

**ARTIFICIAL LIMBS MANUFACTURING CORPORATION OF INDIA**  
(A GOVERNMENT OF INDIA UNDERTAKING, MINIRATNA COMPANY)  
UNDER MINISTRY OF SOCIAL JUSTICE & EMPOWERMENT

AN ISO 9001:2015 COMPANY,  
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**NOTICE**

Please refer the uploaded technical specification for supply installation and commissioning of ZNC Spark Erosion Machine and CNC EDM Wire Cutting Machine (on Trunkey basis). **Kindly ignore previous documents uploaded on 04.06.2021 on same subject.**

Suggestions/ Comments/ observations on the technical specification for supply installation and commissioning of ZNC Spark Erosion Machine and CNC EDM Wire Cutting Machine (on Trunkey basis). The Suggestions/ Comments/ observations, if any may be sent to email: dgm\_spc@alimco.in / sm\_pt@alimco.in / only latest by 10/06/2021 17:30 hrs.

Dy. General Manager (SP&C)  
ALIMCO, KANPUR

**ANNEXURE –A****“ZNC Spark Erosion Machine”****SPECIFICATIONS:****Qty. – 01Set.****CodeNo.**\_\_\_\_\_**Scope:** Supply, installation & Commissioning of ZNC Spark Erosion Machine.**Purpose:**

<b>Sr.No.</b>	<b>Description</b>	<b>Remarks</b>
<b>1.0</b>	This is a fixed column moving table machine. Alternately, bidders can quote for moving column fixed table machine. The calibrated machine shall have precision Co-ordinate table on flat & V type turcide coated guide ways or LM Guide ways. The machine shall have LM guide ways and precision ground ball screws for better stability.	Confirm
<b>2.0</b>	The quill of the work head shall move on LM guideways <b>with</b> Lead Screw/ Ball Screw/ Preloaded Cross Roller Bearing. Driven by AC Servo motor.	Confirm
<b>3.0</b>	Z axis to be NC Controlled. X, Y axis manually controlled.	Confirm
<b>4.0</b>	Single/Double door large work tank for ease of loading/unloading of work piece. Dielectric Oil level alarm to be provided. Oil filtration with 10-micron (or better) Cartridge type paper filter.	Confirm
<b>5.0</b>	Manual Lubrication unit	Confirm
<b>6.0</b>	Hand held full function remote control.	Confirm
<b>7.0</b>	Z axis lock function.	Confirm
<b>8.0</b>	Self-diagnostic trouble shooting with alarm shall be available.	
<b>9.0</b>	Micro-Controller or Z based anti-arc control	Confirm
<b>10.0</b>	<b>Machine Parameters</b>	
<b>10.1</b>	Work table– 600x400 mm	Confirm
<b>10.2</b>	Longitudinal movement (X) – 350 mm	Confirm
<b>10.3</b>	Cross movement (Y) – 250 mm	Confirm
<b>10.4</b>	Work tank dimensions (inside) – 1000x600x400mm	Confirm
<b>10.5</b>	Max. work piece weight – 500 kg	Confirm
<b>10.6</b>	Max. work piece height – 250 mm	Confirm
<b>10.7</b>	Quill travel (Z) – 200 mm minimum	Confirm
<b>10.8</b>	Electrode weight carrying capacity – 80 kg	Confirm
<b>10.9</b>	Minimum daylight (distance between table & quill) –600 mm	Confirm
<b>10.10</b>	Dielectric fluid capacity – 400 litre	Confirm
<b>10.11</b>	Paper Filtration system– 10 micron or better(20 Nos)	Confirm
<b>10.12</b>	Max. working current of Pulse Generator – (30A Minimum)	To be specified by bidder
<b>10.13</b>	Back slide Travel (minimum)– 200 mm	Confirm
<b>10.14</b>	Surface Finish – 0.8 Ra	Confirm
<b>10.15</b>	Metal Removal Rate (Max.) (Copper to steel) – 220 mm <sup>3</sup> /min	Confirm
<b>10.16</b>	Minimum Electrode Wear ≤0.2 %	Confirm
<b>10.17</b>	Controller system OEM make	Confirm
<b>10.18</b>	LCD/ LED colour monitor size 19"(min)	Confirm
<b>10.19</b>	Software perpetual license having facility to prepare drawing	Confirm

<b>11</b>	<b>Standard Accessories :-</b>	
<b>11.1</b>	Axis Corrector with fine adjustment	Confirm
<b>11.2</b>	<b>Flat Electrode Holder</b> or Universal Electrode Holder	Confirm
<b>11.3</b>	Round electrode Holding Chuck or Universal Electrode Holder	Confirm
<b>11.4</b>	Tool Kit	Confirm
<b>11.5</b>	Levelling Pad	Confirm
<b>11.6</b>	<b>Orbital Attachment (if applicable).</b>	Confirm
<b>11.8</b>	Any other accessory for successful operation of the machine.	Confirm
<b>11.9</b>	Spares for 2 years maintenance.	Confirm

**DELIVERY PERIOD INCLUDING INSTALLATION & COMMISSIONING:**

The delivery period including installation & commissioning of ZNC Spark Erosion Machine at the destination mentioned in Para 1 on page no. 02 of the tender documents will be 04 months from the date of placement of Purchase Order/work contract.

**WARRANTY:**

The entire machine inclusive of all system/accessories should be covered under warranty for a period of 24 months (min.) from the date of successful commissioning

**NOTE-**

1. Bidder shall be responsible for installation and commissioning of the machine.
2. Servo Stabilizer
3. Consumables for one year running.
4. Earthing for the machine to be arrange by vendor near machine (dedicated earthing)
5. Dielectric Oil – 420 litres
6. The machine shall be proved out at site by demonstrating the parameters at Sl. No.10.2, 10.3, 10.7, 10.14 and 10.15.

"CNC EDM Wire Cutting Machine"

SPECIFICATIONS:

**Qty. – 01Set.**

**Code No.** \_\_\_\_\_

**Scope:** Supply, installation & Commissioning of CNC EDM Wire Cutting Machine.

**Purpose:**

<b>Sr.No.</b>	<b>Description</b>	<b>Remarks</b>
<b>1.0</b>	The CNC machine shall be C structure with T shaped bed. The X, Y, U and V axes movement shall be CNC controlled. The X, Y, Z, U & V axis movement shall be through LM Guides Ball Screws shall be used for U, V X and Y axis movement. Make of Linear Guides, Ball Screw to be specified. The Z axis movement shall be motorized, AC servo motor with closed loop feedback using linear Scale. The machine shall be fully calibrated. Part programming application software shall be specified.	Confirm/Specify
<b>2.0</b>	Die electric tank (DM water) with paper filter. Alternately, Mineral bed filtration System.	Confirm
<b>3.0</b>	<b>The machine shall have the following features:</b>	
<b>3.1</b>	Automatic wire tensioning system.	Confirm
<b>3.2</b>	Pre-Spark and Pre-Jog facility.	Confirm
<b>3.3</b>	Resumption of cutting from power fail position.	Confirm
<b>3.4</b>	Multi cut, Multi cavity feature.	Confirm
<b>3.5</b>	Centralised Lubrication System.	Confirm
<b>3.6</b>	Controller system OEM make based on <b>Windows 10</b>	Confirm
<b>3.7</b>	Job Align Feature.	Confirm
<b>3.8</b>	Flushing system shall be programmable.	Confirm
<b>3.9</b>	Inbuilt corner control strategy.	Confirm
<b>3.10</b>	Adjustable Wire Guide Frame.	Confirm
<b>3.11</b>	The machine shall be capable to read AUTOCAD/ Dxf/	Confirm
<b>3.12</b>	LCD/ LED color monitor size 19"(min)	Confirm
<b>3.13</b>	Cooling System - Chiller (gas based)	Confirm
<b>3.14</b>	Software perpetual license having facility to prepare drawing	Confirm
<b>4.0</b>	Industrial computer with LCD color display. Program input from USB, LAN online. <b>The program shall have following features:</b>	
<b>a)</b>	Incremental, Absolute command feature.	Confirm
<b>b)</b>	Linear & Circular Interpolation feature.	Confirm
<b>c)</b>	Steps error, backlash error compensation.	Confirm
<b>d)</b>	Display of Machining and Cutting Rate.	Confirm
<b>e)</b>	Automatic Centre find, Edge find.	Confirm
<b>f)</b>	2D / 3D graphic simulation of wire path.	Confirm
<b>g)</b>	Display of Operator Help &Error message.	Confirm
<b>h)</b>	Single block execution.	Confirm
<b>i)</b>	Rotation / mirror of program.	Confirm
<b>j)</b>	Auto gap short recovery.	Confirm
<b>k)</b>	Wire brake protection mode.	Confirm
<b>5.0</b>	<b>Machine Parameters:</b>	
<b>5.1</b>	Work Table Size – 600 x 400 mm	Confirm
<b>5.2</b>	XY table traverse– 400x 300 mm	Confirm

5.3	Z height – (225mm) minimum	Confirm
5.4	Work piece weight – 250 Kg minimum	Confirm
5.5	Max taper cutting angle - $\pm 30$ degrees over 50 mm thickness	Confirm
5.6	Minimum cutting speed – 140 Square mm/min	Confirm
5.7	Wire diameter (mm) –0.25 (Standard Brass)	Confirm
5.8	Working current (minimum) – 6 Amp.	Confirm
5.9	Positional Accuracy – 0.005 mm	Confirm
5.10	Optimum Roughness – 2.0 $\mu$ Ra Single cut – 0.80 $\mu$ Ra Multiple cut	Confirm
5.11	Rated Power (minimum) – 7 KVA	Confirm
6.0	PC / Laptop for part programming, of reputed make like DELL / HP / Sony / ACER shall be supplied with part programming system software. The system shall be IBM compatible with 2 USB port, Anti-virus software, 4 GB RAM, 500 GB hard disk with window 10.	Confirm
7.0	<b>Accessories:-</b>	
7.1	Tool Kit consisting of Spanner sets, Allen key, Controller key, Job clamp, Umbrella comp, Dial Stand, Verticality box etc. – 1 set	Confirm
7.2	Upper flushing nozzle & Lower flushing nozzle – 2 each.	Confirm
7.3	EDM Brass wire Dia 0.25 mm – 1 spool of 3kg.	Confirm
7.4	Adjustable Bridge (Job Mounting Rail) – 1 Nos	Confirm
7.5	<b>Filtration system</b> - Mineral bed filtration System/ Paper Filter system. (20 Nos Paper filter if applicable)	Confirm/Specify
7.6	Dielectric fluid (DM water) – 300 liters.	Confirm
7.7	Servo Stabilizer & Isolation transformer	Confirm
7.8	Power Feed Contact – 2 no.	Confirm
7.9	Wire Guide – 1 Set	Confirm
7.10	Any other accessory required for operation of the machine	Confirm
8.0	List of other consumables for 2 years to be quoted.	Confirm
9.0	List of standard spares for two years maintenance.	Confirm
10.0	Instruction Manual, Operating Manual & other Technology Manuals shall be provided.	Confirm
11.0	Training on this machine during commissioning at site for a period of 1 week.	Confirm

#### **DELIVERY PERIOD INCLUDING INSTALLATION & COMMISSIONING:**

The delivery period including installation & commissioning of CNC EDM Wire Cutting Machine at the destination mentioned in Para 1 on page no. 02 of the tender documents will be 04 months from the date of placement of Purchase Order/work contract.

#### **WARRANTY:**

The entire machine inclusive of all system/accessories should be covered under warranty for a period of 24 months (min.) from the date of successful commissioning.

#### **Note:**

- 1) Earthing for the machine to be arrange by vendor near machine (dedicated earthing)
- 2) Installation & Commissioning of the machine is in the scope of bidder.
- 3) The machine shall be proved out at site by demonstrating, the parameters at Sl. No. 5.2, 5.5, 5.6, & 5.10, Work piece, wires and other material for prove out shall be arranged by bidder.