



QAD Enterprise Applications
Enterprise Edition

Training Guide Quick Start

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What's New?

The following table summarizes significant differences between this document and the last published version.

[illegible]

About This Course

Course Description

This course provides quick start training on QAD Enterprise Edition.

This course provides a very high level overview of most of the basic functionality of the QAD system. It focuses on basic operational tasks to provide a foundation for further training in the more advanced functionality. In this sense you might think of the course as very broad but somewhat shallow. The training Guides for the individual modules provide much deeper training but with a much narrower scope.

Course Objectives

The overall objectives of the course are to provide a basic background in setup concepts and the processing of basic business functions in QAD Applications, such as:

- Purchasing
- Sales Orders
- Work Orders.

Each chapter includes a list of learning objectives for the topics covered in that chapter.

This course is not intended to take the place of implementation training or consulting. The complete body of knowledge required to make the business decisions required for system setup and implementation are beyond the scope of this course.

QAD designed this course for those who need an introduction to the basic QAD Enterprise Edition. The Quick Start is for those who want to “hit the ground running” with the application software. This accelerated course provides a focused introduction to the fundamentals of the system and demonstrates how to apply the functionality to critical business processes.

The format for this course is designed for the classroom with each student completing their own hands-on activities that simulate how to use QAD Enterprise Edition to run a business.

Course Benefits

Obtain an overview of core QAD Enterprise Applications Enterprise Edition functionality.

Audience

This course is intended for first-time users.

Prerequisites

An understanding of basic manufacturing principles is beneficial.

Course Credit

This course is valid for 30 credit hours.

This course is typically taught in 5 days.

Organization of Training Guide

There are four main sections in this training guide

- Organization
- Setup
- Processing Transactions
- Planning

Organization provides a very high-level overview of how the system is organized, its modules, program types, and types of data. The sections on: Setup, Processing Transactions, and Planning provide the core material of the course as they focus on how to set up and use QAD Applications. Each chapter in these sections contains three sub-sections—Key Concepts, Example, and Activity.

Key concepts are discussed at the beginning of each chapter to familiarize you with processes, work flows and terminology. For example, in the chapter on Setup, concepts discussed include Bills of Material and Routings.

The Story

Quality Manufacturing International Incorporated (QMI) is a multinational company headquartered in New York, NY (USA).

QMI has 8 divisions:

- United States of America
- Canada
- Mexico
- France
- UK
- Netherlands
- China
- Australia

Divisional Structure

QMI manufactures a wide range of products, typical of Medical Device, Electronics/Industrial, Consumer Packaged Goods, Automotive, Life Sciences/Pharmaceutical and Food & Beverage. Manufacturing techniques include discrete, repetitive and process.

These same products are produced at all of the 8 company divisions around the world, and sold to industrial companies, large distributors, medical suppliers, and directly to the consumer.

QMI takes advantage of shared services to manage their business relationships. QMI has relationships with customers and suppliers in all of the countries where a QMI division is located.

QAD Web Resources

The QAD website provides product and company overviews. From QAD's main site, you can access QAD's Learning or Support sites.

<http://www.qad.com/>

Virtual Environment Information

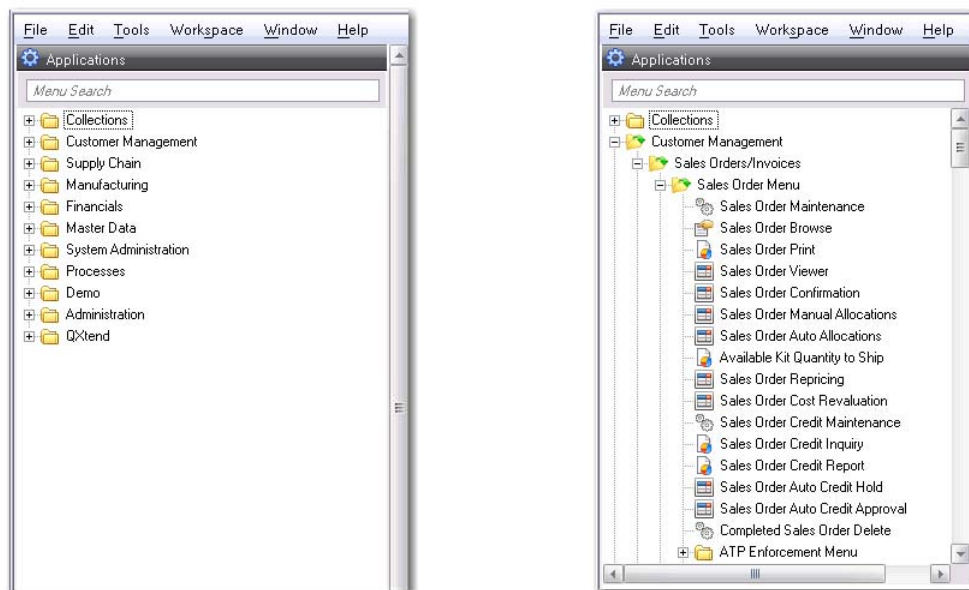
Enterprise Edition 2011.1 r01 - Training, 10USA > 10USACO workspace

Chapter 1

Organization of QAD Enterprise Applications

Introduction

.Net UI menu Structure



The first menu in QAD is the main menu, which has seven application related sections--Customer Management, Supply Chain, Manufacturing, Financials, Master Data, System Administration and Administration. The figure above shows this top level menu. This graphic is showing the .NET UI user interface.

Note If you are not familiar with the .NET UI interface you should review the .Net UI User Interface - End User Training Guide.

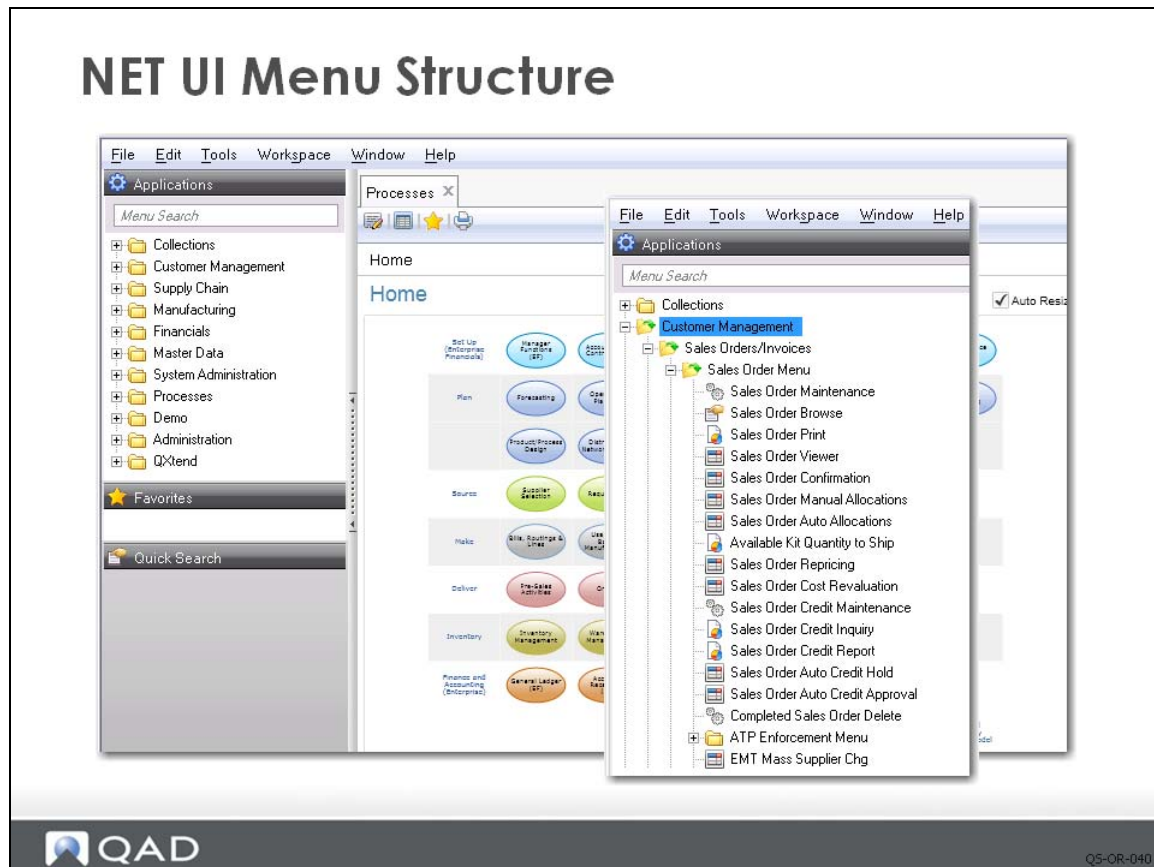
The menu structure for QAD Enterprise Edition has been significantly revised from previous releases. If you are upgrading from a previous version of the system you will want to familiarize yourself with the new menu structure. Enterprise Financials are completely revised from previous releases and have their own user guides and training guides for those who require in-depth knowledge of the new financial functionality.

In order to provide enhanced separation of activities, most of the financial controls are now in separate modules from operational controls. As an example the Sales Order Control under the Sales Order menu in Customer Management now has only the operations control settings for sales orders. All of the financial control settings for sales orders are in Sales Order Accounting Control under the Operational Acct Controls Menu in System Administration.

Each of these folder items contains other folders or menus of related business activities called modules. In some cases, two related business activities are combined in one module, such as Formula/Process.

On the next few pages, we'll take a quick look at these how these menus are organized and how you use them.

.NET UI menu Structure

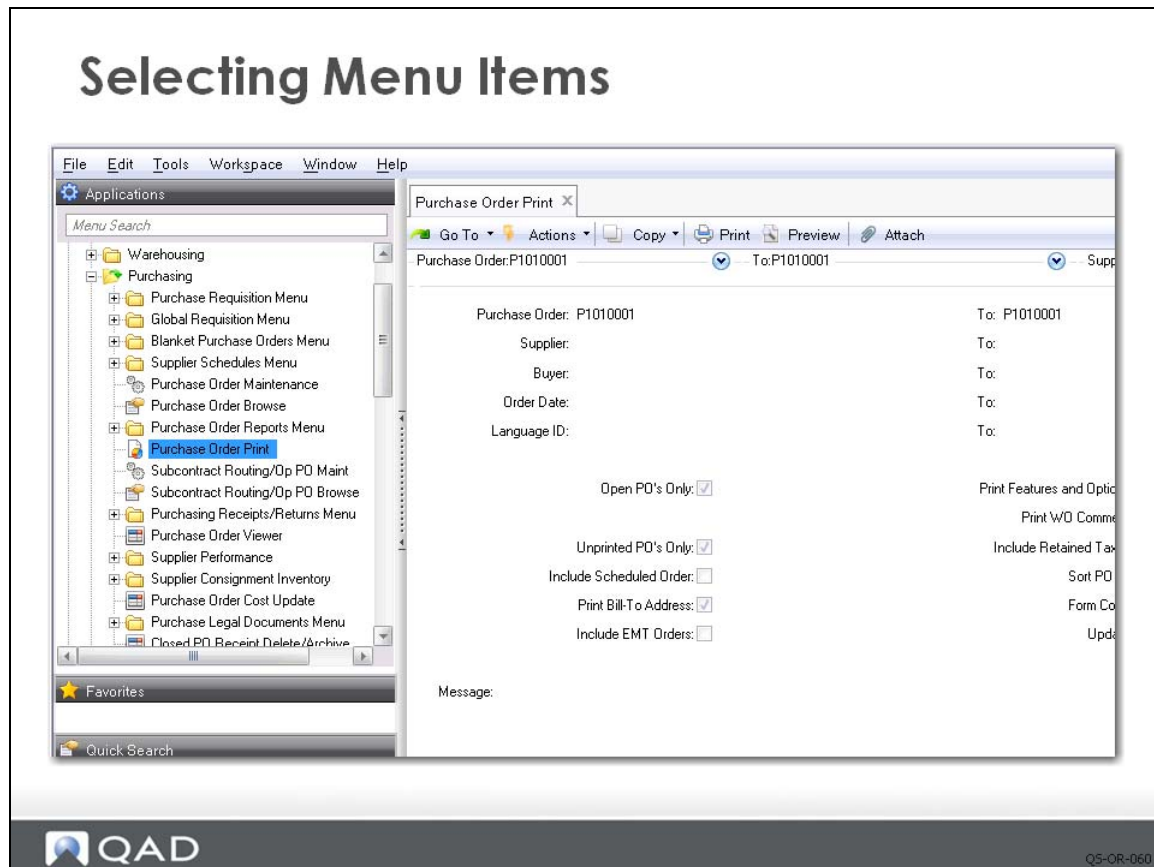


An example of the menu structure shows the indented format of subfolders and items. Under the Customer Management folder item we have the Sales Orders/Invoices Folder and within it other folders relating to the various functions required for managing sales orders and related functions such as Customer Schedules and Shipment Processing.

Within the Sales Orders Menu (folder) there are also discrete functions such as Sales Order Maintenance, Sales Order Browse, Sales Order Print, and Sales Order Cost Revaluation. The individual functions use unique icons to indicate maintenance functions, browse or inquiry functions, report print functions and update transactions.

Note If you are not familiar with the .NET UI interface you should review the .Net UI User Interface - End User Training Guide. This interface is easily user configured and offers many features to enhance your use of the system.

Selecting Menu Items



Selecting Menu Items is done with the mouse. Single clicking a plus or minus sign will toggle the folder open/close function. Alternately you can double-click the folder icon itself to toggle the folder open/close function. discrete functions, such as Purchase Order Maintenance or Purchase Order Print shown here, are selected by double-clicking the related icon. This opens the functional screen in the main window.

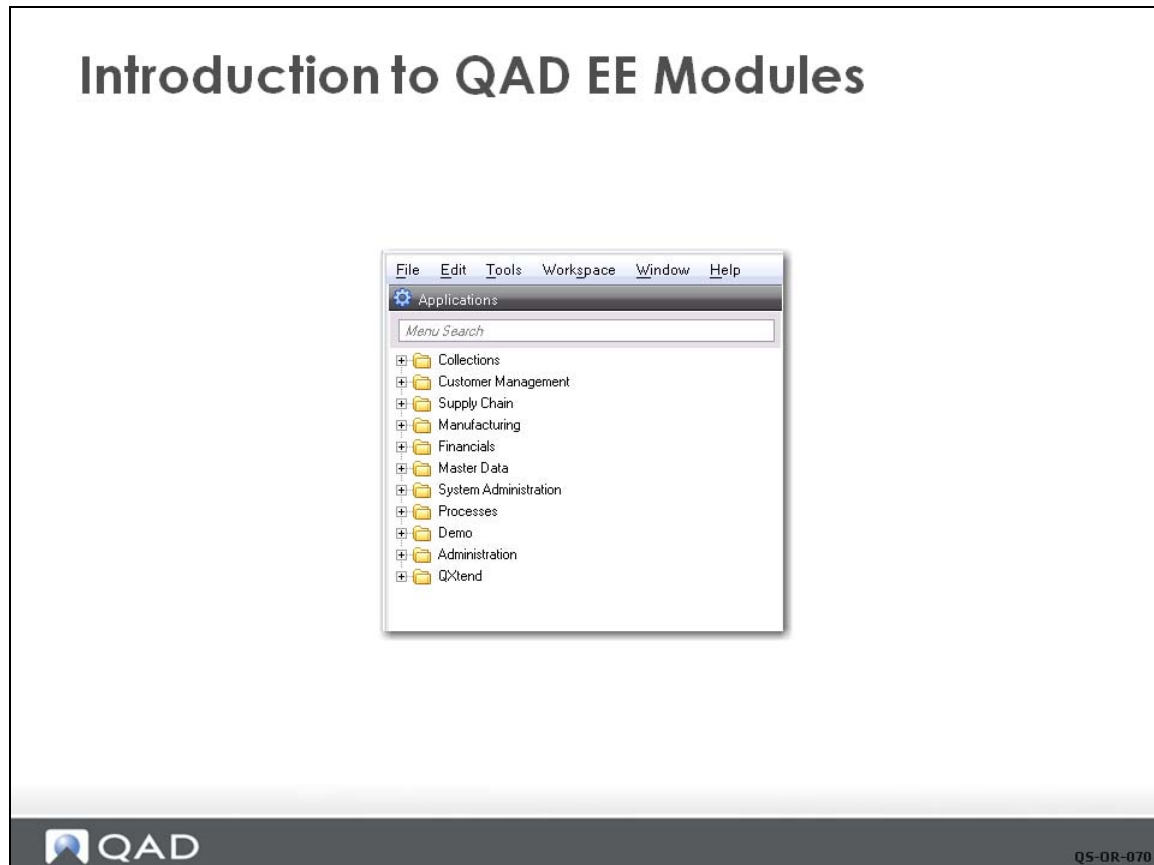
Menu items can also be selected by keying their name in the Menu Search field, or by keying the menu number in the search field. Throughout this guide both menu names and numbers are used for your reference.

Note The .NET UI has many powerful features. Review the .NET UI training guide if you have not done so.

The window uses tabs and allows multiple functions to be open at one time. You can toggle between the functions by clicking on the tabs. Close a tab by mouse clicking on the X in the tab window.

Note the favorites section below the menu window. You can create your unique menu of functions you use most often by dragging the icon image of the item from the main menu window into the favorites window. As you will learn in the .NET UI Training Guide use can also use the menu search window to type the name of the function you wish to use.

Introduction to the QAD EE Modules



The main menu in QAD EE has seven application-related sections--Customer Management, Supply Chain, Manufacturing, Financials, Master Data, System Administration and Administration. The figure above shows this top-level menu. This graphic is showing the .NET UI user interface.

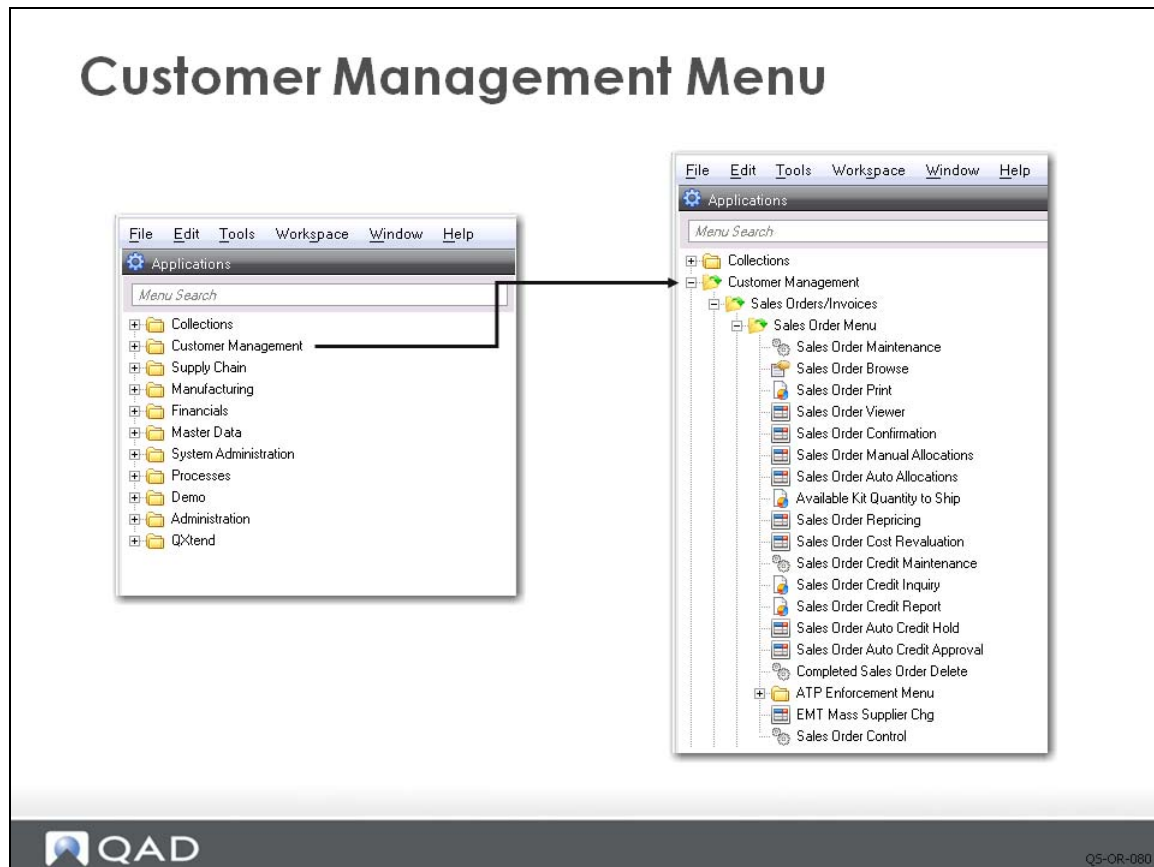
Each of these folder items consists of groups of related business activities called modules.

On the next few pages, we'll take a quick look at these seven main menus and the modules each contains. As we go through the menus and list of modules, it is important to note that in this course we are covering only a very small portion of QAD EE Application functionality. There is much more that the system includes. In-depth, module based training is provided by other QAD classes; information and schedules can be accessed on the QAD web site.

The Process Editor found under Administration let's you access custom menus and personal bookmarks to Internet or intranet resources and view and use custom work flows created with Desktop's Process Editor.

Within each of the seven sections of the main menu are several top-level menu items. Each of these menu items represents a module.

Customer Management Menu

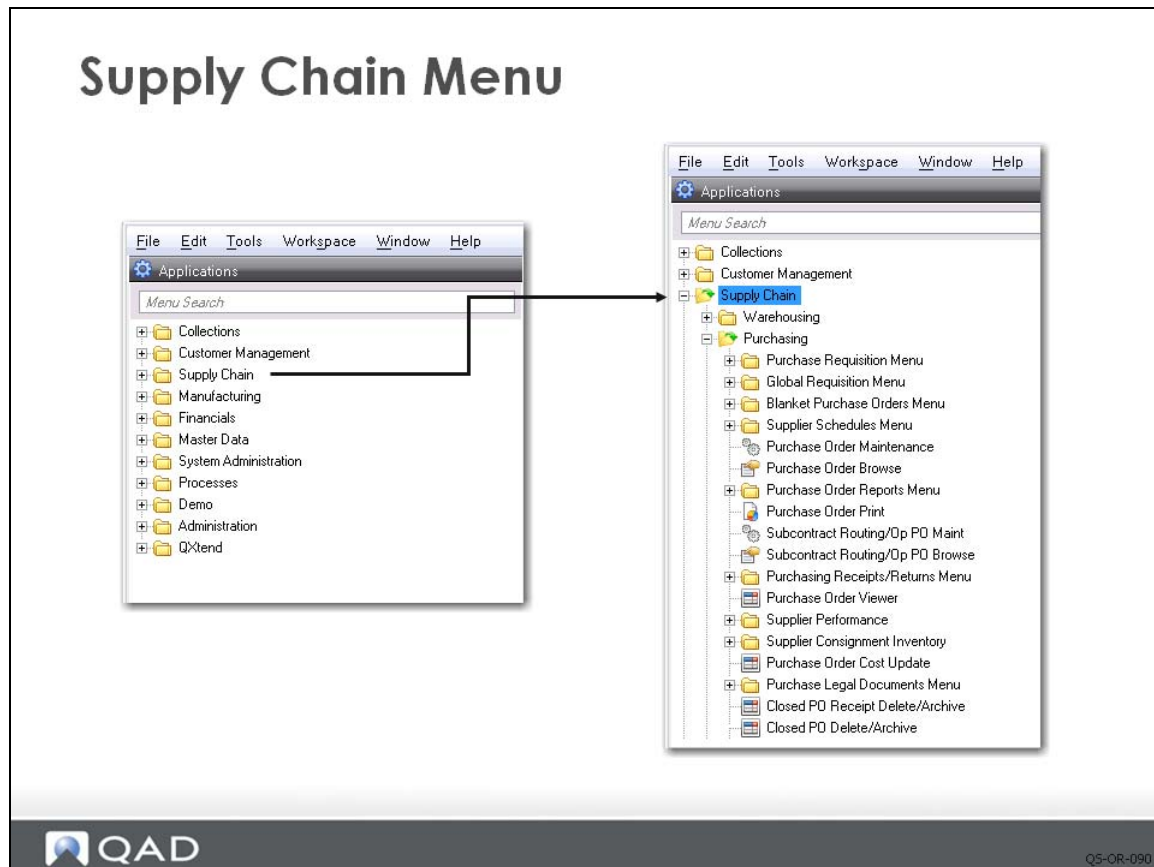


The Customer Management Menu contains all of the menu folders needed to manage all aspects of your customer relations.

The three major subdivisions under Customer Management are Sales Orders/Invoices, Configured Products and Service/Support. As shown, both Sales Orders/Invoices and Service/Support have many sub-folders or menus under them.

This course will cover basic functionality in the Sales Order and Invoicing functions and a simplified shipment process. Other functions such as Sales Quotes, Customer Schedules, Containerization, Consignment Inventory, Configured Products and Service/Support are covered in detail in their respective training guides. While we do not cover these topics in this course, a good understanding of the information presented here is prerequisite to learning the use of these more advanced functions.

Supply Chain Menu



Supply chain management is the process of planning and controlling the movement of goods and information from suppliers and multiple company sites through the manufacturing and distribution processes to the customer.

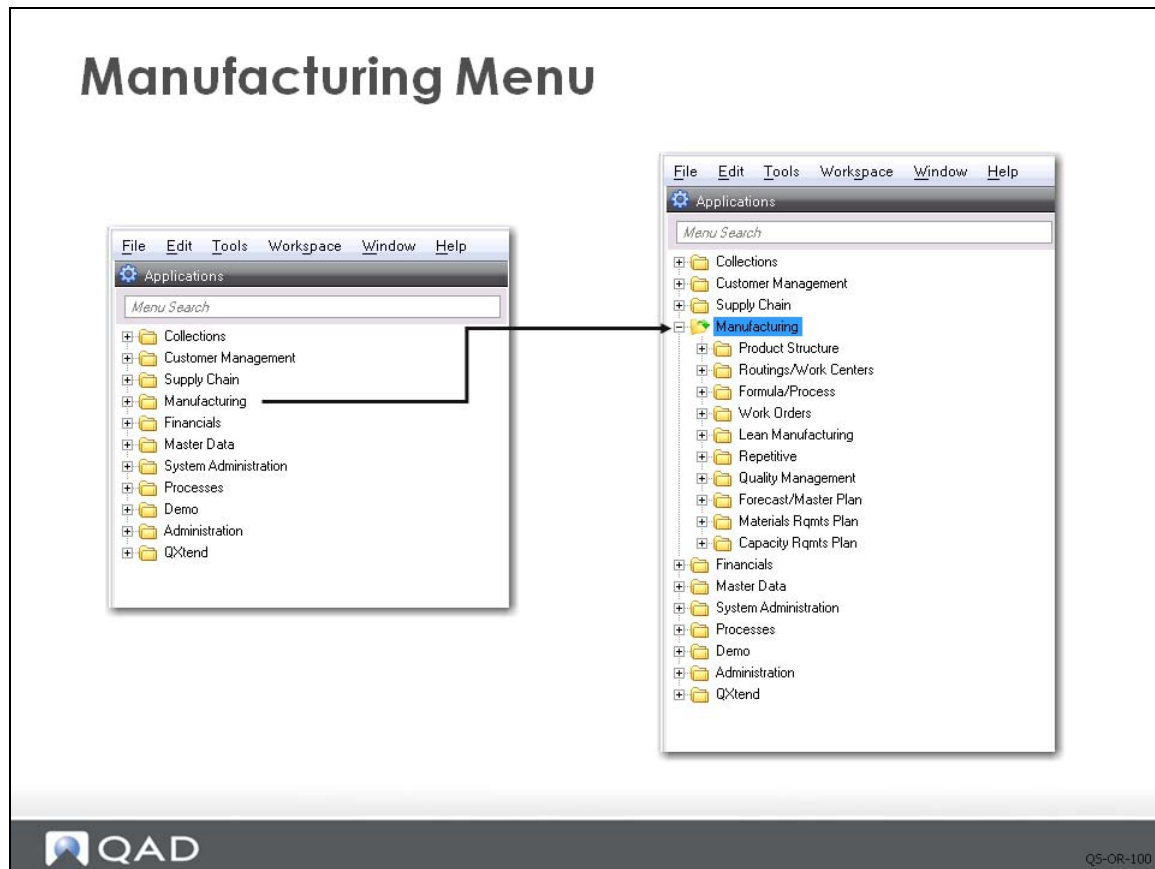
Supply Chain Management Modules

Modules in the Supply Chain menu are: Warehousing, Purchasing, Distribution Plan, Product Line Plan, Resource Plan, Operations Plan, and EDI eCommerce. As the modules in this section are heavy on planning they have significant system wide impact.

Modules in this section support traditional purchasing functions and supply chain planning practices--distribution, product line, resource, and operations--as well as electronic data interchange (EDI) transactions using EDI eCommerce (in support of Supplier Schedules etc.).

These functions are all covered by separate courseware and are not covered in this course.

Manufacturing Menu



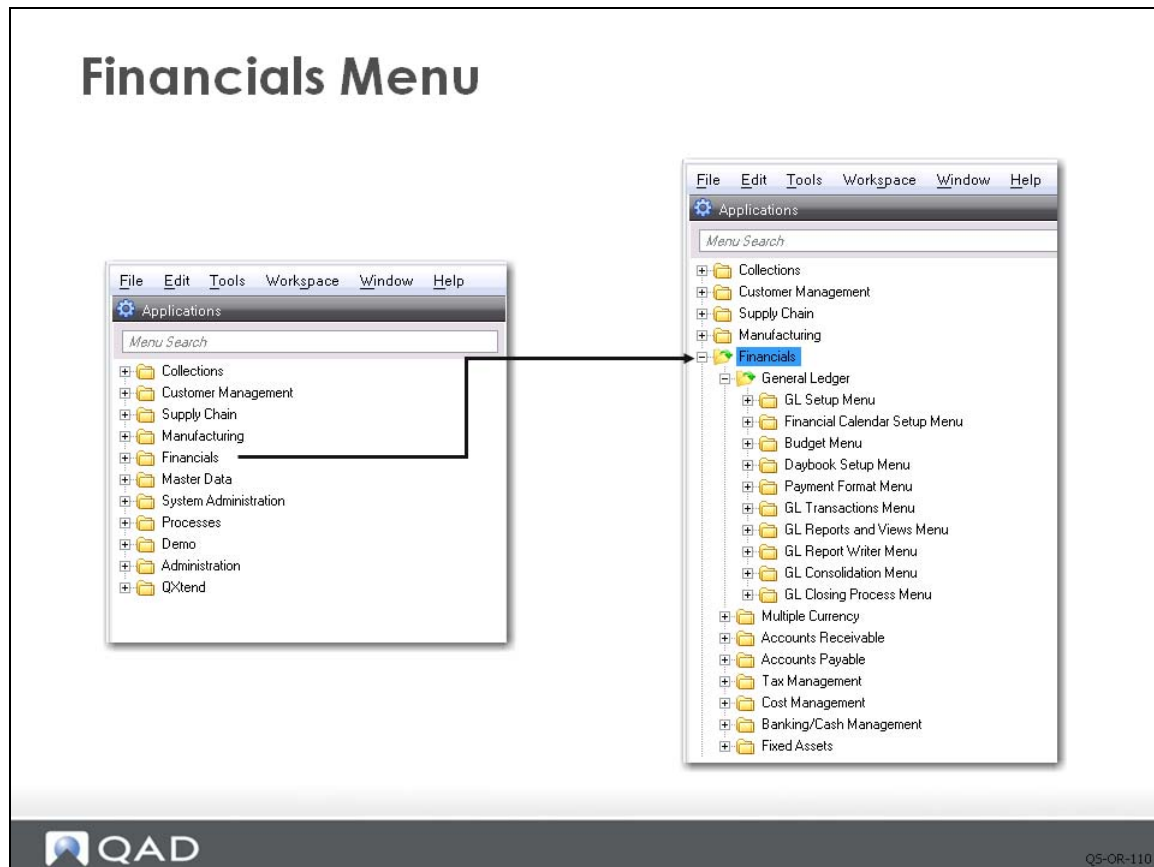
Manufacturing modules manage internal supply and demand. Component and Raw Materials are moved out of inventory into production (WIP). Work Orders process these materials and return them to stores or finished goods inventory locations, or components are moved from production into inventory.

Manufacturing Modules

Modules in Manufacturing are: Product Structures, Routings/Work Centers, Formula/Process, Work Orders, Shop Floor Control which includes Flow Scheduling and Kanban, Repetitive, Quality Management, Forecasting/Master Schedule Planning, Material Requirements Planning (MRP), and Capacity Requirements Planning (CRP).

In this course, we use the Product Structures, Routings/Work Centers, Work Orders, Shop Floor Control, Forecasting/Master Schedule Planning, and MRP modules.

Financials Menu



The introduction of Enterprise Financials with QAD Enterprise Edition has significantly enhanced the functionality of the QAD financial modules. It has had some impact on the system setup. While this course does not deal with the financial aspects of the system directly it does reflect the differences in setup procedures.

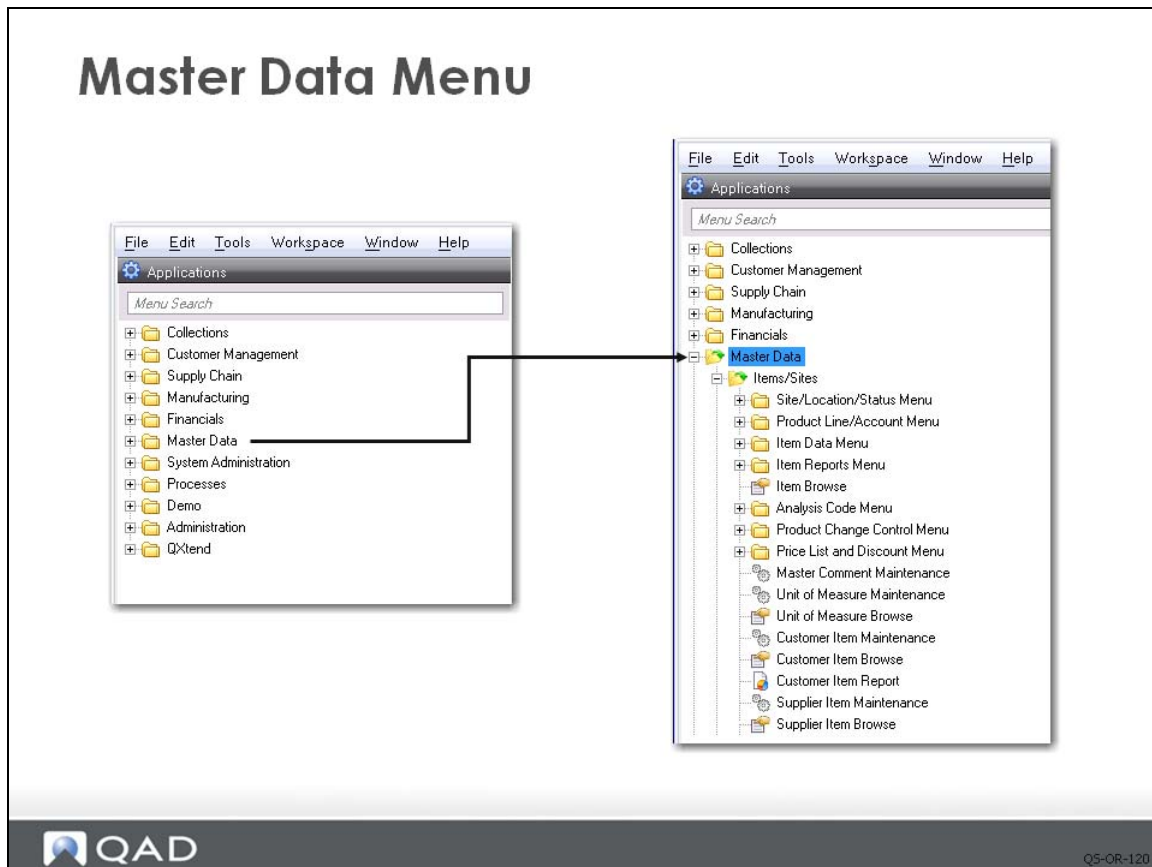
These modules support financial activities of the business and setup the financial aspects of system administration.

Financial Modules

General Ledger, Accounts Receivable, and Accounts Payable track the financial effects of activities in other modules. The Multiple Currency, Tax Management, Banking and Cash Management are primarily setup functions. Cost Management while having some setup features is used primarily for cost planning and tracking. The Fixed Assets Module manages the company's fixed assets from acquisition to retirement.

In this course, we discuss various aspects of the General Ledger, Accounts Receivable, and Accounts Payable modules. We will only deal with broad concepts and tasks needed for system setup. Each module within finance has its own detailed course.

Master Data Menu

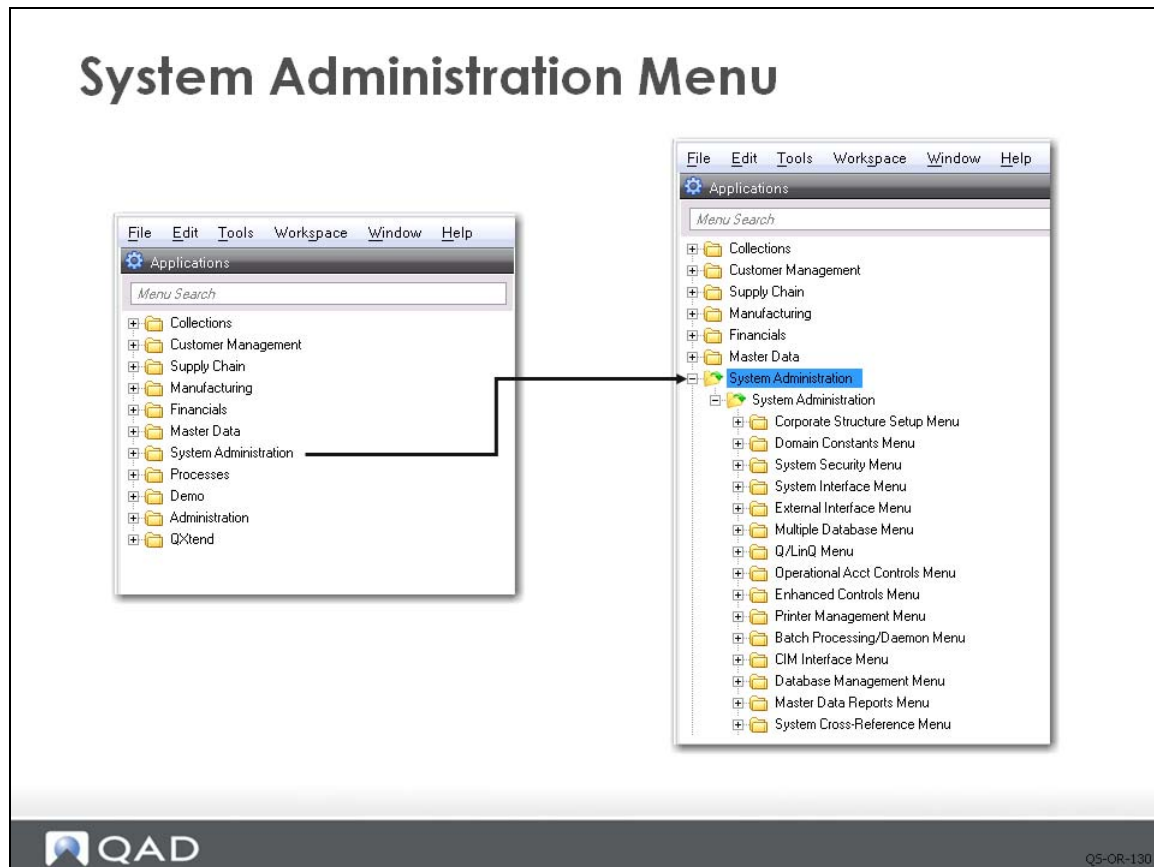


Use the modules in Master Data to set up basic business information--item codes, site codes, and inventory control information. Addresses is used to maintain information about customers, suppliers, employees and data related to those addresses,

Master Data Modules

In this course, we use the Items/Sites, Addresses, and Inventory Control modules.

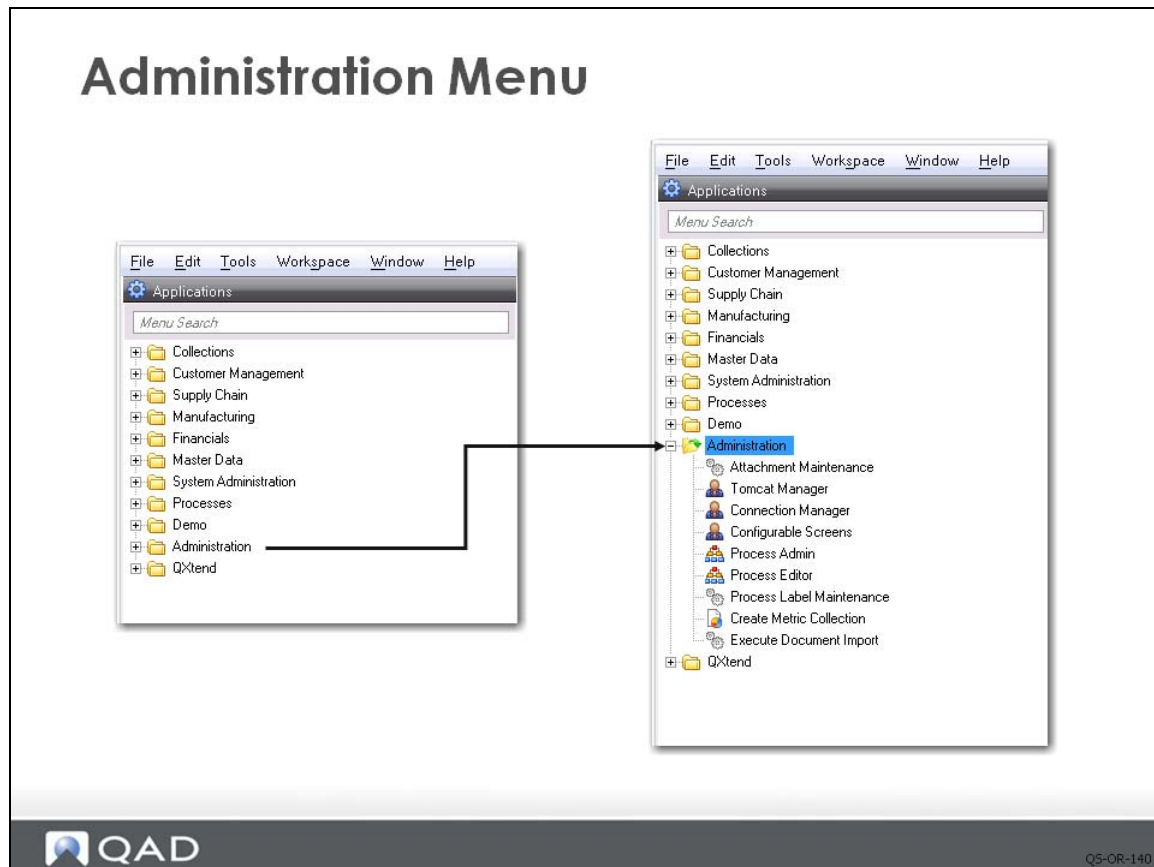
System Administration Menu



The System Administration Menu contains many submenus or folders. Most of these are related to the technical administration and setup of the system hardware, software, security and communications. As such they are well beyond the scope of this course. Most users will not have access to these modules.

The Domain Constants menu does have several user defined functions that will be discussed in this course. While the individual user may not have access to these functions it is important to understand the concepts behind them. This module contains the work day and holiday calendars, reason codes, generalized code validation tables and sequenced number ranges for various documents. Several of these will be covered in this course.

Administration Menu



This section can be used for organizing miscellaneous applications and customized programs that your company creates and uses.

These are not covered in this course.

If used, these are set up by your in house technical support staff.

Program Types

QAD EE uses several different types of programs to facilitate its functionality, these are:

- Maintenance programs
- Inquiry and report programs
- Browse programs
- Transaction programs
- Utility programs

This section summarizes the characteristics and functions of each type of program.

Maintenance Programs

Maintenance programs are used to create and maintain basic codes such as customers, inventory items, GL accounts, currencies, and other data. They are also used to record transactions that initialize business activity in a module.

When you enter data in a maintenance program, an entry (called a record) is made in one or more tables controlled by the maintenance program. For example, Item records are stored in the Item Master table controlled by Item Master Maintenance.

Inquiry and Report Programs

Inquiries and reports retrieve and display database records. Inquiries are primarily used to answer specific questions. Reports usually provide more detail and are printed for a range of data records. You select data by entering a specific range of criteria, such as item number or date.

Typically, inquiries are viewed online and reports are sent to a printer or file. However, you can also print inquiries and view reports. In addition, other output options, such as e-mail, are available.

Browse Programs

Browses are inquiry programs with advanced features such as filtering, sorting, and printing information. They can be used as drilldown browses within programs. Based on whether you choose to display substitute programs on the menus, browses can also replace many of the simple inquiries throughout the menus. How you access them depends on your user interface.

Look-up browses are one form of online help. When attached to individual fields, these simplified browses display the records in the associated master tables. You can then select a value and have the system insert it into the field.

Two user interfaces--QAD Desktop and QAD Enterprise Application for Windows--provide tools that let you display browse data in graphical form such as pie charts and bar charts.

Transaction Programs

Transactions express the core business activities of a company. They control and record activities related to business documents such as sales orders and invoices. An example of a transaction is receipt of a shipment for a purchase order using Purchase Order Receipts. Transaction programs often update record files and generate general ledger account transactions. A sales order shipment and invoice post for example will update the on hand inventory balance for the items shipped, charge the value to cost of goods sold, update the sales ledger for the value of the sale, update the customers account receivable record, book charges to appropriate freight accounts, tax accounts, sales commission accounts, update the inventory allocations and available to promise.

Utility Programs

Utility programs enable you to manage and perform calculations in internal databases. In Purchasing, Closed PO Delete/Archive is a database management utility, and in MRP, Net Change Materials Plan causes the system to run net change MRP calculations. Both are utilities.

Often utilities are designed to be used only once. For example, many utilities perform one time data conversions following system upgrades.

Types of Data

A QAD Enterprise Edition database contains three types of data.

- Control data
- Transaction data
- Static data

These are programmatic definitions, that is the definition is based on how the system handles the data.

In a following section we will discuss some another view of data types defined by business structure and how the data sets interact at the business level.

Control Data

When you implement a module, you enter data that the system uses later to control how the system interacts with users and with the database. This data are stored in control tables.

Control tables enable you to adapt QAD Enterprise Edition to your environment. The data and settings in these tables determine how certain programs are displayed, the numbers assigned to transactions, the GL accounts for particular transactions, and so on. When you can manage a typical manufacturing function in more than one way, control settings enable you to establish a preference.

Transaction Data

Most data in the database are transaction data. Every day, sales orders come in, purchase orders go out, and work orders make demands on and create material for inventory. These events result in transactions, which are stored in transaction tables. In contrast to control programs, transaction tables are constantly updated by users of the system.

Static Data

Static data contains information about the basic building blocks and relationships of a company, the ways it does business, and the entities it does business with. Static data are used to create transaction records. However, static data are changed infrequently. Examples of static data are records for customer, supplier, and employee addresses, items, inventory sites and locations, and GL accounts. Some static data are easily changed for example a supplier who moves and you need to change their address. Other data may not be so easily changed. Changing your cost method for example, while an easy change in the system, could have significant effect on your financial reporting.

Chapter 2

System Structure

Learning Objectives

In this section we provide a high level overview of the structure of the QAD EE System structure.

When you finish this chapter, you should be able to

- Describe what a database is and list the key data it contains
- Describe and understand what a domain is and what it does
- Describe and understand what a shared data set is and what it does
- Distinguish between the kind of information domains and entities contain
- Describe what business relations are and how they are used
- Describe the concept of dual base currency
- Describe how users and roles control access to the system functions

Key Concepts

Introduction

In QAD EE we can look at a company from either a financial or operational perspective. In financial terms, a company is an entity that publishes financial statements and files tax returns. In terms of other activities, a company may be defined by its combined operations, such as sales order entry, purchasing, manufacturing, and general accounting.

On the following pages, we'll discuss the most basic pieces that satisfy both kinds of requirements. First, there is the environment itself – the database. To this are added:

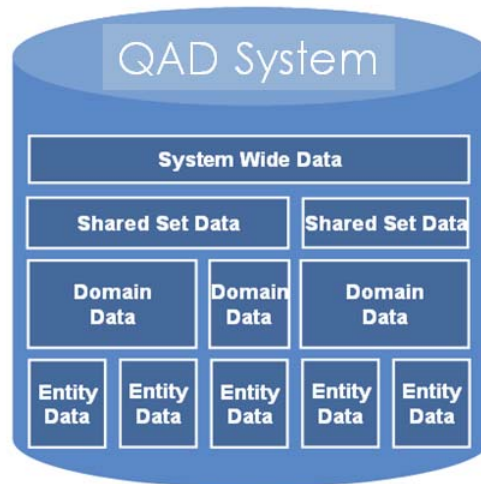
- Domains, which may be thought of as templates for businesses that use the same base currency, chart of accounts and GL calendar.
- Entities, which are used to identify financial entities and their general ledger transactions and financial reports including Income Statements and Balance Sheets.
- Shared data sets with information about customers, suppliers, employees and some other data.

We'll begin this chapter with a discussion about databases, domains and the types of data they contain and share.

Business Model: Four Kinds of Data

Four Types of Data

- System Wide Data
- Shared Set Data
- Domain Data
- Entity Data



Q5-SU-050

- System Wide Data
 - Setup to be used throughout the database
 - Setup once for all domains to use
 - Examples: business relation, currency, country
- Shared Set Data
 - There is a choice to use Set A, Set B etc.
 - Examples: chart of accounts, suppliers, cost centers
- Domain Data
 - Base of your business or the larger company as a whole
 - Domains link to shared sets
 - Data used solely by a single domain
 - Domain has a Base currency
 - Examples: GL calendar, combination of shared set data
- Entity Data
 - Belong to a Domain
 - Inherit shared sets from their Domain
 - Inherit the Base Currency from their Domain

Financial reporting is by Entity (can also be multi Entity)

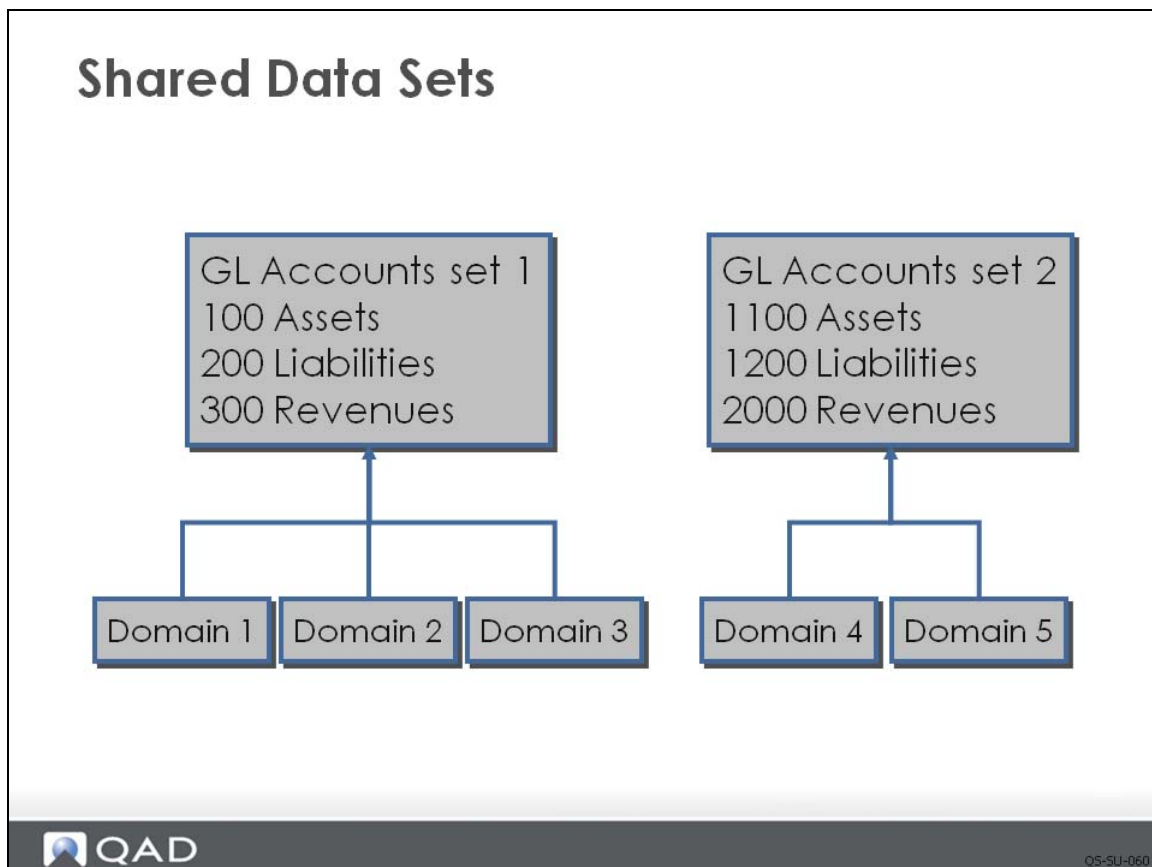
Examples: transactions, numbering, own bank account

Four Levels of Data

- System Wide
Country, currencies, management currency, tax zones
- Shared Sets
Chart of accounts, suppliers, exchange rates
- Domain
Base currency, GL calendar, combination of shared sets
- Entity
Transactions, own bank account number

System wide - database level	Business relations and address related data	Address types, corporate groups, currencies, rounding methods, languages, counties, countries, states
	Address related tax data	Tax zones, tax environments, tax classes, tax usage codes, tax types
Shared Sets	Financial data	Chart of accounts, credit terms, invoice status codes, profiles
	Security data	Users, roles
	Administrative data	E-mail definitions, printers, some EDI and eCommerce setup data
	User interface data	Labels, menus, messages, lookup definitions
Domain	Financial data - Linked to Domain	Chart of accounts and GL Mask (combination acct/sub-acct/cc/project)
	Operational data	Accounting periods
Entity	Defaults from Domain	Transactions, bank accounts, employees

Shared Data Sets



- Separation between:
 - System-wide data
 - Shared Set data
 - Domain data
 - Entity specific data
- Shared Sets of data can be used by multiple Domains
 - For example, 5 domains, but 2 chart of GL accounts are used:

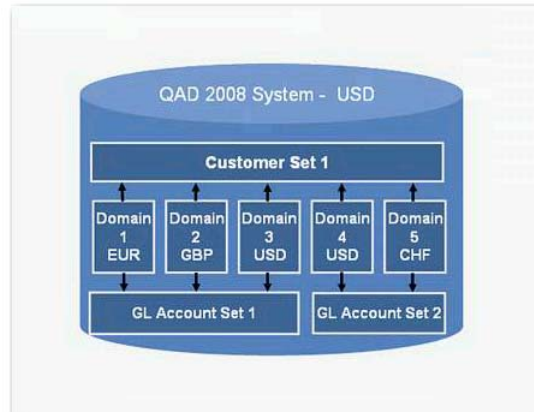
Instead of replicating (DataSync), a Domain points to a Shared Set. Multiple domains can use the same Shared Set.

Data that is published as a Shared Set:

GL Account	Supplier
Sub-Account	Customer
Cost Center	Daybook
Project	Exchange Rate

Shared Sets Example

Shared Sets Example



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Shared Set Type	US - Domain	EMEA - Domain
Customer	AllCustomers	AllCustomers
Supplier	AllSuppliers	AllSuppliers
Account	US_Accounts	EUR_Accounts
Sub-Account	US_Sub	EUR_Sub
Cost Center	US_CC	EUR_CC
Project	US_Project	EUR_Project
Exchange Rate	SystemExRate	SystemExRate
Daybook	US_Daybook	EUR_Daybook

- To determine how many shared sites to create
 - Create a table listing Shared Set type
 - List Domains
 - Determine what information will be shared
 - What information will be different
- A customer references an AR account
- What if the same customer set is used by domains that point to different GL account sets?

Business Relations

Business Relation

Business Relation Modify

Go To Actions Tools Attach Print Preview

Attachments

Business Relation: 10-C1003

Name: Pacific Health Care Systems

Search Name: Pacific Health Care Systems

Second Name:

Third Name:

Group Name:

Active: ☒

Address Info General Defaults

Address	Address	Address	Zip Code	City	Name	Search Name	Telephone
600 Calle de Los			90212	Los Angeles	Pacific Health Car	Pacific Health Car	
250 Carpentaria B			93031	Carpenteria	IMCC	Pacific Health Car	

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- Each customer / supplier / entity / employee is linked to a business relation code
- Defined on database (system) level
- When creating a customer/supplier, the business relation can be created at the same time
- Business Relations have different address types:
 - Head office (mandatory, only 1)
 - Ship-to
 - Reminder (only 1)
 - Remittance (only 1)
 - Dock
 - Enduser

Accounting Layers and Reporting

Accounting Layers

- Three kinds of Accounting layers:
- **Official Layer:** Statutory books (Primary layer)
 - Required Layer
 - Only one Official Layer
- **Management Layers:** Additional transactions for management purposes, for instance to translate to a different set of accounting standards.
 - Optional Layers
 - May have none, one or more layers
- **Transient Layers:** Allows for creation of temporary postings. These are used when accounting entries are made for what-if simulations, or when transactions need to be approved by a manager before posting to the management or official layer.
 - Optional Layers
 - May have none, one or more layers



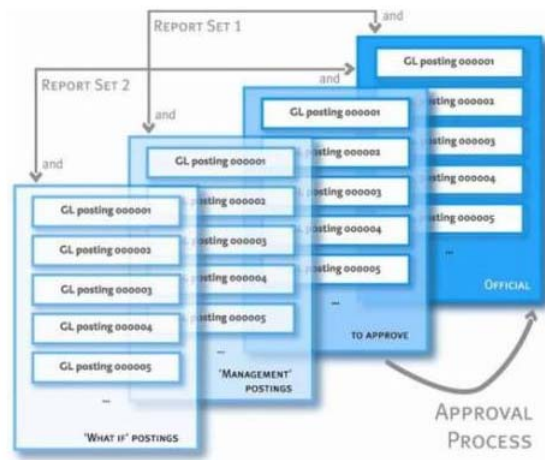
QS-SU-080

Daybooks linked to layers

- GL entries can be moved from layer to layer by changing the daybook
 - Use Mass Layer Transfer to change many transactions at one time
- In reporting, multiple layers can be selected (Ctrl+click)

Accounting Layers and Reporting

Accounting Layers and Reporting



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- Reporting can be based on:
 - A single layer
 - Or a combination of layers
- Layer combinations for reporting can be stored as user preferences
- An account can have a balance for each layer

Dual Base Currency

Dual Base Currency

- Definitions
- **Transaction currency:**
 - The currency the transaction is in recorded.
- **Base currency:**
 - The currency of the entity in which the transaction is recorded.
- **Management currency:**
 - The currency used for corporate-wide management reporting.

Sample Customer Invoice

In GBP (transaction)

In EUR (base)

In USD (management)

Type	Inv Date	Da	Voucher	Business Relation Code	tc Balance	Cu	Due Date	lc Balance	cc Balance	SubAcc	CI Text
Invoice	13-06-06	01	000000001	Essent	1,231.00	GBP	23-06-06	1,773.01	2,080.00		Various



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Definitions

- Transaction currency: The functional currency of the transaction that is recorded.
- Base currency: The functional currency of the entity in which the transaction is recorded.
- Management currency: The currency used for corporate-wide management reporting

Dual Base currency: Transaction amount always stored in the transaction currency, base currency and company management currency

The system stores all three currency amounts: Transaction, base and management

- All transactions always posted in transaction and base currency
- Base currency linked to Domain
- Management currency at system level
- Every transaction is stored in Management Currency.
- Exchange Rate at moment of transaction

Example

A German company:

- Keeps its accounting records in EUR (Base currency)

- Reports to a mother company in the US that keeps its accounting records in USD (Management currency)
- Receives a supplier invoice from a UK supplier in GBP (Transaction currency)

Transaction currency = GBP

Base currency = EUR

Management currency = USD

Users and Roles

Setting up roles and role permissions

Selection Label	Menu	Sel	Resource Label	Type	URI
Scheduled Report Maintenance	36.4.21	5	Scheduled Report Maintenance	M	urn:mfgpro:prpsmt...
Demo Order to Cash	90	8	Demo Order to Cash	M	urn:pmap:DemoScip...
Finance Charge Create	27.5	1	Finance Charge - Create	A	urn:cbf:BDDebtorFinar...
Budget Delete	25.5.1	4	Budget - Delete	A	urn:cbf:BBudget.Del...
Rounding Method Delete	26.2	4	Rounding Method - Delete	A	urn:cbf:BRoundingM...
Rounding Method Modify	26.2	2	Rounding Method - Modify	A	urn:cbf:BRoundingM...

- Roles
 - Set up roles (Role Create)
 - Set up role permissions (Role Permissions Maintain)
- Users
 - Set up users (User Maintenance)
- Access
 - Set up access of users to domains/entities (User Domain/Entity Access Maintain)
- Linking it all together
 - Set up the role for each user per entity (Role Membership Maintain)

Setting up roles and role permissions

Default roles supplied with the system:

- CustomerNotify
- EmployeeNotify
- EndUserNotify
- SupplierNotify

The roles listed above are notified by the system when new records are created in finance (customer, employee, end users, suppliers)

The person assigned these roles will be emailed that these records have been created in finance.

The records must be completed outside of finance

Also supplied with the system are the following roles:

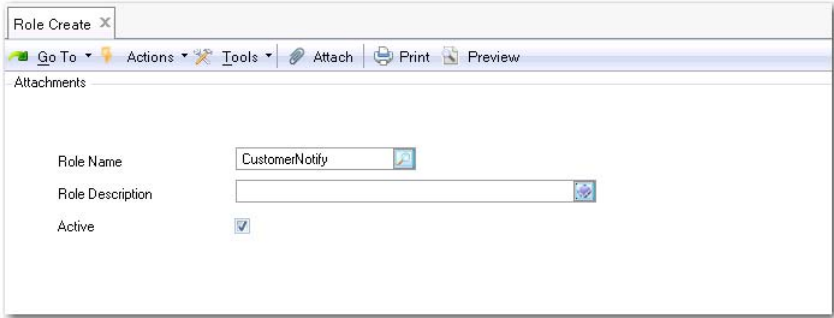
- qadadmin
- SuperUser

These roles must be maintained

Setting up Roles is a two step process

Role Create

Create Role



Role Create X

Go To Actions Tools Attach Print Preview

Attachments

Role Name CustomerNotify

Role Description

Active ☒

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1 Create Role

Role Browse for Permissions

Actions | Print | Add to Favorites | Chart | Chart Designer | Refresh | Stored Searches

Search [3]

Role Name equals [] - [] + - Search Clear All

Role Description equals [] - [] + -

Active equals [] - [] + -

Viewing 1 - 9 of 9 Records per page: 100

Role Name	Role Description	Active
CustomerNotify	Create of customer	ye
EmployeeNotify	Create of employee	ye
EndUserNotify	Create of enduser	ye
qadadmin	QAD Admin	ye
rptAdmin	Report Administration	ye
rptDsgn	Report Design	ye
SuperUser	SuperUser Role	ye
SupplierNotify	Create of supplier	ye
udesign	User Interface Design	ye

2 Assign Role Permissions

Setting up Users

Setting up Users

User Maintenance

Go To

Actions

Copy

Print

Preview

Attach

E-mail Def:

User ID: ACCT

User Name: Alan Curtin

Language: us

Country Code: usa

User Type: Employee

Time Zone: PST/PDT

E-mail Def:

Variant:

Restricted:

Access Location: Primary

Initials:

Active:

E-mail Address:

Menu Substitution:

Remark:

System Access

Enabled:

Enabled Reason: QAD_DEF

Force Password Change:

Update Password:

Last Logon: 3/19/2008

QAD DEFINITION

Last Password Change: 3/18/2008

QAD

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User Maintenance (36.3.1)

Set up User Access

Set up User Access

The screenshot shows a web application window titled "User Domain/Entity Access Manager". It features a menu bar with "Go To", "Actions", "Tools", "Print", and "Preview". Below the menu is an "Attachments" section. The main area contains search criteria: "User" with the value "ACCT", "Domain" with the value "10USA", and "Entity" with the value "10USACO". A "Search" button is located to the right of these fields. Below the search fields is a table with the following columns: "Link", "User Login", "Domain Code", "Default Domain", "Entity Code", and "Primary Entity". The table contains one row with the following values: "ACCT", "10USA", "10USACO".

Link	User Login	Domain Code	Default Domain	Entity Code	Primary Entity
▶	ACCT	10USA		10USACO	☑

Linking it all together

Linking it all together

Role Membership Maintain

Go To

Actions

Tools

Print

Preview

Attachments

User

ACCT

Domain

10USA

Role

CustomerNotify

Entity

10USACO

Search

Drag a column header here to group by that column:

Link	User Login	Role Name	Default Role	Domain Code	Entity Code
☒	ACCT	SuperUser	☒	QAD	999 - SYSADM
☐	ACCT	EmployeeNotify	☐	QAD	999 - SYSADM
☐	ACCT	SupplierNotify	☐	QAD	999 - SYSADM
☐	ACCT	CustomerNotify	☐	QAD	999 - SYSADM
☐	ACCT	EndUserNotify	☐	QAD	999 - SYSADM
☐	ACCT	qadadmin	☐	QAD	999 - SYSADM
☐	ACCT	uidesign	☐	QAD	999 - SYSADM
☐	ACCT	rptDsgn	☐	QAD	999 - SYSADM
☐	ACCT	rptAdmin	☐	QAD	999 - SYSADM
☐	ACCT	SuperUser	☐	USA	US-A
☐	ACCT	EmployeeNotify	☐	USA	US-A
☐	ACCT	SupplierNotify	☐	USA	US-A
☐	ACCT	CustomerNotify	☐	USA	US-A
☐	ACCT	End User Notify	☐	USA	US-A

QAD

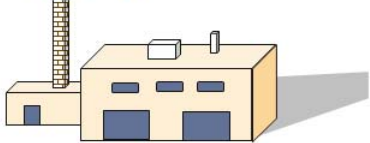
QS-SU-246

Role Membership Maintain (36.3.6.6)

Operational Structure - Entities and Sites

Sites

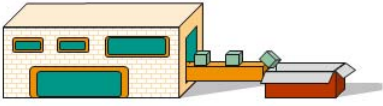
Entity 100



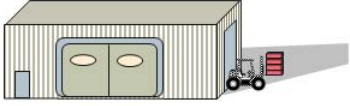
**Plant A
(Site A)**

- An Entity requires at least one site to plan, manage and control inventory
- Separate sites are usually setup for separate physical locations

Entity 200



**Plant B
(Site B)**



**Warehouse
(Site C)**


Q5-SU-120

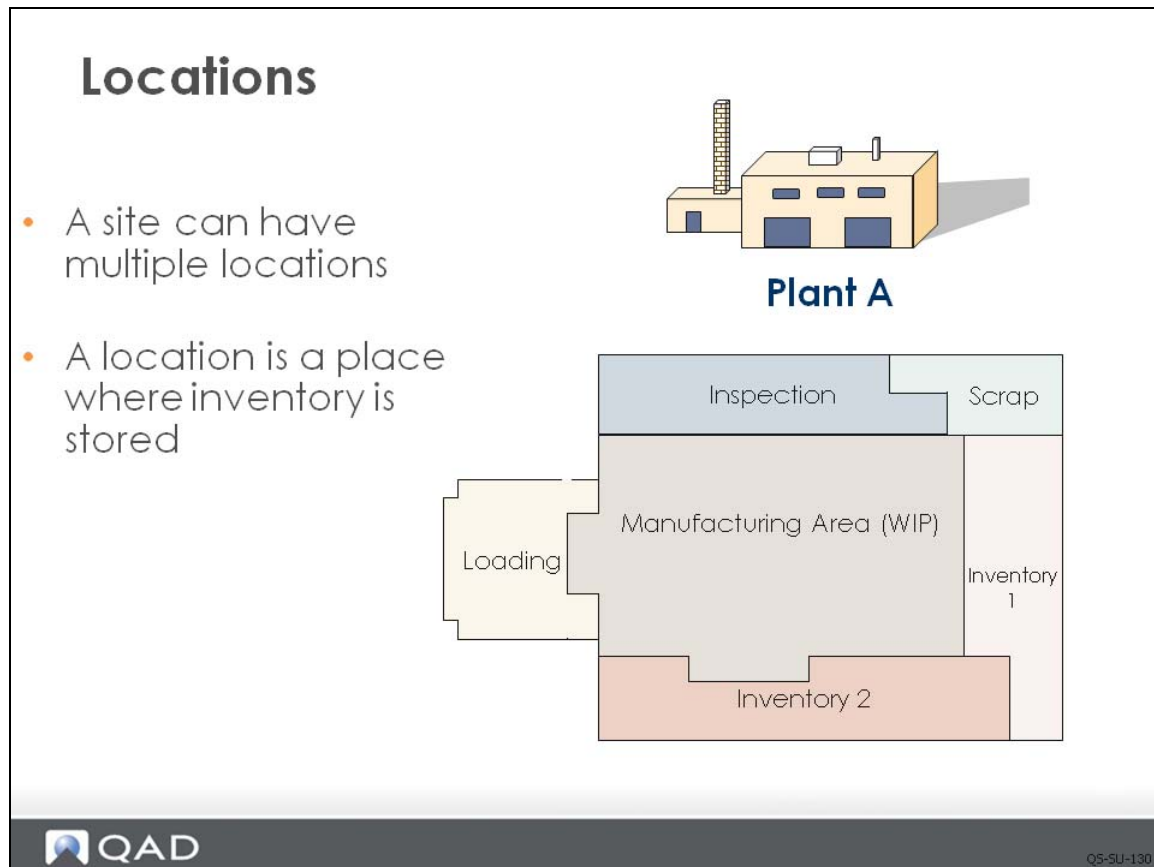
An entity is a subset of the business that does financial reporting. In QAD EE balance sheets and income statements are prepared by entity.

A site is an inventory and planning and control concept. Inventory control and planning information is maintained by site, including inventory availability, manufacturing methods and costs, sales and purchasing data, manufacturing plans and orders, and forecasts. Each site should be associated with a physical address. However, each physical address may have several sites. For example it is not uncommon to have at one physical location separate sites for manufacturing, finished goods inventory, and field service. There are no limitations on how many sites you have under one entity. Each site belongs to one-and only one-entity, but each entity can have more than one site. A site can be, for example, a distribution center, a warehouse, a manufacturing facility or a combination of these.

Site maintenance defines several attributes that default into inventory locations. These are a default inventory status code, whether or not automatic locations are allowed and a transfer variance account.

Most planning and control functions work within one site. Manufacturing orders expect to find all their components at the same site (there are exceptions); MRP or DRP calculates requirements one site at a time. A few functions deal with multiple sites. Multisite purchase or sales orders, distribution orders, and distributed inventory inquiries, for example.

Inventory Locations



In QAD Enterprise Edition each site can have a variety of locations. These are simply the places where inventory is stored. Locations may include shelves, bins, tanks, silos, refrigerators, freezers, humidity and or temperature controlled rooms, segregated quarantine or material review areas, or other storage areas. Each location's parameters identify what can be stored there and how that inventory can be used.

Every inventory transaction must have a site and location. Both can default from the item master.

Predefined locations

Most businesses will have several predefined inventory locations. Raw material and or component inventory, finished goods inventory, and perhaps other locations such as: sales returns, scrap, quality control quarantine, material review board, etc. In general the more carefully defined locations you use the higher level of inventory control you will obtain.

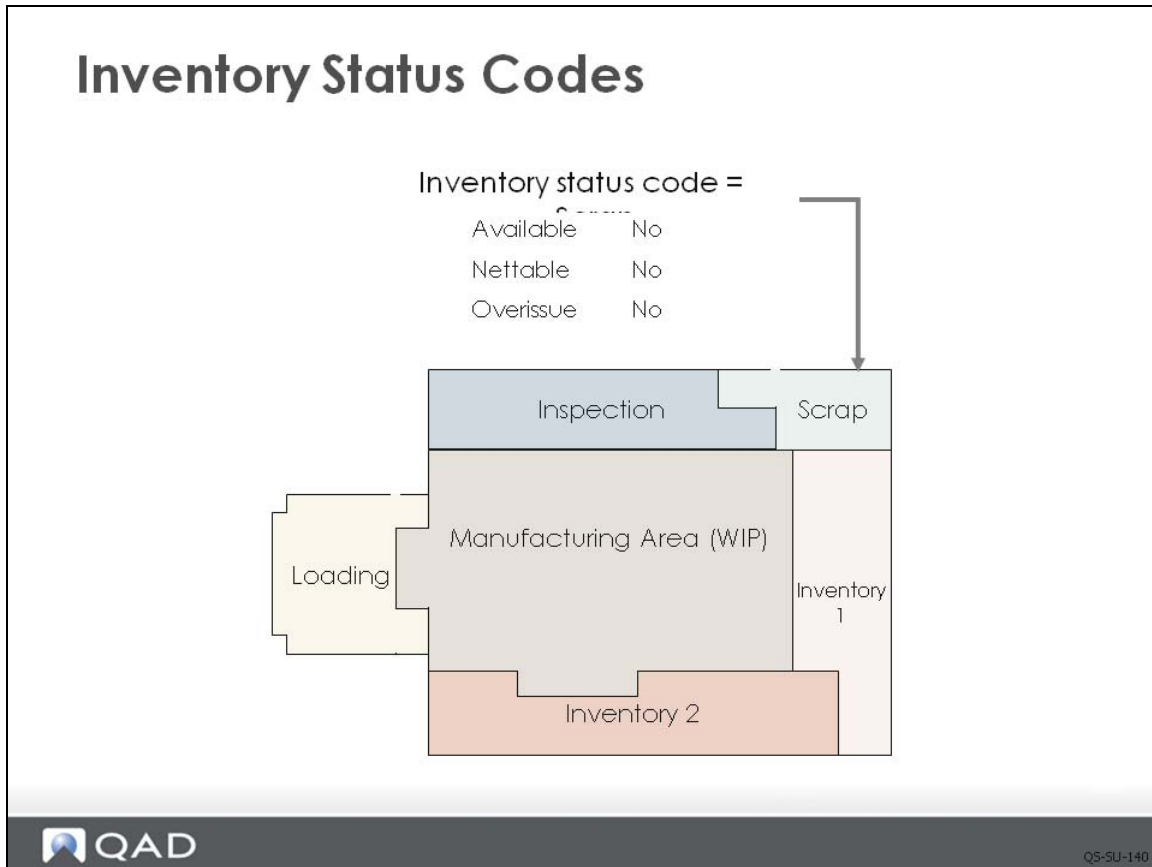
Locations do not have to be predefined. The system can automatically create location codes whenever you enter an undefined value. (Do this by setting Automatic Locations to Yes in Site Maintenance.) While useful in some situations this offers a very low level of control as anyone with access to inventory transactions may create new locations, including those that are typos.

Inventory location attributes include:

- Description
- A default Inventory status code (available, nettable, overissue)

- Whether it is permanent or not
- A Location type code (tank, silo, freezer, etc.)
- Restricted to single item (liquid tanks are usually restricted to a single item for example)
- Restricted to a single lot of a single item (lot controlled liquids)
- Certain items are assigned to certain locations (location type code freezer on item is matched to location type code freezer on location)

Inventory Status Codes



Inventory status codes control your inventory and manage how that inventory is used. Think about how your facility scrap is managed differently than finished goods inventory or spares. In QAD EE, these different types of inventory are identified by their status codes.

Generic Inventory Status Codes

Generic inventory status codes are set up for each type of inventory you have. These identify whether inventory balances of this type are:

- Available to allocate to sales orders and manufacturing orders
- Nettable, to be considered by MRP when calculating net quantity on hand
- Overissue, to denote if this inventory balance may be allowed to go negative

Some general guidelines on how these codes may be used:

- Scrap inventory would not be available or nettable (see figure above)
- Material in receiving quarantine is usually not available but is nettable as it is expected to be good
- Material in material review board is usually not available but may be either nettable or not based on the likelihood of its being approved for use
- Consignment inventory being held for a specific customer would not normally be available
- As negative inventory balances are always errors they should not be allowed

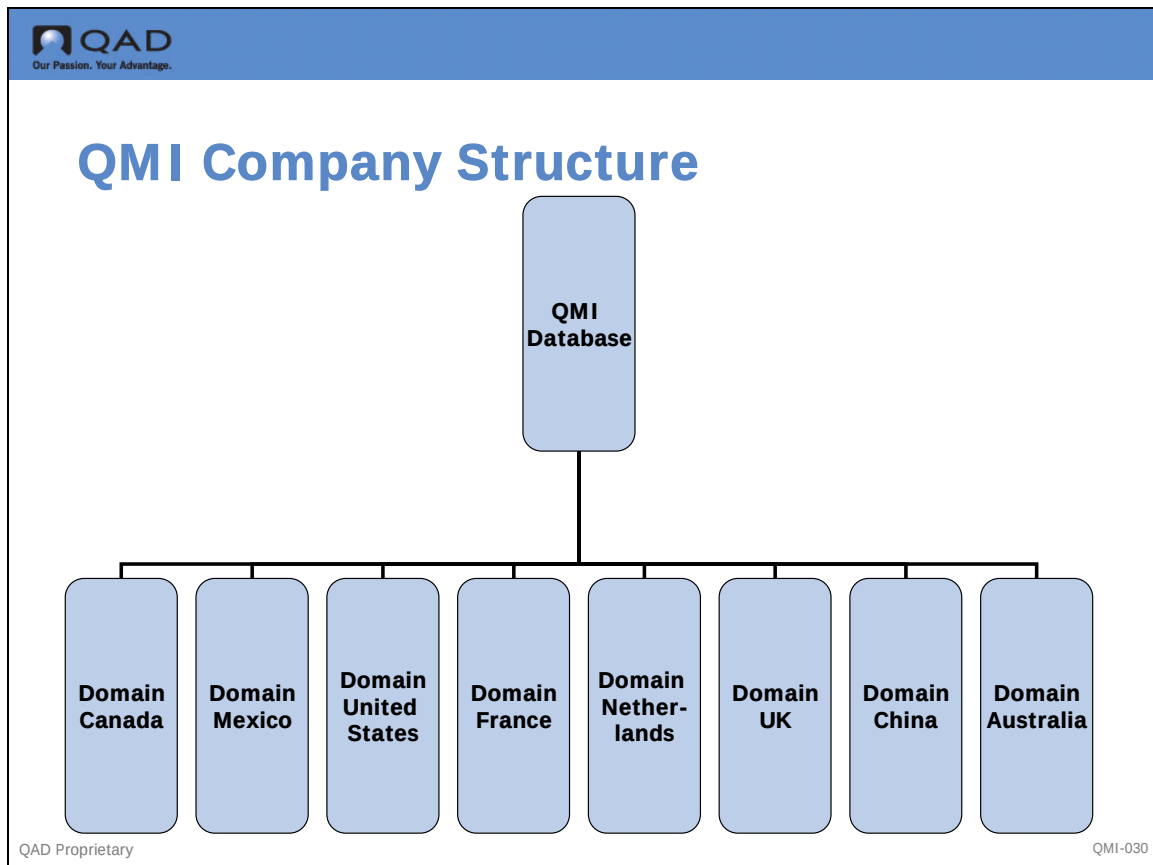
Note: Not allowing negative balances forces the user to fix the error at its source

- Inventory in transit is usually not available

In addition, certain transactions can be restricted. Each inventory status code can have a list of restricted transactions attached. For example, access to sales order issues can be restricted from a Quality Control Hold location.

Whenever items are received into inventory, a status code is associated with that inventory. This defaults to the status code entered for the location but can be changed using Inventory Detail Maintenance. Whenever you attempt to do something with this inventory - allocate it, issue it, move it - the system checks its status code and makes sure that this is a valid action.

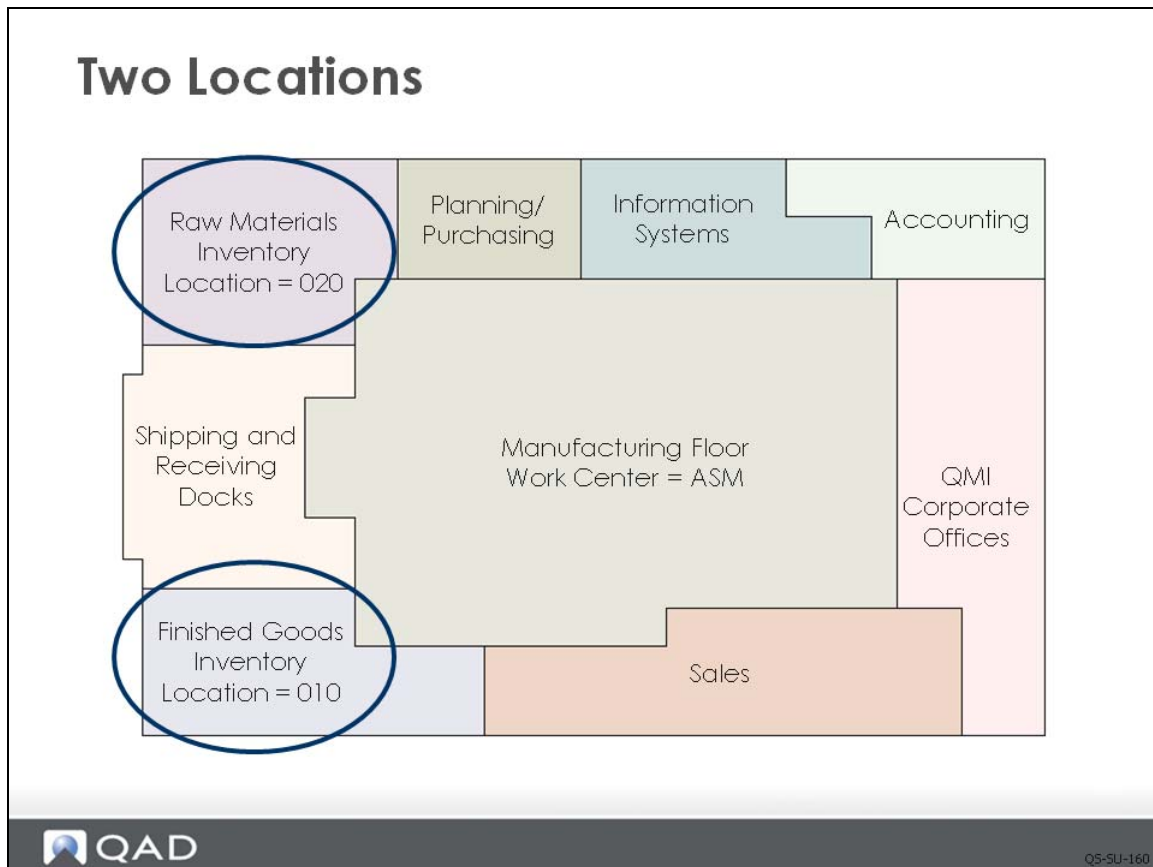
Example



Quality Manufacturing International (QMI) is a multinational company with its headquarters located in New York, NY.

- QMI has 8 divisions located in: USA, Canada, Mexico, France, UK, Netherlands, China and Australia
- QMI produces a wide range of products that cover Electrical & Industrial, Life Sciences, Consumer Products and Automotive Industries
- These products are produced at all of the 8 company divisions around the world.
- QMI uses shared services to manage their customers and suppliers. Customers and suppliers are also located in each of the countries where a QMI division is located.

Two Locations



In the example on the following pages, we will see how QMI sets up the foundations of its business structure: The domain and entity structure have been previously setup by corporate headquarters in preparation for the start up of the new facility. this process included the setup of the accounting structure and GL calendars to insure the new facility correctly integrates with corporate financial reporting requirements.

In this course we will focus on setting up:

- Site
- Locations

Set Up Domain and Entity

Setup Domain and Entity

Entity View X

Go To Actions Tools Attach Print Preview

Attachments

Entity Code: 10USACD Active: ☒ Domain: 10USA

Entity Description: USA DIVISION

Business Relation: 10-USA-CD

Localization Code:

General Shared Sets Additional GL Numbering

Shared Set Code	Shared Set Type
QMS-CostCenter	Cost Center
QMI-SUP	Supplier
QMI-CUST	Customer
QMS-SubAccount	Sub-Account
QMS-ExRate-US	Exchange Rate
QMS-GL-US	General Ledger
QMS-DB-US	Daybook
QMS-Project	Project
Sub-Account COA Mask	Sub-Account COA Mask
Cost Center COA Mask	Cost Center COA Mask
Project COA Mask	Project COA Mask

QAD Q5-SU-170

As an expansion of current businesses QMI basic setup has been completed by the staff of the parent company, QMI. This will ensure that all accounting and financial reporting functions are setup in accordance with corporate procedures.

All of the system wide data is already available to QMI, Images of the domain and entity setup are shown below. Note that QMI has several shared sets that are common with other QMI divisions and two, customers and suppliers that are unique to QMI.

For the purposes of this course we are using a domain already setup with a base currency of US dollars (USD), a general ledger chart of accounts and a GL calendar whose periods correspond to the standard 12 month calendar.

Company Business Relation

Set Up Company Business Relation

Business Relation Browse for... Business Relation Modify

Go To Actions Tools Attach Print Preview

Attachments

Business Relation: 10-CORP-CONS

Name: Quality Manufacturing International

Search Name: Quality Mfg Intl

Second Name:

Third Name:

Group Name:

Active: ☒

Address Info General Defaults

Address	Address	Address	Zip Code	City	Name	Search Name	Telephone
15 Avenue of the			10065	New York	Quality Manufactu	Quality Mfg Intl	



QS-SU-160

QMI's New York address has been setup in business relation modify (36.1.4.3.2)

All addresses for customers, suppliers, employees, are setup in business relationships.

Domain Account Control

Domain Account Control

Domain/Account Control x

Go To Actions Copy Print Preview

Verify GL Accounts: ☒
 Base Currency: USD
 Entity: 10USACD
 Default Domain Language: us

Domain/Account Control x

Go To Actions Copy Print Preview

Sales: 4010 Sales Discount: 4200 Sales Inv Tax Acct: 2400

Sales Accounts

Sales:	4010	mech	ADM
Sales Discount:	4200	Mech	
Sales Inv Tax Acct:	2400	Mech	
Sales CN Tax Acct:	1405	Mech	
Sales Inv Tax Absorbed Acct:	2410	Mech	
Sales CN Tax Absorbed Acct:	1415	Mech	
Sales Returns:	4300	Mech	
COGS Material Acct:	5010	Mech	ADM
COGS Labor Acct:	5100	Mech	
COGS Burden Acct:	5200	Mech	
COGS Overhead Acct:	5300	Mech	
COGS Subcontract Acct:	5400	Mech	
Sales Freight Accrued:	2180	Mech	
Sales Freight Applied:	4680	Mech	
Terms Late Interest:	4650	Mech	

QAD QS-SU-190

Domain Account Control (36.1)

Domain Account Control (36.1) is used to setup default account codes, subaccounts and cost centers. These are the system required accounts from the general ledger chart of accounts. Setting them up here insures that any transaction the system can process will be booked to a valid general ledger account.

The first frame in Domain Account Control shows that GL accounts are verified, the base currency for the entity Training is USD and audit trails are maintained; and the default accounts organized by the type of account, Sales Accounts are shown as an example.

The following frames show the default accounts organized by the type of account.

AP, Department, Product Line

AP, Department, Product Line

Domain/Account Control x

Go To Actions Copy Print Preview

AP Inv Tax Acct:1400 AP CN Tax Acct:2405 AP Inv Tax Retained Acct:1420

Accounts Payable

AP Inv Tax Acct:	1400	Mech
AP CN Tax Acct:	2405	Mech

AP Inv Tax Retained Acct:

AP CN Tax Retained Acct:

Expensed Item Receipt:

Expensed Item Usage:

Expensed Item Rate:

Department

Cost of Production: 5770 Mech

Labor: 5

Burden: 5

Domain/Account Control x

Go To Actions Copy Print Preview

Inventory Acct:1500 PO Receipts Acct:2520 Purchases:6610

Product Line

Inventory Acct:	1500	Mech	
PO Receipts Acct:	2520	Mech	
Purchases:	6610	Mech	ADM
Overhead Appl Acct:	5330	Mech	
Scrap:	6000	Mech	
Work in Process:	1550	Mech	
Inv Discrep Acct:	5900	Mech	
Cost Revalue Acct:	6100	Mech	
Floor Stock Account:	1600	Mech	


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Variances, Service Accounts

Variances, Service Accounts

Domain/Account Control

Go To Actions Copy Print Preview

PO Price Var Acct:6710 AP Usage Variance:6720 AP Rate Variance:6740

Variances

PO Price Var Acct:	6710	Mech	ADM
AP Usage Variance:	6720	Mech	
AP Rate Variance:	6740	Mech	
Method Variance Acct:	6800	Mech	
Transfer Variance:	6820	Mech	
Material Usage Var:	5040	Mech	
Material Rate Var:	5050		
Labor Usage Variance Acct:	5140		
Labor Rate Variance Acct:	5150		
Burden Usage Variance:	5240		
Burden Rate Variance:	5250		
Subcontract Usage Variance:	5440		
Subcontract Rate Var:	5450		
Mix Variance:	6830		

Domain/Account Control

Go To Actions Copy Print Preview

Service Labor:6900 Service Overhead:6905 Service Expense:6910

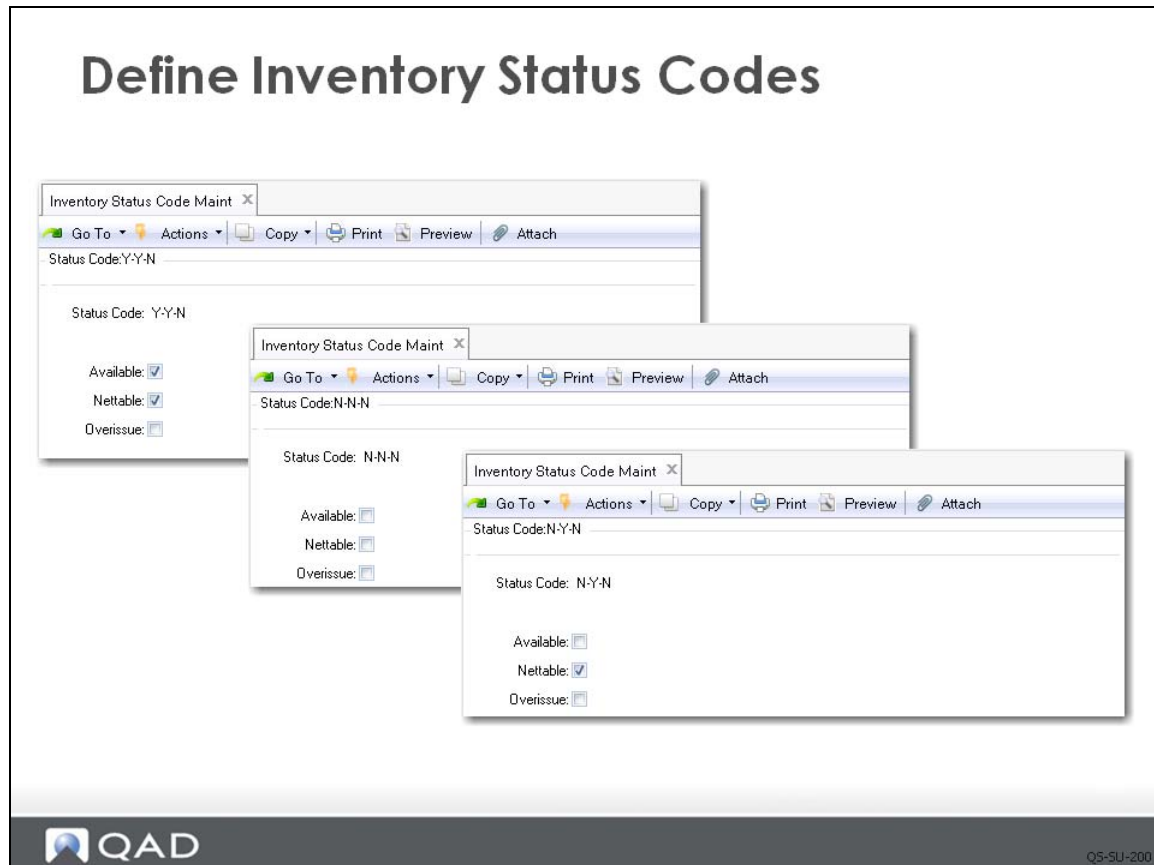
Service Accounts

Service Labor:	6900	Mech	
Service Overhead:	6905	Mech	
Service Expense:	6910	Mech	
Expense Due:	6915	Mech	
Service Returns:	6920	Mech	
Deferred Revenue:	2450	Mech	
Accrued Revenue:	1450	Mech	

QAD

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Set Up Sites



Inventory Status Code Maint (1.1.1)

Prerequisites

Before QMI can enter a site or items, it needs to define at least one inventory status code. Inventory Status codes have a significant effect on how inventory can be managed.

Define inventory status codes

Available means items with this code may be issued or allocated to meet demand. Nettable means items with this code may be used for MRP planning purposes. Overissue means the items may be issued even if the current computer balance is insufficient to meet the demand.

In Inventory Status Code Maintenance (1.1.1), QMI can indicate if the inventory is available for sales orders and/or work orders, nettable for MRP planning purposes, and whether overissues are permitted from the locations identified with this code. QMI used code Y-Y-N to indicate parts and items that are OK to use and indicates they are available to issue and nettable for MRP planning purposes.

QMI defines all its status codes to not allow overissues by leaving the Overissue box unchecked. This prevents inventory transactions that would result in a negative balance.

QMI uses the code N-N-N to indicate items that are known to be unusable. They cannot be issued or used for planning.

QMI uses the code N-Y-N to indicate items that are suspected of being unusable, but there is doubt. These items require further review and are normally sent to an Inspection area for disposition. They cannot be issued but may be used for planning.

Additional Notes

If overissues are allowed, inventory is issued even if the current computer balance lacks enough quantity, even if the location has a zero or negative inventory balance. This is always an error. Not allowing a transaction that will result in a negative balance forces the user to correct the source of the error before completing the transaction. For example by doing a cycle count to correct the balance first.

Note It is highly recommended to not use blank code fields.

Set up Site

Set Up Site

Site Maintenance x

Go To Actions Copy Print Preview Attach

Site: 10-100 Site: 10-100 Domain: 10USA

Site: 10-100

Description: Ultrasound Mfg Site

Domain: 10USA

Entity: 10USACO

Declarant:

Default Inventory Status: Y-Y-N

Automatic Locations: ☒

Inspection Location: 030

EMT Supplier: 10-300

External Supplier:

Transfer Variance Acct: 6820 MECH

Transfer Ownership: ☒

PD Transit Location:

QAD QS-SU-210

Site Maintenance (1.1.13)

QMI has multiple sites, they can be viewed in Site Maintenance (1.1.13), we will be using site 10-100. This site is assigned to domain 10USA and entity 10USACO and has a default inventory status code of Y-Y-N, which was defined earlier. This code will default to inventory locations created in this site.

Automatic locations is left unchecked. If the field automatic locations is checked, then inventory transactions can be processed for locations that do not exist, and the systems adds them as part of the transaction. Some companies like this as it allows users to create new locations as required. The new locations use all defaults from the site record. However, there is no verification of the location entered and as a result locations can be created that are in effect typographical errors.

Leaving automatic locations unchecked requires that new inventory locations be setup in Location Maintenance prior to use.

Important It will be most helpful if the site code is equal to the address code for the physical location. There are several places where the system can retrieve the street address for a site if the site code and the address code are the same. For example purchase orders where the system will retrieve the ship to address code from the line item site code. Site code equal to address code is required for global tax management.

Note Throughout this course various screen shots may display a different domain, entity or site code than mentioned in the text. The content of the transaction detail will be correct. In Activities always follow the printed text.

Set Up Inventory Locations

Set Up Inventory Locations

Location Maintenance (Left Window):

- Site: 10-100
- Location: 010
- Description: Finished Goods
- Inventory Status: Y-Y-N
- Project:
- Date Created: 1/1/2008
- Permanent: ☒
- Type: SR
- Single Item: ☐
- Single Lot/Reference: ☐
- Capacity: 0.0
- Reserved Locations: ☐
- Transfer Ownership: ☒
- Physical Address:

Location Maintenance (Right Window):

- Site: 10-100
- Location: 020
- Description: Components
- Inventory Status: Y-Y-Y
- Project:
- Date Created: 1/1/2008
- Permanent: ☒
- Type: SR
- Single Item: ☐
- Single Lot/Reference: ☐
- Capacity: 0.0
- UM:
- Reserved Locations: ☐
- Transfer Ownership: ☒
- Physical Address:

QAD QS-SU-220

Location Maintenance (1.1.18)

QMI has setup a location 010 for storage of Finished Goods, and 020 for Components. Finished Goods uses the default inventory status code Y-Y-N from the site record.

QMI has three inventory locations, which are a subset of site 10-100. The below image shows the record for the location FGI for storage of finished goods inventory. Check the permanent flag to indicate predefined locations that do not disappear from the records when they are empty.

Material Review Board

Location Maintenance

Location Maintenance
Go To Actions Copy Print Preview Attach

Site: 10-100
Location: 039
Inventory Status: N-Y-N

Site: 10-100 Ultrasound Mfg Site

Location: 039

Description:

Inventory Status:

Project:

Date Created:

Permanent: ☒

Type:

Single Item: ☐

Single Lot/Reference: ☐

Capacity: UM:

Reserved Locations: ☐

Transfer Ownership: ☐

Physical Address:


QS-SU-221

Location Maintenance (1.1.18)

An additional location is setup called Inspection to be used for material that is of questionable quality and requires further evaluation. This location has the status code N-Y-N.

Define an inventory location for every place your business stores inventory items. If you store pallets, or drums of raw material in the parking lot, the parking lot needs to be a location. If the supervisor keeps a safety stock of small items in their bottom desk drawer, the drawer needs to be an inventory location.

Additional Notes

You must associate an inventory status code with every location. By default, this is the inventory status from the site record.

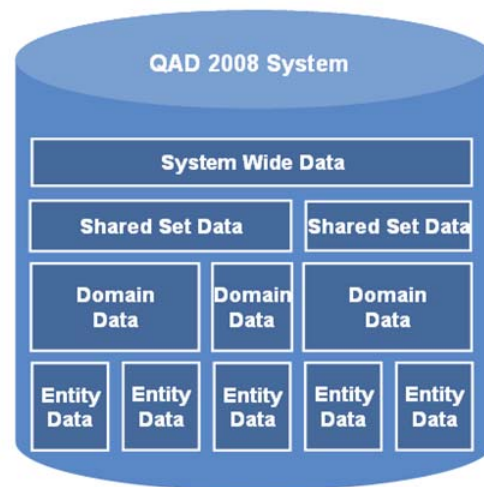
For purposes of this course the other location attributes will be left blank but their usefulness should be obvious. The type code allows you to indicate unique storage locations such as tanks, silos and refrigerators. The item master can specify a location type for an item. The system then does a match for every inventory transaction for that item to ensure it is put into the correct type of location.

Checking single item prevents the user from adding a different item to a location that already has an item in it. For example you cannot add olive oil to a tank that currently has vinegar in it. Further checking single lot/reference prevents adding a different lot number of an item to a location that already has a lot of material in it. For example you cannot add lot 3 of olive oil to a tank that already has lot 2 of olive oil in it.

Review

Review - Four Types of Data

- System Wide Data
- Shared Set Data
- Domain Data
- Entity Data



Q5-SU-230

Database

To summarize, a database is a physical set of tables. All users who have access to that database have access to the data in those tables (subject to Menu, Field, and Compliance Site Security).

Domain

A domain is a template for several entities that share the same base currency, general ledger chart of accounts and calendar. A system requires at least one entity.

Entity

An entity is a financial reporting concept. Balance sheets and income statements are produced by entity. There can be multiple entities in one domain. Consolidated reports can be focused by selecting a range of entities to report. At least one entity is required.

Site

A site is an inventory planning and control concept. All inventory is stored by site, and all planning is done by site. Each site belongs to one and only one entity, but each entity can have more than one site. Almost all reports produced in the system are selected and sorted by site. If there is any inventory at least one site is required.

Location

Within a site there can be multiple inventory locations. These are used to physically identify and control individual items in stock. Inventory reports normally are selected and sorted by location. If there is any inventory at least one location is required.

Review of Steps in Example

QMI also entered its bank (Bank Maintenance) and made it the company's default bank (Accounts Payable Control) in preparation for later transactions.

Next, in Inventory Status Code Maintenance, QMI defined an inventory status codes of N-N-N, Y-Y-N, Y-Y-Y, and N-Y-N.

After defining the inventory status codes, QMI set up the site 10-100 in Site Maintenance and set Y-Y-N as the default inventory status.

In the last step, using Location Maintenance, QMI set up three locations at site 10-100, Finished Goods Inventory, Components, and Pending Inspection. The inventory status codes associated with these locations defaulted from the site code.

Exercise 1

In this activity, you will set up a brand new site. In later exercises you will use a site prepared for you. But first you need to verify a setting.

- 1 Go to Requisition Control (5.2.1.24) and make sure that Using GRS is NOT checked.
- 2 Use Inventory Status Code Maintenance (1.1.1) to add new status codes.

Field	Data
Status Code	YYN; click Next
Available	N
Nettable	N
Overissue	Yes; click Next

Click Next (or press Enter) until you come to the Restricted Transaction field, then click Back to complete the update transaction.

- 3 Use Site Maintenance (1.1.13) to enter a record for your manufacturing/distribution site.

Field	Data
Site Code	10-101; click Next
Description	Ultrasound Mfg Site
Domain	10USA
Entity	10USACO
Default Inventory Status	Y-Y-N

Click Next 3 times, then Back.

Set Up Inventory Locations

Add three inventory locations, Finished Goods, Components, and Pending Inspection to site 10-101. The inventory status code of N-Y-N should default from the site code.

- 4 Use Location Maintenance (1.1.18) to add three inventory locations with the attributes shown in the table below.

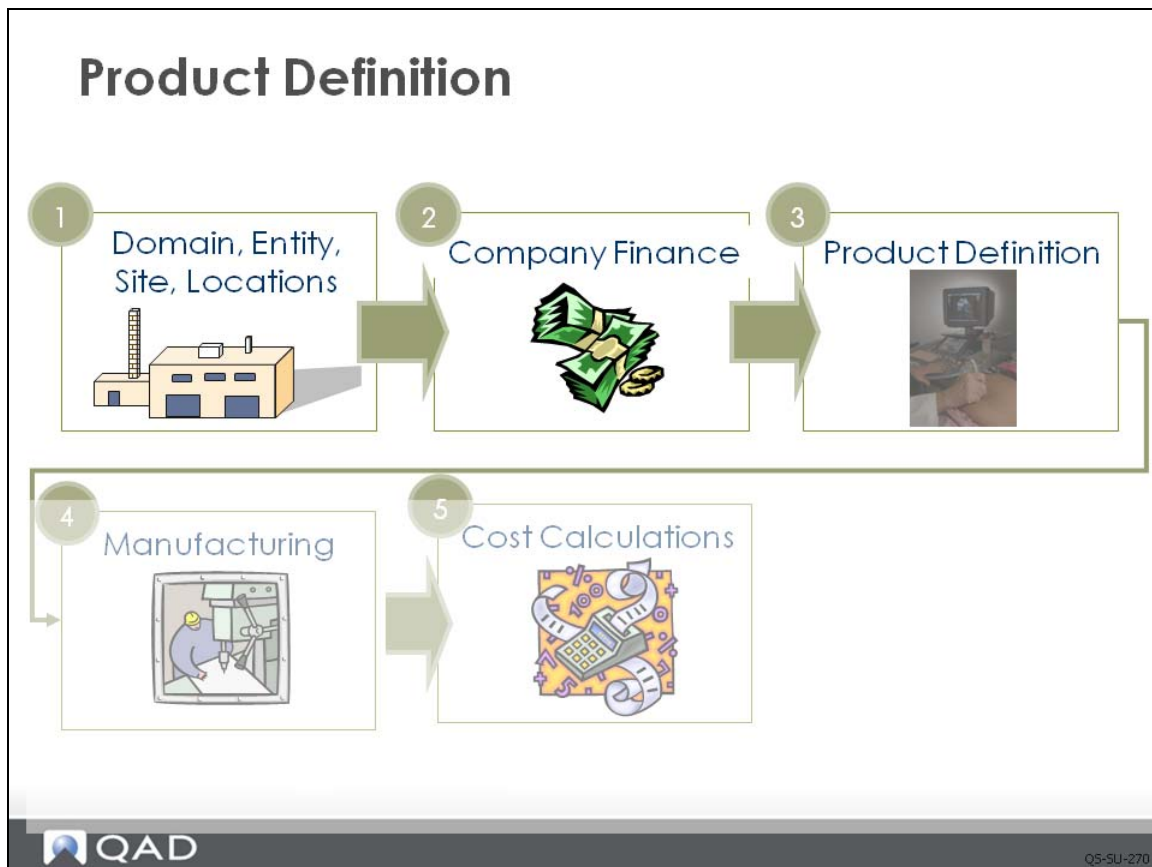
Site	Location Code	Description	Inventory Status
10-101	010	Finished Goods Inventory	Y-Y-N
10-101	020	Components	Y-Y-N
10-101	030	Pending Inspection	Y-Y-N

All other values may be accepted at default.

Chapter 3

Product Definition

Overview



Once the basic company structure has been set up we can enter information about the company's products and how they are made.

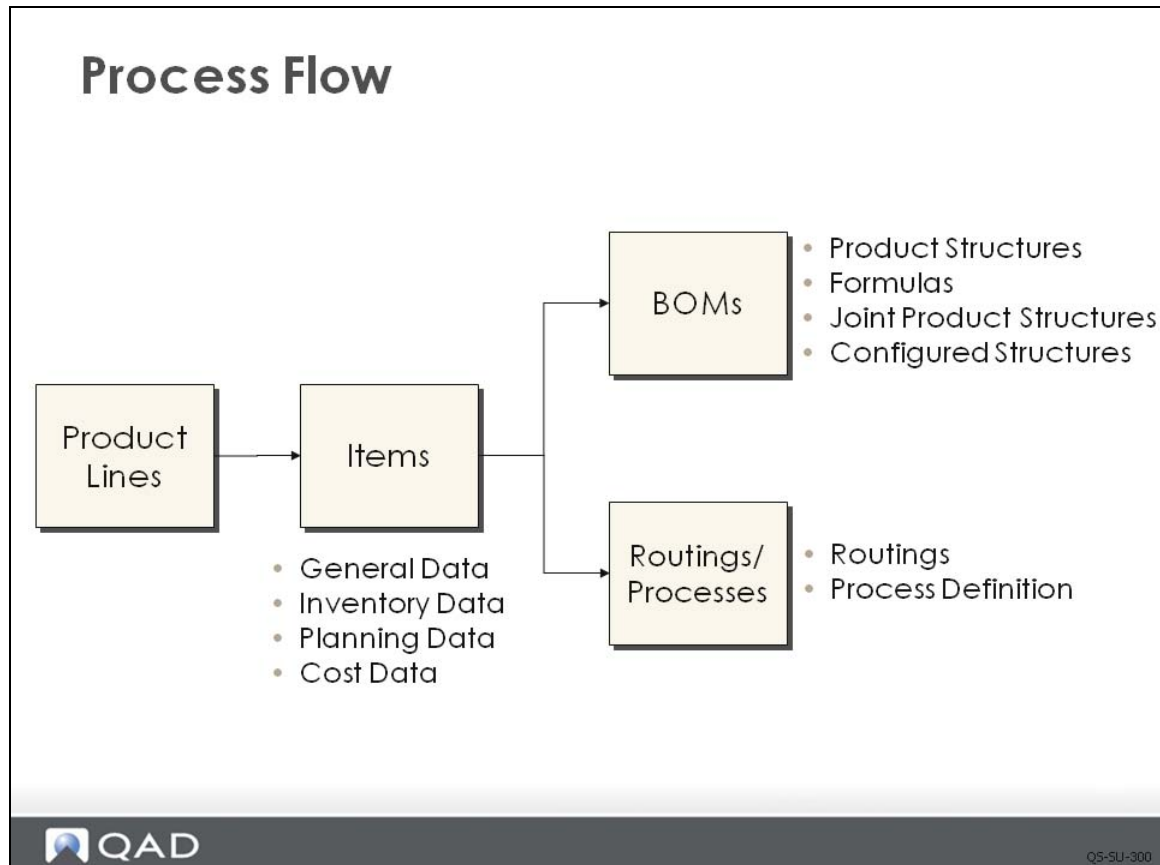
- Key Concepts
 - Product Lines
 - Current Costs
 - Item Information
 - Product Structure
- Example
 - Set Up Product Lines
 - Set Up Accounting Parameters
 - Enter Item Information
 - Set Up Product Structure
- Activities

Learning Objectives

When you finish this chapter, you should be able to:

- Explain the importance of a product line
- Explain the difference between current costs and GL costs
- Provide examples of order policies and order modifiers
- List an item's five cost elements
- Describe the information contained in a product structure
- Set up a product line
- Enter an item
- Define an item's product structure

Key Concepts



Introduction

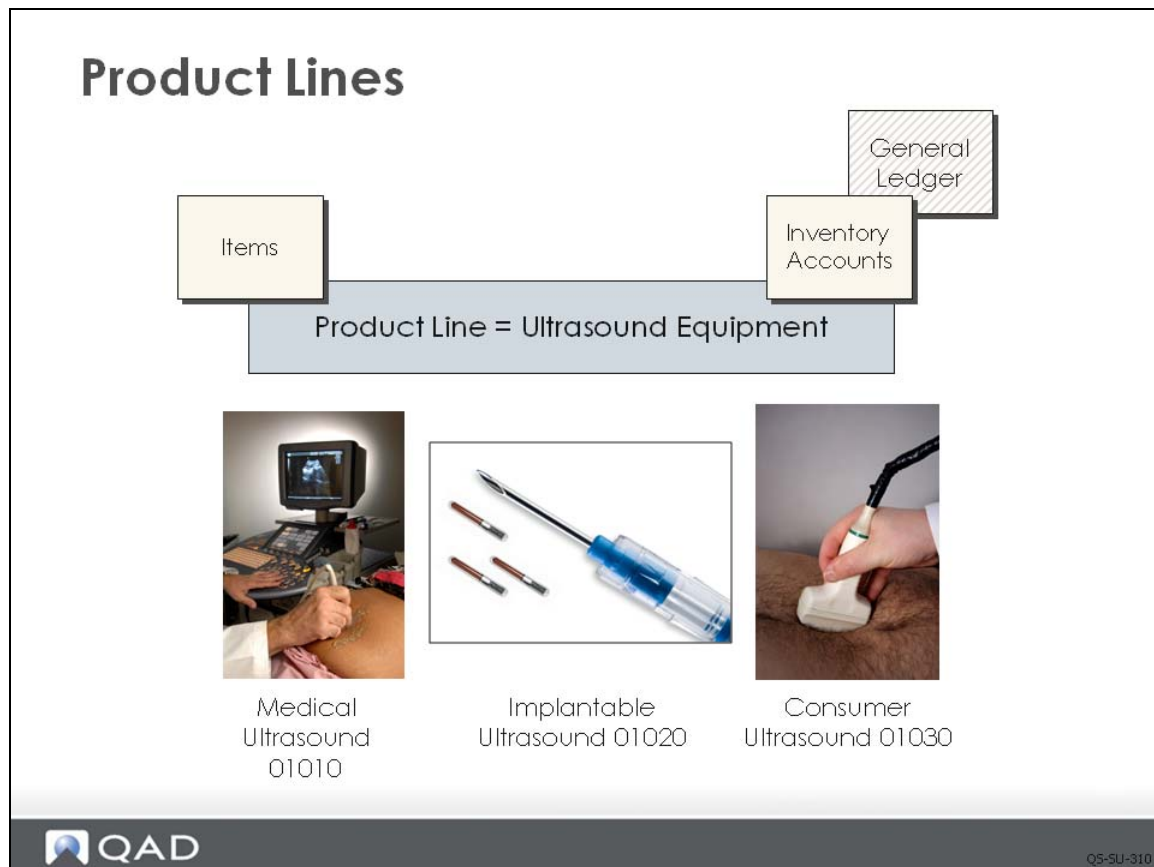
To establish product definition, you must first establish product lines, then assign items to them (see figure above). Although each item needs to have an associated product line to capture inventory costs and movement, each item may or may not have a bill of material (BOM) or routing associated with it. We'll be discussing bills of material in this chapter and routings later in the course, but briefly:

- Bills of material specify how much of what items are required to produce a parent item
- Routings quantify where and how the product is made, the steps in the process of putting the materials together

In very common terms this is like a recipe. Most recipes have a list of ingredients (the bill of material) and a list of steps telling you how to combine the ingredients, and how to process them (the routing).

On the next few pages, we'll look at each step in the process flow shown in the figure above. We'll begin by looking at product lines, followed by items and bills of material (or product structures). Routings will be discussed in Set Up Routings in Set Up Manufacturing Environment.

Product Lines



In QAD EE a product line is a group of similar items or products. Usually, the grouping is by similarities of manufacture or application. While product line codes can be related to a marking concept, they are in fact an accounting concept.

A product line code links items to general ledger accounts. This link is the way the system ensures that all transactions for an item have GL consequences. All items must belong to a product line; otherwise, no GL transactions associated with them could be recorded.

While product lines are primarily a financial construct, they should not be assigned by finance. While finance will play a role in defining product lines both manufacturing and marketing will want to understand the structure and the ability to track costs and revenues for their items.

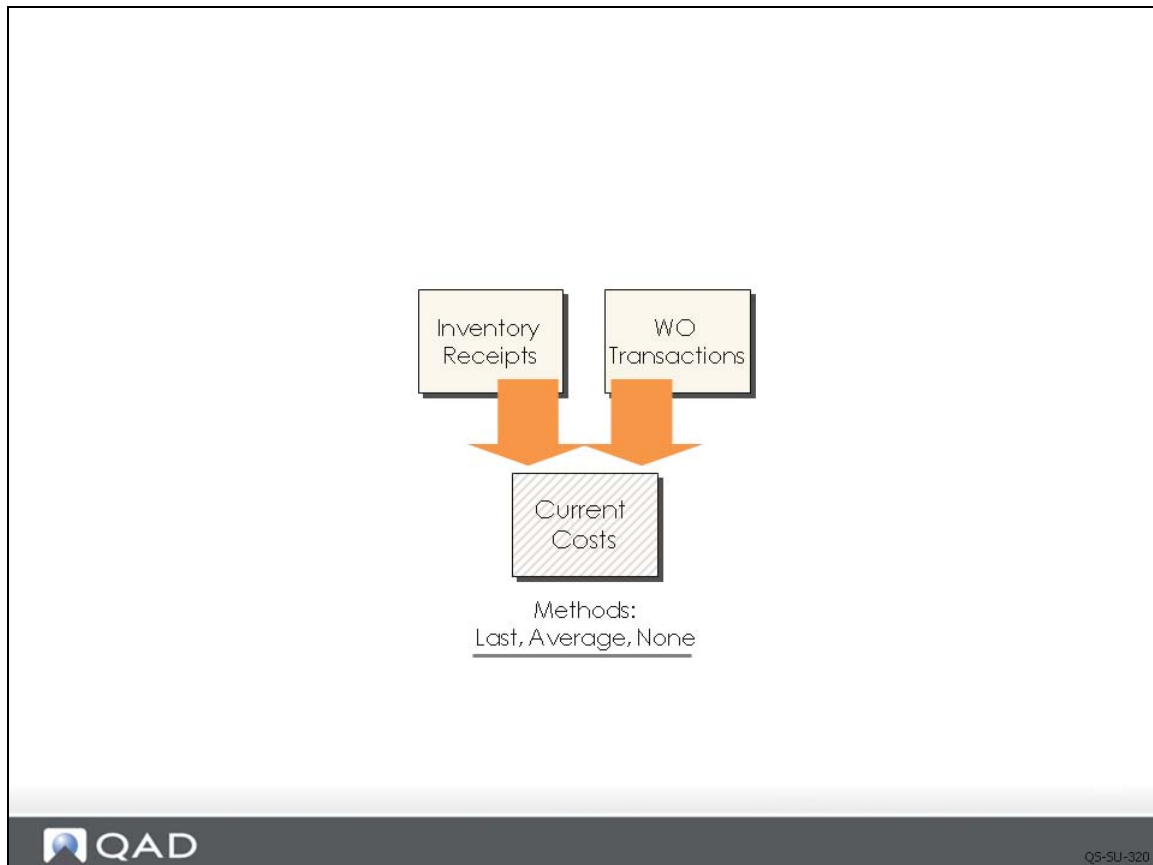
Note It is worth noting that almost every browse, inquiry and report in QAD can be sorted on product line. So some thought should be given to how you wish to organize various reports.

In this illustration we are showing three different types of ultrasound devices in one product line. This means that all costs and revenues for these items will be collected in the same set of GL accounts. Your company could decide that the nature of the materials and the manufacturing processes used are different enough that you would like three product lines based on the material the ultrasound units are made from. This would allow you to use different GL accounts, or sub-accounts, to track the costs and revenues.

Some companies would want different product lines for purchased materials or manufactured components. You must have at least one product line code but you may have as many as you need.

After the product line has been set up, the method of updating the “current costs” of items is selected, which is discussed next.

Current Costs



Current costs are the costs for producing your products based on inventory receipts and work order labor transactions. These reflect what you are currently paying your suppliers for purchased materials, and the current labor hours being consumed in producing the items at the work center labor rates.

When you have a Standard Costing system, the current cost set can be used to track the running average or last cost for use in determining next year's standard cost or for providing a record of recent actual costs.

Methods that can be used with the Current Cost Set are Last, Average, or None.

- Last: Each receipt sets the current cost to the last cost of that item. In the case of purchased material, this is the purchase or invoice price.
- Average: Whenever an item is received, a new weighted average cost is calculated and stored in the cost set, this values all inventory at the new weighted average cost.
- None: Current costs are maintained manually in the system or not used.

The method to be used is selected in Inventory Control.

We'll cover costing in more detail in the next section on Item Information.

Terminology

Cost Set

Identifies cost files in the system. QAD Enterprise Application has two default cost sets-GL and Current-that are available for each site, but a site can have additional cost sets, such as historical costs from prior periods and simulated costs for planning purposes.

Current Cost Set

The current cost of an item is normally based upon recent production and/or purchases. Current costs are the actual costs from inventory receipts and work order labor transactions.

The use of the term actual is a convention adopted by cost accountants and may not be an actual cost in the strict sense of the word. For example the labor cost of an item is the hours charged times the work center labor rate. The work center labor rate usually reflects an average rate for all workers in the work center, rather than the actual rate of the person who worked on a specific work order.

Standard Costing

Costs are pre-established for items and all transactions are valued at that cost as they are processed. Deviations in the costs are reported as variances. Standard costs are usually established once a year.

GL Cost Set

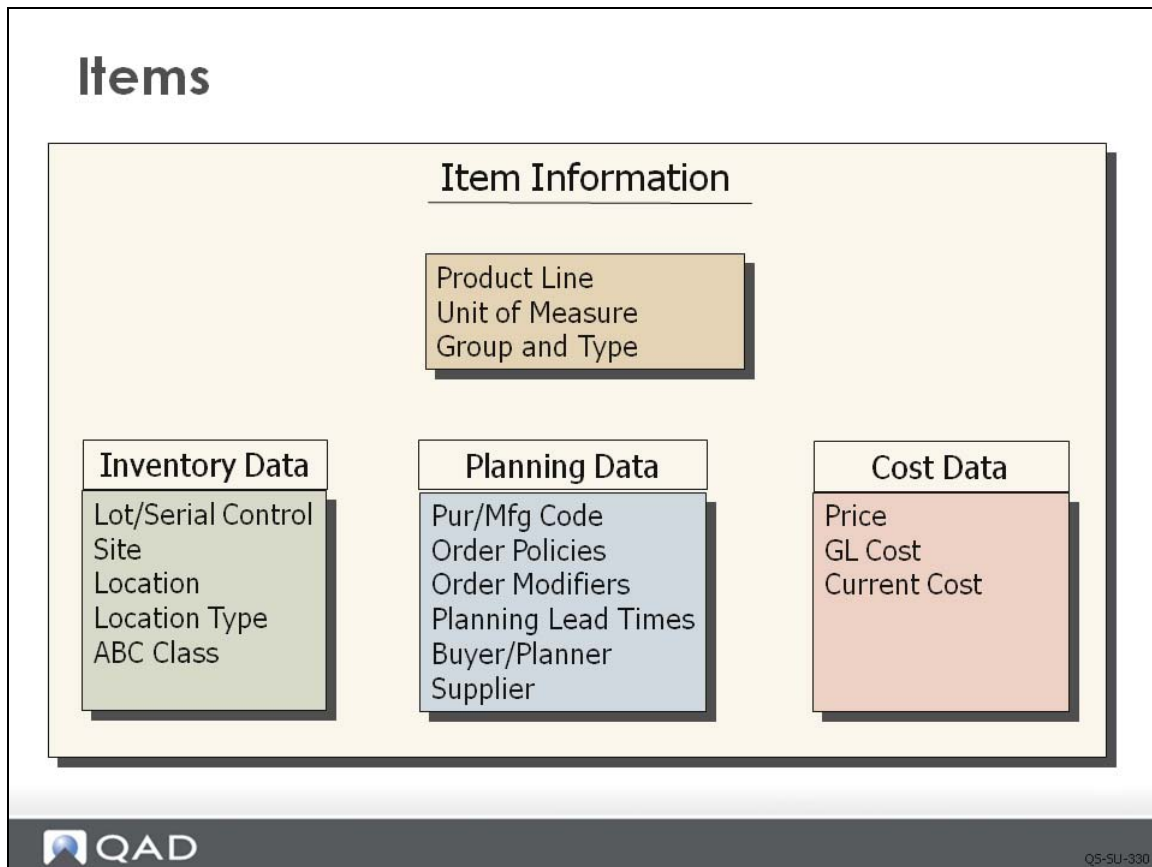
The QAD system keeps the standard cost in a cost set named the GL Cost Set the name reflects the fact that these are the costs used to value all inventory transactions in the general ledger.

At standard the system has two cost sets. The GL cost set and the Current cost set. Additional cost sets can be created using the Cost Management Module.

Variance

In a standard cost system the variance is the difference between the standard cost and the current cost. Usually reported on a monthly basis.

Item Information



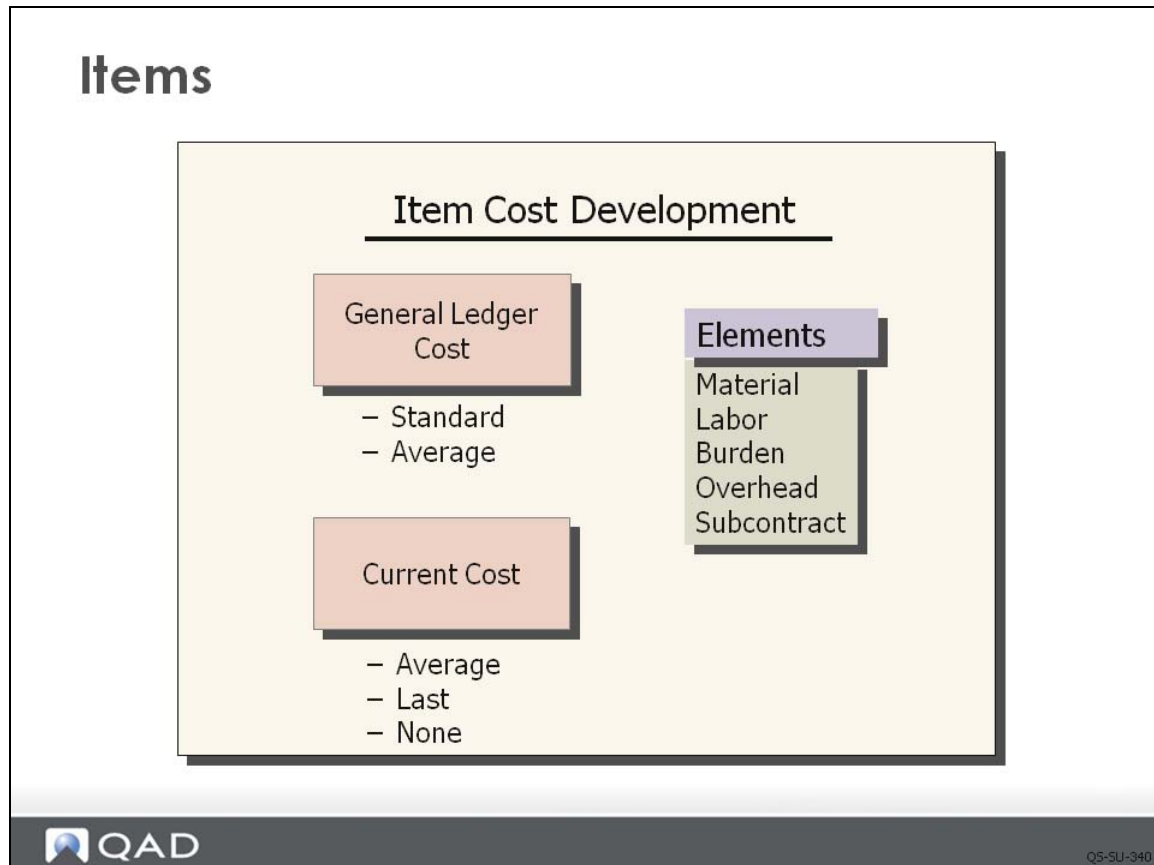
After setting up the product lines and current cost method, we're ready to enter more specific information about each item.

Item information must be entered for every item you use or produce. Item Master Data defaults to all sites in an entity. Later in the course we will see that much of the data for an item can be different at each site.

Every item is identified by an item number. This item number is the same for all sites, as is some of the other identifying information, such as product line, unit of measure, and group and type.

In Item Master Maintenance you can enter inventory data, planning data, and cost data. The basic information recorded in each of these areas is shown in the figure above. (There are also separate functions to add or maintain; item data, inventory data, planning data, and cost data). This allows different functional areas such as production planning and cost accounting to have update access to their data only.

Item Cost Development



The cost of a manufactured item can be calculated based on its standard bill of material and routing. And, depending upon the BOM and routing, there may be both this level and lower level costs.

As shown in the following figure, there are two cost sets for an item, GL and Current. The GL cost set will have either a standard or average costing method; whereas the current cost set will be determined by either the average or last cost of the item; or maintained manually (setting = none). Both the GL and Current cost sets are split into five standard cost categories and elements: material, labor, variable burden, fixed overhead, and subcontract.

In the Example section, you will see how item costs are organized by these cost sets and elements.

Terminology

Average Costing

Costs are recalculated as they occur. The costs associated with a transaction are weighted with the existing costs to provide a new average cost. The average cost may be used for valuation as a GL cost or for information only as a Current cost.

Bill of Material (BOM)

A listing of all sub-assemblies, components, and raw materials of a parent assembly. Shows the quantity of each required to make one parent assembly. Also called a product structure or formula. Used with a master production schedule to determine items for which purchase requisitions and production orders must be released.

GL Cost Set

GL cost is a term that distinguishes costs used for valuing inventory and for determining cost of goods sold from other costs such as Current costs. GL costs can be based on either a Standard or an Average cost method.

This Level and Lower Level Costs

This Level costs are the costs to either obtain or produce an item. Thus, a purchased item has This Level Material cost, but it has no Lower Level costs. Lower-level costs represent costs that are added at prior stages of manufacturing.

Now that we have looked at product lines and items, we'll next discuss bills of material (BOMs), which are called product structures and formulas.

Product Structure

Once items are identified in the system, you can set up product structures and formulas to identify the physical components and raw materials of manufactured products in the system.

Product Structures

Product structures are associated with discrete items and identify the quantity of each component needed to manufacture one unit of an item, expected scrap percentage, and the operation where they are required. Product structures are often referred to as bills of material.

Formulas

Formulas identify ingredient usage as a quantity per batch or percent of batch. These are vital to the planning process. In QAD you define these relationships in Formula Maintenance. Formulas are sometimes referred to as recipes.

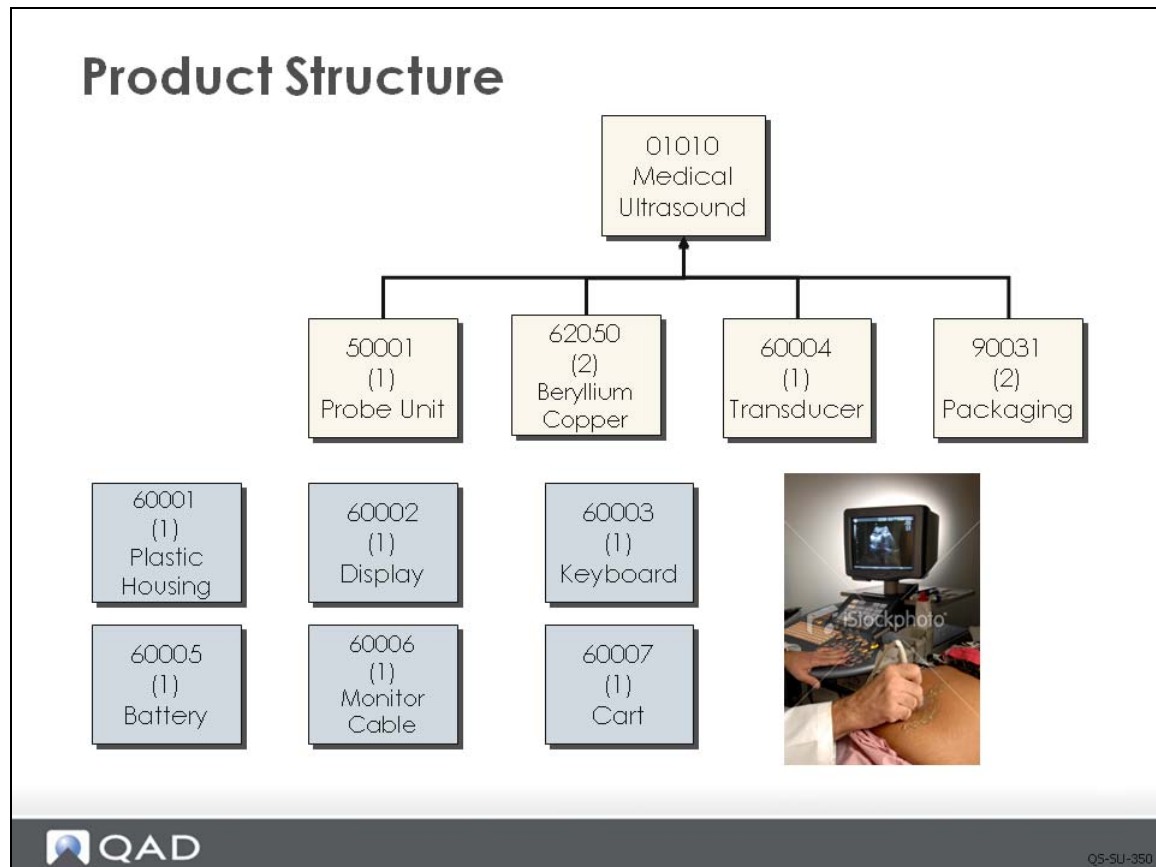
In general, product structures and formulas work in the same way, so we will refer to both as bills of material (BOMs).

Parent/Component Relationships

The system uses BOMs, each a collection of parent component relationships, for the planning and control of manufacturing.

For example, look at the medical ultrasound in the figure below. The medical ultrasound is the parent with 4 components. The component probe unit itself is also a parent and has 6 components.

Parent/Component Relationships



The device 01010 is comprised of a number of components both purchased and manufactured combined to create the final product, a medical ultrasound. In this part of the BOM, the finished medical device is the parent and the rest are components.

Alternate Product Structure or Formula

Different formulas for different batch sizes of product, or alternate product structures used in different circumstances, require multiple BOMs for the same item. This is done by adding a BOM code in Product Structure Code Maintenance or Formula Code Maintenance and then using this BOM code as the parent in Product Structure Maintenance or Formula Maintenance.

The normal situation is to have the BOM code be the same as the item number. In the case where several alternate structures are available they are given other identifiers and the alternate BOM you will use most often can be linked to the item number in Item Planning Data Maintenance,

Terminology

BOM Code

A code uniquely identifying a product structure or formula.

Example

In this example, we'll see QMI's Manufacturing Department:

- Sets up a product line for it's Ultrasound components
- Defines one of the component items which is a purchased item
- Defines the product structure of a medical ultrasound unit, which shows the relationship between the parent item and its components (quantity required and routing operation)

Additionally, we'll look at how Current Costs are calculated at QMI.

Set Up Product Lines

Example: Product Lines

Product Line Maintenance

Go To Actions Copy Print Preview Attach

Product Line: 10 Tax Class: Default Sub-Account:

Product Line: 10

Description: Finished Goods

Taxable: ☒

Tax Class:

Default Sub-Account:

Default Cost Center:

Override:

Override:

Inventory Accounts

Inventory Acct: 1500	Mech
Inv Discrep Acct: 5900	Mech
Scrap Account: 6000	Mech
Cost Revalue Acct: 6100	Mech



Q5-SU-360

Product Line Maintenance (1.2.1)

QMI's Manufacturing Department has set up a product line 10 with the description Finished Goods. The sales and operations of all ultrasound components will be planned, reported, and analyzed by this product line. Additionally, costs are tracked by the inventory accounts set up in Product Line Maintenance (1.2.1).

Note Once your cursor is in the bottom frame (Inventory Accounts) if you continue to click Next the system will take you through four more frames of account code structure. These accounts are defaulting from the Domain/Account control and should be accepted as is.

Select Current Cost Method

Example: Cost Set Method

The screenshot shows the 'Inventory Accounting Control' window. The 'Current Cost (AVG/LAST/NONE)' dropdown is set to 'LAST'. Other settings include 'Sum LL Costs Into Matl Cost' (unchecked), 'Current Cost from AP' (checked), 'Create GL Transactions' (checked), 'Summarized Journal' (checked), and 'Journal Reference Method' (0). The 'Transfer Clearing Acct' is 1670, and the 'Mech' field is empty.

QMI uses a Standard Cost method for the GL Cost Set, and it tracks its actual costs in the Current Cost Set. The method of updating the Current Cost Set is selected in Inventory Accounting Control. QMI uses the method “Last,” so that the last or most recent cost of an item becomes the current cost.

Additional Notes

Current Cost from AP

Optionally, you can also update the current cost upon each AP voucher transaction for the item, which will use the supplier invoice amount to update the current cost.

Create GL Transactions

Create GL Transactions is set to Yes unless you are using the periodic method of inventory accounting. In periodic inventory accounting, the period ending inventory is based on the cost of beginning inventory plus purchases minus sales. No GL entries need to be created if inventory is manually created.

Note Periodic inventory accounting is essentially an obsolete concept. Only the smallest business could manage with this technique. This is a financial inventory method giving only the value of the inventory, and only at period end. If you wanted to know how much of what items you had on hand you would need to do a physical inventory count.

Inventory Control

Create GL Transactions

Inventory Control X

Go To Actions Copy Print Preview Attach

Default Site: 10-100

Inventory Count Parameters

Tolerance From Qty On Hand or Annual Usage: Qoh

Issue Days: 5

Default Site: 10-100

Item Tolerances:

Class A:	3.00%	0.00	Class C:	5.00%	0.00
Class B:	4.00%	0.00	All Others:	5.00%	0.00



QS-SU-371

Use inventory control for setting other non-financial inventory parameters. Use it to set the default site to QMI. This will pre-fill the site field on many transactions saving you some effort.

Set Up Item Status Codes

The screenshot displays the 'Item Status Code Maintenance' window in QAD. It shows two overlapping windows. The background window is for 'Item Status: ACTIVE' and the foreground window is for 'Item Status: OBS'.

Item Status: ACTIVE

Item Status: ACTIVE
Description: ACTIVE

Restricted Transactions:

-
-
-
-
-
-
-
-

Item Status: OBS

Item Status: OBS
Description: Obsolete

Restricted Transactions:

- ADD-FC
- ADD-PO
- ADD-WO
- ADD-SO
-
-
-
-
-
-

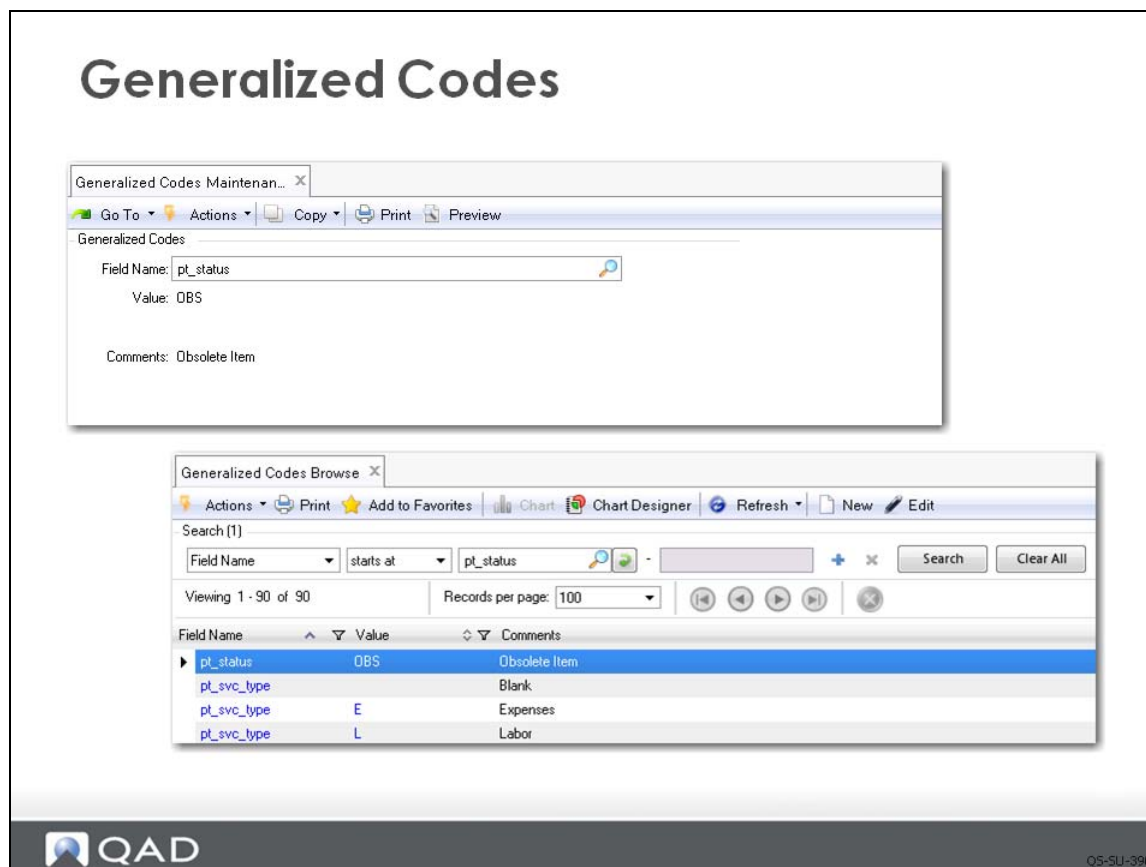
QAD Q5-SU-380

Item status codes are optional but very useful features. The codes are designed to relate to an items life cycle so we will set up two codes one for active items and one for obsolete items.

In the image above we see the code Active with the description Active Item. In the Image below we see the code OBS for obsolete items. In the case of the obsolete items we have advanced to the second frame and entered several inventory transaction codes that will now be prohibited for obsolete items. The codes may be selected by clicking on the lookup icon. Those we have selected for our example will prevent the user from adding a forecast, a purchase order, sales order or work order, for any item with the status code OBS.

Item status codes are user defined and you can setup as many as you need. Used in conjunction with inventory status codes they offer powerful control for your items.

Set Up Generalized Codes



Generalized Codes Maintenance (36.2.13) and Generalized Codes Browse (36.2.14)

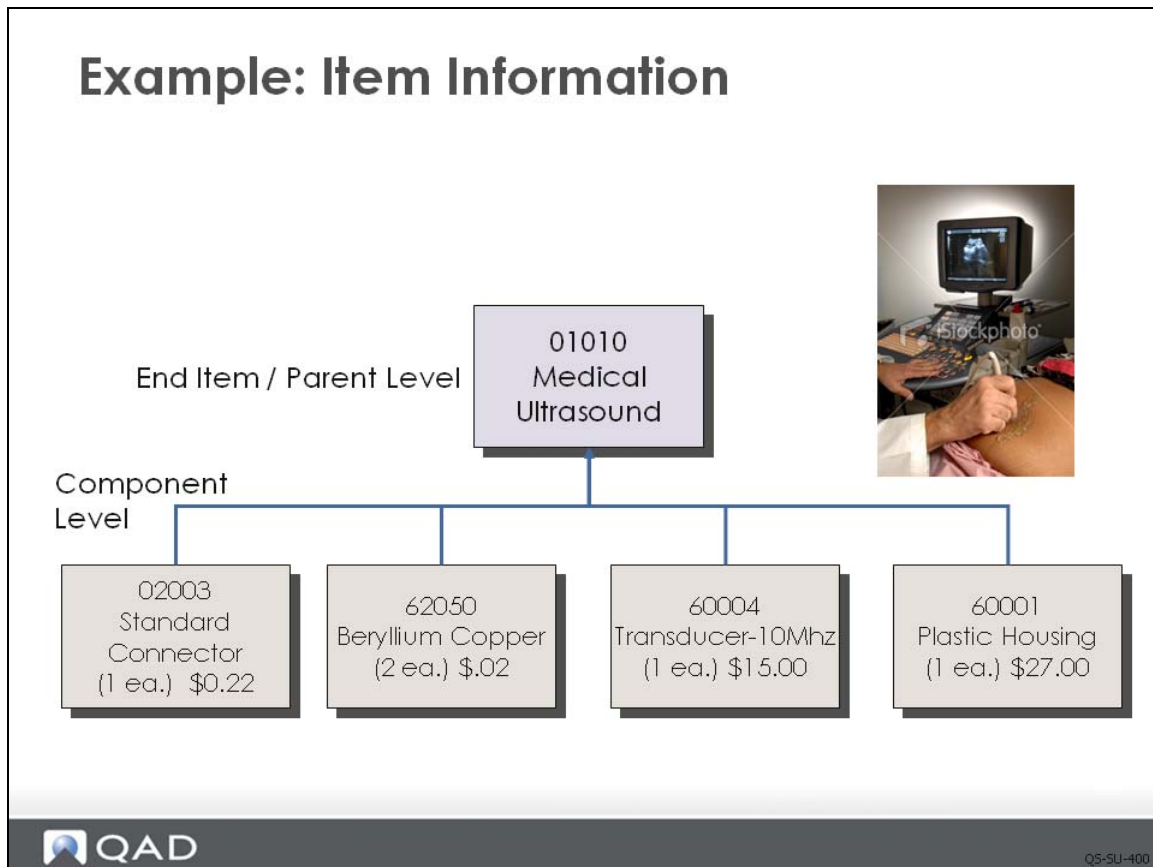
Once you have created your item status codes you may wish to enforce the use of only those you have created. This is done using generalized codes maintenance and is a user invoked tool for controlling the use of those coded fields which are user defined.

This example will then describe the process for any user defined coded field. In the item master maintenance screen roll your mouse pointer over the field Status and you will see in a small pop up box the program name for that field, pt_status. You can find the name of any active field by pointing at it.

You create the list of acceptable codes by entering the field name, then click Next. In the field labeled Value enter the code and click next. Then enter a description for the code and click next. This screen will cycle through as many codes as you wish to enter. When done you may check your work by using the browse as shown above.

Users can see the codes that have been set up by using the Look Up on the field.

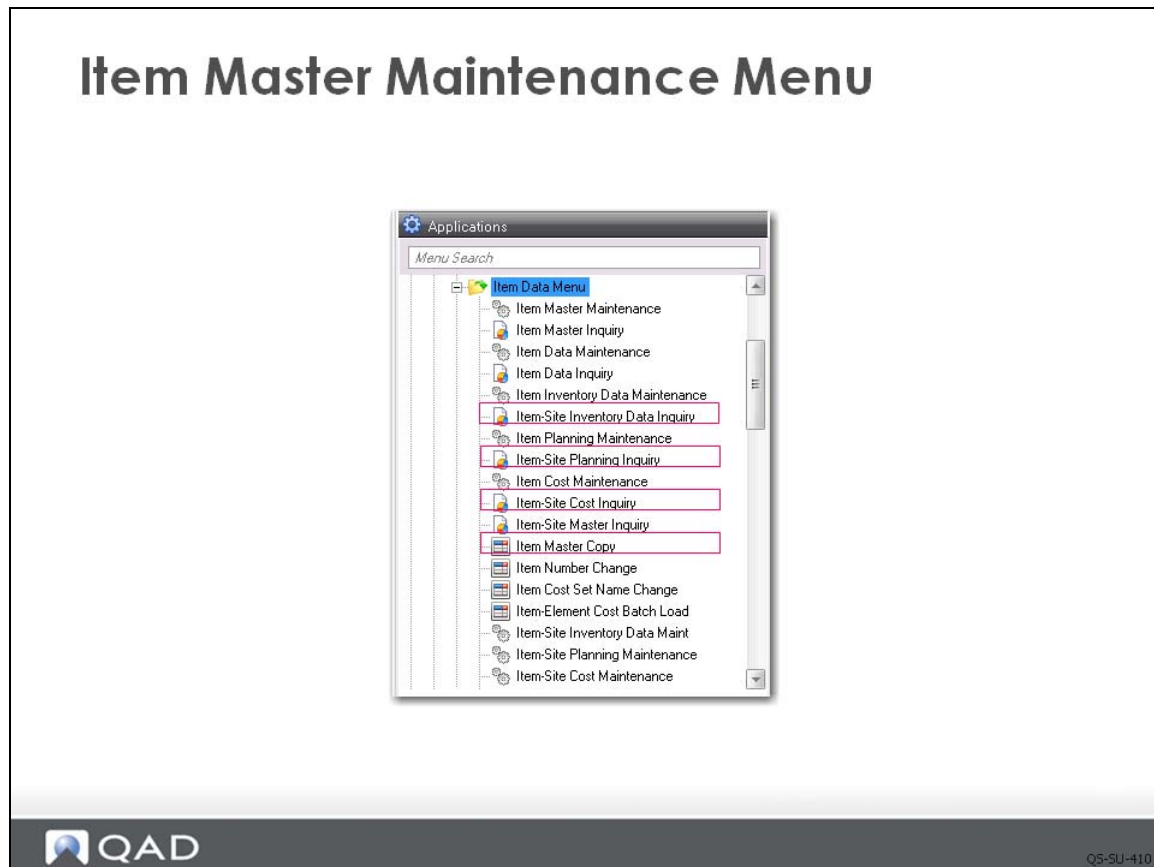
Example: Item Information



The product structure of the medical ultrasound is shown above.

Note In your activity you will need to setup multiple items. All the items belong to product line 10.

Item Master Maintenance Menu



Item Master Maintenance will be used to add all of the information for QMI's medical ultrasound and all of its components.

The Item Master Maintenance function at the top of the menu seen here, is a series of linked frames labeled; Item Data, Item Inventory Data, Item Planning Data and Item Cost Data. As highlighted, each of these functions can be accessed with its own separate menu selection. This is often useful for job separation as system security can limit access to a particular function only to those authorized to add or maintain that specific data.

Note In the activity you may find it more convenient to use one of the separate functions rather than cycle through all the frames in Item Master Maintenance.

You also see here separate functions for the same data at different sites. This training guide will use only one site, 10-100. If additional sites are used, each item can have different data at each site.

Item Data and Inventory Frames

Example: Item Data and Inventory

The screenshot displays the 'Item Master Maintenance' window for Item Number 01010, Description: Medical Ultrasound, and Unit of Measure: EA. The window is divided into several sections:

- Item Data:**
 - Prod Line: 10
 - Item Type: FINGOOD
 - Drawing: F-10000-A23
 - Added: 1/15/2002
 - Status: ACTIVE
 - Revision: D
 - Design Group: PRODMGMT
 - Group: Medical
 - Drawing Loc: B2-1
 - Size: 10
 - Promo Group: MEDICAL
 - Price Break Category:
- Item Inventory Data:**
 - ABC Class: A
 - Average Interval: 90
 - Lot/Serial Control: S
 - Cycle Count Interval: 90
 - Site: 10-100
 - Shelf Life:
 - Location: 010
 - Allocate Single Lot: ☐
 - Key Item: ☐
 - Location Type:
 - PD Receipt Status: ☐ Active: ☐
 - Auto Lot Numbers: ☐
 - WO Receipt Status: N-Y-N
 - Active: ☒
 - Lot Group:
 - Article Number: F10000-0123
 - Memo Order Type:

The QAD logo is visible in the bottom left corner, and the text 'QS-SU-420' is in the bottom right corner.

Item Master Maintenance (1.4.1)

In Item Master Maintenance (1.4.1), the item number is entered (01010), a description, and its unit of measure.

In the Item Data frame, the Product Line 10 is entered. Remember, each item must be assigned to one and only one product line. We use the status code Active in the field Status.

Note Unit of measure and product line are the only fields (besides the item number itself) that are required by the system. Units of measure are critical to both inventory control and costing. Careful consideration should be given to the units of measure you choose to use.

Important Item type, Item Status and Item group are optional and user defined. If you choose to use them plan carefully as codes offer additional capability in sorting browses, reports and inquiries. Item status is designed to be used in conjunction with inventory status code to help control inventory aspects of product life cycle management. If you choose to use these codes their use can be made mandatory and a pop of window can be provided to allow users to select valid codes from a list.

In the Item Inventory Data frame, site 10-100 is entered; this will appear as the default site. In the Location field, 010 is entered, which will appear as the default inventory location for this item. We also set the ABC Class code to A. This will be used for ABC analysis of inventory, managing inventory count tolerances and for cycle counting. Once the system has some data and history to work with the ABC class code can be computed by the system.

The default site and location can be overridden on any transaction by the user by simply typing over the default value and entering the site and or location to be used for the current transaction.

As we click next from the inventory data frame we advance to the shipping data frame. we will leave this data blank for the time being. We will advance past this frame by clicking next to the Item Planning Data frame.

Item Planning Data Frame

Example: Item Planning

Item Master Maintenance

Go To Actions Copy Print Preview Attach

Item Planning Price

Planning

Item

Item Number: 60001 Description: Durable Plastic Housing

Unit of Measure: EA

Item Planning Data

Mstr Sched: ☐

Plan Orders: ☒

Time Fence: 0

MRP Required: ☒

Order Policy: POQ

Order Qty: 0

Batch Qty: 0

Order Period: 7

Safety Stock: 0

Safety Time: 0

Reorder Point: 0

Revision: 0

Issue Policy: ☒

Buyer/Planner: 1-02

Supplier:

PO Site:

Purchase/Manufacture: P

Configuration Type:

Inspect: 1.0

Ins LT: 0

Cum LT: 0

Mfg LT: 4

Pur LT: 3

ATP Enforcement: NONE

Family ATP:

ATP Horizon: 0

Run Seq 1: 2

Phantom: ☐

Minimum Order: 0

Maximum Order: 0

Order Multiple: 0

Op Based Yield:

Yield Percent: 100.00%

Run Time: 0.000

Setup Time: 0.000

EMT Type: NON-EMT

Auto EMT Processing: ☐

Network Code:

Routing Code:

BOM/Formula:

Replenishment Method: Orders

QAD

QS-SU-430

Item Master Maintenance (1.4.1)

Note Item planning data screens can be accessed from either Item Master Maintenance (1.4.1) or Item Planning Maintenance (1.4.7). In the case of a different site using the same item but with a different planning data use Item Site Planning Maintenance (1.4.17).

QMI's Material Planning Department uses the Item Planning Data in this screen to determine how and when to replenish inventory. Let's look at a few of the fields and settings shown above.

The Planning Department wants to allow material requirements planning (MRP) to automatically create planned orders for this item, so the Plan Orders field has a check mark. When Plan Orders is Yes and a value is specified in the Order Policy field, as it is in this example, MRP generates planned purchase and work orders to satisfy net requirements for this item. However as a component this item is not master scheduled so the master schedule flag (Mstr Sched) is left unchecked.

The Order Policy determines the rules for planning orders. The ordering rule QMI applies to this item (01010) is Period Order Quantity (POQ). This means that MRP calculates demand for this item over the number of calendar days specified as the Order Period (which is 7 in this example) and creates one order to satisfy all demands in a seven day period.

Note Order policies and how they calculate order quantities are covered later in the course.

Another key field is the Purchase/Manufacture field. The durable plastic housing (60001) is a purchased part and that is indicated in this field by entering a “P.” The purchasing lead time is 3 days, which is the number of days it takes to complete the purchasing cycle for this item, from the date the need for a purchase is recognized to the date the item is received.

Note More generically the Purchase/Manufacture field defines the source for this item at this site. Its other values and how they work are covered in more detail later in the course.

Important The master schedule flag is normally checked only for those items the master scheduler needs to forecast or otherwise plan for. These are usually the end items the company sells. Most reports, inquiries and browses can be selected on master schedule items only. This is an excellent high level filter.

Item Cost Data Frame

Example: Item Cost Data Frame

Item Master Maintenance

Go To Actions Copy Print Preview Attach

Item: 01010 Item Number: 01010 Description: Medical Ultrasound

Item Planning Price

Price Cost

Item Number: 01010 Description: Medical Ultrasound

Unit of Measure: EA

Totals						
Totals:	13.36452	231.96882	245.33333	☐	03/01/10	☐

GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	225.71	225.71	☒	Material	☐
Labor	13.17	6.17	19.34	☒	Labor	☐
Burden	0.19452	0.08882	0.28333	☒	Burden	☐
Overhead	0.00	0.00	0.00	☒	Overhead	☐
Subcontr	0.00	0.00	0.00	☒	Subcontr	☐
				☐		☐



QS-SU-440

Item Master Maintenance (1.4.1)

Note Item cost screens can be accessed from either Item Master Maintenance (1.4.1) or Item Cost Maintenance (1.4.9). In the case of a different site using the same item but with a different cost use Item Site Cost Maintenance (1.4.18).

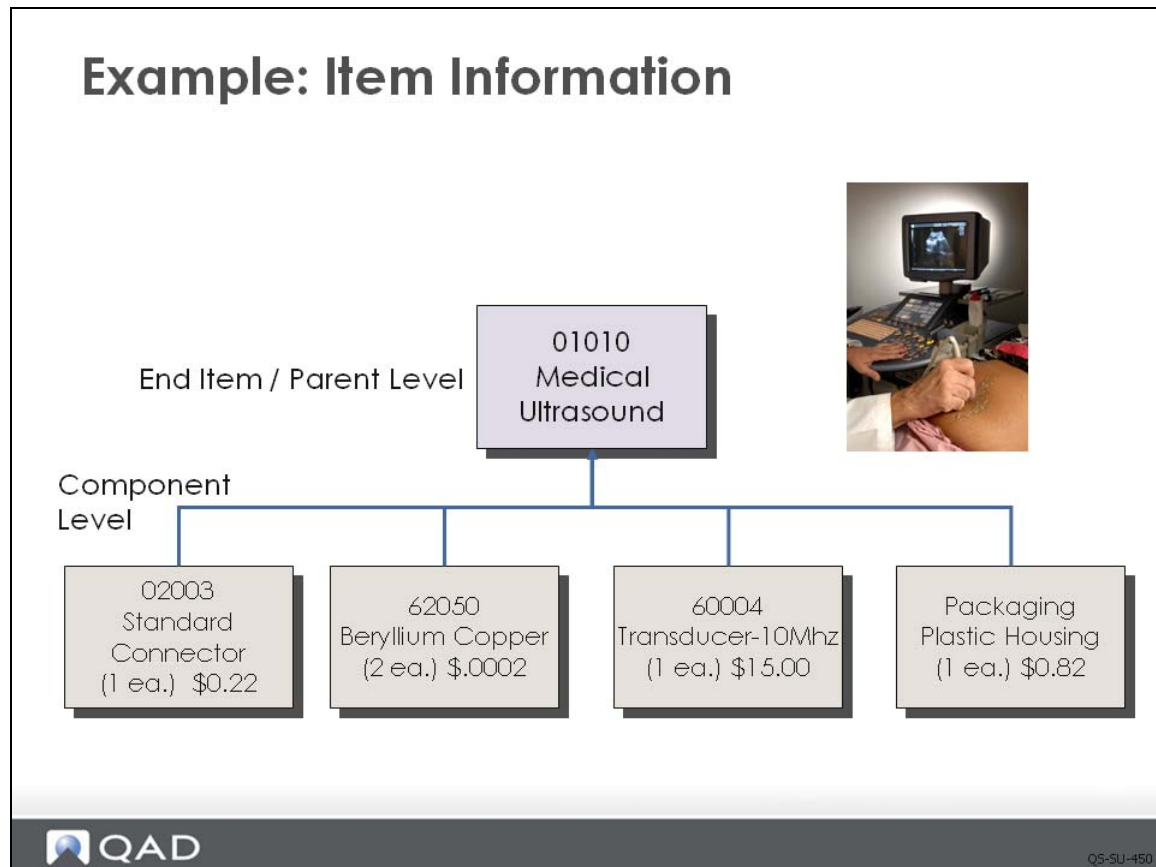
The item cost section is divided into three sections: price, general ledger cost, and current cost. The three frames appear sequentially with repeated clicks of the Next button or use of the Enter key.

In the first frame we will not enter a price as it is not our current intention to sell medical ultrasounds. It may be a market in the future as a service item for hospitals, in which case we will come back to this screen to enter a selling price.

For this example, we're concerned with the Current Cost Data frame, which is the third frame.

Referring back to the product structure for the complete device, we will add a material cost of \$225.71. In the case of a purchased item the material cost is the purchase cost. As a purchased item it has no lower-level manufacturing related costs, only "this-level" costs.

Set Up Product Structure



Let's look at the product structure for 01010 again.

Notice that there is a parent item (01010) and there are four component items (02003, 62050, 60004, 60001). In this example, we'll see how QMI added the component items to the parent, 01010.

Product Structure Maintenance

Example: Set Up Product Structure

Component	Description	Unit of Measure	Reference	Quantity	Start Date	End Date	Operation	BOM Code
01010	Medical Ultrasound	EA		1				01010
50001	Probe Unit - 10 Mhz	EA		1			0	50001
60001	Durable Plastic Housing	EA		1			0	60001
60002	Display / Readout	EA		1			0	60002
60003	Keyboard	EA		1			0	60003



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Product Structure Maintenance (13.5)

In Product Structure Maintenance, the parent item 01010 is entered first. Then component item 50001 is entered in the component item field. Clicking next advances to the quantity per field where the number of the component item required to make one of the parent item is entered.

While in the active window for the component item we can also add the operation number from the route where this component will be used. When completed for the first component, clicking next will bring us back to the component item field where we can enter the next component item as shown below.

Next Component Item

Example: Set Up Product Structure

The screenshot shows the 'Product Structure Maintenance' window. The 'Parent' is 01010 (Medical Ultrasound). The 'Component' being added is 50001 (Probe Unit - 10 Mhz). The 'Quantity' is 1, and the 'Unit of Measure' is EA. The 'Scrap' is 0.00%, and the 'Operation' is 0. The 'Start Date' and 'End Date' are both blank. The 'Forecast Percent' is 100.00%. The 'Option Group' and 'Process' fields have search icons. Below the form is a table showing the product structure hierarchy.

Component	Description	Unit of Measure	Reference	Quantity	Start Date	End Date	BOM Code
01010	Medical Ultrasound	EA		1			01010
50001	Probe Unit - 10 Mhz	EA		1			50001
02003	Standard Connector	EA		1			02003

Product Structure Maintenance (13.5)

Note the quantity per on the probe unit and the operation number. The additional components of the ultrasound are added in the same way.

Component Scrap

The field labeled scrap may be used to account for component scrap. For example the beryllium copper component in our example is a very small item. It is possible that some may be dropped and not found, or found to be damaged. In this case, based on our actual experience we may choose to add a small scrap value to the product structure at this operation. Later we will see how the planning systems will adjust the purchase requirements (and the item cost) to account for this loss.

Effective Dates

The elements that make up a product structure have a range of effective dates so new components can be phased in and others phased out. The Start Date defaults to the system date. By leaving the End Date blank, the item will be effective until that date is changed.

Review Product Structure Inquiry

Example: Product Structure Inquiry

Product Structure Inquiry X

Go To Actions Copy Print Preview Attach

Parent Item/BOM Code: 01010 Output: PAGE

Parent Item/BOM Code: 01010 Medical Ultrasound EA

As Of: 5/25/2010 Levels: Rev: PCO Number: ID: Domain: Output: PAGE

Level	Component Item	Description	Quantity	Per	UM	Ph	T	Iss
Parent	01010	Medical Ultrasound			EA			
1	50001	Probe Unit - 10 Mhz	1.0		EA			
.2	02003	Standard Connector	1.0		EA			
.3	62050	Beryllium Copper	0.0001		RL			
.3	62050	Beryllium Copper	0.0001		RL			
.3	90031	Packaging	2.0		EA			
.2	60004	Transducer - 10 Mhz	1.0		EA			
1	60001	Durable Plastic Housing	1.0		EA			
1	60002	Display / Readout	1.0		EA			
1	60003	Keyboard	1.0		EA			
1	60005	Battery	1.0		EA			
1	60006	Monitor Cable	1.0		EA			
1	60007	Movable Cart	1.0		EA			
1	60008	Printer	1.0		EA			
1	60017	Mouse Pad	1.0		EA			
1	60018	Dust Cover	1.0		EA			
1	60050	Base Unit / CPU	1.0		EA			
1	90093	Shipping Carton	1.0		EA			

13.6 Product Structure Inquiry bmpsiq.p



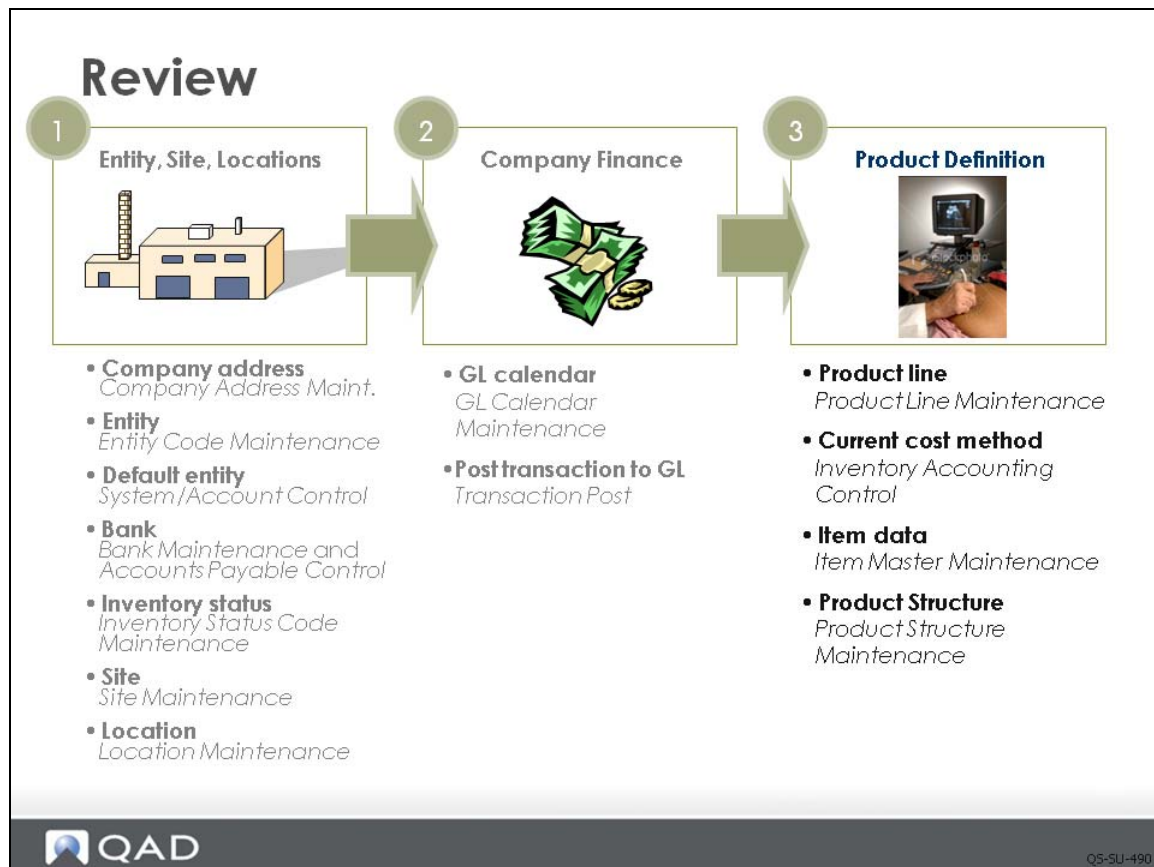
QS-SU-480

Product Structure Inquiry (13.6)

Once the product structure is defined, it can be reviewed in Product Structure Inquiry (13.6). The screen above shows the request setup and the inquiry output.

We see that the parent item, the ultrasound, is listed first, and the component items are listed below it. You can quickly see key information, such as unit of measure for each item and the quantity required to make one complete device.

Review



In this chapter, we saw how products are defined in QAD EE, specifically how:

- Product lines are set up in Product Line Maintenance. They provide inventory accounts for an item so that costs can be tracked.
- Current costs for items are calculated based on the setting in Inventory Accounting Control (Last, Average, None)
- Item data is entered by area-general, inventory, planning, and cost data
- Product structure is defined in Product Structure Maintenance (or Formula Maintenance) indicating the quantity per and routing operation.

Exercise 2

Part One

Set Up a Product Line

Important Remember to check the screen shots in the example if you are unsure how to fill in the data fields for these activities.

- 1 Use Product Line Maintenance (1.2.1) to create a new product line, 15.

This will be the product line for the medical ultrasound quality check.

Key fields to populate are:

Field	Data
Product Line	15; click Next
Description	Quality

Click Next slowly 6 times.

Review the account numbers. Where did this default data come from? Accept the default accounts and update the record. (When the product line is highlighted, click Back.)

Modify Inventory Accounting Control

- 2 Use Inventory Accounting Control (36.9.2). Accept the defaults, but change Current Cost to Last.

Field	Data
Current Cost	Last

Modify Inventory Control

- 3 In Inventory Control (3.24), change the default site to 10-101.

Field	Data
Default Site	10-101

Define Item Status Codes

- 4 Use Item Status Code Maintenance (1.1.5) to set up two status codes, Active for Active and OBS for Obsolete.
- 5 Use Item Master Maintenance (1.4.1) to verify that item 01010 has been created. Key fields to populate are:

Field	Data
Item Number	01010; click Next twice
Site	10-101 (in Item Inventory Data frame)
Location	010 (in Item Inventory Data frame)

Click Next until the Item Number is highlighted, then click Back.

- 6 Define the planning data for the end item in the Item Planning Data frame (or use Item Planning Maintenance (1.4.7)). Key fields to populate are:

Field	Data
Item Number	01010; click Next
Mstr Sched	Yes (checked)
Plan Order	Yes (checked)
Order Policy	POQ
Order Qty	0
Purchase/Manufacture	M
Min Order	1
Order Mult	1

Use default values for all other fields.

Click Next until the Item Number is highlighted, click Back.

Part Two

We will now use Site 10-100 for the remaining exercises. Make the assumption that you have done everything above in Site 10-101.

- 1 Use Inventory Control and make 10-100 the default site.

Define Component Items

Most of the necessary component items have been provided for you. We will add two more.

- 2 Use Item Master Maintenance (1.4.1) to add your component items to your database.

Field	Data
Item Number	60017; click Next
Description	Mouse Pad
Unit of Measure	EA; click Next
Prod Line	10
Item Type	COMP
Status	ACTIVE
Group	Medical; click Next
Location	020; click Next twice
Supplier	10S1002
Purchase/Manufacture	P
Price	3.99
Material	0.49

Field	Data
Item Number	60018; click Next
Description	Dust Cover
Unit of Measure	EA; click Next
Prod Line	10

Field	Data
Item Type	COMP
Status	ACTIVE
Group	Medical; click Next
Location	020; click Next twice
Supplier	10S1002
Purchase/Manufacture	P
Price	9.99
Material	2.49

Item Inventory Data

- 3 Use Item Inventory Data Maintenance (1.4.5) and check the following:
Make sure that the Site for each Item Number is 10-100, change if not.

Item Number	ABC Class	Location
01010	A	010
50001	B	020
02003	C	010
62050	A	020
90031	C	020
60004	B	020
60001	C	020
60002	B	020
60003	B	020
60005	B	020
60006	B	020
60007	C	020
60008	B	020
60017	C	020
60018	C	020
60050	A	020
90093	C	020

Item Planning Data

- 4 Use Item Planning Maintenance (1.4.7) and quickly scan the following component items used to produce the medical ultrasound unit (01010). You will enter 2 more in the next step.

Note which items are purchased or manufactured.

Item Number 01010:

Field	Data
Mstr Sched	Yes
Plan Order	Yes
Order Policy	POQ

Field	Data
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	M
Mfg LT	0
Minimum Order	1
Order Multiple	1

Item Number 50001:

Field	Data
Mstr Sched	No
Plan Order	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	M
Mfg LT	2
Minimum Order	0
Order Multiple	0

Item Number 02003:

Field	Data
Mstr Sched	Yes
Plan Order	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	M
Mfg LT	1
Minimum Order	0
Order Multiple	1000

Item Number 62050:

Field	Data
Mstr Sched	No
Plan Order	Yes
Order Policy	POQ
Order Qty	10
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	3
Minimum Order	1
Order Multiple	1

Item Number 90031:

Field	Data
Mstr Sched	No
Plan Order	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	2
Minimum Order	0
Order Multiple	0

Item Number 60004:

Field	Data
Mstr Sched	No
Plan Order	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	2
Minimum Order	0
Order Multiple	0

Item Number 60001:

Field	Data
Mstr Sched	No
Plan Order	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	5
Minimum Order	0
Order Multiple	0

Item Number 60002:

Field	Data
Mstr Sched	No
Plan Order	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P

Field	Data
Pur LT	5
Minimum Order	0
Order Multiple	0

Item Number 60003:

Field	Data
Mstr Sched	Yes
Plan Order	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	5
Minimum Order	0
Order Multiple	0

Item Number 60005:

Field	Data
Mstr Sched	No
Plan Order	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	1
Minimum Order	0
Order Multiple	0

Item Number 60006:

Field	Data
Mstr Sched	No
Plan Order	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	2
Minimum Order	0
Order Multiple	0

Item Number 60007:

Field	Data
Mstr Sched	No
Plan Order	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	2
Minimum Order	0
Order Multiple	0

Item Number 60008:

Field	Data
Mstr Sched	No
Plan Order	Yes
Order Policy	POQ
PO Site	<blank>
Order Qty	0
Purchase/Manufacture	P
Pur LT	5
Minimum Order	0
Order Multiple	0

Item Number 60050:

Field	Data
Mstr Sched	No
Plan Order	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	5
Minimum Order	5
Order Multiple	5

Item Number 90093:

Field	Data
Mstr Sched	No
Plan Order	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	1
Minimum Order	0
Order Multiple	0

Define Parent/Component Relationships for Items

In this activity you define parent/component relationships for your items.

- Using Product Structure Maintenance (13.5) define the parent/component relationships for your product.

In the Items Tab, double-click item 01010, and drag the lower frame up to view the component items already entered. Note that Item 50001 is a parent item to 02003 and 60004.

Add item 60017 and 60018 as components of item 01010.

Double-click item 60017 in the lower frame and note that the upper frame is now showing the Product Structure Maintenance Tab. Accept the default values.

- Click the Save icon at the top of the screen.

Product Structure Inquiry

Example: Product Structure Inquiry

Product Structure Inquiry X

Go To Actions Copy Print Preview Attach

Parent Item/BOM Code: 01010 Output: PAGE

Parent Item/BOM Code: 01010 Medical Ultrasound EA

As Of: 5/25/2010 Levels: Rev: PCO Number: ID: Domain: Output: PAGE

Level	Component Item	Description	Quantity	Per	UM	Ph	T	Iss
Parent	01010	Medical Ultrasound			EA			
1	50001	Probe Unit - 10 Mhz	1.0		EA			
.2	02003	Standard Connector	1.0		EA			
.3	62050	Beryllium Copper	0.0001		RL			
.3	62050	Beryllium Copper	0.0001		RL			
.3	90031	Packaging	2.0		EA			
.2	60004	Transducer - 10 Mhz	1.0		EA			
1	60001	Durable Plastic Housing	1.0		EA			
1	60002	Display / Readout	1.0		EA			
1	60003	Keyboard	1.0		EA			
1	60005	Battery	1.0		EA			
1	60006	Monitor Cable	1.0		EA			
1	60007	Movable Cart	1.0		EA			
1	60008	Printer	1.0		EA			
1	60017	Mouse Pad	1.0		EA			
1	60018	Dust Cover	1.0		EA			
1	60050	Base Unit / CPU	1.0		EA			
1	90093	Shipping Carton	1.0		EA			

13.6 Product Structure Inquiry bmpsiq.p



QS-SU-480

Product Structure Inquiry (13.6)

Use Product Structure Inquiry (13.6) to review the product structure in. Make sure it looks like the example above with the addition of 60017 and 60018.

Product Structure by Item Report

Product Structure by Item Report

10USA

Level	Component Item	Reference	Description	Quantity	Per UM	Op	Ph	T	Iss	Start	Eff	End	Eff
Parent	01010		Medical Ultrasound		EA								
1	50001		Rev: D Probe Unit - 10 Mhz	1.0	EA								
.2	02003		Rev: AA Standard Connector	1.0	EA								
..3	62050	Operation 10	Beryllium Copper	0.0001	RL	10							
..3	62050	Operation 30	Beryllium Copper	0.0001	RL	30							
..3	90031		Packaging	2.0	EA								
.2	60004		Transducer - 10 Mhz	1.0	EA								
1	60001		Durable Plastic Housing	1.0	EA								
1	60002		Display / Readout	1.0	EA								
1	60003		Keyboard	1.0	EA								
1	60005		Battery	1.0	EA								
1	60006		Monitor Cable	1.0	EA								
1	60007		Movable Cart	1.0	EA								
1	60008		Printer	1.0	EA								
1	60050		Base Unit / CPU	1.0	EA								
1	90093		Shipping Carton	1.0	EA								

End of Report

You can also use the Product Structure by Item Report (13.8.1) to review your work.

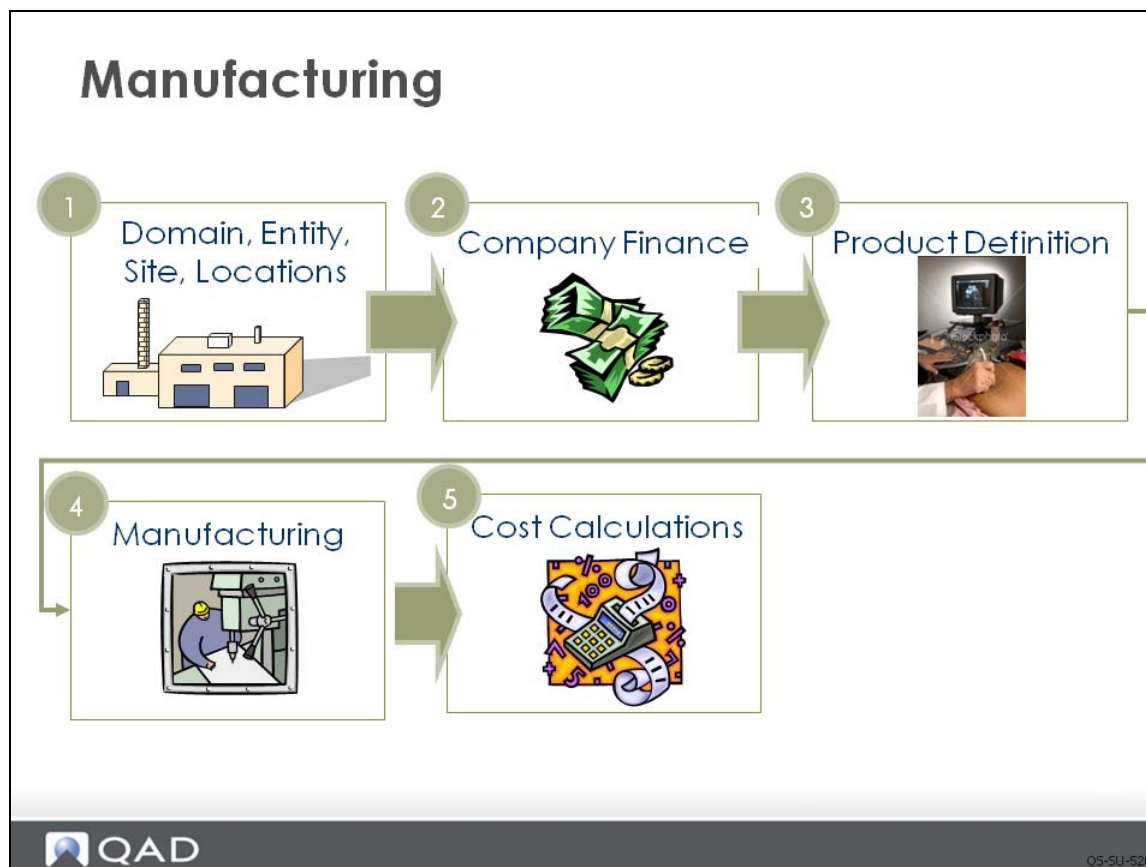
This view of the product structure also displays the operation number the component is used at. You can direct the report to your monitor by selecting PAGE in the Output field.

The operations will be setup in the next section. When new items are created in manufacturing the product structure and the route are usually developed together, so all the information is available to the person entering item data.

Chapter 4

Set Up Manufacturing Environment

Overview



Now that we have seen how you define a product in QAD Enterprise Applications, we will look at the manufacturing environment in which a product is built. Our topics in this chapter are the shop calendar, departments, work centers, machines, and routings.

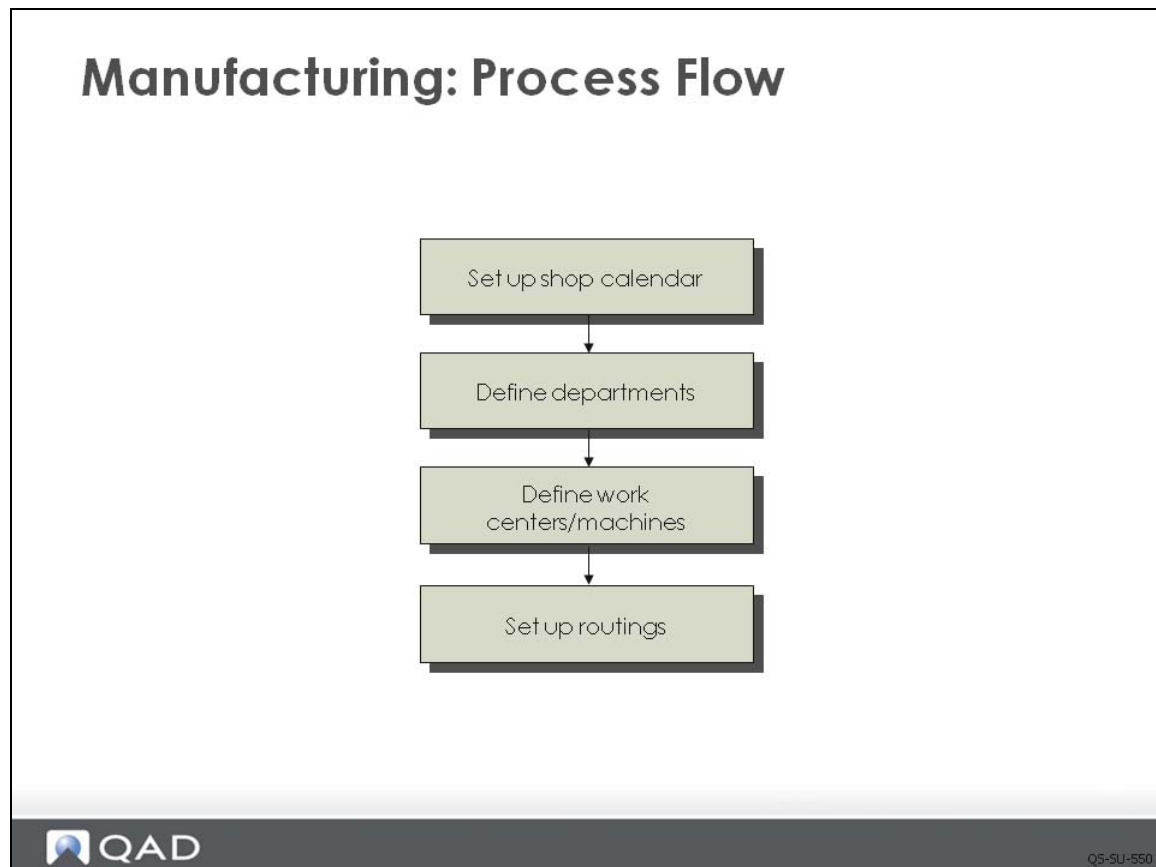
- Key Concepts
 - Shop Calendar
 - Departments and Work Centers / Machines
 - Routings
- Example
 - Set Up Shop Calendar
 - Define Departments
 - Define Work Centers / Machines
 - Set Up Routings
- Activities

Learning Objectives

When you finish this chapter, you should be able to:

- Describe the information provided by a department
- Describe the information provided by a work center
- Describe the information provided by a routing
- Set up a shop calendar, department, work center, and routing

Key Concepts

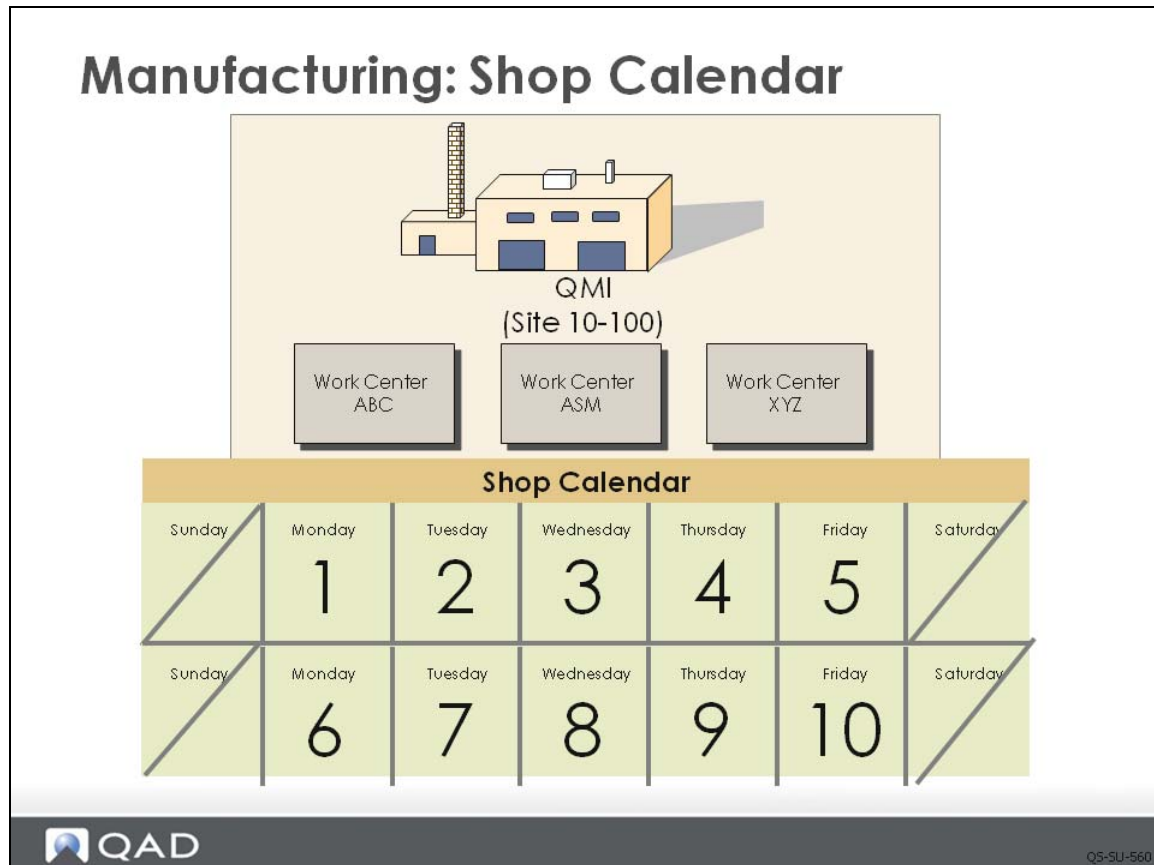


Once you have set up your items in Item Master Maintenance, you need to identify where and how they are manufactured. This is done by:

- Setting up shop calendars.
- Setting up manufacturing departments, work centers/machines
- Defining the manufacturing operations required to produce each of the items

On the following pages, we'll follow the order shown in the process flow below, so we'll discuss the shop calendar next.

Shop Calendar



The shop calendar is required for planning, manufacturing, and distribution modules. The calendar indicates what days the plant is open and how many hours are worked each day (see figure above). The calendar determines the hours a work center is available to do work. This information is also used by capacity requirements planning.

This information is used to schedule:

- Start and due dates for MRP planned orders, master schedule orders, and work orders
- Operations for work orders and repetitive schedules
- The procurement or shipment of materials through association with suppliers and customers

Use Calendar Maintenance and Holiday Maintenance to maintain the calendars.

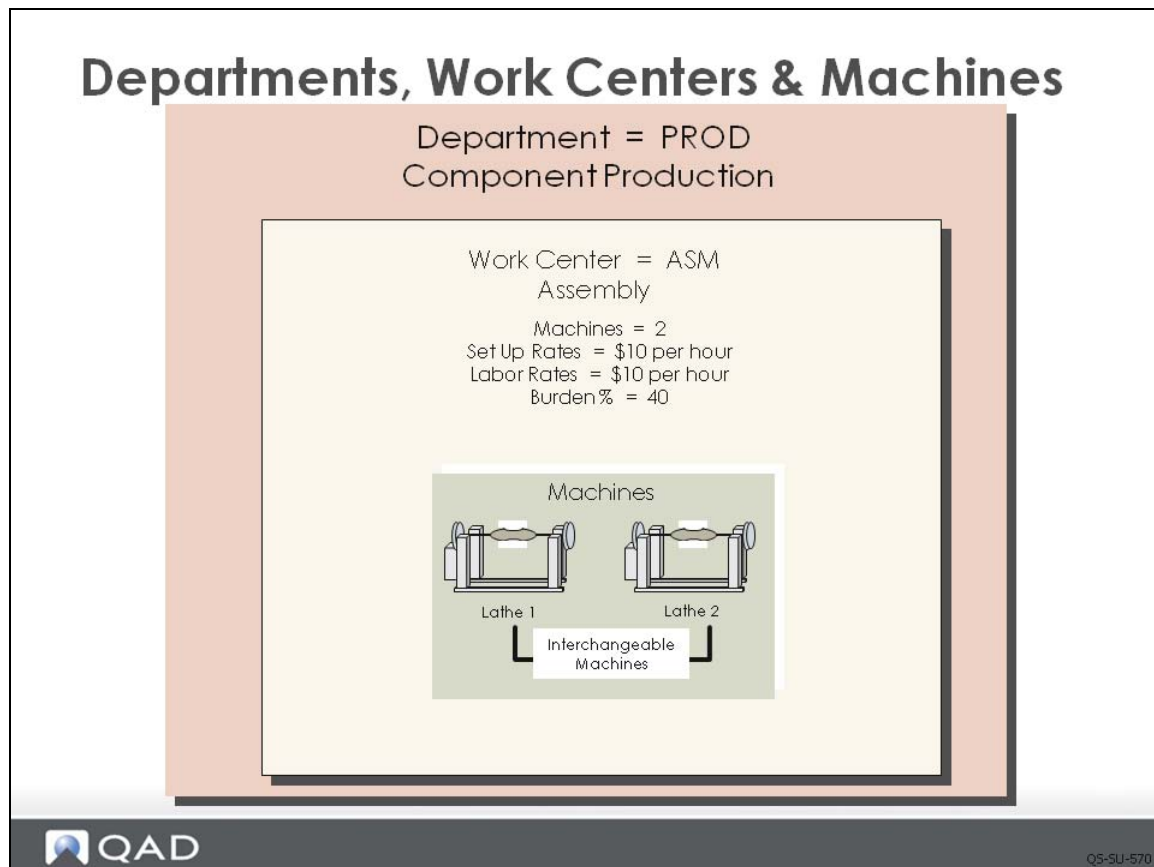
Calendar maintenance is used to setup a default calendar for all sites. Then calendars are defined for work centers that are different than the default calendar. Then any machines within a work center that have different calendars. A calendar defines whether a day is a work day or not and how many hours per day are available for work.

An important point about calendars is whether a day is indicated as a work day or not. If the work day field is not checked an order cannot be due on that day. None of the planning functions in QAD will schedule an order to be due on a non-work day.

In addition to the shop calendar and basic scheduling, the manufacturing environment is defined by its departments, work centers, and machines, which we will discuss next.

Use holiday maintenance to turn off a normal work day, that is, make it a non-work day for the entire site. Use Calendar Reference to modify a calendar for the short term. For example, add extra hours for a peak season, or indicate a two week shut down.

Departments and Work Centers / Machines



Let's look at how work areas in a manufacturing facility map onto the QAD Enterprise Applications concept of departments, work centers, and machines.

Departments

A manufacturing facility is split into departments for control purposes. Each production unit (work center) must belong to one, and only one, department. This grouping is used primarily for capacity planning and accounting purposes. GL accounts are attached to each department. At least one department must be defined before you can enter work centers or routings.

Work Centers

A work center is a specific production unit within a department consisting of one or more people and/or machines. In QAD Enterprise Applications, work centers are the most basic units used for operation scheduling, capacity requirements planning, and cost determinations for GL transactions. You must have at least one work center in order to set up routings and to report labor.

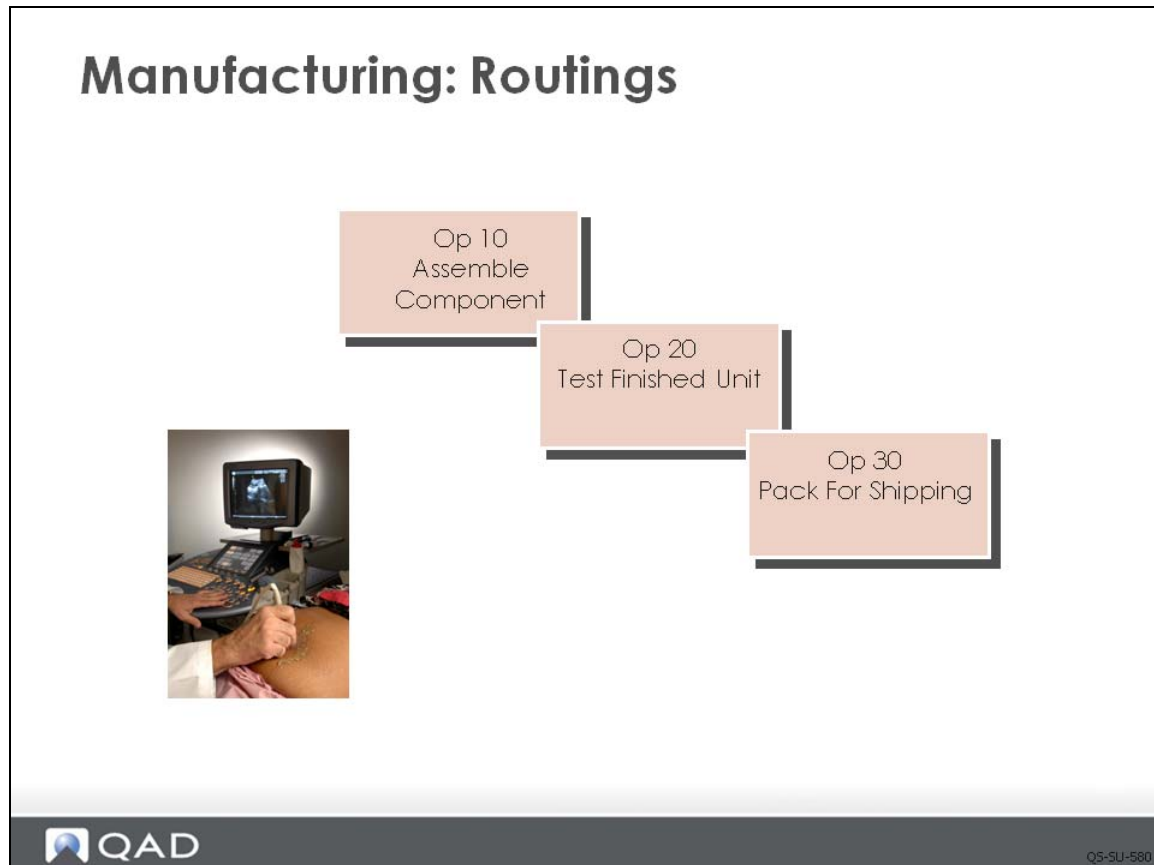
Machines

In a work center with multiple identical machines you may choose to define one work center with multiple machines. In this case the machine (code or number) field is left blank, and the number of machines is entered in the Machines field. When there are more than one identical machines in a work center, you can specify the number of machines that can be used for each operation (parallel production) in the route operation.

If the machines are not completely interchangeable identify each one separately. For example, you have multiple similar machines but they run at different rates. Or perhaps an older machine has a higher rate of rejects. In this case each machine will have a unique machine code. The combination of the work center and the machine will identify a specific machine.

Note While defining unique work center machine combinations allows more precise costing and scheduling, it does limit the ability of the work center supervisor to decide which machines to schedule work on without generating method variances.

Routings



To manufacture an item or product, you must complete one or more activities or operations. The list of required operations is called a routing, which basically defines the process needed to make the item. If a product structure is the list of ingredients in a recipe, a routing is the directions or instructions needed to process the ingredients to achieve the desired end product.

The routing describes:

- The steps required to make the item (operations)
- Where the steps are performed (work center)
- How long they take (queue time, setup time, run time, wait time, and move time)
- The expected yield percentage at each operation (yield%)

Note Queue time, setup time, run time, wait time, and move time are all elements of lead time. These will be discussed in the section on routes.

For example, in manufacturing a medical ultrasound, there might be a routing with several operations with instructions to assemble the various components. How many operations, how they are sequenced, how much detail is included with each, is determined by how the business has setup their process and how they want to manage it. In a highly automated process you may have only one operation that simply says “assemble components. In a very manual assembly process you may have many very detailed steps.

The department and work center codes associated with routing operations link actual production results with capacity planning, cost accounting, and other programs.

Alternate Routings

The normal situation is to have the route code be the same as the item number. In the case where there are several routes that will produce the same item alternate routes are defined with different routing codes. The primary route, or the route you will use most often can be linked to the item number in Item Planning Data Maintenance.

Example

In this example, we will see how QMI's Manufacturing Department sets up a:

- Shop calendar with five eight hour days
- Department called 0010 with a labor capacity of 8 hours/day
- Work center called 1000 with a setup rate of \$5.00/hour, a labor rate of \$4.50/hour and labor burden of 0.01%
- Routing with three operations:
 - Operation 10 (assembly) requires 0.5 hours setup time to get the components from the inventory room; additionally, per device, it requires 1.00 hr. run time to assemble the ultrasound.
 - Operation 20 (test) requires 0.5 hr. setup time, and a run time of 0.2 hr.
 - Operation 30 (pack) requires 0.5 hr. setup time, and 0.06 run time.

Set Up Shop Calendar

Example: Set Up Shop Calendar

The screenshot shows the 'Calendar Maintenance' window in QAD. The window has a title bar with a close button. Below the title bar is a menu bar with 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. Below the menu bar is a header area with 'Site: 10-100', 'Work Center: 1000', and 'Machine:'. Below the header area is a main content area with 'Site: 10-100', 'Ultrasound Mfg Site', 'Work Center: 1000', 'Machine:', and 'General Assembly'. Below the main content area is a table with two columns: 'Work Day' and 'Hours'.

Work Day	Hours
Sunday: ☐	0.00
Monday: ☒	8.00
Tuesday: ☒	8.00
Wednesday: ☒	8.00
Thursday: ☒	8.00
Friday: ☒	8.00
Saturday: ☐	0.00



Q5-SU-590

Calendar Maintenance (36.2.5)

The shop calendar is set up in Calendar Maintenance (36.2.5). This calendar shows a five day week, Monday - Friday, with eight hours available for each day.

If additional sites and or work centers/machines are created they will pick up this calendar as a default, but could then be changed to site or work center/machine specific calendars.

Additional Notes

The system allows separate shop calendars for each site/work center/machine that you create. Each can have its own work days and work-day duration entered in Calendar Maintenance. Holidays that affect all calendars can be entered in Holiday Maintenance, but work-center-specific holidays must be entered in Calendar Maintenance using the Reference field.

Define Departments

Example: Define Departments

Department Maintenance

Go To Actions Copy Print Preview Attach

Department: 0010 Default Sub-Account: Default Cost Center:

Department: 0010

Default Sub-Account: Override:

Default Cost Center: Override:

Description: Manufacturing

Labor Capacity: 8

Cost of Production: 5770	Mech	
Labor: 5120	Mech	mfg
Burden: 5220	Mech	mfg
Labor Usage Variance Acct: 5140	Mech	mfg
Labor Rate Variance Acct: 5150	Mech	mfg
Burden Usage Variance: 5240	Mech	mfg
Burden Rate Variance: 5250	Mech	mfg



Q5-SU-600

Department Maintenance (14.1)

QMI production has set up a department called 0010 using the function Department Maintenance (14.1). As mentioned earlier, a department is used primarily for capacity planning and accounting purposes. In that regard, notice that Labor Capacity is entered here. It is 8 in this example, which means that this department has 8 hours of labor capacity per day Monday through Friday based on the Shop Calendar (more on Labor Capacity below). This implies that there is one person in this department as the calendar shows 8 hours per day. If there were five people in the department we would enter 40 in this field.

Also notice the account codes defaulting from the Domain/Account control - all are manufacturing related. In this case we also have sub-accounts, cons which is a short code for consumer goods, and in the case of the variance accounts a cost center code of Mfg. to indicate these are manufacturing related variances.

Important If it is decided a given work center requires cost of production to be booked to a different account or subaccount then you need to setup a new department for that work center.

Additional Notes

Labor Capacity. Labor Capacity is the total number of hours of work that can be performed within a department per day. QMI defined day length in Calendar Maintenance (shop calendar) for its work center/machine. The department labor capacity is entered manually as the sum of the capacities of all work centers and machines in the department. Capacity Requirements Planning (CRP) uses labor capacity to calculate capacity and load by department.

Important Care should be used in setting the department labor capacity value as the system assumes all labor in the department can be used in any work center in the department. This is seldom the case and may be the cause of setting up more departments.

Department Accounts. Department account codes are used:

- When reporting labor and downtime in the Shop Floor Control and Repetitive modules
- When backflushing inventory and closing the accounting for completed work orders

Define Work Centers / Machines

Define Work Centers / Machines

Work Center Maintenance
Go To Actions Copy Print Preview Attach

Work Center: 1000
Machine:
Department: 0400

Work Center: 1000
Machine:

Description:

Department: Assembly

Queue Time:
 Wait Time:
 Mach/Op:

Setup Crew:
 Run Crew:
 Machines:
 Mach Bdn Rate:

Setup Rate:
 Labor Rate:
 Labor Burden Rate:
 Labor Bdn %:

Q5-SU-610

Work Center Maintenance (14.5)

QMI has set up a work center 1000 called General Assembly. Because there is only one machine (actually just a work bench) in this work center, QMI does not need to specify a machine in the Machine field so it is left blank. If there were two or more machines and they could not be used interchangeably, then QMI would need to enter a machine code to specify machines. If the machines were completely interchangeable then you could leave machine code blank and put the number of machines in the Machines field.

Notice that this work center belongs to the department 0010, which QMI set up in the previous step.

Machines

Other fields to note are Machines/Operation. This tells us the number of machines, at this work center, that can work simultaneously to process an operation. In this example, there is only one machine per operation. And, when we look at the Machines field, we see that there is only one machine in this work center.

If there are multiple machines per operation then the processing time for an operation that uses that work center/machine combination will be cut in half. Any setup time would be doubled.

Cost Calculations

Important information for cost calculations is the rate information. Machine Burden Rate, Setup Rate, Labor Rate, Labor Burden Rate, and Labor Burden Percent all enter into item cost calculations and labor feedback functions to determine actual costs and cost variances.

Additional Notes

In a work center, either the number of machines or the number of people limits capacity. The Machines field contains the number of machines or people. Capacity is then calculated by multiplying total hours (from the work center calendar) by the number of machines.

Field Definitions

Machine Burden Rate . The burden rate per hour applicable to machine run time and setup at this work center.

Setup Rate . The average hourly rate paid to set up this work center.

Labor Rate . The average rate paid per labor hour to run this work center.

Labor Burden Rate . The labor burden rate per hour applicable to both setup and run time at this work center.

Labor Burden Percent . The labor burden percentage applicable to the total labor cost at this work center.

Set Up Routings

QMI's Production Manager has set up the routing in Routing Maintenance. Notice that the routing code is the same as the item number for the completed device (01010). This is usually the case.

In this example, there are three operations involved in assembling a medical ultrasound:

- Operation 10 requires 0.5 hours setup time to get the jig from the tool room; additionally, per device, it requires 1.0 hr. run time to assemble the medical ultrasound.
- Operation 20 requires 0.5 hr. setup time, and, 0.2 hr. run time to test the device.
- Operation 30 requires 0.5 hr. setup time, and 0.6 hr. run time to pack the ultrasound for shipment.

Setup and Run Times

Example: Set Up Routing Op 10

Routing Maintenance

Go To Actions Copy Print Preview Attach

Routing Code: 01010 Standard Operation: Standard Operation:

Routing Code: 01010 Medical Ultrasound

Operation: 10 Start Date: End Date:

Standard Operation:

Work Center: 1000 General Assembly

Machine: ASSEMBLE COMPONENTS

Machines per Operation: 1 Milestone Operation: ☒

Overlap Units: 0 Subcontract LT: 0

Queue Time: 0.25 Setup Crew: 1.00

Wait Time: 0.25 Run Crew: 1.00

Setup Time: 0.5 Tool Code:

Run Time: 1.0 Supplier:

Move Time: 0.0 Inventory Value: 0.00

Start Date: Subcontract Cost: 0.00

End Date: Comments:

Yield Percent: 100.00%



Q5-SU-620

Routing Maintenance (14.13.1)

Setup and run times are given for each operation. For operation 10 the setup involves gathering the components. The worker is allowed one half hour to get the components. These times are converted into decimal hours for the routing standard times by dividing the minutes by 60.

Note There is also a Rate Based Routing Maintenance at menu position (14.13.2) which uses pieces per hour rather than decimal hours per piece to set the time standard for the operation.

Important Be careful not to use the Standard Operation field by mistake. This field has a special use that is covered in detail in the course Routings and Work Centers. We will not be using this feature in this course.

Routing Maintenance

Example: Set Up Routing Op 20

Routing Maintenance X

Go To Actions Copy Print Preview Attach

Routing Code: 01010 Standard Operation: Standard Operation:

Routing Code: 01010 Medical Ultrasound

Operation: 20 Start Date: End Date:

Standard Operation:

Work Center: 1050 Product Test

Machine:

Description: TEST FINISHED UNIT

Machines per Operation: 1 Milestone Operation: ☒

Overlap Units: 0 Subcontract LT: 0

Queue Time: 0.25 Setup Crew: 1.00

Wait Time: 0.25 Run Crew: 1.00

Setup Time: 0.5 Tool Code:

Run Time: 0.2 Supplier:

Move Time: 0.0 Inventory Value: 0.00

Start Date: Subcontract Cost: 0.00

End Date: Comments: ☐

Yield Percent: 100.00%



QS-SU-630

Routing Maintenance (14.13.1)

For operation 20, testing the ultrasound, the run time is 0.2 hour, or 12 minutes

Field Definitions

Queue Time . The time work normally waits at a work center before the operation begins.

Setup Time . The time required to prepare the work center/machines for processing. This is independent of batch size.

Run Time . The standard amount of time required to process a single unit of this item. It can be entered as the units per hour or run time per batch, but internally, this is converted to a run time per unit.

Wait Time . The time spent waiting after the operation is done. For example, drying, curing, cooling. This is based on a 24-hour clock, not the shop calendar.

Move Time . The time a work order is in transit from one operation to the next. Per order independent of order size.

Subcontract Lead Time . A routing operation can be a task preformed by an outside vendor or sub-contractor. In that case this is the number of calendar days it takes to process the standard order quantity at the subcontractor's site. This includes any transit time.

Yield Percent . The normal yield percentage for this operation. The percentage of any order expected to be in usable condition after this operation (used to calculate costs).

Yield in the operation route is intended to be used for scrap that occurs at a specific operation due to some aspect of that operation. It consumes all of the components that have been issued up to that point.

This is in contrast to scrap in the Product Structure which is scrap associated with a specific component at a specific operation. It is important in setting up structures and routes to account for scrap and yield as accurately as possible and in the correct place. A test is; at the given operation, is the component scrapped before being assembled (component scrap in the structure) or is the assembly scrapped after the component is assembled, (yield in the route).

Review results in Routing Inquiry

Review Results in Routing Inquiry

Routing Inquiry

Routing Inquiry - 5/26/2010 10:...



Routing Inquiry

05/26/10

Routing Code: 01010
Effective: 05/26/10

Medical Ultrasound

Output: PAGE

Op	Work Center	Machine	Setup	Run Time	Move	Yield%
10	1000 General Assembly ASSEMBLE COMPONENTS		0.5	1.0	0.0	100.00%
20	1050 Product Test TEST FINISHED UNIT		0.5	0.2	0.0	100.00%
30	1060 Pack PACK FOR SHIPPING		0.5	0.06	0.0	100.00%

14.13.3

Routing Inquiry

rwroiq.p



Q5-SU-640

Routing Inquiry (14.13.3)

The Production Planner reviews the routing in Routing Inquiry (14.13.3) to ensure that the information is accurate.

Review

Review

4

Manufacturing


- **Shop calendar**
Calendar Maintenance
- **Departments**
Department Maintenance
- **Work Center**
Work Center Maintenance
- **Routings**
Routing Maintenance

 QAD

Q5-SU-660

In this chapter, we saw how key areas of the manufacturing environment are set up.

- Shop calendar, set up in Calendar Maintenance and Holiday Maintenance, indicates what days the plant is open and how many hours are worked each day
- Departments, set up in Department Maintenance, are used for capacity planning and accounting purposes
- Work centers and machines, set up in Work Center Maintenance, are used for operation scheduling, capacity requirements planning and cost determinations for GL transactions
- Routings, set up in Routing Maintenance, describe the steps required to make the item (operations), where the steps are performed (work center), how long they take, and the expected yield percentage at each operation

Exercise 3

Add a Department Record

Note Refer back to the screen shots in the example if you are unsure of any step.

- 1 In Department Maintenance (14.1), add a new department record, 050, for assembly. Key fields to populate are:

Field	Data
Department	050
Description	Assembly
Labor Capacity	8

Accept the default account numbers and update the record. Where did these account numbers come from?

Click Next until the Department field is highlighted, then click Back.

Add a Work Center Record

- 2 Use Work Center Maintenance (14.5) to add a work center record. Key fields to populate are:

Field	Data
Work Center	1005
Machine	<blank>
Description	General Assembly
Department	050
Mach/Op	1
Machines	1
Setup Rate	5
Labor Rate	4.5
Labor Burden Rate	0.02
Labor Bdn%	0.01%

Define a Routing or Process Definition

- 3 Use Routing Maintenance (14.13.1) to add a routing code that is the same as the manufactured item number. Key fields to populate are:

Field	Data
Routing Code	01010
Operation	10
Work Center	1005
Machine	<blank>
Description	Assemble Components
Setup Time	0.5 (30 min.)
Run Time	1.0 (60 min.)
Tool Code	<blank>

Accept remaining defaults.

Click Next until the Routing Code field is highlighted.

4 Enter the second operation

Field	Data
Operation	20
Work Center	1050
Machine	<blank>
Description	Test Medical Ultrasound
Setup Time	0.5
Run Time	0.02 (12 min.)

Accept remaining defaults

5 Enter the third operation

Field	Data
Operation	30
Work Center	1060
Machine	<blank>
Description	Pack Medical Ultrasound
Setup Time	0.5
Run Time	0.06

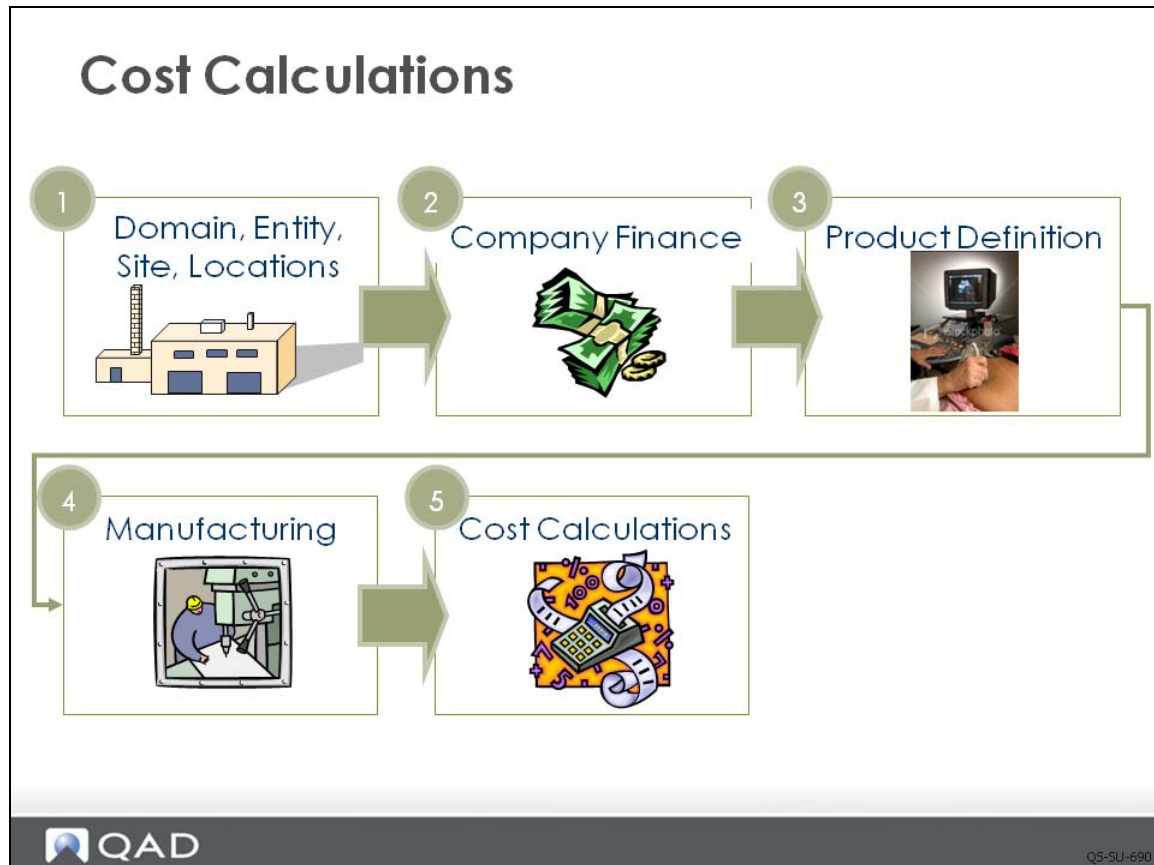
Accept remaining defaults

Review your routing in Routing Inquiry (14.13.3) and make sure that all operations and the correct setup and run times display.

Chapter 5

Cost Calculations

Overview



Based on information set up in product definition and manufacturing, item costs can be calculated. In this chapter, we will see how cost information contained in the routing and product structure is “rolled up” to calculate total cost. We will start by discussing routing and product structure cost roll-ups, followed by a discussion of updating the GL Cost Set by moving costs collected in the Current Cost Set to the GL Cost Set.

Key Concepts

- Routing Cost Roll-Up
- Product Structure Cost Roll-Up
- Current Cost Set Move to GL Set

Example

- Review Standard Order Quantity for Item
- Roll Up Routing Costs
- Roll Up Product Structure Costs
- Move Current Cost Set to GL Set

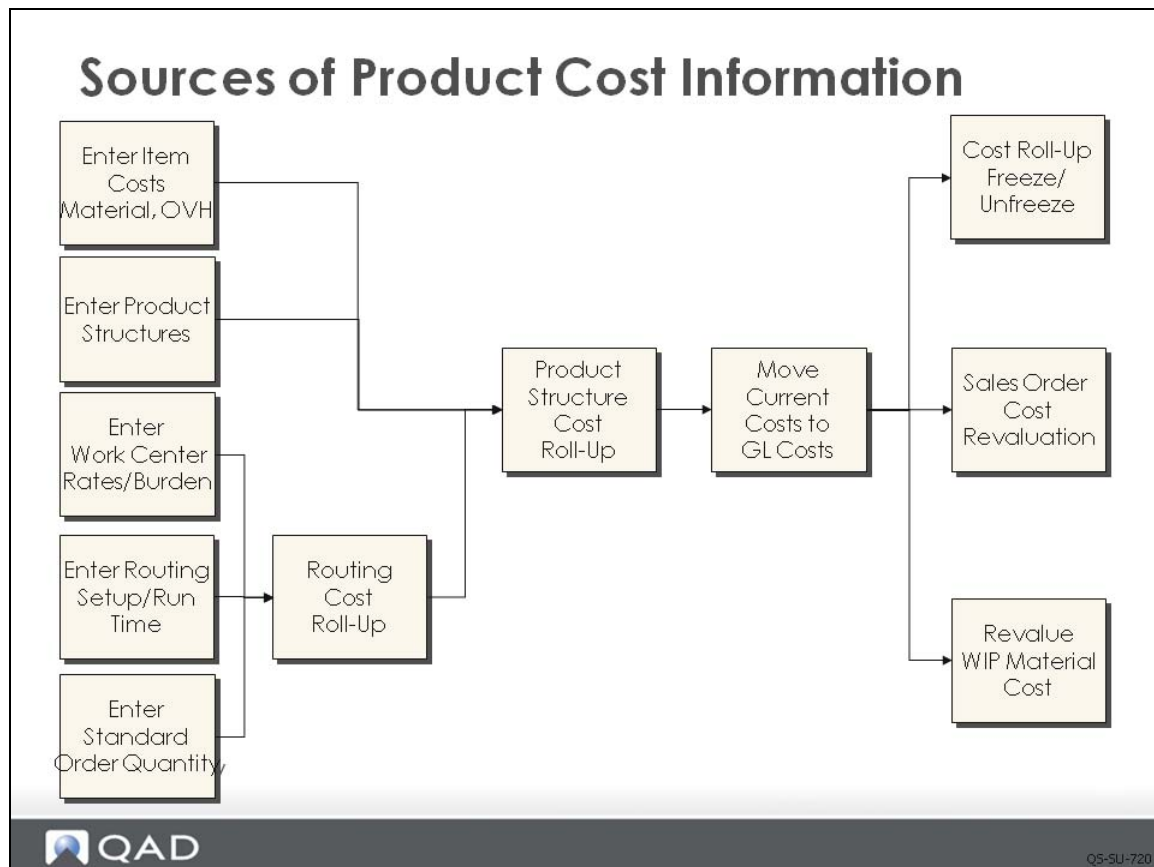
Activities

Learning Objectives

When you finish this chapter, you should be able to:

- Explain the information captured by a routing cost roll-up
- Explain the information captured by a product structure cost roll-up
- Explain the importance of the Order Quantity field (in Item Planning Maintenance) to the routing cost roll-up
- Roll up routing and product structure costs
- Copy and move current costs to the GL cost set

Key Concepts



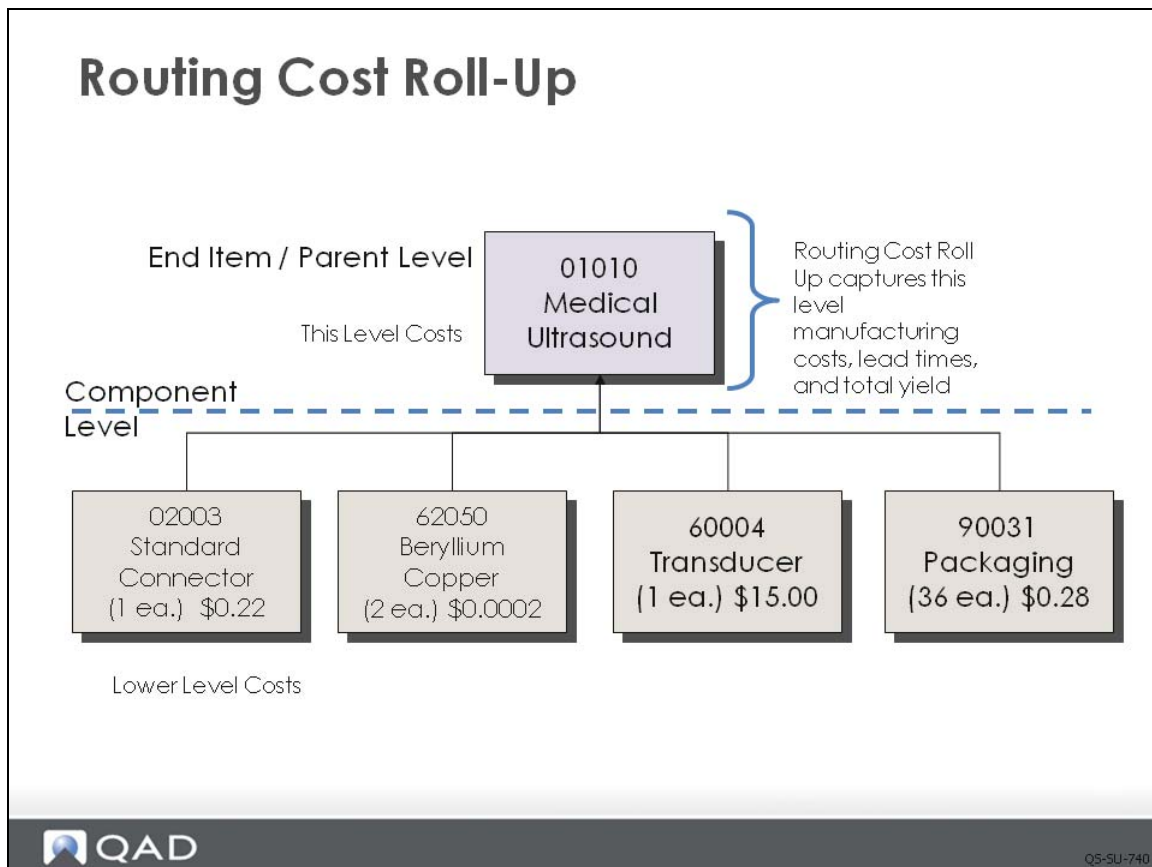
Sources of Cost

Product cost calculations are based on information from a variety of sources. Some of the key pieces are:

- Purchased material, overhead, and other costs entered manually in Item-Site Cost Maintenance for purchased items
- Component quantity per and scrap rates entered in the Product structure (BOM)
- Labor and setup rates entered for each work center
- Variable burden at each work center
- Manufacturing setup and run times entered on each routing operation
- Yield at each operation
- Subcontract cost per unit entered on each subcontracted operation
- Item order quantity entered in Item Planning Maintenance
- BOM and routing code entered in Item Planning Maintenance

Most of this information we have already entered in the previous examples and activities, so our next steps are to roll up the routing and product structure costs, and move the current cost set to the general ledger cost set. We will cover those three steps on the following pages.

Routing Cost Roll-Up



Routing Cost Roll-Up calculates the manufacturing costs, lead times, and total yield for one or more items at a particular site. Costs are calculated for each operation after accessing the item master, work center, routing, and standard operation data.

Standard Order Quantity

When manufacturing costs are rolled up in routing cost roll up, the setup time is divided by the standard order quantity and each item assigned its share of the setup cost. The run times are calculated separately for each item at each operation. However the total run time, for all the items in the standard order quantity, are used to calculate the lead time for a “standard order.” Queue, wait and move times are added to get the total lead time for the item.

Routing Cost Roll-Up Calculations

Routing cost calculations are based upon work center data for hourly rates for set-up and run labor. The work center also provides the burden rates as cost per hour for labor and machine burden, as well as labor burden percent.

Routing Cost Roll-Up Calculations

Routing Cost Roll-Up Calculations

Work Center Maintenance

Go To Actions Copy Print Preview Attach

Work Center: 1000 Machine: Department: 0400

Work Center: 1000 Machine:

Description: General Assembly

Department: 0400 Assembly

Queue Time: 0.25

Wait Time: 0.25

Mach/Op: 1

Setup Crew: 1.00

Run Crew: 1.000

Machines: 1.000

Mach Bdn Rate: 0.05

Setup Rate: 5.00

Labor Rate: 4.50

Labor Burden Rate: 0.02

Labor Bdn %: 0.01%

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Work Center Maintenance (14.5)

Cost Calculations

Cost Calculations

Routing Maintenance

Go To Actions Copy Print Preview Attach

Routing Code: 01010 Work Center: 1000 Machine:

Routing Code: 01010 Medical Ultrasound
Operation: 10 Start Date: End Date:

Standard Operation:
Work Center: 1000 General Assembly
Machine:
Description: ASSEMBLE COMPONENTS

Machines per Operation: 1
Overlap Units: 0
Queue Time: 0.25
Wait Time: 0.25
Setup Time: 0.5
Run Time: 1.0
Move Time: 0.0
Start Date:
End Date:
Yield Percent: 100.00%

Milestone Operation: ☒
Subcontract LT: 0
Setup Crew: 1.00
Run Crew: 1.00
Tool Code:
Supplier:
Inventory Value: 0.00
Subcontract Cost: 0.00
Comments:

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Routing Code Maintenance (14.13.1)

The routing records provide the set-up and run times, as well as the machines per operations and operation yield percent. In the case of a subcontract operation the route provides the per item cost of the outside processing.

Review Standard Order Quantity

Review Standard Order Quantity

Item Planning Maintenance

Go To Actions Copy Print Preview Attach

Item: 01010 Item Number: 01010 Supplier:

Item Number: 01010 Description: Medical Ultrasound

Unit of Measure: EA

Item Planning Data

Mstr Sched: ☒ Plan Orders: ☒

Time Fence: 0

MRP Required: ☒

Order Policy: POQ Order Qty: 0

Batch Qty:

Order Period: 7

Safety Stock: 0

Safety Time: 0

Reorder Point: 0

Item Rev: D

Issue Policy: ☒

Buyer/Planner: 1-01 Supplier:

PO Site:

Purchase/Manufacture: M Configuration Type:

Inspect: 1.0 Ins LT: 0 Mfg LT: 0

Cum LT: 0 Pur LT: 0

ATP Enforcement: NONE

Family ATP: ATP Horizon: 0

Run Seq 1: 2:

Phantom: ☐

Minimum Order: 1

Maximum Order: 5

Order Multiple: 1

Op Based Yield: ☐

Yield Percent: 100.00%

Run Time: 1.260

Setup Time: 1.500

EMT Type: NON-EMT

Auto EMT Processing: ☐

Network Code:

Routing Code: U-001

BOM/Formula:

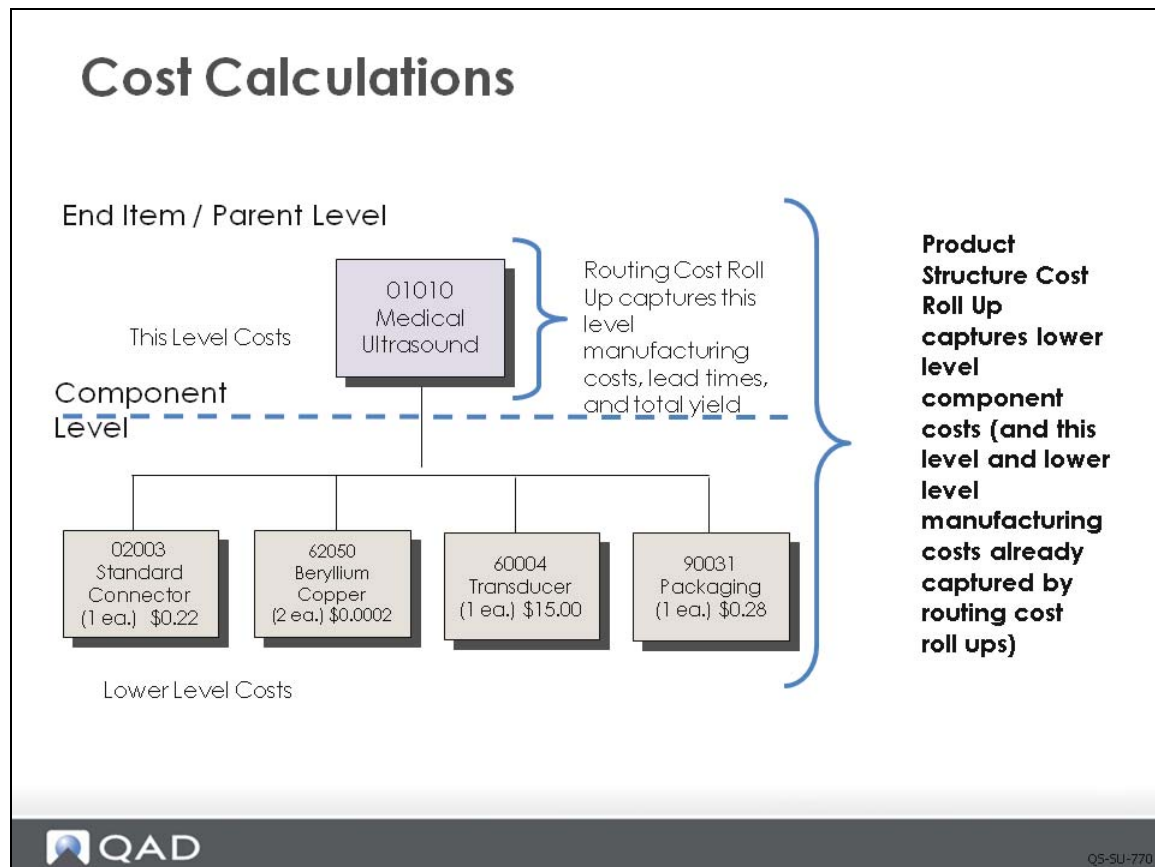
QAD QS-SU-790

Item Planning Maintenance (1.4.7)

The item planning record provides the order quantity value, which is used to amortize set-up costs over a standard or normal order size to obtain a realistic cost per unit value.

Note The routing and product structure roll ups are initiated by the user. Some business have only one or the other hence don't need both. However, in the case where you do have both (the normal situation for manufacturers) it is very important to do the route roll up first, then the product structure roll up. If there are operation yields in the route, these need to be accounted for before determining the materials required from the product structure.

Product Structure Cost Roll-Up



Product Structure Cost Roll-Up updates the costs of parent items based on the costs of their lower level components.

Components have information for the quantity required, expected scrap percentage, and the operation where they are required. Purchased items have material and may have overhead costs. Manufactured items also have labor, burden, and subcontract costs. Product Structure Cost Roll-Up uses these costs to calculate total cost by item, and lower level run and setup times.

Example: Product Structure Inquiry

Example: Product Structure Inquiry

Product Structure Inquiry X

Go To Actions Copy Print Preview Attach

Parent Item/BOM Code: 01010 Output: PAGE

Parent Item/BOM Code: 01010 Medical Ultrasound EA

As Of: 5/25/2010 Levels: Rev: PCO Number: ID: Domain: Output: PAGE

Level	Component Item	Description	Quantity	Per	UM	Ph	T	Iss
Parent	01010	Medical Ultrasound			EA			
1	50001	Probe Unit - 10 Mhz	1.0	EA				
.2	02003	Standard Connector	1.0	EA				
.3	62050	Beryllium Copper	0.0001	RL				
.3	62050	Beryllium Copper	0.0001	RL				
.3	90031	Packaging	2.0	EA				
.2	60004	Transducer - 10 Mhz	1.0	EA				
1	60001	Durable Plastic Housing	1.0	EA				
1	60002	Display / Readout	1.0	EA				
1	60003	Keyboard	1.0	EA				
1	60005	Battery	1.0	EA				
1	60006	Monitor Cable	1.0	EA				
1	60007	Movable Cart	1.0	EA				
1	60008	Printer	1.0	EA				
1	60017	Mouse Pad	1.0	EA				
1	60018	Dust Cover	1.0	EA				
1	60050	Base Unit / CPU	1.0	EA				
1	90093	Shipping Carton	1.0	EA				

13.6 Product Structure Inquiry bmpsinq.p

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Product Structure Inquiry (13.6)

We can see from the Product Structure Inquiry (13.6) above how many of which components are required to make a medical ultrasound.

Example: Item Cost Data Frame

Example: Item Cost Data Frame

Item Master Maintenance
Go To Actions Copy Print Preview Attach
Item: 01010 Item Number: 01010 Description: Medical Ultrasound
Item Planning Price
Price Cost

Item Number: 01010 Description: Medical Ultrasound
Unit of Measure: EA

Totals						
Totals:	13.36452	231.96882	245.33333	☐	03/01/10	☐

GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	225.71	225.71	☒	Material	☐
Labor	13.17	6.17	19.34	☒	Labor	☐
Burden	0.19452	0.08882	0.28333	☒	Burden	☐
Overhead	0.00	0.00	0.00	☒	Overhead	☐
Subcontr	0.00	0.00	0.00	☒	Subcontr	☐
				☐		☐


QS-SU-440

Item Master Maintenance (1.4.1)

In the item cost data we see the material cost of each purchased component, which multiplied by the quantity per unit will be rolled up to the parent level cost.

Move Current Cost Set to GL Set



As discussed earlier, the system maintains by default two cost sets for each item-site: Current, which reflects today's cost for an item, and GL, which is used for all general ledger transactions.

When costs change, you can update and verify the change in the Current cost set first, then use Current Cost Set Move to GL Set to reflect the change in the GL cost set. Current Cost Set Move to GL Set is most commonly used only at regular, widely spaced intervals; usually annually.

By convention QMI does all its work in the current cost set, checking each step as they go. When satisfied that the costs are correct the entire current cost set is moved (copied) to the GL cost set.

Example

In the following example, we'll see how QMI:

- Sets up a standard order quantity of 5 for item 01010 (medical ultrasound)
- Rolls up costs for item 01010 based on its routing
- Rolls up costs for item 01010 based on its product structure
- Copies costs from its Current Cost Set to its GL Cost Set for all of the component items.

Review Standard Order Quantity for Item

Review Standard Order Quantity

Item Planning Maintenance

Go To Actions Copy Print Preview Attach

Item: 01010
Item Number: 01010
Supplier:

Item Number: 01010
Description: Medical Ultrasound
Unit of Measure: EA

Item Planning Data

Mstr Sched: ☒
Plan Orders: ☒
Time Fence: 0
MRP Required: ☒
Order Policy: POQ
Order Qty: 0
Batch Qty:
Order Period: 7
Safety Stock: 0
Safety Time: 0
Reorder Point: 0
Item Rev: D
Issue Policy: ☒

Buyer/Planner: 1-01
Supplier:
PO Site:
Purchase/Manufacture: M
Configuration Type:
Inspect:
Ins LT: 0
Mfg LT: 0
Cum LT: 0
Pur LT: 0
ATP Enforcement: NONE
Family ATP:
ATP Horizon: 0
Run Seq 1:
2:

Phantom:
Minimum Order: 1
Maximum Order: 5
Order Multiple: 1
Op Based Yield:
Yield Percent: 100.00%
Run Time: 1.260
Setup Time: 1.500
EMT Type: NON-EMT
Auto EMT Processing:
Network Code:
Routing Code: U-001
BOM/Formula:

QAD
QS-SU-790

Item Planning Maintenance (1.4.7)

Review Standard Order Quantity

QMI has set up a standard order quantity of 1 for its medical ultrasound (01010), which is used to amortize set-up costs. This information needs to be entered before rolling up the routing costs. The standard order quantity is entered in Item Planning Maintenance (1.4.7) (or the Item Planning Data frame of Item Master Maintenance).

It is important that the standard order quantity be what you will normally produce in a single lot, batch or work order. In this case the setup cost will be spread over the production of 5 units. The order quantity for each item is usually based on some aspect of production that is important to the company. A multiple of the units produced in an hour or a shift is common. Some firms with high setup costs will want very large standard order quantities to spread the setup cost over many units of production. In JIT environments we invest in dedicated capacity in order to keep the order quantity or kanban very low.

Routing Cost Roll-Up

Example: Routing Cost Roll-Up

Routing Cost Roll-Up

Go To Actions Copy Print Preview Attach

Site: 10-100 Cost Set: Current Item Number: 01010

Site: 10-100 Ultrasound Mfg Site [LAST / CRR]

Cost Set: Current Default Current Cost Set

Item Number: 01010 To: 01010

Item Type: [v]

As of Date: 6/2/2010

Roll-up Labor Time: ☒

Roll-up Setup Time: ☒

Roll-up Lead Time: ☒

Roll-up Item Yield: ☒ Include Yield in Cost: ☒

Roll-up Labor Cost: ☒

Roll-up Burden Cost: ☒

Roll-up Subcontract Cost: ☒

Update Items without Routings: ☒

Update Items At This Site Only: ☒

Output:
Batch ID:

QAD

Routing Cost Roll-Up (14.13.13)

Using Routing Cost Roll-Up (14.13.13), QMI is ready to roll up its routing costs for item 01010 medical ultrasound at site 10-100. Notice that we are rolling up the Current Cost Set, not the GL Cost Set. Notice all the check boxes which can be used to leave out some elements of cost for unique or special purposes. Care should be used when leaving out any element of cost.

Additional Notes:

You can roll up either Current or GL costs. The default is to roll up Current costs. Although you can roll up GL costs when they change, it is safer to roll up Current costs and then copy them to the GL.

After rolling up the routing costs, it is a good idea to verify that the roll-up was successful. This can be verified in Item-Site Cost Inquiry, which we will discuss next.

Verify Current labor and burden costs

Example: Verify Routing Cost Roll-Up

Item-Site Cost Inquiry

Item-Site Cost Inquiry - 5/26/20..



Item-Site Cost Inquiry

05/26/10

Item Number: 01010
Inv Site: 10-100

Medical Ultrasound
UM: EA

Output: PAGE

Price: 2,500.00
Fiscal Class:

Item Price Data
Tax: No Tax Class:

Totals: 13.36452 231.96882 245.33333 05/26/10

GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	225.71	225.71	Yes	Material	No
Labor	13.17	6.17	19.34	Yes	Labor	No
Burden	0.19452	0.08882	0.28333	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No
Totals:	13.36452	231.96882	245.33333			03/01/10

Current Cost Data (GL Cost Source Site: 10-100 / Set: Current)

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	225.71	225.71	Yes	Material	No
Labor	13.17	6.17	19.34	Yes	Labor	No
Burden	0.19452	0.08882	0.28333	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No

1.4.10

Item-Site Cost Inquiry

ppptiq03.p



Q5-SU-810

Item-Site Cost Inquiry (1.4.10)

Using Item-Site Cost Inquiry (1.4.10), QMI verifies that the Current Cost Set routing costs (labor and burden) were rolled up for item 01010 at site 10-100.

Note The columns on the cost screens total up, that is the total cost for labor and burden at this level, in this example 13.36452 is displayed above the column.

To see details on how the labor and burden costs were calculated, see Appendix A.

Note There are no material costs as we have not yet rolled up the product structure. There are also no GL costs as yet.

After completing and verifying the routing cost roll-up, the product structure cost roll-up can be initiated.

Product Structure Cost Roll-Up

Product Structure Cost Roll-Up (13.12.13)

Using Product Structure Cost Roll-Up (13.12.13), QMI rolls up its product structure costs for item 01010 at site 10-100. This includes the material costs for the lower-level components, such as the material and burden costs at this level.

Again notice that QMI is rolling up the Current Cost Set, not the GL Cost Set.

Verify costs

Verify Costs

Item-Site Cost Inquiry - 5/26/20... X

Item-Site Cost Inquiry 05/26/10

QAD

Item Number: 01010 Medical Ultrasound Output: PAGE
 Inv Site: 10-100 UM: EA

Price: 2,500.00 Item Price Data
 Fiscal Class: Tax: No Tax Class:

Totals		Totals		Totals		Totals	
Element	GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	225.71	225.71	Yes	Material	No	
Labor	13.17	6.17	19.34	Yes	Labor	No	
Burden	0.19452	0.08882	0.28333	Yes	Burden	No	
Overhead	0.00	0.00	0.00	Yes	Overhead	No	
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No	
Totals:	13.36452	231.96882	245.33333				05/26/10

Current Cost Data (GL Cost Source Site: 10-100 / Set: Current)

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	225.71	225.71	Yes	Material	No
Labor	13.17	6.17	19.34	Yes	Labor	No
Burden	0.19452	0.08882	0.28333	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No

1.4.10 Item-Site Cost Inquiry ppptiq03.p

Q5-SU-830

Item-Site cost Inquiry (1.4.10)

Using Item-Site Cost Inquiry (1.4.10) again, QMI verifies that the Current Cost Set product structure costs (lower-level components) were rolled up correctly for item 01010 at site 10-100. Total Cost is \$245.33333 per unit.

Move Current Cost Set to GL Set

Current Cost Set Move to GL S...

Go To Actions Copy Print Preview Attach

Item: 01010 From: 10-100 Item Number: 01010

Site	Cost Set	Site	Cost Set
From: 10-100	Current	To: 10-100	Standard
Item Number: 01010		To: 01010	

Prod Line: To:
 Item Type: To:
 Group: To:
 ABC Class: To:
 Pur/Mfg: To:
 Buyer/Planner: To:

Change Allowed: 10.0% To: + 10.0%

Copy Material Cost: ☒
 Copy Labor Cost: ☒
 Copy Burden Cost: ☒
 Copy Overhead Cost: ☒
 Copy Subcontract Cost: ☒
 Sum Costs To MTL TL For DRP: ☐

Output: printer
 Batch ID:

QAD Q5-SU-840

Current Cost Set Move to GL Set (1.4.22)

QMI now wants the general ledger to reflect the cost information entered in the Current Cost Set for all of the component items in 01010 at site 10-100, so they are ready to copy and move Current costs into the GL using Current Cost Set Move to GL Set (1.4.22).

By leaving the Item number selection range blank we are selecting all records in the system, which in our case is exactly what we want as there are only the five items. Note the other selection criteria we could use. Note also the check boxes for which costs to copy. We want to copy all costs.

Percent Change Allowed

This field restricts the cost movement to items whose GL costs would change only within the indicated range. To accept the movement of all costs regardless of the difference from the previous GL costs, enter a “?” (question mark) in this field and its corresponding To field if you are using the terminal view of the screen, or all 9's if you are using the desktop view. You can look at the potential consequences before actually moving the current costs to GL costs. To do this, set Pct Change Allowed to 0%. The proposed changes will be displayed on the output device you have chosen, but not copied to the GL costs.

Note When first establishing costs for new items (or in a new system) the present GL cost would be zero. The percent change from nothing to something is mathematically undefined as it would require division by zero.

Current Cost Set move to GL Set

Current Cost Set move to GL Set



Current Cost Set Move to GL Set

10USA

05/26/10

Item Number	UM	Material	Labor	Burden	Overhead	Subcontract
01010	EA Current	225.71	19.34	0.28333	0.00	0.00
245.33333	Standard	225.71	19.34	0.28333	0.00	0.00
Medical Ultrasound	New Cost	225.71	19.34	0.28333	0.00	0.00
245.33333	% Change	0.0%	0.0%	0.0%	0.0%	0.0%
0.0%	GL Amt Chg	0.00	0.00	0.00	0.00	0.00
0.00						

End of Report



QS-SU-841

Current Cost Set Move to GL Set (1.4.22)

The process produces a report which can be output to page and which should look like the screen above.

Verify item costs in Current and GL cost sets

Verify Cost in Current and GL Cost Sets

Item-Site Cost Inquiry 05/26/10

Item Number: 01010 Medical Ultrasound
 Inv Site: 10-100 UM: EA Output: PAGE

Price: 2,500.00 Item Price Data
 Tax: No Tax Class:
 Fiscal Class:

GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)		Totals		05/26/10	
Element	This Level	Lower Level	Total	Pri	Category A/O
Material	0.00	225.71	225.71	Yes	Material No
Labor	13.17	6.17	19.34	Yes	Labor No
Burden	0.19452	0.08882	0.28333	Yes	Burden No
Overhead	0.00	0.00	0.00	Yes	Overhead No
Subcontr	0.00	0.00	0.00	Yes	Subcontr No
Totals:	13.36452	231.96882	245.33333		05/26/10

Current Cost Data (GL Cost Source Site: 10-100 / Set: Current)		Totals		05/26/10	
Element	This Level	Lower Level	Total	Pri	Category A/O
Material	0.00	225.71	225.71	Yes	Material No
Labor	13.17	6.17	19.34	Yes	Labor No
Burden	0.19452	0.08882	0.28333	Yes	Burden No
Overhead	0.00	0.00	0.00	Yes	Overhead No
Subcontr	0.00	0.00	0.00	Yes	Subcontr No
Totals:	13.36452	231.96882	245.33333		05/26/10

1.4.10 Item-Site Cost Inquiry ppptiq03.p

Item-Site Cost Inquiry (1.4.10)

QMI can use Item-Site Cost Inquiry (1.4.10) again; this time to verify that the costs for item 01010 now shown in the GL are as expected. That is, the GL costs should be the same as the Current costs, and they are.

Enter Item Price

Item Cost Maintenance

Item Cost Maintenance

Go To

Actions

Copy

Print

Preview

Attach

Item:01010

Item Number:01010

Tax Class:

Item Number: 01010

Description: Medical Ultrasound

Unit of Measure: EA

Item Price Data

Price: 2,500.00

Tax:

Tax Class:

Fiscal Class:

GL Cost Data

Element	This Level	Lower Level	Total	Pri	Category	A/O
				☐		☐

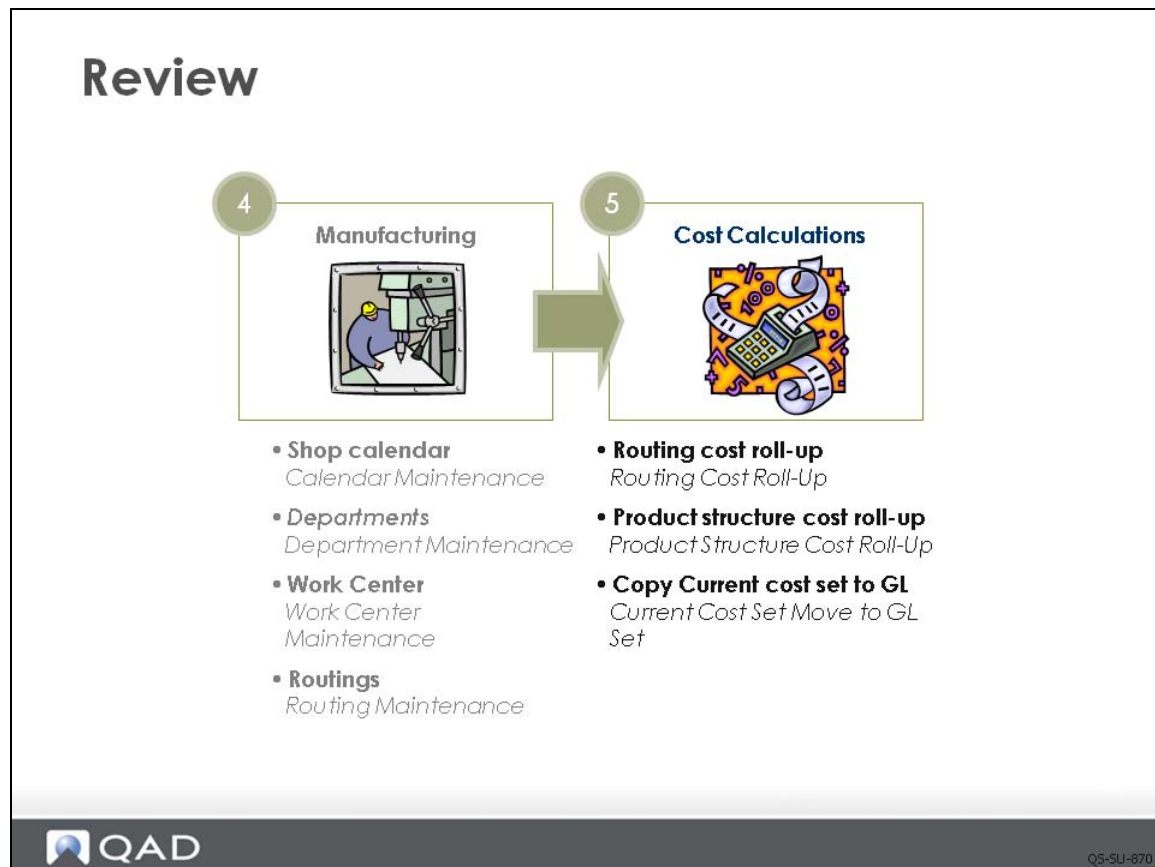
QAD

Q5-SU-851

Item Cost Maintenance (1.4.9)

Now that we know the standard cost of a medical ultrasound, we can return to the Item Cost Maintenance (1.4.9) screen and add the retail price we will charge for this item. We have decided to price this medical ultrasound at \$2,500.00.

Review



In this chapter, we saw how product costs are developed using:

- Routing cost roll-ups, which capture this-level manufacturing costs, lead times, and total yield
- Product structure cost roll-ups, which capture lower-level component costs and all costs previously captured by routing cost roll-ups

We also saw how up-to-date costs reflected in the Current Cost Set can be moved to the GL Cost Set to update that cost set as appropriate.

Exercise 4

Check Standard Order Quantity for Item

In Item Planning Maintenance (1.4.7) Order Qty field, add a standard order quantity of 10 to item 01010. This is the number of units that the cost of set-up time is spread over.

Calculate Amount of Labor, Burden and Subcontract Costs for Manufactured Items

Important Manufactured components must be Calculated first.

Use Routing Cost Roll-Up (14.13.13) to roll up the routing cost.

Field	Data
Site	10-100; click Next
Cost Set	Current; click Next
Item Number	50001 to 50001; click Next

Field	Data
Site	10-100; click Next
Cost Set	Current; click Next
Item Number	01010 to 01010; click Next

Use the default settings for all other fields and update.

Note There is no output for this function.

Use Item Routing Cost Report (14.13.15) or Item-Site Cost Inquiry (1.4.10) to check to see if your Standard costs were correctly calculated for labor and burden.

Calculate Amount of Lower-level Material, Labor, Burden, and Subcontract Costs

Important Manufactured components must be calculated first.

Use Product Structure Cost Roll-Up (13.12.13) to roll up the product structure. Key fields to populate are:

Field	Data
Site	10-100; click Next
Cost Set	Current; click Next
Item Number	50001 to 50001; click Next

Field	Data
Site	10-100; click Next
Cost Set	Current; click Next
Item Number	01010 to 01010; click Next

Use Item-Site Cost Inquiry (1.4.10) to check to see if your standard costs were correctly calculated for lower-level costs.

Important If your rolled up costs are incorrect, the error has its source in one of the data elements you added. Review your entries in the work center file, the product structure the routing record and the item planning data. Check yourself against the values shown in the example screen shots.

Chapter 6

Purchasing

Overview



In this chapter the procurement process, from initial requisition to material receipt will be examined. Key concepts will be discussed, followed by an example that illustrates the purchasing flow.

Key Concepts

- Supplier
- Requisitions
- Types of Purchase Orders
- Order Receipt

Example

- Add Supplier
- Create Purchase Order
- Receive Items and Create Receiver
- Set Up Routings

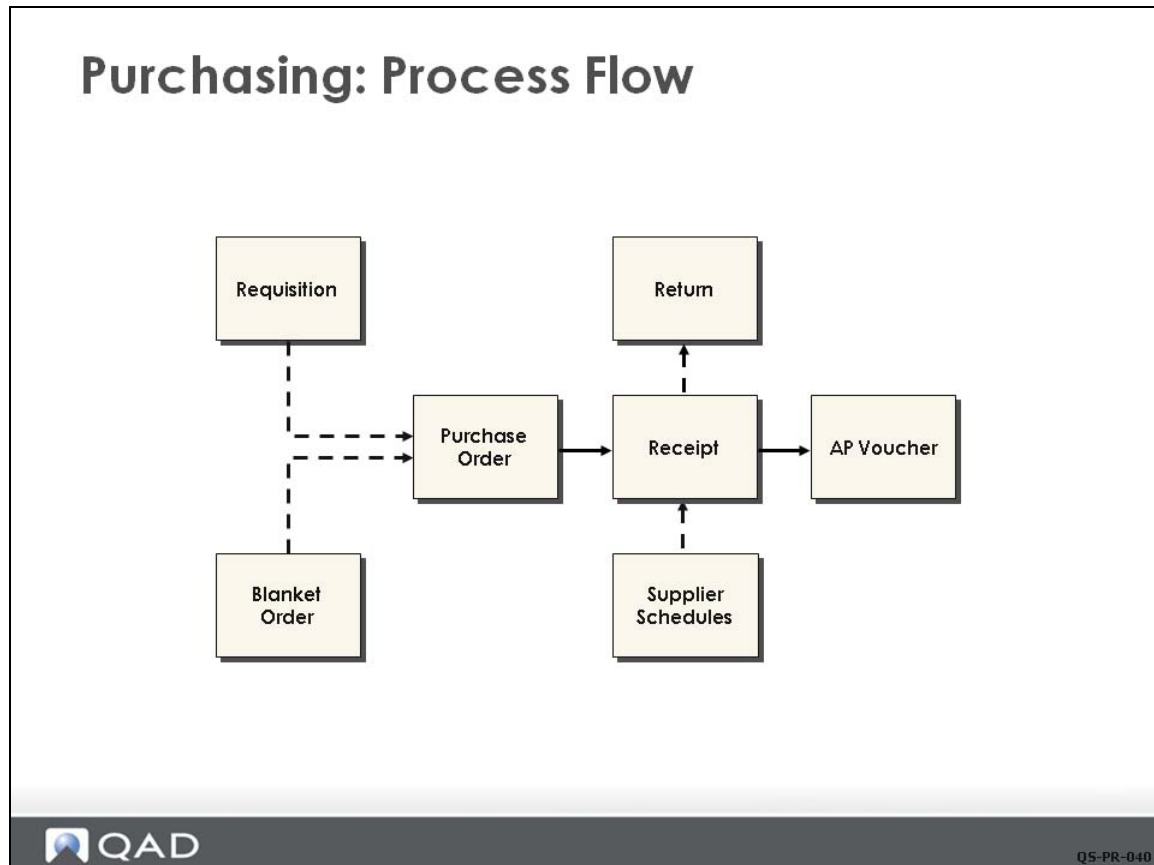
Activities

Learning Objectives

When you finish this chapter, you should be able to:

- Describe the purchase flow
- Explain how the system handles the different numbering systems that suppliers and customers use for the same item
- Explain how the system handles the different units of measure that suppliers and customers use for the same item
- Describe the purchase requisition flow
- Describe the three kinds of purchase orders that QAD Enterprise Applications Enterprise Edition supports
- Enter credit terms
- Enter a supplier
- Enter a unit of measure conversion
- Enter supplier item information

Key Concepts



Purchasing lets you manage all aspects of ordering and receiving materials and services—requisitions, approvals, purchase orders, receipts, and returns. It supports purchasing of products as well as non-product materials and services—such as subcontracting services—and gives you the means to support discrete, process, and just-in-time (JIT) manufacturing.

While purchasing supports the purchase of everything, from office supplies to capital equipment for production, this course will limit the example to purchasing direct material for manufacturing.

A purchase involves several steps. Often the first step is a requisition, which is the result of demands recognized by material requirements planning (MRP). An order is next, either a purchase order, a blanket order, or a supplier schedule. When the ordered goods arrive, a record is made called a receiver. If the goods are returned to the supplier, another record is made. The system keeps a record of each step.

We'll look at several of these stages of the purchasing process in more detail on the following pages, but first we must have a supplier entered in the system before we can perform these purchasing functions. So we'll begin this chapter with a discussion about entering supplier information into the system.

Supplier

Purchasing: Supplier		
	QMI	Supplier
Item	6001 Mouse Pad	Bridgefield Industries
UOM	EA	CS

	QMI	Supplier
Item	60018 Dust Cover	Bridgefield Industries
UOM	EA	CS

Prior to using purchasing functions, you need to set up information for each of your suppliers. Supplier Create which is under Accounts Payable in the Finance system is used to create the supplier record and setup the accounting information needed. Our key supplier for our purchased components is Bridgeville Industries. The finance staff of QMI has setup this vendor with supplier code 10S1002.

In addition to setting up the supplier with the accounting data, we need to setup supplier data particular to manufacturing. This is done in Supplier Data Maintenance under the Addresses menu in Master Data. Here we can record contact names and phone numbers, shipping data and other information of a non-financial nature.

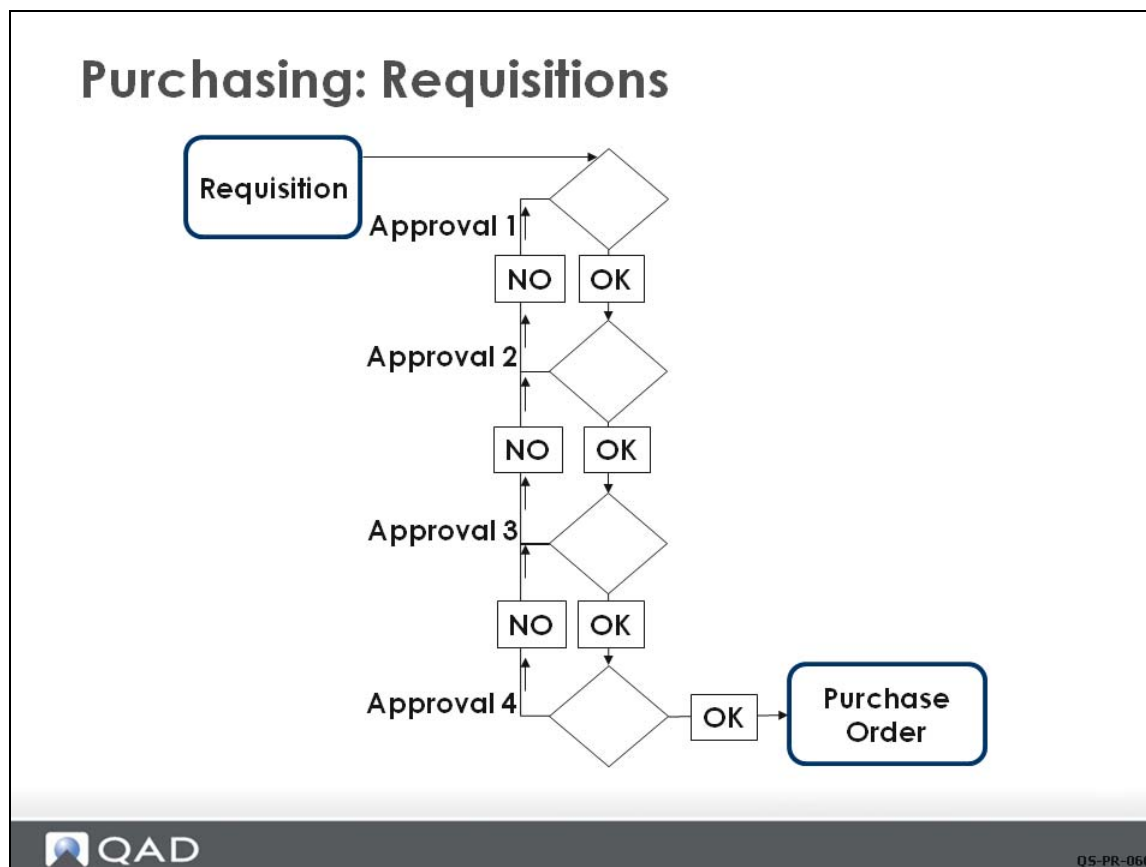
Supplier Items

Supplier items are used to cross-reference your item number with your supplier's item number. Later, in Purchasing, you can reference the supplier's item number instead of your own, and the system will find your item number for you.

Unit of Measure

Unit of measure conversions can be set up so that a unit of measure for a purchase order line can be different than the item master unit of measure. Then, when the item is received, it is converted to the item master unit of measure.

Requisitions

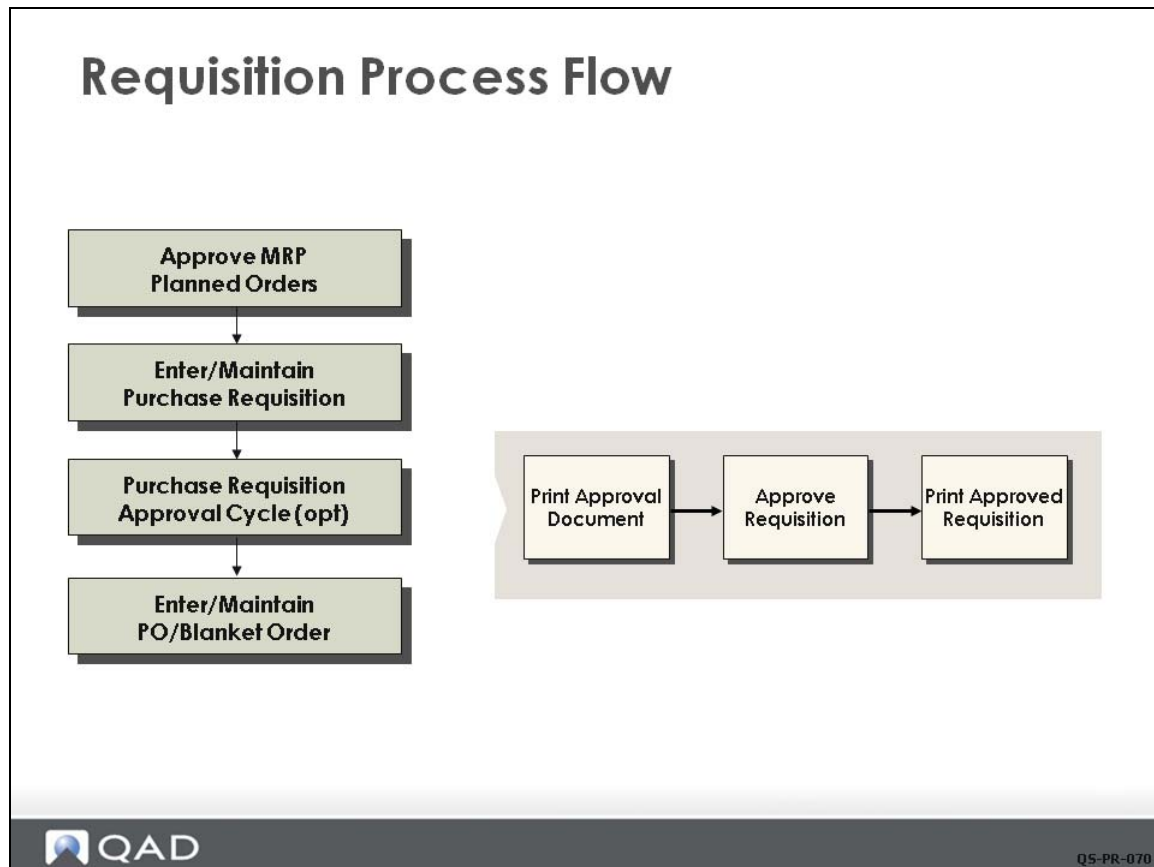


A requisition is a record stating that an item is needed. Requisitions specify quantity, date needed, and place to be delivered. A requisition is often the first step of a purchase, although you can issue a purchase order without it. Some companies also require multiple approvals before requisitions become orders. Once the requisition's information is transferred to a purchase order or a blanket order, the requisition is deleted.

Note QAD Enterprise Applications offers two requisition modules. The modules are labeled Purchase Requisitions and Global Purchase Requisitions. Both are located in the Purchasing Folder under the Supply Chain Menu. Global Requisitions offer considerably more functionality (with more complexity). You should have a clear understanding of the differences between the two before making an implementation decision. You can only use one or the other requisition module at a time, and there are consequences associated with changing. This course discusses only Purchase Requisitions.

Note There is a separate course for Global Requisitions and Purchase Requisitions are covered in more detail in the course Purchasing.

Requisition Process Flow



You can create standard requisitions manually with Purchase Requisition Maintenance or by approving an MRP planned order with Planned Purchase Order Approval. The system refers to requisitions by requisition number.

Approval Process

Companies using requisitions may choose to go through a requisition approval process. Approval levels can be defined to establish approval requirements by product line, site, requested by, and purchase expense account. Then, whenever a requisition is created, it is automatically assigned an approval code. This determines the approval level based on the requisition cost. The approval level indicates the person who must sign off on the requisition before the item can be purchased.

Multiple approval levels can be recorded on each requisition.

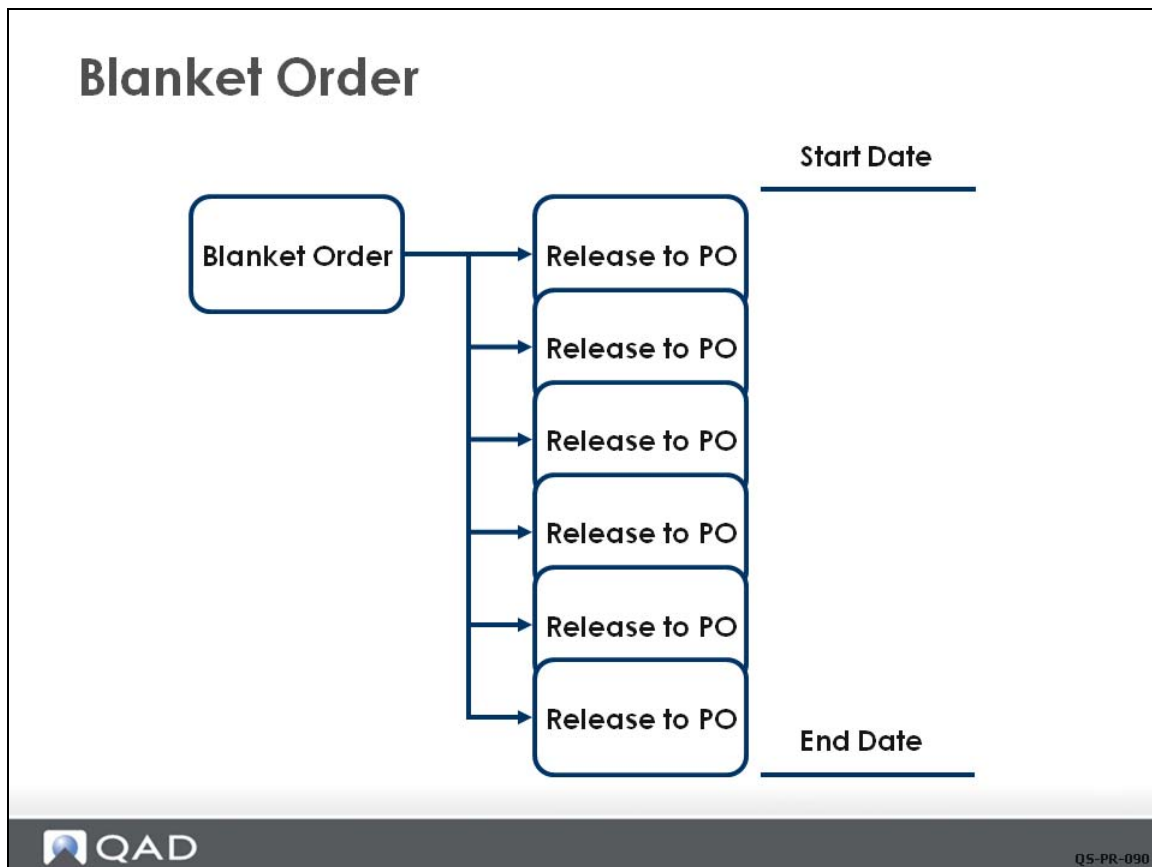
A \$50,000 purchase may need regional manager approval, but the purchasing manager and division manager must sign off first before it is sent to the regional manager.

Printed Requisitions

Requisition documents can be printed for each item, listing the approved requisitions for that item with the quantity and due date.

Supplier-item quotes can be printed on the requisition document. These are similar to manual “buy cards” (used in many purchasing departments) because they list the supplier options.

Types of Purchase Orders



QAD Enterprise Edition supports three kinds of purchase orders:

- Blanket purchase orders
- Supplier schedules
- Discrete purchase orders

Although we discuss all three kinds of orders in this section, our emphasis will be on discrete purchase orders. The Example section is based upon a discrete PO.

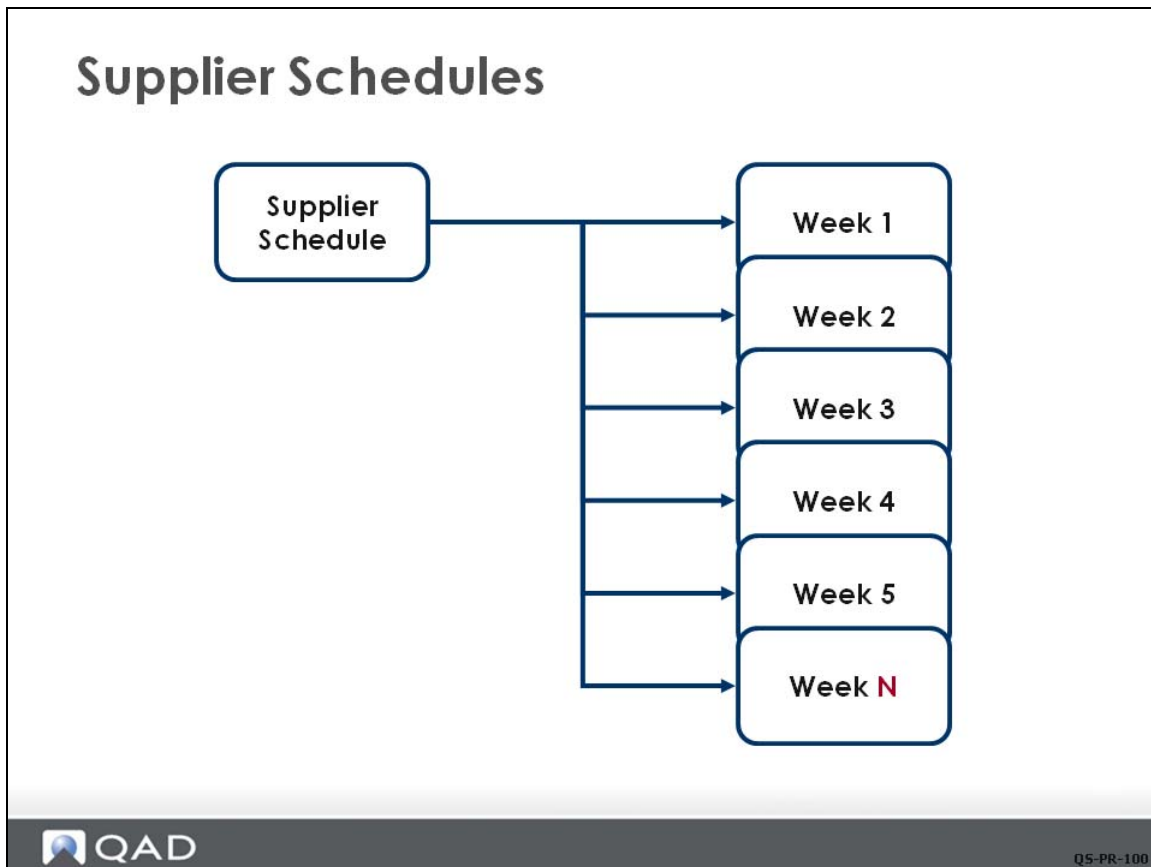
Blanket Orders

Use these for multiple deliveries of stock items, where an ongoing relationship with the supplier is assumed, but exact delivery dates are yet to be determined. Quantities and due dates can be entered up to the time when a blanket order becomes a purchase order. See figure above.

For example, QMI buys all of its components Bridgeville Industries. Each weeks requirements change and are too small to get quantity discounts. Our purchasing manager, could negotiate an annual contract with Bridgeville Industries to get better pricing based on our estimated annual usage of CPUs. He could then setup a blanket order to document this pricing, Each week a call off from the blanket order would be released for the following weeks requirement. Weekly release is used as example, actual releases are user defined.

Each weekly release becomes a discrete purchase order that is managed like any other. The blanket order keeps track of totals order to date.

Supplier Schedules



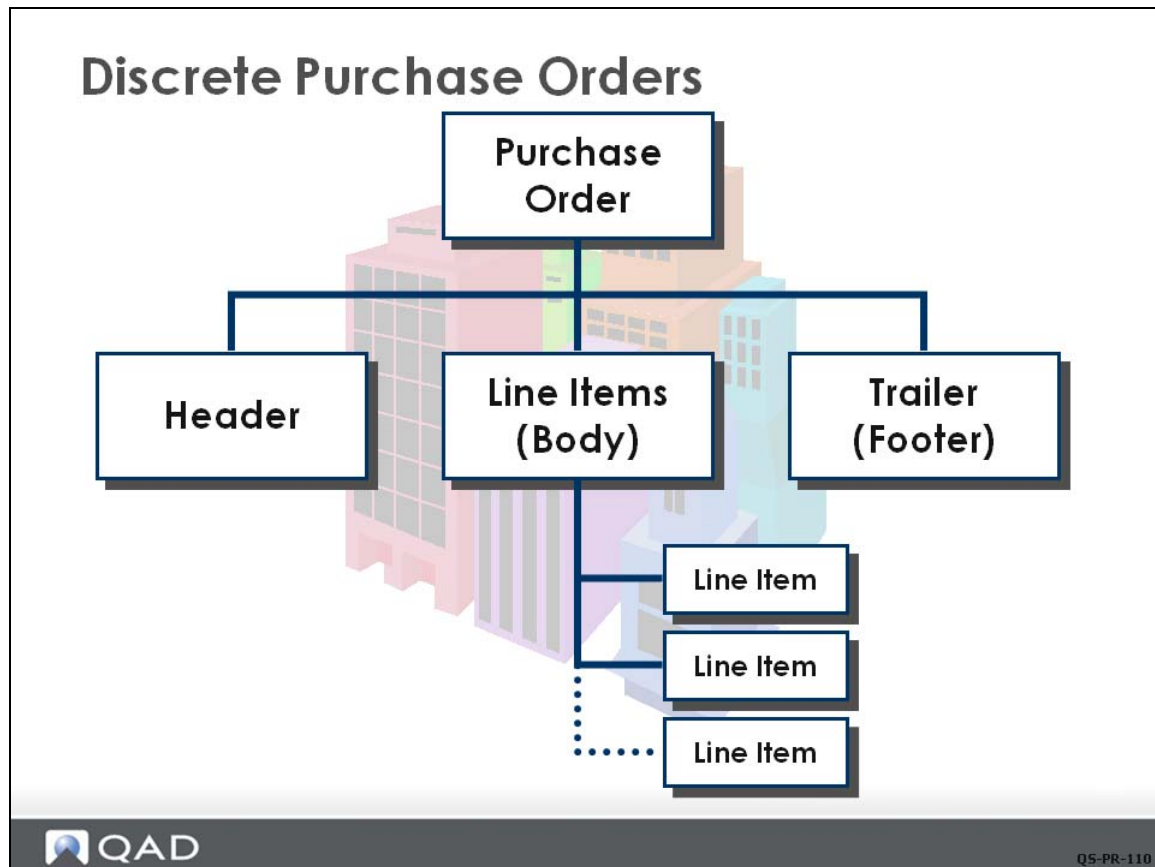
Supplier Schedules

A supplier schedule is an agreement with a supplier that provides long range plan data. Supplier schedules specify dates and even hours of delivery for the near term, and inform MRP and the supplier about long-term plans. These are used for high-volume, repetitive purchasing, often in a JIT environment. See figure above.

A manufacturer of circuit boards needs circuit board blanks supplied each week. The manufacturer knows its exact needs for the next four weeks and its approximate needs for the next 12 months. The supplier of the blanks uses the information in the supplier schedule to plan orders for raw materials and to plan production and deliveries.

Supplier schedules are designed for use with EDI (Electronic Data Interchange) and as such eliminate most of the paperwork associated with the purchasing process.

Discrete Purchase Orders



Discrete Purchase Orders

Use discrete purchase orders for single transactions with a supplier, where there is no assumption that further transactions will occur. Purchase orders contain a single delivery date for each line item. MRP treats purchase order items as supply and assumes that ordered amounts will be available on the delivery date. Receipts can be processed against these purchase orders. We'll look at how to process a discrete PO in the Example section.

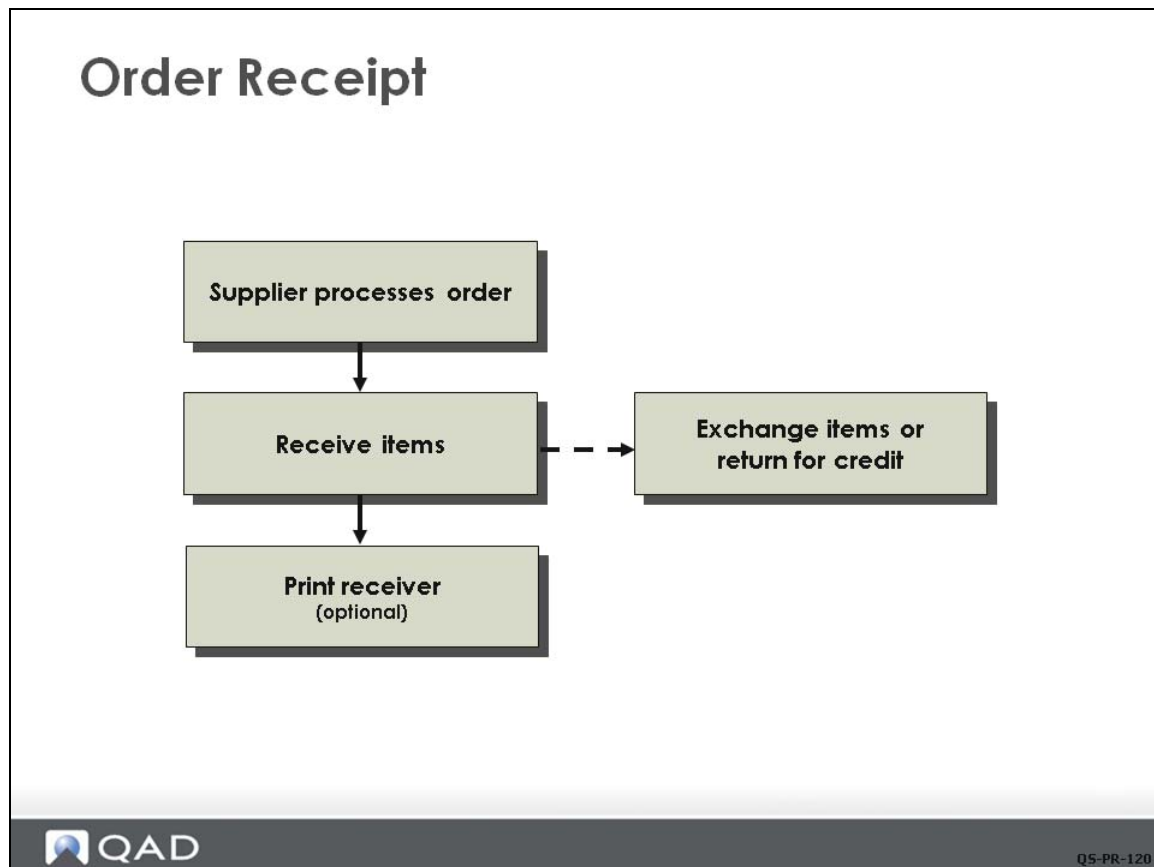
As shown in the diagram there are three main sections to the purchase order.

The Header, which contains data that applies to the entire order. This includes the PO number, the supplier, the buyer and other data.

The line items, which detail the specific things we are buying. This includes item numbers and descriptions, quantities and prices.

The trailer, which records the final data applying to the entire order such as taxes and shipping charges.

Order Receipt



Purchase order receipt transactions are performed when material is received into inventory against an outstanding purchase order. When material is received, inventory is updated as well as the open order quantity on the PO.

All PO receipts and returns generate receivers for matching with supplier invoices in Accounts Payable. A receiver is a record that goods have been received into inventory. Receivers update inventory balances and allow Accounts Payable to verify quantities and prices before paying suppliers.

Receiving documents can be printed and attached to the items or routed to the Accounts Payable department. The order receipt flow is shown in the figure above.

Example

Let's now look at a simple example in which QMI sets up:

- Reviews the Supplier Data
- Sets up a unit of measure conversion for 60017 (mouse pad), which we find out, our supplier will only sell in a case equal to 100 pads.
- Sets up a supplier item so that the system will know that our item 60017 is the same as supplier item 10S1002.
- Reviews the Purchase Control file settings

- Creates a purchase order to buy all of the component items for 01010 in sufficient quantities to build 10 medical ultrasound devices.
- Receives those items into inventory

Supplier Create

Verify Supplier Data - Credit Terms

The screenshot shows a web application window titled "Supplier Data Maintenance". It contains a form for editing supplier information. The "Supplier Address" section is expanded, showing details for Supplier 10S1002, Bridgeville Industries, located at 3390 Linco Road, Stevensville, MI 49127, USA. The "Supplier Terms Data" section is also visible, showing "Cr Terms: 30D", "Discount Percent: 0.00%", "Partial OK: [checked]", and "DB Number:".

Supplier Address			
Supplier: 10S1002	Business Relation: 10-S1002		
Name: Bridgeville Industries			Active: ☒
Address: 3390 Linco Road			Added:
Address:			
Address:			
City: Stevensville	State: MI	Post: 49127	Format:
Country: USA	County:		
Attention: Elizabeth Clear	[2]		
Telephone:	[2]		
Fax:	[2]		

Supplier Terms Data	
Cr Terms: 30D	Discount Percent: 0.00%
Partial OK: ☒	
DB Number:	CoC Number:



Q5-PR-130

Creating Supplier Records

Use the Supplier Activities (28.20.1) to create, view, modify, or delete a supplier. Account details cannot be modified if transactions already exist. A record can only be deleted if it is not referred to in the system, but it can be marked inactive.

Suppliers can be saved in draft format when Draft instances is selected in System/User Settings, Change System Setting. When a record is saved in draft format, none of the system validations are executed. You can then return later to complete the record by choosing the Supplier Browse Drafts activity and selecting the record you want to finish from the list. See *User Guide: Introduction to QAD Enterprise Applications* for details on drafts.

After creating a supplier here, specify additional operational data in Supplier Data Maintenance (2.3.1). An email is automatically sent to the members of the SupplierNotify role responsible for creating this data when a new supplier is created.

Business Relation Create

Business Relation Create

Go To Actions Tools Attach Print Preview

Attachments

Business Relation: Medical Distributors

Name: Medical Distributors, Inc.

Search Name: Medical Distributors, Inc.

Second Name:

Third Name:

Group Name:

Active: ☒

Address Info General Defaults

Address	Zip Code	City	Name	Search Name	Telephone

Export to Excel
Delete a Row
Insert a New Row
Columns...
Reset to Initial Settings
Print...

QAD

QS-PR-131

Creating Business Relations

Use the Business Relation activities (36.1.4.3) to create, view, modify, and delete business relation records. You can also use the Excel Integration option to export records to or load records from an Excel spreadsheet.

Business relations can be saved in draft format when Draft Instances is selected in System/User Settings, Change System Setting. When you save a record in draft format, none of the system validations are executed. You can then return later to complete the record by choosing the Business Relation Browse Drafts activity (36.1.4.3.6) and selecting the record you want to finish from the list.

Verify Supplier Data

Verify Supplier Data

Supplier Data Maintenance
Go To
Actions
Copy
Print
Preview
Attach

Supplier: 10S1002
Site:
Carrier:

Supplier Address

Supplier: 10S1002 Business Relation: 10-S1002

Name: Bridgeville Industries Active: ☒

Address: 3390 Linco Road Added:

Address:

Address:

City: Stevensville State: MI Post: 49127 Format:

Country: USA County:

Attention: Elizabeth Clear [2]:

Telephone: [2]:

Fax: [2]:

Supplier Data

Sort Name: Bridgeville Industries Currency: USD

Supplier: RMS Language: us

Ship Via: PER INSTRUCTIONS Daybook Set: 10PURCH

Remarks:

Site:

Carrier: Kanban Supplier:

Purchase Contact: Promotion Group:

Supplier Data Maintenance (2.3.1)

The supplier record has been setup by QMI finance. QMI purchasing will verify data and add vendor specific information.

In the first frame of Supplier Data Maintenance (2.3.1) we see the address information entered by finance. Purchasing will add contact and shipping information.

Supplier Pricing Data

Supplier Pricing Data

Supplier Data Maintenance X
Go To Actions Copy Print Preview Attach

Supplier: 10S1002
Price Table:
Discount Table:

Supplier Address

Supplier: 10S1002
 Name: Bridgeville Industries
 Address: 3390 Linco Road
 Address:
 Address:
 City: Stevensville
 Country:
 Attention: Elizabeth Clear
 Telephone:
 Fax:

Business Relation: 10-S1002

 State: MI
 Post: 49127
 USA
 [2]
 [2]
 [2]

Active: ☒
 Added:

 Format:
 County:

Supplier Pricing Data

Buyer: 3-02
 Price Table:
 Discount Table:
 Fixed Price: ☒


QAD

QS-PR-141

Supplier Data Maintenance (2.3.1)c

In the second frame we could add the buyer code, price, and discount tables if we were using those. The fixed price check indicates that the PO price is fixed.

Enterprise Material Transfer Data

Enterprise Material Transfer Data

Supplier Data Maintenance X

Go To Actions Copy Print Preview Attach

Supplier: 10S1002

Supplier Address

Supplier: 10S1002
Name: Bridgeville Industries
Address: 3390 Linco Road
Address:
Address:
City: Stevensville
Country:
Attention: Elizabeth Clear
Telephone:
Fax:

Business Relation: 10-S1002
Active: ☒
Added:
State: MI
Post: 49127
USA
County:
[2]:
[2]:
[2]:

Format:

Enterprise Material Transfer Data

Send SO Price: ☐
Send Credit Held SO: ☐
Auto EMT Processing: ☐
Automatic PO Receipt: ☐

SO Price Reduction: 0.00%
Use SO Reduction Price: ☐

Supplier Data Maintenance (2.3.1)

The third frame is used for Enterprise Material Transfer (something referred to as ‘back to back’ sales orders/purchase orders) a special case situation that is covered in its own training material.

Supplier Terms Data

Verify Supplier Data - Credit Terms

The screenshot shows a web-based application window titled "Supplier Data Maintenance". The window has a menu bar with "Go To", "Actions", "Copy", "Print", "Preview", and "Attach". Below the menu bar, the "Supplier: 10S1002" is selected. The "Supplier Address" section displays the following information:

Supplier: 10S1002		Business Relation: 10-S1002	
Name: Bridgeville Industries		Active: ☒	
Address: 3390 Linco Road		Added:	
Address:			
Address:			
City: Stevensville	State: MI	Post: 49127	Format:
Country:	USA	County:	
Attention: Elizabeth Clear	[2]		
Telephone:	[2]		
Fax:	[2]		

The "Supplier Terms Data" section displays the following information:

Cr Terms: 30D	Discount Percent: 0.00%
Partial OK: ☐	
DB Number:	CoC Number:



QS-PR-130

Supplier Data Maintenance (2.3.1)

The fourth frame displays the credit terms setup by finance (30D - means in our case - payable in one month). We have unchecked the Partial OK flag meaning purchase orders must be delivered complete. This is a default for this supplier that can be changed on each PO.

Unit of Measure Maintenance (1.13)

Set Up UOM Conversion

Unit of Measure Maintenance

Go To Actions Copy Print Preview Attach

Item Number: 60017

Unit of Measure: EA

Alternate UM: CS

Item Number: 60017 Mouse Pad

UM Conversion: 100.0000

QAD QS-PR-150

Unit of Measure Maintenance (1.13)

Set Up UOM Conversion

In Unit of Measure Maintenance (1.13), enter a UOM conversion for the 60017 mouse pad.

QMI's base unit of measure for the mouse pad (item 60017) is each (EA). The supplier, Bridgeville Industries will only sell the pads in a case of 100 pads.

In this step, the buyer defines how many pieces are in a case (CS) for a specific item (item 60017). Now the system knows that 1 case equals 100 each for this specific item number.

This is an item specific unit of measure of conversion. It applies only to 60017. If we wanted a generic conversion say from Inch to Centimeter we could enter IN in Unit of Measure, CM in Alternate UM and leave Item Number blank, and enter 2.54 in the UM conversion field. The system can then convert anything measured in centimeters into inches. If you wanted the system to be able to convert from IN to CM you would add another conversion with CM in the Unit of Measure field and IN in the Alternate UM field and 0.394 in the UM conversion field.

Question? What does this new information from our supplier indicate we should do about our item planning data?

Add Supplier Item

Add Supplier Item

Supplier Item Maintenance

Go To Actions Copy Print Preview Attach

Item Number: 60017 Mouse Pad
 Supplier: 10S1002 Bridgeville Industries
 Supplier Item: SCC62050

Unit of Measure: EA
 Supplier Lead Time: 0
 Use SO Reduction Price: 0.00%
 Currency: USD
 Quote Price: 0.49
 Quote Date: 4/5/2011
 Quote Qty: 100.0
 Price List:
 Manufacturer:
 Manufacturer Item:
 Comment:

QAD QS-PR-160

Supplier Item Maintenance (1.19)

Enter information obtained from the supplier, Bridgeville Industries, about the mouse pads in Supplier Item Maintenance (1.19). Note that the supplier Item for our 60017 is SCC62050. Normally this is the case; that is, suppliers do not use the same numbering scheme that their customers do. By entering the supplier item information in the system, the Buyer will be able to use either the supplier's item number or QMI's item number on purchase orders and the system will know it is for the same item.

Additional Notes

- Note the Quote Price field of 0.49
- Note the Quote quantity of 100.
- Supplier lead time of 0 days. This drives the purchase lead time entered in Item Master Maintenance for this item
- Note also the fields for the manufacturer of an item. Often we purchase from distributors, but may also be able to buy direct from the manufacturer.

Important A powerful feature of entering supplier items in the system is that the Supplier Item Browse can search on either item or supplier. This allows you to inquire on all the suppliers that could supply an item, or all the items you purchase from each supplier.

Verify Purchase Control Settings

Verify Purchase Control Settings

Purchasing Control

Go To Actions Copy Print Preview Attach

Ship-To: 10-100 Inspection Location: 030

Ship-To: 10-100

PO Prefix: P10

Next Purchase Order: 00010002

Receiver Prefix: R10

Next Receiver: 00010069

Sort PO By: Site

Receive Alt: ☐

Apprvd Reqs for POs: ☐

Inspection Location: 030

Price Table Required: ☐

Discrete Discount Table Req: ☐

Schedule Discount Table Required: ☐

Ln Format S/M: Single

PO Header Comments: ☐

PO Line Comments: ☐

Cancel Backorders: ☐

Keep Booking History: ☒

Receiver Type: 1

Sequential Receiver: ☒

Tolerance Percent: 10.00

Tolerance Cost: 100.00

Type: 0 - Do not print receivers
1 - Print for each shipment
2 - Print for each item/shipment

(Acceptance Limit For Overshipments)

(Acceptance Limit For Overshipments)

QAD Q5-PR-165

Purchasing Control (5.24)

The Ship-To field is where we put the default site code where we wish to receive most shipments. The site code is linked to our company address record. This allows the system to print the ship to address on all purchase orders. The ship to address can be modified on each purchase order line if necessary.

In Purchasing Control (5.24) we will set the PO Prefix field to P10 and Receiver Prefix to R10, both documents will begin numbering at 00001000. However we have set Receiver Type to 1 which means each line item on the PO will generate a receiver, so receivers numbers will index differently than PO numbers.

We have unchecked all the flags on the right except 'Keep Booking History.'

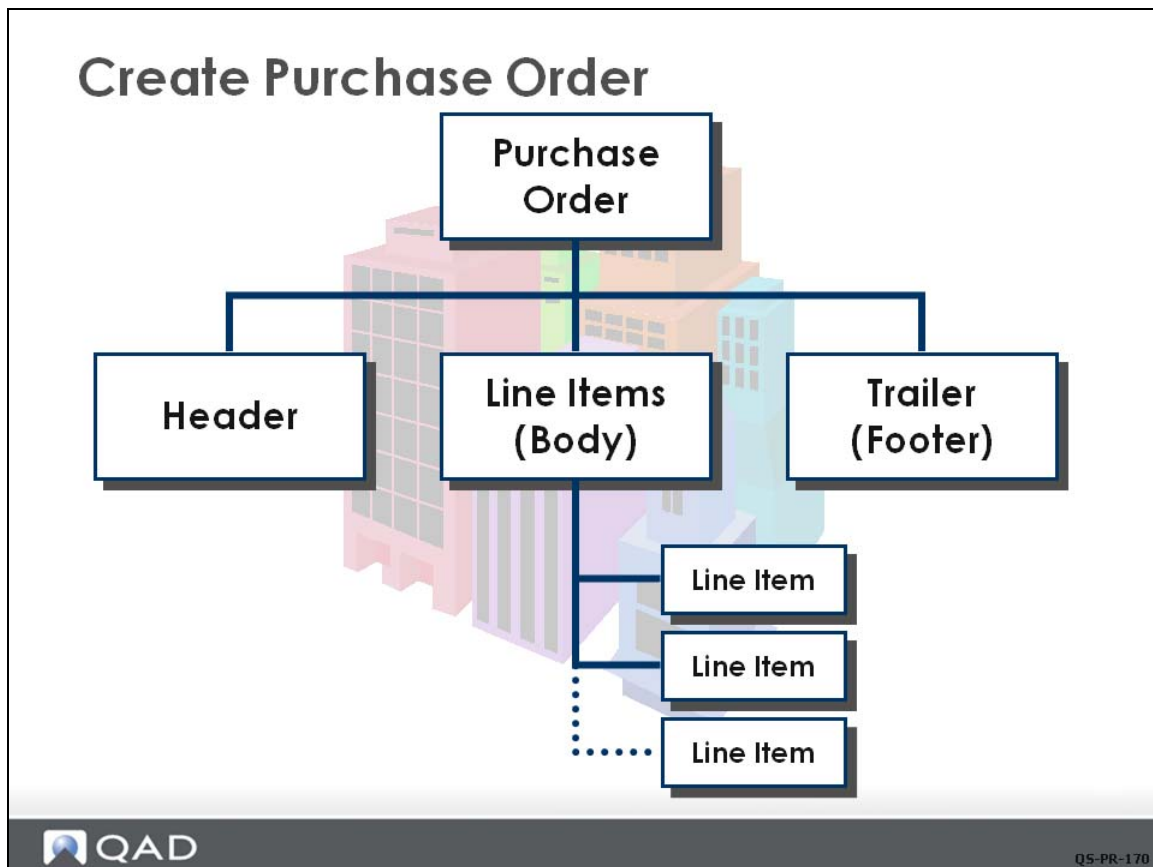
The tolerance fields set the limits for over shipments. Our settings indicate that any item receipt whose count is 10% greater than the PO quantity or whose value is 100 currency units greater than the PO value, will be rejected.

Additional Notes

Line Formats . Single entry lets you customize due dates, sites, tax statuses, and other information for each line item on a purchase order. Multiple entry lets you enter basic information such as item number, quantity, and price for several lines on a single screen. The default format is specified in Purchasing Control.

PO header and line comments are used when you need to add significant detail to either a purchase order header that refers to the entire order, and or, line item detail that applies only to the specific line. The comments screen can always be selected when needed. The control settings if checked would bring up the comments screen for every new PO header and, if the line comment box is checked here, for every new line item added to the PO.

Create Purchase Order



Purchase Order Elements

Before we get into the details of creating the PO remember the three key elements of the purchase order:

The Header, which contains data that applies to the entire order.

The line items, which detail the specific things we are buying.

The trailer, which records the final data applying to the entire order such as taxes and shipping charges.

Enter Header Information

Enter Header Information

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Purchase Order: P1010001 Supplier: 1051002 Price Tbl:

Header Lines Trailer

Header Details Tax Info Logistics Delivery ERS Consignment Comments

Header

Purchase Order: P1010001 Supplier: 1051002 Ship-To: 10-100

Supplier Bridgeville Industries 3390 Linco Road Stevensville MI 49127 USA - TAX PURPOSE

Ship To QMI -USA Division 30 Ridgedale Ave East Hanover USA - TAX PURF

Details

Order Date: 10/6/2010 Price Tbl: Disc Tbl: Ln Disc: 0.00

Due Date: 10/6/2010 Buyer: 3-02 Bill To: 10-100 Site: Daybook Set: 10PURCH

Sales/Job: Contract: Project: Entered By: rgk

Contact: Requested By: Comments:

Remarks:

Tax Info

Tax Usage: Tax Environment: USA Tax Class: Taxable: ☒ Tax In:

QAD QS-PR-180

Purchase Order Maintenance (5.7)

In Purchase Order Maintenance (5.7) QMI's Buyer enters a purchase order for the components required to build 10 medical ultrasound units. We will look at each part of this purchase order.

The first part of the order has “header” information, such as; the PO number, assigned by the system based on the prefix and beginning number we setup in the Purchase Control. The supplier name, Bridgeville Industries, ship-to address, our site 10-100, credit terms, the currency, tax information, and order and due dates (both dates default to today's date).

Note Setting the due date on the order header then defaults that due date to all line items. If you know all the line items will have different due dates, or if you are using requisitions which have the due date, you can leave the header due date blank.

Note The Tax information pops up in a separate window when you click Next or press Enter after completing the header screen. This data defaults from Global Tax Management is not normally modified in purchase order maintenance. Accept the defaults and click Next to advance.

In this example, the system automatically generates the purchase order number, however you can assign PO numbers manually.

Questions

Some of the information that was set up in Supplier Maintenance and Purchasing Control is now seen in the Purchase Order Maintenance screen above.

- What default information came from the supplier record (Supplier Maintenance)?
- What effect do the purchasing control settings have?

Enter Line 1 Data

Enter Line 1 Data

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Purchase Order: P1010001 Supplier: 10S1002 Site: 10-100 Item

Header Lines Trailer

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
1	10-100		62050	1.0	RL	1700.00	0.00

Line Details

Qty Received: 0.0 Due Date: 10/6/2010 CRT Int: 0.00

Qty to Ret: 0.0 Pur Acct: 6610 Mech ADM

Single Lot: Location: 020 Performance Date: Need Date: Project: Type:

Item Revision: Sales/Job: Taxable: Inspect Req: Cmnts:

Status: Fixed Price: UM Conversion: 1.0000 Stock UM Quantity: 1.0 RL

Supplier Item: Manufacturer: Description: Beryllium Copper Update Avg/Last Cost: Extended Net Cost: 1,700.00

QAD QS-PR-190

Purchase Order Maintenance (5.7)

For line 1, QMI's Buyer enters an order for 1 roll, item 62050. The unit of measure and unit cost information default from the information entered earlier in Item Master Maintenance.

Additional Notes

Each line specifies a particular item being ordered, its order quantity, and price. Line details include any exceptions to header information, such as a delivery date or receiving site, that apply to the line item only and not the whole order.

In Purchase Control we had selected single line entry as the format for PO lines. This format shows us one line item at a time but with all the detail in the frame below. This allows us to verify the data that has defaulted in, and to modify any data we need to change. Once we have our four items setup on the PO we will look at the PO in multi-line format to see what that looks like.

Questions

Look at some of the other default information. Where does the following default information come from?

- Location
- Pur Acct

Enter Line 2 Data

Enter Line 2 Data

Purchase Order Maintenance
Go To
Actions
Copy
Print
Preview
Attach

Purchase Order: P1010001
Supplier: 10S1002
Site: 10-100
Item

Header
Lines
Trailer

Lines
Line Details
Tax Info
Comments

Header
Purchase Order: P1010001
Supplier: 10S1002
Ln Format S/M: Single

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
2	10-100		60050	10.0	EA	375.00	0.00

Line Details

Qty Received: 0.0
Due Date: 10/6/2010
CRT Int: 0.00

Qty to Rel: 0.0
Pur Acct: 6610
Mech
ADM

Single Lot: ☒
Performance Date:
Project:

Location: 030
Need Date:
Type:

Item Revision:
Sales/Job:
Taxable:

Status:
Fixed Price: ☒
Inspect Req: ☒
Cmnts:

Supplier Item:
UM Conversion: 1.0000

Manufacturer:
Stock UM Quantity: 10.0
EA

Description: Base Unit / CPU
Update Avg/Last Cost: ☒

Extended Net Cost: 3,750.00

QAD
QS-PR-200

Purchase Order Maintenance (5.7)

For line 2, the Buyer enters an order for 10 CPUs 60050. Note that the system fills in the unit cost of \$375.00.

Enter Line 3 Data

Enter Line 3 Data

Purchase Order Maintenance
Go To
Actions
Copy
Print
Preview
Attach

Purchase Order: P1010001
Supplier: 10S1002
Site: 10-100
Item

Header
Lines
Trailer

Lines
Line Details
Tax Info
Comments

Header
Purchase Order: P1010001
Supplier: 10S1002
Ln Format S/M: Single

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
3	10-100		60008	10.0	EA	269.00	0.00

Line Details

Qty Received: 0.0
Due Date: 10/6/2010
CRT Int: 0.00

Qty to Ret: 0.0
Pur Acct: 6610
Mech
ADM

Single Lot:
Performance Date:
Project:

Location: 020
Need Date:
Type:

Item Revision:
Sales/Job:
Taxable:

Status:
Fixed Price:
Inspect Req:

Supplier Item:
UM Conversion: 1.0000

Manufacturer:
Stock UM Quantity: 10.0
EA

Description: Printer
Update Avg/Last Cost:

Extended Net Cost: 2,690.00

QAD
QS-PR-210

Purchase Order Maintenance (5.7)

For line 3, the buyer enters an order for 10 printers (item 60008).

Enter Line 4 Data

Enter Line 4 Data

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Purchase Order: P1010001 Supplier: 10S1002 Site: 10-100 Item

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P1010001 Supplier: 10S1002 Ln Format S/M: Single

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
4	10-100		60002	10.0	EA	122.00	0.00

Line Details

Qty Received: 0.0 Due Date: 10/6/2010 CRT Int: 0.00

Qty to Rel: 0.0 Pur Acct: 6610 Mech ADM

Single Lot: Performance Date: Project:

Location: 020 Need Date: Type:

Item Revision: Sales/Job: Taxable:

Status: Fixed Price: Inspect Req: Cmnts:

Supplier Item: UM Conversion: 1.0000

Manufacturer: Stock UM Quantity: 10.0 EA

Description: Display / Readout Update Avg/Last Cost:

Extended Net Cost: 1,220.00

QAD

QS-PR-215

Purchase Order Maintenance (5.7)

For line four the buyer orders 10 each of the display /readout, item 60002.

Enter Trailer Information

Enter Trailer Information

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Purchase Order: P1010001 Supplier: 10S1002

Header Lines Trailer

Trailer Tax Info Trailer Information

Header

Purchase Order: P1010001 Supplier: 10S1002 Ship-To: 10-100

Trailer

Non-Taxable:	7,660.00	Currency: USD	Line Total:	9,360.00
Taxable:	1,700.00		Total Tax:	127.50
Tax Date: 10/6/2010			Total:	9,487.50

View/Edit Tax Detail:

Trailer Information

Order Revision: 0

Order Rev Date: Amount Prepaid: 0.00

Print PO: ☒ Status:

EDI PO: ☐ Close Date:

FOB:

Deliver To: Ship Via: PER INSTRUCTIONS

QAD QS-PR-220

Purchase Order Maintenance (5.7)

The last frame shows the “trailer” information, which contains tax, and order status information for all line items. The 9,487.50 is the total value of the four line items on this order. Note the order is flagged for printing.

The system will inquire of you if you make a change to the purchase order, do you want to update the revision number. You would normally do this to keep track of how many changes had been made to the order.

Receive Items and Create Receiver

Example: Receive Items

Purchase Order Receipts X
Go To Actions Copy Print Preview

Order: P1010001
 Packing Slip: 123456
 Receiver: Bridgeville Industries

Supplier: 10S1002
 Status:
 Effective: 10/6/2010
 Move to Next Operation: ☒

Receive All: ☐
Comments: ☐

Ship Date:

2	60050	EA	10.0	EA	0.0	EA	10/6/2010
3	60008	EA	10.0	EA	10.0	EA	10/6/2010
4	60002	EA	10.0	EA	10.0	EA	10/6/2010

Line:
 Quantity:
 Packing Qty:
 Cancel B/O: ☐
 Item Number:
 Supplier Item:

Unit of Measure:
 ID:
 OP:

Site:
 Lot/Ser:
 Reference:
 Supplier Lot:
 Multi Entry: ☐
 Cmnts: ☐

Loc:
 Chg Attribute: ☐

Q5-PR-240

Purchase Order Receipts (5.13.1)

Review Packing Slip from Supplier

Bridgeville Industries the supplier, includes a packing list with the shipment. This document includes our purchase order number, their sales order number, our ship to address, their ship from address, items and quantities ordered, items and quantities shipped, and other information, such as any back orders. We have indicated orders must be shipped complete.

The receiving transaction has a field to include the packing slip number your supplier provides.

Bridgeville Industries has delivered all of the items ordered by QMI. Using Purchase Order Receipts (5.13.1), the Receiving Department records the delivery by first entering the purchase order number, which identifies the line items and the quantity open (ordered but not received), and then by entering the packing slip number. As the packing list indicates order has been shipped complete we can save a few steps by checking Receive All. This pre-fills the transaction frame with all the information needed to process the receipt. as shown below.

Pop Up Button

Pop Up Button

The screenshot shows the 'Purchase Order Receipts' window. At the top, there is a header bar with 'Go To' and 'Actions' menus, and buttons for 'Copy', 'Print', 'Preview', and 'Attach'. Below this is a form with fields for 'Unit of Measure', 'Site', and 'ID'. The main data area displays the following information:

Order: P1010002	Supplier: 10S1002	Status:	Packing Slip: 12345

Ln	Item Number	UM	Qty Open UM	Receipt Qty UM	Project	Due Date	T
1	62050	RL	1.0 RL	1.0 RL		5/27/2010	

A pop-up dialog box is centered on the screen with the text 'Display purchase order lines being received' and two buttons: 'yes' and 'no'.

Below the dialog box, there are several input fields for additional information:

Line:	Unit of Meas:	ID:	Lot/Ser:	Loc:
Quantity:		OP:	Reference:	
Packing Qty:			Supplier Lot:	
Cancel B/O: ☐			Multi Entry: ☐	Chg Attribute: ☐
Item Number:			Crmts: ☐	
Supplier Item:				

The QAD logo is visible in the bottom left corner, and the text 'QS-PR-241' is in the bottom right corner.

Purchase Order Receipts (5.13.1)

This screen pulls the data from the purchase order. If all the data agrees with the packing slip and receiving inspection, the receipt of all items can be completed by clicking next. This will cause a pop up window to appear as seen above.

Purchase Order Receipts

Ln	Item Number	Site	Location Ref	Lot/Serial Supplier Lot
1	62050	10-100	020	

Purchase Order Receipts (5.13.1)

Clicking the yes button brings up a frame showing you exactly the transactions the system is about to complete, as shown above.

Clicking Yes completes the transaction. This transaction will close the line items on the PO, and as there are no other lines on this PO will close the PO. Inventory transactions are posted to the inventory accounts and the inventory detail records are updated. The Supplier Accounts Payable accounts are updated and AP is now ready to voucher the invoice when it arrives and completes its three way matching. That is, the invoice quantity and price must match the purchase order quantity and price and the receipt quantity, before payment can be made.

Review Inventory Levels

Review Inventory Levels

Inventory Detail by Item Browse

Actions: Print Add to Favorites Chart Chart Designer Refresh New Edit Edit

Search (1)

Item Number starts at 01010 Search Clear All

Viewing 1 - 100 of 492 Records per page: 100

Item Number	Site	Qty On Hand - Inv Mstr	Qty On Hand - Inv Detail	Location	Lot/Serial	Reference	Status	Expire Date
01010	10-100	10.0	1.0 010	01010-0712-1	YYY			
01010	10-100	10.0	1.0 010	01010-0712-10	YYY			
01010	10-100	10.0	1.0 010	01010-0712-2	YYY			
01010	10-100	10.0	1.0 010	01010-0712-3	YYY			
01010	10-100	10.0	1.0 010	01010-0712-4	YYY			
01010	10-100	10.0	1.0 010	01010-0712-5	YYY			
01010	10-100	10.0	1.0 010	01010-0712-6	YYY			
01010	10-100	10.0	1.0 010	01010-0712-7	YYY			
01010	10-100	10.0	1.0 010	01010-0712-8	YYY			
01010	10-100	10.0	1.0 010	01010-0712-9	YYY			

QAD QS-PR-280

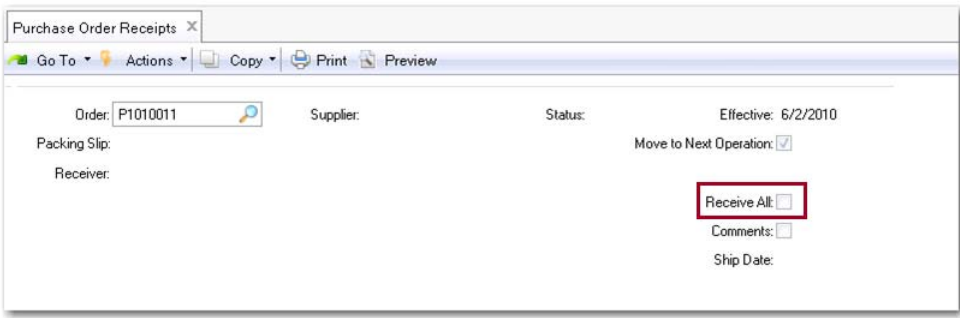
Inventory Detail by Item Browse (3.2)

Concerned about the unit of measure conversion on the beryllium copper? Or any other aspect of the transaction? Use Inventory Detail by Item Browse (3.2) to verify the transactions were completed as expected.

We see here the inventory of items just received, all in the correct location, with the correct status and with the correct quantities.

Purchase Order Receipts

Purchase Order Receipts



Order: P1010011 Supplier: Status: Effective: 6/2/2010

Packing Slip: Move to Next Operation: ☒

Receiver: **Receive All: ☐** Comments: ☐

Ship Date:

QAD Q5-PR-249

Purchase Order Receipts (5.13.1)

Let's take a look at how you would handle PO receipts in a nonstandard situation. We have processed another PO identical to the last one except the PO number is different. The first screen shows the Receive All box left unchecked.

Example: Receive Items

Example: Receive Items, con't.

Purchase Order Receipts x

Go To Actions Copy Print Preview Attach

Unit of Measure: RL Site: 10-100 ID:

Order: P1010011 Supplier: 10S1002 Status: Packing Slip:

Ln	Item Number	UM	Qty Open	UM	Receipt Qty	UM	Project	Due Date	T
1	62050	RL	0.0	RL	0.0	RL		6/2/2010	
2	60050	EA	10.0	EA	0.0	EA		6/2/2010	
3	60008	EA	10.0	EA	0.0	EA		6/2/2010	
4	60002	EA	10.0	EA	0.0	EA		6/2/2010	

Line: 1 Unit of Measure: RL Site: 10-100 Loc: 020

Quantity: 0.00000000 ID: Lot/Ser:

Packing Qty: 0.0 OP: 0 Reference:

Supplier Lot:

Item Number: 62050 Multi Entry: Chg Attribute:

Supplier Item: Cmnts:



QS-PR-250

Purchase Order Receipts (5.13.1)

This will bring up the receipt screen but because we unchecked the Receive All box the Quantity to be received is left blank. We will now use the lower frame to manually enter each line item and the quantity being received.

Example: Receive Items, cont.

Purchase Order Receipts

Go To Actions Copy Print Preview Attach

Unit of Measure: RL Site: 10-100 ID:

Order: P1010011 Supplier: 10S1002 Status: Packing Slip:

Ln	Item Number	UM	Qty Open	UM	Receipt Qty	UM	Project	Due Date	T
1	62050	RL	0.0	RL	0.0	RL		6/2/2010	
2	60050	EA	10.0	EA	0.0	EA		6/2/2010	
3	60008	EA	10.0	EA	0.0	EA		6/2/2010	
4	60002	EA	10.0	EA	0.0	EA		6/2/2010	

Line: 1 Unit of Measure: RL Site: 10-100 Loc: 020

Quantity: 0.000000000 ID: Lot/Ser: Reference: Supplier Lot: Multi Entry: Chg Attribute: Cmnts:

Packing Qty: 0.0

Cancel B/O: Item Number: 62050 Supplier Item:



QS-PR-260

Purchase Order Receipts (5.13.1)

In subsequent frames, shown above, the Receiving Department enters both the actual quantity received for each line (Quantity field) and the quantity indicated on the packing slip (Packing Qty field). This step is especially important when there is a discrepancy between the quantity listed on the packing slip and the actual quantity received. The line detail frame can also be used to indicate inventory location the material is put away in, if it is different than the default.

In this case the quantities are the same. Once the line item data are filled in and you click next the quantity to be received column in the top frame is updated and you can proceed to the next line item.

Purchase Order Receipts (5.13.1)

Purchase Order Receipts

Unit of Measure: RL Site: 10-100 ID:

Order: P1010011 Supplier: 10S1002 Status: Packing Slip:

Ln	Item Number	UM	Qty Open	UM	Receipt Qty	UM	Project	Due Date	T
1	62050	RL	0.0	RL	0.0	RL		6/2/2010	
2	60050	EA	10.0	EA	0.0	EA		6/2/2010	
3	60008	EA	10.0	EA	0.0	EA		6/2/2010	
4	60002	EA	10.0	EA	0.0	EA		6/2/2010	

Line: 1 Unit of Measure: RL Site: 10-100 Loc: 020

Quantity: 0.0 ID: Lot/Ser:

Packing Qty: 0.0 OP: 0 Reference:

☒ Cancel B/O: ☐ Supplier Lot:

Item Number: 62050 Multi Entry: Chg Attribute:

Supplier Item: Cmnts:

QAD QS-PR-261

Purchase Order Receipts (5.13.1)

Note the field Cancel back order. In some cases a shipment may be short a few items, this box lets you receive the item short and cancel the back order, thus closing the PO line. Of course you will want to notify your supplier so they do not try to ship the additional items.

Questions

Where did the following default information come from:

- Supplier
- Location
- Site

If this had been a partial order, how would you handle that in QAD Enterprise Application?

In the final frames, the Receiving Department confirms that all information listed is correct and the system processes the order receipt.

A trailer frame is displayed to review any taxes.

If we wished to print a copy of the receiver it would look like the image below. Remember we set the control file to create one receiver for each line item. We have now received enough components to manufacture 10 medical ultrasounds.

Purchase Receipt Document

Purchase Receipt Document

R E C E I V E R Page: 1

Supplier: 10S1002
 Bridgeville Industries
 3390 Linco Road
 Stevensville, MI 49127
 USA - TAX PURPOSE

Receiver: R1010006
 Receipt Date: 06/02/10
 Print Date: 06/02/10
 Purchase Order: P1010011
 PO Revision: 0

Packing Slip:
 Remarks:

Ship Date: 06/02/10

Ln	Item Number	UM	Pack Slip Qty	Receipt Qty	Location	Req By
2	60050	EA	0.0	10.0		
Base Unit / CPU						
ERS Option: 1						
Req By: _____						
Site	Location	Lot/Serial	Reference T	Tran Qty		
10-100	030	5500		1.0		
10-100	030	5501		1.0		
10-100	030	5502		1.0		
10-100	030	5503		1.0		
10-100	030	5504		1.0		
10-100	030	5505		1.0		
10-100	030	5506		1.0		
10-100	030	5507		1.0		
10-100	030	5508		1.0		
10-100	030	5509		1.0		
Loc Total				10.0		

Ln	Item Number	UM	Pack Slip Qty	Receipt Qty	Location	Req By
3	60008	EA	0.0	10.0	020	
Printer						
ERS Option: 1						
					10-100	

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Purchase Receipt Document (5.13.2)

In the final frames, the Receiving Department confirms that all information listed is correct and the system processes the order receipt. (Partial list shown above.)

Additional Notes

Several settings in Purchasing Control affect purchase receipts.

- The Receiver Type field determines whether receivers are created for each order or for each item on the order, or not printed at all.
- Tolerance Percent and Tolerance Cost determine how the system manages receipts that exceed the order quantity.

Review Transactions

Transaction Detail Inquiry

Transactions Detail Inquiry

Go To Actions Copy Print Preview Attach

Output: PAGE

Transaction: 4396 Output: PAGE

Tran Nbr: 4396	Order: P1010002	R1010002
Trans Type: RCT-PO	Revision: 0	
Date: 5/27/2010	Item Number: 62050	
Time: 10:21	Description: Beryllium Copper	
Effective Date: 5/27/2010	Unit of Measure: RL	
Remarks:	Address: 10S1002	
User ID: qni	Name: Bridgeville Industri	
Program: poporc.p	SD/Job:	
Currency: USD	Ship Type:	
Qty Change: 1.0	Price: 1,700.00	
Shipper Number:	IMC:	
Ship Date: 5/27/2010		

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Transaction Detail Inquiry (3.21.1)

When you enter this screen the first transaction you see will be the last one processed by the system. This first frame gives a high level overview of the transaction. Use the up arrow on your keyboard to scroll back through the transactions to see the PO receipts we have just made.

Using Transactions Detail Inquiry, we can review the detail of the transactions created for the receipt of item 62050, beryllium copper. The second frame gives the complete detail including: inventory, cost and General Ledger account details.

Review Transactions

 Transactions Detail Inquiry 10/06/10

Transaction: 27980 Display E-Signature Details: Yes Output: PAGE
 ===== E-Signature Details =====
 Category: InvTran
 This data is currently unsigned
 ===== End of e-signature details =====

Tran Nbr: 27980	Order: P1010001	R1010068
Trans Type: RCT-PO	Revision: 0	
Date: 10/06/10	Item Number: 62050	
Time: 15:17	Description: Beryllium Copper	
Effective Date: 10/06/10	Unit of Measure: RL	
Remarks:	Address: 1051002	
User ID: rgk	Name: Bridgeville Industri	
Program: poporc.p	SO/Job:	
Currency: USD	Ship Types:	
Qty Change: 1.0	Price: 1,700.00	
Shipper Number:	IMC:	
Ship Date: 10/06/10		

Site: 10-100	Inventory Data
Location: 020	Begin Balance: 0.0
Lot/Serial:	Quantity Change: 1.0
Inv Status: Y-Y-Y	Qty Short: 0.0
Supplier Lot:	Begin Loc Bal: 0.0
Grade/Assay:	Loc Qty Change: 1.0
Reference:	Expire Date:
	Batch:

Material: 0.00	Cost Data	Overhead: 0.00
Labor: 0.00		Subcontract: 0.00
Burden: 0.00		Cost Total: 0.00

Debit Acct: 1500	Mech	RCT-PO
Cr Account: 2520	Mech	
Amount: 0.00		Reference ID:
GL Reference:		

Debit Acct: 6710	Mech	RCT-PO
Cr Account: 2520	Mech	ADM
Amount: 1,827.50		Reference ID: IC101006000003
GL Reference: 2010/RCT-PO000000018		

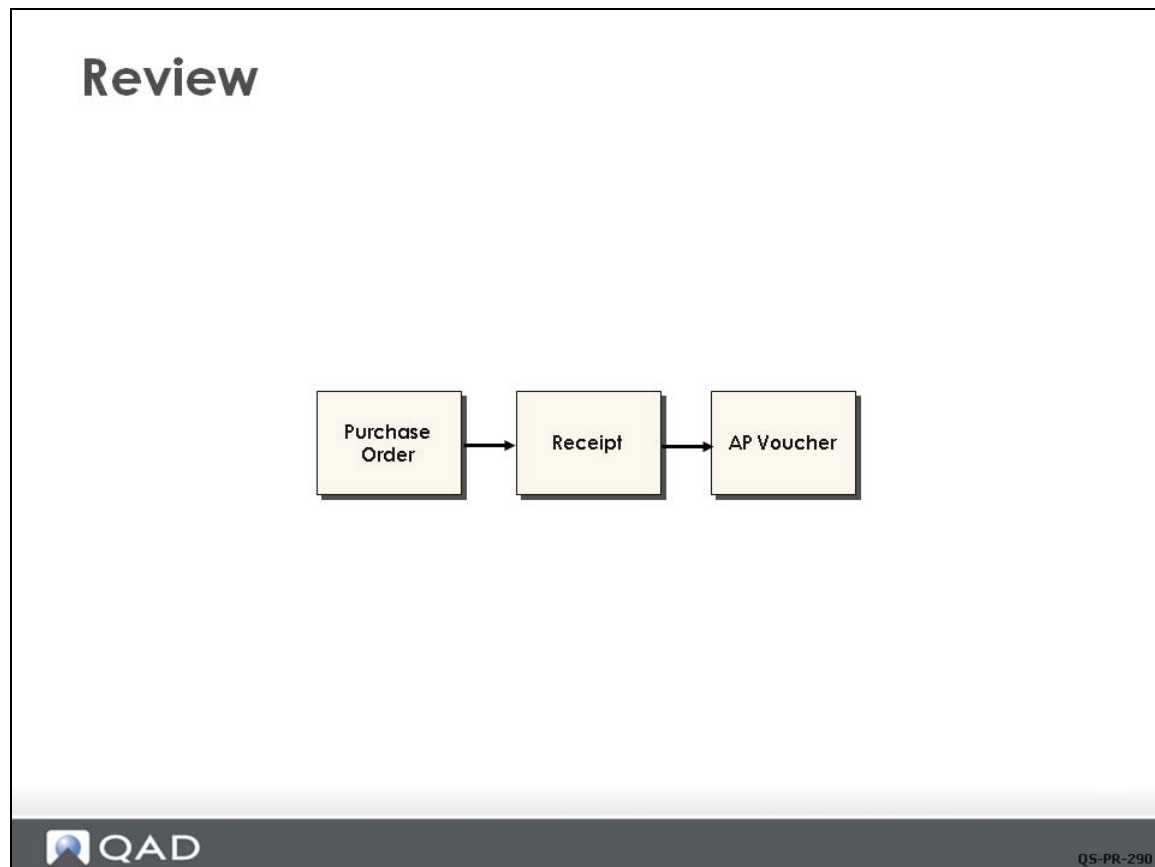


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Transaction Detail Inquiry (3.21.1)

- In the first GL transaction, the inventory account (1500) is debited and the PO receipts account (2520) is credited \$1700.00 the total standard cost of the roll of copper.
- The reference ID is the number if you need to track this transaction in the General Ledger IC means it was a transaction generated by Inventor Control. there is a date code, 100527 and a sequential number, 1 in this case.
- There is also the GL Reference showing the year and daybook plus sequence number.

Review



Let's review some key points in the purchasing cycle that we have covered so far.

For inventory items that you buy for manufacturing, the starting point for payment processing is the purchase order. The purchase order is a contract that confirms your intent to buy. It lists items, quantities, and prices along with any related charges such as taxes and freight.

Upon receipt, your Receiving department issues a receiver to confirm the received items and quantities against the purchase order.

The supplier sends an invoice to your accounts payable function to confirm your liability to pay for the items under the conditions specified on the purchase order. Before you can pay the invoice, you verify that the items you received are what you originally ordered and that the supplier has charged you the correct price. To do this, you record a supplier invoice in Accounts Payable.

Exercise 5

Supplier Data

- 1 Use Supplier Data Maintenance (2.3.1) to review supplier contact information and other data. Click Next at the email pop-up until you reach the Supplier Terms Data frame.

Field	Data
Supplier	10S1002
Name	Bridgeville Industries
Verify Cr Terms	30D (1 month)

Verify that the Partial OK flag is unchecked. Click Next until the Supplier field is highlighted, then click Back.

Supplier Items

Supplier items are used to cross reference your item number with your supplier's item number. You can also document the supplier's quoted price for the item. Later, in Purchasing, you can reference the supplier's item number instead of your own, and the system will find your item number for you.

- 2 Use Supplier Item Maintenance (1.19) to create a record that cross references your item number 60017 and 60018 to your supplier's item number.

Field	Data
Item Number	60017
Supplier	10S1002
Supplier Item	SCC60017; click Next
Unit of Measure	EA
Supplier Lead Time	5
Currency	USD
Quote Price	0.49
Quote Qty	100

Update and exit the record.

Field	Data
Item Number	60018
Supplier	10S1002
Supplier Item	SCC60018; click Next
Unit of Measure	EA
Supplier Lead Time	5
Currency	USD
Quote Price	2.99
Quote Qty	100

Purchasing Control

- 3 Use Purchasing Control (5.24) and update the record per the following:

Field	Data
Ship To	10-100
PO Prefix	P10
Next PO	System Default
Receiver Prefix	R10
Next Receiver	System Default
Ln Format S/M	Single
PO Header Comments	No (unchecked)
PO Line Comments	No (unchecked)

Let all other fields default. Update and exit.

Create Purchase Orders for Component Items

- 4 Use Purchase Order Maintenance (5.7) to place an order for the components 60017 and 60018, all other components are already in inventory.

Purchase Order = [leave the purchase order number blank to default to the next number from your control file]

Field	Data
Supplier	10S1002; click Next

Order and Due Date will default to today's date

Field	Data
Site	10-100 (will be used as a default for the line Status)
Credit Terms	30D (this defaults from the supplier record)

Click Next twice.

Go to the line item data.

- 5 In the line item information, set up purchase order lines for each component for the calculated amount. Key fields to populate are:

PO Line	Site	Item No.	Qty Ordered	UM	Unit Cost
Line 1	10-100	60017	100	EA	0.49
Line 2	10-100	60018	100	EA	2.99

Notice the field Update Avg/Last Cost is checked. This indicates that when these items are received, the current cost of the item will be updated to reflect any difference between our last current cost and the prices on this PO. If we decide we do not want this updated, we can uncheck this box and the current cost will not change.

- 6 When Ln 3 is highlighted click End Lines, Trailer, Next twice, then Back.

Record Receipts against a Purchase Order

The supplier has sent the material you ordered for your components. Receive the items into inventory.

7 Use Purchase Order Receipts (5.13.1). Key fields to populate are:

Field	Data
Order	PO Number or use lookup; click Next
Supplier	will be system filled from the PO record
Packing Slip	enter any number you wish
Receiver	<blank>
Ship Date	<blank>
Receive All	Yes (Checked; very important for fast simple receipt)

Click Next 3 times, review each screen.

This will bring up a window showing the four line items from the PO. The data should look like this.

Line	Item	UM	Qty Open	Receipt Qty
1	60017	EA	100	100
2	60018	EA	100	100

If all the information is correct click next.

This brings up a window, Display purchase order lines being received, click Yes.

This brings up a frame with the receipt details and should look like this:

Ln	Item	Site	Location	Quantity
1	60017	10-100	020	100
2	60018	10-100	020	100

All items should be received into our inventory location 020.

If all the information is correct click next, verify the data are correct in the popup and you have completed the receipt transaction.

If you need to go back and fix something, answer No, and you will have the opportunity to go back and fix any problems.

The last screen shows the trailer section. Be sure to click Next, otherwise, your receipt will not be saved.

8 Use Inventory Detail by Item Browse/Inquiry (3.2) to review the inventory levels for your component items. Key fields to populate are:

Search:

Field	Data
Item Number, Starts At	60017

This selection criteria will display only the items we have entered into our site 10-100.

9 Use Transactions Detail Inquiry (3.21.1) to review the transactions you created when you did the receipt. The last transaction, (Item 60018) will default.

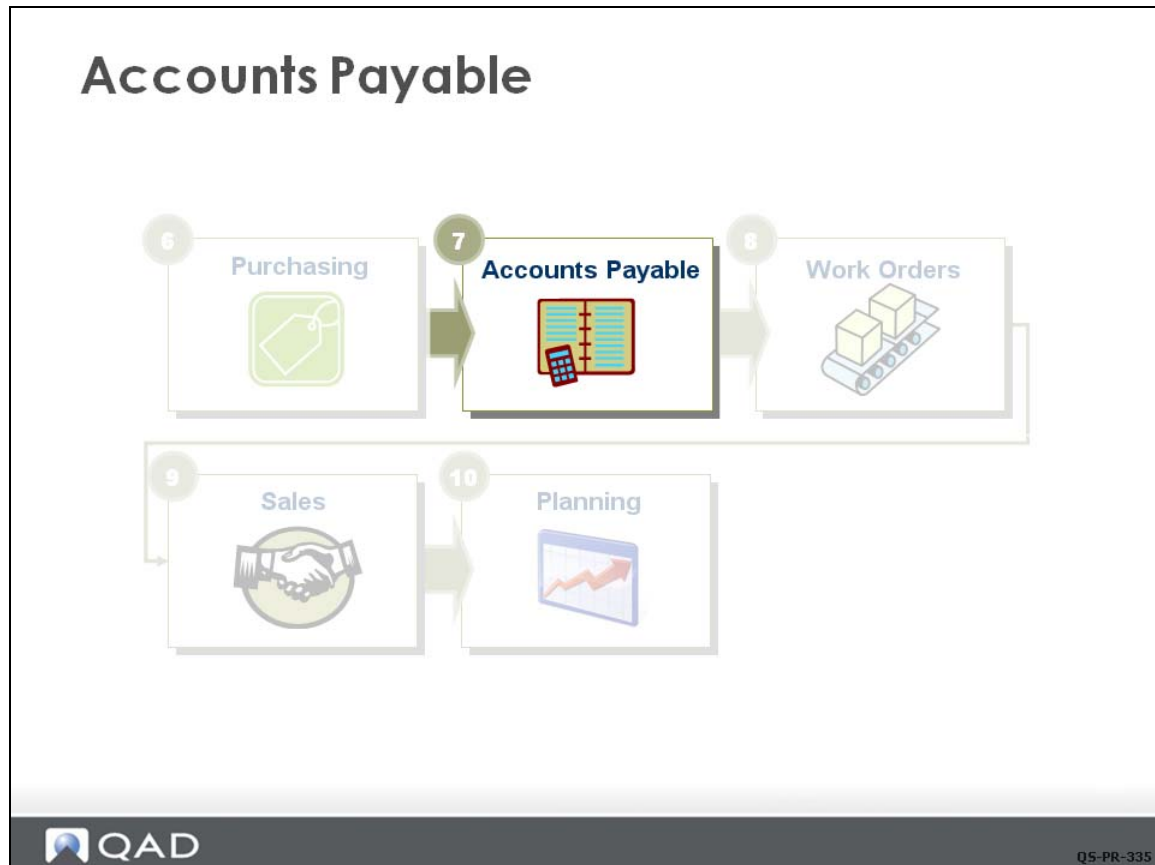
Scroll through the records you created in these activities, (use the up and down arrows on your keyboard in the transaction number field). Look at the transaction type to understand what created the transaction.

Look at the GL detail, and find the GL transaction number that was created for the last purchase order receipt. What accounts were debited and credited?

Chapter 7

Accounts Payable

Overview



This section presents a high level overview of the accounts payable process. All the details of this activity are covered in the financial training materials. These are tasks that are done by the Accounts Payable department and are subject to the various accounting rules and practices. One of the more important rules is separation of activities. This means in simple terms, as applies to this course, that the person who is authorized to buy material should not be the same person who is authorized to pay for the material. We discuss some key concepts to provide an overall concept of the system.

Key Concepts

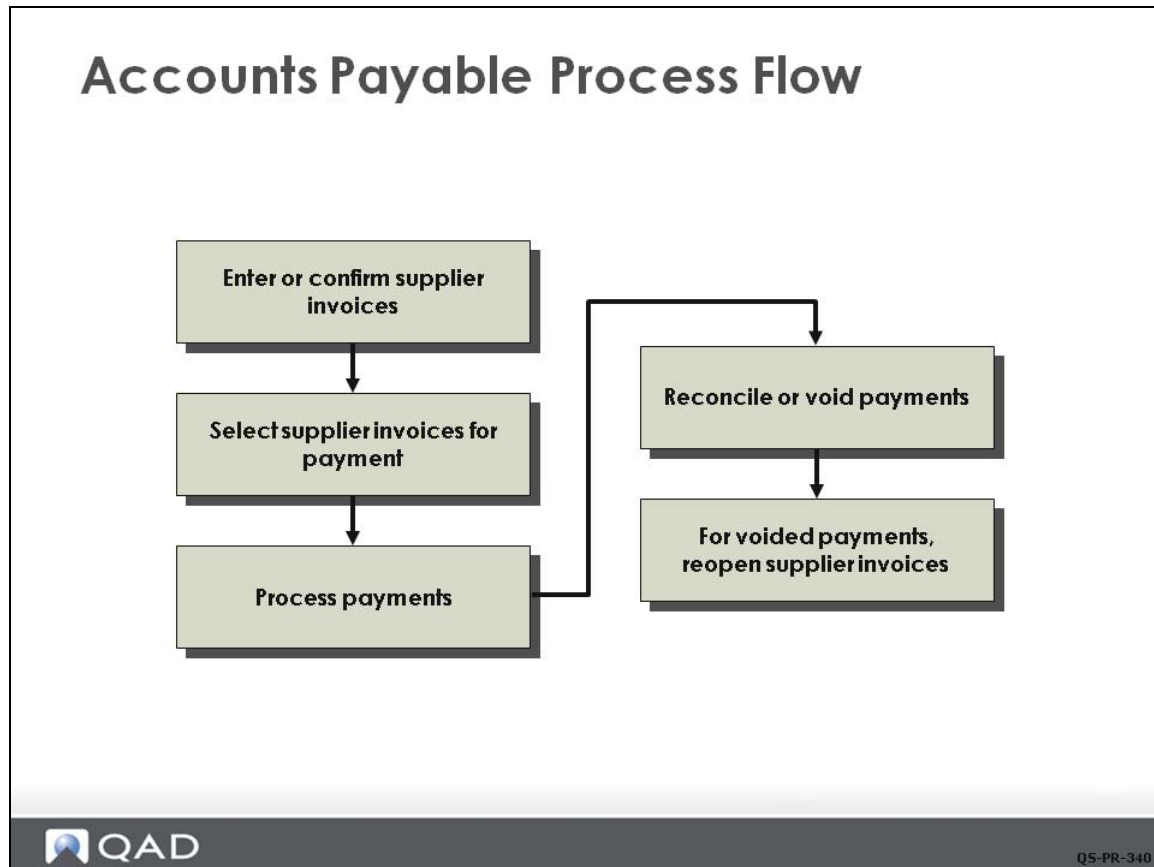
- AP Processing Flow
- Vouchering
- Processing Payments

Learning Objectives

When you finish this chapter, you should be able to:

- Describe the AP process flow
- Define a supplier invoice
- Describe the payment flow

Key Concepts



Introduction

The Accounts Payable department records amounts owed to vendors and processes and prints payments for those amounts. Often, an Accounts Payable department uses supplier invoices to document internal approval and help ensure the accuracy of invoices it receives.

A supplier invoice is an internal document (in the system) based on the invoice from the supplier, that when approved authorizes payment to the supplier. Supplier invoices are selected for payment, either by due date, discount date, or manually. Usually, you run an aging report to determine which balances are oldest. Then print the payment selection register to show the supplier invoices selected for payment and make any needed corrections.

Once supplier invoices are selected, payments are processed by printing checks, recording manual checks, or creating a printed report or a file for electronic funds transfer. The payment register is printed as a record of payments made. To confirm electronic funds transfers, you can print a payment specification report and send it to the supplier.

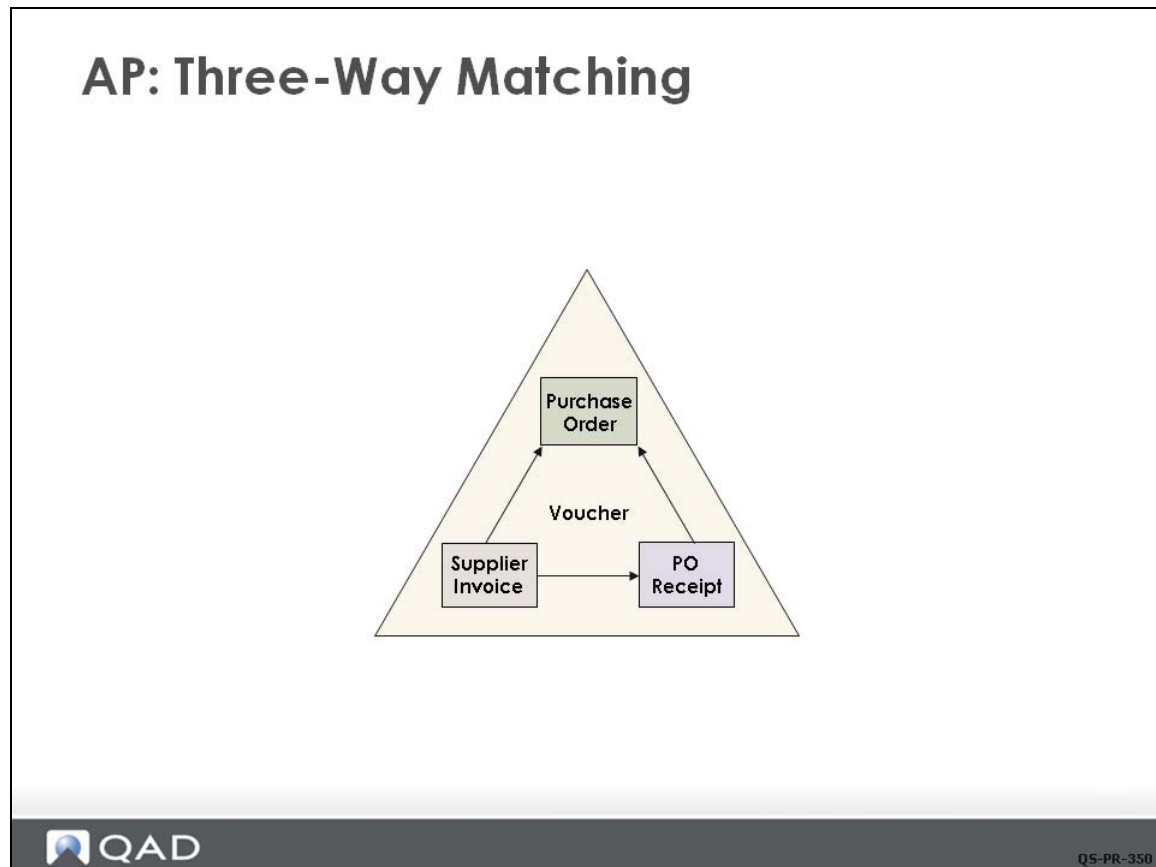
After payment, the supplier balance is decreased, but the payment is not immediately marked as closed. Both the payment and original supplier invoices remain in the system until the payment is cleared by the bank. If the payment does not clear or must be voided for any reason, the system automatically reopens the supplier invoice. The Accounts Payable process flow is shown in the figure above.

Supplier Invoices

Supplier invoices convey authority to pay an invoice and record all relevant details on the nature of the liability and the payment.

As items are received into inventory, a supplier invoice for the items is typically received in Accounts Payable. Information from the invoice is recorded in a supplier invoice. The supplier invoice verifies invoiced items and quantities against the purchase order and receiving records before processing payment.

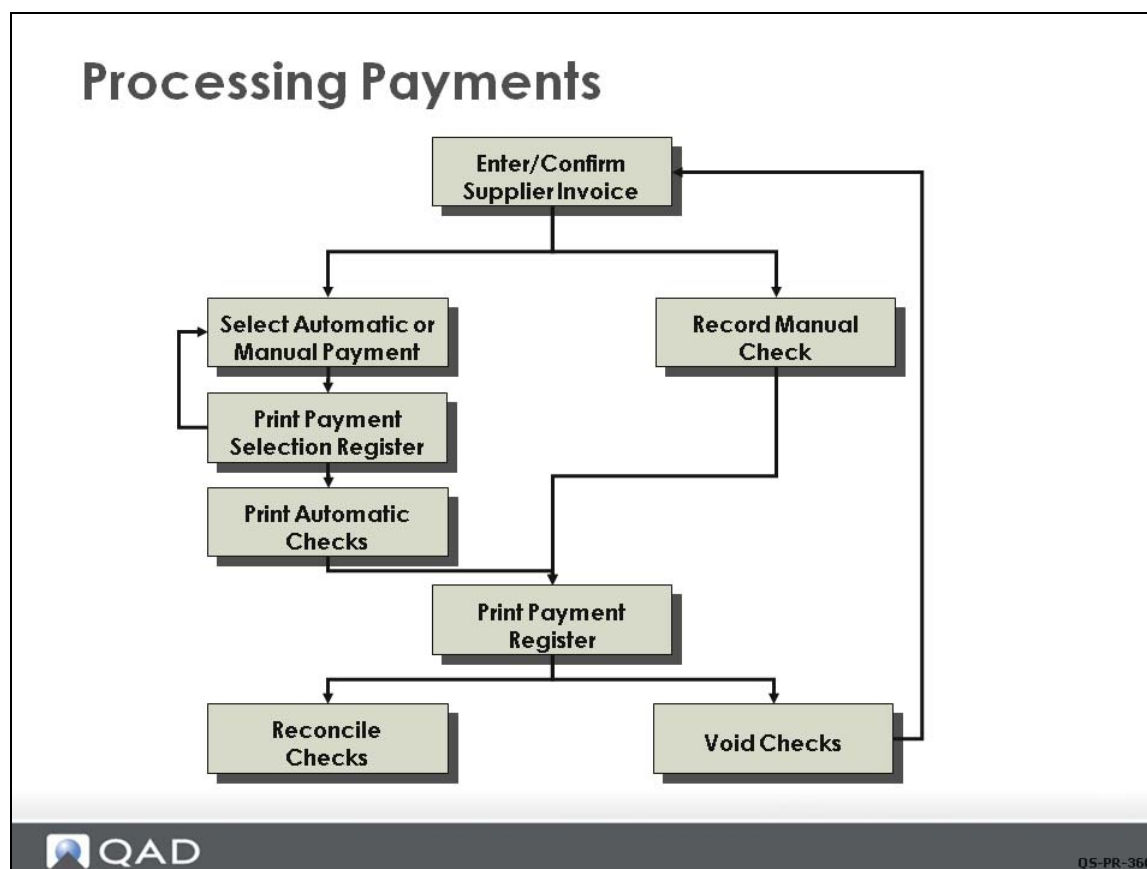
Three-Way Matching



After verifying that no discrepancies exist among the supplier invoice, the purchase order, and the PO receipt-which is called three-way matching-Accounts Payable approves the supplier invoice for payment.

Next, a closer look at the work flow for processing payments.

Processing Payments

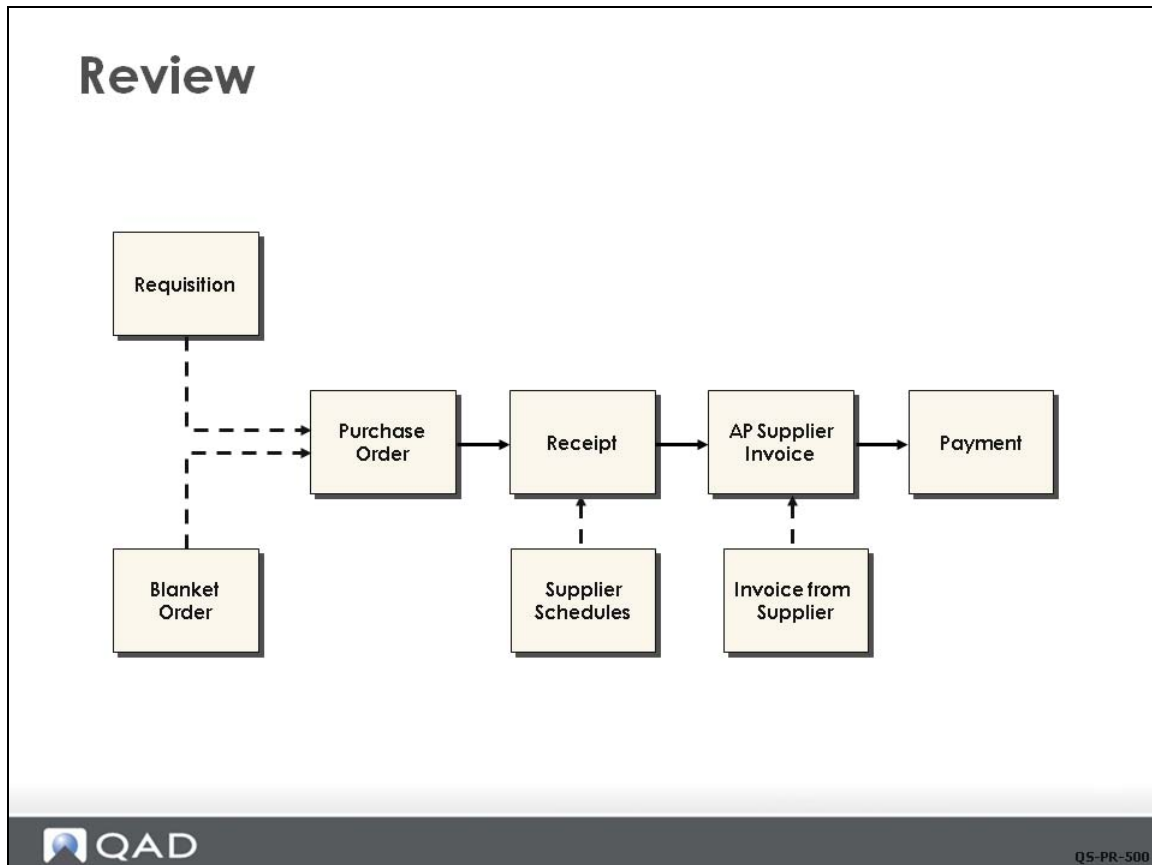


The simplest case of payment processing is when you decide what to pay and then write a check or transfer money in person. Manual payments can be applied to one or more supplier invoices, marking them closed when they are fully paid.

A more complex situation is when you have the system determine which supplier invoices should be paid and then print checks for selected suppliers and amounts. Start by having the system automatically select most of the supplier invoices you intend to pay. After reviewing the report of selected supplier invoices, make any modifications needed. Before processing payments, print the Payment Selection Report--especially if you execute the automatic selection more than once.

You can print payments on standard check forms or to a file in the case of automatic bank transfers. The basic Accounts Payable flow is shown in the figure above.

Review



We'll review the highlights of the purchasing and accounts payable flow that we have covered in the last two chapters.

Purchase Order

In this case, the starting point for payment processing is the purchase order. The purchase order is a contract that confirms your intent to buy. It lists items, quantities, and prices, along with related charges such as taxes and freight. The order also states your billing and shipping addresses, and the credit terms you have negotiated with the supplier. Purchase orders may originate from requisitions, blanket orders or can be created directly.

PO Receipt

When the items are delivered to your Receiving department, a receiving document is recorded (PO receipt). The receiver confirms the received items and quantities against the purchase order. Receipts may be based on supplier scheduled orders.

Invoice

The supplier sends you an invoice to confirm your liability to pay for the items under the conditions specified on the purchase order.

Supplier Invoice

Before you can pay the invoice, you need to verify that the items you received are what you originally ordered and that the supplier has charged you the correct price. To do this, you record a supplier invoice in Accounts Payable.

When you enter the supplier invoice, you reference the purchase order and the invoice. The system then retrieves the receivers associated with the purchase order so that you can record invoice lines against them. If the invoiced items and quantities match the receiver, the receiver is closed.

Payment

Supplier invoices are then selected for payment, either automatically, or manually. Usually, an aging report is run to determine which balances are oldest. The payment selection report is printed to show the supplier invoices selected for payment, and corrections are made if necessary.

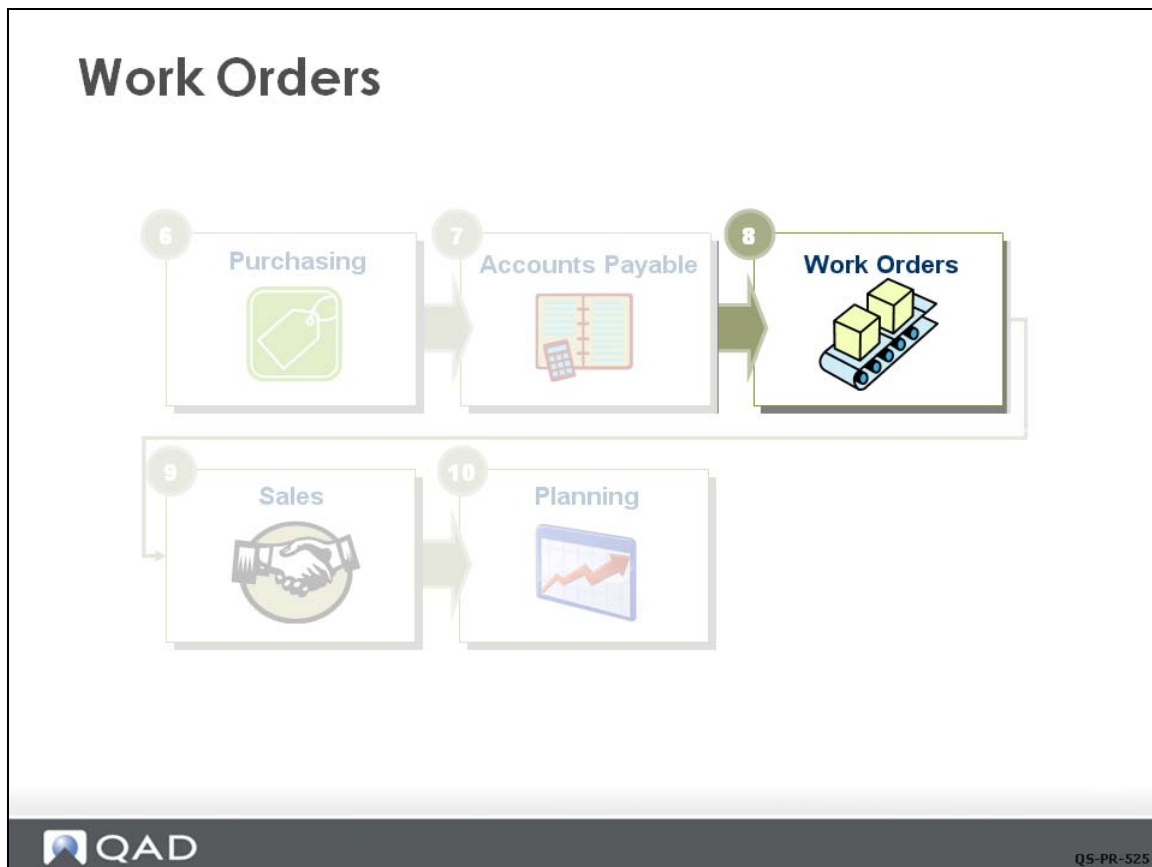
Once supplier invoices are selected, payments are processed by printing checks, recording manual checks, or creating a printed report or electronic funds transfer.

After payments are made, the supplier balance is decreased, but the payment is not immediately flagged as closed. Both the payment and original supplier invoice remain on the system until the payment is reconciled (cleared by the bank).

Chapter 8

Work Orders

Overview



A work order is an authorization to produce a specific quantity of an item by a specific date. In this chapter, we'll further define what a work order is and look at typical stages of its life cycle. After discussing key concepts, we'll go over an example covering the work order life cycle from creation to close.

Key Concepts

- Manufacturing Overview
- Work Orders
- WO Type and Status
- WO Bill of Material and Routing
- WO Life Cycle
- WO Release and Issue of Components
- Shop Floor Control
- WO Receipt and Close
- Variances

Example

- Define Control Settings

- Create and Release Work Order
- Review Picklist and Routing
- Issue Components
- Report Labor
- Receive and Close Work Order

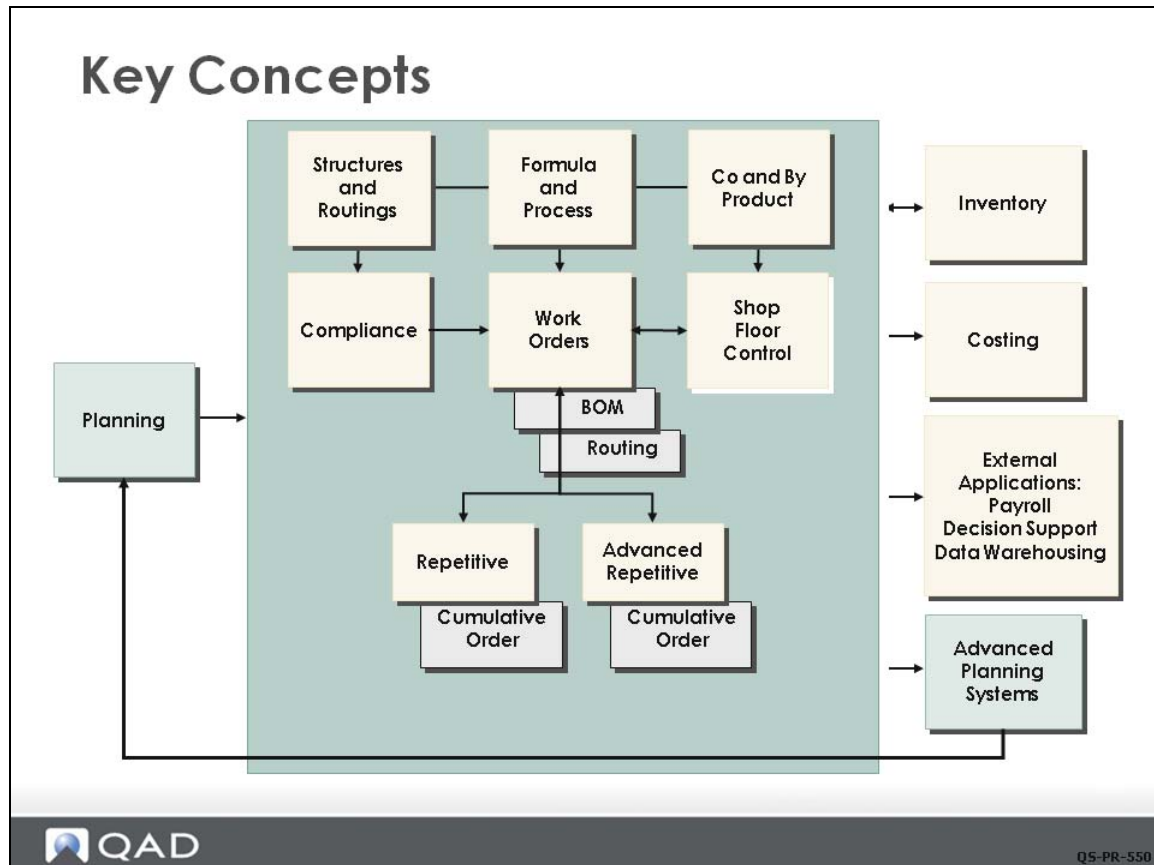
Activities

Learning Objectives

When you finish this chapter, you should be able to:

- List work order types
- List work order status codes
- Describe the work order process flow
- Provide examples of rate, usage, and method variances
- Enter and release a work order
- Issue components
- Record labor
- Receive and close a work order

Key Concepts



Introduction

Manufacturing Overview

QAD Enterprise Application manufacturing modules handle internal supply and demand. Material is moved out of inventory into production, processed or assembled and returned to an inventory location. At the center of much of this activity is the Work Orders module, as shown in the figure above. In the process of using work orders you:

- Define bills of material and product structures in the Product Structures module
- Define routings and operations in the Routings/Work Centers module
- Create planned orders to fill demand with Material Requirements Planning
- Monitor and report on the progress of work orders in the Shop Floor Control module

Manufacturing Environments

QAD Enterprise Application provides features that support different manufacturing environments.

The Work Orders and Shop Floor Control modules are typically used to manage job shop type manufacturing and low to intermediate volume mixed product manufacturing. The Advanced Repetitive or Repetitive modules manage manufacturing in an assembly line or process flow environment.

Formula and Process routes and structures are used to support formula or recipe based processes and these may also utilize Co-By Product structures to facilitate disassembly processes or processes that throw off co and or by products. The Lean Manufacturing module provides support for Kanban and Flow manufacturing. These advanced functions are covered in detail in their own training materials and are not covered in this course.

In this class, we will focus on discrete work orders created in the Work Orders module. Understanding the concepts behind work orders is critical to understanding any of the other manufacturing processes.

Work Order

Work Order

Work Order 123456			
Item	Description	Qty	Date
01010	Medical Ultrasound	1	5/28/XX



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A work order is an authorization to produce a specific quantity of an item for a specific date. A work order may represent a manufacturing production order, a repetitive schedule, or a sequenced production line.

Work orders are typically created in response to current or projected demand for an item. Work Orders can also be used to build up inventory in anticipation of future demand when there is unused manufacturing capacity.

Elements of a Work Order

Important elements of a work order include:

- The type, which identifies the source of the order and indicates how it should be processed
- The status, which determines where a work order is in its life cycle
- The bill of material (BOM), which lists the quantities of components required to fulfill an order
- The routing, which lists the operations required to complete the order

These elements will be examined on the following pages.

Work Order Type

Work Order Type

- **Blank** = Standard
- **F**inal Assembly
- **R**ework
- **E**xpense
- **S**cheduled
- **C**umulative
- **W** = Flow


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The work order type indicates how the work order will move through production and how it affects other modules, especially the financial modules.

Most work orders are entered with a blank type. These represent normal manufacturing orders with a standard product structure and routing. The other types indicate special kinds of work orders.

All work order types are similar in terms of planning, inventory, and accounting. They differ in their default bills, routings, and status codes.

Joint order sets are a special case associated with Co/By Product orders. Joint order sets can be created for regular work orders that are type code blank. See the related training materials on Joint Products for detailed information. Rework and Expense work orders can share the same work order number as a joint order set, but are not considered part of the joint order set. As an example, a work order for co-product or by-product can be reworked using the original work order number. The type code must be blank for a base process work order.

Note Each work order is uniquely identified by the combination of the work order number and the work order ID number. In the case where the work order number is the same, as in a scheduled order, where every schedule for the same item has the item number as the work order number, the work order ID becomes the unique identifier.

Expense and Rework orders are always created by users.

The system generates work orders of type **S**, **C**, **F**, or **W**:

S (Scheduled)

Generated by the system when a Repetitive schedule is entered. The work order number is the item number scheduled for production. Scheduled orders can be tracked using Repetitive feedback functions or released to create work orders. To release it, change the status field from exploded to allocated or to released. The system will automatically change the Type to blank and will treat it like a normal work order. The system will also update the repetitive schedule to exclude the order.

C (Cumulative).

Generated by the system to track repetitive production costs. These cannot be processed by work order functions. Cumulative orders are associated with both regular and sequenced repetitive line schedules.

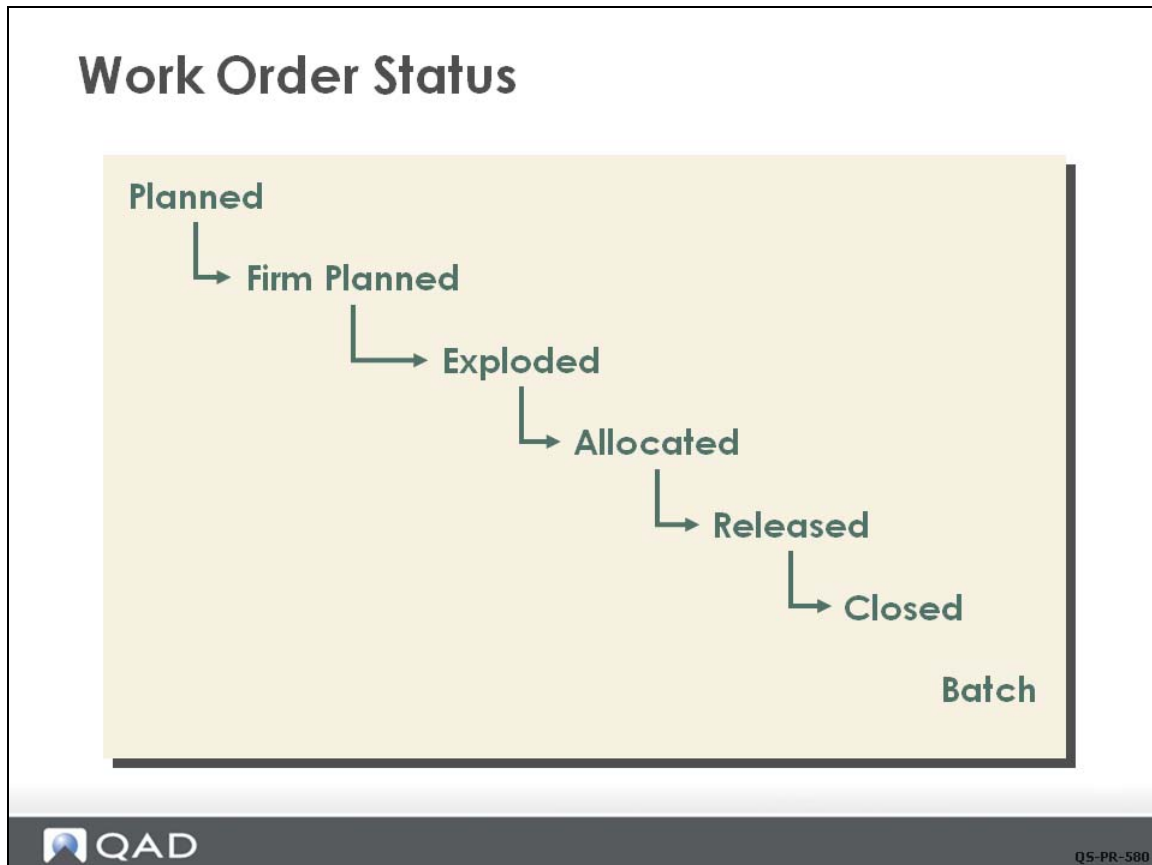
F (Final Assembly).

Generated when a sales order for a configured product is released to manufacturing. The work order number will be the sales order number with a decimal and number to correspond to the sales order line number. It uses the standard routing for the item, but the product structure contains only the items chosen on the sales order configuration. These orders are released and processed as regular work orders. You must specify Type as F in Multiple WO Release/Print to release the work order, however.

W (Flow).

Generated when you use Flow Schedule Maintenance to create a flow scheduled order that does not reference an existing work order. These cannot be processed by work order functions.

Work Order Status



Work order status codes correspond to stages in a work order's life cycle:

A standard work order is usually created by MRP, which treats the work order as a source of supply. At this point, the order is status Planned. When someone reviews MRP's work and confirms the order, it is Firm Planned. Any work order created manually is by default Firm Planned. The supply created by the work order also generates demand for component items; when that demand is calculated, the work order is Exploded. As yet, the demand represented by the order has not affected inventory; when inventory is set aside for the order it is Allocated. When work is ready to begin, the work order is Released. And when work is finished, it is Closed.

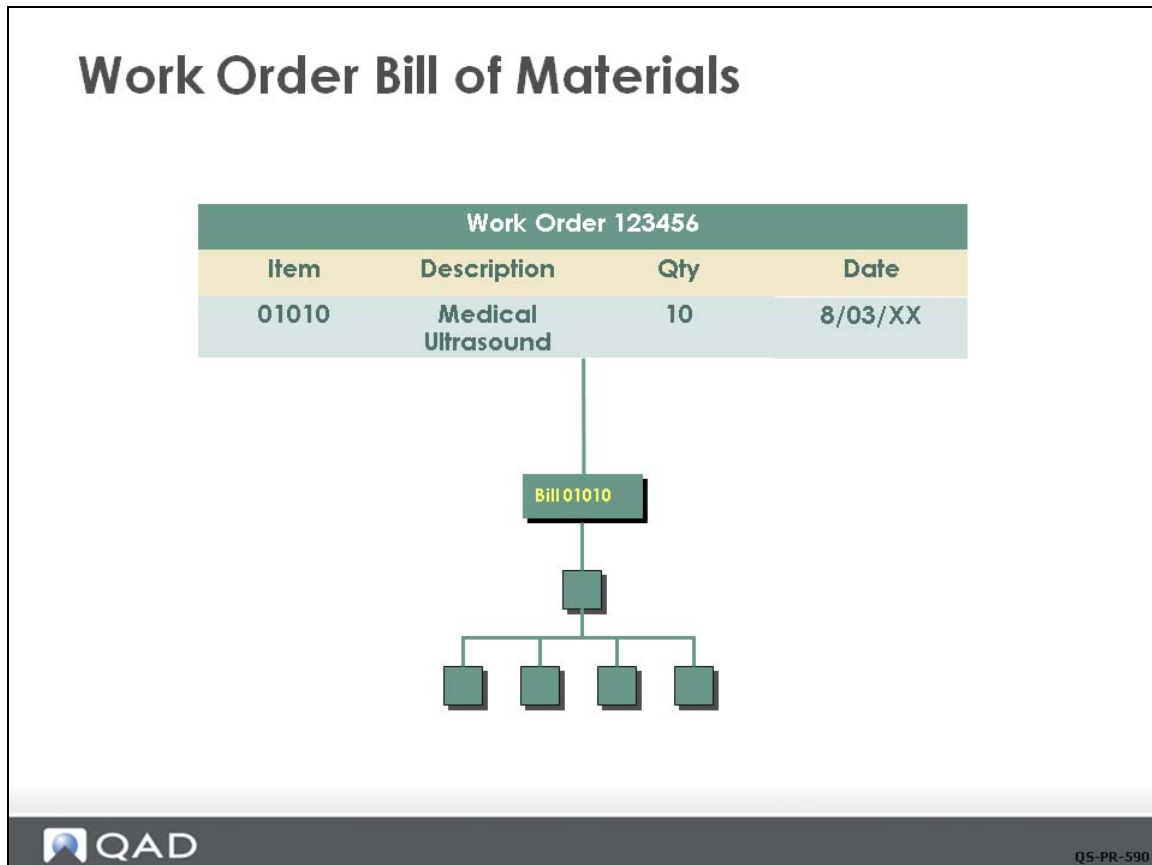
The status of a work order determines how much control you have over its bill, routing, inventory allocations, inventory transactions, and labor feedback.

- You cannot make any changes to orders with status Planned. These are managed by MRP.
- For orders with status Firm Planned, you can change the dates and quantities as needed, and specify an approved alternate bill or routing
- For orders with status Exploded, Allocated, or Released, bills and routings can be modified or alternate ones specified

A work order progresses from one status code to the next and, unless prematurely released, does not return to an earlier status. Most orders will progress from status firm planned to released in one step using the function work order release and print.

Note Manually exploding a work order is a special case usually done to capture the current bill of material before an impending engineering change. Manually allocating a work order is often done to consume the last of a component item that is being phased out. In this case the inventory of the component would be allocated for that specific order.

Work Order Bill of Material

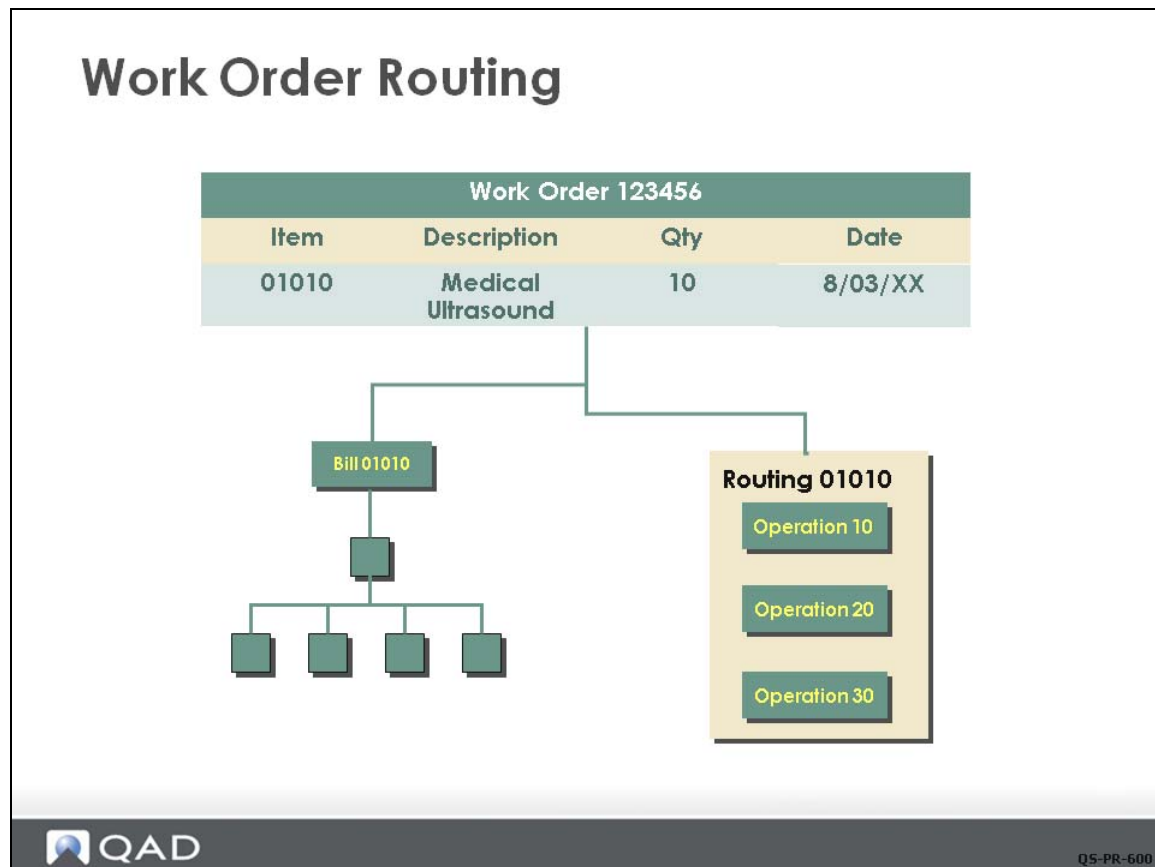


The work order bill of material (BOM) is derived from the item's product structure, defined in Product Structure Maintenance (or Formula Maintenance) and the quantity ordered. Inventory allocations and issues are based on the bill. MRP uses the bill of materials to calculate component demand.

When a work order is created, the Product Structure for the item is copied into it. This product structure with the order quantity of the work order then becomes the Work Order Bill of Material and is specific to that work order. As work progresses, required changes can be made to this copy using Work Order Bill Maintenance. This way, what actually happens can be compared to the standard. Particularly in the case where many substitute items are available for assembly this feature allows for what is often called “as built” documentation.

Once created the work order bill of material is not effected by changes to the product structure.

Work Order Routing



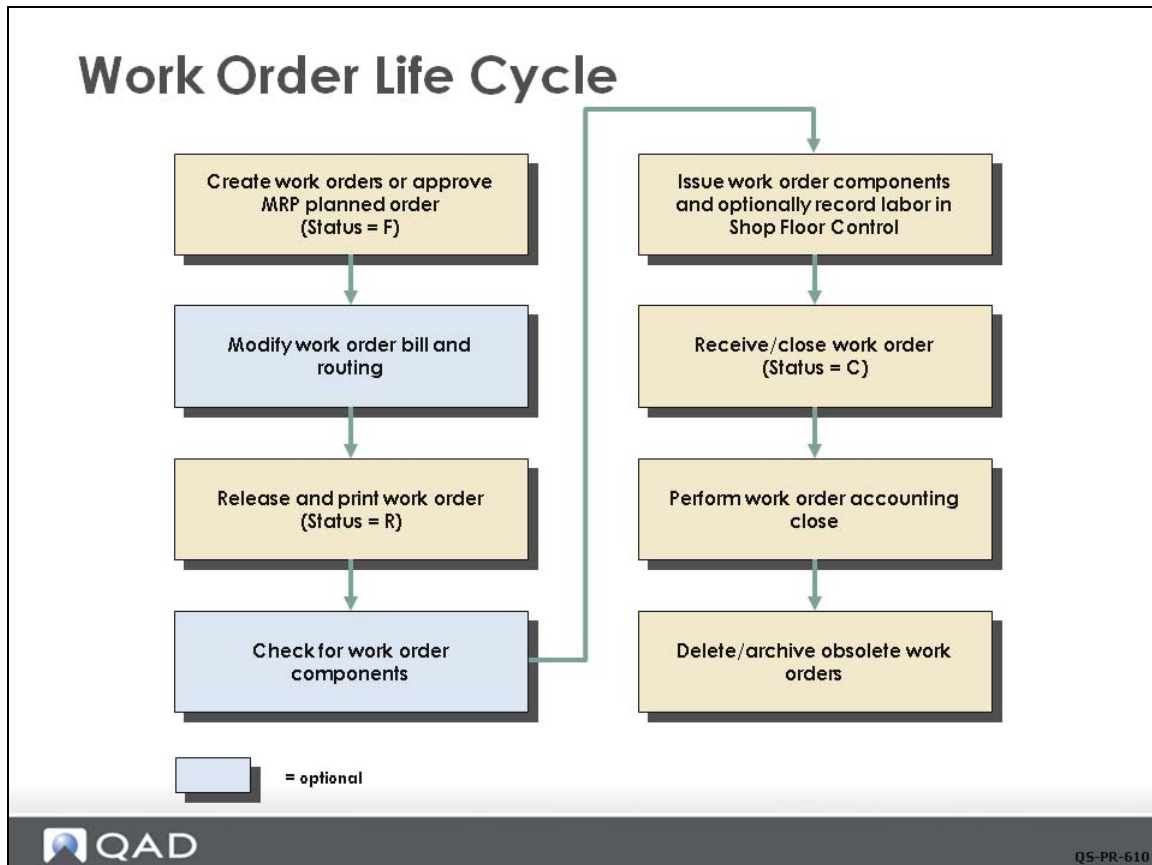
Work order routings, identified by routing codes, specify the operations, or steps, required to manufacture an item. You set up routings and operations using the Routings/Work Centers module. Routings are automatically linked if the item number and routing number are the same. Or, you can manually link them in Item Master Maintenance or Item Planning Maintenance.

When a work order is created, the standard routing is copied into it. As work progresses, required changes can be made to this copy using Work Order Routing Maintenance. This way, what actually happens can be compared to the standard. You can monitor work order operations using the Shop Floor Control module.

Once the work order route is created changes to the Routing will not affect the work order route.

Together the work order bill and route allow you to capture ‘as built’ documentation and otherwise record what actually occurred as opposed to what was planned. This does not prevent manufacturing variances but it does explain them.

Work Order Life Cycle



Work orders are created manually (using Work Order Maintenance) or generated from MRP, repetitive, schedules or configured sales orders. Work orders are also generated when another work order is split, or when one is released that requires a routable component.

In a standard sequence, once the work order has been created, it is released, materials are issued and received, the work order is closed, and the items are shipped. The work order flow is shown in the figure above.

On the next few pages, the following stages in the work order life cycle will be examined in detail:

- release
- issue of components
- receipt
- close

Release Work Order

Release Work Order

- Inventory can only be issued or received against a released work order. You can release orders:
 - One at a time using Work Order Release/Print
 - At the same time using Multiple Work Order Release/Print
 - In Work Order Maintenance by changing their status to Released.
- Releasing a work order has the following effects:
 - Items not previously allocated are detail allocated
 - Picklist is printed
 - First operation moved to queue status (if Moved First Op was set to Yes)
 - Inventory can only be issued or received against a released work order.



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Creating Picklists

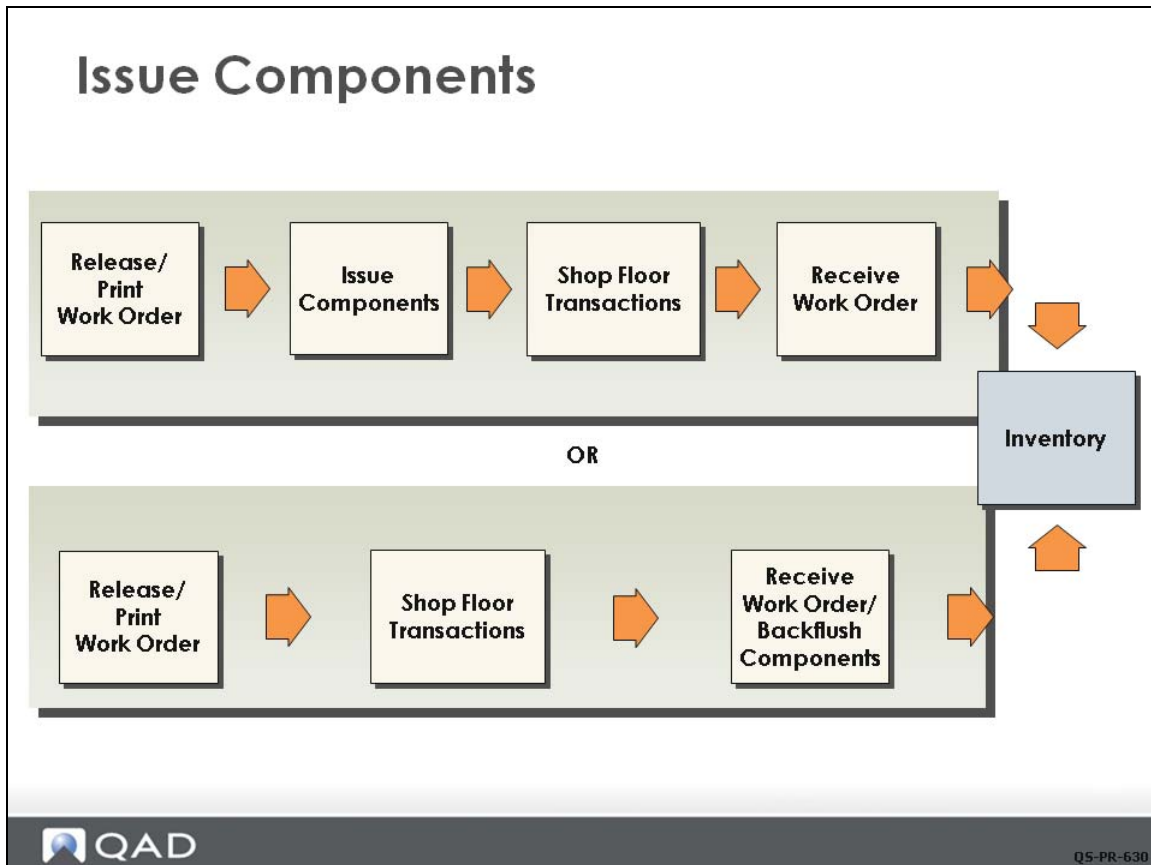
After you release a work order, you can print its picklist. The picklist lists the component requirements and the sites, locations, lot/serial numbers, and reference numbers for the items to be issued. The system creates detail allocations when an order is released, regardless of whether or not you print a picklist. Detail allocations reserve specific quantities in inventory for a work order.

Printing the Routing Sheet

At the time of release you may also print the route for the work order. This is the detailed list of operations and work centers the work order must be processed through. The combination of the work order, the pick list and the routing sheet is often referred to as the shop, or, job packet.

You can release an order without printing a picklist and routing, but you cannot print a picklist for an order without releasing it.

Issue Components



Work order operations begin when a work order is released and its components issued.

There are three ways to issue inventory to a work order:

- Issue inventory directly with Work Order Component Issue (illustrated by the top row of the graphic below)
- Issue inventory as completed products are received with Work Order Receipt Backflush (illustrated by the bottom row of the graphic below)
- Issue inventory, report labor, and receive items with Work Order Operation Backflush (also illustrated by the bottom row of the graphic below)

Inventory transactions occur at different points depending on which method you use. Component quantity on-hand is reduced at a later time using the backflush method.

Work Order Receipt Backflush combines the functions of Work Order Component Issue and Work Order Receipt. Either method keeps track of the inventory transactions used to issue components to a work order and excludes floor stock, which is issued using an unplanned issue transaction.

You can monitor work order operations using the Shop Floor Control module.

Non-Standard Component Issue

Non-Standard Component Issue

Work Order Component Issue X

Go To Actions Copy Print Preview Attach

Work Order: 1001 ID: 2280904 Op: Item: Item N

Work Order: 1001
 Item Number: 01010
 Medical Ultrasound
 Document:

ID: 2280904
 W/O Stat: R

Op:
 Effective: 5/27/2010
 Issue Alloc: ☐
 Issue Picked: ☒

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss	Qty B/O
50001	0.0	0.0	0.0	0.0	0.0
60001	0.0	0.0	0.0	0.0	0.0
60002	0.0	0.0	0.0	0.0	0.0

Item Number:
 Description:
 Quantity:
 Substitute: ☐
 Document:

Op:
 UM:
 Cancel B/O: ☐

Site:
 Lot/Serial:
 Reference:
 Multi Entry: ☐

Loc:

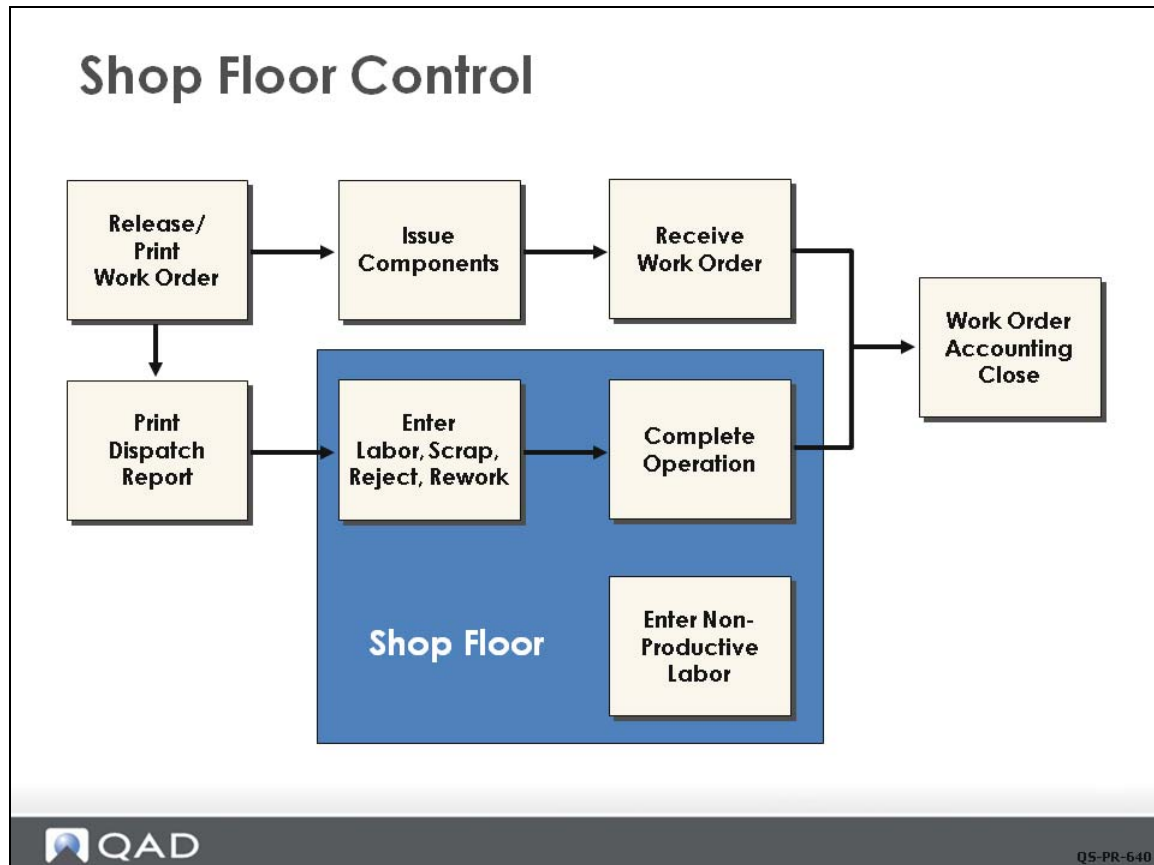
Q5-PR-635

Work Order Component Issue (16.10)

In the case of a nonstandard issue we would use the lower frame of the issue screen to manually enter the correct data. Examples of when this is used include, issuing an approved substitute item in place of the standard item, or issuing material from a different location. A common situation is needing to issue material from two (or more) locations to get the full quantity of the item.

Once the data in the lower frame are filled in and you click next the transaction proceeds as normal.

Shop Floor Control



Once a work order is released, its progress is tracked using shop floor functions to record labor and work order functions and to record material usage and completions. It requires that you set up at least one employee. The figure above shows the relationship between shop floor reporting and the work order process flow.

Operation Status

Labor feedback is done by work order, employee, or work center/machine. In all cases you must identify a released work order.

As labor is recorded, operation status is updated to either Setup, Running, or Complete. When work moves to the next operation, its status changes to Queue.

Labor Reporting

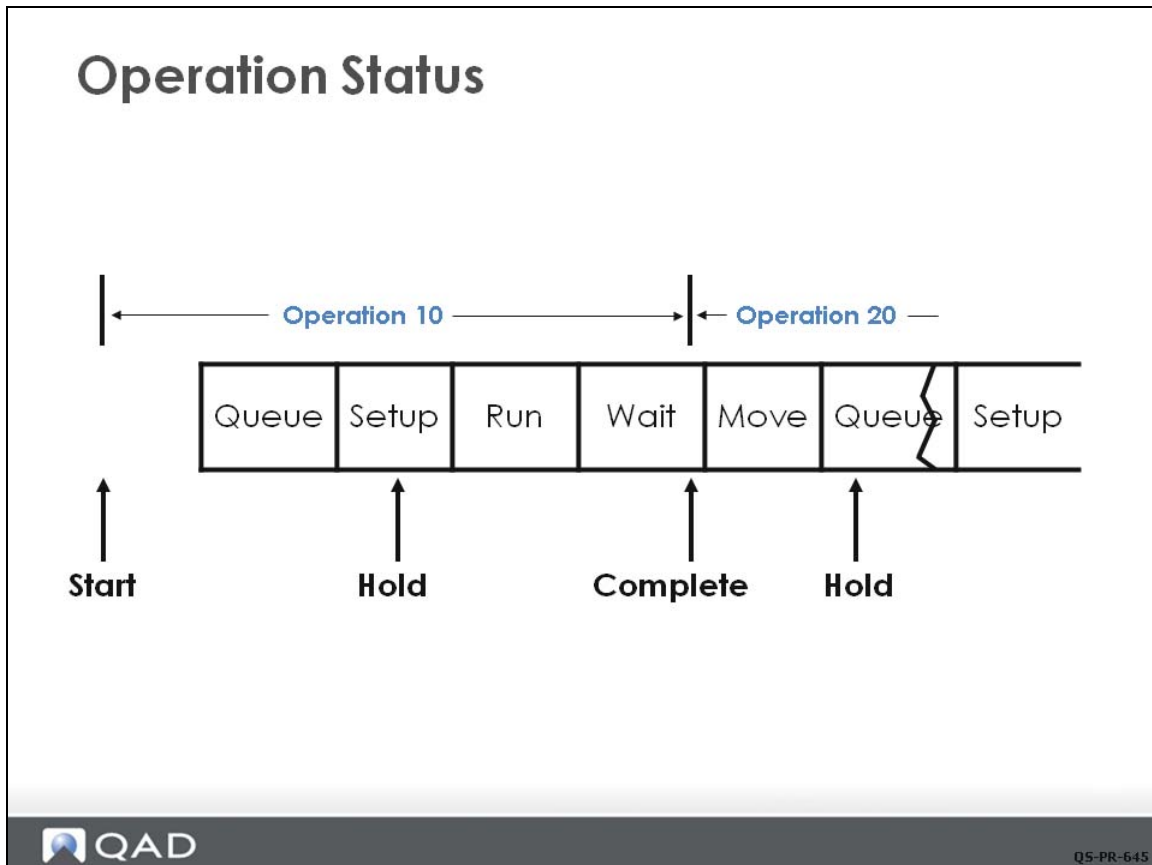
If labor is reported only at a few key operations, called milestones, the Operation Complete Transaction can be used to complete the current operation and the ones that have come before it.

If no labor has been reported against these previous operations, actual labor is set to the labor that should have occurred to make the quantity reported complete, referred to as earned labor.

Nonproductive Time

In order to account for all work hours, nonproductive time can also be recorded. This is time not spent working on a specific manufacturing order-clean-up time, downtime, meetings, breaks, or time spent waiting for work.

Operation Status



Operation status codes are used to indicate the detailed status of an individual operation. The status codes can be entered manually using Work Order Routing Maintenance (16.13.13) or automatically set when the Shop Floor Control Labor Feedback Transactions are used.

QAD Enterprise Applications identifies the following status codes:

- Queue (Q)
- Setup (S)
- Run (R)
- Complete (C)
- Hold (H)

The first operation can be set to status Queue automatically upon releasing the work order if the Move Next Operation field in the Shop Floor Control File is set to Yes. Succeeding operations can be set to Queue automatically when the previous operation is reported as Complete.

Not all operations will use all elements of lead time, nor do all status codes need to be reported. A very short operation may be at status Queue, and then reported complete, with any setup and or run time reported at that moment.

If setup time is reported the status is changed to setup. When run time is reported the status is updated to run. An order can be manually placed on hold at any time. This is usually done when work is stopped for any reason. Such as running out of material or equipment malfunctions, or because the worker is reassigned to another task.

The operation is flagged complete when all work at that operation is finished. The wait and move times are not status codes but elements of lead time. They are referred to as inter-operation times as they have no labor content, but do require time that must be scheduled such as paint drying time or transport time between operations in different buildings.

Receiving Work Orders

When a work order is completed on the shop floor, the items are typically sent to the stockroom.

Use Work Order Receipt to receive items, close the order, and backflush components of final assembly work orders

If you did not issue items previously, issue them when completed products are received with Work Order Receipt Backflush

Use Work Order Operation Backflush to issue items, report labor, and receive completed items at an operation

If you use the Shop Floor Control module, you can enter labor feedback and test results at receipt, and report individual operations as completed.

When a work order is received:

- Inventory increases by the amount of the receipt
- The open order quantity decreases by the amount of the receipt
- Any reject quantity is written off to the Scrap account and not placed in inventory

After the work order has been received, it is ready to close.

Close Work Order

Close Work Order

...but labor reporting okay until operation closed in SFC or until Work Order Accounting Closed is run

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Work orders are typically closed when all the items are received. For most purposes, this ends the life cycle. If a partial receipt is made the work order may be left open to receive the balance of the items at a later time.

To close a work order:

- Change the order's status to Closed. You can do this by setting Close to Yes when completed units are received using work order receipt, or by using Work Order Maintenance.
- Run Work Order Accounting Close to post variances, clear WIP, and close outstanding operations. Execute this program regularly, at least at the end of each fiscal month, for completed orders.

The system prevents component issues and work order receipts for a closed work order. However, additional labor can be reported until either the operations are closed in Shop Floor Control, or Work Order Accounting Close is executed.

If you want to process inventory for a closed work order, you must change its status back to Released.

Work Order Accounting Close

- Completes open work order operations
- Calculates and posts work order variances for material, labor, burden, and subcontract costs

- Calculates and posts usage variances when the labor quantity used differs from the standard.

For example, if it took six hours to complete an operation scheduled for five hours, a labor usage variance of one hour is posted.

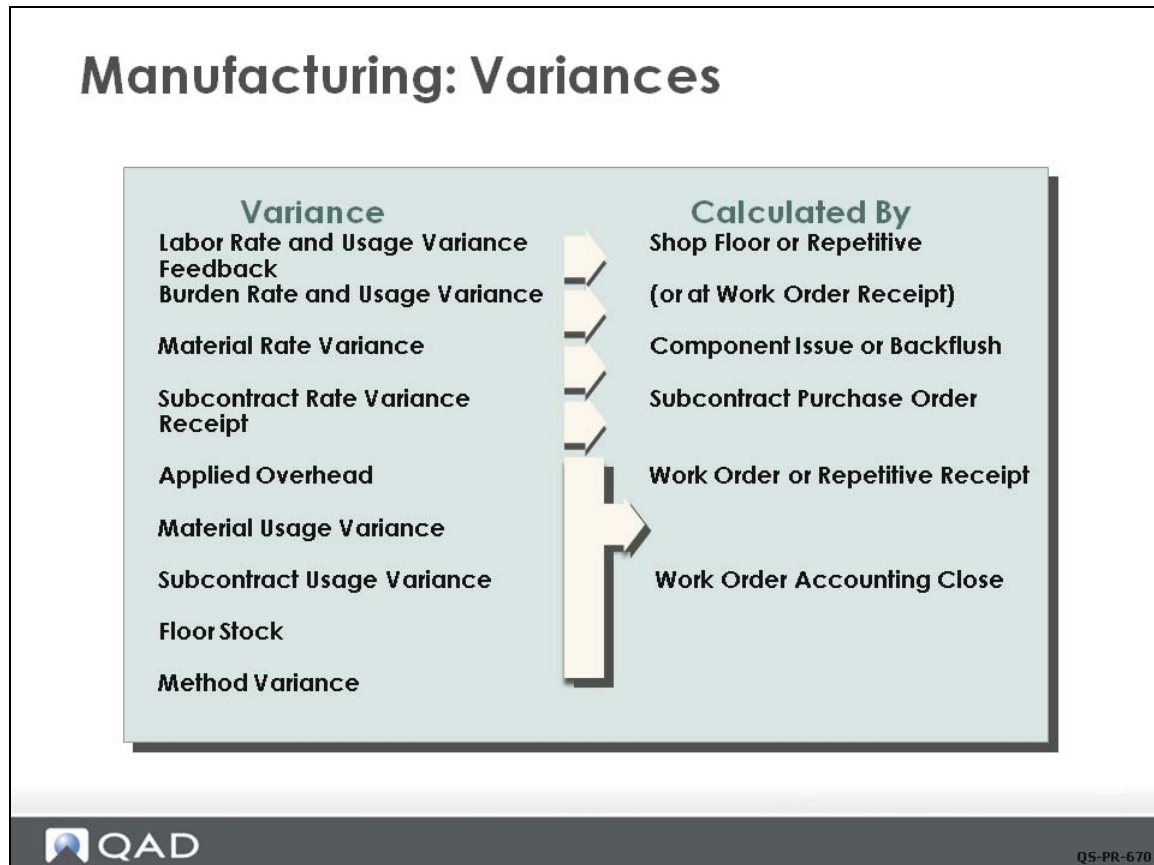
Calculates and posts rate variances for material and subcontract when cost used differs from standard cost. If pay rates are defined in Actual Pay Rate Maintenance, rate variances are also calculated for labor.

For example, when the standard subcontract cost is \$10 and the PO cost is \$12, the subcontract rate variance is \$2.

- Reconciles the WIP account for closed work orders by calculating and posting method change variances for any residual variances. WIP balances cannot be changed after the work order variances are posted.
- Updates current labor and subcontract costs
- Posts floor stock amounts

Important Work Order Accounting close is normally an accounting or finance function done in conjunction with the period end close. It should be carefully coordinated with other period end accounting processes and controlled by internal procedures.

Variances



One important aspect of the entire manufacturing process is the management of cost. In a standard cost system, each item has a standard cost calculated based on the standard bill and routing. But each time the item is made, the cost may be somewhat different. This is tracked as variances.

In QAD Enterprise Applications, variances are calculated and posted automatically throughout the manufacturing process. The illustration above lists the variances and when they are calculated.

Rate Variance

This reflects a difference between the standard cost and the price actually paid. The employee who did the work is paid more or less than the standard work center rate, the subcontractor charged more or less, or the material used had a different GL cost than the item listed on the work order bill. This last cause of variance may mean that a substitute item was used, or that materials were issued from another site with a different cost. It could also mean that the GL cost has changed since the work order bill was created.

Usage Variance

This reflects a difference between the standard quantity and the quantity actually used—more or fewer hours or more or less material.

Both are calculated based on the quantity of inputs that should have been used to get the quantity reported as received—referred to as earned hours or earned materials.

Method Variance

When a work order is completed, the Work Order Accounting Close is run to clear out any balance remaining in work in process.

After all other sources of costs and variances have been accounted for, any remaining amount in work in process is posted as a method variance.

Example

We'll look at a simple example in which:

- We review an employee record
- Work order control settings are defined (Work Order Control)
- A work order to build 5 medical ultrasounds (item 01010) is created (Work Order Maintenance)
- The work order is released (Work Order Release/Print)
- All of the components are issued in quantities sufficient to build 5 medical ultrasound devices (Work Order Component Issue)
- Labor to assemble the medical ultrasound units is recorded: it involves three operations (Labor Feedback by Work Order)
- The work order is received and closed (Work Order Receipt)

Review Employee Record

Employee Modify

Go To Actions Tools Attach Print Preview

Attachments

Employee Code: 11-EMP01 Active: ☒

Name: Angela Patens

Employee Business Relation

External Employee

Supplier Code:

Registration Currency:

User

Login:

Start Date: 01/01/2008

End Date:

Job Title:

Department Code:

Default Project:

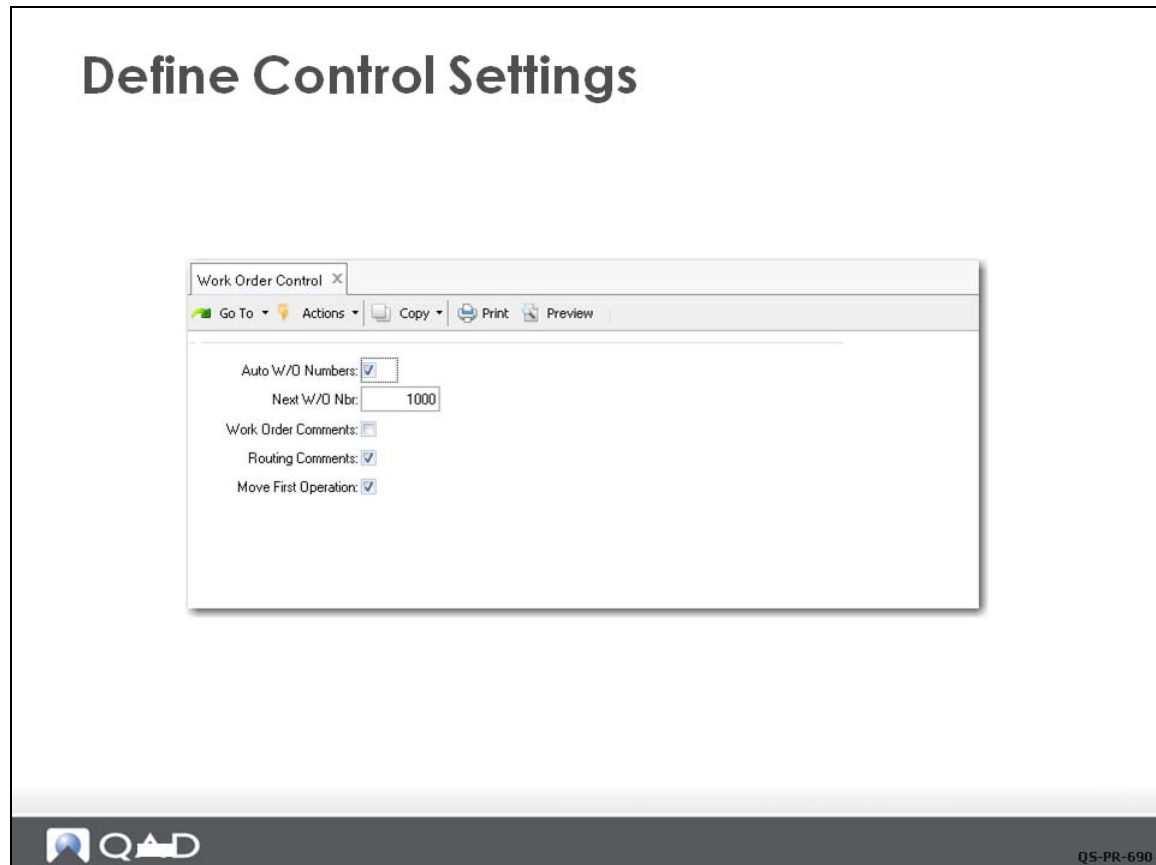
QAD Q5-PR-680

Employee - Modify (36.1.7.2)

The employee record for Angela Patens has been setup by Finance/Human Resources. She has been assigned to our manufacturing department 0100, and has employee code 11-EMP01 which will be used for labor reporting.

Shop Floor transactions must be recorded by an employee. Some firms who are not interested in tracking labor times and charges will create an administrative employee for reporting purposes only. This code is then used by everyone doing shop floor transactions. Another approach is to have the supervisor use their employee code to report labor for the entire department or work center.

Define Control Settings



Work Order Control (16.24)

QMI's Production Manager, has set up the control settings so that:

- Work order ID numbers are automatically generated by the system
- The next number generated will be 1000
- The work order and routing comments screens are checked
- The work order release function sets the status of the first operation to Queue (Move First Operation selected)

Additional Notes

Move First Operation

This field is typically set to Yes. The released order then appears on the dispatch list for the specified work center and the Queue status indicates it is waiting to be started. If a lengthy picking effort is required, the work order may not be ready as soon as it is released. In that case, this field would be set to No, Operation Move would be used to change the status later.

Work Order & Route Comments

The comments screens are always available and can be invoked for any work order as needed. The selection here, if checked, would bring up the comments screen automatically for every work order. This is useful if internal procedures require the use of the comments screen for some reason on every order. In most cases the comments screen is only used occasionally, and is selected as needed.

Create Work Order

Work Order Maintenance (16.1)

In Work Order Maintenance, notice that the work order number is 1001, based on the Work Order Control setting.

Notice that the Post Variances at SFC box has a check mark. this is a default setting, again based on the setting in Work Order Accounting Control which is under the System Administration Menu. This setting means that variances will be posted as soon as the shop floor transaction is processed. If left unchecked the variances are not posted until work order accounting close.

Type and Status

The work order type is “blank,” which means that this is a normal manufacturing order with a standard product structure and routing.

This work order has a status of Firm Planned (F), so this order has been reviewed and confirmed, or manually created.

Due Date

We have let the order date and the release date default to the system date (today). The system has calculated the due date based on the lead time calculated from the standard times in the route, multiplied by the order quantity. We could leave Release Date blank and enter a due date and the system would calculate the release date.

Routing and BOM

The Routing and BOM fields have been left blank, so the system accesses the routing and BOM codes stored with a code equal to the item number on the work order. (The routing code was defined in Routing Maintenance and the BOM code was defined in Product Structure Maintenance.) If we needed to use an alternate bill or route for this work order these are the fields we would use to specify the bill and or route we needed.

Additional Frames

There are several additional frames that will come up when you click next. these are used in special case situations beyond the scope of this course. Accept the defaults and continue to click next until the cursor returns to the first field.

Release Work Order

Work Order Release/Print

Go To Actions Copy Print Preview Attach

Work Order: 1001 ID: 2280904

Work Order: 1001 ID: 2280904

Batch:

Print Picklist: ☒

Print Routing: ☒

Print Co/By-Products: ☒

Item Number: 01010

Medical Ultrasound

Quantity Ordered: 5.0

Quantity Completed: 0.0

Sales/Job:

Remarks:

Release Date: 5/27/2010

Deliver To:

Print Bar Code: ☐

Operation: ☒

Include zero required: ☒

Include zero open: ☐

Reprint picked quantities: ☐

Print floor stock items: ☒

Print Co/By-Products as First or Last Doc: First

QAD

QS-PR-710

Work Order Release/Print (16.6)

Using Work Order Release/Print, QMI's Production Manager releases the work order for 5 medical ultrasound units. Based on the selections above, a picklist of required component items and a route sheet listing operations are printed. If you have a printer you can direct the output to the printer and get a hard copy of the pick list and routing sheet. Otherwise direct the output to PAGE to view the pick list and routing on your monitor.

There is a secondary pop up window shown here used in special case situations. We will accept the defaults and click next to complete the request.

Once all entries in the Work Order Release/Print screen have been completed, the work order status of the order will change from F (firm planned) to R (released). During this process the work order has been exploded and allocated, then released in one step.

Review Picklist

Review Picklist



Work Order Release/Print
10USA

05/27/10 14:38:15
Page: 1

Work Order Picklist

Work Order: 1002
 ID: 2280921
 Batch:
 Item Number: 01010
 Remarks: Medical Ultrasound
 Qty Ordered: 5.0
 EA

Issue Date: 05/27/10
 Rev: D
 Work Order Due Date: 05/28/10
 Sales/Job:
 Deliver To:

Item Number	Rev	Site Location	Lot/Serial Ref	Required Qty to Issue	UM	Issued
50001	AA	10-100		5.0	EA	
Probe Unit - 10 Mhz						
		020	1	0.0	()	
		020	2	0.0	()	
		020	3	0.0	()	
		020	4	0.0	()	
		020	5	1.0	()	



Q5-PR-720

Work Order Release/Print (16.6)

The printed picklist lists the medical ultrasound component items, the quantities to issue and the site, 10-100, and location, 020, to pick from. Note the parentheses which could be used by the issuing stock clerk to initial the pick list to indicate which items have been issued.

Review Routing

Review Routing

Work Order Release/Print - 5/2_ X

Work Order Release/Print
10USA

05/27/10 14:28:48
Page: 1

Work Order Routing

Work Order: 1001
 ID: 2280904
 Batch:
 Item Number: 01010
 Remarks: Medical Ultrasound
 Qty Ordered: 5.0 EA

Rev: D Work Order Due Date: 05/28/10
 Sales/Job:
 Deliver To:

Op	Work Center	Std Op	Tooling Supplier	Setup Time	Run Time	Actual	By
10	1000			0.5		()	
	General Assembly			5.0		()	
	ASSEMBLE COMPONENTS						
20	1050			0.5		()	
	Product Test			1.0		()	
	TEST FINISHED UNIT						
30	1060			0.5		()	
	Pack			0.3		()	
	PACK FOR SHIPPING						

Work Order Release/Print
10USA

05/27/10 14:28:48
Page: 2

*** No picklist was printed for Work Order 1001

16.6
Work Order Release/Print
woworl.p

QS-PR-730

Work Order Release/Print (16.6)

The printed routing sheet lists the operations 10-20-30, and standard setup and run times to manufacture 10 units. The route specifies which work center the work should be done in and the short description of the task.

Release Work Order Status

Review Work Order Status

The screenshot shows the 'Work Order Browse' window. It features a search bar at the top with a dropdown menu set to 'Work Order' and a 'starts at' dropdown. Below the search bar, it indicates 'Viewing 1 - 5 of 5' records and 'Records per page: 100'. The main area contains a table with the following columns: Item Number, Site, Work Order, ID, Quantity Open, Due Date, Sales/Job, and Work Order Status. The table lists five work orders, with the first three having a status of 'R' (Released) and the last two having a status of 'F' (Firm).

Item Number	Site	Work Order	ID	Quantity Open	Due Date	Sales/Job	Work Order Status
01010	10-100	1000	2280902	5.0	05/28/2010		F
01010	10-100	1001	2280904	5.0	05/28/2010		R
01010	10-100	1002	2280921	5.0	05/28/2010		R
02001	10-200		2280899	1,000.0	05/31/2010		R
70050	10-500	QADDEMO-70050	2280900	10,000.0	05/13/2010		F

Q5-PR-740

Work order Browse (16.2)

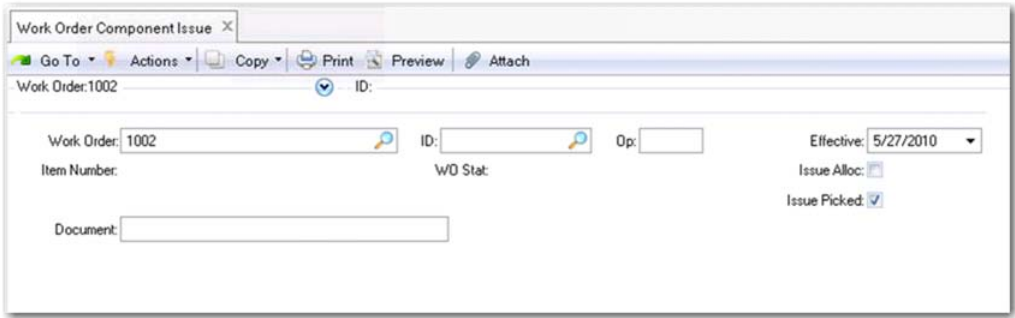
The Work Order Browse now shows that the work order status has indeed changed from F (firm planned) to R (released).

In the process of releasing the order, the work order bill of material was exploded and allocated. This background processing changed its status from Firm to Exploded to Allocated to Released in what was for the user just one step.

In work order control the flag for “Move First Operation” was checked yes, so in addition to the order status released, the operation status for the first operation has been changed to status “Queue.”

Work Order Component Issue

Issue Components



Work Order Component Issue (16.10)

The released work order is now in the stock room to have the components issued. QMI stock room personnel will use work order component issue to do this. The system is accessed using the work order number as shown above. As we expect this to be a standard component issue we check the “Issue Picked” box. The system uses the work order bill of material to retrieve the issue component transaction and brings up a screen as shown below.

Issue Components

Issue Components

Work Order Component Issue

Go To Actions Copy Print Preview Attach

Work Order: 1002 ID: 2280921 Op: Item:

Work Order: 1002
 Item Number: 01010
 Medical Ultrasound
 Document:

ID: 2280921
 W/O Stat: R

Op:
 Issue Alloc: ☐
 Issue Picked: ☒

Effective: 5/27/2010

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss	Qty B/O
50001	5.0	0.0	5.0	5.0	0.0
60001	5.0	0.0	5.0	5.0	0.0
60002	5.0	0.0	5.0	5.0	0.0

Item Number: Op: Site: Loc:
 Description: Lot/Serial:
 Quantity: UM: Reference:
 Substitute: ☐ Cancel B/O: ☐ Multi Entry: ☐
 Document:

QS-PR-750

Work Order Component Issue (16.10)

In this example, all components were picked from the locations printed on the work order picklist, so they can be issued automatically by setting Issue Picked to Yes. This reduces manual entry because it sets the default sites, locations, lot/serial numbers, references, and quantities from the detail allocations on the picklist. To proceed with the transaction, click next.

Display Items Being Issued

Work Order Component Issue

Work Order Component Issue

Go To Actions Copy Print Preview Attach

Work Order: 1002 ID: 2280921 Item: Item N

Work Order: 1002 ID: 2280921 Op: Effective: 5/27/2010
Item Number: 01010 W/O Stat: R Issue Alloc: ☐
Medical Ultrasound Issue Picked: ☒
Document:

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss	Qty B/O
50001	5.0	0.0	5.0	5.0	0.0
60001	5.0	0.0	5.0	5.0	0.0
60002	5.0		5.0	5.0	0.0

Item Number: Op: Site: Loc:
Description: Lot/Serial:
Quantity: UM: Reference:
Substitute: ☐ Cancel B/O: ☐ Multi Entry: ☐
Document:

Display items being issued
yes no

QAD
QS-PR-751

Work Order Component Issue (16.10)

This brings up a pop up asking if you wish to see the issue transaction. Click yes.

Work Order Component Issue

Work Order Component Issue

Go To Actions Copy Print Preview Attach

Work Order: 1002 ID: 2280921

Work Order: 1002 ID: 2280921 Op: Effective: 5/27/2010

Item Number: 01010 W/O Stat: R Issue Alloc: ☐

Medical Ultrasound Issue Picked: ☒

Document:

Item Number	Site	Location	Lot/Serial	Ref	Quantity
50001	10-100	020	1		1.0
50001	10-100	020	2		1.0
50001	10-100	020	3		1.0
50001	10-100	020	4		1.0
50001	10-100	020	5		1.0
60001	10-100	020			5.0
60002	10-100	020			5.0
60003	10-100	020			5.0
60005	10-100	020			5.0
60006	10-100	020			5.0

 QAD

Q5-PR-752

Work Order Component Issue (16.10)

This screen shows the actual inventory transactions that are about to be made. Item number, site, location, and quantity. If all is correct click next to bring up a final verification.

If all is correct click yes and the inventory transactions are updated.

Click No to return to the transaction frame to make corrections. Completing this transaction removes the components from the inventory location and issues them to Work In Process (WIP) at the GL standard cost. The work order and the component items are now delivered to the first work center on the route for assembly to begin.

Non-Standard Component Issue

Non-Standard Component Issue

Work Order Component Issue
Go To Actions Copy Print Preview Attach

Work Order: 1002
ID: 2280921
Item:
Item Number:

Work Order: 1002
 Item Number: 01010
 Medical Ultrasound
 Document:

ID: 2280921
 WD Stat: R

Op:
 Issue Alloc: ☐
 Issue Picked: ☒

Effective: 5/27/2010

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss	Qty B/O
50001	0.0	0.0	0.0	0.0	0.0
60001	0.0	0.0	0.0	0.0	0.0
60002	0.0	0.0	0.0	0.0	0.0

Item Number:
Op:
Site:
Loc:

Description:
Lot/Serial:

Quantity:
UM:
Reference:

Substitute: ☐
Cancel B/O: ☐
Multi Entry: ☐

Document:

Q5-PR-759

Work Order Component Issue (16.10)

In the case of a non-standard issue we would use the lower frame of the issue screen to manually enter the correct data. Examples of when this is used include, issuing an approved substitute item in place of the standard item, or issuing material from a different location. A common situation is needing to issue material from two (or more) locations to get the full quantity of the item.

Once the data in the lower frame are filled in and you click next the transaction proceeds as normal.

Review Inventory

Review Inventory

Inventory Detail by Item Browse
X

Actions Print Add to Favorites Chart Chart Designer Refresh New Edit Edit

Search (1)

Item Number

starts at

50001

-

+

×

Search

Clear All

Viewing 1 - 100 of 406

Records per page: 100

⏪ ⏴ ⏵ ⏩ ✖

Item Number	Site	Qty On Hand - Inv Mstr	Qty On Hand - Inv Detail	Location	Lot/Serial	Reference	Status	Expire Date
50001	10-100	109.0	1.0	020	50001-0710-24		Y-Y-Y	
50001	10-100	109.0	1.0	020	50001-0710-25		Y-Y-Y	
50001	10-100	109.0	1.0	020	50001-0710-3		Y-Y-Y	
50001	10-100	109.0	1.0	020	50001-0710-4		Y-Y-Y	
50001	10-100	109.0	1.0	020	50001-0710-5		Y-Y-Y	
50001	10-100	109.0	1.0	020	50001-0710-6		Y-Y-Y	
50001	10-100	109.0	1.0	020	50001-0710-7		Y-Y-Y	
50001	10-100	109.0	1.0	020	50001-0710-8		Y-Y-Y	

Q5-PR-765

Inventory Detail by Item Browse (3.2)

In reviewing our on hand inventory we see we still have enough components to build another 2 ultrasound units. (Partial list shown above.)

Review Inventory Record Labor

Record Labor

Labor Feedback by Work Order

Go To Actions Copy Print Preview Attach

Work Order: 1002
ID: 2280921
Employee: 11-EMP01

Work Order: 1002
 Operation: 10 ASSEMBLE COMPONENTS
 Document:
 Employee: 11-EMP01 Angela Patens
 Department: 0400 Work Center: 1000
 Shift: Machine:

ID: 2280921
 Op Status: QUEUE
 Pay Code:
 Time Ind: Hours Minutes
 Project:

Quantity Completed: 5.0
 Rejects: ☐
 Rework: ☐
 Start Setup: 01:00:00
 Elapsed/Stop Setup: 01:30:00
 Start Run: 01:30:00
 Elapsed/Stop Run: 04:00:00
 Comment:
 Down Time: 00:00:00

Effective Date: 5/27/2010
 Operation Complete: ☒
 Move to Next Operation: ☒
 Previous Ops Complete: ☒
 Elapsed Setup: 0.500
 Elapsed Run: 2.500
 Down Time Reason:

Q5-PR-760

Labor Feedback by Work Order (16.20.1)

Now that our work order is released to production its status can be updated using shop floor transactions. Shop floor transactions are posted against the work order and operation. they must be entered with a valid employee code. In our simplified example all of our shop floor reporting will be done by our senior assembler, Alex Erickson, employee 10-EMP01.

When we setup the route for our medical ultrasound, we let each operation default to milestone. This indicates we are expecting each operation to be reported when it is complete.

Alex Erickson uses Labor Feedback by Work Order to record labor for operation 10, on our work order.

In addition to the employee ID, other information included on this screen are the work order number, operation, and work center, which all labor feedback transactions must specify. Entering the work order and operation the system will prefill the department and work center fields with the standard department and work center for the route and operation. These should be changed if the work is done in a non standard work center.

Based on the quantity of units completed (10) and operation 10's routing (entered in Routing Maintenance), we would expect the setup time to be 1 hour and run time to be 5 hours (5 units × 1.0 hr/unit). If actual setup or run time had varied from these expected or “standard” times, then usage variances would be generated.

Depending on how you organize your shop floor reporting you can use either the elapsed time for the operation, or enter the start and stop time for the operation.

If you are reporting labor before the completion of the operation, as at the end of a shift, but the work is not complete, then the operation complete flag would be un-checked, and only the units complete would be reported.

The check box for move next operation, if checked, will change the status of the next operation to Queue, and move the quantity complete from this operation into WIP at the next operation.

The check box for previous operations completed, if checked, will close all previous operations with the processing of this transaction.

Operations 20 and 30 will be reported in the same manner. For our example we will use the standard times for each operation.

Questions

What information is provided by the Department 0010?

GL accounts for manufacturing costs are attached to the department in Department Maintenance.

What information is provided by the Work Center ASM?

Rates are specified at the work center level. These include the standard labor rates per hour for setup and run operations, and the variable burden rates that apply to all work done in the work center.

Review Labor Transactions

Review Labor Transactions

Operation Transaction Detail Inq 05/27/10

Tran Nbr: 170 Display E-Signature Details: No Output: PAGE

Type: MOVE
 Transaction Date: 05/27/10 15:03:44 Work Order: 1002
 Effective Date: 05/27/10 Shift: ID: 2280921 Op: 20

Employee:
 Item Number: 01010 Quantity Completed: 0.0
 Medical Ultrasound Qty Rejected: 0.0
 Site: 10-100 Line: Reject Reason:
 Work Center: 1050 Machine: Qty Rework: 0.0
 Department: Rework Reason:
 Qty Scrapped: 0.0

Std Setup Time: 0.0 Actual Setup Time: 0.0
 Std Run Time: 0.0 Actual Run Time: 0.0
 Labor Cost Std: 0.00 Labor Cost: 0.00
 Burden Cost Std: 0.00 Burden Cost: 0.00
 Subcontract Std: 0.00 Subcontract Cost: 0.00

16.20.13.9 Operation Transaction Detail Inq sfopiq12.p

Operation Transaction Detail Inquiry (16.20.13.9)

The labor transactions created when labor was reported for can be reviewed in Operation Transaction Detail Inquiry (16.20.13.9). This shows standard and actual setup and run times and the GL effects.

Accounts affected are Work in Process, Labor Absorbed, and Burden Absorbed.

Review Work Order Route Operation

Review W/O Route Operation Status

Work Order: 1002
Item Number: 01010
Operation: 20

ID: 2280921
Medical Ultrasound

Standard Operation:
Operation Description: TEST FINISHED UNIT
Work Center: 1050 Machine: Product Test

Qty Ordered: 5.0	Std Setup Time: 0.5	Act Setup Time: 0.033
Qty WIP: 0.0	Std Run Time: 0.2	Act Run: 1.017
Run Complete: 5.0		
Sub Complete: 0.0	Std Move Time: 0.0	Machines per Op: 1
Qty Reject: 0.0	Queue: 0.25	Op Status: C
Qty Rework: 0.0	Wait Time: 0.25	Tool Code:
Start Date: 5/28/2010	Subcontract Cost: 0.00	Supplier:
Due Date: 5/28/2010	Setup Crew: 1.00	Yield%: 100.00%
	Run Crew: 1.00	Comments: ☒
	Overlap Units: 0	
	Subcontract LT: 0	



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Work Order Routing Maintenance (16.13.13)

When the Production Manager created work order 1002 in Work Order Maintenance, the system automatically generated a work order routing. This routing tracks the status of each operation and the quantities recorded complete at each operation. It also shows the actual setup and run times.

This screen shows that Operation 20 is complete (Op Status = Complete). There are no units of 01010 in process at this operation (Qty WIP = 0), and 5 have been completed (Run Complete = 5).

If we were to look at operation 30 we would see that its status has been changed to Queue.

If the need were found to make changes to operation 20 reporting, Work Order Routing Maintenance can be used to change the operation status from “C” closed to “R” Running. Allowing additional labor reporting to be done.

Receive and Close Work Order

Work Order Receipt

Work Order: 1002 ID: 2280921 Site: 10-100

Remarks:

Item Number: 01010 Lot/Serial Control: S UM: EA

Description: Medical Ultrasound W/O Stat: R

Open Quantity: 5.0 Automatic Lot Numbers: ☐

Document:

Quantity: 0.0 Site: 10-100

UM: EA Location: 010

Conversion: 1.0000 Lot/Serial:

Scrapped Qty: Reference:

UM: EA Multi Entry: ☐

UM Conversion: 1.0000 Set Attributes: ☐

Total Units: 0.0

Remarks:

Close: ☐

Display item and lot/serial detail

yes no

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Work Order Receipt (16.11)

Using Work Order Receipt, QMI receives the 10 medical ultrasound units into its finished goods location (010) and closes the order.

A Pop up window asks if the information is correct. This brings up a screen that displays the inventory transaction that is about to occur.

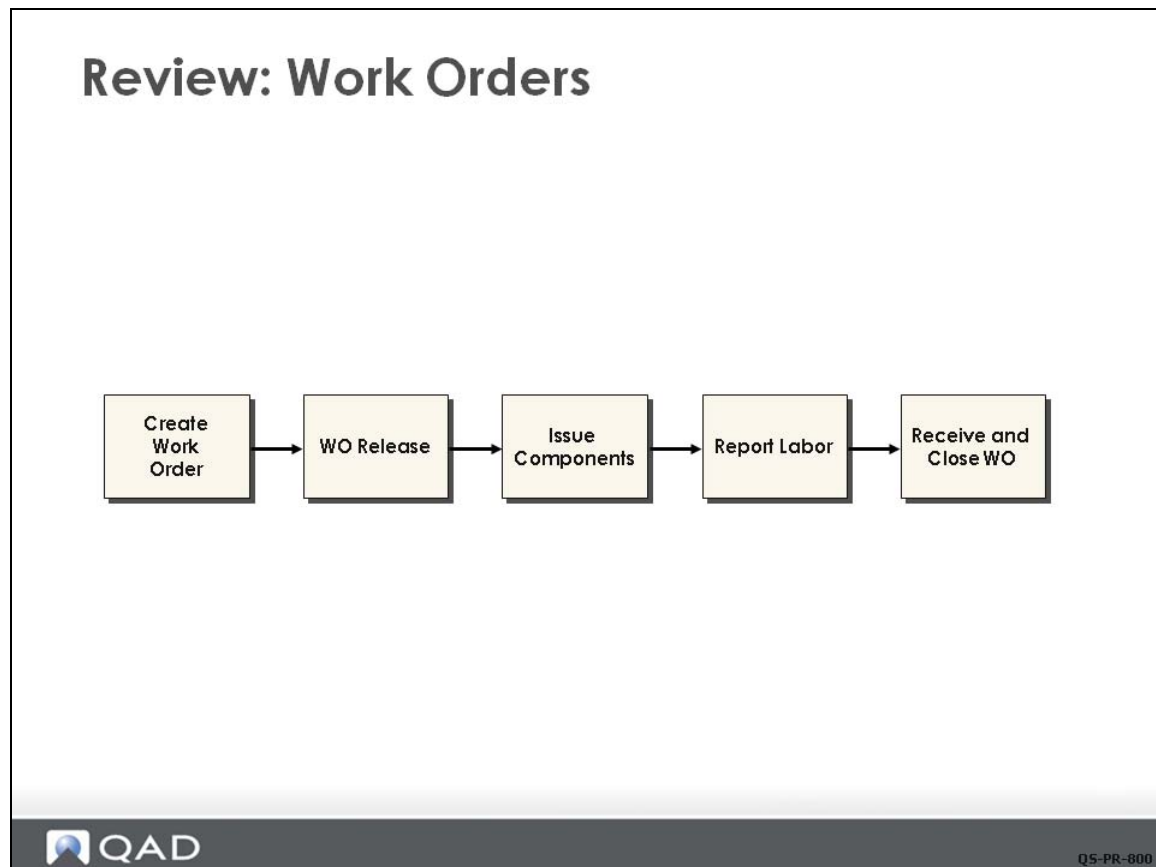
A Pop up window displays the transaction about to be processed and asks for confirmation that all is correct. Clicking yes completes the work order close and the inventory update.

This increases (debits) the Inventory account and decreases (credits) the WIP account for the total standard GL cost.

Additional Notes

There is an additional step in the work order life cycle that is usually taken at the end of each GL calendar period as part of the period-end closing process, and that is Work Order Accounting Close.

Review



In this chapter, we discussed work order types and status codes, and explained the variances that may occur in the work order cycle. We then saw how work orders flow through the system and learned that they are:

- Created in Work Order Maintenance
- Released in Work Order Release/Print
- Issued components by Work Order Component Issue
- Reported in Labor Feedback by Work Order
- Received and Closed in Work Order Receipt

For much more detail on work orders and how special situations are managed see the training guide Work Orders.

Exercise 6

In the following activity you will:

- Review an employee record
- Define control settings
- Manually add and release a work order
- Issue components to a work order
- Report labor to a work order
- Receive and close a work order

Note Remember, if you are uncertain about a given transaction and how to fill in the data fields, refer back to the appropriate section of the example.

Review Employee Record

- 1 Use Employee View (36.1.7.3) to review the record for employee 10-EMP01. An employee is required for shop floor reporting.

Define Control Settings

- 2 Select Work Order Control (16.24) and make sure that the settings are as follows:

Field	Data
Auto W/O Numbers	Yes
Next W/O nbr	[default] or a setting of your choice
Work Order Comments	No (unchecked)
Routing Comments	No (unchecked)
Move First Operation	Yes (checked)

Manually Add and Release a Work Order

- 3 Use Work Order Maintenance (16.1) to add a new work order record.
 - Let the next work order number and ID number default from the control file.
 - Create a work order for 20 units of item 01010 at site 10-100. Work order status is F (firm planned).
 - Let the other field values default. Click Next until the Work Order field is highlighted, then click Back.
- 4 Use Work Order Release/Print (16.6) to release work order 1.
 - This function will also print the work order picklist and routing (also known as the shop paper). Accept all other default values.

Note If your system is configured with a printer you may wish to print your work order pick list and routing. If you do not have a printer direct the output to page to view the documents on your monitor.

Tip: Use the lookup function to find your work order. Output to page, or file if you want to save a copy of the picklist and routing.

- Review picklist and routing.
- Find the new status of the order using Work Order Browse (16.2). What is it?

Work Order Component Issue

- 5** Use Work Order Component Issue (16.10) to issue components from your inventory to your work order. Set the Issue Picked flag to Yes to make your transaction more automatic.

Note By overriding the data in the transaction frame, you can change the quantity issued or the location from which the items are issued. In this activity you should accept the default values as there should be no inventory in any other locations.

- Update and exit.

Report Labor to a Work Order

- Manually calculate how much labor for set up and run time you need to complete all 20 units at each operation. (These numbers are on the routing that was printed for the work order.)

Assume the shop has now built the units, then...

- 6** Use Labor Feedback by Work Order (16.20.1) to report labor and units completed at each operation on your routing, based on your calculation above. Use employee “10-EMP01.”
- At each operation, 10, 20, and 30, report the units completed and the elapsed set up and run times.
 - Change Time Ind field to Decimal Hours.
 - In Operation Transaction Detail Inquiry (16.20.13.9) you could look at the transactions created when you reported labor.
- 7** Use Work Order Routing Maintenance (16.13.13) to review your work order routing. Check how many units have been completed at each operation and how much labor was used for each operation.

Receive and Close a Work Order

- 8** Use Work Order Receipt (16.11) to receive all 20 medical ultrasounds from the work order into inventory at site 10-100, location 010.

Field	Data
Quantity	20
Lot/Serial	MDF950001
Multi Entry	Yes
Close	Yes

- 9** Click Next until “Create List of Serial Numbers” Click Yes.
- 10** Click Next until you see, MDF950020.
- 11** Click Back until you see, “Display Items and Lot/Serial Detail” Click Yes.

- 12 “Is all information correct”? Click Yes.

Chapter 9

Sales Orders / Invoices and Accounts Receivable

Overview



This chapter describes the various activities associated with getting a product to a customer. Typically the sales department is responsible for recording orders, processing shipments, and invoicing. We'll discuss each of these activities followed by an example to illustrate the process.

Key Concepts

- Sales Order Work Flow
- Document Layout
- Allocation of Inventory
- Picklists
- Shipment
- Invoice Management
- Effective Date

Example

- Create Customer Record
- Define Control Settings
- Enter Sales Order
- Print Sales Order
- Print Packing List

- Ship Sales Order
- Print and Post Invoice
- Enter Payment

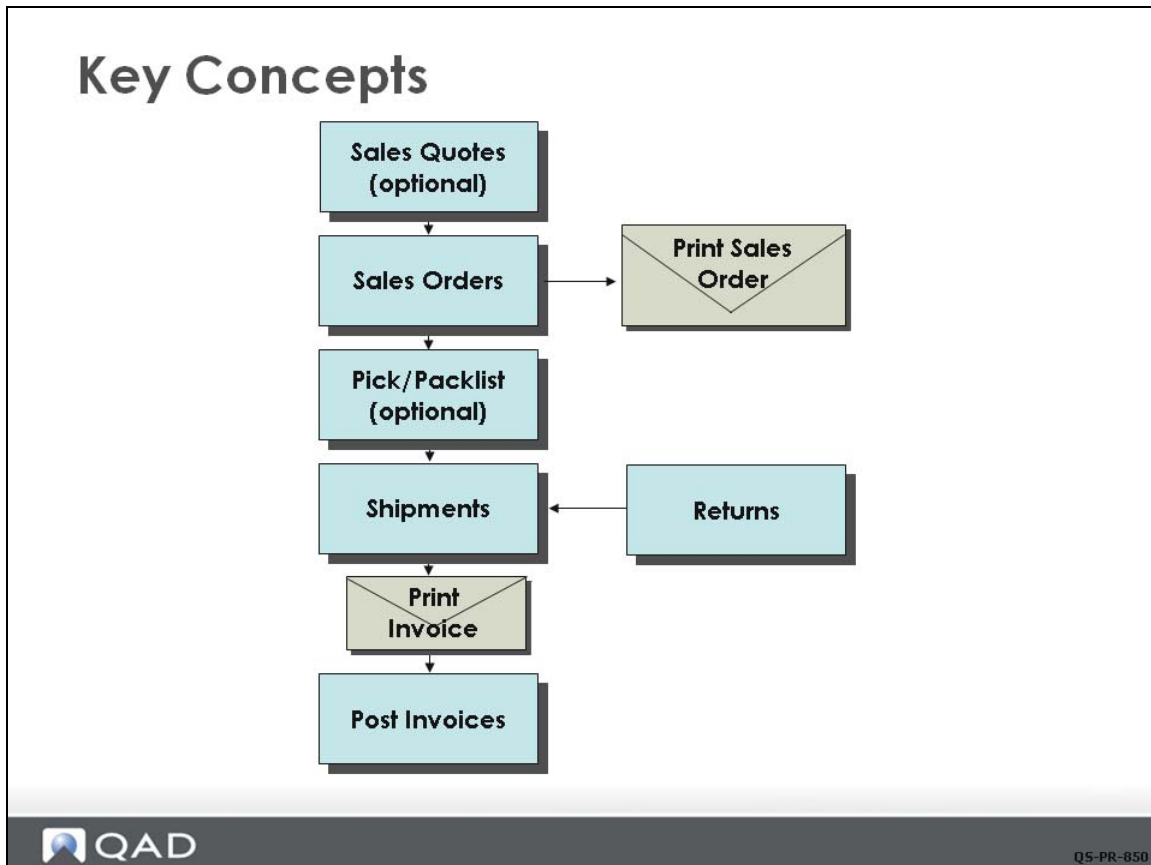
Activities

Learning Objectives

When you finish this chapter, you should be able to:

- Describe the basic sales order process flow
- Explain the different types of information contained in a sales order document's header, line item, and trailer sections
- Explain the differences between general and detail allocations
- Describe the basic invoice process flow
- Describe the basic payment process flow
- Enter, and ship a sales order

Key Concepts



Sales Order Process Flow

A customer sale can begin as a sales order or a sales quote. Both represent offers to sell the customer certain items at a certain price at a certain time. The sales order also represents a commitment from the customer to purchase the items, but a sales quote does not. Consequently, sales quotes are not considered by MRP.

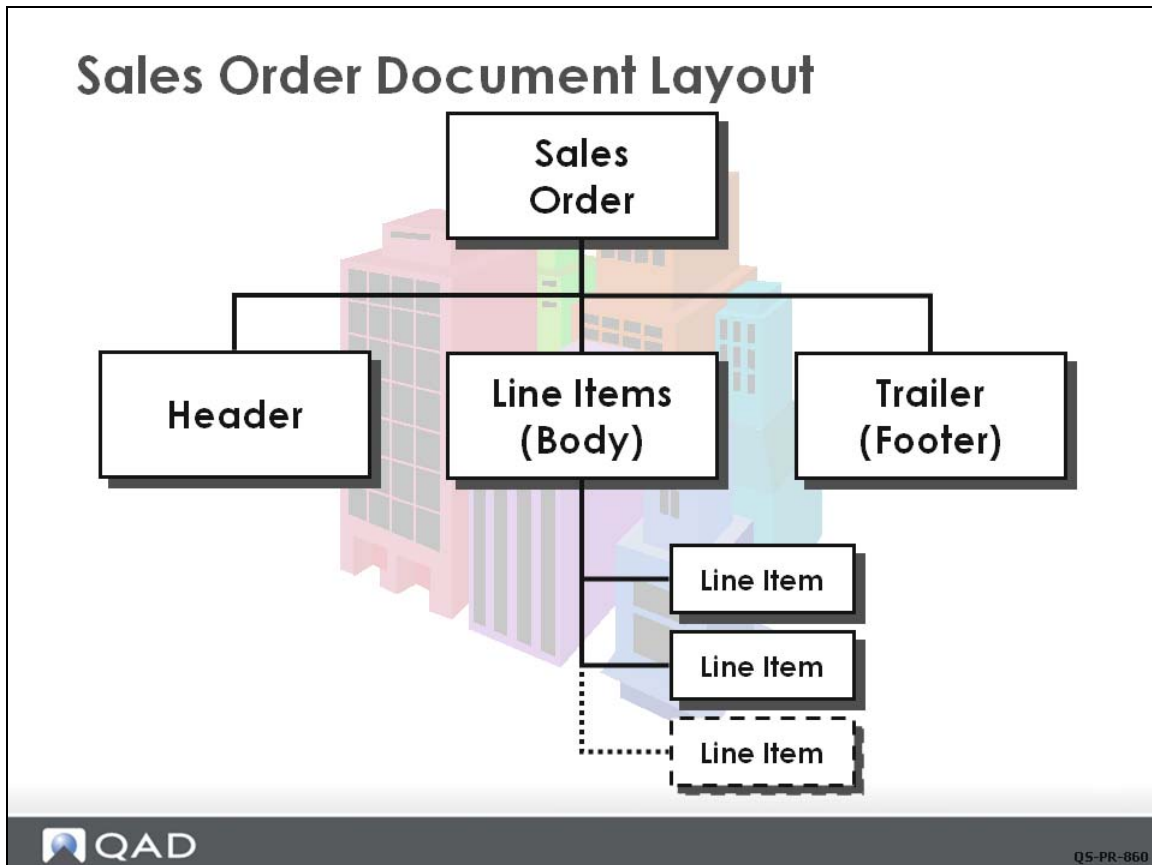
A hard copy document of the order can be printed and sent to the customer.

After a sales order has been entered and is ready to be shipped, a picklist can be printed. When the picklist is generated, any allocated quantities on the order are incremented as picked. The picklist document can be placed inside the shipping box as a packing list. Inventory is not decremented until a shipping transaction is performed.

The shipment transaction creates a pending invoice that does not increment sales until the invoice is printed and is posted to Accounts Receivable.

Once invoices are posted, financial processing continues with accounts receivable functions.

Sales Order Document Layout



In QAD Enterprise Applications, a sales order document has three main parts:

- a header
- one or more line items
- a trailer

Order data is entered and printed in this sequence.

Header

Contains the general terms of the order, as well as default values for line items. Comments may follow, describing in more detail the terms or instructions associated with this order.

Line Item

Specifies a particular item being ordered, its order quantity, and price. Lists any exceptions to header information, such as a date or address that applies to only the line item and not the whole order. Comments may follow each line item, describing in more detail the item, its specifications, or packaging instructions. Each order may have many line items.

Trailer

Contains tax, shipping, and order status information for all line items. Freight can be calculated automatically on a bulk or unit basis. These charges are not subject to commission or discount, and may or may not be taxable.

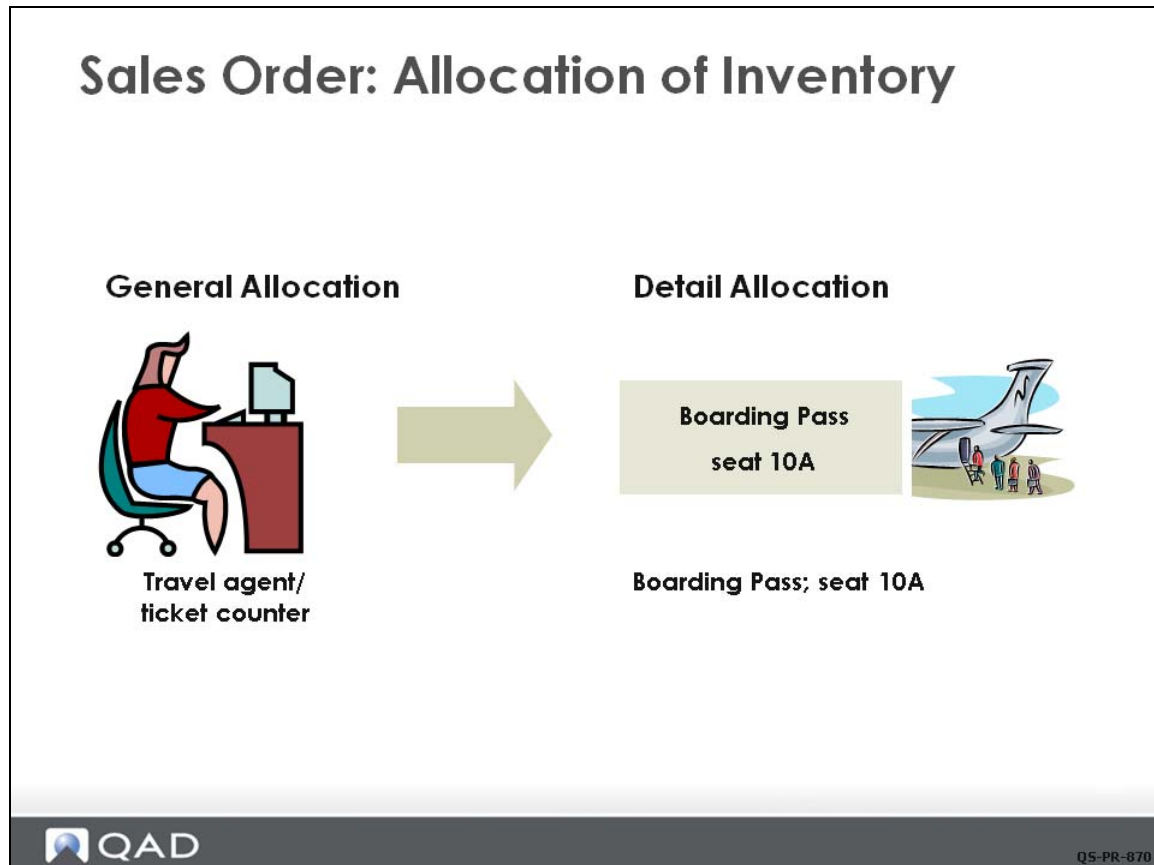
Comments

Comments can be entered manually on each sales quote and sales order or copied from pre-existing master comments and modified as needed. Master comments are useful for storing standard information:

- Item specifications
- Quality requirements
- Item descriptions in other languages
- Export documentation
- Packaging instructions

Each master comment is identified by a reference code, type, language, and page number (up to 99 pages of text).

Allocation of Inventory



QAD Enterprise Applications uses allocations to reserve inventory. Particular quantities may be set aside or allocated to specific sales orders and work orders. For both sales orders and work orders, allocations help ensure that inventory is available when it is needed. For sales orders, allocations also enable the sales department to determine which items are shipped for specific orders and prevents you from promising the same item to two or more customers.

General and Detail Allocations

When inventory is to be allocated, the system distinguishes between a general allocation and a detail allocation. A general allocation reserves inventory at a particular site, but it does not specify a specific location or lot/serial numbers.

- When you buy an airline ticket, the airline allocates a seat for you. This is a general allocation—you have a seat but you do not know which one.

Detail allocations enable you to reserve exact items of inventory at a specific location by specifying lot and/or serial numbers, expiration dates, sites and/or locations. Detail allocation is normally done automatically when the picklist is prepared, but it can be done manually during the order entry process.

In our airline example, this happens when you get a boarding pass—now you should know what seat you are in. It is detail allocated to you and no one else should be assigned to the same seat.

Automatic or Manual

Allocations can be done at several stages, automatically or manually. For sales orders, general allocations can be created during order entry, depending upon the setting in Sales Order Control. The system automatically converts general allocations to detail allocations when picklists are printed. You can also override the system by manually creating detail allocations during order entry.

Like the airline boarding pass example most errors occur when humans try to manipulate the system and override the system allocations.

Printing Picklists

Printing Picklists

Sales Order Packing List- 5/27_ X

QMI -USA Division
30 Ridgedale Avenue
East Hanover, NJ 7950
USA - TAX PURPOSE

Sold To: 10C1003

Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Salespersons: 10SP01
Credit Terms: 2M
2 months after month end of invoice date
Remarks:

P A C K I N G L I S T

Order Number: 10S10001 Page: 1
Order Date: 05/27/10
Print Date: 05/27/10

Ship To: 10C1003

Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Purchase Order:
Ship Via: FEDX
FOB Point:

Ln	Item Number	Site T Location Lot/Serial	Qty Open Qty to Ship UM	Due Shipped
1	01010 Revision: D Medical Ultrasound	10-100	5.0 EA	06/04/10
		010 4	1.0 ()	
		010 5	1.0 ()	

7.9.13
sosopk.p

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Once customer ordered items have been completed, or when stock items are available for shipment, sales personnel can initiate picklist printing for the sales order.

The picklist shows what items to pick to fill an order and what site or location to pick them from. If you created detailed allocations in Sales Order Maintenance--including lot/serial numbers and lot reference numbers--this information appears on the picklist. If you performed a general allocation for the sales order, the system automatically converts the general allocation to a detail allocation when it prints the picklist.

To print a picklist for a sales order, use Sales Order Packing List. You can only print picklists for sales orders not on credit hold. A sample picklist is shown below.

After printing the picklist, the system updates the values displayed in Sales Order Maintenance for the quantity allocated and quantity picked.

Note The terms 'picklist' and 'packing list' are used interchangeably.

Shipment

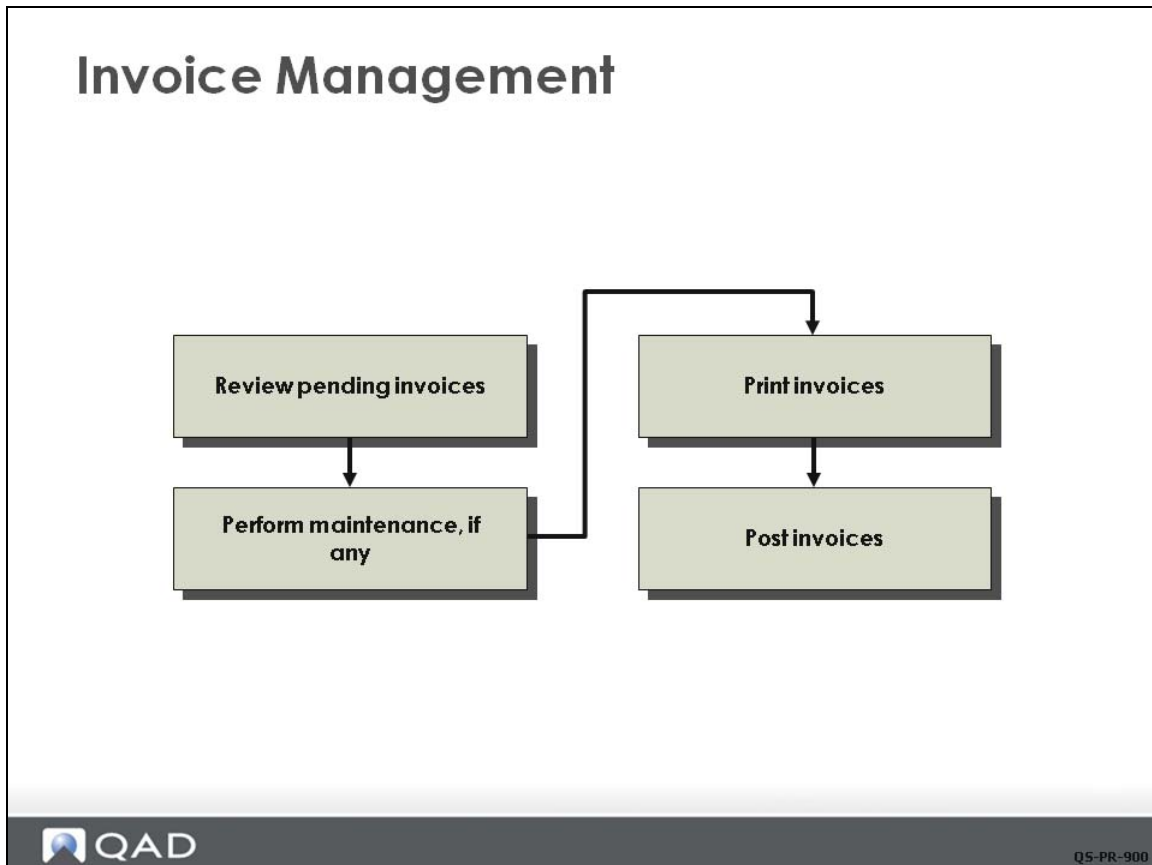


Once the items listed on the sales order picklist have been picked, the items are packed and shipping paperwork is prepared. Following actual shipment, the shipping transaction can be processed.

This physically decreases the quantity on hand for each of the items that were shipped, and generates a GL transaction to decrease (credit) inventory and increase (debit) cost of sales.

Shipping a sales order automatically flags it as ready for invoicing. Normally in QAD Enterprise Application, an invoice document is generated for each shipment. You ship the items, print the invoice, and post it to Accounts Receivable. However, you can combine multiple shipments and sales orders on one invoice.

Invoice Management



A sales order shipment automatically creates a pending invoice with a system-assigned number. While in the pending status, maintenance can be performed on such things as credit terms, commission percentages, prices and discounts. Once pending invoices have been reviewed, they are ready to be invoiced.

Printing Invoices

Selection of invoices for printing may be by individual sales order number or range of sales order numbers or by shipping date or range of shipping dates. The date on the invoice will be the system date unless you change that date.

Posting Invoices

The post function generates an invoice in the Accounts Receivable module and updates the customer's open account balance. Posting an invoice also updates GL account balances for:

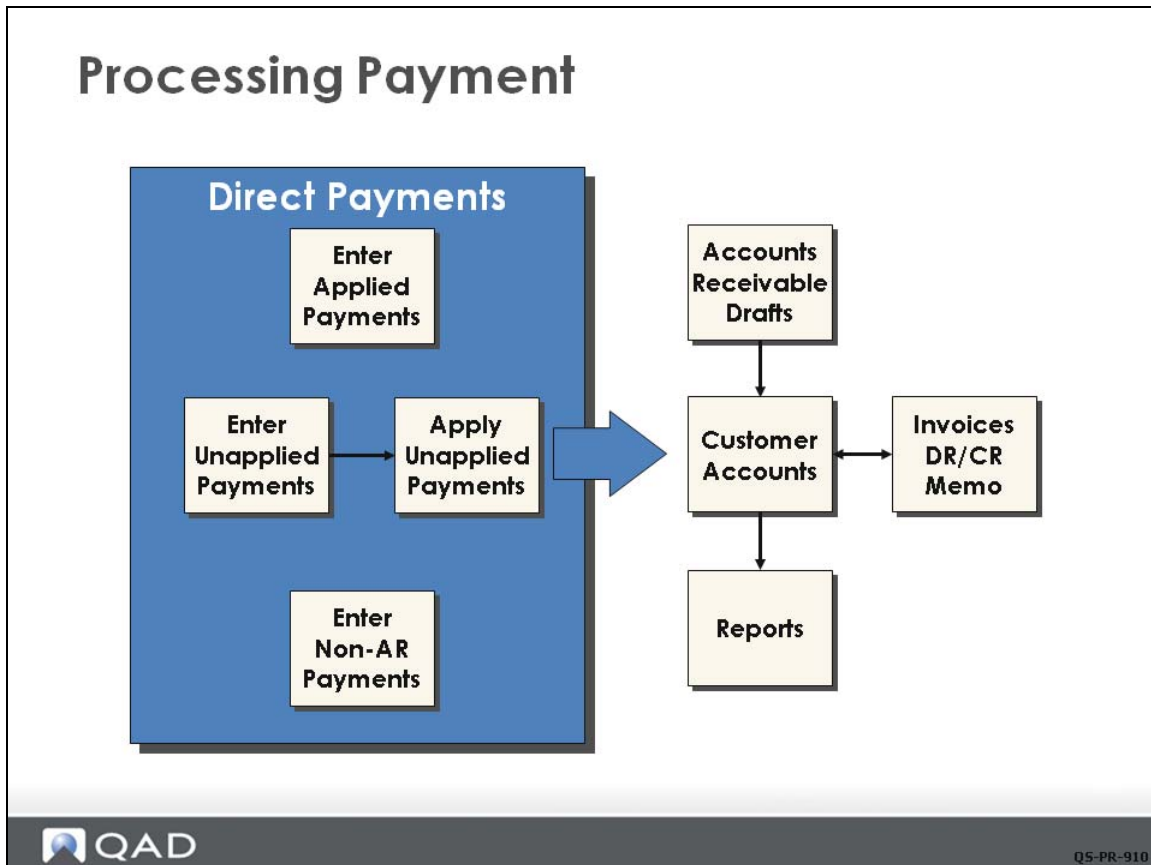
- Sales and AR
- Salesperson quota and commission history
- Sales tax journals
- Sales analysis history

The posting process also deletes sales orders that are complete.

Invoice History

Once posted, the invoice can be maintained in invoice history, useful for reviewing problems, configured product information, or reprinting invoices.

Processing Payment



All cash received from a customer should be recorded in Payment Maintenance (or Cash Book Maintenance). In QAD Enterprise Application, payments may be recorded as:

Applied

Cash received from the customer in payment of specific invoices, memos, finance charges, or open draft amounts.

Unapplied

Cash received from the customer that does not apply to specific invoices or memos, such as prepayments, deposits, or overpayments.

Non-AR

Cash received that is not paying any invoice, memo, or finance charge. Examples include tax refunds and rebates.

Auto Apply

In most cases, customer payments apply to an open invoice or memo item. To make it easier, there is an Auto Apply option in Payment Maintenance that automatically applies the amount received to open balances, oldest first, calculating any discounts the customer was eligible for. (You can enter a range of reference numbers.) This option recommends a selection, which you can then modify.

Apply Unapplied

Sometimes a payment is received that does not correspond to any open invoices or memos, a deposit or overpayment, for example.

These are recorded as unapplied. They decrease the customer's balance, but do not affect the open balance on any open invoice or memo. Later, when you find out what items the payment applies to, the payment can be applied.

Example

In the following example, QMI's Sales Department:

- Defines sales order control settings in Sales Order Control
- Enters a sales order for 5 medical ultrasounds sold to Pacific Health Care Systems at \$2500.00 per unit
- Reviews the sales order and packing list
- Ships 20 medical ultrasound units to Pacific Health Care Systems

The Accounts Receivable Department then:

- Prints and posts an invoice for this sale

Review Customer Record

Review Customer Record 1 of 2

Customer Data Maintenance

Go To Actions Copy Print Preview Attach

Customer:10C1003 Customer:10C1003 Salespsn1:10SP01

Customer Address

Customer: 10C1003

Business Relation: 10-C1003

Name: Pacific Health Care Systems

Active: ☒

Address: 600 Calle de Los Caminos

Added: 2/8/2010

Address:

Address:

City: Los Angeles

State: CA

Post: 90212

Format: After

Country: USA - TAX PURPOSE

USA

County: Los Angeles

Attention: Casey

[2]

Telephone:

[2]

Fax:

[2]

Customer Data

Sort Name: Pacific Health Care Systems

Type: DIST

Salespsn1: 10SP01

Multiple: ☐

Region: US-E

Ship Via: FEDX

Currency: USD

Resale:

Site: 10-100

Remarks:

Lang: us



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Customer Data Maintenance (2.1.1)

Before QMI's Customer Service Representative (CSR) can enter a sales order, there must be a customer record in the system. The finance department has already set up the basic customer data as it relates to accounting. Now we review the Customer Data to add any sales or service specific information such as contact names and phone numbers, region or type codes if we are using those. Here we also can define default sales persons and the site code QMI will normally ship to this customer from.

There are several additional frames in customer data maintenance. In addition to basic address information, This frame lets us set as defaults that sales orders will be flagged as partial shipments are OK, and they will be fixed price. Note these are default settings. Each sales order may be changed as required.

Address Tax Data

Address Tax Data

Address Tax Data

Taxable:☐

Tax Zone: USA-CA-LA

Tax Class:

Tax Usage:

Tax In:☐

Tax ID - Federal:

State/VAT ID:

Tax ID - Misc 1:

Tax ID - Misc 2:

Tax ID - Misc 3:

In City:☒

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Customer Data Maintenance (2.1.1)

As we continue to click next a tax information window pops up. These data are setup by finance and rarely changed during sales order processing

Customer Credit Data

Review Customer Record 2 of 2

Customer Data

Partial OK: ☒	Class: DIST
Discount Tbl:	SIC:
Fixed Price: ☒	Invoice by Authorization: ☐
Daybook Set: 10-SALES	RSS Calendar Option: 1 Customer/Shop
	Non-Sales Order Price List:

Customer Credit Data

Disc Pct: 0.00%	Terms: 2M	Last Sale:
PO Required: ☐	Bill To:	

Customer Freight Data

Freight List: 10FRT	
Min Frt Wt: 1	KG
Freight Terms: ADD	

Enterprise Material Transfer Data

EMT Type: NON-EMT	Customer Shipping LT: 0	Confirmed EMT SO: ☐
		EMT Credit Flow: ☐


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Customer Data Maintenance (2.1.1)

QMI finance has entered customer credit data for Pacific Health Care Systems with terms of 1M (payment is due in one month). Here we also see that the bill to address code is the same as the customer sold to address code.

If we were using predefined freight rate tables and freight lists and or freight terms, we would enter the data in this frame for this customer. Freight Lists are covered in detail in the training guide Sales Order Management.

The last frame in Customer Data Maintenance is the setup for EMT also called back-to-back. This functionality is also covered in detail in its own training course.

Define Control Setting 1 of 3

Define Control Setting 1 of 3

Sales Order Control x
 Go To Actions Copy Print Preview

Use Which Calc for Qty Available to Allocate:

Allocate Sales Order Lines Due in Days: (0 for no allocations)

Limit Allocate to Avail Only: ☒

Detail Allocations: ☐

ATP Enforcement Enabled: ☐

ATP Horizon:

Family ATP Calculation:

Calculate Promise Date: ☒

Pick Only Allocated Lines: ☒

Sales Order Prefix:

Are Sales Orders Printed: ☒

Next Sales Order:

Keep Booking History: ☒

Integrate with SA: ☒

Shipping Lead Time:

Integrate with TrM: ☐

Sales Order Header Comments: ☐

Confirmed Orders: ☒

Sales Order Line Comments: ☐

Fiscal Start Month:

Default to Primary Ship-To: ☐

Ln Format S/M:

Next Batch:

FOB:

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Sales Order Control (7.1.24)

In Sales Order Control, QMI has specified several standards and default settings pertaining to its sales orders.

- The default value for allocations in Sales Order Maintenance is “general,” since Detail Allocations is not selected
- Sales orders have a prefix of 10S and the next number to be issued is 10000
 - Your database may have a different starting number
- Sales order data are integrated with the Sales Analysis module SA as the Integrate with SA is selected
- On new sales orders, the default value will be Confirmed for shipment (Confirmed Orders is selected)
- The default format for sales order line item entry will be Single (instead of Multiple), which lets QMI customize due dates, sites, tax status, and other information for each line item

Define Control Setting 2 of 3

Sales Order Control 2 of 3

Sales Order Control

Go To Actions Copy Print Preview

Use Enterprise Material Transfer: ☒

EMT Type: NON-EMT

EMT Sequence: abcd

Automatic EMT Processing: ☒

Calculate Due Date: ☒

Direct Allocation: ☐

Direct Shipment Location: 140

Auto Accept Supplier Changes: ☒

Use Customer Currency On PO: ☒

Allow Mod/Del When SO Picked: ☐

Allow Mod/Del When Released to W/O: ☐

Allow Mod/Del When Shipped: ☐

Allow Non-Ack Deletes: ☐

Export Hold Sales Status: HD

A-Item/Site
B-Item
C-Customer
D-Sales Order Control

Not used in this course



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Sales Order Control (7.1.24)

The next frame in Sales Order Control is used to setup for Enterprise Material Transfer which is covered in a separate training course.

Forecast Consumption

Define Control Settings 3 of 3

The screenshot shows the 'Sales Order Control' window with the following settings:

- Auto Batch Confirmation: ☐
- SO Edit ISB Defaults: ☒
- SO Returns Update ISB: ☒
- Forecast Consumption (highlighted):
 - Consume Forward: 10
 - Consume Back: 10
- Check Customer Item Nbr First: ☒
- Confirmation Batch ID:
- Confirmation Printer:
- Pending Inv Update ISB: ☒
- Auto Batch Shipment: ☐
- Shipment Batch ID:
- Shipment Batch Printer:



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Sales Order Control (7.1.24)

In the final frame of Sales Order Control QMI have set forecast consumption to forward 10 periods and back 10 periods. How this is used by the system will be discussed in the section on planning and forecasting.

Enter Sales Order: Header Information

Sales Order: 10S10002 Order: 10S10002 Sold-To: 10C1003

Header Lines Trailer

Header Details Tax Info Freight Data Salesperson Delivery Consignment Comments

Order: 10S10002 Sold-To: 10C1003 Bill To: 10C1003 Ship-To: 10C1003

Sold-To: Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles CA 90212
USA - TAX PURPOSE

Ship-To: Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles CA 90212
USA - TAX PURPOSE

Details

Order Date: 5/27/2010 Line Pricing: ☒ Confirmed: ☒

Required Date: 6/4/2010 Manual: Currency: USD Language: us

Promise Date: 6/4/2010 Daybook Set: 10-SALES Taxable: ☐

Due Date: 5/28/2010 Channel:

Perform Date: Project:

Pricing Date: 5/27/2010 Org Inv: Fixed Price: ☒

Purchase Order: Credit Terms: 2M Site: 10-100

Remarks: Credit Terms Interest %: 0.00 Reprice/Edit: ☐

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Sales Order Maintenance (7.1.1)

A sales order entered by QMI's CSR (Customer Service Representative) is shown above. This order is for Pacific Health Care Systems (10C1003).

The CSR lets the system generate the sales order ID, which has a prefix of S10 based on the Sales Order Control setting. Other information defaults from the Sales Order Control setting also, such as site QMI and Confirmed for shipment (yes). The credit terms default from the customer record set up by finance in Customer Create or Customer Modify.

Some header elements, such as some date fields, Site, and Confirmed, become default values for line items; these can be changed, though, during line item entry. As there are six date fields here they deserve some explanation.

- Order Date: Defaults to the system date, may be changed
- Required Date: The date the customer wants the items
- Promise Date: The date you say the customer can have the items
- Due Date: The real due date. In the case of a late order the due date will be later than the promise date
- Perform Date: The date you will be held to for shipping performance. Normally the same as promise date. Can change if customer changes required date
- Pricing Date: Normally the order date, could be the due date, relies on date range based price lists to price items based on the price on a given date

Freight Data

Freight Data

Freight Data

Salesperson 1: 10SP01

Multiple: ☐

Commission 1: 5.00%

Freight List: 10FRT

Fit Min Wgt: 1

Freight Terms: ADD

Calculate Freight: ☒

Display Weights: ☒

Entered By: qmi

Consignment: ☐

Consume Forecast: ☒

Detail Allocations: ☐

Allocate Days: 10

Comments: ☐

Import/Export: ☐

QAD

QS-PR-961

Sales Order Maintenance (7.1.1)

As we click next to advance through the sale order we see the pop up for taxes then the screen for freight and other defaults from the sales control. Here the consume forecast, detail allocations and allocate days may be changed if necessary.

Sales Order: Enter Line Information

Sales Order: Enter Line Information

Sales Order Maintenance

Go To Actions Copy Print Preview Attach

Sales Order: 10S10002 Order: 10S10002 Sold-To: 10C1003 Bill To: 1

Header Lines Trailer

Line Details Freight Data Tax Info Comments

Header

Order: 10S10002 Sold-To: 10C1003 Ln For: Single Org:

Sales Order Line

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
1	01010	5.0	EA	2,500.00	0.0	2,500.00

Line Details

Desc: Medical Ultrasound

Loc: 010 Site: 10-100

USD Cost: 239.24873

Lot/Serial:

Qty Allocated: 0.0

Qty Picked: 0.0

Qty Shipped: 0.0

Qty to Invoice: 0.0

Salesperson 1: 10SP01

Commission 1: 5.00%

Category:

Fixed Price: ☒

Sales Acct: 4010 mech ADM

Disc Acct: 4200 Mech

Confirmed: ☒

Required: 6/4/2010

Promised: 6/4/2010

Due Date: 6/4/2010

Perform Date:

Pricing Date: 5/27/2010

Multiple: ☐

Credit Terms Int: 0.00

Ship Type:

UM Conversion: 1.0000

Consume Fcst: ☒

Detail Alloc: ☐

Taxable: ☐

Freight List: 10FRT

Comments:

QAD

Q5-PR-970

Sales Order Maintenance (7.1.1)

The CSR has entered an order for medical ultrasound units (item 01010); the list price of \$2500.00 defaults from information entered in the cost screens of Item Master Maintenance. The remaining information defaults from values previously entered in the sales order header, Sales Order Control, or Item Master Maintenance.

Sales Order Line 2

Sales Order Maintenance

The screenshot shows the 'Sales Order Maintenance' window. At the top, there's a title bar 'Sales Order Maintenance X'. Below it is a menu bar with 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. The main area has a header section with 'Sales Order: 10S10002', 'Order: 10S10002', and 'Sold-To: 10C1003'. Below the header is a tabbed interface with 'Header', 'Lines', and 'Trailer'. The 'Lines' tab is active, showing a table of sales order lines. The table has columns: 'Ln', 'Item Number', 'Qty Ordered', 'UM', 'List Price', 'Discount', and 'Net Price'. The first row (Ln 2) is highlighted with a red box. The values for this row are: Item Number (blank), Qty Ordered (0.0), UM (blank), List Price (0.00), Discount (0.0), and Net Price (0.00).

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
2		0.0		0.00	0.0	0.00

Q5-PR-971

Sales Order Maintenance (7.1.1)

After completing line 1, the system automatically goes to line 2 (see figure above). Since only one line needed to be entered for this order, the CSR exited the next line by clicking Line Format. The system then goes to the line format window (Ln Format S/M:) Clicking Trailer takes the system to the trailer frame,

Sales Order: Enter Trailer Information

Sales Order: Enter Trailer Information

Sales Order Maintenance
Go To
Actions
Copy
Print
Preview
Attach

Sales Order: 10S10002
Order: 10S10002
Sold-To: 10C1003

Header
Lines
Trailer

Trailer
Tax Info
Trailer Information

Header
Order: 10S10002
Sold-To: 10C1003
Bill To: 10C1003
Ship-To: 10C1003

Trailer

Currency: USD
Line Total: 12,500.00
Discount: 0.00

Tax Date:
Containers: 0.00
Line Charges: 0.00

Freight: 20 20.53
Freight: 20 0.00
Special: 30 0.00

Total Tax: 0.00
Total: 12,520.53

View/Edit Tax Detail

Trailer Information

CR Initials:
Credit card:
Action Status:
Revision: 0
EDI PO Ack:

Print Sales Order: ☒
Print Pack List: ☒
Print Inv Hist: ☒
EDI Inv Hist: ☐
Partial OK: ☒

Prepaid: 0.00
FOB Point:
Ship Via: FEDX
BOL:

QAD
QS-PR-980

Sales Order Maintenance (7.1.1)

The trailer frame is where the system calculates taxes and freight (if we are using those functionalities). There is also provision to add any special service or other charges that apply to the entire order rather than a line item. In the lower frame of the trailer record there are check boxes to print the sales order and or the packing list. there is also the ability to maintain the revision level of the sales order to keep track of customer changes to the order. If finance puts the customer on credit hold the Action Status field will have some value in it such as H for hold.

Print Sales Order

Print Sales Order

Sales Order Print

Go To Actions Copy Print Preview Attach

Sales Order: 10S10008 To: 10S10008

Sold-To: 10C1003 To: 10C1003

Order Date: 4/6/2011 To: 4/6/2011

Language ID: us To: us

Print Features and Options: ☐

Entity Address: 10-100

Form Code: 1

Print Sales Order Trailer: ☐

Discount Detail: None

Discount Summary: None

Increment Order Revision: ☒

Print Additional Line Charges: ☐

Update: ☒

Output: printer

Batch ID:

QAD Q5-PR-990

Sales Order Print (7.1.3)

Because the CSR selected Print Sales Order in Sales Order Maintenance, the sales order is available to print in Sales Order Print. As you can see from the print selection screen above, sales orders may be selected for printing based on a wide selection of criteria. In our example by specifying the one sales order number in both the from and to fields, we have selected just that one order. You can also direct the output to Page which will allow you to view the sales order on your monitor as shown below.

Sales Order Print

Sales Order Print

Sales Order Print - 4/6/2011 1:...

QMI -USA Division
30 Ridgedale Avenue
East Hanover, NJ 7950
USA - TAX PURPOSE

S A L E S O R D E R

Order Number: 10S10008 Revision: 0
Order Date: 04/06/11 Page: 1
Print Date: 04/06/11

Sold-To: 10C1003

Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Ship-To: 10C1003

Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Attention: Casey Hohman
Telephone:

Salesperson(s): 10SP01

Credit Terms: 2M
2 months after month end of invoice date
Resale:
Remarks:

Attention: Casey Hohman
Telephone:

Purchase Order:
Ship Via: FEDX
FOB Point:

Ln	Item Number	Due Date	Qty	Open	UM	Price	Extended Price
1	01010 Medical Ultrasound	04/07/11	10.0		EA	2,500.00	25,000.00
USD Total:							25,000.00

7.1.3
sosorp05.p

Q5-PR-1000

Sales Order Print (7.1.3)

A copy of the sales order is shown in this example.

Additional Notes

After printing the sales order, the system sets Print Sales Order in Sales Order Maintenance to No. To reprint the order, set Print Sales Order to Yes and reprint using Sales Order Print.

Sales Order Packing List

Print Sales Order Packing List



QS-PR-1010

Sales Order Packing List (7.9.13)

To print the packing list, the CSR uses Sales Order Packing List.

Note In QAD Enterprise Applications the terms packing list and pick list are used interchangeably. The pick list can be used to pick the items from inventory for shipment and then included with the shipment as a packing list. Alternatively two copies of the packing list can be used if it is desired to keep a hard copy for internal purposes.

Because the CSR has selected Update, after printing the picklist, the system will update the values displayed in Sales Order Maintenance for the quantity allocated and quantity picked.

Additional Notes

Set Update to No to print a simulated picklist for review without updating the database.

Sales Order Packing List Print

Sales Order Packing List Print

Sales Order Packing List- 5/27_ X

QMI -USA Division
30 Ridgedale Avenue
East Hanover, NJ 7950
USA - TAX PURPOSE

Sold To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Salespersons: 10SP01
Credit Terms: 2M
2 months after month end of invoice date
Remarks:

P A C K I N G L I S T

Order Number: 10S10001 Page: 1
Order Date: 05/27/10
Print Date: 05/27/10

Ship To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Purchase Order:
Ship Via: FEDX
FOB Point:

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	Open UM	Due Shipped
1	01010 Revision: D Medical Ultrasound	10-100		5.0	EA	06/04/10
		010	4	1.0	(	)
		010	5	1.0	(	)

7.9.13
sosopk.p

Q5-PR-1020

Sales Order Print (7.9.3)

Additional Notes

The picklist shows what items to pick to fill an order and what site or location to pick them from. If you created detailed allocations in Sales Order Maintenance--including lot/serial numbers and lot reference numbers--this information would appear on the picklist. If you performed a general allocation for the sales order, the system would automatically convert the general allocation to a detail allocation when it prints the picklist.

Sales Order Shipping

Sales Order Shipments 1 of 3

Sales Order Shipments X

Go To Actions Copy Print Preview Attach

Sales Order: 10S10001 Site:

Order: 10S10001 Ship Allocated: ☐ Sold-To: 10C1003 Site:
Effective: 5/28/2010 Ship Picked: ☒ Pacific Health Care Systems

Document:

Sales Order Line Items

Ln	Item Number	T	Qty Alloc	Qty Picked	To Ship	Backorder Site
1	01010		0.0	2.0	5.0	0.0 10-100

Line: Cancel B/O: ☐ Site: Loc:
Quantity: Lot/Serial:
Item Number: UM: Reference: Multi Entry: ☐
Description:

Q5-PR-1030

Sales Order Shipments (7.9.15)

To record the shipment of the order, approve the order for invoicing, and reduce the quantity on hand for the 5 medical ultrasound units shipped, the CSR uses Sales Order Shipments. Because QMI is using a picklist instead of detail allocations for this order, the CSR accepts the default for Ship Picked (yes).

The middle frame (Sales Order Line Items) shows all open orders on this sales order ready for shipment, which, in this example, is one line. If necessary, modifications can be made to this line in the bottom frame. For example, if the location had changed, the new location could be entered here. In our example the items picked are ready to ship so click next. A dialog box asks if we want to see the inventory transaction. We click yes and a window displays with the complete inventory transaction as shown below.

Inventory Transaction

Sales Order Shipments 2 of 3

Sales Order Shipments X

Go To Actions Copy Print Preview Attach

Sales Order: 10S10001 Site: Site:

Order: 10S10001 Ship Allocated: ☐ Sold-To: 10C1003 Site:
 Effective: 5/28/2010 Ship Picked: ☒ Pacific Health Care Systems
 Document:

Ln	Item Number	T	Qty Alloc	Qty Picked	To Ship	Backorder Site
1	01010		0.0	2.0	2.0	3.0 10-100



QS-PR-1040

Sales Order Shipments (7.9.15)

The system displays the sales order lines to be shipped for final review. A dialog box displays asking if all information is correct.

Additional Notes

If the information is not correct, click No and the system returns to the previous frame where you can make corrections. Click yes to advance to the trailer frame.

Trailer Frame

Sales Order Shipments 3 of 3

Sales Order Shipments

Go To Actions Copy Print Preview Attach

Sales Order: 10S10001 Site:

Order: 10S10001 Ship Allocated: ☐ Sold-To: 10C1003 Site:

Effective: 5/28/2010 Ship Picked: ☒ Pacific Health Care Systems

Document:

Currency: USD Line Total: 62,500.00

0.00% Discount: 0.00

Tax Date: 6/4/2010 Freight 20 20.53

Containers: 0.00 Freight 20 0.00

Line Charges: 0.00 Special 30 0.00

Total Tax: 0.00

View/Edit Tax Detail: ☐ Total: 62,520.53

Ship Via: FEDX Daybook Set: 10-SALES

Ship Date: 5/28/2010 Ready to Invoice: ☒

BOL:

Remarks:

Q5-PR-1050

Sales Order Shipments (7.9.15)

Trailer Frame

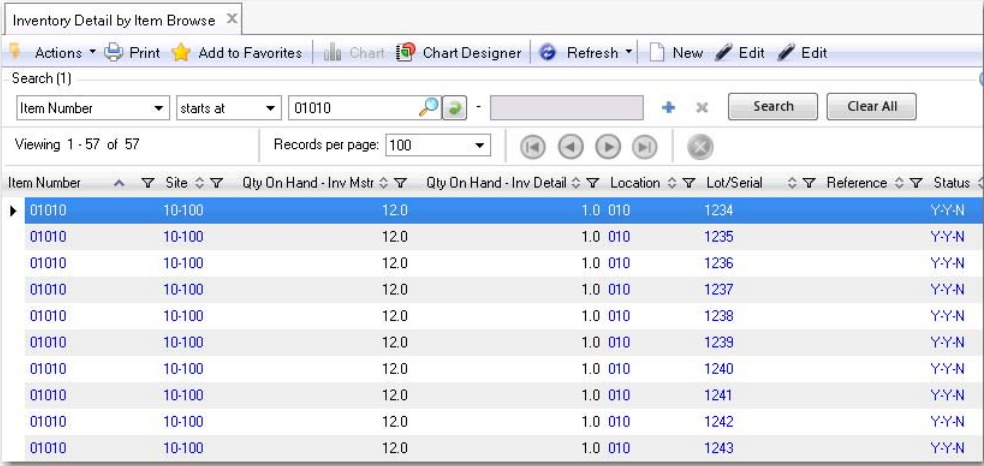
When you exit the line items frame the system brings up the trailer frame for taxes, freight or other charges that apply to the entire order.

Note Three trailer codes may be displayed on the trailer. The three shown here have codes 10, 20, and 30. The codes are setup in Trailer Code Maintenance where they are linked to the appropriate GL accounts. You may setup as many trailer codes as you need but only three can be displayed at a time.

The CSR selects Ready to Invoice, and clicks next which completes the sales order shipment process.

Review Inventory Detail

Review Inventory Detail



Inventory Detail by Item Browse

Actions: Print Add to Favorites Chart Chart Designer Refresh New Edit Edit

Search (1)

Item Number starts at 01010 Search Clear All

Viewing 1 - 57 of 57 Records per page: 100

Item Number	Site	Qty On Hand - Inv Mstr	Qty On Hand - Inv Detail	Location	Lot/Serial	Reference	Status
01010	10-100	12.0	1.0	010	1234		Y-Y-N
01010	10-100	12.0	1.0	010	1235		Y-Y-N
01010	10-100	12.0	1.0	010	1236		Y-Y-N
01010	10-100	12.0	1.0	010	1237		Y-Y-N
01010	10-100	12.0	1.0	010	1238		Y-Y-N
01010	10-100	12.0	1.0	010	1239		Y-Y-N
01010	10-100	12.0	1.0	010	1240		Y-Y-N
01010	10-100	12.0	1.0	010	1241		Y-Y-N
01010	10-100	12.0	1.0	010	1242		Y-Y-N
01010	10-100	12.0	1.0	010	1243		Y-Y-N

QAD QS-PR-1060

Inventory Detail by Item Browse (3.2)

Using Inventory Detail by Item Browse, we can see how many medical ultrasound units are remaining in inventory. In this case we see there are 12 units left in the 010 location at site 10-100.

Transaction Detail Inquiry

Transactions Detail Inquiry

Transactions Detail Inquiry X
Go To Actions Copy Print Preview Attach

Transaction:

Display E-Signature Details: ☒

Output: PAGE

Tran Nbr: 92000	Order: 10S10008	2309487
Trans Type: ISS-SO	Revision: 1	
Date: 4/6/2011	Item Number: 01010	
Time: 13:39	Description: Medical Ultrasound	
Effective Date: 4/6/2011	Unit of Measure: EA	
Remarks:	Address: 10C1003	
User ID: qmi	Name: Pacific Health Care	
Program: sosois.p	SO/Job: 10S10008	
Currency: USD	Ship Type:	
Qty Change: -1.0	Price: 2,500.00	
Shipper Number:	IMC:	
Ship Date: 4/6/2011		

QAD
QS-PR-1070

Transactions Detail Inquiry (3.21.1)

The transaction detail provides information on the transaction number and type (ISS-SO), the program that created the transaction (sosois.p), the user who created this transaction, and the source of the transaction (SO10008). Other key information is shown, such as site and location, inventory data, and so on.

Selecting Next from this frame brings up a screen with additional detail including the GL transactions.

GL Effects

GL Effects

Transactions Detail Inquiry
04/06/11

Transaction: 92000
Display E-Signature Details: Yes
Output: PAGE

Category: InvTran
This data is currently unsigned

===== End of e-signature details =====

Tran Nbr: 92000
Trans Type: ISS-SO
Date: 04/06/11
Time: 13:39
Effective Date: 04/06/11
Remarks:
User ID: qmi
Program: sosois.p
Currency: USD
Qty Change: -1.0
Shipper Number:
Ship Date: 04/06/11

Order: 10S10008
Revision: 1
Item Number: 01010
Description:
Unit of Measure:
Address:
Name:
SO/Job:
Ship Type:
Price:
IMC:

2309487
Debit Acct: 5300
Cr Account: 1500
Amount: 0.00
GL Reference:
ISS-SO
Mech
Reference ID:

Site: 10-100
Location: 010
Lot/Serial: 01010-1210-9
Inv Status: Y-Y-N
Supplier Lot:
Grade/Assay:
Reference:

Inventory Data
Begin Bal:
Quantity Chg
Qty Sh
Begin Loc
Loc Qty Chg
Expire D:
B2

Debit Acct: 5400
Cr Account: 1500
Amount: 0.00
GL Reference:
ISS-SO
Mech
Reference ID:

Material: 1,219.92
Labor: 583.67
Burden: 1.86157

Cost Data
Sub:
Cos

Debit Acct: 5010
Cr Account: 1500
Amount: 1,219.92
GL Reference: 2011/ISS-S0000001009
ISS-SO
Mech
Reference ID: IC110406000028

Debit Acct: 5100
Cr Account: 1500
Amount: 583.67
GL Reference: 2011/ISS-S0000001010
ISS-SO
Mech
Reference ID: IC110406000029

Debit Acct: 5200
Cr Account: 1500
Amount: 1.86
GL Reference: 2011/ISS-S0000001011
ISS-SO
Mech
Reference ID: IC110406000030

QS-PR-1080

Transactions Detail Inquiry (3.21.1)

All of the GL effects of the sales order shipment are also shown in the transaction detail inquiry. Notice that each of the GL transaction numbers start with the letters "IC." This indicates that these are inventory transactions. Additional transactions will be generated when the invoice is posted.

Review Pending Invoice

Pending Invoice Register

06/03/10 09:43:29 Page: 1

10USA

Invoice Number: 10SP01
Salespsn: Pacific Health Care Systems
Bill To: 10C1003
Name: Pacific Health Care Systems
Sold-To: 10C1003

Tax Environment: US/NJ Tax Usage:

Sales Order: 10S10004 Ship-To: 10C1003 Pacific Health Care Systems Order Date: 06/03/10 P0:

Ln	Item Number	UM	Sales	Sub-Acct	CC	Invoiced Tax	Backorder	TaxUsage	Price	Extended Price	Extended Margin
1	01010	EA	4010	mech	ADM	5.0	no	0.0	2,500.00	12,500.00	11,303.76
	Medical Ultrasound										
	Lot/Serial Numbers Shipped:	Qty	Expire	Reference							
	8000	1.0									
	8001	1.0									
	8002	1.0									
	8003	1.0									
	8004	1.0									
	Currency: USD					Line Total:			12,500.00		
	0.00%					Discount:			0.00		
	Tax Date: 06/03/10					Freight 20 :			20.53		
	Containers: 0.00					Freight 20 :			0.00		
	Line Charges: 0.00					Special 30 :			0.00		
						Total Tax:			0.00		
						Total:			12,520.53		
	USD Report Totals:									12,500.00	11,303.76

QAD QS-PR-1090

Pending Invoice Register (7.13.2)

When the sales order is shipped, the system automatically generates the information for an invoice, referred to as a pending invoice.

Pending Invoice Register produces a printed list of all pending invoices, which in this example is just one. This shows the detail of what will appear on the invoice. Notice that “Invoice” in the screen below is “blank.” That is because the invoice number will be assigned using the Invoice Print function.

Additional Notes

The Extended Margin of 11,303.76, is the unit margin multiplied by the quantity shipped (2260.752×5 units shipped). The unit margin 2260.752 is our price 2500.00 less our cost 239.248.

The invoice total of 12,520.53 is calculated by multiplying the price per medical ultrasound (2500.00) by the total quantity (5) and adding the trailer charges, if any.

Preview Invoice Print

Invoice Print or Reprint

I N V O I C E

Invoice: 2010/CINV00000003
 Invoice Date: 06/03/10 Revision: 0
 Print Date: 06/03/10 Page: 1

Bill To: 10C1003
 Pacific Health Care Systems
 600 Calle de Los Caminos
 Los Angeles, CA 90212
 USA - TAX PURPOSE

Sold To: 10C1003
 Pacific Health Care Systems
 600 Calle de Los Caminos
 Los Angeles, CA 90212
 USA - TAX PURPOSE

Sales Order: 10S10004
 Order Date: 06/03/10
 Salesperson(s): 10SP01

Ship Date: 06/03/10
 Purchase Order:
 Ship To: 10C1003
 Ship Via: FEDX
 BOL:

Credit Terms: 2M
 2 months after month end of invoice date

Resale:
 Remarks:

Item Number	UM	Shipped	Qty	B/O	Tax	Price	Extended Price
01010	EA	5.0	0.0	No		2,500.00	12,500.00
Medical Ultrasound							

Currency: USD
 Tax Date: 06/03/10
 Containers: 0.00
 Line Charges: 0.00

Line Total: 12,500.00
 Discount: 0.00
 Freight 20 : 20.53
 Freight 20 : 0.00
 Special 30 : 0.00
 Total Tax: 0.00
 Rounding Trailer Amount: 0.00
 Total: 12,520.53


Q5-PR-1135

Invoice Print or Reprint (7.13.3)

You can use Preview Invoice Print (7.13.3) to see an exact image of what the printed copy of the invoice will look like, that is exactly what the customer will see if you print and send a hard copy invoice.

Invoice Post and Print

Invoice Post and Print (7.13.4)

The company's customer service supervisor or Accounts Receivable (AR) Administrator uses Invoice Post and Print to produce an actual invoice from the pending invoice and post the transaction to the general ledger. The invoice number will be assigned by the print function. The first frame of the selection screen allows you to select sales orders by the usual range of values. Be sure to check the Print Invoice box when you are ready to print hard copy invoices.

The second selection frame offers additional detail selection criteria.

Direct Print Output

Invoice Post and Print

Invoice Post and Print X

Go To Actions Copy Print Preview Attach

Sales Order: 10S10004 To: 10S10004 Sold-To:

Sales Order: 10S10004
Ship Date:
Daybook Set:
Sold-To:
Bill To:
Language ID:

To: 10S10004
To:
To:
To:
To:
To:

GL Effective Date: 6/3/2010 Print GL Detail: ☐

Include Debit Invoices: ☒
Include Credit Invoices: ☒
Consolidate Invoices: ☐
Correction Invoices: ☐
Print Correction Invoice: ☐
Print Invoice: ☒

Invoice Post Output: printer
Invoice Print Output: printer
Batch ID:


Q5-PR-1120

Invoice Post and Print (7.13.4)

The final selection frame of Invoice Post and Print allows you to direct the output to various printers or other output types such as printer (shown here) used to view the result on your monitor. For example the invoice post output is a report that could be sent to a printer with normal paper in the AR department. The Invoices themselves could be sent to a printer with letterhead or pre-printed invoice paper.

Print Sample

The screenshot displays the QAD 'Invoice Post and Print' window. The top window (Page:1) shows the invoice header with the QAD logo, title 'Invoice Post and Print', and date '06/03/10 10:03:41'. It includes the Sales Journal Reference (2010/CINV000000003), AR Batch (5), and company code (10USA). The invoice details show the Bill To (Pacific Health Care Systems, 10C1003) and Sold-To (Pacific Health Care Systems, 10C1003) information, along with the Sales Order (10S10004) and Order Date (06/03/10). A table lists the invoice line items, including 'Medical Ultrasound' with a price of 2,500.00 and an extended price of 12,500.00. The bottom window (Page:2) shows the consolidated debit and credit entries for the invoice, with a total of 12,520.53.

Ln	Item Number	UM	Sales	Sub-Acct	CC	Invoiced	Backorder	Tax	Price	Extended Price	Extended Margin
1	01010	EA	4010	mech	ADM	5.0	No		2,500.00	12,500.00	11,303.76
						0.0					

Medical Ultrasound

Currency: USD Line Total: 12,500.00
 0.00% Discount: 0.00
 Freight 20 : 20.53
 Freight 20 : 0.00
 Special 30 : 0.00
 Total Tax: 0.00
 Total: 12,520.53

Tax Date: 06/03/10
 Containers: 0.00
 Line Charges: 0.00

						Consolidated Dr	Consolidated Cr
10USACO	1300	Gserv			06/03/10	12,520.53	.00
10USACO	4010	mech	ADM		06/03/10	.00	12,500.00
10USACO	4682				06/03/10	.00	20.53
						12,520.53	12,520.53

Invoice Post and Print (7.13.4)

The output of the invoice post transaction is shown above. Note the invoice number has now been assigned by the system based on criteria setup in the finance system. This is the same information we saw in the pending invoice register.

Should you print the invoice it will look the same as the draft invoice we saw earlier but with the added invoice number as shown here.

Invoice Print or Reprint

Invoice Print or Reprint

I N V O I C E
 Invoice: 2010/CINV00000003
 Invoice Date: 06/03/10 Revision: 0
 Print Date: 06/03/10 Page: 1

Bill To: 10C1003
 Pacific Health Care Systems
 600 Calle de Los Caminos
 Los Angeles, CA 90212
 USA - TAX PURPOSE

Sold To: 10C1003
 Pacific Health Care Systems
 600 Calle de Los Caminos
 Los Angeles, CA 90212
 USA - TAX PURPOSE

Sales Order: 10S10004
 Order Date: 06/03/10
 Salesperson(s): 10SP01
 Credit Terms: 2M
 Resale:
 Remarks:

Ship Date: 06/03/10
 Purchase Order:
 Ship To: 10C1003
 Ship Via: FEDX
 BOL:
 2 months after month end of invoice date
 FOB Point:

Item Number	UM	Shipped	Qty	B/O Tax	Price	Extended Price
01010	EA	5.0	0.0	No	2,500.00	12,500.00
Medical Ultrasound						

Tax Date: 06/03/10
 Containers: 0.00
 Line Charges: 0.00

Currency: USD Line Total: 12,500.00
 0.00% Discount: 0.00
 Freight 20 : 20.53
 Freight 20 : 0.00
 Special 30 : 0.00
 Total Tax: 0.00
 Rounding Trailer Amount: 0.00
 Total: 12,520.53

QAD
QS-PR-1135

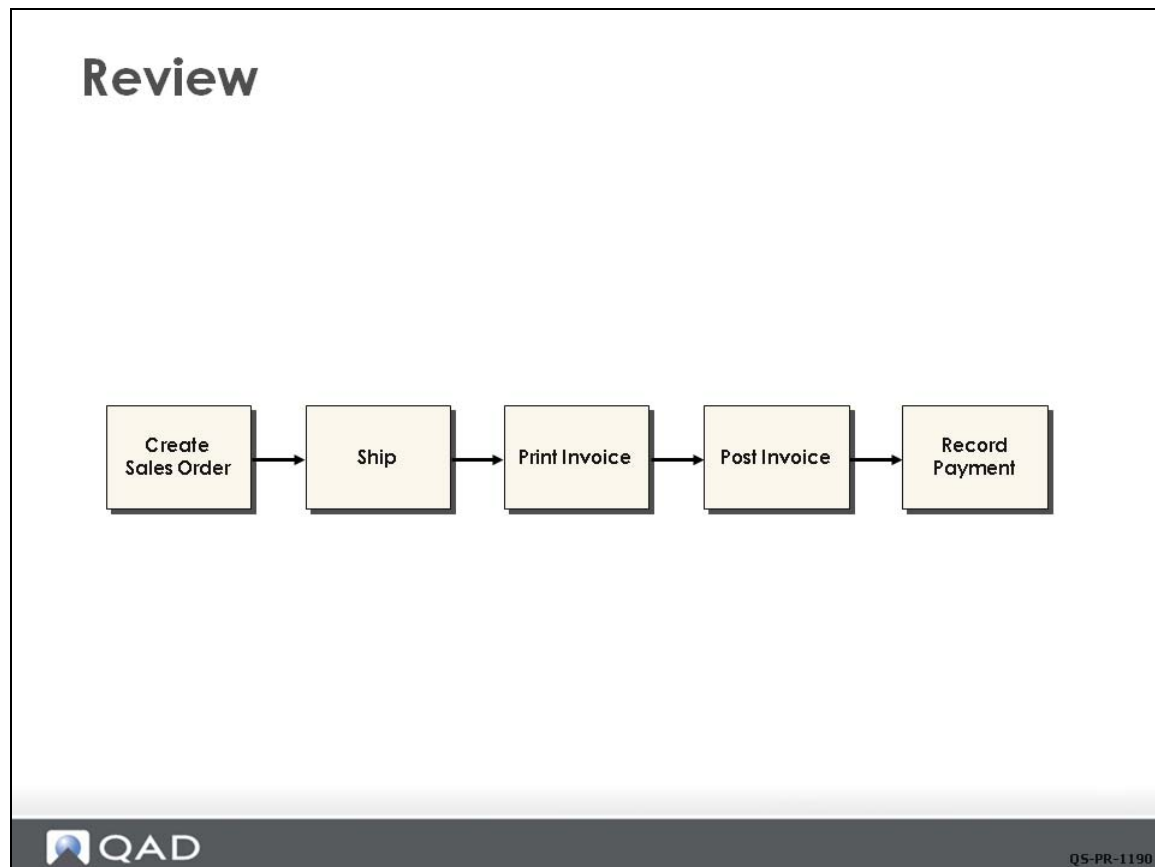
Invoice Print or Reprint (7.13.12)

Additional Notes

Note The invoice format shown above is the standard provided with the system. Most companies will want to create a custom format and or a preprinted form with the company logo or letterhead.

The Invoice Post function generates transactions in the Accounts Receivable module and updates the customer's open account balance. Running Invoice Post also updates GL account balances for Sales and AR, salesperson quota and commission history, sales tax journals, and sales analysis history. At this point responsibility for the collection of the payment is transferred to Accounts Receivable.

Review



In this chapter, we saw that the sales order records the customer's intent to buy, listing the items, quantities, price, sales tax and other charges, and shipping destination. For accounts receivable purposes, the order also records the remit-to address, credit terms, and whether the customer is approved for shipment.

Once the customer order is shipped, a sales invoice is generated. In QAD Enterprise Applications, an order that is flagged as ready for invoicing is called a pending invoice. The invoice communicates the customer's obligation to pay and is sent to the bill-to address on the sales order. Usually, the pending invoice register is reviewed and corrections are made before the invoices are printed and sent to customers. Invoices are posted on a regular basis.

When the customer sends the payment, it is recorded in the system.

Exercise 7

In the following activity you:

- Review a Customer record
- Modify Sales Order Control
- Add a sales order record
- Print a packing list, and ship the sales order
- Review customer balance
- Post and review the Invoice

Review a Customer Record

- 1 Use Customer Data Maintenance (2.1.1) to review the customer record for Pacific Health Care Systems (10C1003).
 - Information entered includes site code (10-100), and credit terms of 2M.

Modify Sales Order Control

- 2 Use Sales Order Control (7.1.24) and set the following fields:

Field	Data
Detail Allocations	No (unchecked)
Sales Order Header Comments	No (unchecked)
Sales Order Line Comments	No (unchecked)
Line Format	Single
Sales Order Prefix	System Default
Next Sales Order Number	System Default
Integrate with SA	Yes (checked)
Integrate with TrM	No (unchecked)
Confirmed Orders	Yes (checked)

Accept other defaults.

Click Next to save changes.

Add a Sales Order Record

- 3 Use Sales Order Maintenance (7.1.1) to add a sales order.

Header information:

Field	Data
Order	<blank>; click Next
Sold-To	10C1003; click Next
Bill-To and Ship-To	Use Default; click Next
Order Date	Default, today's date

Field	Data
Site	10-100
Credit Terms	2M (defaults from customer record)

Accept remaining default values.

Line 1 information:

Field	Data
Item	01010
Site	10-100 (defaults from Header)
Quantity Ordered	20
List Price	2,500.00 (defaults from item master)

Accept remaining default values Click Next.

Field	Data
Update Installed Base	No

The system is now ready for you to enter information for line 2. We are not entering a second line, so, click End Lines then click Trailer.

Trailer information:

Field	Data
Print Sales Order	Yes

Accept remaining default values.

- 4 Use Sales Order Print (7.1.3). Direct the Output to Page and review your sales order.

Print a Packing List and Ship the Sales Order

- 5 Use Sales Order Packing List (7.9.13) to print a packing list for your sales order. Select “Update.”
- 6 Use Sales Order Shipments (7.9.15) to record the shipment of the sales order.
 - Ship Picked = Yes automatically updates the quantity to ship in the shipment display. You can then modify the quantity that is actually being shipped and the location from where the items were taken.

Field	Data
Line	1
Quantity	20
Site	10-100
Loc	010

Confirm that all information is correct.

- 7 Display sales order lines being shipped = Yes
- 8 Is all information correct = Yes

Field	Data
Ready to Invoice	Yes

Click Next until the Order field is highlighted, click Back.

- 9 Use Inventory Detail by Item Browse/Inquiry (3.2) to review your inventory. You should see that the inventory has decreased by the amount of the shipment.
- 10 Use Transactions Detail Inquiry (3.21.1) to review the inventory transaction and see which accounts were credited and which accounts were debited when you did the sales order shipment.

Review Pending Invoices and Print an Invoice for the Shipment

- 11 Use Pending Invoice Register (7.13.2) to review the pending invoices outstanding.
This report will show you the invoices that have not yet been printed and posted. You can also change the flags to show you invoices that have printed but not yet posted.
- 12 Use Preview Invoice Print (7.13.3) to review the invoice for your sales order.
Direct the output to page, this will allow you to review the invoice with out actually printing a hard copy document that is normally sent to your customer.

Post the Invoice to Accounts Receivable

- 13 Post the invoice using Invoice Post and Print (7.13.4), updating the customer account balance, generating unposted GL transactions debiting sales, and updating sales and invoice history.

Field	Data
Print Invoice	Yes
Print Lot/Serial Numbers	Yes

Review a Customer Account

- 14 Use Customer Account Activity Report (27.17.3) to see the customer's (10C1003) open account balance.
Notice the type is I for invoice and the reference is the invoice number.

Chapter 10

Planning

Overview



Planning ensures the timely, efficient and economic movement of material to the marketplace. Material is probably the most visible element that is planned, but material plans need to be linked to plans for sales, manufacturing and distribution operations, personnel, plant and equipment. When they are linked, all of these planning elements contribute to the balancing of supply, demand, and resources. In this chapter, we will see the interaction of some of these planning elements in the Example section-especially those among purchasing, manufacturing, and sales. First, we will look at the primary components of the planning system in the Key Concepts section.

Key Concepts

- Production Planning
- Forecasting
- Master Schedule
- MRP and Action Messages
- Item Planning Parameters
- Planned Orders

Example

- Enter Forecast

- Process Sales Order
- Regenerate MRP
- Process Purchase Order (approve planned orders)
- Process Work Order (approve planned orders)
- Post Transactions

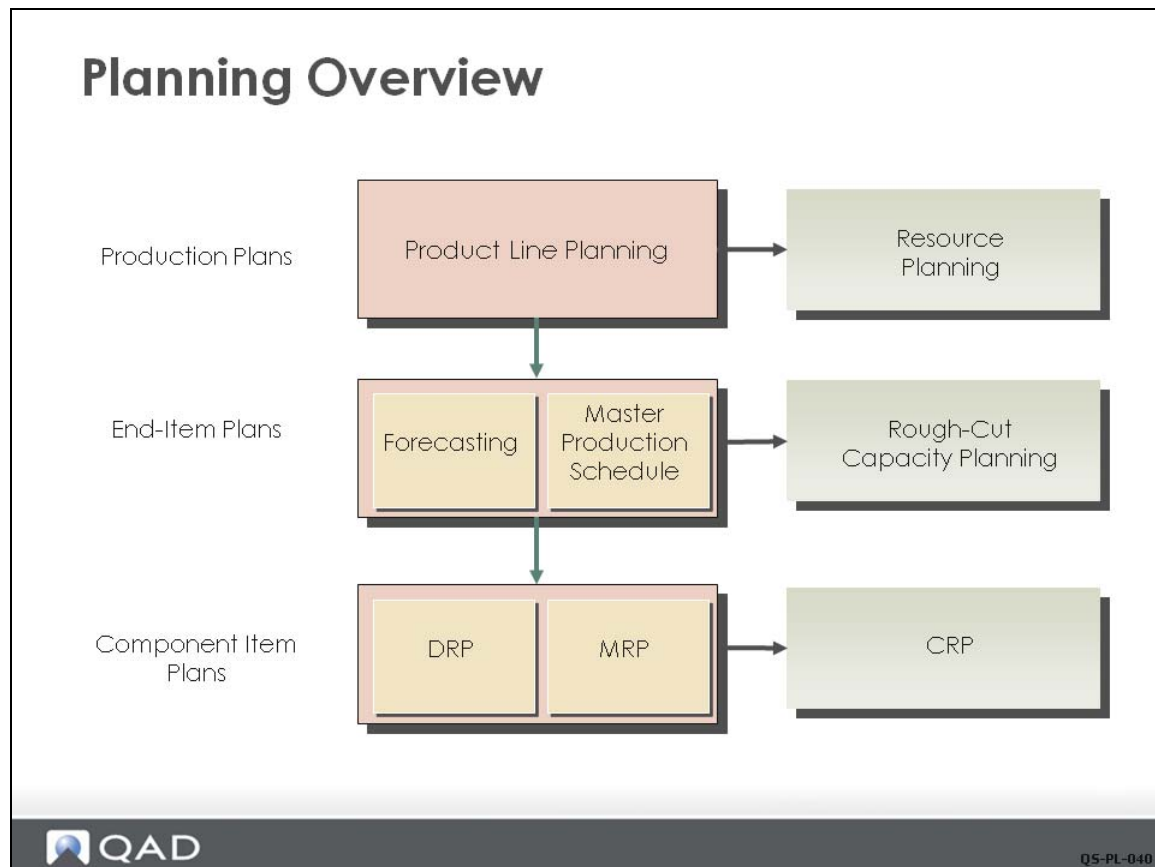
Activities

Learning Objectives

When you finish this chapter, you should be able to:

- Provide examples of production plans, end-item plans, and component item plans
- Name the key input to the Master Schedule
- Explain forecast consumption
- Describe forward and backward consumption
- Define the term Time Fence
- Explain how Order Policy and Order Period relate to one another
- Enter a forecast
- Read Master Schedule Summary and Detail Inquiries
- Read MRP Summary and Detail Inquiries
- Approve planned purchase orders and work orders

Key Concepts



Planning Overview

Within a corporation, planning is done at many levels by many different people. QAD Enterprise Application provides an integrated set of planning tools that are useful at most of these levels. The primary components of the planning system are production planning, end-item planning, and component item planning, which are summarized below and discussed in more detail in this chapter.

Production Planning

At this level, product line planning functions are used to balance sales forecasts, production forecasts, and income forecasts for an entire product line, while meeting the profit goals established in the strategic plan. Often, these plans are created by different people; product line planning is where they are brought together. Resource planning is used to determine whether you have the resources to meet the plans.

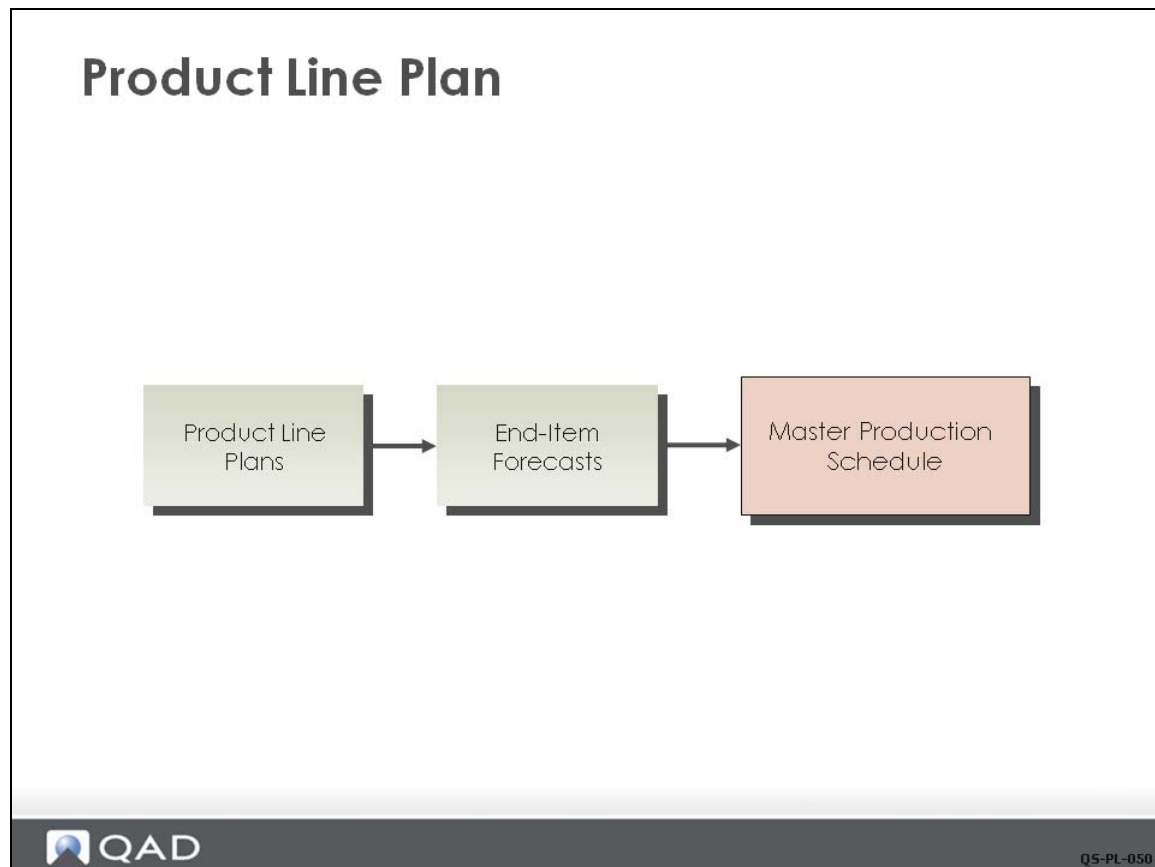
End-Item Planning

Once established, the product line plan is broken down into individual item forecasts. Both actual and forecast demands are reviewed by the Master Scheduler, who sets production levels in response to these demands. Rough-Cut Capacity Planning (RCCP) determines whether you have enough critical resources to meet the master schedule.

Component Item Planning

Material Requirements Planning (MRP) and Distribution Requirements Planning (DRP) both calculate the quantity of raw materials and components needed to support the master schedule. DRP generates planned orders for items to be transferred from another site. MRP generates planned orders for purchased and manufactured items. Capacity Requirements Planning (CRP) determines fairly precisely how this plan loads production resources at your site.

Production Planning: Product Line Plan

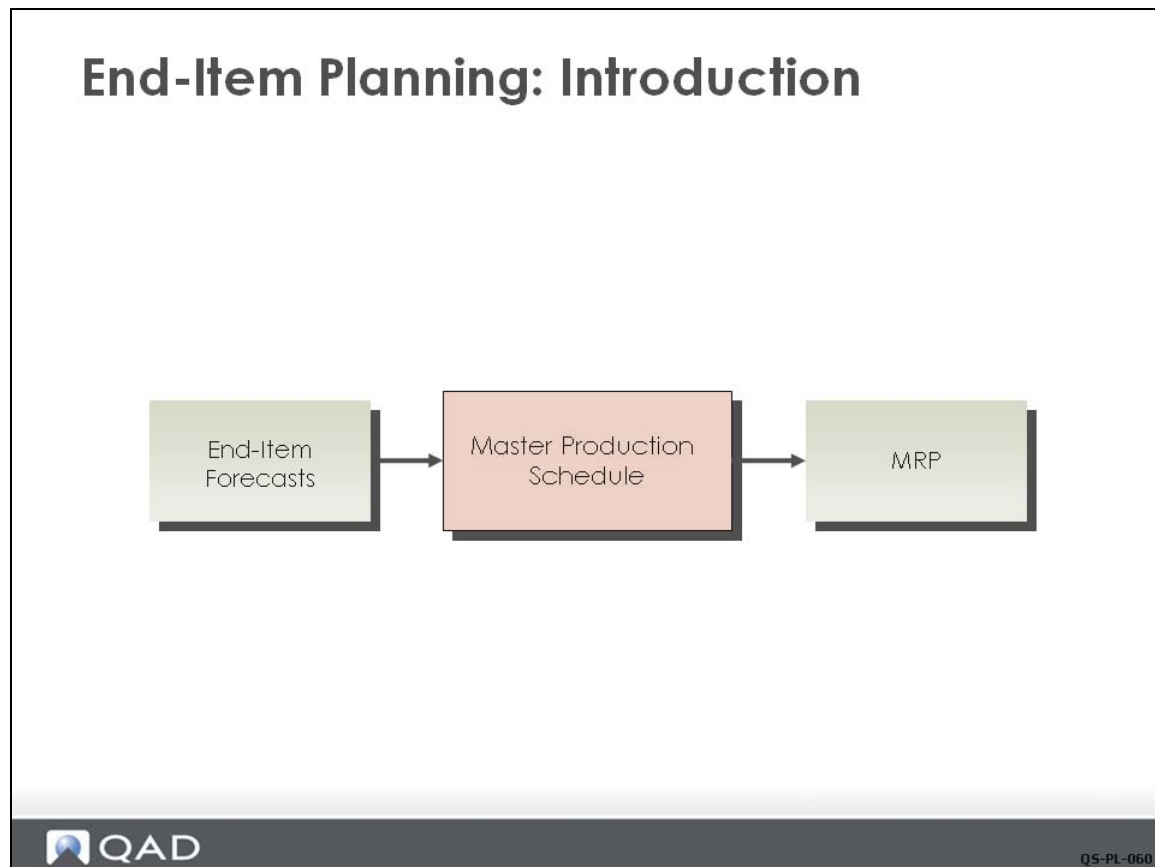


Product line plans generally cover 1 to 3 years, usually shown by months or quarters. They are composed of aggregate forecasts that are converted into end-item forecasts. These detailed forecasts provide input that the master scheduler uses to create a statement of production.

The purpose of a product line plan is to:

- Aggregate forecasts
- Establish aggregate production goals (aligned to corporate goals)
- Plan efficient and cost effective use of production resources, such as machines and manpower
- Outline the level of planned manufacturing output and its cost
- Provide input to a master schedule and rough-cut capacity plan
- Balance sales forecasts, production forecasts, and income forecasts for an entire product line
- Determine whether there are enough resources, in aggregate, to meet the plan

End-Item Planning: Introduction



End-item planning starts with the master scheduler, who estimate the demand for a product and determine how many to produce. The master scheduler's planning horizon should be at least equal to the longest cumulative lead time in the system. Many companies like to plan and forecast 12 to 18 months into the future to insure adequate resource planning and coverage for seasonal products

Inputs

The primary inputs to the master scheduling process are actual and forecast demands. Forecast demands are derived from the product line plans but are much more detailed. Unlike product line plans, which express forecasts in terms of thousands of dollars of production for a complete line of items by month, forecasts are expressed in terms of quantities for a specific item and site by week.

Products subject to seasonal demand can have forecasts that fluctuate widely from week to week. Seasonal build schedules are used to smooth these requirements; increasing production in advance of anticipated spikes in demand.

Output

The output of the master scheduling process is a detailed plan of the number of end items and the schedule for their production. The check on this plan is the availability of critical resources. If you want to make 50 items next week, but your fabricator only makes 25 in a week, you can't fulfill the

plan. Detailed resource planning is done at this stage, looking at the actual schedule and its demands on resources as specified in Item Resource Bills. In many cases, only bottleneck resources are reviewed.

In QAD Enterprise Applications end-item planning is done in the Forecast/Master Plan module. We'll look at forecasting next.

End-Item Planning: Forecasting



The forecast is an estimate of future demand for an item at a particular site, stated in terms of quantity per week. It is the starting point for developing an executable plan. In QAD Enterprise Applications, this is a shipment forecast, or the quantity of an item to be shipped (not ordered) that week. Forecasts are normally entered for items subject to independent demand, from sales orders or spares. Dependent demand-for components and raw materials- is calculated from this.

The system keeps a running total of the actual quantity to be shipped each week, determined by the due date on the sales order line item or customer schedule.

In summary, forecasts:

- Estimate future demand for an item
- Are typically a sales function
- Can be an integral part of master scheduling
- Represent one point of input to the master schedule

Source of independent demand can be created for any item, but is usually created for:

- End items
- Critical subassemblies
- Service parts

Terminology

Abnormal Sales Demand

Some sales order demand cannot be anticipated by the forecast and is considered abnormal sales demand. These can be major new accounts or windfall orders. For example, orders for roofing materials after a hurricane. Since abnormal sales demand was not anticipated by the forecast, it should not consume the forecast. This effectively adds abnormal sales order demand directly on top of the net forecast. A sales order demand is classified as abnormal by using the Consume Forecast option in Sales Order Maintenance.

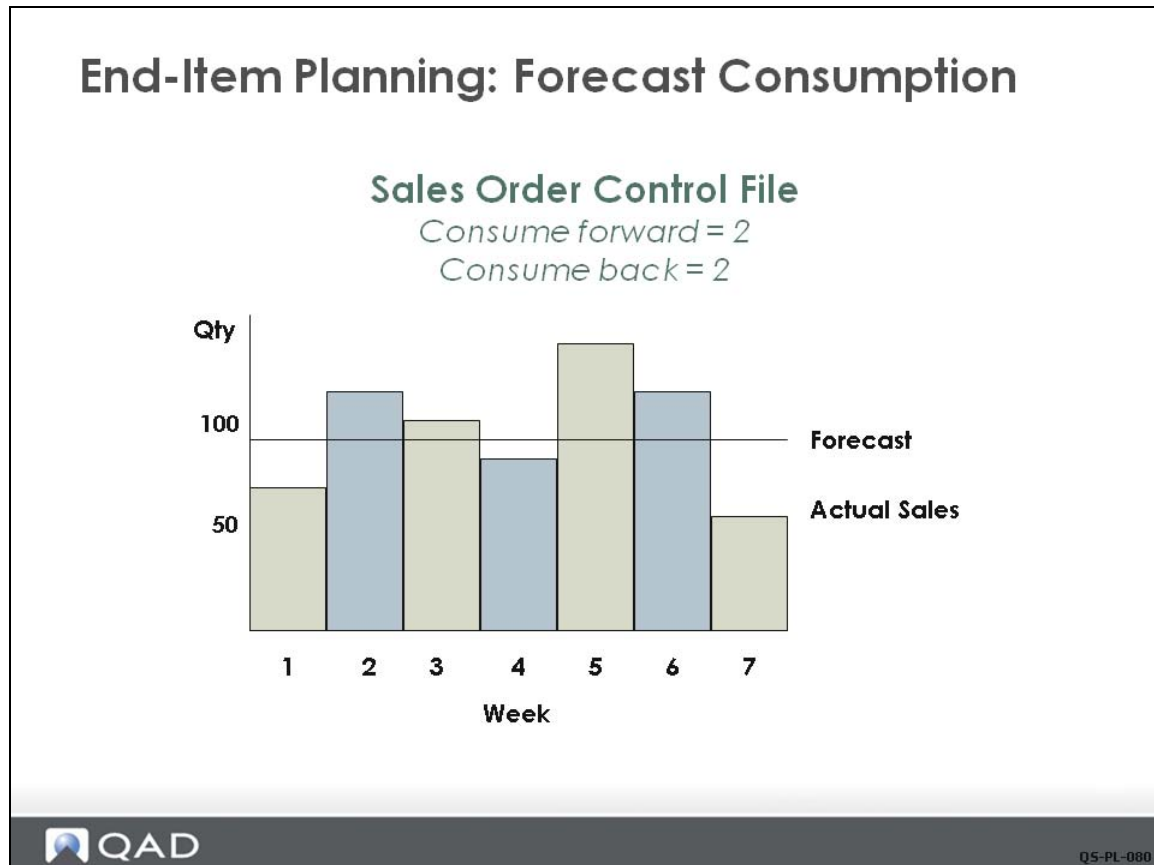
Net Forecast

Net (remaining) Forecast is the amount of the forecast not sold in any given week. MRP always plans to make enough product to match actual orders (regular sales and abnormal), but it also plans production to satisfy any remaining forecast, since orders for this amount may still be expected.

Production Forecast

Production Forecast is calculated by the system based on the forecast of sales of another product. For example, sales of disk drives based on the forecast of computer sales. These are also planned by MRP.

End-Item Planning: Forecast Consumption



Incoming sales orders and scheduled customer deliveries are netted against the forecast. The net (remaining) forecast is calculated as the original forecast less quantity sold (except abnormal sales). Planning sees total demand as actual sales (normal and abnormal), net forecast, and production forecast.

Forecast Consumption

The process of netting sales order quantities from the forecast is called forecast consumption.

As a rule, forecasts are more accurate in the long term rather than the short term. Since forecasts are entered for one-week periods, actual shipments seldom correspond to the forecast for a single one-week period. Shipments may be predicted with more accuracy over a month or a quarter.

Consume Forward/Backward

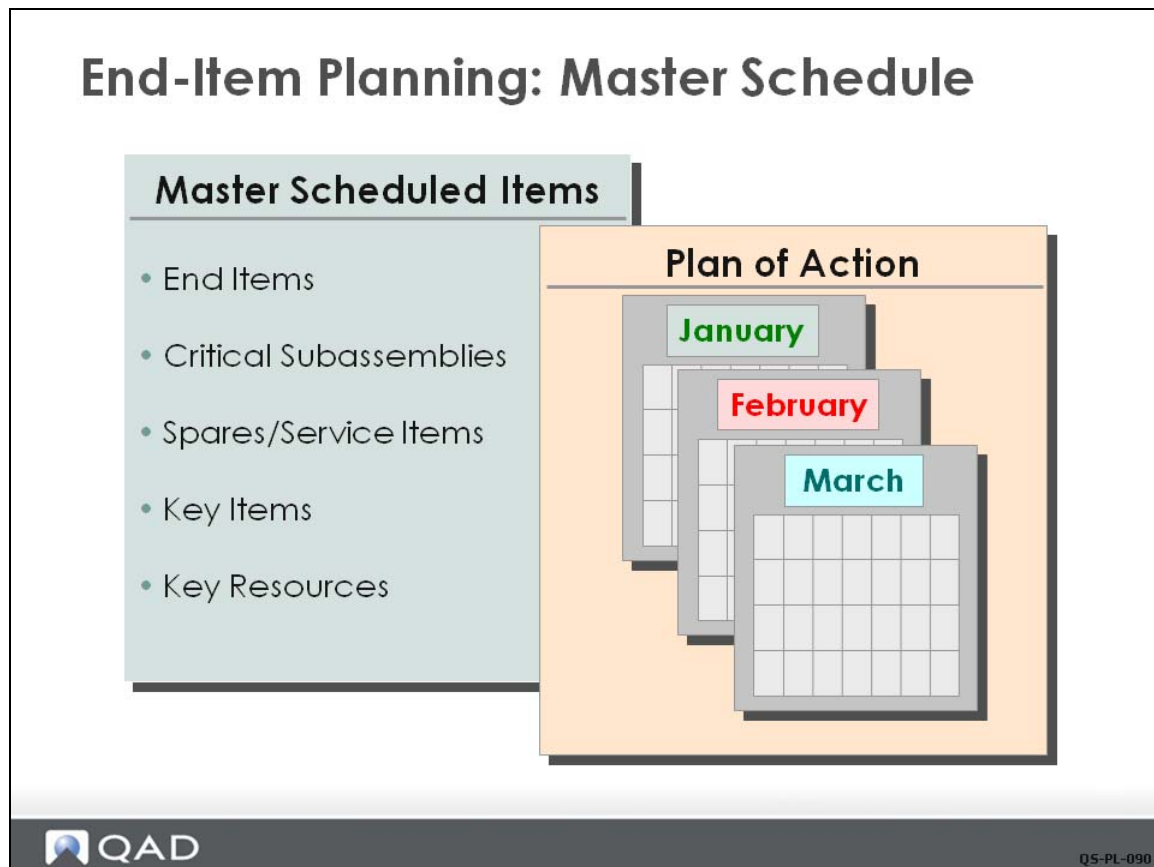
One method of managing this type of fluctuation is to expand the forecast window by using forward and backward consumption. As you would expect, when sales orders are booked, they consume the forecast in the week they are due. But if there is no unconsumed forecast in that week, the system looks at a specified number of weeks before and /or after it to check for unconsumed forecast. This method recognizes that there may be unsold forecast in other weeks that should be consumed.

The rules for forecast consumption are set up in Sales Order Control.

Forecast

Forecasts are often done by month (as in Forecast Simulation in QAD Enterprise Applications) then arithmetically spread to weeks. using a forecast consumption value of forward one week and backward two weeks, plus the current week a sales order is booked in, gives a four week period for the actual sales to equal the original month forecast. Forward two weeks and backward one week, or backward three weeks and forward none, gives the same effect. Most companies would choose to consume unconsumed forecast from prior periods before taking consumption from future periods.

End-Item Planning: Master Schedule



Developed by site and item, a master schedule is the key plan that provides primary input to MRP. A master schedule is a statement of production determining which items to schedule, when orders are needed, and how much to produce.

Master scheduling can be done to anticipate sales as entered in QAD Enterprise Applications and control production when no sales orders are used (in inventory replenishment or build-to-stock environments, for example).

Using master scheduling and MRP is an effective method to set production levels in response to actual and forecast demand (over a period roughly equivalent to the cumulative lead time), and determine in a rough way (RCCP) whether critical resources will constrain supply.

The master scheduler drives the entire production resource of a site. Producing the master schedule requires manpower, materials, manufacturing capability (capacity), cash flow, and management resources. As such the master schedule process should be controlled by internal procedures with top level management commitment.

Rough-Cut Capacity Planning (RCCP)

The rough-cut capacity plan provides a tool for careful evaluation of changes to the master schedule and their impact on material and capacity; rough evaluation of potential capacity problems; proper balancing of customer needs and manufacturing needs; and effective stabilization of MRP.

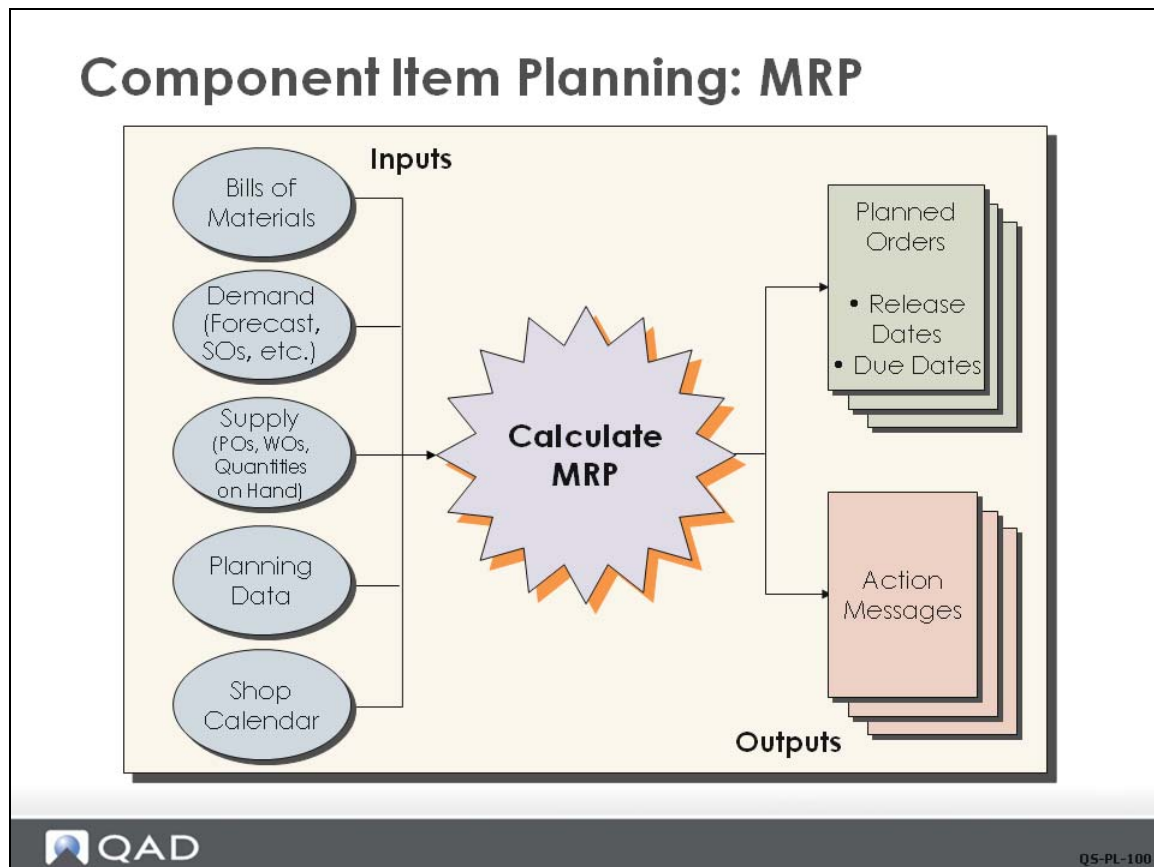
Master Schedule and RCCP Uses

Normal uses of a master schedule include driving RCCP and MRP and planning future production.

The production plan is broken down into buildable units with specific dates for completion. The production plan will be met if the master schedule is developed to support it.

RCCP provides a high level planning process for key resources that may constrain the execution of the manufacturing plan.

Component Item Planning: MRP



The Master Schedule is a detailed schedule of production, but production can be achieved only if the component materials are available.

MRP and DRP explode the Master Schedule to calculate the demand for components based on the bill of materials (BOM). These components may be purchased, manufactured, or acquired internally from another site.

MRP inputs:

- Sources of demand (forecast, production forecast, sales orders, gross requirements, seasonal build, safety stock)
- Sources of supply (nettable quantity on hand, purchase orders, work orders, repetitive schedules, quality orders)
- Item planning data, lead times, order policy, whether the item is manufactured or purchased
- Product structures/formulas
- Shop calendar

MRP Outputs

The primary outputs of MRP are planned orders and action messages. Within the time fence, you just get action messages. Planned orders are generated outside of the item's time fence. Usually the planner reviews and approves MRP planned orders as either work orders or requisitions.

In summary, MRP is a time-phased priority planning system that calculates material requirements using product structures, inventory status, the master schedule, and open order dates.

Supply is scheduled and rescheduled to meet changing demand and maintain valid due dates

MRP Options

The material requirements plan can be created using either net change, regenerative or selective methods.

Net Change

Net change MRP replans items (for all selected sites) that have changed since the last MRP run. The primary advantage of net change MRP is that it often should take less time to process than regenerative. A net change MRP run processed after correctly acting on action messages should yield the same result as a regenerative MRP.

Regenerative MRP

Regenerative MRP creates a completely new material plan (for all selected sites) starting at the top level, exploding new requirements, and continuing to lower-level components. (Remember each site is a separate MRP plan. Only DRP passes requirements between sites.) One advantage of regenerative MRP is that it guarantees that all plans are in complete synchronization and that all due dates are valid.

Selective MRP

Selective MRP is a special case situation and processes a limited set of user defined items, and could be used for what if analysis.

Capacity Requirements Planning (CRP)

MRP component planning is checked against the capacity requirements plan (CRP). CRP determines how much labor and how many machine resources are required for production, and it calculates workload for a department, work center, or machine. It is used for short to medium-range capacity management to determine and provide the resources required to meet MRP's detailed item schedules.

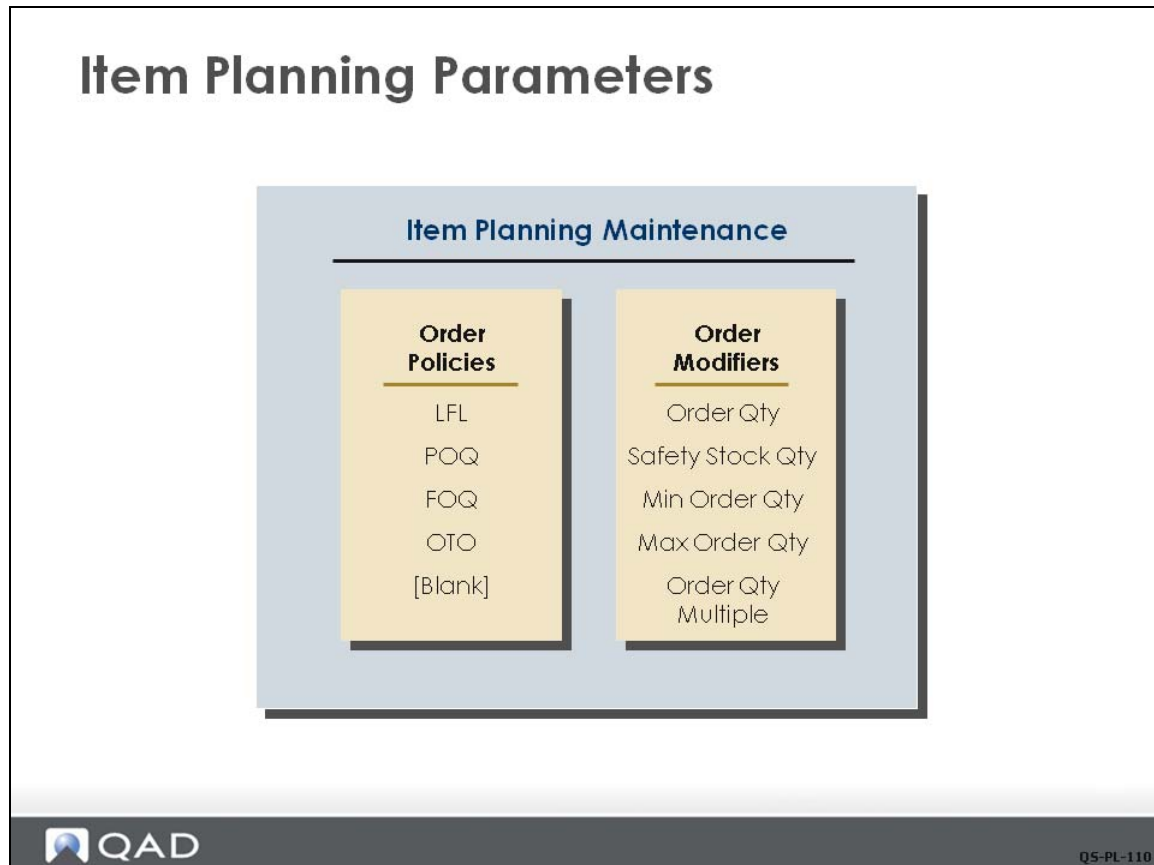
Terminology

Time Fence

Time fence is a policy or guideline established to note where various restrictions for changes in operating procedures take place. For example, changes to the master schedule can be accomplished easily beyond the cumulative lead time, while changes inside the cumulative lead time become increasingly more difficult (to a point where changes should be resisted). Time fences can be used to define these points.

A time fence is expressed in days and is defined in Item Planning Data Maintenance, (1.4.7) or Item Site Planning Data Maintenance, (1.4.17). It tells the system not to change any planned orders within that number of days, but instead to provide action messages telling the planner what the system thinks needs to be done.

Component Item Planning: Item Planning Parameters



QAD uses item planning parameters to determine how items are planned by MRP. General item planning parameters may be defined in either Item Master Maintenance (1.4.1) or Item Planning Maintenance (1.4.7). Site-specific parameters are entered in Item-Site Planning Maintenance (1.4.17). Any parameters not entered in Item-Site Planning Maintenance default from Item Master Maintenance or Item Planning Maintenance.

Order Policies

Order policy determines the rules for planning orders. Order policies are used together with order modifiers to determine order quantities. There are four types of policies:

Period Order Quantity (POQ)

A lot sizing technique where lot size is equal to net requirements for a given time period expressed in days (Order Period field); for example, a 30 day order period would create one planned order for all requirements for the next 30 days. The calculation of the period does not begin until the first statement of demand. For example if MRP is run today for an item with a 30 day period but the first demand order is five days in the future, the system will then count 30 days from five days from now to create the 30 day period bucket.

Fixed Order Quantity (FOQ)

A demand rate lot sizing rule where a fixed quantity (Order Quantity field) must be ordered. For example FOQ is 100 and demand is 105. the MRP will plan two orders for 100.

Lot for Lot (LFL)

A lot sizing technique where MRP plans a separate supply order for each demand order. For example there are sales orders for the same item with quantities of 5, 10, 15, and 20. MRP will plan four orders for; 5, 10, 15 and 20 units.

One Time Only (OTO)

A lot-sizing technique that produces an order only once, based on the due date of the first item required. Used for projects such as creating an engineering drawing that occur only once in the manufacturing of a product.

Order Policy Blank

A blank order policy is used to prevent MRP from planning an item.

Note An order policy that is not recognized by the system (EOQ for example) will default to LFL.

Order Quantity

A specified quantity used in conjunction with the Fixed Order Quantity (FOQ) order policy. It is also used for all item cost and lead time calculations as the standard order quantity.

Safety Stock Quantity

A specified quantity used as inventory reserve to compensate for unexpected demand and to maintain desired service levels. This applies to all order policies, including a blank.

Order Modifiers

Order modifiers change planned order quantities. Minimum, maximum and multiple are order modifiers.

Minimum Order Quantity

This is the smallest order quantity that will be planned. Minimum quantities should only be used with items that have continuing demand, since the minimum order quantity could exceed the actual current demand. Items that have decimal demand values from yield or scrap calculations can be forced to whole numbers by setting this to 1 or to any whole number. Often the minimum quantity is a vendor required minimum for purchased items.

Maximum Order Quantity

MRP generates a warning message in the event a planned order quantity is larger than the specified maximum order quantity. Excessively large lot sizes may tie up a resource so that other orders may be delayed unnecessarily. Further, setting a quantity limit can uncover data entry errors (for example, entry of 1,000 instead of 100).

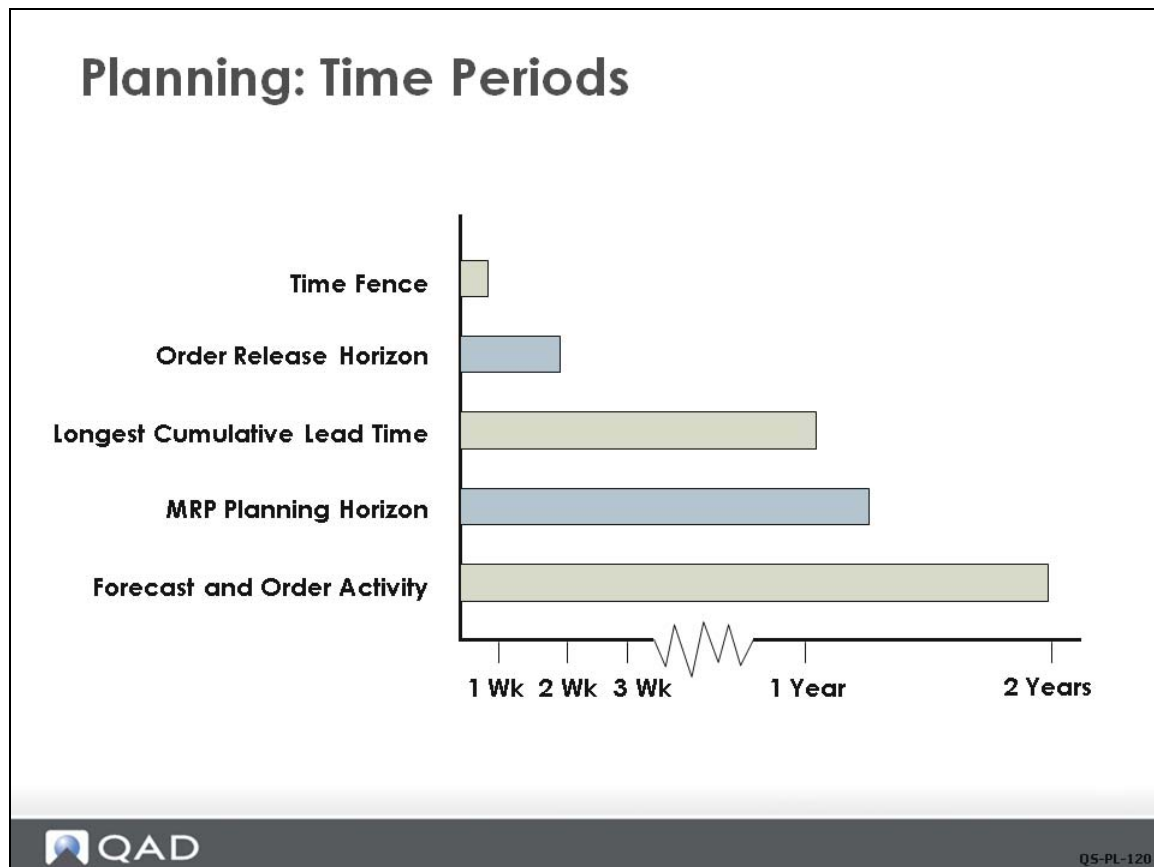
Order Quantity Multiple

Planned orders will be created in multiples of this quantity. That is, if the order multiple is 100, planned orders will only be created for quantities of 100, 200, 300, and so on. Order multiples are appropriate for multiple cavity molding applications, packaging, and so on.

Lead Time

Lead times determine when orders should be released to be available on their due date. Manufacturing lead time for manufactured items, and Purchasing lead time plus Inspection lead time for purchased items. Safety lead time can be added to both. Lead time is calculated by the system using the operation times in the route and the standard order quantity for manufactured items. The lead time for purchased items is entered by the planner.

Component Item Planning: Planning Time Periods



Planning Horizon

Before you run MRP, you set the MRP planning horizon. This specifies a period of time, in calendar days, over which MRP is to plan. MRP only processes material requirements within this horizon. The longer this horizon, the longer it takes MRP to plan. However, the planning horizon should be at least as long as the longest cumulative lead time, plus any associated preparation times. Usually, the Master Schedule also covers a time frame that is at least this long.

Cumulative Lead Time

Cumulative lead time represents the longest planned length of time to obtain an item, assuming that neither it nor any of its components (if any) are in stock. For a manufactured item, this includes the time it takes to acquire raw materials, inspect them, make any subassemblies or components, and assemble and inspect the finished product.

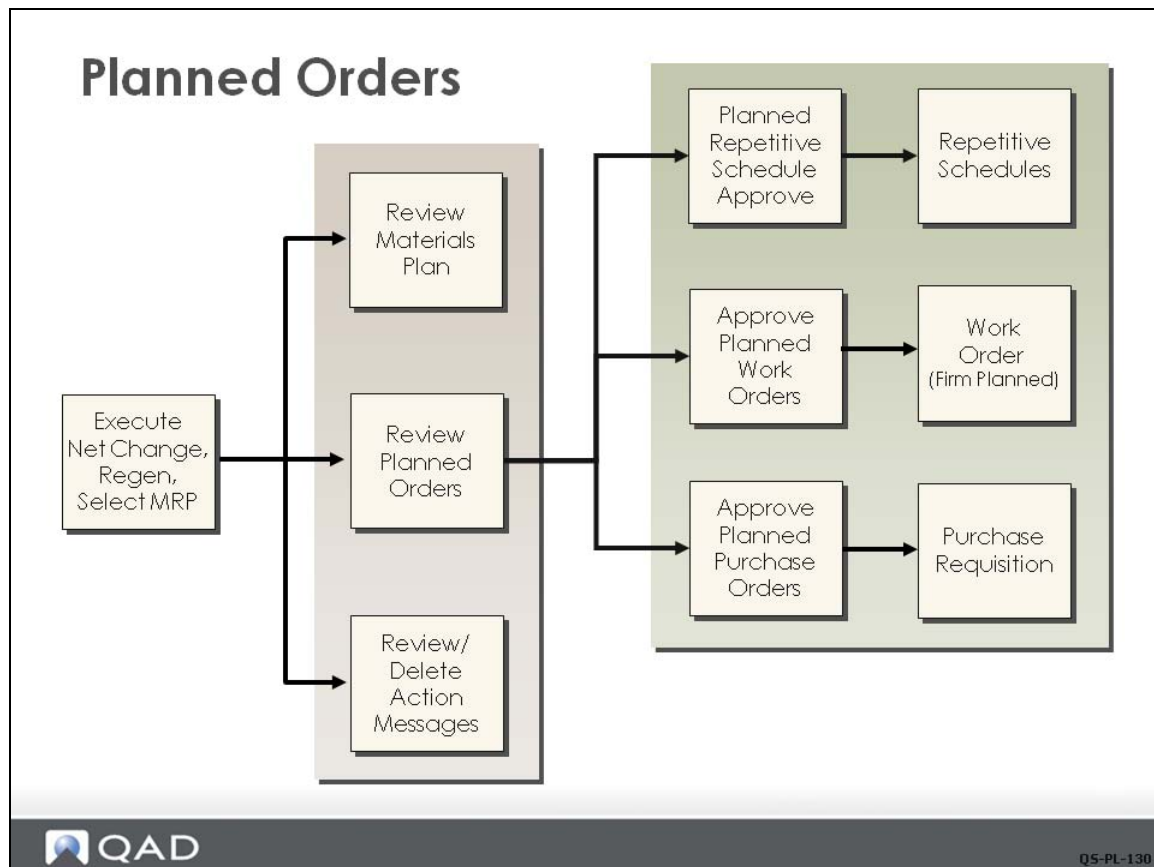
These times are entered in Item Planning Maintenance for each item in the fields Mfg LT, Pur LT, and Ins LT.

Order Release Horizon

To provide visibility for what orders are due to be released, MRP generates Release Due action messages. Typically, you would like to see these in advance, not just on the day the order is due for release.

You can set the release horizon for any number of days. MRP generates Release Due messages only for orders due to be released within this number of days from today's date.

Component Item Planning: Planned Orders



MRP creates planned orders to satisfy net requirements if the parameter for order policy is not blank, and Plan Orders is set to Yes in Item Master Maintenance. The system will create planned work orders or planned purchase orders, depending on the Pur/Mfg code.

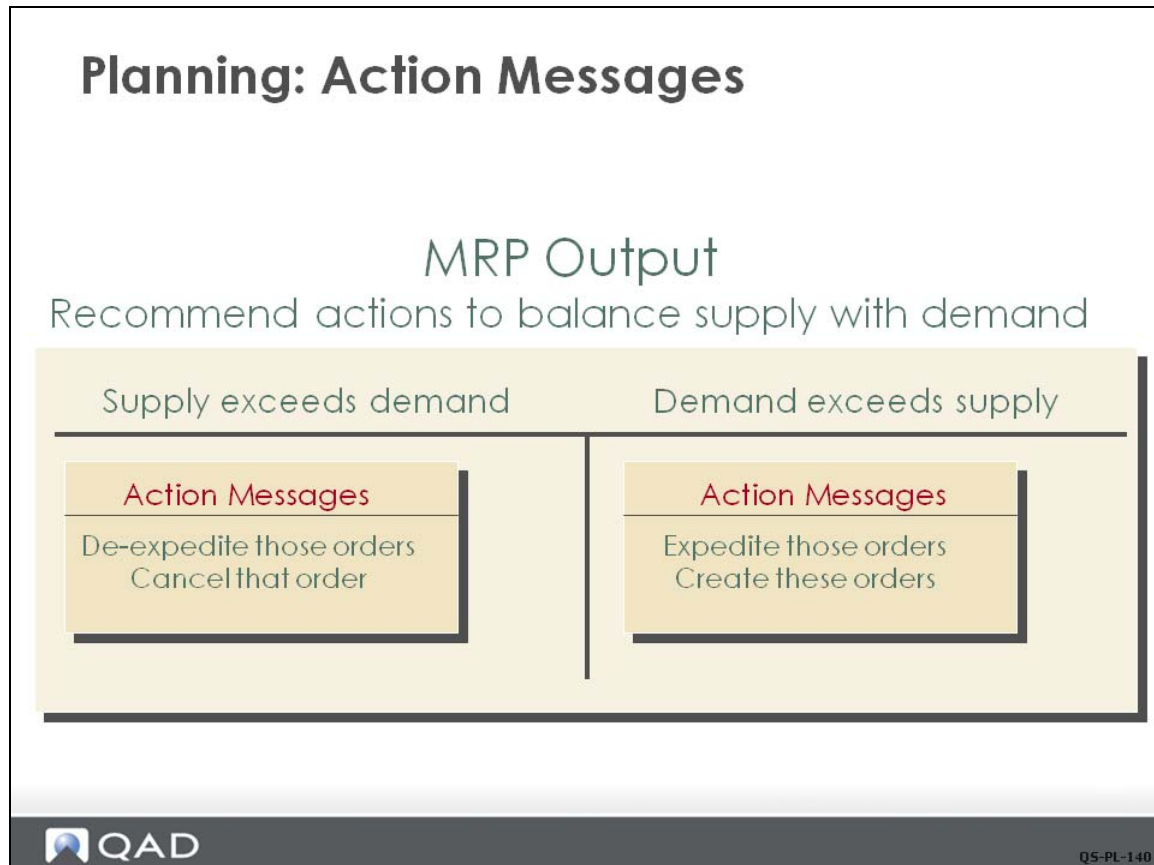
Internally, both planned work orders and planned purchase orders are stored as work orders with status Planned. The primary difference between them is that orders for purchased items are created without work order bills.

Planned Order Approval

The process of approving planned work orders changes the status of work orders from Planned to Firm Planned. While planned orders may be modified or deleted by each successive MRP run, firm planned orders have due dates and quantities that are fixed with respect to the MRP planning process. The due dates and quantities for firm planned orders can be changed manually in Work Order Maintenance.

The process of approving planned purchase orders deletes the planned purchase orders and creates purchase requisitions. Purchase requisitions may be reviewed by buyers or purchasing agents and filled by purchase orders. Once the purchase order is released it becomes supply for the item at that site.

Component Item Planning: Action Messages



To project inventory balances and calculate net requirements, MRP reschedules purchase orders, work orders, and repetitive schedules and plans all activity based on the revised schedule. When it does this, it also generates action messages to alert planners to actions that should be taken to execute the plan, such as rescheduling, canceling, and releasing orders.

Usually the first thing the planner does after running MRP is to look at the action messages. Action messages can be reviewed online and deleted as the required action is taken. They can also be printed along with the detailed plan.

Example

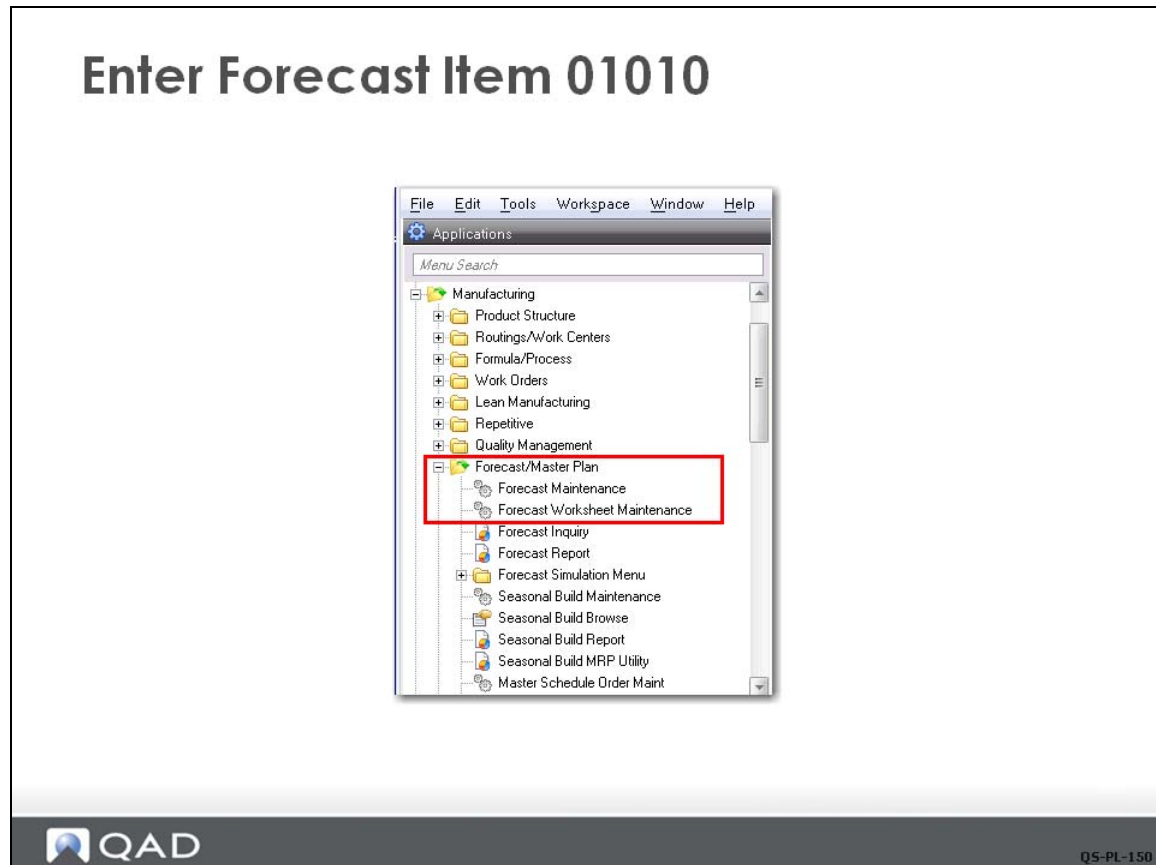
In this section, we'll look at an example to see how the planning process works. In this example, QMI:

- Enters a forecast for medical ultrasound units
- Enters a sales order (where we can see how it consumes demand):
Line 1: normal SO, quantity = 5, due in two weeks
Line 2: abnormal SO, quantity = 5, due in five weeks
- Runs MRP
- Approves planned purchase orders
- Creates a purchase order using MRP requisitions for the component items:

- Receives the PO
- Approves planned work orders
- Releases and issues work order
- Builds work order items and puts the items into stock
- Ships a sales order

In the process of reviewing the production schedule and MRP reports, we can see the effect of the manufacture and purchase lead times on release dates for the purchase orders and work orders in the example.

Enter Forecast: Item 01010



QAD Enterprise Applications offers two screens for entering forecast data.

Forecast Maintenance (22.1)

Forecast Maintenance

Forecast Maintenance
Go To Actions Copy Print Preview Attach

Item Number: 01010 Site: 10-100

Item Number: 01010
Site: 10-100
Year: 2010

Week	Forecast	Week	Forecast	Week	Forecast	Week	Forecast
1/4/2010	0	4/5/2010	0	7/5/2010	5	10/4/2010	5
1/11/2010	0	4/12/2010	0	7/12/2010	5	10/11/2010	5
1/18/2010	0	4/19/2010	0	7/19/2010	5	10/18/2010	5
1/25/2010	0	4/26/2010	0	7/26/2010	5	10/25/2010	5
2/1/2010	0	5/3/2010	0	8/2/2010	5	11/1/2010	5
2/8/2010	0	5/10/2010	0	8/9/2010	5	11/8/2010	5
2/15/2010	0	5/17/2010	0	8/16/2010	5	11/15/2010	5
2/22/2010	0	5/24/2010	0	8/23/2010	5	11/22/2010	5
3/1/2010	0	5/31/2010	5	8/30/2010	5	11/29/2010	5
3/8/2010	0	6/7/2010	5	9/6/2010	5	12/6/2010	5
3/15/2010	0	6/14/2010	5	9/13/2010	5	12/13/2010	5
3/22/2010	0	6/21/2010	5	9/20/2010	5	12/20/2010	5
3/29/2010	0	6/28/2010	5	9/27/2010	5	12/27/2010	5
Total	0	Total	25	Total	65	Total	65

Item Description: Medical Ultrasound

Delete
Back
Next

QS-PL-155

Forecast Maintenance (22.1)

In Forecast Maintenance (22.1) there are 52 weekly buckets so an entire years forecast for a given item and site can be entered in one screen. If you are using forecast simulation this screen may also be populated automatically with data from the forecast simulation calculation.

Forecast Worksheet Maintenance (22.2)

Review Forecast Worksheet: Item 01010

Forecast Worksheet Maintena...
Go To ▾
Actions ▾
Copy ▾
Print
Preview
Attach

Item Number: 01010
Site: 10-100

Item Number: 01010
Site: 10-100
Year: 2010

Week	Forecast	Sales	Abnormal	Prod Fcst	Net Forecast
14 4/5/2010	0	0	0	0	0
15 4/12/2010	0	0	0	0	0
16 4/19/2010	0	0	0	0	0
17 4/26/2010	0	0	0	0	0
18 5/3/2010	0	0	0	0	0
19 5/10/2010	0	0	0	0	0
20 5/17/2010	0	0	0	0	0
21 5/24/2010	0	0	0	0	0
22 5/31/2010	5	10	0	0	0
23 6/7/2010	5	0	0	0	0
24 6/14/2010	5	0	0	0	5
25 6/21/2010	5	0	0	0	5
26 6/28/2010	5	0	0	0	5
Totals	25	10	0	0	15

Q5-PL-160

Forecast Worksheet Maintenance (22.2)

In Forecast Worksheet Maintenance (22.2), the system displays 13 weeks of forecast buckets at a time. Clicking Next will advance to successive calendar quarters. In addition this screen displays actual sales orders, abnormal sales orders, production forecasts and net forecast.

Using the Forecast Worksheet Maintenance the QMI planner has entered forecasts for the number of medical ultrasound units that they expect to ship each week for the next few months. Note that in a prior week the system is showing sales of 10 units, these were the sales order shipped in the last section of the course.

Starting in the current week the planner enters 5 units of 01010 per week for at least five weeks.

Discussion:

If it takes one person 1 day to assemble 5 units and the forecast of 30 each five day week is reasonable, what action is necessary?

Define Control Settings: Forecast Consumption

Forecast Consumption

Sales Order Control x
Go To Actions Copy Print Preview Attach

Auto Batch Confirmation: ☐

SO Edit ISB Defaults: ☒

SO Returns Update ISB: ☒

Forecast Consumption

Consume Forward:

Consume Back:

Check Customer Item Nbr First: ☒

Confirmation Batch ID:

Confirmation Printer:

Pending Inv Update ISB: ☒

Auto Batch Shipment: ☐

Shipment Batch ID:

Shipment Batch Printer:


Q5-PL-170

Sales Order Control (7.1.24)

In Sales Order Control, the QMI planner has set up rules for forecast consumption. In this example, whenever there are sales in excess of forecast in a period, the system will consume the forecast, first by going back, then forward, one period from the original forecast in the period the sales order is due. It will then continue to search backward and forward until the specified number of previous periods (1) and future periods (2) have been examined or the entire sales order quantity has been applied.

Enter Sales Order Line: Consume Forecast

The screenshot displays the 'Sales Order Maintenance' window. At the top, the 'Sales Order Line' table shows a single line with the following details:

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
1	01010	15.0	EA	2,500.00	0.0	2,500.00

Below the table, the 'Line Details' section provides further information for the selected line:

- Desc:** Medical Ultrasound
- Loc:** 010
- Site:** 10-100
- USD Cost:** 239.24873
- Sales Acct:** 4010
- Disc Acct:** 4200
- Confirmed:** ☒
- Required:** ☐
- Promised:** 6/11/2010
- Due Date:** 6/11/2010
- Perform Date:** ☐
- Pricing Date:** 5/28/2010
- Multiple:** ☐
- Fixed Price:** ☒
- Credit Terms Int:** 0.00
- Ship Type:** ☐
- UM Conversion:** 1.0000
- Consume Fcst:** ☒
- Detail Alloc:** ☐
- Taxable:** ☐
- Freight List:** 10FRT
- Comments:** ☐

Sales Order Maintenance (7.1.1)

In Sales Order Maintenance, the QMI customer service representative (CSR) has entered two sales order lines for its medical ultrasound, (item 01010).

Line 1 (shown above) is for an order of 15 units due in two weeks. This order, once confirmed, will consume forecast because the Consume Forecast box has been selected.

Let's look at line 2 on the next page.

Enter Sales Order Line: Do Not Consume Forecast

Do Not Consume Forecast

Sales Order Maintenance X
Sales Order Viewer X

Go To Actions Copy Print Preview Attach

Sales Order: 01010 Order: 01010 Sold-To: 10C1003

Order: 01010 Sold-To: 10C1003 Ln For: Single Org:

Sales Order Line

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Price
2	01010	15.00000	EA	2,500.00	0.0	2,500.00

Desc: Medical Ultrasound
Loc: 010 Site: 10-100
USD Cost: 239.24873
Lot/Serial:
Qty Allocated: 0.0
Qty Picked: 0.0
Qty Shipped: 0.0
Qty to Invoice: 0.0
Salesperson 1: 10SP01
Commission 1: 5.00%

Sales Acct: 4010 mech ADM
Disc Acct: 4200 Mech
Confirmed: ☒
Required: 6/30/2010
Promised: 6/30/2010
Perform Date: 6/30/2010
Pricing Date: 5/28/2010
Multiple: ☐
Category:

Credit Terms Int: 0.00
Ship Type:
UM Conversion: 1.0000
Consume Fcst: ☐
Detail Alloc: ☐
Taxable: ☐
Freight List: 10FRT
Fixed Price: ☒
Comments:


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Sales Order Maintenance (7.1.1)

Line 2 (shown above) is for an order of 15 ultrasound units due in five weeks. This order will not consume forecast because the Consume Forecast box has not been selected.

Additional Notes

Consume Forecast is not selected (un-checked) when the order quantity is considered abnormal and is planned in addition to the forecast. Perhaps the best definition of abnormal sales are those that were not anticipated in the forecast. Often new customers, new markets, or a current customer significantly increasing their volume. Businesses should establish their own rules and guidelines for sales order entry as to when an order is flagged abnormal.

Discussion:

What is the impact of an order for 30 medical ultrasound units due in two weeks on the QMI production department?

Review Forecast Worksheet: Item 01010

Review Forecast Worksheet: Item 01010

Forecast Worksheet Maintena... x

Go To Actions Copy Print Preview Attach

Item Number: 01010 Site: 10-100

Item Number: 01010 Site: 10-100 Year: 2010

Week	Forecast	Sales	Abnormal	Prod Fcst	Net Forecast
14 4/5/2010	0	0	0	0	0
15 4/12/2010	0	0	0	0	0
16 4/19/2010	0	0	0	0	0
17 4/26/2010	0	0	0	0	0
18 5/3/2010	0	0	0	0	0
19 5/10/2010	0	0	0	0	0
20 5/17/2010	0	0	0	0	0
21 5/24/2010	0	0	0	0	0
22 5/31/2010	5	15	0	0	0
23 6/7/2010	5	45	0	0	0
24 6/14/2010	5	0	0	0	0
25 6/21/2010	5	0	0	0	0
26 6/28/2010	5	0	15	0	0
Totals	25	60	15	0	0

Q5-PL-195

Forecast Worksheet Maintenance (22.2)

In Forecast Worksheet Maintenance, we can see the effect of the confirmed order on the net forecast: line 1 for 45 units in week 23, which consumes forecast, and line 2 for 15 units in week 26, which does not consume forecast.

Line 1 of the sales order is a normal order and, accordingly, the sales order quantity of 45 is placed in the Sales column for week 23. Note, though, that only 5 units were forecast for that week. This consumes the entire forecast leaving a net forecast of 0 in week 24 and forward. Based on the Sales Order Control setting for Forward/Backward Consumption, the excess sales of 45 (order quantity above 5) can consume the forecast in another period. First, the system looks at the preceding period, and finds the forecast of 0 units in week 21 has not been consumed (there are no sales in week 21). The current order thus consumes that forecast leaving a net forecast of zero in week 21. Then system then looks to a future period to consume the remaining units and so consumes the forecast in week 24 and forward as well. This affects the Net Forecast column, which is calculated from the shipment forecast less quantity sold. This leaves a net forecast of 0 in weeks 8 weeks into the future.

Line 2 of the sales order is an abnormal sale (consumption flag unchecked) and, accordingly, the order quantity of 15 is placed in the Abnormal column for week 26 and does not consume forecast. So for week 23 MRP will plan for the forecast of 5 and the 45 required for the sales order. MRP will always plan for the total demand when it exceeds forecast.

Note Note the net forecast of zero in week 21 even though there are no sales. Week 21 at the time of this screen shot was in the past. there were no sales in that period to consume the forecast and because it is in the past it is ignored. The system does not accumulate past due unconsumed forecasts, it ignores them.

Discussion point: Does the example shown above accurately reflect the text? If not, why?

Review Master Schedule: Item 01010

Master Schedule Summary Item 01010

Master Schedule Summary Inq...
Run
Export to Excel
View as PDF

Item Number: 01010
Site: 10-100
Display Negative ATP: ☐
Start Date: 5/24/2010
End Date: 6/30/2010
Column Type: Week
Per Column: 1
Columns: 7

Item Number: 01010 Medical Ultrasound
Mfg LT: 1
Plan Orders: Yes
MRP Required: Yes
Pur/Mfg: M
Qty on Hand: 7.0 EA
Purchase LT: 0
Order Quantity: 5
Minimum Order: 1
Order Policy: POQ
Safety Stock: 0
Yield Percent: 100.00%
Maximum Order: 5
Order Period: 7
Safety Time: 0
Time Fence: 0
Order Multiple: 1

Category	Past	5/24/2010	5/31/2010	6/7/2010	6/14/2010	6/21/2010	6/28/2010
Production Forecast	0	0	0	0	0	0	0
Forecasts	0	0	0	0	0	0	0
Sales Orders	0	0	5	45	0	0	15
Gross Requirements	0	0	0	0	0	0	0
Master Schedule	0	15	0	0	0	0	0
Projected QOH	7	22	17	-28	-28	-28	-43
Available to Promise	0	-43	0	0	0	0	0
Cumulative ATP	0	-43	-43	-43	-43	-43	-43

Q5-PL-210

Master Schedule Summary Inquiry (22.18)

In Master Schedule Summary Inquiry, the QMI master scheduler can see the planning data for the item at this site, such as lead times, order policy, order period, order quantity, whether the item is purchased or manufactured, and the current quantity on hand.

Most importantly, though, this screen shows a summary of the master schedule demands for an item; in this example, item 01010 and the current plan to satisfy those demands.

The net forecast is provided in the Forecast row, and the total of the sales order quantities are shown in the Sales Orders row.

The Projected QOH (quantity on hand) is the calculated on hand balance at the end of each period. In this example, there are 7 units in stock or “on hand,” so demand makes the Projected QOH number negative for each period. In week beginning 6/7 the sales order demand for 45 means that the Projected QOH is -28 (QOH - demand; $0 - 28 = -28$); in the week beginning 6/14 the sales order is covered by the master schedule, but projected QOH is still -28.

The real key to this screen is the MRP required flag highlighted in red which is Yes. This simply means something has changed since MRP was last run that the data displayed are no longer accurate and MRP must be run again.

In this example, there is no inventory Available to Promise.

Additional Notes

We will see the effect of running MRP when the QMI planner runs MRP later in this example.

Master Schedule Summary Inquiry

Master Schedule Summary Inq...

Run Export to Excel View as PDF

Item Number: 01010 Site: 10-100 Display Negative ATP: Start Date: 5/24/2010 End Date: 6/30/2010 Column Type: Week Per Column: 1 Columns: 7

Item Number:	01010	Medical Ultrasound	Mfg LT:	1	Plan Orders:	Yes	Per/Bkt:	1	Required:	Yes
Site:	10-100		Purchase LT:	0	Order Quantity:	5	Minimum Order:	1		
Qty on Hand:	7.0 EA		Safety Stock:	0	Yield Percent:	100.00%	Maximum Order:	5		
Order Policy:	POQ		Safety Time:	0	Time Fence:	0	Order Multiple:	1		

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Master Schedule Summary Inquiry (22.18)

Note The display defaults to a period length of a week. In the input selection frame user may select period lengths of days (D), weeks (W), months (M) or GL calendar periods (P). It is also possible to display multiple periods in each column by putting a number in the Per/Bkt field. You may also specify a start date and end date to look at specific ranges of data. So for example if your business worked four ten hour days per week you might choose to make the period Days and display 4 periods per column.

Item Planning Data: Item 01010

Item Planning Maintenance

Go To Actions Copy Print Preview Attach

Item: 01010 Item Number: 01010 Supplier:

Item Number: 01010 Description: Medical Ultrasound

Unit of Measure: EA

Item Planning Data

Mstr Sched: ☒ Plan Orders: ☒

Time Fence: 0

MRP Required: ☒

Order Policy: POQ Order Qty: 5

Batch Qty:

Order Period: 7

Safety Stock: 0

Safety Time: 0

Reorder Point: 0

Item Rev: D

Issue Policy: ☒

Buyer/Planner: 1-01 Supplier:

PD Site:

Purchase/Manufacture: M Configuration Type:

Inspect: ☐

1.0 Ins LT: 0 Cum LT: 0

Mfg LT: 1 Pur LT: 0

ATP Enforcement: NONE

Family ATP: ☐ ATP Horizon: 0

Run Seq 1: Run Seq 2:

Phantom: ☐

Minimum Order: 1

Maximum Order: 5

Order Multiple: 1

Op Based Yield: ☐

Yield Percent: 100.00%

Run Time: 1.260

Setup Time: 1.500

EMT Type: NON-EMT

Auto EMT Processing: ☐

Network Code:

Routing Code: U-001

BOM/Formula:

QAD Q5-PL-220

Item Planning Maintenance (1.4.7)

On the next few pages, we will look at some of the key planning related settings that the QMI planner has set up for the medical ultrasound units and its components.

As item 01010 is the end item subject to independent demand it is Master Scheduled and we want the system to plan orders for us so both Mstr Sched and Plan Orders are enabled (checked). This means that this item will be master scheduled (forecasted in our example), and planned orders created by MRP.

Note MRP processes requirements the same whether the master schedule box is checked or not. However, most reports and inquiries in the system may be selected for master scheduled items only. This is very useful for the master scheduler as they may select only their items for review.

A few of the planning settings that item 01010 and its components have in common in Item Planning Maintenance are the following:

Order Policy of POQ (Period Order Quantity). MRP calculates demand for this item over the number of calendar days specified as the Order Period and creates one order to satisfy this demand. In this example, the order period is 7.

Item 01010 is a manufactured item, and it has a manufacturing lead time of 1 day, shown in the Mfg LT field in the screen above. The lead time is based on the order quantity of 5. Because it is a manufactured item, the system is displaying the setup and run times for our reference.

This screen and discussion just finished about forecast consumption give us an insight to an upcoming problem. Our forecast is currently 5 per week growing to 45 per week in a couple of weeks. It currently takes 5 working days to make 25 units. We will soon need to address the issue of increasing capacity.

Note For more detailed information on planning data and MRP refer the courses “MRP and CRP” and “Master Scheduling and RCCP”.

Item Planning Data: Item 01010

Item Planning Data: Item 01010

Item Planning Maintenance X

Go To Actions Copy Print Preview Attach

Item Number: 01010
Unit of Measure: EA
Description: Medical Ultrasound

Item Planning Data

Mstr Sched: ☒
Plan Orders: ☒
Time Fence: 0
MRP Required: ☒
Order Policy: POQ
Order Qty: 0
Batch Qty:
Order Period: 7
Safety Stock: 0
Safety Time: 0
Reorder Point: 0
Item Rev: D
Issue Policy: ☒

Buyer/Planner: 1-01
Supplier:
PO Site:
Purchase/Manufacture: M
Configuration Type:
Inspect:
1.0 Ins LT: 0
Mfg LT: 4
ATP Enforcement: NONE
Family ATP:
ATP Horizon: 0
Run Seq 1:
2:

Phantom: ☐
Minimum Order: 1
Maximum Order: 5
Order Multiple: 1
Op Based Yield: ☐
Yield Percent: 100.00%
Run Time: 17.000
Setup Time: 7.500
EMT Type: NON-EMT
Auto EMT Processing: ☐
Network Code:
Routing Code: U-001
BOM/Formula:
Replenishment Method: Orders

Cum LT: 0
Pur LT: 0


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Item Planning Maintenance (1.4.7)

Item 01010 (shown above) is a manufactured item. This is indicated in the Purchase/Manufacture field by an M, as shown here. All of the component items also have purchase lead times. Based on the information entered above, the planner has indicated to MRP that these materials should be ordered in quantities to cover demand during an order period of 7 days (Order Period), and that a purchase order for this item should be released 3 days before the item is needed (Pur LT). There is no setup or run time associated with purchased items.

Item Planning Data: Item 50001

Review Planning Data: Item 50001

Item Planning Maintenance

Go To Actions Copy Print Preview Attach

Item: 50001 Item Number: 50001 Supplier: 10S1002

Item Number: 50001 Description: Probe Unit - 10 Mhz
Unit of Measure: EA

Item Planning Data

Mstr Sched: ☐ Buyer/Planner: 1-02 Phantom: ☐
Plan Orders: ☒ Supplier: 10S1002 Minimum Order: 0
Time Fence: 0 PD Site: Maximum Order: 0
MRP Required: ☒ Purchase/Manufacture: M Order Multiple: 0
Order Policy: POQ Configuration Type: Op Based Yield: ☐
Order Qty: 0 Inspect: ☐ Yield Percent: 100.00%
Batch Qty: 1.0 Ins LT: 0 Cum LT: 0 Run Time: 0.260
Order Period: 7 Mfg LT: 2 Pur LT: 0 Setup Time: 1.000
Safety Stock: 0 Safety Time: 0 EMT Type: NON-EMT
Reorder Point: 0 ATP Enforcement: NONE Auto EMT Processing: ☐
Item Rev: AA Family ATP: ☐ Network Code:
Issue Policy: ☒ ATP Horizon: 0 Routing Code: P-001
Run Seq 1: BOM/Formula:
2:

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Item Planning Maintenance (1.4.7)

The next component we will look at is item 50001, the probe. The field to note here is the Order Multiple field. Some purchased items must be ordered in multiples, in this case our vendor has told us we must purchase in multiples of 0, or however many we wish.

Item Planning Data: Item 02003

Review Planning Data: Item 02003

Item Planning Maintenance

Go To Actions Copy Print Preview Attach

Item: 02003 Item Number: 02003 Supplier: 10S1002

Item Number: 02003 Description: Standard Connector
Unit of Measure: EA

Item Planning Data

Mstr Sched: ☒
Plan Orders: ☒
Time Fence: 0
MRP Required: ☒
Order Policy: POQ
Order Qty: 10
Batch Qty:
Order Period: 7
Safety Stock: 0
Safety Time: 0
Reorder Point: 0
Item Rev:
Issue Policy: ☒

Buyer/Planner: 2-01
Supplier: 10S1002
PO Site:
Purchase/Manufacture: P
Configuration Type:
Inspect:
1.0 Ins LT: 0
Mfg LT:
ATP Enforcement: NONE
Family ATP:
ATP Horizon: 0
Run Seq 1:
2:

Phantom: ☐
Minimum Order: 10
Maximum Order: 0
Order Multiple: 2
Op Based Yield: ☐
Yield Percent: 100.00%
Run Time: 0.002
Setup Time: 0.200
EMT Type: NON-EMT
Auto EMT Processing: ☐
Network Code:
Routing Code: 02001
BOM/Formula:

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Item Planning Maintenance (1.4.7)

The planning data for the Standard Connector have been set to normally buy enough for 10 units, Order quantity 10, minimum order of 10, and a multiple of 2.

Review Planning Data: Item 62050

Review Planning Data: Item 62050

Item Planning Maintenance
 Go To Actions Copy Print Preview Attach

Item: 62050
Item Number: 62050
Supplier: 10S1002

Item Number: 62050
 Unit of Measure: RL

Description: Beryllium Copper

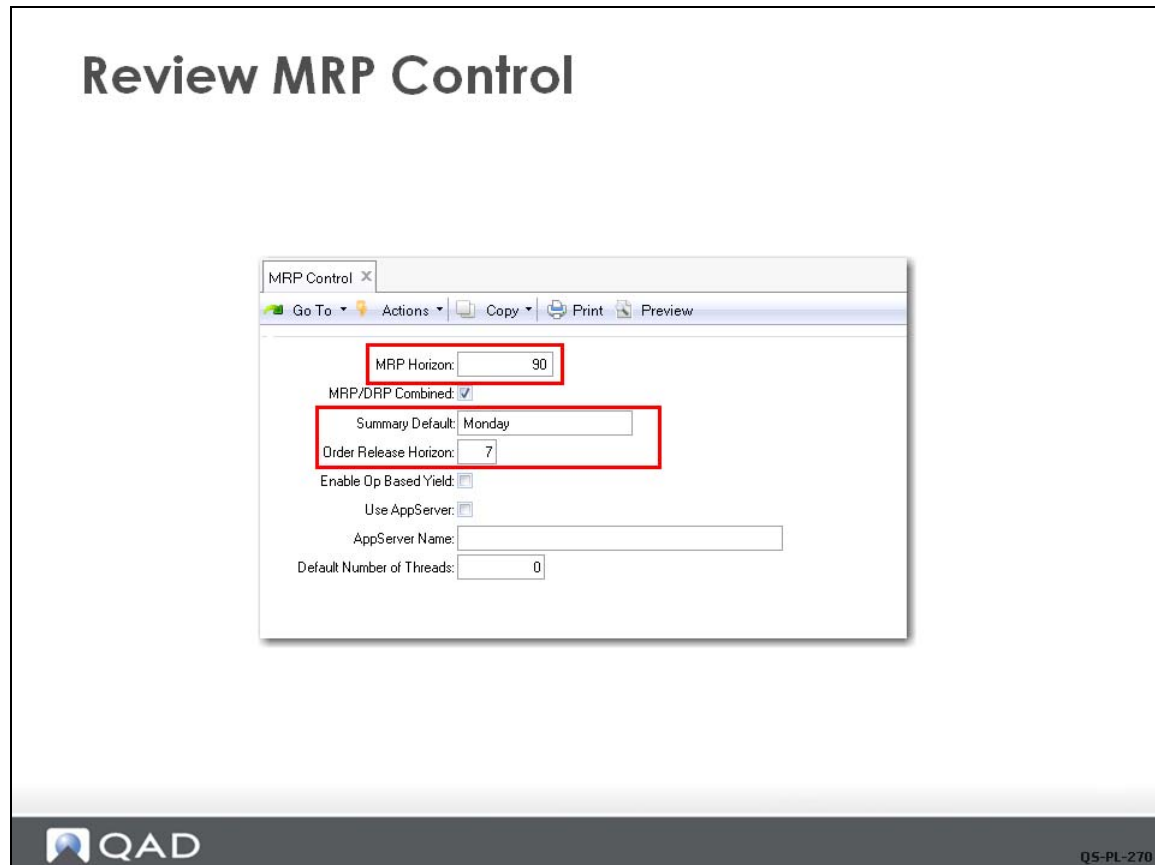
Item Planning Data

Mstr Sched: ☐ Plan Orders: ☒ Time Fence: 0 MRP Required: ☒ Order Policy: F0Q Order Qty: 10 Batch Qty: Order Period: 0 Safety Stock: 1 Safety Time: 0 Reorder Point: 1 Item Rev: Issue Policy: ☒	Buyer/Planner: 2-02 Supplier: 10S1002 PO Site: Purchase/Manufacture: P Configuration Type: Inspect: ☐ 1.0 Ins LT: 0 Mfg LT: 0 ATP Enforcement: NONE Family ATP: ☐ ATP Horizon: 0 Run Seq 1: 2:	Phantom: ☐ Minimum Order: 1 Maximum Order: 2 Order Multiple: 1 Op Based Yield: ☐ Yield Percent: 100.00% Run Time: 0.000 Setup Time: 0.000 EMT Type: NON-EMT Auto EMT Processing: ☐ Network Code: Routing Code: BOM/Formula:

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Item Planning Maintenance (1.4.7)

Review MRP Control



MRP Control (23.24)

Review the MRP Control settings.

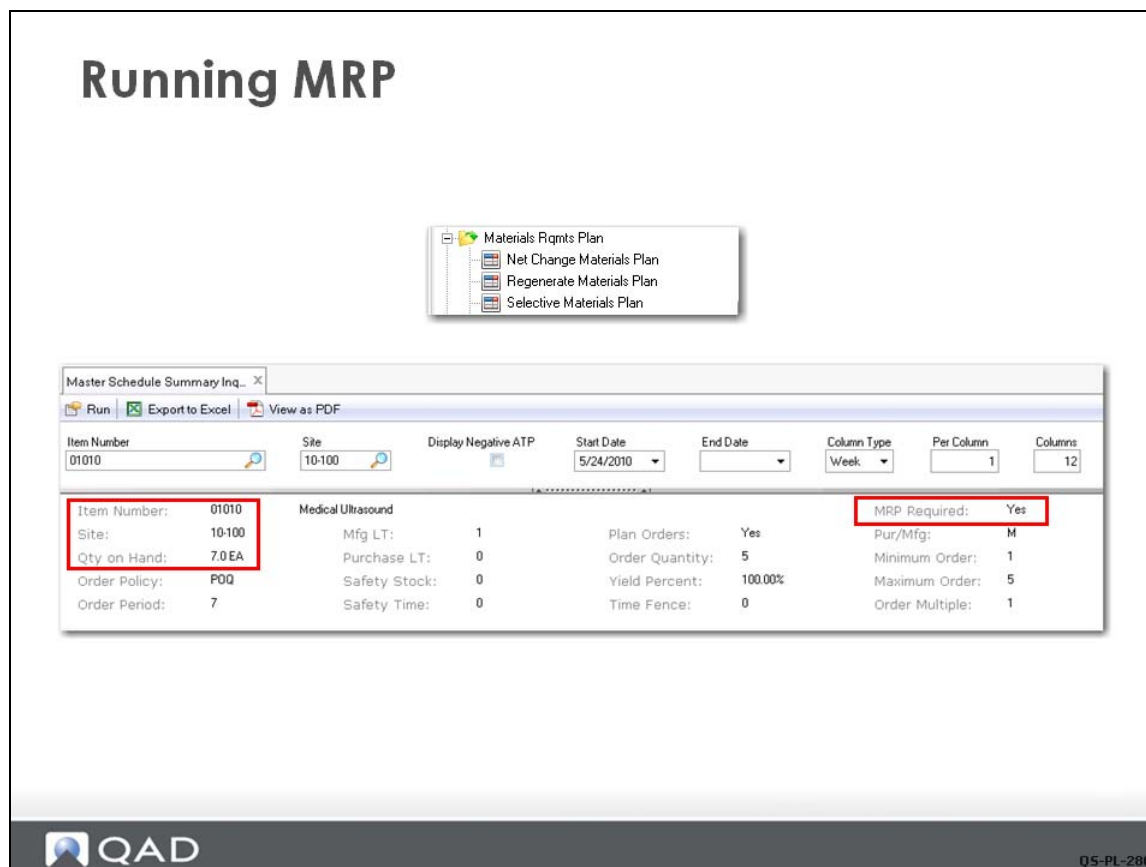
The MRP horizon is the number of days into the future MRP will plan. This needs to be at least one day longer than the longest cumulative lead time in your system. For purposes of this course 90 days would be more than enough. In general you would want to err on the side of planning too far into the future rather than not far enough.

The Summary Default is the day of the week MRP and MPS summary inquires will begin the display on. The field may be set to any day of the week, or “Today.” Most companies will want the columns to be consistent and always display a week beginning with their normal start day. Setting the field to “Today” changes the start day of the display, every day.

The Order Release Horizon is the number of days into the future the system should look to find an order release date. This is very important for MRP action messages. For example as set at 7 shown here, the system will flag all planned orders due to be released in the next 7 days as “due for release.” If you have many planned orders and review them daily you may want this set to one or two days.

For purposes of this course 7 days will work fine.

Running MRP



Master Schedule Summary Inquiry (22.18)

In QAD Enterprise Applications there are three ways to run MRP as seen in the selection menu above. The normal method used on a routine daily or weekly basis is Net Change. Net Change MRP selects all the items at a site whose MRP flag is set to Yes. This is the flag that can be viewed in Master Schedule Summary Inquiry, shown below.

When MRP is first run to include an item this flag is set to NO. In the normal course of business almost any transaction against an item number will reset this flag to yes, meaning MRP should be run again to recalculate the demand and supply for the item. Issues and receipts are obvious changes in inventory. Less obvious are changes in forecast or safety stock, or changes in item planning data. These will also reset the flag to Yes.

Regenerate MRP

Regenerate MRP runs against all items at a site, As such this process may take much longer depending on how many items you have that are inactive or obsolete. This is the method often used when running MRP for the first time.

For both Net Change and Regenerate, the only user selection is the site, or range of sites. An important point here is that MRP is always calculated by site. So for example if you had several sites in your database and ran MRP for all the sites, each site would have its own MRP output, completely separate from the others.

Selective MRP

Running MRP

Forecast Inquiry						
05/28/10						
QAD						
Item Number: 01010 Medical Ultrasound		Site: 10-100		Start Date: 05/28/10 Output: printer		
Wk	Start	Forecast	Qty Sold	Abnormal	Prod Fcst	Net Forecast
21	05/24/10	0	0	0	0	0
22	05/31/10	5	10	0	0	0
23	06/07/10	5	45	0	0	0
24	06/14/10	5	0	0	0	0
25	06/21/10	5	0	0	0	0
26	06/28/10	5	0	15	0	0
27	07/05/10	5	0	0	0	0
28	07/12/10	5	0	0	0	0
29	07/19/10	5	0	0	0	0
30	07/26/10	5	0	0	0	0
31	08/02/10	5	0	0	0	0
32	08/09/10	5	0	0	0	0
33	08/16/10	5	0	0	0	5
34	08/23/10	5	0	0	0	5
35	08/30/10	5	0	0	0	5
36	09/06/10	5	0	0	0	5
37	09/13/10	5	0	0	0	5
38	09/20/10	5	0	0	0	5
39	09/27/10	5	0	0	0	5
40	10/04/10	5	0	0	0	5
41	10/11/10	5	0	0	0	5
42	10/18/10	5	0	0	0	5
43	10/25/10	5	0	0	0	5
44	11/01/10	5	0	0	0	5
45	11/08/10	5	0	0	0	5
46	11/15/10	5	0	0	0	5
47	11/22/10	5	0	0	0	5
48	11/29/10	5	0	0	0	5
49	12/06/10	5	0	0	0	5
50	12/13/10	5	0	0	0	5
51	12/20/10	5	0	0	0	5
52	12/27/10	5	0	0	0	5
Total		155	55	15	0	100

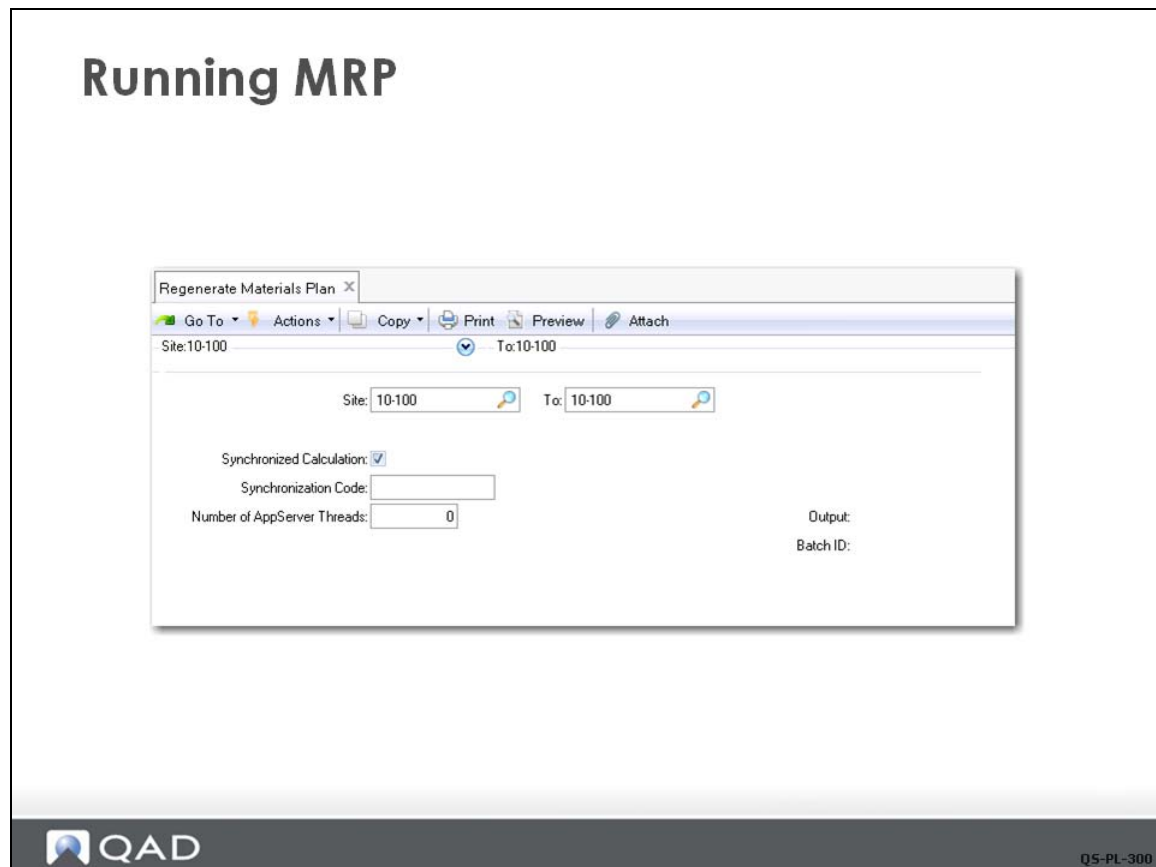
QAD

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Selective Materials Plan (23.3)

Selective Materials Plan allows the planner to select specific items or groups or ranges of items. As can be seen in the selection screen above, there are many ways to limit the number of items that will be processed by this MRP method. While this is a powerful planning tool it should be remembered that items excluded from the process may have an impact on items included in the process.

Regenerate Materials Plan



Regenerate Materials Plan (23.2)

To recalculate demand and plan supply for all items at its site QMI the company's planner runs Regenerate Materials Plan. The site code, or range of site codes, is the only selection the planner has with Regenerate Materials Plan. the other fields shown are technical settings used in multiple processor environments.

A image of the Planned Order Browse for the MRP run just completed is shown below. These are the planned orders MRP created based on the net forecast and sales orders for the end item 01010 and its components based on the product structure and other planning data.

Planned Order Browse

Running MRP

Planned Order Browse

Actions ▾ Print ★ Add to Favorites Chart Chart Designer Refresh ▾

Search
 Item Number starts at

Viewing 1 - 67 of 67 Records per page: 100

Item Number	Site	Work Order	ID	Buyer/Planner	Purchase/Manufacture	Quantity Ordered	Unit of Measure	Release Date
01010	10-100	05280002	2280956	1-01	M	28.0	EA	06/10/
01010	10-100	05280003	2280957	1-01	M	15.0	EA	06/29/
01010	10-100	05280004	2280958	1-01	M	5.0	EA	08/13/
01010	10-100	05280005	2280959	1-01	M	5.0	EA	08/20/
01012	10-100	05280014	2280964	1-03	P	1,000.0	BX	05/27/
01013	10-100	05280015	2280965	1-03	P	1,000.0	BX	05/27/
50001	10-100	05280009	2280960	1-02	M	23.0	EA	06/08/
50001	10-100	05280010	2280961	1-02	M	15.0	EA	06/25/

QAD
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Planned Order Browse (23.9)

Note this display shows the MRP planned Order number and WO ID and the release date, as well as the purchase/manufacture code M or P. The first planned order shows a release date of 06/10/2010. At the time of this browse that date was actually in the past. This is a common problem for new MRP users. A demand, a forecast in this case, was entered into the system without enough lead time, hence the MRP planned release date is before today. This will not effect the activities, as we do not actually need to make medical ultrasound units, we just need to process the transactions.

Review MRP Action Messages

Review Action Messages

The screenshot shows the 'Action Message Browse' window in QAD. It includes a search bar with 'Item Number' and 'starts at' fields, and a table of action messages. The table has columns for Item Number, Site, Date, Message Detail, Order, Line/ID, Action Quantity, and Due Date. The data is as follows:

Item Number	Site	Date	Message Detail	Order	Line/ID	Action Quantity	Due Date
01010	10-100	06/11/2010	De-expedite*Work Order	1000	2280902	5.0	05/28/2010
01010	10-100	06/11/2010	De-expedite*Work Order	1001	2280904	5.0	05/28/2010
01010	10-100	06/11/2010	De-expedite*Work Order	1002	2280921	5.0	05/28/2010
01010	10-100	05/27/2010	Release past due for*Work Orde	1000	2280902	5.0	05/28/2010
01010	10-100	06/10/2010	Quantity exceeds maximum*Plann	05280002	2280956	28.0	06/11/2010
01010	10-100	06/29/2010	Quantity exceeds maximum*Plann	05280003	2280957	15.0	06/30/2010
01012	10-100	05/28/2010	Beginning available less than			-250.0	
01012	10-100	05/27/2010	Release past due for*Planned O	05280014	2280964	1,000.0	05/28/2010
01013	10-100	05/28/2010	Beginning available less than			-250.0	

Action Message Browse (23.6)

The QMI planner reviews the Action Message Browse, shown here. It is important to review action messages first as the MRP planned orders only make sense if the actions required by the messages are actually implemented.

The recommended order in which to read this report is:

- Check the action message
- Check the date column. This is the date associated with the action message
- Check whether the item is a manufactured or purchased item. This indicates whether you need to approve a planned order as a work order or purchase requisition
- Check the due date

In this example, two of the planned orders are past due for release. This will skew the planning unless we can get them released and closed on their due dates. The other orders are “Due for Release” which is the one message we do want to receive.

Review Master Schedule Detail Inquiry: Item 01010

Master Schedule Detail: Item 01010

Master Schedule Detail Inquiry
05/28/10

Item Number: 01010
Medical Ultrasound

Site: 10-100 **Start Date:**

Output: PAGE

Item Number: 01010
Medical Ultrasound
Buyer/Planner: 1-01
Mstr Sched: Yes
MRP Required: No
Plan Orders: Yes
Issue Policy: Yes

Order Policy: POQ
Order Period: 7
Time Fence: 0
Safety Time: 0
Safety Stock: 0

Qty on Hand: 7.0
UM: EA
Min Order: 1
Max Order: 5
Ord Mult: 1
Order Qty: 5
Yield Percent: 100.00%

Site: 10-100
Pur/Mfg: M
Mfg LT: 1
Pur LT: 0
Ins LT: 0
Inspect: No
Cum LT: 0

Due Date	Gross Reqs	Mstr Sched	Proj QOH	Plan Ords	Details
05/28/10		5	7		Beginning Available
05/28/10		5	12		W/O: 1001 ID: 2280904
05/28/10			17		W/O: 1002 ID: 2280921
			22	5	W/O: 1000 ID: 2280902
					Release Date 05/27/10
06/04/10	5		17		SO: 10S10002 Line: 1
06/11/10	15		2		SO: 10S10003 Line: 1
06/11/10	15		-13		SO: 10S10003 Line: 2
06/11/10	15		-28		SO: 01010 Line: 1
06/11/10			0	28	W/O: 05280002
					ID: 2280956
					Release Date 06/10/10
06/30/10	15		-15		SO: 01010 Line: 2
06/30/10			0	15	W/O: 05280003
					ID: 2280957
					Release Date 06/29/10
08/16/10	5		-5		Forecast
08/16/10			0	5	W/O: 05280004
					ID: 2280958

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Master Schedule Detail Inquiry (22.21)

Examine the Master Schedule Detail Inquiry screen. As its name implies, it provides more detail than the Summary screen and the organization of data is different.

In the summary screen, the information is organized in general “buckets” of days, weeks or months. In the detail screen, the information is organized chronologically by specific due dates, showing only dates that have a transaction.

In this example, 06/04/2010 is the due date for 5 units based on sales order 10S10002 line item 1. That demand is displayed in the Gross Requirements column. In the Plan Ords column we see that the MRP planned order to satisfy that demand with the release date of 05/27/2010.

The Master Schedule Detail Inquiry screen shows sources of demand, sales orders and forecasts in this example, and the MRP planned order to satisfy that demand along with the orders release date. On 06/11 we see a Gross Requirement of 15 units based on sales order 10S10003. The system has planned a W/O for 28 to be released on 06/11 to satisfy both these requirements because we have specified Period Order Quantity with a period of 7 days and both these requirements fall in the same period.

Review MRP Summary Inquiry: Item 01010

MRP Summary Inquiry: Item 01010

MRP Summary Inquiry X

Run Export to Excel View as PDF

Item Number
01010

Site
10-100

Start Date
5/24/2010

End Date

Column Type
Week

Per Column
1

Columns
12

Item Number: 01010
 Qty on Hand: 7.0 EA
 Buyer/Planner: 1-01
 Master Schedule: Yes
 MRP Required: No
 Plan Orders: Yes
 Issue Policy: Yes

Medical Ultrasound
 Order Policy: POQ
 Order Period: 7
 Time Fence: 0
 Safety Time: 0
 Safety Stock: 0

Pur/Mfg: M
 Mfg LT: 1
 Purchase LT: 0
 Inspect LT: 0
 Inspect Req: No
 Cumulative LT: 0

Site: 10-100
 Minimum Order: 1
 Maximum Order: 5
 Order Multiple: 1
 Order Quantity: 5
 Yield Percent: 100.00%

Category	Past	5/24/2010	5/31/2010	6/7/2010	6/14/2010	6/21/2010
Gross Requirements	0	0	5	45	0	0
Sched Receipts	0	10	0	0	0	0
Projected QOH	7	22	17	0	0	0
Plan Ords Due	0	5	0	28	0	0
Plan Ords Rel	0	5	0	28	0	0

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MRP Summary Inquiry (23.13)

The information in MRP Summary Inquiry (above) is similar to that shown in Master Schedule Summary Inquiry, but the MRP summary includes information about planned orders, which are MRP calculated. In general the Master Schedule Summary Inquiry deals in more detail with demand, forecasts and sales orders, and displays one row of supply, the Master Schedule. The MRP Summary Inquiry deals more with the supply orders, showing only one line of demand, the Gross Requirements. Then gives detail of when Planned Orders are due, must be released, and are scheduled for receipt.

Planned Orders Due are calculated to satisfy demand from sales orders, forecasts, and so on.

Planned Orders Release indicates when the planned orders should be released to meet the due date. MRP calculates by backward scheduling from the due date, using the lead time and shop calendar information.

Once a Planned Order is released it becomes a Scheduled Receipt, and will no longer appear on the Plan Ord Rel line but will appear on the Sched Receipt line.

Review MRP Detail Inquiry: Item 01010

MRP Detail Inquiry: Item 01010

MRP Detail Inquiry

05/28/10

Item Number: 01010
Medical Ultrasound

Item Number: 01010
Medical Ultrasound

Buyer/Planner: 1-01 Ord Pol: POQ

Mstr Sched: Yes Order Period: 7

MRP Required: No Time Fence: 0

Plan Orders: Yes Safety Time: 0

Issue Policy: Yes Safety Stock: 0

Site: 10-100 Start Date:

Qty on Hand: 7.0 UM: EA Site: 10-100

Min Order: 1 Mfg LT: 1 Pur/Mfg: M

Max Order: 5 Pur LT: 0 Mfg LT: 1

Ord Mult: 1 Ins LT: 0 Pur LT: 0

Order Qty: 5 Inspect: No Ins LT: 0

Yield%: 100.00% Cum LT: 0

Output: PAGE

Due Date	Gross Reqs	Sched Rcpt	Proj QOH	Plan Ords	Details
			7		Beginning Available
05/28/10		5	12		W/O: 1001 ID: 2280904
05/28/10		5	17		W/O: 1002 ID: 2280921
05/28/10			22	5	W/O: 1000 ID: 2280902
					Release Date 05/27/10
06/04/10	5		17		S0: 10S10002 Line: 1
06/11/10	15		2		S0: 01010 Line: 1
06/11/10	15		-13		S0: 10S10003 Line: 1
06/11/10	15		-28		S0: 10S10003 Line: 2
06/11/10			0	28	W/O: 05280002
					ID: 2280956
					Release Date 06/10/10
06/30/10	15		-15		S0: 01010 Line: 2
06/30/10			0	15	W/O: 05280003
					ID: 2280957
					Release Date 06/29/10
08/16/10	5		-5		Forecast
08/16/10			0	5	W/O: 05280004
					ID: 2280958
					Release Date 08/13/10
08/23/10	5		-5		Forecast
08/23/10			0	5	W/O: 05280005
					ID: 2280959
					Release Date 08/20/10

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MRP Detail Inquiry (23.16)

The MRP Detail Inquiry shows information in the same format as the Master Schedule Detail Inquiry. Here it is easy to see the planned W/O created to satisfy the demand created by the forecast in week 06/11 and the W/O planned to satisfy the sales order in week 06/11.

In week 06/30 we see one W/O to satisfy the demand of both the forecast and the sales order. Remember in this case the sales order did not consume the forecast so the MRP plans for both.

Forecasts are done in weekly buckets. Because the system makes no assumption about when in the week the demand may occur, all orders to satisfy forecast are due on the first work day of the week.

In the case of week 06/30 we have one W/O for both demands because the order policy is POQ, that is one order for all demand during the period.

Review MRP Plan for Item 50001

MRP Summary Inquiry: Item 50001

MRP Summary Inquiry
Run
Export to Excel
View as PDF

Item Number: 50001

Site: 10-100

Start Date: 5/24/2010

End Date:

Column Type: Week

Per Column: 1

Columns: 12

Item Number: 50001 Probe Unit - 10 Mhz
 Qty on Hand: 0.0 EA
 Buyer/Planner: 1-02
 Master Schedule: No
 MRP Required: No
 Plan Orders: Yes
 Issue Policy: Yes

Order Policy: POQ
 Order Period: 7
 Time Fence: 0
 Safety Time: 0
 Safety Stock: 0

Pur/Mfg: M
 Mfg LT: 2
 Purchase LT: 0
 Inspect LT: 0
 Inspect Req: No
 Cumulative LT: 0

Site: 10-100
 Minimum Order: 0
 Maximum Order: 0
 Order Multiple: 0
 Order Quantity: 0
 Yield Percent: 100.00%

Category	Past	5/24/2010	5/31/2010	6/7/2010	6/14/2010	6/21/2010
Gross Requirements	0	5	0	28	0	0
Sched Receipts	0	10	0	0	0	0
Projected QOH	0	5	5	0	0	0
Plan Ords Due	0	0	0	23	0	0
Plan Ords Rel	0	0	0	23	0	15

Q5-PL-360

MRP Summary Inquiry (23.13)

Shown above is the MRP Summary Inquiry screen for component 150001 Probe. Why does QMI need 23 probes in week 06/07? Let's look at the MRP Detail Inquiry screen.

MRP Detail Inquiry: Item 50001

MRP Detail Inquiry: Item 50001



MRP Detail Inquiry

05/28/10

Item Number: 50001
 Probe Unit - 10 Mhz

Site: 10-100

Start Date:

Output: PAGE

Item Number: 50001
 Probe Unit - 10 Mhz
 Buyer/Planner: 1-02
 Mstr Sched: No
 MRP Required: No
 Plan Orders: Yes
 Issue Policy: Yes

Ord Pol: POQ
 Order Period: 7
 Time Fence: 0
 Safety Time: 0
 Safety Stock: 0

Qty on Hand: 0.0
 UM: EA
 Min Order: 0
 Max Order: 0
 Ord Mult: 0
 Order Qty: 0
 Yield%: 100.00%

Site: 10-100
 Pur/Mfg: M
 Mfg LT: 2
 Pur LT: 0
 Ins LT: 0
 Inspect: No
 Cum LT: 0

Due Date	Gross Reqs	Sched Rcpt	Proj QOH	Plan Ords	Details
05/27/10	5		0		Beginning Available
			-5		W/O: 1000 ID: 2280902
05/27/10		10	5		Assem: 01010
06/10/10	28		-23		P0: P1010003 Line: 1
					W/O: 05280002
					ID: 2280956
06/10/10			0	23	Assem: 01010
					W/O: 05280009
					ID: 2280960
06/29/10	15		-15		Release Date 06/08/10
					W/O: 05280003
					ID: 2280957
06/29/10			0	15	Assem: 01010
					W/O: 05280010
					ID: 2280961
					Release Date 06/25/10
08/13/10	5		-5		W/O: 05280004
					ID: 2280958
					Assem: 01010
08/13/10			0	5	W/O: 05280011
					ID: 2280962
					Release Date 08/11/10
08/20/10	5		-5		W/O: 05280005
					ID: 2280959
					Assem: 01010



QS-PL-370

MRP Detail Inquiry (23.16)

In the detail screen we see the impact of getting behind with our order releases. The first work order for probe 50001 is very late being released. Note also we have a beginning balance of 0 probes. Another thing we see here is the effect of the offset for the lead time of the medical ultrasound assembly and the offset for the purchased probe.

With sales orders due in the middle of the week and forecasts due on Mondays plus the combined lead time offset, plus the combined demands on one planed order due to the POQ policy, orders for probes become due for release earlier and for larger quantities than at first seems reasonable.

Review MRP Plan for Item 02003

MRP Summary Inquiry: Item 02003

MRP Summary Inquiry X
Run Export to Excel View as PDF

Item Number 02003	Site 10-100	Start Date 5/24/2010	End Date 	Column Type Week	Per Column 1	Columns 12

Item Number: 02003	Standard Connector	Pur/Mfg: 0	Site: 10-100
Qty on Hand: 10.0 EA		Mfg LT: 0	Minimum Order: 100
Buyer/Planner: 1-02	Order Policy: F0Q	Purchase LT: 0	Maximum Order: 2,000
Master Schedule: No	Order Period: 0	Inspect LT: 0	Order Multiple: 100
MRP Required: No	Time Fence: 0	Inspect Req: No	Order Quantity: 1,000
Plan Orders: Yes	Safety Time: 0	Cum LT: 0	Yield Percent: 100.00%
Issue Policy: Yes	Safety Stock: 100		

Category	Past	5/24/2010	5/31/2010	6/7/2010	6/14/2010	6/21/2010
⊕ Gross Requirements	0	0	0	23	0	15
⊖ Sched Receipts	0	0	0	0	0	0
Projected QOH	10	1010	1010	987	987	972
⊕ Plan Ords Due	0	1000	0	0	0	0
⊖ Plan Ords Rel	0	1000	0	0	0	0



Q5-PL-380

MRP Summary Inquiry (23.13)

The MRP Summary Inquiry above shows the requirements and order schedule for the Standard Connector (item 02003).

Because of the lead time offset and the requirement to buy in cartons of 1000 it is harder to see the connections between the lower level component and the higher level demand.

This is one reason it is so important to get good planning data, plan well ahead of lead time requirements and trust the system.

MRP Detail Inquiry: Item 02003

MRP Detail Inquiry: Item 02003



MRP Detail Inquiry

05/28/10

Item Number: 02003
 Standard Connector

Site: 10-100 Start Date:

Output: PAGE

Item Number: 02003
 Buyer/Planner: 1-02 Ord Pol: F0Q
 Mstr Sched: No Order Period: 0
 MRP Required: No Time Fence: 0
 Plan Orders: Yes Safety Time: 0
 Issue Policy: Yes Safety Stock: 100

Qty on Hand: 10.0
 UM: EA
 Min Order: 100
 Max Order: 2,000
 Ord Mult: 100
 Order Qty: 1,000
 Yield%: 100.00%

Site: 10-100
 Pur/Mfg: D
 Mfg LT: 0
 Pur LT: 0
 Ins LT: 0
 Inspect: No
 Cum LT: 0

Due Date	Gross Reqs	Sched Rcpt	Proj	QOH	Plan	Ords	Details
05/28/10				10 1,010		1,000	Beginning Available I/S: 05280012 Site: 10-200
06/08/10	23			987			Release Date 05/27/10 W/O: 05280009 ID: 2280960 Assem: 50001
06/25/10	15			972			W/O: 05280010 ID: 2280961 Assem: 50001
08/11/10	5			967			W/O: 05280011 ID: 2280962 Assem: 50001
08/18/10	5			962			W/O: 05280012 ID: 2280963 Assem: 50001

23.16
MRP Detail Inquiry
mrmplq01.p

MRP Detail Inquiry (23.16)

In the detail view we can see the higher level work orders for the medical ultrasound assembly that are creating the demand for the connectors and the effect of the order multiple of 1000.



Review MRP Plan for Item 62050

MRP Summary Inquiry: Item 62050

MRP Summary Inquiry X

Run
Export to Excel
View as PDF

Item Number: 62050
Site: 10-100
Start Date: 5/24/2010
End Date:
Column Type: Week
Per Column: 1
Columns: 12

Item Number: 62050 Beryllium Copper Site: 10-100

Qty on Hand: 1.0 RL Pur/Mfg: P

Buyer/Planner: 2-02 Order Policy: F00 Mfg LT: 0 Minimum Order: 1

Master Schedule: No Order Period: 0 Purchase LT: 3 Maximum Order: 2

MRP Required: No Time Fence: 0 Inspect LT: 0 Order Multiple: 1

Plan Orders: Yes Safety Time: 0 Inspect Req: No Order Quantity: 10

Issue Policy: Yes Safety Stock: 1 Cumulative LT: 0 Yield Percent: 100.00%

Category	Past	5/24/2010	5/31/2010	6/7/2010	6/14/2010	6/21/2010
Gross Requirements	0	0	0	0	0	0
Sched Receipts	0	0	0	0	0	0
Projected QOH	1	1	1	1	1	1
Plan Ords Due	0	0	0	0	0	0
Plan Ords Rel	0	0	0	0	0	0

QAD
QS-PL-400

MRP Summary Inquiry (23.13)

The QOH for Beryllium Copper in the week of 05/24 is enough to make 5000 medical ultrasounds, so 1 RL is sufficient for our needs.

MRP Detail Inquiry

MRP Detail Inquiry: Item 62050

MRP Detail Inquiry - 5/28/2010... x

QAD MRP Detail Inquiry 05/28/10

Item Number: 62050 Site: 10-100 Start Date: Output: PAGE
Beryllium Copper

Item Number: 62050 Qty on Hand: 1.0 Site: 10-100
Beryllium Copper UM: RL Pur/Mfg: P
Buyer/Planner: 2-02 Ord Pol: F0Q Min Order: 1 Mfg LT: 0
Mstr Sched: No Order Period: 0 Max Order: 2 Pur LT: 3
MRP Required: No Time Fence: 0 Ord Mult: 1 Ins LT: 0
Plan Orders: Yes Safety Time: 0 Order Qty: 10 Inspect: No
Issue Policy: Yes Safety Stock: 1 Yield%: 100.00% Cum LT: 0

Due Date	Gross Reqs	Sched Rcpt	Proj QOH	Plan Ords	Details
05/28/10			1		Beginning Available

23.16 MRP Detail Inquiry mrmpiq01.p



QS-PL-410

MRP Detail Inquiry (23.16)

Review MRP Plan for Item 90031

MRP Summary Inquiry: Item 90031

MRP Summary Inquiry X
Run Export to Excel View as PDF

Item Number: 90031 Site: 10-100 Start Date: 5/24/2010 End Date: Column Type: Week Per Column: 1 Columns: 12

Item Number: 90031 Packaging: Qty on Hand: 20.0 EA Pur/Mfg: P Site: 10-100
Buyer/Planner: 202 Order Policy: POQ Mfg LT: 0 Minimum Order: 0
Master Schedule: No Order Period: 1 Purchase LT: 2 Maximum Order: 0
MRP Required: No Time Fence: 0 Inspect LT: 0 Order Multiple: 0
Plan Orders: Yes Safety Time: 0 Inspect Req: No Order Quantity: 0
Issue Policy: Yes Safety Stock: 0 Cumulative LT: 0 Yield Percent: 100.00%

Category	Past	5/24/2010	5/31/2010	6/7/2010	6/14/2010	6/21/2010
Gross Requirements	0	0	0	0	0	0
Sched Receipts	0	0	0	0	0	0
Projected QOH	20	20	20	20	20	20
Plan Ords Due	0	0	0	0	0	0
Plan Ords Rel	0	0	0	0	0	0

QS-PL-420

MRP Summary Inquiry (23.13)

The MRP Summary and Detail Inquiries for Packaging are shown here.

MRP Detail Inquiry: Item 90031

MRP Detail Inquiry: Item 90031

MRP Detail Inquiry - 5/28/2010... X

MRP Detail Inquiry 05/28/10

QAD

Item Number: 90031 Site: 10-100 Start Date: Output: PAGE
Packaging

Item Number: 90031 Qty on Hand: 20.0 Site: 10-100
Packaging UM: EA Pur/Mfg: P
Buyer/Planner: 2-02 Ord Pol: PQQ Min Order: 0 Mfg LT: 0
Mstr Sched: No Order Period: 1 Max Order: 0 Pur LT: 2
MRP Required: No Time Fence: 0 Ord Mult: 0 Ins LT: 0
Plan Orders: Yes Safety Time: 0 Order Qty: 0 Inspect: No
Issue Policy: Yes Safety Stock: 0 Yield%: 100.00% Cum LT: 0

Due Date	Gross Reqs	Sched Rcpt	Proj QOH	Plan Ords	Details
05/28/10			20		Beginning Available

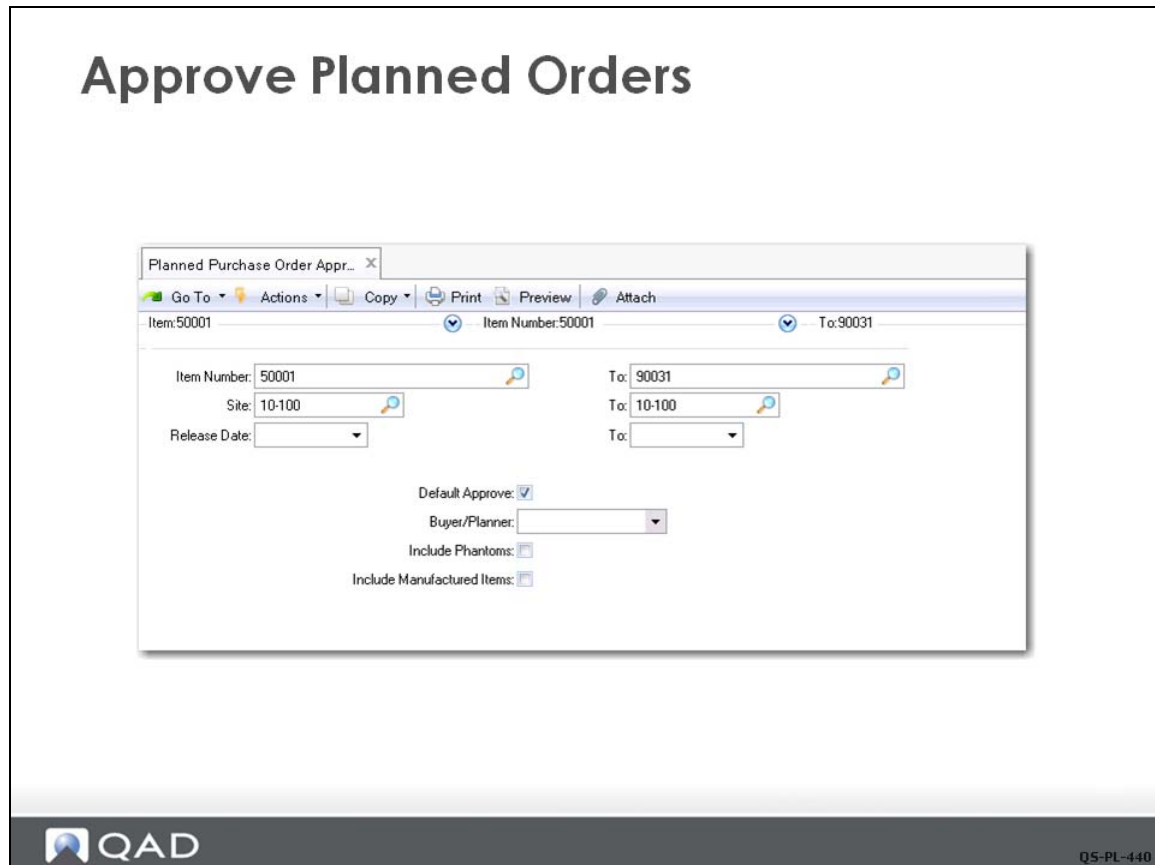
23.16 MRP Detail Inquiry mrmpiq01.p



QS-PL-430

MRP Detail Inquiry (23.16)

Approve Planned Purchase Orders



Planned Purchase Order Approval (23.11)

The QMI planner uses Planned Purchase Order Approval to approve MRP planned purchase orders.

By approving the MRP planned purchase orders, the system converts these orders into purchase requisitions. The planner has selected a range of item numbers that include only the components of the medical ultrasound, and only for the local site. The planner has selected a range of dates that will include any past due orders, but only looking a short time into the future. This will limit the number of orders selected. The planner has set “Default Approve” to Yes so all planned orders will be selected for approval. If you do the selection by release date, for example all orders due to be released today, which is a common way to use this function, then you would want to check Default Approve.

If you are unsure you can leave default approve unchecked and approve the orders individually. In the situation where there are many planners, orders are usually selected by buyer/planner code.

A review screen displays next (shown below).

Approve Planned Orders

Planned Purchase Order Appr... x

Go To Actions Copy Print Preview Attach

Item: 50001 Item Number: 50001 To: 90031

Ln	Req	Item Number	Qty Ordered	Rel Date	Due Date	Appr
1	G1010002	60001	5.0	5/21/2010	5/28/2010	☒
2	G1010002	60001	28.0	6/4/2010	6/10/2010	☒
3	G1010002	60001	15.0	6/24/2010	6/29/2010	☒
4	G1010002	60001	5.0	8/6/2010	8/13/2010	☒
5	G1010002	60001	5.0	8/13/2010	8/20/2010	☒
6	G1010002	60002	5.0	5/21/2010	5/28/2010	☒
7	G1010002	60002	28.0	6/4/2010	6/10/2010	☒
8	G1010002	60002	15.0	6/24/2010	6/29/2010	☒
9	G1010002	60002	5.0	8/6/2010	8/13/2010	☒
10	G1010002	60002	5.0	8/13/2010	8/20/2010	☒

Ln Req Item Number Qty Ordered Rel Date Due Date Appr

0 ☐



Q5-PL-450

Planned Purchase order Approval (23.11)

By careful selection of the date range the QMI planner has selected one order for each component for approval. The approval box is already checked because we had checked default approve in the previous selection screen. Clicking Next will bring up a verification window seen below.

If you are manually selecting orders for approval, or if you need to change a particular orders selection, use the lower frame. Enter the line number of the order you wish to change, then click next to the Approval check box and either check it or uncheck it, then click next again.

Approve Planned Orders

Planned Purchase Order Appr... x

Go To Actions Copy Print Preview Attach

Item:50001 Item Number:50001 To:90031

Ln	Req	Item Number	Qty Ordered	Rel Date	Due Date	Appr
1	G1010002	60001	5.0	5/21/2010	5/28/2010	☒
2	G1010002	60001	28.0	6/4/2010	6/10/2010	☒
3	G1010002	60001	15.0	6/24/2010	6/29/2010	☒
4	G1010002	60001	5.0	8/6/2010	8/13/2010	☒
5	G1010002	60001	5.0	8/13/2010	8/20/2010	☒
6	G1010002	60002	5.0	5/21/2010	5/28/2010	☒
7	G1010002	60002	28.0	6/4/2010	6/10/2010	☒
8	G1010002	60002	15.0	6/24/2010	6/29/2010	☒
9	G1010002	60002	5.0	8/6/2010	8/13/2010	☒
10	G1010002	60002	5.0	8/13/2010	8/20/2010	☒

Is all information correct

yes no

Ln	Req	Item Number	Qty Ordered	Rel Date	Due Date	Appr
0						☐



Q5-PL-460

Planned Purchase order Approval (23.11)

Clicking Yes will approve all orders. This converts them into purchase requisitions. They are no longer planned orders.

In the case where you have more orders that will fit on one screen, clicking next will bring up the next ten orders for review. The system will cycle through as many screens as necessary to display all the orders included with your selection criteria.

Create Purchase Order

Create Purchase Order

Purchase Order Maintenance X

Go To Actions Copy Print Preview Attach

Purchase Order: P1010004 Supplier: 10S1002 Price Tbl

Header Lines Trailer

Details Tax Info Logistics Delivery ERS Consignment Comments

Purchase Order: P1010004 Supplier: 10S1002 Ship-To: 10-100

Supplier: Bridgeville Industries
3390 Linco Road
Stevensville MI 49127
USA - TAX PURPOSE

Ship To: QMI - USA Division
30 Ridgedale Avenue
East Hanover NJ 7950
USA - TAX PURPOSE

Details

Order Date: 6/1/2010 Price Tbl: Disc Tbl: Confirming: ☒ Imp/Exp: ☐
 Due Date: 6/4/2010 Buyer: 3-02 Ln Disc: 0.00 Currency: USD Language: us
 Bill To: 10-100 Site: Fixed Price: ☒ Taxable: ☒
 Sales/Job: Daybook Set: Def AP Credit Terms: 30D 0.00
 Contract: Project: Entered By: qmi
 Contract: Requested By:
 Remarks: Comments:

QAD Q5-PL-480

Purchase Order Maintenance (5.7)

The QMI buyer will now create a purchase order to buy the components required based on the requisitions created from the MRP planned orders.

The basic procedure is the same as we used before to create a PO. However there are a few differences because we will create the line items directly from the requisitions. As shown above the first thing we will do is leave the due date field on the PO header blank. This will insure that the line item due dates default from the requisition due date, not the PO header due date. This means each line item may have a different due date, based on the requisition need date.

Line 1: 50001

Add Purchase Order: Line 1 (50001)

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Purchase Order: P1010009 Supplier: 10S1002 Site: 10-100 Item N

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P1010009 Supplier: 10S1002 Ln Format S/M: Single

Ln	Site	Req	Item	Qty Ordered	UM	Unit Cost	Disc%
1	10-100			0.0		0.00	0.00

Line Details

Qty Received: Due Date: CRT Int:

Qty to Rel: Pur Acct:

Single Lot: ☐ Performance Date: Project:

Location: Need Date: Type:

QAD QS-PL-490

Purchase Order Maintenance (5.7)

The buyer only needs to enter the requisition number for the item (using the look-up) and the remaining fields are populated based on the requisition. Using the requisition look-up double-click the requisition number to add it to the PO, then click next until you cycle back to the line number field for the next item.

Note Once requisitions are added to a PO they are deleted from the requisition file. They now exist only as purchase order line items.

Add Purchase Order: Line 1 (50001)

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Purchase Order: P1010009 Supplier: 10S1002 Site: 10-100 Item N

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P1010009 Supplier: 10S1002 Ln Format S/M: Single

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
1	10-100	G1010002	50001	100.0	EA	0.35	0.00

Line Details

Qty Received: 0.0 Due Date: 6/1/2010 CRT Int: 0.00

Qty to Rel: 0.0 Pur Acct: 6610 Mech ADM

Single Lot: ☐ Performance Date: Project:

Location: 020 Need Date: Type:

Item Revision: AA Sales/Job: Taxable: ☐

Status: Fixed Price: ☒ Inspect Req: ☐ Cmnts: ☐



Q5-PL-500

Purchase Order Maintenance (5.7)

Line 1 for item 50001 is shown above, all the data are defaulted into the PO line from the requisition. If the buyer has the authority they can override the requisition information and manually adjust the PO line item for either quantities, due date or cost and discount. It is common, for example, for the buyer to have the authority to increase the line item quantity slightly in order to get a quantity discount.

Line 2: 62050

Add Purchase Order: Line 2 (62050)

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Purchase Order: P1010009 Supplier: 10S1002 Site: 10-100 Item N

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P1010009 Supplier: 10S1002 Ln Format S/M: Single

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
2	10-100	G1010003	62050	2.0	RL	0.00	0.00

Line Details

Qty Received: 0.0 Due Date: 6/1/2010 CRT Int: 0.00
Qty to Rel: 0.0 Pur Acct: 6610 Mech ADM
Single Lot: ☐ Performance Date: Project:
Location: 020 Need Date: Type:
Item Revision: Sales/Job: Taxable: ☒

QS-PL-510

Purchase Order Maintenance (5.7)

For line item 2 the unit of measure changes to RL for the item the supplier requires.

Add Purchase Order: Line 2 cont.

The screenshot shows the 'Purchase Order Maintenance' window for Purchase Order P1010009, Supplier 10S1002, and Site 10-100. The 'Lines' tab is active, and 'Line Details' is selected. A table lists the line items, with Line 2 highlighted. Below the table, the 'Line Details' section contains various fields for Line 2, including quantity, dates, and unit of measure conversion.

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
2	10-100	G1010002	62050	2.0	RL	1700.00	0.00

Line Details for Line 2:

- Qty Received: 0.0
- Due Date: 6/1/2010
- CRT Int: 0.00
- Qty to Rel: 0.0
- Pur Acct: 6610
- Mech: ADM
- Single Lot: ☐
- Performance Date:
- Project:
- Location: 020
- Need Date:
- Type:
- Item Revision:
- Sales/Job:
- Taxable: ☒
- Inspect Req: ☐
- Cmnts:
- Status:
- Fixed Price: ☒
- UM Conversion: 1.0000
- Stock UM Quantity: 2.0
- Supplier Item:
- Manufacturer: Beryllium Copper
- Update Avg/Last Cost: ☒

Purchase Order Maintenance (5.7)

The system has converted the line item quantity and added the stock unit of measure quantity to show how many will be received into stock when the purchase order receipt is processed.

The balance of the line items are completed in the same manner as line item one. A common practice among buyers is to use the Supplier Item Browse to find all the items they buy from a supplier when they are creating a purchase order for that supplier. Then use Purchase Requisition Browse by item to find any requisitions for those items and add it to the purchase order.

Add Purchase Order: Line 3

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Purchase Order: P1010009 Supplier: 10S1002 Site: 10-100 Item N

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P1010009 Supplier: 10S1002 Ln Format S/M: Multi

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
1	10-100	G1010002	50001	100.0	EA	0.35	0.00
2	10-100	G1010002	62050	2.0	RL	1700.00	0.00
3	10-100	G1010003	60001	20.0	EA	27.00	0.00



Q5-PL-530

Purchase Order Maintenance (5.7)

In the view shown above we have switched to the multi-line mode to show all three line items, with their requisition numbers, in one screen.

Add Purchase Order: Trailer

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Purchase Order: P1010009 Supplier: 10S1002 Currency: USD

Header Lines Trailer

Trailer Tax Info Trailer Information

Header

Purchase Order: P1010009 Supplier: 10S1002 Ship-To: 10-100

Trailer

Currency: USD	Line Total:	3,975.00
	Total Tax:	295.50
	Total:	4,270.50

Tax Date: 6/1/2010

View/Edit Tax Detail: 

Trailer Information

Order Revision: 0

Order Rev Date: Amount Prepaid: 0.00

Print PO: ☒ Status:

EDI PO: ☐ Close Date:

FOB:

Deliver To: Ship Via: PER INSTRUCTIONS



Q5-PL-540

Purchase Order Maintenance (5.7)

The trailer frame shows us the total value of the order and completes the purchase order.

Receive Items

Receive Items (1 of 3)

Purchase Order Receipts

Go To Actions Copy Print Preview

Order: P1010009 Supplier: 10S1002 Status: Effective: 6/1/2010

Packing Slip: Receiver: Bridgeville Industries

Move to Next Operation: ☒

Receive All: ☒

Comments: Ship Date:



Q5-PL-550

Purchase Order Receipts (5.13.1)

In Purchase Order Receipts, the receiving clerk checks Receive All as the purchase order has been shipped complete. This will set up the receipt for simplified processing. If the vendor has provided a packing slip with a reference number that can be entered.

Receive Purchase Order (2 of 3)

Purchase Order Receipts X

Go To Actions Copy Print Preview Attach

Order: P1010009 Supplier: 10S1002 Status: Packing Slip:

Ln	Item Number	UM	Qty Open	UM	Receipt Qty	UM	Project	Due Date	T
1	50001	EA	100.0	EA	0.0	EA		6/1/2010	
2	62050	RL	2.0	RL	2.0	RL		6/1/2010	
3	60001	EA	20.0	EA	20.0	EA		6/1/2010	

Display purchase order lines being received

yes no

Line: Unit of Measure: Site: Loc:

Quantity: ID: Lot/Ser:

Packing Qty: OP: Reference:

Cancel B/D: ☐ Supplier Lot:

Item Number: Multi Entry: ☐ Chg Attribute: ☐

Supplier Item: Cmnts: ☐



Q5-PL-560

Purchase Order Receipts (5.13.1)

This brings up a screen with all the receiving data prefilled. By clicking next a dialog box pops up. The receiving clerk selects yes to display the receiving transactions.

Receive Purchase Order (3 of 3)

Purchase Order Receipts

Go To
Actions
Copy
Print
Preview
Attach

Order: P1010009
Supplier: 10S1002
Status:
Packing Slip:

Ln	Item Number	Site	Location Ref	Lot/Serial Supplier Lot	Quantity
1	50001	10-100	020	99	1.0

Is all information correct

yes
no



Q5-PL-570

Purchase Order Receipts (5.13.1)

Clicking yes brings up a screen reviewing the transaction detail about to be completed including the default inventory location the system expects the material to be placed in. If all is correct click next.

If you need to change the location code or quantity for an item, check No when prompted “is all information correct” this will return you to the line item detail frame where you can specify an alternate location or change the quantity. Otherwise select yes to complete the transaction.

Review Inventory

Inventory Detail by Item Browse X

Actions Print Add to Favorites Chart Chart Designer Refresh New Edit Edit

Search

Item Number starts at Search Clear All

Viewing 1 - 100 of 152 Records per page: 100

Item Number	Site	Qty On Hand - Inv Mstr	Qty On Hand - Inv Detail	Location	Lot/Serial	Reference	Status	Expire Date	Date Created
01010	10-100	7.0	0.0	010	1234		Y-Y-N		05/28/2010
01010	10-100	7.0	0.0	010	1235		Y-Y-N		05/28/2010
01010	10-100	7.0	0.0	010	1236		Y-Y-N		05/28/2010
01010	10-100	7.0	1.0	010	1237		Y-Y-N		05/28/2010
01010	10-100	7.0	1.0	010	1238		Y-Y-N		05/28/2010
01010	10-100	7.0	1.0	010	1239		Y-Y-N		05/28/2010
01010	10-100	7.0	1.0	010	1240		Y-Y-N		05/28/2010
01010	10-100	7.0	1.0	010	1241		Y-Y-N		05/28/2010
01010	10-100	7.0	1.0	010	1242		Y-Y-N		05/28/2010
01010	10-100	7.0	1.0	010	1243		Y-Y-N		05/28/2010
01010	10-100	7.0	0.0	010	4		Y-Y-N		05/27/2010



Q5-PL-580

Inventory Detail by Item Browse (3.2)

We can use Inventory Detail by Item Browse (3.2) to review the current inventory balances of our component items.

Review Planned Order Report or Browse

Planned Order Report or Browse

The screenshot shows the 'Planned Order Browse' window in QAD. It includes a search bar with 'Item Number' and 'starts at' fields, and a table of planned orders. The table has columns: Item Number, Site, Work Order, ID, Buyer/Planner, Purchase/Manufacture, Quantity Ordered, Unit of Measure, and Release Date. The first few rows are highlighted in blue.

Item Number	Site	Work Order	ID	Buyer/Planner	Purchase/Manufacture	Quantity Ordered	Unit of Measure	Release Date
01010	10-100	05280002	2280956	1-01	M	28.0	EA	06/10/2010
01010	10-100	05280003	2280957	1-01	M	15.0	EA	06/29/2010
01010	10-100	05280004	2280958	1-01	M	5.0	EA	08/13/2010
01010	10-100	05280005	2280959	1-01	M	5.0	EA	08/20/2010
02003	10-200	06010027	2281048	2-01	M	1,000.0	EA	05/31/2010
02004	10-200	06010028	2281049	2-01	M	1,000.0	EA	05/25/2010
02200	10-200	06010002	2281023	DRB	L	1,000.0	EA	07/05/2010
02200	10-200	06010003	2281024	DRB	L	1,200.0	EA	07/12/2010
02200	10-200	06010004	2281025	DRB	L	1,300.0	EA	07/19/2010
02200	10-200	06010005	2281026	DRB	L	1,270.0	EA	07/26/2010
02200	10-200	06010006	2281027	DRB	L	1,450.0	EA	08/02/2010
02200	10-200	06010007	2281028	DRB	L	1,290.0	EA	08/09/2010
02200	10-200	06010008	2281029	DRB	L	1,270.0	EA	08/16/2010
02200	10-200	06010009	2281030	DRB	L	1,450.0	EA	08/23/2010
02200	10-200	06010010	2281031	DRB	L	1,290.0	EA	08/30/2010
03040	10-300	06010014	2281035	3-01	M	205.0	EA	05/28/2010
03041	10-300	06010011	2281032	3-01	M	205.0	BX	05/31/2010

Q5-PL-590

Planned Order Browse (23.9)

The QMI planner and buyer have handled the planned purchase orders. Next, let's focus on the manufacturing orders.

The production control planner checks the Planned Order Report or Browse to see a list of the orders that MRP has planned but that are not “firm planned” yet. Once approved MRP Planned Orders become “Firm Planned Orders.” Remember Firm Planned Orders cannot be re-planned by MRP so you do not want to approved MRP Planned Orders until you are ready to release them.

Note MRP planned purchase orders, when approved, become purchase requisitions. MRP planned work orders, when approved, become firm planned orders.

The planned order browse shows both manufactured and purchased item planned orders. Note the M, P, or L in the Purchase/Manufacture column.

For this example the planner decides we need to release the past due first planned order.

Review Planned Order Report or Browse

Approve Planned Work Orders



Q5-PL-600

Planned Work Order Approval (23.10)

The planner uses Planned Work Order Approval to approve the MRP planned order. The planner has de-selected Default Approve.

Note This selection screen can also be accessed by Planner code or release date to limit the items displayed.

Planned Work Order Approval: Line 1

Planned Work Order Approval: Line 1

Planned Work Order Approval X

Go To Actions Copy Print Preview Attach

Item: Item Number: To:

Ln	Work Order	ID	Item Number	Qty Ordered	Rel Date	OK
1	05280002	2280956	01010	28.0	6/10/2010	☐
2	05280003	2280957	01010	15.0	6/29/2010	☐
3	05280004	2280958	01010	5.0	8/13/2010	☐
4	05280005	2280959	01010	5.0	8/20/2010	☐

Ln	Work Order	ID	Item Number	Qty Ordered	Rel Date	OK
1	05280002	2280956	01010	28.0	6/10/2010	☒

QAD

QS-PL-610

Planned Work Order Approval (23.10)

Because Default Approve was unchecked in the preceding frame, the default for all lines is OK blank (box unchecked). After reviewing the list, the planner approves the orders wanted by entering their line number from the first upper window, into the Ln field of the lower frame, clicking next and checking OK by clicking the cursor in the box. Clicking next moves the check mark to the upper window and clicking it again displays the message seen below.

Planned Work Order Approval: Line 1

Planned Work Order Approval

Go To Actions Copy Print Preview Attach

Item: Item Number: To:

Ln	Work Order	ID	Item Number	Qty Ordered	Rel Date	OK
1	05280002	2280956	01010	28.0	6/10/2010	☒
2	05280003	2280957	01010	15.0	6/29/2010	☐
3	05280004	2280958	01010	5.0	8/13/2010	☐
4	05280005	2280959	01010	5.0	8/20/2010	☐

Is all information correct

yes no

Ln	Work Order	ID	Item Number	Qty Ordered	Rel Date	OK
0						☐



Q5-PL-620

Planned Work Order Approval (23.10)

Clicking Yes approves the planned order, and makes it Firm Planned. Once an order is “Firmed” it cannot be viewed in the Planned Work Order Browse.

Review Work Orders

Review Work Order

Work Order Browse

 Actions ▾ | Print | Add to Favorites | Chart | Chart Designer | Refresh ▾ | New | Edit

Search
 Item Number ▾ starts at ▾

Search
Clear All

Viewing 1 - 100 of 241
Records per page: 100 ▾

Item Number	Site	Work Order	ID	Quantity Open	Due Date	Sales/Job	Work Order Status
01010	10-100	1000	2280902	5.0	05/28/2010		F
01010	10-100	1001	2280904	5.0	05/28/2010		R
01010	10-100	1002	2280921	5.0	05/28/2010		R
01010	10-100	05280002	2280956	28.0	06/11/2010		F
01010	10-100	05280003	2280957	15.0	06/30/2010		P
01010	10-100	05280004	2280958	5.0	08/16/2010		P
01010	10-100	05280005	2280959	5.0	08/23/2010		P

Q5-PL-630

Work Order Browse (16.2)

In this example, the planner uses Work Order Browse to review work orders for the item 01010 at site 10-100.

Several work orders display with various due dates and status codes. The planner notes that the order approved in the previous step (work order 1000) now has a status code of F (firm planned). This means that it is no longer under MRP control. A previously closed work order would have a status of C, and there are several status P (planned) orders for.

Note the different numbering scheme for MRP planned orders compared to the manually created order we did earlier. the manually created order has a sequential number assigned from the counter in Work Order Control. The MRP orders have a date coded sequential number.

Verify Availability of Components

Verify Availability of Components

Work Order Component Check... X

 **Work Order Component Check** 06/01/10

Work Order 05280002	ID	Component Item	Short Only No	Output PAGE	
Component Item	Qty	Req UM	On Hand	Qty Alloc	Qty Short
50001 Probe Unit - 10 Mhz	10-100	28.0 EA	28.0	0.0	0.0
60001 Durable Plastic Housing	10-100	28.0 EA	28.0	0.0	0.0
60002 Display / Readout	10-100	28.0 EA	28.0	0.0	0.0
60003 Keyboard	10-100	28.0 EA	28.0	0.0	0.0
60005 Battery	10-100	28.0 EA	28.0	0.0	0.0
60006 Monitor Cable	10-100	28.0 EA	28.0	0.0	0.0
60007 Movable Cart	10-100	28.0 EA	28.0	0.0	0.0
60008 Printer	10-100	28.0 EA	28.0	0.0	0.0
60050 Base Unit / CPU	10-100	28.0 EA	28.0	0.0	0.0
90093 Shipping Carton	10-100	28.0 EA	28.0	0.0	0.0

16.5
Work Order Component Check
wowocc.p


Q5-PL-640

Work Order Component Check (16.5)

QMI's production activity control (PAC) manager uses Work Order Component Check to verify the availability of components in inventory.

The default format for this function is to show only those components which are short of the requirement for this order.

In the selection screen you enter the specific work order in question. If you uncheck the Short Only box you will see the display pictured above. The specific quantities required for this order and the quantity on hand. In this case there are plenty of each component.

Release Work Order

Work Order Release/Print

Go To Actions Copy Print Preview Attach

Work Order: 05280002 ID: 2280956

Work Order: 05280002

ID: 2280956

Batch:

Deliver To:

Print Bar Code:

Operation:

Print Picklist: ☒

Print Routing: ☒

Print Co/By-Products: ☒

Item Number: 01010

Release Date: 6/10/2010

Medical Ultrasound

Quantity Ordered: 28.0

Work Order Due Date: 6/11/2010

Quantity Completed: 0.0

Work Order Status: F

Sales/Job:

Supplier:

Remarks:

Output:

Batch ID:

QAD

Q5-PL-650

Work Order Release/Print (16.6)

The PAC manager releases the work order using Work Order Release/Print. Note the print selection options that have been selected. Set the output field to Page to view the result of releasing the work order.

Work Order Release/Print



Work Order Release/Print
10USA

06/01/10 14:46:51
Page: 1

Work Order Picklist

Work Order: 05280002
 ID: 2280956
 Batch:
 Item Number: 01010
 Remarks: Medical Ultrasound
 Qty Ordered: 28.0

Issue Date: 06/01/10
 Rev: D
 Work Order Due Date: 06/11/10
 Sales/Job:
 Deliver To:

Item Number	Rev	Site Location	Lot/Serial Ref	Required Qty to Issue	UM	Issued
50001	AA	10-100		28.0	EA	
Probe Unit - 10 Mhz						
		020	5000	1.0	(	)
		020	5001	1.0	(	)
		020	5002	1.0	(	)
		020	5003	1.0	(	)
		020	5004	1.0	(	)
		020	5005	1.0	(	)
		020	5006	1.0	(	)

Work Order Release/Print (16.6)

This is an image of the hard copy Work Order Pick List. This would be routed to the stock room to issue the components to the work order.

Work Order Routing

Work Order Routing

Work Order Release/Print

10USA

06/01/10 14:46:51

Page: 5

Work Order Routing

Work Order: 05280002

ID: 2280956

Batch:

Item Number: 01010

Remarks: Medical Ultrasound

Qty Ordered: 28.0

Rev: D

Work Order Due Date: 06/11/10

Sales/Job:

Deliver To:

Op	Work Center	Std Op	Tooling Supplier	Setup Time	Run Time	Actual	By
10	1000				0.5	_____	()
	General Assembly				28.0	_____	()
	ASSEMBLE COMPONENTS						
20	1050				0.5	_____	()
	Product Test				5.6	_____	()
	TEST FINISHED UNIT						
30	1060				0.5	_____	()
	Pack				1.68	_____	()
	PACK FOR SHIPPING						

16.6
Work Order Release/Print
woworl.p

QS-PL-670

This is an image of the hard copy Work Order Routing. This would be routed along with the components to the work center of the first operation, and each subsequent operation.

Note It is not necessary to print hard copy documents. Many companies manage production in a paperless fashion. the system knows what components are required for each order so the stock room can do an electronic transaction to issue the parts. In the same manner the shop floor control system knows each operation in each work center for the work order and reporting may be done with any terminal.

Issue Work Order Components

Issue Work Order Components

Work Order Component Issue X

Go To
Actions
Copy
Print
Preview
Attach

Work Order: 05280002
ID: 2280956
Item:

Work Order: 05280002
 Item Number: 01010
 Medical Ultrasound
 Document:

ID: 2280956
 W/O Stat: R

Op:
 Issue Alloc: ☐
 Issue Picked: ☒

Effective: 6/1/2010

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss
50001	28.0	0.0	28.0	28.0
60001	28.0	0.0	28.0	28.0
60002	28.0		28.0	28.0

Display items being issued

Item Number:
 Description:
 Quantity:
 Substitute: ☐
 Document:

Op:
 UM:
 Cancel B/O: ☐

Site:
 Lot/Serial:
 Reference:
 Multi Entry: ☐

Loc:

Q5-PL-680

Work Order Component Issue (16.10)

The stock room issues the components using Work Order Component Issue. By checking Issue Picked in the header frame the system pre-fills the transaction fields with the information from the Work Order Pick List created in the previous step.

Issue Work Order Components

Work Order Component Issue X

Go To Actions Copy Print Preview Attach

Work Order: 05280002 ID: 2280956

Work Order: 05280002 ID: 2280956 Op: Effective: 6/1/2010

Item Number: 01010 W/O Stat: R Issue Alloc: ☐

Medical Ultrasound Issue Picked: ☒

Document:

Item Number	Site	Location	Lot/Serial	Ref	Quantity
60050	10-100	020	7017		1.0
60050	10-100	020	8		1.0
60050	10-100	020			1.0
90093	10-100	020			28.0

Is all information correct

yes no



Q5-PL-685

Work Order Component Issue (16.10)

By clicking Yes to Display Items being Issued we have a chance to verify that the correct items are being issued from the correct locations, in the correct quantities.

Report Labor

Report Labor

Labor Feedback by Work Order

Go To Actions Copy Print Preview Attach

Work Order: 05280002 ID: 2280956 Employee: 10-EMP01

Work Order: 05280002 ID: 2280956

Operation: 30 PACK FOR SHIPPING Op Status:

Document:

Employee: 10-EMP01 Alex Erikson Pay Code:

Department: 0550 Work Center: 1060 Time Ind: Hours Minutes

Shift: Machine: Project:

Quantity Completed: 28.000000000 Effective Date: 6/1/2010

Rejects: ☐ Operation Complete: ☒

Rework: ☐ Move to Next Operation: ☐

Start Setup: 00:00:00 Elapsed Setup: 0.000

Elapsed/Stop Setup: 00:00:00

Start Run: 00:00:00 Elapsed Run: 1.500

Elapsed/Stop Run: 01:30:00

Comment:

Down Time: 00:00:00 Down Time Reason:

QAD Q5-PL-690

Labor Feedback by Work Order (16.20.1)

On the shop floor, Alex reports the labor for completing the 28 medical ultrasound units. Operation 30, shown here, is the last operation.

In the case of each operation we selected Operation Complete. Meaning we did not do intermediate reporting before the operation was complete. We always selected Move Next Operation which set the status at the next operation to Queue. And we selected Previous Operations Complete just to be sure there were closed in case anyone forgot to report.

Review

The standard setup and run times were entered in Routing Maintenance.

Receive and Close Work Order

Receive and Close Work Order

Work Order Receipt
Go To Actions Copy Print Preview Attach

Work Order: 05280002
ID: 2280956
Site: 10-100

Work Order: 05280002 ID: 2280956 Effective: 6/1/2010

Remarks:

Item Number: 01010 Lot/Serial Control: S UM: EA

Description: Medical Ultrasound WO Stat: R

Open Quantity: 28.0

Document:

Quantity: 28.0

UM: EA

Conversion: 1.0000

Scrapped Qty: 0.0

UM: EA

UM Conversion: 1.0000

Batch:

Automatic Lot Numbers: ☐

Site: 10-100

Location: 010

Lot/Serial:

Reference:

Multi Entry: ☒

Set Attributes: ☐

Total Units: 28.0

Remarks:

Close: ☒

Q5-PL-700

Work Order Receipt (16.11)

Using Work Order Receipt, the Finished Goods Inventory personnel receive the 28 units of 01010 and close work order.

Note Note the check mark in the close box. This indicates the work order is complete and closed from a manufacturing standpoint. To do a partial receipt enter the quantity being received into inventory and leave the close box unchecked. This leaves the work order status as “R” running and open to receive the balance of the items at a latter time.

Receive and Close Work Order

Work Order Receipt X

Go To Actions Copy Print Preview Attach

Work Order:05280002 ID:2280956 Site:10-100

Site	Location	Lot/Serial	Ref	Quantity
10-100	010	8027		1.0

Is all information correct

yes no

As with other transactions, you are given a chance to see the transaction and confirm it is what you expect.

Review MRP Summary

Review MRP Summary

MRP Summary Inquiry x

Run Export to Excel View as PDF

Item Number: 01010

Site: 10-100

Start Date: 5/31/2010

End Date:

Column Type: Week

Per Column: 1

Columns: 12

Item Number: 01010

Medical Ultrasound

Site: 10-1

Qty on Hand: 35.0 EA

Pur/Mfg: M

Buyer/Planner: 1-01

Order Policy: POQ

Mfg LT: 1

Minimum Order: 1

Master Schedule: Yes

Order Period: 7

Purchase LT: 0

Maximum Order: 5

MRP Required: Yes

Time Fence: 0

Inspect LT: 0

Order Multiple: 1

Plan Orders: Yes

Safety Time: 0

Inspect Req: No

Order Quantity: 5

Issue Policy: Yes

Safety Stock: 0

Cumulative LT: 0

Yield Percent: 100

Category	5/31/2010	6/7/2010	6/14/2010	6/21/2010	6/28/2010
Gross Requirements	5	45	0	0	15
Sched Receipts	0	0	0	0	0
Projected QOH	45	0	0	0	0
Plan Ords Due	0	0	0	0	15
Plan Ords Rel	0	0	0	0	15

Q5-PL-710

MRP Summary Inquiry (23.13)

A quick review of the MRP Summary Inquiry for the 01010 shows a much more balanced situation, but we still need another 15 in the week of 06/28.

Review MRP Summary

MRP Summary Inquiry
X

Run
Export to Excel
View as PDF

Item Number	Site	Start Date	End Date	Column Type	Per Column	Columns
01010	10-100	5/31/2010		Week	1	12

Item Number: 01010	Medical Ultrasound	Site: 10-1
Qty on Hand: 35.0 EA		Pur/Mfg: M
Buyer/Planner: 1-01	Order Policy: POQ	Mfg LT: 1
Master Schedule: Yes	Order Period: 7	Purchase LT: 0
MRP Required: Yes	Time Fence: 0	Inspect LT: 0
Plan Orders: Yes	Safety Time: 0	Inspect Req: No
Issue Policy: Yes	Safety Stock: 0	Cumulative LT: 0
		Minimum Order: 1
		Maximum Order: 5
		Order Multiple: 1
		Order Quantity: 5
		Yield Percent: 100.

Category	5/31/2010	6/7/2010	6/14/2010	6/21/2010	6/28/2010
Gross Requirements	5	45	0	0	15
Sched Receipts	0	0	0	0	0
Projected QOH	45	0	0	0	0
Plan Ords Due	0	0	0	0	15
Plan Ords Rel	0	0	0	0	15

Q5-PL-720

MRP Summary Inquiry (23.13)

We are now caught up to the plan. We have enough units in stock to cover the current forecast and the customer order for 45.

Ship Sales Order

Ship Sales Order

Sales Order Maintenance X

Go To Actions Copy Print Preview Attach

Sales Order: 10S10002 Order: 10S10002 Sold-To: 10C1003 Bill To: 10C1003

Header Lines Trailer

Lines Line Details Freight Data Tax Info Comments

Order: 10S10002 Sold-To: 10C1003 Ln For: Single Org:

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
1	01010	5.0	EA	2,500.00	0.0	2,500.00

Line Details

Desc: Medical Ultrasound Sales Acct: 4010 mech ADM

Loc: 010 Site: 10-100 Disc Acct: 4200 Mech

USD Cost: 239.24873 Confirmed: ☒ Credit Terms Int: 0.00

Lot/Serial: Qty Allocated: 5.0

Qty Picked: 0.0 Required: 6/4/2010 Ship Type:

Qty Shipped: 0.0 Promised: 6/4/2010 UM Conversion: 1.0000

Qty to Invoice: 0.0 Due Date: 6/4/2010 Consume Fcst: ☒

Salesperson 1: 10SP01 Perform Date: 6/4/2010 Detail Alloc: ☐

Commission 1: 5.00% Pricing Date: 5/27/2010 Taxable: ☐

Category: Multiple: ☐ Freight List: 10FRT

Fixed Price: ☒ Comments:

QAD Q5-PL-730

Sales Order Maintenance (7.1.1)

QMI's sales department has received the authorization from the customer to ship their sales order early. The sales order control has been set to allocate orders 10 days before the shipment due date. In order to print a packing list we need to allocate 5 units of inventory (01010) to the sales order. There are a couple of ways to do this, we will discuss two of them.

Sales Order Manual Allocations

Sales Order Manual Allocations

Go To Actions Copy Print Preview Attach

Order: 10S10002

Order	Sold-To	Site	
10S10002	10C1003	Pacific Health Care Systems	

Ln	Item Number	T	Qty Allocated	Qty Picked	Qty B/O	Due Date
1	01010		5.0	0.0	0.0	6/4/2010

Ln	Item Number	T	UM	Qty Allocated	Qty Picked	Detail Allocations
1	01010		EA	5.000000000	0.0	



Q5-PL-740

Sales Order Manual Allocations (7.1.1)

One method is to use sales order manual allocations. As shown above we are only allocating line one at this time. The manual allocation transaction shown here saves stepping through all the screens in sales order maintenance, and is also useful if different people have responsibility for allocations.

Ship Sales Order

Sales Order Packing List

Sales Order Packing List: Go To ▾ Actions ▾

Due Date:	To:
Sales Order: SO10005	To:
Ship-To:	To:
Language ID:	To:
Site:	To:
Entity Address: QMS-PR	
Print Only Lines to Pick:	☒
Override Partial OK Flag:	☐
Print Features and Options:	☐
Print Negative Quantities:	☐
Form Code: 1	
Update:	☒

Note: Only orders with an action status of blank will print

Ship Sales Order

Sales Order Shipments

Go To Actions Copy Print Preview Attach

Sales Order: 10S10002 Site:

Order: 10S10002 Ship Allocated: ☒ Sold To: Site:

Effective: 6/1/2010 Ship Picked: ☒ Document:

Sales Order Shipments (7.9.15)

Once we have the allocations we can print the packing list.

With the packing list in hand the QMI shipping department, pulls the inventory, packs it for shipment and then processes the sales order shipment transaction as shown in the series of screens that follow.

Ship Sales Order

Sales Order Shipments X

Go To Actions Copy Print Preview Attach

Sales Order: 10S10002 Site:

Order: 10S10002 Ship Allocated: ☒ Sold-To: 10C1003 Site:
 Effective: 6/1/2010 Ship Picked: ☒ Pacific Health Care Systems
 Document:

Sales Order Line Items

Ln	Item Number	T	Qty Alloc	Qty Picked	To Ship	Backorder Site
1	01010		0.0	5.0	5.0	0.0 10-100

Display sales order lines being shipped

Line: Cancel B/O: ☐ Site: Loc:
 Quantity: Lot/Serial:
 Item Number: UM: Reference: Multi Entry: ☐
 Description:



Q5-PL-770

Sales Order Shipments (7.9.15)

Ship Sales Order

Sales Order Shipments X

Go To Actions Copy Print Preview Attach

Sales Order: 10S10002 Site:

Order: 10S10002 Ship Allocated: ☒ Sold-To: 10C1003 Site:
 Effective: 6/1/2010 Ship Picked: ☒ Pacific Health Care Systems
 Document:

Ln	Item Number	Site	Location	Lot/Serial	Quantity	UM
1	01010	10-100	010	1237	1.0	EA
1	01010	10-100	010	1238	1.0	EA
1	01010	10-100	010	1239	1.0	EA
1	01010	10-100	010		1.0	EA
1	01010	10-100	010		1.0	EA

Is all information correct

yes no



Q5-PL-780

Sales Order Shipments (7.9.15)

Ship Sales Order

Sales Order Shipments

Go To Actions Copy Print Preview Attach

Sales Order: 10S10002 Site:

Order: 10S10002 Ship Allocated: ☒ Sold-To: 10C1003 Site:
 Effective: 6/1/2010 Ship Picked: ☒ Pacific Health Care Systems
 Document:

Currency: USD Line Total: 12,500.00
 0.00% Discount: 0.00

Tax Date: 5/28/2010	Freight	20	20.53
Containers: 0.00	Freight	20	0.00
Line Charges: 0.00	Special	30	0.00
View/Edit Tax Detail:		Total Tax: 0.00	
		Total: 12,520.53	

Ship Via: FEDX Daybook Set:
 Ship Date: 6/1/2010 Ready to Invoice: ☐
 BOL:
 Remarks:



Q5-PL-790

Sales Order Shipments (7.9.15)

The trailer frame completes the sales order shipment process. In this frame we see the value of the shipment and would add any freight charges or other charges applicable to the shipment rather than the line item itself.

Invoice Post and Print

Invoice Post and Print



Invoice Post and Print
10USA

06/01/10 16:18:45
Page:1

Sales Journal Reference: 2010/CINV000000002 AR Batch: 3

Invoice Number	Bill To	Name	Sold-To	Name	Slspn
2010/CINV000000002	10C1003	Pacific Health Care Systems	10C1003	Pacific Health Care Systems	10SP01

Sales Order: 10S10002 Ship-To: 10C1003 Pacific Health Care Systems Order Date: 05/27/10 PO:

Ln	Item Number	UM	Sales	Sub-Acct	CC	Invoiced Backorder	Tax	Price	Extended Price	Extended Margin
1	01010 Medical Ultrasound	EA	4010	mech	ADM	5.0 0.0	No	2,500.00	12,500.00	11,303.76

Currency: USD
 Tax Date: 06/01/10
 Containers: 0.00
 Line Charges: 0.00

Line Total: 12,500.00
 Discount: 0.00
 Freight 20 : 20.53
 Freight 20 : 0.00
 Special 30 : 0.00
 Total Tax: 0.00
 Total: 12,520.53

Invoice Post and Print



Invoice Post and Print
10USA

06/01/10 16:18:45
Page:2

Sales Journal Reference: 2010/CINV000000002 AR Batch: 3

					Consolidated Dr	Consolidated Cr
10USACO	1300	Gserv		06/01/10	12,520.53	.00
10USACO	4010	mech	ADM	06/01/10	.00	12,500.00
10USACO	4682			06/01/10	.00	20.53
					12,520.53	12,520.53


Q5-PL-800

Invoice Post and Print (7.13.4)

Using Invoice Post and Print, process the shipment for invoicing.

Invoice

QMI -USA Division 30 Ridgedale Avenue East Hanover, NJ 7950		I N V O I C E	
USA - TAX PURPOSE		Invoice: 2010/CINV000000002	
		Invoice Date: 06/01/10	Revision: 1
		Print Date: 06/01/10	Page: 1
Bill To: 10C1003		Sold To: 10C1003	
Pacific Health Care Systems 600 Calle de Los Caminos Los Angeles, CA 90212 USA - TAX PURPOSE		Pacific Health Care Systems 600 Calle de Los Caminos Los Angeles, CA 90212 USA - TAX PURPOSE	
Sales Order: 10S10002		Ship Date: 06/01/10	
Order Date: 05/27/10		Purchase Order:	
Salesperson(s): 10SP01		Ship To: 10C1003	
Credit Terms: 2M		Ship Via: FEDX	
2 months after month end of invoice date		BOL:	
Resale:		FOB Point:	
Remarks:			

Item Number	UM	Shipped	Qty	B/O Tax	Price	Extended Price
01010	EA	5.0	0.0	No	2,500.00	12,500.00
Medical Ultrasound						

Currency: USD		Line Total:	12,500.00
Tax Date: 06/01/10		Discount:	0.00
Containers: 0.00		Freight 20:	20.53
Line Charges: 0.00		Freight 30:	0.00
		Special 30:	0.00
		Total Tax:	0.00
		Rounding Trailer Amount:	0.00
		Total:	12,520.53



Q5-PL-810

Invoice Post and Print (7.13.4)

Exercise 8

Balance and Order Quantity Values

Instructions: Use the accompanying table to determine in which periods orders are required and for what quantities. Assume there is no on-hand inventory. For example, looking at period 1 and its demand, the correct entry for LFL is 25. Looking at “POQ covering two periods,” the correct entry is 55.

Order Policy and Modifier

Period	1	2	3	4	5	6	7	8	9	10
Demand	25	30	20	35	25	30	25	35	30	25
LFL	25									
FOQ = 35										
POQ 2 periods	55									
POQ 2 periods Min Qty = 60										
POQ 2 periods Multi Qty = 25										

Enter a Forecast for Parent Item

Note This exercise uses different quantities than the prior examples provided in the text.

- 1 Use Forecast Worksheet Maintenance (22.2) to enter a forecast for parent item 01010 at site 10-100 for the next five weeks.

Field	Data
Item Number	01010
Site	10-100
Year	Current year

Click Next until you are at the current week

Enter a weekly forecast of 20 for each of the next five weeks.

Be sure to continue through all the frames. Only 13 weeks are displayed at a time. The next few frames contain weeks 14 through 26, weeks 27 through 39, and weeks 40 through 52.

Define Control Setting for Forward/Back Forecast Consumption

- 1 Use Sales Order Control (7.1.24) to enter Forecast Consumption.

Accept all defaults, click next until you reach:

Field	Data
Consume Forward	10
Consume Back	10

Enter a Sales Order

- 2 Use Sales Order Maintenance (7.1.1) to enter a sales order with three lines.

Accept all defaults except for the following:

Field	Data
Sold-To	10C1003
Bill-To	10C1003
Ship-To	10C1003

Line 1

Field	Data
Item	01010
Site	10-100
Quantity	20
Due Date	7 days from today
Consume Forecast	Yes

Proceed to Installed Base.

Field	Data
Update Installed Base	No

Line 2

Field	Data
Item	01010
Site	10-100
Quantity	20
Due Date	14 days from today
Consume Forecast	No

Line 3

Field	Data
Item	01010
Site	10-100
Quantity	20
Due Date	21 days from today
Consume Forecast	Yes
Update Installed Base	No

- 3 At line 4 click End Lines. Click Trailer. Click Next. Enter your initials in CR Initials. Click Next, then Back.

Review Forecast

- 4 Use Forecast Worksheet Maintenance (22.2) to review forecast for item 01010. Notice that sales of the first 20 consumes forecast. Sales of second 20 does not consume any forecast.

Review Master Schedule Summary

- 5 Use Master Schedule Summary Inquiry (22.18) to review for item 01010 at site 10-100.

Field	Data
Item	01010
Site	10-100
Start Date	Monday of the current week
Buckets	W (weekly)
Per/Bkt	1

Click Run

The display screen has two sections. In the top section, locate the following fields and record the following values:

QOH (quantity on hand): _____

MRP required flag: Yes/No

Plan Orders flag: Yes/No

Order Policy flag: _____

Review the bottom frame. Notice forecast amounts, sales order amounts, projected QOH, available to promise (ATP), and cumulative ATP.

Review Planning Data and Run Net Change MRP

- 6 Use Item Planning Maintenance (1.4.7) to review planning data for item 01010, and add the following data if necessary:

Field	Data
Order Policy	POQ
Order Period	7
Order Quantity	20
Manufacturing Lead Time	System calculation
Order Multiple	1

- 7 Use Regenerate Materials Plan (23.2) for site 10-100.
Note Enter your initials in the printer field, there is no output.
- 8 Use Master Schedule Summary Inquiry (22.18) to review item 01010 at site 10-100.
 - Make sure the master schedule meets the forecast demand of parent item 01010.
- 9 Use Master Schedule Detail Inquiry (22.21) to review. What information does it provide that the Master Schedule Summary Inquiry did not provide?

Review Action Messages and Approve Planned Orders

- 10 Use MRP Summary Inquiry (23.13) and MRP Detail Inquiry (23.16) to review for parent item 01010 and component items such as 60017 and 60018 at site 10-100.
- 11 Use Action Message Browse (23.6) to review for each of the items.
- 12 Use Planned Purchase Order Approval (23.11) to approve any MRP-planned work orders based on Action Message Browse.

Field	Data
Item Number	<blank>
Site	10-100 to 10-100
Release Date	<blank> to today's date or end of the week
Default Approve	Yes

Approve orders (pop-up confirmation window displays; enter Yes)

- 13 Use Purchase Requisition Browse (5.1.5) to check for items 60017 and 60018 to ensure that planned orders have been changed to purchase requisitions.

In the following activity we go through the basic processing functions and look at how they affect planning. During this activity you:

- Add purchase orders (POs) using purchase requisitions, and receive them
- Release MRP-approved work orders, issue components, report labor, receive and close work orders
- Add, ship, and invoice a sales order

Add and Receive Purchase Orders (Using Requisitions)

- 1 Use Purchase Order Maintenance (5.7) to add a purchase order with each of the component items (60017 and 60018) on a purchase order line.

Header information:

Field	Data
Purchase Order	Use default (system generated)
Supplier	10S1002
Due Date	<blank>

On the line, in the Req (requisition) field, use your look-up browse to select a requisition for each item

Update and exit

- 2 Use Purchase Order Receipts (5.13.1) receive your purchase order.

Approve Planned Work Orders

- 3 Use Planned Order Browse (23.9) to view MRP-planned orders that need your approval.
 - You will want to approve the first one at this time. Note the release date of this work order to be approved. You will need to enter that date in the next step.
- 4 Use Planned Work Order Approval (23.10) to approve the work order you noted in the previous step.

Field	Data
Item Number	01010
Site	10-100

Field	Data
Release Date	<blank>
to	Release date of work order to approve based on information from Planned Order Browse in previous step.

- 5 Use Work Order Browse (16.2) to see if the status of the planned order changed from P (Planned) to F (Firm Planned) when you did the approval.

Issue Components, Report Labor, Receive, and Close

- 6 Use Inventory Detail by Site Browse (3.3) to verify the availability of components in inventory for site 10-100.
- 7 Use Work Order Release/Print (16.6) to release your firm-planned order. Locate the work order by using the lookup. Accept all default values.

Use Work Order Component Issue (16.10) to issue components to your work order.

- 8 Use Labor Feedback by Work Order (16.20.1) to report labor against your work order: Use an employee from the pull down menu and report standard set-up and run time for all operations (10, 20, and 30) for your work order quantity.

Important Time Ind. = Decimal Hours

These standard times can be viewed on the work order routing that was printed when the order was released.

- 9 Use Work Order Receipt (16.11) to receive your work order quantity of item 01010 into inventory and close the work order.

Field	Data
Multi Entry	Yes
Lot/Serial Number	MD9500021
Quantity	10
Create list of serial numbers	Yes

Click Next, then Back until Remarks field is displayed. Click Next.

Display Items and Lot/Serial detail = Yes

Is all the information correct = Yes

Click Back to exit.

- 10 Use MRP Summary Inquiry (23.13) to check item 01010.

Add, Ship, and Invoice a Sales Order

- 11 Use Sales Order Shipments (7.9.15) to ship line 1 of your sales order. Do not ship line 2.
Enter Line 1 Manually

Field	Data
Multi Entry	Yes
Lot/Serial Number	MD9500021

Field	Data
Quantity	10
Create list of serial numbers	Yes

Enter Line 2 Manually, Quantity 0.

12 Use Invoice Post and Print Invoice (7.13.4) to print and post the invoice.

13 Use Customer Account Activity (27.17.3) to review the customer's account.

Answers to Order Policy and Modifier Activity

Period	1	2	3	4	5	6	7	8	9	10
Demand	25	30	20	35	25	30	25	35	30	25
LFL	25	30	20	35	25	30	25	35	30	25
FOQ = 35	35	35	35	35		35	35	35	35	
POQ 2 periods	55		55		55		60		55	
POQ 2 periods Min Qty = 60	60		60		60		60		60	
POQ 2 periods Multi Qty = 25	75			75		50		75		25

