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BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
(WORKS ENGINEERING AND SERVICES DEPARTMENT)


Annex: A

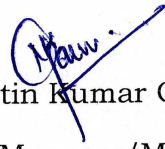
QUALIFYING CONDITIONS:

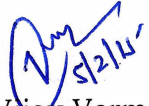
1. Supplier should have experience of successful execution of supply, installation & commissioning of CNC mechanical drive within last Three years from the date of enquiry.
2. Successful supply, installation & commissioning certificate are required in support of point no.1.
3. BHEL executive/s may also visit supplier's works for detailed assessment of his capability to execute the job.
4. Supplier should visit our works to understand the nature/scope of work & for technical discussion/clarifications, if any.

GENERAL CONDITIONS:

1. Recondition of sheet guiding system/ installation & commissioning work to be done by the supplier in BHEL, Jhansi.
2. Offer must be submitted with details containing:
 - (i) Scope of supply complete with quantity.
 - (ii) Scope of work.
 - (iii) Time required for the completion of reconditioning work.
3. Scope of work includes manpower and tools & tackles for reconditioning and erection of all required items for successful completion of work.
4. All supplied items are to be fitted in Sheet Guiding System upto shear of CNC Georg Cropping Line machine.
5. Guarantee of the work shall be 12 months from the completion of work.

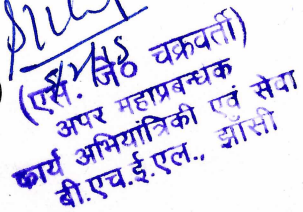

Vivek Kumar Gupta
(Sr. Engineer/Plg)


Nitin Kumar Gaur
(Dy. Manager/MC-1 & 3)


Vijay Verma
(Dy. Manager/Electronics)


(DGM/WEX)


(AGM/WE&S)


(एस. जे. चक्रवर्ती)
अपर महाप्रबन्धक
कार्य अभियांत्रिकी एवं सेवा
बी.एच.ई.एल., झांसी



(2)

BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
(WORKS ENGINEERING AND SERVICES DEPARTMENT)

WEX/SPECS/CNC GEORG/1077/01/R02

04.12.2014

SUB: Supply, Installation & Commissioning of Lead Screws with Nuts & Guides for Georg CNC Cropping Line

Cropping Line is a special purpose CNC m/c to cut CRGO sheets for the mfg. of laminations of transformer core. The M/C was supplied & commissioned in the year 1977. The machine is having sets of precision lead screws and nuts linked in motion with bevel gears for changing width of sheet guides. Guides are positioned by their individual lead screws to maintain same centre line for all guides and synchronized movement of lead screw is essential. Due to Continuous operation of machine, lead screws & Guides have worn out resulting in backlash in their operation. This problem results in disturbance of the sheet guides of the machine, which leads to improper cropping of laminations due to mismatch between guide centre and shear centre. Rejection of such improperly cropped laminations finally leads to heavy generation of scrap in addition to the high downtime of machine due to guide disturbance. In order to reduce the high rejection of cropped laminations as well as frequent downtime of m/c, the mechanism of sheet guiding system needs to be rectified. In order to set right the guiding mechanism, drawings of critical components like lead screws, lead nuts & guide segments have been made on the basis of dimensions of the actual components. Supply of these components as per the drawings & the work involved in assembling these to refurbish the guiding mechanism will be as per the details given below-

SCOPE OF SUPPLY:

Supply of Lead Screws assembly (Lead Screw with nuts & Connecting Links) and Guides (In-feed, Main Guide & Chain Guide blocks with suitable chain) as per Drawing No. BHEL/JHS/WE&S/A4-1926 (Sheet 1 to 21) suitable for Guide adjustment of CNC Georg Cropping Line machine.

ITEM NO. 1: Lead Screws with Nut Assembly: (Total-7 Sets)

(i) In feed & Main Guide Lead Screw & Nut assembly:

Ref. Drawing: Lead Screws as per Lead Screw 1 to 4 (ref. Sheet No. 2 to 5) of Drawing No. BHEL/JHS/WE&S/A4-1926 (1 no. each, total 4 nos.) and **anti-backlash nuts** (8 Sets), each set include Item No. 1 & 3; ref. Sheet No. 9 of Drawing No. BHEL/JHS/WE&S/A4-1926.

(ii) Chain Guide Lead Screw & Nut assembly:

Ref. Drawing: Lead Screws as per Lead Screw 5 to 7 (ref. Sheet No. 6 to 8) of Drawing No. BHEL/JHS/WE&S/A4-1926 (1 no. each, total 3 nos.) and nuts (4 Sets), each set include Item No. 1 & 2; ref. Sheet No. 9 of Drawing No. BHEL/JHS/WE&S/A4-1926.

ITEM NO. 2: Connecting Links with nuts: (Total- 2 Sets)

Supplier has to supply connecting/drive Links (1 no. each) with nuts (2 Sets) (ref. Sheet 19 to 21 of Drawing No. BHEL/JHS/WE&S/A4-1926) of sheet guiding mechanism as installed in the machine. Gears required for transmission shall be provided by BHEL.

Note: Supplier has to provide LH & RH threaded lead screws with end machining for required fittings. Minor rectification may be required at the time of assembly as drawings have been made with existing spares.



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ITEM NO. 3: In feed & Main Guides: (Total- 12 nos.)

(i) In feed Guide- L+R = (Total-2 nos.)

(ii) Main Guide- 1L & 1R (1 no. each) +2L & 2R (1 no. each) +3L & 3R (1 no. each) +4L & 4R (1 no. each) +5L & 5R (1 no. each) = Total-10 nos.

Ref. Drawing: BHEL/JHS/WE&S/A4-1926 (Sheet 10 to 16);

ITEM NO. 4: Chain Guides: (Total- 28 nos.)

(i) Chain Guide 1- Total: 24 nos.

(ii) Chain Guide 2- Total: 2 nos.

(iii) Chain Guide 3- Total: 2 nos.

Ref. Drawing: BHEL/JHS/WE&S/A4-1926 (Sheet 17 & 18);

ITEM NO. 5: Chain for mounting chain guide blocks:

(As per existing installed chain on the machine)

1 no. Simplex Chain with 3/4" pitch, 4 Meter Length

Roller diameter: Ø15.5 mm & Inner Width: 10 mm

Pin Size (to hold chain guides): 70 mm Length X 7 mm Diameter

SCOPE OF WORK:

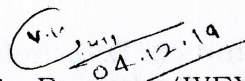
1. Dismantling of existing Lead Screws, Guides & Chains: Dismantling of all existing lead screw & guide assembly etc. from machine required for installation of supplied items (ITEM NO. 1 TO 4).


2. Installation, Commissioning & Trial Operation: Complete assembly of Lead Screws, Guides & chain along with assembly of all end fittings & linkages. Job proving with repeatability in all guide alignment with minimum 4 different job sizes.

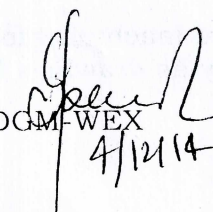
SPECIAL REMARKS:

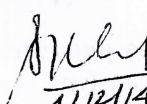
1. Test Certificate: Valid Test Certificate from Govt. Approved Test Lab is required along with all the material being supplied.

2. Warranty: Minimum 12 months.


Sr. Engineer/WEX
04.12.14


Dy. Manager/MC-1&3


DGM-WEX
4/12/14


4/12/14
AGM-WEX