Industries, Inc.

SUPPLIER QUALITY MANUAL

Revision 6
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TABLE OF CONTENTS **PAGE**

I. Purpose

This manual defines the scope of the **Means Industries, Inc.** Supplier Quality Manual and provides a linkage of Means requirements to the clauses of the ISO 9001:2015 and the IATF 16949:2016 quality management systems standards, including applicable IATF Sanctioned Interpretations.

II. Scope

The **Means Industries, Inc.** Supplier Quality Manual references the applicable requirements of the ISO 9001:2015 and IATF 16949:2016 standards as they relate to supplier selection and management, including all applicable customer specific requirements.

4 CONTEXT OF THE ORGANIZATION

No further requirements

5 LEADERSHIP

No further requirements

6 PLANNING

No further requirements

7 SUPPORT

No further requirements

8 OPERATION

8.3.3.3 Special characteristics

MEM-003 Key Characteristic Designation Practices is the Means Document supplied as a supplement to this document for explanation and use of special characteristics.

8.3.4.4 Product approval process

PPAP SUBMISSION REQUIREMENTS

Please review and refer to the following requirements for submitting the following PPAP forms to the Means Propulsion Systems (MPS) plant. Please consult the PPAP individual at the other Means' plants for direction on requirements unique to each location.
AIAG format forms preferred. Any substitute form must contain all the same information at a minimum. Amsted Automotive, Propulsion Systems diamond designation explanation MEM-003 to be used as a general guideline but all diamond designations on the part drawing should be discussed during the APQP process and agreed upon for capability requirements before the supplier PPAP part run.
Means Industries, Inc. responsible product engineer reserves the right to request capability on other pertinent functional or assembly fit dimensions as determined necessary.

Part Roadmap

- Start with a readable part drawing and use the latest purchasing supplied revision level part drawing
- Numbering must flow left to right and top to bottom across the part drawing
- All dimensions on the drawing that can be measured require their own number
- All dimensions within spline data blocks that can be measured, need a number
- Not necessary to number dimensions in parenthesis, these are reference and normally the dimension is numbered somewhere else on the drawing
- Boxed basic dimensions that pertain to any drawing GD&T must be numbered
- All notes that have specific answers must have their own number.
- General tolerances or general information notes do not require numbering.

Dimensional Report – Part Layout

- Six-part layouts required. If there are two cavities measure three from each cavity. If more than two cavities, a minimum of two-part layouts per cavity is required.
- List part number and part drawing latest revision level in title block
- Separate answer for each part for each roadmap number.
- If a dimension pertains to many locations, list how many within the specification line after the specification; ex 2.59mm +/-0.05 (12x)
- If a dimension pertains to many locations, the measured spread should be listed (ex 0.22 – 0.32).
- Record the measurement found for all boxed basic dimensions, no tolerance is needed and mark them as OK. These basic numbers are needed in calculation of the pertaining GD&T answer which may or may not be good. It will be informative in determining which direction the GD&T answer is leaning.
- If raw material parameters are numbered answer “See Material Report” and record the results, there.
- If a characteristic is verified with a special gage, list as “Passes Gage or Fails Gage”.
- Check or X mark the OK or Not OK box to the right for every dimension
- This report to have a completed signature block with date at the bottom.

Material Report – CFG-1004

- List part number and part drawing revision level according to the title block
- List material chemicals with tolerance spread
- List all raw material measurements on this form
- List results of all material testing on this form
- This report to have a completed signature block with date at the bottom.

IMDS – International Material Data System

- Part weight must match the weight listed on the PSW and listed in kilograms to four decimal places

Process Flow Diagram

- List part number and part drawing revision level according to the title block
- Provide the most recent Process Flow date of update

Process Control Plan

- List proper part number and part drawing revision level according to the title block
- Provide the most recent Control Plan date of update in title block
- Separate Safe launch or GP-12 control plan or process step required on initial submittals
- All road mapped characteristics must be on control plan
- Annual layout process line required calling out all dimensions
- Annual capability studies are required for all white and black diamonds at the time of annual layout submission (See 8.6.2).
- Sufficient Alarm Limits shall be established for escalation of abnormal conditions and shall match the reaction plan identified in the product's control plan (GM CSR 9.1.1.1)
- Whereas the control plan identifies a separate document for the reaction plan, the supplier shall submit the reaction plan document with the PPAP package

PFMEA

- List proper part number and drawing revision level in title block
- Provide the most recent PFMEA date of update in title block
- Amsted Automotive, Propulsion Systems input needed to determine all severities pertaining to part failures
- Note: Where PFMEA are supplier proprietary, an on-site review or separate document outlining severity, risk, and detection for every dimension on the Road mapped print shall be submitted with the PPAP package.

Capability Studies

- Submit the Mini-Tab "Six-Pack" Charts (or equivalent) with PPAP.
- 125 pc requirement unless discussed and determined otherwise
- Each capability study header should list PN, description, check dimension and date of study
- Each study report should stand alone with all pertinent information when printed.
- Minimum info within the study to be specification, high, low, histogram, CP, Cpk, PP, Ppk, N & P Value

GR&R Studies

- Required for all variable and attribute measuring instruments for gages used within the control plan. Each gage or measurement device used should be discussed in the APQP process for necessity of a GR&R study.

Material, Heat Treat and process certifications

- Submit copies

Any company or lab certifications

- Submit copies of certifications
- You must have lab certification and lab scopes, but submittal not required, retain them at your facility
- Laboratories used for inspection, test, or calibration services require accreditation to ISO/IEC 17025 or its national equivalent (e.g., CNAS-CL01 in China) or be pre-approved by Means' engineering and quality.

PSW – Part Submission Warrant

- Means part number and part drawing revision level
- All lines filled in. If not applicable use NA

- Part weight must match what is within the IMDS information
- List IMDS approved report number on initial submittals and on any PPAP's where the IMDS information has changed
- Reason for Submittal needs a box checked
- Proper level checked
- Production rate for the equipment being PPAP'ed must be filled in and at a minimum, must meet the volume requirement thru the production year in which this PPAP is intended. Means designated Run at Rate Capacity Form shall be submitted (e.g. Means' Customer Specific Forms to be used or otherwise specified). Note on-site run at rate to be conducted with Means representative unless waived in writing.
- Signature with date of submittal required

8.4.2 Type and extent of control

Suppliers to Means must provide processes, product and services that do not adversely affect the organization's ability to consistently deliver conforming products and services to its customers according to this Supplier Quality Manual and other controls as specified by Means purchasing and/or quality.

8.4.2.3 Supplier quality management system development

Valid Third-party certification IATF 16949 by an IATF-recognized certification body or ISO 9001 issued by a certification body bearing the accreditation mark of a recognized IAF MLA (International Accreditation Forum Multilateral Recognition Arrangement member and where the accreditation body's main scope include management system certification to ISO/IEC 17021) is required based on the suppliers' processes and products and their effect on process and product quality (risk). At a minimum, suppliers must be certified to ISO 9001 and follow the QMS development progression as defined in IATF 16949 with the ultimate objective of becoming certified to IATF 16949.

8.4.2.4.1 Second-party audits

Second-Party Audits may be conducted for the following, as applicable:

- Supplier risk assessment
- Supplier monitoring
- Supplier QMS development
- Product audits
- Process audits
- Follow up from open issues

Risk is evaluated using product safety and legal requirements, supplier scorecard metrics and QMS certification level.

8.4.3.1 Information for external providers - supplemental

Suppliers to Means shall pass down all applicable legal requirements and special product and process characteristics to their suppliers and require the same of their suppliers, down the supply chain to the point of manufacture.

8.5.6.1 Control of changes – supplemental

Any changes requested in product or process must be submitted to the Means quality engineer using QF-18 Deviation and Change Request Form electronic process see website link (https://app.smartsheet.com/b/form/e951ef3fedc5463f877c6a0bb200e00f) for evaluation by a cross-functional team. This Means review includes the review of all applicable Means customer specific requirements regarding change control. No changed product or process is to be shipped without the signed approval of the Means team. If there is *any doubt* about whether or not to submit a QF-18 form, the supplier is to submit the form for evaluation.

Suppliers to Means shall communicate with the appropriate Means quality personnel when shipping changed product. Suppliers shall use the QF-25 Supplier Change Control STOP Template to alert Means receiving personnel and to help Means internally control the use of changed product. All fields on the form must be filled in and the form printed in color to be sure the red is visible. Completed forms are to be attached to all four sides of each container of changed product.

8.6.2 Layout inspection and functional testing

Annual capability studies are required for all white and black diamonds at the time of annual layout submission.

8.7.1.1 Customer authorization for concession

Suppliers to Means shall submit QF-18 Deviation and Change Request Form electronic process see website link (https://app.smartsheet.com/b/form/e951ef3fedc5463f877c6a0bb200e00f) prior to further processing whenever the product or manufacturing process is different from that which is currently approved, including for repair of nonconforming product.

9 PERFORMANCE EVALUATION

9.1.2 Customer satisfaction

Suppliers are required to meet our schedule needs and quality levels meeting all specifications and technical support.

Suppliers are expected to use the Means supplier scorecard for both Quality and Delivery scores independently to improve performance based on defined criteria below:

95 % - 100% - A preferred supplier

- Strong consideration for new business opportunities

90% - 94% - Performance is Satisfactory

- Improvement is required for new business consideration

80% - 89% - Performance is not acceptable

- Corrective action required
- New business consideration is subject to results of corrective actions.

70% - 79% - Performance is unsatisfactory

- Re-survey required. Consideration for possible re-sourcing of present business.
- No new business consideration.
- Documented improvement is required within thirty (30) days.

Below 70% - Lack of performance. Immediate corrective action required

- Re-sourcing will be required if significant document, verifiable improvement is not made within sixty (60) days.
- No consideration for new business.
- Weekly meetings for review of all open actions will be set up by Means supplier quality engineer (or designate) to continue until performance improves.

9.2.2.3 Manufacturing process audit

Suppliers are required to submit annual process audits as required by the nature of the product and process suppled to Means, including those processes supplied by tier suppliers. These include, as applicable:

AIAG Special Processes:
CQI-9 Heat Treat System Assessment
CQI-11 Plating System Assessment
CQI-12 Coating System Assessment
CQI-15 Welding System Assessment
CQI-17 Soldering System Assessment
CQI-23 Molding System Assessment
CQI-27 Casting System Assessment

10 IMPROVEMENT

10.2 Nonconformity and corrective action

As new suppliers are approved through the supplier selection process, the Means Supplier Quality Engineer (or designate) will notify quality contacts for setup into the correction action software QIT.

Upon the notification of a SCAR (Supplier Corrective Action Report) from Means, timing begins and is tracked as follows:

Initial Response and Containment - 24 hrs
Root Cause Identified - 5 calendar days
Corrective action in place - 15 calendar days

The Means supplier quality engineer (or designate) sends a summary matrix (or similar summary) to each supplier for tracking and follow up as shown below:

SCAR #	DATE WRITTEN	Issued To	Means PN & Nam	PROBLEM DESCRIPTION	Initial respons	Containment	Root Cause	Corrective Action	Verification 30 days	Verification 60 days	DATE CLOSED	COMMENTS
SCAR-17-0013	8/14/2017	ABC Company	12345	Parts are mis-identified	8/15/17	8/15/17	8/20/17	8/29/17				

CERTIFIED SHIPMENTS and APPROVED DEVIATIONS

If certification of shipments is required, this will be noted on the SCAR issued by Means. Attach placards to the outside of each container with the SCAR number and a clear description of the issue to which you are certifying. It is acceptable to have more than one SCAR on a placard. Send placards on ***the first certified shipment only.*** Remove all placards from dunnage before returning to Means. If nonconforming parts are found in certified CS1 material or certified material not shipped within 24 hours (or next scheduled shipment), Amsted shall require third-party CS2 certified material by an agreed upon third party between supplier and Amsted.

For approved deviations, attach placards stating the approved deviation number, a description of the reason for deviation and the expiration date. Send placards on ***the first certified shipment only***. Remove all placards from dunnage before returning to Means.

REVISION HISTORY

The two most recent revisions are listed below. Further revision history is available in electronic archived documents.

Rev. #	Revision Date	Rev. By	Approved	Comments
6	11-12-21	R. Barber	R. Barber	Added additional detail to PPAP Submission Requirements, performance evaluation
5	10-29-19	J. Close	T. Duane	Per CAR-53 added consideration of service suppliers that may affect product quality. Added clarification of requirements for valid QMS certificates (CAR-55).