

Supplier Quality Assurance Manual



IMPCO Technologies
3030 South Susan Street
Santa Ana, CA
92704-6435

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| Table of Contents | Page |
|---|-------------|
| Quality Policy | 3 |
| Introduction | 3 |
| New Suppliers | 3 |
| Existing Supplier Evaluation Method | 4 |
| Proprietary Confidentiality Information | 4 |
| Purchase Orders | 4 |
| Purchase Order Changes/Engineering Changes | 5 |
| IMPCO Supplied Drawing Format | 5 |
| Certifications | 5 |
| Supplier Dimensional Certification Data | 6 |
| First Article Requirements | 6, 7 |
| Nonconforming Material | 7 |
| Tooling | 7 |
| Corrective Action Request | 8 |
| Control of Inspection, Measuring and Test Equipment | 8 |
| Sub Contractor Control | 8 |
| Deviations From Specifications | 8 |
| Packaging | 8 |
| Delivery Requirements | 9 |
| Chemical Substance Guidelines | 9 |
| Bar Code Requirements | 10 |

APPENDIX

| | IMPCO Form Number | |
|--------------------------------------|--------------------------|------------|
| A. Supplier Profile – Quality Survey | F.06.2.01-01 | 11, 12, 13 |
| B. Purchase Order | | 14 |
| C. Purchasing Acknowledgement Form | F06.1.02-01 | 15 |
| D. Corrective Action Request | | 16 |
| E. Request for Deviation | F04.9.01-04 | 17 |
| F. Certificate of Conformance | F10.4.01-03 | 18 |
| G. Example Material Cert | | 19 |
| H. First Article Layout | F10.1.01-01 | 20, 21 |
| I. Example Balloon Print | | 22 |
| J. Supplier Inspection Data | F10.4.01-05 | 23 |

Quality Policy

We are committed to producing high quality, reliable, cost effective products that provide customer value, are shipped on time, and contribute to a better environment. Our Quality Management System (QMS) achieves these objectives and embraces the principles of continuous improvement.

Introduction

We at IMPCO are dedicated to being the leader in the manufacture of alternate fuel components and engine systems. We can only achieve our Customer's goals by expecting the best from our Suppliers. We ask that our Suppliers join us to join us in providing the best products with respect to Quality, Delivery and Price. We believe a strong Supplier base will assist us in providing World Class Product to our Customers.

To ensure that our Supplier's quality systems conform to IMPCO's quality system requirements, IMPCO Representatives may visit your facility in order to review your quality system as well as manufacturing capability and capacity. The team's objective is to support the development of future mutual goals for our organizations. As an IMPCO Supplier, you will have a Purchasing Representative and Quality Representative dedicated to providing the most up to date information available in order to nurture an enduring business relationship.

IMPCO is dedicated to providing Customer satisfaction.

New Suppliers

IMPCO's Purchasing and Quality Assurance Team evaluates all new Suppliers. All new Suppliers must submit the following items 1 & 4; Purchasing may request items 2 & 3 if deemed necessary.

1. Impco Supplier Profile – Quality Survey (see Appendix A) supplied by Impco Purchasing
2. Financial Statements
3. Dunn & Bradstreet rating
4. Confidentiality Agreement

After the above information has been received, IMPCO's Supplier Evaluation Team (SET) reviews the information and makes one of the following determinations:

1. Add the Supplier to the Supplier list as approved or conditionally approved
2. Schedule an on-site survey (if needed)
3. Request additional information from the Supplier (if needed)
4. Eliminate the potential Supplier from further consideration

Existing Supplier Evaluation Method

The IMPCO Supplier Evaluation Team (SET), consisting of Purchasing and Quality Representatives, gathers the appropriate data to evaluate the Suppliers. IMPCO reviews the areas listed below to determine how the Supplier is progressing:

1. Quality Systems
2. Product Quality Performance DPM (defects per million)
3. Delivery Performance
4. 1st Article Rejections
5. Corrective Actions issued
6. Request for Deviations issued
7. Partnership

The Supplier's evaluation will determine the category that they will be placed in.

- 1) Approved – These Suppliers are given priority in sourcing decisions for new business
- 2) Conditional – These Suppliers require the Purchasing Manager's approval for new sourcing decisions.
- 3) Restricted – Cannot purchase from, review long term partnership
- 4) Special – Suppliers that supply proprietary product (e.g. specialized commodity)

IMPCO encourages all Suppliers to continually improve their product and processes.

Proprietary / Confidentiality Information

All drawings / documentation supplied to our Suppliers with regards to Purchase Orders or request for quotes are to be considered proprietary information. This includes but is not limited to sample parts, sketches, drawings and specifications which shall remain the property of Impco. Supplier shall treat the information as confidential unless otherwise agreed in writing from our Purchasing group.

Purchase Orders

The Supplier is responsible for meeting all of IMPCO's Purchase Order requirements (see Appendix B) . The following items must be reviewed by the Supplier for each Purchase Order. If the Supplier cannot meet the requirements, the Supplier must notify IMPCO Purchasing.

1. The purchased item part number.
2. The latest revision level of the drawing.
3. The order quantity and accuracy of price.
4. Delivery requirements.

Once the Purchase Order has been reviewed, the supplier must sign and return it to the assigned Purchasing Representative for acknowledgment via email and/or fax.

Purchase Order Changes/Engineering Changes

When an engineering drawing or engineering specification has been revised, IMPCO Purchasing will send the Supplier an Acknowledgement Form (see Appendix C) along with the latest engineering drawing. The Supplier should review the drawing to see if the change affects their production or inventory.

The Supplier should document on the drawing transmittal form: (Refer to form number F06.1.02-01)

1. What is required to make this change? (ie. tooling modification, fixture change, material, etc.)
2. When can this change be implemented?
3. Will the following open Purchase Orders affect this change?
4. Will this change affect work in process or inventory?
5. When will we receive parts to the latest print level along with first article data/part?
6. Does this change affect current pricing of the part? If so, how much?

The Supplier is required to answer the above questions on the Acknowledgement Form and return back to IMPCO's Purchasing Department within 5 working days.

IMPCO Technologies Inc. Supplied Design Format Information.

As a Supplier to IMPCO Technologies Inc. you are aware that over the past few years IMPCO has been in the process of moving its computer aided design capability from two dimensional drafting, to three dimensional solid modeling.

Over the years many Suppliers have requested that we provide them with solid model or two dimensional files translated into formats other than the ones we design in. It is impossible for IMPCO to meet these requests from our Suppliers, as there is an increasing number of design packages on the market, all with slightly different formats.

To support Suppliers in producing quality parts to our specifications, we are prepared to provide the solid model in the native current version Solidworks format only, along with an Adobe PDF file of the two dimensional layout (in cases where the part is only defined in a two dimensional layout we will provide the PDF file only). Viewers for both of these formats are readily available for no charge on-line at:

Solidworks (www.solidworks.com)

Adobe (www.adobe.com)

If your company uses a different format solid modeling program, your software vendor will be able to advise you in what file translators are available to convert from Solidworks. If you have any questions regarding this issue, please feel free to contact your IMPCO Purchasing Representative.

Certifications

Suppliers are required to submit Material, Plating or Heat Treat Certifications as applicable with each shipment or a Certificate of Conformance (C of C) which lists each requirement as per the drawing (see appendix F for example).

The original Certificate of Conformance for each part number should be kept in the Supplier's files for future audit purposes by IMPCO (see appendix G for example).

If no certs or C of C are received with the shipment, the shipment will be rejected and may affect Quality Rating.

Supplier Dimensional Certification Data


On certain parts, Suppliers will be required to submit inspection data with each shipment until further notification by Impco. Impco Quality will complete form F10.4.0.01-05 (see Appendix J) with the required dimension that will need to be inspected. The Supplier will be notified via Purchase Order when this is required.

First Articles


First Article Inspection is performed by the Supplier in accordance with the IMPCO drawing specified on the Purchase Order.

Each characteristic, feature or note on the drawing must be inspected and verified for conformance, and the results recorded as follows: (Note: see Appendix H for layout example and Appendix I for ballooned, print example)

- a. actual measurements/results for variables data (must indicate pass or fail on the inspection report)
- b. pass/fail for attributes data
- c. a ballooned print identifying the item checked which correlates with the actual measurement, feature or note
- d. raw material certifications (see sample Appendix G)
- e. plating certifications (if plating is called out on the drawing)
- f. other special process certifications
- g. there are two types of key Product Characteristics:

1. This symbol  identifies Fit/Function Characteristics for Key Dimensions on components, materials or assemblies which are key to having particular quality, reliability or performance significant to the finished product.

The Supplier must submit a control plan or inspection method on how they expect to control/verify these dimensions during production. This information must be submitted during the 1st article submittal. Quality will review the information submitted and will accept or reject for better control method.

2. This symbol  identifies Safety Compliance Characteristics for Key Dimensions on components, materials or assemblies that are key to having particular safety requirements significant to the finished product.

Any dimension which has been identified with the Safety Compliance symbol will require the Supplier to conduct 100% testing as part of normal production process. The Supplier must submit a Control Plan or inspection method on how they expect to control/verify these dimensions during production. This information must be submitted during the 1st article submittal. Quality will review the information submitted and will accept or reject for better control method.

- i. If the tooling produces multiple parts simultaneously (i.e. multiple cavity die/mold) then an inspection layout from each cavity is required. If the part has multiple engineering design levels (i.e. casting dimension vs. machining dimensions) then a layout is required for each stage (casting layout & machining layout) for each cavity. The inspection layout data and only the completed final parts need to be submitted.

First Articles Con't

Note: all documents as stated above (a-g) are to be identified and shipped to IMPCO as part of the 1st article inspection report. If the items a-g are not submitted the inspection report will be rejected and returned for re-submittal.

First Articles are required for the following:

1. new part being ordered for the first time
2. existing part ordered from new source.
3. design change to the current part (only inspection for the change is required)
4. part that is purchased for Engineering which will be used for production in the future
5. part from new tool which has been ordered to replace a worn tool
6. verification of tool repair

IMPCO reviews Supplier 1st article package for completeness, accuracy and legibility, verifies randomly selected characteristics and features for accuracy, compliance and documents fit check results at assembly process, as required. **If IMPCO accepts a 1st article using the supplier supplied data and if found out later that the parts do not meet the IMPCO specification, our acceptance of the 1st article does not alleviate the supplier from future responsible.**

Conforming First Article Reports are approved and distributed. Nonconforming First Article Reports are returned back to the Supplier so that corrections can be made. **Continuous rejections for a 1st article may prompt the Supplier to lose future business.**

Nonconforming Material

The Supplier will be notified of nonconforming material and will be asked for authorization to return to vendor, scrap or rework the material. A debit memo will be issued against the Supplier's account for all returned/scrapped material. The Supplier is responsible for freight charges associated with the return of discrepant material and all non conformance issues will be reflected in the Supplier's quality rating.

Tooling

When a tool (die cast tool, stamping tool, molded rubber tool) has reached it's estimated life and the supplier is requesting a new tool, the Supplier must submit sample part(s) to Purchasing for review along with an explanation identifying the areas where the tool needs to be replaced. Purchasing will then forward to quality for review. If the tool is used to produce castings then a casting and a machining sample will be required.

When a new tool is produced the Supplier must identify the tool with the following: Impco part number, month and year of completion, Impco Property Tag number and Purchase Order number. Upon completion of the tool, the Supplier must submit pictures showing the required identification above along with the required 1st article.

Corrective Action Request (CAR)

IMPCO will notify the Supplier of a nonconformance with a Corrective Action Request (CAR) (see Appendix D). A CAR can be issued for a part as a result of receiving inspection rejection, defective parts in stock or found defective during our assembly process.

IMPCO requires that the CAR be returned prior to the required due date indicated on the report. The listed due date is the maximum allowable time to respond. Even the smallest problem can be very detrimental to our manufacturing operations, so your quickest response is required. The CAR response should include the corrective and preventive action and a break point for stock. Two or more CARs for a specific part or non-response to a CAR could cause IMPCO to immediately re-source from another Supplier.

Control of Inspection, Measuring and Test Equipment

The Supplier must have established and maintained documented procedures to control, calibrate and maintain inspection, measuring and test equipment and devices used to demonstrate the conformance of product to the specified requirements. Inspection, measuring and test equipment should be used in a manner that ensures that the measurement uncertainty is known and is consistent with the required measurement capability. All inspection, measuring and test equipment must be in compliance to the requirements of ISO10012-1 and standards traceable to the National Institute of Standards and Technology (NIST).

Sub-contractor Control

The Supplier takes full responsibility for any sub-contracted (outsourced or alternate) process and will have final approvals or inspection in place to assure all sub-contracted components conform to all specifications dictated by the drawing (s).

Deviations from Specifications

IMPCO expects all material and/or parts supplied to meet all of IMPCO's requirements.

Nonconforming parts are **NOT** to be shipped to IMPCO without IMPCO's approval in writing. The Supplier is expected to complete the Request for Deviation Form (Appendix E) (also can be downloaded from www.impcotechnologies.com under supplier section) and submit it to IMPCO's Purchasing. If the Request for Deviation is approved, then the Request for Deviation Form will be returned back to the supplier with approved signatures. **UNDER NO CIRCUMSTANCE WILL PRIOR or FUTURE VERBAL AGREEMENTS BE ACCEPTED.**

Packaging

Suppliers are held responsible to ensure packaging is sufficient to protect material from shipping damage (nicks, dings, scratches, etc.).

Delivery Requirements

The Supplier will adhere to formally accepted shipment dates as specified on the Purchase Order. The acceptable window for deliveries is no earlier than 3 days and no later than 2 days from the delivery date specified on the purchase orders. Impco reserves the right to specify preferred carriers, but not limited to. Suppliers are responsible for proper transportation in order to meet agreed delivery dates. All missed shipments must be expedited the same day at the Supplier's expense. (Refer to line 11 on the Purchase Order Appendix B)

Chemical Substance Guidelines

Based upon the Restriction of Hazardous Substances Directive (RoHS) 2002/95/EC "RoHS Directive" all Suppliers are required to comply with the chemical substance guidelines listed below.

The restrictions and allowable amounts are listed below.

- Lead & Lead compounds
- Mercury & Mercury compounds
- Cadmium compounds
- Hexavalent Chromium
- Bisphenol A
- Asbestos
- Polychlorinated Biphenyl (PCB) & Polychlorinated Terphenyls (PCT)

Allowable Impurities:

A maximum concentration value, up to the percentage listed below by weight and homogeneous material shall be tolerated. These substances are allowable provided they are not intentionally introduced for any function purpose such as corrosion, adhesion, etc.

- Steel (including galvanized steel) (Less than .35% Lead by weight)
- Aluminum (Less than .4% Lead by weight)
- Copper Alloy (Less than .4% Lead by weight)
- Hexavalent Chromium (Less than .1% by weight)
- Cadmium (Less than .01% by weight)

For any part that does not meet the above allowable Impurities, the supplier must notify Impco in writing.

Bar Code Requirements

The following instruction is to be used as a guideline when a Supplier is developing bar code shipping labels for products that will be delivered to IMPCO Technologies, Incorporated. Unless stated otherwise, **USS code 39** will be used to barcode the necessary information. For additional guidelines and references, refer to the Automotive Industry Action Group (AIAG) publication titled Trading Partner Labels Implementation Guideline # B-10 *.

1. **Part Number:** The part number as defined by IMPCO and documented on the Purchase Order, which is given to a supplier.
2. **Revision:** The Revision is the configuration of the part in IMPCO’s engineering drawing. It is also noted in the item master field for the revision.
3. **Description:** The description as stated on the Purchase Order is also what is called out on the engineering drawing.
4. **Supplier Name:** The name of the party that produces, provides, or furnishes a product or service that IMPCO has placed an order with.
5. **SPLR ID:** The numeric code used to identify the supplier in IMPCO’s manufacturing system. It is also noted on the Purchase Order.
6. **Quantity:** The number of parts, items or other units of measure in the container.
7. **Purchase Order Number:** A Purchase Order number is a commercial document issued by IMPCO Technologies, indicating the products, quantities and agreed prices for products or services that the Supplier will provide.
8. **Manufacturing Date:** Date of fabrication – two digits month, two digits day, and two digits year.

| | | |
|---|--|---|
| Part Number AB1-23-2  | Revision A  | Date 9/22/2007  |
| Description Throttle Body Assemble  | | Quantity 100  |
| Supplier I.D. Z123XY  | Purchase Order No. 791234  | |
| Customer Impco Technologies | Supplier Name Company XYZ | |

**Automotive Industry Action Group,
 26200 Lahser Road
 Suite 200,
 Southfield, Michigan 48034
 Phone: (248) 358-3570
 Fax: (248) 358-3253*

Appendix A

IMPCO SUPPLIER PROFILE - QUALITY SURVEY

All Shaded Area's are for Impco Only

| | | | | | | |
|--|------------------------------------|--|----------------------------|---|----------------|---|
| Type of Survey: <input type="checkbox"/> QUALIFICATION <input type="checkbox"/> FOLLOW-UP <input type="checkbox"/> SELF SURVEY | | | | | | |
| Supp. Code _____ Federal I.D. # for New Suppliers _____ | | | | | | |
| Name And Address | | | | Key Contacts: | | |
| Company Name: _____ | | | | Quality: _____ | | |
| City, State, Zip _____ | | | | Engineering: _____ | | |
| Phone # _____ | | | | Sales: _____ | | |
| Fax # _____ | | | | Total Number of Employees: _____ | | |
| Web Site: _____ | | | | | | |
| Quality System Registration <input type="checkbox"/> ISO <input type="checkbox"/> ISO/TS 16949 <input type="checkbox"/> OTHER _____ | | | | | | |
| If supplier is ISO or TS/QS certified please submit copy of certification _____ | | | | | | |
| Facility Information: | | | | | | |
| Size of Facility (Total SQ FT) _____ Current Production Capacity: _____ | | | | | | |
| Sales Information: | | | | | | |
| Total Sales \$ _____ Key Customers _____ | | | | | | |
| Tooling Capabilities: | | | | Inspection Capabilities: | | |
| Tooling designed in-house <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | CMM Equipment <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| If Yes, What design software is used _____ | | | | Hardness Testing <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Tooling built in-house <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | Raw Material Testing <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Can prototype/production be done in-house <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | SPC Capabilities <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| | | | | 1st Article Inspection done in-house <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Other Process Capabilities: | | | | | | |
| Rough/Finish Machining <input type="checkbox"/> Yes <input type="checkbox"/> No | | Coating <input type="checkbox"/> Yes <input type="checkbox"/> No | | Welding <input type="checkbox"/> Yes <input type="checkbox"/> No | | Assy <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Quality/Delivery Information | | | | | | |
| Previous Year Outgoing DPM/PPM _____ | | | YTD Outgoing DPM/PPM _____ | | | |
| Previous Year On Time delivery _____ | | | YTD On Time Delivery _____ | | | |
| Survey Completed by: _____ | | | | Date (Signed) _____ | | |
| Do Not use this section below | | | | | | |
| No. | Questions about the Quality System | Questions Assessed | Scoring | | | |
| | | | Points Available | Points Awarded | Element Rating | Status |
| A. | Quality Programs / Management | 0 | 0 | 0 | ---- | Not Assessed |
| B. | Process Control - Shop | 0 | 0 | 0 | ---- | Not Assessed |
| C. | Quality / Inspection Department | 0 | 0 | 0 | ---- | Not Assessed |
| Impco Purchasing: Date (Signed): _____ Approved: _____ | | Total 0 0 #DIV/0! | | | | |
| Impco Quality: Date (Signed): _____ Approved: _____ | | | | | | |
| | | | | | | |

IMPCO SUPPLIER QUALITY SURVEY

RATING INSTRUCTION
 0 - Score a 0 if you have no documented procedure, documentation in place.
 2- Score a 2 if you have a written procedure and some deployment exist. - A documented Procedure must exist.
 3- Score a 3 if documented procedures exist and are audited on a normal basis. Must have evidence of audit schedule and audit results.
NR - The question is for informational gathering purposes only. Do not score any thing in the box. You must only fill information in below the question.

A - QUALITY PROGRAMS / MANAGEMENT

Questions Assessed 0 0
 Total Points Awarded 0
 Percent 0%



| No. | Questions about the Quality System | Rating |
|-----|---|--------|
| 1 | Is the company currently Registered to ISO or QS Is yes skip question #2 If no complete question #2 If Yes, please send copy of Certification <div style="text-align: right; margin-right: 100px;">Only Rate One</div> | |
| 2 | Are there any Quality Procedures in-place? | |
| 3 | Are the procedures on a audit schedule? | |
| 4 | Does the supplier have Impco orders filed and maintained properly/orderly? | |
| 5 | Are there procedures in place to review pricing, delivery, engineering change revision? | |
| 6 | Supplier has the ability to receive Impco drawings, P.O.'s standards, etc. electronically? <i>Supplier to answer below.</i> <div style="border: 1px solid black; height: 30px; width: 100%; margin-top: 5px;"></div> | NR |
| 7 | Does the supplier have a program to control internal and customer drawings? | |
| 8 | Is there a formalized documented process for release of design changes? | |
| 9 | Does the supplier have any job training programs? <i>Supplier to answer below.</i> <div style="border: 1px solid black; height: 30px; width: 100%; margin-top: 5px;"></div> | NR |
| 10 | Are there measurables in-place to review quality and delivery? | |

IMPCO SUPPLIER QUALITY SURVEY

B - PROCESS CONTROL - SHOP

Questions Assessed 0 0
 Total Points Awarded 0
 Percent 0%

| No. | Questions about the Quality System | Rating |
|-----|---|--------|
| 1 | Is there a routing system in place for all manufactured parts? | |
| 2 | Are there documented work instructions for all tasks? | |
| 3 | Is S.P.C. being used to control processes or can they be implemented for future business? <i>Supplier to answer below.</i> <div style="border: 1px solid black; height: 40px; width: 100%; margin-top: 5px;"></div> | NR |
| 4 | Is there a documented preventative maintenance program for all machines? | |
| 5 | Is there a documented system in-place for first piece approval process for all set-ups? | |
| 6 | Does supplier promote good work environment practices? (cleanliness, lighting, work space) | |
| 7 | Is there a safety program in place? <i>Supplier to answer below.</i> <div style="border: 1px solid black; height: 40px; width: 100%; margin-top: 5px;"></div> | NR |
| 8 | List the types of machines. <i>Supplier to answer below.</i> <div style="border: 1px solid black; height: 40px; width: 100%; margin-top: 5px;"></div> | NR |

Appendix B

IMPCO Technologies, Inc

3030 South Susan Street
 Santa Ana, CA 92704-6435
 Tel: 714-656-1200
 Fax: 714-656-1403
 www.impco.ws

PURCHASE ORDER

Purchase Order No.

Bill To: Impco Technologies, Inc.
 3030 South Susan Street
 Santa Ana, CA 92704-6435

| | | |
|--------------------|------------------|-----------|
| Number 15885 OP | Date 3/4/2003 | Page 1 |
|--------------------|------------------|-----------|

Supplier: XXXXXX Company ABC
 123 ABC Drive
 Cerritos CA 90703

Ship To: Impco Technologies, Inc.
 3030 South Susan Street
 Santa Ana, CA 92704-6435

Special Notes must be followed.

Buyer: Rose Hedrick
 Terms: Net 45 Days

FOB:
 Carrier:

Contact Name:

*****SPECIAL NOTES*****

- 1) Impco Technologies, Inc. standard Purchase Order terms and conditions apply to this Purchase Order and can be viewed at www.impcotechologies.com
- 2) Please acknowledge receipt of this Purchase Order and return by fax or e-mail.
- 3) Suppliers must manufacture according to blue prints and/or specifications. Parts not meeting such requirements may be subject to rejection and returned to seller at the seller's expense.
- 4) Suppliers are required to comply 100% with the Supplier Quality Manual in their possession and viewable at www.impcotechologies.com
- 5) Seller must notify IMPCO Purchasing in writing of any anticipated part discrepancy due to improper tooling prior to beginning performance and await IMPCO's response.
- 6) Corrective action notice (CAR's), when applicable, shall be dispositioned from IMPCO Purchasing to resolve part discrepancies. Suppliers are to return completed CAR's by fax, mail or e-mail by the due date to the attention of Purchasing.
- 7) Shipments received without material certification, certificate of conformance, and/or packing slip may be subject to return at the seller's expense.
- 8) Material data safety sheet is required with initial shipment.
- 9) Purchase Order price shall remain fixed throughout the duration of this contract. Seller will invoice the exact prices identified herein. Invoices not matching PO prices may be returned to sender.
- 10) There is a maximum weight limit of 50 lbs per box. Please make sure your company complies with this requirement.
- 11) For shipments over 100 lbs, please contact Cerasis at 800-734-5351 for carrier information. For shipments below 100 lbs, ship UPS collect, use account # 917998.

*****PLEASE ACKNOWLEDGE RECEIPT OF THIS ORDER AND RETURN BY FAX OR E-MAIL*****

| <u>Line</u> | <u>Amd No</u> | <u>Description/ Part Number</u> | <u>QTY</u> | <u>Account Number</u> | <u>Unit Price</u> | <u>Extended Price</u> | <u>DATE</u> |
|-------------|---------------|---------------------------------|------------|-----------------------|-------------------|-----------------------|-------------|
| 1.000 | | Valve | | | \$XX.XXX | \$XXX.XXX | X / XX |

Parts must meet this drawing revision

Shipment must meet this delivery date

Total Order XXXXXXXX

Purchasing Agent:

Impco:

| | | |
|--------------|----------------------|-------------|
| Buyer | Authorization | Date |
|--------------|----------------------|-------------|

Supplier Acknowledgement:

| | | |
|----------------------|--------------|-------------|
| Authorization | Title | Date |
|----------------------|--------------|-------------|

Supplier must sign and return back to purchasing

Appendix C

Purchasing Data Transfer and Acknowledgement Form

Issued To: _____ Date: _____

Issued From: _____

Part Number: _____

Part Name: _____

Drawing Number: _____

Current Revision: _____ New Revision: _____

Instructions:

Attached is a new revision of the above IMPCO Specification. Update your in house documentation to reflect this revision. Sign and return to IMPCO within 5 days to the attention of the buyer of said part number.

IMPCO's drawings and specifications are their property and are furnished to the supplier for the manufacturing of IMPCO product. These drawings shall remain the property of IMPCO and be considered IMPCO's private and confidential information. This information and drawing shall not be given to others not having a need-to-know or used by the supplier for its own purpose.

Supplier Input:

1. What is required to make this change? (ie. tooling modification, fixture change, material, etc.)

2. When can this change be implemented?

3. Will the following open purchase orders affect this change?

4. Will this change affect work in Raw Material, Work in Process or Finished inventory?

5. When will we receive parts to the latest print level along with first article data/part?

6. Does this change affect current pricing of this part? If so, how much?

Current pc price: _____ Revised pc price: _____

Tooling or fixture costs: _____

Signed: _____

Title: _____ Date: _____

Company: _____

Please fax back to the purchasing department when completed

Appendix D

CAR ID:

IMPCO Corrective Action Request

IMPCO Supplier : Please respond to this CAR by faxing back to Impco Purchasing

Date:Supplier:

PO ID:

Part ID:Description:

Drawing

Date Due:Rev.

New Date Due:

Non-conformance (Describe non-conformance and specify requirement)

Interim-Containment (Action taken to contain non-conformance).


Root Cause : (Identify the root cause of each non-conformance item)

Corrective Action: (Action taken to correct non-conformance)

Preventive Action: (Action taken or planned to prevent cause recurrence)

Signature : _____ Title : _____ Implementation Date _____

Appendix E

| | | | | | |
|---|----------|---|-----------------------------------|---|--|
|  | | Request for Deviation | | | |
| <small>Instructions: Complete the first section below, sign and date the form, then submit the request to IMPCO for review and disposition. The dispositioned form will be returned to the originator. Supplier originators submit the completed form to the IMPCO Purchasing Department. IMPCO Cerritos or Sterling Heights originators submit the completed form to Document Control.</small> | | | | | |
| Originator's Name: | | Originator's Company: | | Originator's Phone #: | IMPCO Buyer's Name: |
| Part Number Affected: | | | Part Name: | | Drawing Number & Rev.: |
| Purchase / Work Order Number: <i>(If applicable)</i> | | | Quantity: <i>(If applicable)</i> | | % Defective: <i>(If applicable)</i> |
| Description of Deviation: | | | | | |
| Reason for Deviation: | | | | | |
| Corrective Action Taken: | | | | | |
| Originator Signature: | | | | | Date: |
| IMPCO Review and Disposition | | | Purchasing Acknowledgment: | | |
| Disposition: <input type="checkbox"/> REJECTED | | APPROVED | | <input type="checkbox"/> LIFE OF THE TOOL | <input type="checkbox"/> LIFE OF THE PART |
| | | | | <input type="checkbox"/> LIFE OF THE ASSEMBLY | <input type="checkbox"/> WORK ORDER OR PO. |
| | | | | | <input type="checkbox"/> OTHER(see Disposition comments) |
| Disposition Comments: | | | | | |
| Engineering: <small>(Not Req'd for part shortages)</small> | Quality: | Tech. Service: <small>(Not Req'd for part shortages)</small> | Document Control: | Disposition Date: | Expiration Date: |
| IMPCO Technologies Inc., | | | | | RFD #: |

Appendix F

Supplier Name: _____

CERTIFICATE OF CONFORMANCE

This is to certify that the parts referenced below have been manufactured, tested and inspected in accordance with all IMPCO drawings and specifications:

Purchase Order: _____

Part Number: _____

Quantity: _____

Drawing Revision: _____

Material Specification: _____
(If Applicable)

Finish Specification: _____
(If Applicable)

Other Special Process: _____
(If Applicable)

Authorized Signature

Date

F10.4.01-03-A, August 30, 2002

Supplier Name: COMPANY ABC

CERTIFICATE OF CONFORMANCE

This is to certify that the parts referenced below have been manufactured, tested and inspected in accordance with all IMPCO drawings and specifications:

Purchase Order: IM178999

Part Number: B1-19999

Quantity: 2000

Drawing Revision: C

Material Specification: 384Aluminum Alloy per ASTM B85
(If Applicable)

Finish Specification: Hard Anodize per Mil A 8625 Type III Class 1, Clear
(If Applicable)

Other Special Process: 1014 DF/617 Grey Xylan Coating per ASTM a52
(If Applicable)

John Doe

Authorized Signature

1/17/2002
Date

F10.4.01-03-A, August 30, 2002

EXAMPLE

EXAMPLE

Appendix G

Alloy 384 Certificate of Analysis

Heat Number 301 **Alloy** 384

| <u>ELEMENT</u> | <u>PERCENTAGE</u> | <u>Specification Range (minimum - maximum)</u> |
|----------------|-------------------|--|
| Silicon | Si 10.87 | 9.50 - 12.0 |
| Iron | Fe 0.92 | 1.3 Max |
| Copper | Cu 2.22 | 3.0 - 4.5 |
| Manganese | Mn 0.15 | .5 Max |
| Magnesium | Mg 0.07 | .1 Max |
| Zinc | Zn 2.21 | 3.0 Max |
| Nickel | Ni 0.07 | .5 Max |
| Chromium | Cr 0.04 | |
| Titanium | Ti 0.05 | |
| Lead | Pb 0.07 | |
| Tin | Sn 0.03 | .35 Max |
| OET | <0.50 | .5 Max |
| Aluminum | Al Remainder | Remainder |

Conforms to ASTM B85-99

Samples are analyzed on an optical emission spectrometer with current calibration status. Standards are traceable to NIST Standards.

WARNING: Metal may contain crevices that hold entrapped moisture which can explode when charged to a melting furnace. Dry and preheat all metal before charging it into the furnace. HANDLE WITH CAUTION.

Date: 1/10/2002

Customer: IMPCO Technologies


Part Number: T2-30996-038

Part Name: Body

Purchase order: 26458

Drawing Rev: E

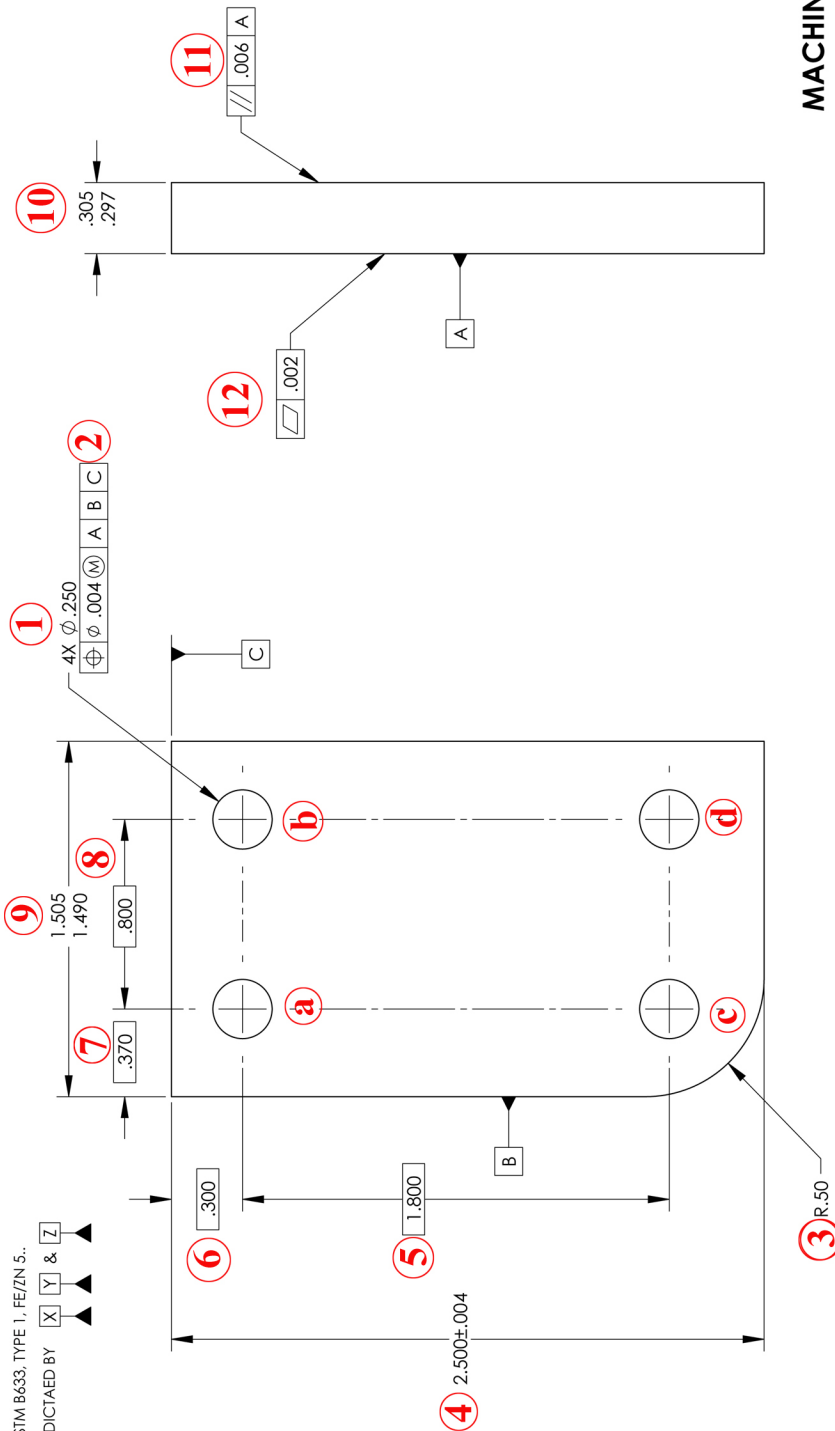
Quantity: 250

|  | | <h1 style="margin: 0;">INSPECTION REPORT</h1> | | | Requested By: | | |
|---|------------------------|---|--|--------------------------------|---|---------------------------------|-------------|
| Reason for Submittal: New Part | | | Submittal Version: First Submittal | | First Article ID Number: XXXXX | | |
| Part Number: B4-12345-001 | | Drawing Number: 12345 | Rev.: C | Description: BRACKET | | Supplier: ABC Company | |
| Inspector: Jane Smith | | Inspection Date: XX-XX-XXXX | P.O. Number: 12890 | | Cavity Number: | Tooling Number: | |
| Item # | Requirements | Tolerance | Actual Results | Deviation | Accept | Reject | Disposition |
| 1a | Ø.250 | ±.005 | 0.250 | | X | | |
| 2a | ⊕ Ø.004Ⓜ A B C | | .0028 | | X | | |
| 7 | .370 | | .371 | | | | |
| 6 | .300 | | .301 | | | | |
| 1b | Ø.250 | ±.005 | 0.250 | | X | | |
| 2b | ⊕ Ø.004Ⓜ A B C | | .0028 | | X | | |
| 7,8 | 1.170 | | 1.171 | | | | |
| 6 | .300 | | .301 | | | | |
| 1c | Ø.250 | ±.005 | 0.251 | | X | | |
| 2c | ⊕ Ø.004Ⓜ A B C | | .0028 | | X | | |
| 7 | .370 | | .371 | | | | |
| 5,6 | 2.100 | | 2.099 | | | | |
| 1d | Ø.250 | ±.005 | .254 | | X | | |
| 2d | ⊕ Ø.004Ⓜ A B C | BT=.013 | .0072 (ACCEPT WITH BONUS TOLERANCE) | | X | | |
| 7,8 | 1.170 | | 1.173 | | | | |
| 5,6 | 2.100 | | 2.102 | | | | |
| 3 | R.50 | ±.010 | R.50 | | X | | |
| Comments: | | | | | <input type="checkbox"/> Approved <input type="checkbox"/> Approved with Deviation <input type="checkbox"/> Rejected | | |
| Purchasing: (purchased parts only) | | Date: | If approved using deviation, record deviation # below: | | DISPOSITION <input type="checkbox"/> RTV :turn to vender <input type="checkbox"/> RTM return to machine shop <input type="checkbox"/> D resubmit with deviation request | | |
| Quality: | | Date: | Engineering: (only if rejected) Date: | | | | |

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NOTES: UNLESS OTHERWISE SPECIFIED

- 1. BREAK SHARP EDGES AND REMOVE BURRS.
- 2. MATERIAL: COLD-ROLLED CARBON STEEL, COMMERCIAL QUALITY PER ASTM A366.
- 3. FINISH: ZINC PLATE PER ASTM B633, TYPE 1, FE/ZN 5...
- 4. CORRELATED DATUMS INDICATED BY [X] [Y] & [Z]



| REVISION HISTORY | | | | |
|------------------|-------|-----|------|------------------------|
| REV. | EO # | SHT | ZONE | DESCRIPTION |
| C | 00654 | - | - | UPDATED HOLE LOCATIONS |

| DATE | BY | CHECKED |
|-------------|----|---------|
| DDMMYYYY | WC | ID |
| 23-DEC-2002 | | |

| KEY PRODUCT CHARACTERISTICS | |
|-----------------------------|-------------------|
| SAFETY/COMPLIANCE | ◆ FIT/FUNCTION |
| S/C CHECKPOINTS | ◇ F/F CHECKPOINTS |
| NO. & TYPE | DESCRIPTION |
| | RATIONALE |
| | PTS |

| APPROVALS | DATE |
|---------------------------|----------|
| DESIGNED BY: BJ HONNEYCUT | 12-23-02 |
| CHECKED BY: PATSY KLEIN | 12-23-02 |
| ENGINEER: SIGMUND FREID | 12-23-02 |
| Q.A.: JIM MITCHELL | 12-23-02 |
| MFG ENG: THE EAGLES | 12-23-02 |

| | |
|----------------|-----------------------|
| | |
| TITLE: BRACKET | |
| SIZE: B | PART NO. B4-12345-001 |
| DWG NO. 12345 | REV. C |
| SCALE: 2:1 | WEIGHT: - |
| SHEET 1 | OF 1 |

MACHINING SHOWN

THIRD ANGLE PROJECTION

INCHES

Supplier Inspection Data

| | | | | |
|---------------------------------|--------------------------------|-------------------------------|--------------------------------------|--------------------------------|
| Part Number: ABC-52-1 | Drawing Number: 52-1 | Drawing Revision: A | Supplier Name: XYZ Company | Sample Plan: 5 parts |
|---------------------------------|--------------------------------|-------------------------------|--------------------------------------|--------------------------------|

| | | TO BE COMPLETED BY SUPPLIER | | | | | | | |
|------|-----------------|-----------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------------------|--------------------------|--|
| Zone | Characteristics | Supplier-Actual Results | Supplier-Actual Results | Supplier-Actual Results | Supplier-Actual Results | Supplier-Actual Results | Pass | Fail | |
| C2 | .125 +/- .005 | 0.122 | 0.123 | 0.122 | 0.123 | 0.122 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| B1 | .063 +/- .005 | 0.063 | 0.063 | 0.064 | 0.062 | 0.063 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| B4 | .722 +/- .002 | 0.72 | 0.72 | 0.722 | 0.721 | 0.723 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | |
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| | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | |
| | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | |

EXAMPLE

This is to certify the part number above has been manufactured and inspected as required in accordance with the Impco drawing as stated above and certain dimensions recorded as required.

NOTE: Material and or Process Certs are still required with each shipment.



 Supplier Signature

10/2/2004

 Date