

Traction Machine Engineering

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BHEL BHOPAL		QUALITY ASSURANCE PLAN FABRICATED/CAST CUM FABRICATED/CASTED MAGNET FRAME FOR TRACTION MOTOR TYPE TM4601							
Sl.No	Component / Operation	Characteristic	Class	Type of Check	Quantum of Check	Reference Document	Format of Record	Agency	Remarks
1.0	Raw Material								
	As per drawing	1. Mechanical, Chemical Properties	MA	Identification & Correlation	100%	Relevant Std.(BP0460297)	Mill Test Certification Test Report	Supp	Ref. note
						As per drg.(For fab.) Relevant Std.(AA19501) For casting	Test Report		
						No rust/pitting etc.( in case of Fabrication)	Ins.Report	Supp	
						Relevant Std.(AA19501) For casting	Test Report		
		2. Surface defects	MA	Visual	100%		Ins.Report	Supp	
		3. Dimensions	MA	Measurement	Sample	As per drg	Ins.Report	Supp	

Sd/-  
23/8/11

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Sl.No	Component / Operation	Characteristic	Class	Type of Check	Quantum of Check	Reference Document	Format of Record	Agency	Remarks
2.0	<b>In Process</b>								
2.1	Submerged arc Welding (For fab./Cast cum fab.)	1 Welding procedure Specification (WPS) 2) Procedure performance qualification	MA	Verification	100%	As per drg	Report	Supp	BHEL Approved Electrode to be use
			MA	Physical Tests	100%	As per drg	Report	Supp	
2.2	Fit up of all welds joints	Alignment and Dimensions	MA	Visual Measurement	Sample	As per drg	Ins. Report	Supp	
2.3	1) Magnet Frame Tube(For fab. Magnet frame)	1. Dimensions including ovality, concentricity after forming / flame cutting / dressing & premachining. 2. Ultrasonic test	MA	Measurement	Sample	As per drg	Ins. Report	Supp	
		2. Ultrasonic test	MA	UT	Sample	As per drg	Test Report	Supp	
	2) Magnet Frame Tube(For cast tube)	1. Dimensions after casting.	MA	Measurement	Sample	As per drg	Ins. Report	Supp	
		2. Ultrasonic test	MA	UT	Sample	As per drg	Test Report	Supp	
2.4	Sub assembly (For fab./cast cum fab.)	1. Dimension 2. Edge Preparation 3. Squareness, flatness & Alignment	MA MA MA	Measurement Measurement Measurement	Sample Sample Sample	As per drg As per drg As per drg.	Ins. Report Ins. Report Ins. Report	Supp	

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Sl.No	Component / Operation	Characteristic	Class	Type of Check	Quantum of Check	Reference Document	Format of Record	Agency	Remarks
2.5	1. Weld Quality/ Full Penetration Butt/groove weld 2. Completed final fillet welds (For fab./cast cum fab.)	1. Freedom from defects  2. Freedom from defects	MA	DP/MT UT	As per drg.	As per drg.	Test Report	Supp	
3.0	<b>Final Inspection</b>								
3.1	Complete Magnet Frame (For fab. & cast cum fab.)	1. Dimensions 2. Squareness, Alignment wherever applicable 3. Post weld heat treatment (Stress Relieving)	MA	Measurement	Sample	As per drg.	Ins. Report	Supp	
			MA	Measurement	Sample	As per drg.	Ins. Report	Supp	
			MA	Verification of time temp chart	100%	As per drg.	Time, Temp chart	Supp	

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Sl.No	Component / Operation	Characteristic	Cls	Type of Check	Quantum of Check	Reference Document	Format of Record	Agency	Remarks
		4. Weld surface flaws	MA	DP / MT	100%	As per drg	Test Report	Supp	
		5. Proof Marking	MA	Measurement	Sample	As per drg	Ins. Report	Supp	
		6. Internal and external cleanliness	MA	Visual	100%	As per drg. No Scales, Rust, pitting allowed	Ins. Report	Supp	
	Complete Magnet Frame(For cast )	1. Proof Marking	MA	Measurement	Sample	As per drg	Ins. Report	Supp	
		2. Internal and external cleanliness	MA	Visual	100%	Casting to be free from sand inclusions, cracks and porosity.	Ins. Report	Supp	
3.2	Painting	Uniformity, colour shade	MA	Visual	Sample	As per drg.	Ins. Report	Supp	
4.0	Pre-Despatch	1. Review of all Test Certificates, Insp.Reports for previous stages.	MA	Visual	100%	As per drg.	Ins. Report	Supp	
		2. Stamping and Marking (Identification)	MA	Visual	100%	As per drg.	Ins. Report	Supp	

NOTE:- 1) Supplier shall submit certificates as per specification & other requirement mentioned in the drawing.  
2) Supplier to whom order is placed shall submit QA Plan as per enclosed format before execution of the P.O.

*[Signature]*  
25/01/11