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Quality management regulations

production material

October 2017

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1 Introduction

Our customer satisfaction is strongly influenced by our suppliers. The supplier's ability to supply reliable products that meet Brose and its customer's quality standards is an important decision criterion for the sourcing of business.

To achieve Brose's high quality standards and be competitive, the Supplier and Brose must work cooperatively, apply the quality management system consistently, and carry out continual improvements.

2 Purpose

The Quality Management Regulations Production Material ("QMR") contain the requirements on suppliers on quality management system and standards for achieving zero defects.

3 Scope

The quality management regulations (QMR) apply to all contracts for the production and supply of production materials to

all companies of the Brose Group.

4 Quality target

Brose demands a zero defect target from its suppliers. "Zero defects" means, without limitation: no complaints, no incidents, no claims, no mistakes, no faults, no failures, and no defective or nonconforming parts. In order to achieve this zero defect target an advance quality planning, implementation in production, effective serial monitoring, a re-qualification and permanent improvement process (CIP) are required. The focus must be on preventing errors rather than detecting errors.

The supplier must manufacture product according to the rules of the quality management system (refer to section 7) and utilize the latest technology for production and testing.

The supplier must comply with IATF 16949 in accordance with the requirements in section 7. To this extent the requirements of the IATF 16949 are an integral part of this agreement between Brose and supplier.

The quality target and quality management system are considered in the supplier evaluation (refer to section 9).

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5 Documentation / admission / sub-supplier

The supplier will have and maintain detailed records that show evidence of the required quality management system, which includes PPAP documents and requalification proof, and retain those documents for at least 15 years after expiration of service live.

As long as there is no written agreement between Brose and the supplier about the acceptance of digital signatures, the supplier is required to sign all relevant documents in writing.

Upon request, the supplier will grant Brose entire access to the documentation and will release to Brose the requested samples. The documentation must be provided to Brose within 1 working day of such request. The supplier will also support Brose with the analysis of documentation and samples. This particularly applies to special characteristics or D-characteristics (appropriate symbols are on the drawing and relevant documents) for which ongoing statistical capability is required and ensured.

Documentation and corresponding samples must be retained for at least 15 years after the expiration of service life, particularly in reference to specific requirements such as safety critical characteristics (see section 17) (safety critical characteristics are defined in drawings, Feasibility Study, and other documents). Archiving and documentation must be in accordance with the requirements in VDA Book1 and the applicable laws, regulations and rules (microfilming is permitted). The supplier grants Brose the right to check compliance with these rules and review all relevant documents.

If the supplier is subject to insolvency proceedings or liquidation, Brose has an unrestricted right to obtain all paperwork for documentation of Brose products, as long as the specified archiving period has not expired. Supplier must assist Brose in obtaining documentation from third party control or possession upon request.

If an order includes development tasks, the supplier is required to have a functional project management system for the planning phase of products, processes, and other comprehensive tasks. The project management system must be documented as part of the quality management plans (product development process) and coordinated with Brose.

If the development service includes software components for the product, then project processing must meet the requirements of Automotive Software Process Improvement and Capability Determination (SPICE) and the VDA minimum requirement level 2 of level of maturity dimension (e.g., all important work product included; documents are available; all required processes are executed and planned systematically and traced). Suppliers must also meet customer specifications as defined.

The supplier must grant the persons commissioned by Brose (e.g. auditors) and its customer’s access to the supplier’s premises and facilities for the purpose of checking the existence and function of the quality management system and the supplier's resources (audit). Brose will provide supplier with advance notice of any visit and within a reasonable time period. Brose reserves the right to provide short notice in the case of serious errors and failures or the assumption of non-conformity of products or processes (e.g. within a few hours).

If the supplier is sourcing production or quality assurance of the subjects of the contract (materials, software, services, manufacturing and/or inspection equipment) by a third party (sub-supplier), the supplier ensures the quality of such deliveries by own means and by contractual integration of sub-suppliers to supplier's quality management system, e.g. by claiming CQI (continuous quality improvement) documents of sub-suppliers.

On request by Brose, the supplier will inform on sub-suppliers. Brose reserves the right to visit and audit these sub-suppliers, if applicable, in order to verify existence and function of quality management system and/or the resources of the sub-suppliers. Brose will announce visits in time. In case of serious errors, production incidents, presumption of non-conformity of products or processes Brose reserves the right for short-term visits (within a few hours).

6 Changes

Brose will inform the supplier in writing if the requirements of the contract change within a reasonable period.

The supplier must request Brose's approval for all changes to products, processes, primary material, or any change that may affect the supplier's contract performance. Supplier's must promptly notify Brose in writing and including all relevant information in order to allow Brose sufficient time to consider any possible influence on the product itself and or on the products produced with it. Depending on these influences Brose will decide whether a release is necessary for the changes. The supplier must coordinate a sufficient lead time in order to allow all actions necessary (e.g. trial fitting, sampling to Brose, sampling Brose to the OEMs, validation, long term tests, OEM approval).

Upon approval by Brose and changes applied, the first three deliveries to each receiving Brose plant have to be clearly marked with the reason for change and the part's service life has to be updated and added to the delivery. The markings and updated delivery date have to be coordinated with and confirmed by the respective Brose facility in time afore.

The supplier must immediately notify Brose if the supplier discovers any deviations to the properties or reliability requirements for the parts (voluntary declaration). Upon approval by Brose, corrective measures must be implemented (e.g., improvements to production processes, materials, parts, testing procedures and testing facilities). Up until these corrective measures take effect, Brose can request special measures for an appropriate period (e.g. higher level of testing, 100% tests, additional working/process steps). The additional incurred costs will be charged to the supplier. The supplier must apply for separate deviation allowance (AWE) (see section 24) for each Brose location affected by the deviations.

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7 Requirements on supplier's quality and environmental management system

Supplier must be IATF 16949 certified through an IATF (International Automotive Task Force) certifying body and supplier's quality management system must meet the applicable standards. Supplier must have IATF 16949 certification number and date. Hereof dissenting Brose may allow the Supplier a certification according ISO 9001 to be sufficient. In this case, the supplier has to fulfill all requirements of the automobile industry according IATF 16949, and provide a confirmed application for IATF 16949 certification by a certified body including roadmap and planned certification date.

The supplier's compliance with IATF 16949 is an integral part of this agreement.In the transition phase until October 2018, all existing certificates according ISO/TS 16949 remain sufficient.

The supplier must develop quality management system and the quality management system of sub-suppliers with the goal of fulfilling the requirements of the IATF 16949 and to implement a certification according IATF 16949 (refer to IATF 16949 chapter 8.4.2.3).

For all parts/processes/services delivered to Brose the fulfillment of legal and regulatory requirements of the exporting country and the country of importation and if necessary any country of destination named by Brose's customer need to be documented (see IATF chapter 8.4.2.2 + 8.6.5).

For suppliers with surface technology (particularly galvanic and coating systems), certification in accordance with DIN EN ISO 14001 or validation according to EMAS (Eco-Management and Audit Scheme) is required.

Processes under the requirement of AIAG – CQI standards (Automotive Industry Action Group – Continues Quality Improvement), must be documented according to the agreement in the Feasibility Study and the supplier has to submit the self-assessment every 12 months to Central Quality of Brose in Coburg (email: quality@brose.com) unbidden or as instructed by Brose.

The supplier must be able to prove that all process and product relevant environmental regulations are established, their impacts on the organization are known, and permanent compliance with the environmental regulations.

The supplier must send new or extended certificates to central quality of Brose in Coburg to quality@brose.com unbidden. Failure to provide this information as required will lead to downgrading in the supplier evaluation (see section 9).

Due to customer requirements, Brose demands the nomination of a Product Safety Representative (PSB) by the supplier. The supplier must send the Product Safety Representative's function/role, name, telephone/mobile phone number, and e-mail address to Brose at psb@brose.com. Supplier must notify Brose immediately of any changes unbidden.

8 Supplier approval

New suppliers or new supplier production sites will only be approved after successful completion of a technology audit by Brose. Alternatively, Brose may decide, that a successful executed OEM- / Tier-1 process audit according to VDA 6.3 is sufficient for a release, if the audit is not older than 6 months.

Manufacturing for Brose is only allowed by a released production site.

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9 Supplier evaluation

All deliveries will be recorded and used for supplier evaluation according to an internal Brose system.

Quality, project management, logistics performance, audit results, certification status, escalation levels and purchasing assessments are considered in the supplier assessment. If the A-status is not achieved in the monthly supplier assessment, the supplier must immediately take corrective measures to promptly achieve the "A" assessment status again.

A detailed explanation of the supplier assessment (in the supplier management manual) can be found at www.brose.com at Purchasing/Handbooks-Templates.

10 Process audit

Brose reserves the right to carry out process audits according to VDA 6.3 at a supplier. The supplier will also do its best effort to ensure a right to audit for Brose at its sub-supplier's location. Any audits at a sub-supplier location will be coordinated with the supplier. Audits can be completed on short-notice or scheduled at regular intervals.

The supplier is required to implement corrective actions related to audit findings and verify their effectiveness.

11 Feasibility Study

Feasibility Study ((FS) former APQP (Advanced Product Quality Planning) will be carried out by Brose and supplier based on the VDA degree of maturity. The purpose is to receive a mutual signed Feasibility Study which is a sourcing requirement. The supplier will receive the Feasibility Study requirements from the respective Brose responsible buyer. The supplier is obligated to actively implement the requirements of the Feasibility Study and to meet the defined requirements.

12 Customer specific requirements

Customer specific requirements will be communicated to the supplier by the respective Brose specialist and must be considered and adhered to by the supplier. These requirements will be documented and agreed upon in the Feasibility Study.

13 Software related to functional safety and components with integrated software

If safety relevant electronics and software are included in the scope of supply, development must conform to the current "state of the art automotive engineering technology" (e.g., IEC DIN EN 61508, ISO 26262).

Safety relevant products and the relevant documents and records must be continuously identified during the entire development and serial process.

The requirements of the necessary safety level (e.g. SIL, ASIL, ...) will be provided in the relevant specification sheet by Brose. All safety concept standards with requirements on design and implementation must be coordinated by the supplier with Brose.

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14 FMEA

To estimate the risks of possible failures a Failure Mode and Effects Analysis (FMEA) according to VDA Book 4 “Quality Assurance in the Process Landscape“ or AIAG “Potential Failure Mode and Effects Analysis“ must be completed.

The FMEA must be maintained during the entire production period and must be updated at product or process changes and at realized actions due to root cause analyses. The supplier must include in the FMEA supplements and changes made by Brose.

The FMEA must be provided for inspection in the context of Feasibility Studies, at visits, audits and run@rates. At product and process release, (see section 16) the FMEA or a meaningful document of the FMEA must be attached.

14.1 Product (design) FMEA

A product FMEA must be completed for all parts that are constructed under the responsibility of the supplier.

14.2 Process FMEA

A process FMEA must be completed for all production process steps. The results of the product FMEA, the special characteristics (see section 17) identified in the Brose drawing, and the bill of material must be considered in the process FMEA.

14.3 Risk evaluation and implementation of the necessary actions

The risks identified within the FMEA must be evaluated and prioritized according to VDA 4 or AIAG FMEA.

The methods RPN (“Risk priority number”) and risk matrix BxA, as described in VDA 4, must be applied to minimize the risks. Any RPN > 100 or “red” on the risk matrix require relevant action.

All actions must be completed before the start of serial production. On necessary changes see section 6 “Changes“.

Actions defined in the FMEA must be implemented into the production control and inspection plan. PMP actions and Best Practices have to be considered for lessons learned. Alignment of the special characteristics has to guaranteed.

15 Proof of process reliability

In order to obtain information on the reliability and robustness of processes, the supplier must verify process reliability in all phases of a project. Process reliability can be proven by capability indicators, 100% inspection, Poka Yoke, first and last part off for tooling dimensions, SPC, etc.

For variable/measurable characteristics, this can be done using the short-term process capability indicators. The requirements for process capability analyses is provided in the VDA volume 2 document "Assuring the quality of deliveries" and VDA volume 4 "Process capability examination" from the "Quality management in the automobile industry" series. If other regulations are applied, Brose will provide the supplier with reasonable notice.

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15.1 Initial samples

Consistent with the methods and actions the supplier uses during initial sampling, the supplier guarantees process reliability during series.

For special characteristics, this will be defined in detail within the scope of the Feasibility Study. Deviating customer specific requirements must be considered.

If the selected method to demonstrate process reliability for special characteristics (safety critical (D), important (◊)) is the short-term capability, this short-term study has to be done with a sample size of at least 50 parts per mold/cavity.

The minimum requirement is: Cmk ≥ 1.67
(See VDA volume 2, 2012).

If a value deviating from this is applied (e.g. by contract agreement with OEM) this will be agreed with the supplier individually.

During the sampling process no machine adjustment, parameter changes or other interference is permitted. If any significant change occurs, a restart of the sampling process is required.

15.2 Safe Launch Plan

The objective of the safe launch plan is to verify the product and process capability and the reliability of the production system. The purpose of this is to identify all influence parameters and to confirm that the process does not produce any defective parts. During the ramp-up phase, additional inspections must be performed as agreed with Brose.

Deliveries of products within the safe launch plan must be specially marked and delivered with separate inspection reports (certified delivery). Definition of the extent of characteristics and the exit criteria will be defined within the Feasibility Study (FS).

15.3 Series

For “special characteristics“, as identified on the drawing and/or applicable documents, the evidence of the process reliability as defined in the Feasibility Study (FS) needs to be proven.

If the process reliability is achieved through the process capability indicators Cpk, than the minimum requirement for these characteristics is:

Cpk ≥ 1.33.

If an alternative value is applied (e.g. customer specific requirement), an individual agreement with the supplier is needed in the Feasibility Study (FS).

Suitable replacement tests can be individually defined with Brose within the Feasibility Study for special processes with sliding average, for example „Cp-value ≥ 2.0 and Cpk ≥ 1.00”.

If the required process capability is not achieved, the supplier must promptly optimize the production process at its own cost. Defective deliveries must be ruled out by taking other suitable measures (e.g. 100% testing, sorting, Poka-Yoke).

If conventional proof of the process reliability is not possible (e.g. material batch), then another suitable measure must be taken to rule out a defective delivery (e.g. factory test certificate DIN EN 10204-3.1).

For all processes with multiple molds in the tools, there must be separate proof of the capability for each tool mold. For tools exceeding 8 molds individual agreement between Brose and supplier is feasible with capability analyses based on “best” and “worst” molds depending on complexity, tooling concept, maturity level, etc. of the production part.

In the case of tool adaptations or tool maintenance, internal sampling must be completed to determine the influence the component could have.

Brose may request proofs from the supplier at any time. The supplier can prove compliance with the required values by either granting Brose access to the documentation on-site or by sending the respective documentation to Brose.

16 Product and process release (sampling inspection)

The following must be implemented for the sampling scope and necessary documents: sampling level 2 of the PPF – procedure (VDA volume. 2) for Europe; and sampling level 3 of the PPAP – procedure (AIAG) in Asia and NAFTA. The latest revision level is applicable. Outdated templates will not be accepted by Brose.

Depending on the internally selected submission level and if so necessary additional requirements, the supplier receives information on the initial sampling from Brose in written by the PO. The particular requirements can be taken from the extranet (extranet.brose.com). For the use of the extranet a separate contract has to be completed (if not already existing) with purchasing.

The submission documents have to be uploaded per part number via the Brose extranet. The supplier is required to meet the extranet submission requirements. Possible changes have to be agreed upon by the Brose quality planner prior to sampling.

Without a contract, the completed submission documents have to be send electronically per e-mail to the contact partner named on the PO. The documents have to be submitted separately.
For change sampling or resubmission sampling regarding index level the requirements may be submitted as follows:
- PO for initial sampling
- by request of quality planner (e.g. via extranet or e-mail)

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Brose completes a full-run test (Run@rate) at the supplier's location in accordance with the risk assessment in the Feasibility Study. Independent of Broses testing, the supplier must provide evidence of an internal full-run (Run@rate) test (see VDA2, section 6.2 / AIAG).

Prior to PPAP submission, the supplier must enter any required information regarding the content of the parts in the IMDS (International Electronic Material Data System) or in the corresponding CAMDS (Chinese Automotive Material Data System). If required, the supplier must coordinate with the central Brose materials laboratory in Coburg.

The Brose approved IMDS number must be provided in the PPAP submission. Additional information regarding IMDS requirements are in the IMDS Guidelines at www.brose.com in the category Purchasing/Handbooks/Template.

The supplier must notify Brose of any planned changes to the production process, materials, subsuppliers, tools (including replacement parts), production technology, production sites and packaging according to section 6 and 8 of QMR. Brose determines all PPAP submission requirements except where the supplier is Customer Directed.

16.1 Initial samples

Initial samples are products and materials that have been fully produced with series resources and under series conditions. These samples should be random samples from a representative production quantity. The batch size should be selected based on the product type or as specified by Brose.

Samples that do not meet part requirements may only be delivered if Brose has approved a written deviation authorization (AWE), see section 24. These parts must be marked accordingly (refer to section19).
Expenses incurred by additional sampling work due to deviations from the drawings will be the responsibility of the supplier. Incomplete PPAP documents will not be accepted.

For tools with multiple cavities, the full quantity of cavities must be entered on the initial sample report and samples must be provided for each cavity. The parts must be allocated to the respective test report. The same also applies to sampling of multiple stamping tools and fixtures.

The initial sampling shipment must be clearly marked with "initial samples" on the packaging and delivery documents. The first samples must be delivered in serial packaging and include serial labeling and the requested quantity.

Retention/reference samples for initial sample parts must be stored (refer to VDA volume 2/AIAG) by the supplier during the documentation period (refer to section 5). The supplier must inform Brose of any products with limited shelf life.

16.2 Other samples

Other samples are products and materials that are not fully produced under serial conditions (including prototype parts). A measurement report is required for these samples and must be in the form specified by the customer, if applicable. The scope of the measurements and report must be coordinated between the supplier and Brose representative placing the order. Identification on the packaging and delivery documents must be clearly identified with "SAMPLE" and the Brose recipient's name.

16.3 Requalification tests

As required in the IATF 16949, full dimensional measurement and functional testing (requalification test) must be completed on an annual basis on all production parts and in accordance with the applicable customer specifications on material and function. Results have to be available for customer assessments. Customer specific requirements apply accordingly.

For new parts, the supplier must coordinate the scope and interval of testing in the Feasibility Study and must consider the requirements of Brose customers if necessary.

Supplier has to ensure requirements on requalification tests. Test results must be submitted to Brose within 24 hours on request.

16.4 Technical Requalification Supplier

The supplier's technical requalification is to ensure product quality, further reduce supplier related complaints, and reduce internal and external failure costs. For supplier's technical requalification the requalification characteristics as agreed on in the Feasibility Study will be inspected at the supplier's location (technical requalification check). The request to perform this audit in general is made at least 5 working days prior to the audit.

17 Parts with specific requirements for verification (D requirement)

To meet legal and authoritative requirements (e.g. with respect to product liability) and customer requirements, additional care is necessary when producing parts with special characteristics and especially for parts with safety critical characteristics (D characteristics are defined in the drawing, Feasibility Study, and other applicable documents). This applies for the complete supply chain to the origin of production. Failure to comply with the D characteristics or other special characteristics could result in costly recalls, service campaigns, exchanges, selling bans, loss of orders, or loss of reputation. The supplier should take proactive steps to avoid these outcomes absolutely.

The supplier has to follow Brose norm 586437 "Principles for dealing with and the definition of special characteristics" on safety critical characteristics, marked with a "D" on drawings and other documents.

For all characteristics marked with a "D", process capability has to be prooven according to section 15. Complete proof of results is necessary.

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All documents related to the product such as FMEA, production control plan, production documents, internal/external shipping documents, and others must be clearly marked with a “D“ or other internal safety designation.

The documentation must provide clear verification of the following:

- Manufacturing specifications
- Completion of all defined tests
- Set-up documentation or test values
- Test equipment calibration
- Clear batch traceability, individual tracking using serial numbers if required, test documentation, production data and material batches (material cert DIN EN 10204-3.1)
- Traceability method must be agreed upon during the advanced quality planning stage
- Any quality deviations including measures, limitation and error prevention programs

Brose reserves the right to check compliance with correct documentation at any time and review all relevant documents.

If the supplier is subject to an insolvency proceeding or liquidation, Brose has the right to obtain all paperwork for documentation of Brose products, as long as the specified archiving period has not expired.

17.1 Labeling obligation

All deliveries of materials and parts with safety critical characteristics must be clearly marked by the supplier. Each container or unit (e.g., mesh pallet, pallet or box) and each delivery note must be marked with a "▽" in addition to the standard labeling (see VDA recommendation 4902: field 8 or 16) and the respective batch number. Each delivery note must be marked with a clear delivery note number that shows the batch number. When delivering two or more different batches in one delivery, a separate delivery note must be enclosed for each batch. A mixture of batches in a single packing unit is not permitted.

The supplier’s sub-suppliers must be approved and obligated to carry out the same procedures with respect to documentation.

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18 Directed parts

The term “directed parts” describes parts that the supplier has to buy from a Brose defined sub-supplier in order to manufacture supplier’s parts. Even if Brose requires a directed parts sub-supplier, the supplier continues to be responsible for all contractual obligations and quality requirements of the parts towards the sub-supplier.

19 Packing and identification

The supplier must store and transport products and parts in a manner that sufficiently secures against loss, theft, damage or changes to the material properties impacted by environmental influences. Unless otherwise specified by Brose in writing, the supplier must include the required packaging and identification in accordance with the Brose handbook on procurement logistics (see www.brose.com in the category Purchasing / Handbooks-Templates). Damage of products and parts has to be excluding during transport and shipment.

The supplier must mark the goods accordingly so that the product and testing status can be unmistakenly identified at any time, from incoming through shipping.

At shipping, the identification specified by Brose must be used. To identify changed parts, reworked parts or parts with a valid deviation permit, the template "Information on parts status" must be used by the supplier and the shipment clearly identified (www.brose.com in the category Purchasing -> Handbooks/Templates).

For defective parts, the supplier must use appropriate markings (e.g., producer sign, date of production, place of production) that will enable Brose to identify or verify other parts that are also defective or may be defective. The supplier must immediately notify Brose of any deviations from the packaging and identification requirements. The supplier will be responsible for any costs or delays related to the supplier’s failure to timely notify Brose.

20 Contingency

The supplier must ensure sufficient capacity at all times, including during the contract review phase. The supplier must have spare parts that are immediately available for the supplier’s use. If tool damage and/or machine breakdown occurs, the supplier must guarantee the availability of products for the customer by taking appropriate actions (e.g., fast, outside service for toolmakers and/or maintenance personnel for immediate support, safety stock for materials). In order to avoid process breakdowns, the supplier must maintain ongoing preventative maintenance.

For special machines/facilities, the supplier must develop an emergency strategy and promptly submit the plan to Brose during the PPAP phase. The supplier must submit this plan without any prompting from Brose.

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21 Incoming inspection

In accordance with the quality management system and quality strategy that Brose requires, the incoming inspection at Brose are to be reduced to avoid double checks.

Brose will only verify identity, labelling and quantity of goods and check for transportation damage or any other obvious damage. Neither any incoming inspection by Brose beyond this scope nor any payment of the product price shall be considered as acceptance of the product as compliant with the contract. The supplier is liable for any defect found by subsequent checks completed by Brose or the customer.

22 Complaints

The supplier must promptly respond to complaints by Brose. The supplier must immediately confirm in writing the receipt of a complaint, and issue the first report within 24 hours via an 8D report or statement (depending on requirements) and immediate corrective actions. Unless Brose agrees otherwise, the supplier must replace suspect material within 1 working day. These replacement deliveries must be clearly marked. Upon request, documents such as measurement report and material certificates must be provided to Brose within 1 working day.

In order to avoid production line stoppages, Brose reserves the right to execute rework/sorting on its own or to order third parties at the cost of the supplier.

Within 5 calendar days after the supplier receives a complaint, Brose must receive the supplier's root cause and corrective actions. Failure to provide sufficient information or root cause and corrective actions within the specified period, will have a negative impact on the supplier evaluation. If the results of the supplier's findings are not provided within 5 calendar days, the supplier's parts will be deemed defective.

The supplier must submit a final 8D report with verified corrective actions within ten (10) calendar days after receiving a complaint.

22.1 8 D procedure

For the purposes of resolving problems, special importance is attached to the systematic procedures using the 8D method. The "Is/Is not-analysis", the "cause-effect diagram (Ishikawa)" and the "5-why method" must be applied. Technical solutions should be pursued. The complete documentation of the problem solution process must be provided with the 8D report at the request of Brose. The template for the 8D process can be found at www.brose.com in the category Purchasing -> Handbooks/Templates -> "8D problem solution procedure".

These are basic problem solving requirements, which prevents repeated issues. In addition, preventative methods and tools such as FMEAs and Lessons Learned must be used. Results must be transferable to similar products and processes and similar issues with other products and processes.

The level of collaboration between the supplier and Brose and the quality of the problem solving process may influence the supplier evaluation (see section 9).

22.2 Warranty analysis

A field claim exists if defective final products have been assembled into a vehicle that has already left the final place of manufacture. A field claim exists even if the vehicle is already transferred and/or registered to the end customer, or if there is only a repair without replacing parts.

The supplier must implement a process to systematically analyze field returned parts and utilize the same process consistently throughout the supply base. This process must meet the requirements of the applicable VDA and/or AIAG standard. Brose reserves the right to check the effectiveness of this process with a warranty analysis. If Brose finds that the supplier's ability to analyze warranty parts is unacceptable, then Brose will not recognize the results and the supplier's has to recognize all previous claimed parts as defective until the ability of analyzing field returned parts is given.

In addition to those costs outlined in the Warranty Agreement, the supplier will be responsible for any additional verifiable expenses that result from field claims (e.g., audits, travel times, additional analysis and inspections).

The supplier must immediately notify Brose of any problems with parts identified during the warranty analyses.

23 Escalation process

Brose will use the CSL process (Controlled Shipping Level) and TOP-Q meetings to escalate problems.

A detailed explanation of this escalation process can be found in the supplier management manual at www.brose.com in the category Purchasing ->Handbooks/Templates.

24 Deviation permission (AWE)

The supplier must immediately inform Brose, if the supplier cannot meet the contract requirements (i.e., deviation from specification or requirements). Contact partner for serial production parts is the responsible quality employee purchased parts in the receiving plant or prior to final PPAP approval according PPF or PPAP the quality planner purchased parts.

Delivery of a nonconforming part may only be made after an AWE is issued and approved for the respective supplying Brose plant.

The supplier must implement an action plan, including champion and timing, to address any deviation immediately. The supplier must clearly identify and label all carriers of any deliveries containing non-conforming parts for the entire duration of the deviation (see www.brose.com "Information on parts status" document in the category Purchasing Handbooks/Templates).

With the Brose Extranet, we offer the supplier the opportunity to make an application for a deviation request quickly and easily in an online format. This is the preferred way of communication.

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The requirement for using the Brose Extranet is a signed user agreement. For further information, please contact your responsible Brose buyer.

Link to Extranet: https:/extranet.brose.com/

Support for Online Deviation Request: AWE-Support.Extranet@brose.com

25 Miscellaneous

Any amendments or modifications to the terms of this agreement must be agreed to in writing for contractual obligation. The written form may be transmitted by facsimile, but not by email.

Effectual version of the terms of this agreement is the German version. Other language's versions are translations of the German version.

In case of references to further documents/literature, the mentioned documents are valid as amended.

26 International standards

The supplier must comply with all national and international standards related to the contract product. The following is a non-comprehensive list of standards that may apply. This is intended only to be used as a reference.

www.vda.de	VDA Information (DE/EN)
www.vda-qmc.de	VDA QMC Information (EN)
www.iatfglobaloversight.org	IATF (Customer requirements) (EN)
www.aiag.org	AIAG (ISO/TS 16949) (EN)
www.fiev.fr	FIEV (French automobile supplier) (F)
www.anfia.it	ANFIA (Italian automobile supplier) (IT/EN)
www.smmt.co.uk	SMMT (Great Britain) (EN)
www.jedec.com	JEDEC (Semiconductor Industry) (EN)
www.ipc.org	IPC (Electronics Industries) (EN)
www.mdsystem.com	International Material Data System (DE/EN)
www.emas-logo.de	EMAS (Int. environmental management) (DE)
ec.europa.eu/environment/emas/index_en	(European commission official EMAS site) (EN)