


SECTION- IV

 BHARAT HEAVY ELECTRICAL LIMITED Fabrication Plant Bharat Heavy Electricals Limited Industrial Area jagdishpur, District: Amethi, Uttar Pradesh-227817 (India) Tele-Fax: +91-5361-271382		Enquiry No. : Due Date : Vendor Qtn. No.: Date :
Specification No: BHEL/FP/TS_VSCOS_R0 SPECIFICATION CUM COMPLIANCE CERTIFICATE FOR COMPLETE SYSTEM OF VARIABLE SPEED CARRIAGE WITH OSCILLATOR FOR WELDING AT ALL WELDING POSITIONS .		
NOTE:- 1. Vendor must submit complete information against Qualification Criteria mentioned against clause no. 12.1 of this technical specification. The offer meeting this clause would only be processed. 2. The "Offered" Column and where applicable, the "Deviations" & "Remarks" Column of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance. 3. The offer and all documents enclosed with offer should be in English language only. 4. Before quoting for below, vendor can visit our unit to understand the requirement of the facility and quote accordingly.		
NAME & ADDRESS OF THE VENDOR :		NAME & ADDRESS OF THE INDIAN AGENTS(if any) :
TELEPHONE NOS.:		TELEPHONE NOS.:
FAX NOS.:		FAX NOS.:
E-MAIL ADDRESS :		E-MAIL ADDRESS :
DUNS NO. (Of Duns & Bradstreet of USA)		

SCOPE: DESIGN, ENGINEERING, SUPPLY, ERECTION & COMMISSIONING AND PROVING AT BHEL SITE OF COMPLETE SYSTEM OF VARIABLE SPEED CARRIAGE WITH OSCILLATOR FOR WELDING AT ALL WELDING POSITIONS					
TECHNICAL SPECIFICATIONS OF VARIABLE SPEED CARRIAGE WITH OSCILLATOR FOR WELDING AT ALL WELDING POSITIONS FOR BHEL FP JAGDISHPUR					
Sr. No.	Description for BHEL requirement	Specified/ to be confirmed by	Offered	Deviation	Remarks
1.0	PURPOSE-				
1.1	The portable, light weight variable speed carriage system with oscillator for welding at all welding position is required to carry oput welding at Fabrication Plant, Jagdishpur. the cariage system shall be comprising of the compact oscillator head, controls, mounting brackets, connecting cables, bracketary for horizontal and vertical adjustment and standard MIG gun holder, suitable for moving on the rigid track or flexible track having microprocessor controls for various parameters.	vendor to confirm			
2.0	TECHNICAL SPECIFICATION				
2.1	The Variable Speed Travel Carriage should have closed loop tacho feedback for accurate speed control of the carriage when running in any plane, regardless of a minimum load of 45 kg.	vendor to confirm			
2.2	The carriage should provide a positive rack pinion drive that can tow minimum 45 kg load on any plane without any change in the preset speed.	vendor to confirm			
2.3	Carriage should be controlled by a microprocessor based 24 volt DC programmable Pulse Width Modulation Control with regenerative breaking.	vendor to confirm			
2.4	It should be possible to mount the torch attachment on the front, back and side of the carriage.	vendor to confirm			
2.5	The independent detachable, electronically controlled oscillator head should be compact and tiltable. It should be fitted onto the carriage by means of bracketry, which facilitates tilting and allows positioning of torch throughout 360 degree.	vendor to confirm			
2.6	Rack arm effective movement for side adjustment min required 300 mm from side of carriage & vertical adjustment movement minimum 150 mm shall be provided.	vendor to confirm			
2.7	The system should have track arrangement for all position welding mounted on "ON-OFF" magnetic mounting device . Track material should be Spring Steel track Width 110 mm, thickness 2.5 mm, length 9500 mm (in 4 segments), minimum bend radius 1550 mm and machined aluminum stiffener to stiffen the spring steel track for 4500 mm welding.	vendor to confirm			
2.8	The system should have independent detachable oscillator head interfaced with carriage with below mentioned controls. a) should have LCD display plane for oscillator parameters. b) Dwell in three position Left, Centre & Right , stop time in all position – 0- 9.9 sec. c) Speed of oscillation – 1 – 45 degree/ sec d) Width of the oscillation with dwells - 2-45 degree. e) Multiple oscillation programme storage atleast 10 nos.	vendor to confirm			
3.0	OTHER TECHNICAL REQUIREMENTS				

TECHNICAL SPECIFICATIONS OF VARIABLE SPEED CARRIAGE WITH OSCILLATOR FOR WELDING AT ALL WELDING POSITIONS FOR BHEL FP JAGDISHPUR					
Sr. No.	Description for BHEL requirement	Specified/ to be confirmed by	Offered	Deviation	Remarks
3.1	LED display in IPM or CM/MIN, external switching for forward/reverse, run/stop, manual / auto and programme variables i.e. increment / decrement and a rotary encoder for speed control should be available.	vendor to confirm			
3.2	Single microprocessor based low voltage controller (24 volt DC) should be able to provide various options like Indexing, Oscillations, Autoweld etc.	vendor to confirm			
3.3	The carriage should be capable of running on tempered, flexible, spring steel tracks, which are secured to the weldment by means of magnets. The 8 ft long tracks should have the facility for joining together to suit the requirements. The lengths can be joined to each other and located in position.	vendor to confirm			
3.4	The carriage should be capable of being mounted on, and taken off the tracks, at any point on the track.	vendor to confirm			
3.5	An idler carriage should be available for mounting the wire feeder. It should be easy to couple the idler carriage with the main carriage.	vendor to confirm			
3.6	Microfine rack boxes rack arms and torch holding devices should be available for positioning the torch at any desired position.	vendor to confirm			
3.7	Input Voltage : 230V AC, Single phase 50Hz.	vendor to confirm			
3.8	Power Consumption : approx. 200 watts. Can tow a load of 45 kgs in all positions with no variation in the preset speed.	vendor to confirm			
3.9	Dimensions LxWxH (mm) : 380 mm X 225 mm X 250 mm Approx.	vendor to confirm			
3.10	Weight of the carriage : 15 Kgs. (Max.)	vendor to confirm			
3.11	Speeds : 5 to 130 cm/min	vendor to confirm			
3.12	Oscillator head should be compact, light weight & should be able to reciprocate with high torque, high resolution & low vibration stepper motor.	vendor to confirm			
3.13	Oscillator head should be capable of imparting a radial , pendulum or tangential motion to the welding gun.	vendor to confirm			
3.14	Oscillator control should provide a large, easy to read, multi-page graphical display& must have capability to offer programmable, adjustment over the following functions.	vendor to confirm			
3.14.1	Motorized Oscillation width.	vendor to confirm			
3.14.2	Motorized Oscillation speed.	vendor to confirm			
3.14.3	Independent motorized left, center & right dwells.	vendor to confirm			
3.14.4	Oscillator center positioning (steering).	vendor to confirm			
3.14.5	Automatic & manual carriage travel activation.	vendor to confirm			
3.14.6	Weld travel start delay & weld crater fill delay.	vendor to confirm			
3.14.7	Standard (angular) or step (square) pattern oscillation.	vendor to confirm			
3.14.8	Multiple oscillation programme storage at list 10 nos	vendor to confirm			
3.14.9	The above features should enable precise control over the automated cycle generating accurate & repetitive weld oscillations.	vendor to confirm			
3.15	Oscillation stroke speed : 1 – 45 degree per second	vendor to confirm			
3.16	Maximum oscillation width : 45 degree.	vendor to confirm			
3.17	Minimum oscillation width : 1 degree without dwells	vendor to confirm			
3.18	Motor for oscillation : 24 VDC Stepper Motor	vendor to confirm			
3.19	Weight of Head : 2.5 kg (Max)	vendor to confirm			

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Sr. No.	Description for BHEL requirement	Specified/ to be confirmed by	Offered	Deviation	Remarks
3.20	Dwell Positions : Left, Centre & Right	vendor to confirm			
3.21	Dwell Range : 0 - 9.9 seconds	vendor to confirm			
3.22	Memory Storage : Min. 10 programmable oscillation cycles	vendor to confirm			
4.0	Scope of supply: each set of variable speed carriage with oscillator for welding at all welding positions system shall comprise following items:				
4.1	Radial Oscillator system for flexible Track : 01 No.	vendor to confirm			
4.2	Flexible Track Idler carriage: 01 No.	vendor to confirm			
4.3	Heavy Duty Flexible Track: 04 Nos.	vendor to confirm			
4.4	Aluminium Flexible Track Stiffner: 02 Nos.	vendor to confirm			
4.5	Track Mounting device: 32 Nos.	vendor to confirm			
5.0	Spares				
5.1	Vendor to offer spares for 1 years of trouble free and smooth operations of the system	vendor to confirm			
6.0	Accessories:				
6.1	Any other accessories that are required for trouble free and smooth operations of machine shall be offered by vendor.	vendor to confirm			
7.0	Installation & Commissioning and training				
7.1	Complete Installation and commissioning is in Vendor's scope.vendor to arrange all types of commissioning tools & tackles, cranes, helping personels etc. on their behalf. After I&C vendor has to prove out the performance of the system to the satisfaction of BHEL	vendor to confirm			
7.2	Vendor to provide training during I&C of complete system for operation and maintenance to BHEL personel for 5 working days .	vendor to confirm			
8.0	Proving and Acceptance of BHEL				
8.1	Vendor to demonstrate the system and prove the complet system at BHEL works for various welding positions like over head, down hand, vertical etc.	vendor to confirm			
8.2	Working of accessories, systems and items supplied shall be cheked by BHEL	vendor to confirm			
8.3	Checking of the system as per specification.	vendor to confirm			
8.4	Proving of complete system to the satisfaction of BHEL	vendor to confirm			
8.5	vendor to prepare test piece if required. The material shall be provided by BHEL.	vendor to confirm			
9.0	Documents to be submitted along with offer				
9.1	Complete Specification filled in BHEL format	vendor to confirm			
9.2	layout drawing of system, assemblies and sub assemblies in standard formats	vendor to confirm			
9.3	General technical litrature of systems and its parts.	vendor to confirm			
9.4	Bill of quantities with the breakup of each item	vendor to confirm			
10.0	Documents to be submitted along with supply				
10.1	Layout drawing of system, assemblies and sub assemblies in standard formats	vendor to confirm			
10.2	installtion diagram.	vendor to confirm			
10.3	installation drawings and documents	vendor to confirm			
10.4	operation and maintenance manual	vendor to confirm			
10.5	Technical Data sheet	vendor to confirm			
10.6	Bill of quantities with the breakup of each item	vendor to confirm			
11.0	Guarantee				
11.1	Vendor to provide guarantee of 01 years for complete System after acceptance of BHEL	vendor to confirm			

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Sr. No.	Description for BHEL requirement	Specified/ to be confirmed by	Offered	Deviation	Remarks
12.0	Qualification Requirement				
12.1	Only those vendors who have supplied and installed simillar type of systems in past 05 years and such system is working satisfactorily till date (as on date of opening of Tender) after one years of its commissioning shall quote. Vendor to submit a performance certificate from the customer where they have supplied simillar type of compressed air distribution system for its satisfactory performance since its commissioning.	vendor to provide			
12.2	Vendor to provide name , address, email, phone no., fax No. of the above customer	vendor to provide			