



Factory acceptance test according to KRONES spe- cification

FAT (Factory Acceptance Test)
KRONES labellers



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1 Definition of factory acceptance test

A factory acceptance test is the acceptance of a product at the manufacturer's location. The factory acceptance test is conducted jointly by the purchaser and contractor, or their authorised representatives.

The acceptance test includes the following procedures:

- The machine or line is checked to ensure all its components are complete. For machines with stand-alone machine guards, the guards are not installed during the FAT. This refers to all modular labellers and the Sleeveomatic. The test is based on the machine order document and, where appropriate, other changes agreed after the signing of the contract, if incorporated into the contract.
- A functional test is also conducted. The functional test determines if all of the agreed functions are provided and the final label decoration result conforms to the specified requirements. This is particularly important in order to detect damage occurred during transit and final assembly for example.
- The aim is to verify that the machine has been assembled correctly in accordance with the specifications and works properly.
- If the tests reveal no or only minor defects, the machine can be accepted. If, however, significant defects are detected, the factory acceptance test can be repeated after subsequent fulfilment (removal of defects).

Alternatively, the purchaser may, at his own discretion, accept the machine in spite of the defects identified.

2 Requirements and basic conditions

Purchaser and contractor

The purchaser defines the equipment to be tested in the test run at set-up speed when awarding the contract.

As a rule, the set-up speed does not correspond to the rated speed as no recirculation is intended.

The contractor specifies the quantity and quality of the test material required for the test run and requests the material from the purchaser in good time prior to testing. The purchaser is responsible for assuring the timely delivery of the material to the contractor. If the test material is not delivered on schedule, there is a chance that the FAT will not be performed.

Basic conditions

- Elements of the factory acceptance test
 - The elements of the overall contract to be included in the factory acceptance test must be defined. Just the labeller, for example, or also other components linked to the machine, e.g. secondary machinery such as coding systems, label inspection units, etc.
 - The steaming tunnel for the Sleevematic is not installed. On request, shrink tests can be conducted in the steaming tunnel of the technical centre.
Drying systems are not mounted either.
- Standard scope of supply
 - The standard scope of supply to be accepted includes the complete equipment that can be defined by the customer. If the customer has not made an appropriate selection, reference equipment is used for acceptance.
 - The standard acceptance procedure includes one day of work. If this is possible during this time, a change-over to another type can also be performed.
- Time schedule
 - The factory acceptance test is usually conducted at an agreed time between 08:00 a.m. and 04:00 p.m.. Deviations from this time frame are possible based on an individual arrangement and in compliance with working time legislation.
 - The total duration of the machine acceptance in the production hall usually does not exceed 4 hours, but may take longer under certain conditions and by arrangement.
- Photography inside the assembly hall is only allowed if the contractor agrees to it.
- Insight into the risk analysis
 - The purchaser is generally entitled to access the machine's risk assessment. On request, the risk assessment can be provided in German. To enable this, notification of any such request must be made in writing two weeks before the scheduled FAT date at the latest.

3 Sequence of the factory acceptance test

- Inspection of the machine with a brief induction into its method of operation.
- Review of the machine layout drawing.
- Joint inspection and assessment of the test material (containers and labels) with regard to processability and possible manufacturing faults which might influence the test result.
- Check that the scope of supply agreed in the contract is complete.
- Checking of all components against the contractual specifications.
- Checking of the protective devices.
- Checking of the required certificates in accordance with national laws.
- Test run of the machine without production.
- Test run of the machine with production at set-up speed.
- Equipment change-over for machines with several label decorations, provided this is possible in one day.
- Functional verification by performing short test runs with the agreed equipment.
- If the factory acceptance tests last several days, each day must end with a final daily review meeting during which the test points covered are summarised.
- After testing all of the agreed equipment variants, a final review meeting is held.



4 Test content

4.1 Static test

- Checking of the machine's interfaces with secondary machinery or with existing line components.
- Check that the machine design complies with the order document, e.g. machine size, pitch, running direction, layout configuration, number of labelling stations and dimensions.
- Check that the scope of supply agreed is complete.
- Checking the components with regard to the defined specifications such as manufacturers of purchased parts or special requirements (special customer requests) regarding the design of mechanical or electrical components.
- Checking of the machine's safety devices. Machine guards, EMERGENCY STOP switches and marking of hazardous spots.

*For further tests, see the "Dynamic test" test item.

4.2 Dynamic test

- Machine test run without production at nominal speed, simulation of machine malfunctions, alarms and resetting/acknowledging the alarm.
- Machine test run with production at set-up speed (duration depending on the test set-up options) and simulation of an EMERGENCY STOP followed by a restart.
- Joint assessment of the label decoration result* with regard to machine function, label position (application height and label orientation) and label decoration quality.

*) The shrinking tunnels of sleeve applicators are usually not installed in the test set-up. The expected shrinking result can be checked in a separate shrink test at the Kronos technical centre.

5 How to handle deviations from the factory acceptance test specification

- Deviations from the scheduled test sequence or the scope of testing are only permitted with the consent of both parties.
- Malfunctions during bottle conveyance, e.g. containers falling over, shall not result in the failure of the FAT.
- The FAT does not include functional testing of the secondary machinery provided by the customer.
- Label decoration faults due to the test material not conforming to the specifications are not subject to assessment. It is generally permissible for the machine manufacturer to furnish proof of such faults by performing test runs with proper test material.
- Requested changes to the contractually specified scope of supply shall not result in the failure of the FAT. In such a case, the supplier reserves the right to check what additional costs would be incurred for the purchaser and to stipulate the time of the change would be made according to the effort and expense involved.
- A non-critical deviation in the labelling accuracy away from the agreed limit values shall not result in a failure of the FAT. The machine manufacturer must instead verify the agreed limit values during the course of the site acceptance test at the customer's location.
- All of the deviations must be documented with a description of the remedy for eliminating the deviation.
- All of the deviations must be released both by the operating company and by the supplier.