

Meggitt Aircraft Braking Systems

Supplement No 1 Rev P

Quality Assurance Purchase Order Requirements

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

When the following requirements are identified within the purchase order, they become a part of the contract requirements and must be satisfied by the Seller to fulfill the complete contract obligations of the purchase order. Where reference is made to specifications, standards or regulations noted in any of the requirements, the latest revision issued at the time of purchase order award shall be applicable on the Seller unless otherwise specified. **Changes to this document from the previous revision will be indicated in bold type and (I) change bars in the right margin.**

Z 10: CERTIFIED SUPPLIER DOCK-TO-STOCK SHIPMENT

The Seller's MABS[®] assigned "Certified Vendor Representative" (CVR) shall stamp and affix a completed MABS[®] Certified Shipment Label (MABS 2153 see Attachment B), to the "number one" (i.e.: box # 1 of XX) shipment container, adjacent to the bar code label. The CVR certified that by the application of the MABS[®] Certified Shipment Label; the item(s) are in compliance to the purchase order and applicable specification requirements. All inspection and or test results documenting the item(s) compliance to the purchase order are available for examination by the Purchaser upon request. This includes all supporting subcontractor documentation. Note; sample inspection, when performed, shall be in accordance with the MABS[®] C=0 sampling plan (reference Attachment "A"), using as a minimum, 1.0 AQL. **Contact your Procured Quality Assurance Engineer or the MABS[®] Buyer to request the MABS 2153 Labels.**

Z 53: CHEMICAL AND MECHANICAL PROPERTIES DOCUMENTATION

The Seller shall submit with each shipment for each melt, heat lot or run, evidence attesting compliance to the chemical and/or mechanical property requirements of the applicable drawing, specification and purchase order. Evidence of compliance shall be transmitted in the following specified form:

- (a) Chemical composition, by an actual composition analysis test report, except that wrought aluminum may be certified to the specific chemical ranges.
- (b) Chemical composition, by a Certificate of Compliance to the specification requirements. All applicable material specifications must be identified on this document.
- (c) Mechanical properties, by an actual test results report.
- (d) Mechanical properties, by a Certificate of Compliance to the specific requirements. All applicable material specifications must be identified on this document.

Z 54: STATEMENT OF CONFORMITY / CERTIFICATE OF CONFORMITY

The Seller shall furnish with each shipment of parts or material a Statement of Conformity (S.O.C.) / **Certificate of Conformity (C. of C.)** attesting that the item(s) shipped are in compliance with all purchase order and applicable specification requirements. The S.O.C. / **C. of C.** shall also state that all inspection and/or test results documenting the item(s) compliance to the purchase order are available for examination by the Purchaser upon request. This includes all supporting subcontractor documentation. The S.O.C. / **C. of C.** must be signed by the Seller's authorized Representative. Direct reference to the Purchaser's purchase order number, item part number, **item serial numbers (if required)**, item revision level and the quantity shipped must be made.

Z 55: GOVERNMENT SOURCE INSPECTION

All items on this purchase order to subject to Government inspection at the Seller's plant prior to shipment. Seller shall provide the Government Representative ten (10) days, advance notification of the event. Upon receipt of this purchase order, Seller shall promptly notify the Government Representative who normally services your plant and provide the representative with a copy of the purchase order so that the appropriate planning for Government inspection can be accomplished. If no Government Representative services Seller's plant, Seller shall notify the nearest Defense Contract Administration Service Office or other appropriate Government contract office. In the event a representative or office cannot be located, Seller shall notify the Purchaser's Procurement office immediately.

Z 56: GOVERNMENT INSPECTION

Material furnished on this purchase order is subject to Government acceptance at the Purchaser's plant.

Z 57: SOURCE SURVEILLANCE ACCEPTANCE BY PURCHASER

Prior to shipment, surveillance acceptance shall be performed by the Purchaser at the Seller's facility. The Seller shall notify the Purchaser at least three (3) working days in advance of the intent to ship and withhold each shipment pending necessary action by the Purchaser's Quality Assurance Representative (PQAR). The Seller shall provide all the necessary inspection/test data, facilities, equipment and personnel required by the Purchaser's PQAR. Final acceptance of the product will be at either the Purchaser's facility, or a site designated by the Purchaser. A copy of the Purchaser's Meggitt Sourced Shipment label (MABS 2154 see Attachment B) as provided by the MABS[®] PQAR shall be affixed, adjacent to the bar code label, on the "#1" Box of each shipment (i.e.: Box #1 of XX). If the supplier does not bar code, then the Supplier Material Release form (MABS-1375), completed by the PQAR, **to show evidence the source surveillance was completed**, must also accompany each shipment. All inspection and/or test results documenting the item(s) compliance to the purchase order shall be retained by the supplier and made available for examination by the Purchaser upon request. This includes all supporting subcontractor documentation. Note; sample inspection when performed by the seller shall be in accordance with the MABS[®] C=0 sampling plan using, as a minimum, 1.0 AQL. (Reference Attachment "A")

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

Z 58: MATERIAL REVIEW BOARD AUTHORITY

Seller material review board authority is NOT authorized on this Purchase Order. Any nonconformance to the purchase order, drawing, specifications, or other applicable documents must be submitted to the Purchaser, through the Purchaser's Procurement Organization, for the Purchaser's MRB approval prior to shipment. The Purchaser reserves the right to require the identification of the root cause of the nonconformance and describe the implemented corrective action taken by the Seller.

***SCRAP DISPOSAL:** Parts scrapped at your facility and are identified with a MABS[®] part number, cage code (0B9R9) or other MABS[®] trademarks or symbols are required to be mutilated beyond use prior to disposal.

NOTE: this code is not applicable to the portion of the design where the Vendor holds the design rights (i.e. Not a MABS[®] drawing or specification.)

Z 59: SELLER DOCUMENTATION

Failure of the Seller to deliver documentation required by the purchase order to support each shipment shall be cause for the rejection and return of the shipment to the Seller.

Z 60: MILITARY SPECIFICATION ITEM (Fastener hardware, fittings, electrical components, weld wire, solders paints, etc.)

(a) Military Specification Qualified Products (QPL) supplied by the manufacturer (or an authorized distributor):

The Seller's warranty assures that:

- The product(s) supplied meet all qualification requirements of the applicable military procurement specification.
- The manufacturer of the product supplied is listed on the applicable Qualified Products List (QPL).
- Records are on file at the Seller's facility, available for Purchaser's review, to evidence compliance.

(b) Military Specification Qualified Products (QPL) supplied by the sources other than the manufacturer (or an authorized distributor):

The Seller's warranty assures that:

- The manufacturer of the product supplied is listed on the applicable Qualified Products List (QPL).
- Records are on file at the Seller's facility, available for Purchaser's review, which evidence the product supplied is traceable to a manufacturer listed on the applicable Qualified Products List.

(c) Supply of Military Specification materials that have no Qualified Products List (QPL) requirements.

The Seller's warranty assures that:

- The product supplied has been manufactured in accordance with the applicable military specification requirements.
- Records are on file at the Seller's facility or at the Seller's source of purchase, available for Purchaser's review, which provide trace ability to the manufacturing source(s) of the product supplied and assure compliance to material property requirements of the specifications.

Z 62: PART IDENTIFICATION MARKING

If the MABS[®] drawing or specification specifies "part identification marking" requirements, then the requirements specified on the MABS[®] drawing or specification take precedence over supplement code Z 62-. When "part identification marking" is not specified on the drawing or specification then the parts shall be identified as follows:

- 1) The supplier shall as a minimum affix the part number to the minimum package or container.
- 2) Adhesive materials (labels) shall not contact the finished part(s)
- 3) The part number shall be as specified on the purchase order
- 4) Material melt or heat lot numbers will be referenced if applicable
- 5) Serial numbers will be referenced if applicable
- 6) Manufacturing lot or date code will be referenced if applicable.

In addition to the "part identification marking" as specified by either the MABS[®] drawing, specification or supplement code Z62-, the supplier is required to apply their MABS[®] supplier acceptance stamp if they have been issued one by MABS[®].

When a supplier acceptance stamp has been issued to the supplier by MABS[®], it shall be applied as follows:

Example =



- 1) Directly to the part on a non-functional surface near the part number.
- 2) Using the same method as specified for the marking of the part number. If the MABS[®] drawing or specification does not specify the method, then the supplier is permitted to use a permanent method that will not degrade the surface, such as vibra-etch or permanent ink.
- 3) In a size appropriate to the size of the part. The size of the MABS[®] supplied stamp may be altered to accomplish this, provided the stamp remains legible.

Z 66: "O" RINGS, PREFORMED PACKING, AND SYNTHETIC RUBBER MATERIALS

The identification, packaging, and age control conditions that apply to the age sensitive materials supplied on this purchase order shall be in accordance with SAE ARP 5316, the following exceptions noted:

- "O" Rings and performed packing shall be marked and packaged individually
- Synthetic rubber parts with suitable surfaces shall be marked individually.
When suitable surfaces do not exist, identification marking may be accomplished by tagging the parts or marking the individual part container(s).

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

- The Seller shall identify (mark) these items with the following information:
- Item part number, as defined by purchase order
 - Governing material specification number
 - Manufacturer's compound number
 - Supplier/Manufactures batch control Number
 - Material cure date – preferred format: Quarter and Year of cure of the rubber component (e.g. July to Sept 2007= 3Q07)
 - Expiration date – preferred format: Quarter and Year of expiration for the rubber component (e.g. July to Sept 2007= 3Q07)

NOTE 1: When the Shelf Life is unlimited per SAE ARP 5316, then identify the package as "Unlimited" or "Unl.".

NOTE 2: Parts must be delivered with at least 75% shelf life remaining. (No more than 25% of the shelf-life may be consumed)

Z 67: SINTERED FRICTION MATERIAL PRODUCTS

The Seller shall furnish certification with each shipment, assuring that no change in chemistry or characteristics of the friction compound from the qualified mix has taken place.
Material, which deviates, must be approved by the Purchaser prior to shipment.

Z 70: LIMITED LIFE MATERIAL (SHELF LIFE)

(Adhesives, epoxy, paint, solvent, fluxed solder, etc.) Each container must be identified with the manufacturer's lot/batch number and shelf life expiration date. The Purchaser's Form, PQA-2 (page 15) must be completed by the Seller and accompany the shipment. The manufactures standard certification shall be accepted in lieu of Form PQA-2, if the certification lists all information required by Form PQA-2.

Z 71: PRESERVATION, PACKAGING AND SHIPPING

When the drawing, specification, or purchase order lacks specific packaging and/or shipping instructions, it shall be the Seller's responsibility to maintain adequate control of the packaging to ensure that the quality of the delivered item(s) is maintained and that damage, deterioration, substitution and loss in transit is prevented.

Z 72: QUALITY ASSURANCE SYSTEM REQUIREMENTS

The Seller shall have and maintain a quality assurance program as identified below. The program shall be subject to the Purchaser's audit and approval. Revision levels shall be to the latest revision level applicable at the time of purchase order issuance.

A-AS9100 Quality Management Systems-Aerospace-Requirements.	E-ISO 9001/FAR PART 21, Quality Management System.
B-Other 3 rd Party Certified QA Systems (TS/QS/NADCAP etc)	F – Canceled
C-MIL-I-45208/FAR PART 21	G – Canceled
D-Control of Quality, Distributor System The following are minimum requirements for distributors: <ul style="list-style-type: none"> ➤ Receiving inspection ➤ Non conforming material control. ➤ Material trace ability ➤ Storage control ➤ Packaging and shipping control ➤ Quality documentation 	H- MABS 21-2 Basic Quality system and when appropriate the additional survey supplements (i.e. heat Treating, Plating etc.)

Z 73: INSPECTION AND ACCEPTANCE TEST REPORTS

- (a) ACCEPTANCE TEST INSTRUCTIONS-Shall be prepared by Seller and must receive Purchaser's approval, at least thirty (30) days prior to first shipment of part, components or assemblies cited on the Purchase Order. Instructions shall describe tests to be performed, control media and tolerances applied, method of tests and test equipment used. Instructions should provide for recording of parameters measured, cross-references to identity of units being shipped, and any special testing requirements defined on Purchase Order.
- (b) INSPECTION INSTRUCTIONS-Shall be prepared by Seller and must receive Purchaser's approval, at least thirty (30) days prior to first shipment of any part, components or assemblies cited on the Purchase Order. Instructions shall describe actual inspections to be performed (dimensional, finish, general quality characteristics), control media and tolerances applied, inspection methods and equipment used. Instructions should provide for recording parameters measured, cross-references to identity of units being shipped, and any special inspection required by Purchase Order

Z 74: PURCHASE INSPECTION INSTRUCTIONS

Instructions supplied by the Purchaser shall be followed by the Seller during the item(s) inspection. All specified data shall be reported. Be identified to the item(s) and shall accompany the item(s) shipped by Purchase Order.

Z 75: SAMPLING INSPECTION OR TEST UPON RECEIPT

The items supplied on this purchase order shall be subject to sampling to an approved statistical sampling plan upon receipt. Should the sample fail to pass the sampling criteria, the lot shall be rejected, or may as conditions dictate, be subject to subsequent Purchaser's re-inspection, re-sampling, or 100% lot sorting at the Purchaser's facility. The costs associated with such re-inspection, re-sampling and/or lot sorting may, at the Purchaser's option, be charged to the Seller. Any such charges shall be subject to the Purchaser's review with the Seller.

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

Z 77(A) - ACCEPTANCE TEST REPORTS (F.T. DATA ATTACHED)

The Seller shall submit with each shipment one copy of the detailed results of all tests that verify and document the item's compliance with purchase order requirements. Unless otherwise specified by MABS[®] Functional Test Instructions (FTI) the reports shall reference the purchase order number, item part number, serial number, part drawing revision level, item material number (if applicable), recorded test results (electrical, mechanical, performance, etc.), accept/reject criteria, signature of the tester, and date of test. The applicable A.Q.L. and sample size used must be shown. The methods of reporting shall be as follows:

The method of reporting the data may be in the form of "variables" data (actual recorded values) or "attributes" data (evidence of test values are not recorded), or a combination thereof.

NOTE: All functional test data items shall be attached to or included with each individual unit. If a unit is boxed individually the functional test data shall be included in the same box.

(B) - LOT INSPECTION PLAN AND RECORD (MIL-STD-105): (This code has been superseded by Z90)

(C) - SOFTWARE QUALITY ASSURANCE PLAN

The Seller shall prepare and maintain a written software quality assurance plan in accordance with DOD-STD-2167, DOD-STD-2168 and format DID-MCCR-80010. The plan shall be submitted to the Purchaser, through Procurement, for Quality Assurance approval no later than forty-five (45) days after receipt of the purchase order. When conflicts occur, DOD-STD-2168 shall take precedence.

(D) - ACCEPTANCE TEST REPORTS (F.T. DATA GROUPED)

The Seller shall submit with each shipment one copy of the detailed results of all tests that verify and document the item's compliance with purchase order requirements. Unless otherwise specified by MABS[®] Functional test Instructions the reports shall reference the purchase order number, item part number, serial number, part drawing revision level, item material number (if applicable), recorded test results (electrical, mechanical, performance, etc.), accept/reject criteria, signature of the tester, and date of test. The applicable A.Q.L. and sample size used must be shown.

NOTE: All functional test data for the individual units shall be collected and placed in a separate data envelope. Accompanying the shipment, this data envelope shall be included in container #1 of the shipment.

Z 78: SELLER'S CONTROLLED PRODUCTS

The Seller shall furnish one (1) copy of the Seller's applicable drawing(s), specification(s), and/or a reproduction of a catalog page, as appropriate, with the first shipment of this purchase order.

Z 79: QUALIFICATION TEST DATA

The Seller shall submit a copy of all qualification test data with each initial qualified lot. The data shall be signed by the Seller's recognized Quality Assurance authority. Qualification data approved by the Purchaser or a Government Agency and prior date of approval is identified.

Z 80: CALIBRATION OF ACCEPTANCE EQUIPMENT

All the Seller's gaging, measuring, and testing equipment used in the manufacture and acceptance of items on this purchase order shall be calibrated against standards traceable to the National Institute of Standards and Technology or International Standards.

Z 81(1): FIRST ARTICLE INSPECTION REPORT (FAIR)

At the Seller's plant, under the surveillance of the Purchaser's Quality Assurance Representative.

The Seller shall notify the **respective MABS[®] Buyer** at least three (3) working days in advance of presenting the sample and production lot.

A sample (1 piece unless otherwise specified) taken randomly from the first production run after acceptance of the lot by the Seller's Inspection Department must be subjected to a First Article Inspection. Data for all characteristics, including actual recorded readings for measurable characteristics, must be included in the FAIR. The FAIR shall be included with the first shipment in a separate envelope identified as "First Article Data" (paperwork) and included in box # 1 of the shipment.

NOTE: AS9102 shall be used for documenting the FAIR unless an alternate format is approved by MABS[®] Quality Engineering.

(I) Assembly and Sub-assembly FAIR shall contain the following items:

- 1) A bill of material, including a listing of:
 - a) All detail parts and/or subassembly part numbers, their respective revision and Engineering Change notices (EPCN) and/or Engineering Deviations (EDN) the required quantity and status of their FAIR pending or completed).
 - b) All hardware part numbers and the required quantity.
 - c) All raw materials, specifications (type, class and grade).
 - d) Applicable assembly instruction document (ATP) and/or functional test instruction (FTI).
- 2) An Inspection report, including:
 - a) Actual configuration, drawing revision, EPCN's, EDN's and rejections (I.N.'s). This shall be based upon the MABS[®] drawings or MABS[®] Source Control drawings whenever applicable.
 - b) Operations performed if less than complete assembly/subassembly and authorized by MABS[®] P.O. (i.e. "less Paint")
 - c) Required dimensions (Shown on the assembly, subassembly and/or interface drawings), the applicable tolerances and actual results.

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- d) The method used to verify each characteristic. (i.e.: The specific numbers and /or descriptions of the tooling used to manufacture, test or inspect the product.)
 - e) Identification of all special processes used (specification number, revision, title and type and class within) in the manufacturing sequence).
 - f) ATP and FT results, with functional test documents as applicable.
 - g) All general drawing note requirements and actual results.
 - h) Detail part and subassembly FAIR as defined below.
- 3) Raw material traceability documents (test reports, lab analysis, manufactures Certificates of Conformance (C of C) etc.)
 - 4) All other sub-tier supplier test reports and C of C's for internal detail parts.
 - 5) Computerized Measurement Machines (CMM) report with supporting Data when specifically requested.

(II) Detail Part FAIR shall include the following items:

- 1) Sellers proprietary part number FAIR shall be completed and filed at the seller's facility. The FAIR shall be made available for review, on-site, when requested by the purchaser.
- 2) The inspection report including:
 - a) Actual configuration, drawing revision, EPCN's, EDN's and rejections (I.N.'s). This shall be based upon the MABS[®] drawings or MABS[®] Source Control drawings whenever applicable.
 - b) Operations performed if less than complete assembly/subassembly.
 - c) Required dimensions, tolerances and actual results.
 - d) The specific numbers and /or descriptions of the tooling used to manufacture test or inspect the product.
 - e) Identification of all special processes used (specification number, revision, title and type and class within) in the manufacturing sequence.
 - f) Hardness and conductivity values if applicable.
 - g) The specified raw material such as alloy, specification (type and class) and final tensile/temper.
 - h) All general drawing notes and actual results.
- 3) Raw material traceability documents (test reports, lab analysis, manufactures Certificates of Conformance (C of C) etc.)
- 4) All other sub-tier supplier test reports and C of C's.
- 5) CCMM report with supporting data when specifically requested.

Z 81(2) FIRST ARTICLE INSPECTION REPORT (FAIR)

By the seller, at the seller's plant, with the results scanned and e-mailed or sent to the respective MABS[®] Buyer via overnight mail, prior to shipment of the lot from which the First Article part was taken. A sample (1 piece unless otherwise specified) taken randomly from the first production run after acceptance of the lot by the Seller's Inspection Department must be subjected to a First Article Inspection. Data for all characteristics, including actual recorded readings for measurable characteristics, must be included in the FAIR.

NOTE: FAI MUST be submitted one week PRIOR to delivery date specified on the Purchase Order.

NOTE: No shipment of parts associated with the First Article sample is permitted without MABS[®] approval.

NOTE: AS9102 shall be used for documenting the FAIR unless an alternate format is approved by MABS[®] Quality Engineering.

(I) Assembly and Sub-assembly FAIR shall contain the following items:

- 1) A bill of material, including a listing of:
 - a) All detail parts and/or subassembly part numbers, their respective revision and Engineering Change notices (EPCN) and/or Engineering Deviations (EDN) the required quantity and status of their FAIR pending or completed).
 - b) All hardware part numbers and the required quantity.
 - c) All raw materials, specifications (type, class and grade).
 - d) Applicable assembly instruction document (ATP) and/or functional test instruction (FTI).
- 2) An Inspection report, including:
 - a) Actual configuration, drawing revision, EPCN's, EDN's and rejections (I.N.'s). This shall be based upon the MABS[®] drawings or MABS[®] Source Control drawings whenever applicable.
 - b) Operations performed if less than complete assembly/subassembly and authorized by MABS[®] P.O. (i.e. "less Paint")
 - c) Required dimensions (Shown on the assembly, subassembly and/or interface drawings), the applicable tolerances and actual results.
 - d) The method used to verify each characteristic. (i.e.: The specific numbers and /or descriptions of the tooling used to manufacture, test or inspect the product.)
 - e) Identification of all special processes used (specification number, revision, title and type and class within) in the manufacturing sequence).
 - f) ATP and FT results, with functional test documents as applicable.
 - g) All general drawing note requirements and actual results.
 - h) Detail part and subassembly FAIR as defined below.
 - i) Raw material traceability documents (test reports, lab analysis, manufactures Certificates of Conformance (C of C) etc.)
 - j) All other sub-tier supplier test reports and C of C's for internal detail parts.
 - k) Computerized Measurement Machines (CMM) report with supporting Data when specifically requested.

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(II) Detail Part FAIR shall include the following items:

- 1) Sellers proprietary part number FAIR shall be completed and filed at the seller's facility. The FAIR shall be made available for review, on-site, when requested by the purchaser.
- 2) The inspection report including:
 - a) Actual configuration, drawing revision, EPCN's, EDN's and rejections (I.N.'s). This shall be based upon the MABS[®] drawings or MABS[®] Source Control drawings whenever applicable.
 - b) Operations performed if less than complete assembly/subassembly.
 - c) Required dimensions, tolerances and actual results.
 - d) The specific numbers and /or descriptions of the tooling used to manufacture test or inspect the product.
 - e) Identification of all special processes used (specification number, revision, title and type and class within) in the manufacturing sequence.
 - f) Hardness and conductivity values if applicable.
 - g) The specified raw material such as alloy, specification (type and class) and final tensile/temper.
 - h) All general drawing notes and actual results.
- 3) Raw material traceability documents (test reports, lab analysis, manufactures Certificates of Conformance (C of C) etc.)
- 4) All other sub-tier supplier test reports and C of C's.
- 5) CCMM report with supporting data when specifically requested.

Z 81(3): FIRST ARTICLE INSPECTION REPORT (FAIR)

By the Seller, at the Seller's plant, with the results reported to the respective MABS[®] Buyer with the shipment of the sample, the production lot, and the Seller's inspection data. The Seller shall notify the respective MABS[®] Buyer at least three (3) working days in advance of presenting the sample and production lot.

A sample (1 piece unless otherwise specified) taken randomly from the first production run after acceptance of the lot by the Seller's Inspection Department must be subjected to a First Article Inspection. Data for all characteristics, including actual recorded readings for measurable characteristics, must be included in the FAIR. The FAIR shall be included with the first shipment in a separate envelope identified as "First Article Data" (paperwork) and included in box #1 of the shipment.

NOTE: AS9102 shall be used for documenting the FAIR unless an alternate format is approved by MABS[®] Quality Engineering.

(I) Assembly and Sub-assembly FAIR shall contain the following items:

- 1) A bill of material, including a listing of:
 - a) All detail parts and/or subassembly part numbers, their respective revision and Engineering Change notices (EPCN) and/or Engineering Deviations (EDN) the required quantity and status of their FAIR pending or completed).
 - b) All hardware part numbers and the required quantity.
 - c) All raw materials, specifications (type, class and grade).
 - d) Applicable assembly instruction document (ATP) and/or functional test instruction (FTI).
- 2) An Inspection report, including:
 - a) Actual configuration, drawing revision, EPCN's, EDN's and rejections (I.N.'s). This shall be based upon the MABS[®] drawings or MABS[®] Source Control drawings whenever applicable.
 - b) Operations performed if less than complete assembly/subassembly and authorized by MABS[®] P.O. (i.e. "less Paint")
 - c) Required dimensions (Shown on the assembly, subassembly and/or interface drawings), the applicable tolerances and actual results.
 - d) Inspect the product.)
 - e) Identification of all special processes used (specification number, revision, title and type and class within) in the manufacturing sequence).
 - f) ATP and FT results, with functional test documents as applicable.
 - g) All general drawing note requirements and actual results.
 - h) Detail part and subassembly FAIR as defined below.
- 3) Raw material traceability documents (test reports, lab analysis, manufactures Certificates of Conformance (C of C) etc.)
- 4) All other sub-tier supplier test reports and C of C's for internal detail parts.
- 5) Computerized Measurement Machines (CMM) report with supporting Data when specifically requested.

(II) Detail Part FAIR shall include the following items:

- 1.) Sellers proprietary part number FAIR shall be completed and filed at the seller's facility. The FAIR shall be made available for review, on-site, when requested by the purchaser.
- 2.) The inspection report including:
 - a.) Actual configuration, drawing revision, EPCN's, EDN's and rejections (I.N.'s). This shall be based upon the MABS[®] drawings or MABS[®] Source Control drawings whenever applicable.
 - b.) Operations performed if less than complete assembly/subassembly.
 - c.) Required dimensions, tolerances and actual results.
 - d.) The specific numbers and /or descriptions of the tooling used to manufacture test or inspect the product.
 - e.) Identification of all special processes used (specification number, revision, title and type and class within) in the manufacturing sequence.
 - f.) Hardness and conductivity values if applicable.

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- g.) The specified raw material such as alloy, specification (type and class) and final tensile/temper.
- h.) All general drawing notes and actual results.

- 3.) Raw material traceability documents (test reports, lab analysis, manufactures Certificates of Conformance (C of C) etc.)
- 4.) All other sub-tier supplier test reports and C of C's.
- 5.) CCMM report with supporting data when specifically requested.

Z 81(4) FIRST ARTICLE INSPECTION REPORT (FAIR)

By the seller, at the seller's plant, with the results scanned and e-mailed or sent to the respective MABS[®] Buyer via overnight mail, prior to shipment of the lot from which the First Article parts were taken. A sample size per C = 0, AQL = 1.0 (reference ATTACHMENT A) must be taken randomly from the first production run after acceptance of the lot by the Seller's Inspection Department shall be subjected to a First Article Inspection. Data for all characteristics, including actual recorded readings for measurable characteristics, must be included in the FAIR.

NOTE: FAI MUST be submitted one week PRIOR to delivery date specified on the Purchase Order.

NOTE: No shipment of parts associated with the First Article sample is permitted without MABS[®] approval.

NOTE: AS9102 shall be used for documenting the FAIR unless an alternate format is approved by MABS[®] Quality Engineering.

(I) Assembly and Sub-assembly FAIR shall contain the following items:

- 1) A bill of material, including a listing of:
 - a) All detail parts and/or subassembly part numbers, their respective revision and Engineering Change notices (EPCN) and/or Engineering Deviations (EDN) the required quantity and status of their FAIR pending or completed).
 - b) All hardware part numbers and the required quantity.
 - c) All raw materials, specifications (type, class and grade).
 - d) Applicable assembly instruction document (ATP) and/or functional test instruction (FTI).
- 2) An Inspection report, including:
 - a) Actual configuration, drawing revision, EPCN's, EDN's and rejections (I.N.'s). This shall be based upon the MABS[®] drawings or MABS[®] Source Control drawings whenever applicable.
 - b) Operations performed if less than complete assembly/subassembly and authorized by MABS[®] P.O. (i.e. "less Paint")
 - c) Required dimensions (Shown on the assembly, subassembly and/or interface drawings), the applicable tolerances and actual results.
 - d) The method used to verify each characteristic. (i.e.: The specific numbers and /or descriptions of the tooling used to manufacture, test or inspect the product.)
 - e) Identification of all special processes used (specification number, revision, title and type and class within) in the manufacturing sequence).
 - f) ATP and FT results, with functional test documents as applicable.
 - g) All general drawing note requirements and actual results.
 - h) Detail part and subassembly FAIR as defined below.
 - i) Raw material traceability documents (test reports, lab analysis, manufactures Certificates of Conformance (C of C) etc.)
 - j) All other sub-tier supplier test reports and C of C's for internal detail parts.
 - k) Computerized Measurement Machines (CMM) report with supporting Data when specifically requested.

(II) Detail Part FAIR shall include the following items:

- 1.) Sellers proprietary part number FAIR shall be completed and filed at the seller's facility. The FAIR shall be made available for review, on-site, when requested by the purchaser.
- 2.) The inspection report including:
 - a) Actual configuration, drawing revision, EPCN's, EDN's and rejections (I.N.'s). This shall be based upon the MABS[®] drawings or MABS[®] Source Control drawings whenever applicable.
 - b) Operations performed if less than complete assembly/subassembly.
 - c) Required dimensions, tolerances and actual results.
 - d) The specific numbers and /or descriptions of the tooling used to manufacture test or inspect the product.
 - e) Identification of all special processes used (specification number, revision, title and type and class within) in the manufacturing sequence.
 - f) Hardness and conductivity values if applicable.
 - g) The specified raw material such as alloy, specification (type and class) and final tensile/temper.
 - h) All general drawing notes and actual results.
- 3.) Raw material traceability documents (test reports, lab analysis, manufactures Certificates of Conformance (C of C) etc.)
- 4.) All other sub-tier supplier test reports and C of C's.
- 5.) CCMM report with supporting data when specifically requested.

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

Z 82: PRE-PRODUCTION SAMPLE

Purchaser's approval of pre-production sample(s) is required **PRIOR** to initiating production. The Seller shall prepare pre-production samples in accordance with the quantities defined by the purchase order for submission to, and approved by, the Purchaser prior to the first production run. The samples must be representative of the intended manufacturing procedures, processes, and equipment to be utilized during production. The Seller shall submit inspection data (including the actual recorded readings of measurable characteristics), which indicates evidence that the sample chosen is in compliance to all requirements, along with the sample(s). The Purchaser's Procurement Organization shall advise the Seller of the disposition of the sample(s) and the subsequent release to proceed with production. No process changes may be made after approval of the pre-production sample without first notifying the Purchaser so that any need for additional samples may be mutually determined. The necessary inspections shall be accomplished as follows:

- (1) At the Seller's plant under the surveillance of the Purchaser's Quality Assurance Representative. The Seller shall notify the Purchaser at least three (3) working days in advance of sample presentation.
- (2) By the Purchaser, at the Purchaser's plant, upon receipt of the sample(s) and accompanying Seller's inspection data.
- (3) By the Seller, at the Seller's plant, with the Seller's inspection results reported to the Purchaser with the shipment of the pre-production sample(s).

Z 83: TEST BARS (FORGINGS)

Seller shall furnish with each shipment of forging: Two (2) test bars produced from the same heat of material as the forging supplied. Test bars must have the same percentage of reduction as parts supplied.

NOTE: Test bars shall be permanently identified with Seller's name or trademark, material heat number, heat treat lot number and alloy identification.

Z 84: TEST BAR (CASTINGS)

Seller shall furnish with each shipment of castings:

- (a) Two (2) test bars representative of each heat treat lot and made from the same melt as castings supplied. Specimens shall conform to Federal Test Method QQ-M-151.
- (b) One (1) spectrographic disc representative of the entire heat or melt.

Z 85: RETURNED NONCONFORMING MATERIALS

Nonconforming material rejected by the Purchaser and returned to the Seller shall be subjected to the quality requirements of the original purchase order. The units shall be retested or reinspected as required by the purchase order specifications. New Quality Assurance documentation, reflecting the retest and/or reinspection results, shall be generated and included with the returned material(s).

Z 86: (A)-FAILURE ANALYSIS REPORTING

The Seller shall perform and report the results of a failure analysis on all failed items that were procured on this purchase order or that were returned under warranty. The completed report shall be submitted by Seller through the Purchaser's Procurement organization and must, as a minimum, provide the following information.

- > Seller's name, address, and date of report
- > Purchaser's Purchase Order and Rejection numbers
- > Part name, number, revision level, serial/lot number
- > Specific failure mechanism
- > Specific root cause of failure mechanism
- > Impact of failure mechanism on parts previously delivered
- > Corrective action taken to preclude recurrence and the effectivity by date or serial/lot number
- > List of materials required to repair any item(s) to be returned to the purchaser (if applicable)
- > Signature and title of the Seller's Quality Representative approving the failure analysis report.

(B)-CORRECTIVE ACTION RESULTS

When delivered items are found to be nonconforming by the Purchaser, a Corrective Action Request (CAR) may be sent to the Seller. The completion and return of the CAR must be within the time allotted on the request form. Abnormal delays in the Seller's response to the CAR will affect the Seller's quality performance rating. The Seller's corrective action must be effective and permanent in the elimination of the root cause. The Seller's response must document the following:

- > Root cause of the nonconformance(s)
- > Failure analysis, when required by the CAR
- > Corrective action(s) implemented by the Seller
- > Effectivity by date, or serial/lot number
- > Effect of the failure on previously shipped items

Such statements as "cautioned operator", "changed tool" and/or "modified operation" are not acceptable. The completed CAR shall be submitted by Seller to the Purchaser, through Procurement, for the Purchaser's Quality Assurance review and concurrence.

Z 87: PURCHASER FURNISHED TOOLING, GAGES & TEST EQUIPMENT

All Purchasers owned and furnished tooling; gages and test equipment are to be maintained by Seller via a calibration program per MIL-STD-45662 and/or ISO 9001. It is the Seller's responsibility to monitor for the next calibration date and/or lot usage. Prior to the calibration expiration date, arrangements shall be made by the Seller, through the Purchaser's Procurement group, to have the item returned and calibrated by the Purchaser. Allow four (4) weeks turn-around time for calibration. With the Purchaser's approval, the Seller may elect to have the calibration performed by an approved laboratory. Seller shall submit the resulting laboratory calibration report to the Purchaser for Quality Assurance review prior to the expiration of the equipment's calibration date.

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

Z 88: STATISTICAL PROCESS CONTROL

The Seller is required to employ Statistical Process Control (SPC) techniques during the manufacture of items specified on this purchase order. In addition, objective evidence that the item was manufactured using SPC shall be furnished with each shipment in the form of a Statistical Process Control Plan and Record (S.P.C.P.R.). The Seller shall devise and submit a copy of the S.P.C.P.R. to be used during the manufacture of the items specified on this purchase order. The S.P.C.P.R. to be used by the Seller must be approved by the Purchaser's Quality Assurance organization **prior to the manufacture** of items specified in this purchase order. The S.P.C.P.R. shall document the following as a minimum:

- | | |
|---------------------------------|--|
| -Purchase Order Number | -Characteristics verified/inspected, but not subject to SPC |
| -Part Number and Revision Level | -Inspection media used/characteristic |
| -Part Name | -Sample size/inspection frequency |
| -Manufactured Lot Size | -Type of control chart being used and control limits |
| -SPC Control Characteristics | -Reaction to Out-of-Control conditions by operators when process is out-of-control |

VARIABLES CHART

-Cpk index of control characteristics subject to SPC (A minimum CpK value of 1.33 is required on all control characteristics unless otherwise stipulated by the Purchaser.)

ATTRIBUTE CHART

- | | |
|--|---|
| -p, c or u value | -Operator's/inspector's signature and title |
| -Quantity accepted/rejected per characteristic | -Control/Acceptance Date |
| -Total quantity accepted and rejected | |

Z 89: CHANGES IN DESIGN, MATERIAL, PROCESSES, LOCATION AND ORGANIZATION

The Seller shall advise the Purchaser, in writing, prior to incorporating any design, material or process changes on items specified on this purchase order. **This also includes changes in the location of the manufacturing site, significant changes in the organization such as name changes and changes to senior management.** This notification must be transmitted to the Purchaser, through the Purchaser's Procurement organization and the changes cannot be incorporated without written approval from the Purchaser. This notification in no way relieves the Seller from meeting requirements of the drawings and specifications applicable on the purchase order.

Z 90: LOT INSPECTION PLAN AND RECORD (L.I.P.R.) (C=0 reference Attachment "A")

The Seller shall furnish, with each shipment, objective evidence of product compliance to the purchase order requirements in the form of a Lot Inspection Plan and Record as required by AS9100 and ISO 9001. When Code Z 57 and/or Z 10 are also a PO requirement the L.I.P.R. is NOT required to be delivered to MABS®. This record shall be filed at the supplier and made available to MABS® upon request. Sample inspection is acceptable, provided the inspection is performed in accordance with the MABS® C=0 sampling plan at 1.0 AQL or less. (Reference Attachment "A"),

The L.I.P.R. shall document the following as a minimum:

- | | | |
|---------------------------------|--|--|
| -Purchase Order Number | -AQL Level | -Quantity accepted/rejected per characteristic |
| -Part Number and Revision Level | -Characteristics inspected | -Total quantity accepted and rejected |
| -Part Name | -Lot Identification, P.O.#, Heat #, etc. | -Inspector's identification/signature/title |
| -Inspection Lot Size | -Inspection device used/characteristic | -Inspection date |
| | - Serial Number when applicable | -Variable (actual) data reporting is not required but accepted |

The L.I.P.R. is subject to acceptance by MABS® Quality Organization.

STATISTICAL PROCESS CONTROL PLAN AND RECORD

The Seller at his option may furnish a Statistical Process Control Plan and Record (S.P.C.P.R.) with each shipment in lieu of an L.I.P.R. as objective evidence of product compliance to the purchase order requirements.

The S.P.C.P.R. submitted by the Seller shall meet the same minimum documentation requirements as the L.I.P.R. (Item 90) except those characteristics selected by the Seller for SPC will have a CpK index number if variables charting is being performed or a p, c, or u value if attribute charting is being used. Note: Substitution of L.I.P.R. characteristics with S.P.C. characteristics shall be on a one-for-one basis. Unless otherwise stipulated by the Purchaser, a minimum CpK value of 1.33 is required on all variable characteristics subject to SPC. The S.P.C.P.R. is also subject to acceptance by MABS® Quality Organization.

Z 91: PURCHASER'S CUSTOMER AUDIT

The Purchaser's customer and/or Government regulatory agencies (FAA, DCMA, ETC.) shall have, upon notification, access to the Seller's facility to determine and verify the quality of product and adequacy of Quality Assurance Systems at all production stages of items intended for incorporation with the Purchaser's products. Such auditing shall, in all cases, be coordinated by the Purchaser's Procurement group.

Z 92: SPECIAL PROCESSES, SUBVENDORS

The Seller has the responsibility and authority to control special process Sources. The Seller shall use only NADCAP recognized Third Party registered/certified Special processors for those processes identified as a "Category 1: NADCAP Required Process" on the MABS® Purchase Order. In addition A2LA and or Nvlap for Testing Laboratories ONLY may also be utilized.

When your MABS® Purchase Order identifies the process specification as a "Category 2: Sources Listed in MABS® Specification(s)" MABS® will list the approved special process sources in the Purchaser's specifications (Drawings, 5D1's, MAT, PRS) or on this Purchase order.

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

All other out sourced items not identified as a Category 1 or Category 2 require the Seller to be responsible for maintaining a Quality system that ensures proper control and approval of suppliers selected. Seller shall also make this system available for review by MABS[®] upon request.

It is always considered acceptable, and MABS[®] encourages the use of, NADCAP approved suppliers for out sourced processes not specifically identified as a Category 1 or Category 2 process.

NOTE 1: This Purchase Order Code applies only to Purchaser's part numbers. Customer and/or supplier part numbers are not affected. This code is **NOT** applicable when the Special Process is performed by the Seller in the Sellers plant but does require the Sellers Quality Systems and or process to be MABS[®] approved.

NOTE 2: NADCAP Suppliers can be found at the SAE website: www.eauditnet.com.

Z 93: IDENTIFICATION OF PACKAGED ELECTRONIC COMPONENTS

Components packaged on reels or tape shall be identified by the manufacturer of the component. No intermixing of manufactures is permitted within a reel or tape, and the components must be from the same date code lot. Small lots of components not sold on reel or tape shall be packaged to contain only those components from a single manufacturer and shall be kept separate by date code lot.

Z 94: ELECTROSTATIC DISCHARGE SENSITIVE ITEM

(A) ELECTROSTATIC DISCHARGE CONTROL PROGRAM

The Seller shall establish and implement an Electrostatic Discharge (ESD) Control Program in accordance with MIL-STD-1686. The item(s) shall be packaged as a Class (1) ESD sensitive device. The program shall be subject to the Purchaser's audit and approval. Implementation guidelines for an ESD program can be found in MIL-HDBK-263.

(B) ELECTROSTATIC DISCHARGE PROTECTION

Electrostatic Discharge Sensitive (ESD) devices shall be handled, packaged, and marked in accordance with the requirements of MIL-STD-1686 for delivery to the Purchaser as a Class (1) ESD sensitive device. Repackaging or dividing ESD protected packages shall be accomplished at an ESD safe work station with applicable packaging and marking specifications.

Z 95: WELD REPAIR AUTHORIZATION POLICY (CASTINGS/FORGINGS)

Weld repairs, which are not permitted by design drawings or specifications, require written approval of the Seller's weld repair process and procedures by the Purchaser (and Government procuring activity when required). The procedures for, and the performance of, weld repair shall be in accordance with the Purchaser's Process Specification. Weld procedures must be prepared and approved for each drawing part number (although the same procedures must be completed and concise in defining exactly how the repairs Will be performed, qualified and documented). The Seller shall request Process Specification(s) from the Purchaser's Procurement organization for their use in preparing the procedures. All procedures shall be signed by the Seller's Quality Assurance Engineering representative. Unless otherwise specified, the seller in accordance with the record retention requirements of the Purchase Order shall retain any acceptance radiographs of weld repairs.

Z 96: MATERIAL SAFETY DATA SHEET

Material Safety Data Sheet must accompany or precede shipment of material. Package must be labeled in accordance with MIL-STD-129.

Z 97: MIL-STD-1535, REGISTERED COMPONENTS

Deleted

Z 98: MIL-STD-1535, GROUP I PURCHASE

Deleted

Z 99: MIL-STD-1535, GROUP II PURCHASE

Deleted

Z 100: PATTERN, MOLD, AND/OR DIE CONTROL REQUIREMENTS

The Seller shall inspect one (1) sample, prior to initiating production, for the Purchaser's approval. The sample must be representative of the intended manufacturing procedures, process and equipment to be utilized during production. This sample shall be sent to MABS[®] when specifically requested. No changes in material, processes, tooling or site of manufacturing may be made after approval of Patterns, Die, Mold, (etc.), without written notification to the Purchaser. Unless otherwise specified in the Purchase Order, the Seller shall furnish the following reports along with the sample. All reports must be identified to the submitted samples.

- 1.) Dimensional-listing all drawing characteristics (from each tool and/or tool cavity)
- 2.) Chemical Analysis - actual composition (except ranges are acceptable for aluminum forgings and compound data for rubber products)
- 3.) Mechanical Properties - the actual test result values
- 4.) Grain Flow (Forgings Only) - photographs showing actual grain flow (show full cross sectional view)
- 5.) Nondestructive Testing (NDT) - supporting documentation, and X-rays if applicable
- 6.) Quality Lot Inspection plan - submitted for MABS[®] review.
- 7.) Pre-production tests - as required by drawing and/or applicable material specifications.

NOTE: If die approval has been previously granted by MABS[®], enclose a copy of die approval documentation to satisfy the above requirement.

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

Z 100 (A): PATTERN, MOLD, AND/OR DIE CONTROL REQUIREMENTS

The Seller shall inspect a sample size per C=0, AQL=1.0 (reference ATTACHMENT A) prior to initiating production, for the Purchaser's approval. The samples must be representative of the intended manufacturing procedures, process and equipment to be utilized during production. These samples shall be sent to MABS[®] when specifically requested. No changes in material, processes, tooling or site of manufacturing may be made after approval of Patterns, Die, Mold, (etc.), without written notification to the Purchaser. Unless otherwise specified in the Purchase Order, the Seller shall furnish the following reports along with the samples. All reports must be identified to the submitted samples.

- 1.) Dimensional-listing all drawing characteristics (from each tool and/or tool cavity)
- 2.) Chemical Analysis - actual composition (except ranges are acceptable for aluminum forgings and compound data for rubber products)
- 3.) Mechanical Properties - the actual test result values
- 4.) Grain Flow (Forgings Only) - photographs showing actual grain flow (show full cross sectional view)
- 5.) Nondestructive Testing (NDT) - supporting documentation, and X-rays if applicable
- 6.) Quality Lot Inspection plan - submitted for MABS[®] review.
- 7.) Pre-production tests - as required by drawing and/or applicable material specifications.

Note: If die approval has been previously granted by MABS[®], enclose a copy of die approval documentation to satisfy the above requirement.

Z 101: CONTROL OF ENGINEERING EVALUATION MATERIAL

The material supplied on this purchase order is intended for engineering evaluation of the product, process, material (etc.) and not for production use. All items procured under this purchase order shall be conspicuously identified by permanent marking in accordance with 5D1-5156 with the following "Engineering Use Only". Where items do not have sufficient area to be permanently identified, 5D1-2885 shall apply.

Z 102: SOFTWARE QUALITY ASSURANCE

The Supplier shall comply with all provisions of RTCA/DO-178B Airborne Software Quality Assurance Systems.

Z 104: MABS[®] CUSTOMER'S SOURCE INSPECTION

Items on this purchase order are subject to MABS[®] Customer's Source Inspection at the Seller's plant after acceptance by MABS[®] Source Surveillance Personnel (Ref Z 57 Code) and prior to shipment. Unless directed otherwise it shall be the responsibility of the Seller to schedule and arrange for inspection by MABS[®] Customer. The Seller shall provide the necessary facilities, equipment, inspection/test data and personnel required by MABS[®] Customer Source Representative.

Z 105: QUALITY RECORD'S RETENTION AND DEFECT REPORTING

I.) Quality Record Retention:

1. Quality Data (e.g. certifications, quality procedure's, reports or other similar data required by Purchaser) shall be provided in English.
2. Quality Records shall be defined as documentary evidence of product definition and conformance (e.g. included but not limited to C of C's, raw material records, test logs, MRB records, Special process records, Drawings, specifications, routings, Physical and Chemical tests, NDT records, etc.) Such records shall be maintained on file for a minimum period of Ten (10) years, unless otherwise specified by Purchase Order Contract. These records shall also be made available to the purchaser's personnel upon request at no additional charge to the Purchaser.
3. The Seller shall maintain X-Ray film on file for a minimum period of Three (3) years, unless otherwise specified by Purchase Order Contract or referenced specification. This film shall also be made available to the purchaser's personnel upon request at no additional charge to the Purchaser.

II.) Defect Reporting:

It shall be the Sellers continuing obligation subsequent to delivery of goods for installation on an aircraft to advise Purchaser's Quality Assurance Department and Purchasing Representative's in writing within twenty-four hours in the event that the Seller discovers any Quality deficiency which affects form, fit, function, safety, reliability, interface dimensions or features of the delivered goods.

Z 106: MABS[®] ASSIGNED SERIAL NUMBERS:

Serial numbers (S/N) provided on this order shall be sequential with no gaps. Serial numbers shall be in the following format (unless otherwise specified by a drawing or specification) MMMYY-XXXX where M= Month, Y= Year and X= 4 digit number. (Example: SEP09-0001) The Seller is required to call Quality at 330-796-4568 for serial numbers to be used for this Purchase order.

Z 107: SOURCE CONTROL DRAWINGS (SOCD) LOT INSPECTION RECORD

Lot Inspection requirements for hardware purchased on Source Control Drawings (SOCD)

The seller shall furnish with each shipment, objective evidence of product compliance to the purchase order requirements in the form of a Lot Inspection Plan and Record. When Code Z 57 and or Z 10 are also a P.O. requirement the Lot Inspection Plan and Record is not required to be delivered to MABS[®]. This record shall be filed at the supplier and made available to MABS[®] upon request.

At a minimum, the Lot Inspection Plan and Record shall reflect the following:

- 1.) MABS[®] Purchase Order Number
- 2.) MABS[®] SOCD Part Number, Revision Level, EPCN's & configuration Revision Level (If applicable per drawing)
- 3.) Supplier Part Number
- 4.) MABS[®] Procurement Specification number (PRC) if applicable
- 5.) Characteristics Inspected
- 6.) Quantity Accepted/Rejected

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

- 7.) Inspectors identification, signature or stamp
- 8.) Inspection date

At a minimum the following items require 100% inspection and should appear on the Lot Inspection Plan and Record unless otherwise specified:

- 1.) Functional Test
- 2.) Identification (including Serialization requirements)
- 3.) Visual Inspection for handling damage and omission of components/operations
- 4.) Review processing for completeness

The Lot Inspection Plan and Record may include other characteristics selected by the supplier or as stipulated by MABS[®]. Sample inspection may be used for these other characteristics unless otherwise stipulated, provided the inspection is performed in accordance with the MABS[®] C=0 sampling plan at 1.0 AQL or less. (Reference Attachment "A"),

Characteristics and dimensions noted on an Interface Control Drawing (ICD) are not required to appear on the Lot Inspection Plan and Record. However, the supplier is expected to maintain a quality system, which validates the characteristics on the ICD at the appropriate level in the process. The supplier should be able to provide documented evidence of the acceptance of these characteristics upon request. These features are however, required to be inspected and documented on First Articles.

Z 108: MATERIAL REVIEW BOARD AUTHORITY, SELLERS DESIGN FEATURES

NOTE: This code takes precedence over code Z 58 when applied

No Seller is authorized to disposition Type-1 non-conformances. A Type-1 nonconformance is defined as a non-conformance which cannot be completely eliminated by rework, and which adversely affects performance, strength, durability, reliability, interchangeability, effective use, operational weight, appearance (where a factor) health or safety, and interface with other components. A Type-2 Non-conformance is defined as any non-conformance other than described for Type-1. Any Type-1 nonconformance to the purchase order, drawing, specifications, or other applicable documents must be submitted to the Purchaser, through the Purchaser's Procurement Organization, for the Purchaser's MRB approval prior to shipment. The Purchaser reserves the right to require the identification of the root cause of the nonconformance and describe the implemented corrective action taken by the Seller.

A Seller who designs, fabricates, processes, or tests products using its own engineering drawings and specifications required to comply to Meggitt Aircraft Braking Systems Corporation's drawings or technical documents shall be granted Type-2 MRB authority limited to the Sellers design documentation and shall not be utilized on dimensions, Specifications, processes, etc. that are specially required by MABS[®] drawings/specifications. This authorizes the Seller to utilize Accept-as-is and repair dispositions on non-conforming products of their proprietary design. All dispositions shall be documented in accordance with the supplier's procedures and be available for review upon request.

*SCRAP DISPOSAL: Parts scrapped at your facility and are identified with an MABS[®] part number, cage code (0B9R9) or other MABS[®] trademarks or symbols are required to be mutilated beyond use prior to disposal.

Z 109 IN-PROCESS INSPECTION CONTROL PLAN AND RECORD

The seller shall furnish an In-Process Inspection Control Plan and Record (I.P.I.C.P.R.) as objective evidence of product compliance to purchase order requirements. The I.P.I.C.P.R. submitted by the seller shall meet the same minimum documentation requirements as the L.I.P.R. (item 90) except the process step at which the inspection takes place for each characteristic will be identified. The I.P.I.C.P.R. is also subject to acceptance by the MABS[®] Quality Organization.

Z 110: FOREIGN OBJECT DAMAGE PREVENTION (FOD)

The Seller shall create and maintain a FOD prevention program that complies with National Aerospace Standard NAS-412. The Seller's FOD prevention program shall preclude and eliminate foreign object entrapment areas and paths through which foreign objects can collect or migrate. The Seller shall ensure work is accomplished in a manner preventing foreign objects or material in deliverable items. The Seller shall maintain work areas and control tools, parts and materials in a manner sufficient to preclude the risk of FOD incidents. The Seller shall document and investigate each FOD incident and ensure elimination of the root cause of each such incident.

MABS[®] shall have the right to perform inspections, verification and FOD Prevention Program audits at the Seller's facility to ensure program documentation and effectiveness. The Seller shall identify a FOD control person responsible for implementing FOD prevention, awareness and training.

The Seller's FOD prevention program shall include Seller's periodic self assessment of it's internal FOD prevention practices, including subcontractors FOD Prevention Program at every tier, to measure effectiveness of program compliance to requirements. At MABS[®] request, the Seller shall provide records of such self-assessment and training to MABS[®], upon request.

The Seller's FOD prevention program shall provide annual FOD training to Seller's employees.

The Seller shall ensure that all products are of new manufacture and free of Foreign Object Debris/Damage (FOD). All products delivered, and processes performed, shall meet or exceed all specifications and requirements contained in the Purchase Order line item including reference documents specified therein.

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

Z 111: MAINTENANCE PER CFR TITLE 14 CHAPTER 1 PART 145

Work performed on this Purchase Order is considered "maintenance" as described in Code of Federal Regulations (CFR) Title 14, Chapter 1, Part 145. Therefore, all personnel performing maintenance functions on the P.O. shall be in a FAA approved drug and alcohol testing program. A copy of this approved plan shall be sent to MABS[®] Repair and Overhaul facility at the following address;

Meggitt Aircraft Braking Systems Corporation
Attn: General Manager **Repair and Overhaul**
1210 Massillon Road, Building D
Akron, Ohio 44315

Z 112: SUPPLIER PROCESS APPROVAL (SPA)

The seller is responsible to submit to MABS[®] the items identified in section (A) and (B) of this purchase order supplement code.

(A) Preproduction

- 1) Process Flow Diagrams
- 2) Control Plan
- 3) Sub-tiers to be used and their capabilities/accreditations
- 4) Process Approval Request

Suppliers are encouraged to use Process Failure Mode and Effects Analysis (FMEA's), but they are not required under this PO. The above items in section (A) are to be submitted to MABS[®] prior to the first production run. The seller shall not begin the first production run until the seller receives written approval from MABS[®] as evidenced by an MABS[®] signed "Process Approval Request".

(B) First Article Review Process

- 1) Control Plan – Final Version
- 2) First Article Inspection (FAI) Report – Reference PO Code Z812 for more details.
 - (a) Workmanship verification results
 - (b) Dimensional results – Actuals
 - (c) Material, Performance Results – Lab Tests, NDT, etc
 - (d) Functional Test Results (as applicable)
 - (e) Special Process Certs
- 3) Master Sample – retained at supplier unless otherwise authorized by MABS[®]
- 4) FAI Submission & Approval

Suppliers are encouraged to perform Capability Studies, but are not required under this Purchase Order if the supplier can demonstrate an acceptable alternate means of review and control. The above items in section (B) are to be submitted to MABS[®] at the completion of the first production run. The seller shall not ship to MABS[®] until the seller receives written approval form MABS[®] as evidenced by a signed AS9102 form or MABS[®] FAI Approval form.

NOTE 1: This code complements purchase order supplement code Z 10- and Z 90- for the initial production. Once the requirements of this code have been satisfied as defined in section (A) and (B), then the requirements of purchase order supplement code Z 10- and Z 90- will take effect for on-going production.

NOTE 2: P.O. Quality Code Z 89- also applies. MABS[®] shall be notified of ALL significant changes to an approved process.

Z 113: MAINTENANCE/REPAIR & OVERHAUL PURCHASE ORDERS (MRO)

This code Supersedes P.O. codes Z 10 and supplements code Z 57. Each MABS[®] Repair Station supplier will be subject to source inspection at the supplier's facility. This source inspection shall be performed by a MABS[®] Procured Quality Assurance Representative (PQAR) or a "Designated Maintenance Quality Representative" (DMQR).

When a MABS[®] PQAR is to perform source inspection, Code Z 57 applies and source inspection will take place per Z 57.

When MABS[®] "Designated Maintenance Quality Representatives" have been established at a supplier through training and the issuance of a controlled nontransferable numbered DMQR stamp, the DMQR is expected to perform the source inspection in place of the PQAR. These representatives will be empowered by MABS[®] to perform the required source inspection. The DMQR is required to assure that the maintenance has been completed to the MABS[®] Service Order. Once satisfied that the required maintenance is complete and correct, apply their stamp to all inspection and test documentation in addition to stamping of the MABS[®] Service Order.

NOTE 1: The DMQR stamp impression is not to be applied to the part, subassembly or assembly.

Z 114: RISK MANAGEMENT

The Supplier shall develop and implement a risk management program that will identify and track cost, schedule and technical risks. The risk management program shall be documented in a Risk Management Plan in the Supplier's format. The Supplier shall regularly review risks and identify new risks. Guidelines are contained in SAE ARP9134 Supply Chain Risk Management Guidelines.

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

Z 115: AIRWORTHINESS RELEASE CERTIFICATE

A) Suppliers with JAA Production Organization Approval or FAA Production Approval Holders.

The Supplier shall prepare and supply an EASA Form 1 (or foreign equivalent) or a FAA 8130-3 Form with each shipment. Contact the MABS[®] Buyer for further details.

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

ATTACHMENT "A"

MEGGITT AIRCRAFT BRAKING SYSTEMS

SAMPLE SIZES FOR "C=0" SAMPLING PLANS

NOTE: The Acceptance Number In All Cases Is ZERO

LOT SIZE	"ASSOCIATED" Acceptable Quality Level (AQL)						
	.65	1.0	1.5	2.5	4.0	6.5	10.0
2 to 8	All	All	All	5	5	5	5
9 to 15	All	13	8	5	5	5	5
16 to 25	20	13	8	6	6	6	6
26 to 50	20	13	8	6	6	6	6
51 to 90	20	13	8	7	6	6	6
91 to 150	20	13	12	11	7	6	6
151 to 280	20	20	19	13	10	7	7
281 to 500	47	29	21	16	11	9	7
501 to 1,200	47	34	27	19	15	11	8
1,201 to 3,200	53	42	35	23	18	13	9
3,201 to 10,000	68	50	38	29	22	15	9
10,001 to 35,000	77	60	46	35	29	15	9
35,001 to 150,000	96	74	56	40	29	15	9
150,001 to 500,000	119	90	64	40	29	15	9
500,001 and Over	143	102	64	40	29	15	9

(C=0 Revision 06/29/2001)

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

ATTACHMENT "B"

MABS-2153 Certified Shipment Label

MEGGITT
MEGGITT AIRCRAFT BRAKING SYSTEMS CORPORATION
CERTIFIED SHIPMENT

CVR Stamp: _____

MABS 2153 (2-08)

MABS-2154 Sourced Shipment Label

MEGGITT
MEGGITT AIRCRAFT BRAKING SYSTEMS CORPORATION
SOURCED SHIPMENT

Source Rep: _____

PO# _____ Item# _____

Quantity: _____

MABS 2154 (2-08)

QUALITY ASSURANCE PURCHASE ORDER REQUIREMENTS

ATTACHMENT "C"

PQA-2

QUALITY ASSURANCE PURCHASE ORDER ATTACHMENT

REQUIRED SHELF LIFE CERTIFICATION AND MARKING IDENTIFICATION INFORMATION

MABS® Purchase Order No.:

MABS® Purchase Order Part No:

Batch/Lot Number:

Manufactured By:

Manufacturer's Part Number:

1. Does this material have a critical Shelf Life? (Check one block)

A. Material is not age sensitive.

B. Material has a critical shelf life established by the manufacturer.

2. If block 1B is checked, complete the following:

This material is certified by the manufacturer to have a shelf life of _____ months.

3. The initiation date of shelf life is from (Check and complete only one).

A. Date of manufacture, which was _____

B. Date of shipment from the manufacturer, which was _____

C. Other: _____

Title: _____

Company: _____

Applicable Notes:

1. At least one half (50%) of the shelf life of material must remain when material is received at Purchaser's plant. Failure to comply with this requirement will result in automatic rejection and return of material to Seller.
2. In all cases of age-sensitive materials, **each shipping container and each individual container** must be **identified** with manufacturer's batch/lot number.
3. This certification must accompany each packing slip. However, if manufacturer's standard certification lists all information required above, manufacturer's certification shall be accepted in lieu of this form (PQA-2)