

Honeywell

Aerospace

Supplemental

Purchase

Order

Conditions

Manual



This manual contains requirements that are applicable when invoked by Honeywell Aerospace Purchase Orders. Requirements include the mandatory use of this manual for Contract Review and Quality Planning activities.

May 1, 2012
Revision K

Notice:

The SPOC Manual is a controlled document. It is controlled in electronic format. If a hard copy version is utilized, it is considered to be a reference tool.

It is important to verify the currency of a hard copy by viewing the online electronic SPOC Manual. Internal Honeywell users may access the manual on the internal Honeywell Intranet:

<http://my.honeywell.com/npoint/portal?smap=intsupch&page=supplierqualitydev&theme=T13a&c=7&cn2=7.4>

Suppliers may access the manual via the Aerospace Supplier Portal (ASP):

<https://www.supplier.honeywell.com>

It is possible that an unincorporated change may be initiated during the current SPOC revision 'K' life cycle. If/when this were to occur, the change will be posted to the above locations only. Thus, it is important to routinely check for any such changes. Changes will be incorporated at the next general SPOC Manual revision/update.

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*Revised / **Added

Section 1.0 General Requirements *

1.1 Preface

This manual contains requirements that are applicable when invoked by Honeywell Aerospace Purchase Orders. Requirements include the mandatory use of this manual for Contract Review and Quality Planning activities. Contents of Sections 1–3 shall be reviewed and complied with in conjunction with the purchase order flow down. The SPOC Manual is controlled in Electronic format as presented on the Supplier Portal. Paper copies, and electronic copies downloaded and saved to a local hard drive are Uncontrolled. Suppliers shall visit the manual online to check for changes that may be identified in the electronic change page at <https://www.supplier.honeywell.com>.

If the Supplier is working to a Purchase Order pre-dating the most current SPOC Manual release date, the Supplier may request authorization to work to the most current SPOC manual revision by requesting a Purchase Order revision from the Honeywell Buyer.

1.2 Applicability

The Honeywell Purchase Order is the official binding contract in the order of precedence described in the Terms & Conditions of Purchase. Requirements are specified on the Purchase Order by group or specific SPOC number(s) and/or text. If conflicts between flow down documents and the Purchase Order are detected, the Supplier shall immediately notify the Honeywell Buyer.

Handwritten, lined-out or initialed changes to purchase orders are not allowed. Handwritten, lined-out or initialed changes to engineering drawings/specification or technical data are not allowed, except where:

- provided for by Honeywell site procedure, **and**
- signed by an authorized Honeywell agent.

Verbal and/or email authorizations are not permitted.

1.2.1 Subcontracting Policy*

Honeywell suppliers shall ensure flow down to, and compliance with, all applicable Purchase Order and Engineering requirements to their sub-tier suppliers, including approved Special Process providers.

For Honeywell designed hardware, Supplier/subcontractor Purchase Orders to special processing providers must contain the following as a minimum:

- Reference to the applicable Honeywell CAGE Code, or request for material.
- Applicable SPOC number(s).
- Honeywell part number and nomenclature of subject part.
- Special Processes to be performed and the applicable specification(s), revision letter(s) including the type, class, or methods and testing that are required by drawing or specification.*
- Any special drawing instructions/notes, as applicable; such as approved Materials Engineering Supplier Agreement, inspection class, inspection grade and inspection acceptance requirements, MOT's, MBP's, or special handling requirements not otherwise stated, etc.*
- Fixed / Frozen process revision level and approval date. If not provided on the Honeywell purchase order, contact the Honeywell buyer for proper information to flow down.*

1.3 Quality Requirements**

The core quality requirement is for all features to comply to specifications 100% for all parts produced and shipped. If the process is not capable of meeting 100% yield it is Honeywell's expectation that all suppliers pursue measurable continuous quality and delivery improvements.

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On an annual basis, Honeywell defines the minimum performance expectation measured in conventional ways like Parts Per Million (PPM) for quality and Percent On Time To Requirements (OTTR) on a supplier level as well as on a part number level.

When a supplier does not meet these minimum performance levels, Honeywell reserves the right to require the supplier to engage in an aggressive improvement project – lead by the suppliers leadership as well as Honeywell Stakeholders. These projects will be focused on improving the supplier's Business Operating Systems that will result in the sustainable achievement of Honeywell's minimum performance expectation.

As of October 2011, Honeywell's minimum performance expectation is:

Quality	100 PPM or lower based on a three Month Moving Average (3 MMA)
Delivery	98 % On-Time to Requirements (OTTR)

1.4 Quality Alerts

Quality Alerts are issued as a means of notifying suppliers of potential problems, or clarifying policies, procedures, work instructions, or drawings. Alerts are issued for an interim period only. Open/active Supplier applicable Quality Alerts are located on the Honeywell Aerospace Supplier Portal site.

1.5 Audit Rights Reserved / Right of Entry

Honeywell, Honeywell Partnerships, Aircraft Manufacturers, customers and Regulatory Authorities reserve the right to perform audits and/or inspections at the Supplier's and/or supplier's subcontractor's facility on the manufactured and/or repaired parts. Supplier material, records, process and routing sheets, manufacturing, and test and inspection facilities are subject to review by Honeywell and/or Honeywell customers (Commercial, designated Government representatives, Regulatory authorities). When on-site verification of Contract / Purchase order conformance is required, the supplier shall provide the equipment, facilities, and personnel necessary for the Honeywell representatives to verify compliance.

1.6 Changes in Quality System, Facilities, Management or Ownership*

Suppliers shall immediately notify the Honeywell Buyer, the Honeywell Site Quality Assurance Management from procuring sites, the assigned FQE, and HTSI (HTSI.CC@honeywell.com) of changes to their Quality System, management or ownership. Changes requiring notification include but are not limited to*:

- Change in location of facilities or manufacturing equipment. Notification must be prior to relocation and with adequate time (minimum 90 days) for hardware, system, and process re-qualification.
- Change in ownership, name changes, or change in senior company management
- Change in quality leadership, system or controlled processes certification status, including suspensions or disapprovals
- Change in holder of design authority or change in location of the design office (change of CAGE code or NSCM)

Supplier notifications shall contain the following supplier information as a minimum:

- Supplier ID/DUNS number
- Old data and new data (i.e. if address change, list the prior address and the new address)
- Name of supplier quality contact
- Phone number of supplier quality contact
- eMail address of supplier quality contact.

1.7 Language Requirements

All quality records, data or correspondence to Honeywell Aerospace are required to be in the language of the Honeywell facility placing the purchase order, or in the English language, as agreed on between the supplier and the Honeywell facility. The Supplier shall maintain an English Language translation of its Quality Manual. Upon request, all

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supplier data related to furnished product must be translated to English and made available. If the supplier does not perform this service, translation fees will be debited to the Supplier.

1.8 Configuration Management

The Supplier shall ensure that the current configuration of all drawings, specifications, and instructions required by the Contract / Purchase Order, as well as authorized changes, are used for manufacturing, inspecting, and testing. Current revisions of Honeywell detail drawings and specifications may be located using the applicable supplier configuration report or by selecting the Aerospace PDM Supplier Access link from the applications menu at the Aerospace Supplier Portal, unless directed otherwise in Section 2.0 of this SPOC Manual. For sites not using the PDM system, contact the Honeywell buyer to obtain the latest revisions.

1.9 Notification of Design and Manufacturing Changes

Suppliers with design authority are required to notify Honeywell promptly, in writing, of any changes of fit, form or function, or safety of product and obtain approval prior to manufacture and delivery. Supplier shall submit proposed changes to the Buyer including but not limited to: process – material – design – software.

1.10 Source of Supply

When the source of supply is specified on the Honeywell drawing / technical data in any way, only those sources listed shall be used. Use of any alternate sources must be approved by Honeywell and added to the drawing/technical data before use.

1.10.1 Olathe Design Controlled (CAGE Codes 22373, 27914, 97896 & 99866) Orders Only

The Supplier shall only use Honeywell approved parts in Honeywell designed products, assemblies and/or sub-assemblies. The approved manufacturer and manufacturer part number information is available on the Honeywell Supplier Portal/Applications/AMPL.

- Commercial off the Shelf (COTS) parts and custom electrical parts, such as, cable assemblies, transformers, inductors, power supplies, etc., are approved by the Honeywell Component Engineering organization in advance of procurement. The supplier shall access the AMPL to determine manufacturer and manufacturer part number approval information for the specified Honeywell part number.
- For printed boards (PB), Honeywell provides a list of approved printed board (PB) manufacturers through the AMPL that the Contract Manufacturer can select in support of procurement requirements. The printed board (PB) manufacturer is approved based upon successful completion of a First Article Inspection (FAI) performed by the printed board (PB) manufacturer, validated by the Contract Manufacturer, approved by Honeywell, subsequently added to the AMPL data base and viewable through the AMPL link noted above.
- Other Honeywell designed products are approved based upon a successful First Article Inspection (FAI) performed by the supplier, reviewed and approved by Honeywell, subsequently added to the AMPL data base and viewable through the AMPL link noted above.

To support this process, the Supplier shall submit the FAI report to Honeywell for each part number prior to delivery of the first shipment.

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1.10.2 Deer Valley, Glendale, and Albuquerque Products (Deer Valley CAGE Codes 55939, 58960; Glendale CAGE Code 61962; and Albuquerque CAGE Code 07187) *

1.10.2.1 Approved Sources of Supply

All suppliers and distributors shall only use Honeywell approved and qualified parts and manufacturers in Honeywell designated products, assemblies and/or sub assemblies. Typically, the following component and component assemblies called out in Bill of Material of Honeywell design drawings, are qualified by Honeywell engineering for inclusion in Honeywell AMPL (Approved Manufacturer Parts List).

- a. Vendor item Control drawing (Formerly Specification control drawing)
- b. Source Control Drawings
- c. Government/Industry Standard drawing
- d. Identification cross reference drawing
- e. Standard Military drawing
- f. 53 M series part numbers

Approved manufacturer and manufacturer part number information is available in Honeywell AMPL which can be accessed through the supplier portal www.supplier.honeywell.com (Log into Honeywell Supplier portal and click on Applications tab and select AMPL).

Honeywell engineering tests and qualifies these parts prior to their inclusion in Honeywell AMPL. Qualified part numbers and approved manufacturers with their CAGE codes are documented in Honeywell AMPL (formerly known as Mapper/query system. They are also normally referenced in the corresponding drawing notes as EB4059903 & P7500683.

When approved sources are listed on both drawings and Honeywell AMPL, sources listed in Honeywell AMPL shall take precedence over the original part drawing.

Access to Honeywell AMPL system is granted as needed to contract manufacturers and major distributors. Buyer may also provide the Honeywell approved supplier information in AMPL to all suppliers at the time of placement of purchase orders. If this information is missing or if further clarifications and access to AMPL are required, Suppliers shall contact their buyers before using components in their assemblies.

1.10.2.2 Material Code Index**

Suppliers or distributors to Deer Valley, Glendale and Albuquerque sites that are contracted to build/fabricate product or to support the build/fabrication of product may access the Honeywell Material Code Index data base via the following link:

<https://aero1.honeywell.com/material/application/user/login.cfm?CFID=10966&CFTOKEN=84118213>

The **User Name** for the data base is "material" and the **Password** is also "material" (Lower Case only).

All suppliers and distributors shall only use Honeywell approved and qualified materials, sundries and manufacturers used in Honeywell designated products, assemblies and/or sub assemblies. Typically, the following materials and sundries are called out on drawings or in Bill of Material of Honeywell design drawings, are qualified by Honeywell engineering for inclusion in Honeywell MCI (Material Code Index).

- a. Manufactured Part Drawings
- b. Manufacturing Specifications MSPEC
- c. Purchase Specifications PSPEC

Honeywell engineering tests and qualifies these parts prior to their inclusion in the Honeywell MCI. Qualified materials and approved manufacturers with their CAGE codes, where applicable, are documented in the Honeywell MCI. **When approved sources are listed on both drawings and the Honeywell MCI, sources listed in the Honeywell MCI shall take precedence over the original part drawing.**

Materials and Process Engineering (M&PE) provides the Honeywell approved manufacturer information in the MCI.

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1.10.3 Tucson Products

All suppliers and distributors shall only use Honeywell approved and qualified parts and manufacturers in Honeywell designated products, assemblies and/or sub assemblies. Typically, the following component and component assemblies called out in Bill of Material of Honeywell design drawings, are qualified by Honeywell engineering for inclusion in Honeywell AMPL (Approved Manufacturer Parts List).

- a. Vendor item Control drawing (Formerly Specification control drawing)
- b. Source Control Drawings
- c. Government/Industry Standard drawing
- d. Identification cross reference drawing
- e. Standard Military drawing
- f. 53 M series part numbers

Honeywell engineering tests and qualifies these parts prior to their inclusion in Honeywell AMPL. Qualified part numbers and approved manufacturers with their CAGE codes are documented in Honeywell AMPL (formerly known as Mapper/query system). The data is refreshed nightly from the AMPL database. As this tool contains data from several Aerospace design locations, the supplier will need to exercise care to use data from the Tucson vault.

When approved sources are listed on both drawings and Honeywell AMPL, sources listed in Honeywell AMPL shall take precedence over the original part drawing.

Access to Honeywell AMPL system is granted as needed to contract manufacturers and major distributors. Buyer may also provide the Honeywell approved supplier information in AMPL to all suppliers at the time of placement of purchase orders. If this information is missing or if further clarifications and access to AMPL are required, Suppliers shall contact their buyers before using components in their assemblies.

1.10.4 Torrance Products (CAGE code 70210) **

All suppliers and distributors shall only use Honeywell approved and qualified parts and manufacturers in Honeywell designated products, assemblies and /or sub assemblies. Typically, the following component and component assemblies called out in Bill of Material of Honeywell design drawings, are qualified by Honeywell engineering for inclusion in Honeywell AMPL (Approved Manufacturer Parts List).

- a. Vendor Item Control Drawing (formerly Specification control drawing)
- b. Source Control drawings,
- c. Government/ Industry standard drawing,
- d. Identification cross reference drawing,
- e. Standard Military drawing,
- f. 53M series part numbers

Honeywell engineering tests and qualifies these parts prior to their inclusion in the Honeywell AMPL. Qualified part numbers and approved manufacturers with their cage codes are documented in the Honeywell AMPL (formerly known as Mapper/query system). The data is refreshed nightly from the AMPL database. As this tool contains data from several Aerospace design locations, the suppliers will need to exercise care to use data from the Specific Honeywell site (Torrance-70210) vault.

When approved sources are listed on both drawings and Honeywell AMPL, sources listed on the Honeywell AMPL shall take precedence over the original part drawing.

Access to the Honeywell AMPL system is granted as needed to contract manufacturers and major distributors. Buyers may also provide the Honeywell approved supplier information in AMPL to all suppliers at the time of placement of purchase orders. If this information is missing or if further clarification and access to AMPL are required, Suppliers shall contact their buyers before using components in their assemblies.

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1.10.5 Albuquerque Products (CAGE Codes 07187 & 017N4) and Redmond Products (CAGE Codes 0YFP0 & 97896) Orders Only**

When the source of supply is specified on Albuquerque and Redmond drawings as “approved”, only those sources listed shall be used. Use of any alternate sources must be approved by the applicable Honeywell site and added to the drawing before use.

When the source of supply is specified on the drawing as “suggested”, other sources may be used.

Note: Albuquerque and Redmond drawings are prepared in accordance with ASME Y14.24, Types and Applications of Engineering Drawings.

1.11 Quality Records

1.11.1 Access to Records

Honeywell reserves the right to access records at the PO holder, or its sub-tiers involved in the manufacture of Honeywell product. The Supplier shall make the records available within 48 hours, or 2 business days, of the request for access.

1.11.2 Records Storage

Records must be stored in an area which meets all local Fire and Life Safety Codes that prevents loss, damage or deterioration. All data stored by electronic means shall be secure with back-up procedures, and audited to verify the integrity of the data.

1.11.3 Disposition of Records

The supplier shall contact the Honeywell Buyer for disposition of records upon termination of business activity.

1.11.4 Corrections

Changes or corrections to records, regardless of the media, shall be made as follows: draw a single line through the old data, enter the correct data, date, and apply stamp or initials or signature of individual making the correction. No erasures, covering, or "white-out" allowed.

1.11.5 Record Retention*

All Quality Records, including radiographic film, shall be retained as follows:

Records in Support of	Minimum Retention Period ¹
Radiographic Film	11 years
Non-traceable, non-serialized parts	11 years
Traceable parts as identified on the Honeywell drawing or purchase order	Indefinitely ²
Serialized parts as identified on the Honeywell drawing or purchase order	Indefinitely ²
Critical parts as identified on the Honeywell drawing	Indefinitely ²
Distributor standard off the shelf product	7 years

1. MINIMUM retention periods, beginning with the date the order was completed. In the case where a specification, contract or purchase order requires a greater retention period, the more stringent requirement will apply.

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2. A lengthy period of time specified in the law that cannot be determined in advance. **Indefinitely** does not mean that the records must be retained permanently. Records having a retention period of "Indefinitely" should be reviewed periodically to determine if they have surpassed their useful legal and business life. Destruction of records with Indefinite retention period must be authorized by Honeywell.
3. Quality records shall be all records as defined within the AS9100 Standard, section 4.2.4. **

1.12 Prohibited Practices

The following acts or practices are prohibited:

1. Unauthorized Repair - Repairs (by welding, brazing, soldering, or the use of adhesives) of parts damaged or found faulty in the fabrication process; repairing holes in castings, forgings or other materials by plugging or bushing without authorization from Buyer.
2. Unauthorized Processing - Addition, revision, or deletion of thermal, chemical, or electrochemical processes in manufacturing when processes are subject to specification control by Buyer.
3. Improper Material Submittal - Submission of material having known defects/problems to Buyer without notification.
4. Improper Material Re-submittal - Resubmission of material to Buyer without material being clearly identified as resubmitted material.
5. Unauthorized Material and Information Transfer – No supplier shall buy, sell, trade, or transfer Honeywell owned/supplied drawings, data, material, parts, devices, assemblies or end equipment for purposes other than the performance of Honeywell business, without prior written approval.
6. Reclaimed Material – No supplier shall use reclaimed material without prior written approval from the Buyer.

1.13 General Quality System Requirements*

Suppliers and supplier sub-tiers providing product, are responsible for maintaining Quality Systems that are compliant to applicable Honeywell Quality System Requirements. Suppliers shall be third-party registered and receive periodic system audits, or be subject to periodic compliance audits by Honeywell. Suppliers assume the cost of systems audits. Honeywell's preferred Quality Systems levels are as follows:*

- **Manufacturing with Design Authority:** AS/EN/JISQ 9100; design must be included in scope of registration, and suppliers may not exclude design portions of the Standard.
- **Manufacturing without Design Authority / Special Processes:** AS/EN/JISQ 9100
- **Repair and Overhaul:** National Aviation Authority (NAA) Certification (local and/or international regulatory agency) and/or AS9100 or AS9110
- **Special Processors (non-manufacturing):** AS9003 or satisfactory audit to Nadcap (AC7004)
- **Materials Laboratories and NDT Laboratories:** ISO 17025, or AS9003, or satisfactory audit to Nadcap (AC7004)
- **Distribution and Brokers:** AS/EN/JISQ 9120
- **Calibration Laboratories:** ISO 17025
- **Software Suppliers:** AS/EN/JISQ 9100 and AS9115

Alternate Quality System standards which do not meet the above requirements must be approved by the Supplier Quality Manager (or designee) of the Honeywell site issuing the PO.

The supplier shall provide evidence of a certificate of registration from an organization accredited by a member of international accreditation forum (IAF) to the industry standard listed above, or successfully pass a compliance audit conducted by Honeywell or Honeywell's approved designee.

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1.13.1 Evaluation

Honeywell Technical Services Inc. (HTSI), and/or the Honeywell purchasing sites, shall perform periodic evaluations on external suppliers. Failure to provide proof of compliance may result in a Quality System compliance audit being launched at the Supplier's expense.

1.14 Obsolescence

For component parts (COTS) or Honeywell designed parts or assemblies, the Supplier shall notify the Honeywell Buyer regarding part or material obsolescence as soon as the information becomes available, with an expectation to provide notification at least six months prior to the last date an order will be accepted.

For products where the Supplier has design responsibility, the Supplier shall develop and implement a Part Obsolescence Management Process. This Process shall include the following elements at a minimum:

- Annual assessment of Product Bill of Material(s) (BOMs) to identify any obsolescence that will potentially impact delivery of product to Honeywell.
- Proactive identification and detection of part, material or manufacturing/test equipment obsolescence issues
- Action Plan to resolve each obsolescence issue, including forecast analysis and product support decision(s) (i.e. Life Time Buy, redesign or product sunset)
- Life Time Buy inventory management plan to ensure long term ability to produce product
- Advanced notification to the Honeywell buyer of any potential interruption in the ability to meet Honeywell forecasted demand due to an obsolescence issue

1.15 Honeywell-Consigned Material

The Supplier shall not return unused consigned material without authorization from the Honeywell Buyer.

1.15.1 Nonconforming Consigned Material

If authorized for return, the material shall be labeled "Return of Consigned Materials, Do Not Route to Stores" on the outside of the shipping container (BARCODE LABELS ARE NOT TO BE USED).

The Supplier shall identify part number and dash number, and the reason for return on the packing slip.

1.15.1.1 Phoenix Engines Orders Only

Nonconforming consigned material parts being returned shall be identified by "RCSM" in the dash number (e.g., 3071432-2RCSM) and be returned on a new item number and/or Purchase Order issued by the Buyer.

1.16 Business Continuity Management**

The Supplier shall ensure their Company has robust Business Continuity Management (BCM) processes in place that include disaster recovery and preparedness.

1.16.1 Business Continuity Plan

The Supplier shall document a Business Continuity Plan which details what the Company would do in the event that key People, Processes or Technology was to become unavailable. This Business Continuity Plan shall be applicable, including but not limited to, natural disasters, labor disputes, lockouts, evictions, power or systems failures, hazardous spills, fire, floods, explosions, sabotage, riots, war or other civil disturbances, and voluntary or involuntary compliance with any laws, regulations, or requirements of any government authorities.

General information regarding how to develop a Business Continuity Plan can be found on the internet. Some helpful website links are listed below:

<http://www.disaster-recovery-guide.com/>

http://www.disasterrecovery.org/disaster_recovery.html

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1.16.1.1 Sub-Tiers

The Supplier's BCM Plan should also include planned actions to mitigate any disruptions in supply from critical sub-tiers.

1.16.2 Audit Rights

Honeywell reserves the right to review the Supplier's BCM Plan at any time to assess their maturity and continued development.

1.17 Crisis Management**

1.17.1 Notification

The Supplier must use best efforts to notify Honeywell Commodity Manager or Buyer within 24hrs if they experience an incident, including but not limited to those listed in 1.16.1 above that may impact their ability to make their scheduled shipments to Honeywell.

1.17.1.1 Sub-Tiers

Supplier must notify Honeywell Commodity Manager or Buyer within 24hrs of receiving notification that any of their critical sub-tiers have experienced an incident, including but not limited to those listed in 1.16.1 above, that may impact their ability to provide materials or components to the Supplier that are required in the manufacture or assembly of Honeywell product.

1.17.2 Disaster Recovery

In the event of a supply interruption, Honeywell may engage the Supplier to collaborate on recovery. Supplier is expected to fully support any such engagement until the delivery schedule to Honeywell is recovered.

Revisions: Paragraph 1.2.1, bullets 4, 5, 6 rewritten. New paragraph 1.3, Quality Requirements added. All subsequent paragraphs renumbered. Paragraph 1.6 added FQE to notification group. Paragraph 1.10.2.2 added to include Material Code Index requirements. Paragraph 1.10.4 Torrance Products has been added. New paragraph 1.10.5. Paragraph 1.11.5 note #3 has been added. Paragraph 1.13, added reference to sub-tier suppliers in first sentence. Also updated Software standard reference from AS9006 to AS9115. New paragraphs 1.16, Business Continuity Management and 1.17, Crisis Management have been added.

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*Revised / **Added

Section 2.0 Specifications and General Information *

2.1 General Requirements*

The applicable revision status of specifications shall be the revision in effect on the date of the Purchase Order, unless otherwise specified.

For Purchase Orders that are open longer than typical manufacturing Lead Times (e.g. Blanket PO's), specification changes that occur after issue of the PO shall be implemented within 60 days.*

Parts on existing POs or LTAs that are processed before the specification change are acceptable unless otherwise specified in the specification revision document.

Material substitutions are not allowed without written Engineering approval, with the exceptions noted below:

- Phoenix Engines: General Engineering Order 22 (EO#22). It is referenced by the Drawing Interpretation Specs SC7000, SC6500, SC6000, SC5535 and E1000. In some of the preceding specifications, EO #22 is referenced in an attached Appendix, while others point to specification SC7500, which houses all active EOs for Phoenix Engines. All are available on the Honeywell Aerospace Supplier Portal.
- Tempe: General Engineering Order 1005 (EO#1005). GPS 1010, GPS 1031 (all revisions), 41-8612 and EO 1005 are not authorized and prohibited for use in Missile, TVA or Marine applications.*
- Torrance: Procurement Information Bulletin 65 (PIB65).
- Tucson / Mexicali: Procurement Information Bulletin 7065 (PIB7065).
- Minneapolis: The material requirements of IPC-4101 shall be substituted when Honeywell-Minneapolis printed wiring board drawings call out MIL-S-13949 materials.

2.1.1 Purchased Raw Material Periodic Compliance Verification**

Materials Control ensures that raw materials conform to the applicable physical, chemical, and other technical requirements, by establishing a re-testing schedule for each raw material source. The re-testing schedule is based on objective evidence which supports the frequency and degree of re-testing actually performed, unless otherwise specified by Contract/ Purchase Order.

2.2 Specification Availability*

2.2.1 To obtain Honeywell Specification Documents**

Suppliers must contact the appropriate Honeywell Buyer/Planner or other appropriate contacts to receive the latest revision of the specification document.

Some documents / specifications may be posted to the Site Specific page for a Honeywell site in the Aerospace Supplier Portal. The path to view Site Specific pages is: *Aerospace Supplier Portal > Documents > Site Specific*. Select specific site and click on red arrow.

2.2.2 To obtain copies of other specification documents (e.g. Industry, Military) identified on Honeywell part drawings**

The latest revision of the Industry or Military specification shall be the revision in effect, unless otherwise specified. It is the responsibility of the suppliers to obtain the latest revision of these specifications.

2.2.3 Specification Index for revision compliance**

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- Honeywell has developed the **Aerospace Specification Index** (ASI) to allow suppliers access to the applicable specification revision information including specification revisions currently in effect, and additional instructions for using superseding or replacement specifications.
 - ASI is available to authorized Honeywell suppliers from the Honeywell Supplier Portal : <https://www.supplier.honeywell.com>
 - ASI currently contains the Specification Index requirement for the following Honeywell sites:
 - Clearwater – Glendale – Minneapolis – Phoenix – South Bend – Tempe – Torrance – Toronto – Tucson – Yeovil(UK)
 - Other Honeywell site specifications indexes shall be incorporated in the ASI for supplier access

2.3 Site Specific Details *

Some Honeywell specifications may be found in the “Documents” section of the Aerospace Supplier Portal. Specifications not posted on the Supplier Portal shall be obtained by contacting the Buyer.

Tempe / Singapore

Specifications for Tempe Design Activity (CAGE Code 59364)

Original Design Activity (ODA) 59364 (indicated by CAGE Code 59364 in the title block on the drawing):

Specification Index Document 41-8612 indicates the revision of the specification recognized by Tempe. The latest 41-8612 Index information can be found in the ASI from Honeywell Aerospace Supplier Portal.

Current Design Activity (CDA) 59364 (indicated by Current Design Activity transfer stamp added near the title block on the drawing):

Follow GPS1010-1 for superseding of ODA specifications first, and then use 41-8612 to determine the revision of the applicable specification recognized by Tempe. The latest 41-8612 Index information can be found in the ASI from Honeywell Aerospace Supplier Portal.

If the Design Activity is in question, contact the Buyer for clarification.

Phoenix Engines / Greer *

Manufacturing Blueprints (MBP's) and Manufacturing Operations and Tooling (MOT's) are non-engineering drawings which may contain characteristics that are lined-out for revision, but whose marked changes are accompanied by an adjacent stamp with “MER-XXX” (where the XXX represents a three-digit number), and accompanied by a signature or initials of the MER stamp holder, and date. Such changes are recognized as acceptable.

Changes of this type are NOT acceptable for engineering drawings/documents.

Torrance

PIB60 – Specification and Process Cross-Reference: If a specification found on the Torrance drawing is listed as a “Requirement Specification” in Table II of PIB60, the designated Honeywell Aerospace-Torrance process specifications must be used and all certification of processing must reflect that the process was performed to the latest revision.

PIB67 – Specification Revision Letter Control: This specification shall be used to verify the revision letter in effect at Honeywell – Torrance for selected third party (Government or Industry) specifications that are under revision letter control. For third party specifications not listed in PIB67, the latest revision of the specification applies.

Tucson

A list of Tucson internal material and process specifications is updated periodically. The PIB7046 list identifies current revision levels of specifications listed on HONEYWELL engineering drawing or specifications.

Cross-reference information between Torrance and Tucson documents is available in PIB7069. The Supplier is responsible to refer to this document wherever Honeywell specifications are referenced on the engineering drawing.

Note: When DOD-STD-100 is referenced on the drawing, PIB7005 may be used for additional clarification.

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Rocky Mount

Suppliers shall refer to the supplier configuration report on the Portal (Supplier Reports) for drawing / specification revisions, Configuration Control Requirements (CCR), Manufacturing Procedure Instruction (MPI), and Preservation and Packaging Specifications (PPS).

South Bend

AI-598- Specification and Process Cross-References: If a specification found on the Honeywell – South Bend drawing is listed in Table 1 of AI-598, the designated Honeywell Aerospace specification must be used and all processing and testing must conform to the latest revision of the designated Honeywell Aerospace specification.

Minneapolis

Direct Replacement of DoD Controlled Documents: For Honeywell drawings that reference cancelled DoD controlled documents where a specific revision of the document is not specified, and the DoD document cancellation notice identifies a superseding document, the seller may elect to use the superseding document without revision to the drawing or purchase order. When the DoD document cancellation notice does not identify a superseding document, the seller shall contact the Honeywell buyer.

Yeovil *

Approved subcontractors: Approved contractors must be used at all times. If further subcontracting is required then it must also be to HAY approved sources on HAY designed products.

Identification of Limited & Non-Flight Cleared Product (Blue & Red Band): When products have been categorized as 'released with limited flight approval' i.e. development flight and test, products are to be clearly and visibly identified as such (blue band using suitable marking method i.e. electrical insulation tape). When products have been categorized as 'non-flight worthy' i.e. development ground/bench test, space model, products are to be clearly and visibly identified as such (red band using suitable marking method i.e. electrical insulation tape). Identification instructions and authority to dispatch are to be obtained from Honeywell Procurement prior to dispatch. Delivery paperwork is to clearly define limitations for product use.

Parts Manufacture Approval (PMA): HAY will not accept the supply or use of PMA components or assemblies. In the cases where the original equipment manufacturer (OEM), which is the design authority, has obtained PMA approvals for his own equipment, this will only be accepted after clearance by HAY quality. All requests by suppliers for release of PMA parts, in the first instance, must be made to the HAY Procurement Department prior to delivery.

Oxygen Bomb Testing: All non-metallic materials coming into contact with an oxygen-enriched atmosphere in HAY oxygen equipment shall be batch tested in accordance with NGPS 973. This specification details the requirements and contains a form to be completed by the Supplier. This form MUST be forwarded to HAY Materials Laboratory with a sample of the raw material to be used for testing prior to commencement of work.**

Oxygen Parts are defined by drawing number nomenclature W,X,Y,Z,OP and 773*****

For Yeovil hardware controlled via a Yeovil drawing, if a special process is required to be performed and it is not called up on the drawing, NGPS 1142 must be used.

All Parts Must be Protected during manufacture, transport and storage in accordance with NGPS 158.**

Toronto

The Toronto site document for applicable specification status (cancellations, supersedures, and cross reference tables), and the specification revisions in effect is 08E0536. The latest 08E0536 Index information can be found in the ASI from Honeywell Aerospace Supplier Portal.*

Revisions: Paragraph 2.1 General Requirements second sentence clarified regarding implementation of changes. Paragraph 2.1.1 added new, periodic raw material verification requirements. Paragraph 2.2 rewritten, including removal of reference to Fax on Demand. Paragraph 2.3 Phoenix Engines/Greer section, deleted Fax on Demand. FOD availability has been discontinued. Yeovil section, added new Oxygen Bomb Testing paragraph. As well as NGPS 158 requirement.

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Section 3.0 SPOC Groups – SPOC 001 through SPOC 009 Details *

3.1 Group Requirements*

In all cases, contents of SPOC Manual Sections 1.0–General Requirements, and Section 2.0–Specifications and General Information, shall be reviewed and complied with in conjunction with the purchase order flow down of specific Group SPOCs, or individual SPOCs.

SPOC Group Number	Individual SPOCs Invoked by SPOC Group
SPOC 001 Manufacturer with Design Authority	Sections 1.0 and 2.0, 100, 106, 124, 127, 128, 129, 130, 140, 142, 149, 154, 164**, 165, 200, 239, 267, 354, 418, 419
SPOC 002 * Manufacturer without Design Authority (may include Specification Control drawings that call out specific dimensions, processing methods, etc.)	Sections 1.0 and 2.0, 100, 106, 124, 127, 128, 129, 130, 140, 142, 149, 154, 164**, 165, 200, 239, 267, 354, 418, 419
SPOC 003 Standard and/or Catalog Hardware	Sections 1.0 and 2.0, 100, 106, 140, 142, 164**, 200, 239, 267, 354, 418, 419
SPOC 004 Industrial Programs	Sections 1.0 and 2.0, 100, 140, 164**, 267, 354, 418, 419
SPOC 005 Shop Overload or Spot Operations	Sections 1.0 and 2.0, 100, 106, 127, 128, 140, 154, 159.1.1, 164**, 165, 200, 239, 267, 354, 418, 419
SPOC 006 Repair & Overhaul	Sections 1.0 and 2.0, 100, 110, 127, 140, 142, 159, 164**, 239, 267, 354, 418, 419
SPOC 007 Ground Support Equipment	Sections 1.0 and 2.0, 100, 127, 130, 140, 142, 164**, 179, 267, 354, 418, 419
SPOC 008 Honeywell Interdivisional Orders (Honeywell to Honeywell purchases)	Process product/material in accordance with AP-1517, Requirements for Transactions between Honeywell Aerospace Sites.
SPOC 009* Printed Board Assemblies	Sections 1.0 and 2.0, 100, 106, 124, 127, 128.4, 140, 142, 149, 162, 164**, 165, 200, 239, 354, 418, 419, 548, 549, 560**

Note: Individual SPOC's may have multiple sections, the supplier is responsible to understand applicability or request clarification.

Revisions: Added details to SPOC 002 applicability. Removed 'and select Cable and Harness Assemblies' from SPOC 009 title. Added SPOC 164 to all group SPOCs. Added SPOC 560 to Group SPOC 009.

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*Revised / **Added

SPOC 100 – Notification, Containment, and Corrective Action of Material Found

Nonconforming to Honeywell Purchase Order Requirements *

100.1 Scope

Material that departs from drawing, specification or maintenance requirements shall be identified and controlled to prevent unauthorized use or delivery to Honeywell or other designated destinations. The Supplier shall provide prompt, written notification on supplier letterhead to both the Honeywell Buyer and site Supplier Quality Manager if nonconforming product or process escapes are identified after shipment to Honeywell has taken place.

100.2 Material Review Authority

The Supplier shall not exercise Material Review authority without written approval by Honeywell's Quality Organization. This applies to material that is Honeywell designed and/or designs controlled to Honeywell specifications or other OEM designed hardware.

Action shall not be taken on any nonconformance which could affect safety of personnel; adversely affect performance, durability, interchangeability or reliability; materially affect weight; or otherwise result in failure of the end article to perform its intended function. All doubtful cases shall be submitted to Honeywell Material Review Engineering on the appropriate form.

Honeywell reserves the right to reject the decision of the Supplier Material Review Board (MRB).

100.3 Request for Material Review Action

The Supplier may request consideration for nonconforming material that cannot be reworked to fully conform to drawing or purchase order requirements. Requests for Material Review Action shall be submitted on the appropriate nonconforming material document (e.g., Request for Material Review Action [RMRA], Quality Notifications [QN], eCATS RMRA or equivalent as applicable to the Honeywell site).

The forms and instructions are located on the Honeywell Aerospace Supplier Portal Web Site listed under the "Documents Section", or by contacting the Honeywell buyer.

Nonconforming articles shall be retained by the Supplier until the completed, dispositioned and approved Material Review document is returned to the Supplier.

Note: Honeywell reserves the right to subtract monies from the purchase order or debit the supplier, for Honeywell incurred costs related to supplier responsible RMRAs.

100.4 Material Discovered Nonconforming after Shipment*

The Supplier shall promptly notify Honeywell when nonconforming product has been shipped. The notification shall include part numbers, design activity CAGE code or CDA code, traceability (lot, serial, manufacturer numbers), ship dates, quantities, and a description of the nonconformance. This applies to any nonconformance that departs from drawing, specifications, aftermarket maintenance technical data or purchase order requirements.

The Supplier shall send written notification, referencing the site-assigned supplier code, to the attention of: all of the following:

The Honeywell Buyer, and

Site Quality Assurance management at the issuing PO Honeywell site, and

Supplier's assigned Field Quality Engineer.**

Product found to be nonconforming, and shipped in partial shipments, requires that the Supplier repeat the source inspection on the remaining pieces per SPOC 149 requirements. A new Partial Shipment Release Sheet shall be

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generated if the remaining pieces are acceptable per SPOC 140.

100.5 Containment of Nonconforming Material*

When a nonconformance is discovered, or the Supplier is notified of a discrepancy, the Supplier must take immediate action to determine if the condition exists on any other work-in-process, in Stores at the Supplier's facility, or in prior shipments. Containment action must be taken and documented prior to the next shipment of the part number involved.

Containment activities taken and/or planned shall be communicated to the Honeywell Aerospace site within 48 hours when formally requested through Quality Notification, RMRA or other documented notification/discovery of nonconforming shipment.*

Product identified on a Partial Shipment Release Sheet as source inspection accepted shall be re-inspected prior to shipment.

The Supplier shall not wait for the discrepant hardware to be returned to begin an investigation.

100.6 Corrective Action

The Supplier is responsible for prompt replies to Honeywell requests for containment and corrective action using eCATS, an electronic corrective action tracking system. All suppliers are responsible for registering for eCATS access located at <https://ecats.honeywell.com/login.jsp>.

100.7 Request for Reversals

Rejects identified as Supplier's Responsibility are documented on the Supplier Scorecard available on the Aerospace Supplier Portal. If the supplier's investigation of the reject concludes that the nonconformance should not be charged to the Supplier's Responsibility, then a request to reverse the responsibility must be submitted by the supplier in eCATS. Reversal requests should be submitted within 30 days of notification of nonconformance. Any reject listing on a supplier's Scorecard constitutes notification whether or not the part is returned. All eCATS reversal requests submitted shall provide detailed justification information. Information on how to file is located on the Aerospace Supplier Portal in the SPOC-Supporting Documents area.

Requests for reversal submitted later than 90 days after nonconformance notification may not receive consideration from the Honeywell site.

100.8 Return Purchase Orders for Replacement, Reworked or Repaired Parts

Any part being supplied to Honeywell on a return purchase order (such as a "W" purchase order), must either fully comply with all drawing requirements or have Honeywell MRB approval for any repairs. Under no circumstances are parts known to be used or overhauled to be sent as a replacement for an OEM part.

For parts that cannot be reworked to full drawing compliance economically or where repair authorization will not be granted, parts are to be scrapped at the suppliers' facility. Supplier shall contact the Honeywell Purchasing agent prior to scrapping these parts, and Honeywell reserved the right to witness the scrapping activity.

100.9 Failure Reporting*

Honeywell reserves the right to request failure analysis on nonconforming hardware submitted from the Supplier.

Failure analysis reports must contain, at a minimum:

- A process map identifying key inputs and outputs of each affected manufacturing step.
- A product/process Failure Mode Effects Analysis (FMEA) tied to the process map identifying the failures or risks associated to the known nonconformance.
- A control plan developed from process map and FMEA identifying how the Supplier shall monitor those known nonconforming characteristics on future lots to prevent re-submittal of nonconforming product.*

Note: Refer to SPOC 128 for information and benefits on implementing Control Plans.

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100.9.1 Applicability*

Upon request, the Supplier shall submit failure analysis, a short term customer escape prevention plan, and a permanent corrective action plan, focusing on the root cause of the discrepancy. Reports shall be submitted within 30 calendar days of request unless otherwise specified.*

Honeywell reserves the right to issue a Supplier Corrective Action Request (SCAR) requiring completion of a part number specific Honeywell PCPX project with the on-site assistance of Supplier Development Engineering. Reference SI-100.9 in the Supplier Portal (path: Aerospace Supplier Portal > Documents > Quality > PCPX).**

100.10 Cost Recovery

The supplier is responsible for cost that Honeywell incurred as a result of supplier responsible nonconformance.

Revisions: Paragraph 100.4 added requirement to also notify the assigned FQE. Paragraph 100.5, further defined containment activity communications in second section. Paragraph 100.9 added nonconforming product to end of third bullet. Paragraph 100.9.1 revised first sentence to include short term escape prevention and permanent corrective action plan. Second paragraph added as new.

*Revised / **Added

SPOC 106 – Eye Examinations *

106.1 General Vision Requirements*

Individuals who inspect material for final acceptance must have:

- Color Vision Eye Examination every 12 months
- Near-Vision Eye Examination every 12 months

The Individual(s) must meet the minimum standards in one eye, corrected with glasses or not corrected:

Color Vision Eye Examination

Examples of acceptable testing methods include: Pseudochromatic plates, Dvorine, Ishihara, Richmond, Farnsworth lantern, Keystone Orthoscope, Titmus vision tester, Titmus II Vision Tester, Titmus 2 Vision Tester. There are standard definitions of what is a pass/fail on these tests that should be followed.

Near-Vision Eye Examination

Examples of acceptable testing methods include: Snellen 14/18 or better, 20/25 or better, Jaeger type 1, Ortho-Rated 8 or equivalent method.*

A medical professional must perform the eye examinations (eye clinic, occupational health clinic, onsite health clinic or medical department).

106.2 NDT Requirements

Near-Vision Eye Examination requirements for persons performing Nital / Temper Etch shall be Jaeger type 2 – 20/30 or equivalent.

For Inspectors certified to the requirements of NAS410 (NDT) or Mil-STD-867 (Nital / Temper Etch), and for personnel performing visual inspection of welds, suppliers may administer their own eye examinations per the standard.

106.3 Record Requirements

The records of the eye examinations shall be maintained by the Supplier.

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Revisions: Paragraph 106.1 Near Vision, moved reference to 20/25, as it appeared it was part of Jaeger requirements.

SPOC 110 – Fixed Process Requirements

110.1 Scope

Parts under Fixed Process Control require written manufacturing process procedure approval prior to the production of parts. Any subsequent changes to the Fixed Process also require Honeywell approval (prior to implementation). Fixed Processes shall be performed only by approved supplier. Pre-production parts, shipped on development purchase orders, shall be uniquely identified and traceable.

110.2 How to Obtain Approval for a Fixed Process or a Change to a Fixed Process

Step 1. Obtain the current Fixed Process Forms through the Honeywell Aerospace Supplier Portal Web Site <https://www.supplier.honeywell.com>, navigate to the Site Specific page, OR contact the site Honeywell Buyer.

Step 2. Verify all Fixed Processes and sub-tiered Fixed Processes are performed by Suppliers with a Honeywell Aerospace vendor code and acceptable quality system.

Step 3. Send the completed Forms, with applicable substantiation documentation and articles, to the applicable site Honeywell buyer.

110.3 Phoenix Engines and Greer Orders Only

General EO#77, "System Changes Applicable to Part Marking and Engineering Source Approval Requirements" is required. It is an attachment to the Drawing Interpretation Specs, SC6500 and E1000, both of which are available on the Honeywell Supplier Portal. Route to the Substantiation Core Team (fixedprocess.phx@honeywell.com) to obtain necessary approvals.

110.4 Rocky Mount Orders Only

General: Engineering documentation identifies this requirement as a "Frozen" process instead of a "Fixed" process. For purposes of this document, the terms should be considered to be interchangeable.

Step 3: Completed forms with associated documentation should be submitted to the Honeywell Buyer so they can be forwarded to engineering for review.

110.5 South Bend Orders Only

Fixed process approval requests shall be submitted to Material Quality Assurance.

110.6 Yeovil Orders Only

Forging Technique Sheets

For Grade A/Class 1 identifiable forgings a Technique Sheet in accordance with the drawing requirements shall be produced.

This procedure shall be completed before forgings are released by the forge master. The forgings shall only be manufactured in accordance with the latest issue approved Technique sheet.

All commercial in confidence type technique sheets shall be endorsed in the following or similar manner: "Commercial in Confidence between Honeywell Aerospace Yeovil and the Supplier".

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Revisions: No changes.

*Revised / **Added

SPOC 118 – Quality Requirements for Honeywell Partners with Federal Aviation Administration (FAA) Approved Production Certificates *

118.1 Scope*

Articles supplied under this order are furnished by a partner of Honeywell holding a FAA Production Certificate, as specified by Federal Aviation Regulations (FAR) Sub-Part G, paragraph 21.132. Inspection and acceptance is delegated to the partnering Supplier in accordance with Federal Aviation Regulation (FAR) 21.146.*

118.2 Documentation Requirements

Certification is required with each shipment stating that the articles supplied were produced in accordance with a quality system approved by the FAA.

Revisions: Paragraph 118.1, referenced FAR paragraph numbers updated.

*Revised / **Added

SPOC 124 – First Article Inspection (FAI) Requirements *

124.1 Scope*

The Supplier holding the Honeywell Purchase Order is responsible for assuring completion of the First Article Inspection Report (FAIR) per AS9102 and this SPOC for all Honeywell design characteristics generated by the supplier or their sub-tiers.

The FAI requirement applies to each bill of material or parts list item with a Honeywell part number that is invoked in the product design, including lower level Honeywell detailed drawings identified on top level assembly drawing(s), and each cavity or tool serial number for products whose dimensions are controlled by the tool. FAIRs may be required on Customer or Supplier Drawings that are non-Honeywell designs or CAGE codes if specified on the Purchase Order. Suppliers may offer an alternate FAI plan to meet the requirements of this SPOC. Approval to operate under this alternate plan shall only be authorized in writing by Honeywell Site Quality management.

Honeywell or Customer FAIR approval does not relieve the supplier of the responsibility and/or liability for full compliance with all contract requirements.

The following items are exempt from the requirements of this SPOC or Identify Honeywell Site Specific Requirements:

Bar and sheet stock.

Unaltered material consigned by or purchased from Honeywell Aerospace or its authorized distributors.

Honeywell vendor item drawings including, specification-controlled, 10- or 11-digit drawings and S-numbered drawings. While these drawings do not require a detailed FAIR, they shall be documented on form 1 of AS9102 for all assemblies and/or lower level FAIRs where they form part of the top level assembly part number.

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Discrepant hardware either returned to the manufacturing supplier or sent to an alternate supplier and dispositioned rework or repair.

Nonfunctional hardware (protective covers, shipping hardware, etc.), unless otherwise specified.

Off the shelf sheet stock, unless post-milled processed.

EXCEPTIONS TO THE ABOVE EXEMPTION

Glendale CAGE Code 61962 : 10 or 11-digit part numbers, specification and source/vendor controlled drawings **shall** have FAIs performed as outlined in this SPOC.*

Deer Valley CAGE Codes 55939, 58960 – Albuquerque CAGE Code 07187: 10 or 11-digit part numbers for Honeywell designed products **require** FAIs as outlined in this SPOC. All vendor item control drawings, Specification and Source Control drawings (unless they contain AWPS characteristics), Government standard drawings, 53 series drawings and identification cross reference drawings are deemed to be equivalent of COTS parts and **do not** require FAIs. Deer Valley also reserves the right to require a FAIR per this SPOC if any of the above items are deemed AWPS or production critical.

Albuquerque, Coon Rapids, Penang, Singapore/Bintan, Poway, Clearwater, Deer Valley, Glendale, Minneapolis, Olathe, Urbana, Plymouth, Redmond and Sarasota: FAI sample piece shall be clearly identified when presented to the FQE or a Honeywell-delegated authorized agent and in subsequent shipment to the Honeywell site. The supplier shall send a copy of Form 1 with the shipment when there is a change in the sub-tier approved manufacturer(s) or approved manufacturer's part numbers. A copy of the AS9102 Form 1 is not required when the Net Inspect System is utilized for the FAIR.*

All requirements of SPOC 124 apply with the following exceptions: Table 2 -- the sites noted above imposed Table 2 on all cast tool built and approved after January 15, 2009.

****Olomouc**: Honeywell Aerospace Olomouc site performed a one-time revision format change of all MBP's (Manufacturing Blue prints) and MOT's (Manufacturing Operations and Tooling) from revision control dates to revision letters starting with revision N/C. A partial FAIR is not required for this one-time change.

Note: This exception is not applicable for newly-created MBP/ MOT's.**

124.2 On-line First Article System Usage

The supplier shall input and maintain FAIR status in the on-line First Article system. FAIR status shall be updated by the Supplier regardless if it is a Full, Partial or Conditionally approved FAIR. Reference On-Line First Article instructions are located on the Supplier Portal.

124.3 Periodic/Repeat FAIs

Honeywell reserves the right to exercise the requirement of additional and/or periodic/repeat FAI requirement on a part number basis to assure continued product conformity. Also, HON reserves the right to validate multiple production lots if needed to determine overall process capability. FAI requirements are governed by SPOC 124 (Event Tables).

124.4 Additional Requirements

Parts defined as data sets shall use Electronic Part Definition (Solid Model) to substantiate the dimensional requirements in accordance with SPOC 267.

For United States-initiated Purchase Orders, when a first time FAIR is being conducted by a Supplier located outside of the United States, the Supplier shall notify the Honeywell Buyer to assure that proper notification is made to the FAA prior to FAIR completion.

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Table 1 – FAIR Event Table*

Event Description	FAIR type due	On-line First Article System	Honeywell / Customer FAIR Review Required	Note
New base part number or first time supplied by source	FULL	All	YES	
New dash number(s) issued and manufactured. See note if new dash number affects 10 or less features of the last full FAIR	FULL	All	YES	Consult FQE to request partial FAIR per AS9102
The engineering drawing for the part receives a revision letter change and part has a Honeywell approved FAIR	PARTIAL	All	YES	
Current FAIR conditionally accepted based on Deviation, RMRA, Case Record, MRB or Manufacturing Revision authorizing rework or requirement modification	PARTIAL FAIR due on next lot manufactured or expiration of deviation/waiver	All	YES	
A change in process, material, tooling, or inspection method that can potentially affect form, fit, or function	PARTIAL	All	YES	SPOCs 110, 180 and/or Spec. may contain additional requirements
A change in manufacturing source or location of manufacturing equipment, including tooling transferred from another Supplier or division of the same supplier	FULL	All	YES	Consult FQE to request partial FAIR per AS9102
Two year (2) lapse in production *	FULL	All	YES	Reference Table 1 Notes 1, 2, 3
Casting tool reaches Table 2 usage levels	FULL	All	YES	<u>See 124.3</u>

NOTES (Table 1):**

1. The 1st tier supplier holding the Honeywell Purchase Order shall have the responsibility of assuring hardware manufactured internally and/or procured from their suppliers are maintained and are in compliance with the Two Year (2) lapse in production requirement in accordance with AS9102. Evidence of continued manufacturing may be requested by Honeywell either at the 1st tier Purchase Order Holders facility or at their sub-tier suppliers as applicable.**

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2. For Stock / Inventory hardware that was manufactured and placed in inventory/stock at a supplier BEFORE the two year lapse in production (and which was covered by a Honeywell-approved FAIR at time of manufacture), a full FAIR with FQE approval will be required for the next lot manufactured.**

3. Raw Castings / Features that are Tool Controlled are exempt unless otherwise specified by the procuring Honeywell Site Quality Department or through Purchase Order text. Features that are a product of the process are not exempt.**

Table 2 – Casting Tool Life Management

Part Type / Process / Pattern	Frequency of FAIR based on number of pieces <u>produced</u> by tool since date of last full FAIR
Solid Blades / Vanes / Investment	50,000
Cored Blades / Investment	25,000
Die Casting	25,000
Nozzle Segment / Investment	10,000
Small Structure / Investment (NO dim/dia. OVER 19.999 inches)	10,000
Wheels / Investment	5,000
360 Nozzles / Investment	5,000
Large Structure / Investment (ANY dim/dia. 20.000 inches or over)	2,000
Metal / Sand	1,000
P-Mold	1,000
Plastic / Sand <u>Note:</u> Tooling made from combined materials default to plastic frequency.	800
Wood / Sand	350

Additional Casting Requirements

Frequency of FAIR is based on the number of production pieces since the last approved FAIR. The Supplier shall assure that all Event Table 1 conditions have been satisfied prior to usage of the Casting Tool Life Management Table below. Frequencies are, at a minimum, tracked by the Supplier/Manufacturer and do not relieve the Supplier of the responsibility/liability to meet the drawing and/or authorized deviation. The Supplier is required to establish and maintain written procedures to assure compliance with these frequencies.

124.5 Approvals*

When a FAIR is required per Tables 1 or 2, a Honeywell Field Quality Engineer (or a Honeywell-delegated authorized agent) is required to review FAIRs prior to hardware release. The Supplier shall notify a Honeywell Field Quality Engineer (FQE) at least two (2) weeks prior to the anticipated completion of the FAIR to schedule the FAIR review at the supplier’s facility. A listing of Field Quality Engineer contacts is available on the Honeywell Aerospace Supplier Portal.

Note: Yeovil may require a three (3) year periodic Full FAIR as a result of product compliance concerns, which will be specified by Purchase Order when applicable. Yeovil FAIRs must be submitted in advance of product delivery using the Net Inspect system. Alternately, a hard copy of AS9102 forms and all supporting test data, including material and process certifications, shall be provided for those suppliers not currently setup in Net Inspect. FAIR approval will be managed via Net Inspect by Yeovil and not by Field Quality Engineering.**

Casting or forging part numbers that require controlled sources due to fixed process requirements shall be reviewed at the casting or forging source. Casting and Forging purchasers shall flow down this requirement in Purchase Order text. Except as stated above, Field Quality Engineers normally will not be dispatched to perform FAIR validations of sub-tier-supplied product, however, **Honeywell reserves the right to perform on-site sub-tier FAI audits to confirm conformance with part requirements.**

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124.6 Documentation and Records*

Unless otherwise specified by the procuring site, a Honeywell-stamped FAIR approval form (AF 0113 or equivalent) shall be retained by the Supplier with the FAI documentation. FAIR's submitted using the Net Inspect system meet this requirement. For FAIRs that do not require customer review the supplier-approved AS9102 forms shall be retained. All documents used to support the review and approval of a FAIR are considered part of the FAIR package and shall be retained by the supplier per Quality Records defined in Section 1.

Retention of FAIR Records Exception: FAIR records may not be discarded as long as active shipments of the respective product are being made with ties/accountability back to that specific FAIR record. Retention of records using the Net Inspect system is considered to be an acceptable alternative. **

Honeywell reserves the right to request the FAI package at any time. When requested, the Supplier shall ensure that FAI documentation is provided within the time frame listed below.

USA, Canada, Mexico or UK – 2 business days

Outside of USA, Canada, Mexico or UK – 5 business days

FAIRs shall be compliant with AS9102 and On-line First Article Instructions. Reference AS9102 form posted on Supplier Portal located in SPOC Form Section for additional guidance. All Material & Process fields shall contain applicable revision level, Type, Class, and/or Grade designation.

Optional Field 14 (Form 3) may be used to satisfy the SPOC 128 (Detailed Inspection Plan when required), as long as the following are recorded:

- Feature classification and accept/reject results for each characteristic, and
- Sample Size.

AS9102 Form 3 Block 5: Each characteristic or feature shall have a corresponding designator "ballooned" from the drawing to the AS9102 FAIR form.

Actual Results for Basic Dimensions: Record the actual measurement or deviation from the basic and reference to the applicable feature control frame's item number. CMM printouts may be used to document the actual measurement or deviation from basic provided that the correlation to feature control frames is identifiable and print out retained as part of the FAIR package.

Revisions: Paragraph 124.1 EXCEPTIONS TO THE ABOVE EXEMPTION, deleted references to Olathe and Redmond CAGE Codes. Exceptions not applicable for Olathe, Redmond added in error. Added Olomouc. Paragraph 124.4 Table 1 notes clarified and removed from 2-Year Lapse line and moved to Notes section at end of Table 1. Paragraph 124.5 added Yeovil specific note. Paragraph 124.6 added Note referring to FAIR record retention requirements. Added FAIR Records Exception statement.

SPOC 127 – Control of Government / Customer or Honeywell Owned Property at Suppliers

127.1 Scope

Government, customer or Honeywell owned acquired/furnished property is:

- Tooling, test equipment and material supplied by Honeywell for use in the performance of this purchase order.
- Tooling, test equipment and material made by the Supplier and paid for by Honeywell in the performance of a purchase order. The Seller is responsible for such property in accordance with the General Terms and Conditions clause of this Order and this Government/Customer or Honeywell Owned property clause.
- The Supplier's Property Management System to control, use, preserve, protect, repair and maintain such property shall be reviewed and approved by Honeywell. Documentation should be submitted to the buyer for approval.

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127.2 U.S. Government owned Contracts

U.S. Government owned, acquired or furnished property supplied by Honeywell is Government Property and subject to the provisions of the Federal Acquisition Regulation (FAR) 52.245-2 (FP) or 52.245-5 (CP), or 52.245-1 for purchase orders placed after June 2007.

127.3 Lead or Kirksite Tooling

For Lead or Kirksite tooling or dies procured with government funds, the supplier shall:

- Charge only for the exclusive use of the tooling or dies unless modified by customer contract or Purchase Order.
- Obtain written approval from the Honeywell Buyer before the destruction or re-use of the Lead or Kirksite metal.

127.4 Control of Government / Customer or Honeywell Owned Property

The Supplier shall:

Have a system, which includes written procedures for control of all tooling, test equipment and material. Procedures shall be in accordance with the controls specified within the terms and conditions and this SPOC.

Receiving and Identification

Each individual piece of test equipment and tooling acquired under this order shall be marked in a permanent manner with the appropriate identification number and ownership as provided by the Buyer. See marking instructions on the GP7-06 Supplier Asset Identification Tag(s) Certification to be provided by the Buyer. Unless otherwise directed by Honeywell, Supplier will make use of Honeywell's numbering system for all items of tooling and test equipment acquired hereunder. General purpose equipment type components of test equipment which are incorporated in a manner that makes removal and reutilization feasible and economical will be physically identified if the acquisition cost is \$5,000 (\$1,000 if contract is for NASA) or more.

Upon receipt or fabrication, of tools and test equipment, complete and return the GP7-06 Supplier Asset Identification Tag(s) Certification and photos of the tools or test equipment that clearly illustrate the permanent mark or tag, to the Buyer.

If not otherwise specified, all equipment that is used to determine acceptance of material will be subject to, as a minimum, an initial inspection and calibration, and a re-inspection and re-calibration every 6 months thereafter.

Records

The supplier shall maintain a record of all Government/customer and Honeywell owned property. The list shall include:

- Description and gage/tool name
- Honeywell identification number (applicable to equipment, tooling, test equipment, gages, etc.)
- Part Number (applicable to material)
- Honeywell Purchase Order number, contract or equivalent code
- Part numbers used to manufacture
- Unit of measure (material)
- Quantity (if other than 1)
- Unit price

The list may also include (when applicable):

- Weight,
- Material content (wood, steel, aluminum, etc.),
- Supplier name,
- Signature of the company's approved representative,

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- Date of certification,
- Program name (if supplied),
- Honeywell Purchase Order site supplier code

When the property is transferred to another supplier or returned to Honeywell, supplier is required to maintain the records of the move for 5 years.

Physical Inventory

Seller is required to perform a physical inventory of all of the Government/customer or Honeywell owned property acquired/furnished against this Purchase Order upon request from Buyer. A copy of the Seller's Inventory reconciliation and Honeywell's GP7-01 Survey of Supplier's Property Management System and Physical Inventory Certification must be submitted to the Buyer, unless otherwise specified.

Maintenance

Maintain the calibration on all the gages as shown in ISO10012-1 or ANSIZ540.

Maintain, protect and preserve tooling and test equipment.

Disposition

Retain all Government/customer or Honeywell owned property at its expense until disposition directions are received from the Buyer.

Seller is required to report immediately to the Buyer any loss, theft or destruction of, or damage to, the Government/customer or Honeywell owned property while in its possession.

Utilization

Utilization of Government acquired/furnished material, test equipment or tooling under this order on other orders is prohibited. Through the Buyer, authorization will only be granted if utilization of the property can be accomplished on a non-interference basis with orders received from the Buyer. Segregate Government or Honeywell owned special tooling and special test equipment when not in use.

No modifications or changes to any of the test equipment or tooling are permitted without prior Honeywell approval.

Contact the Honeywell Buyer before the transfer of test equipment, or tooling between supplier facilities (address location) or to other suppliers.

Report to Honeywell any acquired/ furnished property that becomes excess to the needs of the purchase order.

127.5 Furnished Property Provided on an "As Is" Basis

All Government/customer or Honeywell owned property authorized for is provided on an "as is" basis subject to the following:

Buyer and the Government/customer make no warranty whatsoever with respect to the property authorized for use "as is".

The seller may repair any Government/Customer or Honeywell property made available on an "as is" basis. Such repair will be at the seller's expense except as otherwise provided in this clause. Such property may be modified at the Seller's expense, but only with the written permission of Buyer. Any repair or modification of such property furnished "as is" shall not affect the title of the Government/customer or Honeywell.

127.6 Payment for Special Tooling

To obtain payment, the supplier shall send the signed GP7-06 Supplier Asset Identification Tag(s) Certification and photos to the Honeywell Buyer. Buyer will clear line item from Purchase Order which allows Supplier to be paid.

127.7 Shipment to Honeywell

Supplier should contact the applicable Honeywell buyer to determine proper address to return Honeywell or Customer

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owned gages. The shipment shall conform to SPOC 239.

127.8 Phoenix Engines Orders Only

Honeywell shall perform required recalibration of the following gages. Curvic Masters, Bevel Gear Masters, Thread Ring Gages, Spline Ring Gages, Serration Ring Gages and Special Air Gages.

Revisions: No changes.

*Revised / **Added

SPOC 128 – Characteristic Accountability *

128.1 Scope

Suppliers shall have a verifiable methodology for controlling and recording inspection of all design characteristics, as well as a method of validating received components from sub-tiers.

128.2 Detailed Inspection Plans

A Detail Inspection Plan (DIP) documents the inspection plan for a part to ensure that all engineering drawing characteristics and notes are inspected -and/or controlled by appropriate methods. DIPs shall be documented in a manner that meets the intent of the sample Honeywell DIP/FAIR form (available on the Aerospace Supplier Portal).

A DIP may be used as a record, or may reference supporting records such as routings, receiving or in-process inspection sheets, final test/inspection reports, or statistical data as long as the DIP and/or supporting records is complete, accurate and reproducible. The DIP shall define the manufacturing operation at which the characteristic is inspected and the inspection method used, including the type of tooling/gaging instrumentation used. Characteristics that are subject to change after in-process acceptance (e.g., growth, shrinkage, and/or distortion) must be re-inspected prior to final acceptance.

DIPs which contain characteristics which are “tool controlled” (castings, molded parts, etc) may contain less than 100% of the Honeywell drawing characteristics provided the following conditions are met:

A number of characteristics shall be selected as “control” dimensions. Control dimensions shall be of quantity and type such that inspection of these characteristics will give the supplier enough information (based on tool construction, assembly, process variation, and drawing tolerance) to assure that all other drawing characteristics are in conformance.

The supplier shall maintain a plan which clearly documents the proposed control dimensions for all design characteristics.

DIPs are not applicable to Standard, Commercial and Catalog hardware identified as Honeywell Vendor Items, Specification Controlled, 10 or 11 digit and S-Number drawings, Industry / commercially available hardware AN, MS or AS and other lower level hardware or details, that if procured directly would be classified as SPOC 003 (Standard and/or Catalog Hardware).

128.3 Sampling of Characteristics

The supplier shall inspect all design characteristics per the Aerospace Sampling Plan located on the Aerospace Supplier Portal (<https://www.supplier.honeywell.com>) then navigate to SPOC Manual>SPOC Supporting Documents>SPOC 128-Sampling Plan). Suppliers shall not institute alternate sampling plans unless provided by specification, MESA (Material Engineering Supplier Agreement), or with written approval obtained from the Quality Management of the Site issuing the PO.

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128.4 Circuit Card Assemblies (CCA's), Printed Wiring Boards*

In addition to other requirements contained in this SPOC:

This DIP plan requirement will be in effect with any new delta or first time FAI's as they are accomplished.

The supplier shall conduct a complete review of the requirements of each CCA/PBA and make provisions for the special controls, processes, inspection and test equipment, fixtures, tooling and skills required for assuring all parts conform to the Purchase Order Flow Down, Drawings, and specifications. The supplier shall formulate a Quality Assurance / Inspection / and Test Plan (QATP) for each Honeywell part number. This plan shall be made available for review, and is subject to verification of conformance.

The QATP shall include: all planned inspection points, characteristics to be inspected, accept/reject criteria, inspection documentation requirements and location of inspection records. Any procedures used in inspection/test may be subject to approval of buyer/FQE.

Detailed Inspection Plans for CCA's (Circuit Card Assemblies) / PBA's (Printed Wiring Board Assemblies) shall include the following:

1. A Receiving Inspection Component/Material Validation Plan (All received material must be validated to the Honeywell BOM definition)
2. A Master Traveler Manufacturing Plan must be created for each individual Part Number including all process steps. This traveler must be revision controlled to the Honeywell part drawing revision.
3. Each Process Step must have a process control plan – including equipment control, operator control, and a fully documented work instruction.
4. Each piece of processing equipment must have a calibration plan, maintenance plan, and a part processing control plan by CCA/PBA part number.
5. Special process steps such as conformal coat, bonding, and engineering change order incorporation (i.e., dead bugs, cuts and jumps, magnet wiring) must have process control plans unique to the requirements flowed down.
6. The Hand adds or the Final Assembly process must be fully defined with a work instruction.
7. Each CCA/PBA Master Traveler Manufacturing Plan must incorporate an AOI, AXI, and ICT / Flying Probe test plan that validates component placement, solder joint integrity, and basic component functionality limited by ICT approach capability and CCA/PBA design layout. This test plan should be aligned to the complexity of the CCA/PBA.
8. There should be a final inspection process that validates all drawing characteristics (i.e. but not limited to, max height requirement, lead length, or keep out area) are meet that are deemed to impact form, fit, or function.

128.5 Clearwater – Minneapolis – Plymouth – Coon Rapids – Redmond – Deer Valley – Olathe – Albuquerque – Urbana – Sarasota – Glendale – Singapore – Bintan – Penang Orders Only

The Supplier shall conduct a complete review of the requirements of this order and make provisions for the special controls, processes, inspection and test equipment, fixtures, tooling and skills required for assuring all parts conform to the Purchase Order, Statement Of Work, drawings and specifications requirements.

The supplier shall formulate a Quality Assurance/Inspection and Test Plan (QATP). This plan shall be made available for review, and is subject to verification of conformance. In addition to above, The QATP shall include:

- All planned inspection points, characteristics to be inspected, accept/reject criteria, inspection documentation requirements and location of inspection records, and sample plans (if not 100% inspection).
- Any statistical sampling procedures used in inspection/test may be subject to approval by Buyer. When sampling is used for inspection/test of Buyer's product (from incoming through final inspection/test), the methodology shall be statistically valid, appropriate for use, and preclude the acceptance of known defectives in the lot.

128.6 Glendale Orders Only

The Supplier shall provide the Quality Assurance/Inspection and Test Plan to Honeywell for approval a minimum of 10 working days prior to the first inspection/test. When a Manufacturing Plan is required it may be combined with the Quality Assurance Assurance/Inspection and Test Plan.

- Manufacturing flow chart (or traveler) with identified inspection/test points in their proper sequence and description of

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the inspection functions to be performed. Honeywell, Government, and Honeywell Customer inspection/test points shall be identified (as applicable).

- Test Methods and Equipment (Test Procedures where applicable)
- Inspection Methods and Equipment (Inspection Procedures where applicable)
- Pass/Fail Criteria
- Sample QA Inspection/Test Data Sheets (QA Sign-Off Sheets)
- List of Deliverable Items (Hardware, Data, Certificates of Conformance, etc.). This should be correlated to PO line items when there is more than one line item on the PO.

128.7 Clearwater Orders Only

The Supplier must inspect and confirm critical dimensions as specified on casting print prior to machining.

128.9 Yeovil Orders Only

The following raw material requires pre-testing before use:

- S144/S145 when the proof / UTS Ratio exceeds 0.95

Note: If material is not purchased in the fully heat-treated condition then heat treatment is required before the test can be carried out. Tensile and impact tests in accordance with NGPS 336 are required.

- 2S80 when the impact values are below twice the maximum value. Impact Tests are required in accordance with NGPS 336 from the middle and both ends of each bar. Tests are not required when the incoming raw material is less than 0.450" diameter.

- 3DTD 5212/S162 – Whilst not a mandatory requirement because batch test pieces must accompany each batch, it is advisable to re-test raw material on receipt for tensile & impact properties, to reduce the risk of scrapping fully manufactured components.

Revisions: Paragraph 128.4 rewritten.

*Revised / **Added

SPOC 129 – Acceptance Test Procedure (ATP) Approval Requirements *

129.1 Scope*

Where required by Honeywell Engineering Drawing, Procurement Specification Control (PSC), ATP, or Test Requirements Document (TRD), the Supplier shall submit for approval the test Procedure, test characteristics and test set-up to comply with the test requirements.

Honeywell Engineering may, at their discretion, approve test documents and plans containing less information than required by this SPOC. In such cases, those documents shall take precedence over the requirements of this SPOC.**

129.2 Test Procedure*

The Supplier provided Test Procedure shall cover:

- Supplier Acceptance Test Procedures (SATP)
- Qualification Test Procedures (QTP)

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- Lot Acceptance Test Procedures (LATP)
- Functional Test Procedures (FTP)

The minimum information required includes:

- Nomenclature
- Honeywell and Supplier part number (including dash number), and the Supplier code assigned by Honeywell, Manufacturing Process Rev number, if applicable.
- Procurement Specification Control (PSC) number, if any, including revision letter.

Note: An Engineering Statement of Work may be referenced for research and development articles

- Supplier Test Number, revision letter, and date.
- Equipment type, range, accuracy level, and frequency of calibration.
 - Special test equipment must reference the drawing number and revision letter.
 - If software is used to control an automated test stand, the software number and revision designator must be referenced.
 - One copy of the special test equipment drawing and software must be provided.
 - Commercial executive software for control of a computer need not be referenced or provided.
- Complete description of test performed (inclusive of all parameters and schematic of test set-up) in sufficient detail to permit a duplication of the test.
 - Out-of-tolerance is cause for rejection.
 - If the Test Procedure does not test the article while it is exposed to the full ambient temperature range of the PSC, the tolerance of each tested parameter must be reduced, at ambient, to help ensure the PSC requirements are met over the full temperature range (this normalized tolerance range does not substitute for any requirement to environmentally qualify or substantiate the specified part).
 - The Supplier shall determine the tolerance, which is subject to approval by Honeywell.
- Sampling Plan (if used) must include specific item or portion of test parameter sampled.
- Supplier Acceptance stamp, if any, to accept test results.
- When a Supplier receives a new or repeat Purchase Order for a product that does not have an approved Test Procedure, the Supplier must submit a copy for approval.

129.3 Data Submittal

The Supplier shall submit a copy of the proposed test procedure to the Honeywell Buyer, who will forward to the appropriate Engineering or Quality group for review and approval. Test plans, data sheet format and contents are subject to Honeywell approval prior to manufacture and shipment of production parts. The document must be submitted 60 days prior to scheduled delivery of production or development articles. Shipments shall not be made until this approval has been obtained. Objective evidence of Honeywell approval shall be maintained by the Supplier.

129.4 Change Control

Changes to a Honeywell approved Test Procedure require re-approval prior to implementation, and the changes may not be incorporated until receipt of written approval from Honeywell.

Test procedures that have been approved with comments may be corrected at the next required revision.

Note: Honeywell approval of the Supplier Test Procedures does not relieve the Supplier of the responsibility for determining that the product complies with the requirements of the Purchase Order, engineering drawings, and applicable specifications.

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129.5 Test Data Sheet Requirements

When required, Test Data Sheets shall be enclosed in a data sheet envelope and attached to each individual unit.

Each ATP data sheet shall include the following:

- Supplier name
- Date of testing
- Signature or stamp of individual performing the test
- Honeywell assigned supplier code
- Test procedure document number and revision letter
- Honeywell part number, including the dash number
- Minimum and maximum test limits
- The actual numerical test results
- Any serial number of the unit tested, such that the result for each serial number is known.

The Supplier shall maintain documentation that demonstrates the adequacy of the testing procedure. The documents shall be stored at the Supplier facility.

129.6 Clearwater and Plymouth Orders Only

Acceptance testing requires Honeywell approval prior to use. Software must have document number and revision status control. Procedures for automated or bench acceptance testing shall also be submitted to Honeywell for approval prior to use.

Acceptance test software programs and/or bench acceptance test procedures which are device-specific shall include forcing functions and test limits for all parametric readings required by the specification and shall be submitted to Honeywell for approval or reviewed by Honeywell at the supplier's site prior to acceptance of parts on this purchase order. Device-specific acceptance test software programs and test procedures shall be controlled by document number and revision. Changes which modify the forcing functions, test limits, or parametric readings shall also require Honeywell approval.

Revisions: Paragraph 129.1 added second paragraph regarding precedence. Paragraph 129.2 deleted requirement that all analog parameters must be sampled a minimum of seven times.

SPOC 130 – Software Quality Assurance

130.1 General Requirements

The supplier and sub-tiers shall comply with the appropriate version of RTCA-DO-178, "Software Considerations in Airborne Systems and Equipment Certification", and DOD-STD-2168.

130.2 Deliverable Software DO 178/Mil-Standard

Any software, including non-deliverable software, used to create or revise Deliverable Software shall be categorized as Deliverable Software.

Revisions: No changes.

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*Revised / **Added

SPOC 140 – Certification of Conformance / Shipping Declaration Document / Packing Slip Requirements *

140.1 Scope

The Supplier is responsible for maintaining and supplying accurate and legible certification documentation as objective evidence of meeting drawing, specification, technical data, or purchase order requirements.

140.2 Certification of Conformance / Shipping Declaration Document / Packing Slip Requirements*

A Certificate of Conformance (C of C) shall be provided with each shipment. The C of C can be a separate document, or it can be included as part of the shipping declaration/packing slip text. The following tables list the C of C data/information requirements for each group SPOC. The "X" under the SPOC indicates that requirement applies, and shall be included on each C of C from the supplier holding a direct PO from Honeywell.

Country of Origin (COO) information may be included on Certificate of Conformance to meet COO requirements defined by General Purchase Order Terms & Conditions. Other methods of reporting COO are specified in General Purchase Order Terms & Conditions.**

Table I *

Requirement	SPOC 001	SPOC 002	SPOC 003	SPOC 004	SPOC 005	SPOC 006	SPOC 007	SPOC 009
1. Supplier Name and Address ⁵	X	X	X	X	X	X	X	X
2. Statement that parts conform to the purchase order requirements ⁵	X	X	X	X	X	X	X	X
3. P.O. and line item number ⁵	X	X	X	X	X	X	X	X
4. Original Manufacturer' name and part number (when source of supply is a requirement) ⁵	X	X	X			X	X	X
5. Part number and as applicable, part revision and/or BOM revision level ⁵	X	X	X	X	X	X	X	X
6. Quantity shipped (listed quantities to be broken out by lot, and also totaled) ⁵	X	X	X	X	X	X	X	X
7. Date and identity (hand signature or electronic 'signature') of quality representative or company official *	X	X	X	X	X	X	X	X
8. Evidence of Source Acceptance or Self Release ⁵	X	X						
9. Maintenance performed ⁵						X	X	
10. Supplier work order						X	X	
11. Technical data and revision						X	X	
13. When required by drawing or technical data:								
Lot numbers ⁵	X	X	X	X		X	X	X

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Requirement	SPOC 001	SPOC 002	SPOC 003	SPOC 004	SPOC 005	SPOC 006	SPOC 007	SPOC 009
Serial numbers ⁵	X	X	X	X	X	X	X	X
Date code ¹	X	X	X	X	X	X	X	X
14. MRB (RMRA) number, as applicable	X	X	X	X	X			X
15. Honeywell shipper number (as applicable for consigned material) ⁵	X	X			X			
16. Date of shipment ⁵	X	X	X	X	X	X	X	X
17. For returned parts, the supplier shall indicate if parts are reworked or replacements on the COC.	X	X	X	X	X	X	X	X

140.3 Shelf Life Limited

The following information shall be included on each C of C for shelf life limited product or material as applicable to the specification.

Table II

Requirement	SPOC 001	SPOC 002	SPOC 003	SPOC 004	SPOC 005	SPOC 006	SPOC 007	SPOC 009
1. Manufacturers name	X	X	X	X	X	X	X	X
2. Environmental storage conditions	X	X	X	X	X	X	X	X
3. Date of manufacture and/or cure date (month/year or quarter/year)	X	X	X	X	X	X	X	X
4. Date of shipment	X	X	X	X	X	X	X	X
5. Lot number, or batch number and compound number (as applicable)	X	X	X	X	X	X	X	X
6. Shelf life expiration date (MM/YY) If there is no Expiration Date or Shelf Life required, indicate such (examples include "None", "No Expiration Date", etc.)	X	X	X	X	X	X	X	X

140.4 Certification Package Requirements*

The following items, when applicable to the drawing, specifications, technical data or purchase order, shall be maintained and made available by the supplier unless otherwise specified on the purchase order to submit with shipment.

Table III *

Requirement	SPOC 001	SPOC 002	SPOC 003	SPOC 004	SPOC 005	SPOC 006	SPOC 007	SPOC 009
1. Fixed process certification	X	X			X			
2. Device Test traveler and Assembly record cards	X	X						X
3. Regulatory Airworthiness Forms						X		
4. Material certifications ^{2.9**}	X	X	X**		X		X	X

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Requirement	SPOC 001	SPOC 002	SPOC 003	SPOC 004	SPOC 005	SPOC 006	SPOC 007	SPOC 009
5. Controlled process certification ²	X	X			X	X	X	X
6. Test Reports or Functional Test Data sheets ⁴	X	X	X		X	X	X	X
7. FAIR Package	X	X			X			X
8. Log maintenance cards						X		
9. Discrepant material report ⁶						X		
10. Inspection results or report						X		
11. Rework route tag or equivalent						X		
12. Teardown or findings report						X		
13. Honeywell shipper	X	X			X			X
14. Manufacturer's Certificate of Conformance ⁷	X	X	X				X	X
15. RMRA (Request for Material Review Action, or similar vehicles such as Concession/Waiver/Production permit number, per the Honeywell site requirement)	X	X	X	X	X	X	X	X
16. When material is consigned by, or purchased from, Honeywell Aerospace or a licensed distributor of Honeywell Aerospace, the supplier shall retain a copy of the Procurement Shipping Order (PSO), Honeywell Shipper, or licensed distributor's Certificate of Conformance for the material and treat such items as customer supplied material.* ⁵	X	X	X	X	X	X	X	X
17. Required and actual hardness values ³	X	X			X			X
18. Physical and Chemical Analysis certified by an independent laboratory, if applicable ²	X	X	X	X	X	X	X	

Notes:

- Each inspection lot must be listed as a separate line item along with evidence of electrical testing to the applicable specification as required. All required documentation shall be completely legible, and reproducible.
- Certifications shall include name of process source, specifications and revision letters used. The actual physical and chemical process and heat numbers as applicable shall be indicated. Certifications of Conformance (C of C) must clearly state conformance to all specifications in their entirety, including type, class and grade exactly as described from the drawing or BOM note, embedded specifications that contain specific acceptance testing criteria, additional processing requirements, and/or any specific requirements that pertain to hardware approval or acceptance. *NOTE that various Honeywell sites may identify Grade and Class using abbreviations. These must be clearly understood before certifying compliance. Any confusion or questions shall be directed to the buyer.**
- Hardness shall be re-validated through a secondary test from a representative sample – one piece from each raw material heat lot if no further heat treatment operations are performed, or for each subsequent heat treatment lot when a hardness value is specified on the engineering drawing, material or heat treatment specification contained in and including all Honeywell, Government, or Industry material specifications (AMS, ASTM, etc). The re-validation (second hardness verification) shall be performed prior to shipment to Honeywell and documented by the supplier by qualified personnel - impartial and independent of the original verification.*

*Note: This is required to substantiate that raw material and /or final product has achieved the FINAL hardness or temper as specified on the engineering drawing or referenced specifications, before delivery of the product to Honeywell. If no further heat treat is required per the engineering drawing or material specification, then the raw material specification hardness requirement must be re-verified.**

Second Hardness verification is not applicable on Standard or Catalog Hardware; Carburized, Nitrided, Core or Case hardened materials. This includes non- metallic materials such as Rubber, Elastomeric, Plastic, and

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Composite materials. Honeywell Vendor Item, Honeywell Specification Control, industry or commercially-available hardware (AN, MS, AS, etc) and other non-Honeywell-designed lower level hardware or details are also exempt.*

4. Quantitative results required.
5. Required information to be listed on the shipping declaration and/or packing slip, if not part of the C of C.
6. Airworthiness certification for TSO/PMA/AMS and/or material tests to be conducted by an independent laboratory.
7. If controlled drawing, a hard copy and an email copy of the Verification Report with each UID (Unique Identification) shipment.
8. For R&O orders, COC compliant to table is required per SPOC 159 provisions.
9. Applicable to SPOC 003 only when specifically called out in the purchase order text.**

140.5 Partial Shipment Release Sheets

If the shipment contains less than the original quantity of product that was accepted by Source Inspection, then a Partial Shipment Release Sheet shall be provided.

140.6 Bulk Raw Materials

Unless otherwise specified, purchased bulk raw material (sheet, strip, plate, wire, rod, bar, tubing, solder, powder, paint, oil, fluids, etc.) shall be supplied to the latest procurement specification issue. Material certified to a previous specification issue and of the proper type, grade, or class called for by the engineering drawing or technical data, may be used until depleted, unless restricted by the superseding specification revision. Certifications for material shall include specification number and revision letter applicable to each lot of material.

140.7 Evidence of Source Approval

A Honeywell Source Acceptance Stamp (or facsimile) shall be placed on the shipping documentation (packing slip and/or C of C) for Purchase orders requiring SPOC 149. A Source Acceptance stamp is independent of the Certificate of Conformance signature requirements. C of C required signature and date should not be placed in the Source Acceptance Stamp area.

The individual performing the Source Inspection is responsible for providing the Stamp Impression and Date. This may be a Honeywell approved Source Inspector or it may be a Self Release Approved Supplier representative, whichever is appropriate.

Example of Source Acceptance Stamp:

Honeywell Source Accepted:
Stamp Impression _____
Date _____

A signature is acceptable in lieu of a stamp impression for an Approved Self Release Supplier representative in organizations that do not issue internal employee acceptance stamps and control electronic approval within their Quality Management System.**

Note: If applicable, Request for Material Review Authorization number (shall be referenced under the "Honeywell Source Accepted" stamp.

Note: If acceptance stamp is too large, it is permissible to write in the stamp number on the stamp Impression line.

140.8 Certificates of Conformance for Kits

For materials supplied as a kit, a top level certification of conformance, subject to the documentation requirements above, will be accepted for the entire lot or receipt of kit(s) as long as:

- Manufacturing and procurement traceability and configuration management for every component part in the kit is maintained

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- Associated data such as procurement certificates of conformance, test data, first article inspection reports, etc. are maintained and available upon request.

140.9 FAA Tags**

In addition to the certifications required in Table 1, Suppliers holding an FAA production approval shall ship parts with 8130-3 tags reflecting newly manufactured certification and not returned to service or repaired status to all Honeywell OEM sites. This requirement applies to both new shipments and parts that may have been rejected or returned by Honeywell or from a Honeywell customer location. Suppliers shall contact buyers if there are any questions in issuing new 8130-3 tags as Honeywell OEM sites can only return parts to suppliers requiring Part 21 type rework and have not been used in revenue flights.

Revisions: Paragraph 140.2, added Country of Origin requirements clarification. Removed COO requirement in Table 1, item 12. Added that C of C should be from supplier holding a direct PO from Honeywell. Revised requirement in item 7 from Signature to Identity of Quality Representative. Paragraph 140.4, Note 2, added clarification pertaining to type/class/grade and added note pertaining to understanding abbreviations. Paragraph 140.4, Note 3, section rewritten to clarify requirements pertaining to second hardness verifications. Paragraph 140.4 Table III, requirement 4 – added reference to note 9 and added X to SPOC 003 column for applicability. Added Note 9 to Table III identifying that requirement 4 is only applicable to SPOC 003 if called out on PO text. Revised Table III, requirement 16. Paragraph 140.7 added signature option for suppliers who do not have assigned acceptance stamps. Added new paragraph 140.9.

*Revised / **Added

SPOC 142 – Control of Items with Limited Shelf-Life *

142.1 Scope**

This SPOC covers the certification and shipment requirements of items that require shelf life control of uncured compounds and storage life control of cured elastomers. The items include:

- Uncured compounds (for example: paint, adhesives, curing agents, primers, varnishes, elastomeric molding compounds, pressure sensitive adhesives, Prepregs, sealants, inks etc.)

NOTE: Items such as tapes and labels which have pressure sensitive adhesive back are categorized under uncured compound.

- Cured Elastomers (for example: O-rings, gaskets, plate seals, molded shapes etc.)

142.2 Definitions**

Shelf Life: For uncured compounds - the maximum period of time that the uncured compounds may be stored under the manufacturer's recommended storage condition and remain suitable for use.

Storage Life: For cured elastomers - the maximum period of time that the appropriate packaged cured elastomers may be stored under specific conditions, after which time it is regarded as unserviceable for the purposes for which it was originally manufactured. The time of manufacture is the time of cure for thermoset elastomers or the time of conversion into a finished product for thermoplastic elastomers.

142.3 System for Shelf Life and Storage Life Control**

The supplier shall maintain a documented system for storing and controlling uncured compounds with limited shelf-life and age-sensitive cured elastomers. The system shall include a method of identifying and controlling such items.

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142.4 Cure Date Identification for Storage Life Controlled Elastomers**

Elastomeric parts shall be identified by marking the cure date (quarter and year) on the part or container.

The year shall be divided into quarters as follows:

- 1st quarter: January, February, March
- 2nd quarter: April, May, June
- 3rd quarter: July, August, September
- 4th quarter: October, November, December

The cure date shall show the applicable quarter of the year by number, the letter "Q", and the last two digits of the applicable year. Example: May 2008 would be designated by 2Q08.

An elastomeric part cured during any given quarter is not considered one quarter old until the end of the succeeding quarter.

142.5 Certification Requirements**

When shipping shelf-life controlled compounds and storage-life controlled elastomers, the supplier shall include the following additional information on the Certification of Conformance:

- Date of manufacture for shelf-life controlled compounds
- Cure date (QQ/YY) for storage-life controlled elastomers
- Shelf-life expiration date (MMYY) for shelf-life controlled compounds
- Storage life expiration date (QQ/YY) for storage-life controlled elastomers
- Batch and or lot number as applicable
- Date of shipment
- Manufacturer's name

142.6 Shelf Life of Uncured Compounds Shipped to Honeywell

On the shipment date, the item must have 75% or greater shelf life remaining unless approved by the procuring site. Where no shelf life information is available consult the procuring Honeywell site for direction.

All lots must be segregated and identified to maintain batch and/or lot number and cure date.

142.7 Shelf Life of Cured Elastomers Shipped to Honeywell**

On the shipment date, unless otherwise specified or required by drawing or specification, elastomers which have a storage life control in accordance with ARP5316 for elastomer seals must have 50% or greater storage life remaining. Elastomeric hoses which have a storage life control in accordance with AS1933 must have 75% or greater storage life remaining.

Where no storage life information is available consult the procuring Honeywell site for direction.

All separate lots and/or batches of shelf-life controlled elastomers shall be segregated and identified to maintain lot and/or batch number and cure date.

142.8 Bearing Lubrication*

Unless otherwise required by specification: Bearings that are lubricated for use shall be shipped to Honeywell less than 18 months from the lube application date. Bearings lubricated with preservative compounds shall be inspected for corrosion prior to shipping if more than 5 years from the application date.

142.9 Refrigerated, Frozen or Cryogenically-Stored Item

If the Purchase Order specifies Refrigerated, Frozen or Cryogenic, the items shall be shipped under these temperature conditions:

Refrigerated - less than 40° F (4.4° C)

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Frozen - less than 10° F (-12.2° C)

Cryogenic - less than -40° F (-40° C)

A temperature indicator shall be included in the shipping container and a Refrigerate/Frozen/Cryogenic sticker as applicable is required on the outside of the shipping container. Packaging shall conform to SPOC 239 requirements for Refrigerated, Frozen or Cryogenically-stored items.

142.10 Shelf Life of Compounds Applied to Products

The supplier shall maintain a documented system for identification and control of limited shelf life compounds so that compounds that had expired shelf life were not used on product shipped to Honeywell. (Examples of limited shelf life compounds are adhesives and paints).

142.11 Storage Life Control of Electronic Components*

The date codes marked on components shall be no older than specified by the purchase order at time of shipment.

142.11.1 Storage Life Limit – 1 Year

The date codes marked on components shall be no older than 1 year at time of shipment.

142.11.2 Storage Life Limit – 2 Year

The date codes marked on components shall be no older than 2 year at time of shipment.

142.11.3 Storage Life Limit – 4 Year

The date codes marked on components shall be no older than 4 year at time of shipment.

142.12 Exceptions**

142.12.1 Yeovil Site Only – Marking, Storage, Lifting and Re-Lifting of Rubber Components

142.12.1.1 Storage life is to be measured from the cure date.

GROUP	STORAGE	EXTENSION
A	5 YEARS	2 YEARS
B	7 YEARS	3 YEARS
X	20 YEARS	N/A

142.12.1.2 Deliveries of Natural or Synthetic rubber items shall be:

Group A* items, within 2 years of cure date

Group B* items, within 3 Years of cure date

Group X* items, Must have minimum of 75% life remaining

*Items as per BS 3F68

Revisions: Paragraphs 142.1, 142.2, 142.3, 142.4, 142.5, 142.7, and 142.12 are new. Paragraph 142.8 requirements revised. Paragraph 142.11 Age Limit changed to Storage Life Limit. Remaining paragraphs have been renumbered.

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*Revised / **Added

SPOC 149 – Product Release Process *

149.1 Scope

Honeywell product may only be released for shipment by either of these methods:

- as an approved Self Release (SR) supplier
- use of HTSI (Honeywell) Source Inspection services

Self Release authorization is awarded to those Honeywell Aerospace Suppliers that maintain or exceed program requirements and have proven ability to sustain highest quality standards. If unable to achieve Self Release authority, source inspection services are required at the supplier's cost.

Honeywell or Customer Source Inspection approval does not relieve the supplier of the responsibility and/or liability for full compliance with all purchase order/contract requirements.

149.2 Penalties / Fees

Failure to comply with Product Release requirements may result in a receiving inspection fee per shipment received (based on Honeywell incurred costs – minimum \$500 U.S.), and may incur additional product rejection charges.

149.3 Self Release Requirements*

The requirements for Self Release program eligibility, and the responsibilities of the supplier when releasing product under the Self Release program, are located on the Honeywell Aerospace Supplier Portal:
<https://www.supplier.honeywell.com>. Path to **Supplier Instruction SI 149-01** is > Aerospace Supplier Portal > Documents > Quality > Self Release.*

149.4 Self-Release Change of Status*

Approval for Self Release is in effect once the status change reflects on the Supplier Scorecard in the Aerospace Supplier Portal, or as notified in writing by authorized Honeywell Aerospace Self Release administrator.

Disapproval or revocation of Self Release authority shall be in effect upon official written notification by an authorized Honeywell Aerospace Self Release representative.*

149.5 Source Inspection*

Suppliers who are not approved to release product shall request source inspection services. The process for requesting source inspection is posted on the Honeywell Aerospace Supplier Portal, **Supplier Instruction SI 149-02** located in <https://www.supplier.honeywell.com> > Aerospace Supplier Portal > Documents > Quality > Self Release.*

Revisions: Web page URL corrected in paragraphs 149.3 and 149.5. Notification method clarified in paragraph 149.4.

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*Revised / **Added

SPOC 154 – Key Characteristics (KC) Management *

Key characteristics defined on drawings shall be controlled in accordance with the engineering requirements associated with the indicated feature.**

154.1 Greer – Mexicali – Olomouc – Phoenix Engines – Rocky Mount – Tempe – Toronto – Torrance – Tucson – Yeovil*

Key Characteristics

Key Characteristics (KC) for a part, subassembly or system are those selected geometrical, material properties, functional and/or cosmetic features which are measurable, whose variation control is necessary in meeting Customer requirements and enhancing Customer Satisfaction. The requirements of SAE AS9103 shall be applicable to KCs designated by Honeywell.

The Supplier shall access KCs via the web-based KC database that resides on the Honeywell Aerospace Supplier Portal (<https://aerosuppliersite.honeywell.com> > Aerospace Supplier Portal > Applications > KC Database). The Supplier is responsible to search the database for KCs not only for the assembly part number called out on the Purchase Order, but also for all detail Honeywell part numbers associated with the assembly. The Supplier is required to view the KC database prior to each manufacturing run to retrieve their KC requirements.

Immediately notify the procuring Honeywell organization where a conflict is found between drawing-imposed key characteristics and those defined on the KC Database.*

154.2 Greer – Mexicali – Olomouc – Phoenix Engines – Rocky Mount – Tempe – Toronto – Torrance – Tucson – Yeovil*

Data Submittal

Suppliers are required to electronically submit process capability information to the SPC application located within the Aerospace Supplier Portal. SPC data is required to be submitted prior to each shipment.

If a part number with KC identified on either the drawing or database is not setup, or if setup is incorrect, contact the Honeywell Buyer.

Note: Yeovil Only – Data for KC's and MC's must be reported via Net-Inspect :

<http://uk.net-inspect.com/net-inspect-login.aspx> **

154.3 Greer – Mexicali – Olomouc – Phoenix Engines – Rocky Mount – Tempe – Toronto – Torrance – Tucson–Yeovil*

KC, Alternate Control Method, and CpK Exemption Requests

Use the substitute Key Characteristic form to submit requests for substitute KC's or alternate control methods. The request form is available on the Aerospace Supplier Portal and should be submitted to the appropriate SPC Contact.

154.4 Greer – Mexicali – Olomouc – Phoenix Engines – Rocky Mount – Tempe – Toronto – Torrance – Tucson–Yeovil*

Data Analysis

The Supplier shall review their aggregate KC performance annually. Unless otherwise specified, all Honeywell Key Characteristics are to be produced by processes that are, at a minimum, stable and in control Cpk \geq 1.33.

Suppliers not meeting this KC performance level shall have a Cpk Improvement Plan and track the progress to the

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plan. These plans should be made available as requested by Honeywell representatives. Failure to submit data on parts designated as KC's may result in lot rejections.

Honeywell will evaluate process capability once the supplier has achieved 20 or more in-control points. The supplier is required to submit electronic SPC information during the initial collection of the 20 data points.

154.5 Olathe, Singapore/Bintan and Penang Orders Only*

Key Characteristics Control per AS9103 is a requirement of this purchase order and must be implemented on all drawing, specification, or purchase order (PO) defined key characteristics. SPC data is to be used to monitor processes, drive continuous improvement and reduce variability for all key characteristics with 1.33 CpK minimum as a target. The Supplier shall prepare a Control Plan for each Key Characteristic in accordance with 001-09000-0002 and submit the Plan to Honeywell for approval. Sampling shall be as approved in the Control Plan. The supplier shall enter test data through the following Web Link <https://www.net-inspect.com>. Test data shall be input for each shipment of parts or as indicated in the Control Plan.

Training on the setup and use of Net-Inspect is available under the site specific training documents on the Honeywell Aerospace Supplier portal; DOCUMENTS > SITE SPECIFIC > Olathe, KS AEOC.**

Additionally, Bare Boards (PWBs) plated through-hole thickness per IPC6012 is identified as a Key Characteristic on Olathe PWBs. Key Characteristic data shall be entered in the web link above as directed on the PO.

Revisions: Added initial paragraph as lead in to site requirements. Paragraphs 154.1 through 154.4 added Olomouc and Yeovil to site applicability group. Paragraph 154.1, revised to direct supplier to contact Honeywell if a conflict is identified between KC requirements. Paragraph 154.2 added Yeovil only note directing use of Net-Inspect. Paragraph 154.5 revised web link URL to reflect correct test data posting location. Added reference to training document for Net-Inspect usage.

*Revised / **Added

SPOC 159 – Repair and Overhaul Maintenance Requirements *

159.1 Quality System Requirements

National Aviation Authority (NAA) Certification (local and/or international regulatory agency) and/or AS9100 or AS9110 compliance are required for suppliers and sub-tier suppliers performing maintenance. AC7004 Aerospace Quality System shall be accepted in lieu of SAE AS9100 for suppliers only conducting Special Process services accredited by Nadcap. Additional regulatory approvals may be requested and reflected on the Purchase Order (PO).

AS9100 and/or AS9110 certification shall be required for Honeywell Aftermarket suppliers that do not hold a National Aviation Authority (local and/or international regulatory agency) Repair Station certificate.

Suppliers performing Special Processes / Services:

- Suppliers holding a National Aviation Authority (NAA) Repair Station Certificate must have the appropriate ratings listed on the NAA Air Agency certificate Operations Specifications.
- Suppliers that do not hold a National Aviation Authority (NAA) appropriate ratings shall be identified on the Honeywell Approved Processor Supplier Listing (APSL).
- Suppliers that perform special process that do not hold regulatory or are not listed on the Honeywell APSL shall be assessed by the procuring site as defined in Honeywell Aerospace Procedures. Suppliers performing Special Processing / Services on Military material shall be assessed as defined in Honeywell Aerospace Procedures and approved by the procuring site.

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For a listing of current Approved Processor Supplier Listing (APSL) go to the Honeywell Supplier Portal Web Site, <https://www.supplier.honeywell.com> >Aerospace Supplier Portal > Applications > APSL.

Suppliers shall have a qualification process for inspectors (i.e. training program providing familiarity with the methods, techniques, practices and the use of various types of inspection equipment and visual inspection aids).

159.1.1 Drug and Alcohol Testing Program

All safety sensitive functions (product maintenance and/or preventive maintenance) performed on Honeywell purchase orders shall be accomplished by personnel covered by a FAA compliant Drug and Alcohol Testing Program if performed within the territory of the United States. This is pursuant to 14 CFR Part 120 Drug and Alcohol Testing Program and 49 CFR Part 40 Procedures for Transportation Workplace Drug and Alcohol Testing Programs affects maintenance (not manufacturing) carried out at certificated and non-certificated subcontractors at any tier.

Proof of registration (A449 or AAM810) and D&A program compliance shall be provided to Honeywell upon request, including subcontractors at any tier.

159.2 Purchase Orders

The supplier must have written approval from the Honeywell buyer on all requested changes to the purchase order. This approval must be obtained prior to shipment.

If the serial number changes during the maintenance process and/or if it's not maintain (rotable) part (Repaired and/or Overhaul) under the exchange program (refer to **SPOC 159.3.1.3**, Commercial Non-Maintain Integrity Part (Repair and/or Overhaul) Exchanges), the supplier is not required to notify the buyer.

Note: Supplier must supply the exact part number as ordered on the PO and shall not exchange a like part number.

159.2.1 Use of DER Repairs or Installation of PMA Parts in Honeywell Designed Parts

Usage of approved Designated Engineering Representative (DER) repairs on Honeywell products:

Any approved DER repair held by the supplier that is intended to be used in the repair, overhaul, or installation of detail parts under a Honeywell purchase order shall be submitted for approval by Honeywell prior to use.

Installation of supplier Parts Manufacturer Approval (PMA) parts in Honeywell products:

The use of non-Honeywell approved supplier FAA-PMA parts in repair or overhaul of products shall be approved by Honeywell prior to installation.

Note: All approvals for the above shall be referenced in the Honeywell purchase order.

159.2.2 Document and Data Control

The supplier and sub-tier suppliers shall ensure that the current aftermarket technical data, specifications, and instructions required by the contract / purchase order, as well as authorized changes, are used for maintenance, inspecting, and testing.

Deviation from the current aftermarket technical data requires Honeywell approval.

159.3 Procurement Requirements

159.3.1 Part Exchange Program

159.3.1.1 New Part Exchange Program

This program permits the receipt of new hardware in exchange for used hardware. The following rules apply:

The supplier shall have "Direct Shipment Authorization" (DSA) granted from Honeywell OEM.

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Follow the specific requirements as identified on the DSA letter, i.e.:

DSA certification statement on the shipping documents, etc.

Copy of the DSA letter will accompany the hardware.

The New Part Exchange code must be on the PO or have the Honeywell buyer approval by amending the PO prior to shipment.

The receipt part number is required to be the same as the part number identified on the PO.

Supplier FAA – PMA product requires Honeywell approval.

The Honeywell rework tag that accompanied the original PO part will not be required to be shipped back with the exchange hardware.

159.3.1.2 Commercial Non-Maintain Integrity Part (Repair and Overhaul) Exchanges

The exchange hardware can only be issued from assets provided by Honeywell or assets approved for use for Honeywell.

Exchanged part work/status shall match the work scope identified on the PO.

The appropriate cards shall be updated and accompanied with the certifying package if the part is Life limited/time controlled.

Shipper / invoice:

- a statement identifying the hardware that is exchanged and/or replaced and,
- the Honeywell Purchase Order (PO) and/or Repair Order (RO) number.

Note: The Honeywell rework tag (or equivalent) that accompanied the original PO part will not be required to be returned on part exchanges.

Suppliers with National Aviation Authority for part ordered, the supplier shall also provide:

A FAA 8130-3 or equivalent form shall be issued from the NAA supplier identified on the PO.

The FAA 8130-3 or equivalent forms shall be filled out in accordance with SPOC 159.5.1

DER repairs are required to be approved by Honeywell prior to shipment.

Compliance to any open Airworthiness Directives (as applicable).

Suppliers without National Aviation Authority for part ordered, the supplier shall also provide:

Sub-tiers FAA 8130-3 or equivalent form, and

C of C from the Production Approval Holder (PAH)

159.3.1.3 Honeywell Interdivisional Commercial Non-Maintain Integrity Part (Repair/Overhaul) Exchanges

Internal - Honeywell to Honeywell:

Exchange part number shall match the part number identified on the PO.

Exchanged part work/status shall match the work scope identified on the PO.

Any DER repairs are required to be approval by procuring site prior to shipment.

Compliance to any open Airworthiness Directives (as applicable).

The appropriate cards need to be updated and accompanied with the FAA 8130-3 or equivalent form(s) if the part is Life limited/time controlled.

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Shipper / invoice:
a statement the hardware it's exchanged and/or replaced and,
the Honeywell purchase order (PO) and/or repair order (RO) number.

The Honeywell rework tag that accompanied the original PO part will not be required to be returned on any part exchanges.

Non-serialized part exchanges shall have complete traceability, including identification of the supplier that conducted the maintenance and the maintenance record.

159.4 Maintenance Requirements and Technical Data

159.4.1 Spot Operation Requirements

When completing the maintenance in accordance with spot operations per the routing/traveler do not stamp off the routing/traveler.

Specify the operation performed per the routing / traveler on the Certificate of Conformance or FAA 8130-3 or equivalent form.

159.4.2 No Maintenance Performed

If the supplier can not conduct the maintenance as requested on the purchase order, the supplier shall notify the Honeywell buyer and return the hardware including all documentation. A nonconforming material review document is not required.

Supplier shall state the reason for return on the shipping invoice.

If the hardware is beyond economical repair (BER), then the shipping document must state "BER".

159.4.3 Inspection Requirements

100% inspection of each dimension which is affected by the repair / fixed processes is required.

159.4.4 Rework Route Tag or Equivalent

The Rework Route Tag or equivalent is provided to:

Identify parts for traceability,

Record of inspections,

Maintenance required.

When completing the maintenance do not stamp off the Rework Tag or equivalent.

Note: The Rework Route Tag or equivalent must remain with the original part for which it was issued.

159.4.5 Teardown and Findings Report or Equivalent

The Supplier shall furnish one (1) copy and maintain on file a completed Teardown and Findings Report (or equivalent) for functional components (e.g., fuel control, fuel nozzle, electronic computer, oil heater) and/or other products as requested by the purchase order.

159.4.6 Test Data Sheet

As required by the technical data the supplier shall furnish one (1) copy and maintain on file a completed test data sheet for functional components (e.g., fuel control, fuel nozzle, electronic computer, oil heater) and/or other products.

Test data sheets shall reference the technical data or test instructions by report number and revision number.

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If required by the technical data, then the article that has been functionally tested and acceptance shall be identified with the supplier's Functional Test (FT) stamp.

159.4.7 Log/Maintenance Cards

The following are the types of Log/Maintenance Cards:

Life Limited Part Log is used to document the accumulated hours/cycles, service and or maintenance actions of specified hardware that has a maximum limit on hours and or cycles.

Ultimate Life Part Log Card (APU) is used to document the accumulated hours/cycles, service and or maintenance actions of specified hardware that has a maximum limit on hours and or cycles.

Component Maintenance/Modification Record Card is used to record maintenance actions, service bulletin compliance, etc., on specified components.

All Log/Maintenance cards shall be completed as defined and returned with the hardware.

159.4.8 Nonconforming Material Identified During Maintenance

The supplier shall segregate and return to the Honeywell site initiating the purchase order, all scrap material identified or incurred within the maintenance of the part(s).

The supplier shall specify the reason for return on the packing list or equivalent.

159.5 Shipping Certification Requirements *

159.5.1 FAA 8130-3 or Equivalent Forms (i.e. EASA Form One, TCCA Form One, etc.)

FAA 8130-3 or equivalent forms are required when:

Supplier is NAA approved

If CAAC approved, then an AAC-038 is required with each shipment.

FAA 8130-3 or equivalent forms information required:

Block 5 and/or block 13, record the Honeywell purchase order (PO) or Honeywell Repair Order Number, or as required by the Honeywell site

Block 13 EASA statement required if approved/accepted by the EASA.

Block 19 Dual Release Certification required if the repair station is EASA accepted / approved.

Note: Suppliers located in countries with bilateral agreements with the FAA and EASA shall release product with a Dual Release Certification.

Attachments required (as applicable):

Rework Route Tag or equivalent (Reference 159.4.4).

Teardown and/or Findings Report or equivalent (Reference 159.4.5).

Test data sheets (Reference 159.4.6).

Log/maintenance cards (Reference 159.4.7).

Nonconforming material report as applicable.

A replacement of the original certificate must be provided for the following:

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- A. Hardware returned due to correcting a nonconformance.
- B. Documentation returned due correcting a nonconformance.

Note: If the technical data does not allow the supplier to issue a FAA 8130-3 or equivalent form for the repair, then the supplier must provide an FAA 8130-3 or equivalent form for the inspection and additional certifications for the repair, as required.

159.5.2 Certificate of Conformance

A Certificate of Conformance in accordance with SPOC 140 is required when:

Supplier is not a holder of a National Aviation Authority approved Air Agency Certificate.

Products are used for military programs (reference the PO).

Data is not regulatory and/or OEM approved.

159.5.3 Packing Documentation Requirements

Statement that parts/materials conform to the applicable technical data, specifications, and Purchase order.

Purchase order number.

Purchase order part number.

Serial numbers (as applicable).

Repair Order (RO) number identified on the purchase order.

Shipment quantity.

Other requirements as defined in the purchase order.

Revisions: TCCA form number reference revised in paragraph 159.5.1.

SPOC 162 – Electronic and Electrical Components with Lead (Pb) and Pb-free Finishes

These requirements apply when evaluating changes to existing production hardware, changes to components used within production hardware and in the evaluation of all components and solder materials on new production hardware.

Use of tin-lead and lead free component termination finishes for Honeywell product shall be managed through the use of Honeywell Engineering Specification HPS1006 (Aerospace Process Specification for the Implementation of Lead Free Finished Electronic Parts with Tin/Lead Solder) unless otherwise specified by the program. Note that HPS1006 is intended to assure compliance to the GEIA-STD-0005-1 requirements.

162.1 Solder Joint Integrity and Component Finishes

Section 3.1.1, Table 1 of HPS1006 documents the acceptable combinations of lead finish systems that provide reliable solder joints and is to be used for all Honeywell Aerospace printed board assemblies.

162.2 Tin Whisker Mitigation for Component Finishes

Section 3.1.2 of HPS1006 documents the approaches that are used when mitigating the risk of failure due to tin whiskers on components with pure tin termination finishes. The actual requirement for the level of mitigation required or whether pure tin terminations may be used, per GEIA-STD-0005-2, is determined on a product-by-product basis with specific requirements contained within program documentation and will fall into one of the risk levels listed in the following table (from GEIA-STD-0005-2). If the risk level is not specifically identified by the program, the risk level is assumed to be 2B.

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Risk Level	Documentation of Tin Use	Detection and Control	Mitigation	Risk Analysis
Level 1	Supplier: General information on finishes used.	None	None	None
Level 2A	Supplier: General information on finishes used. Customer: List of any applications where tin is not allowed.	None	None. However, if mitigation methods were assumed for the purposes of analyses, the supplier shall report those assumed mitigations.	At the process level: analyses showing application tolerance to whiskers, OR analyses of tests to demonstrate propensity of whiskering, OR field data analysis demonstrating requirements will be met even if no mitigations are applied.
Level 2B	Supplier: List of families of tin-finished piece parts and categories of applications where they would like to use tin. Customer: List of any applications where tin is not allowed.	It is recommended that the supplier and customer develop a sampling plan for confirming materials received.	It is recommended that at least two mitigation methods be employed.	At the family level: analyses showing application tolerance to whiskers, OR analyses of tests to demonstrate propensity of whiskering, OR field data analysis demonstrating requirements will be met. Some individual uses may need to be analyzed at the instance level.
Level 2C	Supplier: List of all instances of pure tin. Customer: List of any applications where tin is not allowed.	A sample monitoring plan is required but its specifics are left to an agreement between supplier and customer. For critical piece parts, assemblies or systems, the plan should include sampling at least one part per lot of all piece parts not approved for tin.	At least two mitigation methods are required.	At the instance level: analyses showing application tolerance to whiskers, OR analyses of tests to demonstrate propensity of whiskering, OR field data analysis demonstrating requirements will be met.
Level 3	Supplier: Documentation of lot screen results.	At least one sample per lot of all items containing metallic finishes must be tested by a method agreed to by the customer and supplier.	None. Not applicable. No tin is to be used, so no mitigation is required.	None. Not applicable. No tin is to be used so no risk analysis is required.

162.3 Sampling Requirements

Honeywell reserves the right to sample any parts to ensure processing complies with the requirements of this specification.

Revisions: No changes.

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SPOC 163 – Restrictions for use of Mercury and or Mercury Containing Components

Products shall contain no metallic mercury and must be free from contamination by mercury. The Supplier shall not use mercury, mercury components or mercury bearing instruments or equipment that cause the contamination during the manufacture, service, assembly, or test of materials.

163.1 Statement that Order is Free of Mercury

The Supplier shall send a signed statement with the shipment that tells that the items are free of mercury and free from mercury contamination, the statement must include:

The Contract Number

The National Stock Number (NSN), as applicable

The Manufacturer's Code (CAGE) and Part Number or the Specification or Drawing Number

The date of shipment and the quantity shipped

This paragraph must be notated as below, or words that convey the same meaning:

"The undersigned certifies that the items shipped conform to the requirements of the Purchase Order. The items are free from mercury contamination. Mercury-bearing instruments and equipment which can cause mercury contamination were not used in the manufacture, service, assembly, or testing of the items supplied."

The statement must contain the signature of a corporate or company officer.

163.2 Inclusion of Mercury

If the inclusion of metallic mercury is required as a functional part of the items supplied, the supplier shall get written approval from Honeywell prior to delivery and shall supply a "Warning Plate" to show that metallic mercury is a functional part of the item. The label must identify the name and the location of the part or component.

Revisions: No changes.

SPOC 164 –Prohibited Materials

Honeywell prohibits certain materials during the manufacture, service, assembly, or test of Honeywell product.

164.1 Ozone Depleting Substance

Class I Ozone Depleting Substances (ODS) shall not be used in the design, test, manufacture, integration and assembly, handling, transportation, operations, maintenance or disposal of the hardware/components delivered to this order. A certified, signed statement attesting to this shall accompany shipment and be enclosed with packing slip. Certification must contain the manufacturer's name and supplied part number. This certification may be incorporated in the certificate of conformance.

164.2 European Material Restrictions

Suppliers delivering product to European sites shall understand and comply with Registration, Evaluation, Authorization and Restriction of Chemical (REACH).

164.3 Other Restricted Material

For other materials currently restricted for use by Honeywell, the supplier should contact the Buyer.

Revisions: No changes.

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*Revised / **Added

SPOC 165 – Approved Sources for Controlled Processes *

165.1 Scope

Controlled process specifications are listed on the Honeywell Approved Processing Source List (APSL) and suppliers shall use only Honeywell approved sources except for:

Suppliers with design responsibility for hardware supplied to Honeywell may use their own approved process suppliers provided the Honeywell supplier complies with the following:

- Design and Development must be an element in their Quality Management System (Ref AS9100 Section 7.3)
- Supplier Control must be an element in their Quality Management System (Ref AS9100 Section 7.4)

This SPOC does not apply to:

- Industry standard parts such as AN, NAS, MS etc.

165.2 Approved Processing Source List (APSL)

The APSL is the list of Controlled Process Specifications and Approved Sources to perform those processes. Sources performing Controlled Special Processes shall be approved by Honeywell and listed on the web based Aerospace Unified APSL. The Supplier shall periodically review the APSL to ensure sources are not expired and to independently verify the source's capability and quality specific to the Supplier's product.

To determine if a specification or standard is controlled, go to:

www.supplier.HONEYWELL.COM and then: Aerospace Supplier Portal → Applications → APSL and refer to step 4 on the Must Read Instructions.

Requests for approval to perform Controlled Processes may be made using the online APSL.

165.3 Electronics & Wiring Commodities*

Suppliers of Printed Boards (PB), Printed Board Assemblies (PBA) and Cables & Harnesses (C&H) shall be audited and approved to the appropriate specification as outlined in the table below. However, suppliers shall process and certify hardware to specification(s) contractually flowed down.

Commodity	Specification
Rigid Printed Boards (PB) {a.k.a. PWB}*	HPS1011*
Printed Board Assemblies (PBA) {a.k.a. CCA}*	HPS1009*
Flex / Rigid Flex PB**	HPS1017**
Cables & Harnesses (C&H)	HPS1008

Sub-tier suppliers that perform specific sub-processes used in the manufacturing of these three commodities (PBs, PBAs, and C&H) shall be managed and approved by the respective commodity suppliers as part of their overall quality management system. Honeywell reserves the right to audit and approve these sub-tier suppliers. Suppliers that perform special processes on parts not contained on the Bill of Materials (BOM) for a PB, PBA or C&H **shall** fall under standard APSL control per SPOC 165 requirements.*

EXCEPTIONS

The detail/component in question is one of the 3 Electronic & Wiring commodities listed above. Example: a Printed Board is procured as a component of a PBA/CCA, the Printed Board is still subject to the APSL requirements.

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A separate APSL approval for EW.CAH is not required when cables or harness assemblies are terminated directly to the PBA by the PBA supplier (i.e. the cables or harness assembly is not a separate part number on the PBA BOM, but the individual components, such as wire, cable, terminal, etc., are part of the PBA BOM).**

Sub-tier suppliers that perform conformal coating as part of PBA build must be listed in the APSL and approved to the appropriate controlled specification for that process (e.g. HPS1007).

Special processes defined by controlled specifications performed on Honeywell-designed *mechanical* parts/components contained on the PB, PBA or C&H BOM (such as brackets, heat sinks, board stiffeners, ejectors, card guides or wedge clamps) **DO** require use of APSL-approved sources.**

Suppliers of special processes used in the fabrication of commercial off-the-shelf (COTS) electrical components and other non-PB, PBA, and C&H electrical parts/commodities are exempt from being listed on the APSL. Examples include, but are not limited to, wire, connectors, resistors, capacitors, inductors, transformers, and microchips.

EW.CC.TIER1 code approval is not required for suppliers approved to EW.PBA, EW.PBA.EX USA and/or EW.PBA.LEADFREE.**

165.4 Exception for Chemical Film Touch-Up

Chemical film touch-up/rework coating applied by brush or swab application method does not require use of an approved processing source, Nadcap accreditation, SCA, or the conducting of process control tests.

165.5 Change in Location of Facilities

The Approval of Sources to Controlled Specifications is location specific. In the event of change in location, notification shall be made prior to the relocation and with substantial time (minimum 90 days) for hardware, system, and process re-qualification. Also, satellite sites shall be approved independently of a Source's primary location and must have a separate Honeywell OneSource ID. Send relocation notification to: supplier.survey@honeywell.com, and to the Honeywell Buyer.

165.6 Nadcap Accreditation

Honeywell requires all external Suppliers and their Sub-Tier Suppliers to obtain Nadcap accreditation for the following Controlled Processes. The Supplier is responsible for the cost of Nadcap accreditation.

Non Destructive testing

Chemical Processing

Non-conventional Machining and Surface Enhancement

Elastomers

Material testing in accordance with a controlled Materials Testing specification

Coatings

Composites

Heat Treating (including Brazing)

Welding (including Torch and Induction Brazing)

Electronics / Wiring

165.6.1 Exceptions to Nadcap Accreditation

Exceptions are listed on the Controlled Specification list of the APSL.

165.7 Source Certifying Agent (SCA) Program

See SPOC Supporting Document - Supplier Instruction 165.7 located on the Supplier Portal

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(<https://www.supplier.honeywell.com>> Aerospace Supplier Portal > Documents > Quality > Controlled Processes > Certifying Agent .

165.8 Exception for Paint Specs used for Marking**

Several paint specifications such as M4030956 and M4065816 and other APSL controlled paint specs are often used for part marking. When used for part marking purposes only, the paint process does not require use of an approved processing source, Nadcap accreditation or SCA.

Revisions: Paragraph 165.3 updated specification numbers in table. Added Flex/Rigid Flex specification to table. Added sub bullet to first bullet pertaining to APSL approvals. Added new 3rd bullet pertaining to special processes on mechanical parts. Added new 5th bullet clarifying EW.CC.TIER1 code approval. New paragraph added, 165.8.

SPOC 172 – Document Submittal Required

172.1 Requirement

The supplier shall create a data package and ship with each item. The data package shall be maintained per the records retention schedule and be available upon request. The data package shall include:
Assembly record cards for each assembly and the device assembly
Device test traveler

Revisions: No changes.

**Revised / **Added*

SPOC 179 – Government and Customer Directed Source Inspection *

179.1 Scope*

This SPOC applies to any quantities reflecting a U.S. Government Prime Contract Number noted on the Purchase Order. When Government Source Inspection is required, the inspection will be accomplished at the Supplier's facility unless otherwise specified on the Purchase Order. The supplier shall make available all necessary specifications, documents, facilities and assistance. U.S. Government material subject to SPOC 179 shall not ship without evidence of Government Source Inspection approval unless the prime DCMA office provides alternate instructions in writing.*

This SPOC also applies to Honeywell Customer Source inspection; however, Honeywell customer's quality representatives do not have the authority to approve quantities reflecting a U.S. Government Prime Contract Number noted on the Purchase Order unless granted by the U.S. Government Contract.**

179.2 U.S. Government Notification Requirements*

Upon receipt of the order containing quantities reflecting a U.S. Government Prime Contract Number, promptly notify the Government Source Inspection (GSI) Representative who normally services your facility and provide a copy of the order so that appropriate planning for Government Source Inspection can be accomplished. The GSI Representative shall be notified no more than 7 workdays before completion of the order.

If unsure of the DCMA Representative, contact the Honeywell Buyer immediately.

GSI may request the supplier to furnish all work instructions down to the lowest level(s), including all mandatory government inspection points, prior to the initiation of any work.

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179.3 Honeywell Customer Notification Requirements**

Promptly notify the Customer Source Inspection Representative as directed on the Purchase order or by the buyer. Careful attention should be given to planning source inspection to meet Purchase Order schedules. If unsure of the Customer Quality Assurance Representative (QAR), notify the Honeywell Buyer immediately.

179.4 U.S. Government In-Process Inspection*

The DCMA QAR will notify the supplier of where in the process source inspection is required, and reserves the right to inspect product or process at any point along the manufacturing of the product. The supplier shall provide reasonable facilities and inspection equipment for in-process inspection and records where requested.

179.5 Honeywell Customer In-Process Inspection**

The Purchase Order will specify where, in the process, source inspection shall occur by an authorized *Customer QAR*. The supplier shall provide reasonable facilities and inspection equipment for in-process inspection and records where requested. Supplier shall notify Honeywell a minimum of 72 hours prior to inspection.

179.6 Pre-Cap Source Inspection

Honeywell's pre-cap source inspection is required at the supplier's facility. Honeywell shall be notified ten days prior to the close up or sealing of devices supplied against this order so that Pre-cap / Internal Visual inspection can be performed. Evidence of Honeywell's Quality representative's certification shall accompany shipment per SPOC 140.

179.7 Evidence of Source Acceptance*

Evidence of Source Inspection acceptance for a single shipment will be the authorized stamp or signature on the packing list.

If Government Source Inspection / Defense Contract Management Agency:

In addition to an authorized stamp, a letter of delegation (LOD) authority between DCMA offices is required, showing that the specific part number being shipped has been granted GSI delegation. The LOD authority must be linked to the part numbers and quantities that have been granted delegation. Where the total PO quantity is greater than the quantity pegged to the U.S. Government Prime Contract(s) Number, the LOD will be issued for the quantities associated with the Prime Contract(s) only.*

GSI acceptance of a lot of parts, which is greater than the quantity of parts being shipped, is allowed only if the evidence of GSI acceptance can be traced to each part in subsequent shipments. This can only be done if parts and GSI accepted document are marked with serial numbers or lot numbers as required by print or manufacturer's assigned traceable numbers.

Government and Commercial items shall be segregated prior to presenting to GSI for Inspection. The shippers for GSI and non-GSI quantities shall be kept separate for GSI acceptance.*

If NASA Source Inspection:

The NASA quality representative shall be notified immediately upon receipt of this order. NASA or its designated representatives shall be notified 48 hours in advance of the time articles are ready for inspection or test. Inspection (in-process, pre-cap and/or final) is required prior to shipment from the supplier's facility.

Revisions: SPOC rewritten to clarify separation of Government/GSI and non-Government requirements for Source Inspection.

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SPOC 180 – Critical Safety Items *

180.1 Scope*

The Supplier and product shall meet all requirements for Critical Safety Items (CSI) as detailed in the applicable specification invoked by the design documents (Ref; E1010, FI-1776, AW/PS and others). When the CSI / Flight Safety specification is designated as a controlled spec, the CSI manufacturer is required to be approved for the associated specification code and listed on the Honeywell Approved Processing Source List (APSL). Honeywell Purchase Order holders are responsible for ensuring that they and their sub-tiers comply to this SPOC, including any Frozen Planning requirements.

180.2 Frozen Planning Approvals*

Frozen planning is required for all CSI Critical Characteristics. The Supplier shall review Engineering documentation for critical characteristics and their control requirements. Honeywell approval of frozen planning is required prior to filling this order. Any change to frozen planning after initial approval must be approved by Honeywell prior to delivery.

The supplier shall submit planning for critical characteristics using the steps identified in SPOC 110.

Note: AW/PS (Airworthiness Product Safety) parts for Honeywell Aerospace Electronics businesses as delineated by drawings, specs and purchase orders shall have their design/processes approved using form INF-3133. Submittals shall be made to the Honeywell Buyer.**

180.3 Auditing of Critical Safety Item Controls*

The supplier shall conduct self-audits as specified in the controlling specifications invoked by the design data. Results of these self-audits shall be provided to Honeywell as required by the specification.

180.4 Requirements

Item	Requirement
Flight Safety Part Specification	E1010
Flight Safety Identification Symbol	Framed letter "S"
Frozen Item	Frozen Plan
Affected Engineering documentation	Applies to drawings only
Execution of the order	Honeywell approval required prior to execution of P.O.
Honeywell Approval	Materials and Process Engineering
Inspection	100% Initially then sampling plan
MRB	Not Allowed

180.5 Rocky Mount Orders Only

- **Flight Safety Part Specification** — FI-1776
- **Flight Safety Identification Symbol** — Diamond symbol with FSP, FSC or FP inside the diamond – See FI-1776 for definitions
- **Frozen Item** — Referred to as a Frozen "Process"

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- **Affected Engineering documentation** — Includes both Engineering Drawings and specifications
- **Execution of the order** — May buy “Development” hardware if specified on P.O. and supplier’s applicable documentation is under configuration control. Submittal for approval by second lot.
- **Honeywell Approval** — Flight Safety Parts Review Board (FSPRB) or Frozen Process Review Board (FPRB)
- **Inspection** — 100% only
- **MRB** — May be processed through MRB with FSPRB and customer FSPRB approval
- **Flight Safety Critical Characteristics** — Referred to as Flight Safety Characteristics

180.6 Deer Valley, Coon Rapids, and Albuquerque Orders Only

This procurement involves either Airworthiness/ Product Safety Critical, or Flight Safety Critical items or materials. Parameters requiring critical items or materials documentation are specified on Buyer’s drawings, specifications, or Purchase Orders. These parameters shall be quantitatively documented in detail, and shall be positively traceable to the materials, parts, or services supplied against this Honeywell Purchase Order. Design or process changes shall not be made without written authorization from Buyer, reference AW/PS Authorization Request Form (INF-3133). In the interest of air safety and if/when required by Honeywell, the Supplier shall assist in the analysis of materials that are involved in accident investigations. Strict compliance is mandatory.

Revisions: Title revised, was Flight Safety Parts Program. Paragraph 180.1 rewritten to include reference to design documents and APSL. Paragraph 180.2 added reference to control requirements, clarified approval requirement and added Note. Paragraph 180.3 revised section title and replaced entire content.

SPOC 182 – Marking LHTEC Program

182.1 Requirements

The Supplier shall comply with drawing requirements for part numbers, serialization and lot control marking.

All items that have been accepted by the Supplier’s inspection system shall be identified with the supplier acceptance and test stamps, as outlined in the Honeywell product identification and traceability specifications MC9014 and LHG1013. The Supplier shall contact the Honeywell Buyer for current specification revisions.

This SPOC supersedes SPOC 140 traceability requirements when applied.

Revisions: No changes.

**Revised / **Added*

SPOC 200 – Part Marking Requirements *

200.1 Scope

Honeywell site specific addendums to Engineering Drawings. Honeywell prohibits the use of part marking or numbering that is false or misleading as described in 14 CFR Part 3.

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200.2 Torrance Orders Only

Marking shall be in accordance with the drawing requirements.

If there are no marking requirements on the drawing, marking shall be in accordance with AS478 Method 30, 35 or 37.

If the additional marking requirements below duplicate information already called out on a Honeywell Torrance drawing or

AS478, the duplicate requirement/information need not be applied.

Unless the ink color is specified on the engineering drawing, use an ink color that will provide contrast against the background of the hardware.

For any part whose surface, size, or configuration in the marking area is not suitable or is insufficient for the specified class (see note below) marking shall be by containment in accordance with AS478 Method 35D or 37 or by tagging in accordance with AS478 Method 35, 35A, 35B or 35C.

Note: Determination of area suitably or insufficiency must be approved, in writing, by Honeywell SQA

ADDITIONAL MARKING REQUIREMENTS

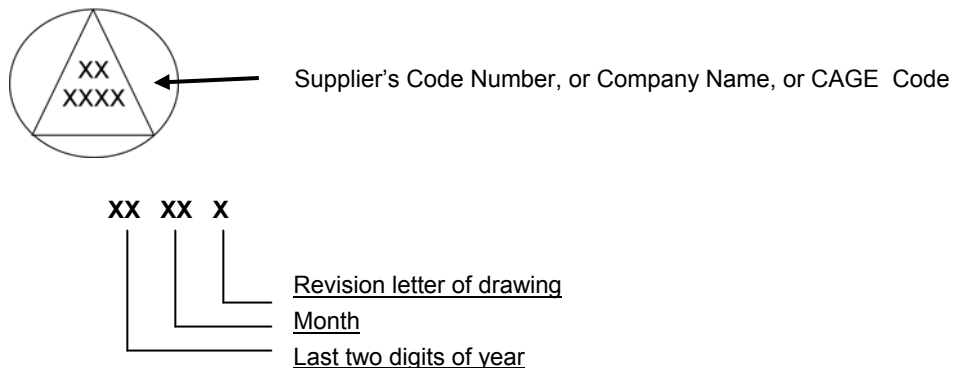
In addition to the requirements listed above, the supplier shall apply a second line of marking directly below the part number which consists of the phrase "MFR" followed by the CAGE Code or the Suppliers Logo. When complete, the entire marking shall be formatted as follows:

70210-123456-1
MFR-XXXXX

Note: Casting suppliers only - Unless otherwise stated on the drawing, a cast raised logo is acceptable on any non machined surface.

In a separate area, not adjacent to the part number marking, the supplier shall also mark their supplier code number (as noted on the purchase order, except drop the leading three zeros), a date code, and the drawing revision letter to which the part was made. When complete, the marking shall be formatted as follows:

Acceptance Identification, Date Code and Drawing Revision.



The Vendor Identification Symbol previously used will now be considered an Acceptance Identification Symbol and when used will be considered final acceptance of the product as well as identification of the manufacturer. The format of the stamp may remain as depicted in previous requirement, or may be changed to resemble an "A" stamp at the supplier discretion.

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200.3 Phoenix Engines Orders Only

All hardware, **except** AGT 1500 program hardware (P/Ns with a 3-xxx-xxx-xx format), accepted by the Supplier's inspection system shall be identified with the Supplier's acceptance inspection stamps. While not currently required, presence of acceptance inspection stamps on AGT 1500 program hardware is permissible.

Examples of stamp design and usage requirements are defined in **MC9014** and **MC9015** specifications (as specified by the drawing).

Interpret AGT1500 traceability requirements per MC9015.

Certain AGT1500 drawings have not yet been updated to reflect (1) the design activity change from Lycoming (CAGE 91547) to Honeywell (CAGE 99193), and (2) the current marking requirements. Such drawings will (a) have CAGE 91547 in the title block, (b) **not** have a CURRENT DESIGN ACTIVITY decal identifying CAGE 99193, and (c) **not** have a marking note that includes marking of "CDA-99193". For these drawings, in **addition** to the marking content requirements stated on the drawing or in its referenced marking specification, the following additional requirements apply:

(Note: do not mark the quotation marks)

1. Mark "CDA-99193" as a separate line following the item identification marking (i.e., following the marking which in general will appear as 91547 3-XXX-XXX-XX REV. X).
2. If the Honeywell Purchase Order (PO) identifies the part's Army Ordnance Number (an eight-digit number beginning with 12) which follows the acronym AON on the PO, it shall be marked on the line following CDA-99193 and be preceded by the US Army CAGE Code (19207), as shown in the example below:

As an example, a Supplier with CAGE Code 12345 should mark PN 3-160-121-04 (manufactured to drawing revision A and with a corresponding AON on the PO listed as 12286922), as follows:

91547 3-160-121-04 REV. A

CDA-99193

19207 12286922

MFR12345

200.4 Tempe Orders Only

Accepted hardware shall be identified by application of the suppliers "A" stamp in accordance with GPS 1102-1 or GPS 1102-3 indicating acceptance by the supplier's quality system. For parts which have been identified with an "A" stamp containing a pre-SAP supplier code, the application of an additional "A" stamp reflecting the post-SAP supplier code is acceptable. Furthermore, products requiring functional testing, pressure testing, dielectric testing, etc. shall be identified with the appropriate FT, PT, etc. stamps indicating acceptance by the supplier's testing in accordance with GPS 1102-1 or GPS 1102-3.

Engineering Drawing Requirement Interpretations and Clarifications for Honeywell Acquisitions

Interpretation on Tempe-controlled drawings

Unless otherwise specified on the drawing, the following specifications shall be used as applicable:

GPS1000-1, Standard for Drawing Interpretation, General

GPS1001-1, Specification for Machine Feature Clarification, General

GPS1002-1, Sheet Metal Parts, General

GPS1003-1, Castings/Forging parts, General

Part Marking Requirements

If there is no part marking requirements stated on the drawing or Purchase Order, the part shall be marked in accordance with MIL-STD-130 and AS478-35D or -37 using 59364 CAGE CODE in front of the part number. (e.g., 59364-XXXXXX-Y).

For parts requiring company name identification, S3002-1 shall be used, in lieu of the Grimes Aerospace, Midland Ross, Janitrol, Altair, Garrett, GFSD, Allied, AlliedSignal, or any other former Honeywell name. In addition, the Tempe CAGE CODE (59364) shall be applied preceded with CDA, instead of MFR. CAGE CODE.

Example: Grimes drawing for part number 54D32-1, mark part as follows:

89513 - 54D32-1

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CDA – 59364

The Tempe Document 41-20422 provides clarifications of engineering drawings where standard title block information has become illegible.

Tempe Document 41-20421 clarifies engineering drawing notes describing design parameters.

RMRA disposition may require additional part marking and part tagging instructions. When the stamp in the Honeywell disposition block states APPLY MRB TAGS, the Supplier shall physically attach an approximately 2.5 X 5 inch green tag with the words "MRB Approved" printed on the tag. The Supplier shall attach one tag per part or package for small parts. The Supplier shall attach the tag so that it is clearly visible after the protective packaging has been applied. The MRB tags need to be visible without removing the parts from the protective packaging.

Note: Do not include green tags in direct shipments authorized by the Tempe site.

200.5 Tempe, Tucson, Mexicali Orders Only

Identification for Parts Not Traceable:

This section describes mandatory part marking requirements in addition to the drawing requirements (not applicable to standard hardware). "Parts not traceable" refers to parts which do not have lot control or serialization imposed by a drawing note.

Apply a 4-digit identification date to the part at the point where part marking is indicated by the drawing, using the required method and location. This date must be recorded on all applicable inspection records, test reports, and certifications. See below for format of the date. The 4-digit identification date is NOT required for:

- parts that have a drawing imposed serial number, lot number, or heat lot number,

- standard hardware (See definition in Sub-section 1.3),

- vendor item (previously known as specification) controlled drawing parts,

- suppliers that have an internal system that has been approved by a Honeywell quality representative.

Format: The first digit of the identification date is the last digit of the year. The remaining three digits will be the progressive calendar date on which the part is marked. For example, parts being stamped on May 7, 1990, would carry an identification date of "0127"—"0" representing the last digit of the year and "127" since May 7 is the 127th day of 1990. Parts being stamped on August 31, 1990, would carry an identification number of "0243", since August 31st is the 243rd day of 1990.

If parts are too small to accept this identification number, tags or bags must carry this 4-digit identification date.

In the event that the Honeywell Purchase Order specifies "less part marking", the 4-digit date code must still be applied to the part by rubber stamp, using semi-permanent ink at the same location where the part would normally be marked.

200.6 Rocky Mount Orders Only

When any new 5- or 6-digit supplier code marking is required, all zeros preceding the actual digits of the supplier code are not to be used as part of the marking.

Parts requiring Load Test (LT) or Pressure Test (PT) shall be marked with LT or PT, permanently identified on each part, on a non-functional surface, after the part has passed test. Marking is per the method specified on the drawing. If no marking method is called out on the engineering drawing, the default is AS-478-30. Refer to ES-0465 for further direction.

When serialization for a piece part is a drawing or Purchase Order requirement, the Supplier shall, unless it is otherwise indicated on the drawing, serialize the parts as follows:

Serial numbers shall consist of the following items in the order:

- the letters "SN" (designates "Serial Number")

- the Supplier code assigned by Purchasing – (new 5- or 6-digit supplier code)

- a dash

- consecutive numbers starting with 0001 (i.e., SNXXXXX-0001).

- If space does not allow the marking of all of the above, the SN may be deleted or marked above the Supplier code or serial number.

Rocky Mount requires that all parts must be identified with site CAGE code.

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Rocky Mount Orders Only

Example of an engineering drawing note:
Mark identification information required per Mil-Std-130 suffixed with a drawing revision letter IAW AS478-35D or 37.

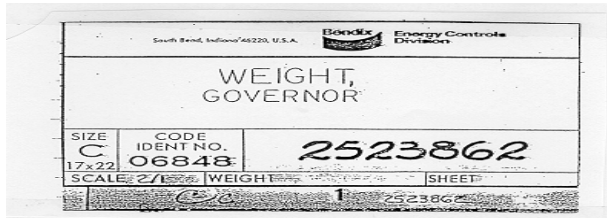


How the marking should look:

34270- 4100045-Y X - (Where Y is the applicable dash number and X is the latest engineering change).
CDA 06848
Supplier Code xxxxx

Note: If the drawing has only one CAGE Code, the part must be identified with that CAGE Code.

Example of an engineering drawing call out per ES-0465:
ES-0465, Paragraph 1.4, refers to FI-1307-1, -2, -3, which complies with Mil-Std-130 and AS 478.



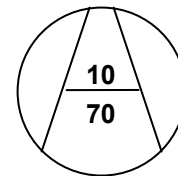
- 1) 06848 2523862 X – (Where X is the Latest Engineering change).
- 2) Supplier Code (FI-1307, Para. 4.3.2)

MC9014 Requirements:

Marking specification per **MC9014** and **GPS1102** requires a 5-digit vendor code to be included in a marking string on the part when the serial number and lot number traceability is needed.

Rocky Mount, NC, has supplier codes assigned using a 5- or 6-digit format.

When required to apply a supplier code per marking specification **MC9014**, on product purchased by Rocky Mount, use the current Honeywell 4-digit Rocky Mount supplier code "1070". (Marking indicated by YYYYYY is the current 5- or 6-digit Rocky Mount supplier code assigned to Rocky Mount suppliers.)

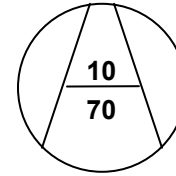


YYYYYY

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Rocky Mount Orders Only

When required to apply a vendor code per marking specification **GPS1102**, on product purchased by Rocky Mount, use 4-digit Rocky Mount supplier code "1070". (Marking indicated by YYYYYY is the current 5- or 6-digit Rocky Mount supplier code assigned to Rocky Mount suppliers.).



YYYYYY

Unless the Supplier is otherwise directed, the above specification requires all development and production parts to be physically marked with an acceptance symbol to signify compliance to specified requirements. The acceptance marking symbol is known as an "A" stamp.

The stamp consists of a .160/1.000 diameter with an easily recognizable letter "A" contained therein. The first two digits of the 5-digit code are placed above the cross bar and the last three digits of the 5-digit code are placed below the cross bar (X = 5-digit code, see diagram).

It is necessary, have one stamp made for each of the vendor codes listed above. Beneath the circle "A" stamp, place the current 5 or 6 digit Rocky Mount supplier code assigned by Rocky Mount. (Y = the current 5- or 6-digit Rocky Mount assigned supplier code)

Marking shall meet the requirement of **ES-0465**, Paragraph 1. The marking referenced in ES-0465, Paragraph 1.3 supersedes AMS 2800. If no facility code is specified on the engineering drawing, contact the Honeywell Buyer for marking directions.

If the Honeywell drawing does not reference a specific marking requirements

Contact the Honeywell Buyer for direction.

Parts being purchased at a SF501 level, "Semi-Finished Parts":

Require marking IAW AS 478-37. Parts are not to be permanently marked with the SF 501 designation.

200.7 Glendale Orders Only

Supplier shall use Honeywell assigned serial numbers.

200.8 South Bend Orders Only

1. Each supplier furnishing product is assigned a supplier identification number by site Material Quality Assurance.
2. Exceptions to these requirements are "Standard Hardware" supply companies, forging, casting and certain molded rubber product suppliers where alternate identification methods, such as trademarks or specification driven supplier identification codes are used.
3. When the part number is required to be marked on the part, the supplier identification number shall be marked using the same size and method as the part number.
4. Unless the drawing identifies specific location, the supplier identification number may be on the part above, below or after the part number.
5. If the part number and supplier identification number is stamped on the same line, spacing equivalent to four digits shall be left between the part number and the identification number. No dash is permitted between the part number and the supplier identification i.e., 2601234B A180.

Product Serialization

1. Product requiring serialization of individual parts will be identified using the method per drawing specification.
2. A controlled serial number prefix and a block of numbers will be selected by the supplier. This serial number shall appear on all certifications and data sheets provided by the supplier. The supplier shall not duplicate serial numbers. Ref. AI-488.

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200.9 Minneapolis Orders Only

When material item(s) supplied on the purchase order are to be serialized as required by the Honeywell drawing, Honeywell concurrence must be obtained on the serial numbers to be used. This is required before initial shipment of product to Honeywell.

200.10 Deer Valley Orders Only

The following marking requirements apply only to Line Replaceable Units (LRUs) and Line Replaceable Modules (LRMs) that undergo final testing at the supplier.

The following shall be stamped, in contrasting permanent ink, on each unit by the supplier before shipment:

- a. The letters F.T. indicating the successful completion of functional test.
- b. The date of functional test completion.
- c. The test technician stamp of who completed the functional test on the unit.
- d. The inspection stamp of who performed final inspection on the unit.

The acceptance stamp of who verified successful completion of functional test on the unit may be used, with Honeywell concurrence, as an alternate to "c": and "d" above.

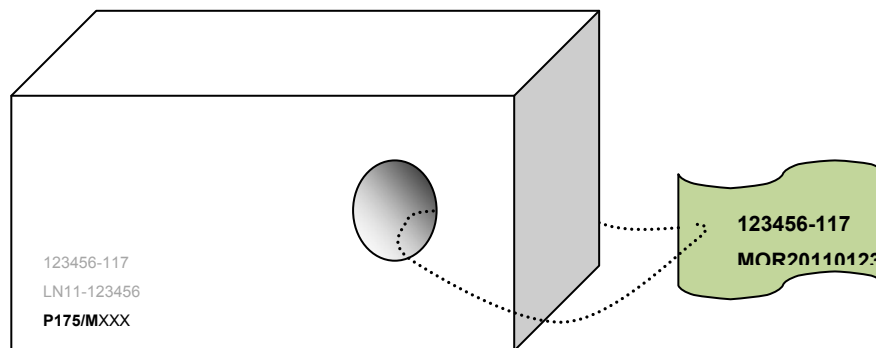
Stamps shall be placed as near to the unit nameplate as possible. When units are too small and sufficient space is not available, F.T. stamps may be placed on bag and tag labels or on C of C. Contact the buyer if you have questions or require clarification.

200.11 Olomouc Orders Only **

RMRA Marking

Additional marking requirements are required for parts delivered on the basis of approved RMRA.

1. If "P175/MXXX" marking format is required by the RMRA disposition this marking shall be applied on the part using the marking method, size and location specified by the engineering drawing, unless otherwise directed by the RMRA.
2. One green tag containing information about Part Number and RMRA Number shall be firmly fastened to the part or package for small parts. The size of the tag shall be approximately 2.5 by 5 inch (65 by 130 mm) and minimum height of letters shall be 0.4 inch (10 mm). If the protective packaging is applied the tag shall be clearly visible without removing the parts from the protective packaging.



Revisions: Added new paragraph, 200.11.

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SPOC 203 – Design of Special Tools and Gages

203.1 Honeywell Site Specifications

203.1.1 Phoenix Orders Only

Tools and Gages

When the tool / gage is accepted by Honeywell, send the *Form PX4087* to the Honeywell Buyer. The Buyer can ask for more documentation (for example, FAIR, photo, drawing) before payment. The PX4087 forms may be obtained from the Honeywell Buyer.

Gages

Design gages and inspection equipment as shown in QPS 203-1.

Tools

Make tool designs on the standard drawing vellum/prints for microfilming. Tooling molds must be capable of making a pre-determined number of satisfactory parts.

203.1.2 Tempe Orders Only

Tools

Make tool designs on the drawing vellum/prints for microfilming.

Gages

Send two engineering drawings of the gage design (or equivalent) and the Gage Operating Instruction (GOI) to the Tempe Gage Engineer, Department 41-99, for approval.

If approved by Honeywell, one copy is signed and returned to the Supplier.

If not approved, the changes are marked on one copy and returned to the Supplier for revision.

Revise the design and re-submit one engineering drawing.

Forward the initial vellums to Tempe Quality Assurance, Gage Engineering 30 days after the acceptable of the gage. The GOIs, gage designs and the vellums are the property of Honeywell.

Send all special gages to Tempe Metrology for acceptance.

Ship to:

Honeywell Aerospace
Tool Control Dept 41-80
1300 W. Warner Road
Tempe, Arizona, 85282
PO# _____

Attention: CRIB 19

{Mark package "NEW" or "RETURNED" tooling.}

When requesting pick up from the Honeywell Tempe Transportation Department call:
(480) 592-5467 (Shipping Transportation)

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203.1.3 Tucson Orders Only

Tooling

Send a sketch of all tooling in 15 days or less from the date of the Purchase Order. Identify the sketches with the applicable revision letter (that is, N/C, A, B).

Show the Honeywell tool number and the critical dimensions, for example, the locating points.

Send all design prints, drawings, sketches or other data for the manufacture of tooling to the Buyer.

Send a *Tool Inspection Report (Form AE-1404)* with the completed tooling. Tooling received with no *Form AE-1404* is sent back to the Supplier. The Supplier pays the cost.

203.1.4 GmbH Raunheim Orders Only

Tooling

Send a sketch of all tooling in 15 days or less from the date of the Purchase Order. Identify the sketches with the applicable revision letter (that is, N/C, A, B).

Show the Honeywell tool number and the critical dimensions, for example, the locating points.

Send all design prints, drawings, sketches or other data for the manufacture of tooling to the Buyer.

Send a *Tool Inspection Report* with the completed tooling. Tooling received with no *Tool Inspection Report* is sent back to the Supplier. The Supplier pays the cost.

203.1.5 Yeovil Orders Only

All equipment, e.g. autoclaves, ovens, presses, custom tooling used for the curing of composites or adhesives shall meet the requirements of NGPS 989.

- Each tool for Class 1 or Class A parts shall be temperature surveyed to determine an appropriate cure cycle for the component being produced. This must be formally approved by the Honeywell Aerospace Yeovil (HAY) Materials Laboratory prior to production. Multi-component cures will be controlled by the component having the longest cure cycle which shall be demonstrated by surveying with the maximum load to be processed.
- The suitability of the tool must be verified by the manufacture of a production component which must satisfy the visible, dimensional (ICY requirements), non-destructive and destructive requirements of the relevant NGMS, NGPS, drawing or Technique Sheet.
- A component tear down procedure shall be used for the initial approval of the process and the manufacture control verification of vital and Category F parts as follows :
 - Vital and Category F parts : 1st, 26th, 51st, 101st and every subsequent 100th part thereafter.
 - Grade A (or class 1 and 2) parts : 1st off only.
 - Grade B (class 3 or unclassified) parts : 1st off only, or this tear down may be substituted by a full NDT report by agreement with HAY Materials Laboratory.
 - The tear down process shall provide information to confirm the suitability of the part by, where possible, the preparation and evaluation of mechanical test specimens and the physical destruction of the part. The procedure shall be agreed by HAY Materials Laboratory prior to manufacture, the resulting report must also be approved by HAY Materials Laboratory.
 - For handed and similar parts the tool try out and production tear down requirement may be satisfied by a HAY similar component.
- Significant changes to process, materials, equipment, tooling, location of manufacture may require reapproval of the temperature survey and tear down component.

203.2 Report of Loss, Damage, or Destruction, or Company Out-of-Business

Gages – loss, damage, destruction

Notify Buyer promptly of the loss, damage or destruction of gages.

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Include:

- Ownership, Purchase Order number, contract number or equivalent code.
- A full description of the items, units, or assemblies lost, damaged, or destroyed. Include U.S. or other government property.
- Date and cause of loss, damage, or destruction, if known.
- Recommendations for disposition of the property. The cost of the repairs for damage – estimates if accurate costs are not available.
- The corrective action implemented to prevent more loss, damage, or destruction.
- Other related data.

Tooling / Gages – company going out of business

If company is going out of business, return all Honeywell-owned Tooling / Gages in the good condition.

203.3 Identification

Gages

Permanently identify the gage with the Honeywell prefix letter, number, suffix letter, and agency/code letters shown on the Purchase Order. Use an electric pencil, or steel stamp, or permanently attach a tag, to put the data on the gage.

Use the gage number of the parent gage on all loose details of the gage. Permanently identify the primary (or base) fixture with the number of pieces (primary plus loose details).

Tools

Paint a yellow dot on all government-owned special tools for identification, or identify as described in the Purchase Order.

203.4 Payment

Tools

No payment is made if the identification mark or tag is missing.

Tools and gages

Supply a Certified Tool / Gage List, a photograph of each tool or gage, and an invoice to the Buyer.

The photograph must show the entire tool and the Honeywell tool identification. If the tool is small, include a card that shows the tool identification in the photograph of the tool.

No payment is made until Honeywell has accepted the tooling or gaging.

203.5 Certified Tool / Gage List

The Certified Tool / Gage List contains all special tools or gages manufactured or acquired by the Supplier and Sub-Tier Suppliers. The Certified Tool / Gage List must include:

- Tool / gage name
- Supplier tool / gage identification number
- Honeywell tool / gage identification number (if supplied)
- Contract or equivalent code
- Purchase Order number
- Total quantity

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- Cost per unit (if applicable)
- Part numbers used to manufacture
- Weight
- Material content (wood, steel, aluminum, etc.)
- Supplier name
- Signature of the company's approved representative
- Date of certification
- Program name (if supplied)
- Honeywell Purchase Order site supplier code.

203.6 Design and Maintenance

Supplier shall establish maintenance instructions, including storage and preservation, and required interval.

Revisions: No changes.

SPOC 228 – Shipments for Cost-Reimbursable Government Contracts

The Supplier shall put this statement on the Bill of Lading:

“Transportation is for the (*name of Government Agency*). The transportation costs paid to the carrier by the Shipper or the Receiver are reimbursed by the US Government as stated in the Cost Reimbursable Contract Number _____. The agency at (*Agency address in the contract*) can confirm this information.”

Revisions: No changes.

SPOC 234 – Direct Shipments

234.1 Scope

Direct ship is an FAA-approved authorization to allow the transfer of product from a Honeywell Aerospace manufacturing site that is not listed on the current Production Certificate, or an approved external manufacturing supplier, to a non-military OEM customer acting in behalf of a Honeywell Aerospace site that is listed on the Production Certificate.

234.2 Direct Shipment Authorization

Direct shipment requires authorization from the appropriate Honeywell Aerospace Business Program Manager, Business Controls and Quality Assurance Departments. A Letter of Authorization (DSA) is issued from the Honeywell Quality Assurance Department authorizing the direct shipment for specific part numbers for a limited time period and/or limited quantity of parts to a specific end-item user. Send DSA requests to the respective Honeywell Program Manager through the Honeywell Buyer.

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234.3 Redmond and Deer Valley Orders Only

Delegation of Direct Ship Authority – Honeywell may delegate to the Supplier the authority to direct ship material to designated customers. Seller shall submit a Certificate of Compliance to the customer with the material and a copy to the Buyer. Sellers with the delegation authority are subject to FAA/Honeywell customer surveillance.

Revisions: No changes.

SPOC 235 – Drop Shipment of a Honeywell Purchase Order to another Honeywell Supplier

235.1 Scope

The following requirements apply to Honeywell suppliers when they are instructed to ship material to another Honeywell supplier.

235.2 Prior to the Drop Shipment

The Supplier shall ensure that the hardware:

- Meets all Purchase Order requirements (e.g., SPOC, engineering drawing, Manufacturing Operations & Tooling [MOT] or maintenance technical data)

The Supplier cannot drop ship if the hardware:

- Is a sample
- First Article Inspection Report (FAIR) has not been completed (**SPOC 124**)
- Is a research part
- Requires a Chemical and Metallurgical Report (CMR)
- Product has not been released in accordance with **SPOC 149**
- Is a Special Federal Aviation Regulation (SFAR) 36 repair

235.3 Immediately upon Shipment of Hardware

The Supplier shall forward the following to the Honeywell Buyer:

- A shipping receipt with reference to the Honeywell-applicable site-assigned supplier code
- Copy of packing slip, including Honeywell Purchase Order number, release, and part number
- All required identifications for traceability (i.e., inspection certificates, physical/chemical test reports)
- A copy of the common carrier prepaid (third-party billing to Honeywell) freight bill
- Bill of lading

Revisions: No changes.

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SPOC 236 – Drop Shipment from a Sub-Tier Supplier to Honeywell PAH Sites

236.1 Scope

The following requirements apply to Honeywell suppliers if shipments are made from a sub-tier supplier directly to a Honeywell PAH site. Honeywell PAH sites are listed on the FAA Production Certificates issued to Honeywell.

236.2 Prior to the Shipment

The Supplier is responsible:

- For flowing through applicable requirements to the sub-tier supplier
- For the hardware meeting all Purchase Order requirements (e.g., SPOC, engineering drawing, Manufacturing Operations & Tooling [MOT] or maintenance technical data)

The hardware cannot drop ship if:

- It is a sample
- A First Article Inspection Report (FAIR) has not been completed (**SPOC 124**)
- It is a research part
- It requires a Chemical and Metallurgical Report (CMR)
- The product has not been released in accordance with **SPOC 149**
- It is a Special Federal Aviation Regulation (SFAR) 36 repair

236.3 Immediately upon Shipment of Hardware

The Supplier shall ensure that the sub-tier supplier forwards the following to the Honeywell Buyer:

- A shipping receipt with reference to the Honeywell-applicable site-assigned supplier code
- Copy of packing slip, including Honeywell Purchase Order number, release, and part number
- All required identifications for traceability (i.e., inspection certificates, physical/chemical test reports)
- A copy of the common carrier prepaid (third-party billing to Honeywell) freight bill
- Bill of lading

Revisions: No changes.

**Revised / **Added*

SPOC 237 – Return of Scrap *

The Supplier shall segregate and return, at no cost to Honeywell, all scrap material incurred in producing parts to the Honeywell site initiating the Purchase Order. Note: This is only valid for Honeywell Free Issued Materials.*

The Supplier shall specify the amount and alloy, or the specification, for the scrap material on the packing list.

Government-owned material determined to be scrap should not be disposed of without obtaining prior written approval from the government representative.

Revisions: Added note in first paragraph clarifying material to be returned.

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SPOC 238 – Military-Type Specific-Application and Multi-Application Re-usable Containers

238.1 Scope

The Supplier shall either be an approved source, or procure Multi-Application Re-usable Containers units from approved sources established by the Container Control Point shown in the table below:

Container Type	Container Control Point	Document Name (Supplier List)
Container part number prefix 13414 and 15450	NAVICP – Naval Inventory Control Point, PHS&T Engineering Programs Branch	NAVICP “Approved Sources Of Multi-Application Re-usable Containers”
MS27684 prefixed exterior metal drums and related items (MIL-D-6054)	DSCP – Defense Supply Center, Philadelphia	DSCP “Sample Sources For Military Standard Drums”
Specific part number for the application	Service-specific	Dedicated drawing

238.2 Government Source Inspection

When required by contract or other document, shipments of containers require Government Source Inspection prior to release.

Non-conformances detected by the Supplier shall be referred to the Procurement Contract Office (PCO), who will coordinate with the Container Control Point, or Cognizant Field Activity (CFA), for determination of fitness for use.

Revisions: No changes.

*Revised / **Added

SPOC 239 – Packaging and Package Identification *

239.1 GENERAL REQUIREMENTS

239.1.0 Phoenix Engines Orders Only

In addition to the requirements of SPOC 239, the supplier shall follow the Packaging and Shipping Requirements located on the Supplier Portal at:

<https://www.supplier.honeywell.com>

Path is Aerospace Supplier Portal > Documents > Shipping. Both “3G10 Phoenix Supplier Packaging and Shipping Requirements”, and “3G10-ATT1” are posted to this location. Click on and download the documents.

239.1.1 Product Delivery

The Supplier must ensure that all items are packaged and preserved adequately to guarantee that the hardware is delivered to Honeywell undamaged and free of corrosion. Unless otherwise specified, all hardware shall be packaged and preserved in accordance with the drawing, applicable specifications, or purchase order requirements. If there is no drawing or specification requirement, hardware shall be packaged and identified in accordance with Aerospace Industry Standards (ATA Spec 300, ASTM-D-3951-98 and MIL-STD-2073).

239.1.2 Weight Limitations

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Hand-handled containers, including bundles are not to exceed 50 pounds (22.7 KG) gross weight. Containers in excess of 50 pounds shall be put on skids or pallets to permit mechanical handling. Hand-handled containers may be skidded or palletized to consolidate a shipment, but containers must be properly identified, stacked, and secured to the pallet. Shipping skids/pallets or boxes shall not exceed 2,500 pounds (1,136 KG) gross weight, and have appropriately placed pallet jack compatible fork truck slots or openings to allow mechanical handling.

239.1.3 Prohibited Packaging

- Newspaper wadding, loose-fill dunnage, macerated (shredded) paper, peanut foam, eco-foam, shredded materials, discarded paper, and broken or recycled foam-in-place are not acceptable as packing (dunnage) materials in any container.
- Paper wraps, envelopes or bags as exterior packages or any packaging material in the form of egg boxes, egg crate trays or dividers. Padded mailers (jiffy bags and similar) with bubble cushioning or packaging material which contains Penta DBE or Octa DBE.
- Bags made from bubble wrap or grocery paper sacks shall not be used as unit packs.
- Wood containers constructed from OSB wafer board, particle board, very thin plywood or any other manufactured wood product which is fragile and will not tolerate handling, stacking and re-closing throughout the entire transportation system and subsequent supply chain handling and forwarding.
- Used containers unless specifically designed to be reusable and are in adequate shape. Polystyrene die cuts are prohibited except for small, light non-critical items.
- Parts that have contact preservation (oil), or have residual fluids or operating oils, shall not be packed/wrapped in paper bags, bubble wrap, sheet foam, or Kraft paper.
- Skin packs that have film-to-film attachments under the item, making part removal difficult, or subjecting the item to damage during opening. Multi-compartment skins packs or blister packs unless they can be positively re-closed after opening, and provide continued part protection.
- Any type of container closure, or lack of a closure, which will result in safety issues, damaged parts or unserviceable packaging when opened.
- Any packaging material which may cause Foreign Object Damage (FOD) or part contamination, part obstruction or leave non-preservation residue.

239.1.4 Inappropriate Closures

Staples are prohibited as a means of closure for exterior shipping containers. Staples are permitted in non-closure portions of box type containers, such as bottom closure, side stitching, etc. The portion of the container meant to be opened must remain staple-free. Staples and other penetrating forms of unit package closure also are prohibited for use on bags (polyethylene or paper), bubble wrap, sheet foam, Kraft paper or other intermediate or interior containers. These types of unit packages must be heat sealed (if applicable) or sealed by folding, taping, Zip-Lok, or zipper sealing, etc.

239.1.5 Fluid-Soaked Packages

Fluid tight packaging shall be as required by hazardous material / dangerous goods regulations and as follows:

- Bagged and the heat-sealed closed in accordance with MIL-DTL-117. The bags shall be made from MIL-PRF-22191, Type I material also known as "bearing bag" material. This method is required for corrodible parts which have contact preservative.
- For non-corrodible items, residual fluids may be contained by bagging and sealing in heavy duty (6 mil or thicker) zip lock type polyethylene bag.
- If the item has internal fluids which may be released during transportation, the first bag shall be surrounded by appropriate absorbent packing and enclosed in a second fluid tight bag or package.

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Note: The item must be cushioned & the first bag must be strong enough to avoid puncture during transportation, as contamination from the absorbent material may FOD the item.

239.1.6 Package Design Characteristics

239.1.6.1 Exterior Shipping Container

The exterior shipping container shall be sufficiently strong and functional to ensure product delivery, packaging identification and subsequent distribution and must withstand superimposed stacking loads, both as presented to the carrier and as may be expected during shipment.

239.1.7 Hazardous Materials and Dangerous Goods

The Supplier shall define, mark, label and prepare for hazardous goods, dangerous material and/or dangerous equipment for shipment in accordance with Department of Transportation HM181, CFR Title 49, "Dangerous Goods", as classified by IATA, IMDG or ICAO.

Due to regulation requirements and potential liability issues, Honeywell may report violations of hazardous materials & dangerous goods regulations to the appropriate governmental agencies.

Note: Jet fuel is a hazardous substance. If an item is purged with 1010 oil, label the exterior shipping container "Purged with MIL-PRF-6081, Grade 1010 Oil". If fuel-wetted items have significant cavities that cannot be flushed, even if purged, HAZ MAT shipment may be required.

239.1.8 International Bug Ban on Containers with Solid Wood

Containers, dunnage, pallets & skids other than those containing non-manufactured coniferous lumber shall be used when possible. If containers with solid wood components must be used, they shall be certified and marked bug free in accordance with ISPM 15 and/or as indicated by <http://www.aphis.usda.gov/ppq/swp/import.html>.

239.2 PACKAGE IDENTIFICATION REQUIREMENTS

239.2.1 Application

Bar code identification (labeling) is required on all exterior containers. Labels must be located to allow the markings to be easily read when stored on shelves or stacked, and to ensure marking will not be destroyed when the container is opened for inspection. When stencils are used, ink must be black waterproof.

Instead of using labels, it is permissible to print identification information directly on the container or packing slip as long as all other requirements are met.

239.2.2 Bar Coding General

Bar code labels shall be printed directly on or be permanently affixed to the exterior shipping container. Additional internal packaging requirements may be specified by the Purchase Order, specification and/or drawing.

Bar codes shall be Code 39 symbology, also referred to as 3 of 9, and printed in medium density.

Bar code height shall be 0.375 inches. The human readable text shall be in English. The characters shall be 0.110 to 0.125 in high, & shall be left justified over the bar code information.

The margin, or quiet zone, is an area surrounding each bar code and shall be a minimum of 0.25 inches at the left and right end of each bar code to decrease bar code reading errors.

Data identifiers shall appear in text on the label within parentheses immediately following the item (such as "Part Number (P)"). Data identifiers shall be programmed to precede the item in the bar code (part number text "3001488-113" coded as "P3001488- 113"). No space, or other character, shall be allowed between the data identifier and the part number.

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Label material/paper shall be white with black printing for maximum contrast. The label may be self-adhesive, either pressure-sensitive or dry gummed, or held in place on the package with a self-adhesive over-laminate.



Figure 1 (Critical Label Spacing)

Critical spacing dimensions for all fields on exterior container label.

Readability:

- Bar Codes shall conform to AIM BC1.
- Check digits and confirmation characters (\$, /, + %) shall not be used.
- X dimension (width of narrow segment) shall be from .010 to .015 inches. Ratio of average width of wide sections to average width of narrow sections shall be from 2.8:1 to 3.2:1. The inter-character gap should be the same as the X dimension.
- Reflectivity and contrast shall be measured at 660 nanometers. Bar codes shall meet one of the following contrast requirements:
 - ◆ Print contrast signal $\geq 75\%$, or
 - ◆ Minimum reflectance difference $\geq 37.5\%$

Distinguish numeric zeros from the letter "O" by using "Ø", "■" or similar character for human-readable data.

239.2.2 Olathe Orders Only

Shipping Labels (Exterior Containers): Data Identifiers (Alpha Characters) shall not be included in the bar codes. Label size shall be 4 x 6 maximum. Minimum size shall be dependent on barcode spacing size and box size. All other requirements of 239.2 apply.

Interior Labels (Interior Containers): All interior containers require Bar Code identification (labeling). Data Identifiers (Alpha Characters) shall not be included in the bar codes. All other requirements of 239.2 apply.

Purchased Component Interior Labels: Component package labels shall have the following human readable and Barcode fields at a minimum:

- Part Number
- Quantity
- Country of Origin with barcode optional

Purchased End Item Interior Labels: Purchased End Items shall be individually packaged, one per package, and each finished unit package shall be human readable and bar code labeled.

Purchased End Item Package labels shall have the following human readable and Barcode fields at minimum:

- Part Number
- Serial Number
- Mod Status (where applicable) with barcode optional
- Country of Origin with barcode optional

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239.2.3 Exterior Container Labels

A representative sample of an acceptable label is shown in Figure 2.

- Minimum label size shall be 3.937 inches (100 mm) high by 6.0 inches (152 mm) wide.
- Maximum label size shall be 5.0 inches (127 mm) high by 6.5 inches (165 mm) wide.

From: Supplier Name 1234 E. Drive Rd. City, State, Zip...	To: Honeywell Engines 402 S. 36th Ave. Phoenix, AZ 85072
P.O. Number(K): G00002164 	
Item Number(4K): 0052 	
Part Number(P): 2-063-320-31 	
Quantity(Q): 1234567 	Shipment Number: 12345678
Optional(Z): H12345678901 	Box ___ of ___
COUNTRY OF ORIGIN: _____	

Figure 2: Sample Exterior Container (Label not to scale)
"To" address to be as indicated on the purchase order.

Note: Some purchase orders show a combination of purchase order number and line item number (example: G00002164-0052). In this example, the 0052 is not part of the purchase order number, but rather is the line item number, which shall go on the second line of the label (Figure 2).

Note: Hand annotation of Box _ of _ numbers is acceptable and is required on boxes only. This field required for all boxes including Box 1 of 1.

The optional block is for additional supplier information, which may be human-read by Honeywell, but will not be read by bar code scanners. Data Identifiers, including prefix, shall be separated from item by a colon.

239.2.3.1 Detailed Field Requirements

- Data Area is space containing field title, human-readable data, and bar coded data.
- Data Area dimensions are shown in (Height, Width) inches; these are minimum values.
- Valid data identifiers are shown in parenthesis prefixing bar code item. The data identifier must be imbedded in the bar code as a data identifier - not as the data itself. Character lengths shown do not include data identifiers.

Data identifiers Bar code prefix)	Item
K	Purchase Order
4K	Line Item Number

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P	Part Number
Q	Quantity
3S	Packing Slip Number
Z	Optional (anything except s/n or l/n literal)

Figure 2 Detailed Field Requirements

Addresses	Data Area (.80, 6.00) for both "From:" and "To:" addresses
(K) PO Number	15 alphanumeric characters, left-justified (flush left) & null filled. (.60, 6.00)
(4K) Line Item Number	4 alphanumeric characters, right-justified with leading zeroes (.60, 6.00). For example, print "0023R" and not "23R", and bar code "4K0023R", not "4K23R". <u>Note:</u> Exceptions to the 4-character length requirement: 1) For SAP POs, 5 alphanumeric characters are required, 2) Rework "W" P.O. item number may be followed by an 'R' making item number 5 alphanumeric characters in length
(P) P/N	25 alphanumeric characters, left-justified null filled. (.60, 6.00)
(Q) Quantity	7 numeric characters, left-justified null filled. (.60, 2.70)
(3S) Shipment Number	8 alphanumeric characters, left-justified null filled (.60, 3.30). If truncation of shipment number is required, only the last 5 right hand numbers shall be used
(Z) Optional	12 alphanumeric characters, left-justified null filled (.80, 2.70)
Boxes	No bar code. Readable text should be .20 to .25 inches high and may be hand-written (.80, 3.30). Legible written characters are acceptable.
Country of Origin	No bar code.

Note: "Null filled" refers to null, meaning "nothing". If a field is null filled, it's filled with nothing.

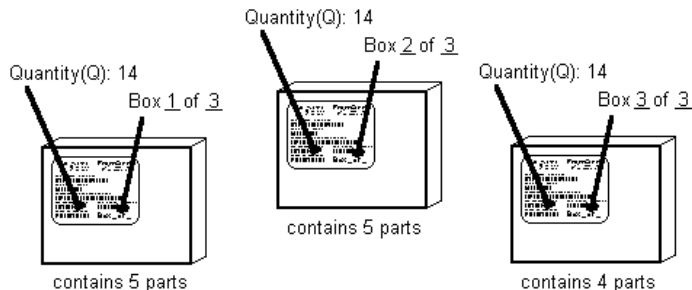


Figure 3: Shipment of 14 Parts with Same P.O. Number, Item, Part Number, Split Across Three Boxes

Note the quantity shown on the Exterior Container for any order shall reflect the quantities that are in the entire order.

239.2.4 Intermediate Package Marking*

Intermediate packages, when used, shall be marked with the Part number, as specified on the PO, PO Number, Quantity and Unit of Measure (each, feet, etc.) and Supplier's Name (bar coding is optional). If product is shelf life sensitive, packaging is to be marked by the supplier with the expiration date.*

239.2.5 Hand Tags

When the packaging material prohibits the use of containers that allow the application of self-adhesive labels, a tag shall be securely fastened to the material. The Supplier shall ensure that the location and

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attachment of the tag, under normal conditions, will not cause damage or premature removal of the tag prior to reaching Honeywell.

239.2.6 Additional Container Identification

When there are identical part numbers with multiple lot numbers, serial numbers, life tracking numbers and/or multiple orders within the same exterior shipping container, it shall be indicated on the exterior container, such as: multiple lot numbers in this container, multiple serial numbers in this container, multiple life tracking numbers and/or, multiple orders enclosed.

239.2.7 Shipping Documents / Packing Slip

Shipping documents; including the C of C, and/or the packing list required by SPOC 140, shall be attached to the exterior of container #1 in a weather-proof envelope marked "Packing List Enclosed. Specific additive customer requirements will be specified via PO and linked to receiving inspection line items. The envelope may be placed in a Tyvec envelope and securely attached to the exterior of the #1 container to prevent damage.

Identification and traceability (I&T) sheets, if provided, shall be placed inside the container or inside Box 1 of a multiple container shipment, at the top of the container (on top of the item shipped). ATP sheets shall be attached to each item or to the first wrap or bag of each item if direct item attachment is not practical.

239.2.8 Separation of Multiple Part Numbers, Purchase Orders, Item Numbers and Addresses

Shipping containers that contain multiple part number or purchase order items shall be clearly identified on the outside of the container as containing such. Place a label for each internal container on the exterior of the consolidation container. Orders to separate addresses shall be packaged separately and routed accordingly.

239.2.9 Airworthiness Certification, Labeling and Consolidation Box Marking

When the PO requires a FAA 8130-3 airworthiness certification or equivalent form (Form 1), the certification form(s) and container identification shall have a bright yellow airworthiness label with bold black printing, similar to that shown in Figure 4, permanently attached to the shipping container.



**Airworthiness
Certification
Enclosed**

Figure 4 Airworthiness Label for Exterior Container

239.2.10 Country of Origin and Marking (includes U.S.A.)

Country of origin marking is mandatory to comply with Customs Regulations or Honeywell requirements

Packaging of articles must be legibly, conspicuously and permanently marked with the parts' country of origin. For a product to be called Made in USA, or claimed to be of US origin without qualifications or limits on the claim, the product must be "all or virtually all" made in the U.S. The term "United States," as referred to in the Enforcement Policy Statement includes the 50 states, the District of Columbia, the U.S. territories and possessions. "All or virtually all" means that all significant parts and processing that go into the product must be of U.S. origin. That is, the product should contain no - or negligible - foreign content.

U.S. suppliers should contact the Federal Trade Commission, Division of enforcement, since the phrase "made in U.S.A." is under their jurisdiction. <http://www.ftc.gov/bcp/online/pubs/buspubs/madeusa.htm> provides guidance. For the purpose of this SPOC, the designation "U.S.A." is not adequate country of origin marking.

It is the supplier's responsibility to ensure that marking on the product reflects the true country of origin of the product and that no illegal transshipment through a third country has occurred. The supplier must also ascertain that foreign suppliers are familiar with the country of origin rules.

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239.3 Electro-Static Discharge (ESD) Labeling and Packaging*

Packaging and labeling for ESD product should comply with Mil-Std-1686 or ANSI/ESD S20.20 (reference SPOC 354).

239.4 Refrigerated, Frozen or Cryogenically-Stored Items

For refrigerated, frozen or cryogenically-stored product, the supplier shall display the type of storage necessary on the outside of the package. Packages must be adequately thermally insulated to ensure temperature requirements are maintained through reasonably anticipated transportation, in-transit delays, transfers and destination.

The supplier's container shall be marked with:

- Net contents
- Manufacturer's production lot number
- Date of manufacture and expiration date
- Date and time shipped
- Warning notes and safety precautions in accordance with federal and state safety and health regulations.

239.4.1 Specific Frozen Packaging Requirements

Supplier shall package material in dry ice to maintain -40 degrees Fahrenheit during shipment, and must use a 24 hour delivery service for this shipment.

Revisions: Paragraph 239.2.4 added requirement for expiration date to be noted on intermediate packaging if product is shelf life sensitive. Paragraph 239.3 added reference to ANSI/ESD S20.20. Deleted Clearwater Orders Only paragraph 239.3.1.

SPOC 241 – Identification of Substantiation Test Items

The Supplier must clearly mark the packing list and each package with "SUBSTANTIATION TEST ITEM".

Revisions: No changes.

SPOC 246 – Exemption of Sales and Use Taxes

This order is exempt from Arizona and Phoenix Sales and Use taxes because the purchased items are equipment, machinery, or rentals to be used directly in manufacturing, processing, fabricating, or metallurgical operations.

Revisions: No changes.

SPOC 259 – Freight to be Paid by Honeywell

The Supplier shall assess all freight charges for which Honeywell is responsible when the freight is tendered to the carrier.

Honeywell participates in discount programs with national carriers; but discounts accrue only when Honeywell is the payer of the original bill. The Supplier that holds the Honeywell Purchase Order will be charged with any lost discounts.

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Revisions: No changes.

SPOC 260 – Priority Rating

The Supplier shall follow all the provisions of the Defense Priorities and Allocations Systems (DPAS) regulation (15 CFR 700) for this rated order that is certified for national defense use.

See the Purchase Order for the appropriate priority rating (e.g., DO-A1, DX-A1, DO-A4).

Revisions: No changes.

SPOC 267 – Electronic Part Definition (Solid Model)

267.1 Scope

Applicable when using Honeywell-supplied Electronic Part Definition (EPD) databases to manufacture and inspect hardware procured directly by Honeywell or indirectly through a sub-tier supplier.

267.2 Requirements

267.2.1 Software Quality Assurance Plan (SQAP)

The supplier utilizing the Honeywell-supplied EPD databases for the manufacture and inspection of product shall maintain a comprehensive SQAP.

267.2.2 Part Inspection Document (PID)

A PID shall be used that describing the methods for inspection and verification of compliance to the Honeywell-supplied EPD database. The Supplier shall furnish a copy of the PID to Honeywell when requested.

In conjunction with standard layout / inspection practices, the following minimum requirements for part inspection should be utilized as a reference guideline. The PID must contain enough data points to adequately describe the inspected feature:

<i>Feature</i>	<i>Minimum Point Density or Equivalent</i>
Continuous Surface > 10"	1 point per square inch
Continuous Surface < 10"	2 points per square inch
Non Standard Radii	3 points
Diameter	6 points
Aero shapes (Blades, Vanes, Nozzles)	Conventional inspection methods may be used
Core Wrap & Wall Thickness	Conventional inspection methods may be used
Standard Radii (i.e. fillets, corners, etc.) standard gauging may be used	

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267.3 Translation Process

Suppliers shall have a Honeywell approved procedure that outlines their translation process. The documentation must demonstrate traceability and compliance to the EPD database.

267.4 Urbana Orders Only

Suppliers must comply with Urbana procedure # 05-02-735.

Revisions: No changes.

SPOC 270 – FAA Conformity (or Civil Aviation Authority of the Country)

270.1 Conformity Process for Non-Certified Parts

FAA conformity inspection is required for parts under this Purchase Order.

270.2 Conformity Inspection Guidelines

The Supplier shall include all inspections necessary to show that the article conforms to the proposed type design data, and shall document the inspections and make the documentation available as objective evidence. The documentation includes but is not limited to:

- Accomplishment of physical inspections
- Witnessing of installation of critical assemblies
- Witnessing of functional tests
- Verification of company conformity through documented evidence (i.e., Material certifications, special process certifications, shop travelers, work orders).

270.3 Conformity Plan Requirements

The Supplier shall provide a Conformity Plan that:

- Defines how the company conformity will be completed.
- Provides a schedule of when parts will be available.
- Identifies where the parts will be FAA conformed.
- Identifies who will perform the conformities. (FAA, FCAA, DAR)

The Conformity Plan shall be approved by the appropriate Honeywell FAA designee working or assigned to the specific conformity project.

Revisions: No changes.

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SPOC 273 – NASA Required Notification

273.1 Scope

NASA required notification in procurement documentation.

273.2 Requirements

Purchase requests, Purchase Orders, contracts, and subcontracts covering the procurement of flight hardware items for use in manned spacecraft shall contain the two blocks of text shown below either printed, stamped, or added in boldface type. All Honeywell subcontractors and all of their subcontractors, including their lowest tier subcontractors shall include these blocks in all of their procurement documentation:

- **“NOTE:** For use in manned space flight. Materials, manufacturing, and workmanship of highest quality standards are essential to astronaut safety. If the supplier is able to supply the desired item with a quality which is higher than that of the items specified or proposed, the Supplier is requested to bring this fact to the immediate attention of the purchaser.”
- “For all Space Station Freedom hardware, random and systematic errors in any article or material measurement shall not exceed 10 percent of the tolerance of the article or material being measured. Authorization for exceptions shall be requested from Honeywell Aerospace Equipment Systems. Random and systematic errors in any calibration measurement shall not exceed 25 percent of the tolerance of the parameter being measured. Authorization for exceptions shall be requested from Honeywell Aerospace Equipment Systems. Certification of conformance to these requirements shall be provided with each shipment of product. These requirements shall be flowed down to all Sub-Tier Suppliers.”

Revisions: No changes.

SPOC 276 – NASA Product Requirements

276.1 Scope

NASA product requirements for Manned Space Flight.

276.2 Purchase Order Requirements

For Purchase Orders involving product for Manned Space Flight: materials, manufacturing, processes and workmanship of the highest quality standards are essential to Manned Space Flight safety. If the Supplier or its Sub-Tier Suppliers can provide a higher standard of quality than requested in this purchase order and associated SPOCs, the Supplier must bring this information to the attention of the buyer.

The Supplier and its Sub-Tier Suppliers must be approved by Honeywell.

Supplier’s certifications (i.e., material, controlled process, etc.) including those of Supplier’s Sub-Tier Suppliers, in support of this order shall provide an auditable trail back to the Honeywell Purchase Order.

Soldering operations for manned space flight applications must conform to NASA's soldering requirements specified in NHB 5300.4(3A-1) or replacement, unless otherwise noted in the specification control or source control drawing. Evidence of solder operation performance must appear on the packing slip and certificate of conformance for products shipped.

There will be no change in the design of the part, in the material and processes, in its construction or in the manufacturer's part number after the first acceptable unit has been received by Honeywell unless requested and/or approved by Honeywell in writing.

Parts and materials which have been permanently installed in an assembly using soldering, alloying, or other fusing techniques, and are then removed from the assembly for any reason shall not be used again in any flight hardware without specific written approval from Honeywell.

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276.3 Glendale Orders Only

For use in manned space flight. Materials, manufacturing and workmanship of highest quality standards are essential to astronaut safety.

This information shall be stated on any lower tier RFQ's, RFP's and purchase orders pursuant to this contract.

There will be no change in the design of the part, in the material and processes, in its construction or in the manufacturer's part number after the first acceptable unit has been received by Honeywell unless requested and/or approved by Honeywell in writing.

If you are able to supply the desired items with a quality which is higher than that of the items specified or proposed, you are requested to bring this fact to the immediate attention of the Honeywell buyer.

Revisions: No changes.

SPOC 277 – Verification of Hardware

277.1 Scope

Source Inspection of product by Honeywell or its customer at Supplier's facility is required.

277.2 Requirement

The Supplier shall contact HTSI (reference SI 149-02) or other designee as directed by the purchase order, 72 hours in advance of any inspection need. Self-Released suppliers do not carry authority to perform product release for this order. Source Waiver shall not be used for this order.

The supplier shall make available to the buyer's Quality representative any necessary specifications, documents, facilities and assistance. Evidence of buyer's Quality representative's acceptance/certification shall accompany shipment.

277.3 Minneapolis Orders Only

For multi-layer boards, all inner layers comprising this order must be inspected in-process by the buyer's quality representative prior to inner layer lamination. If the specification requires electrical testing, a certification of compliance for electrical test must be included with each shipment. The buyer's source inspections include surveillance of products, procedures and facilities.

Notify the seller's procurement representative at least five (5) working days prior to the time materials are ready for source inspection. At the time of such notification, the buyer's procurement quality assurance representative may choose to waive this requirement.

Material may not be shipped without evidence of the buyer's quality representative's approval of the above examinations or documented inspection waiver notification from the buyer. The buyer reserves the right to make final acceptance upon satisfactory receipt of product at buyer's facility.

277.4 Clearwater Orders Only

Contact the Honeywell buyer at least ten (10) work days in advance of inspection to make arrangements for the source inspector's visit.

Revisions: No changes.

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*Revised / **Added

SPOC 308 – Printed Wiring Boards (PWB) *

308.1 Glendale Orders Only

Certificate of Conformance shall specify serial number(s) of supplied PWB's.

308.2 Clearwater Orders Only

100% electrical net list testing shall be conducted after solder mask. If the board has a bonded heat sink, 100% verification that the heat sink is not shorted to board is required.

The number and location of test coupons shall be in accordance with the Honeywell specification. Each coupon or test strip shall be suitably marked to retain traceability.

Thermally stressed x and y coupons shall be analyzed by the supplier to determine acceptability of the product prior to shipment to Honeywell. Test coupons shall be delivered to Honeywell. Any discrepancy shall have prior written approval by Honeywell.

When the Honeywell heat sink bonding spec (FPC 29350-01) is called out, the following minimum requirements are applicable to the bonding of PWBs to heat sinks:

1. Nickel plate
2. Grit blast surfaces of heat sink
3. Clean surfaces of heat sink with pumice scrub or equivalent followed by an isopropyl alcohol rinse
4. Store pre-preg/film bonding materials in a vacuum storage cabinet or equivalent for 1 hour prior to bonding
5. Bond assembly

The manufacturer shall build, screen, and inspect flexible and rigid-flexible printed wiring products in accordance with Mil-P-50884.

308.3 Olathe Orders Only

Quality Conformance Inspection data in accordance with IPC-6012 (latest revision) including the solderability test data shall be supplied with each lot of printed wiring boards. Coupons or sample parts used for this inspection shall be retained by the supplier and shall be supplied only when requested by Honeywell.

For Purchased Circuit Card Assemblies, supplier shall comply with 001-06010-0000, Honeywell Standards and Processes for Circuit Card Assemblies and Bare Boards and 001-00072-0000, Honeywell Procurement Specification for Printed Circuits Boards.

308.4 Urbana Orders Only

Use Printed Wiring Board specification 06-03-005.

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308.5 Albuquerque Orders Only

Identification of Product:

In addition to the date of manufacture (DOM) being identified on each individual PWB as part of the PWB serial number, all PWB product that has been built to this specification shall be segregated by lot and shall have the DOM plainly visible on the outside of the bag or container. As an example, if the supplier is delivering multiple lots on the same purchase order, each lot shall be individually packaged and the date code (DOM) marked on each package.

Solderability Expiration Dates (SEDs):

Honeywell Albuquerque PWB's shall be considered shelf life limited product.

Requirements specified by Honeywell International Inc. Defense & Space Electronic Systems, Albuquerque have the following shelf life:

- Plate and fuse, ENIG and NiPdAu: Thirty-six (36) months
- Hot Air Solder Level (HASL): Eighteen (18) months

It shall be the responsibility of the supplier to ensure that no product is delivered to Honeywell DSES Albuquerque that has less than three (3) months remaining shelf life or ensure that the product is question conforms to the requirements as identified by the requirements below.

Supplier PWB SED Disposition:

The supplier shall either internally or through an approved outside test facility perform a solderability test per IPC-J-STD-003 for Class 3 Category 3 (maximum coating durability) product. The testing shall be performed on either a representative sample board from the lot or a solder coupon. If the sample coupon is tested, the storage environment for the coupon shall be equivalent to the storage environment of the corresponding lot of boards. Certificate of conformance indicating acceptable retest shall be included with the lot of boards.

A new solderability expiration date code based on the solderability test date shall be assigned to the lot of boards. The new solderability expiration date shall only be good for an additional eighteen (18) months. The solderability test acceptance date shall be marked on the board using the following designator: **S/AYYWW**

The original PWB serial number identifier YYWWXXXX shall remain on the board.

Revisions: Paragraph 308.1, Toronto Orders Only section deleted as QAS 80/2 is obsolete. New HPS1101 covers Toronto requirements (reference SPOC 165.3). Paragraph 308.3 deleted. HPS1011 covers the appropriate requirements. Remaining paragraphs renumbered.

**Revised / **Added*

SPOC 309 – Flexible & Rigid Flex Printed Wiring Boards *

309.1 Glendale Orders Only

In addition to the coupons required for QCI testing, each panel shall have at least one corresponding serialized coupon that shall be submitted to Honeywell with the order. The coupon shall be serialized in such a manner as to be identifiable with the boards from the same panel. If shown on the master drawing, one coupon of the Flex Only portion from each rigid flex panel shall also be sent. Coupons shall not be packaged in the same bag as the board but may be grouped in a single bag. When supplied, coupons that were used for QCI testing shall be appropriately identified.

Revisions: Paragraph 309.1, Toronto Orders Only section deleted as QAS 80/3 is obsolete. New HPS1017 covers Toronto requirements (reference SPOC 165.3).

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SPOC 325 – Electronics Solder Requirements

Product covered under this Purchase Order is to be assembled and soldered per ANSI/J-STD-001 Revision (latest), Class 3, (Standard Requirements for Soldered Electrical & Electronic Assemblies), and acceptance criteria based on IPC-A-610 Revision (latest) and applicable Honeywell "M" specification, to the class as specified on the PO. Workmanship and testing also shall conform to the class of IPC-A-610 specified on the purchase order. Any exceptions or deviations must be delineated on the Honeywell drawing and / or Honeywell specification.

If solder testing is required per the drawing/specification then the parts must meet the applicable soldering requirements of the specification listed below:

<i>PRODUCT TYPE</i>	<i>SPECIFICATION</i>	<i>METHOD</i>
SEMICONDUCTORS	MIL-STD-750	2026
MICROELECTRONICS	MIL-STD-883	2003
RIGID PRINTED WIRING BOARDS	MIL-P-55110	PARA 3.7.4.5
RIGID FLEX PRINTED WIRING BOARDS	MIL-P-50884	PARA 3.4.6 PARA 3.7.14
FLEXIBLE PRINTED	MIL-P-50884	PARA 3.4.6 PARA 3.7.14
ALL OTHER PARTS	MIL-STD-202	208
WHEN REQUIRED BY PURCHASE ORDER	MIL-STD-2000	PARA 5.4.4

Components shall have been tested to the requirements listed in the above table within 18 months of the date Honeywell receives the components. The soldering test date (month and year) shall be noted on the Certificate of Conformance supplied with each shipment.

Revisions: No changes.

SPOC 326 – Electronics Marking Requirements

If marking permanency is required per the drawing/specification then the parts must meet the applicable marking permanency (resistance to solvents) requirements of the respective specifications:

<i>PRODUCT TYPE</i>	<i>SPECIFICATION</i>	<i>METHOD</i>
Semi-Conductors	MIL-STD-750	1022
Micro-Electronics	MIL-STD-883	2015
Rigid Printed Wiring Boards	MIL-P-55110	PARA 3.5.4
Rigid Flex Printed Wiring Boards	MIL-P-50884	PARA 3.4.4
Flexible Printed	MIL-P-50884	PARA 3.4.4
All Other Parts	MIL-STD-202	215

Revisions: No changes.

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SPOC 329 – Hardness Critical Item

The parts contain Critical Characteristics shown as Hardness Critical Item / Hardness Critical Process (HCI/HCP). No substitutions or deviations are permitted.

Revisions: No changes.

SPOC 335 – Tape and Reeled Components

Surface mount or axial lead components shall be tape and reeled in accordance with table below.

For order quantities less than 1000; bulk, ammo or rail packaging is acceptable.

Number	Carrier Type	Standard	Requirement
1	Embossed Carrier Taping	EIA 481	Surface mount components shall be supplied on tape and reel in accordance with EIA 481.
2	Axial Lead Taping	EIA 296	Axial lead through hole components shall be supplied on tape and reel in accordance with EIA 296.
3	Radial Lead Taping	EIA 468	Radial lead through hole components shall be supplied on tape and reel in accordance with EIA 468.
4	JEDEC Trays	JEDEC CO-029, etc	Integrated Circuits shall be supplied on JEDEC antistatic trays

Revisions: No changes.

SPOC 349 – Material Samples Required

349.1 Sample Requirements

The Supplier shall supply material samples for the items listed on this Purchase Order. The samples must be:

- Two (2) fully processed test bars **and**
- One (1) chemistry tab.

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349.2 Glendale Orders Only

Process coupons of the material used for fabrication, which have accompanied the components through the processes, shall be delivered with the finished components. Coupons shall be large enough for analysis and shall be identified (preferably stamped) with the finished component part number, serial number (as applicable) and related process. A coupon shall be supplied for each batch of parts going through the process being performed, unless limited by the purchase order.

For Bar/Round Stock, the minimum coupon size shall be $d \times 6.0''(l)$, where d = the actual stock diameter for material $< 0.5''$ in diameter, or where $d = 0.5''$ for stock diameters $> 0.5''$.

For Plate/Sheet/Forging, the minimum coupon size shall be $t \times 1.0''(w) \times 6.0''(l)$, where t = the actual thickness for material $< 0.5''$ thick, or where $t = 0.5''$ for stock thickness $> 0.5''$.

For Heat Treating, the minimum coupon size shall be $t \times 1.0''(w) \times 6.0''(l)$, where t = the thickness to be within .5" of the thickest section of the parts being processed.

For Painting and Chemical Conversion Coating, coupons may be sheet material of similar alloy as the parts being processed with minimum size of $3'' \times 5'' \times .025''$

The seller shall supply a minimum of two test coupons, $1'' \times 1'' \times 9''$ or $1''$ diameter $\times 9''$, for each heat number shipped. The minimum size of the test coupons can be $5/8'' \times 5/8'' \times 3 1/4''$ or $5/8''$ diameter $\times 3 1/4''$. The coupons shall have the same processing histories as the end product. For forged or ring rolling products, a prolongation with sufficient size for making those coupons in two different directions is required.

349.3 Clearwater Orders Only

Test bars shall be provided when specified per the blueprint requirements.

Revisions: No changes.

**Revised / **Added*

SPOC 354 – Electro-Static Discharge Requirement *

For ESDS (Electrostatic Discharge Sensitive) items, the Supplier shall establish and maintain a written electrostatic discharge control program for the control of Electro-Static Discharge (ESD) during fabrication, handling, and packaging of electrical and electronic parts, assemblies, and equipment. The program must comply with the requirements of the most current version of Mil-Std-1686 or ANSI/ESD S20.20.

Revisions: Reference to SPOC 239 packaging requirements removed.

SPOC 385 – Printed Circuit Board (PCB) Testing

The Supplier shall perform continuity and circuit short testing on all double-sided and multi-layer Printed Circuit Boards (PCBs) before shipping to Honeywell.

Revisions: No changes.

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**Revised / **Added*

SPOC 406 – Commercial Items Used in Government Contracts *

This part has been determined to meet the definition of FAR 2.101, “Commercial Items”.

The terms contained in Honeywell’s “Supplement Provisions for Government Commercial Items (GCIs), (SPGCI), apply and are hereby incorporated by reference as if written in full. Honeywell’s Terms and Conditions of Purchase, including SPGCI, are located at the “Supplier Portal” which can be accessed on the internet at: [HTTPS://WWW.SUPPLIER.HONEYWELL.COM](https://www.supplier.honeywell.com). Pathway is *Aerospace Supplier Portal > Documents > Terms & Conditions.***

Revisions: Clause table deleted. Terms and Conditions flowed down are more current.

SPOC 407 – Military Customer First Article Inspection

Verification of First Article by the Military customer (military quality assurance and/or Defense Contract Management Agency) is required. The Honeywell Quality Assurance Point of Contact will coordinate First Article inspection by the Military customer at the supplier.

Revisions: No changes.

**Revised / **Added*

SPOC 410 – Process Control *

410.1 Scope*

Process Control Planning & Execution (PCPX) is a disciplined approach to identify and eliminate sources of systemic process variation. Minimum program requirements for PCPX compliance are available in SI-100.9 located on the Aerospace Supplier Portal.*

PCPX shall be the primary way to meet SPOC 410.

Note: A Supplier that has an active MPC program that began and was in compliance prior to January 1, 2011 may continue to receive credit for process control implementation and must provide objective evidence of ongoing compliance to MPC requirements. MPC compliance requirements are posted on the Aerospace Supplier Portal. Eligible MPC Suppliers shall continue to be subject to Honeywell MPC compliance audit(s). Compliant MPC Suppliers may also be called upon to implement PCPX on specific part numbers at the sole discretion of Honeywell. Non-compliant MPC Suppliers and/or MPC Suppliers with less than 50% Proactive Quality Penetration as of April 15, 2012 will be required to re-align their process control implementation with Honeywell PCPX requirements. Effective April 15, 2012 increases in Proactive Quality Percent Penetration will only be realized through implementation of Honeywell’s PCPX and/or APQP programs.*

410.2 Project Approval

The Supplier shall make available PCPX process analysis and control plan package(s) to their Honeywell Quality representative upon request. The supplier shall continuously monitor PCPX effectiveness, updating controls plan and

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process control documentation, as applicable. All changes to the approved control plan package shall be clearly identified.

410.3 Equivalency

MPC Equivalency approval will continue to be honored for only those Suppliers that were approved prior to January 1, 2011 and subject to ongoing periodic conformance audits for continued effectiveness. Honeywell reserves the right to remove MPC Equivalency at its discretion.

410.4 Records

PCPX and/or applicable MPC documentation shall be considered quality documents. Supplier shall consider the Honeywell PCPX and/or applicable MPC program documents living documents and shall maintain and update documents with any changes that may affect product or process control plans.

Revisions: Revised content to reflect that PCPX shall be the primary way to meet SPOC 410 requirements. MPC Suppliers with less than 50% penetration as of April 15, 2012 will be required to re-align their process control implementation with Honeywell PCPX requirements. Effective April 15, 2012 increases in Proactive Quality Percent Penetration will only realized through implementation of Honeywell's PCPX and APQP programs.

SPOC 415 – Request for Material Review Action (RMRA) Requirements

415.1 Scope

Prior to submitting a Request for Material Review Action (RMRA) to Honeywell, the supplier shall:

- Revise the current Detailed Inspection Plan (DIP) to 100% Inspection for only those dimensional discrepancies noted in each submittal process
- Supply evidence of Root Cause and Corrective Action to prevent reoccurrence.

415.2 RMRA Processing Requirements

Suppliers must follow these Process Action Steps prior to submittal of all RMRA's to Honeywell:

- Evaluate submitted (RMRA) dimensional discrepancies against the current DIP.
- Revise the DIP to 100% inspection in conjunction with the dimensional discrepancies noted in the submitted (RMRA).
- Validate DIP revision with one of the following: Supplier QA Manager, Honeywell Field Quality (FQE), or HTSI. Signature and Date on each revision is required.
- Revised and signed DIP will accompany RMRA to Honeywell Buyer.
- Physical evidence of Root Cause and Corrective Action will accompany RMRA to Honeywell. Example of Physical evidence: Revised Work Instructions/Process Router, Tooling/Fixture/Gauge quote for new or rework, Revised CNC program change, Operator Training Roster.
- Honeywell Buyer will submit all appropriate paperwork to Honeywell Engineering and Quality Material Review Board (MRB) for final disposition of RMRA.
- Supplier On-Going Follow-up process:
 - Continue to monitor manufacturing and inspection process on those dimensional discrepancies noted in any or all RMRA submittals.

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- 100% inspection until the IRR has been re-established per **SPOC 128** (See sampling plan instructions detailed on the Supplier Portal).

Example: Major Char is .010 and under. Sample is 76 accepted in a row.

Example: Minor Char is .0101 and over. Sample is 28 accepted in a row.

Revisions: No changes.

SPOC 418 – Foreign Object Damage (FOD) Control

The supplier shall ensure that **Foreign Objects** and subsequent **Foreign Object Damage** (FOD) is eliminated from all parts prior to shipment. In addition to maintaining compliance with Honeywell site's cleanliness specifications, all suppliers must maintain a FOD free environment during machining, manufacturing, assembly, maintenance, inspection, storage, packaging and shipping.

- Potential FOD includes but is not limited to burrs, chips, dirt, corrosion and contamination resulting from the manufacturing, assembly, maintenance, processing, cleaning, storage and subsequent packaging of parts.
- Suppliers must ensure all passageways- cast and/or machined are clear of chips, core material, dirt, breakout of cast walls, etc.
- Prior to closing inaccessible or obscured areas and compartments during assembly, supplier shall ensure the areas are free of FOD.
- Suppliers must ensure all parts are clean and FOD free prior to shipment.
- Suppliers are required to maintain a FOD prevention program, which includes prevention and elimination of FOD from the manufacturing processes and work area.

Specific attention should be given, where applicable, to items such as:

- Housekeeping and cleanliness
- Food and beverage control
- Tool and small part accountability
- Loose objects
- Material handling and parts protection
- External cleaning following evidence of external contamination

Supplier shall ensure that the responsibility for the FOD prevention program is clearly defined and appropriate personnel have received FOD awareness training.

Suppliers are responsible for flow down of these requirements to their sub-tier suppliers to ensure FOD free products.

For additional information regarding FOD prevention, refer to National Aerospace Standard NAS 412, "Foreign Object Damage / Foreign Object Debris (FOD) Prevention". The NAS 412 document may be used as a baseline FOD prevention resource.

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418.1 Yeovil Orders Only

All oxygen parts defined by drawing nomenclature; W, X, Y, Z & OP must, in addition, be cleaned & supplied in accordance to the requirements of NGPS 151

Revisions: No changes.

**Revised / **Added*

SPOC 419 – Counterfeit Electronic Parts Prevention *

419.1 Scope

419.1.1 Purpose

This SPOC 419 is intended to reduce the risk of counterfeit and fraudulent electronic parts entering Honeywell's supply chain and to standardize practices to:

- a) Specify the flow down of these requirements to applicable contractors and their sub-contractors who are performing work on behalf of Honeywell;
- b) maximize availability of authentic parts;
- c) procure parts from reliable sources;
- d) assure authenticity and conformance of procured parts;
- e) control parts identified as counterfeit within the Honeywell supply chain and in the Contract Manufacturers' supply chain; and
- f) report suspect counterfeit parts, known counterfeit parts, and fraudulent parts to other potential users and to Government investigative authorities as required by contract or by law.

The provisions of this SPOC 419 are in addition to Supplier's responsibility to meet all contractual / purchase order requirements. The requirements of this SPOC 419 are intended to supplement the requirements of a higher level quality standard (e.g. AS9100) and other quality management system documents. They are not intended to stand alone or to supersede or cancel requirements found in other quality management system documents, requirements imposed by contract, or applicable laws and regulations unless an exemption/variance has been granted in writing by the Honeywell Director of Supplier Quality.

419.1.2 Application

- (a) The requirements defined in this SPOC 419 apply to all Electronic Part and Electronic Assembly purchase orders issued to Honeywell suppliers, and Honeywell suppliers shall flow these requirements down to their sub-tier suppliers on behalf of Honeywell no later than the effective date of this SPOC Manual.
- (b) Electronic Parts and Electronic Assemblies delivered after the effective date of this SPOC Manual shall comply with the requirements set forth in this SPOC 419.
- (c) On hand inventory at Contract Manufacturers and sub-tier suppliers who manufacture and procure electronic parts and assemblies on behalf of Honeywell that is planned for use after the effective date of this SPOC Manual in electronic assemblies sold to Honeywell shall meet the requirements set forth in this SPOC 419, except as defined for Contract Manufacturers in Section 419.3.7(f).
- (d) If Honeywell Furnished Material has either (i) traceability to the OCM or their Authorized Distributor with pedigree to the OCM, or (ii) SPOC 419 Part Authenticity test documentation (performed in accordance with SPOC 419 Part Authenticity Testing Statement of Work (SOW) Rev. 1 or higher), including a Honeywell approved Risk Management Worksheet provided by an authorized Honeywell buyer and associated documentation, then Supplier may use such Honeywell

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Furnished Material without needing to comply with further requirements of this SPOC 419. A copy of SPOC 419 Part Authenticity Testing SOW can be obtained on the Honeywell Supplier Portal.

- (e) If Honeywell Furnished Material does not meet either of the characteristics described in clause (d) above, Supplier shall comply with the requirements set forth in this SPOC 419 prior to the use of Honeywell Furnished Material in Electronic Assemblies provided to Honeywell.

Applicability Table 1:

The following is the current applicability table for reference as of the release of this SPOC 419. The latest version of the applicability table is found on the Honeywell Aerospace Supplier Portal in the SPOC 419 Part Authenticity Statement of Work (SOW). The Part Authenticity Statement of Work (SOW) and its current part type applicability table is as of the date of the purchase order. **Please review the current SPOC Supporting Documents on the Supplier Portal for the most recent revision.**

Part Type	One Source Part Family Code (PFC)	Applicable Scope of SOW
Antenna	E1	All
	M – monopole	
	D – dipole	
	S – Surface Wave	
	H – Horn	
	P – Polarized Horn	
	C – Cavity Backed Spiral	
	B – Biconical	
	N – Conical Spiral	
	Y – Other	
Display	E2	<ul style="list-style-type: none"> All for commodity families D, and L. Commodity Family Y may be applicable but must be evaluated on a case by case basis. Request a determination from the Honeywell Counterfeit Parts Issue Resolution Team. None for commodity families B and K.
	B – Bezel	
	D – Display	
	L - Backlight	
	Y - Other	
RF Components	E3	All
	A – Amplifiers	
	N – Attenuators	

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	<ul style="list-style-type: none"> O – Circulators C – Couplers L – Delay Lines D – Detectors U – Dummy Loads F – RF Filters S – Isolators M – Mixers H – Phase Shifters P – Power Dividers T – Terminators Y - Other 	
<p>Contract Manufacture</p>	<p>E4</p> <ul style="list-style-type: none"> R – RF Assemblies CCA P – Pin Through Hole CCA S – Surface Mount & Thru Hole CCA B – Box Build M – Manual C – Chip on board, flip chip F – Flex or Rigid/Flex Assemblies K – Backplane Assembly A – PCMCIA Card Y – Other 	<p>SOW applicability should be addressed at the component level prior to manufacture. If procuring COTS assemblies, all testing is applicable. Electrical test shall be performed at the assembly level and component inspection/verification is done at the part level.</p>

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<p>PWB's</p>	<p>E5</p> <table border="1" style="width: 100%;"> <tr><td>F – Flex</td></tr> <tr><td>R – Rigid</td></tr> <tr><td>C – Combination (rigid & flex)</td></tr> <tr><td>B – Backplane</td></tr> <tr><td>M – Multiwire</td></tr> <tr><td>Y – Other</td></tr> </table>	F – Flex	R – Rigid	C – Combination (rigid & flex)	B – Backplane	M – Multiwire	Y – Other	<p>None.</p>				
F – Flex												
R – Rigid												
C – Combination (rigid & flex)												
B – Backplane												
M – Multiwire												
Y – Other												
<p>Components</p>	<p>E6</p> <table border="1" style="width: 100%;"> <tr><td>P – Passive</td></tr> <tr><td>D – Diode</td></tr> <tr><td>T – Transistor</td></tr> <tr><td>O – Optoelectronics</td></tr> <tr><td>G – Trigger Device</td></tr> <tr><td>S – Integrated Circuit</td></tr> <tr><td>B – Bus Bars</td></tr> <tr><td>C – Crystal</td></tr> <tr><td>L – Lamp</td></tr> <tr><td>Y – Other</td></tr> </table>	P – Passive	D – Diode	T – Transistor	O – Optoelectronics	G – Trigger Device	S – Integrated Circuit	B – Bus Bars	C – Crystal	L – Lamp	Y – Other	<p>All. Crystals are exempt from section 7. This exemption applies to crystals only, not to oscillators containing crystals.</p>
P – Passive												
D – Diode												
T – Transistor												
O – Optoelectronics												
G – Trigger Device												
S – Integrated Circuit												
B – Bus Bars												
C – Crystal												
L – Lamp												
Y – Other												
<p>Connectors</p>	<p>E7</p> <table border="1" style="width: 100%;"> <tr><td>R – Rack and Panel</td></tr> <tr><td>B – Rectangular</td></tr> <tr><td>P – Printed Circuit Board</td></tr> <tr><td>C – Cylindrical/Circular</td></tr> <tr><td>A – Coaxial</td></tr> <tr><td>J – Fiber Optics</td></tr> </table>	R – Rack and Panel	B – Rectangular	P – Printed Circuit Board	C – Cylindrical/Circular	A – Coaxial	J – Fiber Optics	<p>All except section 6 (if the connector is received disassembled)</p>				
R – Rack and Panel												
B – Rectangular												
P – Printed Circuit Board												
C – Cylindrical/Circular												
A – Coaxial												
J – Fiber Optics												

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	<table border="1"> <tr><td>F – Flex Cable</td></tr> <tr><td>H – Headers</td></tr> <tr><td>D – D-Sub</td></tr> <tr><td>M – Miscellaneous</td></tr> <tr><td>Y - Other</td></tr> </table>	F – Flex Cable	H – Headers	D – D-Sub	M – Miscellaneous	Y - Other												
F – Flex Cable																		
H – Headers																		
D – D-Sub																		
M – Miscellaneous																		
Y - Other																		
Relays and Switches	<table border="1"> <tr><td>E8</td></tr> <tr><td>R – Relay</td></tr> <tr><td>S – Switch</td></tr> <tr><td>Y - Other</td></tr> </table>	E8	R – Relay	S – Switch	Y - Other	All												
E8																		
R – Relay																		
S – Switch																		
Y - Other																		
Sensors	<table border="1"> <tr><td>E9</td></tr> <tr><td>P – Pressure</td></tr> <tr><td>T – Temperature</td></tr> <tr><td>F – Flow</td></tr> <tr><td>R – Transducer/transmitter</td></tr> <tr><td>E – Resolver</td></tr> <tr><td>Q – Torque</td></tr> <tr><td>O – Oxygen</td></tr> <tr><td>K – Proximity</td></tr> <tr><td>S – Speed</td></tr> <tr><td>G – Rotation</td></tr> <tr><td>A – Acceleration</td></tr> <tr><td>L – Element</td></tr> <tr><td>M – Meter</td></tr> <tr><td>Z – Position</td></tr> <tr><td>Y – Other</td></tr> </table>	E9	P – Pressure	T – Temperature	F – Flow	R – Transducer/transmitter	E – Resolver	Q – Torque	O – Oxygen	K – Proximity	S – Speed	G – Rotation	A – Acceleration	L – Element	M – Meter	Z – Position	Y – Other	All
E9																		
P – Pressure																		
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L – Element																		
M – Meter																		
Z – Position																		
Y – Other																		
Cables/Harnesses	<table border="1"> <tr><td>EH</td></tr> <tr><td>H – Harness</td></tr> <tr><td>C – Cable</td></tr> </table>	EH	H – Harness	C – Cable	None													
EH																		
H – Harness																		
C – Cable																		

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	<table border="1"> <tr><td>F – Flex</td></tr> <tr><td>J – Fiber Optics</td></tr> <tr><td>A – Coaxial</td></tr> <tr><td>W – Wire</td></tr> <tr><td>Y – Other</td></tr> </table>	F – Flex	J – Fiber Optics	A – Coaxial	W – Wire	Y – Other						
F – Flex												
J – Fiber Optics												
A – Coaxial												
W – Wire												
Y – Other												
Motors	<table border="1"> <tr><td>EM</td></tr> <tr><td>M – Motors</td></tr> <tr><td>A – Actuator</td></tr> <tr><td>T – Transformers</td></tr> <tr><td>D – Inductors</td></tr> <tr><td>P – Power Supplies</td></tr> <tr><td>G – Generators</td></tr> <tr><td>B – Battery</td></tr> <tr><td>E – Igniter/Exciter</td></tr> <tr><td>Y - Other</td></tr> </table>	EM	M – Motors	A – Actuator	T – Transformers	D – Inductors	P – Power Supplies	G – Generators	B – Battery	E – Igniter/Exciter	Y - Other	<ul style="list-style-type: none"> • None for commodity families M, A, G, B, E, Y. • All for commodity families T, D, and P.
EM												
M – Motors												
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B – Battery												
E – Igniter/Exciter												
Y - Other												
Computer Peripherals	<table border="1"> <tr><td>EC</td></tr> <tr><td>K – Keyboard</td></tr> <tr><td>M – Monitor</td></tr> <tr><td>C – CPU</td></tr> <tr><td>Y – Other</td></tr> </table>	EC	K – Keyboard	M – Monitor	C – CPU	Y – Other	None					
EC												
K – Keyboard												
M – Monitor												
C – CPU												
Y – Other												
Electrical Miscellaneous	<table border="1"> <tr><td>EO</td></tr> <tr><td>B – Box/Panel</td></tr> <tr><td>C – Circuit Breaker</td></tr> <tr><td>F – Fuses</td></tr> <tr><td>T – Test Equipment</td></tr> <tr><td>H – Heater/Heater Blanket</td></tr> <tr><td>Y – Miscellaneous Electrical Supplies</td></tr> </table>	EO	B – Box/Panel	C – Circuit Breaker	F – Fuses	T – Test Equipment	H – Heater/Heater Blanket	Y – Miscellaneous Electrical Supplies	<ul style="list-style-type: none"> • None for commodity families B, H, and Y • All for commodity families C, T and F 			
EO												
B – Box/Panel												
C – Circuit Breaker												
F – Fuses												
T – Test Equipment												
H – Heater/Heater Blanket												
Y – Miscellaneous Electrical Supplies												

419.1.3 Applicable Documents

The following documents are directly associated with the application of SPOC 419.

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- For dated references, only the edition cited applies.
- For updated references, the latest edition of the document, including all amendments, applies unless otherwise specified by contract.
- In the event of conflict between the provisions of this SPOC 419 and references cited herein, the provisions of this document take precedence.

419.1.3.1 SAE Publications

AS5553 Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

419.1.3.2 Commercial Publications

IDEA-STD-1010 Acceptability of Electronic Components Distributed in the Open Market

Available from Independent Distributors of Electronics Association (IDEA), 6312 Darlington Avenue, Buena Park, CA 90621, Tel: 714-670-0200, www.idofea.org.

419.2 Definitions

419.2.1 Authorized Distributor: “The term Authorized Distributor refers to either:

(a) An OCM-Authorized Distributor or OEM-Authorized Distributor distributing electronic parts or assemblies under a binding contractual agreement with an OCM or OEM; or

(b) a Supplier that (i) provides electronic parts or assemblies under the terms of a long term agreement (LTA) with Honeywell that specifically identifies those electronic parts, (ii) procures electronic parts or assemblies only from sources as defined in Paragraph (a) or from an OCM or OEM, (iii) establishes an unbroken chain of custody for those electronic parts or assemblies with the source of supply, and (iv) obtains written approval from the Honeywell Director of Supplier Quality to deliver such electronic parts and assemblies to Honeywell. To establish an unbroken chain of custody, Supplier must (A) maintain physical segregation and control of electronic parts or assemblies procured from either (i) a source identified in clause (a) or (ii) an OCM/OEM, and (B) obtain and retain documentation that substantiates traceability of such electronic parts or electronic assemblies to the OCM, the OEM, or the OCM / OEM-Authorized Distributor.

For the purposes of this SPOC 419, Franchised Distributor is considered synonymous with Authorized Distributor.”

419.2.2 Broker: “In the independent distribution market, brokers are professionally referred to as Independent Distributors. See definition for “Independent Distributor”. For SPOC 419 purposes, the Independent Distributor, Broker, Non-Authorized, and Non-Franchised Distributor definitions are synonymous.”

419.2.3 CCA Transfer Material: “All material transferred in accordance with the Honeywell Aero Standard Transition Process from a Honeywell site to a contract manufacturer or from the closing out of a contract manufacturer and the material transferring to another contract manufacturer.”

419.2.4 Certificate of Conformance (C of C, CoC): “A document provided by a supplier formally declaring that all buyer purchase order requirements have been met. The document may include information such as manufacturer, distributor, quantity, lot and/or date code, inspection date, etc., and is signed by a responsible party for the supplier.”

419.2.5 Contract Manufacturer (CM): “A manufacturing company that generates products or goods on behalf of Honeywell, in accordance with Honeywell specifications.”

419.2.6 Counterfeit electronic part, or assembly: defined in accordance with the SAE G-19 Committee, as it may be amended from time to time. As of October 5, 2011, SAE G-19 Committee defines a counterfeit electronic part or

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assembly as: "A fraudulent part that has been confirmed to be a copy, imitation, or substitute that has been represented, identified, or marked as genuine, and/or altered by a source without legal right with intent to mislead, deceive, or defraud."

- 419.2.7 Electronic Assembly:** "An assembly containing one or more electronic parts."
- 419.2.8 Electronic Parts:** "Electrical or electronic devices that are not subject to disassembly without destruction or impairment of design use. They are sometimes called electronic components or piece parts."
- 419.2.9 Fraudulent part:** "Any suspect part misrepresented to the Customer as meeting the Customer's requirements."
- 419.2.10 Independent Distributor:** "A distributor other than an OCM or an Authorized Distributor. For SPOC 419 purposes, the Independent Distributor, Broker, Non-Authorized, and Non-Franchised Distributor definitions are synonymous."
- 419.2.11 Life-Time Buy:** "Procurement of a quantity of parts that is intended to meet all future demand, to the end of all production and field support terms."
- 419.2.12 Non-Authorized Distributor:** "In the independent distribution market, Non-Authorized Distributors are professionally referred to as Independent Distributors. See definition for "Independent Distributor". For SPOC 419 purposes, the Independent Distributor, Broker, Non-Authorized, and Non-Franchised Distributor definitions are synonymous."
- 419.2.13 Non-Franchised Distributor:** "In the independent distribution market, Non-Franchised Distributors are professionally referred to as Independent Distributors. See definition for "Independent Distributor". For SPOC 419 purposes, the Independent Distributor, Broker, Non-Authorized, and Non-Franchised Distributor definitions are synonymous."
- 419.2.14 OCM, or Original Component Manufacturer:** "A company that manufactures a part that it has designed and for which it owns the intellectual property rights."

NOTES:

- The part and/or its packaging are typically identified with the OCM's trademark.
- OCMs may contract out manufacturing and/or distribution of their product.
- Different OCMs may supply product for the same application or to a common specification."

- 419.2.15 OEM, or Original Equipment Manufacturer:** "A company that manufactures products that it has designed and sells those products under the company's brand name."
- 419.2.16 Pedigree:** "An unbroken chain of custody with known lineage directly from the OCM or OEM."
- 419.2.17 Supplier:** "An entity that supplies electronic parts to Honeywell or on behalf of Honeywell to Honeywell's suppliers and their sub-tier suppliers. This includes, but is not limited to, Independent Distributors, Brokers, Third-Party Logistics (3PL) Providers, Contract Manufacturers, and Authorized Distributors."
- 419.2.18 Suspect counterfeit part:** "A part in which there is an indication by visual inspection, testing, or other information that it may have been misrepresented by the supplier or manufacturer and may meet the definition of fraudulent part or counterfeit electronic part or assembly (see following definitions)."
- 419.2.19 Third-Party Logistics (3PL) Provider:** "Firms which provide outsourced or "third party" logistics services to companies for supply chain management functions. 3PL Providers typically specialize in integrated operation, warehousing and transportation services that can be scaled and customized to Customer's needs based on market conditions and the demands and delivery service requirements for their products and materials."

419.3 Requirements

- 419.3.1** Electronic Parts shall be purchased only directly from the OCM or directly from an Authorized Distributor with part pedigree directly from the OCM. Electronic assemblies shall only be purchased from the OEM or an Authorized Distributor with pedigree directly from the OEM.

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- In the event that material is not available from these sources, then the Supplier shall be governed by the requirements of this SPOC 419, paragraphs 419.3.2 through 419.4.8.

419.3.1.1 A Certificate of Conformance shall be provided for the following:

- Electronic part procured from an OCM or Authorized Distributor with established pedigree to the OCM,
 - Electronic assembly procured from an OEM or Authorized Distributor with established pedigree to the OEM.
- There is a distinction regarding the level of documentation on a Certificate of Conformance to be supplied when buying parts manufactured to U.S. military standards and aerospace specifications versus parts made to commercial or industrial standards.
- For procurement of military grade components, a manufacturer's certification to a specified military or aerospace specification or standard is required.
 - This documentation shall contain at a minimum the manufacturer, distributor, distributor purchase order number, part number, quantity, and date code of each quantity supplied.
 - Governing specifications may require additional information to be provided.
 - A copy of the manufacturer's certification shall accompany shipment of parts, or, for parts procured through Authorized Distributors, shipment shall be accompanied by a Certificate of Conformance showing proper supply chain traceability.
 - For procurement of product for commercial or industrial use, product delivered by the manufacturer to the authorized distributor is not normally required to contain a formal Certificate of Conformance.
 - In such cases, the accompanying documentation is a commercially acceptable packing list. This document normally identifies the manufacturer, distributor to whom the parts were supplied, distributor purchase order number, part number, and quantity.
 - Additional information, such as date code or statement of compliance, may be provided but is not normally required.
 - The Certificate of Conformance must be maintained on file by the distributor and shall be made available to Honeywell upon request.
 - Shipments of commercial and industrial parts are typically accompanied by a distributor packing list and/or Certificate of Conformance.
 - Purchase orders issued by Honeywell or on behalf of Honeywell to suppliers shall require that material purchased through authorized distribution be acquired directly from OCMs or authorized suppliers, and sub-tier suppliers that purchase material on behalf of Honeywell shall flow down the requirements of SPOC419.
 - If a Certificate of Conformance in accordance with these requirements cannot be provided, then Supplier shall comply with the requirements of this SPOC set forth in paragraphs 419.3.2 through 419.4.8.

419.3.2 The OCM, OEM, or Authorized Distributor shall provide with the shipment a Certificate of Conformance, certifying that the component or assembly provided is the part number being procured on the Honeywell Purchase Order.

- A Certificate of Conformance which certifies the vendor part number, with the Honeywell ordered part number identified as "Reference or Customer P/N," **does not** indicate certification to the Honeywell ordered part number, if the Honeywell drawing includes additional requirements.

A Certificate of Conformance from an Authorized Distributor must also establish traceability to the OEM or OCM.

- The preferable method is for the Authorized Distributor to provide a copy of the manufacturer's certificate for the lot number being supplied, or provided in an assembly, along with their Authorized Distributor certification.
- Acceptable, but not preferable, is an Authorized Distributor certificate identifying the Original Manufacturer and the source of the Authorized Distributor's authorization from the Original Manufacturer.

419.3.3 The Authorized Distributor shall warrant and represent that it has valid agreements in place with an OCM or OEM for each Product it sells to Honeywell or to a Contract Manufacturer who is building product on behalf of Honeywell.**419.3.4** An Authorized Distributor shall only ship products to Honeywell or to sub-tier suppliers on behalf of Honeywell pursuant to the terms of an OCM or OEM agreement or under the terms of a long term agreement with Honeywell that specifically identifies those Electronic Parts or Electronic Assemblies.

- The Authorized Distributor will be considered an Independent Distributor with respect to any product procured other than pursuant to the terms of an OCM or OEM agreement or under the terms of a long term agreement with Honeywell that specifically identifies those Electronic Parts or Electronic Assemblies.
- An OCM or OEM shall not supply electronic parts to Honeywell or to sub-tier suppliers on behalf of Honeywell that were acquired from Independent Distributors.

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- 419.3.5** An OCM or OEM or Authorized Distributor shall not supply product to Honeywell in a manner different from that described in paragraph 419.3.4 without (a) Honeywell's prior written approval, and (b) complying with the requirements set forth in paragraphs 419.3.8 through 419.4.8 of this SPOC 419.
- 419.3.6** Electronic Parts and Electronic Assemblies shall not be purchased by Supplier from Independent Distributors except (a) in the event that the parts are not available from the OCM or OEM or Authorized Distributor; (b) Honeywell has granted its permission to do so in writing, and (c) Supplier complies with the requirements set forth in paragraphs 419.3.9 to 419.4.8 of this SPOC 419.
- 419.3.7 Contract Manufacturers:**
- (a) Contract Manufacturers and sub-tier suppliers who manufacture and procure Electronic Parts and Electronic Assemblies on behalf of Honeywell shall:
- Implement a counterfeit parts control plan in accordance with AS5553; and
 - When required, complete an EMS Governance Checklist in accordance with the EMS Governance Checklist Work Instructions, available on the Honeywell Supplier Portal.
- (b) An EMS Governance Checklist is required when a Contract Manufacturer or sub-tier supplier cannot procure electronic parts or electronic assemblies from either the OCM or OEM or the OCM's or OEM's Authorized Distributor with part pedigree traceable directly from the OCM or OEM.
- (c) Before a Contract Manufacturer or sub-tier supplier may procure Electronic Parts or Electronic Assemblies from an entity other than the OCM or OEM or the OCM's or OEM's Authorized Distributor with part pedigree traceable directly from the OCM or OEM, the Contract Manufacturer or sub-tier supplier must:
- Submit to the Honeywell Point of Contact ("POC") an EMS Governance Checklist;
 - Obtain a completed Risk Assessment from the Honeywell POC; and
 - Execute the mitigation requirements specified in the Risk Assessment.
- (d) A Contract Manufacturer may transfer material to Honeywell without being considered an Independent Distributor only if:
- It is performing work for Honeywell under a long term contract; and
 - It has acquired the components directly from the OCM, OEM or their authorized/franchised source and provides a Certificate of Conformance
 - The Certificate of Conformance from the Contract Manufacturer shall include a guarantee that (i) the material was acquired from the OCM, OEM or their authorized/franchised source, and (ii) the material does not contain any material acquired from an Independent Distributor/Broker. The Certificate of Conformance must clearly specify the manufacturer and lot/date code for each part number supplied.
- (e) If a Contract Manufacturer cannot meet the requirements of part (d) above, the Contract Manufacturer will be considered an Independent Distributor for the supply of the transfer material and shall comply with the requirements set forth in paragraphs 419.3.9 to 419.4.8 of this SPOC 419 in order to transfer material to Honeywell.
- (f) Subject to the restrictions identified below in this clause, legacy on hand inventory at a Contract Manufacturer (CM) is temporarily exempt from the requirements specified in Paragraph 419.3.7. Legacy on hand inventory is defined as electronic parts or components ("parts") acquired before October 25, 2010 from one of the following sources: i) Honeywell furnished material, including parts supplied as part of a CCA transition; ii) Life Time Buy material acquired by the CM pursuant to Honeywell purchase orders; iii) parts acquired by the CM from non-franchised distributors specifically for use in products sold to Honeywell product; iv) parts acquired by the CM from OCMs or franchised distributors specifically for use in products sold to Honeywell product prior to the origination of SPOC 419. Legacy on hand inventory also includes Honeywell furnished material acquired by the CM on or after October 25, 2010 up until the effectivity date of SPOC 419 rev. K with a Honeywell-provided certificate of conformance and/or shipping document. Restrictions: (i) to qualify for the exemptions set forth above, a CM must have and apply rigorous internal quality requirements and controls to assure that conforming product is supplied to Honeywell; (ii) the provisions of this clause 419.3.7 (f) may be overridden by language in a purchase order issued by Honeywell after the effective date of Rev K of SPOC 419; and (iii) this clause 419.3.7 (f) will expire on December 31, 2012.

419.3.8 Test laboratories:

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Test laboratories that purchase electronic parts or electronic assemblies on behalf of Honeywell for upscreening testing shall purchase electronic parts or electronic assemblies only from the Original Component Manufacturer (OCM) or OEM or an Authorized Distributor with part pedigree directly from the OCM or OEM.

- In the event that material is not available from the Original Component Manufacturer (OCM) or OEM or an Authorized Distributor with part pedigree directly from the OCM or OEM, then the Test Laboratory will be considered an Independent Distributor and shall be governed by the requirements of this SPOC and as defined in paragraphs 419.3.9 through 419.4.8.
- Test laboratories in this category shall not self certify the SPOC 419 Part Authenticity SOW requirements and shall have the SPOC 419 required testing performed by another Honeywell Approved test laboratory.

419.3.9 Independent Distributors:

- (a) An Independent Distributor that supplies Electronic Parts or Electronic Assemblies directly to Honeywell or to Contract Manufacturers and sub-tier suppliers on behalf of Honeywell shall warrant such items to be original, and not counterfeit or fraudulent. Failure to do so renders such item(s) ineligible for purchase / use by Honeywell and its Contract Manufacturers and sub-tier suppliers.
- (b) An Independent Distributor shall assure, through continuous assessment actions, that their approved and ongoing sources of supply are maintaining effective processes for mitigating the risks of supplying counterfeit electronic parts. Assessment actions may include surveys, audits, review of product alerts (e.g. GIDEP, ERAI, & IDEA), and review of supplier quality data to determine past performance. Guidance for assessment actions can be obtained from AS5553.
- (c) The Independent Distributor shall assess and mitigate risks of procuring counterfeit parts. This shall be accomplished and documented for every application when it is necessary to procure from other than the OCM or the OCM's Authorized Distributor for electronic parts and the OEM or the OEM's Authorized Distributor for electronic assemblies.
- (d) Assessment actions shall at a minimum include an External Visual Inspection (EVI) for electronic parts in accordance with the latest revision of IDEA-STD-1010 in effect of the date of the purchase order shall apply as defined in paragraph 419.1.2.2. Results of the External Visual Inspection shall be archived at the Independent Distributor and made available to Honeywell upon request. X-Ray exposure on electronic parts and other test techniques may be damaging in certain application and may be considered a destructive test. Additional testing beyond an EVI performed by the Independent Distributor on electronic parts and assemblies should be carefully considered and reviewed with appropriate subject matter experts prior to performing.
- (e) The Independent Distributor shall ensure that:
 - i. All electronic parts and assemblies that are purchased either directly by Honeywell or through one of Honeywell's sub-tier suppliers on behalf of Honeywell are sent to a Honeywell SPOC 419 Approved Test Laboratory in accordance with Honeywell's Risk Assessment and the latest revision of SPOC 419 Part Authenticity Testing Statement of Work (SOW) as of the date of the purchase order.
 - ii. Existing product in its inventory shall be tested at a minimum to SPOC 419 Part Authenticity Testing SOW, revision 1 or greater. The Risk Assessment and mitigation instructions will be provided by Honeywell, either directly to the Independent Distributor (for direct purchases) or through the Honeywell contractor.
 - A. SPOC 419 Part Authenticity Testing SOW and Honeywell Approved Test Laboratories are available on the Honeywell Supplier Portal.
 - B. Actions identified on the Risk Assessment shall be completed in accordance with instructions provided by Honeywell.
 - iii. All material successfully tested in accordance with the SPOC 419 Part Authenticity Testing SOW shall be shipped directly to a Honeywell production facility from the Honeywell Approved Test Laboratory and shall not be shipped back to the Independent Distributor. A Honeywell production facility may be a Honeywell Contract Manufacturer when the Contract Manufacturer is producing material on behalf of Honeywell. If material is shipped back to the Independent Distributor after it is successfully tested, then the material shall be retested to the latest revision of SPOC 419 Part Authenticity Testing SOW as of the date of the scheduled shipment of goods.

419.4 Additional Requirements for Supplier

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- 419.4.1** Supplier shall specify supply chain traceability (to the OCM for Electronic Parts or to the OEM for Electronic Assemblies) that identifies the name and location of all the supply chain intermediaries from the manufacturer to the direct source of product for the Supplier.
- (a) If this traceability is unavailable or the documentation is suspected of being falsified, Supplier shall request a Risk Assessment analysis and execute mitigation actions per instructions provided by Honeywell.
 - (b) In all instances where parts are procured from an Independent Distributor, a risk analysis and management plan per the requirements defined in this SPOC and approved by Honeywell shall be performed. The Risk Assessment will evaluate and mitigate the technical, schedule, and cost risks associated with the material.
- 419.4.2** Supplier shall flow down requirements of this document to sub-tier suppliers, contractors and their sub-contractors for Honeywell-related purchases.
- 419.4.3** In all instances where parts are procured from an Independent Distributor:
- Supplier shall follow the test requirements defined in SPOC 419 Part Authenticity Testing SOW (Rev. 1 or higher) and additional mitigation actions defined and approved by Honeywell, regardless if the Independent Distributor provides a Manufacturer's Certificate of Conformance for the lot being supplied or Authorized Distributor certification paperwork.
 - The SPOC 419 Part Authenticity Testing SOW to be followed is the version in effect as of the date of the Purchase Order issued to the Independent Distributor.
- 419.4.4** Documentation requirements shall be in accordance with SPOC Manual Section 1 records requirements, and/or as directed by the procuring site's purchase order.
- 419.4.5** Supplier shall implement appropriate controls to assure product origin and conformance to Honeywell requirements and related engineering drawings, including:
- Processes to maximize availability of authentic originally designed and/or qualified parts.
 - Internal procedures to provide suspect parts awareness training relative to identification and reporting of counterfeit parts.
 - Validation of subcontractor's procurement methodology and sources of supply where procurement is outsourced to another entity.
 - Verification of product being received. Supplier is to check for required documents and verify that suspect, counterfeit, and fraudulent electronic parts and assemblies are not being supplied.
- 419.4.6** (a) Upon identification by Supplier of fraudulent, suspect or confirmed counterfeit parts that were purchased for or on behalf of Honeywell or that were delivered to Honeywell, (i) Supplier shall provide notification to Honeywell within 60 days and, in accordance with SPOC 100, to the Government Industry Data Exchange Program (GIDEP), industry supported reporting programs (e.g., ERAI), and/or to applicable Government investigative authorities and law enforcement agencies as appropriate and required by law, and (ii) with respect to parts delivered to Honeywell, Honeywell may quarantine and disposition such parts as required by law.
- (b) Upon identification by Honeywell of its receipt from Supplier of fraudulent, suspect or confirmed counterfeit parts, Honeywell may quarantine and disposition such parts as required by law.
- (c) Honeywell reserves the right to withhold payment for parts that are quarantined, pending their disposition.
- 419.4.7** Supplier will indemnify, defend, and hold Honeywell harmless from and against any and all loss or expense incurred by Honeywell as a result of the delivery by Supplier to or on behalf of Honeywell of suspect, fraudulent, or counterfeit Electronic Parts or Electronic Assemblies.

Revisions: SPOC extensively rewritten.

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*Revised / **Added

SPOC 420 – Advanced Product Quality Planning (APQP) *

420.1 Scope*

Advanced Product Quality Planning (APQP) is a structured method of defining and establishing the necessary activities to ensure that all product will satisfy the requirements of Honeywell. The goal of APQP is to establish mature product quality and program launch. System or part specific APQP application is based on complexity and customer requirements, targeting high and medium high complex components. The APQP organization and or input from engineering determine APQP applicability.

420.2 Applicability*

When this SPOC is invoked on the purchase order, compliance shall be as follows:

- 1) Implement the APQP process as described in the Honeywell Supplier Portal. All required documents, instructions and forms are located there.
- 2) Generate a Production Part Approval Process (PPAP) package per SQP-1230 for review prior to shipment to Honeywell or direct to customer.

APQP engagement with supplier may vary, the APQP engineer reserves the right to select items that may not be required, but still fulfill the contractual requirements of SPOC 420. These items will be identified on the PPAP checklist SQF-0036 form as N/A by the APQP engineer or a supplier quality representative. This checklist will also allow for various levels of compliance to the PPAP process. Unless otherwise specified, all PPAPs shall require level 3 compliance.

420.3 Process*

FAIR acceptance has not changed and is still the responsibility of the Field Quality Engineer (FQE). The FAIR document is just one element of the entire PPAP package. PPAP items that are still being completed at the time of FAIR review will not impact the acceptance of the FAIR process.

The PPAP will be approved by the responsible APQP engineer AFTER the supplier demonstrates the ability to produce conforming hardware while incorporating the APQP tools. It is suggested that a minimum of 10 pieces be produced with the production tooling and equipment before acceptance of the PPAP. The APQP engineer has the final determination of the quantities to be produced to accept the PPAP.

420.4 Changes**

Changes to the design, manufacturing process or within a supplier may impact product performance or allow non-conforming product to be produced. See PPAP Event Table 1 to maintain compliance when changes occur.

Table 1 - PPAP Event Table **

Event Description	PPAP Type Due	Honeywell Review Required	Notes
New base part number or first time supplied by source	FULL	YES	N/A
New dash number issued and manufactured	FULL	YES	Consult APQP engineer to request Delta PPAP
Engineering	DELTA	YES	Items directly

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drawing receives revision letter change and Honeywell approved PPAP is on file			impacted by change
PPAP accepted based on Deviation, RMRA, Case Record, MRB, or Manufacturing Revision authorizing rework or requiring modification	DELTA	YES	Required on next lot manufactured or on the expiration of waiver/deviation
A change in process, material, tooling, or inspection method that can potentially affect form, fit or function	DELTA	YES	Items directly impacted by change
A change in the manufacturing source or location of the manufacturing equipment including tooling transferred from another supplier or division of same supplier	FULL	YES	Consult APQP engineer to request Delta PPAP
Two years lapse in production	FULL	YES	N/A
PPAPs fabricated from casting tools	FULL	YES	Same as Casting Life Tool Management Table 2 per SPOC 124

Revisions: Entire SPOC content rewritten to clarify and add detail. Table 1 added.

SPOC 500 – Failure Analysis and Reporting Process

This SPOC is intended for applications that require specific Honeywell approved test failure or anomaly analysis and reporting procedures.

500.1 Failure Reporting and Corrective Action

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The supplier shall establish a formal, controlled failure reporting, analysis and corrective action process which is subject to Honeywell approval. The supplier process shall include:

- Reporting of all failures which occur from any initial application of power at the lowest level of assembly through qualification/acceptance testing of deliverable hardware.
- Positive control of failed items, retrieval of failed/overstressed parts, failed item and part failure analysis, and documentation of all pertinent information relating to each failure.

Procedures and forms used in support of the supplier's failure reporting system are subject to approval by Honeywell.

The supplier failure review board shall include at least one member each from the supplier's engineering, reliability and quality assurance organizations.

500.2 Failure Reporting and Corrective Action Notification

The supplier's failure reporting system shall include the following elements:

- An agreed method for notification to the designated Honeywell representative of all failure incidents, regardless of magnitude.
- Notification of the Honeywell Buyer in writing within 24 hours of each failure occurrence. The text shall indicate the failed item part number and serial number, date of failure, test being performed, test specification and paragraph, description of the failure including failed parameters with actual/should be data, and preliminary analysis and disposition.
- Submission of the failure report to the Buyer within five (5) working days of the occurrence of each failure. A copy of the initial failure report may be used for notification purposes.
- Adequate support of failure report status and formal closure actions.
- Submission of the completed (closure) failure report within 21 days of each failure, or prior to shipment of the affected assembly, whichever occurs first.
- Notification of the Buyer of all failure occurrences and shall, along with other Honeywell representatives, have the right to participate in all failure investigation activities.
- Failure Analysis Reports
 - Reports shall include all supporting data and analyses, and shall be described in the supplier's detailed procedures.
- Supplier failure review board members shall review (sign and date) all failure reports when all actions are complete and reports are ready for submittal to Honeywell for approval and formal closure.

Revisions: No changes.

SPOC 501 – Single Lot Requirement

501.1 Scope

The entire quantity ordered shall be delivered from one lot date code, batch number, or heat number. The supplier shall contact Honeywell if this cannot be accomplished to obtain written authorization prior to shipping multiple lot date codes.

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501.2 Glendale Orders Only

All devices for each item on this order shall be from the same lot/date code. For EEE components, all devices shall be from the same date-code or assembly lot; multiple lots of sub-assemblies may be used in the assembly or date code lot. For all other type devices, they shall be from the same lot & bear the same lot identification code. If a single lot previously described cannot be provided, the supplier shall notify the Honeywell buyer of the quantity of lots required to fill the order. The supplier shall receive written authorization from the Honeywell buyer for the quantity of lots required to fill the order. A copy of the Honeywell buyer's written authorization shall accompany each shipment of parts. Each lot shall be packaged & identified separately to maintain lot identification & traceability.

Revisions: No changes.

SPOC 502 – Single Raw Material Lot

All parts for this purchase order item should be from the same raw material lot number. If a single lot cannot be used, the parts shall be produced from as few raw material lots as possible. The parts shall be segregated, packaged and identified by raw material lot to maintain raw material lot identification & traceability.

Revisions: No changes.

SPOC 503 – Delegation of Inspection Authority

Honeywell hereby delegates to the supplier the authority to perform in-process inspections and final acceptance inspection for the product described by part number in the purchase order or letter of delegation. The supplier shall maintain inspection records and make them available upon request. Supplier shall not delegate inspection authority to sub-tier suppliers. Suppliers with this delegation authority are subject to FAA/Honeywell-customer surveillance.

This is a special application SPOC and is not intended to be utilized in place of Self Release / Source Inspection requirements as imposed in SPOC 149.

Revisions: No changes.

SPOC 504 – Baseline / BOM Approval Required

504.1 Glendale Orders Only

Supplier is not to begin production build until Honeywell approves the supplier's baseline.

Supplier shall provide a copy of the configuration baseline & configuration identification list, which was previously approved by Honeywell, with each shipment. The supplier shall provide a certified, signed statement (may be included as part of the Certificate of Conformance) that the materials, processes & parts conform to the applicable Honeywell approved baseline document(s), including baseline date & revision.

504.2 Clearwater Orders Only

A bill of material shall be submitted to Honeywell for approval prior to manufacturing parts for this purchase order. The bill of material shall list all electronic, electromechanical, electro-optical, and electrical parts, plus (for hybrid construction) packages, lids, and substrates. Bills of material shall be controlled by document number and revision. Changes to the bill of material also require Honeywell approval.

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Revisions: No changes.

SPOC 505 – Lot Traveler Requirement

505.1 A copy of the Supplier's manufacturing process flow lot traveler showing sequential processing of parts shall be provided. Travelers shall include operation description, including all inspection and test approval points, quality control approval, and sign off with date is required, and shall reflect the quantity of parts processed through each operation.

505.2 Clearwater Orders Only

The lot travelers shall be controlled by revision letter or number. Honeywell approval of the lot travelers is required prior to processing. All changes to the travelers shall be approved by Honeywell prior to implementation.

Revisions: No changes.

SPOC 506 – Parts List Controlled Item

The revision listed on this purchase order is the Parts List (PL) document revision and is the controlling document for the item. The associated item drawing revision is the minimum drawing revision (MIN DWG REV) as listed on the Parts List document.

Revisions: No changes.

SPOC 507 – Manufacturing Plan Required

The Supplier shall develop a Manufacturing Plan that defines the manufacturing processes to be employed in the manufacture of the part/assembly. The Supplier is encouraged to maximize the use of current documentation techniques (e.g. Part Tracking Systems, Travelers, etc.). The Manufacturing Plan shall be provided to the Honeywell Buyer a minimum of 10 working days prior to the initial start of manufacturing. The Honeywell Buyer will process to the appropriate group for review / approval. Manufacturing shall not start until the Manufacturing Plan has been approved, in writing, prior to the start of manufacturing.

The Manufacturing Plan shall include the following as a minimum:

- 1) Processing Sequence including a brief description of each main processing step.
- 2) Equipment to be used at each step (e.g. Mill).
- 3) Any subcontracted procurements including the identification of sub-tier suppliers (e.g. parts, processes, etc.).

Note: This SPOC is not in place of, or inclusive of, a Detailed Inspection Plan, which is covered in SPOC 128.

Revisions: No changes.

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SPOC 509 – Manufacturing Readiness Review

509.1 Requirement

A joint Honeywell and Supplier Manufacturing Readiness Review (MRR) shall be conducted at the supplier's facility prior to the start of manufacturing when required by the Purchase Order (PO) or Statement of Work (SOW). The supplier shall submit the MRR data package to the Honeywell Buyer a minimum of 10 days in advance of the scheduled MRR.

509.2 MRR Objective

The MRR objective is for the supplier to demonstrate the overall production readiness prior to manufacturing, and to ensure that items to be manufactured will meet the requirements of the PO, SOW, engineering drawings and engineering specifications. The supplier shall demonstrate that all necessary manufacturing plans, inspection plans, travelers (build documentation), tooling, facilities, and other resources are in place and available to ensure meeting all quality and design requirements within the negotiated program budget and schedule.

509.3 MRR Team

The supplier MRR team shall consist of representatives from the management and the technical functions. The management functions shall include the contract administrator and responsible project engineer as a minimum. The technical representatives shall include design engineer/representative, manufacturing engineer/representative, and quality engineer/representative as a minimum.

509.4 MRR Presentation

The MRR presentation shall address the following items as a minimum:

- Supplier Project Team Organization with key personnel identified
- Overall Program Schedule including current status
- Procurement status including all sub-tier suppliers, and if applicable, Qualification status
- Manufacturing milestone schedule
- Action Item Status/Review
- Design Status (as applicable) including current status, trade-offs, producibility studies, lessons learned, etc.
- Detailed Manufacturing Flow Diagram including supplier inspection points and Buyer Mandatory Inspection Points (MIP).
- Manufacturing Documentation Status
- Inspection Documentation Status
- Test Documentation Status
- Tooling needs and statuses including drawing status, build status, calibration status, etc.
- Facilities Readiness including layout and capacity (including plant tour during MRR)
- Operators and Inspectors training
- Overall Project Risk Assessment; technical, cost, schedule. Should include any plans to mitigate risks identified.
- Any additional requirements to be part of the presentation as defined in the PO/SOW

509.5 MRR Data Package

The MRR data package shall include the following as a minimum:

- Copy of MRR presentation
- Any Subcontractor (Supplier) Data Requirements List (SDRL) items as defined in the PO/SOW

509.6 MRR Supporting Documentation

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The following documentation, as a minimum, shall be available for review at the MRR:

- Supplier Drawings and Specifications (as applicable)
- Traveler(s)/Build Documentation
- Test Procedures (as applicable)
- Inspection Procedures
- Tooling Drawings

Revisions: No changes.

SPOC 513 – Certifications Required

513.1 Deer Valley Orders Only

Parts/device certification is required and must be from the actual manufacturer. A certified, signed statement that parts/devices conform to applicable specifications shall accompany shipment and be enclosed with packing slip.

513.2 Clearwater Orders Only

The supplier shall provide the manufacturer's name and lot number for each part or material used in the end product delivered to Honeywell.

513.3 Glendale Orders Only

Certified actual, quantitative chemical &/or detailed mechanical test reports including material producer's certificate for raw material shipped to buyer &/or used against this purchase order must accompany shipments & be included with the packing slip. Reports must validate compliance to current raw material procurement specifications as required on the purchase order and be traceable by heat or lot number.

Revisions: No changes.

SPOC 527 – Airworthiness / Safety Critical

Procurement of Airworthiness / Product Safety Critical, or Flight Safety Critical items or materials: A copy of the quantitative data shall be supplied with the material for each shipment.

Revisions: No changes.

SPOC 528 – Homogeneous Material Requirement

All material supplied under this specification number shall be homogeneous. Homogeneous supplies are defined as material that is produced:

- To the same design as defined by the buyer and seller's documentation;
- From the same material as defined by the applicable material specification.

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When alternate materials are allowed by the purchase order and associated documents, the supplier must certify to a specific alternate.

After material has been submitted to Honeywell, the supplier may not change alternates without prior written approval from Honeywell.

The supplier is not restricted to any source of supply of raw material as long as the material meets the applicable specifications; by the same manufacturing process as defined by the seller's manufacturing plan. Changes in manufacturing location or production discontinuities of one month or more violate this requirement.

All manufacturing process sheets shall have a revision date not later than the date of the initial shipment of supplies to Honeywell, and the process used to manufacture the initial product shipment and all shipments thereafter.

Departure from these requirements, including changes suggested by Honeywell, must be approved in writing by Honeywell's Quality Engineering department prior to such departure.

Revisions: No changes.

SPOC 529 – Delegation of MRB Authority

The supplier is hereby granted authority to perform Material Review Board (MRB) actions on material not in conformance. Results of the MRB action shall be submitted to the Buyer with each shipment of the affected material.

529.1 Material Review Action Restrictions:

- Supplier shall furnish one copy of all Material Review reports to Buyer's Supplier Quality Engineering Department via Buyer's Purchasing Department. One copy of each Material Review action shall be included with the shipment of affected material. These reports shall list in detail the salvage methods utilized, if applicable.
- Final review authority over Supplier's Material Review decisions is retained by Honeywell.
- The Supplier shall not make substitution of Material Review members or delegate Material Review authority to subcontractors performing work on Buyer parts without advance written authorization from Buyer.
- Supplier Material Review action is not allowed when interchangeability, external configuration, function, service life, safety, reliability, or point of attachment to Buyer assemblies are affected.

Revisions: No changes.

SPOC 530 – Standard Repairs of Printed Board Assemblies (PBA)

Standard Repairs shall be performed in accordance with IPC-7711 and IPC-7721. The supplier shall provide a document with each PBA/CCA that has had a standard repair. This document will provide:

- Serial number or UCN
- Location of the repair (zone on pictorial view of drawing or termination points), and
- Type of repair performed (stating the paragraph number in the M4093482).

Revisions: No changes.

SPOC 531 – Outsourcing Approval Required

The Supplier shall notify Honeywell, and request written approval prior to outsourcing a process, part, assembly or end item.

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531.1. Clearwater Orders Only

Records of all authorized subcontract work applicable to this purchase order are subject to audit.

Revisions: No changes.

SPOC 532 – Cosmetic Part – Visual Inspection Requirement

Obvious blemishes (e.g., digs, pits, scratches, etc.) are not permitted. Parts should be packaged individually or in containers using dividers. Suppliers shall ensure that inspection practices include a thorough visual examination of product and shall refer to site specific workmanship specifications where available.

Revisions: No changes.

SPOC 534 – Paint / Plating Thickness Test Required

Painting or plating thickness tests shall be conducted on the item(s) on this order by the painting or plating supplier. Painting or plating thickness test data shall be provided with the shipment.

- If material code 94-G10-78 is used, resistance check per M-spec, M8258799, shall also be performed.
- If material code 94-G14-78 is used, resistance check per M-spec, M8251332, shall also be performed.

Revisions: No changes.

SPOC 535 – TSO / PMA Tags

If the supplier holds certification (TSO/PMA/TC), the supplier is responsible for assigning and maintaining serial number control. If Honeywell holds the certification (TSO/PMA/TC), the supplier shall assign serial numbers sequentially beginning with serial number 1001, or as otherwise directed in the Purchase Order.

For product with supplier held TSO/PMA, the supplier shall provide an FAA Form 8130-3 or equivalent Airworthiness Approval Tag with each product, or for large shipments a single FAA Form 8130-3 or equivalent covering the range of serial numbers shipped. If the Honeywell part number differs from the TSO/PMA/TC approved part number, the Honeywell part number shall be referenced on the 8130-3 or equivalent form (it is acceptable to use Remarks Section 13). For individual products, the original certification shall be attached to the exterior of each product container in a protective envelope or inside the box provided that a stamp/label on the box exterior indicates the enclosure. For products covered under a range certification, a copy of the certificate shall be attached to the exterior of each product container in a protective envelope or inside the box provided that a stamp/label on the box exterior indicates the enclosure.

Revisions: No changes.

SPOC 536 – Airbus Requirements – Equipment Suppliers

Products or services provided under this purchase order must comply with the requirements stated in Airbus' GRES E-0009 document (General Requirements for Equipment Suppliers). Buyer (or Buyer's representative) may assess Supplier's processes and/or product using the IPCA Industrial Process Control Assessment (or other) to validate compliance.

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Revisions: No changes.

SPOC 537 – Airbus Requirement – Equipment and Systems Suppliers

Products or services provided under this purchase order must comply with the requirements stated in Airbus' GRESS AP1013 document (General Requirements for Equipment and System Suppliers). Buyer (or Buyer's representative) may assess Supplier's processes and/or product using the IPCA Industrial Process Control Assessment (or other) to validate compliance.

Revisions: No changes.

SPOC 538 – Boeing Approved Source

Supplier must comply with the latest revision of the D1-4426 Boeing Approved Process Sources requirement specification and be a Boeing approved source.

Revisions: No changes.

SPOC 539 – Required Sources for Jewel, Miniature and Instrument Bearings

539.1 Requirements for Jewel Bearings

The supplier shall supply jewel bearings in accordance with FAR 52.208-1, "Required Source for Jewel Bearings"

539.2 Requirements for Miniature and Instrument Ball Bearings

The supplier shall supply ball bearings in accordance with FAR 52.208-7000 "Required Sources for Miniature and Instrument Ball Bearings".

Revisions: No changes.

SPOC 540 – Teardown Analysis Inspection

All lots supplied on this order are subject to part teardown analysis to an LTPD of ten (10), with a maximum accept number of one. Internal workmanship and bond strength will be examined to the criteria of MIL-STD-883, Method 2010, where the detail specification requires MIL-STD-883 processing or to the criteria of MIL-STD-750 for discrete transistors or diodes.

Revisions: No changes.

SPOC 541 – Insulation, Isolation, Dielectric Testing

Insulation, Isolation, Dielectric isolation (DITMCO) testing is required. Records of DITMCO testing shall be sent with the parts.

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Revisions: No changes.

SPOC 542 – Diodes – Metallurgical Bond

MIL-S-19500 diodes with dash 1 part numbers shall be constructed using only a metallurgical bond between the die and the header.

Revisions: No changes.

SPOC 544 – CCA Requirements

For Purchased Circuit Card Assemblies, supplier shall comply with 001-06010-0000, Honeywell Standards and Processes for Circuit Card Assemblies and Bare Boards and 001-00072-0000, Honeywell Procurement Specification for Printed Circuits Boards.

Revisions: No changes.

SPOC 545 – Inspection Requirement

545.1 Glendale Orders Only

All articles shall be burr and sliver free at 6-10X magnification - illuminated. A burr is defined as any sharp projection of metal protruding from the geometric surface defined by the drawing. A burr is typically caused by a manufacturing process such as machining, drilling or casting, which may be short or long in relation to its thickness and occurs on edges or corners. Slivers are loose or torn pieces of metal rolled into the surface or extending from the surface.

545.2 Clearwater Orders Only

100% visual inspection shall be performed at 10x magnification for permanent and legible marking, body finish, lead finish, insulation, lead straightness, pin holes, excessive material, material, misalignment, and any other visual or mechanical defects.

Revisions: No changes.

SPOC 547 – Summary Report Requirement

Manufacturer shall supply summary reports listing all screening and Quality Conformance Inspection (QCI) tests performed on or covering the components supplied to this order, as specified in the applicable military specification and/or Source Control Drawing (SCD). For periodic tests covering but not performed on the lot shipped, the date of test and lot date code tested shall be shown. Tests involving Percent Defective Allowable (PDA) must show the number of components tested and the number passing, or the calculated PDA for that test. This data may be incorporated into the manufacturer's certificate of conformance.

Revisions: No changes.

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SPOC 548 – Automated Optical Inspection (AOI) *

548.1 AOI Requirements

All CCA's will be programmed on an AOI machine to inspect for: wrong, missing or extra parts; polarity and solder joint criteria. Solder joint criteria may be inspected using X-Ray instead of AOI. Records of AOI operation by UCN and Part number shall be retained by the Seller and made available upon request by the Buyer.

548.2 Clearwater Orders Only

AOI inspection is the preferred method of inner layer inspection. AOI inspection shall be performed by the supplier on each inner layer prior to use in the delivered product. Visual inspection of layers may be performed if the AOI station is down or if it is deemed more technically feasible. Results of inner layer are to be recorded and reviewed for accuracy. Results of inner layer inspection shall be recorded by inner layer number. An attributes test summary (including number of layers inspected, number passed and number failed) shall be delivered to Honeywell.

Revisions: Title revised for clarity.

SPOC 549 – AXI (Automated X-Ray Inspection) of Circuit Card Assemblies

Automated X-Ray Inspection (AXI) of Circuit Card Assemblies (CCA) Requirement – Inspection shall be performed by Automated x-ray (AXI) and/or x-ray. CCA's shall be x-rayed for all hidden solder joints, including BGA and any other inaccessible solder joints, to ensure good solder joints have been achieved. X-ray can be used for other solder joints not inspected during AOI. Records of the AXI or x-ray by UCN and Part number shall be retained by the Seller and made available upon request by the Buyer.

Revisions: No changes.

SPOC 550 – Particle Impact Noise Detection (PIND) Screening

The supplier shall provide signed and dated PIND test results which shall include:

- Part number, lot number &/or date code
- Test specification, method and condition
- Quantity tested
- Number of failures at each pass
- Number of test passes completed
- PDA calculation, if applicable

PIND testing shall be performed by a Honeywell approved source.

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550.1 Minneapolis Orders Only

The test conditions for this PIND screening shall be in accordance with MIL-STD-883, Method 2020.7, Test Condition A, with the exception that lot jeopardy does not apply and that the parts be exposed to one test cycle. The test cycle shall be, as described in Paragraph 3.3 of Method 2020.7.

550.2 Clearwater Orders Only

PIND testing shall be performed on each device in accordance with mil-std-883, method 2020, condition a. A single pass is acceptable. Each device shall be serialized prior to pre burn-in electrical tests. Idd2 subgroup 1 electrical test shall be performed at or below 10ua. Burn-in, electrical tests (pre-burn-in, interim, and final) and pda calculations shall be the same as performed for the qml v device (5962r9689103vxc). Radiographic inspection shall be performed on each device in accordance with mil-std-883, method 2012. Only one view is required.

Revisions: No changes.

SPOC 551 – Purchase and Finish PBA Requirement

This order requires that some components will not be placed on the PBA. Refer to drawing notes and parts list (referenced as select) for locations and quantities on the PBA ordered on this purchase order. These locations must be masked during the soldering and conformal coat operations in order to facilitate assembly and final functional testing. Please refer to individual PBA assembly drawings and associated parts list for identification. Components shall be loaded at buyer's facilities.

Revisions: No changes.

SPOC 552 – Automatic Insertion Tubes

Parts shall be supplied in tubes suitable for automatic insertion and with consistent component orientation. Multiple lot numbers/date codes shall not be mixed in the same tube.

Revisions: No changes.

SPOC 553 – Destructive Physical Analysis (DPA) Samples Required

The supplier shall perform In-house Destructive Physical Analysis (DPA) testing and shall furnish the Honeywell buyer with a list of all serial numbers.

The supplier shall:

- Ship to Honeywell the random sample (selected by Honeywell)
- Continue with the production lot in accordance with normal manufacturing procedures
- Submit a signed certification with the shipment of the DPA test units stating that the submitted units are those that were randomly selected by Honeywell for DPA testing.

The certificate shall also identify the Honeywell part number, manufacturer, manufacturer part number, production lot, date code and serial numbers.

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Upon successful completion of the DPA, the Honeywell buyer shall give formal written authorization to ship the production lot. In no event shall the supplier ship the production units prior to authorization from the buyer.

553.1 Clearwater Orders Only

Two parts from each inspection lot shall be shipped to Honeywell for destructive physical analysis. DPA samples shall be pulled after preburn-in electrical tests, and may be marginal parametric failures (no catastrophic failures). DPA samples shall be marked with a red dot, "x", or -DPA and, as a minimum, the lot and serial numbers.

Revisions: No changes.

SPOC 557 – X-Ray Film Required

X-ray film (uncut sheets with penetrameters intact) is required. Film and marking shall include:

- device manufacturer
- device type
- production lot code or date code
- radiographic film view number and date
- device serial number or cross reference list, and
- x-ray laboratory identification (if other than manufacturer).

557.1 Deer Valley and Glendale Orders Only

X-ray (or Radiographic) inspection film of parts must be supplied with each shipment. X-rays must be traceable to the supplier's lot and/or serial numbers of the parts supplied.

Revisions: No changes.

SPOC 558 – Workmanship Standard

Specification 001-06001-0000 is a requirement of this order.

Revisions: No changes.

SPOC 560 – Integrated Circuit (ICT) and Flying Probe (FP) Requirements *

The supplier shall perform circuit testing by either ICT or FP prior to shipment to Honeywell, and shall provide certified test coverage report that:

- lists each reference designator tested by each method
- submitted as part of the FAI report (and subsequent delta FAI reports)

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- maintained on file at the supplier facility.

The supplier shall maintain proper revision controls for all test procedures.

560.1 Integrated Circuit Testing*

Method 1 ICT testing is the preferred electrical testing method.

560.2 Flying Probe Testing*

Flying probe testing shall be performed when ICT is not available.

Revisions: Paragraphs 560.1 and 560.2 removed requirements to mark boards.

SPOC 561 – Workmanship Standard

Specification 3608102 is a requirement of this order.

Revisions: No changes.

**Revised / **Added*

SPOC 562 – Component Traceability **

The Supplier of any component assembly shall be able to, upon request, provide a list of all material utilized in the creation of said assembly. Material requiring this work order to lot/date code level traceability includes electrical components, the active and passive parts and items in the schematic. It does not include non critical parts such as hardware and other mechanical parts.

The list shall contain as applicable:

- Work order number
- CCA serial number range in the work order

For each electrical component used in the work order:

- The component name
- Honeywell part number
- Reference designators where this Honeywell part number is used
- Quantity used per assembly
- Component OEM manufacturers used in the work order
- Manufacturer part numbers used in the work order
- Lot numbers and / or manufacturing dates used in the work order
- Also required to be provided upon request, is the component distributor and procurement date of each component listed

The system must account for any/all components that require replacement past initial installation. The traceability must be maintained throughout the manufacturing process from work order launch to shipping to Honeywell.

In addition to the component traceability, the supplier shall, upon request, provide all necessary processing history for the assembly in question. This shall include process name, date and time, location, and operator ID of the personnel performing the function.

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Revisions: New SPOC. Requirement of Airbus GRESS revision C.

SPOC 563 – Airbus Concession Process for Notification of Nonconforming Material to Honeywell Purchase Order Requirements **

563.1 Scope

This program is for Subcontractors with Design Authority.

Material that departs from drawings and/or specifications during manufacturing shall be identified and controlled to prevent unauthorized use or delivery to Airbus and/or Honeywell.

563.2 Request for Material Review and Acceptance

The subcontractor may request consideration for nonconforming material that cannot be reworked to fully conform to drawing or purchase order requirements. The concession is required to be submitted in accordance with Airbus concession procedure **AP 2006 - Accepting Nonconforming Items by Concession**. This applies to Class one discrepancies – fit, form, or function of a feature outside the limits of the Subcontractor's own design and MRB authority.

563.3 Failure Reporting

Honeywell reserves the right to request failure analysis on nonconforming hardware from the subcontractor.

Any concession submitted to and dispositioned by Airbus will be reported to the Honeywell Buyer and cognizant site A350 program Quality representative.

563.3.1 Applicability

Upon request from Honeywell, the Subcontractor shall submit failure analysis and corrective action plans, focusing on the root cause of the discrepancy. Report shall be submitted within 30 calendar days of the request unless otherwise specified. The Honeywell eCATS system is to be used by the Subcontractor unless otherwise directed.

563.4 Containment and Corrective Action

When a nonconformance is discovered the Subcontractor must take immediate action to determine if the condition exists on any other inventory, either work-in-process, in Stores at the subcontractors facility, or in prior shipments. Containment action must be taken and documented prior to the next shipment and/or process. For product which has escaped the Subcontractor's quality system the customer must be promptly notified.

The Subcontractor will be responsible for issuing corrective action as applicable and/or as requested by Honeywell.

Revisions: New SPOC. Requirement of Airbus Concession Process.

**Revised / **Added*

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SPOC 564 – Functional Test **

The supplier shall perform functional test prior to shipment to Honeywell, and shall provide certified test coverage report and results in accordance with the Functional Test SOW in place for the purchased product.

Revisions: New SPOC.

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