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RAMA KRISHN
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Annexure-1

Technical specification for inverter based Air Plasma Cutting Machine

Description and scope of supply: Installation and commissioning of IGBT based Portable Air plasma cutting machine with single stage reciprocating type tank mounted compressor as per attached Technical specifications with the tender document.

Type of power supply: Digital microprocessor controlled IGBT Based Heavy Duty Power source

SL.NO.	ITEM DESCRIPTION	DETAILS/SPECIFICATION
Plasma Machine		
1	Input Mains: V/Ph,HZ	400 volts(+/-10%),3phase,50/60Hz
2	Output current range	30-125Amp
3	Continuous current output	Adjustable
4	Duty cycle at 125 Amp	100%
5	Enclosure class	IP23C
6	Weight of machine	50kg (maximum)
7	Maximum cut,mm	55mm (SS or MS)
8	Clean cut,mm	40mm (SS or MS)
9	Pierce cut,mm	25 mm (SS or MS)
10	Type of torch	Hand held
11	Torch length	15 mtrs (minimum)
12	Type of gas supply	Oil free dry compressed air
Air Compressor		
1	Power supply	400 volts(+/-10%),3phase,50/60Hz
2	Type of cooling	Air Cooled
3	Pressure in kg/cm2	9 Kg/Cm2 (minimum)
4	Tank capacity in Liters	150 ltrs (minimum)
5	Motor capacity	3 HP (minimum)
Others		
1	Provision of carry case/trolley for both M/C and compressor for each machine	Yes, must provide

Any other accessory/equipment which in the opinion of the tenderer can contribute to better performance/rescue operation shall be clearly indicated and quoted separately as optional accessory. The advantaged should be clearly explained.

Provision of carry case for machine: Yes.(Compact trolley for M/c and compressor) movement.
ISI mark single stage reciprocating type tank mounted Air compressor with 3HP (minimum) motor with compact trolley for machine and compressor Additional requirement of consumables as per annexure-II).

- A) **Safety:-** standard features should be provided to hand operator from electric shock as per EN50192:
- B) Operation and maintenance manual and spare part catalogue :should be supplied by the firm.
- C) **Warranty:-** Air plasma cutting Machines should have warranty of 30 Months from the date of commissioning, the supplier will rectify all defects free of cost which may developed due to faulty design materials and workmanship and defective parts.
- D) The commissioning of machine, training of staff to be done at the premises of consignee free of cost.
- E) Installation commission and proving test: The supplier or his agent would be required to carry out a joint check at the consignee premises along with the consignee before unpacking is done to avoid subsequent complaint regarding short shipment/transit damage. It is necessary that this joint inspection be done

immediately on receipt of machine to the consignee & firm represent to avoid commissioning delay due to short/transit damages.

F) Following item of work shall be performed by the supplier.

- i) Loading unloading shall be compiled by the firm during supply of the consignment.
- ii) Installation of Air Plasma machine.
- iii) Complete fitting and wiring of all electrical items.
- iv) Commissioning of the equipment.

G) Inspection Authorities:

Inspection stage-(I) As per existing purchase norms.

Inspection stage-(II) Firm will demonstrate successful working of machine at consignee premises for 08 hour daily shift for a week and machine should perform operation as per requirement mentioned technical specification.

H) **PMC(Preventive machine service):** Firm will have to perform preventive maintenance service during warranty period and same will be performed on quarterly basis i.e. 04 visits in a year, penalty condition for PMC will be as per availability of machine for operation as mentioned in Para I.

I) COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMC)(OPTIONAL):

The contractor shall be required to take CAMC of the entire machine supplied under the scope of contract.

1.1. Tenderers are required to quote for a comprehensive Annual Maintenance Contract for the various scope of work supplied post warranty on yearly basis giving the rates for each year costs. The duties and taxes as applicable should be indicated separately. All consumables spares and materials shall form a part of the scope of CAMC excluding Diesel/Fuel, lubricating oils or coolant.

1.2. CAMC shall be operated, managed and paid by the respective consignees. The consignee shall indicate the bill payment authority & custodian of the CAMC BG. No further agreement is required for operating CAMC at consignee end.

1.3. CAMC is not a part of scope of supply.

1.4. CAMC is not part of scope of supply being an optional requirement. Therefore the option to award AMC shall remain with the consignee after completion of warranty period. In case consignee wants to exercise the option of entering into CAMC after warranty, then the bidder will be bound to enter into CAMC.

(I) At the offered rates

Or

(II) At the negotiated rates lower than offered rates

Or

(III) Shall participate with valid offer if the fresh tender for CAMC is floated by the consignee. Failing which PCMM/SCR or consignee shall encash the warranty Bank Guarantee of the bidder.

1.5 The duration of CAMC shall be 5 year from the date of expiry of warranty, Rates for CAMC as quoted by the tenderer on yearly basis, will remain applicable during the duration of CAMC and not subject to any variation except any statutory changes in taxes and duties as compared to quoted rates.

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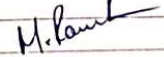
- 1.6 The contractor must provide CAMC services at the consignee location without any precondition. The CAMC should include complete responsibility for the bought out sub-assemblies and components like CNC system, diesel engine, AC unit if any etc.
- 1.7 The details of preventive maintenance services to be provide under CAMC shall be provided by the tenderer the following format.
- 1.8 Preventive maintenance shall preferably be conducted on weekends through mutual agreement with the consignee. Each preventive maintenance schedule normally shall not exceed one day (24 hours). The preventive maintenance regime offered must be aimed at achieving minimum 95% uptime of the plant excluding the plant down time for preventive maintenance schedules.
- 1.9 The tenderer shall ensure that in case a failure is reported by a consignee, qualified service engineer(s) of the contractor shall visit the site within the prescribed response time from the date and time of complaint for the machine. This response time shall be 48 hours for up to only one case per quarter during the period of CAMC & Nil thereafter. 48 hours response time shall be permitted only if 2 successive failures are staggered 3 months apart. Complaints shall be lodged by fax, e-mail, whatsapp or letter at communication given by the tenderer. The responsibility to keep the failure reporting address details current will rest with the tenderer.
- 1.10 In case preventive maintenance is carried out along with breakdown maintenance schedule; preventive maintenance time will be deducted from breakdown time of the plant.
- 1.11 Penalty Clause: Penalty shall be levied on the contractor for maintaining up time below the limit of 95% calculated on working days basis, after discounting for response time and preventive maintenance period. Penalty shall be calculated as % age of quarterly payment and will be deducted from the respective quarterly payments. Penalty calculation will be done over quarterly payment period.

S.No.	Availability Slab	Applicable Penalty
1	95% and above	Nil
2	Below 95%	2.5% forever 1% (or part thereof) reduction in availability of plant below 95%

- 1.12 For CAMC, a Bank Guarantee (BG) equivalent to 5% of the combined quoted cost of equipment including accessories, shall be deposited by the contractor to the consignee, 90 days before the expiry of warranty. BG will have the validity of 5 years and 6 months.

The CAMC BG will be returned on completion of CAMC period. In case, the contractor fails to provide CAMC services successfully, the CAMC BG will be forfeited. This is will be in addition to penalty as per Clause 1.11 above.

- 1.13 UP time of less than 75% for two consecutive quarters will constitute complete failure of contractor to provide the CAMC services successfully and will result in forfeiture of CAMC BG, besides other action like noting adverse performance of the bidder and/or agent for future tenders and their offer in the subsequent tenders will not be considered for placement of any order of next 02 years. This will be in addition to penalty Clause 1.11 above for the period of actual performance.
- 1.14 It is the sole responsibility of contractor to stock all spares and materials as required for smoother executive of CAMC in order to achieve up time in compliance to plant availability as per stipulated requirements.

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- 1.15 In case of damage on account of any external factor, viz., floods, earthquake, fire, arson or sabotage, it shall be the responsibility of the Railways for restoration of the plant to the earlier working order prior to the external factor and the entire cost for repair of the plant shall be borne by the railways.
- 1.16 In case of damage to the plant as mentioned in para 1.15, any spare parts and material necessary to restore the plant to proper working order shall be arranged by the contractor and charged on actual basis duly certified by authorized railway official in the next quarterly bills. The rates charged for such spare parts shall be based upon the spare part rate list provided by tenderer and supported by necessary documents.
- 1.17 In all cases of failure except as mentioned in Clause 1.15 any other spare part or material necessary to restore the plant to proper working order will be arranged by the contractor as a part of CAMC.
- 1.18 Normally quarterly payment (@1/4th of the annual quoted rates) under CAMC will be made to the contractor with in 30 days from the end of that quarter subject to submission of the following documents by the contractor to the paying authority assigned by the consignee.
- 1.18.1 Consignee's certificate for work done with calculation of down time and penalty applicable.
- 1.19 In case of failure of the contractor to provide CAMC services as defined in Clause 1.13, the CAMC BG shall be forfeited with levy of other penalties as applicable under advice to the contractor regarding termination of CAMC.
- 1.20 Firm has to perform CAMC quarterly and total 04 visit in a year. The supplier will rectify all defects free of cost which may develop due to faulty design materials and workmanship and defective parts. Workorder for CAMC will be issued separately by consignee after completion of warranty.
- 1.21 Other general conditions shall be governed by technical specification and IRS conditions

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Extra consumable spares to be supplied along with plants as per annexure-II

Sl No	Description	Qty
1.	Electrodes	100 Nos
2.	Nozzeles-cutting	100 Nos
3.	Swirl	100 Nos
4.	Heat shield cutting	50 Nos
5.	Retaining cap	50 Nos
6.		


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