

<b>RAIL COACH FACTORY, KAPURTHALA</b>		
<b>Specification No.</b>	<b>Description</b>	<b>Covering Page</b>
Mech/M&P/3200/GM/07 Rev.- NIL	Pin Welding Machine	

<b>Designation</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>	<b>Level</b>
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<b>Issue/ Rev</b>	<b>Changes</b>	<b>Date</b>

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## 1.0 IMPORTANT INSTRUCTIONS TO TENDERERS FOR FILLING TECHNICAL BID

- 1.1 Bidders are required to give clause wise comments on the technical specifications, confirming compliance/non-compliance with details of deviations if any along with their effect on the performance. Back references to be avoided, offers are likely to be ignored in case of non-compliance of these instructions for furnishing the information.
- 1.2 Unless otherwise stated, latest alterations/ revisions of specifications/ standards/ drawings shall be applicable. In respect of safety standards and environmental standards relevant to the machine, the machine manufacturers shall ensure compliance with international (CE/ISO/DIN/JIS)/National standards (IS) (wherever applicable).
- 1.3 Tenderers should offer and quote for all the specified concomitant accessories, as these are considered essential for commissioning and utilization of the machine. Even if bidder does not recommend the purchase any of these accessories, the price must be quoted for comparison purposes and their recommendation/suggestion indicated in the offer. Tenderers should also quote for optional accessories, spares and consumable spares as asked in the specifications.
- 1.4 In case, any item is required in sets, please specify nos./pieces per set. This is essential for proper technical evaluation of the offer. Offers received without this may be considered as incomplete and liable to be rejected.
- 1.5 The bidder should quote only for the specified make of sub-assemblies and equipment wherever specified. Makes of sub-systems other than the specified ones will normally not be acceptable. In case, some other make is quoted, specific reasons for the same including its features/advantages over specified makes must be brought out in the offer.
- 1.6 In case there is a contradiction in any information provided (some parametric values given in the specification and those given in the brochure or some other document enclosed by the tenderer), unless specifically mentioned in the deviation cum confirmation statement the values as given in the specification shall be taken as confirmed by the tenderer and offer evaluated accordingly.
- 1.7 The Purchaser may accept internationally accepted alternative specifications which ensure equal or higher quality than the specifications mentioned in the Technical Specification. However, the decision of the Purchaser in this regard shall be final.
- 1.8 Purchaser reserves the right to verify the details submitted by the bidder by actual site visits.
- 1.9 Other terms & condition of the contract will be as per Indian Railway Standard conditions of contract.

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## 2.0 PURPOSE

Pin welding machine should be capable of welding pin/stud of coach roof. These are required for production of LHB Coaches in Shell Assembly Shop.

## 3.0 DESCRIPTION AND SCOPE OF SUPPLY

3.1 The scope of supply covers design, manufacture, supply, installation and commissioning of welding gun and power source with complete cabling and other concomitant accessories / equipment as detailed in the specification. Any other accessory 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.

3.2 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.

## 4.0 GENERAL FEATURES

4.1 Equipments are to be quoted inclusive of with 3 years maintenance from date of commissioning. No extra Charge shall be paid for maintenance apart from consumable accessories & any other part specified & agreed in the tender.

4.2 Environmental Factor.

- a) The unit should be capable of being stored continuously in ambient. Temperature of 0-50 degree Centigrade and relative humidity of 15-90%
- b) The unit should be capable of operating continuously in ambient temperature of 10-40 degree centigrade and relative humidity of 15-90%.

4.3 Documentation- user manual in English or each type.

4.4 Firm should quote all product of one OEM firm. Multi brand products are likely to be rejected. Compliance report to be submitted in a tabulated and point wise manner clearly mentioning the page / Para number of original catalogue / date sheet. Any point, if not substantiated with authenticated catalogue / manual, will not be considered.

4.5 List of Documents to be submitted:

- a) Original Brochure.
- b) Para wise technical compliance statement.
- c) Acceptance of terms & conditions.
- d) Comprehensive warranty statement for service / Spares.
- e) Authorisation letter from the original manufacture / principal supplied & other document of original firm.
- f) Literature of original catalogue of the product to be attached for reference.

## 5.0 ESSENTIAL CHARACTERISTICS AND TECHNICAL PARAMETERS.

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- 5.1** The machine shall have max. loading capacity and output best suited for pin/stud welding by means of peak ignition.
- 5.2** In addition to portable execution, the machine shall be suitable also for stationary stud welding installations with manual, semi-automatic and fully automatic operation/process.
- 5.3** The machine shall have capacitance change over switch so that welding of smaller diameter can be done with the correct adjustment of output.
- 5.4** The pin welding machine should be capable of welding of steel, Cr, Ni resistance steels as well as in special cases and according to individual special requirement of Aluminum, Brass, Nickle and Titanium with the work piece in an either manual, semi-automatic or fully automatic process. Standard stud for peak ignition as well as studs with flange and a simple cone apex of about 7 degree can be welded without requiring any special tools. The application of protective gas or ceramic ferrules may be recommended, if any, for stud with a diameter of over 6 mm to prevent cell formation and optimization of ridging. The application should also be recommended with problematic surface characteristics such as oily, grease, zinc and other galvanic treatments as well as rolling skin, filling material, forging scales, oxide layers etc.

## **6.0 CONCOMITANT ACCESSORIES**

- 6.1** 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.
- 6.2** The machine shall have contact gun which should have squeeze trigger button on gun initiating welding cycle. The ignition tip touches the work-piece the discharge current should start flowing and due to ionization of the fusion zone, the arc is created and heats the surfaces to be joined. The stud is pressed into the molten metal by spring force and thus completes the weld process.
- 6.3** This process should take weld time of about 0.001 to 0.003 second or less.
- 6.4** The pin/stud welded by gun should have adequate tensile & torque strengths and good bend quality.
- 6.5** The welding gun should be provided with the adequate capacity power source, which can be connected to 230 Volt AC, 50 Hz.
- 6.6** Complete technical details e.g. Circuit Diagrams preferably up to component level of the transformer of the power source and gun should be furnished in the offer.
- 6.7** The chucks of M3, M4, M5, M6, M8 should be provided in the offer as well as hex wrench should also be provided. A set of hand tools, if any, may also be mentioned.
- 6.8** The necessary highly flexible copper cables, clamps etc. which are required to make the machine functional should also be given as concomitant accessories.\

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- 6.9 The machine parameters should be as per technical data as specified in Schedule-I of the specification.
- 6.10 Main PCB 01 No. per machine
- 6.11 Welding Gun along with cables 01 Set/ machine
- 6.12 Any other accessory, which in the opinion of the tenderer can contribute to higher production rates, should be indicated and quoted separately.

## **7.0 SPARES AND CONSUMABLES**

- 7.1 The tenderer should furnish details of spares covered under warranty.
- 7.2 List of important spare parts and accessories with their part number and costing.
- 7.3 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.
- 7.4 List of recommended spares for normal maintenance after expiry of warranty period to till useful life of the equipment.
- 7.5 List of recommended consumables for two years shall be quoted separately.
- 7.6 Useful life estimated/expected for each equipment and its sub assembly should be indicated by the tenderers.
- 7.7 The gap gun and positioning gun should also be quoted separately as an optional accessory, which should also be capable of working/compatible with the same power source.

## **8.0 COMMISSIONING AND PROVING OUT :-**

- 8.1 The Successful tenderer shall have to commission the machine within 15 days from the date of receipt of machine at RCF,Kapurthala.
- 8.2 The successful tenderer shall have to prove out the performance of the machine at RCF premises to the entire satisfaction of the consignee.
- 8.3 User shall also be trained in using day to day maintenance of unit.
- 8.4 Any precaution & extra care intended in the use of the equipment should be explicitly informed.

## **9.0 ELIGIBILITY CRITERIA**

- 9.1 The tenderer shall be registered on IREPS website ([www.ireps.gov.in](http://www.ireps.gov.in)) to participate in the tendering process.
- 9.2 The tenderer shall have established quality control system and organization to ensure adequate control at all stages of the manufacturing process.
- 9.3 The tenderer shall provide a performance statement giving a list of major supplies of same/similar equipments effected in last 5 years to the reputed organizations giving details of the order no. and date and the quantity supplied and whether the supply was made within the delivery schedule. Such period shall be reckoned from the date of opening of tender. Tenderer should also provide the prove out test certificate of his supply/supplies.
- 9.4 Tenderer not submitting the requisite information may note that his offer is liable to be ignored.

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## **10.0 TECHNICAL LITERATURE**

- 10.1 One copy of the printed illustrative catalogue showing isometric view/sketch & features of the machine and its elements must be enclosed with each copy of the bid.
- 10.2 The successful tenderer will have to furnish for each machine 02 copies of spare parts catalogue parts catalogue giving the part list number of each component with exploded views and assembly drawings, maintenance manual, trouble shooting guide, operational manual of the machine and all electrical circuit diagrams including PCB circuits to the consignee directly within 3 months of placement of A.T. The bidder should provide a list of literature they will supply along with the machine. The technical literature shall be provided for complete machine including imported and indigenously purchased components/sub-assemblies.
- 10.3 Document in the service / technical manual. Firm shall also provide time within which all service calls shall be attended.

## **11.0 SPECIAL FEATURES**

Special features incorporated into the machine, if any shall be indicated separately by the tenderer, clearly indicating the advantage of these features.

## **12.0 MAKE**

- 12.1 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.
- 12.2 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 authorised 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 authorisation certificate from OEM.
- 12.3 The supplier shall furnish the complete details of Model No. Make & Manufacturer's details/ address, Country and authorization details of Dealership.
- 12.4 The firm shall provide the calibration certificate of National / International Traceability along with validity of at least two years.

## **13.0 SERVICING FACILITIES**

- 13.1 Service facility in Punjab, Address and contract details including phone and fax no. to be provided. The facility should have the necessary equipments recommended by the manufacture to carry out preventive maintenance test as per guideline provided in the service / maintenance manual. Firm should provide

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- list of equipment available for providing calibrations and routine maintenance support as per manufacturer.
- 13.2 Supplier will undertake for service repairs & replacement of any needed part as & when needed.
- 13.3 Maintenance contract to be quoted after the expiry of maintenance period quoted above with details of scheduled visits, part covered under contract & cost of parts not covered as well.
- 13.4 The tenderer shall clearly spell out in the offer about the facility available with him or his agent/dealer for providing adequate after sales service in Punjab during warranty period.
- 13.5 The tenderer shall also indicate the service organization located at various places in India and availability of trained staff, maintenance spares etc.
- 13.6 The contractor shall give a comprehensive spare part list with OEM details and price for all the sub systems.
- 13.7 The tenderer/contractor shall provide list of spares, consumables required for maintenance for 5 years after completion of warranty period
- 13.8 For maintenance during warranty following criteria shall be considered.
- A) Service engineer of the supplier shall be available for attending to the system faults during first 07 days after successful commissioning of equipments during 09.00 - 17.00 hrs on all working days including Saturdays.
  - B) Service engineers shall visit RCF on quarterly basis thereafter till the end of warranty/extended warranty period for Preventive Maintenance at least for one full day at a time.
  - C) In case of any breakdown affecting the performance of the system completely or partly, firm shall depute its service engineer as soon as and when informed by any suitable means like Fax, SMS or email possible after receiving such call.
  - D) Breakdown period shall be calculated from 8 hours after it's reporting to the firm upto the time it is attended. If intimation to the firm is delayed from Railway's side, then the breakdown period calculation will start from the time by which it is reported to the firm.
- 13.9 Total up time of the system should be at least 90%. Up time shall be counted in following manner:-
- A) Total breakdown of less than 8 hours shall be ignored for the purpose of this calculation.
  - B) Penalty may be imposed if the down time is more than 10% without any valid reasons. The levy of token penalty as deemed fit based on the merit of the case may also be consider as per clause 17 (b) of GCC -201.
- 13.10 Warranty period for part or machine shall be extended after completion of warranty period by the duration under which the part or machine remains under breakdown during warranty.
- 13.11 Tenderer shall provide list of spares, consumables required for maintenance for 5 years after completion of warranty period as per annexure-A

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- 13.12 Tenderer shall provide expected life for the components of the system and provide the maintenance schedule required for 10years for as per annexure -A
- 13.13 Tenderer shall provide the service charges /per day/per man for deputing service engineer on the machine on requirement separately for Indian and Foreign engineer.

#### 14.0 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.

#### 15.0 SCHEDULE OF ANNUAL MAINTENANCE CONTRACT (AMC) FOR PERIOD OF 5 YEARS AFTER COMPLETION OF WARRANTY PERIOD

- 15.1 Tenderer shall provide proposal for 5 year Annual Preventive Maintenance schedule to be executed after completion of warranty period in the format as per annexure-B.
- 15.2 The firm shall maintain the machine in good working condition during the contract period and shall correct the fault or failures, repair or replace the worn or defective parts/equipment during the normal working hours of shop where the equipment has been installed. Unserviceable parts/equipment need to be replaced at no extra cost with brand new parts/equivalent or superior specification.
- 15.3 The firm shall respond by deputing service personal to oral / telephonic/ or other modes of intimation for repair and maintenance of the said machines [within 2 hours](#).
- 15.4 The firm shall ensure that the machine is in proper working condition, to the full capacity, after repair and maintenance.
- 15.5 To have a timely supply of spares during AMC, the contractor shall furnish a total list of spares which should contain list of spares that shall be arranged by the firm, both chargeable, duly mentioning the charge against each item, and spares which shall be non-chargeable, and list of spares to be held by RCF.
- 15.6 The contractor shall clearly list-out the list of consumables required for day-to-day operation of the machine. It shall be the scope of RCF to arrange the consumables once the completion certificate is issued for the retrofitted machine.
- 15.7 The tenderer/contractor shall provide suitable standby when repairs exceeds 2 hours. When any equipment is taken for repair to the tenderer/contractor's premises suitable standby equipment should be provided.
- 15.8 Besides attending the breakdown calls, the firm shall attend to the corrective and preventive maintenance of the machines once in a month.



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- 15.9 The AMC is valid for five years from the date of completion of the warranty period . No freight is admissible.
- 15.10 During the AMC period, whatever equipment is defective shall be handed over to RCF. During completion of the AMC period the machines should be handed over in full working condition to its full capacity.
- 15.11 The firm should maintain a register duly indicating the nature of defects and repair attended and got signed by RCF authority. Preventive maintenance schedule should be made. The schedule should be made in such a way that more than one machine should not be attended on the same day. A copy of the schedule should be given to RCF at the beginning of the AMC and the schedule should be strictly followed and on carrying out the preventive maintenance the same should be entered in the register and got signed by RCF authority.
- 15.12 AMC charges shall be paid quarterly as one quarter of the total AMC charges applicable for that year on submission of bills duly certified by the engineers in charge with regard to the satisfactory execution of AMC during the period for which the bill is claimed. Duties & taxes as applicable at the time of payment shall be deducted at source.

ANNEXURE-A

S.N.	ITEM	PART NO.	SERVICE LIFE	PRICE

ANNEXURE -B

S.N.	YEAR	AMC CHARGES
1.	IST YEAR	
2.	IIND YEAR	
3.	IIIRD YEAR	
4.	IVTH YEAR	
5.	VTH YEAR	

## 16.0 WARRANTY

Warranty conditions of contract will be as per IRS conditions or as quoted by the tenderer whichever is later.

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**SCHEDULE-I**

S.No	Description	Value
1.	Working range	Diameter 2 to 8 (10) mm
2.	Materials	St. VA, CuZn 37 (Ms 63), AL,Ti (Refer Para 5.4 also)
3.	Welding sequence	Short time 40-20 pieces/min. Continuous 20-10 pieces/min (Protected against overload & EMI)
4.	Capacitance	98000-108000 Microfarad
5.	Charging voltage	35 to 200 V (Stepless)
6.	Mains supply	220/230 V AC, 50 Hz, 6.3 Amp.
7.	Weight	16-26 Kg
	<b>Standard accessories</b>	
8.	Ground cables and clamps	02 nos
9.	Chucks M3, M4, M5, M6, M8	01 set
10.	Hex-wrench (other hand tools, if any )	01 no. 01 set.
11.	Instruction manual	03 sets
12.	Contact gun	With 6.5 M cable length, suitable for long welding time for St., VA, Ms, rough, oily or galvanized surfaces for steel stud (pin) welding of following size: Length = 70 mm Pin dia = 02 mm Head dia = 04 mm by means of peak ignition

**Note:** Tenderer to furnish following detail of the Pin Welding Machine offered

S.no.	Technical Parameter	Offered by Tenderer

Prepared by  
JE/M&P

Agreed by  
Dy.CPE-I