

**COLLEGE OF AGRICULTURAL ENGINEERING
JAWAHARLAL NEHRU KRISHI VISHWA VIDYALAYA, JABALPUR**

3rd TENDER NOTICE

Sealed tenders are invited from manufacturers/Authorized dealers /Suppliers/Agents for supply of **Laboratory, electronics, mechanical instruments and farm equipments, etc.** are invited for Department of Farm Machinery & Power Engineering, College of Agricultural Engineering (RKVY Project). Tender forms with details, terms and condition for supply can be down loaded from the JNKVV website www.jnkvv.nic.in. Last date of submission 14-03-2018.

Dean
Agricultural Engineering

FACULTY OF AGRICULTURAL ENGINEERING
JAWAHARLAL NEHRU KRISHI VISHWA VIDYALAYA, JABALPUR

TENDER DOCUMENT

TERMS & CONDITONS

1. Only the manufactures/authorized dealers/Publishers/Suppliers/Agents need submit the tender. The authorized dealers should furnish a copy of the current certificate from the Manufactures for their dealership.
2. No person or Firm shall submit more than one tender for the same item.
3. A broad-based specification of equipment is given in Annexure. The tenders should also take note of the remarks, if any given therein.
4.
 - (a) Tender must be submitted in sealed cover to the **Dean, College of Agricultural Engineering, JNKVV, Jabalpur-482004 (M.P.)** by Registered post or delivered personally so as to reach on or before **14.03.2018 by 3.00 PM**
 - (b) Belated tenders due to postal delay or any other reason will be rejected.
 - (c) The tender in for EACH item should be sent SEPARATELY. The outer cover of the sealed envelope should be superscripted. **'TENDER FOR AGRICULTURAL ENGINEERING (Name of the equipment with Serial No.)** due on **14.03. 2018**
 - (d) IF OFFERS FOR MORE THAN ONE ITEM ARE CLUBBED TOGETHER, THE TENDER WILL BE REJECTED.
 - (e) The tender offers should have a validity of 90 days or more from the due date for the rates quoted.
 - (f) The tender will be opened on **14.03.2018 at 3.30 PM** in the office of the undersigned in the presence of the authorized representative of tenders. They should bring proper authority letters.
 - (g) J.N. Krishi Vishwa Vidyalaya; reserve the right to extend the due date and or the date of opening the tenders.
5. The rate quoted should be for delivery at College of Agricultural Engineering, JNKVV, Jabalpur. The rate quoted should be inclusive of Packing and forwarding charges, loading/unloading/handling charges, freight full risk coverage, insurance installation charges etc. & the AMC charges for next two years from the date of installation of the supplied instruments/equipments.
 - a) The price offered for individual items should invariably be in Indian Currency. The Firms are requested to convert the prices into Indian Rupees if they are offering goods. Prices for accessories if any are quoted separately.

- b) Excise duty, sales tax (with and without concessional certificate) VAT and other levees, if any, should be shown separately, and the total price of each item should be worked out incorporating the same.
 - c) Any other charges, such as technical service charges, cost of training, installation charges etc. if any should be shown separately for each item and sub-item.
 - d) Breakup of the prices for the main item and its sub-item should be given separately. This is necessary to workout prices of a desired configuration.
6. The tender should be accompanied by detailed printed technical literature, specification, make and model No. of each item and each sub-item quoted in the tender, otherwise offer shall be rejected.
7. If asked by JNKVV, the tenderer will have to arrange a demonstration of the equipments/system at JNKVV, Jabalpur without any charge of obligations.
8. All losses during transit will have to be made by the tenderer at his own cost within period of 15 days.
9. The tenderer must guarantee satisfactory functioning of the equipment/system and free service including free replacement of parts for a period of at-least one year from the successful and satisfactory installation of the equipment.
10. The tender must be accompanied by Earnest money deposit for each item, as mentioned in the form of crossed bank draft drawn on a nationalized bank, made infavour of J.N. Krishi Vishwa Vidyalaya, Jabalpur. Without the DD of earnest money deposit the offers are likely to be rejected.
- 11.
- (a) The standard terms and conditions of payment acceptable to JNKVV, are payment in full only after the contract is effected in full and to be satisfaction of JNKVV authorities.
 - (b) In special cases, payment in advance or payment through a bank against the document or payment by opening irrevocable letter of credit with a bank or any other mode of payment may be considered by JNKVV provided in such cases the tenderer furnished as unconditional Bank Guarantee for the full amount to JNKVV with an agreement that in cases of any loss, incomplete supply, delay or breach of contract in any manner, the JNKVV can recover full amount from the supplier through this Bank Guarantee.
 - (c) The tenderer should make it clear in the offer as to whether payment terms 11 (a) or 11 (b) both is acceptable to the tenderer else the tender offer is liable for rejection.
- 12.
- (a) If so desired by JNKVV, the tenderer shall have to enter into an agreement.
 - (b) Any deviation, or non-compliance of the terms and conditions by the tenderer shall be considered as a breach of contract and JNKVV reserve the right to forfeit the amount of earnest money and or security deposit in part or in full and to take actions as per legal arrangement.

13. Should there arise any dispute, the Vice-Chancellor, JNKVV, Jabalpur shall be the sole Arbitrator, whose decision in the matter shall be final and binding.
J.N.Krishi Vishwa Vidyalaya reserve the right to accept or reject any or all offers in full or in part without assigning any reason (s) therefore. It also reserves the right to place an order wholly or in part with one or more than one firm as they may be convenient to JNKVV.
14. **Items no. 12 to 22 treated as first call tender items.**
- 15 The tenderer shall have to give an undertaking that the terms and conditions as mentioned above of this tender are acceptable to the tenderer.

Note: The details of tender documents can be obtained in website <http://www.jnkvv.nic.in>. The tender document can also be downloaded from JNKVV website, which will be acceptable only deposited along with IPO/DD ₹ 500/- (Non refundable) in favour of **Dean, College of Agricultural Engineering, JNKVV, Jabalpur** payable at Jabalpur up to **14.03.2018** at 3.00 pm.

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(A) Item for RKVY Project

1.	Growth Chamber EMD 2000/-	10x8 feet growth insulated chamber with humidifier, dehumidifier, temperature, illuminations range if possible wind velocity controls system <i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i>
2.	Pollard system for electro cardiac graphics and stationery /dynamics devices EMD-	Multiple interfaces dual heart rate processing algorithms, 32 entry data history. (With essential accessories) The dynamics and stationery system of heart rate measurement equipment with computer analysis systems. <i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i>
3.	Seed drill metering device and seed drill testing unit EMD- 2000/-	Mortised with metering and others parameters measuring unit. <i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i>
4.	Test rig for manually operated sprayers EMD- 1000/-	This system is designed to conduct performance testing of manually operated sprayers as per IS 10134-1994 facility of testing. Stirrup type sprayer. Foot and Rocker sprayer and Knap sack sprayer. Auto miser sprayer .By changing the drive linkage mechanism is provided alternately. <u>Description & Specification:-</u> <ol style="list-style-type: none">1) Strong and sturdy fabricated frame structure made out of M.S channels and plates to give sufficient rigidity to the machine.2) Drive motor 2 H.P, 1440 RPM coupled with worm reduction gear box 20:1 ratio to provide drive to the test sprayer.3) Adjustable eccentric mechanism fitted on gear box out put shaft with max. Stroke adjustment up to 150 mm.4) Adjustable linkage with ball joints and guide bushes suitable for transferring rotary motion motor to oscillating one of sprayer handle.5) Discharge collecting pipe 6 mm ID and @ 800 mm length provided with pressure gauge, pressure regulator and @ 2 m of flexible pipe for connecting to pump discharge port and sump tank.6) Digital flow rate timer to measure collective discharge of test sprayer for one minute with return valve to sump tank. Range: - 0 - 5 LPM.7) Electrical panel comprises of-<ol style="list-style-type: none">i) A.C. variable speed drive for 5 H.P motor.Other electrical accessories such as contactors, push buttons, MCB etc. <i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i>
5.	Test rig for power	This system is designed to conduct performance and endurance testing of hydraulic power sprayers as per IS 11313:2007 facility of testing.

	<p>operated sprayers EMD- 1000/-</p>	<p><u>DESCRIPTION & SPECIFICATION.:-</u></p> <ol style="list-style-type: none"> 1) Strong and sturdy fabricated frame structure made out of M.S channels and plates to give sufficient rigidity to the machine. 2) Drive motor 2 H.P, 1440 RPM coupled with worm reduction gear box 20:1 ratio to provide drive to the test sprayer. 3)The drive motor is mounted on swinging filed dynamometer so that torque consumed is indicated on the panel suitable flexible coupling attachment is provided for connecting this motor to test pump. 4) Discharge collecting pipe 10 mm ID and 10@ 800 mm length provided with pressure gauge, pressure regulator and @ 2 m of flexible pipe for connecting to pump discharge port and sump tank. 5)Digital flow rate timer to measure collective discharge of test sprayer for one minute with return valve to sump tank. Range: - 0 - 10 LPM. 6)Electrical panel comprises of- <ol style="list-style-type: none"> i) A.C. variable speed drive for 5 H.P motor, Digital torque indicator. Range: - 0 - 20 N-m., Digital Pressure ii) Indicator Range: - 0 -10 kg/cm² 1 3)Digital preset timer, Range: -0 - 99.9 hrs. iii) Other electrical accessories such as contactors, push buttons, MCB etc. <p><i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i></p>
<p>6.</p>	<p>Test Rig For Performance And Endurance Testing of Hydraulic Power Sprayers. EMD- 1000/-</p>	<p>This system is designed to conduct performance and endurance testing of hydraulic power sprayers as per IS 11313:2007 facility of testing.</p> <p><u>DESCRIPTION & SPECIFICATION.:-</u></p> <ol style="list-style-type: none"> 1. Strong and sturdy fabricated frame structure made out of M.S channels and plates to give sufficient rigidity to the machine. 2. Drive motor 2 H.P, 1440 RPM coupled with worm reduction gear box 20:1 ratio to provide drive to the test sprayer. 3)The drive motor is mounted on swinging filed dynamometer so that torque consumed is indicated on the panel suitable flexible coupling attachment is provided for connecting this motor to test pump. 4) Discharge collecting pipe 10 mm ID and @ 800 mm length provided with pressure gauge, pressure regulator and @ 2 m of flexible pipe for connecting to pump discharge port and sump tank. 5)Digital flow rate timer to measure collective discharge of test sprayer for one minute with return valve to sump tank. Range: - 0 - 10 LPM. 6)Electrical panel comprises of- <ol style="list-style-type: none"> i) A.C. variable speed drive for 5 H.P motor, Digital torque indicator. Range: - 0 - 20 N-m., Digital Pressure ii) indicator.Range: - 0 -10 kg/cm² 1 3)Digital preset timer.Range: -0 - 99.9 hrs. ii)Other electrical accessories such as contactors, push buttons, MCB etc. <p><i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i></p>

7.	Pattern meter EMD- 1000/-	<p>Patternometer (<i>As per BIS standard</i>) This system is designed to conduct the spray testing as per BIS standard with all facility of testing with accessories <u>Specification :-</u></p> <ol style="list-style-type: none"> 1) Two aspect of the spray nozzle may be used to represent its functional performance these are its calibration and its distribution 2) Distribution is the pattern of the quantity of spray liquid reading various are as of the target under a nozzle its measurement is generally more difficult task particularly for the spraying system 3) It is mounted on MS fabricated stand dually powder coating 4) Size of stand 1800mm x 800mm x 700mm 5) Size of V channel tray 1700mm x 1100mm x 150mm 6) Sump tank Size 4000mm x 350mm x 400mm FRP lining in the sump tank for leakage proof 7) HTP pump (Taiwan make company) 8) 1 HP three phase motor (laxmi make company) 9) Pressure gauge 7 kg 10) Nozzle gun (Italian make) 11) ¼ flier valve 12) ¼ Copper tubing 13) “V” channel and nozzle gun stand distance between approximate - 550mm 14) Pressure gauge and nozzle body into which various nozzle tip can be fitted 10)The addition rig has a surface or pattern meter for catching liquid from the nozzle <p><i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i></p>
8.	Knapsack sprayer EMD- 1000/-	<p>Knapsack sprayer <u>As per BIS standard</u> <u>Specification :-</u></p> <ol style="list-style-type: none"> 1) the sprayer shall be rigidly mounted on the test bench in such a way that it handle shall be operated in the direction it is designed for operation 2)one end of hose of 1 m. length shall be connected to the discharge out late of the sprayer and the other end to the in late end of a 75 cm length and 6 mm internal diameter 3)a pressure regulator valve shall be adjust the pressure 4)it is mounted on MS fabricated duly powder coated stand Size- 1200mm x 750mm x 600mm 5) measuring tank Size- 350mm x 400mm x 350mm 6) digital RPM meter for stroke measurement 7)1/4 flier valve for pressure reducing 8)knapsack pump (paras make company) as per available 9) 1 hp reduction gear motor

		<p>10) 7 kg pressure gauge 11) starter (L&T make standard company) 12) ¼ copper tubing <i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i></p>
9.	<p>Nozzle performance test rig EMD- 1000/-</p>	<p>Nozzle performance test rig (As per BIS standard) <u>Specification :-</u> 1) The nozzle which is to be tested connected it to the test rig . the height of nozzle from the test bed is at 545 mm as per is check the designation which is mentioned on the nozzle 2) It is mounted on MS structure duly powder coated. The unit comprise of : 3)M.S. frame stand assemble Size – 1300mm x 600mm x 750mm 4)MS “v” channel spray collection assemble Size – 1200mm x 750mm x 150mm 5)glass test tube 18 no with oil seals for collecting sprayer 6) glass test tube tilting assemble / sliding out assemble (improve design) 7) HTP pump Taiwan make 8)spray nozzle assemble 8)pressure gauge 8kg 9)sump tank size 400mm x 350mm x 400mm 10)1/4 fleer valve for pressure reducing 11) FRP lining in the sump tank for leakage proof 12) ¼ copper tubing 13)1 HP 3 phase motor (laxmi make company) 14) nozzle gun (Italian make) 15) starter (L&T make company) <i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i></p>
10.	<p>Performance and endurance test rig for Foot and rocker sprayer EMD- 1000/-</p>	<p>Performance and endurance test rig for Foot and rocker sprayer <u>As per BIS standard</u> <u>Specification :-</u> 1) the pedal lever in case of foot sprayer and handle lever or extension in case of rocker sprayer shall be connected to on adjustable crank mechanism operated by a motor through a speed step down drive so as to give moment of 16 stroke 1 cycles per minute to the piston rode in such manner as to maintain the proper alignment between the piston rode and pump cylinder 2) it is mounted on M.S. fabricated stand Size- 1200mm x 750mm x 60mm 3)measuring tank Size 350mm x 400mm x 350mm 4) sump tank Size – 400mm x 400mm x 400mm 5) Pressure gauge 7 kg 6) digital RPM meter for stroke measurement 7) ¼ fleer valve for pressure reducing</p>

		8) ¼ copper tubing 9) foot operated pump (as per available standard make company) 10) rocker pump (as per available standard make company) 11) 1 hp reduction gear motor 12) starter (L&T standard make company) <i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i>
11.	Reciprocating pump test bench EMD-1000/-	performance and endurance test rig for Foot and rocker sprayer (<u>As per BIS standard</u>) <u>Specification :-</u> The diamond consists of reciprocating pump mounted over the sump tank, the unit is self contained recirculation type provide with vacuum gauge at suction & pressure gauge at discharge input to motor & output of pump can be measured and pump performance can be estimated at different speed by means of and at difference head It is mounted on MS structure duly powder coated. The unit comprise of : 1) Size of Sump tank = 1100mm x450mmx 450mm 2)Size of measuring tank = 400 mmx350mm x 400mm 3)Double acting/ single cylinder 1250 rpm 10kg/ cm2 pressure 4)7kg Pressure gauges for suction &discharge head measurement 5)Energy meter 0 to 5/10 amps 6)Control valve for floe control at discharge 7)Control panel Size – 450mm x400mm x 450mm 8)Unit are double powder coated outside 9)Unit are in F.R.P lining 10)A copy of instruction manual <i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i>
12.	Trigger Type Cut Of Device EMD- 1000/-	Trigger Type Cut Of Device (<u>As per BIS standard</u>) <u>Specification :-</u> 1) This test shall be conducted with water . the cut off device shall be rigidly mounted on the test rig. 2) Make compressor and STP pump connection on test rig . set the required pressure i.e. 3 kg / cm2 3)the cu off device is conformed if it does not leak 4) it is mounted on MS fabricated stand dually powder coated 5)stand size- 1000mm x 750mm x 500mm 6)panel size- 1000mm x650mm 7)7kg pressure gauge 8) HTP pump (Taiwan make) 9)1 HP three phase motor (laxmi make) 10)single stage air compressor (coemathur make) 11)filter regulator 12)solenoid valve (5/3 way valve) 13)timer and count meter 14)1/4 flier valve for pressure reducing

		<p>15) double acting cylinder (40mm x 150mm)</p> <p>16) sump tank Size 400mm x 350mm x 400mm</p> <p>17) 8mm PU tubing for double acting cylinder</p> <p><i>Warranty : 3 years hardware and service warranty at JNKVV, Jabalpur</i></p>
13.	<p>Endurance Test Rig For Fatigue On Compression Sprayer EMD- 1000/-</p>	<p><i>Endurance Test rig for FATIGUE ON COMPRESSION SPRAYER (As per BIS standard)</i></p> <p><u>Specification :-</u></p> <ol style="list-style-type: none"> 1) this test conduct for compression knapsack sprayer 2) manifold is also filled with clean water through the filled hole 3) air pressure with the help of compressor shall be developed equal to the normal working pressure of the sprayer 4) the sprayer or pump shall be deemed to have passed this test if no leaked or breakdown 5) It is mounted on MS structure duly powder coated. 6) size of stand 1000mm x 600mm x 750mm 7) single stage air compressor (koemathur make) 8) filter regulator 9) timer and count meter 10) solenoid valve (3/2 way valve) 11) 1/4" floor valve for pressure reducing 12) 1/2" hand valve for water reducing on compression <p><i>Warranty : 3 years hardware and service warranty at JNKVV, Jabalpur</i></p>
14.	<p>Strap drop test rig EMD- 1000/-</p>	<p>Strap drop test rig (As per BIS standard)</p> <p><u>Specification :-</u></p> <ol style="list-style-type: none"> 1) the spray shall be hung to a support provide on the instrument by strap 2) release the pneumatic valve so that the sprayer will hung on solid support with the help of strap 3) repeat this operation for 24 times this test shall be conducted for any possible break straps brackets as per IS 10134 4) it is mounted on MS fabricated stand dually powder coated Size -1000mm x 800mm x 750mm 5) single stage air compressor 6) pneumatic hand operated valve (5/3 way valve) 7) double acting cylinder – 2 nos Size-70mm x 400mm 8) knapsack pump (paras make) 9) 1/4 x 8mm PU tubing 10) hanging frame 300mm x 450mm x 450mm <p><i>Warranty : 3 years hardware and service warranty at JNKVV, Jabalpur</i></p>
15.	<p>Multimedia I-station RS 2000/-</p>	<p>Wireless microphone :</p> <p>Frequency range : 740MHz ~752 MHz , RF Output: 10 mW</p> <p>Speaker : 2x 60 W speaker with woofers and tweeters, , Frequency range: 40 Hz ~20 KHz, output 60 W RPM/ 160 W peak, weight 3.5 Kg.</p>

		Gooseneck microphone: Frequency response : 150 Hz ~17 KHz, Software: Description: Electric lecturer stand/ electric board KPS S/W using for class and presentation, Operation system: Microsoft windows 2000, windows XP, Windows XP, Windows Vista, Windows 7/8; Hard disk: Over 160 GB. <i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i>	
16.	Portable Vibration Meter EMD-1000/	Vibration Pickup	Accelerometer
		Acceleration	0.1 - 205.6m/s ² , 0.01 - 22.00g (Peak)
		Velocity	0.1 - 400.0mm/s, 0.01 - 15.75in/s (RMS)
		Displacement	0.001 - 9.0mm, 0.1 - 356.3mil (Pk - Pk)
		Frequency Range	Acc.: 10Hz - 200Hz, 10Hz - 500Hz, 10Hz-1KHz, 10Hz-10KHz Vel.: 10Hz - 1KHz, Dis.: 10Hz - 500Hz
		Frequency Resolution	0.25Hz
		Data Memory	100 × 80 pieces of data and 100 spectrums
		Operation Condition	Temperature 0°C to 40°C
		Tolerance	± 5%
		Speed Measuring Range	30 - 300000RPM
		Measuring Distance	0.15 - 1m
		Display	TFT 320×200 pixels with RGB
		Data Interface	USB
		Printer	Integrated thermal
		Power	Rechargeable Li battery, 1500mAh with 50h continuous working
		Size	Appr. 212 × 80 × 35mm
		Weight	Appr. 320g
		Accessories	Power adaptor, Piezoelectric sensor, Magnetic seat, Operation manual, Confirmatory certificate, Communication cable, Carry case
		Optional Accessories	Speed transducer, PC software, Probe
		<i>Warranty :3 years hardware and service warranty at JNKVV, Jabalpur</i>	