



Weber Automotive

QUALITY PLANNING FOR SUPPLIERS

- PERFECTION IS OUR DRIVE -



4 Implementation of basic requirements

4.1 Quality Management System and Quality capabilities

The supplier has implemented a QM system successfully and is using it to demonstrate Quality capability.

The system fulfils the minimum requirements set out in:

DIN EN ISO 9001:2000

The supplier should demonstrate certification through an accredited 3rd party (3rd Party Audit).

Additional allowances of the automobile industry have to be known for the supplier and concerning to the delivered products to Weber Automotive, they have to be fulfilled.

The additional criteria are defined in:

- VDA 6 part 1
- QS9000 series of standards

Or summarized in:

- ISO/TS 16949

A 3rd party certification to the above standards/scripts is recommended by Weber Automotive. The environment protection standard DIN EN ISO 14001 has to be considered.

5 Further allowances

5.1 Production feasibility analysis

Drawings of the product which are compiled by Weber Automotive development should be analyzed by the suppliers in the context of the offer. This analysis contains the economical and process capability and production feasibility (Procedure, basic materials, tolerances - This test offers the supplier the opportunity to bring in his experiences and his proposals to the mutual advantage.

For the inquiry for this production feasibility analysis, the corresponding form has to be filled out feedback has to occur not later than the submission of the quote.

5.2 Issue of Control Plan

Der Contol Plan stellt ein Planungsmittel zur präventiven Prozeßabsicherung dar. Die The Control Plan represents a planning tool for preventive process protection. The generation is done through a systematic analysis of production, installation and inspection processes by the team. This team should consist of personal from planning, production and quality assurance as well as from other concerned departments. The bases of the analysis are process flow charts, product and process FMEAs relevant to the quality characteristics, experiences of similar processes as well as the use of improvement methods.

The control plan should contain at least the following information:

Control plan number with date of issue / alteration, the department responsible for this issue or alteration, part number of the component with current change index, operation number or process number (referring to operation sheet), process name and short description, machine

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or operating resources (with identification number), documentation of machine / operating resource maintenance, assurance of machine or operating resources, inspection characteristics of product and process with classification of the characteristics (referring to inspection requirements), reference documentation of the inspection characteristics, inspection equipment (with identification number), frequency and complexity of sampling and the responsible level / resp. person, inspection method and form of documentation, procedure at occurrence of defective parts (rules), documentation of process / machine setting parameter.

The contents and information required in a control plan are contained in the procedures for the issue of a process monitoring plan in the QS9000 document „Advanced Product Quality Planning and Control Plan (APQP)“.

5.3 Application of product and process FMEA

The supplier, taking into account his production, carries out preventive risk analysis (FMEA) for all products delivered to Weber Automotive and all the involved processes using his products at Weber Automotive and their customers and updates the FMEA if there appears an irregularity in the quality of the product or the process as well as if there are any changes. All parameters which concern the product safety are to be included in the analysis. The points which are judged to be critical have to be improved immediately by suitable corrections and preventive actions, so that specifications, characteristics and product safety as well as a fabrication capability can be assured. The important characteristics for the process identified from the P-FMEA have to be included in the work documents. These characteristics have to be monitored as quality characteristics (SC, or main features) during production.

Details are in VDA Section 4, part 2 as well as in the QS9000 documents.

5.4 Generation of inspection plan

The supplier should compile an inspection plan, which lists all the drawing characteristics with the appropriate inspection and test equipment for each operation. The inspection frequency and the form of documentation of the results should be specified in the inspection plan. The inspection plan has to be send Weber Automotive on demand.

5.5 Audit planning

5.5.1 Internal system audit

Internal system audits are carried out to judge different divisions. They occur at regular intervals on instruction from the management and have to include subcontractors.

5.5.2 Internal process audit

Process audits should be carried out before production start to ensure the applied processes and procedures fulfil the technical and quality requirements of the customers. In the context of a process audit, among others the following fields have to be assessed:

Subcontractors, production and Test facilities, production and test documents, proof of machines and process capability, continuous improvement process, employee qualification, packaging and transport

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5.5.3 Internal product audit (delivery audit)

An internal product audit should be carried out on a fixed number of components ready for dispatch. Those should check that customers requirements, specified by drawings, standards, packing instructions, cleanness requirements, function, outside as well as further customers' guidelines are adhered to.

All the audit results should be documented in written form.

5.6 Measurements System Stability Studies, Machines- and Process-Capability

By using statistical methods, the supplier assures that the engaged machinery, tools, measuring devices, inspection equipment as well as the processes in which they are used, are suitable and capable for the manufacture of the products delivered to Weber Automotive.

The characteristics for which the proof of capability is required are coordinated between Weber Automotive and the supplier.

5.6.1 Measurements System –Stability Studies

As minimum, the following demands should be fulfilled:

- **Process 1**
Inspection equipment capability index: $C_{gk} \geq 1,33$
 Here, 50 repeat measurements are done in short succession by the same inspector condition: The resolutions of the measuring tools have to be less than 10 % of the tolerance.
- **Process 2 (with operator influence)**
Repetition precision and comparison precision (R&R):
 $\leq 20\%$ for new inspection equipment
 $\leq 30\%$ for inspection equipment in use
 In this process, there are normally two inspectors and ten parts with two test series per inspector.
- **Process 3**
Repetition precision (R):
 $\leq 20\%$ for new inspection equipment
 $\leq 30\%$ for inspection equipment in use
 In this process, there are two measurements for every 25 parts.

5.6.2 Machine capability

Index of process capability: $C_{pk} \geq 1,33$

In this case, samples will be taken and assessed for a short period.

5.6.3 Process capability

Index of process capability: $C_{pk} \geq 1,33$


A smaller number of parts will be retained and assessed, distributed over a longer period. Details of the procedure are listed in VDA Section 4 part 1 as well as in the QS9000 documents.

If it is not possible to achieve the minimum demands for a short time, the 100 % tests have to be carried out as long as the capability is achieved again due to corrective actions.

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6 Appendix



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FB 6.4-106en
Herstellbarkeitsanalyse

Mat.- No.: Index: Name:

Supplier: Date:

If currently there is no series production data is available, use experience from similar processes / parts.

1. Has a feasibility study been carried out for the above part for manufacture under production conditions? Yes No

2. Is a Zero-defect plan foreseeable for the planned production and Test conditions? Yes No

3. Is or will there be available process capability for each quality detail specified by Weber Motor AG? Yes No

4. Are there any production-relevant quality features from a suppliers point of view? Yes No

5. Is 100% - testing planned or foreseeable for production? Yes No

Specify 100% - tests: (Use continuation sheet if necessary)
.....

6. Are there any features, materials or processes where a modification or removal would result in a cost reduction? Yes No

Suggestions: (Use continuation sheet if necessary)
.....

7. Target Quality / Price / Date are confirmed on the basis of a Zero Defect Plan for the above part Yes No

Name, Section, Extension

Signature / Company stamp

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