Heartland Automotive, L.L.C.

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Supplier Quality Manual

Revision 1 issued 09-06-2016.
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Revision 4 issued 7-29-2020

Note: Current and Prospective Heartland Suppliers can view a Controlled Copy of this manual on our Website: (www.hauto.net**)**

All printed versions of this manual are uncontrolled.

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General Information

The Heartland Automotive Supplier Quality Manual has been issued in accordance with the requirements of ISO-9001: 2015 and IATF16949:2016. Heartland Automotive must ensure all providers of goods and services incorporated into Heartland's products are integrated within the scope of our Quality Management System. Heartland will continuously review its supplier management process, and make revisions as needed to improve our business and to support compliance with the latest versions of these international standards.

All suppliers of goods and services affecting the conformity of Heartland Automotive's products are expected to understand and implement the provisions of this Supplier Quality Manual, with respect to the goods and services they deliver to Heartland.

For additional information or questions, please contact Heartland Automotive Quality Department.

The Original copy of this Manual is maintained by Heartland Automotive Quality Department. Suggestions for changes should be communicated to your assigned Buyer or the Heartland Quality Department.

QUALITY POLICY

Heartland commits to providing world-class automotive parts, by:

Honoring our commitment to environmental protection and pollution prevention
Ensuring compliance to customer and regulatory requirements
Achieving quality - the first time, every time
Reviewing and continually improving our Management Systems
Training our associates in their roles to improve environmental and quality performance

HEARTLAND / SUPPLIER BUSINESS RELATIONSHIP

A clear understanding of the relationship between Heartland Automotive LLC (Heartland) and its suppliers is essential to minimize miscommunication and misunderstanding. The following points highlight, but do not limit, this relationship:

1) Business relationships between Heartland and its suppliers are established by Purchasing with a Master Agreement. Any difference between the Purchase Order and the Supplier's quote shall be addressed in writing to Heartland Purchasing. The Supplier shall not proceed until these

differences have been resolved. Any remaining differences must be documented in a Purchase Order amendment. Verbal communication of requirements is not acceptable.

2) Prototype parts are to be treated as salable product. Prototype submission and approval requirements apply per the provisions of this manual. Prototype parts must be distinguished and labeled as such. Material supplied for Fit Try (FT) or later trial events may be used to complete PV (Product Validation) testing for the Heartland products they are incorporated into. Some of the Heartland parent products may be safety-rated. Therefore, supplier trial parts for "FT" or later events are required to be "off-tool / off-process" parts, meaning that the production process used to produce them must be as intended for mass production, including the completion and incorporation of product from all mass-production tooling cavities into the finished product supplied for the trial. The blank Trial Parts Tag is available for download in the Supplier Quality section of the Heartland Automotive website (www.hauto.net).
3) Record retention requirements for inspection and test documents relating to work performed under the Purchase Order is five (5) years after completion of the Purchase Order for General Parts, and 15 years for Safety-related parts or calibration records for measurement devices, or as otherwise specified by Heartland. Subject records are to be made available to Heartland upon request.
4) Suppliers to Heartland must have established a quality management system certified to ISO 9001 and compliant with the provisions of this quality manual. In addition, suppliers must ensure that the quality system requirements defined by ISO 9001 and this quality manual are implemented by their sub-suppliers.
5) APQP and PPAP are critical processes. If the Supplier elects to use sub-suppliers for any portion of the manufacturing process, including inspection work, those sub-suppliers must be identified on the PSW form. Once the manufacturing process is approved via APQP and Production Part Approval Process (PPAP), the Supplier may not under any circumstance change the manufacturing process, without prior Heartland Quality Department approval obtained via the Process Change Request (PCR) process described in this Manual. This includes but is not limited to sub-suppliers, equipment, materials, machines, tools, processes or drawing / specification characteristics, as well as movement of equipment or reprocessing of parts. The blank PCR form is available for download in the Supplier Quality section of the Heartland Automotive website (www.hauto.net).
6) In the event the product does not meet Heartland requirements (drawings, specifications, Quality requirements, etc.) a written deviation request and appropriate Heartland formal approval is required, prior to shipment of affected product. The blank deviation form is available for download in the Supplier Quality section of the Heartland Automotive website (www.hauto.net).
7) If the Supplier discovers that non-compliant or suspect product has already been shipped to Heartland, the Supplier must immediately notify the Heartland Quality Department by email. This notification must include details of the product condition, the quantity of suspect product, lot or identification numbers and dates shipped. The Supplier must take immediate containment actions to prevent further shipment of non-compliant or suspect product and notify Heartland of such containment actions. The blank form for this purpose (Notice of Shipment of Nonconforming Product) is available for download in the Supplier Quality section of the Heartland Automotive website (www.hauto.net).
8) If the Supplier delivers product to Heartland which does not meet all product requirements or those of this manual, payment for that product may be delayed or withheld.
9) In the event the Supplier finds drawing or specification errors, you should immediately contact your Buyer and / or the Heartland Quality Department. Heartland will make every effort to address these concerns in a timely manner.
10) Heartland is committed to working with Suppliers during pre-production planning to resolve

issues, improve product quality and reliability and reduce cost. The Supplier shall create and utilize a detailed project plan for program management for all new part development.

i. Supplier must have at least one individual designated as responsible for generating and maintaining the project plan.
ii. This project plan will provide a description of each step in the design, development, preparation, procurement, pre-production of equipment (tooling & gages), pre-production of process, trial runs, initial sample, capability studies, APQP steps, PPAP submission, Supplier Self Assessments, etc.
iii. Each detailed description shall include the duration, start date and finish date. This Supplier project plan shall be prepared for each part number the Supplier is committed to provide to Heartland.
iv. This Supplier project plan shall be furnished in electronic form to the Heartland Purchasing and Quality Departments within two weeks of official kick-off notification from Heartland. Updates shall be provided on a monthly basis or as requested.

11) Heartland will schedule supplier visits to review the project plan and progress for each part number.

ISO 9001 / IATF 16949 AND THIS QUALITY MANUAL:

In addition to having a plan in place to obtain certification to IATF 16949:2016, suppliers must comply with the requirements of the latest revision of ISO 9001:2015. The purpose of this Quality Manual is to clarify and expand those requirements.

Heartland Suppliers are required to flow-down the requirements of this manual to your own suppliers.

Suppliers can obtain additional reference publications from the Automotive Industry Action Group (AIAG). These publications should be treated as resources to establish, implement and maintain an effective quality system and assist the supplier in meeting the requirements set forth in this manual.

The following documents are recommended as Quality System development resources for Suppliers:

Advanced Product Quality Planning and Control Plan Manual (APQP)

Potential Failure Mode and Effects Analysis (FMEA)

Measurement Systems Analysis Reference Manual (MSA)

Statistical Process Control Reference Manual (SPC)

Production Part Approval Process (PPAP)

Effective Problem Solving

Guidelines for Auditing Management Systems

Molding System Assessment (CQI-23)

Main Body

1.0 Advanced Product Quality Planning (APQP)

The Supplier shall designate internal multi-disciplinary teams to prepare for production of new or changed products.

The APQP Process must begin immediately upon issuance of a purchase order or a letter of intent. This is to ensure that delivered parts will meet all specifications set forth by Heartland.

The Supplier must submit an organization chart (revision-dated), which identifies individuals, title, contact information, organization, and reporting structure, particularly for the Quality Organization. If an organization has a management change, the Supplier shall submit a revised/dated copy of the Organizational Chart in a timely manner.

2.0 Project Schedule

Based on the master schedule furnished by Heartland, the supplier shall prepare a schedule for its own project management. This project plan shall include major milestones related to the Heartland schedule, internal milestones and targets for achieving the Heartland schedule, and the timeline for submission of the required forms referenced in this manual. The Supplier must provide updates to Heartland as requested.

3.0 Feasibility Study

The Supplier shall complete the **"Supplier Feasibility Checklist"** (IQMS #336) for new or changed parts. The completed Feasibility Checklist* must be supplied to Heartland prior to Supplier's quote. It should be resubmitted with any change to the items listed above, especially if the change affects pricing, capacity, shipping integrity or part/material specifications. The checklist shall be completed for internal parts and parts purchased by the supplier (raw parts, subcontracted processing, production or inspection). Special attention and additional resources shall be applied as necessary for any items determined to be "Feasible – with changes." Any exceptions noted in the Feasibility review must be described in detail and communicated to the Heartland Purchasing and Quality Departments.

* or equivalent AIAG format. A blank copy of the Heartland document is available for download in the Supplier Quality section of the Heartland Automotive website (www.hauto.net).

4.0 Design Control

Design Records

The supplier shall maintain records of engineering changes that affect the finished product supplied to Heartland. These changes shall include design specifications, raw material, process parameters and validation/reliability testing methods. This log, using a format selected by the supplier, must be submitted with PPAP and other significant process events. It will be maintained at the supplier facility as a controlled document.

Design and Development Process (for Design-Responsible Suppliers)

The supplier shall establish and maintain documented procedures to control and verify the design of the product in order to ensure that the specified requirements are met. The supplier shall prepare plans for each design and development activity. The plans shall describe or reference these activities, and define responsibility of their implementation. The design and development activities shall be assigned to qualified personnel equipped with adequate resources. The plans shall be updated, as the design evolves.

Design Input (for Design-Responsible Suppliers)

All Heartland, Shigeru and FHI requirements, product life, reliability, durability and maintainability objectives shall be included in design inputs.

Design input requirements relating to the product, including applicable statutory and regulatory requirements, shall be identified, documented and their selection reviewed by the supplier for adequacy. Incomplete, ambiguous or conflicting requirements shall be resolved with those responsible for imposing the requirements. Design input shall take into consideration the results of any contract review activities.

Validation of Design Outputs (for Design-Responsible suppliers)

Design validation follows successful design verification and shall be performed to ensure that product conforms to Heartland-defined needs and requirements.

The validation process shall follow a defined qualification program and shall be performed in conjunction with Heartland timing requirements.

5.0 Failure Mode and Effect Analysis (FMEA) for Design and Process

The most important task of the Supplier in quality planning is to develop a “Zero Defect Strategy” and to take all necessary measures to achieve this objective. The failure analysis of the FMEA contributes considerably to the success of the zero-defect strategy.

A **Process Failure Mode and Effects Analysis (PFMEA)** must be carried out in accordance with AIAG guidelines to examine possible defect risks in terms of severity to end-user, probability of occurrence, and potential for detection in your process. The PFMEA must incorporate all processes, including delivery of the product to Heartland, and appropriate controls should be documented and implemented to mitigate the potential failure modes identified. The PFMEA shall be completed within the first one-third (1/3) timeframe of product development, and a copy must be forwarded to your Heartland Supplier Quality Engineer (SQE) for review as part of your PPAP submission package.

The PFMEA must be revised on the following occasions:

* Development/production of new parts
* Introduction of new manufacturing processes
* Changes to parts or processes
* Defect occurrences and rejections from the customer

Particularly important is the revision of the FMEA when a defect occurs.

Design FMEA (DFMEA):

A DFMEA must be completed for all components for which the Supplier is design-responsible.

6.0 Warranty Cost-Sharing Agreement (design-responsible suppliers)

Design-responsible suppliers may be requested by Heartland Purchasing to participate in a Warranty Cost-Sharing Agreement. This agreement will be executed by your Heartland Buyer as part of the Quoting and Purchase Order process.

7.0 Control Plan

Product Characteristics must be identified in a **Control Plan** developed in accordance with AIAG guidelines, and shall be monitored to maintain process control during prototype, pre-launch, and production phases. The supplier's control plan shall identify all characteristics to be checked with the appropriate inspection devices for each operation, along with the inspection frequency and sample size, the type of inspection documentation, and reactions to be taken in the event nonconformities are found. A copy of your Control Plan must be forwarded to the Heartland Quality Department as part of your PPAP submission, and shall be maintained through the life of the program and made available for review upon request.

8.0 Inspection Standard and Special Characteristics

The supplier shall apply appropriate methods to control all product characteristics.

The supplier shall complete and submit the **"Supplier Inspection Standard"** (IQMS #340) to Heartland Quality and secure approval prior to PPAP submission. This document must capture all part characteristics detailed on the Control Plan, as well as the method of measurement and the tolerance. A **Ballooned Drawing** of the part with all drawing characteristics numbered according to the same sequence as the Inspection Standard must also be included with the form. Heartland will use this document for PSW authorization and incoming product control related to these characteristics. This form may also be used for other instances requiring part dimensional data submission to Heartland.

Any Special Characteristics designated on the part drawing require capability studies with short term (PpK) capability of at least 1.67 and long term (CpK) capability $\geq$1.33 and should be addressed in the Supplier's Control Plan. Continuous Improvement must be implemented for Special Characteristics to maintain the required process capability.

However, based on product performance requirements and the nature of the process, the supplier may not be required to perform capability studies for specific product characteristics. These will be communicated to the supplier, as applicable, by the Heartland Quality Department once agreement has been reached with the Design department.

9.0 Process Instructions

Process Instructions shall provide sufficient detail for all personnel who have responsibility for the quality of product. The Supplier must assure that process instructions include sufficient information for the individuals performing the assigned tasks. These instructions include but are not limited to:

* Machine set-up and first-piece checks
* Operator instruction and equipment operation
* Manual part processing
* Operator/inspector inspection
* Material handling
* Packaging and product identification
* Shipping
* Safety / Personal Protective Equipment (PPE)
* Environmental Aspects

Process instructions and appropriate training of all personnel shall be completed and documented prior to start of mass production.

10.0 Measurement, Testing, and Monitoring resources

All measuring devices used to judge conformity of product deliverable to Heartland must be under the control of a suitable accuracy management system which identifies the calibration status of the gauge (traceable to national standards) and the calibration interval. The Supplier must assure that operators and other affected personnel are able to quickly visually verify the calibration status of measuring and monitoring equipment prior to use. Gage R&R studies shall be performed on all inspection instruments used for Heartland products, in accordance with the provisions of the AIAG MSA manual, and utilizing actual production appraisers in the conduct of the study. These studies shall be maintained for review upon request.

11.0 Preventive & Predictive Maintenance

Preventive and predictive maintenance is critical to ensure the continued delivery of conforming product. A preventive maintenance schedule (including maintenance intervals and the extent of the maintenance performed) must be developed and cover all machinery and tooling used to produce Heartland product. This schedule should assign intervals for service and provide an emergency strategy in the event of machine failure. The completion of preventive maintenance and any repairs must be documented in writing. This documentation must be available for Heartland review, and will be included as part of your system audit assessment. Responsiveness to tooling PM surveys will also be an input to your supplier scorecard rating.

12.0 Purchasing

Suppliers to Heartland are required to share information with their sub-suppliers which is pertinent to complying with the quality requirements of this manual. This information may include, but is not limited to:

* Drawings and Specifications
* DFMEA's/PFMEA's and Control Plans
* Quality planning requirements (SQ Manual, project plans, master schedules)
* Engineering and Process change information
* Results of Corrective Actions

The supplier shall also conduct audits to assess the subcontractor's quality management system and production capability. Any deficiencies noted during the audit require corrective action with an implementation schedule. Audit results and completed corrective actions must be kept on file at the Supplier's facility and be available for review by Heartland upon request.

13.0 Packaging and Logistics

The Supplier and the Heartland Production Control Packaging department are responsible for the design and approval of part packaging. However, it is the Supplier's responsibility to ensure that their parts adhere to cleanliness and contamination specifications called out on the drawing and in other technical standards. To prevent damage to product during transport, appropriate means of transport and handling must be planned. This will be negotiated between the Supplier and Heartland Production Control.

Further details about supplier packaging can be found in the **Heartland Supplier Packaging Manual**, available from the Heartland Production Control department.

14.0 Personnel

The supplier must provide for the training and qualification of all associates with responsibility for producing Heartland product. This includes management, engineering, operations and quality functions. Evidence of training and verification shall be made available upon request. As part of your production-planning activity, a staffing plan must be developed to ensure the Supplier's ability to meet production requirements. Planning must be carried out in such a way that sufficient staff capacity is available prior to start of production.

15.0 Prototype Product and Pre-Production Samples

The supplier shall use the same subcontractors, tooling and processes for making prototype or pre-production parts, as those intended for mass production.

The supplier shall perform dimensional inspection on each lot of sample product as directed by your Heartland Supplier Quality Engineer (SQE).

Pre-production samples must be identified by placing a **Supplier Trial Parts Tag** on each container / box of parts (this tag is available for download in the Supplier Quality section of the Heartland Automotive Website).

Material supplied for Fit Try (FT) or later trial events may be used to complete PV (Product Validation) testing for the Heartland products they are incorporated into. Some of the Heartland parent products may be safety-rated. For this reason, **supplier trial parts for "FT" (Fit-Try) or later events are required to be "off-tool / off-process" parts, meaning that the production process used to produce them must be identical to that used for mass production, including the production and incorporation of product from all mass-production tooling cavities into the finished product supplied for the trial**.

16.0 Product Identification and Traceability

The Supplier must adhere to the part identification methods called out on the part drawing, and must maintain product traceability back to the production date/shift and lot of raw material. The Supplier must use a "FIFO" system (First In, First Out) for raw parts, parts purchased from subcontractors, and the Supplier's own produced parts. Material which is shelf life limited must be controlled to ensure expired material is not introduced to the supply chain.

17.0 Assessment for Production Start-Up

The Supplier is required to conduct an assessment of all production and assembly work stations prior to production start-up. The purpose of this assessment is to assure that the commitments made during the job quotation process are implemented and functioning at production levels. The items listed below, at a minimum, must be verified for production start-up:

* Verification of production capacity ("Takt-Try")
* Process / Work Instructions present at the workstation
* Tools / fixtures / gauging / measuring / inspection devices are available, suitable, and calibrated
* Maintenance plans (including but not limited to preventive maintenance) available
* Means of transport determined and in a state of contractual readiness
* Raw material supply is in-place
* Organization of work stations and cleanliness of production facility are to plan.
* Adequate and qualified staff are hired and trained

The assessment must be documented and available for review by Heartland, prior to start of production. The Supplier will identify individuals responsible for corrective actions and establish completion deadlines. The Supplier should re-evaluate the workplace upon completion of the corrective actions.

18.0 PPAP Submission

PPAP submission is required for new parts and significant process or part changes, and in some cases after production interruptions of significant duration. The default submission level for supplier PPAPs is Level 3, in accordance with the most-recent edition of the AIAG PPAP manual. The language of submission is to be English.

A PFMEA and Control Plan must be submitted with the package, created in accordance with the most-recent editions of the respective AIAG manuals.

Dimensional check fixtures may be delivered to the supplier, as a Heartland fixed asset which accompanies the production tooling. If required by your Heartland SQE, your Control Plan must include maintaining the part check fixture at your facility, in a location protected from damage and degradation, and collecting full part dimensional data at least monthly. This data is required to be kept on file and available for review upon request.

The PPAP requirements of this manual also apply to **Bulk Materials** (plastic resin, paint, fabric material) unless specifically waived or modified in writing by the Heartland Quality Department.

The PPAP submission must account for all processing steps used to produce the part. The Supplier must provide data to establish conformity to all drawing characteristics and requirements on five (5) part samples, which must be representatively sampled from a production run of 300 parts or more. For multiple die / mold cavities, five (5) samples from each die / mold cavity must be accounted for. Record the data on an appropriate inspection layout form, with characteristics identified by Ballooned Drawing Number.

The PPAP submission will only be approved when all necessary documents have been submitted and are acceptable. Mass production parts may not be shipped without PPAP approval. Final payment for tooling cost will only be initiated after PPAP approval.

Alternate Machines:

If a supplier wishes to obtain approval to run dies/molds in alternate machines, samples must be generated on the alternate machine(s), and representative, separately-marked data for five (5) pieces per cavity must be included with the PPAP submission, with data on layout forms identified by machine number.

Regrind (for Plastic Molding suppliers):

Drawings created by Shigeru, Ltd. (Heartland's parent company) are generally silent with regard to allowable regrind percentages in molded parts. This is not expected to change. Therefore, if a molding supplier wishes to use regrind material at any time during mass production, it must be validated as part of the initial PPAP approval for the part. Representative samples should be produced using the intended maximum percentage of regrind material, with this percentage being specifically noted in the "Comments" section of the PSW Warrant. **In addition, samples containing the intended regrind level must be provided to Heartland in time to be built into our PV samples which are sent to Japan for validation testing.** Merely providing PPAP samples containing regrind at time of PPAP submission may not be sufficient to obtain approval for use of regrind, if validation testing has already begun.

Please contact your Heartland Purchasing Agent to determine the due date for samples to Japan. If this window of opportunity for Japan validation testing is missed, the supplier will not be allowed to use any regrind in deliverable product at any time during the life of the part. All molding suppliers should understand that this quality requirement flows down from customer specification requirements, and cannot be negotiated or altered in any way by Quotation verbiage, Purchase Order text, or verbal or written agreement with your Heartland Purchasing Agent or Tooling Engineer.

A **Ballooned Drawing** must be created by the supplier and included with the PPAP package. The

Ballooned Drawing must provide a numerical index for each characteristic on the drawing, including:

- All drawing notes (including but not limited to, testing and identification requirements)
- All toleranced dimensions (including dimensions which revert to the general tolerance specified in the title block of the drawing).
- "Reference Dimensions" do not need to be ballooned.

Rules for creating Ballooned Drawings:

- Begin with numeral "1," for the first Drawing Note (if any) on the first page of the drawing.
- After Drawing Notes have been ballooned, begin applying numbers to the characteristics in the upper left-hand corner of the first page of the drawing, and proceeding in a clockwise direction around each view. After the first view has been ballooned, assign balloons to the dimensions in the remaining views on the drawing in the same manner, proceeding around the drawing page in a clockwise direction until all dimensions have been ballooned on all drawing pages.
- If a drawing characteristic is deleted by a subsequent Engineering Change (EC), the number corresponding to the deleted characteristic should not be re-assigned to any other characteristic (this is to avoid confusion between data sets created at different revision levels; each dimension will always have the same balloon number for the life of the part, regardless of revision level). On subsequent revisions of the Ballooned Drawing, the deleted number should be moved to the upper margin of the page where it originally appeared, and should be identified with the note "Characteristic deleted by EC # ____." The remaining drawing characteristics should not be re-numbered.
- If an Engineering Change (EC) adds a drawing characteristic, it should be given the next-highest unassigned number on the Ballooned Drawing, regardless on which page it appears. (For example, if the highest Balloon Number on a 3-page drawing is "119," and an EC adds a new note on Page 1 of the drawing, that new note would be assigned Balloon Number "120").

Controls on Chemical Contents

If requested by Heartland, the supplier must input material data to IMDS (International Material Data System) and indicate completion of this step on the Part Submission Warrant (PSW).

19.0 Safe-Launch Process (initial production containment)

For the first 90 days after launch of a new part, the supplier is required to implement an initial product containment process, consisting of an additional 100% visual inspection of all parts after the production process is complete. This containment process is a flow-down of a Subaru quality requirement, and is designed to protect the customer from quality spills during the critical first 90 days of production, when a vehicle is being newly introduced to the market and initial dealer inventories are being established.

- Additional 100% visual inspection of all parts is required after the production process is complete
- Each skid of product must be identified with a Safe Launch inspection tag
- Inspection data (containment results) must be documented and provided to your Heartland SQE on a weekly basis.

20.0 Process Change Request

Once the PPAP has been approved, any deviation from the production process approved in the PPAP must be submitted for prior customer approval. All product or process modifications must be approved by your Heartland SQE before any change action is taken. Some changes may require a new PPAP submission, as determined by your Heartland SQE, with PSW approval prior to shipment of affected product.

Depending on the nature of the change, the following forms may be used to communicate the change to Heartland:

- **Request for Engineering Approval** (**REA**) – for part drawing changes.
- **Process Change Request** (**PCR**) – for production process changes which do not affect conformity of the part to the drawing.
- **Deviation Request** – for temporary approval of limited quantities of parts which do not conform to the part drawing. (Permanent changes to part conformity require REA, above).

Please clearly describe what changes are planned and how they will affect the product.

A Process Change includes, but is not limited to, any of the following:

- Addition or replacement of tooling or machines
- Changes in raw material
- Manufacturing location changes within the plant or to a new geographic location
- Movement of tools or subcontracting to any sub-supplier
- Changes in processing
- Changes in process fluids used to make the part
- Molded Parts - cycle time reductions in excess of 10% of overall cycle time
- Any changes of the above nature carried out within the process scope of a sub-supplier, subcontractor, or supplier of outsourced processes.

Process changes are not required for the following:

- Replacement or relocation of small hand tools, improvised jigs, tables, and assembly aids without fixed asset tags
- Replacement of perishable tools
- Regularly scheduled tool maintenance

21.0 Supplier Scorecards

Each supplier will receive a monthly scorecard from Heartland Purchasing, detailing your performance in the areas of Quality, Delivery, Cost, and Tool Maintenance. This scorecard is an overall corporate measurement which includes performance data for parts supplied to both the Lafayette and Greencastle

Heartland facilities, and may be used as input to sourcing decisions. The exact composition of the metrics may change over time to meet business needs.

The Quality-related factors of the Scorecard rating include, but are not limited to, the following:

- PPM
- Line disruptions
- Response to RMA and sorting requests
- Timeliness of corrective action responses

22.0 Internal Audit Program

Each supplier shall confirm the Quality Management System sustains ongoing compliance with the requirements of this manual by planning and carrying out a system of Internal Audits. An audit plan must be established which defines and documents the scope, frequency, and attainment percentage of Internal Audits. In addition to System audits in accordance with ISO 9001, the complete audit program shall consist of Process and Product Audits.

Process Audits:

The Supplier shall conduct Process Audits to verify your production processes and procedures comply with the technical and quality requirements of the part. An audit should also be conducted when there is a change in the process, significant change in key process personnel, failure to maintain process control, failure to meet delivery requirements, or otherwise at a minimum of an annual basis for each production process used to produce deliverable product for Heartland. The scope of a process audit should include, but is not limited to, the following:

Production, measuring, and test equipment
Employee Training
Compliance with Standard Work documents
Effectiveness and use of Machine Setup documentation
Verifications of the machine and process capability
Continuous improvement processes
Packaging and transport
Subcontractors and outsourced processes (if any)

Product Audits:

Product audits must be carried out on completed parts in accordance with your Control Plan. A Product Audit should assess conformity to all customer requirements including drawings, standards, packaging, cleanliness, function, or external appearance. There shall be a minimum of one product audit per calendar year. A product audit shall include 100% inspection of all Heartland product requirements.

23.0 BOUNDARY SAMPLES

Boundary Samples will be issued by your Heartland SQE, if applicable. Boundary Samples are physical parts which display the attribute tolerance limit for an appearance characteristic which has some allowable defect level, but which is difficult to objectively define or communicate by any other method. They may be temporary or permanent, and must define the acceptable limits, whether Max. or Min.

Parts which do not define a Max. or Min. level are not Boundary Samples, and should not be referred to as such.

Valid Boundary Samples must contain the following information:

a) **The defect should be named**. This is to ensure the viewer knows which condition the Boundary Sample is addressing, since there can be multiple Boundary Samples, and/or multiple defect conditions covered by the same Boundary Sample.
b) **The defect location should be circled or identified in some way.** This is to ensure the viewer does not mis-interpret the Boundary Sample as applying to some other area or condition which may be present on that specific part.
c) The Boundary Sample should be signed and dated by your Heartland SQE and your own quality representative.

"OK" REFERENCE SAMPLE: These are physical part samples which exhibit an "OK" level of a defect condition. **Because they do not define an acceptable limit, they are not the same as a Boundary Sample, and cannot be used for sorting product.**

"NG" REFERENCE SAMPLE: These are physical part samples which exhibit an "NG" or no-good level of a defect condition. **Because they do not define an acceptable limit, they are not the same as a Boundary Sample, and cannot be used for sorting product.**

24.0 Control of Nonconforming Product

Upon discovery of nonconforming supplier material at Heartland, suspect product will be quarantined, a reject notification will be communicated to the supplier via email, and the supplier will be charged an Administrative Fee on a per-RMA basis to account for lost time, handling, and administrative costs. The supplier may also incur third-party sorting and/or rework costs at the discretion of Heartland Supplier Quality.

In addition, if requested by your Heartland SQE, completed corrective action documentation is due within 10 calendar days.

Non-conformances will affect the performance rating on your Supplier Scorecard, which is distributed monthly by the Heartland Purchasing Department.

Return Material Authorization:

The supplier has 10 calendar days to respond to Heartland's request for Return Material Authorization (RMA). The supplier is entitled to review the material at Heartland's facility during this period, or to receive defect samples shipped at supplier expense.

If Heartland does not receive RMA within 10 calendar days, we reserve the right to scrap the subject defective material at supplier expense and debit the supplier for the entire cost thereof. Storage space is at an absolute premium in our facilities. Heartland does not have physical space to safely store defective supplier material for indefinite periods of time while awaiting RMA responses from suppliers. **Please ensure all stakeholders in your Quality and Financial functions are aware of this policy and understand that it will be enforced**.

Third Party Sorting:

If sorting of defect product is required to support Heartland's production line, the supplier is required to provide authorization to one of Heartland's designated third-party sorting companies within one hour of defect notification, to begin the sort on your behalf. These sort companies are operating within the scope of Heartland's Health, Safety, and Quality Management System, and are trained in the proper procedures for document control, product identification, and safety. The third-party sort may be discontinued when Heartland has received three (3) defect-free shipments of the parts from the supplier, provided that all in-house material at Heartland has been sorted. For pre-existing Heartland inventory, the supplier has the option to either provide employees of your own company (ie, not a different sorting company) to sort material at the Heartland location, and/or to have Heartland inventory returned to your plant to be sorted **if your Heartland Buyer / Material Planner agrees to it**. (Depending on the current inventory levels, it may not be possible to return product to your location for sorting).

The following criteria are used to initiate a third-party sort of supplier product:

a) Three (3) defects on the same part number within a production shift, or an accumulation of five (5) defects on the same part number within a week.
b) Left- and Right-hand parts are treated as the same part number, for purposes of initiating a sort (example: 3 RH defects + 2 LH defects = sort both).
c) Colors: different colors are also treated as the same part number, except for paint defects in parts painted by the supplier. For those, the 3/5 rule still applies, but only the colors for which defects have been found will be sorted.
d) If a "containment break" occurs (defects are found in certified product) as a result of a sorting company's mistake, re-sorting will occur at the sort company's expense, with cc: notification made to the part supplier's Quality contact.
e) If a supplier defect is found at the customer location, the supplier is required to initiate sorting regardless of defect quantity.

Certification of product must remain in place at the supplier's location until a permanent countermeasure has been implemented and verified.

Rework and Repair of product:

Rework: Rework is understood to mean a process resulting in a part which fully conforms to all

requirements. The Supplier must ensure the rework process has no negative impact to fit, form, or function for the end user (ie, dimensions, function, strength, appearance, and service life). Rework is limited to a "one-cycle repetition" of some portion of the existing mass-production process documented in the approved PPAP (excluding special processes). If more than a "one-cycle repetition" of the manufacturing process is required to correct the defect, a documented rework process must be developed and agreed-to by your Heartland SQE before the rework process can commence.

Repair: Repair is different from Rework, in that it is understood to mean a process which modifies a nonconforming part to make it functionally suitable for use, **but the repaired part remains nonconforming after repair is complete.** The Supplier must ensure the repair has no negative impact to fit, form, or function for the end user (ie, dimensions, function, strength, appearance, and service life). A documented repair process must be developed and a **Deviation Form** must be submitted and approved by Heartland before the repair may commence.

Reworked and Repaired product must be 100% re-inspected afterward to assure suitability for use. This inspection must include verification of the reworked or repaired characteristic(s), plus any associated characteristics which could be adversely affected by reprocessing (i.e. checking trim lines or hole diameters for mutilation after removal of flash, checking surface grain and gloss level after removal of blemishes, etc.).

25.0 Corrective and Preventive Action

Heartland places great emphasis on the timeliness and thoroughness of the supplier's Corrective Action process. There are two levels of customer complaint which may be issued to a supplier:

Problem Reports: Problem Reports are issued in situations where Heartland's customer has requested a rapid response with a lesser level of detail. Completed Problem Reports must be returned to your Heartland SQE within 3 calendar days.

5-Why Reports: 5-Why Reports require a greater level of detail. A complete 5-Why response (all steps) must be submitted to your Heartland SQE within 10 calendar days.

Upon reject notification, and regardless of defect part disposition, the supplier must provide information regarding containment steps taken **within 24 hours** of defect notification. The Supplier is required to implement and maintain a status sheet to track all open corrective action reports, which shall be available for review upon request. Your Heartland SQE must approve the corrective action before the 5-Why or Problem Report is considered closed.

26.0 Continuous Improvement

The supplier shall implement and maintain a Continuous Improvement program which considers and assesses the following:

Contingency planning
Process capability and centering of product characteristics in the middle of the tolerance
Productivity improvement
Customer Complaint analysis
Internal defect and failure analysis
On-time performance to customer due dates for items such as Quotes and PPAP submissions
Cost performance
Delivery Performance
Recordable and Lost-Time accidents
Environmental performance metrics and compliance with regulatory targets

The supplier should maintain evidence that your Continuous Improvement program considers and addresses risks to your Business Processes, including risks to continuity of supply and mitigation actions. Your contingency planning should be periodically reviewed and updated to account for changes in the business and potential new risks.

Reference Section

GLOSSARY

APQP: Advanced Product Quality Planning. A structured method of defining and establishing the steps necessary to assure that a product satisfies the customer. The goal is to facilitate communication with everyone involved to assure that all required steps are completed on time. A company's top management must be committed to and involved in the process.

CAPABILITY STUDY: A statistical study of a process involving measurement of a finite quantity of parts, to allow calculation of the Capability Index.

CAPABILITY INDEX (CpK): A statistical calculation which uses the process Mean and Standard Deviation as inputs. The generated value is useful in predicting the ability of process to conform to specifications, if the process is within statistical control limits (ie, the process is experiencing random, common-cause variation only).

CHECKING FIXTURE: A gauge used to evaluate dimensional fit of a part to a simulated mating position in the vehicle.

FEASIBILITY STUDY: A team-based assessment tool for evaluating whether a process, design, procedure, or plan can be successfully accomplished in the required time frame to meet customer requirements.

FMEA: A team-based analytical tool intended to: 1) recognize and evaluate the potential failure modes of a product/process and its effects, 2) identify actions which could eliminate or reduce the chance of the potential failure occurring, and 3) document the process.

GAGE REPEATABILITY AND REPRODUCIBILITY (GRR): A mathematical study of measurement system repeatability and reproducibility, in which multiple appraisers use a measurement tool to assess several parts multiple times. Mathematical reduction of the data

will yield measurement error as a percentage of part tolerance and/or total variation. These values are useful in determining the suitability of the measurement system for the intended application.

IN-PROCESS CHECKING FIXTURE (GAGE): Similar to a Check Fixture, but typically used during manufacturing (e.g. used to check subassembly vs. final assembly).

INSPECTION STANDARD: A supplement to the part drawing and Control Plan, presenting the frequency and sample size of quality checks with a greater amount of detailed sketches and diagrams, and normally provided on a customer-specified document format.

PPAP: (Production Part Approval Process). The output of this process is a documentation package, referred to as the PPAP, which describes the production process in detail and documents finished part conformity with all product requirements. The purpose of PPAP is to document that all customer engineering design record and specification requirements are properly understood and accounted for by the supplier, and that the process defined in the PPAP package can make product consistently meeting these requirements during an actual production run at the quoted production rate.

PART SUBMISSION WARRANT: An industry standard document, usually the cover page in the PPAP submission, which lists all pertinent part information including the part number, revision level, supplier production location, reason for submission, and actual production rate, and confirms that inspections and tests have been performed on actual process-representative parts demonstrating conformance to all customer requirements. Customer approval of this document signifies authorization to produce a new or changed part with the process documented in the PPAP.

PROCESS: A combination of people, machines, methods, materials, and work environment which produces an output in the form of a product or service. A process can involve any aspect of a business.

PROCESS CHANGE: Any deviation from the PPAP-approved process. Requires a Process Change Request to be approved by Heartland in advance of the change.

PROCESS AUDIT: An on-site evaluation of a supplier's process, in accordance with documented quality criteria, for confirmation or problem-solving purposes.

PROCESS CONTROL: Systems and methods for preventing the manufacture of non-conforming products through data collection, analysis and feedback to the process.

PROCESS FLOW DIAGRAM: A diagram which depicts the flow of materials through the process, including any rework, repair and audit operations.

PRODUCTION TOOLING: Tooling for permanent mass-production use, which has been PPAP-approved and is capable of producing parts that meet production Drawing and Inspection Standard requirements at Mass Production volumes.

PROTOTYPE TOOLING: Tooling not intended for mass production, capable of producing parts that

meet production Drawing and Inspection Standard requirements, but at low volumes only, typically for part/product trial purposes.

PROTOTYPE PART: A pre-mass-production part made to establish manufacturability and validate design adequacy.

QUALITY SYSTEMS AUDIT: An on-site evaluation to determine the adequacy and performance of a supplier's total quality system.

RAW MATERIAL: Metallic or non-metallic material in its basic form (i.e. resin, sheet, roll, wire, powder, etc.) used to manufacture Heartland products.

REPAIR: Re-processing of nonconforming product resulting in parts which are adequate for the intended use, but which do not conform to all drawing or specification requirements. Delivery of repaired product always requires customer approval.

REWORK: Re-processing of nonconforming product via the PPAP-approved process, resulting in parts which conform to all drawing or specification requirements.

SPECIAL PROCESS: A process such as welding or heat treating which, if changed, could affect pass-through characteristics such as material structure, mechanical, chemical or electrical properties in a way which cannot be evaluated with simple verification methods.

SPECIAL CHARACTERISTICS:

KEY CHARACTERISTIC - A product characteristic for which variation is likely to significantly affect customer satisfaction with fit, form, function, or appearance, or the ability of a downstream customer to process or build the product into the next higher assembly.

CRITICAL CHARACTERISTIC - A product characteristic (with Safety or Legal considerations) for which variation could significantly affect the product's safety or its compliance with government regulations (such as: flammability, occupant protection, steering control, braking, emissions, noise, radio frequency interference, etc.).

SREA: Supplier Request for Engineering Approval. (Drawing Change Request)

SOC: Substances of concern

VOC: Volatile organic Compound