



UTAS SUPPLIER PRODUCT-RELEASE PROGRAMS

APPROVALS:

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1.0 PURPOSE

The purpose of this document is to define the Hamilton Sundstrand/UTAS Supplier Authorization to release Program in addition to the requirements and responsibilities for the Hamilton Sundstrand/UTAS Supplier Designated Quality Representative (DQR). This document also provides additional Quality Systems requirements that are not contained in the United Technologies Corporations ASQR-01 'Aerospace Supplier Quality Requirements'.

Note: This specification does not apply to the Windsor Locks Space Systems business entities.

2.0 SCOPE

2.1 AUTHORIZATION TO RELEASE PROCESS

The Authorization to Release (ATR) process is applicable to suppliers that provide product to UTAS facilities or drop ship product to UTAS suppliers or customers. ATR Suppliers shall use the ATR process for all UTAS product shipments, including supplier-to-supplier, supplier-to-distributor, distributor-to-distributor, and supplier to Strategic Logistic Center (SLC). Previously UTAS approved DSQR Suppliers will be recognized as meeting DQR status. The procedures presented herein are general and may be tailored for individual program requirements or to fit unique Supplier/UTAS relations. ATR terms and conditions shall be documented in a Letter of Agreement (Form 8) between the supplier and UTAS. Direct ship authority will be granted by UTAS on a separate Letter of Agreement.

2.2 ALTERNATE TO ATR PROCESS

Suppliers not approved for the ATR Process are required to request source inspection services per instructions located on the UTAS Supplier Portal. This required over-inspection service will be at the supplier's expense. Only the following sections of HSM17 apply:

- 2.2.1 Order of precedence per paragraph 2.3.1 through 2.3.5
- 2.2.2 Use of CQAR (third party source) or Receiving Inspection
- 2.2.3 Non conforming material per paragraph 5.11
- 2.2.4 Design Control per section 5.12
- 2.2.5 Special Marking Requirements per section 5.14.6
- 2.2.6 Applicable Document revisions per 5.15
- 2.2.7 Raw Material per HSM19
- 2.2.8 Special Process Control per sections 6.0, 7.0 and 8.0

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2.3 ORDER OF PRECEDENCE

The order of precedence, in circumstances of conflicting requirements, shall be:

1. Contract (i.e. Purchase Order, SA (Scheduling Agreement))
2. Drawing Referenced
3. HS/UTAS Specifications
4. Referenced Specifications
5. This procedure (HSM17)

3.0 DEFINITIONS

- **AUTHORIZATION TO RELEASE (ATR):**

A process that authorizes a supplier's representative (DQR) to act as an agent of UTAS who may perform process audits, product inspection, acceptance, and release. Hamilton Sundstrand's/UTAS ATR process is documented through the Electronic Release Process

- **BULK PACKAGING:**

Parts too small to be individually stamped, typically high volume, low cost, manufactured or specifically designated parts (i.e. bag of industry standard washers, nut, etc.).

- **CONTRACT QUALITY ASSURANCE REPRESENTATIVE (CQAR):**

Contract Quality Assurance Representatives approved by UTAS (third party) to perform duties and responsibilities of UTAS Supplier Quality Assurance (SQA). CQAR's are delegated product acceptance or release authority.

- **DEFECTIVE PART PER MILLION DEFECT (DPPM) RATE:**

DPPM is a metric used to determine a supplier's performance based on receipt and acceptance of product, and is calculated as follows.

$$DPPM = \frac{\text{Number of Pieces Rejected}}{\text{Number of Pieces Received}} \times 1,000,000$$

- **DESIGNATED QUALITY REPRESENTATIVE (DQR):**

A supplier representative (employee) approved by UTAS to perform Source inspection, corrective action and related duties (formerly referred to as DSQR's).

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- **SUPPLIER SOURCE INSPECTION (SSI)**

Supplier Source Inspection (SSI) is an internet web-based method to communicate to Suppliers, SQARs and others; current contractual requirements for Purchased Parts. It collects data necessary to release product (Lot Date Codes, Serial Number, Key Characteristics, Materials, etc.) and makes information readily available for use. It provides for direct shipment to point of use, bypassing RI and Material Lab, triggers payment, Supplier Ratings and other systems.

- **ELECTRONIC SOURCE INSPECTION RECORD (iLot) :**

An Inspection Record generated by an approved individual using the Electronic Release Process application. The record applies to a specific quantity of parts inspected at a given time and provides the status of inspection approval based on provided requirements.

- **ESCAPE:**

An escape event is defined as the return of parts and other delivered products that do not meet contractual requirements.

Significant escape - a safety related escape or an escape resulting in considerable business impact (e.g. causing significant customer installation or assembly line stoppage, removal/tear down, inventory recalls or missed deadlines or contracts).

- **FIRST ARTICLE INSPECTION REPORT (FAIR):**

A First Article Inspection Report is to give objective evidence that all engineering, design, and specification requirements are correctly understood, accounted for, verified, and recorded. First Article Inspection Reports shall be performed accordance with SAE AS9102 and additional requirements detailed in ASQR-01 and HSM236.

- **MONTHLY ROLLING AVERAGE:**

Monthly Rolling Average is calculated using the average of the DPPM value for each of the months specified. For example, a 3 Month Rolling Average would average the current and two preceding months DPPM value.

- **NOTIFICATION OF POTENTIAL QUALITY ESCAPE (NOPQE):**

NOPQE is an escapes management process to report potential product non-conformances and document relentless root cause and corrective action. UTC Form 6 is used to document supplier non-conformances found at a supplier's facility concerning product that has shipped. Supplier to send in NOPQE via the Supplier Request for Information system.

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- **PRODUCTION PART APPROVAL PROCESS (PPAP):**
PPAP is a series of analyses of various aspects of a production manufacturing process. The purpose of this process is to provide evidence that UTC member engineering design, record and specifications requirements are properly understood and fulfilled. The goal is to demonstrate the established manufacturing process has the potential to produce product that consistently meets all requirements at the intended production rate.
- **(QN) QUALITY NOTIFICATION**
A Quality Notification is a request to the supplier for Containment, Root Cause and Corrective Action for product delivered and found to be nonconforming. A Quality Notification (QN) is also issued to a supplier for unacceptable findings resultant of an audit or product assessment.
- **SUPPLIER TO SUPPLIER SOURCE INSPECTION:**
Product release performed by sub-tier supplier currently doing business with UTAS to supplier holding the direct UTAS purchase order.
- **SUPPLIER QUALITY REPRESENTATIVE (SQR):**
An SQR is an individual performing functions as defined by this procedure as well as applicable HS/UTAS procedures. There are three types of SQR's used by UTAS, they include:
 - Supplier Quality Assurance Representatives (SQAR), UTAS or UTC employee
 - Contract Quality Assurance Representatives (CQAR), Contract Employee
 - Delegated Quality Representative (DQR), Supplier's Employee

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4.0 SOURCE INSPECTION

4.1 SOURCE INSPECTION

When a supplier must have UTAS perform source inspection (SQAR or CQAR), the supplier must request source inspection services per instructions located on the UTAS Supplier Portal under Help/Supplier Quality Training Materials. All First Article Releases for Flight Safety Product, Full and Partial (Delta) must be approved by a Hamilton Sundstrand/UTAS Employee (SQAR) and Source Inspected by the SQAR or authorized delegate of UTAS. Subsequent releases of Flight Safety Product can be performed by the DQR.

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5.0 AUTHORIZATION TO RELEASE (ATR) PROCESS REQUIREMENTS

5.1 Electronic Release Access

Supplier self-release requires Internet access and web site access to UTAS's Supplier Home Page. For all self-released product, the supplier shall complete an electronic source inspection record using the Electronic Release Process.

5.1.1 ATR Supplier Selection

To be considered for the ATR Program, a supplier shall meet the following criteria:

- Be listed on the current UTAS Quality Approved Supplier List
- Be under the cognizance of the Supplier Quality Assurance organization
- Have a satisfactory or better rating for the last system audit or have an approved corrective action plan for the last system audit.
- Hold a valid AS9100 certificate per the ASQR-01 requirements for manufacturers or AS9120 certificate per the ASQR-01 requirements for distributors. Exceptions require approval from UTAS.

5.1.2 ATR Supplier Approval

To be approved for the ATR Program, the supplier shall:

- Select qualified employees from the quality department considered competent to perform the required duties of a DQR.
- The number of DQRs approved for a specific supplier shall be commensurate with the workload and appropriate contingency factors (vacation, holidays, illness, shift coverage, fluctuations in PPM, First Article audits, etc.). It is highly recommended a minimum of two DQRs be available at all times for all UTAS Suppliers. One DQR will serve as the Primary, taking overall responsibility for the program, with all others serving as alternates. When the supplier cannot provide DQR coverage, the supplier is responsible for charges that may occur through the use of a third party agency (CQAR) under UTAS's control.

5.1.3 ATR Supplier Requirements

Suppliers approved for the ATR program shall:

- Notify the UTAS/CSC Help Desk when a DQR is leaving their position

5.2 DQR CANDIDATE SELECTION

Minimum qualifications for candidates are:

- Employee of the supplier
- Direct report through the Quality Organization
- Yearly eye exams by certified eye professional (e.g. optometrist, certified company nurse) per requirements of ASQR-01 with objective evidence to be kept on file at the supplier. The requirements detailed in ASQR-01 must be followed for each type of inspection performed.
- A minimum of (6) six months experience with UTAS product, specifications, and drawing requirements
- A minimum of (1) one year experience in the inspection field or Quality environment. This requirement may be shortened depending on the candidate's overall Quality Control background and prior experience with UTAS product.
- The ability to read, write and understand English
- Complete, sign, and submit a Letter of Agreement (LOA), UTCQR Form 8, for each candidate, to UTAS SQA Management for approval
- Submit a completed DQR Candidate Form to UTAS SQA Management for approval. Use the UTAS version of UTCQR Form3.

Note: All forms / documents relative to the DQR Process must be in English.

Note: These requirements can be tailored by UTAS SQA Management depending on the experience of the potential DQR candidate, and/or commodity being supplied.

5.3 DQR CANDIDATE SUBMITTAL APPROVAL

Upon application approval, UTAS will return via email signed copies of their Letter of Agreement and DQR Candidate Form. The DQR candidate will be responsible to review all the applicable DQR Training Material provided on the Supplier Portal. As a minimum, the training will consist of acquiring a thorough knowledge of all applicable UTAS procedural requirements, purchase orders, engineering drawings

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(change levels), specifications, product specific quality plans, quality system requirements, required special process approvals and SSI. The DQR candidate is required to complete a UTAS Knowledge Check.

Upon successful completion of the Knowledge Check, the DQR candidate shall perform a self-assessment of their knowledge using QC-0023.01 and submit to UTAS, the applicable UTAS SQAR will review and at his/her discretion, conduct an interview to determine the candidate's approval for Probationary access.

The UTAS SQAR will be the prime contact for any questions or issues that may arise during the performance of the DQR's duties

Note: SQA management reserves the right to deny applicant to move forward with DQR privileges.

5.4 PROBATIONARY PROCESS FOR NEW DQRs

Upon approval to Probationary Status, the DQR Candidate shall receive an approval email containing their electronic stamp (DQR number). This will allow them access to the Electronic Release application on the HS Supplier Portal. Probationary DQRs shall only be authorized to generate "M" code Releases during their Probationary period. These "M" code Releases cannot be shipped. All "M" code Releases must have Over-Inspection verification performed and shipped with an "F" code Release. This shall be in effect for an initial probationary period of approximately six months and will require a second person verification to release the "M" coded Release.

Over-Inspection verification can only be performed by one of the following:

- Non-probationary DQR at the site
- HS Supplier Quality Assurance Representative (SQAR)
- Third Party Source Inspector (CQAR)

The duration of probation can be modified at the discretion of the UTAS SQAR. Factors to be taken into account include but are not limited to; the quantity of Releases generated familiarity with the product, product complexity, and overall understanding of this document.

The applicable UTAS SQAR shall review or conduct an interview using form QC-0023.01 to determine the candidate's approval to be released from probation.

Note: Contact your UTAS SQAR to schedule this review when Probationary period is completed.

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5.5 DQR RECERTIFICATION PROCESS

All Production Status (active) DQRs shall be certified to AS13001. Failure to comply will result in the loss of DQR status and SSI access.

In addition to AS13001 all DQR's shall successfully complete supplementary UTAS product, process and procedural training within the required timeframe in order to receive authorization to release supplier product. Failure to do so will cause DQR status to be inactive; this means they cannot create an iLot within the SSI application.

Note: If a DQR holds a current certification, it is still valid until the DQR's next scheduled training is completed on schedule.

5.6 SUPPLIER ATR SUSPENSION

At the discretion of UTAS SQA Management, a supplier may be suspended from the ATR program at any time. Suspension applies only for product procured by or for UTAS.

Suspension from the ATR Program may take place when any of the following occurs:

- UTAS determines SQAR coverage is no longer required
- Actions taken by the supplier have been determined detrimental to the best interest of UTAS
- No DQR release activity occurring in a 12-month period.
- Significant escape to UTAS or to an OEM customer

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5.7 SUPPLIER DQR SUSPENSION

At the discretion of UTAS SQA Management, a DQR may be suspended from the ATR program at any time. Suspension applies only to the specific DQR or DQRs approved by UTAS.

Suspension from the DQR Program may take place when any of the following occur:

- UTAS determines DQR coverage is no longer required.
- Actions taken by the DQR are detrimental to the best interest of UTAS.
- It is determined that Electronic Release identifications and passwords are shared with other employees.
- No DQR activity occurring in a 12-month period.
- Email failure – DQR email address and Electronic Release user I.D. must be the same.
- Significant escape to UTAS or the OEM customer released by the DQR.

5.8 DQR REACTIVATION

Suspended DQRs may be reactivated if the requirements below are met. DQR may be placed on a conditional probation and may require SQAR evaluation and training.

- A DQR who has not created a release in a 12 Month period will have to retake the DQR test
- DQR could be placed on a conditional probation
- Submit proof of current eye exam. Follow requirements detailed in ASQR-01 and the DQR Candidate Selection section above
- Restored access to UTAS Supplier portal

SQAR is responsible to ensure DQR is adequately trained prior to reactivation. SQAR may administer DQR test or require DQR to attend onsite training.

5.9 DQR RESPONSIBILITIES

General DQR responsibilities include:

- The DQR's supplier portal account must have access to view drawings, specifications and early warnings. DQRs must be subscribed to receive early warning notifications via e-mail.
- DQRs are required to navigate throughout the supplier portal to access all information within (i.e. revision levels, PO note codes, SRI information, report card, CAD/QN submittals, ASQR-01 specs, etc.)

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- DQR's are required to review all quality and general alert messages, as well as any early warnings to confirm that no issues apply to parts being or already shipped.
- Inspect entire manufactured lot presented for DQR inspection; verification that 100% visual and 100% part marking has been completed. DQR must verify the part marking approval process has been followed correctly.
- If sample inspection is utilized, verify sample plans meet all requirements of ASQR-20.1
- For applicable 2D marking, the DQR must verify the marking has been:
 - Validated – Confirms that the data content contained in the 2D Data Matrix Symbol is accurate and conforms to the DoD Construct format as well as ISO15434 and ISO15418.
 - Verified – Confirms that the printed symbol meets the quality guidelines as specified by MIL-STD-130.
- Review drawing, purchase order, and the COPS/ProCert Database for CTQC or KPC requirements. Verify all required data has been collected and recorded in the supplier web page.
- Review the Purchase Order for any PPAP requirements and verify PPAP documents (Objective Evidence Package) are properly prepared, submitted and approved, Form #1 completed and signed as required. (See Section 13)
- Verify the manufacturing/inspection traveler to ensure all operations were completed and accepted in accordance with the applicable purchase order, all drawings and all specification requirements.
- Review manufacturing/inspection operations for any process interruptions that may have an adverse effect on product quality, such as heat treat, oven curing, plating, soldering, welding, brazing, etc., have been properly reworked or dispositioned through UTAS; MRB.
- Review purchase order and supplements for all quality and any additional embedded requirements.
- Review all manufacturing data is completed to the drawing and part revision levels at the latest revision and/or meet purchase order revision requirements.
- Review Engineering Changes and Effectivity Codes and Dates, BOM and Approved Suppliers as required.
- DQR is responsible to verify that approved Special Process suppliers are used for restricted specifications and Special Processes (80/85 Report) for all HS designed product. Nadcap Special Process suppliers for all source control product is preferred. Verify all certifications have correct specifications and are signed and dated.
- Procurement of Raw material requires a Mill composition certificate that has been verified and meets specification. Raw Material procurement must meet the requirements of HSM19.

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- DQR must review certifications and/or receiving inspection record (receivers) for unbroken traceability back to the original component and/or equipment manufacturer per requirements of HSM19.
- As required, verify the ATP is approved and revision controlled.
- If required, material verification testing results are provided and within engineering and specification tolerance.
- Applicable Functional Test data sheets (i.e. ATP) and inspection operations are complete and acceptable (within engineering tolerance). Variable results are recorded when applicable. Test data sheets include the following minimum requirements:
 - Test specification number, revision status, amendment number and addendum.
 - Part number / serial number and revision letter of material / component being tested.
 - Test paragraph, required reading/actual reading (use positive statement, e.g., “No Leakage” if actual reading is not quantifiable).
 - Date test was performed
 - Operator identification. Inspection approval signature / stamp.
 - Blank entries that are not applicable shall be noted “N/A”.
 - As applicable, all testing equipment is properly listed and accounted for.
- Review Quality History for prior escapes and that corrective action and containment has been completed.
- DQR must review any CAD/QN’s and/or any returned hardware that the dispositions are fully completed and inspected as applicable.
- DQRs shall be actively involved in Customer Escape investigations to verify corrective actions and/or applicable action plans were completed as stated in the QN response.
 - DQR must verify 100% inspection any deviated characteristics for a minimum of the next (3) three consecutive manufactured lots.
 - Report any suspect quality issues to their representative SQAR.
- Review that First Article is complete and meets purchase order requirements.
 - Review and ensure all First Article documentation is properly completed and per ASQR-01, AS9102, HSM236 and FAI template on the Supplier Portal. Ensure that First Article review form QC-1700.00 has been properly completed.
 - Verify form 1 has valid UTAS signature when required per the purchase order prior to shipping
 - Verify the FAIR properly signed and dated by the preparer, approver and customer (when applicable).

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Note: Documents can be found on the UTAS Supplier Portal by going to the Quality Management tab and then Aerospace Quality Requirements or by going to Help? tab and clicking the Supplier Quality Materials link.

- Verify all documentation and all signatures are clear and identifiable.
- Perform all production product releases through the Electronic Release.
- Release all material in accordance with HS procedures and specifications.
- Clearly state the Engineering Change revision of the part. Entering N/C for 'no change'.
- The DQR shall not be the same associate who performed the final Inspection for the P/N listed on the PO being released in the Electronic Release (ASQR-20.1 inspection).
- Perform inspection on a minimum of 3 pieces and 5 characteristics (unless lot size or characteristics are less) for all Master Lots or individual releases. The characteristics selected shall vary for each lot ensuring any tight tolerances are selected.

If dimensions are required to be inspected in the Electronic Release Process, they are to be inspected and input into the Electronic Release Process. If data is not defined in the Release System, the Inspection data defined by the supplier (3 Pieces and 5 Characteristics Min) shall be retained by the DQR and available for review by UTAS.

Note: In the event the supplier is performing SPC, do not choose a characteristic that has a CPK greater than 1.33.

The DQR shall verify all SPC features are properly accounted for during manufacturing and in-process inspection and that SPC data has been collected and recorded per HSC16199 requirements into the COPS Database.

- Verify all applicable material related test requirements are met prior to initial release of any part. When required, subsequent testing will be imposed by purchase order or by specification.
- Verify UTAS approved suppliers for Process/Material Specifications identified on Report 80 and Report 85 are used (see Table 2 of this document for guidelines)

Note: Listing of approved/restricted Process/Material Suppliers (Report 80 and 85) is available on the UTAS Supplier Portal.

- Approve material for shipment by completing applicable forms and affixing stamps as required by specific purchase order and UTAS specification requirements.



- Perform quality-related follow up activities that include, but are not limited to, corrective action resulting from audits, surveys, and nonconforming material escapes.

Note: DQR's do not have customer signature authority. DQR's are not authorized to ship product prior to FAIR signature approval by UTAS when a signed Form #1 is required.

- Maintain original and delta FAIR and associated documentation/certification on file for SQAR review/approval during scheduled DQR audits.
- When required on the purchase order, send the full conformance package with all documentation requirements established by the purchase order and Test Data Package to UTAS. This shall include, as applicable:
 - C of C's – Certifications of Conformance
 - Certifications of materials, sub-tier processes, material testing, etc.
 - Certifications of special processes, including processes provided by sub-tier process suppliers.
- Allowance of a SSI by-pass or partial SSI acceptance may only occur when granted authority by HS Supplier Quality Assurance Manager. In the event of this occurrence specific instructions will be provided as applicable with the authorization to ensure proper receipt and containment at UTAS for required follow-on actions

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5.10 DQR PROCESS

The DQR shall inspect all hardware as defined in 5.9. They will prepare hardware for shipment by completing the Electronic Release inspection report, assuring completion of all associated documentation, inspections, and tests.

5.10.1 Over-inspection Audits

Over inspections shall be controlled through the online Electronic Release application. Any subsequent audits must be performed by a different DQR. A second DQR is mandatory to release an "Audit or 'M' Code" Release. If a second DQR is not available, contact a CQAR per instruction on the UTAS Supplier Portal. This shall be at the Supplier's expense.

Audits will be required when:

- Management Override exists
- Random Audit Process imposed by the system
- First Article Inspection Report Review
- DQR on probation
- Significant escape to the Customer



5.10.2 Flight Safety Hardware

The DQR shall verify all Flight Safety characteristics and Flight Safety features have been inspected per requirements. The DQR shall verify that Flight Safety Approvals have been uploaded into the COPS/ProCert database where applicable.

Initial Release and subsequent Partial (Delta) First Article Inspection Reviews can only be performed by an SQAR. Subsequent releases not involving First Article Inspection reviews may be performed by a DQR or CQAR.

5.10.3 Castings and Forgings

Procurement of all Hamilton Sundstrand/UTAS designed castings and forgings shall be procured from a Hamilton Sundstrand/UTAS approved supplier and require an UTAS approved release for all shipments. Supplier shall not ship production castings or forgings to UTAS or another UTAS supplier without having a written FAIR approval from UTAS Procurement Quality Assurance. Suppliers shall notify the UTAS buyer when a casting/forging FAIR is ready for UTAS PQA review.

Castings/Forgings Flight Safety First Article parts must be released by the SQAR or delegated UTAS Representative.

All castings requiring radiographic inspection shall be serialized and the x-ray film retained by the supplier per the requirements of ASQR-01

5.10.4 Supplier to Supplier

Product requirements performed by a sub-tier supplier are the responsibility of the supplier holding the UTAS Purchase Order. That supplier is responsible to communicate and obtain all applicable information and certifications from their sub-tiers as required by UTAS flow down. The supplier may flow-down the use of the most current revision of Form UTAS-FRM-0034-00 or equivalent check list to obtain this information from their sub-tiers. For all castings, forgings, and flight safety parts the use of this process is mandatory. For that product the completed form shall be approved by a UTAS approved DQR or authorized UTAS Delegate. This information shall be considered a Quality Record and be retained per ASQR-01 requirements

For Flight Safety Releases, HSC 16199 requirements shall be followed and flown down to the sub-tier suppliers.



5.11 NONCONFORMING MATERIAL

The supplier shall establish and maintain documented procedures to ensure product not conforming to a specified requirement is prevented from unintended use or installation. This control shall provide for identification, documentation, evaluation, segregation (when practical), disposition of nonconforming product, and for notification to the functions concerned.

5.11.1 TYPE I Nonconformance

Nonconforming items of Hamilton Sundstrand/UTAS design must be dispositioned by Hamilton Sundstrand/UTAS Material Review Board (MRB) before goods or services are delivered. Type 1 disposition of supplier propriety items or components that could by itself, or by relation to other components, affect system or end item specification, reliability, weight, safety, and appearance when it is a significant factor, requires approval by Hamilton Sundstrand/UTAS MRB prior to release. Disposition by Hamilton Sundstrand/UTAS MRB may be obtained by submitting ‘Conditional Advance Disposition/QN’ per 5.11.3.

The supplier shall not proceed with a repair procedure unless authorized by Hamilton Sundstrand/UTAS MRB.

5.11.2 TYPE II Nonconformance

Suppliers approved by Hamilton Sundstrand/UTAS may perform Type II material review actions on proprietary products provided the subject product was completely designed, developed and funded by the supplier.

Type II is defined as any departure from requirements not falling into the category of Type I. These Type II dispositions, when authorized, shall be made available upon Hamilton Sundstrand/UTAS request.

Requests for Type II MRB authority by specific product types (when required) are to be transmitted to Hamilton Sundstrand/UTAS Procurement via Supplier Request for Information (SRI) available on the UTAS Supplier Portal. Additional information may be requested by Hamilton Sundstrand/UTAS such as review and/or approval of the supplier’s nonconformance and corrective action procedures, instructions and personnel.

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Hamilton Sundstrand/UTAS authorizes the supplier’s Type II approval by issuing letter of delegation. The delegation will specify the approval level and any specific restriction or instructions. Supplier’s providing standard catalog items or commercial off the shelf (COTS) items are not required to request Type II MRB authority.

5.11.3 Vendor Quality Notification (QN)/ Conditional Advance Disposition (CAD) Requirements

If nonconforming material is detected during the manufacturing process that requires ‘accept as is’ or ‘repair’ disposition from UTAS, the Supplier is responsible for ensuring the following:

- QN/CAD (including cause corrective action) has been generated and submitted.
- QN/CAD has been disposition and approved by UTAS.
- Requested repair activity is completed and conforming to requirements.
- Supplier has implemented corrective action to address root cause of the QN/CAD.
- iLot generated for affected product accurately document QN/CAD activity.
- QN/CAD material dispositioned as scrap has been properly mutilated (rendered unfit for use) at the supplier.

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Note: The CAD application can be found on the Quality Notification tab on the UTAS Supplier Portal. Submitting CADs online through the portal is the preferred method. There is training material available within the UTAS Supplier Portal to aid in the submittal process. A CAD may be referred to as a type Quality Notification.

5.12 DESIGN CONTROL

Suppliers with design authority shall establish and maintain documented procedures to control and verify the design of the product in order to ensure the specified requirements in CEP100, Hamilton Sundstrand Supplier Configuration Management Requirements, are met.



5.13 SUPPLIER TO SUB-TIER OFFLOAD REQUIREMENTS

Complete offload is defined as supplier outsourcing the entire manufacturing process of HS designed hardware (including sub-tier source selection of any applicable special processes).

Partial offload is defined as supplier outsourcing a part of their manufacturing process (including designated source or sub-tier source selection of any applicable special processes) to their sub tiers.

For all offload of UTAS designed hardware, whether complete or partial, the Primary supplier to UTAS is required to ensure all UTAS requirements are flowed-down to their sub-tier. This is to include, but not limited to, flow down of all purchase order requirements, quality requirements, engineering design and specification requirements, raw material and special processing requirements including all and embedded ASQR-01, HSM19, HSM17 and HSM236.

The Primary supplier to UTAS is responsible to ensure all applicable documents and specifications are at the latest revision and available or provided to their sub-tier.

The supplier shall validate all offloaded features, characteristics and compliance to UTAS requirements. Evidence of flow-down and validation must be available for audit and/or as requested by UTAS.

The use of a Supplier Self Verification Process Delegation Program must be compliant to AS9015 and submitted to UTAS Supplier Quality on an SRI. This request must be approved prior to implementation of any program.

5.14 PART STAMPING/SPECIAL MARKING REQUIREMENTS

5.14.1 Cage Code 73030

For Cage Code 73030, Product Acceptance Stamp (Oval with last 3 digits of Supplier Code)

Product acceptance stamps are used for stamping all hardware in which the flow down is required by P.O. or all Heritage Hamilton drawings with a cage code of 73030. The supplier will need a set of oval stamps for stamping parts. The oval stamp must contain the last three digits of the company's HS primary supplier code. The primary supplier code is the code used on shipments within North America.

These stamps should be approximately the same size as the part marking and must be legible. Parts need to be stamped to be in conformance with HS part

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acceptance requirements. Place stamps using permanent ink in contrasting colors to the part identification information. Stamp marking may be of the same type as the part marking specified on the drawing.

Note: A complete tutorial guide for marking parts can be found on the UTAS Supplier Portal under Part Marking Identification Aid.

5.14.2 No stamps are allowed on General Electric part numbers

5.14.3 No stamps are needed on Dynamic Control parts

5.14.4 Heritage Sundstrand may flow additional marking requirements on the P.O

5.14.5 Required Stamp Locations

Place acceptance stamp to the left of the part number except as noted below:

Situation	Location of Stamp
Insufficient space	Above or below UTAS Part Number
No UTAS Part Number on part	Stamp container & associated paperwork
Part size too small	Stamp container & associated paperwork
Bulk Packaging	Prior UTAS approval required (Via SRI Process) in order container or associated paper work

5.14.6 Examples of Special Marking Requirements for HS Parts

Part Status	Required Acceptance Stamp												
Parts which passed B/P Pressure Test	Mark with Letters "PT" in permanent ink Locate near part number but slightly separate from it												
Parts manufactured to unreleased drawings (Identified with "X" in part number)	Mark "Diamond R" at left side of part number												
Parts manufactured for Engineering use only Diamond (TS) parts are not upgradeable	Mark "Diamond TS" at left side of part number No SSI required with "Diamond TS" products												
NDT Stamping	Stamp to the right (above or below if space restrictions) of applied part number or alternately next to any serial number or on a prominent surface												
Instructions call for identifying NDT acceptance by dye marking	<table border="1"> <thead> <tr> <th>Method</th> <th>Pieces Inspected</th> <th>Pieces Not Inspected In Sample</th> </tr> </thead> <tbody> <tr> <td>Penetrant</td> <td>Maroon</td> <td>Yellow</td> </tr> <tr> <td>MPI</td> <td>Blue</td> <td>Orange</td> </tr> <tr> <td>Radiography</td> <td>Blue</td> <td>Orange</td> </tr> </tbody> </table>	Method	Pieces Inspected	Pieces Not Inspected In Sample	Penetrant	Maroon	Yellow	MPI	Blue	Orange	Radiography	Blue	Orange
Method	Pieces Inspected	Pieces Not Inspected In Sample											
Penetrant	Maroon	Yellow											
MPI	Blue	Orange											
Radiography	Blue	Orange											

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5.15 APPLICABLE DOCUMENT REVISIONS

Where the Drawing refers to a material, process or inspection specification, drawing or standard that has been revised, cancelled or superseded, the following shall apply:

If the Drawing refers to a specific issue or revision of the document, that issue or revision shall be used.

If the Drawing does not refer to a specific issue or revision of a document, the following shall apply:

- Standard Parts. For standard parts (such as AN, NAS, MS, M, etc.) the part to be used may be any revision in effect prior to cancellation or supersession. When utilizing Mil-Std parts a change from MIL-X to MIL-DTL or MIL-PRF is considered a change in the revision letter of the document not a new specification.

- Material, Inspection, Process and Acceptance Specifications

If the document has not been cancelled, then only the current revision may be used. Where the document is cancelled, with or without supersession, the last issue prior to cancellation or supersession shall continue to be applicable.

For superseded UTAS Specification's a SRI shall be submitted for direction.

6.0 UTAS APPROVED SPECIAL PROCESSES AND NDT REQUIREMENTS

6.1 APPROVED SPECIAL PROCESSES

All process and material specifications that appear on any UTAS engineering drawing, and are also listed on Reports 80 & 85, require a HS approved source. Suppliers must use an UTAS approved supplier (except as noted in Table 2) when a specific material or manufacturing special process is listed in UTAS Report #80, "*UTAS Approved Process/Material Supplier Report*," or be listed as a UTAS approved supplier in UTAS Report #85, "*Supplier Internal Processes Report*."

6.1 Report #80:

Identifies UTAS approved suppliers who are capable of providing a special manufacturing process or material in accordance with applicable process/material specifications (e.g., HS, PN, CP, AMS, MIL STDs, etc.),

typically as a service provider. Approved sources are listed in ascending order based on the UTAS supplier code number.

6.2 Report #85:

Identifies UTAS approved suppliers/fabricators who utilize their own captive internal special manufacturing process or material in accordance with applicable process/material specifications (e.g., HS, PN, CP, AMS, MIL STDs, etc.), typically in the production of UTAS product.

6.3 Reports #80 and #85 can be viewed on the UTAS Supplier Portal.

Note: If a specification is listed in either UTAS Report #80 or #85, and no UTAS approved process supplier is listed, then the supplier shall submit an electronic SRI (ASQR-01 Form 3) from the UTAS Supplier Portal to request an approved process supplier be identified. The Supplier cannot ship product until the Special Process Supplier has been added to the 80/85 Report.

7.0 NADCAP ACCREDITATION REQUIREMENTS

As a prerequisite for obtaining Hamilton Sundstrand/UTAS approval for listing in UTAS Report 80 & 85, Nadcap accreditation is required for the following special processes: materials testing, chemical processing, coatings, heat treating/brazing, nondestructive testing, nonconventional machining, surface enhancement, welding/brazing and electronics. Source Control suppliers should be Nadcap accredited or use Nadcap accredited sources for special processes as defined by Table 2.

For electronics manufacturers of Printed Wiring Boards, Circuit Card Assemblies, and Cable and Harness Assemblies, inspectors and hand assembly/solder operators shall have the applicable IPC certification. Valid IPC certificates are required as noted:

- 1) Printed Wiring Boards – IPC-A-600 (all inspectors, including those validating micro-sections).
- 2) Circuit Card Assemblies – IPC-A-610 and/or J-STD-001 (all inspectors, hand solder and hand assembly personnel).

Cable and Harness Assemblies – IPC/WHMA-A-620 (modules applicable to scope of work) and J-STD-001, if any soldering is noted on the part drawing

8.0 MATERIALS TESTING LABORATORY REQUIREMENTS

When specified on the Hamilton Sundstrand/UTAS Purchase order, any product produced for Hamilton Sundstrand/UTAS (Aerospace Division) requiring product and/or materials testing shall be performed by a Materials Testing Laboratory listed in Hamilton Sundstrand/UTAS Report #80, “Approved Process/Material Supplier Report”.

To access the Report #80:

- Access the UTAS Supplier Portal
- Select Supplier Reports tab and then 80/85 tab
- Select Report #80 from ‘Click here to review’
- Radio button should be set to Specs beginning with...
- Input “*Laboratories, Independent Approved*” to specification number field for “Metallics” or
- Input “*Labs, Approved NonMetallic Testing*” to specification number field for “NonMetallics”.

Other testing required by an engineering drawing and associated technical specification(s) necessary to complete a part shall be performed by supplier’s internal lab or any testing source holding a current A2LA, Nadcap, or HS approval.

Table 2

Requirements for Usage of UTAS Report 80 & 85 Approved Special Process Suppliers (Note 1, 2)

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Drawing Designation	Examples	Site	HS Special Process Specs	MIL/Fed/Ind Special Process
	Released Production Drawings			
UTAS Design / Source Approval Item	17044534, 903D421, 4506783, C1006748, etc.	All	Yes	Yes
Source Control	5018794, 5900100, 5913596	All	Yes	No (Note 5)
Specification Control / Vendor Item Control Drawing/ Selected Item Drawing	17044534, 903D421, 4506783 etc	All	Yes	No
Altered Item Drawing	Same as Production Drawings	All	Yes	Yes
COTS	AN, MS, NAS, JN, JANTX, JANHC, Supplier Drawings	All	Yes	No (Note 4)
UTAS Std Parts Drawing	69234, 69240, 69603, 3415,	All	Yes	No (Note 3, 4)
	Advanced Released Production Drawings			
Advance Release Drawing	170XXXX rel 01 ARC 11	RFD	Yes	Yes
Advance Release X Drawing	579X2-81577-1 (Diamond R Material)	WLOX	Yes	Yes
Advance Release HSPS	450XXXX IAR 8	HSPS	Yes	Yes
	Non Production			
EP – Non Production	EP 1705968	RFD	No	No
Diamond TS- Non Production	579X2-821577-1 W/Diamond TS Purchase Order Note	WLOX	No	No
	Product Forms			
Rubber /Elastomeric Seals (excluding Industry std O-rings) AMS7259, AMS7276, etc. For Industry std O-rings follow requirements of Appendix 1	All Production drawings, including Industry Standard Parts.	All	Yes	Yes

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Note 1: Except as modified above, all processes listed in Report 80/85 are considered restricted Special processes and UTAS approved sources shall be used.

Note 2: “Yes” indicates that a UTAS approved Special process supplier (Report 80 & 85) shall be used. Unless otherwise specified “No” indicates a non-UTAS approved supplier may be used if the P.O. supplier controls the Special Process supplier per AS9100 or ISO9001 and the related processing specification.

Note 3: FSCM 73030 drawings with a Standard Part title shall be treated as UTAS Design, Source Approval Item, Specification Control etc. as dictated by the drawing type.

Note 4: Exceptions to UTAS STD Parts, COTS and Standard catalog hardware are those noted in Appendix 1 and 3.

Note 5: All Special Processes performed to military, federal or industrial specification should be performed by a Nadcap accredited supplier.

9.0 PROCESS CERTIFICATION REQUIREMENTS

Per ASQR-01, all parts are subject to UTCQR-09.1. The DQR is responsible to verify compliance to this requirement.

In addition, UTAS may invoke key characteristics per HSC16199. It is the DQR's responsibility to assure compliance with specification and to verify all applicable Process Controls have been implemented. Prior to each shipment, the DQR must verify the required data is uploaded into the Control of Process and Safety Database (COPS) available through the Supplier Portal.

Note: Refer to HSC16199 and UTCQR-09.1 for definitions and detail requirements.

10.0 TEMPORARY KEY CHARACTERISTICS (TKC)

Hamilton Sundstrand/UTAS reserves the right to flow down to a Supplier a Temporary Key Characteristic (TKC) used to:

- 1) Validate the effectiveness of the corrective action plan submitted by an UTAS Supplier in the event of a dimensional escape.
- 2) Validate the effectiveness of the corrective action plan submitted by an UTAS Supplier in the event of a dimensionally related Conditional Advanced Disposition (CAD/QN).
- 3) UTAS Engineering/Quality/Procurement may want to understand the capability for a given process/feature for design and/or root cause analysis purposes.

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10.1 DQR Responsibilities

The DQR is to verify that all TKCs have been properly accounted for during manufacturing and in-process inspection and that SPC data has been collected and recorded per HSC16199 requirements.

10.2 DQR Release of Product

The DQR will ensure all TKC requirements listed are completed for any applicable HS part number identified with a TKC prior to shipping.

11.0 SURVEILLANCE CONTROL SWITCHING RULES

Note: Hamilton Sundstrand/UTAS reserves the right to execute any of the control plans defined in the “Surveillance Control Switching Rules” diagram as seen in Appendix 2, as well as to impose chargebacks for FAIs and escapes (QNs). These chargebacks, however, do not preclude, nor in any way limit UTAS from collecting additional damages resulting from these Escapes and recovering additional costs which UTAS may incur from such Escape(s). Hamilton Sundstrand/UTAS reserves the right to override any provision of the escalation policy.

The individual control plans are based on a Suppliers quality performance as measured by Parts Per Million (PPM) for High Volume Suppliers (>10,000 pieces shipped over 12 month period) or escapes for Low Volume Suppliers (those shipping 10,000 pieces or less in a 12 month period. Both PPM and escape quality metrics are based on the last 6 months period. The levels specified are consistent with Supplier quality performance levels of the UTC Supplier Gold process as illustrated below:

- Performing - PPM of 500 or less / 5 escapes or less
- Progressing – PPM between 500 and 1500 / less than 15 escapes
- Underperforming – PPM of 1500 or greater / 15 or more escapes

12.0 PRODUCTION PART APPROVAL PROCESS

Note: UTAS reserves the right to invoke ASQR-09.2, “UTC Production Part Approval Process”, based on various risk assessments. The DQR is responsible for ensuring compliance to this specification when invoked.

12.1 The Supplier DQR shall review the UPPAP Objective Evidence Package for the following:

- 12.1.1 Overall Objective Evidence Package completeness and accuracy.
- 12.1.2 Documented action items for any UPPAP element not fully completed.

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12.1.3 UPPAP Submission forms are signed by supplier management.

Note: All PPAP forms and training material is available on the UTAS Supplier Portal.

12.2 UPPAP Approval

12.2.1 The DQR will not ship UPPAP parts until receiving back from UTAS a signed UPPAP Form 1 with either Full Approval, Interim Approval, or an authorized deferral. Reference ASQR-09.2 for more detail.

12.2.2 DQR shall assure completed UPPAP Objective Evidence file is maintained per the requirements defined in ASQR-09.2. They will also retain the UPPAP Form 1 on file at the supplier's site.

12.2.3 In the event that a UPPAP Form 1 is approved with a deferral, it is the DQR's responsibility to assure that the assigned actions are closed per the supplier commitments on the form, and that the shipments stop if those actions lapse.

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13.0 SUPPLIER REQUEST FOR INFORMATION

UTAS has developed a supplier portal system to improve communications with suppliers using the Supplier Request for Information process. The system includes a central database for tracking progress and ownership of SRI's as well as maintaining a permanent record. Supplier and UTAS personnel will mutually have this visibility. An SRI shall be submitted through the supplier portal and may be used for items such as (reference ASQR-01):

- An anomaly noted in a drawing or specification that could result in a nonconformance.
- Lack of clarity or definition in a drawing or specification.
- A request for an alternate method to a quality system requirement
- Supplier Information on the Drawing or Specification has changed.
- Any change that may affect quality which must be documented and communicated to UTAS via SRI prior to affectivity of the change including but not necessarily limited to:

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- Ownership
- Company name change
- Management
- Manufacturing location
- Process
- Product
- Inspection Techniques

Note: The SRI form can be found in the Quality Management tab from the UTAS Supplier Portal. A complete tutorial is also available in the Help? Tab.

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Appendix 1 Commodity Requirements

O-Rings:

All o-rings supplied to UTAS must be individually packaged with the appropriate part marking on each bag. Bulk packaging is not allowed. The following individual bag type must be used:
AMS2817 Type 3 Black Polybag

Industry Standard O-Rings:

Industry Standard o-rings must be made by a Hamilton Sundstrand approved manufacturing site for the material formulation of the o-ring. The approved manufacturing sites are listed in Hamilton Sundstrand's/UTAS's Report #80 under the material formulation. Hamilton Sundstrand/UTAS drawings listing Industry Standard o-rings with approved sources are excluded from this requirement.

Teflon Wire:

M22759/5, M22759/7, M22759/9, M22759/11 and MIL-DTL-16878 PTFE Teflon Wire must be Differential Scanning Calorimetry (DSC) tested per the requirements of Engineering Standard MS41.14 paragraph 3.0.

These requirements apply to all direct and indirect Hamilton Sundstrand/UTAS suppliers.

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Appendix 2 Surveillance Control Switching Rules

Level 1: High Volume \leq 500 PPM 6 m rolling OR Low Volume \leq 5 escapes 6 m rolling (Performing)

- DQR recertification every 3 years
- DQR Self Release
- ASQR-01 Self-Assessment and/or Compliance Audit

Level 2: High Volume $>$ 500 PPM 6 m rolling OR Low Volume $>$ 5 escapes 6 m rolling (Progressing) OR

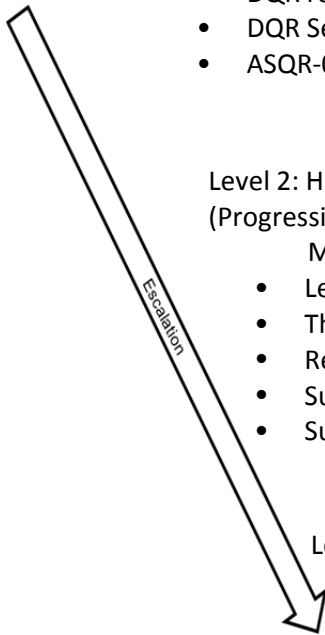
Major audit findings

- Level 1 requirements, plus escalations below:
- This level may trigger a compliance audit or process assessment
- Review DQR performance and reserve the right to revoke privileges
- Supplier to provide improvement plan
- Supplier action review meeting with supplier quality representative and buyer

Level 3: High Volume \geq 1500 PPM 6 m rolling OR Low Volume \geq 15 escapes 6 m rolling (Underperforming) OR significant escape OR supplier audit failure

- Level 2 requirements, plus escalations below:
- Supplier paid over inspect and/or third party quality engineering function
- Business Alignment Review with supplier executive

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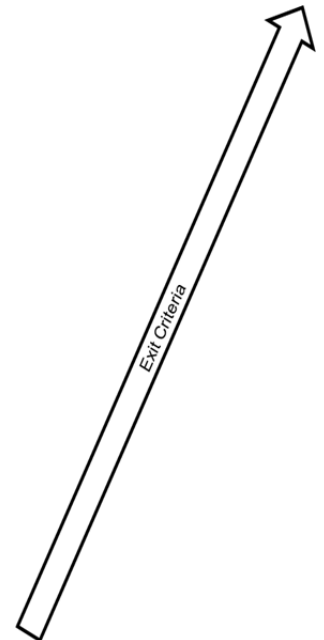
Level 1: High Volume \leq 250 PPM 6 m rolling OR Low Volume \leq 2 escapes 6 m rolling

Level 2: High Volume $>$ 500 PPM 6 m rolling OR Low Volume $>$ 5 escapes 6 m rolling OR Major audit/assessment findings

- Exit level 2 and enter level dictated by performance, if:
- High Volume \leq 500 PPM 6 m rolling OR Low Volume \leq 5 escapes, AND
- If applicable, third party finds no DQR escapes, AND
- Open actions satisfactorily closed, AND

Level 3: High Volume \geq 1500 PPM 6 m rolling OR Low Volume \geq 15 escapes 6 m rolling OR significant escape OR supplier audit failure

- Exit level 4 and enter level dictated by performance, if:
- High Volume $<$ 1500 PPM 6 m rolling OR Low Volume $<$ 15 escapes, AND
- Third party finds no DQR escapes, AND
- Open actions satisfactorily closed, AND



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Appendix 3

Externally Threaded High Strength Fastener (HSF) Requirements

Fastener Manufacturers producing externally threaded fasteners with a minimum ultimate tensile strength of 150,000 pounds per square inch or greater shall be AS9100 registered and Hamilton Sundstrand/UTAS approved. This includes high strength fasteners produced to Hamilton Sundstrand/UTAS drawings, military, federal and industrial specifications. Approved manufacturers are listed in Hamilton Sundstrand's/UTAS's Report 80 under "*Fastener Manufacturers, High Strength*". Fasteners manufactured by sources that are not UTAS approved will not be accepted.

All special processes and non-destructive testing performed per Hamilton Sundstrand, military, federal and industrial specifications shall be performed by Hamilton Sundstrand approved suppliers (HS/UTAS Report 80/85) or Nadcap accredited sources. If the special process supplier is not HS or Nadcap approved verification testing is required as specified herein.

Note: Verification testing is not applicable to UTAS Flight Safety Parts and HS FSCM 73030 designed standard parts, these HSF's must be processed using HS/UTAS Report 80 & 85 suppliers.

The following sampling plan shall be used when verification testing is performed on HSFs. Refer to Table – 1.

HSFs Sampling Plan Table – 1

Lot Size From	Lot Size To	Sample Size – Nondestructive Test 1.5 AQL (1.9 AOQL) (b)	Sample Size – Destructive Test (a) 1.5 AQL (1.9 AOQL)
2	8	8	4
9	15	8	4
16	25	8	4
26	50	8	4
51	90	8	4
91	150	12	4
151	280	19	4
281	500	21	4
501	1,200	27	4
1,201	3,200	36	4
3,201	10,000	38	4
10,001	35,000	46	4
35,001	150,000	56	4
150,001	500,000	64	4
500,001	greater	64	4

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- (a) The Destructive Samples may be taken from the Nondestructive sample after they have finished their nondestructive verification testing.
- (b) Table 1 Sampling is not permitted for Magnetic Particle (MPI) or Fluorescent Penetrant (FPI) Inspection.

Verification Testing Requirements On HSFs		
Verification Testing of Required Special Processes By Suppliers Without HS or Nadcap Approvals Table - 2		
Special Process (c)	Fastener's Specifications (d)	Required
Certification Review (Traceability)	Dependent on HSF is Required for all restricted special processes	Yes
Verification Test Report, when required	Examples of Fastener's Specifications Requirements	Yes
Heat Treat - Core Hardness OR Ultimate Tensile Strength	ASTM E384 ASTM F606	Yes
Heat Treat - Carburization	ASTM F2328	Yes
Decarburization Thread Hardness	ASTM F835	Yes
Plating -- Thickness	NASM1312-12, ASTM B487	Yes
Plating -- Hydrogen Embrittlement Test (HET) (a)	ASTM F606 – Mandatory Test Method	Yes
Plating -- Corrosion Resistance	Specific Part Plating Specification	No
Passivation (b)	AMS2700 - Humidity Test	Yes
Thread Form	Specific Part Procurement Specification	Yes
NDT –MPI(e)	ASTM E1444	Yes
NDT –FPI(e)	ASTM E1417	Yes
(a) HET per ASTM F606 is mandatory if no HET specification appears on a plated HSF document or its tiers.		
(b) Verification testing is to be performed per the passivation specification noted on the fastener's documentation.		
(c) These verification tests are only required on processes that were not performed by HS approved or Nadcap accredited sources.		
(d) The specs referenced in the Table are intended to be examples and not a comprehensive list. The applicable fastener specification or drawing shows the required testing documents.		
(e) NDT inspections, including frequency shall be performed in accordance with the requirements specified for the fastener (drawing and procurement specification).		

If Table 2 does not address a required restricted special process (e.g. dry film lube, peening etc.) the Supplier shall submit a SRI to UTAS for verification testing requirements.

All verification testing defined in Table – 2 shall be performed at a HS/UTAS Report 80/85 approved laboratory, Nadcap or A2LA accredited laboratory.

HSFs must pass all the required verification testing to be used on UTAS product.

Verification testing failures need full lab reports including photographs to document the reason for failure. UTAS shall be notified in writing of any test failures.

When verification testing is performed, the supplier furnishing the HSF to UTAS either as a detail or part of an assembly is responsible for maintaining traceability to the original HSF manufacturer, part number and manufacturing lot.

Upon request electronic or hard copies of verification testing results shall be sent to the user of the HSF.

When verification testing is required, the instructions for completing the electronic source inspection record (iLot) are specified in the Materials and Processes Review section under “Fastener Manufacturers, High Strength”.

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