



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

Enq 2761399E
Date 21.01.2017

Due Date: 08/03/2017

Supplier can quote single machine also which will able to make both the profiles as per clause no 2.1 if possible

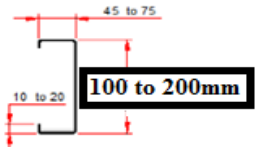

Specification cum Compliance Certificate for- C & L- Sections rolling machine

Note:-

1. The 'Offered' Column and where applicable, the 'Deviations' & 'Remarks' Column of this format shall be
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 "C- Purlin and "L" bracing rolling machine" complying with specification as below.

S No.	Description - BHEL's Requirement	Specified	Specified
1.0 PURPOSE & WORK PIECE MATERIAL			
1.1	Purpose: To roll C-section and L section		
2.0 SPECIFICATION:			
2.1	Roll forming line to form C-section and L section from coiled sheet. Required size of the C and L as specified at a rolling speed of 5m/min (minimum). The rolling line includes- Decoiler, straightening unit, roll formers, punching unit and shearing unit.		
2.2 CAPACITY			
2.2.1	Capacity	C - 100mm to 200mm	L - 20mm to 100mm
2.2.2	Rolling line speed	5m/min to 10m/min	5m/min to 10m/min
2.2.3	Sheet thickness	1.5mm to 3.15mm	1.5mm to 3.15mm
2.2.4	Material	H.R. & C.R. of E350MPa	H.R. & C.R. of E350MPa
2.3 Decoiler			
2.3.1	Decoiler capacity	5 tons	5 tons
2.3.2	With speed control device	Vendor to note	Vendor to note
2.4 Coil straightener			
2.4.1	roller type	Vendor to specify	Vendor to specify
2.4.2	number of rollers	Vendor to specify	Vendor to specify
2.4.3	motor capacity	Vendor to specify	Vendor to specify
2.5 Rolling line			
2.5.1	set of rollers	Vendor to specify	Vendor to specify
2.5.2	motor capacity	Vendor to specify	Vendor to specify
2.5.3	rolling speed	5m/min to 10m/min	5m/min to 10m/min
2.5.4	Accuracy Level	Length: +/-2 m.m. Bend/Twist: 0.5 mm/mtr. Dimn: +/-0.2 m.m.	Length: +/-2 m.m. Bend/Twist: 0.5 mm/mtr. Dimn: +/-0.2 m.m.
2.6 Punching & shearing unit			
2.6.1	Speed	Vendor to specify	Vendor to specify
2.6.2	number of punches	Vendor to specify	Vendor to specify
2.7 Controls		PLC control system	PLC control system
2.8	Integration of total rolling, decoiling, punching & shearing	Vendor to note	Vendor to note
2.9	The rolling line shall be supplied with necessary electrical control panel located at convenient place and operator panel shall be provided with push button/selector switch for on/off and all functions of the rolling line.	Vendor to offer	Vendor to offer
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	Vendor to specify
3.2	Hyd pump & valves : Rexroth / Vickers make only	Vendor to note	Vendor to note
3.3	Hydromotor-Danfoss/ Rexroth make only	Vendor to note	Vendor to note
3.4	Filtration System	Vendor to specify	Vendor to specify
3.5	Hydraulic pump capacity (flow / pressure)	Vendor to specify	Vendor to specify
4.0	<u>First filling of all required Oils & Grease etc.</u> 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	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	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	Vendor to confirm
6.2	All Motors shall conform to IEC or Indian Standards	Vendor to confirm	Vendor to confirm
6.3	All cables and cable trays required for the machine should be included in the offer.	Vendor to confirm	Vendor to confirm
6.4	Vendor should ensure the proper earthing for the machine and its peripherals.	Vendor to confirm	Vendor to confirm
6.5	The electrical components used shall be from reputed international makes such as Siemens / Telemechanique / Merlin Gerin / GE/ ABB and shall be accordance with DIN/IEC Standards.	Vendor to confirm	Vendor to confirm
	SAFETY ARRANGEMENTS:		
	Following safety features in addition to other standard safety features should be provided on the machine:		
7.0	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. 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.	Vendor to confirm	Vendor to confirm
	ENVIRONMENTAL PERFORMANCE OF THE MACHINE :		
	The Machine shall conform to following factors related to environment		
8.0	(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. (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.	Vendor to confirm	Vendor to confirm
9.0	LEVELING & ANCHORING SYSTEM		
9.1	Complete anchoring system including foundation bolts, anchoring materials, leveling shoes etc. should be supplied.	Vendor to confirm	Vendor to confirm
9.2	Rails required for horizontal traverse will be laid by BHEL. Supply do not include rails. Supplier to provide civil requirements for laying rails.	Vendor to note	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	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	Vendor to confirm
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	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	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	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	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	Vendor to note

12.6	Schedule of Erection and Commissioning shall be submitted with the offer.	Vendor to submit	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	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	Vendor to submit
13.1.2	Internal routine test report	Vendor to submit	Vendor to submit
13.1.3	Test plan for final factory inspection to BHEL review	Vendor to submit	Vendor to submit
13.1.4	Equipment to be tested for its full capacity.	Vendor to accept	Vendor to accept
13.1.5	Demonstration of all features of the machine, control system & accessories	Vendor to demonstrate	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	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	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	Vendor to accept
13.2.4	Demonstration by actual use of all supplied attachments and accessories to their full capacity.	Vendor to accept	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	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 10 rolling lines of same or higher capacity in the past ten 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	Vendor to confirm
16.0	GENERAL :		
16.1	Machine Model	Vendor to furnish	Vendor to furnish
16.2	Total connected load (KVA):	Vendor to furnish	Vendor to furnish
16.3	Floor area required (Length, Width, Height) for complete machine & accessories	Vendor to furnish	Vendor to furnish
16.4	Painting of Machine / Electrical Panels :	Vendor standard color	Vendor standard color
16.5	Total weight of the machine	Vendor to furnish	Vendor to furnish
16.6	Weight of heaviest part of machine	Vendor to furnish	Vendor to furnish
16.7	Weight of the heaviest assembly / sub-assembly of the Machine	Vendor to furnish	Vendor to furnish
16.8	Dimensions of largest part/ sub-assembly/ assembly of the machine	Vendor to furnish	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	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	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	Vendor to note

PRE-QUALIFICATION CRITERIA

S.NO	CRITERIA for Roll Forming Line for “C” Section	VENDOR ACCEPTANCE/ REMARKS
1	<p>Only those bidders, who have supplied at least 1 No. of Roll Forming Line for “C” Section of Similar range or higher range in the last 2 years (On the Date of Opening of tender) are eligible to quote.</p> <p>Along with the Offer the following information should be submitted by the vendor about the companies where similar Equipment has been supplied.</p> <p>(1)Name of the customer / company where installed. (2) Complete postal address of the customer. (3)Month & Year of supply. (4)Application for which the equipment is supplied with details of performance achieved on the job. (5) Name and designation of the contact person of the customer. (6)Phone, FAX no. and email address of the contact person of the customer. (7)Performance certificate from the customers regarding satisfactory performance of equipment supplied to them on Customer's Letter Head.</p>	
2	<p>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/dealer.</p>	
3	<p>Bidder should furnish financial standing through latest I.T.C.C., Annual report (balance sheet and Profit & Loss Account) of last 3 years.</p>	

S.NO	CRITERIA for Roll Forming Line for “L” Section	VENDOR ACCEPTANCE/ REMARKS
1	<p>Only those bidders, who have supplied at least 1 No. of Roll Forming Line for “L” Section of Similar or higher range in the last 2 years (On the Date of Opening of tender) are eligible to quote.</p> <p>Along with the Offer the following information should be submitted by the vendor about the companies where similar Equipment has been supplied.</p> <p>(1)Name of the customer / company where installed. (2) Complete postal address of the customer. (3)Month & Year of supply. (4)Application for which the equipment is supplied with details of performance achieved on the job. (5) Name and designation of the contact person of the customer. (6)Phone, FAX no. and email address of the contact person of the customer. (7)Performance certificate from the customers regarding satisfactory performance of equipment supplied to them on Customer's Letter Head.</p>	
2	<p>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/dealer.</p>	
3	<p>Bidder should furnish financial standing through latest I.T.C.C., Annual report (balance sheet and Profit & Loss Account) of last 3 years.</p>	

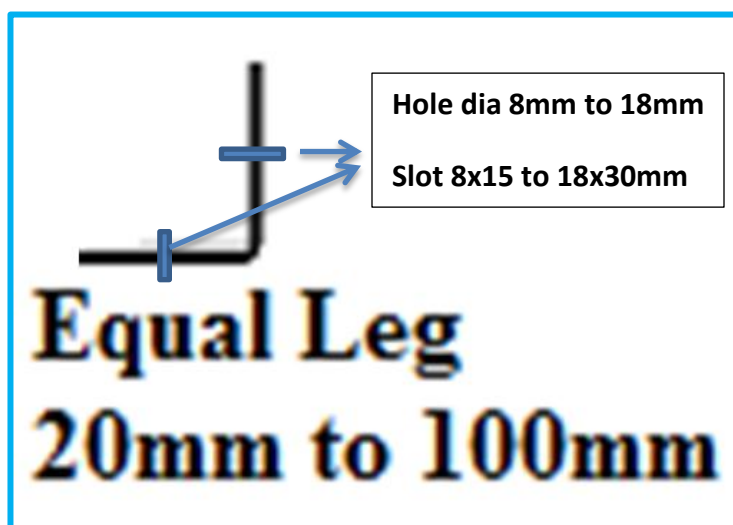
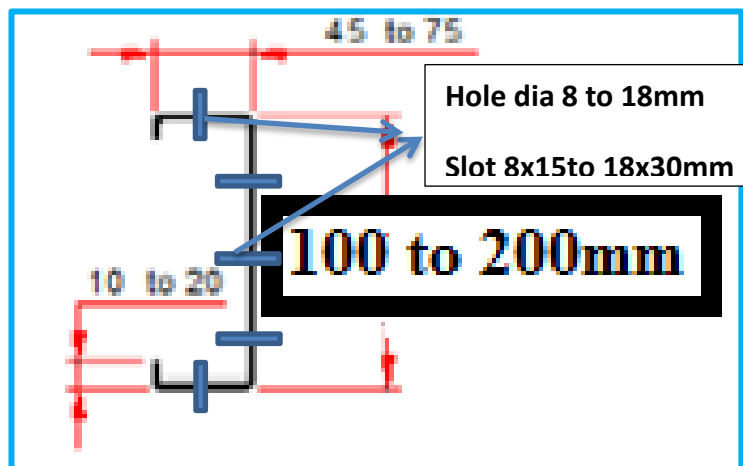
NOTES

1. Bidders shall note & clearly mention their acceptance/remarks for the criteria's 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.



Write-up for the proposed procurement of Roll forming Lines of “C” and “L” profiles against the enquiry no 2761399E/21.01.2017

As part of continual improvement and optimizing the material content we intend to use of rolled sections of tailor made sizes with varied thickness meeting the design requirement. Also we intend to use high strength steel of yield E350MPa of cold rolled/hot rolled sheets of thickness 1.5mm to 3.15mm thickness for roll forming “C” and “L” profiles from the proposed roll forming line. “C” and “L” profile shall have independent roll forming lines complete with total system requirement meeting the technical specification. *The Proposed automated independent roll forming lines shall include De Coiler, Coil straighteners, Roll forming line with adequate stations, punching station, hydraulic system, electric motor and Control Panel.*





These tailor made “C” sections will have holes of Diameter 8mm to 18mm and the slotted holes of 8x 15 and 18x30 in the flange as well as web sections for interconnection during the assembly. Similarly, “L” sections will have holes of Diameter 8mm to 18mm & the slotted holes of 8x 15 and 18x30. The punching press shall be designed with variable pitch holes along axial as well as lateral directions.

Raw material of varied widths of CR/HR high strength Yield E350 coil strips will be loaded in the de-coiler and then straightened before entry in to roll forming line. Roll forming line should be suitable for variable thickness and variable profile height as indicated in the technical specification with adequate stations. Cutting press of heavy duty type will be part of the total roll forming line will ensure cutting of the finish component to the required lengths automatically. The roll forming line and associated units should be designed to operate at desired speed and meet the specification requirement. Integration of total roll forming line from De-coiler to shearing the finish profile sections shall be automated through a PLC system. Necessary mandatory spares for operating the proposed roll forming lines for trouble free two years will be part of the guarantee envisaged in the technical specification.