

ANNEXURE – A
CNC Laser Sheet Cutting machine (On Turn Key Basis)

Code No. _____

Qty. – 01Set.

SCOPE

1. Laser Sheet Cutting System.
2. CNC System and Software.

PURPOSE

All types of sheet (material & thickness as mentioned) to be cut for ALIMCO products through this CNC Laser Sheet Cutting Machine.

SPECIFICATIONS

<u>S.No.</u>	<u>Description of Requirement</u>	<u>Required</u>
	<u>CNC laser Sheet Cutting Machine</u>	
1	Sheet cutting	
1.1	X travel	3000 mm minimum
1.2	Y travel	1500 mm minimum
1.3	Z travel	100 mm or better
1.4	Sheet size (to be cut)	(2500 x 1500) mm (minimum)
1.5	Weight carrying capacity	700 Kg (minimum)
1.6	Maximum Speed (simultaneous positioning)	At least 100 m/minute or more
1.7	Maximum Acceleration	Up to 1 g
1.8	Linear Axis Resolution	0.001 mm
1.9	Linear Accuracy	0.1 mm
1.10	Edge Detection Accuracy	0.05 mm
1.11	Repeatability	0.05 mm
1.12	Material: Iron (mild steel), SS & Al to be cut by laser	Confirm
1.12.1	Cutting thickness (MS Sheet)	At-least up to 3.15 mm
1.12.2	Cutting thickness (AL Sheet)	At-least up to 2 mm
1.13	Laser sheet cutting system, consisting of :	
1.13.1	Electrical cabinet	Confirm
1.13.2	Safety devices i.e. guard, Alarm system etc.	Confirm
1.13.3	Automatic Pallet changer with double platform (simultaneous type and suitable as per sheet dimension)	Confirm
2	Controller:	
2.1	Siemens / Fanuc /Beck off/ABB/B R Automation/Mitsubishi	Vendor to specify
2.2	Laser safety window with full safety enclosure Class-1	Confirm
2.3	TFT color touch monitor	Min 19"
2.4	USB Port for program loading with source key	Confirm
2.5	Ethernet connectivity through network card	Confirm
3	Laser Source	
3.1	Fiber laser source with pulse generator, control panel and control	Confirm
3.2	Laser source	Fibre laser
3.3	Fiber laser source nominal power	Minimum 3000 W

3.4	Fibre Laser Make	IPG/SPI/IFA Laser/Super/Coherent
3.5	Lens holder	01 Set
3.6	Chiller with closed circuit for laser source	01 Set
3.7	Fume extractor with high efficiency cartridges: Hourly air flow rate Min. 1500 m ³ /h.	01 Set
3.8	Wide door opening required for manual sheet 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 cut management for optimal utilization of sheet to reduce scrap	Confirm
4.3	CAM system for automatically applying the cutting parameters on every part geometry and decide the operating sequence, cutting strategy (auto nesting).	Confirm
4.5	Integrated parametric three-dimension software suited to design and draw Sheets 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	PC license of the software for operating and checking on PC.	Confirm
4.8	System configuration- As per software requirement; with following minimum requirements i) Compatible O.S. Genuine Windows 10 Professional 64 bit or above ii) Processor: Inteli7 or Xeon E3, 3.2Ghz or faster iii) Min. 1920*1080 resolution, dual monitor size- 21" (min.) iv) Storage: SSD with at least 1 TB v) Memory: Min. 32 GB v) NVIDIA graphic card Min. 4 GB memory	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	Total Electrical Power required (In KW)	Confirm
6.4	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: The authorized Service Partners in India (Name & Address) must be certified by manufacturer and shown in the quotation	Confirm
9	Machine to have capability to handle voltage and current fluctuation and power backup required for min 5 mins. For CNC control system	Confirm
10	Spares & Consumables:	
10.1	Spares & Accessories: Limit switches (02 Sets) CNC Panel Keys (02 Sets) Fuses (01 Sets) Protection Mirror (10 Nos.) Ceramic parts (01 Set) Basic equipment cutting nozzles – 50 numbers. 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

		(Not to be quoted)
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	14 Days
13.2	Preventive maintenance training	07Days
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 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
15	Delivery Period:	5 months
16	Vendor to deliver machine at " ALIMCO Kanpur"	Confirm
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
19	Bidder having experience of 5 years to serve the industry based in India & bidder should also supplied at least 3 similar capacity Laser Sheet cutting machine in Govt. Sector. PO to be enclosed.	Confirm
20	Warranty	2 Years (Min.)

DELIVERY PERIOD INCLUDING INSTALLATION & COMMISSIONING:

The delivery period including installation & commissioning of all of the machines at the destination mentioned in Para 1 on page no. 02 of the tender documents will be 5 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 successful commissioning (Warranty shall specifically cover laser source).

Note:

1. Supply to be done on Turnkey Basis. ALIMCO shall provide electrical supply point near to the place of installation.
2. Machine shall be supplied with 3 sets of comprehensive operation and maintenance manual.
3. Breakdown calls to be attended within 72 hrs. Physically or through tele-diagnostic.
4. Civil foundation details and drawings with specifications to be provided by the tenderer.
5. Total power consumption (in kW) to be provided by the tenderer.

6. 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.
7. 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.
8. Vendor to arrange any civil foundation work, if required, for the installation of machine.
9. Vendor to ensure shifting and re-installation of system, once in future, at its specified location in new shop of ALIMCO Kanpur site.