PM Industries
Precision Manufacturing Services

QUALITY ASSURANCE MANUAL

Lapping & Grinding of Ceramics.

Polishing of Ceramics & Quartz.

Dicing of Ceramics.

Laser Machining of Ceramics. Laser Marking, Bar Coding, & Serializing.

Laser Circuit Trimming, Etching, Pattern Delineation, Marking, & Serializing.

Custom Gold Sputtering on Cylinders & other 3D Objects.

PM Industries
CUSTOM MANUFACTURING SERVICES
PM Industries Inc. 14305 SW Millikan Way Beaverton Oregon 97005
Phone 503-641-4646

P/M Industries, Inc.
Quality Assurance Manual

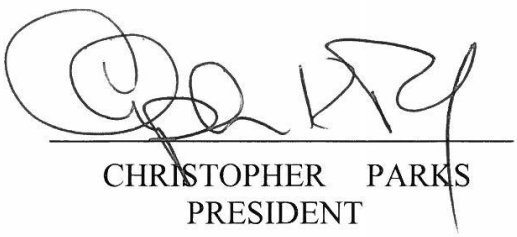
PM Industries Provides Custom Machining services on Ceramic, Glass, Resistor Circuits, Metal, and other products to meet customer requirements and specifications.

This manual establishes and controls P/M Industries quality system. It is modeled on the ISO 9001 standards for quality assurance. We chose this format for two fundamental reasons. First, we feel that it provides the best, most complete framework for us to build our quality system around. Second, it provides the best fit to the quality systems of our customers.

P/M Industries charter is to satisfy its customers. Everything within P/M Industries is geared towards providing products and services that meet or exceed customer's expectations. We believe in building long term relationships with our customers that are based on trust and open communication. By understanding and consistently meeting the needs of our customers, we seek to become a leader in the microelectronics industry. We view the implementation of our quality system as the fulfillment of this charter.

This 2016 revision of the manual is provided for your reference. It represents the intent of our quality system as of January, 2016. The PM Industries Quality Management System is Certified to ISO 9001:2008 standards. This manual is not a controlled copy and will not be recalled as new revisions of the manual are made available.

APPROVED AND ENDORSED BY:



CHRISTOPHER PARKS
PRESIDENT

1-8-16
DATE

PM Industries Inc. 14305 SW Millikan Way Beaverton Oregon 97005
Phone 503-641-4646

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QUALITY ASSURANCE MANUAL

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PURPOSE:

This procedure provides a foundation for the Quality Management System at PM Industries and establishes Management Responsibility of the system.

SCOPE:

This procedure details Management's Responsibility for developing, maintaining and continually improving PM Industries Quality Management System.

APPLICABLE DOCUMENTS:

1. ISO 9001-2008: Quality Management System, International Standard.
2. Contract Review Procedure, QAP0030.

RESPONSIBILITIES:

1. It is the responsibility of Senior Management to maintain and revise this document as needed.
2. It is the responsibility of all Production Supervisors to communicate the policies and objectives outlined in this procedure with their production personnel.

PROCEDURE:

1.0 Management Commitment

Senior Management will provide commitment to develop, implement and continuously improve the effectiveness of the Quality Management System (QMS) at PM Industries through:

1.1 Establishing, measuring, and reporting to the organization customer satisfaction and the ability to meet customer requirements.

1.2 Conducting management reviews on the effectiveness of the organization's quality policy and quality objectives.

1.3 Ensuring resources are available for maintaining and continuously improving the Quality Management System.

2.0 Customer Focus

It is the responsibility of Senior Management to implement a system for establishing, measuring, and improving customer satisfaction for all processes or services supplied at PM Industries.

3.0 Quality Policy

It is the policy of PM Industries to produce products and supply services that faithfully meet our customer's specifications and exceed their expectations through continuous improvement.

3.1 It is important that every employee understands that our customers expect competitively priced products and services, delivered on time from a financially sound supplier in addition to meeting specification.

3.2 Producing and delivering quality assigns a multi-dimensional requirement on each employee at PM. We have designed our Quality system based on ISO 9001, giving PM a road map for the organization of the system and clarifying the rolls of all employees in the organization. At the heart of our quality systems is the requirement for Management Level Review of the effectiveness of the system and the expectation that the system will assure continuous improvement.

3.3 We will meet or exceed the quality expectation of our customers by having a well organized and understood Quality Management System, by taking pride in our work, ourselves, and our customers.

4.0 Planning

4.1 Quality Objectives

4.1.1 Measurable objectives shall be established throughout the organization at relative points to assure the following:

4.1.1.1 Customer satisfaction as measured by Customer Returns and On-Time Delivery reporting.

4.1.1.2 Profitability as measured by Operating Income reporting as a function of Sales revenue and Cost of Sales.

4.2 Quality Management System Planning

4.2.1 Each department, with assistance of the Quality Management Team, will be responsible for developing and implementing quality improvement plans at planned intervals.

4.2.2 Quality improvement plans are to comply with the established, measurable quality objectives.

4.2.3 Quality improvement plans will be updated in conjunction with the annual review of the Quality Management System.

4.2.4 Senior Management will approve updated quality improvement plans prior to implementation.

4.2.5 The Quality Management Team will maintain records for Quality Management System Planning.

5.0 Responsibility, Authority, and Communication

5.1 Structure and Authority (Reference Appendix A)

5.1.1 Responsibility for implementation of the Quality Management System will be vested in Senior Management.

5.1.2 Responsibility of daily operations of the Quality Management System is vested in Department Supervisors and Leads.

5.1.3 The Quality Management Team reports to the President.

5.1.4 The Quality Management Team has authority to:

5.1.4.1 Initiate preventive action for quality related issues.
5.1.4.2 Identify deficiencies related to the quality of the product and its processes.
5.1.4.3 Verify the implementation and effectiveness of corrective actions.
5.1.4.4 Delay the production or delivery of suspected deficient product until a proper disposition has been made.
5.1.4.5 In the case of a disagreement between the Quality Management Team and the responsible department the president will have final authority to resolve the issue.

5.2 Management Representative

5.2.2 The selected lead quality representative for the Quality Management Team has the responsibility and authority to ensure that the quality system is established, implemented and maintained in accordance with ISO 9001.

5.2.3 The lead quality representative will regularly report to Senior Management on the performance and needed improvements for the Quality Management System.

5.2.4 The lead quality representative will be responsible for implementing and promoting continuous awareness of customer requirements throughout the organization in the manner of a scheduled meeting or customer satisfaction report.

5.3 Internal Communication and Interaction of Processes:

5.3.1 Regularly scheduled Staff meetings and Operations meetings are held to ensure the effectiveness of the quality management system and to implement Continuous Improvements. Appendix B, Internal Communication, shows the interaction of key departments of our organizational structure that are represented at these meetings. It is through these meetings that improvements and preventative actions are addressed and implemented in the form of projects.

5.3.2 PM Industries is a customer driven organization. Support Processes, Product Realization Processes, and Management Processes are structured to improve Customer Satisfaction. Appendix D, Interaction of Processes shows how these three processes will improve customer satisfaction.

6.0 Management Review

6.1 General: Senior Management will monitor the performance of the Quality Management System at scheduled intervals to:

6.1.1 Ensure its suitability with the current quality policy and objectives.
6.1.2 Evaluate effectiveness across the production floor.
6.1.3 Assess the opportunity for improvements.

6.2 Quarterly, the Quality Management Team will make quarterly reports to Senior Management. The following items, but not restricted will be included:

6.2.1 Audit results
6.2.2 Scrap reports
6.2.3 Preventative/Corrective Actions and status
6.2.4 Process changes or implementations.
6.2.5 Recommendations for process improvements
6.2.6 Follow up from previously implemented changes

6.3 Annually, the Quality Management Team and Senior Management will review the following items:

6.3.1 Quality Manual
6.3.2 Overall Audit Results
6.3.3 Customer Satisfaction
6.3.4 Performance of predefined quality objectives
6.3.5 Implemented Quality Improvement Plans

6.4 Senior Management will include feedback to the review process for the following items:

6.4.1 Improvements to the Quality Management System and the processes it supports.
6.4.2 Customer Satisfaction
6.4.3 Justified Resources

7.0 Resource Allocation

7.1 Assessment and allocation of resources for the quality function will be made by Senior Management at quarterly Quality Meetings to reflect quality planning, objectives, and aim of the Quality Management System.

7.2 Technical resources will be allocated by each production department, as needed, to meet current quality objectives and plans.

8.0 Product Realization

8.1 Product Realization in a contract manufacturing environment for products begins with the customer's request for quote to produce parts in conformance to a customer supplied print. PM is exempt from the design of products as the design is typically in the form of the customer supplied print. PM Industries has a variety of capabilities and established processes. A Contract Review is performed to determine if the customer's specifications are within the capabilities of PM Industries. Refer to Appendix C, "Product Flowchart", for a summary of product realization from RFQ to product shipment.

8.2 The contract review will categorize the job or product into one of four categories:

8.2.1 **Repeat Part Number:** The part number has been previously manufactured and accepted by the customer. The processes and documentation to manufacture this part is established and confirmed.

8.2.2 **Revised Part Number:** The part requires a production review to ensure the revised customer's part specifications are within the capabilities of PM Industries and to update the Print Package.

8.2.3 **Standard Job or Product:** The customer's part specifications are determined to be similar to other parts manufactured and processed at PM Industries. The part requires a production review to ensure the customer's part specifications are within the capabilities of PM Industries and to generate the Print Package. (Controlled Print, Process Sheet, Setting Sheet, Program Log Sheet, and Inspection Documents.)

8.2.4 **Non-Standard Job or Product:** The customer's part specifications are determined to be outside of the rules of PM Design Guidelines. A more extensive technical evaluation is required to determine if PM Industries will move forward on this job in the form of a project to develop the processes that will deliver a compliant product that meets all of the customer's specifications and expectations.

8.3 An increased amount of customer communication and technical resources are required for a Non-Standard Job or Product. Technical resources will be in communication with the customer to negotiate the design requirements, specifications, development review, verification, validation, and changes.

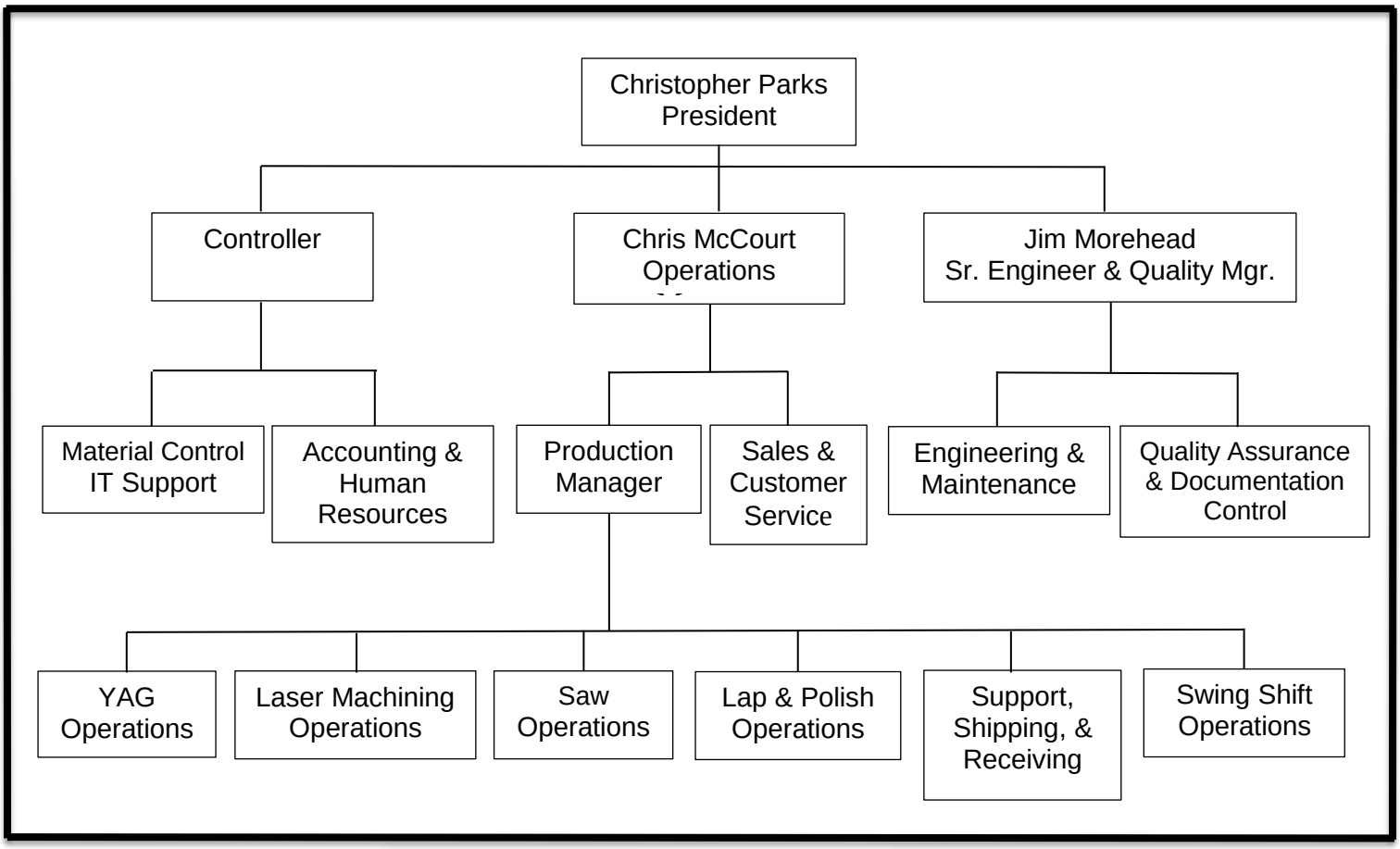
8.3.1 Refer to Appendix B, "Internal Communication" of this document for a summary of how customer requests and requirement inputs are communicated and developed internally into Customer Projects, Capability Projects, Development Projects, Process Improvements, and a documented process to realize the final product.

8.3.2 Refer to Procedure QAP0030 Contract Review, Appendix B, for a detail on the "**DEVELOPMENT PROCESS STEPS FOR NON-STANDARD JOBS".**

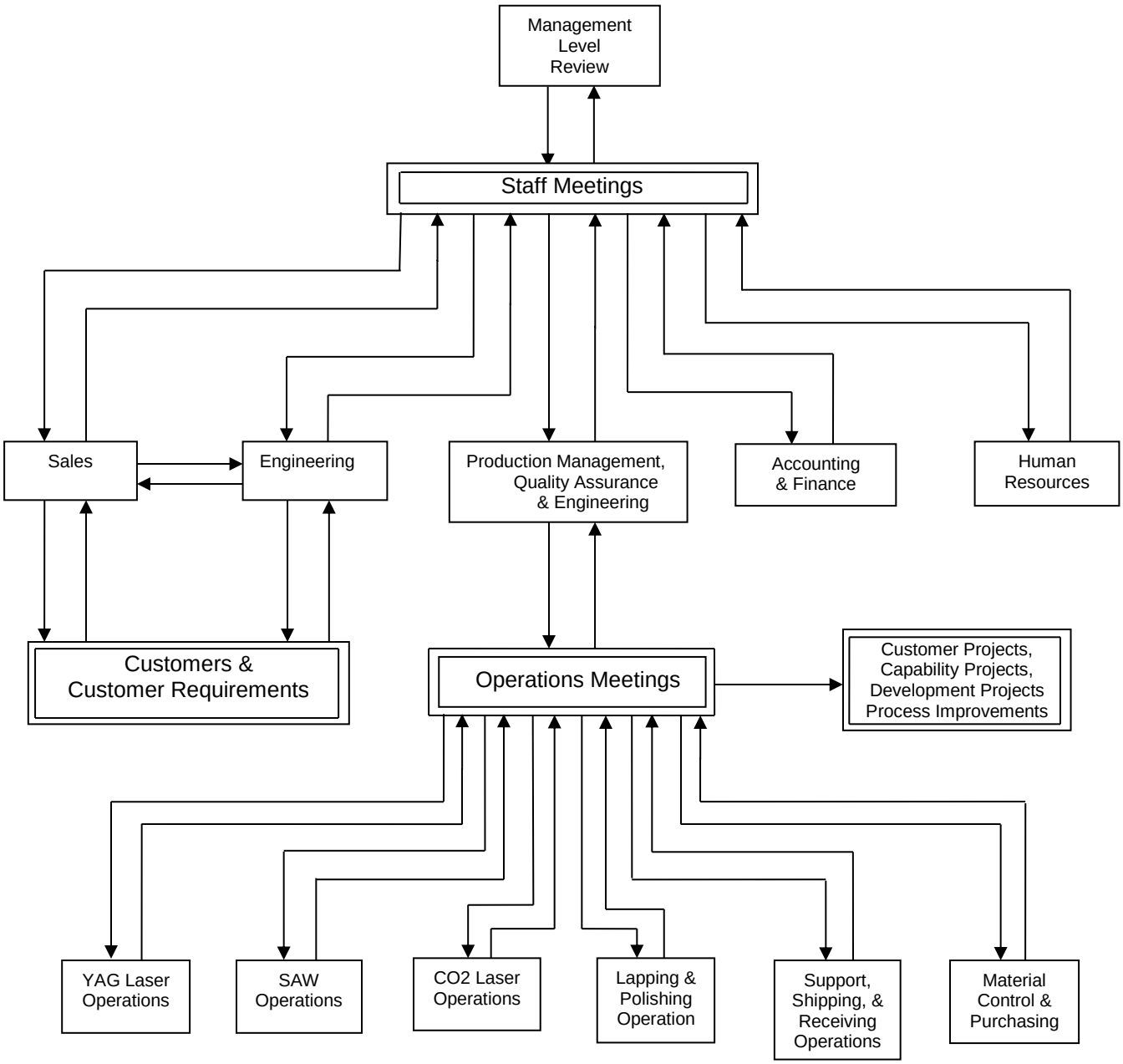
Appendix A:

Management Structure

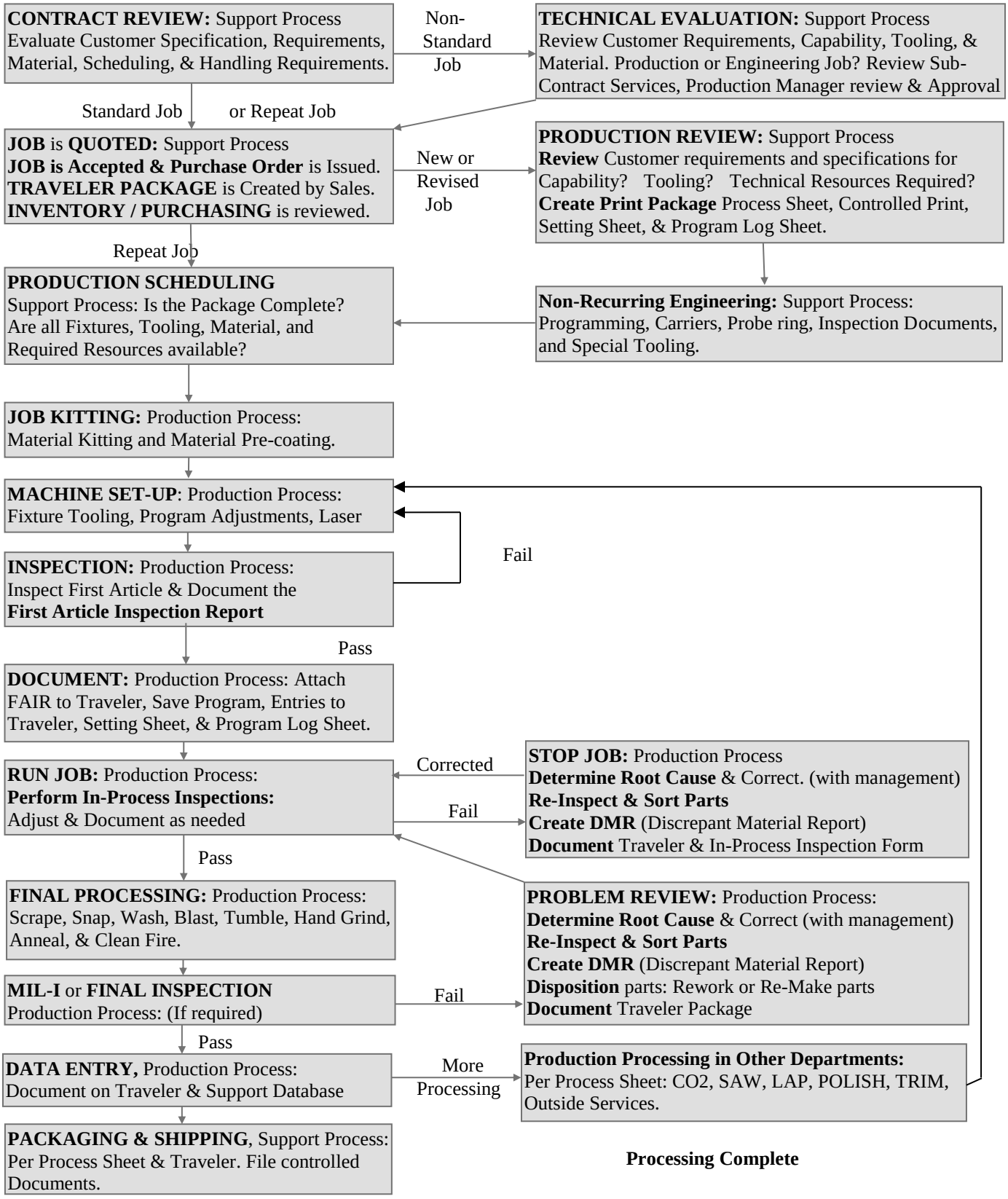
Organization Chart as of 9/1/2016



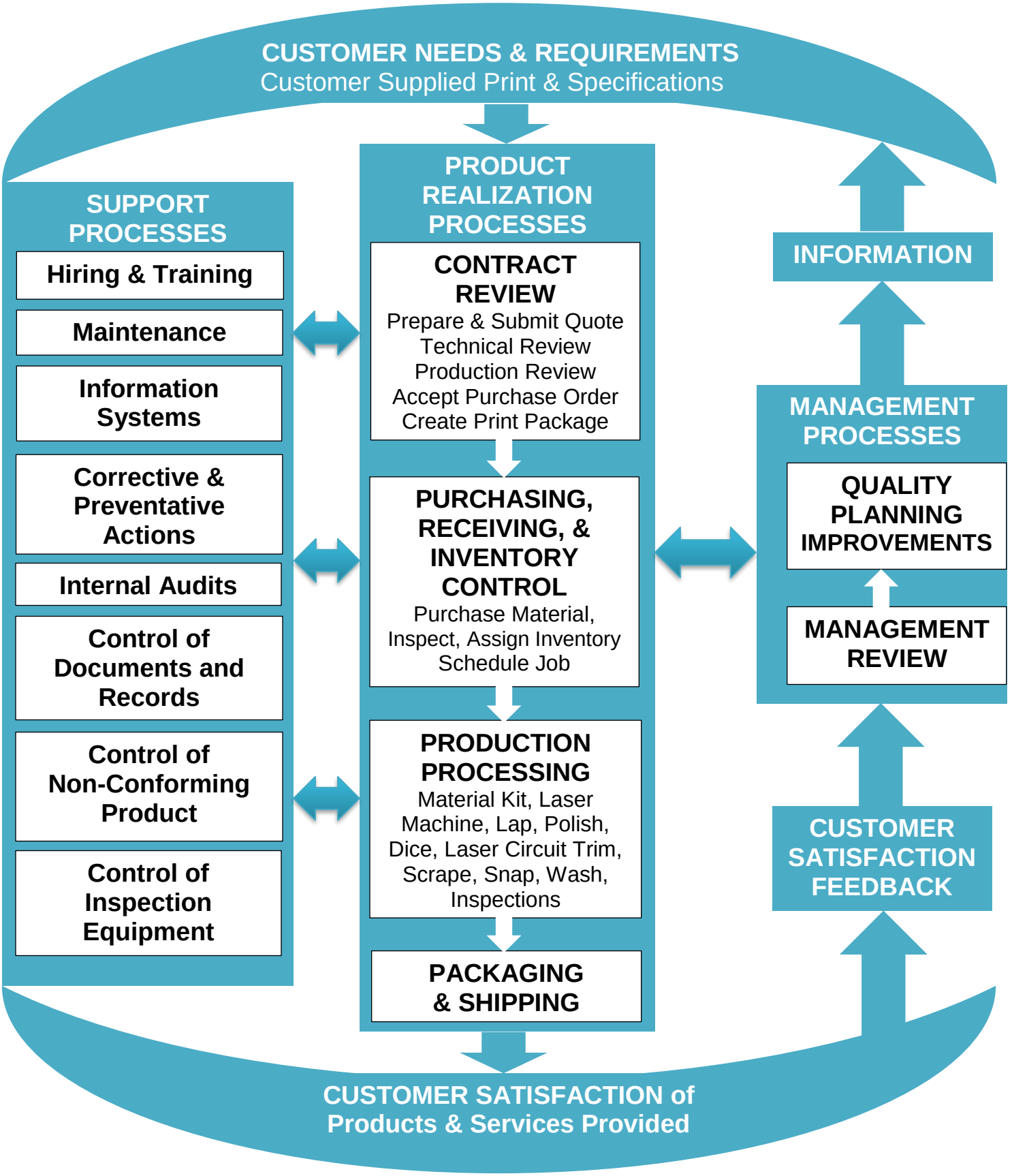
Appendix B: **Internal Communication**



Appendix C: **PRODUCT FLOWCHART**



Appendix D: **INTERACTION OF PROCESSES**



PURPOSE:

This document defines the structure of the quality system and provides for planning activities within the quality function.

SCOPE:

This document applies to all quality activities performed at P/M Industries.

APPLICABLE DOCUMENTS:

1. ISO 9001 Quality systems - Model for quality assurance in design, development, production, installation, and servicing.

2. 18-QAP0001 - P/M Industries Quality System: Management and Authority.

RESPONSIBILITIES:

1. The Material Control department is responsible for the control of this document.

2. The Quality Assurance department is responsible for maintaining this document under the direction of Executive management.

3. The Production Manager is responsible for ensuring the full implementation of this procedure within the respective production departments.

4. Senior managers of technical and administrative support activities are responsible for full implementation within their respective departments.

PROCEDURE:

1.0 QUALITY MANUAL

1.1 The structure of the quality system will be defined within a quality manual.

1.2 The quality manual will be composed of procedures that define specific elements of the quality system.

1.3 The quality manual will be organized around the ISO 9001 requirements.

2.0 QUALITY PLANNING

2.1 Each department, with the assistance of Quality Assurance will be responsible for developing quality improvement plans prior to the start of each fiscal year.

2.2 Quality improvement plans will be updated in conjunction with the annual management review of quality performance. See the “Management Review Section” of document 18-QAP0001, P/M Industries Quality System: Management and Authority.

2.3 Quality improvement plans will address the following areas:

2.3.1 Updates to the quality system to ensure that the needs of our customers are met.

2.3.2 The identification of resources needed to meet the requirements of quality.

2.3.3 A systematic plan for continuous improvement based on realistic measures of customer service.

2.4 Updated quality improvement plans will be approved by senior management as part of the updated Operating Plan prior to implementation.

2.5 The Quality Assurance department will maintain records of quality planning.

PURPOSE:

This document defines the method for contract review.

SCOPE:

This procedure applies to all customer contracts at PM Industries.

APPLICABLE DOCUMENTS:

1. Sales Order
2. PM Design Guidelines
3. Customer Drawings and Specification
4. Global Process Sheet
5. Production Checklist, (See Appendix A)
6. Customer Complaint and Return Material Procedure.
7. Corrective Action Procedure

DEFINITIONS:

1. **Production Review:** A review of all technical aspects of a customer order by the production department's Technical Representative to ensure that the customer specifications and requirements are attainable.
2. **Standard Job**: A customer order with part specifications that has been determined to be within PM Design Guidelines and is similar to other parts manufactured here at PM Industries.
3. **Non-Standard Job:** A customer order with part specifications that has been determined to be outside of the PM Design Guidelines or Standard Processes.
4. **Technical Evaluation:** An evaluation conducted by Engineering and Production Management on a customer request with requirements that has been determined to be a Non-Standard Job.
5. **Rework Process Sheet:** A single use Process sheet with rework instructions attached to the Rework Traveler Package.

RESPONSIBILITIES:

1. The Quality Manager is responsible for maintaining this document.
2. The Sales department is responsible for the initial Contract Review.
3. The Production Manager is responsible for the implementation of this procedure through the production departments.

PROCEDURE:

1.0 CONTRACT REVIEW:

Prior to submitting a quote for a contract or confirming a purchase order, the sales person will review the prospective order to ensure that all requirements have been adequately defined and documented. This will include the following:

1.1 The Part Number, and Revision Level on the Print must match the Part Number, and Revision Level on the Customer Purchase Order.

1.2 Review of the Sales Review Checklist, to confirm that the applicable job requirements have been addressed. (See Appendix A)

1.3 All artifact dimensions on the drawing are specified, legible, and have appropriate tolerances.

1.4 All drawings, prints, and customer supplied specification sheets referenced in the purchase order and on the drawing, are present.
1.5 All customer quality requirements specified on Purchase order, drawing, and customer specification documents are within the capability of the PM Design Guidelines and can be met.
1.6 Confirm that the customer's delivery schedule can be met.
1.7 A customer Sales Order with part specifications that are outside of the PM Design Guidelines or Standard Processing, requires a technical review before a Quote or Sales Order is generated. Follow the process steps in appendix B of this document.

2.0 ACTION AT CONTRACT REVIEW:

2.1 Any differences between the quote and the purchase order are to be resolved before the sales order is produced.
2.2 **Sales Order:** If the drawing is correct and the requirements of the job are consistent with the production checklist, then the sales person may generate the Sales Order in accordance with section 4.0 DOCUMENTATION.
2.3 **Global Process Sheet:** If the requirements of 2.2 are met, then the sales person may generate the Global Process Sheet in accordance with sections 5.

3.0 CHANGES:

Any changes to a Sales Order, initiated by the customer, after the original Sales Order has been accepted, are to be incorporated into the Sales Order via a Change Traveler. ALL changes must be reviewed in accordance with all of the steps above.

4.0 DOCUMENTATION:

4.1 "New" Customer Part or Sales Orders require the following Documentation:
4.1.1 Drawing, Print or equivalent.
4.1.2 Sales are to request a .DXF or .DWG file if available for the CO2 Department.
4.1.3 Global Process Sheet (including master and part yield).
4.1.4 Customer or PM Specification/tolerance as required. PM Specifications are found on the network at Public:\1-PMI Sales\production-sales standards.xlsx.
4.1.5 If the order is a **"Qualification Run"**, the traveler must be stamped as a **"QUALIFICATION RUN".** Document specific information needed on the traveler. Engineering Inspections shall be required and documented as a Process Step on the traveler before proceeding to the next Process step.
4.1.6 Customer drawings and specifications must be in a format that production is readily familiar with. If not, Sales will provide additional documentation to facilitate clear interpretation and a production review will be required before submitting the order.
4.1.7 New sales orders created with a value of $10,000 or higher require a review by another sales representative prior to release.
4.1.8 Non-Standard Job or Product: If the customer's part specifications are outside of the rules of PM Design Guidelines or Standard Processes, a more extensive technical evaluation is required to determine if PM Industries will move forward on the job. The technical review will often result in a project to develop the processes to deliver compliant product that meets all of the customer's specifications and expectations. Refer to appendix B of this document for detailed process steps to follow for this type of new job.

4.2 "Revised" Customer Part or Sales Orders. Internally or Customer initiated.

4.2.1 For processing changes, complete a Production Review.
4.2.2 For a master change, enter as a "Revised" order on the on the Traveler and update the Global Process Sheet.
4.2.3 Document the revision specifically and completely on Traveler and Global Process Sheet.
4.2.4 Revised Customer Part or Sales Orders require the same documentation as a "NEW" Customer Part or Sales Order. Note changes on the traveler in the appropriate department section(s).
4.2.5 Revised sales orders created with a value of $10,000 or higher require a review by another sales representative prior to release.

4.3 "Repeat" Customer Part or Sales Orders.

4.3.1 Repeat Customer Parts or Sales Orders normally require no additional supporting documentation.
4.3.2 The Sales person will review previous production runs of the repeat part to ensure that the quoted hours match the actual hours to determine if a price adjustment is required.
4.3.3 The Sales person is to update the estimated run times on the traveler if there is a discrepancy between the estimated and actual run times.
4.3.4 If a new print is received with a purchase order, the part number and revision level must be verified.
4.3.5 A Non-Standard job does NOT become a Repeat Job until the third production run has been completed in accordance with Appendix B: Completion Review.

4.4 "Rework" Sales Orders or Customer Complaint.

4.4.1 Rework Sales Orders require information in the form of a Customer Complaint. The traveler and original Sales Order Number must be Included in the complaint package in accordance with the Customer Complaint and Return Material Procedure and Corrective Action Procedure.
4.4.2 The Rework Traveler shall include Traveler Notes referencing the RMA # and the original Sales Order #.
4.4.3 Production will generate a Rework Process Sheet with rework instructions and attach it to the Traveler Package before scheduling the job.
4.4.4 A copy of the Corrective Action from the complaint must be attached to the print package and must be documented on the Global Process Sheet before scheduling the job.

5.0 GLOBAL PROCESS SHEET:

5.1 **General Customer Information:** Special Notes and External Customer Specifications. If by design, the customer name on the print does not match the customer who is ordering the part, then the Global Process Sheet must be clearly noted to explain the discrepancy.
5.2 **Preparation:** Master size / Supplier, Yield, Alternative Master size, Yield, Pre-Coat, Exact Quantity, Camber Sort. Enter the data and circle all that apply.
5.3 **Production Notes:** Should match the same processes as on the Traveler. Add any special notes or details as needed. See section 5.5 for standard processes.
5.4 **Peripheral and Shipping:** Circle all that apply and add detailed notes where applicable.

5.5 **GLOBAL PROCESS SHEET: STANDARD TERMINOLOGY**
Include special instructions and detailed notes as required.

5.5.1 **YAG:**
TRIM
MARK: Marking, Serialization, Delineate, or Ablation
PRINT
SPUTTER
BAKE**:** Stabilization Bake
MIL-I: Inspection

5.5.2 **CO2:**
MACHINE
DRILL
SCRIBE
CVT: "**C**lean **V**ia **T**echnology", Requires Engineering Approval
MARK: Marking, Barcode, & Serialization
DYE CHECK
PRECOAT
SCRAPE
SNAP
TUMBLE
ANNEAL
CLEAN FIRE
FLAT FIRE
MIL-I: Inspection

5.5.3 **ABRASIVES**:
SAW
LAP
POLISH
BLAST
GRIND
TUMBLE
ANNEAL
CLEAN FIRE
FLAT FIRE
MIL-I: Inspection

5.5.4 **SUPPORT:** (Peripheral)
PULL FROM STOCK
SCRAPE
SNAP
CLEAN
SINGULATE or DON'T SINGULATE
ANNEAL
CLEAN FIRE
FLAT FIRE
TUMBLE
HAND GRIND
MIL-I: Inspection

Appendix A
SALES REVIEW CHECKLIST

CUSTOMER _____ QUOTE #: _____

PART #; _____ REV: _____

REVIEWED BY: _____ DATE: _____

NEW JOB [ ] REVISED [ ]

JOB REQUIREMENTS FOR ALL DEPARTMENTS

1. [ ] The Customer's Name, Part Number, Revision Level, Quantity, and Shipping Instructions On the Sales Order and Quote documents must match the Part Number, Revision Level, Quantity, and Shipping Instructions on the Customer Purchase Order.
2. [ ] The Part Number and Revision Level on the Print must match the Part Number and Revision Level on the Customer Purchase Order.
3. [ ] All Nominal values and tolerances are on the print and legible.
4. [ ] There are no inconsistencies or conflicts on the print.
5. [ ] All notes are legible.
6. [ ] All requirements for the job are within P/M Industries' capability.
7. [ ] Standard Job.
8. [ ] Non-Standard Job.

TRIM JOBS

9. [ ] The print shows a location for all resistors in nominal table.
10. [ ] Low ohm resistors have probe points specified.

MARKING JOBS

11. [ ] Artifacts are legible and identified.
12. [ ] Artifacts have appropriate tolerances.
13. [ ] The etch depth is specified.

CO2 JOBS

14. [ ] Request a .DXF or .DWG drawing file.
15. [ ] Pull back from metallization is specified for metalized parts.

SAW JOBS

16. [ ] Dicing Blade thickness is specified.
17. [ ] Pull back from metallization is specified for metalized parts.

LAP & POLISH JOBS

18. [ ] Flatness is Specified.
19. [ ] Surface Finish is specified.
20. [ ] Thickness is specified .

Appendix B: DEVELOPMENT PROCESS STEPS FOR NON-STANDARD JOBS

Contract review

1. The Sales Rep will identify the job as non-standard, requiring engineering process development.
2. The Sales Manager will review the sales revenue potential for this customer and other customers to value the job, the capability, and the Customer / PMI relationship to determine PM Industries' involvement.
3. The Sales and Engineering Managers will evaluate this information and the cost of development and to decide whether to progress to technical evaluation within 2 business days.

Technical review

4. The Sales Rep will present the project overview to the Production Manager and address goals, risks, and questions.
5. The Production Manager will coordinate with technical staff to define the required resources and time to develop, test, and document the process with a target completion date.
6. The Production Manager will provide the Sales Rep with process development cost information. (Consumables, Equipment, and Man Hours)
7. The Sales Rep will consult with the Customer to Quote, approve and initiate the Qualification Sales Order to create sample parts for the customer's evaluation.

Sales Order

8. The Sale Rep will generate and deliver the sales order with all pertinent information to the Production Manager.
9. The Sale Rep will include an Engineering Stamp on the sales order.
10. The Sale Rep will include Inspection Process Steps on the traveler as instructed by Engineering.
11. The Sale Rep will specify the ship method on the traveler as "Hand Carry" to insure a thorough documented final inspection.

Production Data Capture

12. Production Scheduling will schedule the Sales Order with Engineering availability.
13. Production Scheduling will notify Sales of the completion target date.
14. Engineering will generate a detailed Global Process Sheet with inspection stops between processes.
15. Engineering will provide Data Capture Forms to the applicable production departments.
16. The Production Leads from each department will ensure that production data is captured.

Tracking

17. Engineering Sales Orders are identified as "Hand Carry" on the shipping schedule for ship method.
18. Engineering sales orders are reviewed at the weekly production meeting for status updates.
19. The Production Manager will provide status updates to Sales and PMI Management as necessary.

Completion Review

20. Shipping is to return completed Sales Order Traveler to the Production Manager (Hand carry).
21. The Production Manager is to Review final inspection and data with the technical staff & Engineering.
22. Engineering is to update the Global Process Sheet and the New Materials Database.
23. The Production Manager will advise Sales of the results and any process issues affecting future pricing and lead times.
24. The Sales Rep will generate a change Traveler to define a ship method to release order for shipment.
25. The Sales Rep will notify the customer of results.
26. The Sales Rep will document the Customer feedback in the database. 1st run development, 2nd run qualify, 3rd run optimize.
27. A final review meeting with Sales, Engineering, and the Production Manager will be held to finalize the Process and close the project.

PURPOSE:

The purpose of this procedure is to establish guidelines for the issuance and control of documents and forms.

SCOPE:

This applies to all documents and forms used for but not limited to the specific purpose of maintaining standard production processes, engineering standards, quality standards, Sales, Administration, and Special Purpose Forms. It also applies to customer specifications approved for use by P/M Industries as well as specific customer drawings relating to customer part numbers.

APPLICABLE DOCUMENTS:

1. P/M Industries Quality System: Management and Authority; 18-QAP0001

2. Customer Specification Control Form; SA-0001

DEFINITIONS:

1. Document - A written paper that conveys information such as a procedure, instruction, specification, etc.

2. Internal documents - Documents written by PM Industries such as Procedures, Forms, and Process Sheets.

3. Customer specifications - Specifications written by a customer and approved for use by PM Industries.

4. Customer drawing – Customer supplied drawing with specifications relating to customer part numbers.

5. Form - A written paper that requests information such as an Inspection Report.

RESPONSIBILITIES:

1. It is the responsibility of Quality Assurance to ensure this document complies with ISO 9001 requirements.

2. Document control is responsible for the administration of the document control system.

3. Each department is responsible for generating and maintaining the documents that apply to their work processes.

4. Each department is responsible for ensuring only controlled copies of documents are in use.

PROCEDURE:

1.0 DOCUMENT CONTROL

1.1 All controlled copies of internal documents, customer specifications, and customer drawings shall be Control Stamped “CONTROLLED COPY When Marked in Red” in red ink.

1.2 Copies of controlled internal documents or customer specifications and drawings used for reference purposes shall be stamped “REFERENCE ONLY” in blue ink.

1.3 Issuance of control stamps shall be controlled by Document control.

1.4 Forms used in the production areas are not stamped.

2.0 PROCEDURE MANUALS

2.1 Procedure Manuals shall have a Table of Contents. The person or department assigned the procedure manual is responsible for maintaining the Table of Contents.

2.2 The Table of Contents shall list all internal documents and customer specifications issued to that procedure manual. It is placed at the front of the procedure manual.

2.3 The Table of Contents shall have the following information:

2.3.1 Control Number
2.3.2 Revision Level
2.3.3 Title

3.0 DOCUMENT REVIEW

3.1 Each department shall be responsible for performing an annual review of all internal documents and forms active in the department.

3.2 The annual review shall be performed to insure all internal documents and forms reflect current processes and standards.

3.3 The annual review is separate from normal revision changes.

4.0 DOCUMENT CONTROL NUMBERS

4.1 Document control shall issue control numbers for internal documents and forms.

4.2 The control number shall identify the specific internal document or form until it is retired or becomes obsolete. An internal document or form becomes obsolete when it is not applicable to current processes or standards.

4.3 Control numbers for internal documents and forms shall be assigned sequentially in accordance with sections 7.6 and 8.4.

4.4 If a retired internal document or form is re-activated, it shall be issued a new control number.

5.0 DOCUMENT REVISIONS

5.1 All internal documents and forms shall have a revision level.

5.2 An initial release shall be assigned revision level “A”.

5.3 Subsequent revisions shall follow the sequence of the alphabet.

5.4 Only one revision level is active.

5.5 Old revisions shall be recalled and archived.

5.6 All customer specifications shall have a revision level.

5.6.1 Only one revision level of a customer specification is active.
5.6.2 Old revisions shall be recalled and archived.

5.7 All customer drawings will have a part number and revision level.

6.0 INTERNAL DOCUMENT FORMAT AND APPROVAL

6.1 The Document Control Number, Revision level, and Title shall be listed on the top of the Title page and in the header of each subsequent page of the document.

6.2 The PM Logo and the page number shall be listed in the footer of each page of the document.

6.3 Each document shall have a title page. The Title Page Format is specified in Appendix B. The procedure template with title page, document format, header, and footer in Arial font, size 12, is located at: :PCD\procedures\procedure template

6.4 All documents shall be approved prior to release.

6.4.1 The minimum requirements for approval are the signatures of the initiator, the department supervisor of the department where the document is active, department manager, and Quality Assurance.
6.4.2 If the document is active in more than one department, the approval signature of the department supervisors is not necessary.
6.4.3 Approval signatures shall be on the title page of the document.

6.5 The revision level of the document shall be next to the approval signatures on the title page.

7.0 DOCUMENT CONTROL LOG

7.1 Document Control shall maintain a Document Control Log. It shall have the following:

7.1.1 Master Distribution Page for all documents, including active and retired documents.

7.1.2 Original copy of the document title page. It shall be placed immediately after the Master Distribution Page for that revision level.

7.1.3 When a document is revised to the next revision level, a new Master Distribution Page shall be made. It is placed in front of the Master Distribution Page of the previous revision. The pages are kept to provide a history of the document.

7.2 Each document shall have a Master Distribution Page that consists of the following:

7.2.1 Control number of the document
7.2.2 Revision level of the document
7.2.3 Release date of the revision level
7.2.4 Recall date of the revision level
7.2.5 Title of the document
7.2.6 Location of each copy of the document
7.2.7 Issue date of each copy
7.2.8 Return date of each copy
7.2.9 Brief description of the revision

7.3 The Document Control Log shall have a Document Master List. It is placed in front of the log. It lists the control number, current revision level, title, and release date of all documents in the log.

7.4 Master Document File

7.4.1 Document Control shall maintain a Master Document File which contains a copy of the current revision of every document that has been issued.
7.4.2 The Master Document File shall have a Table of Contents in accordance with section 2.0.
7.4.3 Each document shall have a minimum of two controlled copies. One copy shall be kept in the Master Document File. The second copy shall be kept in the procedure manual of the department where the document is active.

7.5 Control Number Designation

7.5.1 Document control number is a nine-digit number. It designates the department number, type of document and control number. It has the following format:

1 2 3
XX - XXX XXXX

EXAMPLE: Quality Assurance document: "P/M Industries Quality System: Management and Authority". It is identified by No. 18-QAP0001.

1) Department Number (Administrative) 18-XXXXXXX
2) Document Type (QA Procedure) XX-QAPXXXX
3) Document Control Number XX-XXX0001

7.5.2 Appendix A lists the department numbers and abbreviations used in the control number.

8.0 FORMS

8.1 The control number shall be listed at the bottom right hand corner on each page of the form.

8.2 The revision level shall be listed at the bottom right hand corner, below the control number, on each page of the form.

8.3 Master Form File

8.3.1 Document control shall maintain a Master Form File, which contains a copy of the current revision of every form that has been issued.
8.3.2 The original copy of the form title page shall be kept in the Master Form File. When a form gets updated to the next revision level, the new title page is placed in front of the old title page.
8.3.3 A Form Master List shall be placed in front of the file. The list shall have the control number, title, current revision level and effective date.

8.4 Control Number Designation

8.4.1 Form control number is a six-digit number. It designates the type of form and control number. It has the following format:

1 2
XX-XXXX

1) Form Type (QA Form) QA-XXXX
2) Form Control Number XX-0001

8.4.2 Appendix A lists the department numbers and abbreviations used in the control number.

8.5 Each form shall have a title page. The format of the title page is specified in Appendix B.

9.0 CUSTOMER SPECIFICATIONS

(Customer Supplied Documents Approved For Use)

9.1 Sales Reps are responsible for getting customer specifications to Document control with a Customer Specification Control Form, SA-0001.

9.2 All customer specifications shall be reviewed and approved by PM Industries prior to release to production areas.

9.3 Customer Specifications Document Control Log.

9.3.1 Each customer specification shall have a Master Distribution Page that consists of the following:

9.3.1.1 Control Number
9.3.1.2 Revision Level
9.3.1.3 Release Date of the customer specification for use at PM Industries
9.3.1.4 Recall Date
9.3.1.5 Title
9.3.1.6 Location of each copy of the customer specification
9.3.1.7 Issue date of each copy
9.3.1.8 Return date of each copy
9.3.1.9 Brief description of the revision

9.3.2 Document control shall maintain a Customer Specifications Document Control Log. It shall have the following:

9.3.2.1 Master Distribution Page for all active and retired customer specifications.
9.3.2.2 Any approval documentation for the customer specifications. It shall be placed immediately after the Master Distribution Page for the revision level of the customer specification.

9.3.2.3 When a customer specification is updated to the next revision level, a new Master Distribution Page shall be made. It is placed in front of the Master Distribution Page of the previous revision. These pages are kept to provide a history of the document.

9.3.2.4 The Customer Specifications Document Control Log shall have a Customer Specification Master List. It is placed in front of the log. It lists the customer name, control number, current revision level, title, and release date of all customer specifications in the log.

9.4 Master Customer Specifications Document File

9.4.1 Document control shall maintain a Master Customer Specifications Document File which contains a copy of the current revision of every customer specification that has been issued and approved for use at PM Industries.

9.4.2 Each customer specification shall have a minimum of two controlled copies. One copy shall be kept in the Master Customer Specifications Document File. The second copy shall be kept in the procedure manual of the department where it is active.

9.4.3 The Master Customer Specifications Document File shall have a Table of Contents in accordance with section 2.0.

10.0 CUSTOMER DRAWINGS

(Customer Supplied Drawings and Customer Approved Drawings for part numbers ordered with documented revision levels).

10.1 All 'Controlled Copy' customer drawings will be maintained in a controlled central file structure.

10.2 Files will be maintained by customer name, part number, and revision level. There will be only one file folder per part number and revision level.

10.3 The drawing part number and revision level will be matched to the Purchase Order for release to production as part of the Production Traveler Package.

10.4 P/M Generated Process Sheets are generated to clarify customer specifications and production process instructions, will be attached to the drawing and filed as part of the Print Package.

10.5 Copies of the 'Controlled Copy' of customer drawings will be prepared as required by Production Scheduling for multiple production jobs going to the floor at one time for the same part number and revision level. These copies will be stamped 'Reference Only' in blue ink with a date and related Sales Order number recorded.

10.6 Upon shipment of the order, the 'Controlled Copy' is returned to the central file and the 'Reference Only' copies are returned to Production Scheduling for disposal.

10.7 Storage of customer drawing files.

10.7.1 Active prints are prints that have been used within the last two years shall be kept in the controlled central file.
10.7.2 Prints that have become inactive or obsolete shall be removed from the active files and archived. They shall remain archived for four years unless reactivated.
10.7.3 Prints that have been inactive for four years will be destroyed.

11.0 SECURITY OF "ITAR" DRAWINGS AND DOCUMENTS

11.1 Additional document security is required for any orders for parts associated with:

11.1.1 International Traffic in Arms Regulations (ITAR)
11.1.2 Directorate of Defense Trade Controls (DDTC)
11.1.3 United States Munitions List (USML)

11.2 It is the responsibility of the Customer to notify PM Industries that the part drawings and documents are "ITAR" security risks. The customer is to provide part drawings and documents stamped "ITAR" to identify the "ITAR" security risks.

11.3 It is the responsibility of the salesperson to ensure that any print or document that has been designated as "ITAR" security risk, is stamped "ITAR" by the customer and secured while in their possession.

11.4 "ITAR" customer supplied prints, documents, and all parts of the "Print Package" shall be stored in the locked "ITAR" file with limited access.

11.5 Any subcontractor providing services such as metallization or plating, shall be:

11.5.1 Required to provide proof of an "ITAR" security planning and company policy.
11.5.2 Notified of the "ITAR" security risks associated with part documentation and product.
11.5.3 Provided with part drawings and documents stamped "ITAR" to identify "ITAR" security risks.

12.0 PART DOCUMENTATION FOR THE CO2 DEPARTMENT

All part numbers and revision levels shall have a "Print Package" generated. The Print Package shall include the following documents.

12.1 The controlled copy of the Customer supplied Drawing.
12.2 The controlled copy of the PM supplied Process Sheet.
12.3 A Program Log Form.
12.4 System Setting Form.
12.5 A CAD print of the substrate showing the part orientation and datum.
12.6 A First Article Inspection Form

13.0 PART PROGRAM AND DATA FILE CONTROL FOR THE CO2 DEPARTMENT

13.1 All parts numbers and revision levels require program generation and retrieval to process the part. Each revision level of a part has three program files associated with it.

13.1.1 The customer supplied CAD file. (.DXF or .DWG)
13.1.2 The PM generated Geometry file. (.VNC)
13.1.3 The PM generated Machine code file. (.NCF or .PRG)

13.2 Sales is responsible for getting the customer supplied CAD file, (.DXF or .DWG). This file must be drawn to scale as it will be used to generate the part machine code file.

13.2.1 Sales is responsible for saving the customer supplied CAD file in the central file location on the network for all customer CAD files.
13.2.2 The file name of the customer supplied CAD file shall match the part number and revision level on the traveler and process sheet.

13.3 CO2 is responsible for generating the Geometry file and saving the file in the central file location on the network for all Geometry files.

13.3.1 The file name of the Geometry file shall match the part number and revision level on the traveler and process sheet. Part Number_Rev#_#UP.VNC
13.3.2 There shall be only one geometry file saved per part number and revision level for a particular ceramic master size.

13.4 CO2 is responsible for generating the Machine code file and saving the file in the central file location on the network for all Machine code files under the customer's name.

13.4.1 The file name of the Machine Code File shall match the part number and revision level on the traveler and process sheet.
Part Number_Rev#_#UP.NCF

13.4.2 There shall be only one Machine code file saved per part number and revision level for a particular ceramic master size and controller type.

13.5 Revised part numbers will be evaluated in the contract and production review process to determine if the part revision requires a new geometry file and machine code file to be generated. If the new revision does not affect the Geometry of the part, the previous revision files can be resaved to match the new revision level. Both revision level files will be saved in there associated central file location on the network as outlined in section 13.3 and 13.4.

APPENDIX A:

I DEPARTMENT NUMBERS:

01	YAG / Trim
02	CO2 (Scribe)
03	Ceramic
07	Saw / Dice
08	Abrasive
10	Document Control/Material Control
16	Production Overhead / Maintenance
17	Sales
18	Administrative
25	Corporate

II ABBREVIATIONS:

AB	Abrasive & Saw
AC	Accounting
AD	Administrative
CU	Customer
EN	Engineering
EQ	Equipment
GP	General Production (applies to all production areas)
I	Instruction
MA	Maintenance
MK	Marketing
P	Procedure
PO	Peripheral Operation (Support)
PU	Purchasing
PR	Production
QA	Quality Assurance
SH	Shipping / Receiving
S	Standard
SA	Sales
SC	Scribe (CO2)
YA	YAG

APPENDIX B:

Document Title:

Document No: **Revision:** **Page 1 of**

REVISION HISTORY

REV	DATE	DESCRIPTION OF REVISION CHANGE
A		

APPROVED BY:

Department Signature	Date	Rev	Effective Date	
Quality Assurance:				
Production Manager:			**Issued To:**	
Document Control:			**Copy #:**	**Loc.:**
Originator:				

DOCUMENT: 18-QAP0028
REV. G
TITLE: DRAWING CHANGES PROCEDURE

PURPOSE:

The purpose of this document is to define the drawing change process for both internal and customer supplied drawings.

SCOPE:

1. This document applies to ALL drawing changes by ALL departments.

2. This document covers the following types of drawing changes:

   2.1 Requested change(s) that change the documents intent,
   2.2 Repairs or corrections to a document to increase legibility.

APPLICABLE DOCUMENTS:

Document, Form, and Program Control Procedure, 18-QAP0002

DEFINITIONS:

1. CHANGE OF INTENT - Modifications to an original customer or P/M Industries document made that changes a document's meaning. The customer or P/M Industries can make a "change of intent".

2. CHANGE FOR CLARIFICATION - Drawing modifications or additional information to help define the parts better for our process.

3. DOCUMENT - Is any written formatting used to communicate requirements such as specifications, drawings, process sheets, purchase order, etc.

4. TECHNICAL PARAMETER - Is any apparent limit(s) used to define the intent of a document through notes, dimensions, tolerancing, or standard drafting practices.

RESPONSIBILITIES:

1. Quality Assurance is responsible for the control of this document.

2. CUSTOMER DOCUMENTS
   Sales is responsible for change of intent modifications to customer documents. Sales and/or Supervisors are responsible for clarification.

3. PM INDUSTRIES DOCUMENTS
   The department maintaining and controlling the document is responsible for making all modifications to PM INDUSTRIES documents.

PROCEDURE:

1.0 AUTHORIZATION

1.1 All changes to the customer drawing are to be documented and with supporting documentation be communicated to the customer for approval. Changes are not considered final until customer approval has been received.

1.2 Customer approval is requested in writing either by fax or email.

1.3 Customer must follow up verbal approvals with a written signoff before the job may be scheduled. See Note above.

1.4 When customer approval is not available Sales Rep will initial and date necessary changes for the customer after emailing or faxing all information to the customer contact. Copy of email and/or fax must be attached to the traveler and/or drawing folder.

1.5 Orders with written approvals pending are to be held in Production Scheduling until written approval is received.

2.0 CHANGE OF INTENT

2.1 Apply to one order only. A new document is to be requested prior to the start of the next order of the same part type.

2.2 <u>All</u> intent changes require customer notification and approval. (refer to section 1)

2.3 All drawing Intent changes are to be dated and initialed by person documenting the changes. Customer name approving the change is to be included.

2.4 Always keep an original, unmodified copy of the customer drawing attached to the change information.

3.0 CHANGE FOR CLARIFICATION

3.1 The clarification process is used when the following conditions exist.

3.1.1 Correcting illegible documents
3.1.2 Clarification of specifications (Customer or PM)

3.2 The customer should provide an updated print before subsequent orders are processed. This may be waived with the written approval of the customer or QA representative.

NOTE: This process ***<u>is not</u>*** to be used in place of special/process instructions. These belong on the Global Process Sheet.

3.3 Clarifications or illegibility corrections made to any customer document require email or fax notification to the customer.

4.0 UPDATING CHANGES

4.1 Prints that Change Intent will be allowed to pass through the system only once before an updated print is required.

5.0 CHANGE PROCESSES

5.1 AutoCAD drawing changes are permitted. Original drawing must be attached to updated drawing.

5.2 Draw a single bold line through original parameter. Print the new parameter next to the parameter being changed and include the initials of the customer representative, P/M Industries rep, and date (including year) that the parameter change is made.

5.3 Technical parameter/specification change(s) example:

WAS	CHANGE TO	
~~.030 DIA ± .002~~	.029 ± .001	AD/DGR 3/24/06 (CUST. INIT/PM INIT./DATE)

5.4 Illegible technical parameter correction example:

.030 DIA ± .002 AHD/DGR 3/24/92
~~.*** DIA ± .002~~ (CUST. INIT/PM INIT./DATE)

6.0 EXCEPTIONS/PROCESS DEVIATIONS

6.1 Contract to contract drawings and specifications such as 1 time runs and prototypes should be attached to the traveler and no folder should be created.

6.2 Travelers for Exceptions and Process deviations should be stamped with the "PROCESS DEVIATION" stamp.

PURPOSE:

This document specifies the manner in which purchasing is controlled.

SCOPE:

This document applies only to purchased supplies and products that have a direct impact on the services and products that we provide our customers.

RESPONSIBILITIES:

1. Quality Assurance is responsible for maintaining this document.

2. Material Control is responsible for the control of this document.

3. Material Control is responsible for the implementation of this procedure.

DEFINITIONS:

1. Customer: Anyone to whom P/M Industries provide products or services.

2. Supplier: Anyone that provides P/M Industries with products or services.

3. Critical supplier: Any supplier that provides a product or service which directly affects the products or services that P/M Industries provides its customers.

4. Critical supply: Any product or service which directly affects the products or services that P/M Industries provides its customers.

APPLICABLE DOCUMENTS:

1. Critical Supply List. 10-PDS0004

2. Preferred Critical Supplier List 10-PDS0005

3. Subcontractors Quality Survey: 18-QAS0001

PROCEDURE:

1.0 CONTROL OF CRITICAL SUPPLIERS

1.1 Material Control shall maintain a list of critical supplies.

1.2 Vendors for critical supplies shall be listed on a Preferred Critical Supplier list. Critical supplies shall be purchased only from suppliers on this list, unless otherwise required by the customer.

1.3 Suppliers on the Preferred Critical Supplier List shall be required to fill out a written survey of their quality system on a yearly basis.

2.0 CONTROL OF PROCUREMENT

2.1 P/M Industries shall use a written numbered Purchase Order to purchase all critical supplies. The Purchase Order shall specify the material in enough detail to eliminate confusion as to what was ordered. The purchase order shall require Certificates of Conformance and lot control, where applicable.

2.2 Material Control shall issue a written Purchase Order for all outside services on parts that will go to customers. The purchase order shall specify the requirements for the work and the level of inspection, reports, etc. required, if applicable. The Purchase Order shall also require a Certificate of Conformance indicating that the work performed meets all requirements specified in the purchase order or related documentation.

2.3 Material Control shall review and initial each Purchase Order to ensure it is in accordance with sections 2.1 and 2.2.

3.0 COUNTERFEIT PARTS PREVENTION PLAN

3.1 Raw ceramic materials shall be purchased only from suppliers on the Preferred Critical Supplier list unless otherwise required by the customer.

3.2 Suppliers and sub-Contractors providing raw materials must provide traceability back to the Original raw material supplier with names and locations of supply chain intermediaries.

3.3 Suppliers and sub-Contractors providing deposition or plating of materials onto raw materials must provide traceability of the material back to the original deposition or plating material supplier with names and locations of supply chain intermediaries.

3.4 Suppliers and sub-Contractors providing components or assembled products must provide traceability back to the Original Component Manufacturer (OCM) with names and locations of supply chain intermediaries.

4.0 VERIFICATION OF PURCHASED PRODUCT

4.1 Any verification of purchased product that is to be done at the suppliers premises shall be completely specified in the Purchase Order.

4.2 When required in the contract, on-site verification shall be available to the customer at the supplier’s premises.

PURPOSE:

This procedure defines the manner in which customer supplied product is to be controlled, stored, and maintained.

SCOPE:

This document applies to all customer supplied material at P/M Industries.

APPLICABLE DOCUMENTS:

1. Shipping and Receiving Procedures 10-SHP0001.
2. Product Identification and Traceability Procedure 18-QAP0038.
3. Customer Supplied Raw Material Procedure 18-QAP0019

RESPONSIBILITIES:

1. The Quality Assurance department is responsible for maintaining this document.
2. The Material Control department is responsible for the control of this document.
3. All personnel and departments are responsible for following this procedure.

PROCEDURE:

1.0 IN-HOUSE TRACKING SLIP

1.1 An In-House Tracking Slip will be used to identify customer supplied material at all stages of process from receiving until they ship out.

1.2 The Tracking Slip will identify the customer, part number, revision level, sales order number, lot number, quantity, count method, initials of receiver, and any comments related to the material.

2.0 RECEIVING

Customer supplied product is to be received in per Document 10-SHP0001, Shipping and Receiving Procedures.

3.0 PRODUCT IDENTIFICATION AND TRACEABILITY

Product identification and traceability will be maintained per Document 18-QAP0038, Product Identification and Traceability Procedure.

4.0 NON-CONFORMING MATERIALS

Any customer supplied product that is lost, damaged, or is otherwise unsuitable for use shall be recorded and reported per Document 18-QAP0015, Non-Conforming Material Procedure.

Purpose:

This procedure defines how product is identified and traced from receipt of raw material or customer supplied material through production and delivery.

Scope:

1. This document applies to all product produced at PM Industries.
2. Customer requirements take precedence over this document

Applicable Documents:

1. Kitting Procedure; 10-POP0001
2. Shipping and Receiving Procedure; 10-SHP0001
3. Inventory Control Procedure; 18-QAP0018
4. Customer Supplied Raw Material – Controlled Stock Procedure; 18-QAP0019
5. Customer Supplied Product Control Procedure; 18-QAP0037
6. Parts Handling Procedure 10-PRP0005

Responsibilities:

1. Quality Assurance is responsible for maintaining this document.
2. Material Control is responsible for the control of this document.
3. All departments are responsible for following this procedure.

Procedure:

1.0 RECEIPT OF MATERIAL

1.1 All raw material and customer supplied product will be received per Shipping and Receiving Procedure 10-SHP0001.

1.2 Raw ceramic will be entered into inventory per Inventory Control Procedure 18-QAP0018.

1.3 Customer supplied raw material will be entered into ‘controlled’ inventory per Customer Supplied Raw Material Procedure 18-QAP0019

2.0 RAW CERAMIC KITTING

2.1 Raw ceramic drawn from inventory will be pulled from masters designated on the traveler for that job or from alternate masters designated on the Global Process Sheet.

2.2 The description of the material drawn, the lot numbers, and the quantity will be entered on the traveler.

2.3 Different material lots shall be physically separated by use of different kitting trays. Every tray of material shall be identified with a lot separation tag.

3.0 CUSTOMER SUPPLIED RAW MATERIAL KITTING

3.1 Customer supplied raw material drawn from ‘controlled’ inventory will be pulled from customer material designated on the traveler for the job.

3.2 Customer supplied material shall have a tracking slip filled out and attached to the tray with the kitted parts.

3.3 Different material lots shall be physically separated by use of different kitting trays. Every tray of material shall be identified with a lot separation tag or the tracking slip.

4. TRACEABILITY THROUGH PRODUCTION

4.1 Identification and traceability of all product will be maintained during the production process by means of a traveler and lot separation tags.

4.2 The traveler will accompany the product as it progresses through the plant.

4.3 The traveler will contain information specifying customer, part number, revision level, traveler number, quantity, material, P/M master, and lot number, as applicable.

4.4 For Large sales orders that necessitate a portion of the order to move ahead to a subsequent process or are processed on more than one machine, an addendum traveler will be created to accompany and track those parts. The addendum traveler and will re-unite with the original traveler at packaging, where all parts for the sales order will be accounted for.

4.5 Parts that have not yet been processed / inspected shall be physically separated and status identified from parts that have been processed per Parts Handling Procedure 10-PRP0005.

5. PRODUCT SHIPMENT

5.1 All product leaving P/M Industries will be identified per Packaging Instructions 10-SHI0005.

5.2 Packing slips and Certificates of Conformance will be filled out per Shipping and Receiving Procedure 10-SHP0001.

6. MATERIAL IDENTIFICATION TAGS

6.1 Material identification tags are to be used to identify customer, sales order number, material type. Material lot number, and the status of material throughout the production process.

6.2 Yellow lot separation tags are to be used to identify and distinguish between lots of material within a job.

6.3 Red reject material tags are to be used to identify reject or non-conforming product. The red reject material tags are to include the reason for non-conformance.

6.4 Blue salvage / rework tags identify material that does not conform to specification, but can be reworked and re-inspected to into conformance. Blue salvage / rework tags are to include operator initials, the reason for non-conformance, and the rework instruction required to bring the material into conformance. The following steps are to be completed before the job is sent to packaging.

6.4.1 The rework instruction is to be performed.

6.4.2 The parts are to be re-inspected for conformance.

6.4.3 The re-inspected parts are to be sorted, physically separated, and identified with a yellow lot separation tag specifying their inspected good status or a red reject tag if they are non-conforming with a specified reason.

PURPOSE:

This document defines the manner in which production processes are controlled.

SCOPE:

This document applies to all production processes that impact the quality of product manufactured at P/M Industries.

RESPONSIBILITIES:

1. The Material Control department is responsible for maintaining this document.

2. The Production Manager is responsible for the implementation of this procedure.

PROCEDURE:

1.0 MANUFACTURING PROCESSES

1.1 Each production department will maintain a procedure manual documenting the manner in which operations basic to the manufacturing process are performed.

1.2 Documented workmanship standards will be maintained in each of the production departments.

1.3 Each production department will deploy its engineering and technical resources to identify and monitor process parameters and product characteristics. Basic statistical techniques will be employed to ensure the stable control of these parameters.

2.0 EQUIPMENT AND MAINTENANCE

2.1 The maintenance department will keep maintenance logs for all equipment which requires regular maintenance. The logs will detail all work performed on the equipment.

2.2 The preventative maintenance schedule is available for the department managers to view on the local area network at “svr2145\Maintenance\maintenance schedule”. The preventative maintenance schedule details when a preventative service was last performed, and when it is next due. The Maintenance department will maintain and update the schedule as the work is performed.

2.3 At the beginning of each week, the Maintenance department will meet with the department managers to agree to a schedule for the preventative maintenance that is due. The department managers will be responsible for scheduling the required maintenance in a timely manner.

2.4 Corrective Maintenance will be managed through the Work Order Database and is accessed with the “Maintenance” button on the main menu of the Local Area Network. The department managers, supervisors, and leads are responsible for accurately filling out the work order form. The maintenance department is responsible for:

2.4.1 Performing the corrective maintenance.
2.4.2 Testing the equipment to ensure that the failure symptom has been resolved.
2.4.3 Notifying the acting lead person for that department of the repaired status of the equipment.
2.4.4 Documenting the work performed on the database.
2.4.5 Closing the work order on the database.

2.5 The preventative and corrective maintenance of existing equipment must be approved by the appropriate department manager, supervisor prior to release to production.

2.6 New equipment must be approved by the department manager that is receiving it prior to its release by Maintenance into production.

PURPOSE:

This procedure provides the overall framework and requirements for all inspection procedures at P/M Industries.

SCOPE:

1. This document applies to all inspection procedures in use at P/M Industries.

2. Customer requirements for inspection take precedence over this document. Customer sampling procedures and plans will be utilized as specified.

APPLICABLE DOCUMENTS:

1. Quality Records Control Procedure: 18-QAP003

RESPONSIBILITIES:

4. The Material Control department is responsible for the control of this document.

5. The Quality Assurance department is responsible for ensuring that all inspection procedures at P/M Industries conform to this document.

PROCEDURE:

1.0 GENERAL

All products produced at P/M Industries must undergo inspection prior to shipment.

1.1 Unless otherwise stated, In-Process and Final Inspections will be based on ANSI Z1.4 Inspection Level II, 1.0 % AQL sampling plan.

1.2 Inspection procedures will reflect the type of product being manufactured. Specific inspection criteria include, but are not limited to, electrical measurements, mechanical dimensions, and visual appearance.

2.0 RECEIVING INSPECTION

All incoming product that has been identified as a critical supply, per the Critical Supply List 02-PDS0004, will be inspected prior to being entered into inventory, or released into production.

3.0 INSPECTION REQUIREMENTS FOR MANUFACTURED PRODUCT.

3.1 First Article Inspection:

3.1.1 Prior to Starting a production run, an inspection of the first good piece produced will be required. A production run is one continuous run of product on a piece of equipment.

3.1.2 The First Article Inspection will be conducted by a qualified inspector other than the person who performed the set-up.

3.1.3 The inspection will verify that the correct part is being made and that all specifications for that part are being met.

3.2 In-Process Inspection:

3.2.1 Where applicable, parts will be sampled and inspected during the production run to ensure that all specifications and requirements are being met.

3.2.2 The In-Process inspection will monitor those aspects of the part that are subject to change during the production run.

3.3 Final Inspection:

3.3.1 Final inspection of manufactured product will be required under the following circumstances:

3.3.1.1 It is not possible to perform an accurate In-Process Inspection during the production run as the parts are being made.
3.3.1.2 A final Inspection is specifically required and specified by the customer.
3.3.1.3 The job has been designated as a Mil-I-45208.

3.3.2 Final inspections will generally be required to conform to the same requirements as In-Process inspections.

3.3.3 The results of Final inspections are to be utilized as part of each departments continual improvement efforts.

4.0 INSPECTION RECORDS

4.1 Records will be kept of all inspections performed at P/M Industries in accordance with the Quality Records Control Procedure: 18-QAP0031

4.2 Inspection records will uniquely identify the product being inspected, the nature of the inspection, the date of the inspection, the attributes or dimensions inspected, and the results of the inspection.

4.3 Inspection records of product received into inventory will be kept in the inventory room.

4.4 Inspection records of product manufactured or processed at P/M Industries will be attached to the global traveler for that job.

5.0 GOVERNMENT INSPECTION

When required, provisions for government inspection will be made per Government Inspection Procedure: 18-QAP0021.

6.0 RE-INSPECTION REQUIREMENT

Non-conforming material, lots that fail inspection, or other product that requires rework, must be re-inspected prior to final shipment.

PURPOSE:

To provide for the maintenance of a calibration system used to control the accuracy of measuring and test equipment and measurement standards.

SCOPE:

This procedure covers the acceptable method to be used to verify the accuracy of all Measurement and Test Equipment (MTE) used in the inspection processes at P/M Industries. All measurement equipment is P/M Industries owned and controlled. No personally owned equipment is utilized for product acceptance. Note: Current processes do not utilize computerized measurement and test equipment therefore software control procedures are not referenced. Appropriate software controls will be added if such equipment is installed.

APPLICABLE DOCUMENTS:

1. MIL STD 45662A
2. Certificate of Calibration
3. J.J. Electronics Quality Manual

DEFINITIONS:

1. MTE: Measurement and Test Equipment (MTE)

2. CAL: Calibration

RESPONSIBILITIES:

1. Material Control is responsible for the maintenance, distribution and retrieval of this procedure.

2. Material Control is responsible for assuring calibration of all MTE on schedule.

3. Material Control will maintain a file of all calibrated MTE and related Calibration Certificates.

PROCEDURE:

1.0 GENERAL

1.1 All calibrated MTE will be identified with a sticker indicating the name of the calibrating company, the current CAL date, the next CAL due date, the P/M property tag number and identification of person who calibrated the instrument.

1.2 MTE not calibrated will be identified by a sticker indicating "For Reference Only".

1.3 The company providing MTE calibration shall maintain a list of MTE under contract for calibration. It will provide, monthly, a list of MTE due for calibration that month.

1.4 Calibration will be traceable to the National Institute of Standards and Technology (NIST) and will be performed according to the calibration company quality manual.

1.5 In those cases where it is not practical to send MTE to the calibrating company, the calibrating company will perform an "on site" calibration.

1.6 Customer/Government supplied MTE shall be used in the manner prescribed by the customer/Government. Calibration of that equipment shall be performed according to the procedure specified by the customer/Government.

2.0 PROCEDURE

2.1 Material Control will receive on the first of each month, from the calibrating company, a list of MTE to be calibrated that month.

2.2 Material Control, in conjunction with department supervisors, will schedule the release of the MTE from the business units in order to assure meeting the calibration date.

2.3 Material Control will remove the MTE from the production floor by the cal due date and arrange for the calibration.

2.4 Upon receipt of the MTE and Calibration Certificates, Material Control will evaluate the results of the calibration.

2.4.1 MTE whose certificates indicate that the device was received "in tolerance", shall be returned to the production floor.

2.4.2 MTE whose certificates are marked "scrap" will be removed from the calibration list and not returned to the production floor.

2.4.3 In the event that the Calibration Certificate for an MTE indicates the device was received out of tolerance, Material Control and the department representative that uses the device will evaluate the discrepancy to determine the likelihood that parts were manufactured out of specification.

2.5 If it appears likely that parts were produced out of tolerance, due to an out of tolerance MTE, then all parts in-house will be re-inspected. If suspect parts have been shipped, the customer will be notified so that those materials may be evaluated.

2.6 Material Control, with the advice of Quality Assurance or the appropriate department manager or technical representative, will adjust the calibration interval based on the results of previous calibrations in order to prevent out of tolerance conditions.

2.7 Material Control will file the Calibration Certificates.

2.8 Any MTE not capable of being certified to NIST Standards will be marked “For Reference Only” and will not be used for any inspection process.

PURPOSE:

To document the manner in which the inspection status of product manufactured at P/M Industries is maintained.

SCOPE:

This document applies to all product manufactured or inspected at P/M Industries.

APPLICABLE DOCUMENTS:

1. Inspection Control Procedure 18-QAP0013
2. Product Identification and Traceability 18-QAP0038
3. Non-Conforming Material Procedure 18-QAP0015

RESPONSIBILITIES:

1. Quality Assurance is responsible for ensuring that this document conforms to ISO 9002 requirements.
2. Material Control is responsible for the control of this document.
3. All personnel inspecting or manufacturing product at P/M Industries are responsible for following this procedure.

PROCEDURE:

1.0 IDENTIFICATION OF INSPECTION STATUS

1.1 A record of all inspections performed on the manufactured product shall be attached to the Traveler with the associated inspection forms.

1.2 The conformance or non-conformance of the inspected product shall be documented on the Traveler and inspection forms in accordance with Inspection Control Procedure 18-QAP0013.

1.3 Product that requires further inspection before leaving a department shall be identified with "Needs Inspection" written on the Lot Separation tag in accordance with Product Identification and Traceability, 18-QAP0038.

2.0 IDENTIFICATION OF NON-CONFORMING PRODUCT

2.1 All material found to be non-conforming during processing or inspection shall be segregated, marked, and labeled with a Reject Material tag in accordance with Product Identification and Traceability, 18-QAP0038.

2.2 It may not be possible to completely segregate acceptable product from non-conforming product such as good and bad circuits on a single substrate. In those cases, the individual circuits shall be marked or labeled and the substrate shall be kept separate from substrates that are free of defects in accordance with Product Identification and Traceability, 18-QAP0038.

2.3 The disposition of non-conforming product will be performed in accordance with Non-Conforming Material Procedure, 18-QAP0015.

DOCUMENT: 18-QAP0015
REV. H
TITLE: NON-CONFORMING MATERIAL PROCEDURE

PURPOSE:

The purpose of this procedure is to define the process for non-conforming materials (Internal, Vendor and Customer supplied).

SCOPE:

This procedure applies to all activities where inspection is performed to determine if material or product meets specifications. When P/M Industries works to customer's proprietary finished product specifications, parts not conforming to customer specifications will be segregated, labeled and handled per customer instructions. This procedure applies to (who?)

APPLICABLE DOCUMENTS:

1. P/M Industries Quality System: Management and Authority, 18-QAP0001.
2. Inventory Control Procedure, 18-QAP0018.
3. Discrepant Material Report (DMR).
4. Customer Supplied Specifications.
5. Material Review Board Procedure, 18-QAP0024.
6. Problem Review Form GP0001.
7. Corrective Action Report (CAR)
8. Product Identification and Traceability Procedure, 18-QAP0038.

RESPONSIBILITIES:

1. Material Control is responsible for the control of this document.
2. Quality Assurance is responsible for maintaining this procedure.
3. The production Manager is responsible for the implementation of this procedure within the respective departments.

PROCEDURE:

1.0 VENDOR RELATED NON-CONFORMING MATERIALS

1.1 All material found to be non-conforming is immediately segregated and placed in a suitable container with a Reject Material tag.

1.2 A DMR shall be filled out and forwarded to Quality Assurance along with any supporting documentation (i.e. incoming documentation, record of measurements indicating the non-conformance, etc.).

1.3 The non-conforming material shall be labeled with a red reject tag and placed in the Non-Conforming Material locker along with a copy of the DMR.

1.4 Material Control, under the direction of Quality Assurance, will review the DMR and issue a CAR to the vendor.

1.5 QA and Material Control will jointly decide on the disposition of the material based on the nature and extent of the non-conformance, and the need for the material.

1.6 The disposition of vendor supplied material will be one of three categories.

1.6.1 Use As Is (UAI): The material is cleared for use on a limited basis and logged into inventory. All boxes of the material shall be labeled with a description of the non-conformance.
1.6.2 Sort and Return: The material is sorted and all defective material is returned to the vendor for replacement or credit. The balance is accepted into inventory.
1.6.3 Return To Vendor (RTV): The entire lot is rejected and returned to the vendor for replacement or credit.

1.7 Material Control is responsible for negotiating the return of defective material.

2.0 VENDOR SUPPLIED MATERIALS: PM INDUSTRIES RELATED DEFECTS- P/M production defects fall into two classifications - Standard and Non-standard Non-Conforming Material.

2.1 All material found to be non-conforming, during processing or inspection, is immediately segregated from the lot and identified with a Reject Material tag.

2.2 All rejected material generated on a job is documented on the back of the Traveler and entered into the production database at the completion of the order.

2.3 STANDARD NON-CONFORMING MATERIAL: Production defects (rejects) related to standard processes. Defined as a normal low level of rejects relative to established and controlled processes with determined material loss rates.

2.3.1 Rejects will be rendered useless by marking with an indelible marker.
2.3.2 The reject material will be disposed of prior to the job being released for packaging and shipping.

2.4 NON-STANDARD NON-CONFORMING MATERIAL: Production defects related to material and processes that require corrective action to resolve excessive reject quantities and/or unacceptable quality performance. The production supervisors and technical staff will generate a DMR per the established DMR Guideline.

2.4.1 The responsible supervisor or technical staff member prepares a DMR.
2.4.2 The DMR, the related materials and the Reject Material Tag are placed in the Non-Conforming Material locker.
2.4.3 A copy of the DMR is submitted to the Production Manager and QA.
2.4.4 Disposition of items in the Non-Conforming Material locker is the responsibility of the Production Manager.
2.4.5 The Production Manager has the responsibility to see that the appropriate corrective action has been taken.

2.4.6 In the event that the non-conforming material has been shipped, the customer will be immediately notified. The notification will include a description of the discrepancy, P.O. number, part/serial numbers affected, lot numbers, quantities delivered and deliver dates.

3.0 CUSTOMER SUPPLIED MATERIALS

3.1 All material found to be non-conforming, during processing or inspection, is immediately segregated from the lot and identified with a Reject Material Tag.

3.2 All rejected material generated on an order is to be documented on the back of the Traveler and entered into the production database at the completion of the job.

3.3 Excessive rejects as determined by the supervisor/sales representative will be recorded on a Problem Review Form.

3.4 The department supervisor will submit the Problem Review Form to the appropriate sales person for resolution with the customer.

3.5 At the completion of the work order, all non-conforming material will be packaged separately, labeled and returned to the customer. If the customer has specified the procedure for handling non-conforming material, the customer's procedures take precedence.

4.0 CUSTOMER RETURNS

4.1 Material returned to P/M Industries by a customer will be placed in the Non-Conforming Material locker with a copy of the complaint.

4.2 Returned material will be reviewed and dispositioned by Quality Assurance and the department where the material originated.

4.3 Each department has ultimate responsibility for pursuing corrective action for returned materials.

5.0 SCRAP REPORTING

5.1 Scrap report generation is the responsibility of the Production Manager.

5.2 Scrap reports will consist of reject rates for each job, the date generated, and where applicable, the value of the scrap.

5.3 Regularly scheduled scrap reports will include summary data, which specifies the average scrap rates for jobs ran during that period.

5.4 Scrap reporting is to be used by Production as part of its continual improvement program.

PURPOSE:

To define the corrective action system used at P/M Industries.

SCOPE:

This document applies to all Corrective Action Reports (CARs) issued at P/M Industries. A Corrective Action Report shall be issued for the following reasons: customer or internal complaints, scrap generation, vendor discrepancies, internal or customer audits, or reasons deemed appropriate by Quality Assurance.

APPLICABLE DOCUMENTS:

1. Corrective Action Report Form
2. Production Traveler Package
3. P/M Industries Quality System: Management and Authority, 18-QAP0001
4. Internal Quality Audit Procedure, 18-QAP0010

DEFINITIONS:

1. Non-Conformance: a deviation from what is required.
2. Root Cause: the underlying reason that a non-conformance occurred.
3. Corrective Action: a systematic and documented sequence of steps taken to fix the root cause of a non-conformance.
4. Preventive Action: a systematic and documented sequence of steps taken to prevent the occurrence or re-occurrence of potential problems.
5. CAR: Corrective Action Report

RESPONSIBILITIES:

1. Quality Assurance is responsible for ensuring the process complies with the requirements of ISO 9001.
2. Material Control is responsible for the administration of the process.
3. Material Control is responsible for controlling this document.
4. All departments at P/M Industries are responsible for pursuing corrective action. CARs shall be completed within the time frame established in this document.
5. Suppliers are responsible for pursuing corrective action. A suppliers CAR shall be completed within the time frame established in this document.

PROCEDURE:

1.0 CORRECTIVE ACTION LOG

1.1 Material Control shall maintain a log of all CAR's issued.

1.2 Each CAR shall be issued a number for tracking purposes.

1.3 The CAR log shall include the tracking number, the department responsible for the non-conformance, the person or company who initiated the CAR, the date issued, the date due, the date returned, and the date closed.

2.0 CORRECTIVE ACTION PROCESS

2.1 All non-conformance reported to Material Control shall be reviewed. A CAR shall be issued to the responsible department or supplier.

2.2 A copy of all CARs shall be forwarded to the appropriate Production Department Manager and Quality Assurance.

2.3 The responsible department or supplier shall have five working days to determine the root cause of the non-conformance, formulate corrective and preventive action plan and return the CAR to Operations Control.

2.4 The completed CAR shall include a detailed description of the Root Cause, Corrective Action taken, and Preventive Action taken.

2.5 The CAR shall also have the effective dates and the person responsible for implementing the corrective and preventive actions.

2.6 Quality Assurance shall review completed CARs before it is submitted to Material Control to determine suitability of the corrective and preventive actions.

2.7 The Department manager and supervisor has the responsibility for ensuring the implementation of corrective and preventive actions.

2.8 All CARs shall be reviewed and approved by the Department Manager and Quality Assurance before returning them to Material Control.

2.9 Material Control shall review all completed CAR's for the information required in sections 2.4 and 2.5 before recording them as returned.

2.10 Incomplete CARs shall be returned to the responsible department or supplier for further action.

2.11 Material Control shall maintain a "Open Complaint List" of outstanding CAR's on the database. The Open Complaint List is accessed with the "Complaints" button on the main menu of the local area network.

2.12 Complaints are to be reviewed at operations meetings to expedite there completion and ensure awareness of preventative actions on all shifts

2.13 During scheduled department quality audits, implementation of completed CARs shall be verified in accordance with Internal Quality Audit Procedure, 18-QAP0010.

PURPOSE:

The purpose of this procedure is to outline the process for customer complaints and customer return of discrepant material.

SCOPE:

This procedure applies to all customer orders.

APPLICABLE DOCUMENTS:

Corrective Action Procedure, 18-QAP0023

DEFINITIONS:

1. Customer Complaint: A customer complaint is any customer disapproval of parts and/or services received.

2. Corrective Action: Corrective action is the plan used to determine the root cause of a complaint and to implement action to correct it.

RESPONSIBILITIES:

1. Customer complaints are initiated by the Sales contact or Quality Assurance at the specific request of the customer.

2. Material Control is responsible for issuing Return Material Authorization (RMA) numbers and authorizing rework. RMA numbers are not to be issued by any other person or department.

3. The Lead Quality Representative will approve credit to the customer.

4. Quality Assurance is responsible for the maintenance of this document.

5. Material Control is responsible for implementing this procedure.

6. Material Control is responsible for the control of this document.

PROCEDURE:

1.0 COMPLAINT PACKAGE GENERATION

1.1 Sales or Quality will fill out a Complaint Form.

1.2 Sales will generate a complaint package consisting of the Sales Order, Traveler, print, Global Process Sheet, any documentation from the customer, any samples of the defect and the Complaint Form in a plastic carrier.

1.3 The assembled complaint package is forwarded to Material Control. Complaints that lack the required documents will be returned.

1.4 One or two samples illustrating the defect may be returned to P/M Industries without a RMA number.

2.0 COMPLAINT LOG AND RETURN AUTHORIZATION

2.1 Material Control will log the complaint into the Complaint Log.

2.2 Complaints are numbered sequentially as they are received.

2.3 The Complaint Log lists the customer name, the complaint number, the Sales Order number, the date the complaint was opened, the date the complaint was closed, a brief description of the complaint, and whether a RMA number was issued.

2.4 After the complaint is logged, Material Control generates a Corrective Action Request (CAR). The complaint package and CAR are issued to the Manager where the work was performed. See Corrective Action Procedure, 18-QAP0023, for instructions for generating a CAR.

2.5 If discrepant material needs to be returned, Material Control will issue a RMA number.

2.6 A complaint needs to be generated before a RMA number can be issued.

3.0 REWORK AND CREDIT

3.1 Rework is not authorized without a complaint being generated.

3.2 Credit for discrepant parts is contingent upon the approved return of the material and its proper authorization.

3.3 Material returned without a RMA number may be refused.

3.4 For customer supplied material, P/M Industries normally will not issue credit for more than the cost of the work actually performed.

3.5 When discrepant parts have been received and the required rework is completed, the completed CAR is submitted to the Lead Quality Representative.

3.6 The Lead Quality Representative reviews and approves the CAR and authorizes credit, if applicable. The CAR and complaint package are then forwarded to Material Control.

3.7 Material Control closes the CAR and forwards it and complaint package to Accounting.

4.0 CUSTOMER INTERFACE

4.1 The manager of the area completing the CAR in conjunction with Sales is responsible for informing the customer of the actions taken to contain and correct the problem.

4.2 If provided, a copy of the customer's Supplier Corrective Action Request (SCAR) form should be completed and provided to Sales to forward to the customer by e-mail, fax, or mail. If a SCAR is not provided by the customer, a copy of the written P/M CAR response is provided to Sales to forward to the customer by e-mail, fax, or mail.

4.3 The Lead Quality Representative will be available to assist in achieving timely and effective resolution.

5.0 CLOSING THE COMPLAINT

5.1 The complaint remains open until the corrective action is completed, the customer has been informed of the corrective action, and any credit issues have been resolved.

5.2 Material Control logs out the closed complaints.

5.3 The complaint package is disassembled and all documents are to be filed.

6.0 RECORDS

6.1 All documents relating to the complaint, including the CAR, are stapled to the Complaint Form and filed in Quality Assurance for two years.

6.2 The Traveler, print, Global Process Sheet, and Sales Order are filed separately.

6.3 Complaints that are older than two years are archived for another five years before being destroyed.

PURPOSE:

This procedure outlines the process of entering raw materials into Inventory stock. It covers raw materials that become manufactured parts for customers.

SCOPE:

This procedure applies to all incoming raw materials and surplus material returned from the departments. Incoming raw materials are purchased vendor materials and P/M manufactured materials.

APPLICABLE DOCUMENTS:

1. Shipping and Receiving Procedures, 10-SHP0001
2. Raw Ceramic Inspection Instruction, 02-POI0001
3. ANSI Z1.4 1% AQL Sampling Table

RESPONSIBILITIES:

1. Material Control department is responsible for the control of this procedure.

2. Material Control department is responsible for the administration of this procedure.

PROCEDURE:

1.0 INCOMING CERAMIC MATERIALS

1.1 Verify that the material has been accepted in accordance with Shipping and Receiving Procedures, 10-SHP0001. This is identified by the "Received " stamp on the packing list.

1.2 Assemble the inventory control package which consists of the Certificate of Compliance (C of C), the packing list and the Receiving copy of the purchase order. If the purchase order is broken into multiple releases, the Receiving copy of the purchase order will not be available. It is retained in the Pending Purchase Order Book in Shipping and Receiving department.

1.3 A random sample is taken from each lot in the shipment according to a 1.0% AQL level two sampling from ANSI Z1.4 table. Samples are to be taken randomly among all boxes in the lot. The ceramic will be tested for camber, length, width, thickness, surface finish and visual defects in accordance with Raw Ceramic Inspection Instruction, 02-POI0001.

1.4 If a lot fails the inspection in section 6.3, immediately segregate the non-conforming material and tag with a "Reject Material" tag. Place the lot in quarantine and notify Purchasing.

1.5 If a lot passes the inspection in section 6.3, label each box with a master number, lot number and quantity and place the material in Inventory stock room. The master number is located on the bottom of the purchase order.

1.6 Prior to entering the incoming material to stock, the incoming count must be verified. This is to be done on all purchased vendor materials and P/M manufactured materials. The following methods are acceptable for verifying the counts:

1.6.1 Quantities <= 200 pieces, a physical count is necessary.

1.6.2 Quantities >200 pieces, a weigh count is acceptable by the following method:

1.6.2.1 Physically count a complete box of material, not less than 100 pieces, saving all packing material, shrink film, etc.

1.6.2.2 Zero the scale with the box and packing material on it.

1.6.2.3 Weigh the sample of material. Divide the actual weight by the sample quantity and record the result. **This is the per piece weight.**

1.6.2.4 Weigh each additional box of material and record the actual weight on each box. If the actual weight varies more than 1% of the sample weight then the contents of that box must be physically counted.

1.6.2.5 Once all boxes have been weighed and the weights recorded, use the following formula for determining the actual quantity per box: **Actual weight divided by per piece weight equals actual count.**

1.6.2.6 Write the actual count on the box next to the manufacturer's count in red pen with the counter's initials.

1.7 Once the entire shipment quantity has been calculated, verify it matches the quantity on the Requisition copy of the purchase order, the Receiving copy of the purchase order and the packing list.

1.7.1 The Requisition copy of the purchase order is located in Inventory Purchase Order Log Book.

1.7.2 If the purchase order is broken into multiple releases then the Receiving copy of the purchase order will not be available. Receiving copy will be provided when the multiple releases are completed.

1.8 If the entire shipment quantity differs from the manufacturer's listed quantity on the packing list, make corrections on the packing list, the Requisition copy of purchase order and the Receiving copy of the purchase order. If the Receiving copy of the purchase order is not available, make the corrections when Receiving copy is

provided upon completion of multiple releases.

1.9 Return the Receiving copy of the purchase order and original packing list to Purchasing. This indicates lot/shipment acceptance to Purchasing.

1.10 File the original C of C in the Certifications Book. File a copy of the packing list, a copy of the C of C and the inspection form in Inventory Control files.

1.11 When the purchase order is complete, remove the Requisition copy from the Inventory Purchase Order Log Book and discard.

1.12 Lots that passed inspection and count has been verified, are “Logged to Stock”. It is entered into the Inventory database and on the daily Kitting Log at the Inventory Clerk’s desk.

2.0 RETURNING SURPLUS MATERIAL TO INVENTORY

2.1 Production surplus raw material will be returned to Inventory with a master number, lot identification, and P/M sales order number. Return all such material to inventory from which it was originally drawn.

2.2 Enter the returned quantity into the daily Kitting Log and label it as “stock return”.

3.0 DISCREPANT MATERIAL CLEARED FOR USE

3.1 Discrepant material cleared for "use as is" will have a reject material tag with the manufacturer, P/M sales order number, a description of the material, the lot number and a description of the discrepancy.

3.2. The discrepant material is placed in a suitable container that assures clean and proper storage on the Non-Conforming Material shelf in the Inventory stock room.

3.2.1 The Inventory Clerk will add a description of the discrepancy on the Traveler when the discrepant material is used for production.

PURPOSE:

This procedure outlines the process of entering customer supplied raw materials into a controlled stock status. It covers customer supplied raw materials that become manufactured parts for the customer.

SCOPE:

This procedure applies to all incoming customer supplied raw materials which need to be held in a controlled stock status prior to being kitted for a production order.

APPLICABLE DOCUMENTS:

1. Shipping and Receiving Procedures, 10-SHP0001

2. Customer Supplied Product Control Procedure, 18-QAP0037

3. Product Identification and Traceability, 18-QAP0038

RESPONSIBILITIES:

1. Material Control department is responsible for the control of this procedure.

2. Material Control department is responsible for the administration of this procedure.

PROCEDURE:

1.0 INCOMING CUSTOMER SUPPLIED RAW MATERIALS

1.1 Verify that the material has been accepted in accordance with Shipping and Receiving Procedures, 10-SHP0001. A completed In-House Tracking Slip must be attached.

1.2 Prior to entering the incoming material to stock, the incoming count must be verified. This is to be done on all customer supplied raw materials. The following methods are acceptable for verifying the counts:

1.2.1 Quantities <= 200 pieces, a physical count is necessary.

1.2.2 Quantities >200 pieces, a weigh count is acceptable by the following method:

1.2.2.1 Physically count a complete box of material, not less than 100 pieces, saving all packing material, shrink film, etc.

1.2.2.2 Zero the scale with the box and packing material on it.

1.2.2.3 Weigh the sample of material. Divide the actual weight by the sample quantity and record the result. **This is the per piece weight.**

1.2.2.4 Weigh each additional box of material and record the actual weight on each box. If the actual weight varies more than 1% of the sample weight then the contents of that box must be physically counted.

1.2.2.5 Once all boxes have been weighed and the weights recorded, use the following formula for determining the actual quantity per box:
Actual weight divided by per piece weight equals actual count.

1.2.2.6 Write the actual count on the box next to the manufacturer's count in red pen with the counter's initials.

1.3 Once the entire shipment quantity has been calculated, verify it matches the quantity on the packing list.

1.4 If the entire shipment quantity differs from the customers listed quantity on the packing list, make corrections on the packing list.

1.5 Return the original packing list with the count verification to Material Control.

1.6 Once the count has been verified, The material is "Logged to Customer Supplied Stock" and entered into the customer supplied material database at the Inventory clerks desk.

PURPOSE:

This procedure defines the requirements for proper handling, packaging, and preservation of product and materials handled at P/M Industries.

SCOPE:

This document applies to all materials shipped from P/M Industries.

APPLICABLE DOCUMENTS:

1. Shipping and Receiving Procedures, 10-SHP0001

2 Parts Handling Procedure, 10-PRP0005

DEFINITIONS:

1. ESD - Electrostatic Discharge, release of static electricity
2. BeO – Beryllium Oxide
3. AlN - Aluminum Nitride

RESPONSIBILITIES:

1. Shipping and Receiving Department shall be responsible for adhering to this document.

2. Material Control shall be responsible for maintaining and controlling this document.

PROCEDURE:

1.0 GENERAL NOTES

1.1 Gloves or finger cots shall be worn at all times when handling any type of material. Refer to Parts Handling Procedure, 10-PRP0005.

1.2 Do not use rubber bands for packaging.

1.3 Do not place tape directly on parts.

1.4 Do not mark or write on parts.

1.5 Place the "FRAGILE" sticker on the outside of the package if parts are less than .025” thick or appear to be fragile.

1.6 If parts are dropped perform a 100% physical inspection to ensure parts are not damaged.

NOTE: If damaged parts are found or suspected, contact supervisor or lead for instructions on inspection of all parts in package.

1.7 Lot integrity shall be maintained in accordance with Parts Handling Procedure, 10-PRP0005.

1.8 Parts with different lot numbers shall be packaged separately.

2.0 PRE-PACKAGING

2.1 Read the Traveler and Global Process Sheet before packaging any job.

2.2 If either document is not with the parts, delay packaging the parts.

2.3 Special instructions on the Global Process Sheet or specific customer specification located in the Customer Spec. Manual take precedence over this document.

3.0 OVERS, (OVER Stock)

3.1 Ship all overs pulled for the current sales order.

3.2 Keep overs separate from current traveler parts and label with the Lot # and "-O" For example: Lot # 100283549-O.

3.3 Disposition of overs:

3.3.1 If their total value is ≤ $100, scrap the parts.

3.3.2 If their total is >$100 stock in overs:

3.3.3 Package the overs per this document.

3.3.4 Attach the sales order information to the package.

NOTE: If there are concerns about scrapping, stocking, or shipping the overs, Contact your supervisor.

4.0 COUNTING

4.1 Check the Global Process Sheet to determine if the job requires the exact quantity to be shipped.

4.1.1 If the exact quantity is indicated, check that the count equals the amount ordered.

4.1.2 If there are not enough parts to fill the order, inform the Salesperson and wait for additional instructions.

4.1.3 If there are too many parts, package per overs section of this document.

4.2 Check the Global Process Sheet for instructions regarding under shipment or over shipment. If instructions are not specified, count should be ±10% of the ordered quantity.

4.3 A physical count is required for orders under 200 pieces. Larger orders may be weigh counted.

4.4 Document the total quantity shipped in the Shipping section of the Traveler. If multiple lot numbers exists, document quantity shipped from each lot number in the shipping section of the traveler.

4.5 If the shipment is a partial, document the information as specified. Also document the date and write "Partial" on the Traveler. This is to ensure subsequent partials do not create confusion with the total count shipped.

5.0 WRAPPING 96% ALUMINA, BeO AND AlN PARTS

5.1 Wrapping AlN parts.
AlN parts should not contact one another to prevent abrasion dust on the parts.

5.1.1 Slip sheet all AlN parts > 2” square.

5.2 For Parts <0.010 inches thick:

5.2.1 Separate with thin cardboard between each part and the top and bottom of each pack.

5.2.2 Shrink wrap in stacks of 10 parts.

5.2.3 Put 3 stacks in a 3”x3”x7” box.

5.2.4 Attach the “FRAGILE" sticker and label to the outside of the box.

5.3 For parts with a thickness < .020 inches and an area > 0.5 inch square, package as follows:

5.3.1 Put thin cardboard on the top and bottom of the package.

5.3.2 The cardboard shall be slightly larger than the parts.

5.3.3 Shrink wrap in packages of 25 parts.

5.3.4 Attach the label to the outside of the shrink-wrapped package then bubble wrap it.

5.3.5 Place the "FRAGILE" sticker on the outside of the bubble wrap.

5.4 For parts with a thickness $\geq$ .020 inches and an area > 0.5 inch square, package as follows:

5.4.1 If the thickness of the parts is < .030 inches, shrink-wrap in packages of 100 parts.

5.4.2 If the thickness of the parts is $\geq$ .030 and <.050 inches, shrink wrap in packages of 50 parts.

5.4.3 If the thickness of the parts is $\geq$ .050 inches, shrink wrap in packages of 25 parts.

5.4.4 Place the label on the outside of the shrink-wrapped package then bubble wrap it.

5.4.5 If the thickness of the parts is > .020 inches but appear to be fragile:

5.4.5.1 Put thin cardboard on the top and bottom of the package.

5.4.5.2 The cardboard shall be slightly larger than the parts.

5.4.5.3 Shrink wrap in packages of 25 parts.

5.4.5.4 Attach the label to the outside of the shrink-wrapped package then bubble wrap it.

5.4.5.5 Place the "FRAGILE" sticker on the outside of the bubble wrap.

5.5 For round or square parts with an area $\leq$ 0.5 inch square, package as follows:

5.5.1 Part thickness < .020 inches:

5.5.1.1 Coin stack parts in stacks of 100 and shrink wrap.

5.5.1.2 If parts are too small to coin Stack, bag in bags of 200.

5.5.1.3 Attach the label on the outside of the package then bubble wrap it.

5.5.2 Part thickness $\geq$ .020 inches:

5.5.2.1 Coin stack parts in stacks of 50-75 parts.

5.5.2.2 Shrink-wrap all coin stacks.

5.5.2.3 If parts are too small to coin stack, bag in bags of 200.

5.5.2.4 Attach the label on the outside of the shrink wrapped package then bubble wrap.

6.0 WRAPPING 99.5 % & 99.6% ALUMINA, AND POLISHED PARTS

6.1 If the parts are not polished, place each part in a poly(ethylene) bag.

6.2 If the parts are polished, place each part in a polypropylene bag.

6.3 Place 10-25 bagged parts between card board and shrink wrap.

6.4 Attach the label on the outside of the pack then bubble wrap it.

7.0 WRAPPING METALIZED PARTS

7.1 Metalized parts shall be individually poly bagged or waffle packed unless otherwise specified on the Global Process Sheet.

7.2 Put the bagged parts in plastic boxes or customer supplied containers.

7.3 Attach the label to the outside of the container then bubble wrap it.

8.0 WRAPPING CUSTOMER SUPPLIED MATERIAL

NOTE: Check Customer Specification Manual for special instructions.

8.1 Wrap all customer-supplied parts as specified in previous sections. Do not place the parts in customer supplied container(s) unless specifically required by the customer.

8.2 If the parts are ESD sensitive, use the ESD bubble wrap (pink) for packaging.

9.0 WRAPPING CUSTOMER SUPPLIED-REJECT MATERIAL

9.1 All customer-supplied material (good and reject) is returned to the customer.

9.2 Shrink-wrap all reject material together. Do not package them with good parts.

9.3 Write “Reject” on the label and attach it to the outside of the shrink-wrapped package.

9.4 Document the number of reject parts in the Shipping section of the Traveler.

10.0 LABELING

10.1 Each wrapped package shall be labeled.

10.2 The label shall contain the following information:

10.2.1 P/M INDUSTRIES printed on the label.

10.2.2 Part number and revision level.

10.2.3 Sales Order Number

10.2.4 Purchase order number.

10.2.5 Manufacturer and type such as Bourns/ASM 870. If it is customer supplied material, write “C/S”.

10.2.6 Lot number.

10.2.7 Date.

10.2.8 Quantity of the package

10.2.9 If applicable, note subgroup of the lot number such as a work order number.

PURPOSE:

To provide general instructions for the receipt, shipment, and preservation of product and materials handled at P/M Industries.

SCOPE:

This document applies to all goods shipped to or from P/M Industries.

APPLICABLE DOCUMENTS:

1. Packaging Instructions, 10-SHI0005
2. Shipping and Receiving Daily Schedule
3. Raw Ceramic Inspection Instruction, 02-POI0001
4. Parts Handling Procedure, 10-PRP0005
5. Customer Supplied Product Control Procedure, 18-QAP00372.

DEFINITIONS:

1. C of C - Certificate of Conformance

RESPONSIBILITIES:

1. All personnel involved in the shipping and receiving of material at P/M Industries shall be responsible for adhering to this document.
2. Shipping and Receiving department shall be responsible the maintenance of this document.

GENERAL NOTES

1. Gloves or finger cots shall be worn when handling any ceramic materials. Refer to Parts Handling Procedure, 10-PRP0005.
2. Lot integrity shall be maintained in accordance with Parts Handling Procedure, 10-PRP0005.

PROCEDURE:

1.0 RECEIVING SHIPMENTS

1.1 Customer Supplied Products (Specific to a customer order).

1.1.1 Incoming customer supplied materials shall be unpacked, inspected, counted, logged in and placed on the Sales Receiving Table no later than 12:00 pm.

1.1.2 The package shall be inspected for damage. If any damage is found, contact the supervisor.

1.1.3 Complete an In-House Tracking Slip (count slip) and attach it to each incoming order. Refer to Customer Supplied Product Control Procedure, 18-QAP0037 for completing an In-House Tracking Slip.

1.1.3.1 Incoming orders of 200 parts or less shall be physically counted.

1.1.3.2 Incoming orders of more than 200 parts shall be weight counted.

1.1.3.3 An In-House Tracking Slip shall be completed for each part number or lot number received.

1.1.3.4 If there is a subgroup lot number such as a work order number, write it in the Comments section of the In-House Tracking Slip.

1.1.3.5 Different part numbers, lot numbers or subgroup lot numbers shall be kept in separate work trays.

1.1.3.6 If the incoming count does not agree with the customer's packing slip, make a note on the In-House Tracking Slip.

1.1.3.7 If the incoming parts are damaged in any way (broken, chipped, etc.), CONTACT the appropriate Salesperson and supervisor immediately. Write a description of the problem in the Comments section of the In-House Tracking Slip.

1.1.3.8 There is no way to verify a Vendor's count except by a physical count or by weight count of the parts. Therefore a Vendor's count is not an acceptable count.

1.1.3.9 Attach the In-House Tracking Slip to the work tray and place them on the Sales Receiving Table.

1.2 Customer Supplied Raw Materials (To controlled stock)

1.2.1 Incoming customer supplied raw material shall be unpacked, inspected, counted
and logged prior to being placed in a 'controlled' inventory.

1.2.2 Complete an In-House Tracking Slip (count slip) and attach it to each incoming order.

1.2.2.1 (Same as 1.1.3.1 – 1.1.3.9)

1.2.2.2 Deliver with In-House Tracking Slip to the inventory stockroom and notify the inventory clerk.

1.3 PM Vendor Supplied Materials (non-customer supplied)

1.3.1 Incoming PM Vendor supplied materials and packages shall be unpacked, inspected, counted and logged in prior to being released for use. All non-customer supplied material shall have a P/M purchase order number. It is a 5 digit number located in the purchase order section of the incoming packing slip. An In-House Tracking slip (count slip) is not required for non-customer supplied material.

1.3.1.1 Verify the material description and count on the incoming packing slip match the green copy of the purchase order. The green copy is Receiving Department's copy of the purchase order and is located in the Purchase Order Book. If the information does not agree, contact the Purchasing manager.

1.3.1.2 Complete the incoming count section of the purchase order.

1.3.1.2.1 If the purchase order is complete (the full order has arrived), stamp "Received" on the packing list. Remove the green copy of the purchase order. Attach it, the packing slip and other supporting documents together and send them to the Purchasing manager.

1.3.1.2.2 If the purchase order is not complete (the full order has not come in), record the amount received on the green copy of the purchase order. The green copy remains in the Purchase Order Book until the full order is received. Send only the packing slip and other supporting documents to the Purchasing manager.

1.3.1.3 If the incoming material or package is damaged (broken, etc.), contact the purchasing manager.

1.3.1.4 If the incoming material and paperwork appear to be correct, contact the individual listed on the green copy of the purchase order.

1.3.2 Incoming raw ceramic material shall be handled as specified in section 1.3.1. In addition, the following procedure shall be followed:

1.3.2.1 Unpack the inner box (boxes) of raw ceramics from the outer shipping box.

1.3.2.2 Check the incoming material to the material description and count on the green copy of the purchase order.

1.3.2.3 The count is determined by adding the count listed on the outside of each box.

1.3.2.4 If the incoming order contains several different parts or lot numbers, the order shall be kept separate by size, material type or lot number of the material.

1.3.2.5 Deliver the incoming order with all related documentation to the Inventory stock room and notify the Inventory Clerk.

2.0 SHIPPING PROCEDURES

2.1 All outgoing material shall be at the Shipping and Receiving Department by 2:30 pm in order for it to ship that day. This is to ensure that there is sufficient amount of time to process (count, wrap and package) the outgoing material prior to the shipping clerk departing for the day.

2.2 Outgoing material shall be delivered to the packaging area before or on the scheduled shipping date.

2.3 Read the Global Process Sheet and Traveler before packaging or shipping the outgoing material.

2.4 Parts that are missing a Global Process Sheet, Traveler or completion dates on the Traveler shall be held up until the information is found. Check for any special C of C requirements.

2.5 Parts shall be packaged per Packaging Instruction, 10-SHI0005, unless the Traveler or Global Process Sheet specifies special packaging instructions.

2.6 Place the packaged parts carefully in the shipping box to ensure that the edges, sides, corners, etc. of the parts will not touch each other during shipping. Try to place the parts in the shipping box so that the flat surface is facing each other.

2.7 Fill the shipping box with Styrofoam peanuts or other packaging materials to ensure minimum movement of the packaged parts during shipment.

2.8 Boxing requirements may vary with each shipment but generally the following will apply:

2.8.1 Single Box - when the material is shipped by Air Freight and not leaving the Continental USA.

2.8.2 Double Box - when the material is shipped by any ground transportation, including UPS 3 day select (orange).

2.8.3 International shipments - When material is sent outside the continental U.S., the material shall be packaged per Packaging Instruction, 10-SHI0005. Then each package is wrapped with bubble wrap and double boxed. This is due to the various carriers used to transport international shipments.

2.8.4 Any shipment with multiple boxes shall have the box number and total number of boxes written on each box. For example, “1 of 4”, “2 of 4”, “3 of 4”, etc.

2.9 After the outgoing material has been boxed, weigh it. Then write the weight, rounding up to the nearest pound, on the box.

2.10 Complete the Shipping section of the Traveler and enter all necessary shipping information into the computer.

2.11 Complete the packing slip.

2.12 Partial shipments require special marking and handling of documentation.

2.12.1 The Traveler and supporting documents shall be returned to production or Operations Control for completion of the order. Place them in the file holder mounted on the Shipping door, labeled “Partial Orders”.

2.12.2 The yellow copy of the sales order shall be placed in the wire basket on the desk with the Shipping computer. It will be sent to Accounting with other shipping documents.

2.13 COD shipments require the following additional steps prior to shipment:

2.13.1 Once the outgoing material is boxed and weighed, “key out” of the sales order program.

2.13.2 Attach the completed COD tag to the box being shipped.

2.13.3 Enter the COD amount, listed on the yellow copy of the packing slip, in the appropriate space in the UPS computer.

2.13.4 Attach the receipt copy of the COD tag to the yellow copy of the packing slip.

2.13.5 Notify Accounting of the COD total.

2.14 International shipments require the following additional steps prior to shipment:

2.14.1 Once the order is boxed, weighed, and "keyed" out in the computer, contact Accounting so they can generate the required documents for Customs.

2.14.2 Complete the air bill for the shipping company or enter the destination information into the UPS/Fed-X computer.

2.14.3 When Accounting delivers the Certificate of Origin and other documents, the job is ready for shipping.

2.15 Place the packing list and associated documents in the packing list label and attach it to the top of the box. If the top of the box is too small, place the label on the side of the box. Verify that the packing list label is firmly attached to the box. This is to ensure that it does not come off during transit. If necessary, use clear tape to attach the packing list label.

2.16 Complete the Certificate of Conformance. It shall have the following items filled out:

2.16.1 Certified Lot Number

2.16.2 Material Used such as “96% alumina”, “BeO”, etc.

2.16.3 Type the manufacturer of the material and material designation are required here such as “Bourns / ASM 870”, “CBL 995”, etc.

2.16.4 Authorized signature and title

2.17 Place the Traveler, yellow copy of the sales order and associated documents in the wire basket on the desk with the Shipping computer.

PURPOSE:

To specify the manner in which records related to the quality performance of the company are stored and maintained.

SCOPE:

This document applies to all quality records generated at P/M Industries.

RESPONSIBILITIES:

1. The Quality Assurance department is responsible for maintaining this document.

2. Material Control is responsible for the control of this document.

3. All personnel involved in the performance of quality related tasks are responsible for following this procedure.

PROCEDURE:

1.0 LENGTH OF STORAGE

1.1 Unless otherwise specified, quality records shall be stored in the department where they originate for two years. After two years, they will be archived for five years before being destroyed.

1.2 Archived documents will be stored on the premises at P/M Industries for ease of retrieval.

1.3 Quality records are available for customer and regulatory examination.

2.0 INSPECTION RECORDS FOR MANUFACTURED PRODUCT

2.1 A record of all inspections for product manufactured at P/M Industries will be kept.

2.2 The inspection records will detail the following items:

2.2.1 Customer name.
2.2.2 Part number.
2.2.3 Revision level.
2.2.4 Date of inspection.
2.2.5 Inspectors name or initials.
2.2.6 Specific items inspected.
2.2.7 The number of pieces inspected.
2.2.8 The results of the inspection including any discrepancies.

2.3 Inspection records will be attached to the global traveler and ultimately filed in accordance with section 1.0, Length of Storage.

3.0 INSPECTION RECORDS FOR RAW CERAMIC

3.1 A record of all incoming inspections on raw ceramic will maintained.

3.2 The inspection records of each lot of raw ceramic received into inventory will include the following:

3.2.1 Manufacturer.
3.2.2 Purchase order.
3.2.3 Lot number.
3.2.4 Type and size of material.
3.2.5 Quantity.
3.2.6 Date of inspection.
3.2.7 Sample size.
3.2.8 Inspectors name or initials.
3.2.9 Specific items inspected.
3.2.10 The results of the inspection including any discrepancies.

4.0 GENERAL QUALITY RECORDS

4.1 Records relating to the maintenance of the quality system, and its performance will be maintained in the quality assurance office in accordance with section 4.0.

4.2 These records will include customer complaints, corrective action reports, non-conforming material reports and internal audit results.

5.0 MANAGEMENT REVIEW

Records of periodic reviews of the quality system by executive management will be kept by the Quality Manager. Refer to Document: 18-QAP0001 P/M Industries Quality System: Management and Authority.

PURPOSE:

This procedure establishes the method for planning and implementing internal quality audits at P/M Industries.

SCOPE:

This procedure applies to all P/M Industries departments, processes, and procedures.

APPLICABLE DOCUMENTS:

1. P/M Industries Quality System: Management and Authority, 18-QAP0001

2. Corrective Action Procedure, 18-QAP0023

DEFINITIONS:

2. Audit: An audit shall be defined as a review or evaluation to determine compliance to established processes and procedures.

3. Quality Audit Form (QAF): A document used to evaluate a department's performance on a Quality Audit. The format of the QAF varies for each department.

RESPONSIBILITIES:

1. Quality Assurance (QA) is responsible for the performance and completion of quality audits.

2. Quality Assurance is responsible for maintaining this document.

3. Material Control is responsible for controlling this document.

PROCEDURE:

1.0 AUDIT SCHEDULE

1.1 Departmental audits shall be performed at least once a year.

1.2 Audits of individual processes or procedures shall be performed to resolve quality issues, as needed, or to qualify a new procedure.

1.3 Unless the audit is the result of an unresolved quality issue, the department is notified that an audit will be conducted within 30 days.

1.4 Quality Assurance shall maintain a schedule of departmental audits.

2.0 TRACKING

2.1 All QAFs shall be assigned a four digit number, consecutively numbered.

2.2 QAFs shall be kept in QA.

2.3 Each audit finding with its completed Corrective Action Request shall be returned to QA.

3.0 DEPARTMENTAL AUDIT ITEMS

At a minimum, the following items shall be covered during a departmental audit.

3.1 The Traveler, print packages, and other documentation on the production floor shall be examined for accuracy and completeness.

3.2 The auditor(s) shall verify all operators are certified for the jobs they are performing.

3.3 The department procedure book shall be examined to verify obsolete documents are removed and documents are up to date and controlled.

3.4 At the time of the audit, all jobs in process shall be checked to ensure established procedures are followed.

3.5 Measurement instruments on the production floor shall be examined to verify they are calibrated, their calibration sticker is up to date and they function properly.

3.6 Inspection documentation shall be examined for accuracy and completeness.

3.7 The department shall be inspected for cleanliness and organization.

3.8 The auditor(s) shall verify the implementation of completed Corrective Action Requests, (CAR's). Prior to the scheduled audit date, QA shall determine the CAR's to be verified.

4.0 PROCESS AUDIT ITEMS

At a minimum, the following items shall be covered during a departmental audit.

4.1 The process shall be evaluated for its level of documentation. The process shall be clearly defined in controlled documents.

4.2 The process shall be evaluated for its ability to consistently meet the required level of quality.

4.3 The auditor(s) shall verify the process adheres to controlled documents and all personnel are trained and certified to perform the process.

5.0 AUDIT TEAM

5.1 The audit team shall consist of the Quality Assurance manager and one or more department managers from departments not being audited.

5.2 Other members of the audit team may be chosen from departments other than the one being audited. The selection shall be made at the discretion of Management and Quality Assurance.

5.3 During the audit, the supervisor or department head shall be present to answer questions and to understand the basis for any audit findings.

6.0 AUDIT RESULTS

6.1 The results of the audit shall be logged by Quality Assurance.

6.2 Quality Assurance shall report the audit results to the audited department and Management within 10 working days of the audit.

6.3 A Corrective Action Request shall be issued for each area of non-compliance found during the audit. The CAR shall be completed and processed in accordance with Corrective Action Procedure, 18-QAP0023.

6.4 Quality Assurance shall schedule a follow up audit to verify the implementation and effectiveness of any corrective action taken.

PURPOSE:

To outline the manner in which training requirements are assessed and provided for.

SCOPE:

This document applies to all training activities at P/M Industries.

RESPONSIBILITIES:

1. The Quality Assurance department is responsible for maintaining this document.
2. Material Control is responsible for controlling this document.
3. Each senior functional manager is responsible for following and implementing this procedure.

PROCEDURE:

1.0 ASSESSMENT OF TRAINING NEEDS

1.1 Each functional manager will maintain a list of job titles/descriptions specific to that function/department. For each job title, the function/department will identify specific areas of responsibility and initial qualifications for employment.

1.2 Job descriptions are to be updated on a yearly basis to ensure that they are still reflect the needs of the department

2.0 TRAINING MODULES

2.1 Training for employees in a given job title will be broken into a series of independent modules that will cover specific areas of knowledge that the employee needs to master in order to fulfill his/her job function.

2.2 Training modules will reference and make use of established procedures.

2.3 A training module may take as little as one day to cover or may last for several weeks. If the module takes more than one day, it should be broken up into a series of lessons.

2.4 All training modules need to be approved by the function/department in which the training takes place.

3.0 CERTIFICATION

3.1 At the conclusion of a module the trainee needs to be tested and, if the trainee passes, certified in that area.

3.2 Certification will be a primary requirement for advancement in a range.

3.3 Employees are to be re-certified at regular intervals as specified within each training module.

4.0 TRAINING RECORDS

4.1 Records of training certification and recertification will be maintained for all employees.

4.2 Each function/department will maintain its own training records.

PURPOSE:

This procedure outlines the manner in which statistical techniques are to be used to characterize and control processes at P/M Industries.

SCOPE:

This document applies to all areas of production where the use of statistical techniques may help to drive the continual improvement of manufacturing processes.

RESPONSIBILITIES:

1. The Quality Assurance department is responsible for maintaining this document.

2. The Production Manager is responsible for the implementation of this procedure within the respective departments.

3. Document Control is responsible for the control of this document.

PROCEDURE:

1.0 STATISTICAL TRAINING

1.1 All production personnel will receive training in the use of Statistical techniques.

1.2 Training will consist of classroom time and on the job training in their own department working on specific projects.

2.0 PROCESS CHARACTERIZATION

2.1 With the guidance of the production engineering and management personnel, each department will identify processes in need of characterization and process improvement.

2.2 Selection criteria will be based on the relative impact of the process on the product, and the potential gain afforded by improving the process.

2.3 Specific projects will be developed by the engineering resources within the department and executed with the assistance of Production.

2.4 The results of each project will be used to determine current process capability, and areas where further improvements are necessary.

3.0 STATISTICAL PROCESS CONTROL

3.1 Engineering and management personnel in each department will identify processes where statistical process control techniques may be applied.

3.2 Selection criteria will be based on the relative impact of the process on the products being manufactured, and the applicability of SPC to the process.

3.3 Specific projects will be developed by the engineering resources within the unit and run by production personnel.

3.4 On-going results will be used to establish stability in the process and to determine the causes of unacceptable variation in either the process or product.