



Boiler Auxiliaries Plant,
Bharat Heavy Electricals Limited,
Ranipet - 632406, Tamilnadu, INDIA.

Enquiry Number: 2771166E
Date: 04.11.2017
Due date: 28.11.2017

Specification cum Compliance Certificate for- Torsion Spring Manufacturing Machine

Note:-

1. 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.

2. The offer and all documents enclosed with offer should be in English language only.

Name & Address of the supplier:	Name & Address of the Indian Agent:
Telephone No.	Telephone No.
Fax No.	Fax No.
e-mail :	e-mail :

Scope: Supply, Erection & Commissioning of **"Torsion Spring Manufacturing Machine "** complying with specification as below.

S No.	Description - BHEL's Requirement	Specified	Offered	Offered
1.0	PURPOSE & WORK PIECE MATERIAL			
1.1	Purpose: <i>To manufacture Torsion Spring.</i>			
2.0	SPECIFICATION:			
2.1	"Torsion Spring Manufacturing Machine" includes Spring Coiling Machine, wire feeder and CNC controls. Wire material Austentic Stainless Steel, diameter 1.5mm to 3mm and spring diameter is minimum 40mm.			
2.2	CAPACITY			
2.2.1	Capacity	Sprind wire diameter 1.5mm to 3mm & spring outer diameter minimum 40mm.		
2.2.2	Coiling speed	minimum 5 pieces / min		
2.2.3	Wire diameter	1.5mm to 3 mm		
2.2.4	Material	Austentic Stainless Steel		
2.3	Number of Axis			
2.3.1	Three axis -minimum	Vendor to specify		
2.4	Wire Feeder			
2.4.1	Type of feeder	Vendor to specify		
2.4.2	Wire feeding Shelf and quantity.	Vendor to specify		
2.7	Controls			
	Type	Vendor to specify		
3.0	HYDRAULIC SYSTEM : (if provided in the machine) Details should be Submitted by the Vendor			
3.1	The System should have centralized Hydraulic Tank located at floor level and connected to moving items through flexible hyd hoses.	Vendor to specify		
3.2	Hyd pump & valves : Rexroth make only	Vendor to note		
3.3	Hydromotor-Danfoss/ Rexroth make only	Vendor to note		
3.4	Filtration System	Vendor to specify		
3.5	Hydraulic pump capacity (flow / pressure)	Vendor to note		
4.0	First filling of all required Oils & Grease etc. to be supplied by vendor. Indigenous (Indian) source or Indian equivalent and specifications of oils/ greases are also to be provided by the vendor.	Vendor to confirm		

5.0	LUBRICATION:			
5.1	Lubrication shall be of life time lubricated wherever possible. Other lubrication points shall be specified. Details shall be submitted.	Vendor to confirm		
6.0	ELECTRICAL:			
6.1	415V + 10% / -10%, 50HZ +/-3 HZ, 3 Phase AC (3 wire system with out neutral) Power Supply Voltage will be provided by BHEL at a single point near the machine, as per layout recommended by Vendor. All types of cables, connections, circuit breakers etc. required for connecting BHEL's power supply point to different parts of the machine/control cabinets, shall be the responsibility of vendor. Requirement of grounding/earthing with required material details is to be informed by vendor well in advance so that same could be incorporated during construction of foundation.	Vendor to confirm		
6.2	All Motors shall conform to IEC or Indian Standards	Vendor to confirm		
6.3	All cables and cable trays required for the machine should be included in the offer.	Vendor to confirm		
6.4	Vendor should ensure the proper earthing for the machine and its peripherals.	Vendor to confirm		
6.5	The electrical components used shall be from reputed international makes such as Siemens / Telemecanique / Merlin Gerin / GE/ ABB and shall be accordance with DIN/IEC Standards.	Vendor to confirm		
7.0	SAFETY ARRANGEMENTS:			
	Following safety features in addition to other standard safety features should be provided on the machine:			
	1. Machine should have adequate and reliable safety interlocks / devices to avoid damage to the machine, work piece and the operator due to the malfunctioning or mistakes.	Vendor to note and reply		
	2. A detailed list of safety alarms / indications provided on machine should be submitted by the supplier.			
	3. All the pipes, cables etc. on the machine should be well supported and protected. These should not create any hindrance to machine operator's movement for effective use of machine.			
4. Emergency Switches at suitable locations as per International Norms should be provided with details.				
8.0	ENVIRONMENTAL PERFORMANCE OF THE MACHINE :			
	The Machine shall conform to following factors related to environment			
	(a) Maximum noise level shall be 85 dB(A) at normal load condition, 1 meter away from the machine with correction factor for back ground noise, if necessary. This will be measured as per international standards like DIN 45635-16. Supplier to demonstrate compliance to noise level, if so required.	Vendor to confirm		
	(b) If any safety / environmental protection enclosure is required it should be built in the machine by the vendor.			
(c) Paint of the machine should be oil / coolant resistant and should not peel off and mix up with coolant.				
9.0	LEVELING & ANCHORING SYSTEM			
9.1	Complete anchoring system including foundation bolts, anchoring materials, leveling shoes etc. should be supplied.	Vendor to confirm		
9.2	Rails required for horizontal traverse will be laid by BHEL. Supply do not include rails. Supplier provide civil requirements for laying rails.	Vendor to note		
10.0	TOOLS FOR ERECTION, OPERATION & MAINTENANCE :			
10.1	Special tools and equipment required for erection of the machine shall be brought by the vendor.	Vendor to confirm		
11.0	FOUNDATION :			
11.1	Vendor shall submit the preliminary General Layout drawing including control panel for getting BHEL's approval within 15 days from the date of Letter of Intent (LOI).	Vendor to submit		

12.0	ERECTION & COMMISSIONING			
12.1	Supplier to take full responsibility for carrying out the erection, start up, testing of machine, it's control & all types of other supplied equipment, machining of test pieces etc. Service requirement like power, air & water shall be provided by BHEL at only one point to be indicated by supplier in their foundation/layout drawings. Other requirements like crane and helping personnel shall also be provided by BHEL. Details of these requirements should be informed by vendor in advance	Vendor to note		
12.2	Tools, Tackles, instruments and other necessary equipment including Laser equipment required to carry out all above activities should be brought by the supplier. .	Vendor to note		
12.3	Commissioning spares, required for commissioning of the machine within stipulated time, shall be brought by the supplier on returnable basis.	Vendor to note		
12.4	All Cover Plates required for the machine and its peripherals including pits, if any, shall be supplied and installed by the vendor. The plates should be sourced from India	Vendor to note		
12.5	Portion, if any, of the machine, accessories and other supplied items where paint has rubbed off or peeled during transit or erection should be repainted and merged with the original surrounding paint by the vendor. For this purpose, the vendor should supply sufficient quantity of touch-up paint of various colors of paint used.	Vendor to note		
12.6	Schedule of Erection and Commissioning shall be submitted with the offer.	Vendor to submit		
12.7	Charges, duration, terms & conditions for E&C should be furnished in detail separately by vendor along with offer.	Vendor to submit		
13.0	MACHINE ACCEPTANCE: (Tests/Activities should be Performed by Vendor)			
13.1	Tests/Activities should be carried out at supplier's works on the machine before dispatch :			
13.1.1	Motors data sheet	Vendor to submit		
13.1.2	Internal routine test report	Vendor to submit		
13.1.3	Test plan for final factory inspection to BHEL review	Vendor to submit		
13.1.4	Equipment to be tested for its full capacity.	Vendor to accept		
13.1.5	Demonstration of all features of the machine, control system & accessories	Vendor to demonstrate		
13.2	Tests/Activities should be carried out at BHEL works while commissioning the machine :			
13.2.1	Equipment to be tested for its full capacity of the machine.	Vendor to confirm		
13.2.2	Demonstration of all features of the machine, control system & accessories to the satisfaction of BHEL for efficient and effective use of the machine	Vendor to accept		
13.2.3	Training of BHEL machine operators in operation of complete machine & accessories etc. by the supplier's engineers during their stay at BHEL works	Vendor to accept		
13.2.4	Demonstration by actual use of all supplied attachments and accessories to their full capacity.	Vendor to accept		
14.0	PACKING:			
14.1	Sea worthy (if sailing)& rigid packing for all items of complete machine, CNC System, all Accessories and other supplied items to avoid any damage/loss in transit. When machine is dispatched in containers, all small loose items shall be suitably packed in boxes	Vendor to note and accept		

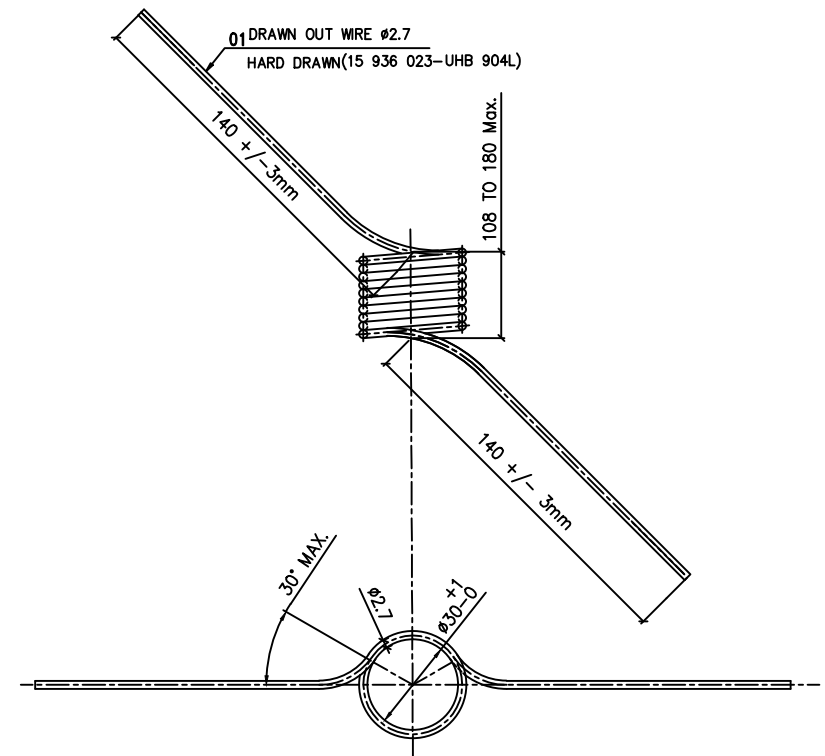
14.0	QUALIFICATION REQUIREMENT(Applicable for Open tender only)		
14.1	Only those vendors (OEMs) should quote who have supplied and commissioned at least 1 Coiling Machines of same or higher capacity in the past 5 years (on the date of opening of tender) and referred equipment is presently working satisfactorily for more than one year(six months in case of supply to BHEL) after commissioning (on the date of opening of tender).		
14.2	The following information is to be submitted by the vendor about the companies where similar equipments have been supplied. This is required from all the vendors for qualification of their offer.		
	1.Name of the customer/Company where referred equipment is installed.		
	2.Complete postal address of the customer.		
	3.Month & year of commissioning.		
	4.Parameter of the equipment(s) supplied and application for which the machine is supplied.		
	5.Name and designation of the contact person of the customer.		
	6.Phone no, fax no and email address of the contact person of the customer.		
	7.Performance certificate from the customer regarding satisfactory performance of the machine supplied to them.(Original certificate of through email directly from the customer).Original performance certificate may be returned after verification by BHEL,if required.		
	8.BHEL reserves right to verify the information provided by vendor. In case the information provided by the vendor found to be false / incorrect the offer shall be rejected.		
15.0	Guarantee		
15.1	24 months from the date of acceptance of the machine at BHEL works.	Vendor to confirm	
16.0	GENERAL :		
16.1	Machine Model	Vendor to furnish	
16.2	Total connected load (KVA):	Vendor to furnish	
16.3	Floor area required (Length, Width, Height) for complete machine & accessories	Vendor to furnish	
16.4	Painting of Machine / Electrical Panels :	Vendor standard color	
16.5	Total weight of the machine	Vendor to furnish	
16.6	Weight of heaviest part of machine	Vendor to furnish	
16.7	Weight of the heaviest assembly / sub-assembly of the Machine	Vendor to furnish	
16.8	Dimensions of largest part/ sub-assembly/ assembly of the machine	Vendor to furnish	
16.9	Vendor to submit, along with offer, reference list of customers where similar equipments have been supplied mentioning broad specifications of the supplied machine i.e. Model, Capacity,	Vendor to furnish	
16.10	Detailed catalogues, sketch/ photographs of the m/c and accessories/ attachments should be submitted with the offer.	Vendor to submit	
16.11	Hydraulic, Pneumatic & oil pipings should be preferably metallic except places where flexible pipings are essential. All the pipes required for the same shall be included in the standard scope of the machine.	Vendor to note	
17.0	Estimated Delivery period		
17.1	Delivery period for supply as 12 weeks from the date of purchase order		
18.0	Estimated Commissioning period		
18.1	Commissioning will best at within 15 days from the date of acceptance of the machine at BHEL works.		
19.0	Estimated Commissioning Charges		
19.1	Terms & Conditions for E&C Charges should be furnished details separately by vendor along with the offer		

TORSION SPRING SPECIFICATION



NOTE

01.	No. OF TURNS	: 40 to 67
02.	MOUNTED LENGTH	: 4788 Appx.
03.	LENGTH OF STRETCHED WIRE.	: 4020 TO 15330
04.	TENSILE STRENGTH	: 1050 $\pm$ 75 N/SQ.MM
05.	TENSILE FORCE WHEN MOUNTED	: 20 KP
06.	WT. PER METRE OF ELECTRODE WIRE	: 0.0453 KG
07.	COIL DIAMETER (OUTER).	: 36 Appx,
08.	UN WIND LENGTH PER SIDE.	: 140 Appx,



QUALIFICATION CRITERIA
(Torsion Spring Manufacturing M/C)
Enquiry Number: 2771166E/04.11.2017

Sl. NO	CRITERIA	VENDOR ACCEPTANCE / REMARKS
	Only those bidders, who have supplied at least 1 No. of Torsion Spring manufacturing Machine of Similar capacity in the last 5 years (On the Date of Opening of tender), are eligible to quote.	
2	Along with the Offer the following information should be submitted by the vendor about the companies where similar Equipment has been supplied. 1. Name of the customer / company where installed. 2. Complete postal address of the customer. 3. Month & Year of supply 4. Name and designation of the contact person of the customer. 5. Phone, FAX no. and email address of the contact person of the customer.	
3	Authorization certificate: Only the original equipment manufacturer Or their authorized Agents / distributors / dealers are eligible to quote. Along with the offer valid authorization certificate from the original equipment manufacturer should be submitted if the offer submitted by an Agent / distributor / dealers.	
4	Catalogue & Drawings: The specification cum compliance certificate given in the annexure for the offered item should be duly filled & submitted along with the relevant catalogue & drawings for bid consideration.	
5	Performance Guarantee: The Performance of the equipment shall be guaranteed for a minimum period of 24 months from the date of Commissioning at BHEL works.	
6	Estimated delivery period: Delivery period for supply as 12 Weeks from the date of P.O	
7	Estimated commissioning period : commissioning will be start within 15 days from the date of acceptance of the machine at BHEL works.	
8	Estimated commissioning Charges: Terms & conditions for E&C Charges should be furnished in detail separately by vendor along with the offer.	

NOTES:

1. Bidders shall note & clearly mention their acceptance / remarks for the criteria given above.
2. Duly filled copy of this format **to be submitted along with the supporting documents** for bid consideration.
3. After satisfactory fulfillment of all the above criteria / requirement, offer shall be considered for further evaluation as per NIT and all other terms of the tender.