

CNC Laser Tube Cutting System
(On Turn-key basis)

Code No. _____

Qty. – 01 Set

SCOPE

1. Laser cutting system.
2. CNC System and Software.

PURPOSE

1. Cutting, drilling, Notching, Slotting, end preparation to be done on ALIMCO products through laser.

SPECIFICATIONS:

SL. NO.	DESCRIPTION OF REQUIREMENT	REQUIRED
	Laser System	
1	Cutting tube details	
1.1	Laser cutting of Round tubes	At-least from ϕ 15-35 mm
1.2	Laser cutting of rectangular tubes	At-least up to 65mmx35 mm
1.3	Loadable bar / tube length	At-least up to 6250 mm
1.4	Material: Iron (mild steel), SS, Al, Cu, Brass to be cut by laser	Confirm
1.5	Cutting thickness (MS Tube)	At-least up to 2.5 mm
1.6	Cutting thickness (SS Tube)	At-least up to 2 mm
1.7	Cutting thickness (Aluminum Tube)	At-least up to 2 mm
1.8	Capacity of loading cradle	Min. 3500 Kg
1.9	Laser tube cutting system, consisting of :	
1.9.1	Measurement and automatic bar loading system, tube guiding and supporting device	Confirm
1.9.2	Electrical cabinet	Confirm
1.9.3	Safety devices i.e. guard, Alarm system etc.	Confirm
1.9.4	Guide steady near cutting head with electronically synchronized chuck, CNC motorized axial positioning, including 4 independent adjustment jaws and interchangeable thrust bearing.	Confirm
1.9.5	Integration of automatic loader for tubes (round, square, rectangle and flat oval tubes) including positioning / orientation system.	Confirm
1.9.6	Automatic worked piece discharge-support system for scrap pieces.	01 Set
1.9.7	Parts collecting table with conveyor and horizontal motorised chains covered with rubber.	01 Set
2	Controller:	
2.1	Siemens / Fanuc	Vendor to specify
2.2	TFT color touch monitor	Min 19"
2.3	USB Port for program loading with source key	Confirm
2.4	Ethernet connectivity through network card	Confirm
3	Other Features of machine	
3.1	Fiber laser source with pulse generator, control panel and control	Confirm
3.2	Laser source	Fiber laser
3.3	Fiber laser source nominal power	Min. 2000 W
3.4	Lens holder	01 Set
3.5	Chiller with closed circuit for laser source	01 Set
3.6	Fume extractor with high efficiency cartridges: Hourly air flow rate Min. 1500 m ³ /h.	01 Set
3.7	Optical device for welding seam identification and orientation for all type	01 Set

	of cutting sections (round, square, rectangle and flat oval tubes).	
3.8	The Machine should have capability to automatically release the scrap	Confirm
3.9	Wide door opening required for manual tube loading and unloading whenever required	Confirm
4	Hardware, Software & IT Systems	
4.1	Offline programming system should have a CAD module to design and draw a workable piece	Confirm
4.2	Software should have library of bend cut management	Confirm
4.3	Offline programming system should be able to import IGES/STEP/DXF file for program generation	Confirm
4.4	CAM system for automatically applying the cutting parameters on every part geometry and decide the operating sequence, cutting strategy.	Confirm
4.5	Integrated parametric three-dimension software suited to design and draw tubular frames of any type and section and to automatic generate the single relevant components	Confirm
4.6	Post processor for loading of program to the machine	Confirm
4.7	3D graphical simulator of part program to check the correct location of the work and estimate the hourly productivity of work piece	Confirm
4.8	PC license of the software for operating and checking on PC.	Confirm
4.9	System configuration- As per software requirement; with following minimum requirements i) Compatible O.S. Genuine Windows 10 Professional 64 bit or above ii) Processor: Intel i7 or Xeon E3, 3.2Ghz or faster iii) Min. 1920*1080 resolution, dual monitor iv) Storage: SSD with at least 20GB v) Memory: Min. 32 GB v) NVIDIA Quadro graphic card Min. 4 GB memory	Confirm
5	Machine compliance with CE norms	Confirm
	GENERAL OPERATING CONDITION	
6	Electrical should be designed for	
6.1	3 Phase 415V ($\pm 10\%$)	Confirm
6.2	Frequency 50 Hz ($\pm 3\%$)	Confirm
6.3	Protection level	IP54 or better
7	Complete electrical system with tropicalization for Indian condition +5°C to +50°C temp and RH 100%	Confirm
8	Service: Must have authorized service centre in India. Full address along with contact details to be provided	Confirm
9	Machine to have capability to handle voltage and current fluctuation and power backup for CNC control system required for min 5 mins.	Confirm
10	Spares & Consumables:	
10.1	Spares & Accessories: Limit switches (02 Sets) CNC Panel Keys (02 Sets) Fuses (01 Sets) Lens (10 Nos.) Clamping Jaws (01 Set) Guide roller (01 Set) Basic equipment cutting nozzles (1 Set) Any other spare over and above mandatory items necessary for vendors machine	Confirm
10.2	Separate list of consumable.	Vendor to provide list along with cost
11	Supplier shall provide undertaking for machine spares up to minimum 10 years from date of supply.	Confirm
12	Documentation: Following documents (3 sets of hard copy and 1 set of soft copy) along with delivery will be required	Confirm

12.1	Operating instruction	Confirm
12.2	Quality Test records	Confirm
12.3	Preventive maintenance instructions	Confirm
12.4	Lubrication chart & parameter list	Confirm
12.5	Lifting instruction mentioned in packing list.	Confirm
12.6	Detailed invoice and packing list of all items and all other accessories enclosed in respective boxes	Confirm
13	Training at site	
13.1	Operation and Programming	2 Week
13.2	Preventive maintenance training	1 Week
14	Prove-out:	
14.1	Vendor to perform complete trial run and prove out	Confirm
14.2	Vendor has to prove-out operations of cutting, drilling and notching operations on attached drawings for prove-out at ALIMCO premises after successful installation and commissioning on site. Raw material shall be provided by ALIMCO	Confirm
14.3	Vendor has to give cycle time of each component / drawing in writing	Confirm
15	Delivery	Period: 6 months
16	Vendor to deliver machine at " ALIMCO Kanpur"	FOR Kanpur, India
17	Packaging and Transportation	In the scope of vendor
18	Installation and Commissioning should be done within 21 days on receipt of machine at ALIMCO Kanpur by the vendor site. All necessary calibrations shall be done by vendor at the time of handover the machine.	Confirm

DELIVERY PERIOD INCLUDING INSTALLATION & COMMISSIONING:

The delivery period including installation & commissioning of the machines at the destination mentioned in Para 1 on page no. 02 of the tender documents will be 06 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 from the date of commissioning.

Note:

1. Machine shall be supplied with 3 sets of comprehensive operation and maintenance manual.
2. Breakdown calls to be attended within 72 hrs. Physically or through tele-diagnostic.
3. Civil foundation details and drawings with specifications to be provided by the tenderer.
4. Total power consumption (in kW) to be provided by the tenderer.
5. The Bus-bar trunking (BBT) for electricity has been provided at 8.5 meter height. Sufficient suitable cable, cable tray, Circuit breaker, fittings to connect the machine from power source is in Vendor's scope.
6. Compressed air pipeline is available in the work center (air pressure will be available approx. 4.5 to 5 bar), all necessary fittings, air dryer, air booster as per machine requirements, is in vendor's scope.
7. Vendor to arrange any civil foundation work, if required, for the installation of machine.
8. Vendor to ensure shifting and re-installation of system, once in future, at its specified location in new shop of ALIMCO Kanpur site.