

**1. Supply and E & C of various Spot Welding Automation Solutions for manufacturing of SS METRO COACH**

➤ The brief details with applications are as following-

S. No.	ITEM Description	Qty.	unit	Brief description of machine
1	Spot welding Machine( C type gun) (Including Jig and over hang arrangement for welding machine)	2	nos	Welding machine rating-250 kVA( Min) Table (Jig) area : L25 m x W3.6 m( min) Torch arm length- 900 mm Application- to spot weld various parts of under frame Material of job- Light alloy HTS and SUS 301 Under frame size-3.1x22 mtr Flexibility- Flexibility to accommodate under frame of various widths from 3.0 to 3.6 mtr to be confirmed.
2	Spot welding Machine( C type gun) (Including Jig and over hang arrangement for welding machine)	1	no	Welding machine rating-250 kVA( Min) Table/Jig Size : 25 m X 3.6 m ( min) Torch arm length- 900 mm Application- to spot weld various parts of roof Material of job - SUS 301 and SUS 304 Roof size- 3.1 meter x 22 meter x 600 mm height Flexibility- Flexibility to accommodate roof of various widths from 3.0 to 3.6 mtr to be confirmed.
3	Indirect Series Spot Welding Machine(Including clamping fixture/Jig and moving gantry arrangement for welding machine)	1	no	Welding machine rating-125 kVA( Min) ( Head mounted) Head- Angular with ±90 deg Table size : 25 m x 4 m( min) Roof size- 3.1 meter x 22 meter x 600 mm height Application- to spot weld roof structure with roof sheet Material of job - SUS 301 and SUS 304 Flexibility- Flexibility to accommodate roof of various widths from 3.0 to 3.6 mtr to be confirmed. Control - CNC
4	Spot welding Machine( C type gun) (Including Jig and over hang arrangement for welding machine)	4	nos	Welding machine rating-150 kVA( Min) Table/Jig Size : 25 m X 5 m X 4 m( Approx) Torch arm length- 1100 mm Application- to spot weld various parts of side panel Material of job - SUS 301 and SUS 304
5	Indirect Spot Welding Machine( Gantry operated)	2	nos	Welding machine rating-125 kVA( Min)( Head mounted) Head- Angular with ±45 deg Application- to spot weld side panel structure with side panel sheets Material of job - SUS 301 and SUS 304 Control - CNC Table/Jig Size - 25 m x 3.5 m(min)
6	Spot welding Machine ( C type-Gun ) along with jigs and fixture	2	nos	Welding machine rating-110 kVA( Min) Application- to spot weld roof panel with end panels Material of job - SUS 301 and SUS 304
7	Car body Assembly Jig	1	no	Job- SS METRO COACH coach Application- to clamp and hold whole body of coach within dimensions and used for spot welding / welding
8	Indirect Spot Welding Machine ( Roof-Side )	1	no	Welding machine rating-100 kVA( Min) x2nos Mounting- To be mounted on a movable column and operation automatic Material of job - SUS 301 and SUS 304 Application- to spot weld roof panel with side panels Control- CNC

9	Indirect Spot Welding Machine ( Side-Floor )	1	no	Welding machine rating-200 kVA( Min) x2nos Mounting- To be mounted moving column and operation automatic Application- to spot weld floor panel with side panels Control- CNC Material of job - SUS 301 and SUS 304
10	Automatic MIG Welding Machine	1	no	RATING- 500 AMP @ 60 % Duty mounted on angular head Clamping area- 3.5x25 mtr ( Min) Application- to weld roof panel
11	Spot welding Machine( C type gun) (Including Jig and over hang arrangement for welding machine	1	no	Welding machine rating-250 kVA( Min)x2 Jig/table Size : 20 m x 5 m Material of job - SUS 301 and SUS 304 Application- to spot weld various parts of end panels

- Note- over all size of car body is L22xW3.2-3.7XH3.0 mtr
- Qualifying Criterion : Supplier must have at least one successful installation of CNC Spot Welding Automation Solutions for similar application of Metro/SS Coach/SS Body Vehicles.
- BHEL may sort vendors based on this EOI.
- Supplier has to give full technical details including spares etc along with budgetary estimate.
- For any queries/clarification the following BHEL official may be contacted.

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The Expression of Interest (EOI) has to be reached to the above addressee or tender box on or before 03.45 pm 18.02.2013. EOI will open at 2.00 PM 19.02.2013