***ATTACHMENT I***

***User Requirements Specification (URS)***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **The bidder fills in only the column: "CHARACTERISTICS OFFERED: "**  **The column "MEETS YES / NO:" is filled in by the Contracting Authority.** | | | | |
|  | **REQUIRED SPECIFICATION** | **TYPE:[[1]](#footnote-1)** | **CHARACTERISTICS OFFERED[[2]](#footnote-2)** | **MEETS**  **YES / NO**  **(filled in by the Contracting Authority)** |
| **Purpose of equipment: CNC plasma and gas cutting of steel plates** | | | | |
| **Required equipment: CNC cutting machine with plasma and gas torch and all related equipment** | | | | |
| **1** | **General requirements** | | | |
|  | Brand new CNC plasma and oxy fuel cutting machine manufactured in 2021. Or later | 1 |  |  |
|  | CNC plasma and oxy fuel cutting machine is a plate cutting automatic system, gantry type with a cutting source of plasma and oxy-fuel. The equipment consist of the following main components:  - CNC cutting machine.  - Fume extraction table. Includes cutting table and duct.  - Plasma source with all associated equipment and cutting torch  - Oxy-fuel cutting system with all associated equipment and cutting torch  - Sets of consumable parts for plasma and oxy fuel cutting torch  - Dust collectors system (provided by Trea Trade) | 1 |  |  |
|  | Equipment shall come with the equipment/tools for installing,removing,maintenance and fixing its parts/components according to manufacturer’s standard. | 1 |  |  |
|  | Equipment must be able to work in the tropical weather conditions with high humidity (95% relative humidity) and salty (near-shore) as well as the average temperature from 10°C to 45°C, lots of smoke and dust. | 1 |  |  |
| **2** | **Other** **requirements:** | | | |
| **A** | **Specifications of CNC Cutting Machine** | | | |
|  | Power input: 400V, 50Hz, 3 faze | 1 |  |  |
|  | Equipment is 4 axis type ( X, Y1, Y2, Z). | 1 |  |  |
|  | Cutting method: Plasma and Oxy fuel | 1 |  |  |
|  | Plasma cutting ability for carbon steel:  Piercing from the middle of the plate thickness 35mm  Cutting from the edge of plate thickness 60 mm | 1 |  |  |
|  | Oxy fuel cutting ability for Carbon steel:  Up to 300 mm of thickness | 1 |  |  |
|  | Effective cutting length: 3.000 mm | 1 |  |  |
|  | Effective cutting width with fume collecting duct: 2.100 mm; without fume collecting duct 2.600 mm | 1 |  |  |
|  | Max. cutting speed: ≥ 16m/min. | 1 |  |  |
|  | Traveling speed: ≥ 24m / min. | 1 |  |  |
|  | Machine accuracy: ± 0,1 mm | 1 |  |  |
|  | Plasma torch: 1 torch | 1 |  |  |
|  | Oxy fuel torch: 1 torch on separate carriage | 1 |  |  |
|  | Y-axis dual synchronized Helical Rack & Pinion Drives | 1 |  |  |
|  | X-axis helical rack & pinion drive | 1 |  |  |
|  | Operator chair integrated into the CNC cutting machine | 1 |  |  |
|  | Track/rail self-lubrication device | 1 |  |  |
|  | Machine has heat shield plate between Gantry and table | 1 |  |  |
|  | Double row roller wheel for heavy duty loading and provides best motion | 1 |  |  |
|  | Torch spatter cover for reducing the spatter and eye protection. | 1 |  |  |
|  | Keyless pinion design to ensure min. backlash | 1 |  |  |
|  | Sealed cable chain for X & Y axis |  |  |  |
|  | The portal structure is heat treated after welding the machine structure. If the supplier meets this condition, he shall submit with the offer a document on heat treatment when the machine is ready to be sent. | 2 |  |  |
|  | The actuators for X, Y, and Z axis are used by servo motors. | 1 |  |  |
|  | Plasma source: 150-170A; working with a mixture of gases, A gas mixer using Air and / or Nitrogen and / or Oxygen. | 2 |  |  |
|  | When cutting on 130 amps or more on thicker materials, defined as 12 mm thicker to the thickest possible for the plasma offered, plasma has the ability to provide Class 3 quality cuts according to ISO 9001 or equivalent standard for most of the life of consumables. When cutting thinner materials, defined as slightly less than 10 mm, with low current processes (30 A or 80 A), the cutting quality must meet and prove class 2 according to ISO 9001 or an equivalent standard. | 1 |  |  |
|  | Equipment is equipped with automatic height control device for cutting torch. The height control lifter should be controlled by CNC, not an independent control box. It must have an IHS system. | 1 |  |  |
| **B** | **CNC specification** | | | |
|  | The latest version of the machine | 1 |  |  |
|  | Built-in CNC: 18.5 inches, touch screen, English language with the possibility of translation into Croatian at the customer's request | 1 |  |  |
|  | Associated operating system | 1 |  |  |
|  | Associated Processor, minimum 4-core | 1 |  |  |
|  | Ram: 4 GB, Hard drive:120 GB SSD. | 1 |  |  |
|  | Connectivity : USB (2 Ports), Wireless, LAN, Bluetooth | 1 |  |  |
| **C** | **Specifications of CNC Control Software System** | | | |
|  | Ingress protection: IP23 (Protect the equipment from exposure to excessive moisture). | 1 |  |  |
|  | Existence of shortcut keys to select the cutting process: plasma, Oxy fuel, demo mode, marking. | 1 |  |  |
|  | Existence of a function when cutting back and forth from the current cutting point, the possibility of cutting from any position on the cutting line. | 1 |  |  |
|  | Memory of the position of the last cut even after switching off and on the machine again | 1 |  |  |
|  | Possibility of rotation, movement, duplication and other changes according to the given cutting drawings on the machine | 1 |  |  |
|  | Automatic rotation of the cutting design depending on the angle of the placed sheet on the table | 1 |  |  |
|  | Built-in pre-defined cutting shapes within the machine itself | 1 |  |  |
|  | Laser lights facility to detect the cutting position, simulating the cutting journey, compensating for gaps after detection. | 1 |  |  |
|  | Cutting return function: When need to replace or clean the consumables, move the cutting torch to a convenient position, then the machine will automatically return/ back to previous/ latest position to continue cutting. |  |  |  |
|  | With software for automatic nesting and CNC cutting file creation and drawing | 1 |  |  |
| **D** | **Torch Height control** | | | |
|  | Constant measurement of sheet metal height and distance to shield tip and height change depending on measured distance and set input parameters | 1 |  |  |
|  | Lifter stroke > = 210mm | 1 |  |  |
|  | Positioning accuracy +/- 0,02 mm | 1 |  |  |
|  | Positioning speed 7500mm / min | 1 |  |  |
|  | The THC should include the anti-collection device | 1 |  |  |
|  | The Anti-collection device should have 2 sensors and automatic return to centering holder. | 1 |  |  |
|  | The torch holder is allowed to be rotated for straight bevel cutting. | 1 |  |  |
| **E** | **Specifications for Fume Extraction Table** | | | |
| 2.46 | Sectional exhaust by mechanical exhaust, there is no any electrical and pneumatic components on it. Exhaust is only activated as long as the cutter is located above the section. | **1** |  |  |
| 2.47 | The distance between cutting slat is <= 90mm | **1** |  |  |
| 2.48 | Modular construction design for easy shipment and quick installation | 1 |  |  |
| 2.49 | Internal cross suction duct design provides optimal fume extraction. | **1** |  |  |
| **F** | **Training and other requirements** | | | |
| 2.50 | Required training of CNC table operator for 4 days | 1 |  |  |
| 2.51 | The bidder will provide Trea Trade experts and staff with training (with appropriate manufacturer's certificates) to perform installation, testing, commissioning and maintenance and troubleshooting of the table. | 1 |  |  |
| 2.52 | Possibility to visit the factory where the CNC table will be produced, Except in case of emergency; Covid-19) - Enter YES / NO (optional) | 2 |  |  |
| 2.53 | Installation included in the price | 1 |  |  |
| 2.54 | The first two services of CNC machine and plasma source included in the price | 1 |  |  |
| 2.55. | Use of original CNC machine parts, plasma sources and torch in case of replacement or failure (OEM) [[3]](#footnote-3) | 2 |  |  |

1. ***Type****: This column indicates the type of the requirement. The possible values are:*

   *1 - Regulatory Requirement (Mandatory)*

   *2 - Desirable (Optional)* [↑](#footnote-ref-1)
2. *Bidder enters “****YES”*** *if offered specification is equal to one required or enter offered specification details* [↑](#footnote-ref-2)
3. ORIGINAL EQUIPMENT MANUFACTURER [↑](#footnote-ref-3)