[Organization logo]

[Organization name]

Commented [9100A1]: All fields in this document marked by square brackets [] must be filled in.

PROCEDURE FOR MANUFACTURING OF ELECTRICAL AND OPTICAL EQUIPMENT

Code:

Version: 0.1

Created by:

Approved by:

Date of version:

Signature:

Commented [9100A2]: If you want to find out more about production and service provision, see this 9001Academy article: Understanding Product & Service Provision in ISO 9001 http://advisera.com/9001academy/blog/2014/10/07/understanding-product-service-provision-iso-9001/

Commented [9100A3]: Adapt to the existing practice in organization.

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Commented [9100A4]: This is only necessary if document is in paper form; otherwise, this table should be deleted.

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Change history

Date	Version	Created by	Description of change
	0.1	9100Academy	Basic document outline

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1. Purpose, scope and users

The purpose of this procedure is to describe the process of manufacturing of electrical and optical equipment according to demanded quantity and deadlines, in line with the request for product quality, according to customer request.

The procedure is applied in realization of the manufacturing process.

Users of this document are persons responsible for the process of manufacturing in [organization name].

2. Reference documents

- AS9100 Rev D standard clauses 8.5; 8.6
- Procedure for Document and Record Control
- Procedure for Competence, Training and Awareness
- Procedure for Purchasing and Evaluation of Suppliers
- · Procedure for Design and Development
- Warehousing Procedure
- Procedure for Management of Nonconformities and Corrective Actions
- · Procedure for Equipment Maintenance and Measuring Equipment
- [Work instruction manuals]

3. Product realization

3.1. Product realization planning

Procedure for Manufacturing of Electrical and

Optical Equipment

3.1.1. Making production plan

According to demand of products and volume of production in previous period, [CEO] together with [job title] creates [Production Plan].

Availability of information that defines product characteristics

For project-based production and individual production according to customer request, information about product characteristics is defined in [document name].

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Commented [9100A5]: List the names of instruction manuals used in this process.

Commented [9100A6]: E.g. Production Manager

Commented [9100A7]: E.g. Product Specification, law and regulatory requirements, instructions, catalogues, etc.

Commented [9100A8]: Delete if there is no cyclic production.

Commented [9100A9]: E.g. Customer Request, Project Task, etc.

Commented [9100A10]: Delete if organization doesn't perform this type of production.

[Job title] defines all resources needed for production, including human resources,

[Job title] creates the Quality Plan, which defines necessary activities of verification,

Availability of work instructions

[Job title] is responsible for creation of work instructions for the following process activities: [list the names of work instruction for each activity].

•

[Job title] is responsible to ensure that all equipment is in operational condition and, on [job title]'s request, deliver evidence of execution of the Plan for Preventive Equipment

Maintenance and records of calibration and repairs of measuring equipment.

such requirements.

Conducting measuring and monitoring

[Job title] must ensure availability of monitoring and measuring resources and define the enter them into the Quality Plan.

[Job title] ensures that any documented information for monitoring and measurement

are to be retained, and any specific equipment required and instructions for use.

[Job title] must ensure that when sampling is used the sampling plan is justified on the basis

3.1.2. Creating work order

For each individual batch, [job title] creates [Work Order] which defines all activities to be executed

According to [document name], [job title] makes an internal purchasing order that specifies

the Project Plan, and delivers it to [job title].[Job title] defines which work instructions will be applied are stated in the Product Specification made by [job title].

3.2. Production provision realization

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Commented [9100A11]: E.g. Production Manager

Commented [9100A12]: Work instructions are needed for

Commented [9100A13]: E.g. Maintenance Operator

Commented [9100A14]: E.g. Production Manager

Commented [9100A15]: E.g. Head of maintenance department

Commented [9100A16]: E.g. Production Manager, Technology Engineer, etc.

Commented [9100A17]: Other records can be defined as addition to Quality Plan, e.g. records for monitoring temperature, pressure, humidity, etc.

Commented [AS910018]: E.g. Production Manager, Technology Engineer, etc.

Commented [AS910019]: E.g. pass/fail, etc.

Commented [AS910020]: E.g. Production Manager, Technology Engineer, etc.

Commented [9100A21]: E.g. Production Plan, Customer Request, Project, etc.

Commented [9100A22]: E.g. Production Manager

Commented [9100A23]: Delete if clause 8.3 of AS9100 Rev D

is excluded.

Commented [9100A24]: E.g. Warehouse Manager

Commented [9100A25]: E.g. Production Manager

Commented [9100A26]: E.g. Production Manager

Production is executed in controlled working conditions, which implies compliance with all technical and technological requirements defined in documents necessary for the production process. If

Commented [9100A27]: This refers to law and legal

materials are entered in Production Registry by [job title]. [Job title] ensures that products are never

3.2.1. Internal purchase and receipt of raw materials

According to the Production Plan and Production Registry, [job title] makes internal purchase. After received quantity meets demand, [job title] sends raw materials to production.

3.2.2. Production of plastic semi-product

[Job title] receives the raw plastics in form of as granules, pellets, or powder. The raw plastic is then

3.2.3. Production of electrical components

Based on Product Specification, [job title] controls production of copper parts and soldering of testing of the components. If the testing results are satisfactory, [job title] sends the components to assembly facility.

3.2.4. Production of optical components

Procedure for Manufacturing of Electrical and

Optical Equipment

[Job title] receives glass blank and compares it to Product Specification, if the glass blank meets the

[Job title] is responsible for generating lenses by grinding, after this rough grinding [job title] sends

is conducted by [job title] using inverse spheres of the same radii ground together so that the hills and valleys on the optics will wear away to produce a true sphere. Slurry flows in between the grinding process.

After the lens is generated and fine ground, [job title] sends it to polishing that can be both Numerical Control) machines.

Before centering begins, the polished surfaces are inspected by [job title]. [job title] checks the

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Commented [9100A28]: Adapt to organization practice.

Commented [9100A30]: Adapt to organization practice, the whole section can be edited in order to be aligned with the manufacturing process in the organization.

such as scratches, digs, and sleeks. If the optic does not meet its specifications, [job title] returns it to

Once the optic is centered and edged, [job title] cleans and inspects it for the last time. Both

title] places the optics into holders which are loaded into the top of a vacuum coating chamber.

When the lenses are finished, [job title] sends them to assembly facility.

3.2.5. Assembly

[Job title] receive plastic semi-products, electrical components and lenses and controls the assembly

handled according to the Procedure for Managing Nonconformities and Corrective Actions.

3.2.6. Packaging and storage

[Job title] oversees the packaging process and in case of nonconformities apply Procedure for Managing Nonconformities and Corrective Actions. Once the product is finished [job title] sends it to

3.2.7. Identification and traceability

configuration management practices defined in the Procedure for Production and Service Provision enter identification data in the Record of Traceability, identifying differences between the actual configuration and the required configuration on the Record of Product-Service Configuration.

3.2.8. Validation of production and service provision

[Job title] must conduct validation of all processes of production and service provision where:

- it is not possible to confirm by measurement that a product or service satisfies customer request;
- I to not provide to conduct to

Processes that fall under at least one of above conditions are defined as Special Processes and the results of their validation are recorded on the Record of Validation of Product Process and Special Process.

Where appropriate, as part of validation, [job title] must determine:

- Conditions to be in place to maintain process approval

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Commented [9100A31]: Adapt to organization practice.

Commented [9100A32]: Adapt to organization practice.

Commented [9100A33]: Or Production Registry.

Commented [9100A34]: Delete if there are no processes that require validation; see Quality Manual.

Commented [9100A35]: E.g. welding – techniques for testing welding compactness don't give information about its strength, or when service provision is instant and prevents subsequent testing.

Commented [9100A36]: For example lacquer thickness of lacquered wire.

Commented [AS910037]: E.g. necessary training and retraining of employees who perform the process, monitoring requirements for the process, scheduled re-validation of the process etc. [organization name]

- .
- Special work instructions
- Use of special methods and procedures necessary for implementing and monitoring the process
- _

[Job title] creates records needed to provide evidence that realization processes and resulting products meet predefined requests.

[Job title] enters data about validation in the Production Plan, which demonstrates the capability of of Special

Processes on the Record of Validation of Production Process and Special Process, which demonstrates the capability of the process to accomplish planned results.

original results.

3.2.9. Customer property

[Job title] is responsible for identification, verification, and protection of customer or external provider property that is given for use or implementation in a product. If customer or external

owner using Notification to Customer about Changes on His Property.

3.2.10. Control of changes

the requirements and enters changes in the Production/Service Change Review Record.

3.2.11. Product release, delivery and activities after delivery

[Job title] is responsible for determining, at appropriate stages, by which degree the product requirements are met regarding Product Specification and customer requirements. If requirements

Record of Product Service

Conformance and approving shipment. Products that don't meet the requirements are handled according to the Procedure for Managing Nonconformities and Corrective Actions.

[Job title] ensures that the release of products and services to the customer will not proceed until

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Commented [9100A38]: This is entered in Quality Plan.

Commented [AS910039]: E.g. Statistical measurement controls, detailed implementation procedures, etc.

Commented [9100A40]: This is entered in Quality Plan.

Commented [9100A41]: This is done when previous validation didn't give expected results, or when validation needs to be done on a routine basis.

Commented [9100A42]: Adapt to organization practice.

Commented [AS910043]: This is often called first article inspection.

Commented [9100A44]: This can be deleted if organization doesn't use Customer Property. See Quality Manual.

[organization name] [Job title] defines the extent of post-delivery activities that are required, considering: **Customer requirements** Customer feedback Commented [AS910045]: E.g. off-site work Product/customer support Investigation and reporting or problems detected after delivery Commented [9100A46]: Adapt to organization's needs. During servicing activities, [job title] is obligated to initiate correction of non-conformance using the Procedure for Management of Nonconformities and Corrective Actions for every non-conformity of 3.3. **Product preservation** [Job title] is responsible for preservation of product during production and internal transport of Commented [9100A47]: E.g. Production Manager product and/or assembly parts. Commented [9100A48]: E.g. Warehousing Manager and/or assembly parts before delivery to a customer according to Warehousing Procedure. [Job title] is responsible for preservation of product during transport. Commented [9100A49]: E.g. Driver

Commented [9100A50]: E.g. Shift Leader

3.4. Resolving non-conformities

notifies [job title], who acts according to the Procedure for Procedure for Management of Nonconformities and Corrective Actions.

If the non-conformity can be resolved, the process is resumed; otherwise, [job title] stops the the Procedure for Management of Nonconformities and Corrective Actions, but can't change technological parameters.

4. Managing records kept on the basis of this document

Procedure for Manufacturing of Electrical and ver. [version] from [date] Page **8** of **10**Optical Equipment

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	Code	Storage			
Record name		Retention time	Location	Protection	Responsibility
Product Specification	PR.10.1	2 years	[office of Production Manager]	Records are stored in file cabinet [describe name/location]	[job title]
Record of Product/Service Conformance	PR.10.2	2 years	[office of Production Manager]	Records are stored in file cabinet [describe name/location]	[job title]
Quality Plan	PR.10.3	2 years	[office of Production Manager]	Records are stored in file cabinet [describe name/location]	[job title]
Notification to a Customer about Changes on his Property	PR.10.4	2 years	[office of Production Manager]	Records are stored in file cabinet [describe name/location]	[job title]
Record of Traceability	PR.10.5	2 years	[office of Production Manager]	Records are stored in file cabinet [describe name/location	[job title]
Production/Service Change Review Record	PR.10.6	2 years	[office of Production Manager]	Records are stored in file cabinet [describe name/location	[job title]
Record of Validation of Product Process and Special Process	PR.10.9	2 years	[office of Production Manager]	Records are stored in file cabinet [describe name/location	[job title]
Record of Product- Service Configuration	PR.10.10	2 years	[office of Production Manager]	Records are stored in file cabinet [describe name/location	[job title]

Commented [9100A52]: If the records in this column are in electronic form, write the name of the folder on Production Manager computer.

Commented [9100A53]: Adapt the information in this column to the normal practice in your company.

Commented [9100A51]: Adapt the information in this column to the normal practice in your company.

Commented [9100A54]: This document is unnecessary if organization doesn't store and work with customer property.

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Production Plan	PR.10.17	2 years	[office of Production Manager]	Records are stored in file cabinet [describe name/location	[job title]
Production Registry	PR.10.18	2 years	[office of Production Manager]	Records are stored in file cabinet [describe name/location	[job title]

5. Appendices

- Appendix 1 Product Specification
- Appendix 2 Record of Product/Service Conformance
- Appendix 3 Quality Plan
- Appendix 4 Notification to a Customer about Changes on his Property
- Appendix 5 Record of Traceability
- Appendix 6 Production/Service Change Review Record
- Appendix 9 Record of Validation of Product Process and Special Process
- Appendix 10 Record of Product-Service Configuration
- Appendix 17 Production Plan
- Appendix 18 Production Registry