

**KIRCHHOFF AUTOMOTIVE**

**QUALITY ASSURANCE GUIDELINE**

**FOR SUPPLIERS**

Valid for all sites of Kirchhoff Automotive  
Revision Level 03/ 11.01.2010

## Foreword

The present guideline for quality assurance applies to all suppliers of KIRCHHOFF AUTOMOTIVE, who deliver products, facilities or services. The guideline describes the key quality requirements which suppliers of KIRCHHOFF have to meet. This agreement is valid between the whole organisation of the supplier and each plant of KIRCHHOFF AUTOMOTIVE.

This guideline pursues the strategy of building long-term and a fair cooperative relationship with suppliers. A partnership with suppliers which reliably meet the requirements for price, supply reliability, quality and innovation.

The quality of the KIRCHHOFF AUTOMOTIVE modules depends to a large extent on the quality of the supplied products, facilities and services. Quality of products has to be planned and manufactured.

Inspections and tests can only rate the quality of the products and convert the knowledge acquired into improvement programs in order to achieve continuous quality enhancement and process assurance.

KIRCHHOFF AUTOMOTIVE is dependent on the commitment to deadlines and quantities of its suppliers. For this reason, we make great demands on our component vendors in these areas. Compliance with these requirements must be ensured and guaranteed by our suppliers.

The supplier is fully responsible for the quality of its product, facilities or service. Should our company notice failures of quality, the supplier will be asked to resolve these immediately at its own expense and to demonstrate to KIRCHHOFF AUTOMOTIVE within a specified period of time appropriate steps to improve the quality.

Due to the high quality demands of our customers, we shall find ourselves constrained to use alternative sources of supply if the supplier is not able to resolve quality problems for whatever reason.

Thank you very much for your understanding and your support.

## CONTENTS:

1. GENERAL REQUIREMENTS	4
1.1. Quality Management System	4
1.2. Environmental Management	4
1.3. Secrecy	4
1.4. Working language	4
1.5. General suppliers contacts	4
2. DEFINITIONS	5
3. SUPPLIERS' QUALIFICATION / SELECTION	5
4. PRODUCTION PART APPROVAL PROCESS (PPAP)	6
5. IMDS – INTERNATIONAL MATERIAL DATA SYSTEM	7
6. SUPPLIERS RATING SYSTEM	8
6.1. Supplier quality performance rating	9
7. QUALITY COMPLAINTS AND ISSUES	9
7.1. Incoming inspection at KIRCHHOFF plants	10
7.2. Quality issues	11
8. SUPPLIERS QUALITY AUDITS	12
9. SERIAL DELIVERIES MANAGEMENT	12
9.1. Delivery performance	12
9.2. Marking	12
9.3. Packaging and labelling	13
9.4. Quality Assurance in series production	13
9.5. Procurement	13
9.6. In-process tests	14
9.7. Safety parts	14
9.8. Handling of defective units	14
10. SUPPLIERS CONTINUOUS IMPROVEMENT	14
10.1. Forward quality planning	15
10.2. Technical documents	15
10.3. Feasibility studies	15
10.4. Definition of inspection characteristics	15
10.5. Documentation	16
11. RECOMMENDED MANUALS, current revisions	16

## **1. GENERAL REQUIREMENTS**

### **1.1. Quality Management System**

In order to meet the aims mentioned above, we expect our suppliers to have a quality management system, in accordance with the current revision of ISO/TS 16949 or at minimum with the current revision of EN ISO 9001. The supplier is fully responsible for the quality of the products delivered to KIRCHHOFF.

The aim of the quality management system is the rapid detection of any deviations from planned specifications for development, pre-production and series/batch production. It must ensure that effective remedial steps are implemented on time.

### **1.2. Environmental Management**

The supplier has to ensure protection of all environmental resources during all steps of the projects. Therefore he should follow the guidelines of the current revision of EN ISO 14001. A certification after this guideline is requested. The supplier ensures to observe all additional environmental guidelines given from KIRCHHOFF or KIRCHHOFF's customer. Further the supplier ensures to observe all laws given by the government of the receiving country.

### **1.3. Secrecy**

The contracting partners undertake to treat as trade secrets all non-public commercial or technical details which become known to them as a result of this business relationship. Sub-suppliers shall be subject to the same obligation.

### **1.4. Working language**

Formal business language for communication is English for all suppliers or domestic language is used if applicable. Since KIRCHHOFF AUTOMOTIVE is an international group, this document is exclusively published in the English language. Any translation into other languages is for information only.

### **1.5. General suppliers contacts**

Suppliers are obliged to choose quality, logistic and sales contact persons and send the data of these persons (name, telephone, e-mail) to appropriate KIRCHHOFF plant before the start of business.

## 2. DEFINITIONS

Suppliers – suppliers of raw materials, finished parts and assemblies, services and standardized parts (fasteners, bought-in parts).

Suppliers of standardised parts (fasteners) “bought-in parts” – suppliers of screws, weld nuts, bolts, collars, tubes etc.

Suppliers of semi-finished parts – suppliers of stamped parts, weld parts, assemblies.

Suppliers of services – suppliers of KTL painting, powder painting, zinc coating, washing-degreasing, conservation, stamping, arc welding, sorting and reworking etc.

## 3. SUPPLIERS' QUALIFICATION / SELECTION

Suppliers can be chosen for business in two different ways, by recommendation of KIRCHHOFF`s customers or as a choice of KIRCHHOFF.

Choice of suppliers depends on following factors:

- quality of supplier,
- quality certificates,
- quality of products and services,
- economic factors,
- technical potential and capacity,
- automotive customer references,
- logistic capacity.

Before start of formal business, the supplier is obliged to return the completed Supplier Self Profile (self-evaluation form to be downloaded under <http://www.kirchhoff-gruppe.de>) received from KIRCHHOFF, as well as copies of certificates which can guarantee its high level of quality and environmental care.

Furthermore, for qualification, the supplier can also be audited by KIRCHHOFF representatives as a quality system audit and/or a quality process audit.

The supplier is obliged to send references and other information with the guarantee of ability to meet requirements concerning Delivery Performance, quality level of products and natural environmental care.

The first condition of the supplier`s approval is that the supplier is certified acc. min. ISO 9001 standard and, if required by KIRCHHOFF AUTOMOTIVE, positive KIRCHHOFF quality audit findings.

Approved suppliers are listed in the KIRCHHOFF AUTOMOTIVE Approved Suppliers list, which is the main condition to start business with the supplier.

If the supplier does not meet the KIRCHHOFF specific requirements, Quality Performance or Delivery Performance in serial production the supplier can be removed from the List of Approved Suppliers. It can also result in the termination of business.

The supplier is obliged to get the necessary knowledge about global IMDS data system.

#### **4. PRODUCTION PART APPROVAL PROCESS (PPAP)**

Before starting serial production, it must be shown that the quality requirements, which have been agreed upon in the drawings and specifications, are met.

PPAP is carried out according to AIAG reference or alternatively VDA Volume 2. Initial Samples must be clearly marked and PPAP documents have to be attached.

PPAP procedure has to be performed before the serial deliveries and parts need the approval of KIRCHHOFF.

It is forbidden to implement any material changes, construction of parts modification, engineering changes and essential process changes without a new PPAP procedure and a new approval.

If the supplier does not meet one of the PPAP procedure requirements it can be a reason for PPAP rejection.

New approval is required for following:

- new components,
- modification of the manufacturing conditions,
- modification of the agreed specifications,
- change of manufacturing site,
- interruption of manufacturing for 2 years,
- when manufacturing with several identical tools, a multiple mould is required from each tool or cavity

Supplier of raw materials is obliged to submit:

- Cover Sheet (PSW or VDA).
- Dimensional report (incl. thickness, width, coil diameters).
- Material Report (incl. mech. & chem. properties, amount of oil, condition of surface)

The supplier of fasteners “bought-in parts” is obliged to submit a current version of PPAP documents Level 2 (form acc. To AIAG reference QS 900 or VDA or other accepted form) and Initial Samples.

The supplier of semi-finished parts is obliged to submit current PPAP Level 3 (form acc. to AIAG reference or VDA or other form approved by KIRCHHOFF) and Initial Samples.

PPAP approval may depend on functional equipment or/and final customer approval.

If KIRCHHOFF rejects the supplier’s PPAP or final customer rejects KIRCHHOFF’s PPAP, the supplier is obliged to prepare a new PPAP after solving the problem which resulted in the rejection.

Suppliers of semi-finished parts and fasteners (bought-in parts) are obliged to submit conformance of the parts as per the initial samples annually. (Documents to be defined with KIRCHHOFF). Resignation of this requirement can be defined with supplier individually.

In respect of critical characteristics, documentary evidence of a capability investigation shall be prepared and added to the initial sample inspection report (e.g. VDA part 1).

Unless otherwise agreed, a project related quality capability (like APQP or similar, incl. production trial run under full-load and serial production conditions) will be carried out at the supplier’s premises as part of the process approval procedure.

KIRCHHOFF needs to be informed in writing about any location transfer within the suppliers production process, and KIRCHHOFF have the right to raise an objection.

**Table No. 1. List of required PPAP documents.**

	Part Submission Warrant	Dimensional Report	Material Test Results	Drawings with indicated characteristics	Control Plan	3D-Measurement Report	SPC Reports	IMDS-ID report
Suppliers of raw materials	■	■	■	■	■	■	■	■
Suppliers of fasteners	■	■	■	■	■	■	■	■
Suppliers of semi-finished parts	■	■	■	■	■	■	■	■
Suppliers of services	■	■	■	■	■	■	■	■

## 5. IMDS – INTERNATIONAL MATERIAL DATA SYSTEM

A precondition of the supplier’s finished parts approval or bought-in parts approval is also the correct report in IMDS data system (<http://www.mdssystem.com>) and KIRCHHOFF report approval.

The supplier has to have knowledge of IMDS management. The report has to be prepared specifically for the appropriate KIRCHHOFF AUTOMOTIVE plant. It is unacceptable if the report is prepared with an ID which is different to the required delivery plant ID.

For all changes of products (for example: surface coating changes, raw material changes), the supplier is obliged to enter new data into the IMDS data system and get KIRCHHOFF AUTOMOTIVE's approval according to the schedule.

The IMDS-ID print out report for each part has to be attached to the PPAP documents. The supplier is obliged to use only OEM customers' part numbers in the IMDS system.

Suppliers of raw materials are obliged to enter all material data into the IMDS before start of business.

Suppliers of services are obliged to enter data into the IMDS or provide all required information. KIRCHHOFF's approval of the supplier's IMDS report is the condition for further business with the supplier.

Incorrect IMDS report or rejection by KIRCHHOFF or final customer approval can stop deliveries and further orders from the supplier.

## 6. SUPPLIERS RATING SYSTEM

KIRCHHOFF AUTOMOTIVE informs the suppliers quarterly about their evaluation. The following four criteria are used by each plant of KIRCHHOFF AUTOMOTIVE for suppliers' periodical evaluation.

**Table No. 2. List of criteria for supplier's evaluation.**

IT.	Criteria	Points
1	Quality Performance	40
2	Delivery Performance	30
3	Service	20
4	Certification Status	10

Thus the supplier can reach a maximum result of 100 points.

Out of the rating achieved by the suppliers within the evaluation period, a classification level will be given, as follows:

- Group **A** – Supplier:  $\geq 91$  to 100,

- Group B – Supplier:  $\geq 80$  to  $< 91$ ,
- Group C – Supplier:  $0$  to  $< 80$ .

If the supplier is in group B the supplier should present an improvement Action Plan. Decision if the Improvement Plan is required depends on 3 months and 6 months performance. If the supplier is rated in group C, the supplier shall be put on new business hold. Retrieving this situation will depend on an effective action plan, audit result, and ongoing performance, etc.

The goal for each supplier is to be in group A which means very good and preferable supplier.

### 6.1. Supplier quality performance rating

Common procedure is established for all suppliers of KIRCHHOFF AUTOMOTIVE (raw materials, bought-in parts, semi-finished parts, services).

**Table No. 3. List of points reduction for quality performance.**

IT.	Reason of reduction	max	40
1	Recurring quality problem	4	36
2	KIRCHHOFF's customer complaint	5	31
3	Internal complaint	2	29
4	Disruption of production	3	26
5	Stops of production (customer's / KIRCHHOFF)	8	18
6	Stock replacement required	2	16
7	Some NOK parts in delivery	1	15
8	No complaint support	3	12
9	No or delayed 8D-Report/Action Plan	1	11
10	Non acceptance of sorting action (additional complaint costs)	3	8
11	Number of complaints	5	3
12	All NOK parts in delivery	3	0

## 7. QUALITY COMPLAINTS AND ISSUES

The supplier can be informed about the complaint by an e-mail, telephone and or by post and is obliged to take action according to the complaint report. The supplier has to ensure that effective and efficient measures are implemented to prevent a reoccurrence.

If the supplier receives a complaint, the supplier must contact KIRCHHOFF Quality Assurance Department by phone or by e-mail within 24 hours to clarify complaint actions.

In a complaint situation KIRCHHOFF can demand to hire an external sorting company at the suppliers' expense to sort or rework all the parts in KIRCHHOFF incoming storage, finished assemblies stock or to realize sorting action or reworking in each final customer plant in the world. The supplier is responsible for the hire of a sorting company. KIRCHHOFF can also demand stock replacement at suppliers cost in estimated term.

Containment actions (for example: sorting, reworking, stock replacement) have to be done immediately after first notification of the complaint.

The supplier may be charged all the costs associated with sorting the defective parts or finished parts in the relevant KIRCHHOFF plant or final customer's plant. Any costs incurred by KIRCHHOFF or the final customer (sorting, reworking, stock replacement, OEM production stops) may also be passed to the supplier.

Suppliers who do not have 100 % inspection of the parts are not free of potential costs due to complaints and difficulties within KIRCHHOFF or the final customers.

Complaint for raw material suppliers. If there is a risk of deadlines for deliveries to the final customers, KIRCHHOFF can proceed production of the raw material and hire an external company to sort the stamped parts for claimed defects. Defected material can be sent back or scraped after suppliers consent at the suppliers cost.

Complaint for service suppliers. Sorting and reworking actions and transport are at the suppliers cost. If the parts can not be reworked the service supplier can be charged the cost of the parts. If the service supplier is not able to do the service then KIRCHHOFF can hire another service company and pass all charges back to the original supplier.

Poor quality of the parts, inappropriate service of IMDS data system and logistic problems can be reasons for the quality complaint. The supplier can personally participate in the consideration of the complaint within KIRCHHOFF.

### **7.1. Incoming inspection at KIRCHHOFF plants**

Due to quality assurance regulations the necessary inspections will be carried out only at the supplier's plant.

If deviations in quantity, packaging or obvious quality problems are found, KIRCHHOFF will complain directly to the supplier.

The supplier is obliged to send a completed 8D-report within 48 hours (first three points) and in two weeks (finished report) with details of corrective and preventive actions. The 8D-report can be prepared using a supplier form. If the supplier does not send the 8D report within the specified time it could have a strong influence on further business.

**Table No. 4. The schedule for fulfilling the steps.**

Defect components	Short term action 8D step 3	Root causes and verification off all actions 8D step 7
	< 2 days	< 2 weeks

Every quality problem that appears in KIRCHHOFF process causes disturbances and additional work.

KIRCHHOFF shall endeavour to inform the supplier of detected defects immediately. This shall be done in a test report.

The supplier and KIRCHHOFF agree that the fixed delivery date or period is an essential part of the business relationship and that the whole contract depends on compliance or non-compliance with this date or period. For this reason, all orders are fixed-date deals.

Because of the importance of compliance with delivery dates and periods, which is recognized by KIRCHHOFF and the supplier, it may not always be possible for the supplier to remedy defective deliveries for reasons of urgency. In these cases, after coordination with the supplier, KIRCHHOFF is authorized to resolve the defects itself and to invoice the supplier for incurred costs, e. g. for sorting, processing and returning defective parts.

However, if, bearing in mind the urgency of the order, it is still possible to resolve the defect through the supplier, KIRCHHOFF will return the goods together with a note of the defects to the supplier. Incurred costs will be invoiced to the supplier.

Due to the importance of the delivery date or period for the order processing, KIRCHHOFF shall be entitled in the event of default in delivery to claim for all legal consequences that result from the delay. KIRCHHOFF shall not have to grant a period of grace. If the supplier is responsible for the defective condition (either through negligence or intent), the claim for damages shall also include consequential damages, e.g. line standstill etc. at customers of KIRCHHOFF.

## **7.2. Quality issues**

The supplier is informed about quality problems which may not be the reason for the complaint by information report or other information documents. The supplier is obliged to analyse the quality problem and supervise the production process to avoid complaints. The supplier is obliged to assure full support to solve all relevant quality problems within KIRCHHOFF and at customer sites.

## 8. SUPPLIERS QUALITY AUDITS

In order to assure continuous improvement by the suppliers KIRCHHOFF can conduct quality audits in their supplier's plants acc. to VDA 6.3. Quality audits are carried out to check ability of the suppliers to meet continuously increasing requirements of the automotive industry. The quality system, process, part can also be subject to an audit.

The supplier is obliged to enable KIRCHHOFF representatives to conduct quality audits. The supplier is obliged to work out and implement corrective and preventive actions and also supervise effectiveness of these actions acc. to required schedule.

Quality issues can cause additional quality audits. The supplier is informed about an audit two weeks before the date of the quality audits.

KIRCHHOFF is entitled to investigate and rate the quality assurance measures of suppliers. For this purpose and after an appointment has been made, the supplier will give KIRCHHOFF reasonable access to its establishment and provide a qualified employee for support. The optimization of any detected weak points is the responsibility of the supplier. Confidential or sensitive production processes and establishments may by agreement be excluded from auditing.

As part of its delivery remit, the supplier also has to make it possible for KIRCHHOFF to audit its sub-suppliers. However, the supplier is normally responsible for the auditing of sub-suppliers.

Supplier audits are considered as an evaluation tool for:

- supplier quality system effectiveness when the performance level drops to unacceptable levels
- strength of quality system of subcontracted suppliers,
- effectiveness of corrective and preventive actions

## 9. SERIAL DELIVERIES MANAGEMENT

### 9.1. Delivery performance

All suppliers are fully responsible for high Delivery Performance –100% of deliveries on time. If suppliers do not meet logistics requirements they could be charged all costs for the delay and the complaint.

### 9.2. Marking

When supplying components the supplier shall always refer to and indicate the KIRCHHOFF article number in any communication. It concerns particularly labels, delivery notes and invoices, as well as correspondence. In addition these numbers shall be prominent (e.g. highlighted, underlined, bigger fonts).

### **9.3. Packaging and labelling**

The packaging method, box type, storage conditions, quantity of pieces, delivery dates, should be established between KIRCHHOFF and each of the suppliers. The parts and raw materials have to be packed according to general safety requirements.

Initial samples have to be packed in a way which makes it impossible to damage the parts during packaging and transport.

All parts have to be packed in such a way as to avoid damage during transport or storage. The type of packaging, prescribed by the OEM or KIRCHHOFF and approved jointly with the supplier has to be used.

Traceability has to be ensured through clear markings. The supplier has to ensure the traceability of his and his sub-suppliers products up to the raw material stage. If there is no particular packaging prescribed, all parts have to be packed in such a way as to avoid damage during transit or storage. This shall apply irrespective of who is responsible for the cost of packaging and shall be coordinated with KIRCHHOFF.

### **9.4. Quality Assurance in series production**

Service suppliers have to make required tests and measurements and provide required reports with each delivery according to the schedule.

Steel and aluminium suppliers are obliged to provide required material certificates of conformance with each delivery.

Suppliers of bought-in parts are obliged to enclose the material certificate with each delivery if required.

KIRCHHOFF does not have 100 % inspection of incoming finished parts, fasteners, parts after services and raw materials.

Suppliers of services are obliged to submit 100% of good parts after the service.

### **9.5. Procurement**

The supplier has to assure that the products he is obtaining from his sub-supplier meets the required quality.

Therefore, the guidelines and measures indicated in this document also apply to his suppliers. In the case where KIRCHHOFF is the customer and responsible for the product, the supplier has to inform KIRCHHOFF about all sub-suppliers who have influence on the part quality before sourcing them. KIRCHHOFF has the right to raise an objection if necessary.

Changing of sub-supplier during the whole project-lifetime has to be announced in advance to KIRCHHOFF in written form. In this case KIRCHHOFF also has the right to raise an objection.

Suppliers are obliged to meet the FIFO requirements.

### **9.6. In-process tests**

The prescribed quality-relevant characteristics must be checked and documented by means of in-process tests, performed in accordance with a process-related control and inspection plan, and corresponding inspection instructions, which will need to be created. Upon request, access to the records has to be given to KIRCHHOFF.

### **9.7. Safety parts**

With safety parts, the supplier is obliged to completely document the quality management measures and results (e.g., VDA part 1). Every single safety part has to be identified, clearly traceable, and comprehensible.

All documents which are used for safety parts must be marked corresponding to the specifications of the OEM. Without the OEM definition the identification concerning the management system of the supplier has to be used (e.g. VDA, EAQF).

The product liability laws, valid in the origin country and the countries, where the parts will be delivered, have to be obeyed.

### **9.8. Handling of defective units**

If defective parts are detected during the inspections, they have to be separated from the normal production flow, identified immediately and stored in a way which avoids return into the normal production flow. The defect cause has to be established and corresponding corrective measures have to be implemented.

## **10. SUPPLIERS CONTINUOUS IMPROVEMENT**

The supplier is obliged to maintain and improve its quality system according to current revision of ISO/TS 16949 standard (min. ISO 9001) and its environmental system according to ISO 14001 standard.

The supplier is obliged to present a long-term schedule of implementation of these standards. Supplier is obliged to supervise its processes as continuous improvement actions.

The supplier has to improve the quality of the products and services to meet the still increasing automotive industry requirements.

KIRCHHOFF declares the readiness to help its suppliers to improve the quality system (for example: trainings, quality assurance issues support).

### **10.1. Forward quality planning**

KIRCHHOFF expects its suppliers to carry out systematic quality planning. The quality of a product is largely determined in the development stage. Therefore it is essential that quality assurance measures are built into the planning at this stage.

Effective elements in the forward planning of quality are:

- Manufacturing feasibility studies,
- Project flows with quality aims and scheduling/deadlines (incl. reviews and milestone systems),
- FMEA (Design / Process / Logistics),
- Control Plans,
- Capability studies of process, tooling and equipment,
- Test equipment and resource planning,
- SPC.

KIRCHHOFF is entitled to request evidence for performing this tool at any time of the project and within serial delivery.

### **10.2. Technical documents**

The supplier is responsible for meeting the technical requirements set by KIRCHHOFF. Any uncertainties regarding interpretation, missing documents and instructions/specifications, etc. must be clarified immediately in order to ensure problem-free collaboration. This clarification is in responsibility of the supplier.

### **10.3. Feasibility studies**

Within a feasibility study of the components it shall be assessed whether a requested product can be produced under series/batch production conditions corresponding to the technical specifications and contract agreements. KIRCHHOFF is entitled to request evidence for the performance of such a feasibility study at any time of the project.

### **10.4. Definition of inspection characteristics**

This definition shall be derived from e.g. FMEA, APQP, Risk Analysis, AQPP or other development tools. Within the quality planning procedure, important and critical characteristics must be summarized in a detailed control plan according to the guidelines of the current revision of ISO/TS 16949. This shall form the basis for preparation of a detailed quality plan with the aim of “Zero Defects”.

## 10.5. Documentation

For quality records, a retention period as defined by the current revision of ISO/TS 16949 shall apply. Initial sample inspection reports have to be stored according to the demands of ISO/TS 16949 and customer requirements.

## 11. RECOMMENDED MANUALS, current revisions

ISO/TS 16 949	Quality management in the automotive industry International Automotive Task Force (IATF),
DIN EN ISO 9001	Quality management systems – Requirements,
VDA Volumes 1 – 7	Quality management in the automotive industry, VDA e. V. Frankfurt,
AIAG Core Tools	Ford, Chrysler, GM,
– SPC	Statistical Process Control,
– MSA	Measurement Systems Analysis,
– APQP	Advanced Product Quality Planning,
– PPAP	Production Part Approval Process,
EQAF	Renault – Nissan,
Formel Q	VW

### Salvatory clause

In the event that certain individual provisions of this guideline prove to be or become invalid, this fact shall not impair the validity of this guideline. In such event, the invalid provisions shall be replaced by valid provisions that come nearest the original intent.

Modifications and supplements to this guideline are only effective if agreed by both parties in writing.