

**Special Processes Audit Checklist – GE Aviation Systems Wolverhampton. HEAT TREATMENT**

**Company**

|                           |                             |                 |                            |
|---------------------------|-----------------------------|-----------------|----------------------------|
| Company Name              | Wallwork Heat Treatment Ltd | Company Address | Lord Street, Bury, BL9 ORE |
| Contact Name              | Nick Olpin                  | Auditor         | Simon Ford                 |
| Position                  | Quality Manager             | Date of Audit   | 24 <sup>th</sup> Feb 2009  |
| e-mail                    | nick.olpin@wallworkht.com   | Report          | SQ013-09                   |
| Date of previous audit    | N/a                         | ref             | N/a                        |
| Previous approval expires | N/a                         | ref             | N/a                        |

*rev 1. Includes evidence of closure of corrective actions.*

**Audit Summary**

Approval of this supplier has been requested by Micro Precision of Hemel Hempstead. Supplier operates a well organised, busy subcontract heat treatment shop. Based on the quality and capability of this supplier, recommend this supplier be added as an approved tier 1 supplier to GE Aviation direct., therefore usable by Micro Precision and others

Note:- Approval of heat treatment datacards will not be required  
 Note:- Routine annual special process audit will not be required as this supplier holds relevant Nadcap approvals – assuming successful addition of carburising in Jun-09 to existing scope that includes pyrometry, nitriding and heat treatment of steels.  
 Supplier may delete the requirement for accompanying mechanical test pieces for the alloys/conditions listed in PS 118 para 6.1 as long as heat treatment facilities are maintained in line with the requirements of AMS 2750 issue D. Assessment of heat treatment properties in those instances is therefore by hardness testing alone.

**Approvals**

Supplier is **approved** for:-

- Pyrometry in accordance with MSPS200.HT.001
- Carburising in accordance with MSPS200.HT.002
- Nitriding in accordance with MSPS200.HT.003
- Heat treatment of Steels in accordance with PS 118
- Supporting processes including hardness testing, metallographic examinations and microhardness testing

Satisfactory evidence of closure of corrective actions has been received.

|   |                                       |
|---|---------------------------------------|
| Auditor   | Supplier                              |
| Simon Ford, Senior Materials Engineer<br>For GE Aviation Systems Ltd, Wolverhampton UK<br><i>SSFord 16/4/09</i> | <i>22/4/2009</i><br><i>Nick Olpin</i> |

**Audit Scope**

Audit Type Initial / Re-accrreditation / Other \_\_\_\_\_

| <u>Specification</u> | <u>Baseline</u>               | <u>Description</u> | <u>Audit</u> | <u>Checklist</u> | <u>Supplier has Nadcap?</u> |
|----------------------|-------------------------------|--------------------|--------------|------------------|-----------------------------|
| MSPS200.HT.001       | AMS 2750                      | pyrometry          | ✓            | HT 1             | ✓                           |
| MSPS200.HT.002       | AMS 2759/7 Type 1, Class 1    | Gas Carburising    | ✓            | HT 2             | No                          |
| MSPS200.HT.003       | AMS 2759/6 Class 1 or class 2 | Gas Nitriding      | ✓            | HT 2             | ✓                           |
| <br>                 |                               |                    |              |                  |                             |
| <u>Specification</u> | <u>Alternative</u>            | <u>Description</u> |              |                  |                             |
| PS 118               | -                             | HT of Alloy Steels | ✓            | HT 3             | ✓                           |

Other related specifications:-

PS 8 surface preparation  
 PS 45 temporary protection of parts  
 PS 78 trichloroethylene vapour degrease  
 PS 111 Hardness Testing  
 PS 143 abrasive blast  
 PS 156 part marking - engraving & vibro-etch only  
 PS 192 salt spray corrosion testing  
 PS 193 air line cleanliness  
 QCI 520 inspection records & inspection card  
 QCI 524 laboratory procedures - chemical analysis

**Note: - the above processes do not carry a specific special process approval. They are audited to the extent required under the main process listed above.**