

**Report No:** M16-1337  
**Date:** 21<sup>st</sup> and 25<sup>th</sup> July 2016  
**Client:** Minespec Parts Pty Ltd  
**Contact:** Ian Roduner  
**Subject:** The Magnetic Particle, Ultrasonic and Visual examination of nominated areas about one [1] EX5500 Boom.  
**Test Location:** Austin Engineering, 56 Len Shield Street, Paget QLD 4740.  
**Order No:** P0216  
**Client Job No:** TBA  
**Technician:** Paul McNeill and Donald O'Hare

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**Results of Examination:**

Results of examination are detailed in Table 1 of this report.  
All measurements provided in millimetres unless stated otherwise.

**Reported By:**



Craig Birkett  
AS3998 Level 3  
Technician

**Report Issue Date:**

27<sup>th</sup> July 2016

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## TECHNICAL DATA

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### MAGNETIC PARTICLE EXAMINATION

<b>Test Standard:</b>	AS 1171-1998
<b>Test Procedure:</b>	MT01
<b>Product Criteria:</b>	To detect cracking
<b>Technique:</b>	Magnetic Flow
<b>Current Type:</b>	Sustained
<b>Magnet:</b>	AC yoke MT34
<b>Media:</b>	Ardrox 800/3 & 8901W
<b>Material:</b>	Carbon Steel NFS
<b>Surface Condition:</b>	Bare metal / painted
<b>Demagnetized:</b>	No
<b>Test Restrictions:</b>	Nil

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### ULTRASONIC EXAMINATION

<b>Test Standard:</b>	AS 2207-2007
<b>Test Method:</b>	UMB-2
<b>Product Criteria:</b>	AS/NZS 1554.1:2014 SP
<b>Technique:</b>	Contact Scanning
<b>Sizing Method:</b>	Last Significant Echo
<b>Flaw Detector:</b>	Epoch 600
<b>Couplant:</b>	UT-X
<b>Material:</b>	Carbon Steel NFS
<b>Surface Condition:</b>	Complies to 3.3
<b>Transducers:</b>	DL4R P78 and MWB 0270 P55
<b>Test Restrictions:</b>	Limited scanning area due to welded attachments and geometry

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### VISUAL SCANNING & EXAMINATION

<b>Test Standard:</b>	AS 3978-2003
<b>Test Method:</b>	Visual examination of all viewable areas
<b>Product Criteria:</b>	To detect cracking
<b>Material:</b>	Carbon Steel NFS
<b>Lighting Condition:</b>	Complies to AS 3978
<b>Inspection Stage:</b>	Welding completed
<b>Surface Condition:</b>	Painted
<b>Inspection Aids:</b>	Torch and Rule
<b>Test Restrictions:</b>	Paint

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**RESULTS OF EXAMINATION**

The Magnetic Particle, Ultrasonic and Visual examination of nominated areas about one [1] EX5500 Boom.

**TABLE 1**  
**Magnetic Particle, Ultrasonic and Visual Examination**

<b><u>Examined</u></b>	<b><u>Interpretation</u></b>	<b><u>Quality</u></b>
1.1 <b>RHS W1 Internal Welds and Transitions</b> Visual Supp MPI	No cracking detected	
1.2 <b>RHS W4 Welds</b> Visual Supp MPI	Cracking detected – <i>refer to photograph 1.2.</i>	
1.3 <b>RHS W7 Welds</b> Visual Supp MPI	Cracking detected – <i>refer to photograph 1.3.</i>	
1.4 <b>RHS Boom Foot Welds</b> Visual Supp MPI	Cross failure through casting – <i>refer to photograph</i>	
<b><i>Window numbers are from Boom Foot to Stick End</i></b>		
1.5 <b>LHS W1 Welds</b> UT	No recordable discontinuities detected	Complies
1.6 <b>RHS W1 Welds</b> UT	Window removed at time of inspection	
1.7 <b>LHS W2 Welds</b> UT	No recordable discontinuities detected	Complies
1.8 <b>RHS W2 Welds</b> UT	Inclusion detected – 28mm Deep, 40mm Long <i>Refer to photograph 1.1.</i>	Complies

**TABLE 1 - continued**  
**Magnetic Particle, Ultrasonic and Visual Examination**

<b><u>Examined</u></b>	<b><u>Interpretation</u></b>	<b><u>Quality</u></b>
1.9 LHS W3 Welds UT	No recordable discontinuities detected	Complies
1.10 RHS W3 Welds UT	No recordable discontinuities detected	Complies
1.11 LHS W4 Welds UT	No recordable discontinuities detected	Complies
1.12 RHS W4 Welds UT	Discontinuities detected: - Crack 270mm Long, 24-26mm Deep, surface breaking 130mm x 1 <i>Refer to photograph 1.2.</i>	Does not comply
1.13 LHS W5 Welds UT	No recordable discontinuities detected	Complies
1.14 RHS W5 Welds UT	No recordable discontinuities detected	Complies
1.15 LHS W6 Welds UT	No recordable discontinuities detected	Complies
1.16 RHS W6 Welds UT	Discontinuities detected: - Crack 400mm Long, 24-36mm Deep <i>Refer to photograph 1.3.</i>	Does not comply

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**TABLE 1 - continued**  
**Magnetic Particle, Ultrasonic and Visual Examination**

<b><u>Examined</u></b>	<b><u>Interpretation</u></b>	<b><u>Quality</u></b>
1.17 LHS W7 Welds UT	No recordable discontinuities detected	Complies
1.18 RHS W7 Welds UT	Discontinuities detected: - Crack 200mm Long, 28mm Deep, surface breaking 140mm <i>Refer to photograph 1.3.</i>	Does not comply



**Photograph 1.1.**  
General view of areas examined and inclusions detected about EX5500 Boom.



**Photograph 1.2.**  
General view of areas examined and discontinuities detected about EX5500 Boom.



**Photograph 1.3.**  
General view of areas examined and discontinuities detected about EX5500 Boom.