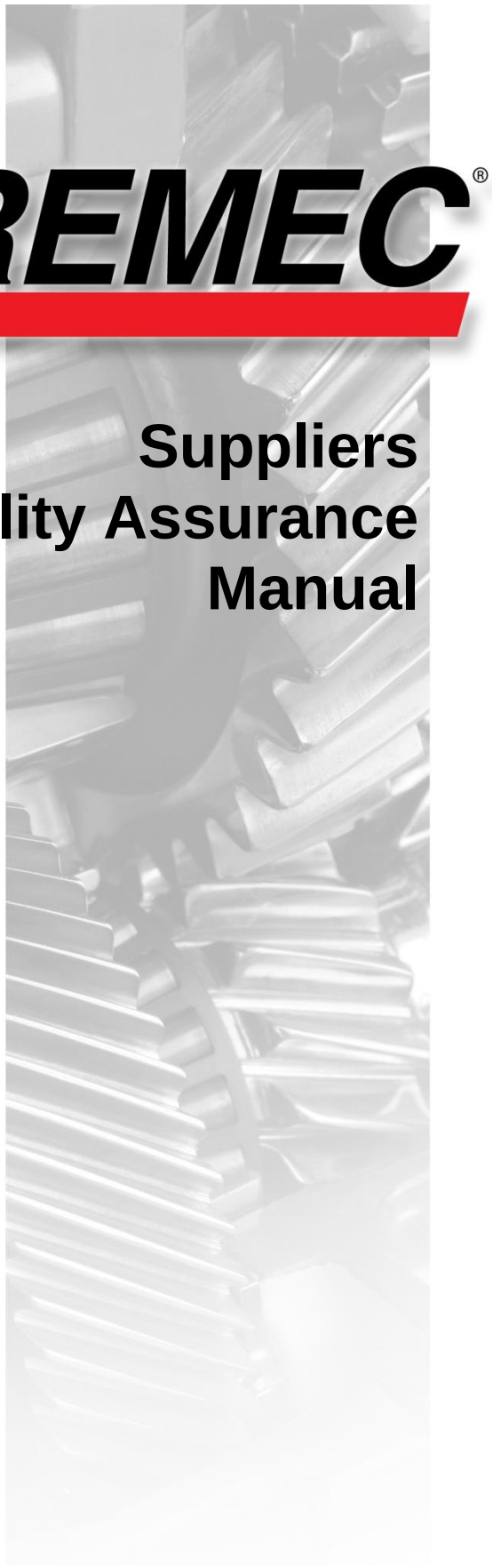

Suppliers Quality Assurance Manual

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Avenida 5 de Febrero 2115 | Fracc. Industrial Benito | Juárez | Santiago de Querétaro, Querétaro C.P. 76120
Tel: +52 (442) 211.7300 | Fax: +52 (442) 211.7335 | www.TREMEC.com

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Dear Supplier,

In global markets, it is no longer enough for many worldwide enterprises to promise their customers they will meet their requirements, in their country as well as abroad. Nowadays, markets are increasingly demanding standardized Quality Assurance Systems, which will guarantee their products and excellence services by enforcing the “Zero Defects” policy, among others. Therefore, some improvements to Quality Systems have been implemented through time, and today, the Technical Specification IATF 16949 is the outcome of continuous improvement and a further step towards excellence. Moreover, it offers us the opportunity to be prepared for future changes, and to have an exporting competence embracing the Total Quality concept, since Total Quality is an endless race, as you know.

The General Director, General Leaders, Area Leaders and Personnel who are part of this Organization, are aware of the effort and dedication required to attain IATF 16949 Certification in each of our plants, as well as to become a state-of-the-art group of enterprises committed to a continuous and thorough search of Our Customers’ Satisfaction. Thus, we are requesting you, our suppliers, to participate and get involved in the process to reach this goal.

As part of our team, we would like to share this Quality Assurance and Supplier Development Manual with you, so that you may use it as a supporting tool to meet our Quality System’s Requirements.

Antonio Herrera Rivera
General Director
TREMEC Group

Introduction

Application of this manual

This manual shall apply to suppliers of materials and services that are embodied directly or indirectly into the finished product(s) of TREMEC.

The manual forms part of the overall supply agreement between the parties and is integral to the Purchase Order / Agreement with the Supplier.

This scope of this manual is such that it should be used in conjunction with the Automotive Industry Action Group (AIAG) / International Automotive Task Force (IATF) reference manuals including Advanced Planning for Quality Products (APQP).

All Suppliers shall have access to this document and shall follow the policies and procedures set out within this manual and those required by the AIAG/IATF Reference Manuals. Suppliers will be responsible for procuring the relevant standards and documentation at the latest level.

Quality System

The manual defines the Quality System that suppliers shall use to guarantee materials and services are supplied in accordance with the Purchase Order(s) or Instruction(s).

The Supplier shall put in place a Quality System that ensures compliance with this manual.

The Supplier's Quality System shall be documented and available for audit by our representatives.

Supplier's Responsibility

Suppliers are responsible for ensuring compliance with this Manual and Quality Standard set by TREMEC.

These requirements apply to both the Supplier and their Sub-Supplier(s) in relation to work performed against TREMEC Purchase Order(s) or Instruction(s). The supplier shall pass on the requirements of this manual to its supplier's base and shall be responsible for their Sub-Suppliers compliance with this Manual.

It will assume that the requirements of this Manual are understood by the supplier before they accept any Purchase Order(s) or Instruction(s) from TREMEC.

Company name and references

TREMEC is an acronym for Transmisiones y Equipos Mecánicos S.A. de C.V. and includes by reference TREMEC's Belgian branch and TREMEC Corporation. The specific TREMEC entity for purposes of the application of this manual shall be the TREMEC entity issuing the applicable Purchase Order and/or the Supply Agreement, as the case may be.

Instructions and Responsibilities

1. Supplier Sourcing

1.1 Global standards

1.1.1 TREMEC requires its Suppliers to be certified by to the latest version of IATF 16949 or ISO-9001 management systems. It is our goal that all our suppliers shall base their Quality System on *IATF 16949:2016*.

1.1.2 TREMEC bases its quality procedures on APQP and PPAP requirements as detailed in the AIAG/IATF Reference Manuals. Suppliers are expected to follow these same procedures.

1.1.3 Suppliers of parts that are determined to be 'Safety Critical Items' (any systems where unintended behaviors could result in potential safety concern under certain conditions) shall comply with standard ISO 26262-1:2011 'Road vehicles – Functional safety'

1.2 Approved Suppliers

1.2.1 Only suppliers that are approved by TREMEC shall be eligible to supply goods and services, this shall include customer directed suppliers. Approved suppliers shall be those who are:

- i) Existing TREMEC suppliers with status 'Green'
- ii) New suppliers that have been Qualified and Approved.

1.2.2 Approved suppliers are recorded on TREMEC Approved Supplier list.

1.3 Approval of New Suppliers

1.3.1 All potential Suppliers are required to complete the "*Supplier General Profile*" questionnaire which is found in Appendices of this manual. To be submitted to the SQE/SDE.

1.3.2 New Suppliers shall be assessed using the '*TREMEC Suppliers' Quality System Assessment for New Suppliers*' found in Appendices of this manual. Suppliers shall be required to reach a score of 80% before they can be added to the Approved Supplier List. To be submitted to the SQE.

1.3.3 All Suppliers will provide their company details and contacts using the '*Supplier Data Form*' found in Appendices of this manual. To be submitted to the Buyer.

1.3.4 New Suppliers will be required to enter into a *Non-Disclosure Agreement*, the standard form can be found in Appendices of this Manual. To be submitted by the Buyer.

1.3.5 All Suppliers will confirm that they have received, understood, and accepted the TREMEC Supplier Quality Assurance Manual by completing and returning the acknowledgement form at the end of this manual.

1.3.6 TREMEC reserves the right to audit the Supplier's Quality System and/or Manufacturing processes, even if certified by a third party.

1.4 Continuous Supplier Validation and Performance Monitoring

1.4.1 Suppliers shall be continually assessed by TREMEC.

1.4.2 "Red" Suppliers will be placed on New Business on Hold (NBOH).

1.4.3 Suppliers are required to provide periodic updates on request, and no less frequently than annually, on their safety and delivered quality performance

2 Prototype Requirements

2.1 Supplier Manufacturing Feasibility Plan

The Supplier shall complete a '*Supplier Manufacturing Feasibility Analysis' (*found in Appendices of this manual) with each quotation response that is compliant with the specifications detailed in TREMEC's Request for Quotation (RFQ) or other formal communication. The '*Supplier Manufacturing Feasibility Analysis'* shall set out the process

required to manufacture the part, including details of the equipment, machinery and measuring instruments suitable to complete the operation.

2.2 Engineering Specification and 'Special Characteristics'

The Supplier shall check and confirm that the Engineering Specifications and drawing, identifying Significant and Critical Characteristics and confirm that drawings referred to in the RFQ and Purchase Order correspond with each other and are consistent with the last information they have been provided with by the TREMEC contact. List of engineering drawing symbols found in Appendices of this manual

2.3 Prototype Control Plan (PCP)

Prior to batch manufacturing of prototypes, the Supplier shall develop a '*Prototype Control Plan'* (PCP). The PCP shall define the method used to control Special Characteristics indicated in the drawing(s). This document should be signed by the Supplier and sent to the SDE for review and approval prior to prototypes manufacturing start-up.

2.4 Prototype Shipment Documentation

The prototype batch shipment should be accompanied by the following documentation:

- Layout Drawing including drawing number and or part number
- Inspection results for all prototype parts including all dimensions indicated on the drawing, or whatever was agreed and documented by TREMEC's SDE
- 100% inspection for the prototype batch where dimensions are identified as 'Critical Characteristics'
- Metallographic and/or Metallurgic Report as required in the specification
- Material Test Report(s) / certificates as required in the specification.

And other documentation indicated in the drawing or by TREMEC SQE / Engineering.

2.5 Traceability

The prototype parts shall be identified according to the numerically, from [1] to [the total number of parts of the batch], cross referenced with the number indicated on the dimensional reports (inspection results). The parts shall also be marked with the batch number and engineering level. These details shall be entered in the following format:

LEVEL – BATCH – CONSECUTIVE/TOTAL Example: AB – 2 – 13/50

Where…

LEVEL	Design engineering level used for the manufacturing of the prototype (e.g. AB)
BATCH	The batch number of the prototype part purchased during the project's life (e.g.: 2, which means second batch purchased for the same prototype part number).
CONSECUTIVE/TOTAL	Consecutive numeric identification according to the total number of parts, which constitute the prototype's batch (e.g.: 13/50, which means: part number 13 of the total 50-part batch purchased.

Note: In the case of bolts, latches, shims, springs, nuts, pins, etc., where part identification may be difficult, the batch shall be identified (box, bag, etc.) with a tag containing the above-mentioned information. The color of the tag shall differ from batch to batch.

2.6 Prototype Defect

In the event of a non-conformance, which is attributable to the Supplier, a Defective Material Report (DMR) shall be sent to notify the Supplier. The Supplier shall take measures to rectify the batch according to the DMR, and if necessary shall replace the whole batch. The Supplier will submit an 8D Report to the SDE describing the root cause(s) and corrective action(s) to be taken to prevent quality issues recurrences.

2.7 False Supplier Report

In the event of a non-conformance where the Supplier's report had confirmed conformance, costs incurred by TREMEC in sorting and rectifying the problem including those of any sub-contractor employed by TREMEC to do this task, may be charged to the Supplier.

2.8 Ready for "Off the Shelf" parts

Parts that are purchased as "Off the shelf", for example, proprietary parts supplied through distributors, must still be validated by TREMEC. Therefore, the Supplier shall send in addition to documentation described in item 2.4:

- A Part Submission Warrant (PSW) Guarantee for each numbered part supplied by the Original Manufacturer (OEM) validated by the Supplier
- An OEM Control Plan for each part number
- Dimensional reports for 2 parts of each component, inspected at a 100%, for all the characteristics of the designs released by TREMEC.
- 100% inspection results for all the parts in the prototype batch, against the dimensions shown on the design, indicated as critical.
- Tests Results against design specifications for each part as required.

Or other documentation as indicated in writing by TREMEC.

2.9 PSWs for Ready For Use (RFU) assemblies

PSWs are not required for individual components that comprise the finished assembly.

PSW approvals shall be in the name of the Supplier and not of the OEMs.

3 Preparation for Serial Production

3.1 Supplier Manufacturing Feasibility Analysis

The Supplier shall send with every quotation, a *Supplier Manufacturing Feasibility Analysis* (see Appendix) for each part according TREMEC's Engineering drawing. This shall include an '*Operations Flowchart'* setting out the operations required to manufacture the part including details of equipment, machinery and measuring instruments required for each operation.

3.2 APQP Team / APQP Status Report

On receipt of the PO the Supplier shall create an APQP team and initiate an '*APQP Status Report'* and *'Open Issues List'* (OIL). The APQP status report will be focused on addressing the status and timing of the required PPAP documentation to be included along with the Part Submission Warrant (PSW). It is preferred to have the PPAP documentation package and PSW submitted as one electronic file or document. The 18 primary PPAP documents/ deliverables are:

1.) Design Records
2.) Authorized Engineering Changes
3.) Customer Engineering Approval
4.) Design Failure Mode and Effects Analysis (DFMEA)

5.) Process Flow Diagrams
6.) Process Failure Mode and Effects Analysis (PFMEA)
7.) Control Plans
8.) Measurement System Analysis (MSA)
9.) Dimensional Results
10.) Records of Material/Performance Test Results
11.) Initial Process Study
12.) Qualified Laboratory Documentation
13.) Appearance Approval Reports (AAR)
14.) Sample Production Parts
15.) Master Sample
16.) Checking Aids
17.) Customer Specific Requirements
18.) Part Submission Warrant

Once the PSW is approved a significant production run will be required to verify production capacity and readiness. This is subject to discussion and agreement but typically requires a production run of 4 to 8 hours.

In addition to the above TREMEC will also require documentation of approved packaging, documented evidence of material uploads into the IMDS and evidence that all customer owned tooling has been properly tagged/labelled.

3.3 Design Review

If the Supplier is design responsible, before commencing manufacture the Supplier shall:

- Submit a Design Failure Mode Effect Analysis (DFMEA) to the TREMEC SDE for approval
- Confirm TREMEC has approved the design and specifications
- firm that all open issues created during the Design Review have been closed

3.4 Design Verification

If the Supplier is design responsible, the Supplier shall:

- Adhere to TREMEC tests and Pass / Fail Requirements.
- Communicate verification testing criterion and timing plan to TREMEC SQE

Validation plan:

The Design validation (DV) plan is defined by the supplier on the basis of:

- The DFMEA analysis
- The lessons learned.
- This validation plan will list all the testing required:
- To validate the component and ensure the validation of the design.

This validation plan will be reviewed and signed at least by the:

- Quality representative of the supplier
- Engineering representative of the supplier
- Project coordinator of the supplier
- TREMEC Engineering & SQE

3.5 Process Development Plan (PDP)

On receipt of the purchase order, the Supplier shall submit a *Process Development Plan* (PDP) to the Buyer and SDE for: tooling, manufacturing / inspection frames, gages and testing equipment.

The PDP shall include the following:

- A Process Operations Flowchart (3.5.1)
- A Process Failure Mode Effect Analysis (PFMEA) (3.5.2)
- A Production Control Plan (3.5.3)
- Process sheets, work and inspection Instructions
- Gage repeatability & reproducibility (GR&R) studies or other in accordance with the Measurement Systems Analysis (MSA)
- Capability Studies regarding Critical and/or Significant Characteristics for the Product and/or Process
- Packing Method and Type
- PPAP submittal timetable

3.5.1 Process Operations Flowchart

The purpose of the Process Operations Flowchart is to demonstrate that the overall process has the capability and capacity to meet the production requirements. Specific requirements of the *Operations Flowchart* include:

- The sequence of operations for all the process operations, for example, inspections, transportation, storage, etc.
- The machinery and equipment used in each operation.
- The cycle time taken for each operation.
- Critical machinery shall be identified according to the following: by loads, maintenance requirements, cycle time, capability (Cpk), complexity of Operations and by operator skills
- “Bottle Neck” operations shall be identified and machine capacity studies shall be detailed

3.5.2 Process Failure Mode and Effects Analysis (PFMEA)

The Supplier shall provide a PFMEA which complies with the methodology defined in the last revision of the AIAG/IATF reference manual. Characteristic class shall be indicated on the PFMEA and the Control Plan. Specific requirements for TREMEC are set out below:

- Critical Characteristics = Severity on the PFMEA between 9 and 10
- Significant Characteristics = Severity on the PFMEA between 5 and 8 and occurrence between 4 and 10
- DR’s, AQC’s, PTC’s, PQC’s and no symbol characteristics = Severity on the PFMEA below 5

See the glossary for further details of drawing characteristics & symbols.

Current controls of process prevention and detection

This section of the PFMEA, shall emphasize the use of SPC (X-R, X-S charts, etc) and the implementation of error-proofing devices, for example: error proofing / Poka Yokes, applicable for Critical and Pass Through Characteristics

Any failure mode with high priority risk shall have recommended actions. The definition of high priority risk must be according to the recommendation of the last edition of the FMEA (AIAG/IATF) Reference Manual.

3.5.3 Production Control Plan

The Supplier shall comply with the Control Plan technique and methodology stated in the AIAG/IATF (APQP & Control Plan) Reference Manual, latest edition, including the use of the official format. Specific TREMEC requirements for the treatment of critical and significant characteristics are as follows:

- Indicate whether a characteristic is special and identify it according to the correct symbol (found in Appendices of this manual)
- All special characteristics are subject to 100% inspection.
- All readings shall be recorded and used to estimate process capability in accordance with table is Section 3.5.4

3.5.3.1 Improvement Plan

When the process is not capable, an improvement plan shall be agreed with the TREMEC SQE, which might include:

- 100% inspection is required until the process capability meets the requirements
- It is recommended that alternate control methods are used between continuous variables and discrete variables, the purpose of which is:
  a) to ensure a 100% compliance of requirements
  b) to enable the collection of data, allowing capability studies to improve decision making
- Records shall be kept for each reading when dealing with measuring instruments by means of a continuous variable.
  With discrete variables, the recommendation is to use measuring instruments for attributes, as well as control charts.
- When a process has been demonstrated to be capable, the use of SPC (X-R Charts) must be detailed as the control method for the characteristics in the Production Control Plan

3.5.3.2 Approval of Production Control Plan

The *Production Control Plan* shall be approved by the TREMEC SDE when the Supplier shows the capability to control the Special Characteristics.

Note. Refer to last edition APQP & Control Plan (AIAG/IATF) manual for further information

3.5.4 Capability Studies using Statistical Process Control (SPC)

The Supplier shall monitor Special Characteristics using SPC according to AIAG, SPC and PPAP Reference Manuals at last revision. The Supplier shall comply with the following TREMEC's specific requirements to control the Special Characteristics as detailed below:

SPECIAL CHARACTERISTICS REQUIREMENTS					
Characteristic	**Description**	**Non-Conformance Could Affect**	**Capability Requirement (Short Term/PPAP)**	**Capability Requirement (Long Term)**	**Control Method**
CC*	Critical Characteristic	Safety & Other Regulatory Requirements	Cp ≥2.0, CpK ≥1.67	Cp ≥2.0, CpK ≥1.50	Requirement will depend on customer requirements and will be clarified during Request for Quotation process
SC*	Significant Characteristic	Form, Fit or Function	Cp ≥2.0, CpK ≥1.67	Cp ≥2.0, CpK ≥1.50	SPC (X bar & R)
DR*	Documentation Required	Form, Fit or Function	Cp ≥1.33, CpK ≥1.00	Cp ≥1.33, CpK ≥1.00	SPC (X bar & R)
NO SYMBOL	Standard Characteristic	Form or Fit	Cp ≥1.33, CpK ≥1.00 (When it is required by SDE and depending of nature of characteristic)	Cp ≥1.33, CpK ≥1.00 (When it is required by SDE and depending of nature of characteristic)	Inspection frequency & Control Method in Control Plan depending of preliminary capability study (PPAP) and nature of the characteristic
PTC	Pass Through Characteristic	Vehicle Assembly	Cp ≥1.67, CpK ≥1.33	not applicable	Depends on PTC requirement
AQC	Attribute Quality Characteric	Function & Durability	Cp ≥1.33, CpK ≥1.00 (When it is required by SDE and depending of nature of characteristic)	not applicable	100% attibute gage inspection with nP Chart
TYPE I ERROR PROOFING: design of part or assembly systems that prevent the defect from occurring					
TYPE II ERROR PROOFING: implementation of poke yoke and/or other controls to identify/reject defective units and prevent them from moving to the next station or end of the line.					

Readings used to perform Capability Studies shall be taken from the Pre-production run (PPAP) and shall include at least 30 equally spaced readings throughout the batch.

- If there is doubt in the results or where greater confidence in the Capability Study is required, 100 readings (20 sub-groups, 5 readings each) shall be used.

* Acceptable manufacturing controls for CC, SC and DR characteristics on materials, heat treatment, coating, destructive testing, cleanliness etc.		
Material Properties:		
CC	Hardness Certification per batch	Appropriate batch or heat sampling for destructive testing to be agreed between Tremec's responsible SQ&D and suppier
SC		
DR		
Hardness:		
CC	Hardness Certification per batch	Appropriate batch sampling for destructive testing to be agreed between Tremec's responsible SQ&D and suppier
SC		
DR		
Porosity:		
CC	First Off/Last Off per shift/Batch	Appropriate batch sampling for destructive testing to be agreed between Tremec's responsible SQ&D and suppier
SC	One per shift/Batch	
DR		
Corrosion Coating:		
CC	First Off/Last Off per shift/Batch	Appropriate batch sampling for destructive testing to be agreed between Tremec's responsible SQ&D and suppier
SC	One per shift/Batch	
DR		
Where direct measurement of special characteristics is not feasible or impractical , product characteristics may be indirectly controlled through the control of relevant key process input variables (Process characteristics or parameters).		

3.5.4.1 Annual capability review

- Each year, the capability study of all the Critical Characteristics shall be sent to the TREMEC SDE. If the Cpk is below the requirement, the Supplier will provide an 'Improvement Plan' and the parts may be subject to Containment Procedures.

Note: Refer to last edition SPC (AIAG/IATF) Manual for further information.

3.5.5 Measuring Systems Analysis

The Supplier shall perform Repeatability and Reproducibility and/or Linearity and/or Bias and/or Stability or other approved MSA on all gages and measuring instruments, used for the measurement of characteristics identified on TREMEC: drawings, Control Plan or defined by the nature of the process. TREMEC specific requirements are:

For Special Characteristics

- Studies shall be in force for one year, provided no change is made on the measuring system (Operator, gage or inspection method).
- R&R studies shall comply with MSA (Measurement System Analysis) Methodology, where TREMEC acceptance criterion is ≤ 20% (when dealing with continuous variables). With discrete variables, criteria provided on the MSA shall be used.
- For characteristic described in Control Plan without any kind of symbology the MSA study shall comply with the Measurement System Analysis Reference Manual Criteria.
- Every time a change is made to the measuring system (Operator, Gage or Inspection Method), the Supplier shall notify and send Reproducibility and Repeatability Studies to the TREMEC SDE.
- Linearity, Bias and Stability studies, shall be made at TREMEC's request depending on the criticality of the component and the measuring systems used.

Note. Refer to last edition MSA (AIAG and IATF) Manual for further information.

3.5.6 Production Demonstration Run (Run @ Rate)

The Supplier shall perform the Production Demonstration Run to assure that daily capacity required by TREMEC facility is reached.

3.5.7 Production Parts Approval Process (PPAP)

Suppliers shall comply with the Production Parts Approval Process (PPAP), this is to:

1) Validate that the design information and engineering specifications, are fully understood and applied by the Supplier.
2) That the manufacturing process can produce parts that will comply with these requirements during a validation run, as well as during normal production.

3.5.8 What Triggers PPAP

PPAP shall be submitted or resubmitted to TREMEC by the Supplier, when one or more of the following cases occur:

- A new product
- Correction of inconsistencies of parts previously submitted with PPAP
- Engineering changes in the design of a product previously submitted with PPAP and approved by TREMEC.
- Changes to the process that was used in the previously approved part
- Tooling: transfers, replacement, updates or repair(s)

- Change of supply sources for sub-contracted parts, materials or services (eg. raw material, semi-finished parts, heat treatment, coatings, etc.)
- Parts produced in a different location than that previously approved
- Inactive process for more than a year.
- Changes on the inspection / test method for new techniques.
- Modifications to the packing or preservation method (quantity, size, material, labelling, corrosion protection, etc.)
- Updating full layout engineering drawing, when required by the TREMEC facility.
- Change of Supplier's registered name.
- When the SDE considers it to be appropriate.

3.5.9 PPAP Submission Levels and Requirements

TREMEC requires all its Suppliers to submit a level 3 PPAP in each presentation, according to PPAP reference Manual, unless otherwise provided by procedures negotiated between the TREMEC SDE and the Supplier (see chart below).

Item	Requirement	Submittance Level				
		Level 1	Level 2	Level 3	Level 4	Level 5
Product design records						
1	Product Design Records Details of properties of components	R	S	S	*	R
2	Changes to engineering documents (when applicable)	R	S	S	*	R
3	Tremec engineering approval, if required	R	R	S	*	R
4	Design FMEA (If supplier is the owner of the design)	R	R	S	*	R
5	Process flow charts	R	R	S	*	R
6	PFMEA	R	R	S	*	R
7	Dimensional result (5 sample parts @ 100%)	R	S	S	*	R
8	Tests, material, performance results	R	S	S	*	R
9	Initial study of process capability	R	S	S	S	R
10	Measuring System Analysis Study	R	S	S	S	R
11	Laboratory scope Documentation (according to ISO/TS-16949)	R	S	S	*	R
12	Pre-production and Production Control Plan	R	R	S	*	R
Part Submission Warrant (PSW)						
13	Report IMDS Reference Number in the PSW.	S	S	S	S	S
14	Appearance Approval Report	S	S	S	*	R
15	Checklist of bulk material requirements	R	R	S	*	R
16	Product samples (5)	R	S	S	*	R
17	Master sample	R	R	R	*	R
18	Inspection aids	R	S	S	*	R
19	Additional records, when specified by Tremec.	R	S	S	*	R
20	Production demonstration run results (R@R)	R	R	R	*	R
21	Evidence of tooling, Inspection & Testing Devices owned by Tremec or its customers	S	S	S	S	S

S = The Supplier shall submit the designated activity to Tremec as part of the PPAP, and retain a copy on record.

R = The Supplier shall retain a copy and make it available when requested by Tremec.

* = The Supplier shall retain a record and submit to Tremec on request.

3.5.10 International Material Data System (IMDS)

Each supplier is accountable for issuing information on the chemical composition of the materials supplied to TREMEC. This shall be uploaded in the following Web page: www.mdsystem.com. When uploading details for a part, the TREMEC plant ID number is 19729.

The Supplier shall send, along with PPAP documentation, details of the part number and the IMDS reference number. It is mandatory for all the automotive industry suppliers to provide such information. Non-compliance to such requirement by the Supplier, shall result in PPAP's rejection.

The Supplier shall send, along with PPAP documentation, details of the part number and the IMDS reference number. It is mandatory for all the automotive industry suppliers to provide such information. Non-compliance to such requirement by the Supplier, shall result in PPAP's rejection.

3.5.11 PPAP Validation

Product validation requires TREMEC approval of:

- PSW (Part Submission Warrant)
- The Production Control Plan

If PPAP is rejected, the Supplier shall make the necessary corrections, agreed upon by both parties, and re-submit samples and documentation.

3.5.12 Identification of Shipments Following PPAP Approval

Following PPAP approval, the Supplier shall identify product shipped for the following 90 days or 2 deliveries (if no deliveries are made during the 90 day period) using the completed blue label (found in Appendices of this manual) on all sides of the outer packaging. The measurements suggested for the label are: 11" (279.5 mm) X 8.5" (216 mm) Width x Height.

3.6 Containment Procedure for Pre-Production

The purpose of this Procedure is to:

- Protect TREMEC from quality non-conformances
- Validate the Production Control Plan
- Document the Supplier efforts to check his process controls during: start-up, ramp up, revisions of manufacturing process, or when the manufacturing run has a gap of 3 months or longer, between one run and another
- Ensure that any quality issues which may arise, are quickly identified, contained and corrected at the Supplier's facilities
- Increase the involvement of the Supplier's senior management

3.6.1 Process Validation

The Supplier shall establish a validation process which contains the following elements:

- Identification of the personnel responsible for ensuring the development and implementation of process verification
- Containment exit criteria, that have been agreed with TREMEC SDE
- Set up Containment Stations at the Supplier's factory. Containment Stations shall be off-line and separated, checked independently from the standard manufacturing process and located at the end of such process. Containment stations shall be documented and approved by TREMEC SDE.
- Identify additional inspections, tests and dimensional checking required for Containment Stations based on the Characteristics of the Product and those defined by the nature of the process and/or issues identified during product development and the process
- Set work instructions for Containment Stations and train staff in them
- Establish a reaction plan for a single defect
- Implement an audit process for the Containment, using senior management to ensure the conformance of the Pre-Production Control Plan

A PV (Process Validation) test plan may be required to validate the process impacts on the product.
This validation plan will be reviewed, agreed and signed at least by the:

- Quality representative of the supplier

- Engineering representative of the supplier
- TREMEC Engineering & SQE

3.6.2 Pre-Production Control Plan

The Pre-Production Control Plan, is in addition to the PCP, consisting of extra controls, inspections, audits, and tests to ensure conformance and capability of manufacturing processes. The plan needs to consider the following:

- Increasing the sample size stated in the Production Control Plan
- Verification of identification requirements
- Verifying the effectiveness of “error-proofing devices” measures
- Immediate implementation of containment
- Immediate implementation of corrective actions (non-negotiable and directed by TREMEC)

Documenting the Pre-Production Control Plan

- Document the Pre-Production Control Plan using the format provided on the AIAG/IATF Reference Manuals, and Advanced Product Quality Planning & Control Plan (APQP).
- Document additional inspections, functional tests and dimensional checks required for the Containment Station, or for the Process Check Station using the *Special Characteristics Control Plan*, referenced on AIAG’s APQP manual - Supplement K
- Document the work instruction for the Containment Station to ensure standardization
- Document the Control Plan validation suitable for review by TREMEC SDE
- Document problem solving techniques used including but not limited to:
  - Root cause analysis (5 Why analysis)
  - Irreversible corrective actions with breaking points
  - FMEA’s
  - Control Plan updating

3.6.3 Containment Period

The duration of the Containment shall be agreed for: a period of time; a quantity of parts set by TREMEC SQE or until the Production Control Plan has been validated, whatever occurs first. If time and quantity have not been specified, Containment shall continue in force through acceleration (“Ramp Up”) or for a period of 90 days, whatever takes place first.

3.6.4 Containment Inspection

Containment inspection is mandatory for all product requested during Pre-Production. After Manufacturing, testing and measuring of the Supplier’s facilities have been approved, The TREMEC SDE may remove the need for inspection.

3.6.5 Indication of compliance to Pre-production Containment

To indicate compliance with Pre-production Containment requirements, shipments shall be marked with a green circular label approximately 25mm in diameter marked with the words “Containment PP”. This shall be signed by the person responsible for ensuring correct implementation

3.6.6 Exit Criteria – Pre-Production Containment

The Supplier will exit Pre-production Containment after:

i) The Supplier dispatches the correct number of parts to meet pre-production requirements without any quality issues

ii) All quality problems have been resolved and the Process Control Plan has been approved.
iii) The Production Control Plan has been approved by the TREMEC SDE.

If quality issues are detected during Pre-Production Containment, then the Pre-Production Containment procedure shall continue implementation of corrective actions and validation of effectiveness.

3.6.7 Non-Conforming material shipment - consequences

- Failure to execute the Pre-Production Containment procedure shall result in the Supplier having to go to “Controlled Shipments Level II”.
- Shipments of Non-conforming material to TREMEC plants, shall result in the automatic placement of the Supplier in “Controlled Shipments Level II” which is defined later in this manual

4 Production Requirements

4.1 Revalidation (Re-Submission of PPAP)

On request from the TREMEC Buyer or SDE the Supplier will submit a level 4 PPAP which includes:

- An Engineering Drawing fully marked up
- A level 4 PSW, whose rationale is “Revalidation”.
- Capability Studies of the Special Characteristics and those defined by the nature of the process
- GR&R Studies (Reproducibility and Repeatability), Linearity, Bias, Stability, for the Measuring System used to assess the Special Characteristics and those defined by the nature of the process
- Material Test Certificate(s), as required
- Heat Treatment Certificate(s) as required
- A Certificate for Conformity covering engineering tests as per TREMEC’s Engineering drawing, or as agreed with TREMEC SDE

If the Supplier is providing TREMEC with an assembly containing different components, whose drawings are owned by the Supplier, then additionally the following are required:

- Supplier layout drawing (marked drawing)
- Full dimensional Report for 5 parts
- Sub-supplier Level 4 PSW approved by the Supplier
- Certificate for Compliance with all Supplier Engineering tests (as required)

If the Supplier is providing TREMEC with an “RFU” (Ready for Use) assembly and/or component, and TREMEC owns the drawings of such components and/or semi-finished products, then the Supplier shall add the following to the lists above:

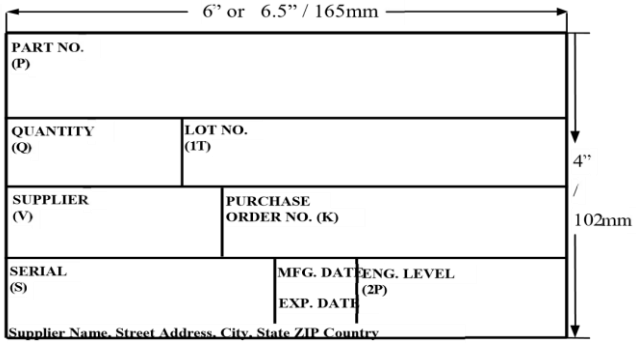
- Level 4 PSW of each component for TREMEC approval

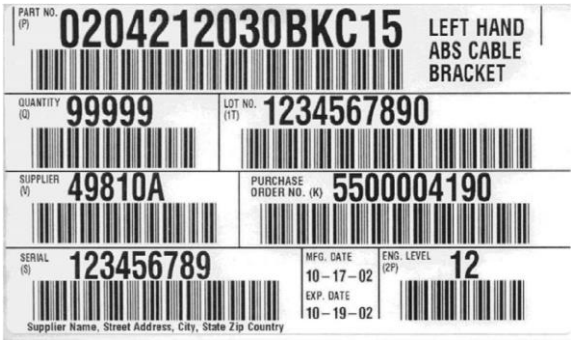
TREMEC will pay for reasonable costs of any Revalidation PPAP subject to the need for revalidation not being caused by the fault of the Supplier.

4.2 Identification of product in each shipment

Labels are to adhere to the specifications as detailed and illustrated in the Automotive Industry Action Group's publication "Shipping/Parts Identification Label Standard" (AIAG-B-10) Version 3, June 2004. For a copy or additional information, contact the Automotive Industry Action Group at (248)-358-3003, 26200 Lahser Road, Suite 200, Southfield, Michigan 48034-7100, or their web site: http://www.aiag.org/. Excerpts of AIAG-B-10 are included herein. Areas of the label not specified in AIAG-B-10, are left to TREMEC's option and are denoted by a (*). In the event of a conflict, TREMEC's Supplier Labeling Requirements will take precedence.

Shipping/Parts I.D. Label Dimensions (not to scale)





AIAG Standard Data: (Four data areas required by AIAG-B-10)

- Part Number
- Quantity
- Supplier Number
- Serial Number

AIAG Special Data Area:

TREMEC requires suppliers to provide 6 additional data areas within the portion of the label designated by AIAG-B-10 as the "Special Data Area". These fields are:

- Description
- TREMEC's Purchase Order Number
- TREMEC's Revision Level Designator
- Production Date - for materials which have a shelf life, provide both the production date and expiration date. Individual container/packages within a multi-pack carton shall also be labeled with the expiration date.
- Lot Number
- Supplier Name and Address

4.3 Quality Requirements in each Production Shipment

Each production shipment, to the TREMEC plant may include the following documentary evidence as required by the drawing, Production Control Plan or TREMEC SDE.

- Dimensional Report for Special characteristics in accordance with sampling and frequencies set out in the Production Control Plan.

- Material Test Certificate(s)
- Heat Treatment Certificate(s)
- Dimensional Report(s) in accordance with sampling and frequencies set out in the Production Control Plan.
- Certificate of Conformity to Engineering specifications

4.4 Special Characteristics Requirements in Production for Critical Components

4.4.1 Capability Studies

The Supplier shall perform capability studies from readings taken from X-R charts and keep records of those X-R charts along with Cp and Cpk calculations. These records shall be made available to TREMEC on request.

4.4.2 Capability Studies results below the requirements

If Capability Studies show performance below the requirements, the Supplier shall be subject to the Containment Procedure for Pre-Production. The Supplier will remain in this status until it demonstrates compliance to the requirements.

4.5 Deviation Request

If product is outside of specification, the Supplier may make a Request for Deviation. The Deviation Request shall clearly describe the reason for such deviation, and an 8D Report shall be enclosed describing the root cause(s) and corrective action(s) to be taken to prevent quality issues recurrences. Requests will be considered by TREMEC SDE and Engineering and disposition of the deviation will be provided to the Supplier as to whether the deviation has been approved and if any conditions apply, in writing.

If the Supplier has already been given the approval of such deviation in writing by TREMEC, then the Supplier shall enclose a copy of such deviation approval inside each container, package, case, bag, etc. before getting shipped to the TREMEC factory.

The Supplier shall not ship any materials to the TREMEC plant without TREMEC's previous authorization.

4.6 Defective Material Report (DMR)

A DMR can be issued to the Supplier for the following non-conformances:

i. **Quality, i**ncluding**:** appearance, dimensionally out of tolerance, finish, contamination, metallurgy, not to drawing, incomplete documentation.
ii. **Packaging,** including: Incorrect or non-existent labeling, Incorrect or missing packaging, damaged to packaging due to improper handling.
iii. **Supply issues,** including: over or under shipments, late deliveries.

The TREMEC Department or function raising the DMR is the 'Issuing Entity'.

4.6.1 Potential DMR

The Supplier has a duty to advise TREMEC if it suspects that parts supplied by it may be defective. A Potential DMR occurs when the Supplier notifies TREMEC that he has found an inconsistency with Product(s) that has been shipped or is ready to be shipped to TREMEC.

a) If the Product(s) has not been entered into the TREMEC ERP system, no DMR issuance is required if:

- **Replacement** - The Supplier immediately replaces the Product(s) by expedited carriage including airfreight, if it is necessary to avoid production delays.
- **Deviation Request** - If the non-conformance is due to a characteristic which does not impact the Product's performance, the Supplier can submit a Request for Deviation. The Supplier can only ship the material once he gets the approval of this document. The parts shall not be counted for PPM for the supplier.

b) If the Product(s) have already been entered into the TREMEC ERP system and can be identified in the Quality Receipt area, the DMR shall be issued and the Product(s) placed in the reject location as "Other". It shall be recorded that the Supplier notified TREMEC of the non-conformance in a timely manner.

If there is a cost involved in accepting the deviated products such as reworked, the cost of this shall be charged to the Supplier.

4.6.2 Quality Alert

When the data and facts of a potential quality issue are not sufficient to justify the DMR, it is the SDE's responsibility to notify the Supplier of such findings via a Quality Alert. The purpose of the Quality Alert is to create awareness, allow an investigation and allow preventive actions to be taken with reference to the quality issue.

It shall be the Supplier's responsibility to post any such Quality Alert at the work station where the product is manufactured. If further investigation generates sufficient objective evidence of a Quality Issue it will stop being a Quality Alert and a DMR will be issued.

4.6.3 DMR Identification, Assessment and Issue

The DMR issuing entity shall define the Non-Conformance caused by the part defect or quality issue in greater detail. The SDE shall verify that the Supplier was responsible for the Non-Conformance, previously to the DMR issuance and return of parts to the Supplier.

The following information shall normally be provided in the DMR:

- The part number
- The point in the process where the no-conformance was found for example: customer (customer assembly line or in the field), line (assembly or machining), receipt, accumulated (recurrence) or other (specify)
- The quantity of suspect and/or rejected parts at different points in the supply chain
- Whether the Non-conformance originated from an internal Corrective Action Request
- Did the Supplier notify TREMEC SDE of a possible Non-Conformance previous to material receipt?

To accelerate the containment actions, the Issuing Entity shall notify the Supplier via telephone to discuss the immediate actions to be taken. Depending on the complexity of the issue, the investigation and its impact, the Supplier may be involved in both, the identification and verification of the Non-Conformance at the TREMEC plant facilities.

4.6.4 Determination of Quantities for DMR.

The Defective % is determined by the following formula:

Rejected % = Quantity Rejected / Quantity Sampled x 100

The Inspector/SDE determines and defines the total quantity rejected after having proceeded with the type of disposition given by the Supplier. The quantity rejected after the first disposition, shall be counted for PPM.

4.6.5 DMR & Quality Performance Measurements

i. Deviated parts that have not been entered into TREMEC ERP system shall not be counted as non-conformances in assessing supplier performance.
ii. Reworked or deviated Product(s) shall be counted for PPM only if the supplier did not notify about the issue before they were entered into TREMEC ERP system.
iii. Only the parts which turn out to be non-conforming or rejected after the assessment has been made, shall be counted for PPM

4.6.6 Recovery Action(s)

It is the Supplier's responsibility to recommend recovery action(s) no later than 24 hours after notification by DMR. TREMEC's SDE may suggest to the Supplier the type of recovery action that is most suitable in the circumstances to avoid stoppages on the assembly or machining lines.

If the Supplier does not respond within 24 working hours after the DMR has been issued, TREMEC shall decide upon recovery action(s) and costs incurred shall be itemized in the DMR, submitted to the Supplier and charged to the Supplier's account.

4.6.7 Disposition of the Rejected and Suspect Product(s)

If the Supplier does not respond within this time, TREMEC may take the following actions:

a) Request collection by the Supplier within the agreed time period. If the Supplier does not collect within this period TREMEC may dispose of the Product(s) at its own discretion, and costs generated by this shall be charged to the Supplier's account.
b) Return the Product(s) to the Supplier and shipping costs charged to his account.
c) With the agreement of the Supplier, dispose of the material at the TREMEC's plant and charge the costs generated to his account.
d) Rework at TREMEC's plant with TREMEC' own resources or a third party. Costs generated by this shall be itemized, submitted to the Supplier and charged to the Supplier's account.

Where costs are charged to the Supplier's account, the Supplier shall send a Debit Authorization Number.

4.6.8 Product(s) Damaged in Transit

In the case of material damaged during transportation from the Supplier to the TREMEC plant, costs shall not be charged to the Supplier where TREMEC is responsible for arranging the carrier as determined by the agreed INCO terms.

4.6.9 Identification of Existing DMRs

The Issuing Entity shall verify that the DMR System does not contain an open and valid DMR before issuing a new DMR. This requires that the following will be clearly defined each time a DMR is issued:

- Name and number of supplier
- Defect location
- Part number
- Description of issue or non-conformance

If the non-conformance found is the same (repetitive) as that detailed in a DMR that is still open, the Quality Inspector shall include the quantity received in the existing DMR and the part number shall be placed in 'Controlled Shipments Level II'.

On receipt of the DMR, the Supplier shall identify the part(s) with a yellow dot and a yellow label for when bulk packaged case, with the legend "100% Certified Material, EC-I", making reference to "Controlled Shipments" procedure.

4.6.10 Containment Actions

Once the Supplier has received the DMR, the Supplier shall plan advise containment actions within 24 hours:

Containment actions shall apply to existing material at the Supplier's factory, material in transit and material at the TREMEC factory. Containment actions shall follow the 8 Disciplines problem solving method and include startup containment actions as well as the identification method for the following batches.

If the Supplier does not respond within the following 24 working hours after the DMR has been issued, TREMEC may directly implement containment actions, and costs incurred shall be itemized, submitted to the Supplier and charged to the Supplier's account

4.6.11 8 Disciplines (Corrective and Preventive Actions)

The Supplier shall respond to the Corrective Actions via the DMR system in the 8 Disciplines format section (see Appendix) within **10 calendar-days** of DMR issue or as agreed with the TREMEC SDE. This shall include:

1) The Containment Actions taken
2) The Methods used to assess effectiveness of containment actions taken
3) Root cause analysis of the problem and methods used
4) Corrective and Preventive Actions implemented, including the rationale used to eliminate any potential failure with an error proofing / poke yoke focus
5) A clear description of the activities to be developed such as corrective and preventive actions, showing the responsible persons and follow-up dates
6) Capability statistical studies subsequent to corrective actions implementation.
7) Show how the solution shall be institutionalized in reference to other similar parts or processes
8) Dates when the Failure Mode and Effects Analysis (FMEA), process sheets, inspection instructions and Control Plan (if applicable), shall be updated and available for revision by TREMEC SQE.

For further details see FMEA and APQP Reference Manuals

4.6.12 Incorrect Information in the DMR

If there is a complaint about some information included in the DMR, the Supplier should advise the TREMEC SDE, who shall verify the details and advise the Supplier of any corrections. Incorrect information in the DMR, shall be corrected by the Issuing Entity on the DMR System.

4.6.13 DMR Appeal Process

The Supplier can appeal against a DMR issuance in its entirety or against specific information contained in the DMR. To make an Appeal the Supplier must follow the following process:

1. The Supplier shall submit objective evidence to the SDE demonstrating the reason for the Appeal. Any request to change a DMR, due to an error, shall be made within 5 working days upon DMR issuance.
2. If the SQE and the Supplier do not reach an agreement, and the Supplier wishes to continue with the Appeal, the situation shall be turned to the TREMEC Supplier Development and Quality Engineering Manager for review.

4.6.14 Cost Recovery Process

The following costs shall be claimable:

- Costs due to additional machining and/or processing of defective parts.
- Costs due to the disassembly of TREMEC's products caused by the Supplier's defective part.
- Costs directly incurred by TREMEC for any line stoppage as a direct result of Supplier fault will be charged back to the Supplier.
- Other costs, directly caused by the non-conformance or quality issue, including but are not limited to the following: shipping costs, travel expense and costs of disassembling defective transmissions from vehicles cause by the Supplier's defective part.

Costs shall be charged for the time spent at the hourly rate for staff plus any material costs. In all cases, all these charges shall be documented. TREMEC shall support Cost Recovery claims by providing details of any costs claimed including: man-hours and grade of worker, raw materials used, third-party costs, assembly or machining lines idle time and the impact on the number of transmissions.

4.6.15 Cost Recovery Appeal Process (DMR Section 3)

The Supplier may appeal against Cost Recovery (DMR Section 3) using the following process:

- The Supplier shall initiate any appeal within the first three weeks upon Cost Recovery issuance (DMR Section 3) by contacting the TREMEC Buyer or SDE.
- The Supplier shall submit objective evidence regarding an unjustified or imprecise charge. If the Supplier and TREMEC agree on a change, the Cost Recovery Request shall be updated.
- If there is no agreement between TREMEC and the Supplier, within the first three weeks upon Cost Recovery (DMR Section 3) issuance, the Supplier shall then appeal to TREMEC's Supplier Development and Quality Engineering Manager and TREMEC's Purchasing Manager. If a new agreement is reached, then the modified cost shall be charged to the Supplier's account.
- The appeal process shall be concluded within 6 weeks upon Cost Recovery issuance (DMR Section 3).
- If there is no agreement between the parties within 6 week the matter will be settled by third party arbitration.

4.7 Procedure and Requirements for Controlled Shipments

4.7.1 General Information

Controlled Shipments are used in exceptional circumstances when the Supplier's controls are not considered robust enough to isolate non-conforming parts and prevent shipping to TREMEC's factories. Controlled Shipments involves additional inspection at the Supplier's plant and assessment of the effectiveness of primary and secondary inspection processes and implementation of corrective actions to eliminate the initial non-conformance.

There are two levels of Controlled Shipments:

Controlled Shipments Level I is an inspection process carried out by the Supplier's personnel at the Supplier's factory, with the aim of preventing shipment of non-conforming material and parts to TREMEC's factories.

Controlled Shipments Level II is the same activity as Level I, but with inspection carried out by a third company selected by TREMEC and paid for by the Supplier. In addition, Level II activity can be carried out at the Supplier's plant using his material facilities, but with labor provided by a third company assigned by TREMEC. In special cases, TREMEC will lend its facilities to the third company in order to carry out the inspection.

The key points in this process are:

1. Consensus of SDE and TREMEC Buyer that the current Supplier's controls are not robust enough to isolate TREMEC's factory from receiving non-conforming parts or materials.
2. Formal communication with the Supplier about the action (Level I or Level II) to be taken, including the successful exit criterion.
3. For Controlled Shipments Level II, an initial meeting with the Supplier shall be required at TREMEC's Plant and/or conference call between TREMEC and the Supplier, to explain the requirements and responsibilities that both parts shall adopt.
4. For Controlled Shipments Level II, if the inspection is carried out at the Supplier's plant, a detailed description of the inspection area is required.
5. A review plan is required

4.7.2 Controlled Shipments: Level I or Level II

The need to implement Control Shipments and to determine the level will be based on one or more of the following factors:

a) DMR issuance / repetitive DMR issuance.
b) PPM performance
c) Issue impact and duration
d) Non-robust processes and incapable of producing quality parts consistently
e) Inadequate containment and/ or solution of non-conformances via the DMR process
f) Field issue / customer complaint

Assessment team

The assessment team shall normally be formed by TREMEC's Quality Assurance, Engineering and Purchasing Managers.

Controlled Shipments Level II is characterized by situations, where the previous actions implemented by the Supplier have proved to be ineffective, and that they have the prevailing need for a third party to perform required inspection.

4.7.3 Controlled Shipments Level I

The issue of a DMR puts both the part number and the Supplier in Controlled Shipments Level I status. TREMEC's SDE communicates to the Supplier, in writing, the definition of the issue, the need for additional inspection, the containment activities and the criterion to exit the Controlled Shipments Level I condition.

It shall be the Supplier's responsibility to:

1) Immediately establish an inspection area at his factory.

2) Begin the inspection activities and deploy the results in a public and visible area in the company.
3) Track and locate the previous points in the process, where the non-conforming material have been detected.
4) The leadership team of the Supplier shall meet daily in the selected inspection area, to check the results and ensure that the corrective actions taken are being effective, or that a change is required.
5) Communicate the results in writing daily regarding the inspection process to the TREMEC's SDE.
6) Request exit from the Controlled Shipments process by sending documentation on performance to the TREMEC's SDE.

The Supplier shall comply with the following requirements for the Containment Actions in Controlled Shipments Level I:

- The inspection area shall be appropriately suitable and equipped for the purpose.
- It shall have a well-defined and efficient material flow, including areas clearly identified for the inflow and outflow of material from the area
- No rework or material recovery shall be done in this area
- The inspection area shall be independent from the Supplier's production process.
- The non-conformances, results and actions taken in respect of the containment activity, shall be clearly displayed on the information board
- The charts and results shall be updated and reviewed daily by the Supplier's leadership team
- Solutions shall be clearly analyzed and documented with objective evidence
- The inspector designated to perform the containment inspection shall have the corresponding work instructions, quality standards and/ or acceptance samples available.
- Designated inspectors shall be properly trained.

TREMEC shall assess the information against the exit criterion and ensure that any change in Controlled Shipment status is communicated, in writing, to all the affected entities in TREMEC.

4.7.3.1 Specific Inspection Requirements and Reporting (Level I)

100% inspect the characteristic that was found out of specification for the defective part number, and all the part numbers that have a similar manufacturing process, namely, those which are manufactured in the same machine and/or have the same manufacturing concept. TREMEC's SDE together with the Supplier, shall decide which part numbers are affected.

4.7.3.2 Marking

- All certified parts shall be identified with a yellow dot.
- All cases or bags where the certified material is packed shall be identified with a yellow label which reads: "100% Certified Material CS-I"
- Periodic feedback to the TREMEC's SDE about the performance of the 100% certification results. (Acceptance and rejection percentage).
- Compliance with all the events of the 8 D's process and all the activities involved.
- The Supplier's Quality Assurance Manager as well as the General Manager, shall submit a complete report of the 8D's per quality issue during the next 15 working days upon DMR issuance

4.7.3.3 Exit from Controlled Shipments Level 1

All these activities shall be kept until the 8 D's report is closed by the TREMEC's SDE.

4.7.4 Controlled Shipments Level II

Failure to comply with any of the above-mentioned activities shall cause the Supplier to be placed in "Controlled Shipments Level II". Some of the reasons for this are:

- If TREMEC finds in some of its facilities a repetitive issue: same defect in the same part number or any other in a different part number with a similar Supplier's manufacturing process
- Non-Compliance to the Product identification requirements for the next shipments after the issuance of the DMR.
- Non-Compliance to the tracking of events of the 8D's process.
- If any part number provided by the supplier to TREMEC, results in a claim from a TREMEC customer

4.7.4.1 Requirements of Controlled Shipments Level II

The following are specific requirements for Controlled Shipments Level II that shall be communicated in writing by the SDE to the Supplier:

1. Details of the non-conformance
2. The action to be taken
3. The type of inspection required
4. The exit criteria to be achieved in order to leave the Level II condition

4.7.4.2 Controlled Shipments Level II Meeting

If required, an initial meeting between TREMEC and the Supplier at TREMEC's facilities. Attendees should include: the SDE, Buyer and the Supplier's Quality Manager. The meeting agenda should include:

a) The objective of the meeting
b) Issue description
c) Definition of activities and responsibilities
d) Set out the details for the Controlled Shipments II Plan.
e) Define the criteria to terminate and leave the Controlled Shipments II condition.
f) Define the means and plan of communication.

4.7.4.3 Controlled Shipments Level II Supplier Actions

1) Complete the Entry into Level II Controlled Shipping and return it along with the Controlled Shipping Confirmation Reply to the TREMEC SDE. Both documents found in the Appendices of this manual.

2) Issue a Purchase Order to the Third-Party Inspection. The Supplier shall be responsible for all the costs generated by the Third-Party Inspection company, which shall carry out the containment activities and/or supervise the Supplier's employees at the Supplier's plant.
3) Provide an adequate space for equipment and necessary tools required to perform the re- inspection activity.
4) Drive the Permanent Corrective Actions.

4.7.4.4 Specific Containment Requirements for Controlled Shipments (Level II)

1. Information boards shall show the following information:
   a) Quality and acceptance standards such as master samples, technical specifications, drawings, etc.
   b) Action plans based on the non-conformances found
   c) Process Control Plan, where the non-conformances occurred

d) Work Instructions for operators and/or designated inspectors
e) Charts showing the number of inconsistencies found, PPM, DMR, etc.
f) Quality Charts with trends, if possible, for the Statistical Process Control Charts.

2. A Communication Plan which shall include:
   a) The method, format and frequency of communication from the Supplier to TREMEC SDE.
   b) The issues or non-conformances found during the inspection process
   c) The criterion for exit from Level II condition which shall:
      i. Be Specific and Measurable,
      ii. Focused on non-conformances or quality issues previously detected.
      iii. Include a program to assure that the corrective actions implemented are permanent.

4.7.4.5 Requirements of Controlled Shipments Level II

200% inspection of the part in which the defect was found. The first 100% inspection shall be done by the Supplier and the second 100% inspection can be performed at:

i. The Material Supplier's factory using his own resources (facilities, gages, etc.) using a Third-Party Supplier defined by TREMEC, to perform the second 100% certification before being shipped to TREMEC.
ii. The Facilities of the Third-Party Supplier defined by TREMEC, using his own resources in order to carry out a second 100% certification before being shipped to TREMEC. The Inspection cost shall be agreed upon between the Supplier and the Third-Party Inspector.
iii. TREMEC's factory, using a Third-Party supplier defined by TREMEC.

4.7.4.6 Specific identification (CS Level II)

All the Product(s) shall be identified with a blue dot by the Supplier, and a green dot by the Third-Party supplier. All the cases or bags where the certified material is packed shall be identified with a green label reading "100% Certified Material CS-II". This activity shall be carried out by the Third-Party supplier

4.7.4.7 Reporting (Level II)

- The Supplier will provide regular feedback to the SDE about the inspection results including acceptance and rejection percentage
- The Supplier shall comply with all the events of the 8D's process and the implied activities
- The General Director, General Manager and Quality Manager along with the respective team from TREMEC and the Third Party shall meet within three working days of the issue being notified by the SDE. The meeting agenda shall include: the reason for the Level II condition, the execution of the Control Shipment Level II and the exit criterion.
- The same people on behalf of the Supplier shall submit the 8D's Complete Report about the quality issue solution within 15 working days of the Procedure for Controlled Shipments Level II being formalized
- The Supplier shall continue all the activities until the 8D report is closed by the TREMEC's SDE

While the Supplier is in the Controlled Shipments Level II status, they shall be placed in "NEW BUSINESS HOLD" until he exits such status and the 8D's report is closed by the TREMEC's SDE

Failure to comply with any of the above-mentioned activities, shall cause the Supplier to be replaced and deleted from the “TREMEC’s Approved Suppliers List”.

4.8 Suppliers Global Performance Monitoring

TREMEC monitors the performance of Suppliers using data generated by the behavior of the supplier in respect of quality, delivery and competitiveness.

5.0 GLOBAL TOOLING GUIDELINES

The purpose of this section is to set provide guidelines for Supplier’s understanding of TREMEC policy, objectives and procedures with regards to Tooling, Machinery, Test Equipment located at Supplier’s facility(s) and Owned by TREMEC or TREMEC’s Customers.

5.1 TOOLING ADMINISTRATIVE ISSUES

- All Tools, machinery, jigs/fixtures, test or inspection equipment belonging to TREMEC or TREMEC’s Customer fall under these guidelines
- Dedicated tools can only be used for TREMEC and / or Customer specific Products, unless prior written tooling usage agreement obtained from TREMEC Purchasing Director and equivalent level Purchasing Manager at the appropriate Service Parts Purchasing activity (if applicable); customer requirements for both Production and Service must be considered priority when determining the usage agreement
- Tooling used for prototype, which will be used later to produce production parts, will be treated as normal production tooling
- Unique computer hardware / software required directly for the production or gauging of the part is considered part of dedicated tooling and shall become the property of TREMEC or their customers
- The Tooling Purchase Order / Tooling Contract and Supplier quote will provide the basis and definition for Tooling Ownership, costs, any special maintenance requirements or other negotiated items and payment schedules
- Invoices exceeding the Tooling Purchase Order or for costs not included within the Tooling Purchase Order will not be honored. Tooling Changes/Modifications requested by TREMEC are to be quoted to your Purchasing Contact; when accepted a Purchase Order Amendment or new Purchase Order will be issued authorizing payment(s)
- A TREMEC Tooling Breakdown Form for tools, fixtures, gauges, or equipment must be completed by the Supplier after receipt of the Purchase Order (PO). This may be a TREMEC format or Customer format to be completed by the Supplier and returned to the TREMEC Buyer.

5.2.1 NEW PART TOOLING PROOF / TRYOUT

- Suppliers are responsible to perform first piece verification for a Tool Check / Tryout prior to production use. Tool Tryout process is applicable for New or Re-Worked Tools that affect Form, Fit or Function of the part being produced. The Supplier must resubmit PPAP based on requirements and retain the first part(s) for TREMEC inspection / audit and verification for final payment approval.

5.2.2 RESPONSIBILITY

- Suppliers are responsible for the quality and maintenance of tooling in their possession for the life of the program, both Production and Service Requirements
- Periodic maintenance programs are to be conducted. Documentation, checklist, Dimensional Reports should be retained. Report to TREMEC buyer, in writing, the conditions and remaining life estimated for the parts, every 3, 6 or 12 months according to the process where the tooling is used in agreement made with the SDE/TREMEC's Buyer
- Supplier is responsible for Safekeeping and Proper Use, and may be liable if/when tooling deficiencies are detected, subject to terms of the Purchase Order
- Supplier must promptly report any loss, damage or destruction of the tooling to TREMEC's Buyer
- Tooling is not to be modified, moved, sold, or disposed of without written permission of TREMEC Purchasing. However, should tooling need to be relocated (either from one location to another or from one Supplier to another), the original Supplier is required to keep the tooling in PPAP approved condition. Supplier is responsible to assure proper and safe packaging/crating to protect for the transit
- The Supplier must consult with TREMEC before scrapping or reworking production tooling to a new design level. A Final Production Run of parts may be required prior to disposition of Tooling and must be agreed with TREMEC's Purchasing.

5.2.3 ACCOUNTABILITY

- Tooling must be made available for return to TREMEC or the customer upon request or contract completion/termination inclusive of Service requirements. Tool and Die Set-up Sheet(s) when applicable are considered part of the Tool/Die and to be available for Audit or Return
- The Supplier must maintain a Record System to document expenditures, Maintenance Records for TREMEC and TREMEC's Customer owned tooling

5.2.4 TREMEC TOOLING AUDITS

- TREMEC shall have access to all tooling referenced in the Tooling Purchase Order and Tooling designs upon request and are all subject to audit. In the event TREMEC audits the Supplier's tooling cost, it will be necessary to make available supporting documents associated with the Tooling Purchase Order(s) and amendments selected for audit.
- Condition of Tooling and Maintenance Records are also subject to audit continued maintenance

5.3 TOOLING OWNERSHIP

- Tooling purchased by TREMEC is the property of TREMEC or their customer(s) and held by suppliers on a bailment basis pursuant to TREMEC's Standard Purchasing Terms and Conditions

5.4 FINAL INTERPRETATION of GUIDELINES

Final interpretation of these guidelines are the responsibility of the TREMEC Purchasing & Development Team – Vendor Tool Group. These Guidelines are not subject to vendor interpretation. Any questions to be resolved prior to acceptance of the Tooling Purchase Order to the Vendor.

6 Packaging / Labeling Standards

TREMEC Supplier Packaging / Labelling Standards in their latest version shall apply (currently Rev.2 – September 21, 2017. Any deviation or customer specific packaging or labelling requirements shall be provided separate instruction as required.

7 References

- QS-9000 3rd Edition, March 1998, Third Approved Clause C9 of QS-9000
- First Approved Clause C9, 4.6 Purchases (July 01, 2001) IASG, QS-9000:1998
- Quality Assurance Manual for Suppliers, TREMEC January 2000
- General Motors Global Procedure GP-5
- General Motors Global Procedure GP-12
- ISO/TS-16949:2009
- ISO 9001:2015
- IATF 16949:2016

8 TREMEC Terms and Global Equivalences

- Defective Material Report (DMR) & Non-Conformance Report (NCR) are equivalent.
- Pre-Production Control Plan = Prelaunch Control Plan
- 'Red Supplier' - A supplier whose performance has declined and no longer meets TREMEC's minimum performance requirements. Depending on severity of performance a supplier may be required to submit and performance improvement plan or may be disqualified as a supplier for future business.
- Supplier Development Engineer (SDE) & Supplier Quality Engineer (SQE) are equivalent.
- Safety Critical means a component or subsystem that is included in FMVSS, other regulatory specifications or ISO:26262

9 Form of Agreement – Supplier Quality Assurance Manual

This agreement will be incorporated into all purchase orders issued by TREMEC and/or the supply contracts made between the Parties subject to express exception and any deviations noted in this document.

The Parties

TREMEC	**Supplier Name**
Address	Address
Authorized Signature	Authorized Signature
Printed Name	Printed Name
Title:	Title:
Date:	Date: