

BHEL, Tiruchirapalli-620014		SSTP / Tool Engineering		Technical Delivery Conditions	
Product : KR75 & KR150ROLL					
Document No.		Revision No.		Effective Date	
TDC/TE/MFG- 14		01		17.07.09	
Revision Record		01 - TDC reviewed and revised			
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**1.0 PRODUCT:**

Sl.No.	Equipment / Product	Drg. No.	Drg. Rev. No.
1.	KR 75 Roll	20.ST.232.01.008	AS PER LATEST ENQUIRY / PURCHASE ORDER
2.	KR150 Roll	20.ST.231.01.149	

**2.0 APPLICATION:**

For straightening the finished tubes in cold condition.

**3.0 MATERIAL:**

- DIN 1.2601 – X165CrMoV12 ( Rolled Steel )**
- Conduct Ultrasonic Test on Raw Material after proof machining in accordance with SA 388.
- Acceptance Standard in accordance with AM 203.2(c), ASME Sec VIII Div.2. Shall be certified by NDT Level II qualified personnel as per SNT-TC-1A (Society for Non destructive Testing)
- Chemistry** : As per drawing  
Original mill test certificate shall be provided. Otherwise copy of original mill test certificate and test report from NABL accredited lab for chemical check on sample from the procured material shall be provided.

**4.0 DIMENSIONS AND TOLERANCE:**

As given in the drawing

**5.0 HEAT TREATMENT:**

Sl.No.	Process	Detail
1.	Stress Relieving	<b>600 - 650 Deg.C ; Soaking 1 Hr.</b> Furnace Cooling
2.	Hardening	<b>980 - 1020 Deg.C</b> Oil quenching
3.	Tempering	300 - 400°C

**6.0 DIMENSIONAL INSPECTION:**

Dimensional inspection shall be carried out by the supplier - Acceptance as per drawing.

**7.0 NON DESTRUCTIVE TESTING :**

**1.LIQUID PENETRANT INSPECTION:**

To be conducted on entire surface after finish machining as per **ASTM E165-02** and shall be certified by NDT Level II qualified personnel as per SNT-TC-1A

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**8.0 MECHANICAL TESTING :**

1. Hardness Test on job as per **DIN EN ISO 6508-1.** - Acceptance as per Drawing.

**9.0 MARKING:**

As given in the drawing.

**10.0 TEST CERTIFICATE/REPORT:**

Following test certificates shall be sent with materials. In all the TCs & reports BHEL PO No., component name, TDC NO. and drawing no. shall be mentioned where ever applicable: Traceability data like Heat / Melt No. & job Sl. No. shall be provided in all the reports.

1. Raw Material Chemistry (**Clause 3.0**)
2. Hardness Test (**Clause 8.0**)
3. Temperature-Time-Recorder Chart for the Heat Treatment Cycle followed
4. Ultrasonic Test Report for Raw Material (**Clause 3.0**)
5. Liquid Penetrant Test (**Clause 7.0**)
6. Dimension Report (**Clause 6.0**)

**11.0 PRESERVATION & PACKING :**

1. Supply with rust preventive coating which shall be dry after application and removable by common solvents.
2. Pack suitably to avoid transit & handling damages

Prepared By	Reviewed By	Approved By
 DM / TE	 DGM / QA&C	 AGM / TE