ACDC CRANES Ltd
LIFTING ASSISTANCE

Inspection Report and MPI Technique Instruction	Issue 1
Wet Non Fluorescent Continuous	Page 1 of 3

Customer:	Tata Steel	**Description:**	Coil Grabbers	**Technique Number:**	YOKE
Report No:	F011109-1	**Part No:**	Grab No 1: 4567	**Order No:**	4100193857
Quantity:	1 OFF	**Material:**	-	**Serial Numbers:**	-
Test Date:	*28/06/2011*	**Re Issue Date:**	-	**Scope of Inspection:**	All Accessible Welds
Manufacturing Staqe:	In Use	**Procedure *1* Acceptance:**	TP37/Factual		

Process Control Checks

Cleaning Agent Type:	Jac 2	**Batch No:**	035182		
Contrast Paint Type:	-	**Batch No:**	-	**Application:**	
Black Ink:	NEOCOLB	**Batch No:**	B1095		
Electromagnetic Force Lifting Test Process Control Ref:			YECC	Date: *28/06/2011*	
White Light Inspection Lamp: Process Control Ref No:			UVIWL	Date: *28/06/2011*	
Detection Media: Process Control Ref No:			AEROSOL	Date: *28/06/2011*	
Hall Effect Probe:	CYHT 201				
Flux Indicator Type:	Castrol Strip		All Surface Areas Were Examined In Two Perpendicular Directions For Direction And Magnitude Confirming 100% Coverage		
Restrictions to Required Coverage:					

Test Results: The above Componentls Have Been Tested in Accordance With the Customer Purchase Order Requirements and All Related Testing Specifications

See Attached Diagrams and Pictures

Comments:

Technician:J.Miles

peN Level 2: 309809 (Gen MT)

Inspection Report and MPI Technique Instruction	Issue 1
Wet Non Fluorescent Continuous	Page 2 of 3

Reference Documents:		AC Electromagnetic Yoke Hall Effect Gauss meter Inspection Lamp
Personnel Certification:	EN473 (PCN) & SNTTC 1A Level 2	

The Inspector Shall Ensure Compliance With All Requirements Of The Quality Assurance Procedures For MPI
IF IN DOUBT REFER TO REFERENCED TECHNICAL DOCUMENTS
Testing To Be Performed In Accordance With NDT Health and Safety And Environmental Procedures

All Components Tested Shall Be Checked For Residual Magnetism At Initial Stage, Final Stage And Between Each Operation, If The Gauss Reading Is Outside Required Range At Any Stage The Component Shall Be Demagnetised

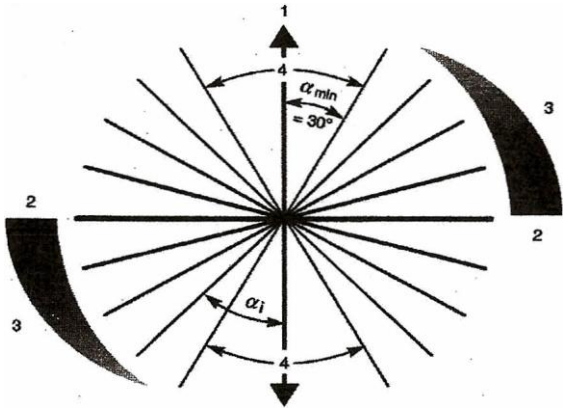
Magnetisation Method, Pre Wet/Energise And Spray Simultaneously, Continue Energise For +2 Seconds After Spray Application Number of Shots Shall Be Determined By Hall Effect Probe And Castrol Strip

Stage	Equipment Technique	Instruction Details	Indication Direction	Verify
Pre Stage	To Assess Suitability For Testing And Preparation For Testing			
1	Visual Inspection All Accessible Surfaces, Check For surface Condition And Surface Finish			
2	Pre Clean All Component/s Using approved Cleaning Agents			
3	A Thin Layer Of Contrast Aid Paint Shall Be Applied To The Surface To Be Inspected			
1	AC Yoke	AC Yoke Pre Wet/Energise and Spray Simultaneously Continue Energise for + 2 Seconds after Spray Application	See Page 3	Determine Area For Magnitude And Direction To Ensure 100% Coverage Tolerance >2.4 kNm
2	Continue As Stage 1 For 100% Coverage			
3	Post Clean All Component/s Using Approved Cleaning Agents			
4	Record Status Of All Components And Attach Status Labels And Complete Inspection Report, Sign Stamp And Date			

Inspection Report and MPI Technique Instruction	Issue 1
Wet Non Fluorescent Continuous	Page 3 of 3

5.6.1 Field directions and testing area

The detectability of an imperfection depends on the angle of its major axis with respect to the direction of the magnetic field. This is explained for one direction of magnetization in Figure 1.



α Is the angle between the magnetic field and the direction of the imperfection
α_{min} Is the minimum angle for imperfection detection
α_i Is an example of imperfection

Key
1 Magnetic field direction
2 Optimum sensitivity
3 Reducing sensitivity
4 Insufficient sensitivity

Figure 1 – Directions of detecable imperfections

To ensure detection of imperfections in all orientations, the welds shall be magnetized in two directions approximately perpendicular to each other with a maximum deviation of 30 degrees. This can be achieved using one or more magnetization methods

Testing in only one field direction is not recommended but may be carried out if specified, e.g. in an application standard.

When using yokes or probes, there will be an area of the component in the vicinity of each pole piece or tip that will be impossible to test due to excessive magnetic strength. This is usually seen as furring of particles.

Care shall be taken to ensure adequate overlap of the testing areas as shown in figures 2 and 3

Technique Produced By		Approved By	
Sign		Sign	
Print	R D Smith	Print	N Turner
Date	16.03.2010	Date	16.03.2010