



PROCESS CHECK REPORT

Company:		
Process Title	SHOT PEENING FOR IMPROVED FATIGUE RESISTANCE	
Category(s) of Approval	12b	
Process Check Report Ref. No:		
Date Of Process Audit:		
Auditor (please print name):		
Nadcap Reference (if applicable):		
Invoked Documents:- HBIFSAS/QA/SC1, QAIS Doc Ref Q5B-008H		
QA Element	Yes	No
	✓	X
Calibration Status: All Inspection, Measuring and Test Equipment used in this Process is calibrated, and certified against equipment traceable to National Standards		
Materiel Usage: All Materiel used in this Process is in accordance with requirements of the relevant Process Specification/Standard		
BAEP/BS: All work has been processed in accordance with the latest issue of the relevant BAEP(s) and/or National Standards		
Technique Sheets: All applicable Technique Sheets used, including Inspection Plans, are to the latest issue and have been approved by HBQSC		
Training/Qualification: All relevant personnel involved with this Process are appropriately trained, qualified and assessed periodically		
Internal Audit: The Internal Audit for this Process is current, with no outstanding CAs		
If No to any of the above QA Elements - give details below:		
Audit Comments:		
Auditor:	QA Manager:	Approved by (HBQSC):



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Invoked Documents Listing

1. Process Specifications

Reference No.	Title	Issue
BAEP 2001	Shot Peening For Improved Fatigue Resistance.	4

2. Quality Assurance Instructions To Suppliers

Reference No.	Title	Issue

3. Other Technical Documents Invoked

Reference No.	Title	Issue

4. General

For any deviations to the applicable BAEP please see the Processor Surveillance Questionnaire Pack



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AUDIT FINDINGS

Details Of Check	Result / Remarks	Action Required
Is BAEP 2001 available and at the correct issue.		
Does an internal procedure exist and what is its reference/issue status.		
Is the shot peening satisfactorily incorporated into the planning.		
Are history sheets available and fully endorsed.		
Is the equipment designed such that the operator is fully protected during the process.		
Has the equipment means of separating the broken shot, scale and dust from the good media.		
Is the equipment controlled at an air pressure of 0.2-0.6Mpa (30-90psi) which is clean, dry and oil free.		
Have all the following processes been carried out prior to peening:- i) Bending, drawing, stretching. ii) Dimensions checked. iii) Heat treatments.		
If not stipulated on the drawing is the surface rougher than 125µm for steel and 63µm for aluminium and titanium.		



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AUDIT FINDINGS

Details Of Check	Result / Remarks	Action Required
Are areas to be peened free from any surface coatings.		
If NDT is part of the process, has this been carried out prior to peening.		
Are all parts cleaned as per BAEP 9069, 9053 or 9069.		
If necessary is adequate masking of the parts not requiring peening undertaken.		
Are the following peening intensities adhered to for arc height:- i) Fe - Fe Almen C 0.2-0.3mm ii) Fe - Fe Almen A+ 0.3-0.35 mm iii) Al - Fe Almen C 0.075-0.15mm iv) Ti - Fe Almen A 0.15-0.2mm		
Is the nozzle at approximately 6" from the work piece surface and at 90° to it.		
Are the equipment settings to achieve saturation peening of the Almen strips determined in accordance with BAEP 9046, and also the peening time to obtain complete coverage.		



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AUDIT FINDINGS

Details Of Check	Result / Remarks	Action Required
Is a special nozzle used to ensure perpendicular blasting of the bores.		
Are the following adhered to unless specified on the drawing or technique sheet:- i) Steel shot for ferrous parts. ii) Glass beads for aluminium parts. iii) Steel or glass titanium parts.		
For distortion correction of aluminium parts is steel shot used in accordance with BAEP 4524.		
Have these parts been subsequently decontaminated.		
Are the parts peened whilst held under any external loading, if so has this been agreed with Design approval.		
If peening close tolerance parts is an allowance made on pre-peening dimensions.		
Has a technique sheet been raised for each part in accordance with BAEP 4580 and design approved.		
Is a register maintained of all work passing through the shot peening department.		



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Details Of Check	Result / Remarks	Action Required
Are the Almen strips passed by inspection prior to commencement of the peening operation.		
Are all the Almen results entered into the register against the corresponding part number.		
Are all aluminium and titanium parts blasted to BAEP 2002 or 2006 after peening.		
Are steel parts also blasted if to be hard chrome plated subsequently. If this is considered inadequate has a light grinding taken place to remove large asperities (no more than 0.08mm should be removed).		
If the above process is followed is at least 50% witness of the shot peened surfaces remaining.		
Is etch inspection and stress relieving carried out as per BAEP 4544.		
Are parts that require protective treatments, treated within 4 hours of peening. If this cannot be achieved are parts temporarily protected to BAEP 9038.		



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AUDIT FINDINGS

Details Of Check	Result / Remarks	Action Required
<p>Is the shot inspected by the laboratory at suitable interval for:-</p> <ul style="list-style-type: none"> i) Dimensional limits of BAEP 0035 of less than 20%. ii) Broken shot does not exceed 10%. iii) Glass beads continuously separated (if greater than 20% then the charge shall be changed for a new one). 		
<p>Is the shot peening media obtained from an approved source.</p>		
<p>Does the technique sheet detail all the requirements below:-</p> <ul style="list-style-type: none"> 1) Peening conditions. 2) Requirements for coverage. 3) Shot material. 4) Shot size. 5) Nozzle identification. 6) Air pressure. 7) Work piece to nozzle distance. 8) Total peening time required. 9) Speed of traverse. 10) Rotational speed of part. 11) Centrifugal wheel distance. 12) Number and angle of nozzle or wheels. 13) Almen gauge requirements. 14) Almen intensity. 15) Location of Almen test strips. 		
<p>Are all personnel adequately trained to carry out the shot peening operation and analyse the shot.</p>		