1. Aim and purpose of the agreement

This quality assurance agreement describes the minimum requirements for the quality system of the contractual partners and regulates the rights and obligations with regard to quality assurance for the products to be delivered.

Our suppliers are our partners. This agreement is intended to help us to pursue a joint quality strategy to ensure smooth processes between our suppliers and GGB, thereby minimizing costs and developing our suppliers in line with the QM requirements of the market and thus our common customers.

This Quality Assurance Agreement (hereinafter referred to as "QAA") implements the requirements of EN9100, IATF16949 and ISO 9001 as amended.

If the supplier cannot meet one or more of these requirements, he must notify the Supply Chain Service of GGB Heilbronn GmbH (hereinafter referred to as "GGB") in writing to obtain appropriate exclusions.

2. General agreements

2. Scope of application, subject matter of the contract

This QAA applies together with all purchase contracts concluded between GGB and the supplier, unless otherwise agreed (as an appendix to this QAA). The GGB QAA is an integral part of the orders placed and is therefore binding for all suppliers.

QAA applies to suppliers of GGB, and their subcontractors and the services provided by the supplier and subcontractors. Therefore, the supplier will conclude a QAA with his subcontractors, which corresponds to this QAA in content.

Special requirements for the products to be delivered are defined as order details or in supplementary agreements to this QAA and are therefore part of the contract.

In addition, the requirements of this QAA apply to third-party services for our products, services and for suppliers of production and operating equipment as well as for testing and laboratory equipment.

In addition, reference may be made in individual cases to special product-related quality assurance agreements, the requirements of which must be complied with by the supplier.

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3. Operation

3.1 Obsolescence Management

The supplier will inform GGB's Supply Chain Service in a timely manner (at least 12 months in advance) and proactively about the life cycle of the material / product.

Working with GGB, the supplier develops a plan to manage and cover the production of GGB's relevant products over this period without jeopardizing customer supply.

3.2 Requirements related to the approval of products, processes and equipment

The supplier checks GGB's order documents for completeness, correctness, and consistency and, in order to ensure that he can safely implement the requirements and that all deliveries and services provided by him comply with the requirements as per order.

He must plan and execute production and service provision under controlled conditions.

Processes, production facilities, tools, programs, and equipment must be qualified and released before they are used and must be maintained and tested at certain intervals according to process instructions and/or process descriptions. Documentation of the tests must be made available by the supplier at GGB's request.

The supplier shall carry out and document suitable work planning to be able to prove the required work sequences and treatment processes. The planned production sequence will be established by an initial sample inspection at the latest and may not be changed thereafter without GGB's consent.

To control remedial measures for risks and to safeguard possible sources of error, the supplier shall use suitable methods according to the state of the art (e.g., FMEA, 5-Why, Ishikawa, fault tree analysis, etc.).

Technical equipment and documentation necessary for work processes must be clarified before the order is placed. The supplier must implement appropriate fallback solutions, emergency plans and capacity safeguards.

Consumer goods and consumables such as water, compressed air, electricity and chemical products must be monitored and controlled to the extent that they affect the quality of the product.

Manufacturing and testing procedures must be verifiably documented and approved as planned or otherwise.

The product must be packed in such a way that it cannot be damaged during delivery. If necessary, the product must be protected from damage by environmental influences. If storage time limits must be observed, this must be pointed out and the date of manufacture of the product must be indicated. For further cleaning requirements, please refer to point 6.2.

3.3 Tests, complaints, measures

The supplier shall subject his deliveries and services to an inspection (incoming goods, production, process, and final inspection) and remedy any defects found in the process. Should reworking measures be necessary, these must be reported to GGB immediately. This must be documented accordingly and submitted on request.

For drawing parts, GGB reserves the right to request quality planning if GGB quality management deems it necessary.

The supplier shall carry out a suitable inspection planning (technical and scheduling) and document and archive the results.

Tests performed shall be documented with date by the inspector at a suitable place. GGB must be allowed to participate on request.

The supplier shall use suitable testing and measuring equipment and systematically check compliance with the permissible tolerances of the testing and measuring equipment (calibration).

If special quality requirements exist on the part of GGB's customers which are relevant to the supplier's ordered service, these will be stated prior to the order and must be considered by the supplier (e.g., material certificates etc.).

The functional characteristics of the part are determined in collaboration with GGB. The supplier equips itself with test equipment for agreed characteristics. The test equipment must be agreed between the supplier and GGB. Test fixtures for specially agreed characteristics must be documented with proof of test equipment capability. The supplier must prove process capability for these characteristics over the entire production period by means of suitable processes (e.g., statistical process control or manual control card technology).

If the required process capability is not achieved, the quality must be assured by suitable test methods (100% testing); the production process must be optimised accordingly to achieve the required capability. (Required preliminary capability Ppk > 1.67 and for capabilities in the series Cpk > 1.33).

Due to the level of quality sought by the parties and the production at the supplier's premises, GGB limits the incoming goods inspection for the respective product to determining the compliance with the quantity and identity of the ordered products and to the absence of externally visible transport and packaging damage. GGB will notify the supplier of any complaints detected during this inspection within ten (10) working days. In this respect, the supplier waives the objection of late notification of defects.

As far as possible, the supplier shall be returned to the supplier for analysis of rejected / failed products.

Further inspection obligations of GGB according to §§377 of the German Commercial Code do not exist.

In the event of production stoppages at GGB or customer sites because of defective deliveries, the supplier must provide immediate remedy (replacement deliveries, special production, sorting or reworking).

4. Quality management / Audit / Access rights

4. 1 Quality Management System

The supplier undertakes to permanently apply a quality management system in accordance with EN9100 and IATF16949, but at least in accordance with ISO9001, in the respective current version, which is certified by an accredited certification institute. The certificate must be made available to GGB without being requested to do so, at the latest upon conclusion of the contract.

If these requirements cease to apply (e.g., by withdrawal of the certificate) GBB's Supply Chain Service must be informed immediately.

The following sets of rules shall only become part of the contract of this QAA to the extent that they are expressly quoted below:

- The respective current VDA books.
- The current manuals of the AIAG Core Tools

The supplier is committed to the zero-defect target and 100% delivery reliability and must continuously optimize its performance to this end. Insofar as GGB provides the supplier with production and test equipment, in particular means and facilities within the scope of the purchase of deliveries, these must be included by the supplier in its quality management system as its own production and test equipment.

4.2 Audit / access rights

GGB has the right to conduct an audit to determine whether the customer's requirements regarding the supplier's management system have been implemented. The audit can be conducted as a system, process or product audit and must be agreed in good time before planned implementation. The audit can be carried out by GGB itself or by third parties commissioned to do so. Reasonable restrictions on the supplier's ability to safeguard its trade secrets are accepted.

The supplier grants GGB and its customers as well as regulatory agencies/authorities, e.g., BWB, LBA, the right to convince themselves of the effectiveness of the supplier's quality assurance system (e.g., through system, process, or product audits) on site at any reasonable time and to participate in tests of the subjects of performance.

In the event of the occurrence of errors and/or potential for improvement, the supplier undertakes to work actively on the correction/optimization of errors and to provide all necessary documents for inspection without delay, if requested.

In the case of subcontracting, this requirement must be passed on to the subcontractors. GGB must be informed of the assignment of a subcontractor.

If the supplier uses subcontractors to fulfil his contractual obligations, he must integrate their supply share into his QM system and audit them periodically in a suitable manner. This also applies if subcontractors have been prescribed by the customer. Alternatively, GGB may accept audit results from third parties.

5. Support

5.1 Staff qualification requirements

Personnel carrying out activities affecting product quality must have appropriate skills and experience. Appropriate records (e.g., job descriptions, induction plans, qualification matrix) of training, skills and experience must be maintained and appropriately documented upon request by GGB.

The technical equipment must be maintained and adjusted by qualified personnel.

The persons employed for the special processes must be verifiably qualified for this.

In addition, it must be ensured that staff are aware of the importance of their contribution to product or service conformity, product safety and the importance of ethical behavior (error culture, honesty, etc.).

With his signature, the supplier confirms compliance with the Code of Conduct provided by GGB (valid version from the GGB parent company).

5.2 Matrix of responsibility

The supplier has defined internally who in the company is allowed to make changes to controlled documents (e.g., production order, delivery notes, test records, etc.). Changes to controlled documents may only be carried out by this defined group of people.

6. Product

6. 1 Purchase information for the product to be procured

The configuration of the product or service to be supplied to GGB by the supplier is described.

- through documents (drawings, data records, material test certificates, etc.)
- additional requirements specified in the order
- Deviations from the documents specified in the order
- general standards or sets of rules, e.g., EN, DIN, DVS, VDE, etc,

If the supplier recognizes requirements not specified in the processing of GGB, but which are necessary for the specified or intended use as far as known, he must notify GGB of these requirements.

The traceability period is further defined in point 10.2.

6.2 Series production, traceability, identification, deliveries

In case of process disturbances and quality deviations, the causes must be analyzed, improvement measures must be introduced, and their effectiveness must be checked. If the supplier detects deviations from the specification, a written exception must be obtained from GGB before the products are shipped. GGB must also be notified immediately of any deviations detected subsequently.

The supplier undertakes to ensure the traceability of the products delivered by him. In the event of a detected defect, traceability must be possible in such a way that the quantities of defective parts / products can be limited to precise shipments (e.g., batch tracing).

The supplier shall ensure that the products are delivered in suitable means of transport approved by GGB to avoid damage and quality degradation (e.g., contamination, chemical reaction). Different batches must be delivered separately packed and labelled.

About the labelling of products, parts and packaging, the requirements agreed with GGB must be observed. Deviations from existing labelling obligations require a written agreement between the supplier and GGB.

7. Requirements for products and services

7.1 Requirements for the supplier or service provider

If the supplier intends to relocate all or part of the order or to have it subcontracted, this requires the prior written consent of GGB. The supplier is also obliged to pass on all requirements of this QAA to the subcontractor in case of subcontracting.

When selecting subcontractors, the supplier must use the subcontractors specified or approved by GGB.

The supplier must install and carry out suitable controls at direct or subsequent sub-suppliers, as well as at his own premises, to ensure that the requirements of this QAA are met and that the use of counterfeit and/or defective products is prevented.

At regular intervals, the supplier must evaluate the subcontractor's delivery performance, including processes, products, quality management, services, and punctual delivery performance.

Verification measures regarding externally outsourced processes, products and services must be carried out in accordance with the risks identified. This shall include inspection or periodic review, where applicable, where there is a high risk of non-conformity, including the presence of counterfeit products.

If verification activities are delegated to subcontractors, the requirements and scope for delegation must be documented in writing by the supplier and monitored regularly.

When accepting products from the supplier, the supplier must ensure, where applicable, that recognized statistical methods are used.

The supplier must ensure that its sub-suppliers use only GGB-approved sources for specific processes.

GGB may require the supplier to provide documented evidence of the items listed.

7.2 Notification requirements

Changes by the supplier to product or process definitions, including changes to external suppliers, require written notification (12 months in advance) from GGB. GGB must be notified of changes in key positions.

This applies in particular to all changes after execution of an FAI / PPAP /PPF.

Deviations from the documents and/or products require a written approval.

Should the supplier discover non-conforming products in his procurement/manufacturing process or suspect that these are counterfeit products, he must inform GGB immediately.

In principle, all changes must be subjected to a risk assessment, even if they are not notifiable according to the PPAP manual.

7.3 Requirements for the program to prevent damage caused by foreign objects

The requirements for the foreign object damage prevention program, also known as Foreign Object Damage (FOD), are defined in EN9146.

The supplier must install and maintain an appropriate program and processes for the prevention of foreign object damage.

This program shall specify appropriate documented information to assess the risk to product characteristics and operations from foreign object damage and shall include implementation and maintenance guidelines.

The supplier's management review process shall document the compliance/non-conformance of this program and the effectiveness of this program shall be evaluated and documented accordingly.

The supplier shall communicate the results and effectiveness of the foreign body damage prevention program to relevant internal and external interested parties.

The supplier shall maintain appropriate information in its management system regarding a risk assessment of foreign body damage for procured materials.

An appropriate training program to prevent damage from foreign bodies must be defined, implemented, and reviewed.

Protection against damage caused by foreign bodies must be defined, implemented, and maintained throughout all phases of operation.

The supplier undertakes to comply with processes for order and cleanliness and to keep the workplace clean in all work areas and infrastructure. The defined measures are reviewed by the supplier and assessed regarding risks.

To minimize the FOD risk for the product, the supplier must define, implement, and review processes for the responsibility and control of company-owned, personal tools, consumables, hardware and personal items.

In the event of loss of company-owned tools, personal tools, consumables, hardware and personal items, the supplier has implemented appropriately documented reporting processes.

8. Product / process development / sampling

8.1 Sampling FAI

The initial sample inspection (FAI) is performed according to EN 9102.

The initial sample is intended to prove that all technical design and specification requirements are correctly understood, assigned, verified, and documented and that a process-reliable series production takes place.

A FAI shall be performed if required in the purchase order.

A FAI for drawing parts / specification parts must be carried out at the time of initial production.

Deviations from this are to be regulated in the order / contract. In case of serious changes to, tools or programs and in case of an interruption of production time of more than one year or in case of relocation of the production site, a new FAI is required.

If required, FAI planning must be coordinated with the GGB. GGB must then be notified two weeks prior to the FAI to allow GGB to participate.

FAI minimum requirements:

- Checking the product against the drawing documents (e.g., material certificate)
- Verification of special processes (e.g. welding, soldering, gluing, heat treatment, surface treatment, etc.) e.g. by destructive / non-destructive testing
- Validation of jigs / gauges and product-specific tools (e.g., special keys, contour cutters, adapters, etc.) and verification by test reports.

Validation of test and application software for the production process (CNC and measuring programs).

8.2 Sampling PPAP/PPF

Requirements for initial sampling:

- A representative production volume for initial samples shall be at least 300 parts.
- Initial samples must be presented by the subcontractor for all new parts or products and all modifications with changes to drawings. All changes to the product, process, material, production location, tooling, new subcontractor, etc. must be notified to GGB. GGB (AE) will clarify with the customer the scope of re-sampling.
- Series deliveries may only be made after the first sample has been approved from GGB. If this is not available, a written special release for delivery must be obtained from GGB (AE) at the customer's premises.
- Re-qualification tests in accordance with IATF are to be carried out annually from the date of initial sampling. In the case of special parts, initial sampling shall be repeated annually from the date of initial sampling, unless other customer requirements are known. The notice of the requalification inspection must be stored in the Control Plan. Results must be available upon request from GGB. GGB must be notified of any deviations detected during requalification.
- The documents must be transmitted electronically to GGB.
- Initial sample parts must be packed and marked as initial sample parts separately.

8.3 Development, quality planning

If the order to the supplier includes product and/or process developments, the supplier must assure the quality prior to the introduction of series production in accordance with VDA Volume 4 Part 3 or AIAG Core Tools, as applicable.

That includes:

- Implementation of a project management system with delivery of the project schedule according to the specifications agreed between GGB and supplier
- The supplier checks the technical documentation provided to him and notifies GGB if defects are found

- Execution of a producibility/feasibility assessment and feasibility study for measuring equipment including written confirmation.
- Use of known preventive measures for error avoidance (Q-techniques, e.g. system, product and process FMEA with handover of documentation)
- Demonstrable consideration of experience from previous development projects
- Pre-series products are to be manufactured under near-series conditions
- Proof of capability for test equipment, product and process must be provided for agreed characteristics.
- Creation of initial samples under series conditions and presentation with initial sample test report for release at GGB according to VDA 2 PPF or QS-9000 PPAP, according to the respective valid version
- Determination of a suitable packaging type in coordination with GGB

9. Control of products suspected of being defective, determination of causes and corrective measures

9.1 Requirements concerning the supplier's declaration

The supplier will take suitable precautions to prevent the delivery to GGB, either directly or indirectly, of rejected or unremedied and rejected services.

Should it nevertheless become necessary to supply products that deviate from the above, this may only be done with a deviation approval by GGB.

This must be enclosed with the delivery concerned. The supplier is also obliged to deliver all rejects to GGB which are marked accordingly and secured against mixing.

The supplier must take appropriate precautions to prevent the delivery and marketing as well as the use of counterfeit or presumed counterfeit products.

Only original parts may be supplied to GGB. Should a counterfeit product nevertheless be supplied or there be suspicion of having received a counterfeit product, the supplier must inform GGB of this fact and initiate the specified official steps.

The suspect products must be stored accordingly by the supplier in such a way that they cannot enter the flow of goods or be returned to the seller without an examination of the facts.

9.2 Complaints processing

In the case of deliveries which do not meet the specified quality requirements, the following procedure will be followed:

- GGB informs the supplier of the faulty delivery by means of a complaint report (e-mail). For each complaint report, the supplier will be charged €150.00 in complaint handling costs.
- The supplier must respond within 24 hours of receipt of the complaint notification by means of 8D reports.
- The supplier must examine the defect for its causes and immediately submit the results to GGB, including the specified immediate measures.
- If the entire delivery is returned, this shall be at the expense of the supplier. The supplier must immediately provide a replacement delivery or a credit note.
- Should GGB be forced to take special action for scheduling reasons (to meet its own delivery commitment to a customer), GGB may, at its discretion, have a sorting inspection or reworking carried out at the supplier's expense, unless the supplier provides the staff required for the sorting inspection or reworking.
- Within 14 calendar days, the complaint report, including an analysis of the causes, corrective and remedial actions, must be completed and submitted to GGB. It must contain the cause of the error, analysis, corrective measures and implementation date.
- Any long-term remedial measures determined must be transferred by the supplier to the FMEA. QM plan (control plan), inspection plan, etc. must be adjusted if necessary.

Both contracting parties are committed to the ZERO error target.

10. Documented information

10.1 Name or exact identification

All documents and records (e.g., specifications, drawings, process requirements, test instructions and other applicable documents) must be marked and controlled with regard to their issue status and possible changes.

The most recent versions must be available at the time the work is carried out.

The supplier must ensure that the documents remain easily legible and easily identifiable.

Records must be easily retrievable and accessible to the SCI and the authorities for evaluation.

10.2 Documentation, information

Traceability must be possible for all delivered products / services, i.e., the specification documents, the product development process, the use, or whereabouts of a product must be traceable by means of suitable records and, if necessary, part marking.

All materials must be verifiable and assignable with corresponding material test certificates at any time and without doubt.

It must be possible to prove the conformity of the product with the requirements at any time.

As a rule, the documentation must be available 50 years after delivery of the last product. This applies to the production order / route card, test reports, FAI's, PPAP's, PPF's, works certificates of all materials, measurement reports, delivery notes. Before destroying the documents and records, the supplier will inform GGB and obtain a release for this.

The supplier must grant GGB access to these documents on request.

If it becomes apparent that agreements made (e.g.: on quality characteristics, deadlines, delivery quantities) cannot be met, the supplier is obliged to inform GGB accordingly. In the interest of finding a quick solution, the supplier is obliged to disclose the data and facts.

Once a year, the supplier undertakes to inform GGB's Supply Chain Service of the increased freight costs associated with the obligation to achieve 100% on-time delivery.

Furthermore, the supplier has implemented a system in his company with which his employees can access the documents necessary for process and production development, production and storage at any time.

11. Control of documented information

The supplier has defined and implemented the process of controlling documented information in his company. This proFcess ensures that

- the distribution, access, retrieval, and use
- the filing / storage and preservation, including preservation of readability, monitoring of changes (e.g., index changes)
- the storage and disposal of the documents is ensured.
- no outdated documented information is inadvertently used or marked accordingly if the use is permitted.
- external information is marked and controlled.
- only persons authorized to make changes to the documents.
- the access authorizations are defined and have been implemented.

12. Supplier evaluation

The supplier undertakes to achieve the following objectives together with GGB.

OTD: 96 – 100%

Number of products delivered on time (5 working days before and 0 working days after the confirmed date)

UMKZ: 0-1 Violation

Environmental performance indicator (a gradation by one level if no UM certification is available) and packaging violations.

QKZ: x≤250

Quality score (a gradation by one level if no EN9100 certification is available) and the number of products complained about.

SKZ: 0 Incidents

Special status notifications from the customer regarding quality or delivery issues, field failures, production downtimes, malfunctions at the customer's site, including return deliveries from the field.

These key figures are evaluated by GGB every six months and transmitted to the supplier by means of the supplier evaluation.

13. Product safety

The supplier must have a documented process that represents the management of product safety relevant products and product processes.

This process should include the following issues:

- Determination of the legal and official product safety requirements
- Notification of customers about identified requirements.
- Determination of characteristics that are relevant for product safety.
- Defined responsibilities.
- Appointment of a Product Integrity Representative (PSCR)
- Identification of training needs within the company.
- Transmission of product safety requirements throughout the supply chain

14. Liability

The agreement of quality targets and intervention limits (incidents, ppm targets) does not affect the supplier's liability for warranty and compensation claims by GGB for defects in the delivery.

In general, the period of limitation for claims for defects is 24 months from delivery, for the automotive and automotive supplier industry, for the aerospace industry it is 48 months.

15. Confidentiality

The supplier shall use all documents and knowledge received in connection with this agreement and within the scope of the cooperation only for the purposes of this agreement and shall keep them secret from third parties with the same care as corresponding own documents and knowledge, irrespective of the type of transmission.

The obligation does not apply to documents and knowledge which are generally known or were already known to the supplier on receipt without the supplier being obliged to maintain secrecy. In the event that the supplier invokes one of these exceptions, he must prove this to GGB.

The supplier must ensure that he concludes a corresponding confidentiality agreement with his subcontractors. If required, he must provide appropriate proof of this.

16. Insurance

The supplier assures GGB that it has adequate insurance. GGB expects suppliers to take out appropriate product liability insurance, including vehicle recall, to cover the risks arising from this agreement with regard to product liability. The supplier will provide GGB with proof of insurance upon request.

17. Term of the agreement

This QAA takes effect on the signature date of both parties and is concluded for an indefinite period of time. It may be terminated by either party by giving 24 months' written notice to the end of a calendar year.

The confidentiality obligation under item 13 shall remain in force for a period of 5 years after termination of this agreement.

Delivery obligations not yet fully met at the time of termination of this agreement are not affected by the termination.

The termination of this agreement shall not affect the validity of current individual supply contracts until they have been fully executed.

18. Severability clause

This contract remains valid even if individual provisions should prove to be invalid. The provision in question shall then be interpreted in such a way that the economic and legal purposes originally intended by it are achieved as far as possible.

Further customer/product specific requirements can be added if required.

19. Other

This agreement shall be governed exclusively by the laws of the Federal Republic of Germany to the exclusion of all conflict of laws rules. Place of jurisdiction is Heilbronn.

Changes and amendments to this agreement must be made in writing.

Terms / Abbreviations:

QM	Quality Management
QAA	Quality assurance agreement
FAI	Initial sample inspection (First Article Inspection)
PPAP	Production Part Approval Process
PPF	Production process and product release
FMEA	Failure mode and effect analysis

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