1. Preface

Our prestige and position in the market are decisively influenced also by the quality of our products. The quality of your supplies to us has a direct influence on our products. Being our partners, our suppliers are responsible for the quality of their products.

The present QAA Suppliers (Quality Assurance Agreement with Suppliers) is intended to implement a joint quality strategy on the basis of the regulations contained in this document. This in the interest of smooth procedures between KS and its suppliers and to minimize costs.

An all-embracing philosophy of constant improvement (CIP) must be in place within the entire supply organization. This concerns in particular the:

- Quality
- Costs
- Deadlines
- Products and procedures

A further important contribution to the safety of supplies is an effective environmental management which guarantees that the applicable national regulations concerning the environment are complied with and which improves the supplier's situation in respect of the environment continuously and efficiently.

The present QAA/QR guideline is part of the KS/AG General Terms of Purchase.

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Section 1: General requirements

1.1 Quality Management System
1.2 Business language
1.3 Quality objectives
1.4 Environment / Health / EU standards / regulations
1.5 Project planning
1.6 Particular characteristics
1.7 Products and characteristics subject to a particular duty of proof
1.8 Subcontractors – change of subcontractor
1.9 Release of process and product
1.10 Changes to product or process
1.11 Treatment of complaints / warranties
1.12 Supplier assessment / escalation stages

Section 2: Planning

2.1 Manufacturability analysis
2.2 Time planning
2.3 Planning contents
2.4 Project evaluation
2.5 Project release
2.6 Prototype production

Section 3: Production process and product release

3.1 First samples
3.2 First-sample documentation
3.3 Reasons for first samples
3.4 First samples according to data records (Pro-E/Unigraphics, etc)
3.5 Recording of material data

Section 4: Further requirements

4.1 Retention periods for documents and records of relevance to quality
4.2 Special inspections
4.3 Release of work stations
4.4 Product audits / process audits
4.5 Capability factors
4.6 Centered production
4.7 Approval of deviations
4.8 Requalification

Section 5: List of literature

Section 6: Appendices and documentations

6.1 Presentation stages: Chart
6.2 Form: Manufacturability analysis
6.3 Form: QM plan
6.4 Form: Application for design deviation
6.5 Form: 8-D report

Section 1
General requirements

1.1 Quality Management System

An effective and certified Quality Management System in compliance with the VDA 6.1 / QA 9000 / or ISO TS 16949 regulations is a basic prerequisite for a supplier relationship with KS/AG.
The following are guaranteed by the effectiveness of the QM System:

- Continuous and provable improvement of the processes, procedures and products
- Quality of the delivered goods
- Punctual deliveries
- Effectiveness and efficiency of the translation of corrective measures
- Communications at all levels
- Contents- and time-wise processing of new and modification projects

Existing suppliers without proof of a certification must obtain certification at least according to EN ISO 9000 ff by 1 Jan 2006 and submit proof.

The purpose of this Quality Management System is to meet the mutual objective, namely a zero-defect quality.

KS/AG reserves the right to audit the Quality Management System, processes and products of the supplier or to have them audited by thirds. The KS/AG representatives shall be granted access within the normal business hours, subject to prior agreement of the date.

The items listed above serve for clarification and represent no restriction of the mentioned regulations!

1.2 Business language

Business language is the language of the country of the ordering works, alternatively English.

1.3 Quality objectives

The supplier shall define internal and external quality targets which permit to measure and evaluate the achieved quality. The following minimum requirements apply in this context:

- Determination of the internal and external error rates on the basis of PPM (parts per million).
- Determination of the internal and external error costs.
- KS/AG may, jointly with the supplier, agree on quality targets for the products to be defined, whereby measures to be implemented in case of non-achievement may also be defined.

The supplier's liability for deficiencies or for claims for damages due to nonconforming supplies remains unaffected.

1.4 Environment / Health / EU standards / regulations

It is recommended to improve the environmental situation on the basis of environmental management standards such as the EC Eco-Audit Regulation or ISO 14001 continuously and efficiently.

1.4.1 Conformity of raw material, components, packaging and equipment

EU Directives

On request the supplier is required to certify compliance with the following guidelines:

EU Directive 2002/95/EK RoHs Restriction of hazardous substances
EU Directive 2000/53/EC ELV
EU Directive 2003/11/EC heavy metal ban (Addendum to Directive 2003/53/EC)
EU Directive 2006/122/EC of PFOS (perfluorooctane sulfonates)

Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

KS AG expects that all samples and products delivered fully comply with the current legal regulations and standards. If required, such declarations must be registered by the suppler or its upstream supplier directly.

1.5 Project planning

Comprehensive planning is required to meet the high quality requirements of our customers. This is why systematic, order-related planning must be a main component of the QM System.

Within the framework of a Project Management, project planning in compliance with the requirements as per section 2 of the present QAA/QR must be implemented to guarantee the product quality and delivery times for all new or modified products. This applies also to commissioned subcontractors, if any.

Project progress reports must be submitted in coordination with KS/AG. The name of the person in charge of the project must be communicated to KS/AG.

1.6 Particular characteristics

In principle all product and process characteristics are important and must be maintained. Particular characteristics, i.e. quality characteristics of importance for the functions and critical for the processes as well as attributes subject to a particular duty of proof, require special attention since any deviations may significantly affect not only the suitability for assembly, the function or the quality of subsequent production operations, but also the compliance with legal requirements. Particular characteristics are defined by KS/AG and its customers and/or result from the supplier's design and/or process FMEA.

1.7 Products and characteristics subject to a particular duty of proof

Concerned here are products whose characteristics have a decisive influence on the safety of a vehicle or the compliance with legal requirements. A corresponding risk must be expected in this area in the context of product liability. Products falling in this category and their characteristics are suitably identified in the technical documentation of KS/AG and its customer.

The supplier undertakes to install an appropriate system for the treatment of products and characteristics subject to a particular duty of proof.
Submission of proof must meet the requirements of VDA volume 1 as regards contents and be of a nature to enable proof of applied diligence in an event of damage (evidence for the defence).

Traceability must be set up in such a way that an unambiguous assignment is guaranteed from the suppliers to the production and inspection lots. A derivation system working down to subcontractor level must be guaranteed.

1.8 Subcontractors – change of subcontractor

The supplier is responsible for the development of its subcontractors (sub-suppliers / suppliers) so that the requirements stated in paragraph 1.1 are met. If the supplier places orders with subcontractors, the requirements of this guideline must also be met by the subcontractors. In this context please observe paragraph 6.1 Presentation stages (position 12).

KS/AG must be notified in good time of a planned change of subcontractor and the change needs the prior approval of KS/AG. A release by KS/AG of both production process and products is mandatorily required.

KS/AG reserves the right to audit also subcontractors. Such audits, however, shall not relieve the supplier of its responsibilities towards the subcontractor and KS/AG.

1.9 Release of process and product

Process and product release shall be effected in accordance with the production process and product release procedure (PPF) of VDA volume 2 or according to the production part acceptance procedure of QS 9000 (PPAP).

Series supplies may only be effected after a process and product release has been obtained from KS/AG. The process and product release comprises a.o.

- Release of first samples of the products
- Release of quality planning
- Proof of the corresponding presentation stages

Complete payment of the mould costs will only take place after process and product release.

1.10 Changes to product or process

Changes to both product and process are subject to release by KS/AG. They must be documented in a permanently updated product and process record.

1.11 Treatment of complaints / warranties

If the purchaser KS/AG lodges any complaints, error prevention measures shall be initiated and documented immediately, and to be notified in writing within 24 hours. In addtition an 8-D report shall be submitted to KS/AG within 2 working days.
If necessary KS/AG will verify the effectiveness of the initiated measures at the supplier's.

In case of an impending deficiency of our production the supplier is required to provide either conformal goods or initate a sorting action within 4 hours otherwise the arising expenses will be charged to the supplier’s account.

1.12 Supplier assessment / escalation stages

At defined intervals, in principle once per year, the purchaser KS/AG informs the supplier of the supplier's classification as regards quality (achievement of the targets), deadlines and service.
The classifications defined below are hereby used and substantiated with additional demands as required.

Classification A

No measures required
The supplier is requested to constantly pursue the objectives of our mutual QAA (target = 0 ppm) and to keep the achieved quality position stable.

Classification B

Plan of action required
Information to the Management of the supplier, requesting it to implement a mutually agreed plan of action in order to reach the classification of an A-supplier again within a reasonable period.

Classification C

Immediate action required
Information to the Management of the supplier, requesting it to mandatorily initiate immediate measures which must be translated successfully within a specified period and whose effectiveness must be proven.
In parallel KSAG will investigate alternative suppliers in order to be able to react if necessary.

C-Suppliers are generally blocked for new enquiries

Section 2
Planning

As a matter of principle we demand from our suppliers a systematic planning according to VDA volume 4 or alternatively QS 9000 APQP within the framework of a project management.
This planning shall not only comprise the parts produced by the supplier, but also the parts bought-in by him.

2.1 Manufacturability analysis

The feasibility declaration must be submitted with the quotation.

2.2 Time planning

KS/AG shall notify the supplier of the project-related deadlines. From these the supplier shall establish a detailed time schedule containing all necessary activities. This time schedule shall be coordinated with KS/AG in good time.

2.3 Planning contents

The minimum requirements and processes/procedures to be applied must be looked up in the regulations.

2.4 Project evaluation

Project progress reports are the basis for a regular project evaluation and must be submitted to KS/AG. KS/AG reserves the right to verify how the project progresses.

2.5 Project release

A release to take up production may only take place after positive inspection of all activities planned in the project.
On the part of the supplier this release shall be documented by all persons in charge of Quality Assurance, production and planning as well as other departments if applicable, with date and signature.

2.6 Prototype production

Where prototype parts are concerned, a prototype report shall be submitted with the first supply and after each change (index / subject number).

Section 3
Process and product release

3.1 First samples

First samples are products made and inspected under series conditions (machines, plant, operating devices, inspection and testing equipment as well as processing conditions).

The inspection and test results of all characteristics shall be documented in a first-sample inspection report. The number of parts to be documented shall be agreed with KS/AG. The first samples, together with the first-sample inspection report and the documents as per the presentation stages (see section 6), shall be delivered to the purchaser on the agreed date. The clear identification as first samples is required and the place of production must be stated. Identical numbers must be used in the first-sample inspection report and the current, KS/AG-released drawing (to be enclosed with the report) to ensure correct identification of the characteristics.

Subassemblies produced on the basis of a KS/AG design including the individual parts must be subjected to a first-sampling procedure and submitted to KS/AG.

Where products of the supplier's own design are concerned, the supplier shall sample the subassembly and submit the results to KS/AG. First sampling must also be carried out on individual parts and if appropriate sub-subassemblies. This documentation shall be made accessible to KS/AG if required.

Deviations from KS/AG specifications which were overlooked during process and product release entitle KS/AG to lodge a complaint at a later stage provided that the individual positions were not clearly declared as accepted by KS/AG in the first-sample inspection report.

3.2 First-sample documentation

The first-sample documentation must be delivered together with the first samples. A missing first-sample documentation will result in a negative assessment of the supplier. Unless accompanied by the first-sample documentation, first samples cannot be processed.

3.3 Reasons for first samples

In compliance with the mentioned regulations first samples are required as follows:

- When a product is ordered for the first time.
- After the supplier changes from one subcontractor to another.
- After a product change, in respect of all characteristics affected by it.
- After a change of the drawing index, in respect of all characteristics affected by it.
- After a delivery stop.
- After deliveries have been interrupted for more than one year.
- In case of modified production processes.
- After the introduction of new/modified moulding devices (moulds, in case of multi-cavity moulds of each individual cavity).
- After a relocation of production facilities or use of new or shifted machines and / or operating equipment.

- After the introduction of alternative materials and designs.

Exceptions in procedures and scope are only admissible by agreement with KS/AG, in the following cases:

- Supplies interrupted for more than one year
- Miniature series, customer service parts
- Standard and catalogue part

3.4 First samples according to data records

Measurements must be made against the applicable 3-D data model. The number of measuring points must be selected so that all geometries are safely determined.
Details of the measurements must be coordinated and agreed with Quality Assurance / Measuring Technology KS/AG.

3.5 Recording of material data

Recording of material data is a firm part of sampling. The data must be entered in the International Material Data System (IMDS) in coordination with the purchaser.

3.6 Release status / approval with reservations

If the supplier's PPAP cannot be released due to deviations or a limited approval (yellow release) is being issued, the supplier is required to re-sample and re-present all non-conforming positions within 4 weeks.

In a limited release (yellow release) scenario, KS/AG is allowed to block the final payment until sufficient proof of rectification is provided by the supplier.

Section 4
Further requirements

4.1 Retention periods for documents and records of relevance to quality

The supplier shall define retention periods during which documents and records of relevance to quality will be kept, whereby the following minimum requirements will be met:

15 years for:

- Documents and records concerning products with particular submission of proof
- Records of special inspections and tests

3 years for:

- Records of quality performances without particular submission of proof (Q-control cards, inspection and test results, PPM charts, etc.)
- Records of QM evaluations, internal audits, etc.

1 year after product expiry for series and spare parts requirements:

- Material inspection reports, sales contracts, supplements to these, etc.
- Records of process and product releases.

The retention periods start running on the date the records are established.
These definitions do not substitute any legal requirements.

4.2 Special inspections

Special inspections are inspections which extend beyond the usual series inspections. Among them are e.g. strain tests, reliability tests and technically elaborate inspections. The supplier shall carry out special inspections on the occasion of first sampling in accordance with the specifications of KS/AG, and then continue the inspections for the purpose of ongoing production monitoring with the jointly determined number of parts and inspection frequency. The parts to be tested must originate from the current series production and the inspection results must be traceable to the production lots.

In case of negative test results the supplier shall immediately stop any further deliveries of products, determine the cause of the nonconformity, initiate suitable remedial measures and document these.

KS/AG must be notified without delay (Purchasing and Quality Assurance). Further action must be coordinated with KS/AG.

4.3 Release of work stations

A formal workstation release of all production and assembly stations must be granted before serial production is taken up. All working steps in production and assembly must be included in this and the result must be documented. The persons responsible to implement stopping and improvement measures must be nominated and deadlines must be set for the finalization of such measures.

A renewed inspection (KVP) taking into account the deviations revealed beforehand must be carried out after completion of the specified measures. The result shall again be documented in writing.

4.4 Product audits / process audits

By means of product and process audits carried out at regular intervals (as per audit schedule and event-related) the supplier shall verify that all specifications applicable to supplies (production, inspection, identification, preservation, cleanness, packaging, delivery documents, etc.) are complied with. The results including the initiated measures must be documented. Proof of the effectiveness of the measures must be submitted. The product audits can also be carried out and substantiated by „families of products“.

4.5 Capability factors

The methods to determine the capability factors must be looked up in the applicable trade publications of VDA volume 4 part 1 (Quality Assurance prior to series deployment) or QS 9000.

<u>The following minimum requirements apply:</u>

- Short-time process capability Cm, Cmk equal or > 2.00
- Long-time process capability Cp, Cpk equal or > 1.67

4.6 Centered production

A centered production must be aimed at where characteristics are controllable.

For the special characteristics, a mastered and capable process must be maintained and documented by means of statistical process control (SPC) on the basis of ongoing systematic evaluations of the test results in accordance with the regulations.

Uncontrollable special characteristics such as e.g. mould-related characteristics and special characteristics without process capability require a restriction of the work tolerance taking into account all general conditions of statistical process control such as e.g. machine/process, measuring processes, uncertainty of inspection, measuring and test equipment, and a corresponding definition of the intervention limits.

A sorting outside these intervention limits must be avoided. In case of characteristics without process capability the 100% inspection must also be documented by statistical methods.

4.7 Approval of deviations

In case of deviations from technical documents of KS/AG, a release for delivery must be obtained from KS/AG prior to delivery as a matter of principle.
In case the goods are already delivered, KS/AG must be notified immediately so that further action can be specified.

4.8 Requalification

At the request of KSAG the supplier undertakes to voluntarily submit KS/AG a re-qualification of all products to be delivered.
The requalification comprises complete proof of dimensions of all drawing specifications as well as associated requirements. The proofs shall be submitted in written form at the request of KS/AG. By written agreement with KS/AG it is possible to limit the requalification to characteristics critical for the functions.

Section 5
List of literature

Associated documents VDA / QS 9000 / DIN EN ISO

Quality Management in the automotive industry:

A)	**VDA regulations**
Volume No. 1	Submission of proof
Volume No. 2	Quality Assurance for deliveries to the automotive industry
Volume No. 4 (parts 1-3)	Quality Assurance prior to series deployment
Volume No. 6 (part 1)	QM System audit
ISO/TS 16949	Quality Management Systems Special requirements in case of application of ISO 9001:2000 for series and spare-parts production in the automotive industry
Volume No. 6 (part 5)	Product audit at automotive producers and subcontractors
Volume No. 6 (part 3)	Process audit
Volume No. 3	Reliability Assurance at automotive producers

B)	**QS 9000 Regulations**
QA 9000	Overall regulation
QA 9000	PPAP
QA 9000	APQP
QA 9000	SPC
QA 9000	MSA
QA 9000	FMEA

Section 6
Presentation stages

6.1 Presentation stages (chart 6.1)
6.2 Form: Manufacturability analysis
6.3 Form: QM plan
6.4 Form: Application for design deviation
6.5 Form: 8-D report

Note:

Forms are included in the QAA /QR as reduced samples. All required forms can be downloaded from the internet free as WORD file under www.ks-ag.ch.

6.1 Presentation stages

Presentation stage 3 applies in principle provided that no deviating written demands of KS/AG or written agreements exist for individual components.

Requirements / presentation stages

	Presentation stages	**1**	**2**	**3**	**4**	**5**
1	Cover sheet first-sample inspection report	X	X	X	X	X
2	Inspection results					
2.1	Dimensions, materials, constituents, etc.	V	X	X	X	X
2.2	Proofs of machine capability (MFU) Proofs of process capability (PFU)	X	X	X	X	X
2.3	Proofs of functioning and reliability	X	X	X	X	X
3	Sample parts	V	X	X	X	X
4	Design documents (customer drawings, etc.)	V	X	X	X	V
5*	Development release	V	X	X	V	V
6	FMEA					
6.1*	Design FMEA	E	E	E	E	E
6.2	Process FMEA	E	E	E	E	E
7.1	Process sequence diagr. (prod. inspection steps)	V	V	X	V	E
7.2	QM plan	V	V	X	X	E
8	Work (production) and inspection and test plan	E	E	E	V	V
9	List of inspection devices (product-specific)	V	V	X	V	V
10	Investigation of capability of inspection devices	V	V	X	V	V
11	Proof of compliance with legal and client-specific requirements. (E.g. environment, safety, recycling)	V	X	X	V	E
12	List of all commissioned subcontractors with assignment to the part and the process	V	X	X	V	V

Legend:

X Is submitted to the competent office/person at KS/AG, one copy to be kept at the supplier's (producer).

V To be kept at the supplier's (producer), must be submitted to KS/AG for insight at request of KS/AG.

E To be kept at the supplier's (producer), must be submitted to KS /AG for insight at request of KS/AG.

***** If the design responsibility lies with the supplier.

6.2 Appendices / Form for manufacturability analysis
Form 02.00.10

To be obtained under www.ks-ag.ch

6.3 Appendices / Form QM-Plan
Form 05.01.07

To be obtained under www.ks-ag.ch

6.4 Appendices / Form Application for design deviation
Form 02.00.09

To be obtained under www.ks-ag.ch

6.5 Appendices / Form 8-D report
Form 05.01.03
Form 05.01.04 execution reference

To be obtained under www.ks-ag.ch

Apart from the above, reference is made to our General Terms of Purchase:

To be obtained under www.ks-ag.ch