

# Innokeg InfoKeg

Logistic System



## Innokeg InfoKeg Management System

KHS Till has developed the modular **InfoKeg** keg management system in order to meet continuously growing demands in terms of product quality and profitability.

**InfoKeg** runs under WINDOWS as a single PC solution or as a client-server application. In addition to the capability of processing individual keg-specific data, **InfoKeg** can also be used without ID carrier at the keg for recording of:

### Production data

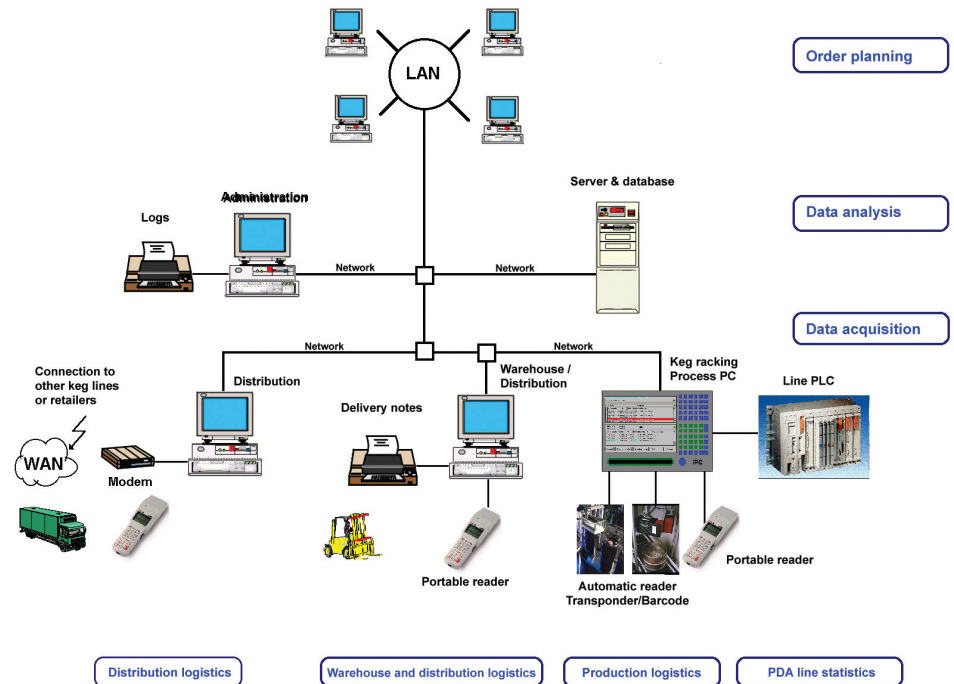
- \_ Filled container statistics (quantity of product racked by shift and keg type)
- \_ Reject statistics (rejected kegs by error status, shift and keg type)

### for Line statistics

- \_ Line efficiency
- \_ Machine fault statistics
- \_ Weak point analyses

### and as a Production data acquisition system

- \_ Line visualization
- \_ Analog media values
- \_ Media consumption



# Innokeg InfoKeg Management System

A transparent keg inventory is a prerequisite for proper keg management. Every keg must be uniquely identifiable. Based on their identity, kegs are assigned keg-specific data such as keg supplier, production date, fitting supplier etc., and production data such as product, filling date and time. Alone the production data makes it possible to draw conclusions with regard to the quality of different suppliers. Far more important, however, is comprehensive monitoring of the process stages in the racking line for each individual keg. Deliberate or unintentional manipulation during the washing and racking processes is eliminated, thereby avoiding costly complaints from customers and the related negative impact on reputation. The **InfoKeg** keg production logistics module is available for keg-specific data management during production.

#### **Keg production logistics:**

- \_ Keg inventory management
- \_ Quality management
- \_ Segregated racking

A further significant benefit of keg production logistics is automatic documentation of production data, enabling quality assurance according to ISO 9001. Both product-specific and keg-specific filling statistics can be created automatically. Fault statistics make it possible to draw conclusions regarding damaged kegs and potential problems in the racking line.

The **InfoKeg** keg distribution logistics module is available for tracking kegs in the market.

#### **Keg distribution logistics:**

- \_ Current keg locations
- \_ Location of lost kegs
- \_ Keg turnaround time at customer site
- \_ Gray market analysis

Seamless tracking of kegs between racking plants, wholesalers, end customers and back enables storage times to be determined, reasons for complaints and keg repair costs to be allocated to the company responsible, and gray markets to be investigated. Furthermore, different racking plants can access the same keg inventory and the complete keg history, which is essential for segregated filling.

## System Design

The front page shows a full configuration of the **InfoKeg** keg management system. The modular structure of the software

enables the individual system components to be operated individually and also enables systematic expansion of the system. In a first step, for example, line statistics, production data acquisition or production statistics could be used without ID carrier at the keg. Once the kegs have been equipped with ID carriers, keg production logistics for internal data acquisition can be introduced, followed by keg distribution logistics. The keg life cycle thus becomes fully reproducible.

The number of reading stations in the racking line depends on the size of the system, the principle of machine operation (linear machine, rotary machine) and the required production logistics data.

For keg distribution logistics purposes, forklift trucks can be equipped with reading stations, so that all kegs can be read and assigned to customers during loading. This also makes it possible to automatically prepare delivery notes.

Portable hand-held readers are used for keg tracking in the market. Data are transferred either via wireless modems directly from the delivery vehicle, or from a base station after a delivery round.

## Keg ID carriers

Each keg is equipped with an ID carrier for the keg production and keg distribution logistics modules. The keg management system is independent of the ID carrier used (e.g. seven-segment code, barcode, or transponder).



Seven-segment codes (clear text), barcodes, and ID matrix are visual ID carriers that are read by scanners or camera systems. In these cases, keg coding is relatively cost-effective. On the other hand, readers are relatively expensive and susceptible to reading errors due to optical identification in harsh operating conditions. Transponders are electronic IDs that are read via antennas. Since they are based on high-frequency transmission, their read error rate is less than 0.1% and the antennas can be installed in or underneath the conveyors. Transponders are more expensive than bar codes or seven-segment displays, although their service life corresponds to that of kegs. The antennas for reading the data are significantly less expensive than scanners or camera systems.

## Readers

Automatic reading stations for installation in the keg line and portable readers for the keg tracking in the market are available for all ID carriers described above. The readers in the keg line are connected with the process PC via a fieldbus and feature a NoRead recognition function. The keg number is processed directly via the line's database system. Any unread kegs are rejected. For stock management purposes, the forklift trucks are equipped with wireless modem readers, so that all kegs can be logged directly and assigned to the respective storage location. Hand-held readers with wireless interface are available for mobile data acquisition within the racking plant and for data acquisition in the market. The current status of the kegs such as product, best-before date and supplier can thus also be read at the end customer.

## The advantages of Innokeg InfoKeg

The **InfoKeg** keg management system offers comprehensive information about the keg inventory. In addition to an overview of the complete keg inventory, the service history of each individual keg from purchase to the current date can be completely traced. In practice this means, 'when was the keg racked with which product, and which route did it take to the end user and back'.

In addition, the other analysis options and functions available include the following:

- \_ Gray market analysis.
- \_ Keg turnaround times based on customers and regions.
- \_ Allocation of repair costs to the customer.
- \_ Allocation of quality complaints to the keg number in order to detect damaged kegs.
- \_ Automatic foreign keg detection.
- \_ The system enables verification of the racking date, the product, and the filling quantity independent of labels, imprints, or caps.
- \_ Regular keg maintenance after a specified number of times racked or excessive dwell time in the market.
- \_ Production monitoring in accordance with ISO 9001 becomes possible.
- \_ Segregated keg racking
- \_ Data acquisition and verification anywhere in the market.
- \_ Determination of the repair frequency for certain kegs or fittings makes it possible to draw conclusions as to the quality of the materials.

- \_ Since the tare weight for each keg is stored in the database, the content can be checked unmistakably.
- \_ Any recalls in the event of a faulty fitting batch, for example, can be automated.
- \_ Integrated production data acquisition.
- \_ Line visualization capabilities.

## Software configuration

The clear objective of the hardware and software configuration for the complete system was to create transparency in production and distribution, improve and constantly monitor quality standards, and to lighten workload and keep the machine operator better informed. The WINDOWS graphical user interface facilitates operation of more complex system, since many operators already have experience handling WINDOWS. Familiarization within the system is very easy, since **InfoKeg** displays all analyses both graphically and in tabular form. It is additionally possible to control **InfoKeg** via a modem. Valuable and rapid support can thus be provided even after the commissioning phase. All system components can be tested through special test programs, providing significant relief for service technicians.

The software is also subdivided into several modules as follows in accordance with the modular system concept:

### ■ Process integration

The process software deals with data acquisition and analysis in the racking line and is tailored to the requirements of each individual system. The keg readings from all stations within the system are analyzed and the related information is forwarded to the PLC in order to reject the keg if necessary. The current keg status is stored directly in the standardized keg database and is thus available for analysis by the administration PC.

### ■ Distribution integration

Portable hand-held readers acquire the keg data in the market. They have either their own memory to temporarily store all of data read or a direct wireless connection to the system host. In any case, keg deliveries are fed into a separate distribution PC that processes the data and writes them to the distribution database of the server. The software is independent of the particular distribution structure. The **InfoKeg** keg distribution logistics can handle direct sales or distribution paths with any length.

■ **Administration section:**

An administration PC deals with data analysis and data management. This PC is connected to the server and therefore has free access to all **InfoKeg** data. The administration section of **InfoKeg** is easy to operate due to its clearly structured Windows interface. All statistic functions and all functions for which changes can be entered are password-protected in order to rule out unauthorized access.

The administration program features the following main menus:

■ **Management**

General keg information such as keg type, keg manufacturer, fitting manufacturer, and customer and product data etc. are managed in this section. Existing entries can be modified and new entries can be created, in order to add a new product, for example. This menu also enables the user to read in new keg inventories from data supplied together with the kegs by the keg manufacturer.

■ **Keg statistics**

Keg-specific information such as the manufacturer, the production date etc. can be retrieved from the keg database for each individual keg. The history of the keg during production and in the market can also be traced here. Shift logs, racking, and reject statistics can be retrieved over variable periods.

■ **Analysis**

In this menu, the recorded data are analyzed according to criteria specific to the particular racking line. Weak point analyses can be carried out very quickly, including parameters such as the efficiency of the overall system or faults at individual treatment heads at the machines. This enables preventive maintenance through regularly queries.

■ **Distribution**

The current keg location, the keg turnaround time at customers, the keg circulation frequency, and lost kegs can be determined in addition to keg deliveries. Gray markets can be revealed by comparing filled containers supplied with the returned empty containers.

Straightforward integration into existing lines, ease of servicing through modem-based remote maintenance, and clearly structured operation are the main characteristics of the **InfoKeg** keg management system.

■ **Innokeg InfoKeg**

The system offers an integrated system solution including production statistics, production data acquisition, visualization in the racking plant, and keg distribution logistics covering retailers and end users.

We would be glad to discuss the optimum solution for your system and send you detailed informational materials including a demonstration software CD.

