

WP0603-1 QUALITY ASSURANCE CLAUSES (Appendix II)

A ACCEPTANCE AT DESTINATION

Articles ordered in this contract are subject to final acceptance at destination. Suppliers shall notify and obtain prior approval in writing from Crane - Keltec of product design changes which affect the form, fit or function of the product ordered.

Changes to design, materials or processes, which affect form, fit, function, performance, quality, reliability or safety, shall not be implemented unless approved by Crane - Keltec. Product or assembly shall not be moved or outsourced to another production facility unless a documented request for change is approved by Crane – Keltec in advance.

A1 FIRST ARTICLE (REFERENCE AS9102)

Product will not be accepted without objective evidence of an AS9102 compliant format First Article Verification. A First Article Inspection shall be provided for the initial shipment of any Crane - Keltec controlled or designed part number. Drawings that require a First Article Inspection are:

- a. Standard Drawing - Full First Article Required.
- b. Source Control - Full First Article Required.
- c. Selected Item - All characteristics specifically selected for Crane - Keltec use as identified on the drawing.
- d. Altered Item Drawing - All characteristics altered for Crane - Keltec use as identified on the drawing. If the altered part is a Designed part, a First Article is required on the detail drawing.

Specification Controlled Drawings, Off-The-Shelf, Commercial, Supplier or Vendor Item Drawings do not require a First Article Inspection, unless specifically stated on the purchase order

Evidence of Supplier's First Article Verification Documentation shall include:

1. Recorded inspection and test variable data for all characteristics, requirements and parameters. The Supplier shall record all measurable characteristics (i.e. drawing dimension, tolerance, measured dimension, electrical tests, etc.), including a verification of drawing notes. If the report is not 100% complete, please explain omissions. The supplier shall forward a reproducible, signed copy of the report along with applicable material certifications (ex. coating, paint, plating, composition, etc.) with the initial lot. Certifications are required for all items listed on the Crane – Keltec drawings or bills of material for the item or assembly purchased. Certifications for commercially available components used in the manufacture are not required to be submitted with the First Article but must be available upon request.
2. Verification Quality Notes listed on the Purchase Order have been satisfied.
3. First Article Verification Report shall include supplier name and be validated with an appropriate Quality Acceptance, by stamp or signature and date of inspection. It must include purchase order number, part number, revision letter, drawing number, drawing and parts list revisions, and date code (if applicable).

ITAR CONTROLLED DATA SEE SHEET 1



SIZE A	CAGE CODE 09062	WP 0603	
SCALE	NONE	SHEET 1 of 16	REV AB

4. As a supplement to a supplier inspection document, a copy of the applicable drawing or specification can be used to record the actual measurements or dimensions. Coordinate measuring machine printouts are acceptable as long as a dimensional map is provided.

NOTE:

Results recorded on drawings will not be acceptable if drawing does not include current revision letter.

Additional First Article Clarifications:

A documented First Article Verification is a requirement of this purchase order if:

1. This order is the first to the supplier's facility or changes in manufacturing location for the part number identified on the purchase order, or if
2. There is a change in drawing revisions, inspection methods, tooling, or materials with the potential of affecting form, fit, or function, a First Article Update is required for the area affected by the change only, or if
3. There has been a 1-year or greater lapse in production (not applicable for Distributors). If subsequent shipments are from the same lot/date code as a previous shipment, a copy of the previously submitted First Article report is acceptable, or if
4. This is the first purchase order for this part number to call out First Article Verification, i.e., it is a new requirement.

The First Article sample shall have been fabricated using the same parts, materials and processes where production will be performed. A First Article shall not be performed on prototype parts, unless specified by the Purchase Order.

NOTE:

If subsequent shipments are from the same lot as a previous shipment, a copy of the previous First Article report is acceptable.

NOTE:


First Article Verification Report shall be shipped to Crane - Keltec with the deliverable lot.

NOTE:

At the discretion of Crane - Keltec, actual confirmation of the First Article Verification data at the supplier's plant may be required.

A2 GOVERNMENT INSPECTION

ITAR CONTROLLED DATA SEE SHEET 1

 <p>CRANE AEROSPACE & ELECTRONICS</p> <p>KELTEC A Crane Co. Company</p> <p>FORT WALTON BEACH, FLORIDA 32548</p>	SIZE A	CAGE CODE 09062	WP 0603	
	SCALE NONE	SHEET 2 of 16	REV AB	

Government Inspection is required prior to shipment from your plant. Upon receipt of this order, promptly notify the Government Representative who normally services your plant so that appropriate planning for Government Inspection can be accomplished. In the event the representative or office cannot be located, our purchasing agent should be notified immediately. A reproducible copy of Government Source Inspection shall be submitted with each shipment. Government inspection is required prior to shipment of this material.

NOTE:

This clause should be used only at the customer/Government's request.

A3 QUALITY SYSTEM REQUIREMENTS

The Supplier/Contractor's Quality System shall conform to the requirements of ISO 9001:2000 or equivalent (i.e. AS 9100) and is subject to review and approval by Crane - Keltec Quality Assurance. The Supplier shall implement and maintain an effective quality system, which will assure that all materials and services conform to purchase order requirements. The Supplier's quality system shall be documented and provide for early detection of nonconformances. Records generated by the quality systems shall be made available for periodic review when deemed necessary or requested.

MIL-Q-9858A certification may be accepted as an alternate. If the nature of the material to be supplied or the supplier's organization makes any section of ISO 9001 inappropriate, the supplier shall request exemption by Crane - Keltec Quality Assurance through Crane - Keltec Purchasing.

A4 INSPECTION SYSTEM REQUIREMENTS


The Supplier/Contractor's Inspection System shall conform to the requirements of ISO 9002 denoting the applicable exceptions (latest version) and is subject to review and approval by Crane - Keltec Quality Assurance. MIL-I-45208A certification may be accepted as an alternate. If the nature of the material to be supplied or the supplier's organization makes any section of ISO 9002 inappropriate, the supplier shall request exemption by Crane - Keltec Quality Assurance through Crane - Keltec Purchasing.

A5 ACCEPTANCE TEST PROCEDURE IN-PROCESS AND FINAL

The Supplier/Contractor shall prepare separate detailed test procedures, encompassing tests required for in-process and final acceptance. Each item of hardware, or part thereof, which requires acceptance and testing, shall be covered by an acceptance test procedure. Final and in-process acceptance test procedures require Crane - Keltec Quality Assurance approval prior to the delivery of the first unit of hardware. Subsequent changes are subject to Crane - Keltec Quality Assurance approval prior to incorporation.

A6 CRANE - KELTEC SOURCE INSPECTION

ITAR CONTROLLED DATA SEE SHEET 1

 <p>CRANE AEROSPACE & ELECTRONICS</p> <p>KELTEC A Crane Co. Company</p> <p>FORT WALTON BEACH, FLORIDA 32548</p>	SIZE A	CAGE CODE 09062	WP 0603	
	SCALE NONE	SHEET 3 of 16	REV AB	

At Crane-Keltec discretion, source Inspection may be conducted by Crane – Keltec or it’s representative at the Supplier/Contractor's facilities or where designated in the contract prior to shipment. Inspection/test and in-process inspection/test of the articles defined in this contract shall be subject to witness by Crane - Keltec Quality Assurance Inspection. Inspection and/or test performed in accordance with the agreement between the Contractor and a Crane - Keltec Quality Source Representative will fulfill the acceptance inspection/test requirements of Crane - Keltec. Contractor shall contact the Crane - Keltec Quality Source Representative prior to the start of fabrication so that mandatory in-process inspection/test points can be agreed. The contractor shall notify Crane - Keltec at least 10 days prior to the date acceptance is required. Contractor shall have available and present upon request, documented evidence of his inspection/test performance including in-process and/or final test. This may be used for the acceptance of hardware or material. Required documentation for shipment must be completed and signed by the contractor's authorized quality personnel, and available for the Crane - Keltec Quality Representative's review.

A7 SPECIAL PROCESSES CONFORMANCE

Supplier/Contractor and any sub-tier supplier engaged in special processes such as soldering, welding, cleaning, X-ray, welding, magnetic particle and penetrate inspection, heat treating, plating, potting, etc. shall be in accordance with specifications and standards stated on the drawings and/or purchase order. Contractor shall have records of approval on file, available for review by Crane - Keltec. Crane - Keltec and/or its customers may require certification and approval of special processes.

Suppliers shall ensure that all personnel performing such processes as welding, soldering and Non-destructive Evaluation or Testing are certified in accordance with the specifications contained on the drawings and purchase orders. Suppliers shall also ensure the associated equipment used is certified as appropriate.

A7A NADCAP APPROVAL

Supplier shall be responsible to ensure that all special processes are performed either by the supplier or sub-contractor be accredited by the National Aerospace and Defense Contractors Accreditation Program (NADCAP). Retain all non-destructive testing records and results, including X-ray film for a minimum of 4 years from product shipment. NDT records or Certification approval shall be provided to Crane-Keltec upon request.

A7B LOCKHEED MARTIN APPROVED SOURCES

Supplier shall be responsible to ensure that all Lockheed Martin controlled processes are performed either by the supplier or sub-contractor be by a Lockheed Martin approved source. Lockheed Martin approved sources can be found on the Lockheed Martin home page at: <http://www.lockheedmartin.com/material-management/>

A8 SURVEILLANCE

ITAR CONTROLLED DATA SEE SHEET 1



SIZE A	CAGE CODE 09062	WP 0603	
SCALE	NONE	SHEET 4 of 16	REV AB

During purchase order performance, a Crane - Keltec or other authorized Q.A. Representative may visit the supplier's facilities to monitor the items being manufactured for Crane - Keltec. The representative may audit both the product and the Quality/Inspection System to determine compliance with quality requirements. Advance notification of such visits, whenever possible, will be made to avoid schedule disruption.

A9 ENVIRONMENTAL

Seller shall comply with federal, state and local environmental laws and regulations. Seller shall establish and implement a Hazardous Materials Management Plan (HMMP) IAW National Aerospace Standard (NAS) 411. A hazardous Materials Management Program Plan shall be prepared IAW DI-MISC-81398 and NAS 411 if no plan has been provided on previous contracts or if significant changes occur. To the greatest extent possible, the Seller shall avoid the use of hazardous materials found on 5 lists know as EPA 17, Class 1 ODC's, EPCRA 302, 313, & 313A. Priority for avoidance shall be given to chemicals identified as one of the EPA 17 and Class 1 ODC's. Use of any chemical from these 5 lists, or products containing such chemical shall be approved in writing by the Buyer prior to use through approval of the annual HMMP Progress Reports. HMMP Progress Reports shall be prepared IAW DI-MISC-81397 and NAS 411. These reports shall be submitted 60 DAC and annually on the anniversary of any previous annual reports or more frequently if significant changes have occurred. A statement of nonuse of any of the above listed chemicals shall suffice for a report.

NOTE:

This is a Lockheed Martin (PAC-3) contract requirement and as such must be complied with in order for Keltec to fulfill SDRL requirement of the contract.

B1 RADIOGRAPHS

Radiographs shall be supplied with the material to Crane - Keltec.

B2 CASTINGS, SHEET, TUBULAR AND BAR STOCK, BAR SOLDER AND OTHER BULK METALS AND ALLOYS

Evidence of inspection/test or physical/chemical analysis must be submitted with each shipment of material on this order. Marking: Material supplied under this purchase order must be identified in accordance with the applicable MIL Specification for the material.

B4 CHEMICAL CONVERSION COATING (MIL-C-5541)

Appearance of the MIL-C-5541 Chemical Coating on treated surfaces shall be Class 1A unless specified otherwise, and uniform in appearance without objectionable iridescence or evidence of drain marks, inadequate rinsing or water marks.

B5 RAW CASTINGS AND FORGINGS

ITAR CONTROLLED DATA SEE SHEET 1



SIZE A	CAGE CODE 09062	WP 0603	
SCALE	NONE	SHEET 5 of 16	REV AB

Two samples of all raw castings and forgings are required from new or reworked dies or molds and must be approved by Crane - Keltec Quality Assurance prior to run of production parts. Unless Quality Clause A6 is a requirement of this contract and is exercised, the samples shall be forwarded to Crane - Keltec Receiving Inspection with actual results of lay-out inspection, radiographs and actual chemical and physical test results. When Quality Clause A6 is exercised, the lay-out and test data shall be evaluated at the Supplier/Contractor's facility. In either case, first article approval by Crane - Keltec Quality Assurance is required prior to start of production. The Supplier/Contractor is responsible for obtaining Crane - Keltec approval of any change to process or tooling using the same process listed above.

B6 PROHIBITED MATERIALS

Cutting fluids and cleaning agents containing the listed materials shall not be used, during the machining, fabrication processing or cleaning of the purchase order item unless specified on the engineering drawing.

- Amines, urethanes and amine-containing materials
- Sulfurs, polysulfides, polysulfones and other sulfur-containing materials
- Organo-tin and other organic-metallic compounds

C CERTIFICATE OF COMPLIANCE FOR MATERIAL AND PROCESS CONFORMANCE

The Contractor shall submit with each shipment a certificate by the Supplier/Contractor's Quality Representative that the materials furnished to Crane - Keltec are in conformance with applicable requirements of the contract, drawings and specifications and that supporting documentation is on file and will be made available to the Crane - Keltec or Government representatives upon request.

Military Specifications and standards referenced shall be to the latest revision level in effect on the date of this order, unless specified otherwise.


The C of C shall include a statement that the items meet the requirements of the purchase order and/or specifications referenced on the drawing and/or purchase order. C of C's must include, as a minimum, the following information:

Supplier name and address	Serial number(s), as applicable
Crane - Keltec purchase order number	Quantity of parts in shipment
Part number on purchase order	Statement certifying product compliance
Part revision on purchase order	Signature, stamp, or ID of authorizing agent
Date code(s) or lot number(s) covering all items.	Date of C of C

An example of an acceptable statement of certification of conformance is as follows:

"This is to certify that all items noted above are in conformance with the purchase order, contract, drawings, specification and other applicable documentation and that all process certifications, chemical and physical test reports, are on file at this facility and are available for review by Crane - Keltec".

ITAR CONTROLLED DATA SEE SHEET 1

 <p>CRANE AEROSPACE & ELECTRONICS</p> <p>KELTEC A Crane Co. Company</p> <p>FORT WALTON BEACH, FLORIDA 32548</p>	SIZE A	CAGE CODE 09062	WP 0603	
	SCALE	NONE	SHEET 6 of 16	REV AB

(heatsinks, base plates, etc) or mounting hardware on Crane - Keltec products without prior written approval from Crane - Keltec.

E MARKING REQUIREMENTS FOR MIL-PRF-55681 AND MIL-PRF-55342 DEVICES

Parts shall be marked IAW MIL-PRF-55342 or MIL-PRF-55681. Marking shall be as defined within the applicable standard. Marking size, orientation, and method used is at the discretion of the manufacturer but must be legible and permanent.

E1 PRODUCT IDENTIFICATION

Parts shall be marked in accordance with the applicable drawing and shall include the manufacturer's cage code preceded by MFR. The marking shall be accomplished IAW MIL-STD-130. Marking shall be applied in the approximate area and using the same method as depicted on the drawing.

Parts not required to be marked per drawing shall be individually bag and tagged, IAW MIL-STD-130. Tag shall include part number, revision, and manufacturer's cage code preceded by the letters MFR.

E2 MOISTURE SENSITIVE PARTS (PLASTIC)

The supplier must determine the moisture sensitive level (MSL) of parts in accordance with J-STD-020A - Moisture/Reflow Sensitivity Classification for Non-Hermetic Solid State Surface Mount Devices. It shall be ensured that plastic encapsulated components that are moisture or reflow sensitive are adequately received, stored, processed, packaged and marked to prevent degradation due to moisture in accordance with J-STD-33 - Standard for Handling, Packing, Shipping and Use of Moisture/Reflow Sensitive Surface Mount Devices or equivalent.

Components shall be dry packed with desiccant (MIL-D-3464, Type 1 and 2) in moisture barrier bags (MIL-D-81705), and a humidity indicator card that are virtually impermeable to water. When Moisture Sensitive Devices are to be shipped in carriers or trays, the carriers and trays must be able to withstand baking at 125°C. A label is to be affixed to the container indicating the elapsed time from bake out to vacuum sealing. Sealed bags shall bear a label indicating the original manufacturer's part number and date code(s).

F TRACEABILITY

The Supplier/Contractor shall submit with each lot a certificate of traceability signed by the Suppliers Quality representative. If the shipment is comprised of several lots then the certificate of traceability must reference each lot. (i.e. lot and date code)

F1 DATE CODE/ OR SERIAL NUMBER TRACEABILITY TO MANUFACTURERS LOT

ITAR CONTROLLED DATA SEE SHEET 1



SIZE A	CAGE CODE 09062	WP 0603	
SCALE	NONE	SHEET 8 of 16	REV AB

Supplier shall provide manufacturer's lot or date code information for each item shipped against this purchase order. Documentation accompanying each shipment shall state how many of each lot number(s), date code(s) or serial number is being provided.

F1A DATE CODE OR SERIAL NUMBER ON PACKAGING

Date Code or serial number must be visible on intermediate packaging to include reels, tubes, or other packaging.

F2 TRACEABILITY (PWB)

PWB's must be traceable to the panel. It is recommended the supplier know the exact location for each PWB in each panel for troubleshooting purposes.

F3 SINGLE DATE CODE/LOT

The seller shall make every attempt to provide parts within the same date code or lot.

F4 FOREIGN OBJECT DAMAGE/DEBRIS (FOD) PREVENTION

The Supplier shall establish and maintain an effective FOD prevention program to control and eliminate FOD and/or contamination assuring work is accomplished in a manner preventing foreign objects or material from entering and remaining in deliverable products. The Supplier's program shall utilize effective FOD prevention practices. MIL-STD-980 may be used as a guide to establish and implement the Supplier's FOD program.

Maintenance of the work and control of tools, parts, and materials shall preclude the risk of FOD incidents. Prior to closing inaccessible or obscured areas and compartments during assembly, the Supplier shall inspect for foreign objects/materials. The written procedures or policies developed by the Supplier shall be subject to review and audit by Crane - Keltec Quality Assurance and disapproved when the Supplier's procedures or policies do not accomplish their objectives.

F5 DATE CODE RESTRICTION

All material supplied must have a lot/date code that is within 5 years of the receipt by Crane-Keltec.

G PACKAGING

Items supplied on this purchase order shall be packaged IAW best commercial practice for worldwide shipment by commercial transportation. Items shall be individually packaged, as required, to prevent handling and shipping damage. Individual packages shall be designed and sealed to prevent the encroachment of moisture and contaminants.

H QUALITY ALERT ON NON-CONFORMANCE

ITAR CONTROLLED DATA SEE SHEET 1



SIZE A	CAGE CODE 09062	WP 0603	
SCALE	NONE	SHEET 9 of 16	REV AB

This item has been placed on "Special Alert" for a previous non-conformance.

H1 SUBSTITUTIONS

Substitutions are not allowed for this item. Substituted items will be rejected and returned to the supplier at the supplier's expense.

J HANDLING OF CLASSIFIED DOCUMENTS/MATERIAL/PRODUCT

All classified documents/material/product delivered to Crane - Keltec by suppliers shall adhere to the following requirements:

- Supplier shall follow guidelines set forth in DOD 5220.22 National Industrial Security Program for handling of classified material at the supplier facility and any relevant subcontractors.
- When this clause is invoked on Crane - Keltec purchase order the supplier shall not send documentation including drawings and/or data sheets with the material/product.
- Upon receipt of classified documentation or classified material/product the item shall be directed to Crane - Keltec Security Officer. Upon delivery to Keltec, only a cleared shipping person, the Facility Security Officer (FSO) or his/her assistant FSO may sign for any classified material/product. If received by the cleared shipping person, he/she brings the documentation/material/product to the FSO or the assistant FSO to open, record delivery and for safeguard keeping in a GSA security container.

K ESD

Electrostatic discharge protection shall be maintained in a manner that is routine, with controls exercised over parts during receipt and test of parts, through the manufacture and inspection cycles, storage, and shipping. Electrostatic discharge protection criteria, as a minimum, shall be in accordance with MIL-STD-1686, EIA-625 and MIL-HDBK-263. In addition to classes 1 and 2, class 3 static sensitive devices, as defined in MIL-HDBK-263, shall be protected from damage due to electrostatic discharge with packaging in accordance with MIL-B-81705; and labeled IAW MIL-STD-129.

M MATERIAL SAFETY DATA SHEET (MSDS)

One copy of the MSDS for each product purchased shall accompany each shipment. Receiving Inspection will forward a copy to Crane - Keltec's Safety Department.

N AGE SENSITIVE MATERIAL

Applies to, synthetic rubber (electrometric) products, potting compounds, shrinkable tubing, epoxies, age sensitive adhesives, sealants, compounds and paints. C of C for age-sensitive

ITAR CONTROLLED DATA SEE SHEET 1



SIZE A	CAGE CODE 09062	WP 0603	
SCALE	NONE	SHEET 10 of 16	REV AB

materials shall contain the following as a minimum: date of manufacture, shelf life expiration date and storage conditions to achieve shelf life, if not stated on material package.

NOTE:

Shipments with less than 70% of its total shelf life remaining when received by Crane - Keltec will not be accepted.

N2 SHELF-LIFE AND TEMPERATURE SENSITIVE MATERIAL

Shelf-life and temperature storage conditions are to be attached to the packaging sheet and accompany each shipment to be delivered. The outer-most shipping box must be marked to indicate "Shelf-life and Temperature Sensitive Material" and "Temperature Storage Range in Degrees."

P PERMANENCY OF MARKING ON ELECTRONIC COMPONENTS, PARTS, ASSEMBLIES AND HARDWARE

Resistance to solvents shall meet the requirements of MIL-STD-130 and the applicable marking ink specification as called out on the drawing.

P1 GROUP A ACCEPTANCE TEST (For PWB's)

Lot acceptance data shall be performed in accordance with MIL-PRF-55110, Appendix A, Table A-II and Table A-III. Lot acceptance data shall reflect actual readings taken during test, or a check-off sheet when go-no-go type test equipment is used. Data sheets shall list the actual parameters tested in each case and shall accompany each shipment.


Multi-layer boards require 100% continuity testing per MIL-PRF-55110 Appendix A, Table III, using a 'gold standard' to compare. (Engineering and Quality Engineering may approve, in writing for the supplier to use alternative methods to a 'gold standard').

- Gold Standard: A printed wiring board that a supplier has previously built and shipped to Crane - Keltec of a 'proven design'.
- The Program Manager, Quality Engineer, and Project Engineer (engineering representative) (all three) may waive in writing the "Gold Standard" requirement based on PWB quantity, complexity and contract requirements.

P2 GROUP B ACCEPTANCE TEST (For PWB's)

Environmental test or qualification test results shall list all parameters tested and actual readings taken during these tests. The Group B test requirement may be satisfied when test data demonstrates satisfactory performance of monthly Group B test samples submitted to a DESC

ITAR CONTROLLED DATA SEE SHEET 1

 <p>CRANE AEROSPACE & ELECTRONICS</p> <p>KELTEC A Crane Co. Company</p> <p>FORT WALTON BEACH, FLORIDA 32548</p>	SIZE A	CAGE CODE 09062	WP 0603	
	SCALE	NONE	SHEET 11 of 16	REV AB

suitable laboratory as specified in MIL-PRF-55110. Group B testing is not necessarily required to be performed on Crane - Keltec PWB's. This data shall accompany each shipment.

P3 GROUP C ACCEPTANCE TEST (For PWB's)

Production sampling test as required by specification may be selected for parts used in Group A and B tests. The results of the test shall be forwarded to Crane - Keltec Quality Assurance.

P4 PRINTED WIRING BOARD IDENTIFICATION

Manufacturer's applicable FSCM, logo or other identification shall be etched or stamped in permanent ink on each Printed Wiring Board supplied under this purchase order.

P4A PRINTED WIRING BOARD IDENTIFICATION (HIGH VOLTAGE)

Manufacturer's applicable FSCM, logo or other identification shall be stamped in non-conductive permanent ink on each Printed Wiring Board supplied under this purchase order.

P5 PRINTED WIRING BOARDS USED ON HI-REL SOLDERING PROGRAMS

Printed Wiring Boards shall be fabricated and tested IAW MIL-PRF-31032 and/or MIL-PRF-55110. Printed Wiring Boards shall meet the requirements of IPC-A-600, CLASS 3. Solder mask, when specified, shall be per IPC-SM-840A and shall be applied over bare copper. Solderability testing shall be in accordance with IPC-S-804. The following are required on each lot of PWB's:

One coupon per panel is to be retained by the supplier for 7 years and available upon request to Crane - Keltec.

Date codes of the PWB's shall be within 180 days of the receipt of the item by Crane - Keltec.

NOTE:

PWB's, with date codes exceeding 180 days, may only be shipped with prior written approval. Approval can be obtained through the Purchasing Department of Crane - Keltec. One extra board will be required for solderability testing at Crane - Keltec, if the PWB's pass solderability testing, the boards will be accepted.

- Individual PWB's shipped to Crane - Keltec must be stored and shipped individually in sealed Electrostatic Discharge (ESD) shielding bags. A desiccant material will be packed with each PWB to minimize moisture in storage.
- PWB panels shall be packaged in sealed Electrostatic Discharge (ESD) shielding bags so that individual panels are separated to prevent damage. A desiccant material will be packed with each PWB panel to minimize moisture in storage. .

ITAR CONTROLLED DATA SEE SHEET 1



SIZE A	CAGE CODE 09062	WP 0603	
SCALE	NONE	SHEET 12 of 16	REV AB

- Symmetry across Board Thickness: top half shall be a mirror image of bottom half to achieve a balanced construction, unless specified otherwise.

P6 PRINTED WIRING BOARDS USED ON DEDICATED SERVICE ELECTRONIC PRODUCTS

Printed Wiring Boards shall meet the acceptance criteria established in IPC-A-600 for CLASS 2. Solder mask, when required, shall be per IPC-SM-840 CLASS 2 and shall be applied over bare copper, unless specified otherwise. Symmetry across Board Thickness: top half shall be a mirror image of bottom half to achieve a balanced construction, unless specified otherwise.

R REQUIREMENT FOR DRAWINGS

Drawings, sketches and specifications sufficient to inspect and/or test this material shall accompany each shipment under this contract.

R1 RECORD RETENTION

The Supplier shall maintain adequate records of inspections and tests for a minimum of seven (7) years. Records shall provide objective evidence of inspection with applicable drawings and specifications and shall be made available for review. Records include material certification, special processing, work order/traveler, test reports, inspection reports, calibration records and first articles. Records shall include corrective actions taken when applicable.

S/S1 COMPONENTS WITH SOLDERABLE LEADS OR SURFACES

Solderable component leads or surfaces (including wire) must meet the requirements for solderability per MIL-STD-202 Method 208 and/or ANSI/J-STD-002 (Solderability Tests for Component Leads, Terminations, Lugs, Terminals and Wires). Leads, pins and terminals of components or parts susceptible to oxidation shall be protected by adequate packaging to minimize oxidation during storage and shipment.

S2 COMPONENT AND ITEMS WITH GOLD LEADED SURFACES

Except for surface mounted parts, gold shall be removed from the to-be soldered surfaces of gold parts. For surfaced mounted parts, the gold shall be removed from at least 95% of the total gold plated surface and there shall be no gold on the to-be soldered areas of the part. The tinning process for both types of components shall consist of two separate solder dips.

S3 SPECIALTY METALS - DFARS 252.225-7014 (BERRY AMENDMENT)

The Contractor/Supplier shall include (flow down) to all their suppliers of specialty metals as defined by DFARS 252.225-7014. DOD's interpretation of this specialty metals clause is that it prohibits the contractor (including its suppliers at every tier) from incorporating into military parts, components, and/or end item deliverables "specialty metals" which have been melted outside the United States, its possessions, or Puerto Rico, unless certain limited exceptions set forth in the clause or DFARS Subpart 225.7002-2 apply. One such exception is for specialty metals melted in

ITAR CONTROLLED DATA SEE SHEET 1



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SIZE A	CAGE CODE 09062	WP 0603	
SCALE	NONE	SHEET 13 of 16	REV AB

a qualifying country or incorporated into an article manufactured in a qualifying country. Those countries are listed at DFARS 225.872-1(a) or (b).

S4 STATISTICAL PROCESS CONTROL (SPC):

SPC shall be implemented and maintained by the supplier. The Supplier's SPC program shall be documented and include provisions for selection and identification of key characteristics and/or processes, statistically based control charting, demonstration of continuous improvement, management supervision, corrective action, training, and flow down to sub-tier suppliers when the key characteristic and/or process is controlled by a sub-tier supplier. The requirement for and establishment of SPC key characteristics and/or key processes may be based on similar parts or processes.

T TEST REPORTS

Actual functional test reports referencing Purchase Order number, contractor's name and address and/or independent laboratories name and address, part number, part name, serial number/date code if applicable, data and run time if applicable must accompany each shipment to be delivered. These reports shall be validated by an authorized representative or the Contractor's Quality Department by either an inspection stamp or signature.

T1 MIL-S-19500/MIL-M-38510

Requirements of the latest revision of MIL-S-19500/MIL-M-38510 are applicable to material furnished on this purchase order.

T2 SCREENING DATA

The seller shall provide screening results in accordance with specified documents.

T3 DESTRUCTIVE PHYSICAL ANALYSIS REQUIRED (DPA)

The seller shall perform and provide DPA results in accordance with specified documents.

T4 PRODUCT VERIFICATION TESTING (PVT)

The seller shall perform and provide PVT results in accordance with specified documents.

T5 CHEMICAL AND PHYSICAL TEST REPORTS

One copy of actual chemical and/or physical test reports, for each lot, batch or heat shall accompany each shipment.

T6 TEST SAMPLES

ITAR CONTROLLED DATA SEE SHEET 1



SIZE A	CAGE CODE 09062	WP 0603	
SCALE	NONE	SHEET 14 of 16	REV AB

Concurrent with the shipment of production articles, Supplier/Contractor shall furnish test sample(s) of each batch sufficient to conduct test in accordance with specification of purchase agreement requirements. Each test sample must be clearly and permanently marked with (1) batch or lot number; (2) date manufactured; (3) specification or material control information number; (4) Contractor's designation; (5) purchase agreement number.

T9 PURCHASES OF CUSTOMER DESIGNED TWT, UNITS, POWER SUPPLIES AND MODULES
 This group includes purchases for products or services that are either complex or have critical application and for which conformance to contract requirements cannot or should not, for economical reasons, be fully determined upon receipt. Full acceptance will be determined on one or both of the following conditions (a) the installation of product in its intended application (b) engineering or test evaluation of the product.

W MATERIAL REVIEW

Material review authority is not delegated: non-conforming materials will require approval from Crane - Keltec prior to shipment. On approval to ship the supplier shall be responsible for clearly marking the item as "Non-Conforming".

W1 SUBCONTRACTED ASSEMBLIES AND PRINTED WIRING BOARDS (Military Products)

Soldering shall be in accordance with the requirements of MIL-STD-2000A or ANSI/J-STD-001 Class 3. IPC-A-610 Class 3 shall be the inspection criteria. Evidence of manufacturing and inspection shall be delivered with each assembly/lot. When required by drawing or contract, each part must be serialized. Serial number sequence is to be supplied by Crane - Keltec. Static sensitive devices must be processed, protected, identified, and shipped in accordance with MIL-STD-1686 and DOD-HDBK-263 or EIA-625.

W2 SUBCONTRACTED ASSEMBLIES AND PRINTED WIRING BOARDS (Commercial Products)

Soldering shall be in accordance with the requirements of ANSI/J-STD-001 Class 2 or comparable best commercial standard. IPC-A-610 Class 2 shall be the inspection criteria. Evidence of manufacturing and inspection shall be delivered with each assembly/ lot. When required by drawing or contract, each part must be serialized. Serial number sequence is to be supplied by Crane - Keltec. Static sensitive devices must be processed, protected, identified, and shipped in accordance with MIL-STD-1686 and DOD-HDBK-263 or EIA-625.

W3 WORKMANSHIP FOR FABRICATED MAGNETIC ASSEMBLIES (Military Products)

Each manufacturing lot shall be identified with the manufacturer's FSCM number and the date code of manufacture. Soldering shall be in accordance with the requirements of MIL-STD-2000A or ANSI/J-STD-001 Class 3. Parylene N may not be used in lieu of Parylene C as a coating for cores.

ITAR CONTROLLED DATA SEE SHEET 1



SIZE A	CAGE CODE 09062	WP 0603	
SCALE	NONE	SHEET 15 of 16	REV AB

W4 WORKMANSHIP FOR FABRICATED MAGNETIC ASSEMBLIES (Commercial Products)

Each manufacturing lot shall be identified with the manufacturer's FSCM number and the date code of manufacture. Soldering shall be in accordance with the requirements of ANSI/J-STD-001 Class 2 or comparable best commercial standard. Parylene N may not be used in lieu of Parylene C as a coating for cores

W5 WORKMANSHIP OF MACHINED PARTS

Workmanship shall be in accordance with the drawing requirements, and any requirements of the detail equipment specification applicable to marking of parts and assemblies, welding and brazing, plating, riveting, finishes, machine operations, screw assemblies, and freedom of parts from burrs, sharp edges, press brake marks, or any other damage or defect that could make the part (or equipment) unsatisfactory for the purpose intended.

W6 CORES, TORRIDS, FERRITE BEADS, BOBBINS, E-CASES, AND LAMINATIONS

Workmanship and manufacturing of Cores, torrid, ferrite beads, bobbins, e-cases, and laminations shall meet the requirements as specified in PC 110-84, Standard Specifications for Ferrite Pot Cores and MMPA Standard No. UEI 310, Standard Specifications for Ferrite U, E & I Cores, unless specified otherwise.

X NO SPECIAL REQUIREMENT (Internal Use Only)

This code is to be applied to all purchase orders with no special or specific requirements. Only to be used for non-deliverable items. Material ordered under this note is for items under the category of office supplies, maintenance material, forms and will be accepted by the user to her/his requirements. This material is not intended for delivery to Crane - Keltec Customers.

ITAR CONTROLLED DATA SEE SHEET 1



SIZE A	CAGE CODE 09062	WP 0603	
SCALE	NONE	SHEET 16 of 16	REV AB