

रेल कोच फैक्टरी, कपूरथला
RAIL COACH FACTORY, KAPURTHALA

MD35131

Dated 13.11.2013

Sub: Issue of MDTs-212, Rev-02 Technical specification for supply of machined FIAT type bogie frame.

Please find enclosed a copy of modified technical specification MDTs-212, Rev-02 for supply of machined FIAT type bogie frame for information & necessary action at your end.


SME/BD

CQM,CPLC,CWE/SHELL,CMM/HSQ,CMM/TKJ,CMT,DY.CPLC-III.

SSE/Lib. Design

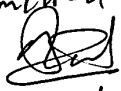
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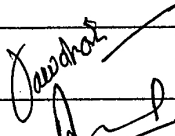
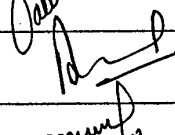
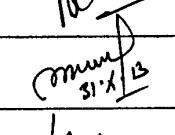
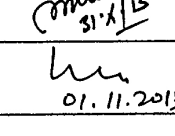
DY.CME/D1, DY.CME/D3

CDE

Submitted

12/11/13



Technical Specification For Supply of Machined FIAT Type Bogie Frames		
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Name	Designation	Signature	Date	Level
Jawahar Lal	SSE/BD		31.10.2013	Prepared
Joginder Singh	SME/BD		31.10.2013	Agreed
Lalit Kishore	Dy CME/D-3		31.10.2013	Reviewed
Parmanand Singh	CDE	 01.11.2013	31.10.2013	Approved

Issue/REV.	Detail of changes	Date
Rev-01	Para 3.3.1-Keeping the bogie frame added. Para 3.3.2-Added (Earlier machining in only horizontal position was permitted. Now machining in vertical position has also been added in response to CDE noting on PP-4 of MD44121 Volume- 57) Para 4.1-Vertical added	11.05.2011
Rev-02	Para 2.2- deleted. Para 3- Eligibility criteria modified & Para 3.3 added. Para 4.1 – Added. Para 4.2 deleted. Para 5- deleted. Para 8 and 9 modified. Serial numbers updated accordingly.	06.09.2013


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1. General:

This specification covers the technical requirements to be complied by the tenderer for machining of FIAT type bogie frames. Fabricated Bogie frames shall be supplied by RCF/supplier.

2. Scope of supply:

- 2.1. The machined bogie frames are to be supplied conforming in all respects to the relevant drawings & specification of tender.
- 2.2. This is a general specification required for machining of all type of Fiat type bogie frames used in mainline coaching stock.

3. Eligibility Criteria:

- 3.1. The tenderer must submit detailed clause-wise comments on the specification. In absence of above, offers shall be deemed as incomplete and may not be considered.
- 3.2. Since Fiat bogie have complexity in machining and requires development time for setting-up in-house infrastructure/Jigs and fixtures, bulk or regular procurement orders should only be given to the firms who have successfully supplied machined Fiat bogie frame to RCF/ICF/IR in past and have the infrastructure as mentioned in paras # 3.4 of this specification.
- 3.3. Developmental order can be placed on those tenderer having in-house infrastructure as mentioned in paras # 3.4.
- 3.4. The manufacturer shall have following minimum infrastructure facility at their works for machining of FIAT type bogie frames.
 - 3.4.1. Minimum 5-axis CNC Machining center with probing facility (for reference and inspection), minimum Bed size 3Mx4M suitable for machining of Bogie frame in single setting keeping the bogie frame in the horizontal position. Machine should have 3-axis movement of X, Y, Z Axis & two rotational movements of milling head for drilling and facing in range of $\pm 96^\circ$ with least count of 2° . The minimum movement of tool head shall be 1.2 M.

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OR

Minimum 5-axis CNC Machining center with probing facility (for reference and inspection), minimum Bed size 2.5Mx4M suitable for machining of Bogie frame in single setting **keeping the bogie frame in the vertical position**. Machine should have 3-axis movement of X, Y, Z Axis & two rotational movements of milling head for drilling and facing in range of $\pm 96^\circ$ with least count of 2° . The minimum movement of tool head shall be 1.2 M.

3.4.2. Level surface table of size 4000mmX3500mm.

3.4.3. Vernier caliper size 2.6M with dial gauge accuracy 0.01mm.

3.5. The manufacturer shall be an ISO-9001-2000 certified company.

4. Machining of Bogie frame:

4.1. Machining of bogie frame shall be done on 5-axis CNC machining center as indicated in para # 3.4.1.

4.2. Bogie frame should be suitably fixed on Machining center using proper fixture in such a way that machining shall be done in single setting in horizontal / vertical position to achieve the dimension tolerances and the surface roughness as per tender drawings.

5. Dimensions and Tolerances:

5.1. All dimension/tolerances shall be as per details given in the drawings.

5.2. Detailed dimension control charts/sheets shall be prepared for each bogie frame in which measurements of critical dimensions shall be recorded and kept for evaluation and verification by the inspecting agency.

5.3. All the un-toleranced dimensions shall be in accordance with IS: 2102 (Medium).

5.4. Gauges, fixtures and templates and accurate measuring instruments shall be used to ensure the correctness of the dimensions.

5.5. Drawing no. 1267505 to be referred for preparation of measurement sheet.

6. Pilot sample approval:

6.1. Before manufacture of pilot sample, Jig & fixture to be got approved from CDE/RCF, Kapurthala.

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- 6.2. Manufacturer should get pilot samples approved from CDE/RCF, Kapurthala before start of series machining and bulk supply.
7. **Quality Assurance Plan:** Firm has to comply machining processes and inspection as per Quality Assurance Plan enclosed as annexure-A.
8. **Code of Practice for Quality Control and Inspection:**
- 8.1. Regular inspection will be done by inspecting agency as per Quality Assurance Plan enclosed as annexure-A.
- 8.2. The manufacturers shall furnish to the purchasing/ inspecting authorities information in respect of quality control systems in force at their works on various materials used in the manufacture of components.
- 8.3. RCF may carry out in-process inspection of manufacturing of bogie frame at the firm premises.
9. **Identification Marking:** Each bogie frame shall be stamped with an easily visible identification indicating the bogie frame serial number, year of machining and firm's name to facilitate identification/correlation with the inspection/ test results.
10. **Packing:**
- 10.1. 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.
- 10.2. The packing shall be such that all the machined surfaces shall be properly protected against rubbing/ impact/scratches with other bogie or with mode of transportation i.e. wagon/truck/trailers etc.
11. **Warranty:**
- The manufacturer shall warrant the bogie frame for conformance to quality for a period of 30 months from date of supply or 24 months from date of installation which ever shall be sooner, as per IRS conditions.

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Annexure-A

#	Description	Parameter	By Vendor	By RITES
1	Fixture for machining of bogie frame	Suitable fixture for machining of bogie frame	Ensure suitable fixture	Ensure availability of suitable fixture
2	Machining of bogie frame	Machining of frame to be done in single setting on five axis CNC machining centre as defined in the specification.	To be ensured Ensure all five axis of the machine are working, specially milling head and probe facility	<ul style="list-style-type: none"> Check proper working of 5-axis CNC machine center as per specification for each inspection lot. Inspect quality of machining as per drawings and specification.
3	Surface protection	Protection of paint.	Ensure that painted surfaces are not damaged during machining and transportation.	Check for damaged surfaces.
4	Dimensional check of bogie frame	As per drawings and specification	Ensure as per specification/drawing during process of manufacture and final product.	Product will be inspected as per drawings/speciation in conformance to sampling plan.

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