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Revision status 6

Copies to:
LOQ; LOQL; LO-E; Supplier

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- Note:
- The supplier must ensure that this guideline is known and available to all units concerned.
 - Publication of a new revision status invalidates the previous status which must be replaced at the appropriate places.
 - This guideline with revision status 6 was basically revised resulting in erasing of the revision sign *

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1. Purpose

This quality assurance guideline is valid for suppliers of production material. It forms part of the general purchasing conditions agreed between the purchaser and the supplier.

This quality assurance guideline describes the mandatory specifications that apply between Woodward L'Orange and its suppliers.

2. Supplier's Quality Management System

Suppliers commit to implementing and maintaining a certified quality management system in compliance with the ISO 9001 standard as a minimum in order to be able to ensure the required quality of their products and services. In general as well as in case of doubt, the quality system requirements of the WPQR-9100 apply. *(For a template refer to: <http://www.lorange.com/purchasing/downloads>)*

Commitment to the zero-defect target and a continuous improvement process for products/services must be demonstrated to Woodward L'Orange.

3. Audit

The supplier shall enable Woodward L'Orange to inspect its planning, production and quality assurance processes in use. This inspection will be made by way of previously announced process audits and in case system audits on the basis of the VDA 6.3 standard.

The supplier shall ensure that Woodward L'Orange has free access during the audit to those areas that are relevant for Woodward L'Orange (e.g. Engineering, Planning, Production, Stocks, Measurement, ...).

The supplier shall enable comprehensive inspection of quality-relevant documents.

Woodward L'Orange will inform the supplier in writing about the results of the audit. If Woodward L'Orange should stipulate any actions resulting from the audit, the supplier is requested to consider and implement the actions as necessary in due time.

4. Information and Documentation

If the supplier should notice that any quality criteria, delivery quantities or deadlines are not complied with, Woodward L'Orange shall be fully informed without delay. If the supplier should detect any non-conformity after shipment, such non-conformity shall also be communicated to Woodward L'Orange immediately. In case of process changes on supplier side Woodward L'Orange has to be informed additionally. This is done with the PCN-Process (Process Change Notification). The supplier shows his change with the Template 4-OF-01487 ICS „Supplier Process Change Notification (PCN) Form.“ *(For a template, refer to: <http://www.lorange.com/purchasing/downloads>)* The form includes four categories based on them one category has to be selected:

Category 1: The approval of Woodward L'Orange is necessary before implementing any change. This category is used at:

- Location change of manufacturing, assembly or testing of product
- Woodward L'Orange Fixed / Frozen Process
- Critical Items
- Controlled Attributes

Category 2: Suppliers have to inform Woodward L'Orange of an change and get the approval before shipment. This category is used with:

- Source change (Including Source Change of a Special Process)
- Source Change of supplier design parts/products
- Fundamental manufacturing technology change
- Assembly or Test method change
- Tooling change to precision moldings or casting parts
- Manufacturing process change for casted or molded parts
- Woodward L'Orange defined keys
- Software change

Category 3: Suppliers are required to notify Woodward L'Orange and obtain Woodward L'Orange SQE approval of changes prior to shipment of parts. This category will be used when:

- Manufacturing method change
- Control Plan / Inspection Plan change
- Replaced or Modified manufacturing tooling (Does not include perishable tooling.), Tooling/Equipment arrangement change, Tooling/Equipment overhaul or retrofit
- Capacity Management and Machine Offload
- Business System Changes

Category 4: No notification to Woodward L'Orange required.

- Regular administrative shop management activities
- Quality system changes

Note: Routine Tool replacement and process adjustments that are managed through the defined control plan are not considered process changes. PCN NOT required.

Details and explanations are given in the global leading document 3-OF-04182, refer to:

<http://www.lorange.com/purchasing/downloads>

5. Stipulation on Product and Process

The supplier shall only deliver products that have the agreed properties to the full extent. The supplier shall verify that the documents provided by Woodward L'Orange are free from errors, complete and plausible prior to accepting the order.

If this should not be the case, the supplier shall respond by informing Woodward L'Orange in writing before accepting the order.

6. Planning of Products and Processes, Contract Review

In the course of the contract review, the supplier creates a feasibility study (for the form, refer to <http://www.lorange.com/purchasing/downloads>) and submit it to Woodward L'Orange along with the quotation.

The supplier shall plan the processes required for production. This includes, for example, the preparation of work plans, equipment plans or test plans. The supplier shall ensure the suitability of production facilities and production equipment. The documented proof shall be provided by the supplier by regular inspections.

Planning shall also cover capacities, any necessary qualifications of employees, test processes, logistic processes and products.



7. Product and Process Approval with PPAP

The production process- and product approval takes place with the production part approval process (PPAP). A new PPAP shall only be required after discontinuation of production of 24 months. An entry into the IMDS database is not required until further notice.

As a matter of principle, all characteristics created or influenced in the production process shall be verified according to drawing and 3D model. If the inspection requires special test equipment unavailable to the supplier/contractor, an external test center must be commissioned. The supplier/contractor is responsible for this inspection. A standardized inspection procedure and/or standardized measuring points on the part shall be agreed between the supplier/contractor and Woodward L'Orange, if necessary.

The inspection results shall be documented by way of inspection reports according to PPAP Class Matrix. Details based on that are shown in the global valid WPQR-9102, refer to <http://www.lorange.com/purchasing/downloads>). Based on any potential future risk the content of the PPAP depends from 4 classes. Depending on the ordered class, the supplier has to deliver different documents. The in following mentioned documents must be attached to every initial sampling:

- „Part Submission Warrant“ (4-06-3461)
- Dimensional Inspection Results / Balloon drawing
- Material test results
- Risk Analysis (83-501-00163)
- Feasibility Study (83-500-00164)

The in following listed documents are also required depending on the ordered class. Vendor-specific documents which are content-related comparable with the Woodward L'Orange templates will be accepted by Woodward L'Orange, as well:

- Process Capability Study and
- Measurement System Analysis MSA for from Woodward L'Orange specified Keys
- Process Flow Diagram (manufacturing process steps including external ones)
- Control Plan (at least inspection plan with inspection process steps, test frequency and used test equipment)

Templates for the upper mentioned documents are given in the initial sampling package 83-500-00356 and in the combined supplier PPAP forms packet, refer to <http://www.lorange.com/purchasing/downloads>.

Based on special requests on Woodward L'Orange's side, the following documents could be also ordered in case:

- Acceptance record for supplements / devices, if applicable
- Photographic documentation of the casting pattern, if applicable
- Design and development approvals, acceptance records, if applicable
- Cleanliness analysis according to LON-114a at 3 parts, minimum and if applicable

Dimensioned parts shall be clearly numbered consecutively in order to safeguard the correlation of the parts with the measurement results. The method of marking shall be coordinated with Woodward L'Orange if necessary.

For similar parts, an overall FMEA for processes or part families is sufficient. For production, a process FMEA shall be created and in case of development for Woodward L'Orange, an additional design FMEA shall be created. Sending of the FMEA is not desired, however, its substantiation in the initial sample cover sheet. Any classification society approvals required shall be substantiated.

Series production shall not be initiated by the supplier before receiving written approval of the sampling process by Woodward L'Orange.

Exceptions:

- Standard and catalog parts are exempted from the sampling procedure.
- For very small amounts and spare parts, the scope of sampling shall be agreed in writing with the acceptance department and noted down on the cover sheet.
- For shipments from the stock, a cover sheet and a related note in the observations field shall be sufficient unless there were any complaints in the previous shipment.

8. Production

In the event of any quality or process deviations during production, the supplier shall analyze these in order to detect the root causes of the defects. Measures for improvement shall be initiated and their efficiency shall be verified.

9. Marking

Marking of products shall be as agreed with Woodward L'Orange. If individual marking is not agreed, it is necessary to ensure that unambiguous identification is possible during transport and storage.

10. Traceability

The supplier shall ensure the traceability of products and the containment of any defective parts/batches.

11. Exceptional Release



If the supplier should detect a minor non-conformity with specifications, an exceptional release issued by Woodward L'Orange can be applied for in writing. Woodward L'Orange sends exceptional releases to suppliers in writing, if any. (For an application form, refer to: <http://www.lorange.com/purchasing/downloads>.)

Woodward L'Orange reserves the right to invoice the effort involved.

12. Cleaning, Technical Surface Cleanliness

The requirements on the surface cleanliness of our products are high and have a direct influence on the function and service life our products. They are described in the LON-114a. In addition, the general drawing supplement to technical drawings 83-500-00350 is to be observed, refer to <http://www.lorange.com/purchasing/downloads>.

13. Delivery, Packaging

The supplier shall deliver the products to Woodward L'Orange according to valid delivery rules or in suitable transport packaging. The transport packaging provides complete protection during transport and protection from corrosion, contamination and damage.

The planned type of packaging has to be coordinated with Woodward L'Orange in time before starting the serial deliveries. The supplier has to start this process on personal initiative.

The requirements from Woodward L'Orange for the handling of charge carriers and the material have to be fulfilled. If there are no any special packaging instructions given the general packaging instruction and the work instruction for usage of VCI-products 83-400-00013 from Woodward L'Orange are valid.



14. Complaints

If Woodward L'Orange should detect any deviation from the specifications when receiving the goods or during subsequent production steps, a notification of defect in 8D format will be sent to the supplier immediately. The supplier shall be obliged to perform a defect analysis immediately and communicate the results to Woodward L'Orange. To support the systematical problem solving the 8D notifications 83-500-00165 can be used, refer to <http://www.lorange.com/purchasing/downloads>. Unusable products will be promptly returned to the supplier.

The 8D report completely filled in shall be returned by the supplier, indicating the actions envisaged for eliminating and preventing the defects.

If supply difficulties should arise because of complaints, the supplier undertakes to remedy the situation by taking suitable immediate action at its own charge. Such actions include, for example, replacement deliveries, extra shifts, sorting activities, special transport arrangements, etc. .

15. Environmental Protection / Health & Safety

The supplier commits to complying with all legal regulations for environmental protection, health and safety and energy efficiency. The aim is to reduce the impact of industry on human beings and the environment to a minimum.

Woodward L'Orange recommends obtaining environmental, health & safety, and energy certifications according to DIN ISO 14001, OHSAS 18001 and DIN ISO 50001.

Woodward L'Orange reserves the right to conduct environmental audits with suppliers not maintaining an environmental management system.

