

TSV Supplier Quality Manual Approval


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SUPPLIER QUALITY MANUAL

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SECTION I: INTRODUCTION

1.1 Preface

Textron Specialized Vehicles ("TSV") is a leading global manufacturer of golf cars, snowmobiles, utility and personal transportation vehicles, professional turf-care equipment, all-terrain vehicles (ATV's), and ground support equipment. Textron Specialized Vehicles markets products under the E-Z-GO®, Artic Cat®, Cushman®, Jacobsen®, Ransomes®, TUG™, Douglas™, Premier™, and Safeaero™ brands; its vehicles are found in environments ranging from golf courses to factories, airports to planned communities, and theme parks to hunting preserves. Artic Cat produces a full line of snowmobiles, consisting of models categorized s High Performance, Trail Performance, Mountain, Crossover, Touring and Utility.

TSV is committed to ongoing innovation and to continued improvements in the quality, and performance of its products, as well as product diversification. TSV's continued success is based on quality and reliability of its products as perceived by customers. High levels of quality and reliability help reduce costs, increase productivity and ultimately improve market acceptance and competitive advantage.

Production of a quality, finished product is determined, largely, by the quality of the materials used in a product. As a result, TSV has identified supplier quality as a key element for remaining competitive in the marketplace. Attaining high quality requires teamwork between TSV and its supply base to achieve mutually satisfactory goals. Paramount to achieving the necessary teamwork is an open two-way communication channel.

1.2 Scope

This manual provides an overview of certain TSV policies and procedures that affect and relate to our supply base. Contents apply to production parts as well as service parts, garments and accessories.

This section defines a general overview of the Supplier Quality Program responsibilities and requirements for TSV and its Production suppliers. Ultimately, the supplier is responsible for the quality, timely delivery, lead-time, and technical services of products sold to TSV. When suppliers have a strong and effective Quality Program, they can assure timely delivery of product at high quality levels at an optimum cost. TSV promotes open lines of communication with its suppliers and makes a concerted effort to thoroughly convey requirements.

The supplier's Quality Program shall contain at a minimum the following disciplines:

- Quality systems and product realization planning
- Document and data control
- Control of records
- Specification change control
- Control of purchased product
- Control during processing

- Use of statistical methods
- Control of finished goods
- Control of non-conforming product
- Calibration, Gage R & R of measuring and test equipment
- Corrective/preventative action plans
- Employee training

The objective of TSV's Supplier Quality Program is to get the right product at the right quality level, and at the right cost, on time, every time. The Supplier Quality Program enables us to make the best possible sourcing decisions so that we can establish mutually beneficial long-term supplier relationships that will benefit TSV and our suppliers. The supplier program is designed to improve communication with suppliers resulting in a thorough understanding of TSV's product/process requirements.

The Supplier Quality Program will increase the supplier's ability to reduce defects, reduce material handling costs and manufacturing costs that are attributed to losses caused by defective parts. These improvements will lead to the elimination of late shipments, ultimately enabling TSV facilities to reduce inventory and eliminate supplier part problems in our manufacturing facilities and at our customers.

Suppliers will be selected and then consistently evaluated on their ability to meet:

1. Total Cost
2. Capacity
3. Technical Capability
4. Quality System
5. Delivery and Service
6. Financial Stability

By application of the above requirements, TSV and suppliers of TSV will be able to provide the quality products necessary for mutual success. Each supplier must build on these requirements to develop an effective quality system, which will be reviewed by TSV as appropriate. This procedure applies to all new and/or potential suppliers and currently authorized suppliers of parts, products or services to TSV facility.

Once a supplier is approved, supplier performance will be monitored and evaluated on an ongoing basis. Continued supplier approval status shall be based upon complying with quality system requirements outlined throughout this manual, including Production Part Approval Process (PPAP), audits and a sustained level of acceptable performance.

1.3 Confidentiality

Prior to TSV approval, a formal non-disclosure agreement shall be required. All TSV's designs are confidential and proprietary. Openly sharing information is a vital part of doing business, so it is important

that all parties involved are aware of the terms and conditions associated with the agreement. The supplier shall treat all data in strict confidence and report any intentional or non-intentional breach of confidentiality to TSV Management immediately.

SECTION II: SUPPLIER APPROVAL PROCESS

2.1 Supplier Approval Review

Potential suppliers are required to be approved by Quality and Sourcing. The purpose of this section is to define the Supplier Quality Approval Process. Suppliers will be required to complete a self-assessment form provided to them. The fulfillment of the requirements of suppliers' quality system is critical to the overall approval process and provides the necessary evidence needed to ensure product and process integrity and continuous improvement. During the approval process, TSV may request conference(s), either face to face and/or via telephone or an on-site audit, etc. Supplier assessments allow TSV to minimize its supply risk by awarding work to suppliers who have a comprehensive Quality System which efficiently administers the controls and checks necessary to ensure the products delivered fulfill print requirements.

- 2.1.1** TSV Sourcing Department is responsible for the initiation of supplier approval process.
- 2.1.2** TSV Quality has overall responsibility for coordinating the approval process.
- 2.1.3** Potential suppliers are required to be approved by the Sourcing and Quality departments prior to quoting or being awarded production parts. An on-site evaluation may be required to determine if a supplier is approved. Production volumes of parts, criticality of the parts, and basic quality system knowledge of the company are considered when determining if an on-site evaluation is required. Based upon the results of the evaluation it is determined if a potential supplier is an appropriate candidate to supply TSV with purchased components.
- 2.1.4** The next step in the Supplier Quality Approval Process is coordination of the Advanced Product Quality Planning (APQP) and Production Part Approval Process (PPAP) per the AIAG requirements. All PPAP documentation can be obtained by contacting the AIAG group, or your SQE can supply you with the TSV workbook of these forms.

Automotive Industry Action Group
26200 Lahser Rd., Suite 200
Southfield, MI 48033-7100 USA
www.aiag.org

2.2 Supplier Quality System Requirements

It is recommended that all suppliers develop and implement an effective operating Quality Management System (QMS). The QMS should be based on a recognized international quality system standard, such as ISO9001, QS9000, or TS16949. All suppliers are highly encouraged to pursue third party registration. However, where a supplier is assessed to be a Level “A” supplier, third party registration is a requirement. Table “A” below represents a ranking process for suppliers which may be used as an assessment tool.

| | High Business Risk | Low Business Risk |
|---------------------|--------------------|-------------------|
| High Technical Risk | Level A | Level B |
| Low Technical Risk | Level B | Level C |

Table “A” Supplier Risk Matrix

Level A Supplier:

- Complete a Supplier Self-Assessment
- A formal on-site assessment at the Supplier location
- Approval by Quality and Sourcing
- Must maintain third party registration of ISO9001, QS9000, or TS16949

Level B Supplier:

- Complete a Supplier Self-Assessment
- Complete a Formal on-site assessment at the Supplier location
- Approval by Quality and Sourcing
- Must maintain a Formal Quality System

Level C Supplier:

- Complete a Supplier Self-Assessment
- Complete a Formal on-site assessment at the Supplier location

2.3 APQP (ADVANCED PRODUCT QUALITY PLANNING)

TSV requires that all suppliers utilize the Advanced Product Quality Planning Process (APQP). APQP is a preventative quality-preplanning framework, used in the product/process development process that provides a robust product and process. The purpose of APQP is to produce a product quality plan which will support development/production of a product or service that is mutually beneficial to both the customer and the supplier. All Advanced Product Quality Planning documentation and requirements can be obtained by contacting AIAG:

[AIAG Products & Services Understanding and Implementing APQP with PPAP - AIAG Training](#)

APQP (Advanced Product Quality Planning) consists of five major activities:

- Planning
- Product Design and Development
- Process Design and Development
- Product and Process Validation (pre-production PAP)
- Production (PPAP)

The APQP (Advanced Product Quality Planning) process has seven major elements:

- Understanding the needs of the customer
- Proactive feedback and corrective action
- Designing within the process capabilities
- Analyzing and mitigating failure modes
- Verification and validation
- Design reviews
- Control special / critical characteristics

Ongoing feedback assessment and corrective action is an integral part of these phases and activities.

2.4 PPAP Process

When the Supplier's Quality System has been approved, the parts/materials will be approved using the **APQP AIAG Process that culminates with PPAP**. This is the documented verification that all TSV's Engineering Design requirements are met by the Approved Suppliers. The initial PPAP may be performed on-site by an TSV Supplier Quality Engineer (SQE). TSV encourages the suppliers to submit an electronic copy of the PPAP documents to improve the efficiency and to accelerate the approval process. The SQE will notify the supplier as to the location to supply the electronic file. This could be via e-mail or a supplier portal if available.

The purpose of the PPAP process is a prevention-oriented process to determine if the supplier fully understands all TSV engineering design record and specification requirements. In addition, the PPAP process will verify that the manufacturing process used by the supplier has the capability to produce product that will consistently meet TSV's requirements during production at the quoted production rate.

Along with new suppliers and new products, **PPAP INITIATION IS REQUIRED** when any of the events shown on the below Table "B" PPAP Initiation occurs. Both TSV and the Supplier may be responsible for requesting a PPAP initiation, as defined in the PPAP Initiation Table.

| Item | Requirement | PPAP Initiator | Events |
|------|--|----------------|--|
| 1 | New Part or Product (i.e. a specific part, material or color not previously supplied to TSV) | TSV/Supplier | <ul style="list-style-type: none"> Newly designed part – initial release or a previously approved product which has a new or revised (e.g. suffix) product/part number assigned to it. |
| 2 | Correction of a discrepancy on a previously submitted part | TSV/Supplier | <ul style="list-style-type: none"> Submission is required to correct any discrepancies on previously submitted part. A “discrepancy” can be related to: <ul style="list-style-type: none"> The product performance against the customer requirement Dimensional or capability issues Subcontractor issues Full Approval of a part replacing an interim approval Testing, including material, performance, engineering validation issues |
| 3 | Engineering change to design records, specifications or materials for production/ product part number(s) | TSV | <ul style="list-style-type: none"> Submission is required on any engineering change to production product/part design records, specifications or materials |
| 4 | For Bulk Materials only | TSV | <ul style="list-style-type: none"> Process technology new to the supplier, not previously used for this product |
| 5 | Use of other construction or material that was used in the previously approved part or product | Supplier | <ul style="list-style-type: none"> For example, other construction as documented on a deviation or included as a note on the design record and not covered by an engineering change. |
| 6 | Production from new or modified tools, dies, molds, patterns, etc. including additional or replacement tooling | Supplier | <ul style="list-style-type: none"> This requirement applies to tools which, due to their unique form or function, can be expected to influence the integrity of the final product. It is not meant to describe standard tools (new or repaired) such as standard measuring devices, drivers, etc. |
| 7 | Production following refurbishment or rearrangement of existing tooling or equipment | Supplier | <ul style="list-style-type: none"> Refurbishment means the reconstruction and/or modification of a tool or machine or to increase the capacity, performance or change its existing function. This is not meant to be confused with normal maintenance, repair or replacement of parts for which no change in performance is to be expected and post repair verification methods have been established. Rearrangement is defined as activity which changes the sequence of product/process flow from that documented in the process flow diagram (including the addition of a new process) Minor adjustments of production equipment may be required to meet safety requirements such as installation of protective covers, elimination of potential risks, etc. These changes can be made without TSV approval unless the process flow is changed as a result of this adjustment. |

| | | | |
|----|--|----------|---|
| 8 | Production from tooling and equipment transferred to a different plant location or from an additional plant location | Supplier | <ul style="list-style-type: none"> • Production process tooling and/or equipment transferred between buildings or facilities in one or more locations • Production transferred from one plant to a facility in a different location. |
| 9 | Change of subcontractor for parts, non-equivalent materials or services (e.g. heat-treating, plating) that affect customer fit, form, function, durability or performance requirements | Supplier | <ul style="list-style-type: none"> • Suppliers are responsible for approval of subcontracted (tier-two) material and services that do not affect customer fit, form, function, durability or performance requirements. TSV must be notified of changes. |
| 10 | Product produced after the tooling has been inactive for volume production for twelve months or more | Supplier | <ul style="list-style-type: none"> • For product that has been produced after tooling has been inactive for twelve months or more: <ul style="list-style-type: none"> • Notification is required when the part has had no active purchase order and the existing tooling has been inactive for volume production. • The only exception is when the part has low volume, e.g. service or specialty vehicles. However, TSV may specify certain PPAP requirements for service. |
| 11 | Product and process changes related to components of the production product manufactured internally or manufactured by subcontractors that impact fit, form, function, performance and/or durability of the salable product. Additionally, the supplier shall concur with any requests by a subcontractor before submission to TSV | Supplier | <ul style="list-style-type: none"> • Any change that affects TSV's requirements for fit, form, function, performance, and/or durability requires notification to TSV. |
| 12 | For bulk materials only | Supplier | <ul style="list-style-type: none"> • New source of raw material with special characteristics from new or existing subcontractor. • Change in product appearance attributes where there is no appearance specification. • Revised parameters in the same process parameters of the approved product – includes packaging • Change outside of DFMEA (product composition ingredient levels) of the approved product. |
| 13 | Change in test/ inspection method – new technique | Supplier | <ul style="list-style-type: none"> • For change in test method, supplier should have evidence that the new method provides results equivalent or better than the previous method. |

Table “B” PPAP Initiation

Process Capability requirements for PPAP approval will be according to TSV's Engineering Standard, GS-726-128, Design Engineering Documentation Guidelines and Arctic Cat requirements.

2.4.1 PPAP Approval

Full Approval: Indicates that the part or material meets all customer specifications and requirements. The supplier is therefore authorized to ship production quantities of the product subject to releases from TSV scheduling activity.

If a case arises that PPAP is not acceptable, an TSV deviation may be approved once the supplier has:

- Clearly defined the root cause of the non-conformities preventing production approval; and,
- Prepare an action plan agreed upon by TSV. Re-submission to obtain “full approval” is required

2.4.2 PPAP Level Requirements

TSV Reserves the right to redefine the submission level required:

New Parts: Level 2 / First Article Inspection Report (FAIR) is required for Low Risk Parts (at minimum)
Level 3 is required for Medium and High-Risk Parts as identified by your SQE.

Part Changes: Level 2 / First Article Inspection Report (FAIR) may be sufficient for Low Risk Parts
Level 3 is required for Parts produced at a new or additional location
Supplier Quality Engineer will define the level required for all changes

| | |
|----------------|---|
| Level 1 | Production Warrant and Appearance Approval Report (if applicable) submitted to TSV |
| Level 2 | Production Warrant/ FAIR coversheet, dimensional results and material certifications to be submitted to TSV |
| Level 3 | Production Warrant, product samples and complete supporting PPAP data requirements submitted to TSV |
| Level 4 | Production Warrant/FAIR coversheet and any other requirements as defined by TSV |
| Level 5 | Production Warrant, product samples and complete supporting PPAP data requirements with an on-site review to be conducted at the suppliers manufacturing location |

Table “C” PPAP Submission Levels

Rejected: Means that the submission, the production lot from which it was taken, and accompanying documentation do not meet TSV requirements. Corrected product and documentation shall be submitted and approved before production quantities may be shipped. If the PPAP is rejected, the supplier will be given the reason(s) for the rejection and the supplier must provide the corrective actions to resolve the causes of the rejection.

NOTE: ANY CHANGES IN YOUR PROCESS NEED TO BE COMMUNICATED TO TSV IMMEDIATELY - BEFORE CHANGES ARE MADE FOR TSV’S APPROVAL. THIS APPLIES TO ADDITION OF NEW EQUIPMENT, CHANGES IN MATERIAL, CHANGE IN SUB-SUPPLIERS, ELIMINATION OF OR ADDITION TO OPERATIONS IN PROCESS DUE TO IMPROVEMENT WORK AND RE-LOCATION OF PART MANUFACTURING AT DIFFERENT PLANTS.

2.5 Run at Rate Process

The purpose of Run at Rate is to verify that the supplier's manufacturing process is capable of producing components that meet TSV's on-going quality requirements at quoted tooling capacity for a specified time-period. Furthermore, that the supplier's process conforms to the plans submitted by the supplier in the part submission documentation and other required documentation (such as production volumes).

A Run at Rate study is required as listed below:

- New part (may be done by part family)
- New supplier/location (may be done by part family)

The following may also warrant a request for a Run at Rate:

- Change of material or to an alternative material
- Significant tooling/equipment changes that influences product integrity or process cycle time
- Significant changes to the design
- When specified by TSV/customer

A TSV representative will evaluate all new part numbers. The supplier will be notified of the need to perform a monitored or supplier monitored Run at Rate as early in the Advanced Product Quality Planning Process as possible. During Run at Rate, production tools must be in place and run at full production speed, utilizing regular production conditions, direct and indirect personnel, and support systems.

The number of components to be produced during the Run at Rate should be sufficient to demonstrate manufacturing process capability and should be predetermined by the joint agreement between TSV and the supplier. The minimum length of the Run at Rate is dependent on production requirements at full acceleration.

The Run at Rate should be performed during PPAP approval and before start of production acceleration. Although encouraged to be performed as early as possible, a key consideration in establishing the Run at Rate date is the stability of the design (design freeze) and production tooling availability. The exact date should be predetermined by the procuring plant and the supplier. A representative from TSV should be present for the entire Run at Rate.

The Run at Rate documentation (checklist, worksheets etc.) has to be available to the supplier one week before Run at Rate is carried out. To make effective use of time, the supplier should complete as much as possible of the Run at Rate Worksheets before the official Run at Rate is carried out.

If parts are produced ahead of production schedules, the supplier will hold all parts produced until authorized to ship. The supplier will ensure that sufficient production containers and packaging are available to prevent part damage according to the supplier packaging manual.

The Run at Rate will verify the supplier's actual manufacturing process output, can meet the requirements for on-going quality and quoted tooling capacity. In addition, it will verify that the supplier's

actual process complies with documentation presented at PPAP, the Run at Rate, will review the following items for compliance to requirements:

- A. Documentation
- B. Manufacturing process and results
- C. Part quality requirements and results
- D. Sub-supplier development activities
- E. Packaging

A. Documentation:

At the time of Run at Rate, the following documentation should be available for review:

- 1) Part submission warrant (or equal documentation)
- 2) Process flow chart
- 3) Process control-plan
- 4) DFMEA / PFMEA
- 5) Packaging / labeling plan / samples provided
- 6) Ramp-up curve

B. Manufacturing process:

All of the following requirements must be met to pass the Run at Rate study:

- 1) The product is being manufactured at the production site using the production tooling gauging, process, materials, operators, environment, and process settings.
- 2) The actual process flow agrees with the process flow chart as documented.
- 3) Operator instructions are available and adhered to each workstation.
- 4) Visual aids- if required - are available and are in place.
- 5) All process documents, such as control charts, inspection plans etc. are developed, approved and in place.

C. Manufacturing capacity results:

The following will be verified while the process is running:

- 1) The net output from each operation can support the quoted capacity.
- 2) During the Run at Rate, the tooling must meet the quoted up-time requirements.
- 3) Any unexpected downtime must be documented and corrective actions must be taken.
- 4) All line changeovers, if any, can be performed within the quoted tooling capacity requirements.
- 5) The net throughput of good pieces (scrap, allowable rework parts) meets daily quoted capacity.

D. Part quality plan:

All requirements mentioned below must be met to pass Run at Rate study:

SECTION III: General Requirements

- 1) All production-checking fixtures must be complete with acceptable measurement system studies performed, and operator instructions / visual aids available.
- 2) All in process gauging and controls must be complete, functional and in place.
- 3) The process control plan must agree with the actual process.
- 4) Product parts checks and statistical monitoring must be in place as mentioned on the process control plan.
- 5) Potential failure modes, as identified in the PFMEA are addressed through error proofing or the control plan.
- 6) The process control - reaction plan, as well as the supplier's corrective action process to ensure containment and correction, should be available for review.

E. Part quality results:

All requirements mentioned below must be met to pass Run at Rate study:

- 1) Parts produced off production tooling during the Run at Rate meet the TSV requirements for on-going quality, as stated in the PPAP documentation.
- 2) The manufacturing process is under control/demonstrates stability.
- 3) The manufacturing process demonstrates the required capacity.
- 4) The process control plan is sufficient to effectively meet the design record requirements (i.e. control points, frequency).
- 5) Adequate control of non-conformances, if applicable:
 - The non-conformances yielded by the process were identified and segregated from other parts
 - If the PFMEA does not identify the potential failure modes, the PFMEA needs to be updated to include required corrective action
 - All rework and repair effectively correct the non-conformance(s)
 - All prototype and pilot concerns, if any, have been corrected and validated

F. Subcontractor Requirements:

The subcontractor(s) ability to meet TSV quality and capacity requirements must be confirmed by the supplier prior to the Run at Rate being conducted at the supplier's facility. If the subcontractor cannot demonstrate the required capacity, a contingency plan must be provided to TSV for review.

Note: Any changes in your process must be communicated to the assigned TSV Supplier Quality Engineer (SQE) immediately.

3.1 Supplier or Sub-Contractor Requirements

To maintain integrity of the product throughout the supply chain all purchased product/material must conform to the requirements specified by TSV. It is the supplier's responsibility to ensure that they have a program in place to select and approve their suppliers (sub-contractors). The supplier must have a program in place that ensures all purchased products comply with the requirements specified by TSV. The supplier shall have a program that is effective in assessing subcontractors on their ability to meet the defined quality requirements. The supplier must require their subcontractors, at a minimum, meet the requirements of this manual, including PPAP. Suppliers must assure the quality of their incoming materials and components. This assurance should be established either through a formal sub-contractor quality program, receiving inspection, or some combination of these methods but the supplier is responsible for the quality of their sub-contractors.

3.1.1 Analysis of Quality Data

In the area of continual improvement, the supplier is urged to maintain a program for collection and analysis of quality data. The supplier should have in place a process to target areas contributing to lowered throughput that reduce profits. The program should target processes with the most potential for improving product reliability and customer satisfaction. The data collection may include but not limited to: rework, scrap, customer returns, or customer plant defects (PPM), production throughput yields and premium freight costs.

3.2 TSV Supplier Performance

Quality Performance

TSV's manufacturing cannot operate effectively and efficiently when there are quality problems with the components. In an effort to maintain high quality levels, every supplier's quality performance will be monitored. The supplier is expected to maintain a maximum threshold level of Parts per Million Defect Level (PPM) based on type of product or commodity on an ongoing basis. The supplier's PPM levels will be tracked and made available to our suppliers.

When a supplier's quality performance rises above the threshold of their PPM goal for three consecutive months or above the threshold for 3 months in a 6-month period, the supplier may be placed on a Probational period. The supplier will then be required to present comprehensive action plans with timelines and corrective action measures in order to resolve performance issues, improve their quality performance, and prove they can provide conforming product that meets TSV expectations and specifications.

The PPM calculation is the total number of parts rejected per month, divided by the total number of parts received per month, times 1 million. Example for PPM: A facility receives a shipment of five hundred and twenty parts and there are four defects in this lot, the formula for PPM is:

$$(4/520) \times 1,000,000 = 7,692 \text{ PPM}$$

Note: PPM metric based on order receipt quantity (e.g. each, weight, length) as appropriate.

Lead-Time

The supplier will be monitored on how they meet the defined lead-times agreed upon by the supplier and TSV's Commodity Manager in the Sourcing contract or supplier agreement. The supplier's lead-time will be monitored to ensure they are meeting the defined lead-times. In support of continual improvement, the supplier is encouraged to work on reducing lead-time.

3.3 Problem Reporting and Resolution

When the supplier maintains an effective Quality Management System, the system greatly reduces the probability of having defects. However, problems may occur from time to time. In order to reduce the impact on TSV, it is imperative that these issues are resolved immediately.

The supplier will be required to implement corrective action on any sections that do not meet the established criteria set forth in this program, to include, but not limited to the following: defective product not meeting on-time delivery, lead-times, PPAP issues and non-conformances.

When defective product/material is found at TSV, in order to best support the production line, there are several ways TSV may handle the problem. The methods of handling the defective product include, but are not limited to:

- 1) The product will be returned to the supplier at the supplier's cost, while verified good product from the supplier is being delivered to TSV.
- 2) The supplier will be required to sort, screen or rework the product at TSV.
- 3) TSV may sort, screen or rework the product until the supplier arrives, then charge those costs back to the supplier.
- 4) TSV will retain the services of a local inspection house, and charge that cost to the supplier.
- 5) If any vehicles are to be reworked after the build is complete, the supplier will be charged a fee for the rework of the cars. The Sourcing department will define what charges are to be levied.

When corrective action is required, the supplier is to respond using the format provided by a TSV SQE or may use their own form with problem solving or 8D content. The form should be returned to the requester within twenty-four (24) hours of notification, with the possible cause(s) of the deficiency and the short-term corrective action documenting the supplier's containment plan, assuring the production receives acceptable product. The supplier must submit the completed corrective action within fourteen (**14**) days to the requester. A Supplier Quality Engineer or a Sourcing Representative will follow up with the supplier to verify that the issue has been resolved and effective corrective action is in place.

Below are the 8 steps of a Corrective Action Report:

- 1) Use Team Approach

Establish a cross-functional group of people with the knowledge, time, authority and skill to solve the problem and implement corrective actions. The group must select a team leader. The team may consist of design, product, manufacturing, and quality engineers, maintenance personnel and, most importantly, the operators.

- 2) *Describe the Problem*
Describe the problem in measurable terms. Specify the internal or external customer problem by describing it in specific terms. Such as number or percentage of product found defective, over what time-frame, and who found the problem.
- 3) *Implement and Verify Short-Term Corrective Actions*
Define and implement those intermediate or containment actions that will protect the customer from the problem until a permanent corrective action can be implemented. Verify the effectiveness of these actions with data. Including all product at TSV, any warehouse that may house inventory, what is in transit, inventory at the supplier's facility and all work in process.
- 4) *Define and Verify Root Causes*
Identify all potential causes, which could explain why the problem occurred. Test each potential cause against the problem description and data, using standard quality improvement tools such as Pareto charts, control charts, design of experiments and others that may apply. Identify all possible solutions to eliminate root cause of the defect.
- 5) *Verify Corrective Actions*
Confirm that the selected solutions will resolve the problem for the customer and will not cause undesirable side effects. Define other actions, if necessary, based on potential severity of problem.
- 6) *Implement Permanent Corrective Actions*
Define and implement the permanent corrective actions needed. Choose on-going controls to ensure the root cause defect is eliminated. Once in production, monitor the long-term effects and implement additional controls as necessary.
- 7) *Prevent Recurrences*
Modify specifications, implement work instructions, visual aids, and process controls, update training, and improve practices and procedures to prevent recurrence of this and all similar problems.
- 8) *Congratulate Your Team*
Recognize the collective efforts of your team. Publicize your achievement. Share your knowledge and learning.

3.4 Measurement Systems Analysis

In many cases, nonconforming product is found at TSV facilities due to measurement systems error. Inaccurate measurements may result in an incorrect process or product appraisal. This error increases the

emphasis for correct measurement systems. Measurement equipment is subject to the same types of variation as production processes.

To ensure that measurement equipment used in the development and manufacture of products is accurate and repeatable, it must be calibrated at established intervals suitable to the types of gauges used. Equipment to be calibrated includes: gauges, instruments, sensors, test equipment, computer software, manufacturing jigs, fixtures, molds and process instrumentation that can affect the product or process. The calibration frequency should be determined by: the equipment type, frequency of use, function and manufacturer's recommendation.

The supplier may be required to perform repeatability and reproducibility (Gauge R&R) studies to determine the uncertainty of the measurements on gauges used to measure KPC dimensions. These dimensions are noted on the part drawings and/or engineering specifications. Included in the Gauge R&R program are the production tooling and fixtures that are used as a method for inspection. Gauge R&R studies will include Linearity, Bias, and Stability. This will be done during PPAP and process approvals. The Gauge R & R results should be interpreted as follows:

- A. The Gauge R&R % Tolerance is < 10%, the gauge is acceptable
- B. The Gauge R&R % Tolerance is >10% and < 30%, the gauge is considered marginally acceptable for use
- C. The Gage R&R % Tolerance is > 30%, the gauge is not acceptable for use and replacement is recommended. New or different types of gauges should be considered

3.5 Request for Deviation/Supplier Request for Product Change (SRPC)

TSV Suppliers are to make every possible effort to only ship conforming product, and if print specifications cannot be achieved or sustained to communicate that concern to Sourcing at time of quoting. If the supplier finds non-conforming production parts at their facility before shipment, they may request a deviation utilizing the SRPC form in the TSV PPAP workbook. Exceptions to the drawing must be communicated by the supplier to their Commodity Manager and Supplier Quality Engineer (in advance) before a deviation or change is approved. They will meet with design engineering to determine whether the product can be used under a deviation or if the material cannot be used. TSV will review requests for deviation providing the request is combined with immediate corrective action. However, when a request for deviation occurs, TSV is under no obligation to grant the request. A request may only be granted with the approval of design engineering, sourcing and quality.

3.6 Development Stages and Processes

In the development process, engineers and suppliers will work together in designing prototype and sample parts to be used for testing.

Proper procedures must be followed to ensure accurate delivery, quality, timely payments and sample shipments. Special pink colored adhesive labels are to be used as a visual indicator on packages

containing PPAP, FAIR and other non-for-production-inventory parts. The label includes information fields regarding what type of part, the part number, revision level, supplier, an area designated for the recipient of the goods and a field for the date that the part was to be shipped. The packaging slip should accompany the package and reflect the standard PO, part number, quantity and receipt.

So as to not confuse sample submissions with production parts, TSV requires the submissions to be sent through FedEx or other similar expediated means.

3.7 Statistical Process Control

TSV is committed to the application of statistical techniques in all manufacturing processes. Statistical Process Control (SPC) measures the ability to consistently produce product within specification. TSV recommends the supplier apply the proper SPC techniques to verify the capability of their processes and products.

When control charts are used, real time trend analysis should be done and actions taken when adverse trends appear, according to published rules to identify special cause variation. Control charts should also be analyzed for process shifts and improvements. When the cause can be identified, control limits should be adjusted accordingly. It is highly recommended that when statistical process control charts are used, they be maintained by adequately trained operators who are responsible for the quality of their own work.

In the purchase order or other documents, a supplier may be requested to provide real time SPC data, control charts, inspection data, or other form of certified test reports with each shipment. There are several reasons for submittal of SPC data, the reasons include but are not limited to: the criticality of the product produced; a decline in the supplier's quality performance; process changes; product changes; or when special studies are being conducted.

3.8 Industry Workmanship Standards

In the absence of defined specifications on TSV drawings, applicable industry standards are to be applied (e.g. ANSI, AGMA, ISO, TSV).

3.9 Electronic 3D CAD Data Files

All unspecified dimensions for new part number drawings released are to be derived from the 3D CAD model. Not all TSV suppliers use Unigraphics or Pro-Engineer software. This requires TSV engineers to create and share 3D CAD data files (STEP, Parasolid, etc.) with its suppliers.

3.10 Equipment Preventative Maintenance

With today's just-in-time delivery and shorter lead times becoming the norm, suppliers must have a regular planned equipment preventive maintenance program (PM). The supplier shall maintain the equipment to ensure that it is performing optimally. A well-designed PM plan eliminates interruptions to the process flow, allowing the supplier to plan for equipment downtime. The majority of maintenance time

should be spent on preventive activities instead of firefighting. A PM plan should include at a minimum: schedules for planned downtime; documented maintenance procedures or work instructions; identification of key equipment; availability/inventory of key replacement parts; and records indicating that the planned maintenance has been completed as required.

3.11 Tooling Requirements

In the effort to keep tooling costs at a minimum, the supplier must maintain all tooling in proper condition. The following are guidelines the supplier is expected to follow concerning TSV owned tooling and tooling fixtures. The maintenance and repair of tooling is the responsibility of the supplier unless otherwise negotiated. TSV reserves the right to review and inspect TSV owned tooling and applicable tooling records at the supplier's facility. The supplier will have a PM program for all tooling used to produce TSV product whether the tooling is owned by TSV or the supplier.

To assure continuity of supply, the supplier must notify TSV Sourcing, in advance when possible, that the condition of the tooling will not allow product that conforms to specifications to be produced. A capability study may be required to validate tooling performance.

TOOLING POLICY

Tooling purchased by TSV or by a TSV customer, for use at a supplier facility shall be used exclusively for production of TSV requirements as authorized by Purchase Orders, Blanket Purchase Order Releases, and/or Forecasts furnished to suppliers. Products produced from such tooling may not be sold or furnished to other parties without the express, written authorization of TSV.

Each article of tooling must be clearly marked (stamped, stenciled, or permanently tagged) identifying the item as "Property of TSV" or if applicable, "Property of TSV (customer)" and the part number, which it produces. TSV will reimburse suppliers for only unique, dedicated production tools, and may request evidence of supplier's actual cost for such tooling prior to final payment. Unless specifically negotiated, TSV will not reimburse suppliers for Capital Equipment or tooling that is shared (used in production of products for other customers), or not returned to TSV upon demand. Likewise, unless specifically agreed, TSV will not reimburse suppliers for nonrecurring engineering (NRE) costs.

Tooling purchased by TSV is the property of TSV and held by suppliers pursuant to the terms and conditions of purchase. The Supplier may not move TSV tooling to alternate locations without advance written approval. TSV reserves the right to demand surrender of any TSV-owned tooling upon reasonable notice. TSV reserves the right to carry out an audit of TSV owned tooling at the suppliers' premises.

Tooling must be maintained in satisfactory working condition, capable of production that meets all governing drawings and specifications, and at the capitalized planning volumes/rates. Suppliers may not change/modify tooling owned by TSV without advance notification and approval in writing of such changes. Tooling must be fully covered by insurance against damage, loss, or theft and free from all liens and encumbrances at all times without expense to TSV.

Upon final payment, ownership of tooling is granted to TSV. Payment for tooling will be made, at agreed upon terms, following Initial Sample Approval. Suppliers when requested must furnish complete tooling drawings, including all details, inserts, consumables, etc. to TSV as part of the Initial Sample Approval submission. Invoices for tooling must show exact physical location by City, State or Province, and Country where tools will be used in production.

4.1 In-House Activities

TSV enjoys hosting visits by our suppliers at its various facilities. It is imperative that TSV rules be followed so these visits can continue. The main items that need to be followed include:

- Visitors to obtain a visitor pass and escorted by a TSV employee. Suppliers who make continuing visits can obtain a “contractor” badge which will not require constant escort. Please check with SQE for this option.
- No cameras, cell phones with cameras or any other recording devices are allowed in the manufacturing and assembly areas.
- Personal safety equipment must always be worn. Safety glasses must always be worn in the plant. Earplugs are also required in certain areas and will be made available.
- Visitors must stay in the allowed walk areas. Rubber sole shoes with closed toes and heels are required. If your visit requires going into non-walk sections, then steel/composite toe shoes are required.
- Smoking and tobacco use on all TSV properties is prohibited.
- No drugs or alcohol are allowed on TSV properties.
- No firearms are allowed.
- Harassing or unsafe behavior will not be allowed.

5.1 Notices of Rejection (NR)

NR's are created for FAIR, PPAP, GAMMA/Pilot and production parts that are found to be nonconforming. The sourcing/NPI team receives and dispositions all NRs. Sourcing/SQE contacts suppliers about NRs, receives the supplier's disposition preference, receives the RGA/RMA # from the supplier and creates the Return PO (if applicable). Engineering evaluates if the nonconforming product is fit for use. The SQE will investigate measurement concerns or technique differences brought to TSV's attention by supplier.

If the product is found to be nonconforming and rejectable, the information from the NR along with the disposition will be used to create a Notice of Rejection (NR) which is sent to the supplier. NRs are typically e-mailed to 2 or 3 representatives of that supplier. Due to the need for having a quick short-term Corrective Action response, it is beneficial that multiple people are in place to react promptly. If e-mail addresses are not available, the NR will be faxed to the supplier.

A processing fee will be charged to the supplier based on the business unit discretion. The supplier will also be responsible for all rework or sorting operations that need to occur because of nonconforming product delivered by a supplier. The supplier should lead the efforts required to address all nonconforming product. If TSV is forced to address these nonconformances, manual rework or sort operations will be charged back to the supplier at an hourly rate based on the business unit discretion. Rework or sort operations that need to be completed using TSV's mill, lathe, CMM or other equipment will be charged back to the supplier at an hourly rate based on the business unit discretion. Note: all applicable unless contractual nullification.

All suppliers will be subject to a daily production shutdown fee based on the business unit discretion if their part cause a work stoppage. These fees are used to help recoup a portion of expense TSV incurs due to lost revenue, overtime paid, efficiency reduction and increased shipping charges caused by suppliers' nonconforming products. TSV will work with the supplier to determine an effective cost and quality focused solution when nonconforming products force print requirements to be deviated.

5.2 Low Cost and Frequency Program

Purpose: To expedite the process of dispositioning infrequent and/or low dollar value rejected material efficiently. This process is meant to address those parts/components that have not caused any collateral damage and it is clear that the issue belongs to the supplier. These parts will be charged back to the Supplier at TSV's cost.

Scope: This process will affect rejected product quantities based upon dollar value and frequencies. Part/s qualifying will be eliminated from inventory without involvement in the NR process (no administrative fee, request for CAR or PPM against the supplier). The practice of scrapping parts where the cause of the nonconformance is TSV will not change.

SECTION V: Glossary

6.1 Glossary

APQP Process – Process that uses tools to offer the opportunity to get ahead of problems and solve them before the problems affect the customer.

Bias - The difference of the observed value of a measurement compared to a reference standard (bias is sometimes referred to as accuracy).

Characteristic – A distinguishing feature, dimension, or property of a process or its output (product) on which variable or attribute data can be collected. Visual aids can be used to specify or describe characteristics.

Design FMEA (Failure Mode and Effects Analysis) – An analytical technique used by Design Engineering and a cross functional team as a means to ensure that, to the extent possible, potential design failure modes, their associated causes, and effects have been considered and addressed.

Design Review – A process in which Design Engineering, Quality and/or Manufacturing Engineering and the supplier representatives (Quality, Engineering, and/or Sales), review the intended design of a product or component. The review will include: design for manufacturability, tolerance review, critical dimension reviews, and cosmetic requirements to provide a product that meets the customer's needs.

FAIR – (First Article Inspection) – evidence of measurements and material certifications assuring that parts comply to dimensions, features and properties as specified in engineering print.

Gage Calibration – A method to determine the accuracy and precision of a gage or measuring equipment to specified operational standards. The calibration of the equipment should be traceable to NIST (National Institute of Standards and Technology) whenever possible.

Gage R&R (Gage Repeatability and Reproducibility Study) – A method of determining how much of the measurement process and its variation contribute to the overall process variation.

ISO – a set of international standards that focuses on process based quality management developed to help companies effectively implement the quality system to help maintain an efficient and effective quality business system.

Linearity - The gage variation measured over the full operating range of the gage.

Material Certifications – Verification that a given material meets required specifications by performing chemical and/or metallurgical analysis. (I.e. hardness, yield strength, elongation, chemical content, etc.)

Non-conformance – A feature or action that fails to meet the requirements specified in a contract, specification, blueprint, international standard, or any other approved document.

Poka - Yoke – Mistake proofing methodology.

PPAP (Production Part Approval Process) – Defines generic requirements for production part approval. The purpose is to determine if the supplier properly understands all engineering design

specifications/product requirements. Also if the process has the potential to produce product consistently meeting these requirements during an actual production run at the quoted production rate.

Pre-Launch – A description of the dimensional measurements, material and performance tests that occur after prototype and before normal production build.

Preventative Action – An action taken to eliminate the possibility of a nonconformance.

Process Control Plans – A written description of a process or system for controlling the production of parts and/or the process. It includes information about what characteristics are checked, frequency of checks, and evaluation method.

Process Documentation – Written documentation used to control a process. An established set of operational definitions written to clearly communicate the what, when, where and how of a process operation.

Process Flow Diagram – A controlled document with a graphical view and brief description depicting the steps in a process.

Process FMEA (Failure Mode and Effects Analysis) – An analytical technique used by Manufacturing Engineering and a cross functional team as a means to ensure that, to the extent possible, potential process failure modes, their associated causes, and effects have been considered and addressed.

Product Audits – Auditing of finished product to established specifications.

Production Pilot Run – A production run conducted on TSV's or the supplier's standard production tooling and equipment. The production run is one continuous run to establish part and/or process capability levels (Cpk). A production trial run can also be used to verify and validate new equipment.

Production Process – A comprehensive documentation of product/process characteristics, process controls, tests, and measurement systems occurring during normal production.

QFD (Quality Function Deployment) - The translation of customer expectations into specific engineering and quality characteristics.

Quality Systems Self Evaluation – An audit done by the supplier on their quality program based on TSV's requirements or ISO 9001:2008/ISO 9001:2015, also referred to as a first party audit.

Repeatability - The average variation obtained by one operator when using the same measuring device measuring the same characteristic multiple times.

Reproducibility - The average variation obtained when different operators measure the same characteristic multiple times using the same measuring device.

Stability - The total variation in a gage using the same master or parts, over a period of time, demonstrates the reliability of the gage.

Traceability and Lot Control – 1) The ability to trace the date code or lot number of a particular lot(s) of product at the supplier's facility from raw materials, through production, inventory and transit to TSV. 2) The ability to trace the history of a product after shipment by means of recorded information and/or identification after the product has been assembled and in use at the end user's facility.

SECTION VI: Glossary

7.1 Appendix: Common Acronyms, Abbreviations and Industry Terms

- **Note: Other meanings may also exist, but these are commonly used in the Industry.**

A2LA = American Association for Laboratory Accreditation
 AC = Artic Cat
 ACAT = Artic Cat
 AFE = Authorization for Expenditure
 AQL = Acceptable Quality Level
 AIAG = Automotive Industry Action Group
 AND – Activity Network Diagram
 ANOVA = Analysis of Variance
 ANSI = American National Standards Institute
 AOQ = Average Outgoing Quality
 APICS = American Production and Inventory Control Society (i.e., now the Association for Operations Management)
 APQP = Advanced Product Quality Planning
 ASME = American Society of Mechanical Engineers
 ASQ = American Society for Quality
 ASTM = American Society for Testing and Materials
 ATV = All-Terrain Vehicle
 AUG = Augusta

BoK = Body of Knowledge
 BOM = Bill of Material

C&E = Cause and Effect
 CA = Corrective Action
 CAD = Computer Aided Drafting or Computer Aided Design
 CAE = Computer Aided Engineering
 CAM = Computational and Applied Mathematics
 Cal = Calibration
 CAR = Corrective Action Report
 CE = Concurrent Engineering
 CI = Continuous Improvement
 CMM = Computerized Measuring Machine
 CMQ/OE = Certified Manager of Quality & Organization Excellence
 CNC = Computerized Numerical Control
 COQ = Cost of Poor Quality
 COQ = Cost of Quality
 CP = Control Plan
 CPR = Component Producibility Review
 Cp = Capability index for stability
 Cpk = Capability index for stability as it relates to specification limits
 CPL = Lower capability index
 CPU = Upper capability index
 CQA = Certified Quality Auditor
 CQI = Continuous Quality Improvement
 CQIA = Certified Quality Improvement Associate
 CRM = Customer Relationship Management
 CS = Customer Satisfaction
 CTL = Cut to Length
 Cushman = Brand of Vehicle
 CUSUM = Cumulative Sum
 CY = Calendar Year

DE = Design Engineer
 DEV = Temporary Deviation

DFA = Design for Assembly
 DM = Design for Manufacturing
 DFT = Demand Flow Technology
 DFMEA = Design Failure Mode and Effects Analysis
 DIN = German Institute for Standardization
 DMADV = Define, Measure, Analyze, Design and Verify
 DMAIC = Define, Measure, Analyze, Improve and Control
 DOD = Department of Defense
 DOE = Design of Experiments

EAU = Estimated Annual Usage
 ECB = Engineering Confirmation Build
 ECN = Engineering Change Notice
 ECO = Engineering Change Order
 ECR = Enterprise Change Request
 ENG = Engineer or Engineering
 EPAT = Engineering, Supply Chain, Assembly and Test
 ERP = Enterprise Resource Planning
 EVOP = Evolutionary Operation
 E-Z-GO = Brand of vehicle

FAIR = First Article Report
 FEA = Finite Element Analysis
 FFA = Force Field Analysis
 FIM = Full Indicator Movement
 FMEA = Failure Mode and Effects Analysis
 FTA = Fault Tree Analysis
 FY = Fiscal Year

G&A = Garments and Accessories
 GD&T = Geometric Dimensioning and Tolerancing
 GMP = Good Manufacturing Practice
 GR&R = Gage Repeatability and Reproducibility

HU = Handling Unit

NR = Inspection and Disposition Report
 IFI = Industrial Fastener Institute
 IPPC = International Plant Protection Convention
 IR = Inspection Required
 ISC = Integrated Supply Chain
 ISIR = Initial Sample and Inspection Report
 ISM = Institute for Supply Management
 ISO = International Organization for Standardization
 ISO 9000 = Fundamentals and vocabulary of the Quality Management System
 ISO 9001 = Requirements of the Quality Management System
 ISO 9004 = Guidelines for performance improvements of the Quality Management System

Jac = Jacobsen
 JIS = Japanese Industrial Standard
 JIT = Just in Time

KCC = Key Control Characteristic
 KPC = Key Product Characteristic

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KPI = Key Performance Indicator
KPIV = Key Process Input Variable

LCL = Lower Control Limit
LMC = Least Material Condition
LSL = Lower Specification Limit
LSV = Low Speed Vehicle
LTL = Lower Tolerance Limit
LTL = Less than Load (partial truck)
LTPD = Lot Tolerance Percent Defective

ME = Manufacturing Engineer (production)
ME = Mechanical Engineer (design)
Mil-Std = Military Standard
MMC = Maximum Material Condition
MPS = Master Production Schedule
MRB = Material Review Board
MSA = Measurement Systems Analysis
MTBF = Mean Time Between Failures
MY = Model Year

n = Sample Size
N = Lot Size
NC = Nonconformance or Nonconforming
NCM = Non-conforming Material
NDA = Non-Disclosure Agreement
NDT = Non-Destructive Testing
NIR = No Incoming Inspection Requirement
NIST = National Institute of Standards and Technology
NR = Notice of Rejection
NPI = New Product Introduction

OC = Operating Characteristics
OEM = Original Equipment Manufacturer

PF2 = Supplier packaging Form for protecting product
PF3 = Packaging Buy-Off
PC = Percent Complete
PDCA = Plan, Do, Check, Act
PDF = Portable Document Format (viewable drawing)
PDSA = Plan, Do, Study, Act
PE = Professional Engineer (US License)
P ENG = Professional Engineer (Canadian License)
PERT = Program Evaluation and Review Technique
PFMEA = Process Failure Mode and Effect Analysis
PG&A – Parts, Garments and Accessories
PJ Eng = Project Engineer
PM = Preventative Maintenance
PM = Program/Project Manager
PN = Part Number
PO = Purchase Order
Poka Yoke = Mistake Proofing Methodology
PPAP = Production Part Approval Process
PPI = Process Performance Indices
PPL = Lower Performance Index
PPM = Parts Per Million. PPM metric is the quantity of defects per million parts received (PPM = % defective / parts received X 1000000).
PPU = Upper Performance Index
PRAT = Process Review and Action Team
PSO = Process Sign-Off Checklist
PSW = Part Submission Warrant
PTV = Personal Transportation Vehicle
PU = Packaging Unit
PVB = Product Validation Build

QA = Quality Assurance
QC = Quality Control
QE = Quality Engineer
QFD = Quality Function Deployment
QM = Quality Manager/Management
QMS = Quality Management System
QIS = Quality Information System
QS 9000 = Quality System Requirements
QSS = Quality System Survey
Qty = Quantity

R = Range
R&R = Gauge Repeatability and Reproducibility
Ra = Surface Roughness Average
RAB = Registrar Accreditation Board
RBS = Resource breakdown Structure
REID = Re-Identify
REL ENG = Release Engineer
REV = Revision
RFI = Request for Information
RFP = Request for Proposal
RFQ = Request for Quote
RFS = Regardless of Feature Size
RGA = Return Goods Authorization
RMA = Return Materials Authorization
RPO = Return Purchase Order
RPN = Risk Priority Number
RQL = Rejectable Quality Level
Rt= Surface Roughness total
RTV = Return to Vendor
ROV = Recreational Off-Road Vehicle

SA = Scheduling Agreement
SAE = Society of Automobile Engineers
SAP = System Applications and Products
SCM = Supply Chain Management
SOP = Standard Operating Procedure
SOW = Statement of Work
SPC = Statistical Process Control
Spec = Specification
SQE = Supplier Quality Engineer
SRM = Supplier Relationship Management
SRPC = Supplier Request for Product Change Form
STC = St. Cloud manufacturing plant
STD = Standard
SWOT = Strengths, Weaknesses, Opportunities and Threats analysis

TC = Team Center
Temp Dev = Temporary Deviation
TOC = Theory of Constraints
T&M = Time and Material
TQM = Total Quality Management
TRF = Thief River Falls manufacturing plant
TS16949 = Technical Specification – supplemental to ISO 9001
TSV = Textron Specialized Vehicles

UCL = Upper Control Limit (voice of process)
UOM = Unit of Measure
USL = Upper Specification Limit (voice of customer)
UTL = Upper Tolerance Limit

VA = Value Analysis
VAT = Value Added Tax
VE = Value Engineering

VIN = Vehicle Identification Number
 VOC = Voice of the Customer

WBS = Work Breakdown Structure
 WPM = Wood Packing Materials

8.1 Appendix: Arctic Cat Supplier Portal Website

Arctic Cat has an interactive website available for their suppliers to obtain information regarding business procedures, transactions and view the combined performance between Arctic Cat and the Supplier. It is a complete system in which suppliers can see their requirements, create compliant bar code labels and submit ASN's (advanced shipping notices). Suppliers must have "Microsoft Internet Explorer Version 7" or newer on a personal computer with an operating system of Windows XP or newer. For security purposes, a user ID and case-sensitive password are required to log in. To obtain a user ID and password, contact the Supplier Portal Systems Administrator at support@articcatine.com. A supplier can also contact any member of the Commodity Team to assist in contacting the administrator.

The Supplier Portal Home Page is designed to give a quick visual of key performance measures. The performance indicators are designed as a continuous improvement tool. The graphs display transactions in monthly increments with the details displayed when clicking on the bars.

The Supplier Portal address is: <https://sp.articcatine.com>

A guide entitled **Using the Supplier Portal Website** is available through the link: <https://sp.articcatine.com/help/7StepGuide.aspx>

Arctic Cat updates the requirements on the Supplier Portal nightly. ASNs are absorbed into the system before the MRP run.

Revision History:

| Document Number | Revision | Initiation Date: |
|-----------------|----------|--------------------|
| SQM | A | February 21, 2005 |
| SQM | B | December 20, 2005 |
| SQM | C | April 3, 2008 |
| SQM | D | September 13, 2012 |
| SQM | E | July 11, 2017 |
| SQM | F | December 18, 2019 |

Note: 1 Revisions to this document such as spelling, grammar, or numbering may be made without changes to the revision, providing it does not change the effect of the wording.

Note: 2 All applicable TSV engineering standards still apply.

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Revision History for TSV Supplier Quality Manual

From: To: Date: Summary of Changes

| | | |
|---|--------------------|---|
| A | July 19, 2005 | New Release |
| B | December 20, 2005 | Deleted Purchasing Contract and Supplier Assessment |
| C | April 3, 2008 | Revised to reflect current process |
| D | September 13, 2012 | Reviewed with Clint Greene and Renée Stern and revised |
| E | July 11, 2017 | Reviewed with Jim Vincenzetti, Renée Stern, John Taylor, Kerri Thompson and revised. |
| F | December 18, 2019 | Reviewed with Renée Stern, John Taylor and revised to commonize with Arctic Cat processes and documentation. Removed 'Education Required' column. |

