

9.1 Technical experts of the manufacturer will fully and adequately train operators, maintenance staff nominated by the consignee at firm's premises for two weeks before the dispatch of the plant to the consignee. Also technical experts of the manufacture will fully and adequately train operators, maintenance staff during commissioning of the plant at consignee for a period of 4 weeks in operation and in mechanical, electrical and electronics trouble shooting of the equipment.

10.0 RELATED DRAWINGS:

10.1 The supplier shall furnish to consignee 2 copies of General Arrangement drawings indicating all leading parameter and related diagrams (Mechanical and Electrical), giving equipment weight, overall dimensions, electrical load and circuitry within 4 weeks of the receipt of order.

- 10.2 The Consignee shall either approve the GA drawings or if necessary return them to the Supplier / contractor for correction(s), within 2 weeks of its receipt from the Supplier / Contractor, under clear dated signatures. The complete process for the approval of the correct GA drawings shall not exceed 6 weeks from the date of first submission of the same.
- 10.3 The bidder shall furnish the time Schedule for supply installation & commissioning of the test setup as given in **Schedule-IV**. The Schedule IV needs to be submitted with sign, seal & signature separately.

11. INSTALLATION, COMMISSIONING AND PROVING TESTS

11.1 JOINT INSPECTION

- 11.1.1 The contractor or his agent would be required to carry out a joint check at the consignee's end, along with the consignee, before unpacking is done, to avoid subsequent complaints regarding short shipment/transit damages. It is necessary that this joint inspection be done immediately on receipt of the equipment by consignee to avoid commissioning delays due to shortages/transit damages.
- 11.1.2 This equipment being ordered on turnkey basis the Supplier and consignee will ensure that facilities as defined in the Tender, necessary at site for commissioning the equipment e.g. electrical power, water, compressed air connections etc. are ready before the dispatch of the equipment.

11.2 TURNKEY CONTRACT FOR INSTALLATION AND COMMISSIONING:

- 11.2.1 The bidder shall offer complete installation and commissioning of the load car on a turnkey basis. The turnkey offer shall include the following activities:
- 11.2.1.1 Provision of all tools and equipment, technical and unskilled manpower, material handling equipment and material for installation and commissioning.
- 11.2.1.2 Installation and commissioning of the plant shall be completed as per schedule IV from the date of receipt of the equipment at consignee's end or provision of clear site, whichever is later.
- 11.2.1.3 Loading/unloading of the equipment on receipt and its movement to the site of installation.
- 11.2.1.4 The supplier shall demonstrate equipment performance and prove out the claimed capability for successful commissioning at the consignee's works as given in **Schedule-I** of this specification. After such successful demonstration as herein before, the consignee shall take over and watch the equipment performance for a period of three months, before the final proving test certificate is issued.

11.3 RESPONSIBILITIES:

11.3.1 The Consignee shall be responsible for:

- 11.3.1.1 Provision of a clear site for erection and commissioning of the equipment.
- 11.3.1.2 Electricity and water at free of cost.
- 11.3.1.3 In case a road mobile crane has to be arranged by the supplier for material handling, a clear approach for it up to the site has to be provided.
- 11.3.1.4 Space for storage of material/equipment required for working/erecting of foundation and installation of equipment etc.

11.3.2 The supplier shall be responsible for:

- 11.3.2.1 Advise consignee in time regarding schedule for requirement of clear site for erection and other infrastructure.
- 11.3.2.4 Installation and commissioning of the equipment including arrangement of all man power, material, material handling equipment and facilities required for the same keeping in view the facilities to be provided by the consignee as per contract.
- 11.3.2.5 unloading of the equipment on receipt and its movement to the site of installation.
- 11.3.2.6 Any other resources/facilities required.

- 11.4 If an assembly/sub-assembly requires to be taken back to the manufacturer's premises for repairs/replacement either before commissioning or during warranty, the manufacturer or his agent would be required to submit an Indemnity Bond. In case the entire equipment has to be taken back, a Bank Guarantee would have to be submitted. The Indemnity Bond/Bank Guarantee should be of adequate value so as to cover the cost of the assembly/sub-assembly/paid up cost of the equipment.

12. COLOUR

12.1 All steel surfaces shall be thoroughly cleaned by disc grinding/sanding or shot/sand blasting and then immediately painted (except mechanical mating surfaces) with two coats of red oxide-zinc chromate primer as per IS: 2074. All weld joints shall be cleaned of slag and spatters before painting. The paint surfaces of bought out items shall not be disturbed generally.

The equipment/accessories shall be painted with two coats of synthetic enamel paint as per the choice of consignee, Number 281 to IS: 5-1978 (if any specific color and code standardized by BIS is in vogue, the same should be mentioned by the bidder). The total dry film thickness on the steel surfaces shall be about 100 microns.

13. BOUGHT OUT ITEMS

The bidder shall furnish along with the offer a list of all critical items/sub- assemblies, which are bought out by the bidder and proposed to be used along with the manufacturer's name, brand and model. The successful bidder may be required to produce invoices to ensure genuineness of such products by the inspecting agency.

14. AFTER SALE SERVICES

14.1 The tenderer will clearly spell out in the offer, the facilities available with him or his agent for providing adequate after sales service anywhere in India during warranty and post warranty periods. Tenderer will also indicate the service organizations located at various places in India and the availability of trained staff, maintenance spares, consumables etc. at different centers in the country.

SCHEDULE - I

Detailed Technical Specifications of Load Car

Description: Eddy Current Dynamometer Coupling fitted Self Propelled Traction Load Car for Testing of Agricultural Tractors- **80 kN (Maximum) Qty.: One (1) No.**

Objective: Drawbar performance testing of general purpose agriculture tractor as per IS – 12226 & O.E.C.D. Test Code-2, (Copy enclosed as Annexure –D)	
Features: The tractor test load car offered should be well compact designed on Tandem axle truck chassis, well-furnished flat floor front cabin air conditioner, to meet stringent norms under free field condition. The front cabin inside will be Sound proof, tinted glazed doors/windows access, direct glazed door access to the 'eddy current coupling cell' in the middle of the load car and should be equipped with the silent run generator set mounted in the rear section of the load car will be at par and above with the equipped equipment specified in the tender document	
Measuring Parameters	Drawbar Pull, Drawbar Power, Forward speed, engine speed, Percentage wheel slip, Fuel consumption, Atmospheric conditions and other related parameters as per IS-12226 & OECD Code-2 of general purpose agriculture tractor.
Loading Device/Power absorption System	Capacity: 80 kN (Max.), with suitable heavy duty eddy current based coupling, interconnecting shaft, floating axle.
Chassis/Underframe structure of Load Car	Ashok Leyland 1920 Series, 4x2 Haulage. Engine: H-Series BS VI, 6 Cylinder CRS with iGen-6 technology. Max Power: 200 HP @ 2400 rpm Max Torque(Nm): 700 @ 1200-2000rpm Gear Box: 6 speed synchromesh-3 options Number of cylinders: 6 Piston displacement: 5660cc Chassis/Frame structure: Cowl & Chassis, HSS material with new improved design Load body size: 20 ft General dimensions: Overall length: 8510mm Overall width: 2570mm Overall height: 3165mm Wheel base: 5050mm Turning circle dia: 17.2mm
Cooling System	The cooling system should be suitable for above loading device/power absorption system. Suitable up to ambient temperature of 50°C
-Maximum Drawbar Pull to be measured	80 kN (Maximum)
-Minimum drawbar Pull to be measured	Negative Pull (to be obtained by self-propelling load car to tractor)
Hitch of the load car: (Height to be adjusted manually by rotating handle provided)	Suitable tow bar of adjustable length will be provided to hitch the tractor with the load car. The tow bar will be provided with a facility to adjust any step less height of hitch in the range of 150 to 1000 mm from ground level and will be coupled to the steering system of load car for turning ability of complete combination of load car -tractor around the test track as the tractor turns.

Controls of the loading device of load car	Step less, Automatic/Manual controls will be provided to achieve a set load for drawbar performance measurements. The control arrangement will have provision for observation corresponding to rated engine speed, 15% wheel slip and maximum sustained pull etc.
Throttle actuator for tractor engine	-Digitally controlled throttle actuator with application software automation to control the tractor throttle inside the control cabin.
Note: The automation system will be as per the requirement of test specifications of test code IS -12226 & O.E.C.D. Test code-II and the procedure contained therein and amended time-to-time.	

I. Front Compartment: The forefront compartment will be equipped as follows:				
Control Cabin:		<p>The control cabinet will be equipped with fully air conditioned and adequately insulated to minimize heat / sound/vibration with modern Instrumentation panel for rapid analysis of drawbar performance of an agriculture tractor. Sufficient space provided for accommodation of all instrumentation and data acquisition system along with the seating arrangement for Engineers and skilled Staff.</p> <p>The Control cabin is to be designed in the front of the vehicle chassis.</p> <ul style="list-style-type: none"> viii. Air conditioner will be roof duct mounted of suitable Capacity ix. Seating arrangement for testing Staff : 04 persons x. Separate door access either side in the coupling section- xi. Proper arrangement of LED lights, Backup lightings. xii. Canopy over the cabin to protect the duct mounted AC equipped. xiii. The control cabinet will have separate access door for engineer Operator and separate door on LHS for visitor. vii. CCTV will be provided at Front, Back & Bottom of loadcar. A monitor will be provided to view the CCTV images. 		
II. Middle Compartment: The eddy current coupling will be installed in the middle compartment of the chassis.				
Eddy Current Coupling: - The eddy current coupling of type water cooled type (Heenan WCS2193)				
Roller chain Coupling (Chain drive box) (Rear Axle – Coupling)		Suitable flexible coupling along with chain box adapter will be provided for power transmission (8-16Hrs or more) to rear axle of the vehicle chassis.		
i. Propeller shaft -Rear		Companion flange, tubular shaft. Needle roller bearing, universal joint, sliding coupling		
ii. Rear Axle		5.83: 1 is provided for Ashok Leyland 1920 Series 4x2 Haulage		
iii. Compressor		Separate local blower is considered for traction axle tyres cooling		
Water Cooling System: The water cooling system will be equipped with the following safety devices: - (The display of all process control value be incorporated in the application software window)				
1. Pressure switch	2. Solenoid valve	3. Bypass	4. Temperature switch	5. Strainer
6. Water outlet Temperature sensor		7. Water Filter		8. Water Pump-Self priming type
Note: One set items (1-8) equipped are required in spare to keep standby for immediate maintenance.				
Radiators: (Of Suitable size)		Maximum continuous heat dissipation capacity suitable as per load car heat dissipation requirement.		
Heat Exchanger		Shell & tube type parallel flow type heat exchanger with coolant.		

Cooling Fan: Roof Mounted:	Of suitable capacity for load car heat dissipation requirement - 1No. Protection: Circular mesh ½” beneath the roof over `eddy current coupling`.
-This fan moves out hot air upward of the compartment equipped, `eddy current coupling` in the momentum.	
III. Automation System	
Data Acquisition System of load car	The Data acquisition system of the load car will comprised of I/O module based 16 channel (analog/digital) input of transducers & sensors equipped with Tractor/Load car for measuring field parameters as per : IS – 12226 & O.E.C.D. Test Code-2. The PC based `Data Acquisition System` will be compact & reliable to work in harsh environment. Qty.-1Set
Industrial PC	Industrial PC (Latest Configuration) with min. dual LAN Card; RAM-8GB; HDD: 1 TB; Monitor LED-24”; U.S.B. port -2.0 high definition – 4 Nos., MS Window Latest Version Licensed; MS Office-latest licensed; Printer: 80 Column-Dot-Matrix; make: Wipro/canon/ HP: Qty.- 2 Set.
Application Software	Complete CD media with hard copy of the testing application software will need to be designed as per the requirement of test cycle, test menu at site as desired up to the extent of satisfaction of running test cycle. The test result to be represented in the desired datasheets, characteristic curves will be provided at the time of software development at site as per test code referred above. In addition Suitable software program for measuring nominal speed of tractor needs to be designed as per the requirement. The Data Acquisition and automation cum testing software will have the facility of on line graphical representation of following parameters and other testing parameters as IS 12226/OECD Test Code-2 ; iii. Drawbar pull(kN) Vs. Drawbar power(kW) iv. Drawbar pull(kN) Vs. Forward speed(kmph) iii. Drawbar pull(kN) Vs. Percent wheel slip iv. Drawbar pull(kN) Vs. Specific fuel consumption(g/kWh)
Note: The application software will display C.FMTTI, Budni, on each page of report window	
Front Tow Bar:	The front towing bar should exactly be the as equipped with the existing load car attached for which dimensions may be collected by visiting at site of the Institute. Qty.1No.
Characteristics curve of the load car	Max Pull (kN / speed (m/sec)/power (kW) curve of load car will be provided.
Note: The entire requirement while designing the load car, mounting of major/ process control equipment will be fully to the consent / agreement at each & every stage of the Institute.	
IV. Power Supply Compartment:	
Genset	62.5 KVA Cummins make DG set with suitably modified canopy to accommodate in the loadcar
Genset Cabin	The genset cabin must be with acoustic panels to minimize the noise.
Utility Equipment	Maintenance kit (necessary special tools & spanners),Service Jack etc.,
Uninterruptible Power Supply	A UPS of suitable capacity or at least (2.5 kVA)-pure sine wave should also be provided for back-up of control panel and Data Acquisition System. Qty.1No.
A tentative line diagram (General Arrangement Drawing) of the load car is as shown below:	

Representative List of sensors & Transducers

Supply, Installation & Commissioning of Self Propelled Loadcar (Eddy Current Coupling based) for Testing of an Agricultural Tractors – (Pull – 80kN)

The representative list of sensors and transducers to be connected on Load car / Tractor side:

(I) Instrumentation System-Transducers & Sensors to be equipped in the Load car for signal communication to Data acquisition System..(1-9) ↯			
S No.	Descriptions	Qty.	
1.	Strain Gage Load Cell 10 T, bonded strain gage type, Bridge resistance (350Ω),universal	2 No.	
2.	Atmospheric Press. transmitter (duct mounted)	2 No.	
3.	Atmospheric temperature Sensor(duct mounted)	2 No.	
4.	Relative Humidity transmitter (duct mounted)	2 No.	
5.	Optical spot light sensor with on / off switching facility for wheel Distance Run An alternative pneumatic tyre wheel (circumference 1.0 m ±0.01m should be attached.	2 Set.	
6.	Fuel Flow Sensor -0.25cc (Oval Gear System based)-preferably gravimetric mass flow	2 No.	
7.	Digital Sound level Meter (IEC 651 Type – I) Connected to DAQ System and integrated to the software for display & recording of sound pressure levels.	1Set.	
	Sound level meter calibrator- Type Class-I		
8	Pre-polarized condenser Microphone (½”); Microphone Extension – 15Metres cable, Half size helmet (1No.) to (Connect the Microphone at Operator’s ear level).Provision for attachment of microphone need to made as per IS -12180 code.	2 No.	
9	Intercom system (0.35Hz to 3.5kHz.)	2 Set	
(II) Instrumentation System-Transducers & Sensors to be equipped to the Tractor side for signal communication to Data Acquisition System.			
Note: All the temperature sensors should be type (Pt-100Ω); Range (0-200 °C); Length-as per requirement,			
Temperature Sensors:	S. No.	Descriptions	Qty.
	1.	Lubricant Temperature Sensor	2 No.
	2.	Transmission oil temperature sensor	2No.
	3.	Air intake temperature Sensor	2No.
	4.	Air inlet temperature sensor	2No.
	5.	Air outlet temperature sensor	2No.
	6.	Coolant Temperature Sensor	2No.
	7.	Fuel temperature Sensor	2No.
(III) Other process control Sensors & Transducers(1-4) ↯			
S. No.	Descriptions	Qty.	
1.	Tractor’s front drive wheel sensor(optical)-Proximity Type	2No.	
2.	Tractor’s rear drive wheel sensor(optical)- Proximity Type	2No.	
3.	Tractor’s Power Take Off (P.T.O.) shaft speed sensor-Optical shaft encoder type	2No.	
4.	Tractor’s cooling fan speed sensor (Optical): as per OECD code.	2No.	
Note:	The quantity of items mentioned above (all transducers & sensors) in actual (1+1=2No.), one should get equipped and one will be spare. All the cable, adapter, fixtures, connectors, sleeves, tags, thimbles signal labels, etc., will be supplied with the above items.		

SCHEDULE-II**GENERAL CHARACTERISTICS****1 . RIGIDITY AND STABILITY**

- 1.1 The equipment shall be robust, rigid and of sturdy construction. It shall be designed to meet heavy duty demands of various operations on the equipment under normal Workshop environment for such equipment. It shall be free for vibrations even when working at full capacity.
- 1.2 All equipment castings shall be made of close grained high grade cast iron or equivalent materials meeting IS-210 Standards to ensure durability and rigidity. The casting shall be thermal stress relieved to ensure stability and continued accuracy.
- 1.3 All equipment fabrications of critical load bearing assemblies like beds, columns etc. shall be adequately strengthened and stress relieved.
- 1.4 Change in ambient temperature shall not affect the performance of the equipment.
- 1.5 There shall be no change in the performance of the equipment either on switching on the equipment or after continuous running.
- 1.6 There shall be no resonant vibrations throughout the working range of the equipment at all load levels.

2. SAFETY CONTROLS

- 2.1 The equipment shall incorporate safety devices to provide protection to the operator and equipment against all possible operational and equipment failures.
- 2.2 Suitable interlock shall be provided to prevent equipment operations in the event of:
 - Faulty sequence of operation.
 - Fluctuation in supply voltage.
 - Resumption of power supply after power failure.
 - Non-positioning of safety guards.
 - Failure of hydraulic system (where applicable)
 - Failure of lubricating system (In case of automatic including drop in pressure lubrication)
- 2.3 A fault or damage in the control circuit or interruption re-establishment after an interruption of fluctuation in whatever manner in the power supply to the equipment must not lead to dangerous situations in particular.
 - The equipment must not start unexpectedly.
 - The equipment must not be prevented from stopping if command has already been given.
 - No moving part of the equipment or piece held by the equipment shall fall or be ejected.
 - The protection devices must remain effective.
- 2.4 The equipment shall be fitted with an emergency stop device to enable actual or impending danger to be averted. This device must be
 - Conveniently located.
 - Clearly identifiable.
 - Stop the equipment as quickly as possible without causing additional hazards.

The emergency stop must remain engaged. It should be possible to disengage it only by appropriate operation. Disengaging the control must not restart the equipment but only permit restarting.
- 2.5 Safety features shall also include.
 - Safety device against overload for all mechanical and electric items to the extent possible.
 - Safety stops against over-running of mechanical components extent possible.
 - Safety stops against over-running of mechanical components.
- 2.6 Guard and protection devices shall protect exposed persons against risks related to moving transmission parts (such as pulleys, belts, gears, rack and pinion, shafts etc.) and moving parts directly involved in the process to the extent possible. This shall meet the following requirements:-
 - Be of robust construction
 - Not give rise to any additional risk

- Not be easy to bypass or render non-operational
- Be located at an adequate distance from danger zone
- Cause minimum obstruction to the view of the production process.
- Rigidly connected and not prone to rattling.
- Enable essential work to be carried out without the guard or protection device having to be dismantled.

- 2.7 First aid box, fire extinguishers must be provided to mitigate Electrical (Class-E), Liquid (Class-B) & chemical fire hazards.

3. OPERATIONAL CONTROLS

- 3.1 The operation of the equipment shall be by push buttons or levers.

- 3.2 The control devices shall be
- Clearly visible and identifiable.
 - Ergonomically positioned for safe operation without hesitating or loss of time, and without ambiguity.

4 . LIGHTING

- 4.1 Integral lighting suitable for the operations concerned where its lack is likely to cause a risk despite ambient lighting of normal intensity shall be provided.
- 4.2 The manufacturer must ensure that there is no area of shadow likely to cause nuisance, that there is no irritating dazzle and that there are no dangerous stroboscopic effects due to lighting provided by the manufacturer.
- 4.3 Integral parts requiring frequent inspection and adjustment and maintenance areas must be provided with appropriate lighting.
- 4.4 The equipment lighting should be of low voltage so as to prevent any hazard to the operator.

5 . EQUIPMENT MAINTAINABILITY

- 5.1 The equipment shall be so designed as to require minimum possible maintenance and to give trouble free service.
- 5.2 All assemblies/parts of the equipment shall be easily accessible for maintenance.
- 5.3 The equipment shall not require major dis-assembly for checking and replacement of a particular part, especially for parts requiring periodical check up and replacement.
- 5.4 The manufacturer must provide means of access e.g. stairs, ladders, cat walks etc. to allow access safety to all areas used for production, adjustments and maintenance operations.

6 . COOLANT SYSTEM (WHERE APPLICABLE)

- 6.1 Suitable coolant system with pump, motor, tank, filter etc. shall be provided. The filter shall be of reusable type and indigenously available. If reusable filter cannot be offered the filter cartridge shall be readily available in India. Source of supply shall be indicated. Adequate no. of filters for 2 years working on double shift basis shall be offered as spare. Details of the coolant system shall be indicated in the offer.
- 6.2 The supply of coolant shall be in ample volume. Provision to re-circulate the coolant shall be available. A chip and coolant tray shall be provided. The volume of coolant flow shall be indicated. It shall be adjustable.
- 6.3 An enclosure shall be provided to prevent the coolant from splashing outside the equipment zone. Details of enclosure shall be provided. Specific requirements of coolant system for grinding equipments etc. shall be clearly indicated.

7. LUBRICATION SYSTEM (WHERE APPLICABLE)

- 7.1 The equipment shall be provided with an automatic lubricating system for ensuring delivery of adequate quantity of lubricant to areas requiring continuous lubrication. Suitable arrangements must be provided for indication of failure of the lubricating system.
- 7.2 The system shall be provided with interlock to prevent equipment operating/starting in the event of the failure lubrication system.
- 7.3 Reusable filters capable of filtering chips, dust particles etc. shall be provided. Indicators for showing clogged condition of filters shall be available. The filters shall be indigenously available. If reusable filter cannot be offered the filter cartridge shall be readily available in India. Source of supply shall be indicated. Adequate no. of filters for 2 years working on double shift basis shall be offered as spare.
- 7.4 Lubrication and filter cleaning chart shall be displayed on a metal plate at a conspicuous location on the equipment indicating:-
- (a) Specific location of points on the equipment to be oiled lubricated/greased.
 - (b) Periodicity of lubrication of these points.
 - (c) Filter to be cleaned.
 - (d) Periodicity of cleaning filters.
 - (e) Periodicity of replenishing lubricating oil for the centralized system.
 - (f) Any other similar relevant information.
- 7.5 Points where manual lubrication is needed shall be separately indicated. Frequency of lubrication shall be also clearly mentioned.
- 7.6 Lubricating oils used in the equipment shall be available in India. Successful tenderer will be required to indicate brand names of approved oils manufactured by various Indian Oil Companies.
- 7.7 First fill of lubricating oils used in the equipment shall be provided with the equipment. Details of lubricating system provided shall be indicated.

8. PNEUMATIC SYSTEM (WHERE APPLICABLE)

- 8.1 The compressed air supply will be provided by the customer at the equipment within pressure range of 4.5-7.5 kg.cm² and a moisture content or 1000 ppm. The pneumatic system of the equipment should be designed accordingly. An alarm shall be provided for low air pressure.
- 8.2 Suitable filter/moisture trap shall be provided by the contractor in the system of pneumatic air intake. The filter shall be reusable type and indigenously available. If reusable filter cannot be offered, the filter cartridge shall be easily available in India. Source of supply shall be indicated. Adequate no. of filters for 2 years working on double shift basis shall be offered as spare.
- 8.3 Air pressure regulator, if necessary, shall be provided by the tenderer.
- 8.4 The make of pneumatic control equipment shall be of reputed make. The makes shall be indicated.

9. HYDRAULIC SYSTEM (WHERE APPLICABLE)

- 9.1 Hydraulic circuit must be equipped with the following safety and inspection equipment:
- (a) Pressure gauges at all place, where pressure has to be set up or inspected.
 - (b) Safety valves for hydraulic circuit if relief valve does not fulfill this function.
 - (c) Equipment for checking of temperature in the circuit or in the pump wherever necessary.
 - (d) Arrangement to show if the filters (including those in the pump set) are choked and need cleaning. The filters shall be of reusable type and indigenously available. If reusable filter cannot be offered, the filter cartridge shall be readily available in India. Source of supply shall be indicated. Adequate no. of filters for 2 years working on double shift basis shall be offered as spare.
 - (e) Alarm for low oil level.
- 9.2 The sump aggregate shall have the following:
- (a) Oil level sight gauges or any other equipment showing the minimum and maximum oil levels in sump.

- (b) A drain plug at the lowest portion of the tank.
- (c) It shall be possible to drain the oil from the tank without disconnecting any pipes or other fittings.
- 9.3 The temperature of oil in hydraulic circuits shall not exceed 60 degrees C in any case. Suitable arrangement shall be incorporated to ensure that the oil is not overheated under local weather conditions at continuous normal working of the equipment.
- 9.4 Facilities for bleeding of air in case of air lock shall be provided.
- 9.5 The hydraulic reservoir, pump and allied equipment shall be suitably segregated from the equipment in order to remove major source of heat.
- 9.6 Hydraulic oils used on the equipment shall be available in India. Successful tenderer will be required to indicate brand names of approved oils supplied by various Indian Oil Companies.
- 9.7 First fill of hydraulic oils used on the equipment shall be provided with the equipment.
- 9.8 The hydraulic system elements shall be from reputed Indian manufacturers . The make of different elements shall be clearly indicated. Details of Hydraulic system shall be indicated.

SCHEDULE- III

ANNUAL MAINTENANCE CONTRACT (AMC)

1. Tenderers are required to quote for a comprehensive Annual Maintenance Contract for the equipment supplied against this specification, which will be inclusive of all spares, material and labour costs. The duties and taxes as applicable should be indicated separately. All consumables except Diesel/ fuel, lubricating oils or coolant shall form a part of the scope of comprehensive AMC.
2. AMC agreement for each installation will be signed between the consignee and the tenderer. The detailed terms and conditions of AMC shall be as given in following clauses:
The duration of AMC shall be **5 years** from the date of expiry of warranty. Rates for AMC quoted by the tenderer will remain applicable during the **5 years** duration of AMC and not subject to any variation except any statutory changes in taxes and duties as compared to quoted rates.
3. The tenderer must confirm willingness to offer AMC services at consignee location without any preconditions.
 - a) The consignees must enter into AMC according to these terms and conditions at least 30 days prior to expiry of warranty. In case the AMC agreement is not finalized within 6 months from the date of expiry of warranty, the tenderer may charge one-time initial inspection charges of up to 20% of quarterly AMC charges in addition to the rates quoted for AMC.
4. The details of preventive maintenance services to be provided under AMC shall be provided by the tenderer in the following format.

S No.	TYPE OF PREVENTIVE SCHEDULE	PERIODICITY	ITEMS TO BE CHECKED	ITEMS OF REPLACEMENT	EXPECTED PLANT DOWN TIME
--	--	--	--	--	--

5. Preventive maintenance shall be conducted on weekends through mutual agreement with the consignee. The preventive maintenance regime offered must be aimed at achieving minimum 90% uptime of the plant excluding the plant down time for preventive maintenance schedules.
6. The tenderer shall ensure that in case a failure is reported by a consignee's, qualified service engineers visit the site within 7 days from the date of complaint on calendar days' basis. This period of 7 days after the failure report shall be treated as grace period, which will not count towards plant down time for up to one failure per quarter and a maximum of 4 failures per annum. In case the number of failures exceed one during any quarter or four during any year of AMC, grace period of only 2 days will be permissible for such additional failures. Complaints shall be lodged by consignee by fax, e-mail or per bearer at address given by the tenderer. The responsibility to keep the failure reporting address details current will rest with the tenderer.
7. In case preventive maintenance is carried out along with breakdown maintenance schedule; preventive maintenance time will be deducted from breakdown time of the plant.
8. **Penalty Clause:** Penalty shall be levied on the tenderer for maintaining plant up time below the limit of 90% calculated on working days basis, after discounting for grace period and preventive maintenance period. Penalty shall be calculated as percentage of quarterly payment and will be deducted from the respective quarterly payments. Penalty calculation will be done over quarterly payment period.

S No.	Availability Slab	Applicable Penalty
1.	90% to 80%	0.5% for every 1% (or part thereof) reduction in availability of plant below 90%.
2.	Below 80%	1% for every 1% (or part thereof) reduction in availability of plant below 80%.

9. A Bank Guarantee equal to annual value of AMC will be submitted by the tenderer at the commencement of AMC, which will be returned on completion of AMC period. In case the tenderer fails to provide AMC services successfully, the AMC BG will be forfeited. This will be in addition to penalty as per clause 9 above.
Plant up time of less than 60% for two consecutive quarters will constitute complete failure of tenderer to provide the AMC services successfully; the AMC BG will be forfeited. This will be in addition to penalty clause 9 above for the period of actual performance.
10. Spares as per list recommended by the as given in clause 5 of bid document part II of section III, will be kept by the consignee which may be used by the tenderer for performing repair & maintenance under warranty/AMC. However, all spares/items borrowed by the tenderer for warranty/AMC, shall be returned conveniently but not later than the last date of warranty period / end of next quarterly period of AMC respectively. Cost of outstanding spares may be deducted from pending bills/Bank Guarantee by the consignee.
11. In all cases of plant failure except as mentioned below, any other spare part or material necessary to restore the plant to proper working order will be arranged by the tenderer as a part of AMC.
12. In case of damage to the equipment on account of any external factor, viz., floods, earthquake, fire, arson or sabotage, entire cost of spare parts and material necessary for repair of the plant shall be borne by the railways. However, the tenderer shall provide services of their engineers free of cost as a part of AMC to restore the plant to working order.
13. In case of damage to the plant as mentioned above, any spare parts and material necessary to restore the plant to proper working order shall be arranged by the tenderer and charged on actual basis duly certified by authorized railway official in the next quarterly bills. The rates charged for such spare parts shall be based upon the current OEM's published spare part rate list or current DGS&D rate list for spare parts of the OEM or spare part rates accepted by any Govt. organization for similar equipment. The tenderer shall furnish one of these documents to support the rates charged for spares used for repair.
14. Normally quarterly payment under AMC will be made to the tenderer within 30 days from the end of that quarter subject to submission of the following documents by the tenderer to the paying authority assigned by the consignee:
- a) Consignee's certificate for work done as per proforma 'A' with calculation of downtime and penalty applicable.
 - b) A certificate by consignee that no spare part is due with the tenderer
 - c) Bills submitted by the tenderer & accepted by consignee.
 - d) Attested photocopy of the AMC BG.
15. The contract shall be determined in following ways:
- A. Notice in writing by either party, giving 3 months clear notice period. Dues, if any, will be settled in accordance with the conditions of this agreement.
 - B. Consignee may terminate the contract in the event of failure of tenderer to provide AMC services in terms of the AMC agreement.
 - C. Other general conditions shall be governed by Bid Document as applicable.

Proforma-A
(Illustrative)

Consignee's Certificate for Quarterly Work Done under AMC

1. Name of Equipment:
2. Name of /Contractor:
3. Quarterly charges for AMC (Standard): `
4. As per AMC agreement no. dtd.
5. Quarter for which bills are preferred:
6. From: To.
7. No. of Breakdown during the quarter:
8. Calculation of Penalty and Net AMC charges payable to /Contractor for the quarter:
9. Total Plant Down Time (in days):
10. Standard down days for preventive maintenance (in days/quarter):
11. Total grace period for breakdown:
12. Net down time for the plant [= (9)-{(10)+(11)}] :
13. 100% Availability for the quarter (in days) :
14. Actual availability [] :
15. Actual availability in %age:
16. Calculation of penalty:
17. %age availability below 90% to 80%:
18. %age availability below 80%:
19. Penalty:
20. Net amount payable as AMC charges to [= (5)-(vii c)]

It is certified that all spares borrowed by the for the previous quarter have been returned in good condition

SCHEDULE-IV**Format for Time Schedule Chart (Proposed):**

S. No.	Activity	Activity Code	Time Schedule expected	Time Schedule Offered by bidder	Remarks, if any
1	Issue of Letter Of Acceptance	D1		D	
2	Submission of Performance Security Deposit	D2	D1+30	D1+30	
3	Issue of Supply Order	D3	D2+30		
4	Submission of general arrangement drawings To the consignee by Successful Bidder/Supplier	D4	D3 + 30		
5	Approval of GA drawings by consignee (Max 6 weeks from date of receipt from supplier)	D5	D4 + 45		
6	Supply of equipment	D6	D5+ 360 days (Max)		
7	Installation of equipment	D7	D6+ 30		
8	Prove Out and commissioning of equipment	D8	D7 + 30		
9	Issue of Proving Test Certificate	D9	D8 + 90		
10	Warranty	D10	D9 + 2 years		
11	AMC	D11	D10 + 5 years		

**Signature of the Bidder
(M/s.-----)**

ANNEXURE-B

RATE SCHEDULE TO TENDER/ COMMERCIAL BID

- 1. Description of Item: SUPPLY, INSTALLATION & COMMISSIONING OF SELF PROPELLED LOAD CAR (Eddy Current Coupling Based) FOR TESTING OF AGRICULTURAL TRACTORS, Pull – 80KN**

Consignee and place of Delivery:-

**DIRECTOR, GOVERNMENT OF INDIA
CENTRAL REGION FARM MACHINERY
TRAINING & TESTING INSTITUTE,
MINISTRY OF AGRICULTURE & FARMERS WELFARE
(DEPTT.OF AGRIL., COOPEARTION & FARMERS WELFARE)
P.O. TRACTOR NAGAR, BUDNI (M.P.) 466445**

SCHEDULE	TIME & DATE	TIME & DATE OF OPENING OF TECHNICAL BID	TIME & DATE OF OPENING OF COMMERCIAL BID	OFFER SHALL REMAIN VALID FOR ACCEPTANCE UPTO
	1.00 HRS ON	15.00 HRS ON	10.00 HRS ON	180 days from the opening date of tender

SNo.	DESCRIPTIONS	RATE(₹) In figures
1.	Ex-works cost of Load Car for Testing Agricultural Tractor (Basic equipment) Excluding concomitant accessories. (Both in figures and words)	
2.	Ex-works cost of the following concomitant accessories (As per Tech. Spec Para-2.2.1, Annexure-A)	
	2.2.1.1 Perishable/Consumable and non- Perishable/ consumable spares required for normal maintenance to cover complete range of mechanical, hydraulic and electrical equipment including controls for 2 Years- One Set	
	2.2.1.2 Maintenance tools kit (Bidder to submit list)- Two Sets	
	2.2.1.3 Others if any	
	Total Ex-works cost including Concomitant accessories (Both in figures and words)	
3.	Packing charges	
4.	Forwarding charges	
5.	Freight to destination	
6.	Destination Price (excluding duty & taxes)	
7.	Turnkey charges as per 11.2 of Annexure-A (Detailed Specifications of the Turnkey element to be specified by the firm) (if any)	
8.	Installation & commissioning charges as per 11.2 of Annexure-A (Detailed Specifications of the Turnkey element to be specified by the firm) (if any)	
9.	Training cost (if any)	
10.	Service Tax (if any)	
11.	Other charges (if any) (Please Specify)	
12.	Total price (inclusive of Turnkey, installation, commissioning, training and Service Tax but exclusive of Duties & Taxes) (Both in figures and words)	

THE COST OF OPTIONAL ACCESSORIES, MAINTENANCE SPARES AND OTHER ACCESSORIES AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS (Para 2.3, Annexure-B) SHOULD BE QUOTED SEPARATELY INDICATING ALL THE COST ELEMENTS AS MENTIONED ABOVE.

DELIVERY REQUIREMENT- within 6 (six) months after issue of Letter of Acceptance (LOA)

Is IGST /import duty extra (Yes/No)	
If yes, indicate rate & Nature of sales tax	
Is excise duty Included/excluded (Yes/No)	
Indicate the rate of excise duty along with assessable value.	
Is service tax extra (Yes/No)	
If yes, indicate the rate & item on which it is applicable	
Station of dispatch	
Delivery period offered	
Terms of payment	
Gross weight & dimension of packages per unit (Tentative)	
Details of earnest money deposit (EMD) (DD No, Date, Amount etc.)	
Total Cost inclusive of all charges and taxes: (Both in figures and words):	

It is hereby certified that we have understood the Instructions to Tenderers and also the General Conditions of Contract attached to the tender and have thoroughly examined specifications, drawings and/or pattern, quoted in the Schedule of Requirements and are thoroughly aware of the nature of stores required and our offer is to supply stores strictly in accordance with the requirements and according to the terms of the tender. We agree to abide solely by the General Conditions of Contract and

other Conditions of the tender in accordance with the tender documents if the contract is awarded to us.

We hereby declare that in quoting the above price, we have taken into account the entire credit on inputs available under the MODVAT scheme introduced w.e.f.1.3.1986 and further extended on more items. We further agree to pass on such additional duties set off is may become available in future in respect of all the inputs used in the manufacture of the final product on the date of the supply under the MODVAT Scheme by way of reduction of prices and advise the Purchaser accordingly.

(Signature & seal of Tenderer)

Date:

Signature of witness
(Name & Address)

Name in Block letter:
Capacity in which tender is signed:
Address of the Tenderer in full:
