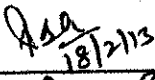

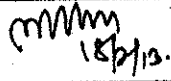
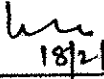


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Name	Designation	Signature	Date	Level
Aman Bhardwaj	SSE/Bogie Design	 18/2/13	18.02.2013	Prepared
Joginder Singh	SME/BD	 18/2/13	18.02.2013	Reviewed
Lalit Kishore	Dy CME/D-3	 18/2/13	18.02.2013	Agreed
Parmanand Singh	CDE	 18/2/13	18.02.2013	Approved

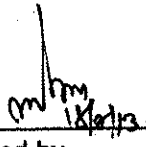
Rev. No.	Details of Changes	Date
00	Nil	Nil


18/2/13

Prepared by


18/2/13

Reviewed by


18/2/13

Agreed by

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1. **General:** This specification covers the infrastructure requirements for machined bogie bolster of FIAT bogie.
2. **Scope of supply:** Fabricated bogie bolsters shall be supplied by RCF/purchaser. It will be machined conforming in all respects to the relevant drawings using infrastructure mentioned in this specification without any damage to non-machined parts.
3. **Eligibility Criteria:**
 - i. The manufacturer shall be an ISO-9001-2000 certified company.
 - ii. The tenderer shall submit para-wise comments on this specification in his offer. He shall bring out the deviations, if any from the specification & drawing with adequate justification. Failure to do so may result in offer being regarded as technically unsuitable.
 - iii. Firm shall provide list of M&P and past performance in his offer.
 - iv. The manufacturer shall have adequate machining facilities mentioned in para # 4.
4. **Availability of infrastructure facility at manufacturer's premises in working order:**
 - i. Minimum 3-axis CNC Machining center with probing facility (for reference and inspection), minimum bed size 1.5Mx3.5M suitable for machining of bogie bolster in single setting. Machine should have 3-axis movement in X, Y, Z axis of milling head for drilling and facing.
 - ii. Level surface table of size 3500 mmX1500mm.
5. **Availability of testing equipments at manufacturers premises in working order:**
 - i. Vernier caliper size 0.5 M with dial gauge accuracy 0.01mm.
 - ii. Bore gauge for different holes in bolster
 - iii. Height gauge
 - iv. Digital surface roughness tester.
6. **Fixtures:** Firm should have in-house facility or have tie-up for fixtures required for machining of bogie bolster for different stages.
7. **Machining of Bolster:**
 - i. Machining of bogie bolster shall be done on 3-axis CNC machining centre as indicated in para 4 (i).
 - ii. Bogie bolster should be suitably fixed on Machining center using proper fixture in such a way that machining shall be done in single setting to achieve the dimension tolerances and the surface roughness as per drawing of tender.
 - iii. Single setting means that a particular reference is taken by probe and machining is completed according to that reference taken and the program fed without any change in bogie frame position.
8. **Stage inspection:** The stage inspection shall be carried out by manufacturer and records should be made available to the inspecting agency:
 - i. The Purchaser/Inspecting Agency shall have access at all reasonable times to the works where bogie bolster is machined and stored and shall have the right to inspect jig and fixtures and measuring instruments being used by the manufacturer. All the facilities, labour, appliances, gauges, measuring instruments etc. necessary for inspection shall be provided by the manufacturer free of cost.
 - ii. Dimension Control Charts and stage inspection reports etc. shall be supplied along with the Bogie bolster - to the purchaser.

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9. Dimensions and Tolerances:

- i. All dimension/tolerances shall be as per details given in the drawings.
- ii. Detailed dimension control charts/sheets shall be prepared for each bogie bolster in which measurements of critical dimensions shall be recorded and kept for evaluation and verification by the inspecting agency.
- iii. All the un-toleranced dimensions shall be in accordance with IS: 2102 (Medium).
- iv. Gauges, fixtures and templates and accurate measuring instruments shall be used to ensure the correctness of the dimensions.

10. Quality Assurance Plan: A Quality Assurance Plan which outlines the various stages and processes including inspection in order to obtain a Quality product shall be submitted to RCF, Kapurthala or Purchaser for approval. QAP shall be prepared on the lines as indicated in MDF00014. This shall be done and got approved by CDE/RCF, Kapurthala before undertaking manufacture of pilot sample.

11. Pilot sample approval: Manufacturer should get two samples approved from CDE/RCF, Kapurthala before start of series manufacture and bulk supply.

12. Code of Practice for Quality Control and Inspection:

- i. The manufacturer shall furnish to the Purchasing/Inspecting authorities the details of inspection records as required under the quality control systems in force.
- ii. These records and reports shall be maintained by the Competent Technical Authority of the manufacturer and shall be open to examination by the Purchasing/Inspecting Authorities at all reasonable time.

13. Identification Marking: Each bogie bolster shall be stamped with an easily visible identification indicating the bogie bolster serial number, year of manufacture and manufacturer's name to facilitate identification/correlation with the inspection/test results.

14. Packing:

- i. All machined surfaces shall be applied with suitable rust preventive, which shall prevent it from corrosion & oxidation for a minimum period of one year of storage.
- ii. The packing shall be such that all the machined surfaces shall be properly protected against rubbing/impact/scratches with other bogies or with mode of transportation i.e. wagon/truck/trailers etc.

15. Warranty: The manufacturer shall warrant the bogie bolster for conformance to quality for a period of 30 months from date of supply or 24 months from date of installation whichever ever shall be sooner, as per IRS conditions.

.....X.....

Prepared by

18/02/13

Reviewed by


Agreed by
