


298548/2604/HEP-TXW205500



PARAT HEAVY ELECTRICALS LIMITED
BHOPAL

Fresh Indent FOR RATE CONTRACT

3

1

1

O

RC/FA

4

50.000

205

17092024

NO
120544812

DATE
17/05/24

BUY
SEC
58

ORG DATE
IF AMD

0.00

HS15250

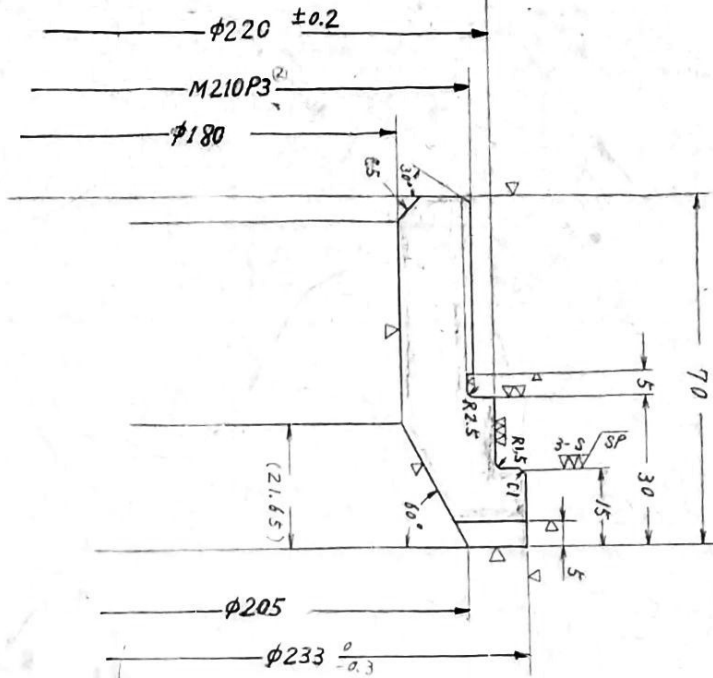
REMARKS: ESTIMATE AS PER TRANSACTION ID. NO.12765. ESTIMATE ENCLOSED IN ENVELOPE. PREFERRED DELIVERY SHALL BE WITHIN 60 DAYS FOR FIRST LOT OF 50 NOS. (CUMMULATIVELY) & THEREAFTER EACH SUBSEQUENT LOT OF 50 NOS. (CUMMULATIVELY) WITHIN NEXT 30 DAYS FROM EARLIER LOT FROM DATE OF PLACEMENT OF PO. RC TO BE FINALISED ON TWO SOURCES. FOR PQR REFER CASE 1 (A) OF APPROVAL REF.MNX/MISCC/24-25/05 DTD:01.05.24. LD WILL BE APPLICABLE ON UNDELIVERED QTY. OF LOT MENTIONED IN PI.

EXISTING PO

NOTE:

1. FINISHED PRODUCT SHALL BE COATED WITH ANTI-RUST VARNISH/COMPOUND, SUITABLY PACKED TO PREVENT TRANSMIT AND LONG-TIME STORAGE DAMAGE.
2. MANUFACTURER TO PROVIDE THEIR METAL PUNCH/IDENTIFICATION MARK AT THE LOCATION SHOWN.

SURFACE ROUGHNESS			
ITC 1	25-5	6-5	5
ROUGH MACHINED	FILISHED MACHINED	FINE FINISHED MACHINED	



ALT 3
ALT 3
ALT 3

3. METALLURGICAL TESTING FOR BOTH PROTOTYPE AND BULK SUPPLIES SHALL BE CARRIED OUT BY DYC, GEMILINK/RIJ AND FOR BULK SUPPLIES METALLURGICAL METALLURGICAL TEST SHALL BE CARRIED OUT BY GEMILINK/RIJ OR D) NABL OR RD50 APPROVED LABORATORY, TO BE WITNESSED BY REPRESENTATIVE OF CLW ZONAL INSPECTION CELL IN CASE OF (C).

SEE CLAUSE NO-II 083 PERN. ATMS-095.001 (LATEST)

VG0.8
21.65
21.65
21.65

16:157079 P6 IV G7-42.
G8370 En 24/85270 G7-87 m 40
Heat treated 730/85 095-004.
Spec no 43/85 095-004.
ALT: METERIAL

ITEM	PARTS NAME	NO. OF PIECES PER MOTOR	NAME OF RAW MATERIAL	SPECIFICATION	RAW WEIGHT	FINISHED WEIGHT	REMARKS
1	COMMUTATOR NUT	1	SCM 440	U/S 64/05	10.0 kg	5.6 kg	
2							

ALL CORNERS RADIUS SHALL BE 0.5^{±0.03} EXCEPT WHERE STATED.

R0.5



Hitachi, Ltd.
Tokyo Japan

HITACHI WORKS DWG. NO.
105778-6

COMMUTATOR NUT

TITLE HS-1050-EX/B, HS152504

2 PLACES
(180°)

NOTE:

1. MATERIAL SHALL BE PERFORMED HEAT TREATED FROM RAW MATERIAL DRG. NO. 105778-660
2. MECHANICAL PROPERTIES SHALL BE AS FOLLOWS:

YIELD POINT : $\geq 85 \text{ kg/mm}^2$
ELONGATION : $\geq 11\%$
HARDNESS : HB 285-310
TENSILE STRENGTH : $\geq 100 \text{ kg/mm}^2$
REDUCTION OF AREA : $\geq 40\%$
IMPACT VALUE : $\geq 5 \text{ kg-m/cm}^2$

See note 2

100

Signature Not Verified

Digitally signed by
GAYA CHAND
GHOSH
Date: 2022.04.09
13:25:19 IST
Reason: IREPS-CRIS
Location: New Delhi

SPECIFICATION FOR
INNER/OUTER BEARING STOPPERS
COMMUTATOR NUT, DISC SPRING AND
COMMUTATOR VEE RING.

DRN.	CHKD.	SEE/TMD.
		

SPECIFICATION FOR
INNER/OUTER BEARING STOPPERS
COMM. NUT, DISC SPRING AND
COMMUTATOR VEE RING

DY. CEE/TMD.

CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL

NO. 4.TMS.095.001, REV. 1
DATE: 31-10-2009

Signature Not
Verified

Digitally signed by
Ravindra Kumar
Date: 2021.11.09
16:40:20 +05'30'
Reason: IREPS-CRIS
Location: New Delhi

4 TMS 095.001
Rev. 1

4 TMS 095.001

298546/2024/HEP-TXM20500

5/46

Drum	Chosh	SEE/TMD
DRN.	CHKD.	


 DY.CEE/TMD.

CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL
NO.4.TMS.095.001,REV,1
DATE : 31-10-2009

FOREWORD

1. The tenderefs may please note that CLW do not undertake to supply them drawings for forged profile necessary drawings for fixture,toolings templates and for process detailes. CLW may, hohever comment suggest alteration/modifications to the suppliers drawings and methods, if required, during the manufacture,testing/inspection of the prototypes and / or use of the materials in CLW,s production.
2. SCOPE: This specification covers the manufacturing,testing,inspection,packing and supply of fully machined of forged components viz inner/outer bearing stoper(PE&CE),Comm. Vee ring, Comm.Nut & disc spring.
3. SPECIFICATION : The forging shall conform to the specification mentioned in the drawings of individual item.
4. MANUFACTURING:All forging shall be manufactured from killed steel produced by the open hearth,electric,basic-oxygen or combination of these process,or any other suitable method which will meet the requirement of the standered.
5. CHEMICAL COMPOSITION :The chemical composition analysis of steel forging when made in accordance with IS:228'59 shall be as per specification mentioned in the drawings of individual item.
6. MECHANICAL PROPERTIES: Should as per grade of specification mentioned in the drawing.
7. DIMENTIONAL TOLERANCES: All the forgings shall be free from harmful defects and unless otherwise mentioned in the drawing. The forging tolerances shall conform to the following

For drop and process forging :	IS:3469'1974 (pt.2)
For upset forging :	IS:3469'1974 (pt.3)
Weight & Quantity tolerance :	IS:3469'1974 (pt.1)
8. HEAT TREATMENT: The normalising temperature should be as per table-2 of IS:2004'1991 for those items which are as per IS:2004'1991 for other as per drawing.
9. RAW MATERIAL IN BRIEF PROCESS METHOD
 - i) Full precaution shall be taken to avoid hydrogen flaking shrinkage and cracks during heat treatment/annealing.
 - ii) Total wall thickness of maximum 5mm.shall be kept on forged profile for proof maching and then final machining.
 - iii) These materials shall be finally machined to the dimensions and profiles shown in the relevant drawings.

10. TEST AND TEST METHOD

- 10.1 The supplier shall offer the prototype(twoNos.) for inspection and test at his works with prior intimation to Dy.CEE/TMD,Dy.C.C&M/CLW,Dy.COS. They should provide all necessary facilities for inspection and testing. After the test it is considered necessary by the authorised representative of Dy.CEE/TMD/Inspecting authority to carry out further additional test or trials of the prototype at chittaranjan,the supplier will arrange the same by quickest means.
- 10.2 The supplier shall provide all facilities to the inspectng officers at his works, to inspect and test the equipment at various stages of manufacture.

 SEE/TMD.

 CHKD.

 DNR.

SPECIFICATION FOR
INNER/OUTER BEARING STOPERS,
COMM. NUT,DISC SPRING AND
COMMUTATOR VEE RING


DY.CEE/TMD.

CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL
NO.4.TMS.095.001,REV.1
DATE : 31-10-2009

10.3 Testing and approval of the design drawing and prototype by the purchaser shall in no way absolve the supplier of his responsibility under the terms of contract for the item supplied.

10.4 The sampling for test for forged items will be as follows:

- i) Dimension checks :20% of the offered quantity.(suppliers should check themselves 100%)
- ii) Mechanical test :Minimum 2 test pieces or 3% of offered quantity which ever more, selected random.

a) Tensile
b) Elongation
c) Hardness
d) Bend test

Values as per relevant drawing.

ALT. 1

e) DEFLECTION TEST FOR DISK SPRING

- iii) Chemical composition : - do -
- iv) Grain flow/grain structure : - do -
- v) Magniflux test/Die-penetrete test : 100% of the offered quantity
- vi) Ultrasonic test or radiografic test : 5% of the offered quantity of finished components at random.

11. INSPECTION [See clause-11 at sheet NO 5 OF 5]

ALT. 2

Bulk inspection of all the items shall be carried out at the manufacturers premises by CLW inspector. All metallurgical test shall be carried out by the authorised representative of a) The Dy.C&M/CLW or b)NABL approved laboratory. In case of b) it should be in presence of representative of zonal CLW inspection cell. The cost of inspection & testing including cost of material consumed in testing shall be borne by the supplier. The manufacturers shall also produce test certificate as recorded by them along with their product offered for inspection.

12. MARKING

Each component shall individually marked on suitable location with supplier's name/identification mark, Sl.No. before offering the material to the inspector.

13. PACKING

The packing component shall be suitably packed to prevent transit/long storing damage. For this purpose the following precautions to be taken in sequence.

- i) The component shall be coated with antirust varnish/compound after inspection and passed.
- ii) Varnished component shall be properly wrapped in polythene paper followed by corrugated paper.
- iii) The wrapped equipment shall be finally sealed in thick polythene bag.
- iv) The sealed components shall be finally packed in wooden crate/box fitted with saw dust to prevent transit damage of machined surface.

14. INFORMATION REQUIRED WITH TENDER.

- i) Details of forged facilities available with tenderers for undertaking the job.
- ii) Details of machining and testing facilities available.
- iii) Details of heat treatment facilities which is to be followed at various stages.
- iv) Details of availability of correct grade steel with them and the source from which the material has been is proposed to be obtained.
- v) The percentage of reduction in forging to be offered by them.
- vi) Quality assurance plan: Must be submitted as per annexure -1
- vii) Clause wise comments have to be furnished by the tenderer. Vague comments like noted and understood are not accept. Compliance have to be clearly stated. Otherwise CLW reserve the right to reject the offer.

SEE/TMD.
CHKD.
DNR.

SPECIFICATION FOR
INNER/OUTER BEARING STOPERS,
COMM. NUT, DISC SPRING AND
COMMUTATOR VEE RING

DIY. CEE/TMD.

CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL
NO.4.TMS.095.001,REV.1
DATE : 31-10-2009



ALT-2

1.1. INSPECTION

Inspection of all items shall be carried out at the manufacturers premises.

Metallurgical testing for prototype supplies shall be carried out by Dy. CC&M/CLW/CRJ or NABL approved laboratory for which sample to be drawn, stamped & sealed by authorized representative of Dy CEE/TMD/CLW/CRJ and for bulk supplies metallurgical test shall be done by DyCC&M/ CLW/CRJ or NABL approved laboratory , to be witnessed by authorized representative of CLW Zonal Inspection cell.

Cost of inspection & testing including cost of Material consumed in testing shall be borne by the supplier. The manufacturer shall also produce test certificate as recorded by them along with their product offered for inspection.

SEE/TMD	SPECIFICATION FOR INNER BEARING STOPPERS, COMMUTATOR NUT ,DISC SPRING & COMMUTATOR VEE RING	 Dy.CEE/TMD	CHITTARANJAN LOCOMOTIVE WORKS (W.B) No. 4TMS.095.001 REV-1 DATE: 21.10.2009
 SEE/TMD			