

RAIL COACH FACTORY, KAPURTHALA

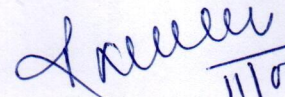
No. Mech/M&P/Umbrella/Project/438/13

Date 11.06.2024

**Sub:- Draft Specification of Portable Laser Welding Set.**

Please find the attached draft speciation of Portable Laser welding set and offer your comments latest by 15.06.2024 so that the specification can be finalized accordingly.

**Treat it most urgent please.**

  
For Dy.CPE-II 11/06/24

AWM/Planning

AWM/MFG

SEE/Plant



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## 2.0 PURPOSE

Portable Laser Welding machine is required which is small in size and suitable for repair welding in Furnishing/Shell shop where it is very intricate to carry the complete welding set along with transformer unit. Handy, Mobile, Lightweight which is easy to bring along and fits in everywhere. It will reduce the logistics and time involved in repairing/rectification work out in Shell Shop/ of Rail Coach Factory, Kapurthala.

(Production and planning department may specify the thickness and type of material for welding operation)

## 3.0 DESCRIPTION AND SCOPE OF SUPPLY

- 3.1 Portable Laser Welding machine covers design, manufacture, supply, installation and commissioning of Portable Laser Welding machine as per below specifications and major parameters given in the Schedule-I.
- 3.2 The supply shall also include all equipments and accessories which the manufacturer considers essential to make the equipment fully functional when installed and put into operation.
- 3.3 Other concomitant accessories/ equipment which the manufacturer considers essential to make the machine fully operational when installed and commissioned with requirement of utilities, etc if any, should be clearly indicated by tenderer in the offer.
- 3.4 The total value of the offer will be calculated on.
  - i. The cost of the basic machine.
  - ii. Cost of the concomitant accessories according to tenderer specification.
  - iii. Cost of any other accessory treated as concomitant accessory.
  - iv. Application duties and taxes, insurance, freight and installation and Commissioning charges.
- 3.5 Technical experts of the manufacturer during commissioning of machine will fully and adequately train the operators/ maintenance staff nominated by the consignee including repairs of electronic gadgets, sub-assemblies and Printed Circuit Boards up to component level.

## 4.0 TECHNICAL FEATURES

One copy of the printed illustrative catalogue showing features of the machine and its elements must be enclosed with each copy of the bid.

- 4.2 The technical literature shall be provided for the complete machine, including imported and indigenously purchased components / sub- assemblies. The successful tenderer will have to furnish 4 (four) copies each of the following manuals directly to the consignee along with the machine. Out of these 04 sets, the bidder shall be required to submit one set of all documents in best available condition one month prior to the training for the machine. One set of technical literature should cover the following details:-
  - i. Operational & Maintenance manual of the machine.
  - ii. Spare part manual including part lists no., hard copies in A-4 size as well as in PDF format.
  - iii. Lay out drawings in A-1 size, which clearly shows the position of all type of electrical components in machine.

**Note: All manual and literature should be in English/Hindi.**



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## 5.0 GENERAL FEATURES

- 5.1.1 The machine shall be small in size and suitable for repair where it is very intricate to carry the complete welding set along with transformer unit.
- 5.1.2 The machine shall be Handy , mobile , and lightweight.
- 5.1.3 It shall be capable of working in normal Indian Railways workshop environment with maximum ambient temperature up to 50°C and maximum relative humidity up to 98%.

## 5.0 SPECIAL FEATURES

Special features incorporated in the equipment, if any, shall be indicated separately by the tenderer, clearly indicating advantages of the features.

## 6.0 MAKE

- 6.1 The supplier shall clearly mention whether the system quoted is Indian make or imported. If Indian make, the tender should be accompanied by duly sanctioned factory license & relevant documents & also produce records of installation & satisfactory after sales service performance of their equipment from at least one govt. Institution of similar or large size for duration at least 3 Years duration.
- 6.2 If imported item, the OEM firm should be registered for operations in India for a minimum period of last 3 years. In case this is not so, the dealer should be authorized regional supplier & service provide for the late 3 years. He should also produce installation & satisfactory after sales service record of duration at least last 3 years from at least one govt. Institution for a system of similar or larger size. Further the tender should be accompanied by authorization certificate from OEM.
- 6.3 The supplier shall furnish the complete details of Model No. Make & Manufacturer's details/ address, Country and authorization details of Dealership.

## 7.0 CONCOMITANT ACCESSORIES

- 7.1 The tenderer shall supply a list of concomitant accessories, which will be supplied along with the machine. The cost of each listed concomitant accessory should be quoted separately. Wherever for any reason the cost of any concomitant accessory is included in the basic price of the machine the same should be specifically mentioned.
- 7.2 Any other accessory, which in the opinion of the tenderer can contribute to higher performance, should be indicated and quoted separately.
- 7.3 A maintenance tool kit containing hand tools is required to cover all the fasteners of all sub-assemblies of the equipment.

## 8.0 SPARES & CONSUMABLES

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- 8.1 The tenderer should furnish details of spares covered under warranty.
- 8.2 List of important spare parts and accessories with their part number and costing.
- 8.3 The tenderer should be furnishing the price list of spare parts required for two years normal maintenance of the equipment. Sources of supply of spares used other than that of manufacturer should be furnished by the tenderer.
- 8.4 List of recommended spares for normal maintenance after expiry of warranty period to till useful life of the equipment and these spares should be readily available in the market with your authorized stockists.
- 8.5 List of recommended consumables for two years shall be quoted separately.
- 8.6 Useful life estimated/expected for each equipment and its sub assembly should be indicated by the tenderers.

#### **9.0 OPTIONAL ACCESSORIES:**

Any other accessory, which is in the opinion of the tenderer can contribute to higher production rates, should be indicated and quoted separately mentioning prices of each accessory.

#### **10.0 INSPECTION OF EQUIPMENT & TESTING AT MANUFACTURERS WORKS.**

- 10.1 Manufacturers must have suitable facilities at their works for carrying out various performance tests on the equipment. The tenderer should clearly confirm that all the facilities exists and shall be made available to the inspecting authority.
- 10.2 A load and functional test must be carried out at the manufacturer's works. Reliability of the equipment shall be demonstrated to the satisfaction of the appointed inspector or inspecting agency.
- 10.3 A Quality assurance plan (QAP) for inspecting the equipment should be supplied along with the bid by the bidder.

#### **11.0 INSTALLATION COMMISSIONING AND PROVING TESTS.**

- 11.1 The contractor or his agent would be required to carry out a joint check at the consignee's end, along with the consignee, before unpacking is done, to avoid subsequent complaints regarding short shipment/transit damages. It is necessary that this joint inspection be done immediately on receipt of the machine by consignee to avoid commissioning delays due to shortages/transit damages.
- 11.2 Installation of the machine would be done under the supervision / direction of firm engineers. The contractor shall arrange commissioning of machine after installation is done. Adequate number of teams of technical experts will be made available so that the commissioning delays are eliminated. Such personnel will be required to be present as soon as the machine has been received.
- 11.3 The contractor or his agent shall commission the machine as per Schedule-I within 15 days from the date of receipt of machine.
- 11.4 The machine performance shall be demonstrated to the full satisfaction of consignee at the consignee's works.



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- 11.5 If an assembly/sub-assembly requires to be taken back to the manufacturer's premises for repairs/replacement either before commissioning or during warranty, the manufacturer or his agent would be required to submit an Bank Guarantee. In case the entire machine has to be taken back, a Bank Guarantee would have to be submitted. The Bank Guarantee should be of adequate value so as to cover the cost of the assembly/sub-assembly/paid up cost of the machine.

## 12.0 DEVIATIONS:

The tenderer should clearly certify that the machine offered fully meets the specification various design features incorporated in the machine to fulfil different technical performance requirements should be fully explained in the offer. However, minor deviations from this specification, which do not affect or in any way interfere with the stipulated performance standards, or would result in improved safety/reliability or would reduce recurring maintenance/operating cost of the machine, can be considered for acceptance.

## 13.0 SERVICING FACILITIES

- 13.1 The tenderer will clearly spell out in the offer the facilities available with him or his agent for providing adequate after-sales service in Punjab/India during warranty period. The complete details such as organization for after sales service, availability of technically competent engineers and warehousing facilities for spares should be clearly indicated. Bidders not offering complete servicing/repair facilities in India to ensure quick response to maintenance/ servicing calls are not likely to be considered.
- 13.2 After the warranty period and AMC period, if any, the manufacturer or his agent shall agree to provide service supports for trouble shooting and obtaining spare parts. The manufacturer shall be obliged to provide spare parts required by the Purchasers for a period of 10 years from the date of delivery of the machine at the ultimate destination to safeguard against obsolescence.
- 13.3 Tenderer who are OEM, shall undertake to supply spare parts for a period of expected life of machine. Other tenderers shall submit undertaking from OEM for supply of spare parts for a period of expected life of the machine.
- 13.4 During warranty period, the supplier or his authorized agent shall attend for break down as soon as possible, but in no case later than 24 hours of receipt of intimation of the breakdown.

## 14.0 BOUGHT OUT ITEMS:

- 14.1 The bidder shall furnish along with the offer a list of all critical items/ subassemblies which are bought out by the bidder and proposed to be used, along with the manufacturer's name, brand model etc. The successful bidder



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may be required to produce invoices to ensure genuineness of such products / verification by the Inspecting agency.

#### 15.0 COLOUR:

The machine and its accessories shall be painted in Apple Green Colour No.281 to IS: 5-1978, (if any specific colour code standardized by BIS is available, the same be given). The machine can also be painted in equivalent RAL/DIN/other International Standards. If there is a standard color scheme of the manufacturer, the same can also be considered and may be specified.

#### 16.0 WARRANTY OBLIGATION:

The following conditions regarding Maintenance and reliability shall also apply:-

- 16.1 The machine shall be designed for a life of 10 years with regular maintenance and all the structural members of the machine shall be guaranteed for 10 years against cracks breakages and etc. during the course of normal operations. Tenderer would submit suitable undertaking.
- 16.2 The warranty period would also cover comprehensive preventive maintenance, which will be inclusive of all spares, material and labour cost. All spares and material except consumables shall form part of the scope of the preventive maintenance during the warranty.
- 16.3 The machine shall at all times give contractual out-put and accuracy. Any efficiency or break down for a total of 01 hr. or more for a day would be treated as failure for the day, for the purpose of extending warranty period.
- 16.4 The tenderer shall ensure that in case a failure is reported by a consignee qualified service engineers shall visit the site within 24 hours from the date of complaint on calendar day's basis. Complaints shall be lodged by consignee by fax phone, e-mail whatsapp, or per bearer at address given by the tenderer.
- 16.5 The details of preventive maintenance to be provided during warranty period shall be indicated by the tenderer giving details of type of preventive schedule, periodicity on items to be checked, items to be replaced and expected plant down time. Preventive maintenance schedules shall be conducted on weekends as far as possible or any other day through mutual agreement with consignees. Total break down hours shall be calculated after discounting grace period and preventive maintenance period.



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## MAJOR PARAMETERS

## SCHEDULE-I

SR NO	Parameter	Specification
1	Laser power	1500 W (IPG/ TRUMPH/ BANTek)
2	Laser source type	CW (Continuous Wave)
3	Laser wavelength	1080 nm
4	Welding head	Wobble (Magnetic levitation)
5	Max. welding head weight	0.850 kg
6	Weld mode system	CW/ PWM
7	Weld speed range	0 – 120 mm/s or wider
8	Weld method	Vertical / splicing/ overlap / angle
9	Weld width	0 – 5 mm
10	Control system	Will be able to control setup frequency, power wobble frequency, wobble diameter, weld modes, and wire feed and back.
11	Cooling system	Built in water chiller
12	Water tank capacity	19 litres or less
13	Water quality	Distilled water or purified water
14	Power supply	230 V $\pm$ 10% 50/60Hz
15	Fiber optical length	10 m
16	Auxiliary gas which may be used	Argon or Nitrogen
17	Allowable air pressure range	0.1 to 0.3 MPa or wider
18	Wire feeder	Optional
19	Support wire	0.8mm, 1.0mm, 1.2mm
20	Wire feeder weight and size (max)	15 kg, 55 cm x 25 cm x 30 cm
21	Lifetime	100000 hours
22	Machine Weight	270 kg or less
23	Machine dimension(max)	140 cm x 65 cm x 110 cm
24	Materials supported	SS, MS, Carbon Steels (up to 3 mm)

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ANNEXURE-A

S.N.	ITEM	PART NO.	SERVICE LIFE	PRICE

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