Tool Management

iQ Basis

Purpose

Tools are a part of the production and the mounting process. The process capability has to be assured – like for all other components of a process. One task of the quality assurance is to guarantee safe processes. The iQ-WZM (tool management) module supports the systematic entry of tools, the assembly, the constant monitoring regarding the process capability and the early initiation of repairs and the purchase of spare parts.

Master Data of Tools

Tool types are roughly distinguished in two classes: tools without an ident no. (consume material like borers, cutters etc.), and tools with an ident no. that are custom-made. In iQ-WZM tools without an ident no. are considered as a tool type.

Tools that have been manufactured for a production process **according to a drawing** usually only exist once and are called idents.

For one **tool type** an unlimited number of **individual tools** with their serial respectively inventory numbers can be registered in iQ-WZM.

Information that belongs to all tools is maintained on type level. This also applies to the history (e.g. tool type: new revision state of a drawing).

Master Data of Tool Types

- Key or tool type no., short description
- Lookup term
- Revision state
- Status of the revision state
- Validity period
- Drawing no. with revision state

Tool Characteristics

Because of the variety of tool types partly very different descriptions of characteristics are necessary.

- **Setting parameters** for casting tools, usually bound to a code no.
- **Part list** for a metal cutting tool with a drawing for the assembly
- Parameter defaults for the adjustment of the tool
- Description of the inferface between **tool and workpiece**
- Description of the interace between **tool and machine** etc.

To deal with the variety of tool types they are categorized in classes. The characteristics can freely be set up by the user. The possible entries for a characteristic are predetermined in catalogues within the iQ-GL module.

Tool Part List

The tool part list contains all material ids that are used in the tool assembly. The list is maintained directly together with the tool.

Printing of the Setup Paper

When printing tools that have to be assembled the print result consists of the drawing, the part list, and the setup parameters.

Relations between Workpieces and Machines

It is possible to create a list of materials (i.e. their id's) that are handled with a special tool. Machines that are able to use the tool can also be written to a list. Materials and machines are maintained in iQ-GL.

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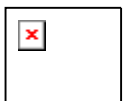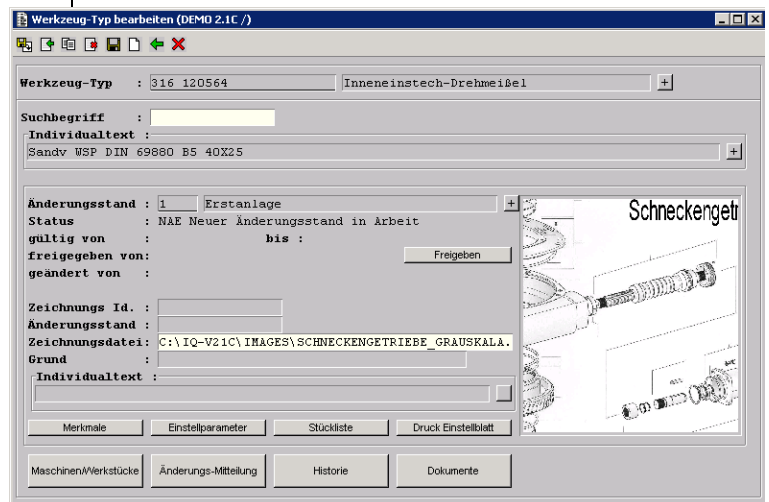
Master Data of Ident Tools

The master data of each ident is recorded below the tool type. A typical field is the status: released, locked, ordered etc. Other data includes:

- Inventory no.
- Serial no.
- Owner   site/cost centre
- Location   site/cost centre
- Sub location   free text
- Storage location   site/cost centre
- Tool setter   site/cost centre; several setup locations can be assigned

Purchasing Data

Tool type fields

- Producer, business partner
- Supplier/business partner, site, contact person
- Costs, gurantee date, tool contract
- Tool fields
- Order form, target date, date of delivery
- Delivery document, actual costs, actual date

Repair data

- Specification of repair capability
- Service provider; business partner, site, contact person
- Internal repair, site, cost centre
- **Standard price** for the revision, time for the revision

Dynamic data

The following dynamic data refers only to single tools. There are similarities to the dynamic data of the gauge management.

- Issuing of tools
- Display of the old status, storage location, bin location
- Display of the site, cost centre, sub location
- User
- Date/time of issuing, new status
- Tool retraction
- Date/time of retraction
- Reason of retraction: normal, for repair, for inspection
- Storage location: site, cost centre, bin location
- Costs and reason for costs; e.g. after retraction of a service

Interfaces to SAP R/3

Interface to **R/3-PP**; production utilities

Only "site types" are reported to PP. This means the description of the tool type contains a continuous number (001, 002 etc.) for each serial number. In other words: the tool is traced back to a tool type with the quantity one.

The master data is entered in iQ-WZM and after changing the status respectively creation of the data it is transferred to PP.

Interface to R/3 PM

The single tools are reported as equipment to the PM (analogue gauge management). Every change of the status is registered by the PM.

Tool History

For tools (that are not usual consumable materials such as borers) that can be reset in to a serviceable condition by maintenance, adjustment, and reconditioning the history of all operations has to be registered, e.g.:

- Maintanence of master data and changes
- New versions by changing lists or drawings
- Take-over after first time purchase
- Capability inspection after take-over, repair etc.
- Use; operating life, number of the swings (pressing)
- Interface to the production order management for the retraceability
- Specifications about repair, adjustment
- Capability analysis etc.