Supplier Manual

Requirements

Version 1/18.02.2019 – Löhde - Schilli

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Preface

In order to continue meeting ever increasing customer demands with respect to quality and flexibility in the future we require suppliers, which engage themselves beyond the basic requirements, to face these challenges together with us in the future.

With partners who are capable and willing to contribute their process specific expertise for our mutual benefit ambitious quality goals are realizable. This manual provides a guideline for a cooperation based on partnership between the suppliers and KOLB.

Based on the purchasing- and quality policy, KOLB requirements for the guarantee and maintenance of an impeccable product quality are laid out.

The supplier manual is a binding document. It is a component of the contractual agreement between KOLB and the supplier and is already applicable in the pre-contractual inquiry situation.

18.02.2019-Löhde-Manager Material Handling / QMB

1.0 Purchasing - / Quality Policy and Goals

We aim for long term goals based on partnership with our suppliers. Continuous improvement of the cooperation in the processes and the systems of the supplier contributes to the economic efficiency, delivery reliability, and quality improvements. Rapidly changing and increasing customer requirements imposed on Kolb also demand highest flexibility and willingness to creatively and quickly contribute towards solutions for problems from our suppliers. Deliveries and performance must therefore fully comply with all agreed and legal requirements. In thriving for this zero defect goals, consistent quality planning and effective series monitoring are indispensable. The focus must be placed on defect avoidance. The suppliers commit themselves to only deliver products free of defects.

Together we want to reach the following goals:

- Development of a long term partnership
- Securing of the common competitiveness
- Optimal communication
- Minimization of storage and transportation expenses to the benefit of both parties
- Creation of prerequisites enabling suppliers to optimal realization of their quality responsibility.
- Securing of quality before series delivery.
- Securing and continuous improvement for quality in series production

2.0 Supplier Management System Requirements

Suppliers commit themselves to develop a quality management system, and prove its implementation by submission of the respective certificate, which meets at least the requirements according to DIN ISO EN 9001. The suppliers goal shall be to align their quality system with IATF 16949 and submit prove. If requirements from Kolb customers demand other management systems, these are to be defined in quality assurance agreements. Environmentally friendly production and environmentally friendly products are demands we all have to face. Therefore, we require our suppliers to work according to the environmental management system DIN EN ISO 14001, respectively work towards its implementation. Compliance with current laws is assumed.

3.0 Process for Supplier Selection

'Quality at a fair price' is KOLB's guiding principle for the selection of suppliers

3.1 Supplier Self-Assessment

The supplier self-assessment in form of a supplier questionnaire includes the most important information for a first general evaluation of the supplier. The supplier will receive form FB0901 along with the inquiry documents.

It is quickly to be returned to the inquiring buyer. KOLB is to be immediately informed about significant changes.

3.2 Auditing of Suppliers

KOLB reserves the right to conduct audits according to VDA 6.1/6.3, IATF 16949 at the supplier. Suppliers shall support KOLB with this to the best of their abilities. Reasons for audits may especially include:

- Selection / evaluation of new suppliers
- Quality problems in the series (see 5.4 actually resulting costs will be charged back to the supplier)
- Requirements of our customers
- KOLB internal requirements

The suppliers agree to remedy deviations noted in the audit report in a timely manner.

Kolb reserves the right to subject processes to a value analysis (see 3.7 continuous improvement CIP).

3.3 Nomination of Suppliers

The decision about the nomination will be made by the purchasing-, quality-, logistics-, and technology departments. Basis for the business relationship are the framework contracts developed and concluded by the strategic purchasing department.

3.4 List of Approved Suppliers

With conclusion of the framework contract, suppliers will be integrated in list FB0907 of approved suppliers. Prerequisites are positive visitation or audit results.

Reasons for a comprehensive or partial blocking of suppliers may consist of:

- Significant transgression of delivery due dates
- Insufficient realization of system requirements
- Inadequate reaction times
- Significant deterioration of product quality
- Non-compliance with KOLB requirements

3.5 Quality Assurance Agreement

The quality assurance agreement governs the quality relevant relationship between the suppliers and KOLB. It supplements the existing delivery terms and conditions.

Quality requirements regulate essentially the following points:

- Quality management system
- Test and documentation responsibility of the suppliers
- Goal agreements (see 5.1)
- Compliance with legal requirements

3.6 Warranties

Warranty details are regulated in the framework agreement. KOLB points out that suppliers will be charged according to their responsibility in case of defects in the field for the resulting costs as determined by our common customers. For this purpose suppliers will be informed immediately about the costs assignable to them.

Pictures or samples of defects, insofar as they were made available to KOLB, are available for review in KOLB GmbH's quality department.

3.7 Continuous Improvement CIP

Continuous improvement must be a component of every supplier's quality strategy. KOLB expects the active participation of suppliers in the continuous improvement of procedures, processes, and products with the goal of permanent improvement of the entire system. The results of CIP are to be proven as cost savings, respectively as quality improvements. CIP projects are supported by KOLB's supplier development.

4.0 Quality Assurance prior to Mass Productions

4.1 General

Scheduling of development projects is to be planned together with KOLB's project manager according to the final customer's specific requirements. The suppliers provide qualified employees in sufficient number.

4.1.1 Product Quality Planning APQP / Status Report

KOLB developed a form with the most important milestones according to the APQP elements for the planning and handling of projects. This plan represents the minimum documentation requirements for joint project work. The status report will be developed by the suppliers in coordination with supplier development and shall be reported by the suppliers in frequent intervals.

4.1.2 Specifications / Drawings

The supplier obligate them themselves to:

- obtain and comply with legal requirements, all specification, product specifications and standards in their revisions valid at the given time
- request, assess, coordinate and comply with product specifications
- define and comply with important characteristics and necessary parameters for process capabilities (when applicable in coordination with KOLB's quality planning)
- point out missing information (for example specifications, standards)
- report discrepancies in documentation to the appropriate point of contact in purchasing

4.1.3 FMEA

A design FMEA is only to be created in case of design responsibility. The requirement is to be verified with KOLB's quality planner / product designer.

Process FMEA are to be created or updated in for the safeguarding of start of production, in case of changes, or in case of quality complaints. The creation follows the guidelines of VDA volume 4 part 2. The FMEAs must be made available to KOLB for review upon request.

4.1.4 Test Planning (Control Plan / PLP)

The control plans form an overview of all quality requirements, their documentation and test criteria of products. They are to be created for prototype, pre-series, and series phases respectively. Adjustments in the project progress must be coordinated with the respective point of contact responsible for quality at KOLB.

The control plan includes:

Receiving-, intermediate-, final inspection, product audits, and requalification test. Features which are identified and assessed in the FMEA as relevant with respect to quality must be also found in the control plan.

4.1.5 Capability verification

Process capability analysis' serve the verification of the quality capability of the processes. Capability verifications for all test and performance features are to be provided by the suppliers on their own initiative. Additional capability verifications are to be coordinated with the quality planners at KOLB. The calculation and execution of capability studies must follow the VDA volume 4.1 / QS 9000 guidelines, insofar as there exist no overriding customer requirements.

The following limits for the verification of process capability shall apply:

Short term capability cm/cmk >= 1.67
Preliminary process capability pp/ppk >= 1.67
Long term capability cp/cpk >= 1.33

Process capability studies are to be conducted free of charge to KOLB, are to be provided upon request, and are also to be proven for the current series.
If the above mentioned process capability limits are not achieved, the affected product features must be 100% inspected and the results must be documented. Test equipment capability (cg/cgk) must be proven for used test equipment where applicable.

4.1.6 Process Approval / Run at Rate prior to Series Start

The product- and process quality as well as confirmation of series production cycle time (capacity verification) is to be proven by the supplier during a run at rate series production run. Process approvals due to complaints are billable, actually resulting costs will be charged to the suppliers. (see 5.4)

4.1.7 Sample Reports / Samples

4.1.7.1 Initial Sample with ISR (PPAP Level III / VDA2 Level 2)

Initial samples reports from suppliers to KOLB must be in accordance with VDA volume 2, respectively QS 9000 (PPAP). The production of initial samples must be conducted under series production conditions with series production tooling. If multiple tooling or forms are used or if parts originate from clusters, parts from each tooling, form, or cluster position, but at least 5 pieces are to be measured and separately subjected to sample reports. The initial sampling also includes proof of the test instructions and specifications invoked in the drawing. Used materials are to be verified with material certifications and entered into IMDS. Scope of re-sampling reports are to be handled like initial sample reports.

Process capability verifications are elements of the initial sample report (see Control Plan). Material data are to be provided in IMDS prior to the initial sampling (see 4.1.7.4 IMDS Data).

Features deviating from the requirements shall be agreed upon in writing with the product developer and are to be documented with a deviation approval prior to submission of initial sampling (see 4.1.10). Initial sampling is not possible without this form of approval.

Examples for rejection of initial sample reports.

- Documents and verifications are incomplete
- Deviation nominal vs. actual is present but not approved
- The submitted / sampled parts do not comply with the current revision levels
- Missing IMDS data

Attention: in case of failed initial sample reports KOLB is to be reimbursed for the actual cost (hourly rate x hours worked) of resubmission of sample reports. Other samples are not to be identified as initial samples. It is within KOLB's discretion to select from the sampling procedures:

4.1.7.2 Sampling of Prototypes and Pre-Series Parts / Other Samples

Point of contact for scope and time of sampling of prototypes and pre-series parts / other samples is the respective product developer, respectively quality planner. The suppliers obligate themselves to draft and document test protocols for prototypes and pre-series parts according to the drawing specification. Process capability verifications are to be determined during the prototype and pre-series phases.

Sample parts along with the test reports are to be identified accordingly and are to be provided to the requesting department free of charge.

4.1.7.3 Reference / Hand Samples and Boundary Samples

Reference / hand samples:

- Represent the allowed manifestation of values of characteristics

Boundary samples:

- Sample manifesting the boundary condition of a quality characteristic

Reference / hand samples and boundary samples are to be coordinated with KOLB's quality planners and are to be identified as such, and are to be stored protected from environmental impacts for the entire duration of the production time. They must be provided to KOLB upon request.

4.1.7.4 IMDS Data

Only data meeting the following basic requirements will be accepted:

- Compliance with the current IMDS guidelines
- The reference number does not contain any spaces, special symbols, or letters
- The entry of the drawing number, revision level/date is optional
- If a reference number must be resubmitted for any reason, this must be done as a new revision.

4.1.8 Part History

The suppliers document the part history for all products. All product- and process changes are documented here. Content of the part history:

- Reference number
- Article identification
- KOLB drawing revision index and corresponding supplier change index
- Change reason
- Effective date of change
- Hand samples or PST (pre-series tooling) or ST (series tooling)
- Machine set up data

If necessary machine set up data documentation may be requested (for all development stages according to the KOLB drawing revision level and the applicable optimization actions implemented by the supplier, machine set up parameters are to be documented in the supplier part history. The updated supplier part history must immediately be provided to the product developer and must accompany each delivery of the particular part revision level.).

4.1.9 Identification of Prototypes and Pre-Series Parts (Containers)

Prototypes, pre-series parts, and series parts must be clearly identified on the packaging units with an additional DIN A5 label. The labels must show the part number, part name, revision level, production date, lot number, and reference to the approval report. Deliveries according to deviation- or special approval are to be clearly identified as such for the first 3 deliveries.

4.1.10 Special Approval

Deviation from delivery specifications are not permissible. Exemption: approvals with time or quantity limits may be granted as an exemption in writing by the developer and supplier management of KOLB in coordination with the product developers.

4.1.11 Requalification Tests

During the scope of frequent testing of all parts and components delivered to KOLB all characteristics (particularly function, material, and geometry) are to be verified at least once every year. The scope of the characteristics to be tested may only be restricted in coordination with the person responsible for quality at KOLB. Upon request, the documentation shall be provided to KOLB free of charge.

4.1.12 Identification of Prototypes, Pre-Series-, and Series Parts

As a rule, each part is to be identified. The identification shall be in the form of a label or inserts in the tooling. The following information must be included:

- Reference number or name
- KOLB drawing index and corresponding supplier change index
- Production date
- Material

Parts for which the dimension, function, or geometry prevent such identifications, identification shall be coordinated with KOLB's quality representative.

4.1.13 Documentation Accompanying the Delivery during Prototype and Pre-Series Phases

Each delivery shall include product specific test documentation in compliance with the control plan requirements:

Additionally, each delivery shall include the part history. Parts used for non-destructive testing shall be included in the delivery and shall be identified separately.

4.2 Tooling and Equipment Management

The purchasing is subject to the agreed upon contractual agreements between KOLB and the supplier. The suppliers obligate themselves to store, insure, and maintain these properly and according to the rules.

4.2.1 Tooling and Equipment Design and Manufacturing

The suppliers shall utilize appropriate technical means for the design, manufacturing, and dimensional testing. In case of contracting with sub-suppliers, these sub-suppliers shall be disclosed to KOLB and shall meet as part of the supplier's responsibility these requirements as well. Tooling which is the property of the customer or KOLB owned tooling must be clearly identified with tags.

4.2.2 Tooling and Equipment Approval and Release

The release will be granted as a result of a successfully concluded initial sampling. If required, the approval may be granted directly by a KOLB representative at the supplier.

4.2.3 Tooling and Equipment Management

The suppliers shall plan and implement a process for the tooling and equipment management. This shall specifically include the following criteria:

- Tooling and equipment history
- Appropriate storage system
- Documentation of preventive tooling and equipment maintenance

4.2.4 Test gages / test equipment

Test gages and test equipment shall be included in the supplier's test equipment management. They shall be identified appropriately and shall correlate with the product. Capability of the test equipment shall be verified in the scope of the initial sampling. The designs of test gages and test equipment holders are to be coordinated with the respective quality planner or product developer. These are to be designed in a way that they may cover the entire duration of the product development and the production. The supplier bear the costs for test gages, test equipment, and test equipment holders. Suppliers shall provide test and equipment capability verifications (Gage R&R) for all D/CC/SC characteristics on their own initiative.

5.0 Quality Assurance in Mass Production

5.1 Agreement on Key Performance Indicators and Goals in the supply chain

Legal and official requirements and further quality basics

In addition to the cited standards and the generally valid legal regulations, standards and regulations, in particular the KOLB order documents are eg. B. Ordering drawings including the regulations specified therein such as DIN standards, KOLB standards, technical delivery conditions, data sheets, etc.

- Approved test instructions and test equipment

Additional order information, eg. B. Packaging instructions

- Special statutory provisions

-Special rules for environmental protection and recycling

and other agreements concerning quality. Applicable statutory and regulatory requirements (including product safety) as well as product and process characteristics must be passed down the supply chain to the place of manufacture.

The supplier must document the process of ensuring that all externally provided processes, products and services meet the applicable legal and regulatory requirements of the exporting country, the country of importation and the country of destination specified by the contracting entity, provided they are communicated to the supplier. If the client specifies specific monitoring measures for certain products that are subject to legal and regulatory requirements, the supplier must ensure that the monitoring takes place as required and is continuously maintained.

Goals will be defined as part of a quality assurance agreement (component of the framework contract) or in individual agreements. Goals will be agreed upon with the supplier together with the supplier development or quality manager in coordination with purchasing. Additionally, ppm goals may be agreed upon in specific cases for specific products.

The documentation of the monthly updated complaint rate is responsibility of the supplier. The following aspects are taken into consideration for the evaluation of deliveries:

- Deviations from the required product quality
- Deviations from logistics requirements
- Others (for example missing documentation)

5.2 Commodity Receiving Inspection

KOLB conducts the following random sample inspection independent from the supplier's final inspection:

- Identification check
- Visual inspection for directly visible transport damage
- Quantity check

KOLB will complain to the suppliers in writing about obvious recognizable deficiencies. Deficiencies which were not noticeable or which were not noticed during the receiving inspection will be complained about to the suppliers after having been discovered or in the scope of collective rejection reports.

Sorting of defective parts:

If defective parts are discovered during receiving or during installation during pre-series or series production, suppliers shall have the opportunity, after having been requested to do so, to sort the quantity of suspicious parts without delay at KOLB at their expense. Suppliers bear the resulting costs if the sort is conducted by KOLB personnel or third party services providers after having informed the suppliers (see 5.4).

5.3 Complaint Process

In case of complaints, suppliers will be informed by KOLB by submission of a complaint notification. The suppliers are requested to analyze the defect and define, implement, and monitor appropriate corrective actions. The required response (8-D report) is to be filed with the complaining department within one calendar week.

Immediate response:

If the analysis of the issue requires a longer time, or if due to the severity of the situation a response from the supplier is required quickly, the response shall be submitted without delay to the complaining department.

5.4 Claims for Defects

KOLB has the right to invoke the agreed upon warranty rights in case of unsatisfactory quality performance for which the supplier is responsible. The costs resulting from such deficiencies will be calculated by KOLB and charged to the suppliers. Depending on the resulting expenses (regional hourly rate, scope, and duration) particularly the following types of costs in connection with the complaint will be charged by the responsible person in KOLB GmbH's quality department.

- Sorting costs
- Rework
- Interruption of production
- Utilized storage space
- Analysis activities
- Repeated initial sampling in case of rejection
- Process approvals in connection with the complaint (follow up audit)
- Handling costs in case of customer complaint with root cause in supplier's responsibility

6.0 Supplier Evaluation

For the evaluation of suppliers, key performance indicators are summarized. Included are information form the logistics-, purchasing-, development-, and quality management areas. The supplier evaluation includes the following criteria:

- Quality
- Quantity deviations
- On time deliveries
- Premium freight
- Special status

An overall evaluation will be compiled from the above mentioned key performance indicators. This evaluation will be provided to the supplier. Corrective action plans are required within specified time limits (see corresponding mail) for B and C classifications. The corrective action plan is to be filled in completely and is to be resubmitted to the purchasing department.

7.0 General Supplier Requirements

7.1 Environment

Suppliers must make sure that all materials and raw materials which are used in the supply chain meet all legal requirements as well as the requirements of KOLB's customers particularly with respect to restricted hazardous materials.

The suppliers obligate themselves to enter material data (KOLB GmbH) into the IMDS (International Material Data System, see www.mdsystem,com) with the initial sampling and guarantee the correctness of the information provided by them. The environmental guidelines of the countries of origin, countries of destination, and Germany are to be observed, as well as the IMDS guidelines.

7.2 Packaging

The packaging for prototypes, pre-series, and series parts, respectively the product specific packaging and the identification including the utilized materials are to be agreed upon, tested, and monitored in coordination with KOLB's logistics department. The identification of the packaging must be in accordance with VDA 4902.

8.0 Escalation Procedure KOLB

Goals and Process

The escalation process is applied to assure a frictionless production- and project processes and in order to recognize problems at an early stage.

KOLB differentiates two phases:

- Project phase (development, pre-series)
- Series phase

Goals of the process are:

- Finding of effective solutions for significant problems during the customer – supplier relationship together with the supplier
- Guarantee a strategic balance between KOLB's interests and the responsibilities of the supplier
- All affected parties know their responsibility for quick and efficient problem solving

Generally, each step of the escalation process is structured as follows:

- Root cause analysis
- Problem definition
- Agreement on an action plan for elimination of the root cause and definition of corresponding responsibilities
- Implementation of the action plan

Depending on the results of the implemented actions, the escalation may proceed to the next step of the particular process or the escalation process may be discontinued. Other rights which KOLB may have based on the contractual agreements or the agreed upon law apply in addition and remain unaffected.

9.0 Supplier Statement of Consent

This supplier manual is a component of the contractual relationship between KOLB and the supplier without requiring signing of the manual. The confirmation of the receipt of the supplier manual and the consent with the content result automatically from the commencement of the contractual relationship with KOLB. It already applies during the inquiry phase.

10.0 Literature Reference (as valid at the given time)

Verband der Automobilindustrie (VDA) – all volumes
Requirements of quality management systems as valid at the given time

- DIN EN ISO 9001
- VDA 6.1
- IATF 16949 /
- DIN EN ISO 14001

11.0 Abbreviations

APQP (Advanced Product Quality Planning)
PPAP (Production Part Approval Process)
Gage R&R (Gage Repeatability and Reproducibility)
FMEA (Failure Mode Effects Analysis)
D (documentation requiring characteristic)
CC (Critical Characteristic)
SC (Significant Characteristic)
CIP (Continuous Improvement Process)
IMDS (International Material Data System, see www.Mdsystem.com)
ISR (Initial Sample Report)

12.0 Appendix – Forms

Overview of Applicable Forms

Please contact Mr. Ronald Loehde @ +1 49 202 517110 with questions or concerns