

Supplier Quality Manual

PM-SQM

Revision History			
Rev	Date	By	Description
NW	16 Oct 2018	FWW	Initial Release
A	6 Mar 2020	FWW	Complete Revision

*For a detailed description of revisions, see Appendix B.

PRATT MILLER IS COMMITTED TO CONTINUALLY IMPROVING OUR METHODS FOR PROVIDING CUSTOMER-FOCUSED, INNOVATIVE, HIGH QUALITY PRODUCTS AND SERVICES WHICH MEET OR EXCEED EXPECTATIONS.



FOREWORD

To Our Suppliers:

For Pratt Miller to be a preferred supplier to our customers for production manufacturing across a range of industries, we must have a process in place that encourages, supports, and ensures our suppliers meet quality and performance expectations.

Pratt Miller's objective is to continually improve quality levels, relationships, and interactions with our supply base. Our strategies to achieve this objective include:

- Long term strategic relationships with key suppliers
- Interaction and cooperation between engineering, manufacturing, purchasing, and quality personnel of Pratt Miller and its suppliers
- Monitoring the ability to meet delivery requirements
- Assurance of compliance to market specific requirements where applicable

Pratt Miller management has endorsed the continuous improvement of our suppliers as a necessary focus to ensure a competitive advantage across a variety of markets and to guarantee continued customer satisfaction.

Sincerely,

The Pratt Miller Management Team

Table of Contents

1.	Purpose & Scope	4
2.	Expectations of Suppliers	4
3.	Supplier Assessment & Approval	5
4.	Performance Expectations & Rating	5
5.	Right of Access	7
6.	Change Management	7
7.	Non-Conforming Product	9
8.	Inspection, Measurement, & Test Equipment	10
9.	Identification & Traceability	11
10.	Record Retention	11
11.	Shipping, Handling, & Delivery	11
12.	Quality Clauses	13
QC-001	Certificate of Conformance	13
QC-002	First Article Inspection.....	14
QC-003	Safety Related Characteristic Inspection	15
QC-004	Quality Control Characteristic Inspection	15
QC-005	Raw Material Certification.....	15
QC-006	Special Process Certification.....	15
QC-007	100% Critical Characteristic Inspection	16
QC-008	Acceptance Sampling	16
QC-009	Part Serial Number Traceability	16
QC-010	Single Lot/Date Code Traceability	17
QC-011	Acceptance Test Plan, Procedure, & Reporting	17
QC-012	PM Source Surveillance Inspection	17
QC-013	Government Source Inspection.....	17
QC-014	Specialty Metals	17
QC-015	Export Control	17
QC-016	Other Purchase Order/Contract Specific Requirement(s)	18
QC-017	Minimum Automotive Quality Management System Requirements	18
QC-018	Production Part Approval Process (PPAP)	18
QC-019	Material Composition Reporting.....	18
QC-020	Conflict Minerals Policy.....	18
Appendix A - Package Label Requirements		20
Appendix B - Revision Details		24

1. Purpose & Scope

1.1. Purpose

The purpose of this manual is to clearly define the minimum requirements, processes, and systems for supplying material (raw materials, production services, component parts, assemblies/systems, etc.) to Pratt Miller (PM), communicate the responsibilities of both suppliers and PM personnel to reduce confusion or misunderstandings, and to ensure the on-time delivery of conforming products and services. It shall supplement the requirements of the current revisions of quality management systems standards including, but not limited to, ISO 9001, IATF 16949, and AS9100 where they are applicable. This manual does not supersede the requirements of contractual agreements, purchase order requirements, and/or statutory or regulatory requirements.

1.2. Scope

This manual defines the expectations and requirements for all direct suppliers of material to PM for production purposes and applies contractual terms, unless otherwise exempted by a contract or purchase order.

PM supports a customer base across a wide spectrum of industry sectors with low volume manufacturing services ranging from components to complete systems and vehicles. As such, a wide range of customer driven, industry specific requirements may be applied to a respective production contract or purchase order. Material supplied to PM shall be manufactured, inspected, tested, stored, and shipped in accordance with the requirements set forth in this manual, as well as those of any applicable standards and specifications.

2. Expectations of Suppliers

2.1. A supplier's leadership shall:

- 2.1.1. Review, understand, and ensure compliance to this manual as part of doing business with PM on production manufacturing programs.
- 2.1.2. Ensure adherence to the PM Supplier Code of Conduct.
- 2.1.3. Adhere to all requirements of this manual, as well as all contract or purchase order requirements, terms and conditions.
- 2.1.4. Ensure that PM requirements are adequately communicated to and adhered to by employees of the supplier who are working on PM programs.
- 2.1.5. Ensure that PM requirements are adequately communicated to and adhered to by sub-tier suppliers. It is the responsibility of the supplier to flow down the requirements set forth in this manual, as well as those defined in the contract or purchase order documents and manage those sub-tier suppliers accordingly.
- 2.1.6. Identify a primary and secondary contact at a minimum for each PM production program for both routine and emergency communications for all shifts working on a respective program.

3. Supplier Assessment & Approval

- 3.1. Suppliers shall be capable of meeting PM requirements in the areas of quality, delivery, cost, and continuous improvement. PM will assess these areas as part of its supplier selection process through a variety of activities, including, but not limited to:
 - 3.1.1. Self-surveys of supplier capabilities
 - 3.1.2. Quality management system assessments
 - 3.1.3. Assessment of financial status
 - 3.1.4. Plant audits
- 3.2. PM prefers that suppliers be currently certified in good standing to an internationally recognized quality management system standard, such as ISO 9001, IATF 16949, or AS9100. Potential suppliers who do not hold such a certification may face an increased level of scrutiny during the assessment and approval process. Depending on program requirements, certification, accreditation, or compliance to one or more specific standards may be a requirement.
 - 3.2.1. Automotive production suppliers must be certified to a current version of ISO 9001 at a minimum to be sourced for production contracts. Demonstration of compliance to the IATF Minimum Automotive Quality Management System Requirements for Sub-Tier Suppliers (MAQMSR) shall be required prior to production of saleable product after completion of the Production Part Approval Process (PPAP) unless otherwise agreed upon in writing by an authorized PM representative.
- 3.3. Suppliers shall be active and responsive in ongoing assessments and continuous improvement activities to remain an approved supplier to PM.

4. Performance Expectations & Rating

- 4.1. PM will use Supplier Scorecards to continually assess and manage supplier performance based on the quality and delivery requirements for goods and/or services provided by the respective supplier.
- 4.2. The Supplier Scorecard will evaluate the supplier based on defined metrics using a 12-month rolling average. This Scorecard will be communicated to suppliers and be used to give visibility at both PM and its suppliers on the overall health of the supplier relationship.
- 4.3. Based on the ratings for the metrics in the Section 4.4, a supplier may be required to enter a formal improvement program through the PM Supplier Development Process. Rating levels and the associated requirements for supplier improvement are defined below.
 - 4.3.1. Suppliers who maintain a rolling average Overall Rating $\geq 90\%$ and a monthly Overall Rating $\geq 85\%$ are considered suppliers in good standing.
 - 4.3.2. Suppliers who maintain a rolling average Overall Rating in the range from 80-89% or a monthly Overall Rating in the range 75-84% are considered marginal suppliers. PM Quality and Purchasing shall review the performance of these suppliers with them monthly and determine a corrective action plan to once again be in good standing.
 - 4.3.3. Suppliers who maintain a rolling average Overall Rating in the range from 70-79% or a monthly Overall Rating in the range 70-74% may be placed on a new business hold until they have once again attained supplier in good standing status. PM Quality and Purchasing shall review the performance of these

suppliers with them bi-weekly and determine a corrective action plan to once again be in good standing. Top management at the supplier shall sign off on the corrective action plan.

4.3.4. Suppliers whose rolling average or monthly Overall Rating is <70% may be considered unacceptable. A new business hold will be placed on the supplier and no RFQ activity shall occur with the supplier. PM Quality and Purchasing shall review the performance of these suppliers with them bi-weekly and determine a corrective action plan to once again be in good standing. Top management at the supplier shall sign off on the corrective action plan and be involved in the bi-weekly reviews. A lack of quantifiable improvement and/or failure to adhere to the corrective action plan will result in PM Purchasing de-sourcing the supplier.

4.4. Supplier Scorecard Metrics

4.4.1. Overall Rating

$$\text{Overall Rating} = (0.75 * \text{Quality Rating}) + (0.25 * \text{Delivery Rating})$$

4.4.2. Quality Rating

$$\text{Quality Rating} = (0.50 * \text{Defect Rate}) + (0.25 * \text{Severity Rating}) + (0.25 * \text{SCAR Late Response})$$

4.4.2.1. Defect Rate

$$\text{Defect Rate} = 100 * \left(\frac{\# \text{ of defective parts}}{\text{total \# of parts shipped}} \right)$$

4.4.2.2. Severity Rating

Severity Rating Level		Severity Description
5	Critical	Use this rating when issue is a departure from the requirements affecting one or more of the following: <ul style="list-style-type: none"> ▪ safety ▪ human health ▪ environment ▪ security (national or commercial)
4	High	Use this rating when issue is a departure from the requirements affecting one or more of the following that result in production stoppages, delivery delays to a customer, or recalls/warranty claims: <ul style="list-style-type: none"> ▪ performance or operational limits ▪ interchangeability, reliability, maintainability, or durability for an item or its repair parts ▪ structural strength or integrity ▪ weight, moment, or center of gravity ▪ appearance
3	Elevated	Use this rating when issue is a departure from the requirements affecting one or more of the following that result in sorting or rework by PM to meet production schedules: <ul style="list-style-type: none"> ▪ interchangeability, reliability, maintainability, or durability for an item or its repair parts ▪ appearance
2	Moderate	Use this rating when issue is a departure from the requirements affecting one or more of the following that result in sorting or rework by the supplier to meet production schedules: <ul style="list-style-type: none"> ▪ interchangeability, reliability, maintainability, or durability for an item or its repair parts ▪ appearance
1	Low	Use this rating when issue is a departure from the requirements affecting one or more of the following that result in sorting or rework by the supplier without risk to production schedules: <ul style="list-style-type: none"> ▪ interchangeability, reliability, maintainability, or durability for an item or its repair parts ▪ appearance

$$\text{Severity Rating} = 100 * \left(\frac{5 - \text{Weighted Average of Defect Severities}}{5} \right)$$

$$\text{Weighted Average of Defect Severities} = \frac{(n_1 * \text{Severity}_1) + (n_2 * \text{Severity}_2) + \dots + (n_x * \text{Severity}_x)}{n_1 + n_2 + \dots + n_x}$$

n = # of parts affected by a respective issue associated with the severity level

4.4.2.3. SCAR (Supplier Corrective Action Required) Late Response

Initial Response (IR) = 24 hours

Intermediate Corrective Action (ICA) = 48 hours

Completion of 8D (8D) = 30 days

$$\text{SCAR On - time Response} = 100 * \left[\left(\frac{x_{IR}}{3} \right) + \left(\frac{x_{ICA}}{3} \right) + \left(\frac{x_{8D}}{3} \right) \right]$$

On - time response, x = 1; Late response, x = 0

4.4.3. Delivery Rating

$$\text{Delivery Rating} = 100 * \left(\frac{\text{\# of Parts Delivered On Time}}{\text{Total parts that should have been delivered}} \right)$$

5. Right of Access

- 5.1. The supplier shall provide PM, a PM customer, or a specified third-party authority or regulatory agency, right of access to the supplier’s operations to assist the supplier in the resolution of quality problems with parts manufactured for PM and its customers.
- 5.2. PM reserves the right for PM, a PM customer, or specified third-party authority or regulatory agency to witness at any stage (subject to proprietary considerations) the manufacture, processing, test, inspection and all applicable records of items being manufactured for PM and its customers.
- 5.3. PM reserves the right for PM, a PM customer, or specified third-party authority or regulatory agency to perform an audit or inspection of records at the supplier’s facility. This verification does not absolve the supplier of the responsibility to provide acceptable product, nor does it preclude any subsequent rejection by PM or its customer.

6. Change Management

- 6.1. Engineering Drawings, Specifications, & Math Data
 - 6.1.1. The supplier shall have a change management system implemented.
 - 6.1.2. The supplier’s change management system must ensure that the latest engineering drawings, specifications, and math data are available at the manufacturing, test, or inspection location.
 - 6.1.3. The supplier’s change management system shall have the ability to react to a change order resulting from a PM design revision and identify the break point in the production where the revision has been implemented.

6.2. PM and Customer Initiated Changes

- 6.2.1. All potential, proposed and/or mandated engineering changes affecting purchased product, will be submitted to the supplier for impact and timing assessments. These engineering change order/request documents will be processed via PM Engineering Change review procedures. Documentation for approved engineering changes will be forwarded to the supplier for execution as defined in the PM procedures.
- 6.2.2. All changes to automotive production parts or product are required to be approved in accordance to the AIAG PPAP manual requirements before production implementation.
- 6.2.3. The supplier is required to:
 - Respond to engineering change order/request within 5 business days, or as otherwise arranged with the designated Buyer. Failure to respond in the required timeframe may result in a negative effect on the suppliers Delivery Rating.
 - Itemize applicable cost and timing in the required format.
 - Manage and report all applicable engineering changes of their sub-tier supply base.
 - Submit samples of all executed changes as required. For automotive production parts, this shall be done in accordance with the PPAP manual requirements prior to production implementation.

6.3. Supplier Proposed Engineering Changes

- 6.3.1. Supplier proposed changes must be submitted for approval consideration. All proposed changes, including but not limited to the following are to be communicated as applicable:
 - Proposed material changes
 - Proposed process changes
 - Proposed tooling and/or fixture changes
 - Proposed manufacturing location changes
 - Proposed sub-tier supplier changes
 - For automotive production products, any other changes as defined in the AIAG PPAP manual, including Customer Specifics
 - Cost impact/benefit for each of the change considerations listed above
 - Changes to form, fit, and/or function
- 6.3.2. Rejected Supplier Change Requests will be returned to the supplier with an explanation and/or request for additional information.
- 6.3.3. Approved Supplier Change Requests will be communicated to the supplier. The appropriate Quality Engineer will communicate sample submission expectations and timing requirements. Other instructions and required documentation, when applicable, will also be communicated at this time.

6.4. Changes to Product, Process, and/or Supply Chain

- 6.4.1. The philosophy of continuous improvement encourages process improvements; however, suppliers are required to obtain documented PM approval prior to implementing any change to product, process, and/or supply chain after successful launch and/or approval of a particular product by PM and/or its customer.
- 6.4.2. PM may elect to require a formal product realization process or components thereof prior to approval of a change. In these cases, suppliers shall not ship products with changes to PM facilities prior to receiving approval.

- 6.4.3. Suppliers shall inform PM and clearly identify a break point at which the approved change has been implemented.
- 6.4.4. Failure to contact PM and obtain documented approval prior to implementation of changes and shipment of product shall result in a negative impact on the supplier's rating with all product with unauthorized changes being recognized as defective per the scoring defined in Section 4 of this manual.
 - 6.4.4.1. PM may additionally require that the supplier compensate PM for all associated collateral costs and expenses related to the shipment of product with unauthorized changes.
 - 6.4.4.2. PM may place a hold on new business opportunities for the supplier from PM.
- 6.4.5. Upon successful completion of a purchase order for a particular product or products, PM may issue repeat orders for the same product or products. The supplier may not make any changes to materials, sub-tier suppliers, manufacturing methods, processing, equipment, et cetera from those approved on previous orders without documented approval from an authorized PM representative.
- 6.5. Engineering Change Product Identification
 - 6.5.1. The first shipment of engineering change products is to be identified as directed by the applicable PM Quality Engineer or other authorized PM Representative. Subsequent shipments may also require engineering change identification when deemed necessary by PM.
 - 6.5.2. Each container of engineering change product is to include this identification. Failure to properly identify engineering change materials may result in the issuance of a chargeback.

7. Non-Conforming Product

- 7.1. If a supplier finds product to be non-conforming prior to delivery, it is the responsibility of the supplier to notify the PM Quality and/or Purchasing contacts for that contract prior to impact on delivery.
 - 7.1.1. The supplier shall begin containment action upon discovery of a product nonconformance.
 - 7.1.2. Non-conforming product shall not be shipped to a PM facility without prior written authorization from a PM Quality or Purchasing representative.
 - 7.1.3. All non-conforming product that has been authorized for shipment shall be identified as such with a red tag, as well as on the shipping documentation. Writing on product using paint pens or permanent markers is not an acceptable means of identification.
 - 7.1.4. In the event that the supplier determines that non-conforming product was shipped to a PM facility the PM Quality and/or Purchasing contacts shall be notified immediately of all shipments that were affected.
- 7.2. For non-conformances identified by PM, the PM Quality contact will notify the supplier.
 - 7.2.1. The supplier shall acknowledge receipt of the notification to the PM Quality contact via email and begin containment actions within 24 hours.
- 7.3. For non-conformances with product on a production delivery schedule:
 - 7.3.1. The supplier shall determine interim corrective action and notify the PM Quality contact of this action plan via email within 48 hours.

- 7.3.2. The supplier shall determine the root cause of the non-conformance and notify the PM Quality contact via email within 7 days.
- 7.3.3. The supplier shall determine the permanent corrective action addressing the root cause and submit an 8D with all required information to the PM Quality contact for approval within 14 days.
- 7.3.4. PM must be able to issue final approval of the 8D and close the issue within 30 days unless an extension of this time period has been granted in writing by the PM Quality contact.
- 7.4. Unauthorized Repair or Substitution
- 7.4.1. The supplier shall not deviate from the purchase order/contract requirements, including, but not limited to, the engineering drawing and all applicable specifications, without written authorization from an authorized PM Quality, Engineering, or Purchasing contact. This includes the use of welding, plugging, threaded inserts, the substitution of raw materials or components, or any other deviation from requirements.
- 7.4.2. A copy of any PM authorization of a repair or substitution shall be included with the shipment of the parts and noted on the shipping documents.
- 7.5. Cost Recovery and Chargeback Policy
- 7.5.1. Suppliers are liable for all costs incurred by PM when the cause is the supplier's responsibility. Charges will be determined by PM and may include:
- Administrative costs
 - Operating costs of protective measures (sort or scrap)
 - Re-work costs
 - Costs incurred in the downstream operation stage or third-party claims
 - Rejects of finished and/or semi-finished products
 - Retrofit of sub-assemblies or vehicles
 - Machine downtime
 - Staff costs associated
 - Production line shutdown
 - Transportation costs
 - Re-packaging & handling costs
 - Travel costs
 - Claims charged by the customer
 - Additional special costs

8. Inspection, Measurement, & Test Equipment

- 8.1. The supplier shall have a documented calibration system that meets the requirements of ISO 9001, at a minimum. Calibration records shall be traceable to the National Institute of Standards and Technology (NIST) or an equivalent regulatory agency.
- 8.2. The supplier is expected to provide all necessary inspection, measurement, and/or test equipment required to determine the conformance of product to the requirements of the purchase order/contract, including, but not limited to, the engineering drawing and all applicable specifications.

- 8.3. When specialty or unique equipment is required, it is the responsibility of the supplier to obtain such equipment unless otherwise stated in the purchase order/contract.

9. Identification & Traceability

- 9.1. All products supplied to PM require manufacturing batch/lot traceability at a minimum to facilitate quarantine and/or recalling in the event of a nonconformance. Supplier shall ensure that all products are identified according to print and/or purchase order requirements and specifications.
- 9.2. The supplier shall have an effective system implemented to maintain lot traceability of raw and/or finished material, as well as retain and retrieve all quality records for product supplied under a PM purchase order/contract when requested within a reasonable time period. Typical desired response time desired is less than two business days from receipt of the request from the PM Quality contact.

10. Record Retention

- 10.1. The supplier to PM, as well as the supplier's sub-tier suppliers, shall maintain verifiable objective evidence of all inspections and tests performed, results obtained, and dispositions of non-conforming product.
- 10.2. The records shall be identified to associated product, lot number, batch and/or date codes, and serial numbers (if applicable). The supplier's records associated with the manufacture of serialized or lot-controlled articles shall provide for continued traceability of serial numbers or lot number identification through all phases of manufacture, commencing with the raw material and continuing through final acceptance of the end item.
- 10.3. Records shall be made available to the PM, PM customer, and/or Government representatives upon request for parts manufactured for PM and its customers.
- 10.4. Records shall be retained in a safe, accessible location for 5 years after date of delivery, or as defined in the purchase order/contract.

11. Shipping, Handling, & Delivery

11.1. Shipping & Handling Methods

- 11.1.1. The supplier shall specify and select shipping and handling methods that ensure proper and on-time delivery without damage to the product. The selected methods may be reviewed by a PM representative for approval prior to their use if required by the contract or purchase order.
- 11.1.2. If the supplier determines that a shipment will not be delivered on time, the PM Purchasing contact shall be notified immediately.
- 11.1.3. The supplier shall ensure that special labeling requirements shall be listed in the appropriate shipping documents and on each package.
- 11.1.4. Packaging Requirements
- 11.1.4.1. The supplier shall be responsible for ensuring that products provided to PM are packaged such that dimensional integrity is preserved; contamination and corrosion are prevented; no physical damage occurs; or, when specified, that packaging is in accordance with the drawing, appropriate American Society for Testing and Materials (ASTM) or military standard, or other applicable purchase order/contract specified requirement.

- 11.1.4.2. The supplier shall provide packaging that maintains the quality of the provided product and prevents damage, deterioration, or loss in transit.
- 11.1.4.3. The supplier shall label the exterior of the package to ensure adequate identification of precautions needed to ensure the integrity of the product being shipped.

11.2. Package Labelling Requirements

- 11.2.1. The supplier shall adhere to the coding, symbology and display requirements set forth in the AIAG Bar Code Symbology Standard (AIAG B-1) for their labels. The specifications outlined in Appendix A of this manual must be adhered to unless superseded by contract or purchase order specific requirements from PM.

11.3. Shipping Documents

- 11.3.1. The supplier shall provide commercial shipping documents or a packing list showing the following:
 - PM purchase order/contract number
 - Date of shipment
 - PM part number, revision level, and description
 - Quantity of items
 - Identification of the lot number, batch and/or date codes, and all serial numbers (if applicable)
 - Special handling constraints or cautions if applicable, including, but not limited to, the following:
 - Safety or environmental hazards
 - Electrostatic discharge (ESD)-sensitive items; open only at approved ESD workstation
 - Moisture-sensitive components; open or store only in humidity-controlled area
 - Shock-sensitive components; specify shock monitoring, if required
- 11.3.2. Purchase orders/contracts may specify different and/or additional information for inclusion on shipping documents. In such instances, the purchase order/contract requirements shall supersede the information requirements of 11.3.1.

11.4. Delivery Requirements

- 11.4.1. Delivery of product is expected on the calendar date(s) to the PM facility specified in the purchase order/contract. Any deviations from schedule must be approved in writing with a PM Purchasing representative. Deliveries may be early up to 3 days with advance notice
- 11.4.2. Shipments will be accepted at PM facilities between the hours of 7:00 AM and 4:30 PM on non-holiday weekdays. Other delivery times may be arranged through working with a PM Purchasing representative at PM's discretion on a case by case basis.

11.5. Controlled Shipping

- 11.5.1. When directed, suppliers will be required to certify product after a lot rejection has occurred. Two types of controlled shipping actions are employed when this situation occurs.
 - Level 1 (CS1) – Supplier conducted sort and certification of subsequent part shipments
 - Level 2 (CS2) – Third party sort and certification of subsequent part shipments

11.5.2. The level of inspection (CS1 or CS2) will be determined based on one or more of the following reasons:

- Repeat quality issues and/or failure to resolve a quality issue
- Severity of the risk to PM and its customers
- Incapable supplier process(s)
- Line downtime or disruption
- Customer complaints
- Other factors deemed applicable

11.5.3. The controlled shipping process will be applied as follows:

- The appropriate PM Quality Representative will initiate controlled shipping as deemed necessary based on a review of the quality concern(s).
- The supplier will be notified of their controlled shipping status. Additionally, PM's customer and/or the supplier's quality system registrar may be notified of CS2 status as deemed necessary.
- PM Quality, Purchasing, and Operations will develop and review the Controlled Shipping expectations and exit criteria with the supplier.
- The supplier and PM will mutually define the certified material identification requirements.
- PM Quality, Purchasing, and Operations personnel will monitor the supplier's progress to plan.
- When the supplier has met the exit criteria, the controlled shipping status will be removed. PM's customer and the supplier's quality system registrar will be notified of the change in status as applicable.
- Failure to exit from controlled shipping status may result in a new business hold or de-sourcing.

11.5.4. Coordination and follow-up of all controlled shipping actions are the sole responsibility of the supplier. Part supply to PM must meet released quantities without supply interruption.

11.6. Excess Transportation Charges

11.6.1. If the need to expedite shipments is deemed to be the fault of the supplier, the supplier will bear the costs for expedited freight required to meet delivery requirements. This includes any excess freight charges incurred by PM to meet the customer's delivery requirements.

Additionally, excess transportation costs may be debited back in full to the supplier for reasons including, but not limited to the following:

- Unauthorized multiple shipments
- Expedited freight as a result of past due requirements
- Expedited freight as a result of defective material
- Past due parts received on regularly scheduled truck(s)

12. Quality Clauses

12.1. The Quality Clauses listed in this section will be selected by PM based on program requirements and will be applied to purchase orders/contracts accordingly. PM will clearly communicate these requirements to its suppliers to ensure an understanding in relation to the specific quality and documentation requirements of a purchase order/contract.

QC-001 Certificate of Conformance (CoC)

The supplier shall provide a CoC with each shipment. Failure to submit the CoC will result in the rejection of the shipment. If multiple containers are used for a given shipment, the appropriate container shall be clearly labelled "DATA ENCLOSED."

The CoC shall include the following information:

- Supplier's name and location
- Manufacturer's name and location (if different)
- Date of manufacture/expiration (if applicable)
- Date of Certification; signed or stamped and "Title" of certifying official of the supplier
- PM part number, revision level, and description
- Manufacturer's part number, revision level, and description (if applicable)
- PM purchase order/contract number and line item number(s)
- Quantity of items
- Identification of the lot number, batch and/or date codes, and all serial numbers (if applicable)
- Shelf life requirements (if applicable)
- Reference any non-conformance/deviation number (if applicable)
- All required governing specifications and revisions as specified on the PM purchase order/contract
- A statement certifying material meets all requirements of the contract, such as: "The undersigned, as the authorized representative of the contractor, warrants and represents all the information supplied above is true and accurate, and that material covered by this certificate conforms to all contract requirements, including, but not limited to, the drawings and specifications."

The CoC shall be supported by inspection and test data, material analysis, or certification from the raw material producer or processor and shall be made available as requested for specifications, such as raw material, special processes, etc.

QC-002 First Article Inspection (FAI)

The supplier shall perform and complete a FAI in compliance with AS9102 requirements for submission to and approval by the designated PM Quality Representative prior to the delivery of any items on this purchase order/contract.

The FAI shall be performed for an item representative of the lot/process of the items on this purchase order/contract. This includes all details and sub-assemblies which constitute the end item ordered.

The FAI shall include a 100% fully ballooned engineering drawing, including the notes. A corresponding 100%-dimensional layout inspection report shall be conducted on a minimum of one part, unless otherwise specified in the terms of the purchase order/contract. Inspection report documentation shall be traceable to the individual part inspected.

The FAI shall not be considered complete until all non-conformities have been resolved and the FAI is reviewed and approved by the PM Quality Representative. Allow five working days for completion of the review. Approval will constitute AS9102 Form 1 sign off by the PM Quality Representative.

Note 1: A new FAI may be required when:

- Changes occur to the method of production, including a change to process equipment, tooling, measuring equipment, and/or process flows;
- There is a lapse in production for over one year;
- Required as part of the corrective action process;
- There is a change in sub-tier suppliers with the exceptions of raw materials or COTS items where the specifications including fit and form have not changed.

Note 2: A new FAI is not required if one has already been submitted and approved for the given product revision on a previous procurement and there have not been any changes listed in Note 1, unless otherwise specified in the purchase order/contract.

QC-003 Safety Related Characteristic (SRC) Inspection

All characteristics designated as SRCs on the engineering drawing shall be 100% inspected on every part, unless otherwise specified by the purchase order/contract. SRCs shall follow the same numbering scheme as the ballooned engineering drawing submitted as part of the FAI. A corresponding dimensional layout inspection report shall be submitted for all parts, unless otherwise specified in the terms of the purchase order/contract. Inspection report documentation shall be traceable to the individual part inspected.

QC-004 Quality Control Characteristic (QCC) Inspection

All characteristics designated as QCCs on the engineering drawing shall be 100% inspected on every part, unless otherwise specified by the purchase order/contract. QCCs shall follow the same numbering scheme as the ballooned engineering drawing submitted as part of the FAI. A corresponding dimensional layout inspection report shall be submitted for all parts, unless otherwise specified in the terms of the purchase order/contract. Inspection report documentation shall be traceable to the individual part inspected.

When process capability has been demonstrated sufficiently by the supplier using statistical process control (SPC), the supplier may request a reduced frequency of QCC inspection. The PM Quality Representative will evaluate the request and supporting data and choose to approve or deny the request. If approved, SPC data must be provided on an agreed upon interval for the evaluation of continued control of the manufacturing process. No deviation from 100% QCC inspection shall occur prior to approval being granted by PM in writing.

QC-005 Raw Material Certification

The supplier shall include with each shipment the raw material manufacturer's test report (e.g., mill test report) that states that the lot of material furnished has been tested, inspected, and found to be in compliance with the applicable material specifications.

The test report shall list the specifications, including revision numbers or letters, to which the material has been tested and/or inspected and the identification of the material lot, batch or heat treat lot to which it applies.

When the material specification requires quantitative limits for chemical, mechanical, or physical properties, the test report shall contain the actual test and/or inspection values obtained. For aluminum mill products (except castings), certifications for chemistry may indicate compliance within the allowed range. Certifications for physical properties shall show actual values.

QC-006 Special Process Certification

Certain special processes are required to comply with this order. Special processes include chemical processing (e.g., anodizing, plating, passivation, etc.), coatings (e.g., painting, thermal spray, etc.), and heat treating and will be specified in the purchase order/contract. Suppliers to PM must select National Aerospace and Defense Contractors Accreditation Program (NADCAP) accredited special process sub-tier suppliers or have the desired supplier reviewed and approved by the PM Quality Representative. A listing of NADCAP accredited suppliers can be found at: <https://www.eauditnet.com/eauditnet/eau/user/login.htm>.

A special process certification for each qualifying process shall be provided with each shipment of product delivered on this order. Special process certifications may be in the supplier's format and shall include the following:

- PM purchase order/contract number
- Part number and revision level
- Quantity processed
- Serial and/or lot numbers of the product processed (if applicable)
- Material process specification and revision

- Objective evidence demonstrating compliance with the applicable process (e.g., temperature charts and hardness test results for heat treatment, destructive test results)
- A certification stating that the special process was performed per the applicable drawing or specification requirements (all special process specification data sheets required with shipment)
- Supplier's name and address

When the special processor is other than the direct supplier to PM, a CoC from the special process sub-tier supplier stating that the special process was performed per applicable drawing or specification requirements, and including the information listed above, is acceptable. CoCs must include the special process supplier's name and address and must be signed and dated by a company official.

QC-007 100% Critical Characteristic Inspection

The supplier shall inspect all parts 100% for the following applicable characteristics:

- All SRCs and QCCs
- All GD&T callouts $\leq .010''$ (0.26mm)
- All dimensions of $\leq .010''$ (0.26mm) TOTAL tolerance range
- All surface finish callouts $\leq 64\mu\text{in}$ (1.6 μm)
- All surface finish callouts that indicate a range (e.g., 64-125 μin)
- All threaded features and their depths or lengths
- All radii and chamfers with a MINIMUM or MAXIMUM callout

All required characteristics shall follow the same numbering scheme as the ballooned engineering drawing submitted as part of the FAI. A corresponding dimensional layout inspection report shall be submitted for all parts, unless otherwise specified in the terms of the purchase order/contract. Inspection report documentation shall be traceable to the individual part inspected.

QC-008 Acceptance Sampling

100% inspection of all items on this purchase order/contract is not practical; however, PM requires that the supplier performs a 100% inspection of the applicable characteristics of the item to a sampling plan that can assure that the items meet the drawing and purchase order/contract requirements. The sampling plan shall be submitted to and approved in writing by the PM Quality Representative prior to use.

Applicable characteristics under this requirement that must be included on the inspection report include:

- All SRCs and QCCs
- All GD&T callouts $\leq .010''$ (0.26mm)
- All dimensions of $\leq .010''$ (0.26mm) TOTAL tolerance range
- All surface finish callouts $\leq 64\mu\text{in}$ (1.6 μm)
- All surface finish callouts that indicate a range (e.g., 64-125 μin)
- All threaded features and their depths or lengths

The use of a sampling plan in no way affects PM's right to reject any and all items found to be non-conforming. In the event that PM discovers a non-conformance, corrective actions may require changes to the sampling plan.

QC-009 Part Serial Number Traceability

Each item specified on this purchase order/contract shall be identified with a unique serial number providing traceability to inspection results, special process certifications, raw material certifications, etc. PM may specify the required format for serialization in the purchase order/contract.

QC-010 Single Lot/Date Code Traceability

Items specified on this purchase order shall be from one lot, manufactured and/or processed at the same time, and shall be traceable to the same raw material lot/heat (e.g., machined parts shall be manufactured in the same production run and utilize raw material from the same lot/heat).

QC-011 Acceptance Test Plan, Procedure, & Reporting

The supplier shall develop and submit an Acceptance Test Plan and Procedure for the supplied product(s) in accordance with the conformance requirements of the purchase order/contract to the PM Quality contact.

PM will review the Acceptance Test Plan and Procedure and notify the supplier its acceptance or rejection via email. In the event of a rejection, PM will provide feedback on what was not satisfactory to improve and expedite the resubmission and approval of the Plan

The Acceptance Test(s) shall be used to verify system-level functional requirements are met. Results shall be provided in an agreed upon report format to the frequency in the accepted Acceptance Test Plan and Procedure.

QC-012 PM Source Surveillance Inspection

PM maintains the prerogative of source surveillance inspection by a PM Quality Representative. PM shall notify the supplier if and when this option will be exercised.

QC-013 Government Source Inspection

The Government has the right to inspect any or all work included in this order at the supplier's plant. PM shall notify the supplier if and when this option will be exercised.

QC-014 Specialty Metals

This purchase order/contract is subject to the requirements of DFARS 252.225-7008 Restriction on Acquisition of Specialty Metals and/or DFARS 252.225-7009 Restriction on Acquisition of Certain Articles Containing Specialty Metals. The complete text of these restrictions can be found at <https://www.acq.osd.mil/dpap/dars/dfars/html/current/252225.htm>.

A statement certifying compliance to DFARS 252.225-7008 or DFARS 252.225-7009 shall be included for each shipment of the applicable product delivered to PM. This statement shall be signed and dated, with the title of the signer noted, and may be included as a part of the CoC. The statement shall identify the material or item by lot and/or heat, date of manufacture, and/or serial number and/or revision date, as applicable.

The supplier shall supply PM with the appropriate certifications demonstrating objective evidence to support the origin of the applicable raw materials.

QC-015 Export Control

This purchase order/contract contains technical data subject to and restricted by U.S. export control laws and regulations under 22 C.F.R. § 120 et seq. of the International Traffic in Arms Regulations ("ITAR") and 15 C.F.R. § 730 et seq. of the Export Administration Regulations ("EAR"), and by entering into this Agreement, the parties agree that they will not violate any laws and/or regulations under ITAR and EAR, and that they will not, without limitation, disclose, transfer, or export Confidential Information to third parties, including foreign persons or entities whether or not related to or affiliated with such party, and/or subcontract out any work and/or orders arising from this Agreement, without first receiving express written consent from the disclosing party and as required by contract or by law, each party shall register with the Office of the Defense Trade Controls.

If either party does not comply with its obligations under this paragraph or any terms specified in this Agreement, such non-complying party will indemnify, hold harmless, and defend the other party as to any violations that the non-complying party may cause under ITAR and EAR, including but not limited to the payment of civil and criminal penalties, all costs and expenses, and attorney's fees.

QC-016 Other Purchase Order/Contract Specific Requirement(s)

The purchase order/contract contains additional clauses or requirements that are specific to the purchase order/contract which are not covered by a specific quality clause in this manual. The applicable additional clauses or requirements may be passed down from a PM customer requirement or be driven by a PM risk analysis of the project.

QC-017 Minimum Automotive Quality Management System Requirements

The supplier shall comply with all requirements specified in the current version of the AIAG Minimum Automotive Quality Management System Requirements for Sub-Tier Suppliers (MAQMSR) prior to the Production Part Approval Process (PPAP), and the production of approved, saleable product for PM. Customer Specific Requirements for a respective OEM in the applicable clauses in the MAQMSR shall also be included in the scope of compliance to the MAQMSR.

QC-018 Production Part Approval Process (PPAP)

The supplier shall submit a complete PPAP package in accordance with the most current edition of the AIAG Production Part Approval Process Manual. The default submission is a Level 3 package. Other submission levels shall only be accepted with prior written approval from an authorized PM representative. The completed PPAP package documents shall be submitted in English.

This requirement extends to all commodities supplied by the supplier's subcontractors and sub-tier suppliers.

Suppliers are responsible for costs incurred by PM resulting from late or incomplete submissions.

QC-019 Material Composition Reporting

The supplier shall use the International Material Data System (IMDS) to report required part material composition information. This must be completed prior to submission of the PPAP package and the appropriate information per the AIAG PPAP Manual. If a supplier fails to complete their IMDS submission, the PPAP package will be rejected.

If a supplier requires assistance with IMDS, they should inquire in writing to the appropriate PM Quality Engineer. It is the supplier's responsibility to keep their IMDS data current for both component changes and system upgrades.

Where applicable, polymeric parts shall be identified with the appropriate ISO marking codes in accordance with the requirements of the AIAG PPAP Manual.

QC-020 Conflict Minerals Policy

PM is committed to sustainable and responsible sourcing of goods and services throughout our supply chain. PM supports the human rights goals reflected in the adoption of conflict mineral due diligence requirements included in the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. PM has a zero-tolerance policy against the use of child labor and prohibits abusive treatment to employees and corrupt business practices in our supply base.

We require our suppliers to engage in supply chain due diligence to improve understanding and reporting of component content supplied to PM. Further, we encourage our suppliers to source responsibly with validated conflict free smelters, wherever possible, to increase our level of confidence that the components in our vehicles and products contain conflict free minerals. We recognize that our sourcing decisions may cause economic consequences in impacted regions and seek to avoid inadvertent adverse economic impact attributable to conflict mineral due diligence activities.

Appendix A

Package Label Requirements

General Requirements

- The label shall employ the Code 3-of-9 or Code 128 bar code symbology as established in AIAG B-1.
- The data identifiers and units of measure where applicable, shall be in accordance to the ANSI MH 10.8.2 standard.
- The label shall be secured to the container and/or load to prevent loss and present the label in a reasonably clean, flat, and uprightly oriented manner so that either contact or non-contact devices can scan it.
- The label shall display the PM part number, quantity in the container the label is being applied to, the PM supplier code number, the serial number of the shipment assigned by the supplier, and the PM purchase order number covering the material. This information shall be included on each label in the designated areas and shall be displayed in both human readable characters and bar code symbols as described in this standard.
- The date of manufacture and the PM engineering release level letter designation that coincides with the material in the container shall also be in human readable characters in the designated areas. Bar code symbols are optional.
- The encoded bar code label shall include only the start and stop characters, the data identifier and the specific PM data requirements described in the following sections. No place holders or other special characters will be allowed in the bar code.
- The minimum label size shall be 4.0 inches high (101.6mm) by 6.0 inches (152.4mm) wide.
- The maximum length of a bar code symbol should not exceed 5.5 inches (139.7mm).
- An example of a label complying with the requirements laid out in this document can be seen in Figure A-1 in this appendix. The label is not scaled to meet the label, bar code, and text size requirements.

Part Number Area

- The Part Number Area shall have the ability to accommodate at least thirty (30) characters. Only the PM part number assigned by PM Purchasing can be used in this area. The human readable characters shall be composed of the correct PM part number as shown on the Blanket Purchase Order or Release.
- Some PM part numbers use hyphens in the part number. Please include the hyphen in the bar code. For example, if part number 12-34-56-78 is printed on the label, the hyphens shall also be encoded in the bar code. If a hyphen is not on the Blanket Order do not include the hyphen on the Label.
- “*” denotes start and stop characters for the bar code. The data identifier “P” shall precede the part number in the bar code. If the human readable part number is 12-34-56-78, the bar code shall be encoded *P12-34-56-78*

Quantity Area

- The Quantity Area shall have the ability to accommodate at least eight (8) characters. The unit of measure shall be present and human readable.
- “*” denotes start and stop characters for the bar code. For most PM purchased components, the data identifier “Q” is used. For example, if the human readable quantity is 1000 with no unit of measure specified, the bar code SHALL be encoded *Q1000*
- The quantity shown on the label shall accurately reflect the number of pieces within the container on which the label is applied. All human readable characters shall be 0.5 inches (12.7mm) high by 0.375 inches (9.525mm) wide. The bar code shall be printed directly below the human readable characters and be a minimum of 0.5 inches (12.7mm) high.

Supplier Number Area

- The Supplier Number Area shall have the ability to accommodate at least seven (7) characters. The supplier number shall be composed of the supplier number indicated on the Blanket Purchase Order assigned by PM Purchasing. The supplier number is required by PM's system to correctly identify the product to the supplier and credit the supplier's account.
- “*” denotes start and stop characters for the bar code. The data identifier “V” shall precede the supplier number in the bar code. For example, the bar code shall be encoded *VXYZINC1*
- All human readable characters shall be 0.2 inches (5.08mm) high. The bar code shall be printed directly below the human readable characters and be a minimum of 0.5 inches (12.7mm) high.

Serial Number Area

- Note that this area is for serialization of shipments, NOT individual parts or products.
- The Serial Number Area shall have a unique serial number assigned by the Supplier, not by PM. This serial number shall not be repeated to PM within a twelve-month period to uniquely differentiate that particular container, regardless of content or destination, from others.
- The barcode serial number must be 19 characters in length comprised of the seven (7) character supplier number, followed by the century year (CCYY) and an eight (8) digit numerical serial number. If you cannot generate a 19-digit serial number, please fill with leading zeros.
- “*” denotes start and stop characters for the bar code. The data identifier “S” shall precede the serial number in the bar code. For example, if the supplier serial number is XYZINC1202000000123, the bar code shall be encoded *SXYZINC1202000000123*
- All human readable characters shall be 0.2 inches (5.08mm) high. The bar code shall be printed directly below the human readable characters and be a minimum of 0.5 inches (12.7mm) high.
- The supplier name, city, state, and zip code shall be printed directly below the serial number bar code and should be 0.1 inches (2.54mm) high. Please contact PM Purchasing with any questions.

Purchase Order Number Area

- The Purchase Order Number Area shall have the ability to accommodate at least six (6) characters and display the PM purchase order number associated with the parts in the container.
- “*” denotes start and stop characters for the bar code. The data identifier “K” shall precede the purchase order number in the bar code. For example, if the purchase order number is 012345, the bar code shall be encoded *K012345*
- All human readable characters shall be 0.2 inches (5.08mm) high. The bar code shall be printed directly below the human readable characters and be a minimum of 0.5 inches (12.7mm) high.

Lot Number Area

- The Lot Number Area shall have the ability to accommodate at least nine (9) characters and display the PM purchase order number associated with the parts in the container.
- “*” denotes start and stop characters for the bar code. The data identifier “T” shall precede the lot number in the bar code. For example, if the lot number is 123456789, the bar code shall be encoded *K123456789*

Special Data Area

- The Manufacturing Date Area (MFG DATE) should contain the date the parts were manufactured and packed into the container on which the label is applied. The human readable characters should be 0.2 inches (5.08mm) high. The date shall be legibly printed either mechanically or by hand.
- The Expiration Date Area (EXP DATE) shall include the expiration date for all material subject to expiration. Labels for materials not subject to expiration can leave this area blank.

- The Engineering Level Area shall display the PM Engineering Revision Level that pertains to the parts within the container to which the label is applied. The Engineering Revision Level shall be legibly printed either mechanically or by hand. If printed mechanically, the characters should be 0.2 inches (5.08mm) high.
- The remaining unused areas can be utilized at the supplier’s discretion.







PART NO: (P)	12-34-56-78		PART DESCRIPTION HERE	
				
QUANTITY: (Q)	1000		PURCHASE ORDER NO: (K) 012345	
	PCS			
SUPPLIER: (V)	XYZINC1	LOT NUMBER: (T) 123456789		
				
SERIAL: (S)	XYZINC1202000000123		MFG DATE 01/JAN/2020	EXP DATE 01/JAN/2025
			ENGINEERING LEVEL A1	
XYZ INC., NEW HUDSON, MI 48165				

Figure A-1 - Example Package Label

Master Labels

- When multiple containers of the same item, part, or code number are packed as a unit, a Master Label shall be used and should be positioned in such a manner that when the pack is broken apart the label is discarded.
- The top of the label shall have the heading “MASTER LABEL” printed at a minimum height of 1.0 inch (25.4mm) letters.
- The data areas of the label shall conform to the specifications defined for an Individual Container Label except that the data identifier for the serial number shall be “M” for Master Labels.
- An example Master Label can be seen in Figure A-2.


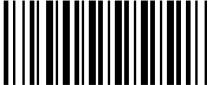




<h1>MASTER LABEL</h1>			
PART NO: (P) 12-34-56-78			
			
QUANTITY: (Q) 10000		PURCHASE ORDER NO: (K) 012345	
	PCS		
SUPPLIER: (V) XYZINC1	LOT NUMBER: (T) 123456789		
			
SERIAL: (M) XYZINC1202000000123	MFG DATE 01/JAN/2020	EXP DATE 01/JAN/2025	
	ENGINEERING LEVEL A1		
XYZ INC., NEW HUDSON, MI 48165			

Figure A-2 - Example Master Label

Label Quality Requirements

- All suppliers shall submit a sample of their label to the PM Material Planning Lead for a respective program for review against the specifications and requirements defined in this appendix. The sample must be granted written approval prior to the start of production shipments.
- In the event a label is found to have a nonconformance to the requirements, the supplier will be notified, and formal corrective action required.

Appendix B

Revision History Details			
Rev	Date	By	Description
NW	16 Oct 2018	FWW	Initial Release
A	6 Mar 2020	FWW	Revised format; Updated all sections to include automotive requirements throughout document; Added Appendices