

NATIONAL INSTITUTE OF TECHNOLOGY

TIRUCHIRAPPALLI – 620015

DEPARTMENT OF MECHANICAL ENGINEERING

Web: www.nitt.edu

Phone: 0431 - 2503418, 2503442



TENDER DOCUMENT

Tender Notification No.: NITT/Mech/Materials Characterization Lab/TIG Welding/2012

Dated: **30.03.2012**

Name of the Item	Automated TIG Welding Equipment
Quantity Required	01
Delivery	Within four weeks from the date of purchase order delivery
Last Date of submission of quotation	25.04.2012 up to 3.00 p.m.
Date of opening of quotation	25.04.2012 up to 3.30 p.m.



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NOTICE INVITING QUOTATION

The National Institute of Technology, Tiruchirappalli (NITT) is an autonomous body under MHRD, Government of India, University, imparting Technical Education and engaged in Research Activities. It is proposed to procure the following equipment for the departmental academic/research activities.

Sealed quotations are invited for the following equipment subject to the following terms and conditions, from the reputed manufacturers or their authorized dealers so as to reach this office on or before scheduled date and time. The Quotations will be opened on the same day in the presence of the Registrar.

Requirement

Name of the Equipment: **Automated TIG Welding Equipment**

Specifications:

Parameters & Functions	Description
Type	Power source Should be Inverter Controlled with MOSFET and capable of delivering a smooth Constant Direct Current \pm (suitable for DCEP and DCEN modes of welding operations)
Process	The power source should be capable of doing the following process TIG AC, TIG DC-, MMAW AC, MMAW DC+, MMAW DC-
Primary continuous power (100% duty cycle)	The power source should be capable of drawing not greater than 15.5kVA
Open Circuit Voltage	86V
Operating Range for Welding Current	TIG 3-400A MMA 10-400A
Mains voltage	3*400V
Mains voltage tolerance	(15% both on the + and the - side)

Power Factor	0.99
Duty cycle	310A @100 D.C for a 10 min cycle for 40 C
Insulation	F class insulation
Machine Protection	IP23
Machine Cooling	The Power source should have feature forced air cooling system that ensures adequate cooling of the components while preventing dust and metal particles from being drawn in.
Welding Cable Length and earth cable	The welding cable length should be of 4 meters
Materials to be welded	The power source should be capable of welding ferritic /austenitic CrNi steels, materials, Nickel based materials, Magnesium materials copper materials, special materials, aluminium
Welding torch	Torch should be 400A @60%d.c with a facility to change the current in the torch end itself.
TAC Function	The power source should be with a special TAC function which helps in the tacking of the materials with a turbulence effect
Job Mode	The power source should be able to store 100 programs
FOD	The power source should be of Fan on demand concept with thermostat controlled fan
Active Wave Technology	The power source should be having this technology which reduces the noise levels below 80dba even when operated at 300 amps.
Over temperature protection	The power source should be with a special protection when the power source is operated above the duty cycle.
AC frequency	The power source should be capable of changing the A.C frequency
Automatic cooling unit cut off	The power source should be capable of turning on and off the cooling unit when required
RPI	The power source should be capable of producing Reverse polarity ignition
Tungsten electrode cap shaping	The power source should be capable of forming cap shape in tungsten electrode
Ignition time out	The power source should be capable of Ignition time out function
TIG pulsing	The power source should be capable of producing pulsing frequency in the range of 0.2Hz-2kHz
Ac balancing	The power source should be capable of setting the fusing power /cleaning action for TIG ac welding.
TIG CYCLE	The power source should be capable of providing TIG cycle with specified time for gas preflow, post flow and main current, upslope, downslope.

Arc break watchdog	The power source should be capable of arc break watchdog function which helps to cut off automatically when there is no current after a specified duration of time.
Spot welding	The power source should be capable of producing spot welding for the min and max time range
Special 4 Step for aluminium welding	The power source should have a special 4 step function for aluminium welding.
Touchdown ignition & HF ignition	The power source should be capable of producing both by touching the materials by utilization high frequency
Waveform changing options	The power source should be capable of changing waveforms (triangular, sinusoidal and rectangular) both in positive and negative cycles during AC welding
Robot interface	The power source should be compatible for interfacing with robot at a later stage.
Marks of conformity	The power source should conform to S,CE .
Cold wire feeder compatible	The cold wire feeder should be compatible with power source at a later stage. Start delay, End delay, Feeder inching speed, wire withdrawl, push pull torch compatible
PLASPEED (AUTOMATED WITH POWER SOURCE)	(High speed welding and cutting trolley)
Cutting speed	50-4500mm/min
Standard length of track	1800mm
supply voltage	230V/50HZ

Terms & Conditions

1. The item to be used is strictly according to the specification and subject to test by the Institute/concerned authorities. It must be delivered and installed in good working condition.
2. The bidder should give details of their *technical soundness and provide list of customers of previous supply of similar items to Universities, Institutes or Government Departments / Undertakings / public sectors with contact details*. The details of the agency/profile should be furnished along with the copy of all related documents.
3. **Payment: No advance payment will be made.** Payment will be made only after the supply of the item in good and satisfactory condition and receipt of performance security by supplier. In case of imports, the payment will be made through LC after installation and performance security need to be submitted at the time of LC commitment.

4. Rate shall be inclusive of all taxes. The Institute is eligible for customs duty and excise duty exemption.
5. The sealed cover should be addressed to

**The Director,
National Institute of Technology,
Tiruchirappalli – 620 015**

The cover should be subscribed with the following details

1. **Kind Attention to Dr. T. Ramesh, and Prof. N. Sivashanmugam, Assistant Professors / Mechanical Engineering.**

2. **Quotation Notification No.**

3. **Date of Opening**

6. The clear specification, make, model range etc., of product shall be mentioned in the quotation.

7. Guarantee and Warrantee period should be specified.

8. Period required for the supply and installation of item should be specified.

9. The Director reserves the right to reject any or all the offers without assigning any reasons thereto.

10. Time for completion of supply after placing purchase order: Within Four Weeks

11. Last Date of submission of quotation: 25.04.2012

12. Place, Date and time of opening of Quotations

**Date : 25.04.2012
Time : 3:30 PM
Venue : Director Office**

13. Note: The Institute shall not be responsible for any postal delay about non-receipt / non delivery of the bids or due to wrong addressee.