



*Authorized and Certified Sage Business Partner  
Certified Operations Management Solution Provider*

## **Sage Operations Management Design and Structures Overview**

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### **Operations Management**

Operations Management is a production system for make-to-order and custom manufacturers, as well as other job management project requirements. The seamless, real-time integration with Sage 100cloud functions provides synchronization between financial and operations data for more accurate analysis and reporting.

Operations Management provides tools to quickly determine accurate job cost estimates by identifying the component costs of the job - material, labor, and subcontracted services. With a complete view of total costs and pricing information, the best pricing decision may be made.

### **Underlying Operations Management Design and Structures**

It is important to provide details about the basic structures, or building blocks, of Sage Operations Management and how these integrate with the standard Sage 100cloud functions. This document will assist in understanding how these relate to the current systems, procedures, and workflows.

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### **Sales Order**

The sales order is required as the first task in creating a production work ticket, specifically for make to order and custom manufacturing jobs. The applicable work ticket(s) are linked to the sales order used to create them. The sales order may be entered as a standard order or as a quote, both of which allow a work ticket to be created. Note that quotes do not allow transactions to be posted.

### **Work Ticket**

The work ticket contains all the information required to build the item it is attached to on the sales order. It may also be referred to as a work order, traveler, router, or job ticket. The work ticket includes a header step 000 and up to 999 additional steps. These relate to tasks or operations. The work ticket and step structure contain labor and parts budgets, scheduling data, labor required and used, parts detail required and used, and status.

Make to stock work tickets may also be defined for components/subassemblies built for parent items or items that require building to inventory.

### **Work Ticket Step**

Work ticket steps represent tasks required to build the parent item and may be referred to as activity centers, labor classes, tasks, routings, processes, phases, or operations. These are where all required parts and quantities are resident, and costs are incurred when parts are used. When labor is entered, it is shown in detail and adds to the cost of the work ticket.

### **Work Ticket Template**

Work ticket templates are predefined formats used to create work tickets. For standard build items, these templates may include the required steps, as well as the required parts. For custom jobs and parts, the template defines the basic operational steps, and the parts may be added or imported as the requirements are defined.

### **Work Ticket Class**

A work ticket class is a job type that defines how an item is to be built and defines coding for various postings. Specific parameters include work ticket creation parameters (including make to order/make to stock), scheduling parameters, invoicing rules, accounting posting rules, user-defined fields, warranty/serial number data, and overhead calculations. There is no limit to the number of work ticket classes that may be created.

### **Activity Code**

Activity codes primarily relate to labor in terms of standard costs, burden calculations and billable rates, when applicable. The codes may also be applied to machines and other entities, such as subcontractors. Each step has an activity code assigned, but transactions, such as labor hours may have many activity codes assigned that are different than the step the detail resides on.

### **Purchase Order**

In addition to the standard function of purchase orders, these may be linked specifically to work tickets and their steps. When this is done, the receipt of goods posts the item quantity directly to the work ticket and WIP without going through inventory. Linking of purchase orders may be performed from the purchase order module, from the work ticket or through the component exception manager. They may only be unlinked from the purchase order module.

### **Component Exception Manager (CEM)**

The CEM is the MRP function within Operations Management. There are two primary purposes:

1. Purchasing for inventory or work ticket requirements based on inventory level parameters or items required on work tickets. Purchase orders that are created may be specific to inventory or a single work ticket or consolidated into a single purchase order for multiple requirements – for stock and/or work tickets. The receipt of goods for these items will correctly allocate quantities to each requirement.
2. Creation of production work tickets from sales orders (for parent items) or items on work tickets that are defined as make to order or subassemblies. Subassemblies are closed to the parent work ticket that created the work ticket.

For multi-level bills of materials, lower level steps will be identified by the CEM and subassembly work tickets created that eventually will be fulfilled and closed to the bill level above it. All work tickets that are created in the CEM are linked to an internal sales order, but this is automatic without the requirement to first create the sales order.

### **Bill of Materials**

When the Bill of Materials module is integrated with Operations Management, work tickets may be populated with components from bills using work ticket templates or the import parts feature in work ticket entry. Multi-level bills generate parts at the highest level. Each item code on a template step may have the explode BOM check box field set to checked to explode the parts onto the step.

Subsequent levels on a bill or items that are subassemblies will be identified in the CEM and subassembly work tickets created with parts exploded onto the step.

### **Parts on Work Tickets**

Parts on work tickets are essentially a collection of required parts assigned to steps based on the activity code assigned to that step. Because parts may be imported from a bill of material or the explode BOM is checked on for a bill on a template, there is no actual bill of material resident on a work ticket step, just the parts from that bill.

Parts may be individually included on steps of a template or entered directly to those steps once a work ticket has been created. Parts may be imported to work ticket steps from three sources:

1. Work Ticket Template
2. File Import
3. Bill of Material

### **Warranty/Serial Tracking**

Operations Management includes a warranty/serial tracking feature to keep track of warranties for items sold or serviced. Item warranty information is tracked in the Equipment/Asset file by serial number (manufacturer's or internally assigned number) and Inventory item code. In addition to tracking warranty information, the Equipment/Asset file accumulates revenue and cost amounts from the initial sale of the item and all subsequent repair invoices.

### **Time Tracker**

The Time Tracker module has multiple purposes in addition to time entry, but it is the primary data entry point for workers and supervisors on the production floor. Time entry may be automated using bar codes for employee numbers and including bar codes on the travelers/work tickets by step. The system tracks time spent on a task from start to stop times, plus also daily clock in and out times for payroll purposes. Time may also be entered manually, if required.

Parts usage and status tracking are part of the Time Tracker function, so conceivably all job information and entry required on the floor may be based on the Time Tracker features.

### **Data Collector**

The data collector operates with both labor and parts to integrate these into work tickets and their steps. Although initial data may be brought into the data collector via the visual integrator import utility, it goes beyond the review and editing capabilities to ensure the data is viable for the work ticket and related data. Data collector also includes automated tools for importing based on the presence of data or schedules.

## Optional Modules

- ☐ Enhanced Scheduling
- ☐ Product Configurator
- ☐ MFG 100 Professional
- ☐ Field Service & Dispatch
- ☐ Technician Dashboard

## Additional Third-Party Integrations

- ☐ CADLink - QBuild Software
- ☐ JobPack Scheduling and Resource Allocation

### **About John Hoyt**

John Hoyt specializes in process review and analysis and specific software solutions for the manufacturing industry. John's expertise is with the Sage Operations Management and Sage Production Management modules available for the Sage 100cloud software. Originally developed and known as JobOps prior to being branded as the manufacturing functions for Sage 100, John has worked with the software for over 25 years. John is a Certified Operations Management Consultant and has assisted over 125 manufacturing organizations in their implementations and process improvements.