



User Guide

Volume 6

MASTER FILES

ITEMS/SITES
PRICING
PRODUCT CHANGE CONTROL
ADDRESSES
INTRASTAT
INVENTORY CONTROL
PHYSICAL INVENTORY
TAXES



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Contents

ABOUT THIS GUIDE	1
What Is in This Guide?	2
Other 9.0 Documentation	2
Online Help	2
QAD Web Site	3
Conventions	3
Windows Keyboard Commands	3
Character Keyboard Commands	4
CHAPTER 1 INTRODUCTION TO MASTER FILES	7
Items/Sites	8
Pricing	8
Product Change Control (PCC)	9
Addresses	9
Intrastat	9
Inventory Control	9
Physical Inventory	10
Taxes/GTM	10
SECTION 1 MASTER FILES	11
CHAPTER 2 ITEMS/SITES	13
Introduction	14

Sites	14
Locations	14
Items	15
Product Lines	15
Items	15
General Item Data	17
Codes vs Master Comments	19
Inventory Data	19
Shipping Data	21
Planning Data	22
Cost Data	23
Customer and Supplier Items	24
Product Lines	25
Product Line Accounts	26
Alternate Product Line Accounts	27
Sites	28
Locations	30
Inventory Status Codes	32

CHAPTER 3 PRICING 35

Introduction to MFG/PRO Pricing	36
Using Best Pricing	38
Planning for Best Pricing	39
Setting Pricing Defaults	41
Setting Up Analysis Codes	42
Setting Up Item Price Break Categories	49
Creating and Maintaining Price Lists	50
Repricing Orders in Sales Order Repricing	68
Repricing in Sales Order Maintenance	72
Understanding Sales Order Maintenance Fields	74
Using List/Discount Table Pricing	76
Creating Price Lists	77
Generating Price Lists by Item	80
Copying Price Lists	81

Processing List/Discount Prices	84
Pricing Setup	85
CHAPTER 4 PRODUCT CHANGE CONTROL.....	87
Introduction	88
PCR/PCO Life Cycle	91
PCR Life Cycle	91
PCO Life Cycle	92
Setting Up PCC	94
Preparing Data for Use with PCC	95
Setting Up the PCC Control File	96
Defining Groups, Routing Slips, and Change Types	97
Creating PCRs and PCOs	107
Using PCR/PCO Function Maintenance	109
Maintaining Text Files	111
Maintaining Item Files	111
Maintaining Product Structure Files	113
Maintaining Routing Files	115
Maintaining Formula Files	116
Maintaining Process Files	117
Maintaining Item Specifications	117
Maintaining Trailers	118
Reviewing PCO Data	119
Routing PCRs and PCOs for Approval	120
Approving PCRs and PCOs	121
Rerouting PCOs	122
Detail Approval Maintenance	122
Incorporating PCOs into Production	122
PCO Release and Distribution	123
Incorporation Planning Report	124
Incorporation Selection	125
Incorporation	126
Implementation	126
Closing PCRs and PCOs	127

Importing and Exporting PCRs and PCOs 127

Setting Up PCC Security 128

 Access to PCO Maintenance Detail Functions 128

 Restricting Access to Other MFG/PRO Functions 128

CHAPTER 5 ADDRESSES 131

Introduction 132

 Address List Types 134

Setting Up Company Addresses 135

 Company Banks 135

 Company Addresses for Purchase Orders 136

 Company Address and Taxes 136

Setting Up Salesperson Addresses 136

Setting Up Customer Addresses 137

 Customer Credit Data 139

 Customer Freight Data 140

 Other Customer Data 140

Adjusting Credit Limits 141

Setting Up Supplier Addresses 142

Setting Up Employee Addresses 143

Setting Up Carrier Addresses 143

Setting Up Customer/Supplier Bank Addresses 144

Setting Up Credit Terms and Trailer Codes 146

 Proximo Terms 147

 Base Date 149

 Credit Terms Interest 149

 Base Days 150

 Trailer Codes 151

Setting Up Freight Charges 151

Changing or Merging Address Codes 156

CHAPTER 6 INTRASTAT 157

Introduction 158

Implementing Intrastat 160

Setting Up Intrastat Codes	161
Setting Up Addresses for Declarants and Agents	162
Setting Up the Intrastat Control File	162
Setting Up Commodity Codes	165
Setting Up Intrastat Item Data	166
Entering Country Codes for Customers and Suppliers	168
Entering Net Weights for Intrastat Items	168
Recording Intrastat Data for Orders	169
Entering Intrastat Data in Sales Order Maintenance	169
Entering Data in Order Intrastat Data Maintenance	170
Manually Creating Intrastat History	171
Printing Intrastat Declarations	172
Reprinting Intrastat Declarations	174
Reviewing Intrastat History Information	175
Deleting and Archiving Intrastat History	175
Types of Intrastat Data	176

CHAPTER 7 INVENTORY CONTROL 177

Introduction	178
Setting Up the Inventory Control File	178
Creating Inventory Detail Records	180
Creating Inventory Transactions	180
Transfers	181
Receipts	182
Issues	182
Shipping Documents	183
Creating Inventory Transaction History	183
Creating Lot/Serial Number History	185
Performing Cycle Counts	186
ABC Class Code	186
Cycle Counting Procedure	187
Creating Inventory Reports	189
Stock Status Report	189
Reorder Report	189

Item ABC Status Report/Update	189
Inventory Detail Report	190
Inventory Detail by Location	190
Current Surplus Inventory Report	190
Projected Surplus Inventory	191
Inventory Valuation Reports	191
Checking Inventory Availability	192

CHAPTER 8 PHYSICAL INVENTORY 193

Introduction	194
Deleting/Archiving Old Tags	194
Freezing Inventory Balances	195
Creating/Printing Tags	195
Entering Initial Tag Counts	196
Reviewing Results	197
Zeroing/Voiding Unused Tags	197
Updating Inventory Balances	198

SECTION 2 TAXES 199

CHAPTER 9 INTRODUCTION TO TAXES 201

Taxes in MFG/PRO	202
Regional Tax Systems	202
Global Tax Management	203
Advantages	203
Considerations	204
Tax Elements	204

CHAPTER 10 REGIONAL TAX SYSTEMS..... 207

Introduction	208
U.S. Sales Tax	209
Value Added Tax (VAT)	210

Canadian Taxes	211
CHAPTER 11 IMPLEMENTING GTM	213
Implementation Overview	214
Setting Up Country Codes	215
Setting Up State, Province, County Codes	216
Setting Up Tax Zones	216
Tax Zone Hierarchies	217
Tax Zone Maintenance	218
Setting Up Tax Types	220
Setting Up Tax Classes and Usages	221
Setting Up Rounding Methods	223
Setting Up Tax Environments	224
Setting Up Trailer Charges	228
Setting Up Tax Bases	229
Setting Up GL Accounts	231
Setting Up Tax Rates	232
Tax Rate Maintenance	234
Tax Rate Copy/Update	237
Setting Up the GTM Control File	239
Updating Other MFG/PRO Records	240
Company and Site Addresses	240
Customers, Suppliers, and End Users	240
Product Lines and Items	243
Switching to Live GTM Processing	243
Implementing Special Taxes	243
Tax Exemptions	243
Tax Based on Partial Item Amounts	244
Custom Tax Calculation Methods	244
Luxury Taxes	246
Capped Taxes	246
Recoverable Taxes	246
Tax-on-Tax	247
Discounted Taxes	248

Retained Taxes	249
Absorbed Taxes	249
Reverse-Calculated Taxes	250

CHAPTER 12 PROCESSING GTM 253

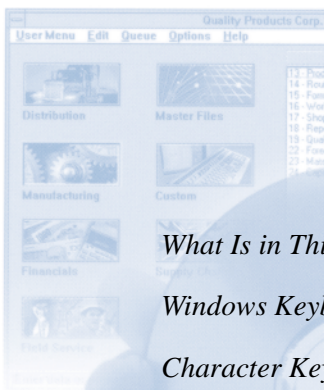
Calculating Taxes	254
Specifying Tax Data	257
Viewing Tax Amounts	259
Correcting Transaction Tax Amounts	261
General Ledger Effects	262
Standard Cost	263
Average Cost	275
Reporting	287
Printing Tax Information on Documents	287
Tax Reports	287
Fixing Common Tax Problems	288

CHAPTER 13 GTM CONVERSIONS 289

Introduction to GTM Conversions	290
MFG/PRO Prerequisites	290
Pre-conversion Planning	291
Post-conversion Procedures	292
Converting VAT Taxes to GTM	292
Setting Up GTM	294
Converting Master Records	300
Converting Transaction Records	304
Converting U.S. Taxes to GTM	311
Setting Up GTM	312
Converting Master Records	323
Converting Transaction Records	327
Converting Canadian Taxes to GTM	335
Setting Up GTM	336
Converting Master Records	347
Converting Transaction Records	352

INDEX 361

About This Guide



What Is in This Guide? 2

Windows Keyboard Commands 3

Character Keyboard Commands 4



Routing Maintenance (Date Based)

Routing Code:	10-15000	MANUFACTURING
Operation:	20	
Standard Operation:		
Work Center:	1030	INSPECTION, ALL SITES
Machines:		
Description:	INSPEC PER PROC-000	
Machines per Op:	1	
Overlap Units:	1	
Queue Time:	1.0	
Wait Time:	0.0	
Setup Time:	0.0	

What Is in This Guide?

This guide covers the modules and functions included under the Master Files icon on the main menu of MFG/PRO Version 9.0 for Windows.

Other 9.0 Documentation

- For an overview of new features and software updates, see the *9.0 Release Bulletin*.
- For software installation instructions, refer to the *9.0 Installation Guides*.
- For instructions on navigating the MFG/PRO environment, refer to the *9.0 User Interface Guide*.
- For information on using MFG/PRO, refer to the *9.0 User Guides*.
- For technical details, refer to the *9.0 File Relationships* and *9.0 Database Definitions*.
- To review MFG/PRO program screens, refer to the *Screen Book, Volumes 1–3*.
- To view documents online in PDF format, see the *9.0 Documents on CD*.

Online Help

MFG/PRO has an extensive online help system. Help is available for most fields found on a screen. Procedure help is available for most programs that update the database. Most inquiries, reports, and browses do not have procedure help.

For information on using the help system, refer to the *9.0 User Interface Guide*.

QAD Web Site

For MFG/PRO users with a QAD Web account, MFG/PRO documentation is available for viewing or downloading at:

<http://support.qad.com/documentation/>

To obtain a QAD Web account, go to:

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

The QAD Web site also has information about training classes and other services that can help you learn about MFG/PRO.

Conventions

MFG/PRO 9.0 is available in several interfaces: Windows, character, Web browser, and an interface for object-oriented programs. To standardize presentation, the documentation uses the following conventions:

- MFG/PRO screen captures reflect the Windows interface.
- References to keyboard commands are generic. For example, choose Go refers to F2 in the Windows interface and to F1 in the character interface. The following tables identify the keyboard commands for the Windows and character interfaces.

Windows Keyboard Commands

Navigation Commands	Keyboard Entry	Description
Go	F2	Moves to next frame.
End	Esc	Exits a frame, program, or menu.
Previous	F9 or up arrow	Retrieves previous record in a key data field.
Next	F10 or down arrow	Retrieves next record in a key data field.
Enter	Enter	Moves to next field within a frame.
Tab	Tab	Moves to next field within a frame.
Back Tab	Shift+Tab	Moves back one field within a frame.
Exit	Alt+X	Closes a program.

Navigation Commands	Keyboard Entry	Description
Run	Ctrl+R	Starts a program by name.
Save (object)	F12	In a key frame, moves to data entry; in data entry, saves and returns to key frame.
Print (object)	Ctrl+P	Prints browse or maintenance information.

Help Commands	Keyboard Entry	Description
Field Help	F1	Opens help on current field.
Procedure Help	Shift+F1	Opens help on current program.
Browse	Alt+F1	Displays choice of records.
Look-Up Browse	Alt+F2	Displays choice of records.
About	Ctrl+F1	Displays the program name.
Browse Options	F7	Opens the browse options window.
Browse Options Toggle	Alt+F	Turns the browse options on and off.
Browse Graph	Shift+F11	Opens the browse graphing window.
Field Name	Ctrl+F	Displays the field name.

Edit Commands	Keyboard Entry	Description
Delete Record	F5	Deletes an open record.
Cut	Ctrl+X	Cuts a field or selection to clipboard.
Copy	Ctrl+C	Copies a field or selection to clipboard.
Paste	Ctrl+V	Pastes data from the clipboard.

Character Keyboard Commands

Navigation Commands	Keyboard Entry	Control Key Entry	Description
Go	F1	Ctrl+X	Moves to next frame.
End	F4	Ctrl+E	Exits a frame, program, or menu.

Navigation Commands	Keyboard Entry	Control Key Entry	Description
User Menu	F6	Ctrl+P	Displays list of user-selected programs.
Previous	F9 or up arrow	Ctrl+K	Retrieves previous record in a key data field and scrolls up in look-up browses.
Next	F10 or down arrow	Ctrl+J	Retrieves next record in a key data field and scrolls down in look-up browses.
Enter	Enter		Moves to next field within a frame.
Tab	Tab		Moves to next field within a frame.
Back Tab	Shift+Tab	Ctrl+U	Moves back one field within a frame.
Menu Bar (object)	Esc, M		Accesses the menu bar.
Save (object)	F12		In a key frame, moves to data entry; in data entry, saves and returns to key frame.
Print (object)	Ctrl+P		Prints browse or maintenance information

Help Commands	Keyboard Entry	Control Key Entry	Description
Field Help	F2	Ctrl+W	Opens help on current field.
Procedure Help	F2	Ctrl+W	Opens help on current program.
Look-Up Browse	F2	Ctrl+W	Displays choice of records.
Browse Options	F7		Opens the browse options window.
Browse Options Toggle	Alt+F		Turns the browse options on and off.
Field Name	Ctrl+F	Ctrl+F	Displays the field name.

Edit Commands	Keyboard Entry	Control Key Entry	Description
Insert	F3	Ctrl+T	Enables text insertion.
Delete Record	F5	Ctrl+D	Deletes an open record.

Edit Commands	Keyboard Entry	Control Key Entry	Description
Recall (standard)	F7	Ctrl+R	Recalls last saved value in a field.
Cut	F8		Clears a field.
Copy	F11	Ctrl+B	Copies a field.
Paste	F11	Ctrl+B	Inserts value that you copied.
Multiple Copy (standard)	F12	Ctrl+A	Copies values from one or more fields and pastes them into the same fields of another record.
Clear Date	Shift+?		Clears the value in date fields.

Introduction to Master Files

Master files provide data to other MFG/PRO programs. This chapter gives an overview of MFG/PRO master files.

Items/Sites **8**

Pricing **8**

Product Change Control (PCC) **9**

Addresses **9**

Intrastat **9**

Inventory Control **9**

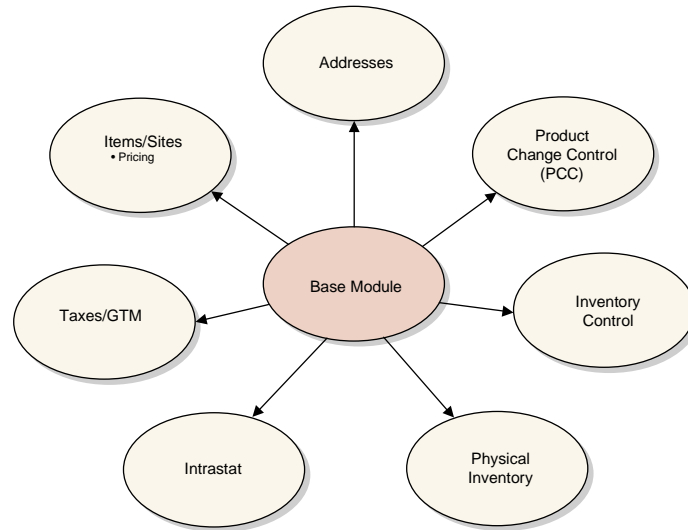
Physical Inventory **10**

Taxes/GTM **10**

Parameter	Value	Remarks
Routing Code	10-15000	MANUFACTURE CHILDRN
Operation	20	
Standard Operation		
Work Center	1030	INSPECTION, ALL SITE
Machine		
Description	INSPEC PER PROC-000	
Machines per Op	1	
Overlap Units	1	
Queue Time	1.0	
Wait Time	0.0	
Setup Time	0.0	

Master files provide basic business information to other MFG/PRO programs. Figure 1.1 shows the master files programs discussed in this volume.

Fig. 1.1
Master Files



Items/Sites

▶ See Chapter 2, “Items/Sites,” for details.

Items and sites are the foundation of all MFG/PRO modules. The Item/Sites master files define manufacturing and distribution sites, inventory locations, product lines and items. Customer and supplier item numbers are also defined, with pricing for each. Unit of measure conversions defined here support entry of alternate units of measure in other transactions.

▶ See *User Guide Volume 9: Compliance*.

While Compliance features are located on the Item/Sites menu, they are described in a separate volume.

Pricing

▶ See Chapter 3, “Pricing,” for details.

Pricing master files allow automatic pricing by providing price lists during key transactions. Two basic pricing models are used: best pricing model and list/discount pricing.

Product Change Control (PCC)

Product Change Control (PCC) is a flexible information storage tool to control and monitor product changes from inception through implementation. Item engineering data, product structures, routings, formulas, processes, and item specifications can be modified in PCC without affecting the rest of MFG/PRO. Use PCC to define approval cycles for product changes before the changes are incorporated into production files.

▶ See Chapter 4, “Product Change Control,” for details.

Addresses

The Addresses master files define customers, suppliers, salespersons, employees, carriers, banks, and company addresses. All address information is stored and maintained in these files. Also use Addresses to define freight charges, credit terms, trailer codes.

▶ See Chapter 5, “Addresses,” for details.

Shipping groups and documents are also defined in the Addresses/Taxes module. These records are used exclusively with shipping functions.

▶ See *User Guide Volume 2: Distribution*.

Intrastat

MFG/PRO Intrastat offers data collection and reporting tools for companies doing business in European Union member countries and for companies requiring written documentation of inventory movement. Intrastat collects data in a history file whenever there is sales or purchasing activity, then uses the data to generate Intrastat reports.

▶ See Chapter 6, “Intrastat,” for details.

Inventory Control

Inventory Control receives transactions from other MFG/PRO applications and provides balance and availability information where needed. It tracks intersite transfers and their financial consequences, such as cost variances, and automatically posts intercompany transfers. Inventory Control is fully integrated with MFG/PRO.

▶ See Chapter 7, “Inventory Control,” for details.

Physical Inventory

▶ See Chapter 8, “Physical Inventory,” for details.

MFG/PRO Physical Inventory conducts physical counts of all inventory items.

Taxes/GTM

▶ See “Taxes” on page 199.

MFG/PRO supports three different tax management systems: U.S. taxes, Canadian taxes, and VAT taxes. In addition, Global Tax Management (GTM) supports tax systems in South America, Asia, and other areas, while completely supporting U.S. sales tax, VAT, and GST/PST.

Use Taxes/GTM to define tax rates and exemptions and assign them to customers, suppliers, product lines, and items. GTM includes conversion programs for customers planning to convert to GTM from other tax systems.

SECTION 1

Master Files

This section describes how to set up and use the master file records that form the base data in your MFG/PRO database.

Introduction to Master Files **7**

Items/Sites **13**

Pricing **35**

Product Change Control **87**

Addresses **131**

Intrastat **157**

Inventory Control **177**

Physical Inventory **193**

Routing Maintenance (Main Screen)

Routing Code:	10-15000	MANUFACT: CHILIN
Operation:	20	
Standard Operation:		
Work Center:	1030	INSPECTION, ALL SITE
Machine:		
Description:	INSPEC PER PROC-000	
Machines per Op:	1	
Overlap Units:	1	
Queue Time:	1.0	
Wait Time:	0.0	
Setup Time:	0.0	
Ready Production:		

CHAPTER 2

Items/Sites

This chapter discusses two essential elements in product definition: items and product lines. Item records are used to define the actual products that are kept in inventory and/or planned by MRP and DRP. Product lines group items for planning and accounting purposes. In addition, sites, locations, and inventory status codes are introduced.

Introduction **14**

Items **15**

Product Lines **25**

Sites **28**

Locations **30**

Inventory Status Codes **32**



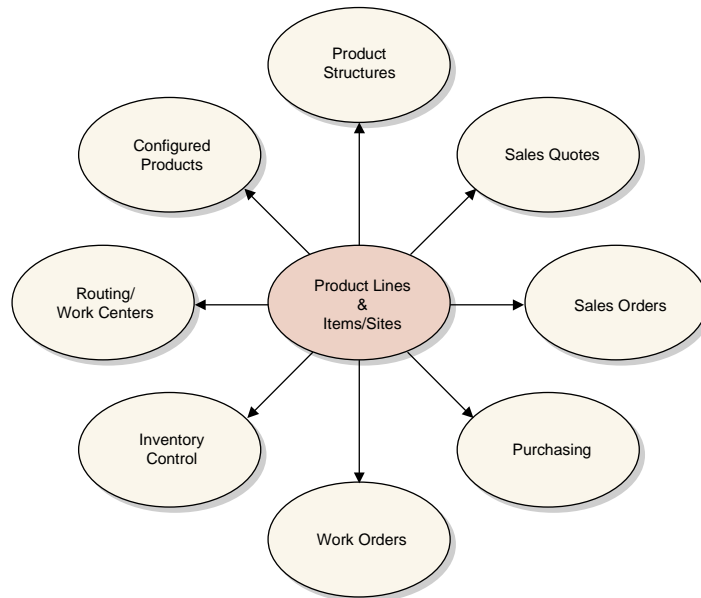
Routing Code: 10-15000 MANUFACTURE CHAIN
Operation: 20

Standard Operation		
Work Center	1030	INSPECTION, ALL SITE
Machines		
Description	INSPEC PER PROC-000	
Machines per Op	1	Allocation
Overlap Units	1	
Queue Time	1.0	
Wait Time	0.0	
Setup Time	0.0	
Ready Production		

Introduction

Item/site information supplies a foundation for many other functions in MFG/PRO. Figure 2.1 illustrates how items and sites are central to other processes in MFG/PRO.

Fig. 2.1
Items/Sites



Sites

All inventory related functions within MFG/PRO can be done by site. A site may be a manufacturing or distribution facility that requires separate planning and inventory control.

Locations

Within each site, inventory is held in locations. These may be temporary or permanent, and they may be assigned rules which govern how inventory in the location can be issued or received.

Items

Items are defined for use throughout the system. The characteristics of an item include inventory data such as ABC class and shelf life, planning data such as order policies and lead time, and price and cost data. The same item may have different characteristics at each site.

Product Lines

For planning and reporting purposes, items are grouped by product line.

Items

In MFG/PRO, item records are created primarily for items and products that are stored in inventory and/or planned by MRP or DRP. At this time, items are assigned to product lines and default data used in inventory control, sales, purchasing, planning, and costing is loaded. In MFG/PRO, you can customize costs and other information by company site once you set up the initial record.

Figure 2.2 shows the major elements that are implemented during product definition, in the order they are set up. Only product lines and items are mandatory. Usage of the other elements varies by company and is described in other chapters.

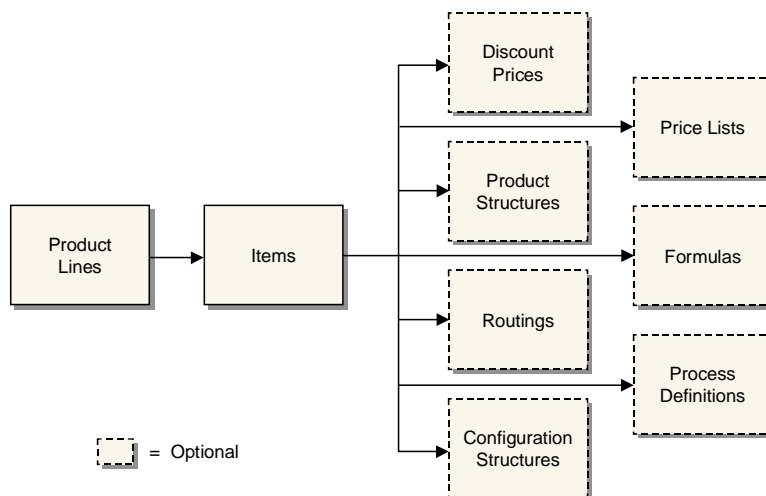


Fig. 2.2
Product Definition
Flow

Item data is divided into four categories that roughly parallel how companies typically divide up the maintenance responsibility. Table 2.1 lists the data types and responsible departments.

Table 2.1
Item Data

Data Type	Responsible Department
General Data	Product Engineering or Research and Development
Inventory Data	Inventory Control or Materials Management
Planning Data	Material Planning
Cost Data	Cost Accounting

Because some information serves multiple programs, a field that is the responsibility of one particular organization within your company may not be where you expect it. For example, the default list price for a product might be determined by the sales department, but in MFG/PRO, this field is considered cost data, normally maintained by accounting.

To support this potential division of responsibilities, there are two ways to load item master data:

- From Item Master Maintenance (1.4.1), you can enter all item data. This is the only program that can be used to create new item numbers. This method is the most convenient.
- From separate programs, you can create the item record (1.4.3), then enter planning data (1.4.7), inventory data (1.4.5), and cost data (1.4.9). This method offers the most security, because access to the individual programs can be password-restricted.

If your company manages the same items at multiple sites, you can control, plan, and cost items separately for each site. Data can be differentiated by site using the item-site data programs (1.4.16, 1.4.17, 1.4.18). When MFG/PRO processes an item at a particular site, it first looks for item data specific for the site. If none is found, the system uses the item master record.

Internally, the system requires one and only one item master record for each item. Item-site data is optional.

General Item Data

Every item has some relatively static information that describes its general characteristics, regardless of how it is used. This includes the item's description, product line, unit of measure, drawing, revision, status, and so on.

Any general data you set up for an item must be valid for all sites in the system, since this data cannot be defined per site. If general item data for an item varies by site, you must set up the item with different item numbers.



Fig. 2.3
Item Master
Maintenance
(1.4.1), Item Data

The item number, description, product line, and unit of measure (UM) are the most visible and most important engineering fields.

The item number is the index for item data. Whenever you enter a number in an Item field, it is validated against numbers in the item master. The fields for unit of measure, group, type, and status permit virtually any combination of characters. Most of these fields are validated with generalized codes, and look-up browses can be set up.

♦ See *User Guide Volume 11: Manager Functions* for details on generalized codes.

Item Number and Description

Most companies have not escaped controversy when determining conventions for item numbering and item descriptions. Proponents of significant, semi-significant, and nonsignificant item numbering schemes argue the advantages and disadvantages of coding information into an item number.

With MFG/PRO, any numbering scheme is possible. Using a significant numbering scheme may be less important because users have access to help windows that can be searched by item number or description. This

works best when you ensure that descriptions are consistent with each other. MFG/PRO browses can be easily customized to sort by any field.

Item Unit of Measure

The item unit of measure (pt_um) is used for inventory balances, product structures, manufacturing orders, planning, and reporting. Values can be defined with generalized codes.

Different areas of a company may handle an item using different units of measure. For example, an item may be moved in pallets but sold by the box. For these cases, set up alternate units of measure and conversion factors in Unit of Measure Maintenance (1.13).

When items are handled in different units of measure on purchase orders, sales orders, and inventory transactions, the system automatically converts the quantities from an alternate unit of measure to the item unit of measure using the predefined conversion factors. In most cases, either unit may be entered on transactions.

The formula for alternate unit of measure is:

$$\text{Standard UM} \times \text{Conversion} = \text{Alternate UM}$$

Grouping Fields

If grouping items by product line does not satisfy the planning and reporting requirements of all company departments, the item type and group fields can also be used to group items. Both fields are used in the planning and sales modules. The item type is also used for product costing functions and cycle count reporting.

The promo group indicates an item is priced using the Advanced Pricing Management module. Design groups are used in the Product Change Control module to determine who is responsible for changes affecting the item.

Codes vs Master Comments

Codes such as group and type are useful because they provide a short, convenient way to categorize and identify items. However, more extensive information related to an item may be needed. For example, Product Engineering maintains information concerning the implementation of engineering change orders for an item. Purchasing tracks specific supplier requirements and Quality Engineering stores inspection-related text.

In MFG/PRO, these requirements can be met by recording master comments. Each master comment can have up to 99 pages of text. Master comments are identified by reference, type, and language codes. When master comments are added for an item, the item number is entered as the reference code.

Use the Type field to identify different master comment records for the same item number. For example, the type codes PE, PO, and QE can be used for Product Engineering, Purchasing, and Quality Engineering. To review all the master comments entered for an item, print the Item Master Comments Report (1.5.12).

Master comments do more than store and organize textual information for an item. They can also be copied into documents such as purchase orders, sales quotations, and sales orders.

Inventory Data

Inventory control is responsible for the security, movement, accuracy, and, in some cases, the allocation of inventory. Every item has inventory control information associated with it. MFG/PRO uses this information to track and control the movement of the item. For example, if an item has an expiration date, MFG/PRO does not issue the item after that date.

Item Inventory Data					
ABC Class:	A	Avg Int:	90		
Lot/Serial Control:		Cyc Cnt Int:	120		
Site:	20000	Shelf Life:			
Location:	100	Allocate Single Lot:	no		
Location Type:		Key Item:	no		
Auto Lot Numbers:	no	PO Rcpt Status:		Active:	no
Lot Group:		WD Rcpt Status:		Active:	no
Article Number:					

Fig. 2.4
Item Master
Maintenance
(1.4.1), Item
Inventory Data

The following briefly explains how inventory control fields are used.

ABC Class Code. This code classifies items by level of importance, such as dollar value, with class A being the most important. The system uses the ABC class code with cycle counting. You can add the code directly or leave it blank. If left blank, you can have the system calculate an item's ABC class code by running the Item ABC Status Report/Update (1.5.9 or 3.6.3).

Lot/Serial Control. The Lot/Serial Control flag determines whether the item must have a lot or serial number when you process receipts or issues for it. If set to L (Lot), you cannot issue or receive the item without a lot number. If set to S (Serial), you cannot issue or receive the item without a serial number. If left blank, lot/serial numbers are not required for the item, but you can record them if you want.

Site. The site where you normally manufacture or store the item. The site defaults from the Inventory Control File (3.24), but can be overridden.

Location. This location displays as the default for inventory transactions for the item.

Location Type. Type identifies special storage requirements of the item such as flammable, humidity controlled, outside. If you assign the item a location type, it can only be received into a location that matches.

Automatic Lot Numbers. This field determines if the system assigns lot numbers automatically. If Yes, the system assigns the work order number as the lot number. If you are using the Compliance module, lot numbers can be generated based on a lot group format.

Average Interval. The number of calendar days used as the averaging interval in ABC computations.

Cycle Count Interval. The number of calendar days between cycle counting this item.

Shelf Life. Shelf life indicates the number of calendar days you can hold the item in inventory before it becomes unusable. The system adds this figure to the item's receipt date to calculate the expiration date. You cannot allocate, ship, or issue expired inventory.

◆ See *User Guide Volume 9: Compliance* for information on lot groups.

Allocate Single Lot. This field indicates whether the system should always fill sales orders and work orders from a single lot of this item. If Yes, you can manually allocate orders from more than one lot using Sales Order Manual Allocations (7.1.6) or Work Order Bill Maintenance (16.13.1), but the system displays a warning message.

Key Item. Indicates if this item must be available before a work order can be released. If Yes, the system does not release work orders and print picklists until there is enough of the item to allocate.

PO Receipt Status. A default inventory status for the item when received on a purchase order. This field is optional. If not specified, the status of the location or site is used as a default.

WO Receipt Status. A default inventory status for the item when received on a work order. This field is optional. If not specified, the status of the location or site is used as a default.

Shipping Data

The shipping department uses item shipping data to determine freight charges. For example, freight charge calculations use the item's shipping weight to determine freight costs.

▶ See “Setting Up Freight Charges” on page 151 for details.

Item Shipping Data	
Corp Comm Code:	<input type="text"/>
Ship Weight:	1.00 <input type="text"/> lb
Freight Class:	<input type="text"/>
Net Weight:	1.00 <input type="text"/> KG
Volume:	100.00 <input type="text"/> CI

Fig. 2.5
Item Master Maintenance (1.4.1), Item Shipping Data

In some business environments, it is a common practice to use commodity codes to group items for internal business needs. For example, all suppliers providing a certain kind of commodity—represented by a commodity code—may be rated together, regardless of the particular item.

Note Corporate commodity codes are distinct from the commodity codes used to classify goods for Intrastat reporting purposes.

Create valid commodity codes and associate groups of items with them in Commodity Code Maintenance (1.4.19). The associated code then displays in Item Master Maintenance and can be modified if needed.

▶ See “Setting Up Commodity Codes” on page 165 for details about Intrastat codes.

Planning Data

▶ For details about MRP, see *User Guide Volume 3: Manufacturing*.

The material planning department uses item planning data to determine how and when to replenish inventory. This data affects MRP, purchasing, manufacturing (work orders, repetitive schedules, and master scheduling), configured products, and costing. Most of the fields are used in material requirements planning (MRP).

Fig. 2.6
Item Master Maintenance (1.4.1), Item Shipping Data

Item Planning Data					
Master Sched:	<input type="checkbox"/> yes	Buyer/Planner:	<input type="text"/>	Issue Policy:	<input type="checkbox"/> yes
Plan Orders:	<input type="checkbox"/> yes	Supplier:	<input type="text"/>	Phantom:	<input type="checkbox"/> no
Time Fence:	<input type="text"/> 0	PO Site:	<input type="text"/> 10000	Min Ord:	<input type="text"/>
MRP Required:	<input type="checkbox"/> yes	Pur/Mfg:	<input type="text"/> M	Max Ord:	<input type="text"/>
Order Policy:	<input type="text"/> POQ	Configuration:	<input type="text"/> ATO	Ord Mult:	<input type="text"/>
Order Qty:	<input type="text"/> 0	Mfg LT:	<input type="text"/> 1	Yield%:	<input type="text"/> 100.00%
Batch Qty:	<input type="text"/> 1.0	Pur LT:	<input type="text"/> 0	Run Time:	<input type="text"/> 0.01666667
Order Period:	<input type="text"/> 7	Inspect:	<input type="checkbox"/> no	Setup Time:	<input type="text"/> 0.000
Safety Stk:	<input type="text"/> 0	Ins LT:	<input type="text"/> 0	EMT Type:	<input type="text"/> NON-EMT
Safety Time:	<input type="text"/> 0	Cum LT:	<input type="text"/> 2	Auto EMT Processing:	<input type="checkbox"/> no
Reorder Point:	<input type="text"/> 0	Network Code:	<input type="text"/>		
Rev:	<input type="text"/> AA	Routing Code:	<input type="text"/>		
		BOM/Formula:	<input type="text"/>		

The Pur/Mfg (purchase/manufacture) code determines how items are planned, costs are calculated, and cumulative lead times are calculated. This code can be:

- Purchased: obtained from suppliers
- Manufactured: produced internally, typically with work orders
- Line: produced internally, typically on a production line
- Routable: produced internally
- Distribution: obtained from distribution sites
- Configured: configured to customer order and produced internally
- Family: a special type of item used for operations planning

The system assumes items with a blank Pur/Mfg code are manufactured.

Cost Data

The item cost data is divided into three sections:

- Price
- General ledger (GL) cost
- Current cost

Price

Price and costs are entered in base currency specified in the System/Account Control File. The item master price is the default list price in sales transactions, if price lists are not being used. You can only assign one list price directly to an item.

▶ See Chapter 3, “Pricing,” for details on using price lists.

The taxable status and tax code default from the product line and are used in the purchasing, sales, and service/support management modules.

GL and Current Costs

In MFG/PRO, the item GL costs are the standard costs used for GL transactions. Both the GL costs and current costs are the costs for the item at the site specified in the inventory data section.

In turn, each of these costs has five cost categories: material, labor, burden, overhead, and subcontract. Burden is sometimes known as variable burden or variable overhead. Overhead is known as fixed burden or fixed overhead. Use Item-Site Cost Maintenance (1.4.18) to update the GL and current costs for all sites.

Both the GL and current costs can be updated automatically during routing and product structure roll-ups by using item cost utilities in the Item Data Menu (1.4) or by using cost simulation programs in the Cost Management module.

▶ These programs are discussed in *User Guide Volume 4: Financials*.

Customer and Supplier Items

A customer may prefer to order using their own item number or an industry standard number rather than the one your company uses.

Example Contractors may be required to order with a government procurement code instead of your item number.

Use Customer Item Maintenance (1.16) to set up a cross-reference between your item numbers and those used by a customer. When a customer item number is specified on a sales order, the system accesses the price, description, and other information associated with your item number. Both item numbers appear on all sales and shipping paperwork.

You can also use Customer Item Maintenance to set up a cross-reference between internal numbering systems. For example, your sales department may have catalog numbers that differ from the item numbers used by manufacturing. To set up an internal cross-reference, leave the Customer/Ship-to field blank.

The same need to cross-reference numbers may exist for your suppliers. Use Supplier Item Maintenance to create a cross-reference between your suppliers' numbers and your item numbers, as well as track the quoted price and lead time. Specify supplier item numbers in Blanket Order Maintenance, Purchase Order Maintenance, and Scheduled Order Maintenance. Both your number and the supplier number displays on reports, as well as in Purchase Order Receipts.

Product Lines

A product line is a group of similar items or products. At the corporate level, a company's sales and operations are often planned, reported, and analyzed by product line rather than by individual item or product. This higher-level view of activity makes it easier to relate day-to-day operations to the company sales and operations plan.

By dealing with an aggregate, it is sometimes possible to get a clearer, more accurate picture. For example, a shipment forecast for a product line is more accurate than a forecast for a specific item.

Before you define product lines, you should determine the most important criteria for grouping items. Unfortunately, different departments usually want to divide items differently. For example, Sales may want to group products by target market, but Manufacturing wants to group products by production method.

In MFG/PRO, product lines group items for accounting and planning purposes:

- Each product line is associated with specific GL accounts for inventory, sales, and purchases. By default, transactions for items belonging to the product line update these GL accounts. You can also set up alternate product line accounts when it is necessary to aggregate inventory or sales by site.
- All of the planning programs including product line planning, resource planning, MRP, MPS, and forecasting can be run by product line.
- On sales, purchasing, and service/support management transactions, an item's taxable status defaults from the product line.

MFG/PRO is a standard cost system, although it can be used as an average cost system. The product line GL accounts are oriented to standard cost accounting. The values for these accounts default from the System/Account Control File (36.1). The accounting department is usually responsible for approving these.

▶ See "Alternate Product Line Accounts" on page 27 for details.

▶ See *User Guide Volume 4: Financials* for details on the control file.

Product Line Accounts

Table 2.2 lists each product line account, the account type, and the programs that use the accounts.

Table 2.2
Product Line
Accounts

	Account	Type	Use
Inventory Accounts	Inventory	Asset	Inventory Transactions
	Inv Discrep	Expense	Inventory Counts
	Scrap	Expense	WO Receipt
	Work in Process	Asset	Work Orders, Backflush, Rep
	Method Variance	Expense	Work Orders, Rep, SFCs
	Cost Revalue	Expense	GL Cost Change
Sales Accounts	Sales	Income	Invoice Post
	Sales Disc	Expense	Invoice Post
	(Tax) Exempt Sales	Income	Invoice Post (Canadian)
	COGS Material	Expense	SO Shipment
	COGS Labor	Expense	SO Shipment
	COGS Burden (Variable)	Expense	SO Shipment
	COGS Overhead (Fixed)	Expense	SO Shipment
	COGS Subcontract	Expense	SO Shipment
Purchasing	Purchases	Expense	PO Receipt (Non-Inventory)
	PO Receipts (Accrued AP)	Liability	PO Receipt, Voucher
	Overhead Appl(ied)	Expense	PO Receipt
	PO Price Var	Expense	PO Receipt
	AP Usage Var	Expense	Voucher
	AP Rate Var	Expense	Voucher
Work Order	Floor Stock	Expense	WO Close
	Material Usage Var	Expense	WO Close
	Material Rate Var	Expense	WO Issue, WO Close
	Cost of Production	Expense	Nonproductive Labor
	Subcontract Usage Var	Expense	WO Close
	Subcontract Rate Var	Expense	WO Close

	Account	Type	Use
Service	Service Labor	Expense	Call Activity Recording
	Service Overhead	Expense	Call Activity Recording
	Service Expense	Expense	Call Activity Recording
	Expense Due	Liability	Call Activity Recording
	Service Returns	Expense	Call Activity Recording

The Taxable and Tax Code fields determine how taxes are usually processed for items belonging to a product line. How these fields are used depends on the tax method (U.S. Sales tax, VAT, Canadian taxes, Global Tax Management) specified in the System/Account Control File (36.1).

Alternate Product Line Accounts

In some applications, you may need to set up alternate inventory or sales accounts for the same product line.

For example, you can specify only one inventory account in Product Line Maintenance (1.2.1). If different locations within a site are used for raw materials, WIP, and finished goods, you probably do not want to post inventory transactions for these locations to the same inventory account.

Assign alternate inventory accounts to a product line for a site or site and location using Inventory Account Maintenance (1.2.13).

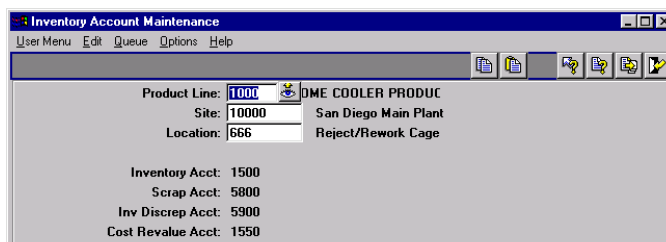


Fig. 2.7
Inventory Account
Maintenance
(1.2.13)

In Sales Account Maintenance (1.2.17), alternate sales accounts can be assigned to a site, site and customer type, site and channel, or site, customer type, and channel. Channel is entered on sales quotes and orders to indicate the distribution channel for a sale.

Fig. 2.8
Sales Account
Maintenance
(1.2.17)

Product Line:	1000	HOME COOLER PRODUC
Site:	10000	San Diego Main Plant
Customer Type:		
Channel:		
Sales Acct:	3000	0100
Sales Disc Acct:	3900	0100
COGS Material Acct:	5050	0100
COGS Burden Acct:	6480	0100
COGS Labor Acct:	6860	0100
COGS Overhead Acct:	6495	0100
COGS Subcontract Acct:	5070	0100

During transaction entry, MFG/PRO automatically retrieves and uses alternate inventory accounts. Alternate sales accounts are retrieved and displayed and can be modified if needed.

Sites

The site code identifies a specific warehouse or a group of buildings at the same physical location. The site code in the inventory detail record is a basic unit for inventory control and planning.

Sites are assigned to a specific GL entity and database. Some programs, such as MRP, work vertically within single sites. Others, such as distribution requirements planning (DRP) and consolidated order processing, work horizontally across two or more sites and possibly two or more databases.

The system uses sites for inventory records, item costing, purchasing, sales quotations, sales orders, forecasting, master scheduling, MRP, and DRP. Not all programs operate by site. For example, departments and work centers are not site specific.

▶ See *User Guide Volume 5: Supply Chain Management* for information on DRP.

Setting up sites for a single company is a very straightforward process. The site entity defaults to the system entity and the database reference is left blank. However, when MFG/PRO is used to support multiple company operations, several important questions must be resolved:

- How many databases will be used?
- Will consolidated order processing be used?
- Will distribution requirements planning be used?

The answers to these questions are interrelated and require familiarity with a number of other issues. Before answering these questions, be sure to review the rest of this chapter.

For multiple, connected databases such as those used for consolidated order processing or DRP, all the site codes in the system must be set up in each database. When you set up the site code, you assign each site to a specific database. When MFG/PRO looks for information about this site, it looks only in the assigned database.

If there are multiple databases that are functionally independent from each other, as would be the case for consolidated order processing, each database requires only the site codes for its own operations.

Tip
Database connections are set up using programs on the Multiple Database menu (36.6).

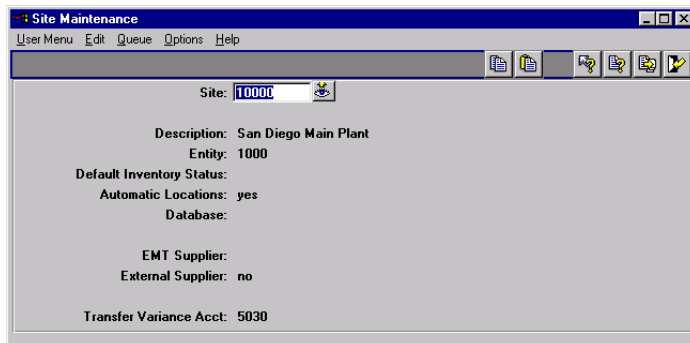


Fig. 2.9
Site Maintenance
(1.1.13)

Site. Enter a unique identifier for a site. Even though consolidated order processing and DRP may not be implemented in the immediate future, it is a good idea to make site codes unique across all databases.

Entity. Entity codes differentiate GL transactions for separate companies or businesses. The entity code assigned to the site determines the GL entity for transactions created when inventory is moved into or out of it.

When the operations for a single company (entity) are controlled within one database, the system entity, the GL entity defined as the primary entity, and the site entities should be identical. This remains true in each operating database, even if multiple databases are used for consolidated order processing or distribution requirements planning.

A site cannot be deleted if it is in use by any Inventory Movement Code security record.

Locations

Tip
Use Location Maintenance (1.1.18) to create locations.

▶ See “Setting Up the Inventory Control File” on page 178 for details.

A location defines an area such as a shelf, bin, or tank within a site. Since inventory locations are a subset of site, the same location codes can be used for different sites. A site can have an unlimited number of locations. Although the system permits the use of blank location codes, this is not recommended.

Select a location naming convention that takes advantage of how inventory is detail allocated (picked). When work order and sales order picklists are printed, the system looks through locations for available inventory and makes detail allocations. It searches location codes in ascending or descending order according to the setting in the Inventory Control File (3.24).

Because of this, numeric location codes such as 1000, 1100, and 8000 are recommended. If you use significant codes and allocate in ascending order, the system allocates inventory in alphabetic order so that Inspect would come before Stores.

Permanent/Temporary Locations

Locations can be defined as permanent or temporary. When you define a location as permanent, the system maintains all location detail records for that site/location until they are deleted using Zero Balance Delete/Archive (3.23). Since detail records are maintained, locations with zero balances appear on reports.

If you define a location as temporary, the system automatically deletes inventory detail records when the location’s balance falls to zero. It does not delete the location code. Since zero balance locations do not have detail records, they do not appear on reports.

Automatic Locations

The system can automatically create location codes whenever you enter an undefined value. Do this by setting Automatic Locations to Yes in Site

Maintenance (1.1.13). This option is useful if you frequently need to define a new location while entering a transaction.

Note The system automatically creates new location codes without verification. This means you can inadvertently create a new location code from a typing error. For example, if you type STWCK instead of STOCK, the system creates a location code called STWCK.

If a site has a complex network of storage locations, automatic locations may be a useful feature. An alternate approach is to set up your main locations in Location Maintenance (1.1.18) and define sub-locations using the lot reference field.

Single Item Locations

Some locations can be used to store different types of the same kind of material. For example, a vat may contain any kind of liquid, such as olive oil, ammonia, or acetic acid. However, at any one time, you only want one type of liquid in that location.

Define these locations as by setting Single Item to Yes in Location Maintenance. When a location is designated as a single item location, it can only have an on-hand balance for a single lot used of one item at a time.

Tip
Single item applies to lot reference also, if it is used.

Location Types

Some items require special storage conditions, such as temperature control or sterile environments. Storing these items in an inappropriate location can cause inventory to become unusable. Location type codes enable you to control the type of inventory stored in a location.

Specify the type code for a location in Location Maintenance (1.1.18).

Then identify the items that require this type of storage by specifying the same type code for the item in Item Inventory Data Maintenance (1.4.5) or Item Master Maintenance (1.4.1).

When an item is received, the system checks the location and item type. If they are not the same, an error displays.

Inventory Status Codes

The inventory status code determines whether the inventory balance at a site or location is:

- Nettable for material requirements planning calculations.
- Available for sales order and work order allocations. Allocations are used to reserve inventory and assist in picking inventory to be shipped or issued.
- Issued even if the site or location has a zero or negative inventory balance.
- Not available for particular kinds of inventory transactions. For example, material that is located in scrap locations should not be used for sales order issues.

Fig. 2.10
Inventory Status
Code Maintenance
(1.1.1)

The screenshot shows a window titled "Inventory Status Code Maint" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. The main area displays the following information:

Status Code: QC-HOLD

Available: no
Nettable: no
Overissue: no

Below this is a section titled "Restricted Transactions" containing two tables. The first table lists three transactions, and the second table lists one transaction.

Restricted Transactions		
Restricted Transaction	CIM Allowed	Description
ISS-SO	no	Sales Order Shipments
ISS-UNP	no	Unplanned Issue
ISS-WO	no	WO Issue or Backflush

Restricted Transactions		
Restricted Transaction	CIM Allowed	Description
ISS-SO	no	Sales Order Shipments

Initially, set up one inventory status code for most situations. This can have a blank status and should be both nettable and available.

Status Defaults

The inventory status code associated with a site sets the default for all locations within it. When inventory is received in a location, it takes on the inventory status of the location. You can use Inventory Detail Maintenance (3.1.1) to change the inventory status code for an individual item once it is in a location.

If you are using the Compliance module, you can also define inventory status at receipt.

▶ See *User Guide Volume 9: Compliance*.

Overissue Policy

Whether or not you allow overissues depends on your own policies and procedures. Some organizations determine that to maintain accurate inventory balances, negative balances cannot be permitted.

In an online, interactive system like MFG/PRO, inventory records are updated when inventory transactions are processed. Information is sometimes entered in batch because people are not able to enter transactions in real time. Without controls, inventory balances may temporarily be driven negative. However, after all the transactions are entered, inventory balances should not be less than zero.

If all of the following are in place and executed, inventory balances should be accurate.

- Procedures for recording inventory movement
- Procedures for data entry
- Regular cycle counts
- Good stockroom practices such as proper labeling and housekeeping
- Controlled stockroom (e.g., people cannot just walk in and take material)

If the Overissue flag for the inventory status code is set to No, you may be unable to record a shipment transaction for inventory that is known to have shipped, because a work order receipt has yet to be processed. To prevent unnecessary delays in processing transactions, the Overissue flag can be set to Yes. At the end of the day, a report can be run to check for negative balances. Regular cycle counts also help identify problems.

In some regulatory environments, it may be better to set the Overissue flag to No. Here, data entry procedures should be developed to ensure the timely entry of inventory transactions. This may be particularly true when there are critical items controlled by lot or serial number.

Note Overissues are not prevented when components are issued during inventory, work order, and repetitive backflush transactions. These transactions assume that component inventory must have been issued if a parent is received or an operation has been completed.

CHAPTER 3

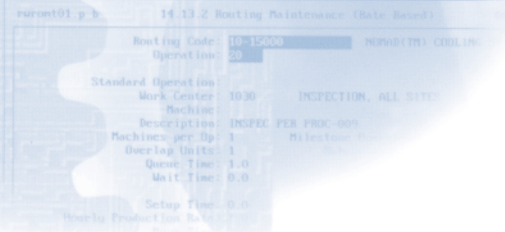
Pricing

This chapter discusses the two pricing models used in MFG/PRO: best pricing and list/discount table pricing.

Introduction to MFG/PRO Pricing **36**

Using Best Pricing **38**

Using List/Discount Table Pricing **76**



Routing Maintenance (Date Based)

Routing Code:	10-15000	MANUFACT: CHILIN
Operation:	20	
Standard Operation:		
Work Center:	1030	INSPECTION, ALL SITE
Machines:		
Description:	INSPEC PER PROC-000	
Machines per Op:	1	
Overlap Units:	1	
Queue Time:	1.0	
Wait Time:	0.0	
Setup Time:	0.0	
Ready Production:		

Introduction to MFG/PRO Pricing

MFG/PRO supports automatic pricing in a number of key transactions. The simplest way to establish prices is by associating prices with items in Item Master Maintenance. However, this approach is often too inflexible to meet the needs of modern companies.

For greater flexibility, MFG/PRO offers two pricing models based on price lists: best pricing and list/discount table pricing. These models are represented by submenus on the Pricing and Discount menu (1.10).

- Use price lists based on the best pricing model for sales orders, sales quotes, and issue lines on Service/Support Management (SSM) return material authorizations. Set up these price lists in SO/SQ/RMA Issues Pricing Menu (1.10.1).
- Use price lists based on the list/discount table model for automatic pricing of purchase orders, scheduled sales orders, supplier scheduled orders, and SSM returns to suppliers (RTS) and RMA receipt lines. Set up these price lists in PO/RTS/Sched/RMA Rcpt Price Menu (1.10.2)

Table 3.1
Pricing Menus

	Menu	Menu Label	Program
Best Pricing Model	1.10.1	SO/SQ/RMA Issues Pricing Menu	
	1.10.1.1	Price List Maintenance	pppimt.p
	1.10.1.2	Price List Inquiry	pppii01.p
	1.10.1.3	Price List Report	pppirp01.p
	1.10.1.5	Price Lists by Customer Inquiry	pppii02.p
	1.10.1.6	Price Lists by Item Inquiry	pppii03.p
	1.10.1.8	Price List Copy	pppicp.p
	1.10.1.13	Pricing What-If Inquiry (S/O)	sopwiiq.p
	1.10.1.15	Customer Orders by Price List Inquiry	pppii04.p
	1.10.1.17	Sales Order Price Inquiry	soppiq.p
	1.10.1.18	Sales Quote Price Inquiry	sqppiq.p
	1.10.1.24	Pricing Control File	pppipm.p

	Menu	Menu Label	Program
List/Discount Model	1.10.2	PO/RTS/Sched/RMA Rcpt Price Menu	
	1.10.2.1	Price List Maintenance	pppcmt.p
	1.10.2.2	Price List Browse	ppbr003.p
	1.10.2.3	Price List Report	pppcrp.p
	1.10.2.4	Price List By Item Report	pppcrp01.p
	1.10.2.5	Price List Copy	pppccp.p
	1.10.2.6	Price List Generation By Item	pppcptup.p
	1.10.13	Volume Discount Maintenance	sosdmt.p
	1.10.14	Volume Discount Browse	sobr008.p

Two additional pricing functions used in MFG/PRO are described in other volumes.

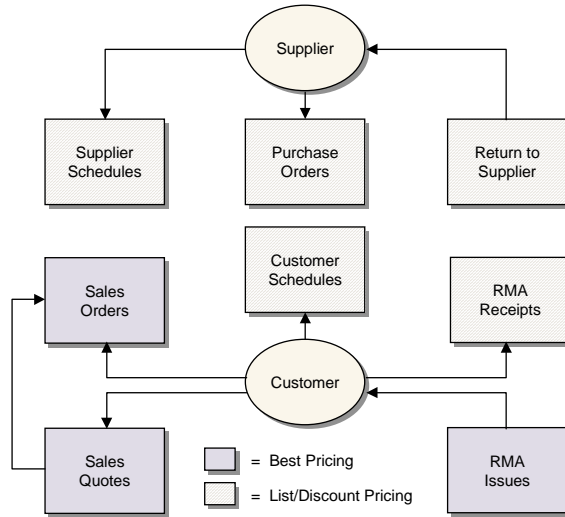
- Service price lists are created in Service/Support Management and used for contract pricing and call billing. They are defined and managed entirely within SSM.
- Advanced Pricing Management (APM) is a separate product that interfaces with MFG/PRO sales orders and is used for complex promotional pricing. The features of APM are described in a separate volume. The interface between APM and MFG/PRO is described in *User Guide Volume 10: External Interfaces*.

▶ See *User Guide Volume 8A* for details on service pricing.

▶ See *User Guide: Advanced Pricing Management* for details.

Figure 3.1 illustrates how the system applies the best pricing and list/discount pricing models to various orders in MFG/PRO.

Fig. 3.1
Two Pricing
Models



Using Best Pricing

Best pricing, or sales order pricing, enables you to create price lists that accommodate a wide range of pricing situations. Instead of matching price lists strictly through items or product lines, the system can determine best prices using flexible categories of items and customers called *analysis codes*.

Figure 3.2 gives steps for setting up a typical sales order pricing operation. Each step is discussed in detail in the sections that follow.

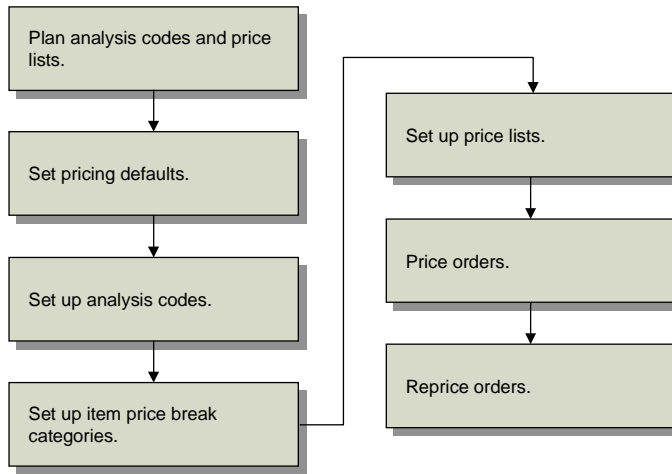


Fig. 3.2
Sales Order Pricing
Work Flow

Sales order pricing includes both the Analysis Code menu (1.8) and the SO/SQ/RMA Issues Pricing menu (1.10.1). Sales order price lists are used to price orders you create in Sales Order Maintenance (7.1.1), Sales Quote Maintenance (6.1), and RMA Maintenance (11.7.1.1). Price break categories allow volume price breaks for multiple items. Break categories are assigned to item numbers.

▶ For more information on RMAs, see *User Guide Volume 8B: SSM*.

Planning for Best Pricing

To use best pricing, you need to plan analysis codes and price lists. How you use analysis codes depends on how you organize items and customers. How you use price lists also depends on how you organize items, but also on your product structures, and whether you manufacture configured products, offer discounts on quantity volume, and many other factors.

Planning Analysis Codes

To plan analysis codes, do the following.

- 1 Collect and review your company's current pricing policies, procedures, and associated structures.
- 2 Determine the benefit of using analysis codes with your current or planned pricing practices. Analysis codes are best suited to extensive, complex pricing structures.
- 3 If you decide to use analysis codes, determine how you want to group inventory items and customers in relation to pricing. Establish a list of unique codes identifying these groups.
- 4 For each customer and item group, determine how you want to select members using the conditions available in Analysis Code Selection Maintenance.
- 5 Consider the usefulness of combining analysis codes into hierarchical pricing structures. All attributes of child analysis codes are inherited by the associated parent analysis code.
- 6 Create a visual diagram of how you want to link analysis codes.
- 7 Review and modify all analysis codes defined and determine how they will be associated with one or more price lists.

Planning Price Lists

In planning for price lists, consider the following questions.

- 1 Do you offer promotional discounts?
- 2 Do you engage in joint cooperative marketing agreements with retailers where the amount of cooperative marketing is based on the volume purchased over a period of time by the retailer?
- 3 Do you use coupons?
- 4 Do you convert savings resulting from seasonal fluctuations in materials costs into customer discounts?
- 5 Do you offer additional discounts to customers in a geographical area where a product is not moving quickly?

- 6 Do you maintain a minimum price for a product that is the lowest acceptable price offered, regardless of the number of discounts?
- 7 Do you offer volume discounts based on quantity and/or value?
- 8 Do you negotiate credit terms with your customers?
- 9 Do you negotiate freight terms and freight discounts with your customers?
- 10 Do you want some discounts exclusive of all other discounts or combinable with other discounts?
- 11 Do you want volume discounts based on a range of similar products?

Setting Pricing Defaults

Use the Pricing Control File (1.10.1.24) to set pricing defaults.

Discount Combination Type. Enter either Additive or Cascading to instruct the system what to do when multiple price lists apply.

▶ See “Discount Sequences” on page 56.

Automatic AC Build for Customers/Items. Enter Yes to have the system automatically add new customers or items to existing analysis codes. Otherwise, enter No. If No, Analysis Code Detail Build must be run after new customers and items are added.

QO Default Price Date. Price date indicates which price lists are effective for a quote. Specify a default price date by entering Due Date, Order Date, Required Date, or Promise Date.

Tip
On a sales quote, Order Date is the field labeled Quote Date.

Price QO by Line. Enter Yes to recalculate prices as lines are entered in a quote. This updates prices immediately if a combination of items or quantities qualifies for a better price. Enter No to recalculate prices only once, when the quote is complete.

QO Factor Rounding. The number of decimals to which factors are rounded in a sales quote. The default is 3. This field only has effect when discounts are displayed as factors.

Display QO Discounts as. Valid values are Discounts or Factors. For a 10% discount, the factor is 0.90 (or 1–0.10). The default is Discount. This also controls the format for prompting of a discount.

SO Default Pricing Date. Specify a default price date for sales orders by entering Due Date, Order Date, Required Date, or Promise Date.

Price SO by Line. Enter Yes to recalculate prices as lines are entered in a sales order. Enter No to recalculate prices only once, when the order is complete.

SO Factor Rounding. The number of decimals to which factors are rounded in a sales order. The default is 3.

Display SO Discounts as. Valid values are Discounts or Factors. For a 10% discount, the factor is 0.90 (or 1–0.10). The default is Discount. This also controls the format for prompting of a discount.

Promotions Prefix. If Advanced Pricing Management (APM) is installed, use this field to identify price lists generated by APM.

▶ See *User Guide Volume 10: External Interfaces* for details.

Tip

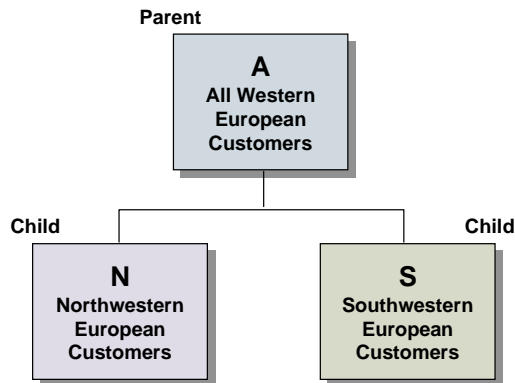
These codes are not the same as those created in GL Report Writer.

Fig. 3.3

Parent and Child Analysis Codes

Setting Up Analysis Codes

In best pricing, you classify customers and products using analysis codes. Analysis codes are based on characteristics such as region, salesperson, or item number, and can be linked to form combinations or sets. For example, analysis codes can link regions, as shown in Figure 3.3.



- Analysis Code N groups customers in Northwestern Europe.
- Analysis Code S groups customers in Southwestern Europe.
- Analysis Code A combines the two groups by linking codes N and S.

Code A is referred to as a *parent code* because Codes N and S are linked to it. Codes N and S are referred to as *child codes*.

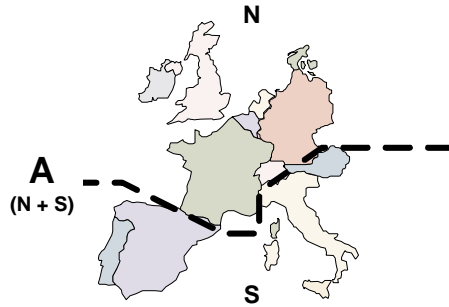


Fig. 3.4
Map of Example
Region Codes

Analysis code linking uses OR logic. For example, if code A links codes N and S, any customer meeting the code N or code S criteria is included in code A.

Figure 3.5 outlines commonly used procedures for setting up and managing analysis codes. Each procedure is discussed in detail in the sections that follow.

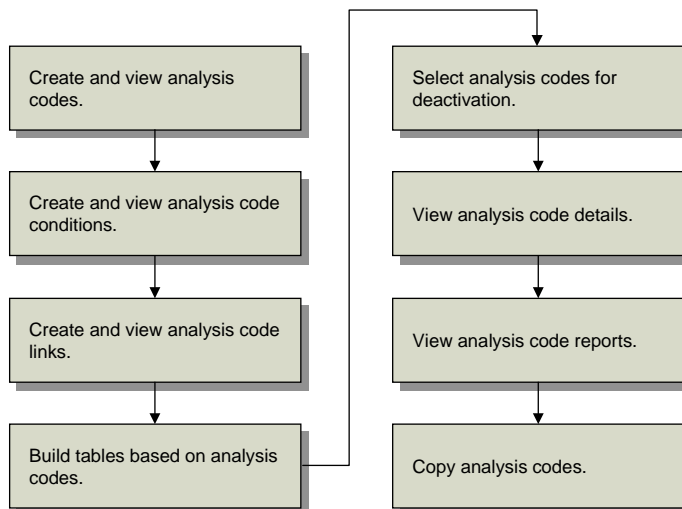


Fig. 3.5
Analysis Code
Work Flow

Creating Analysis Codes

Create analysis codes for customers and items in Analysis Code Maintenance (1.8.1). Use Analysis Code Inquiry (1.8.2) to view analysis codes.

Fig. 3.6
Analysis Code
Maintenance
(1.8.1)

The screenshot shows a window titled "Analysis Code Maintenance" with a menu bar containing "User Menu", "Edit", "Queue", "Options", and "Help". The main area contains the following fields:

Type:	Customer
Code:	OEM
Description:	Original Equipment Manuf
Active:	yes
Comments:	no

Type. Valid values are item or customer.

Code. Enter an alphanumeric code identifying a group of customers or items.

Description. Enter a brief description of this particular code. This displays in inquiry screens.

Active. Enter Yes. If No, a warning displays when you create a price list with this analysis code.

Comments. Enter Yes to review or update comments.

Use Analysis Code Report (1.8.17) to view details for a range of analysis codes. Enter the analysis code type, analysis code range, and analysis detail selections to be included on the report.

Creating Analysis Code Conditions

Use Analysis Code Selection Maintenance (1.8.4) to define how members are selected for inclusion in an analysis code group. Use Analysis Code Selection Inquiry (1.8.5) to review analysis codes and their condition fields and ranges.

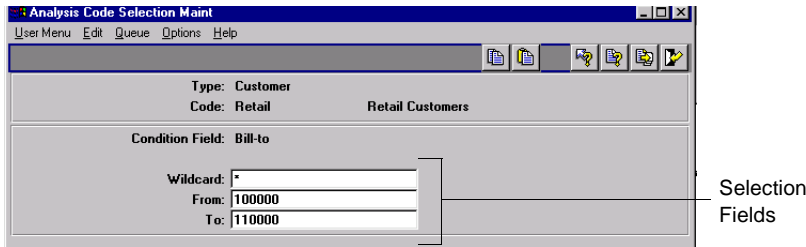


Fig. 3.7
Analysis Code
Selection Maint
(1.8.4)

Type. Valid values are item or customer.

Code. Enter an analysis code you created previously, considered the parent code.

Condition Field. Enter a characteristic or qualifier. You can apply more than one condition to an analysis code. If multiple qualifying conditions are selected, AND logic is used. For example, if Condition Field is set to Salesperson 1, and a second Condition Field is set to Salesperson 2, only records meeting both conditions are selected.

Customer Conditions		Item Conditions	
Bill-to	Salesperson 2	Article	Item Number
Class	Site	Break Category	Product Line
List Type	Sort Name	Buyer/Planner	Site
Number	Type	Description 1	Type
Region	User Field 1	Description 2	User Field 1
Salesperson 1	User Field 2	Group	User Field 2

Table 3.2
Valid Conditions

Wildcard. Enter one of the following wildcards.

- (.) period—a single position wildcard. For example, .2 indicates any selection with 2 in the second position.
- (*) asterisk—a multiple position wildcard. For example, *2 indicates any item with 2 in the last position.

From. For a condition, enter the beginning range to be included in the analysis code.

To. For a condition, enter the ending range to be included in the analysis code.

Linking Sets of Analysis Codes

By linking analysis codes, you can organize customers and items in a variety of ways. Item analysis codes can be linked only to other item codes, and customer codes only to other customer codes.

Analysis code linking uses OR logic. For example, if code ABC links A, B, and C, any customer meeting the criteria for A, B, or C is included in ABC.

Link analysis codes in Analysis Code Link Maintenance (1.8.7).

Fig. 3.8
Analysis Code Link
Maintenance
(1.8.7)



Type. Valid values are item or customer.

Code. Enter a valid analysis code. This code is considered the parent.

Linked Code. Enter the code you want to link to. This code is considered the child.

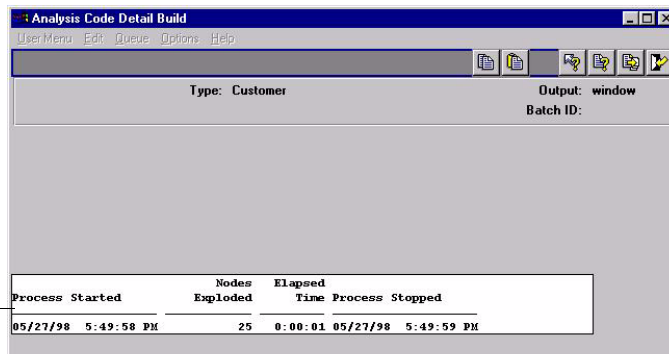
Description. Enter a brief description of this link.

You can view analysis code links in two ways.

- Use Analysis Code Link Inquiry (1.8.8) to view codes linked to a parent code.
- Use Analysis Code Where-Linked Inquiry (1.8.9) to view child analysis codes and the parent codes they are linked to.

Building Analysis Codes

Use Analysis Code Detail Build (1.8.19) to build a table of items or customers for each analysis code, based on analysis code rules and links previously defined. Build analysis codes whenever these rules or links are changed, when new codes are created, and when new items and customers are created.



The system displays the progress of the build.

Fig. 3.9
Analysis Code
Detail Build
(1.8.19)

The Pricing Control File (1.10.1.24) gives you the option to automatically build analysis codes when you add new customers and items. However, if you change condition fields for an analysis code, you must still run the build program. This utility builds the database by analysis code type.

Warning Interrupting this utility can disable price lists that use analysis codes. This utility must be completed in its entirety.

As the build proceeds, the system displays:

- *Process Started.* Date and time the program was initiated.
- *Nodes Exploded.* Current number of items or customers processed.
- *Elapsed Time.* Time it took for the system to update each item or code.
- *Process Stopped.* Time the program completed.

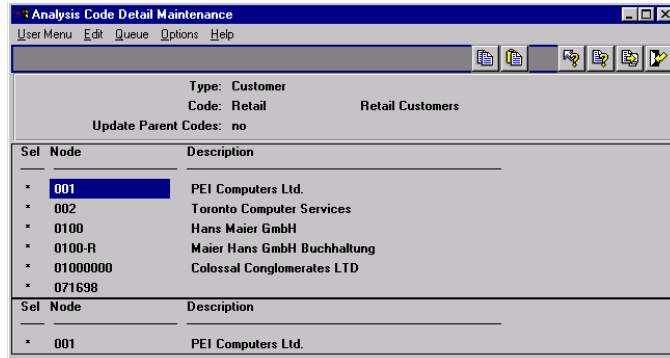
At the end of the build, the system generates a summary report, listing the analysis code type, code value, active status, and each customer or item selected by the build.

Detailed Selection of Analysis Code Nodes

Use Analysis Code Detail Maintenance (1.8.13) to inactivate or reactivate individual items and customers selected for a code. An asterisk in the Sel field indicates an active node. Use the Up and Down arrows to position the cursor on the item or customer you want to modify. Then press Enter to toggle its current state.

Tip
Although builds can be run online, batch mode may be more efficient due to potentially long run times.

Fig. 3.10
Analysis Code
Detail Maintenance
(1.8.13)



To select a node by name, press Go to access the update frame at the bottom of the screen. You can type the first character of the node name to go directly to its location in the list of nodes.

Viewing Analysis Code Nodes

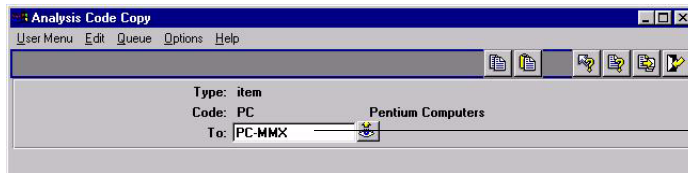
There are two inquiries for viewing analysis code nodes.

- Use Analysis Code Detail Inquiry (1.8.14) to view specified analysis codes and their nodes.
- Use Analysis Code Where-Used Inquiry (1.8.15) to view the analysis codes to which a specified node belongs.

Copying Analysis Codes

Use Analysis Code Copy (1.8.20) to copy an existing analysis code as a basis for creating a new one.

Fig. 3.11
Analysis Code
Copy (1.8.20)



Enter the new analysis code name here.

Type. Enter Customer or Item.

Code. Enter the analysis code to be copied.

To. Enter the name of the new analysis code.

Setting Up Item Price Break Categories

Price break categories let you assign volume price breaks for multiple items. Discounts can be calculated based on the quantity or amount ordered on multiple lines of a sales order or quote.

Example One hundred green bicycles are ordered on line 1 of a sales order, 100 red bicycles on line 2, and 200 bicycle reflectors on line 3. The reflectors receive a price break based on the quantity of bicycles ordered (200)—not the quantity of bicycles plus reflectors (400). The bicycles also receive a price break based on the number of bicycles ordered (200).

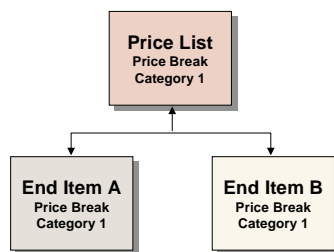


Fig. 3.12
Cumulative Price
Break Categories

There are two ways to take advantage of price break categories.

- Accumulate quantities on related items by assigning the same price break category to each item.
- Offer discounts on accessory items by assigning a price break category to a price list to which the accessory item belongs and to the item master of the accessory item's principal item.

In the case illustrated in Figure 3.13, bicycle tire pumps belonging to the price break category *Accessories* qualify for Price List A. Price List A uses the price break category *Bicycles* to determine the price for the pumps, even though the pumps do not belong to that price break category.

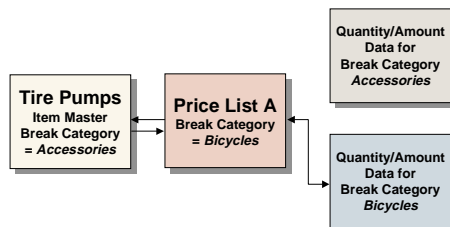


Fig. 3.13
Price Break
Categories and
Accessory Items

Enter break categories in Item Master Maintenance (1.4.1) and Price List Maintenance (1.10.1.1).

Fig. 3.14
Price Break Cat
Field of Item
Master
Maintenance
(1.4.1)

The screenshot shows the 'Item Master Maintenance' window. The title bar reads 'Item Master Maintenance'. Below the title bar is a menu bar with 'User Menu', 'Edit', 'Queue', 'Options', and 'Help'. The main area is divided into sections. The top section displays 'Item Number: 10-10000' and 'Description: OASIS(TM) COOLING SY: HOME/INDUST MODEL'. Below this is the 'Item Data' section, which contains several fields: 'Prod Line: 1000', 'Item Type: CONFIG', 'Drawing: 10-10000', 'Added: 11/25/96', 'Status: AC', 'Rev: AB', 'Design Group: [dropdown]', 'Group: DISCRETE', 'Drawing Loc: [dropdown]', 'Size: [dropdown]', 'Promo Group: [dropdown]', and 'Price Break Cat: Conditioners'. A label 'Price Break Cat field' points to the 'Price Break Cat' field. At the bottom, there is a section for 'Item Inventory Data'.

Item Number. Enter an item code.

Price Break Cat. Enter a category name. Name price break categories as you like, but make sure that you enter the same names on price lists and other items.

Creating and Maintaining Price Lists

A price list defines all the information necessary to correctly price an item for a customer. A price list applies to the customer or item codes you assign to it as follows.

- A single item number
- A single customer number
- A group of customers belonging to an analysis code
- A group of items belonging to an analysis code
- All customers

▶ See “Discount Types” on page 51.

The discount type, referred to as the *amount type*, defines the purpose of a price list. There are several discount types, and they can be combined. A price list also defines minimum quantities, effective dates, and other information you may want to extend to your customers.

▶ See “Calculating Best Prices” on page 54.

When an order is entered, MFG/PRO determines which price lists apply, examines those lists, and determines which of them yield the best price for the order. Applicable price lists may have been determined using the same or different criteria.

Discount Types

The Amount Type field determines the discount type assigned to a price list. Possible choices are:

- *List Price*. Used as the item list price. List prices also set allowable minimum and maximum prices, if selected for a given line item, even if the list price is manually overridden.

List prices are the foundation of pricing logic. The choice of exclusive, base, combinable, and base combinable as the Comb Type does not apply to list prices. They must be set up with a Comb Type of combinable.

- *Discount%*. Percentage subtracted from the item list price.
- *Discount Amt*. Amount subtracted from the item list price.
- *Markup*. Percentages added to item cost in a specified cost set. Must be either a base or exclusive combinable type.
- *Net Price*. Discounts resulting in a fixed price. Must be either a base or exclusive combinable type.
- *Accrual*. Similar to Discount%, except that a percentage of the net price accrues to a specified general ledger account, without reducing the net price, and independent of discount.
- *Credit Terms*. Specified for an order or quote, independent of other discount types.
- *Freight List*. Specified for an individual order or quote line item, independent of discount.
- *Freight Terms*. Specified for an order or quote, independent of discount.

Other Pricing Elements

The system processes pricing by line item. As a sales order or quote is entered, the system determines the following.

- Who the pricing customer is.
- Which price lists combine with other price lists.
- Which price lists are candidates for each line item.
- Whether break category discounts apply.

- Whether configured products are included, and whether pricing applies across the entire product or at the current level only.
- Which price list yields the best overall price for the customer.

Who Is the Pricing Customer?

When selecting price lists, the system determines who the pricing customer is as follows.

- When sales orders are entered, the system uses the customer number in the Ship-To field as the pricing customer if the ship-to customer exists in the customer master file.
- Otherwise, the system uses the customer number in the Sold-To field as the pricing customer.

Discount Combinability

The best possible new price of a line item is determined by considering multiple discounts and combining various discounts. Combination types instruct the system how price lists combine with other price lists for purposes of multiple discounts and best pricing calculations. The choices are:

- *Base*. The standard discount for customers that serves as the basis for additional discounts and can be combined with any non-exclusive price list. Base price lists are exclusive of other base price lists.
- *Combinable*. Incremental price lists intended to combine with base and other combinable price lists.
- *Base-Combinable*. Incremental price lists intended to combine base price lists only.
- *Exclusive*. Exclusive price lists that cannot be combined with any other price lists.

The best discount the system arrives at is one of the following: best base price plus all combinable discounts, best base price plus the best base combinable price list, and the best exclusive price list.

Markup and net price lists must be of combination type base or exclusive.

List price tables provide pricing history and set minimum/maximum prices. They are the foundation for the pricing logic. For pricing

structures with an Amount Type of list price, the combination type does not apply. They must be set up with a Comb Type of combinable.

Price List Candidates

The system finds candidates by matching the customer number and the item number on a sales order with the customer code and the item code on the price lists. A match is found if *all* of the following conditions are true.

- Customer code on the price list equals:
 - The customer entered on the order
 - Any customer analysis code associated with this customer
 - Blank, indicating the price list applies to all customers
- Item code on the price list equals:
 - The item number entered on the order
 - Any item analysis code associated with this item number
 - Blank, indicating the price list applies to all items
- The order currency and price list currency are the same.
- The start and end dates are effective.

Break Categories and Price List Processing

As each line item is priced, the system determines if any lines need to be accumulated for price breaks. If so, the price calculated is based on the total quantity (or amount) on all qualifying line items.

A line qualifies if the break category in the Item Master File matches:

- The break category on a selected price list, *and*
- The break category of another line item on the same order.

Once all line items are completed, the system reviews them to ensure that proper discounts are calculated. For example, if line item 4 affects the quantity discount for a prior line, the system reviews that line and updates its pricing. There may be times when an item should receive a discount based on the quantity ordered on other line items, but should not add to the total break quantity.

▶ See “Other Pricing Elements” on page 51.

Configured Products Pricing

The system determines in two stages whether price lists apply across an entire configured product line or at the current level only.

Factor contestants. Each component, including the parent item of the configured product, is priced independently and then totaled.

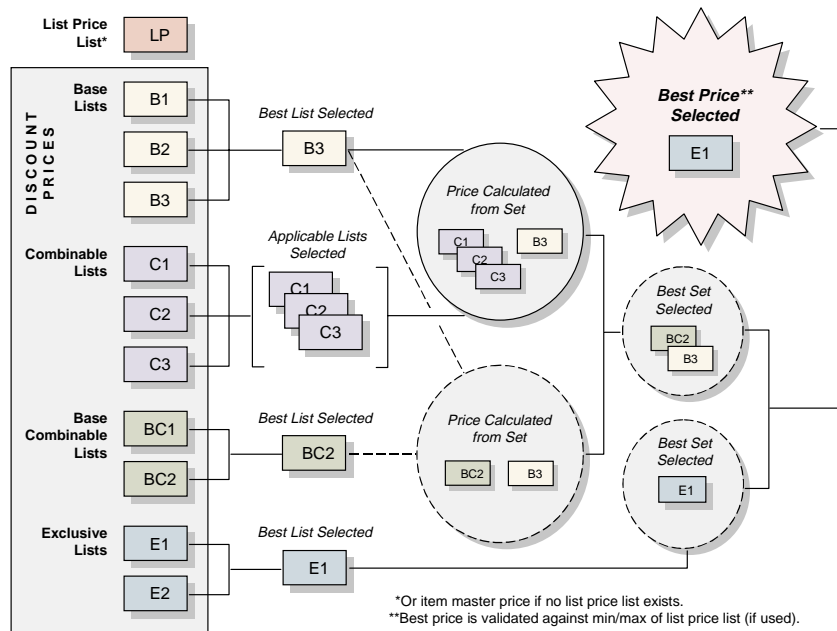
Best overall price. The system calculates the net price for the entire configured item, using the rolled-up list price, discounted by only those discounts that apply across the entire configuration.

The system then compares the net price with the best overall net price and chooses the better of the two.

Calculating Best Prices

In best pricing, multiple discounts are considered and applicable discounts combined to determine the best possible net price for a line item, as illustrated in Figure 3.15.

Fig. 3.15
How Best Pricing Works



Multiple price lists may apply. The best discount is:

- The best base price plus all combinable discounts, *or*
- The best base price plus the best base-combinable price list, *or*
- The best exclusive price list.

When the system has found all qualifying price lists, it then determines what combinations result in the best price. The rules for combining price lists are based on the Comb Type field in Price List Maintenance.

Table 3.3 lists how the system uses price lists.

Table 3.3
How MFG/PRO
Uses Price Lists

System Function	What happens
Building the Best List Price	The system evaluates each applicable List Price price list. If more than one is found, the lowest price is used. If no List Price list is found, the Price field from the Item Master File is used. The price is stored in the List Price field of the sales order or quote.
Building the Best Net Price	The system accesses each applicable Discount%, Discount Amt, Markup, and Net Price price list. It then determines what combination yields the lowest price. The rules for combining price lists are based on the Com Type field in Price List Maintenance. The Discount and Net Price fields are then updated on the sales order or quote.
Modifying Price for Minimum or Maximum	If the calculated Net Price on a sales order is above the maximum or below the minimum price (set on List Price price lists in Price List Maintenance), the Net Price on the sales order or quote is adjusted.
Manually Overriding Calculated Prices	The calculated List Price, Discount, and Net Price can be manually changed on a sales order or quote (if you have password access to these fields). When this occurs, the system records a Manual discount, which is the difference between the system-generated price and the price entered.

Example A company offers a promotional discount to customers in a geographic area. For qualifying customer A, this discount is better than the standard discount. Qualifying customer B, however, qualifies for a better discount than the geographic discount. The system assigns the better discount, so customer B is not penalized for qualifying for the promotion.

Discount Sequences

Tip

A discount is combinable when more than one price list is used to determine net price.

When using combinable type discounts, the discounts can either be added together or multiplied/cascaded. Specify which calculation to use in the Pricing Control File for all orders and price lists.

When the cascading calculation method is chosen and GL accounts are used to track discounts to individual price lists, the discount sequence number becomes important. This is because the individual discount amounts can differ depending on the order in which they are applied. The net price of the order is the same regardless of sequence numbering.

When the additive calculation method is used, discount sequence number is not significant. With this method, the calculation uses the best list price with each discount and adds the individual discount amounts to obtain the total discount.

Applying the Additive Method

In a sales order line with a best list price of \$100, price lists A and B are used. Price list A has a sequence number of 100 with a 20% discount. Price list B has a sequence number of 200 with a 30% discount. Using the additive method, the system calculates the discounts as follows.

$$\$100 \times .20 = \$20$$

$$\$100 \times .30 = \$30$$

$$\$20 + \$30 = \$50$$

A discount of \$20 is recorded for price list A and \$30 for B. The total discount is \$50 and the net price is \$50. It does not matter which discount is calculated first, because the best list price is used to calculate both individual discounts.

Applying the Cascading Method

Using the cascading method for the same example, the system first performs the calculations for price list A, since it has the lower sequence number.

$$\$100 - [\$100 \times (1-.20)] = \$20$$

$$\$100 - \$20 = \$80$$

Calculations are then performed for price list B.

$$\$80 - [\$80 \times (1-.30)] = \$24$$

$$\$80 - \$24 = \$56$$

The total discount for the order is \$44 and the net price is \$56. For this order line, a discount of \$20 is posted in the general ledger for price list A, and \$24 for B.

If the sequence numbers are reversed, calculations are first performed for price list B.

$$\$100 - [\$100 \times (1-.30)] = \$30$$

$$\$100 - \$30 = \$70$$

Calculations are then performed for price list A.

$$\$70 - [\$70 \times (1-.20)] = \$14$$

$$\$70 - \$14 = \$56$$

As before, the total discount is \$44, and the net price is \$56. But the discount posted for price list A has changed from \$20 to \$14; and the discount for price list B has changed from \$24 to \$30.

When Discount Sequence Numbers Are the Same

It is possible for two or more price lists to have the same sequence numbers. In this case, the discount is proportioned between the two lists according to the contribution of each. The calculation involved for each price list is as follows:

$$(1 - \text{individual discount factor}) / \text{total additive discount} \times \text{list price} - (\text{list price} \times \text{total cascading factor})$$

The discount factor = 1 – discount percent. Following the previous example, the discount calculation for price list A would be:

$$\text{Discount factor} = 1 - .20 = .8$$

$$\text{Discount} = (1 - .8) / .5 \times \{ \$100 - [\$100 \times (.7 \times .8)] \} = \$17.60$$

The individual discount for price list B would be:

$$\text{Discount factor} = 1 - .3 = .7$$

$$\text{Discount} = (1 - .7) / .5 \times \{ \$100 - [\$100 \times (.7 \times .8)] \} = \$26.40$$

Tip

If a manual price list is included in the pricing determination, the system assigns it sequence 999. This ensures that manual discounts are calculated last when the cascading method is used.

▶ See “Applying the Additive Method” on page 56.

The discount calculation works the same with a negative discount.

Creating a Price List

Use Price List Maintenance (1.10.1.1) to define item codes, customer codes, discounts, and other information pertaining to a price list. Create as many price lists as you need to satisfy your pricing requirements. If you do not use price lists, the system uses the Price field in the item master file.

Fig. 3.16
Price List
Maintenance
(1.10.1.1)

The screenshot shows the 'Price List Maintenance' window with the following data and options:

- Price List: PR-0001
- Customer/Analysis Code: D200
- Item/Analysis Code: All
- Currency: USD
- UM: ea
- Start:
- Expire:

Configuration options include:

- Description: []
- Amount Type: List Price
- Qty Type: Quantity
- Comb Type: Combinable
- Min Net Ord: 0.00
- Max Qty: 0.0
- Break Cat: []
- Config Disc: no
- Manual: no
- Max Orders: 0
- Disc Sequence: 10.0
- Print: yes
- Promotion Type:
- Promotion:
- Cost Set:
- Comments: no

Price List. Enter a code identifying the price list.

Customer/Analysis Code. Enter a customer address code, analysis code, or leave blank for all customers.

Item/Analysis Code. Enter an item number, analysis code, or leave blank for all items.

Currency. Enter the code indicating the currency for this price list. The default is the base currency.

UM. Enter a unit of measure or leave blank for all units of measure.

Start. The first day this price list is effective. If left blank, the price list is effective for any date prior to the expiration date.

Expire. The last day this price list is effective. The date must be greater than or equal to the start date. If left blank, this implies no expiration.

Proceed to the next frame.

Description. The description of your price list (optional).

Amount Type. The choices are Accrual, Credit Terms, Discount%, Discount Amt., Freight List, Freight Terms, List Price, Markup, and Net Price. The amount type of the list affects which fields display in the following frames.

▶ See “Discount Types” on page 51.

Qty Type. Specify whether quantity breaks are calculated by Amount or Quantity.

- Amount: Price breaks are based on the total extended list price of items ordered, measured in the price list currency.
- Quantity: Price breaks are determined by the number of items ordered.

Comb Type. This field describes how price lists combine with other price lists for multiple discount and best pricing calculations. Valid values are:

▶ See “Discount Combinability” on page 52 for details.

- Exclusive. Cannot combine with any other price list.
- Base. Can combine with any price list that is not exclusive or another base.
- Combinable. Identifies an incremental price list that is intended to combine with other combinable and base price lists. List price tables must be combinable.
- Base-Combinable. Identifies an incremental price list that is intended to combine only with base price lists.

Tip
Markup and net price lists must be of combination type base or exclusive.

Min Net Order. In conjunction with Qty Type specified, either the minimum order item quantity or minimum order currency amount required for price list; default is 0 (zero).

Max Qty. In conjunction with Qty Type specified, either the maximum order item quantity or maximum order currency amount allowed for price list; default is 0 (zero).

Break Cat. In conjunction with specified Min Net Ord value, an additional category by which item quantities or currency amounts can accumulate for required price list minimum. Either blank if no Break Category specified, the Item Master file Break Category code

selected for this item, or the Break Category code assigned to another Item Master record; default is blank.

Config Disc. Either Yes or No. Applicable to configured products. If Yes, the price list applies to everything in a configured product, when pricing a configured item (otherwise ignored). If No, it only applies to the specific item.

Manual. Enter Yes if this price list should only be considered during line item pricing when it is specified in the Manual price list field. Enter No if this price list should be considered anytime it applies to the customer or item.

Max Orders. Defines the maximum number of orders that can be priced using this list for a given customer. This field is for reference only. It is normally used with manual price lists, which might, for example, apply only once for a new customer.

Disc Sequence. In conjunction with Comb Type specified, a numerical value indicating the order in which the system applies price list discounts relative to other price list discounts with which it can be combined; default is 10.0. A discount sequence can be decimal.

Print. Enter Yes if the price list should be shown on associated sales order documents and invoices; otherwise, enter No. The default is Yes.

Promotion Type, Promotion. These fields only have values if you are using the interface to Advanced Pricing Management.

Cost Set. Applicable cost basis for markup price lists only. Either blank if standard cost or the selected Item Master file current cost set code; default is blank.

Comments. Enter Yes to review or update remarks related to this price list.

Depending on the amount type of the price list you are editing, the system displays a different frame. Figure 3.17 illustrates the frame that displays when the amount type is Credit Terms, Freight List, or Freight Terms.

Tip
The system applies lower numbers first.

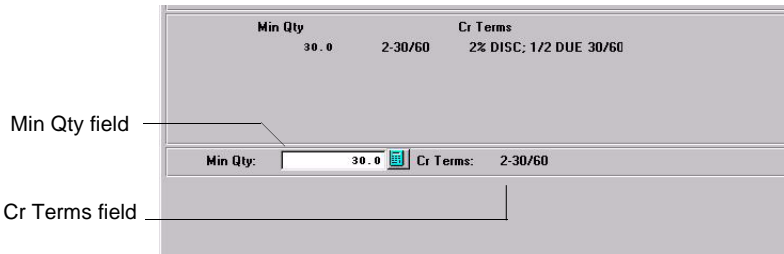


Fig. 3.17
Min Qty and Credit Terms Fields

Min Qty. Enter a quantity or amount. The Min Qty field changes to Min Amt if the Qty Type field is set to amount.

Cr Terms. Choose a credit term. The Cr Terms label changes to Frt Terms or Freight List, depending on your selection in the Amount Type field.

Continue entering values for each quantity or amount break.

The frames illustrated in Figure 3.18 and Figure 3.19 display when amount type is Accrual, Discount%, Discount Amt, Markup, or Net Price.

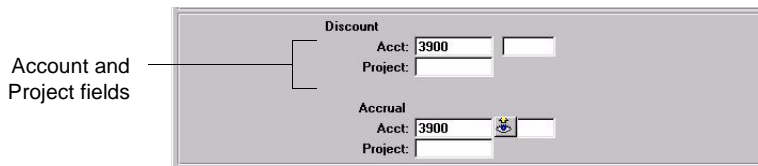


Fig. 3.18
Discount Accrual and Project Fields

Acct and Project. For Discount%, Discount Amt, Markup, or Net Price price lists, enter the account and projects numbers in the Discount Account and Project fields. For Accrual price lists, enter the account and project numbers in the Expense Account, Accrual Account, and Project fields. The Discount label changes to Expense for Accrual price lists.

Proceed to the next frame.

Min Qty. A quantity or amount. The Min Qty field changes to Min Amt if the Qty Type field is set to Amount.

Discount%. A discount percentage. The Discount% label changes to Markup%, Net Price, or Disc Amt, depending on your selection in the Amount Type field.

Fig. 3.19
Min Qty and
Discount% Fields

Min Qty	Discount %	Min Qty	Discount %
10.0	1.0		
100.0	2.0		

Min Qty: Discount %:

Continue specifying values for each quantity or amount break.

The frame illustrated in Figure 3.20 displays when amount type is List Price.

List Price. Enter the list price for this price list.

Min Price. Enter the lowest allowable price for this price list. If a lower price is entered on a sales order, this price is used instead.

Max Price. Enter the highest allowable price for this price list. If a higher price is entered on a sales order, this price is used instead.

When you create a List Price price list, the following fields are ignored: Qty Type, Comb Type, Min Net Ord, Max Qty, Break Cat, Config Disc, Max Orders, Disc Sequence, Print, and Cost Set.

Fig. 3.20
List Price, Min and
Max Price Fields

List Price:

Min Price:

Max Price:

Reviewing Price Lists

To review price lists, use one of the following programs.

- Use Price List Inquiry (1.10.1.2) to review names and summary information on price lists.
- Use Price List Report (1.10.1.3) to review pricing details for each price list.
- Use Price Lists by Customer Inquiry (1.10.1.5) to review price lists sorted by customer code
- Use Price Lists by Item Inquiry (1.10.1.6) to review price list detail sorted by item code.

Copying a Price List

Use Price List Copy (1.10.1.8) to quickly create new price lists based on existing ones. You can copy a price list into any currency or adjust existing price lists with increased or decreased prices.

The system makes a copy of the source price list under the target price list code with a start date of today. Specific prices (Amount Type List Price or Net Price) are multiplied by the Adjustment Percent and the Cur Conv Factor, then rounded to the specified number of decimal places. Discount and markup percentages are copied as they are in the source price list.

Source Price List: j2ij-1	Target Price List: j2ij-1
Source Currency: USD UM:	Target Currency: CAD UM:
Cust/Supplier Cat:	To:
Item Cat:	To:
Start: 10/05/98	Expire:
Adjustment %: 100.00%	Curr Conv Factor: 1.75
Round to Two Decimal Places (x.xx) : no	Update: no
Round to Nearest Whole Number (x.00) : no	Print Audit Trail: no
Round to Nearest Ten (x0.00) : no	
Round to Nearest One Hundred (x00.00) : no	
Round to Nearest One Thousand (x000.00) : no	Output:
	Batch ID:

Fig. 3.21
Price List Copy
(1.10.1.8)

Source Price List. Maximum eight-character, alphanumeric code identifying the price list from which the information is copied.

Source Currency. Currency code used by the source price list.

Target Price List. Enter a code identifying the price list to which the information is copied. The target and source price list can be the same. In this case, an ending effective date is added to the source list and a starting effective date to the target list. If the target list is not the same as the source and does not exist, it can be created. If it does exist, it can be either cleared or added to.

Target Currency. Enter the currency for the system to use on the target prices. The source and target currency can be the same—leave blank for the system to default to the source currency. If you are copying from one currency to another, the system calculates and displays a

default Cur Conv Factor using the exchange rates effective on the price list start date. The system adjusts prices on the target list using the conversion factor you specify.

UM. Either an item unit of measure to which price list applies or blank if the price list applies for all units of measure; default is blank.

Cust/Supplier Cat. Either the customer code or the customer analysis code for which price list applies, or blank if price list applies to all customers; default is blank

Item Cat. Either the item code or the item analysis code for which price list applies, or blank if price list applies for all items; default is blank.

To. Either the last value within a range or blank if range is not specified; default is blank.

Start. Start date defaults to today's date and defines the start date for the new pricing structure created by the copy. This field is applied differently by the system in different situations:

- If the source and target codes and currency are the same and the date entered matches the start date currently on the source price list, a new price list is not created. Instead, the existing price list is modified according to any adjustment percentage entered.
- In other cases when the source and target codes and currency are the same, the system uses the start date as the start effective date on the target list and adds an ending effective date on the source list (day before target's start date).
- If the source and target codes are different, the start date is used on the target and the source list is not affected.

Expire. Either the last date (MM/DD/YY) target price list is effective or blank if price list is effective any date on or after start date; default is blank.

Adjustment%. Percent (up or down) target price list amounts are to be adjusted relative to source price list amounts. Enter 100.0 for no adjustment or a numerical value indicating percent adjustment is needed. For example, 90 adjusts target price list down 10%; 110 adjusts target price list up 10%, The default is 100.0.

Cur Con Factor. Enter a conversion factor to use when the source and target price list currencies are not the same. The system calculates and displays a default Cur Conv Factor using the exchange rate in effect on the price list start date. If effective exchange rates are not found, Cur Conv Factor defaults to 1. You can modify the conversion factor, if needed. However, the value cannot be 0.

Tip
Specify rates in Exchange Rate Maintenance (26.4).

Clear Target List. Enter Yes to delete all other target price lists having same name and attributes or No to not delete other target price lists; default is No.

Update Item Price. Enter Yes to update Item Master records with target price list pricing or No to not update Item Master records; default is No.

Create Target List. Enter Yes (the default) to create a new list if one does not exist. When No, a list is not created. If Create Target List is Yes and the list exists, the value of Clear Target List determines if the list is cleared before the copy, or if an end effective date is added to the old prices.

Update. Enter No (the default) and set Print Audit Trail to Yes to print a report of potential changes before they are made. Specify Yes to update price list files based on the parameters specified.

Print Audit Trail. Enter Yes (the default) to print an audit report showing the effect of applying the copy parameters to the target price list. If No, a report does not print.

Output. Enter an output destination for the audit report.

Batch ID. Assigned Batch Identification Number for purposes of processing transaction off line.

Generating Pricing Reports

Three pricing reports display information about how the system calculates prices for order lines:

- Pricing What-If Inquiry (1.10.1.13) displays prices based on user-specified input parameters.
- Customer Orders by Price List Inquiry (1.10.1.15) displays the price lists used to price a customer's orders.

▶ See “Pricing History File” on page 73.

- Sales Order Price Inquiry (1.10.1.17) displays pricing details for selected order lines.
- Use Sales Order Pricing Report (7.15.7) to view pricing history records created for each change to an order line’s pricing.

Pricing What-If Inquiry

Use Pricing What-If Inquiry (1.10.1.13) to review what-if pricing scenarios. This inquiry does not apply to configured products with optionally configured components.

Fig. 3.22
Pricing What-If Inquiry (1.10.1.13)

Sel List	Amt Type	Comb Type	Break Cat	Break Qty/Amt	Amount
yes	Normal	List Price	Comb	0.0 Qty	0.00

Customer. Enter the customer address code or customer analysis code for price calculation. Leave blank to calculate prices regardless of customer.

Site. Enter the site code for price calculation. Leave blank to calculate prices regardless of site.

Item Number. Enter the item code or item analysis code for price calculation. Leave blank to calculate prices regardless of item.

Unit of measure. Enter the item unit of measure for price calculation or leave blank if price list applies to all units of measure.

Order Quantity. Enter the number of line items ordered.

Manual. Enter a code identifying a manual price list or leave blank.

Effective. Enter the pricing effective date in MM/DD/YY format. The default is the system date.

Currency. Enter the applicable currency for price list calculations and display. The default is the base currency.

Accumulated Quantity. If price list Qty Type is Quantity, enter the number of items for this order. Either Ord Qty value or Break Qty value; default is Ord Qty.

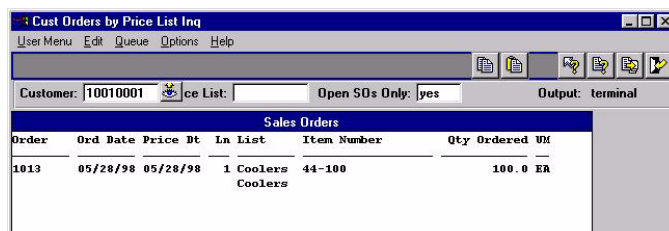
Accumulated Amount. If price list Qty Type is Amount, the currency amount accumulated for this order. Either Ord Qty x List Price value or Accum Qty x List Price value; default is Ord Qty x List Price.

Show Only Selected. Choose Yes to have the system show only price lists that are selected for use in determining list and net prices. Choose No to have the system show all price lists considered for evaluation of the list and net prices. In either case, a Yes or No appears in the Sel column indicating the system selection process. The default is Yes.

The system calculates the price for the item and customer you selected for each price list that matches the selected item and customer combination.

Viewing Orders by Price List

Use Customer Orders by Price List Inquiry (1.10.1.15) to ensure that a customer does not exceed the maximum number of orders or to see how a price list is used.



The screenshot shows a window titled "Cust Orders by Price List Inq" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. Below the toolbar, there are input fields for "Customer: 10010001", "Price List:" (with a dropdown arrow), "Open SOs Only: yes", and "Output: terminal". A table titled "Sales Orders" is displayed with the following data:

Order	Ord Date	Price Dt	Ln List	Item Number	Qty Ordered	UM
1013	05/28/98	05/28/98	1 Coolers	44-100	100.0	EA
			Coolers			

Fig. 3.23
Customer Orders
by Price List
Inquiry (1.10.1.15)

Customer. Enter a customer number.

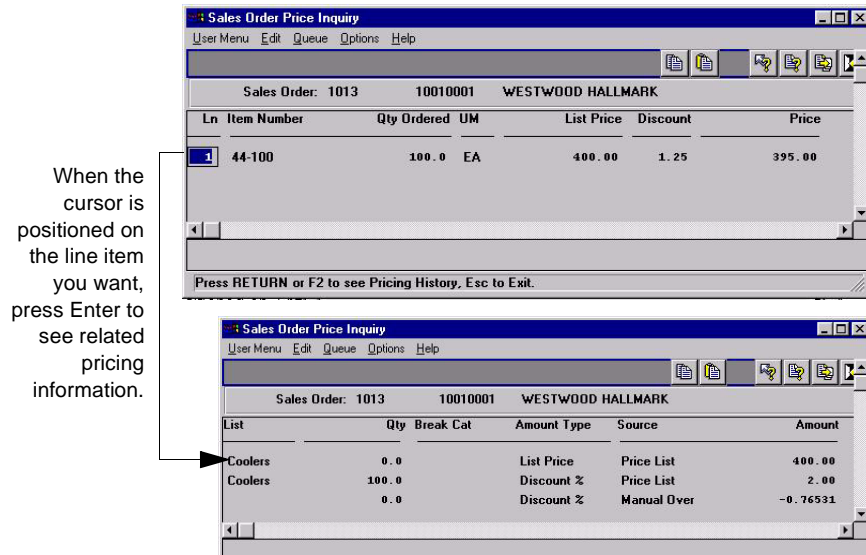
Price List. Enter a price list that applies to this customer. If you want to see all orders for this customer, leave blank.

Open SOs Only. Yes if you want to see open sales orders only. Choose No if you do not want to limit the inquiry.

Viewing Sales Order Discounts

The system calculates and displays price lists, discount factors, net prices, line item amounts, and order amounts online. After line items have been processed, the system recalculates previous lines based upon quantity breaks if subsequent lines result in a different total accumulated order quantity. To view this information, use Sales Order Price Inquiry (1.10.1.17).

Fig. 3.24
Sales Order Price
Inquiry (1.10.1.17)



Sales Order. Enter a sales order number, then scroll through the inquiry to display lines on the order. Press Enter on a selected line to see pricing details.

Repricing Orders in Sales Order Repricing

Tip
To open a sales order for repricing in Sales Order Repricing (7.1.11), set Fixed Price in the order header or line item to No.

Use Sales Order Repricing (7.1.11) to update the list and net price of selected orders to the latest corresponding price list price. You can reprice sales orders so that ordered quantities are added together, across orders, to calculate quantity breaks.

Sales Order Repricing combines orders by matching price lists and any combination of:

- Sold-to customer numbers

- Bill-to customer numbers
- Ship-to customer numbers
- Purchase order numbers
- Any combination of these four factors

Customers that do not have centralized purchasing can still receive quantity and volume discounts based upon purchases made from other intracompany purchasing departments. Line items on combined orders are repriced as if they are on the same order, which means that line items with the same break category (or the same item number) have their order quantities accumulated.

If you want an open sales order to be repriced in Sales Order Repricing, the Fixed Price field in the sales order header or the line item frame must be set to No. Otherwise, the order is skipped, even if it matches selection criteria.

The Fixed Price field appears in:

- Customer Maintenance
- Sales Quote Maintenance, header and line
- Sales Order Maintenance, header and line
- RMA Maintenance, header and line

Fixed Price defaults from Customer Maintenance to Sales Quote Maintenance, and then to Sales Order Maintenance. If you do not use sales quotes, the value defaults directly from Customer Maintenance to Sales Order Maintenance. The value of Fixed Price on an order header determines the default for each line as it is added.

When a sales quote is released to an order, the system resets the Fixed Price value on the order header to the value associated with the customer. The line item Fixed Price value is unchanged.

During order repricing, you have the option to:

- Check credit limits after new prices are applied and make various credit adjustments
- Print sales orders
- Combine sales orders
- Include RMA issues

Use Sales Order Repricing (7.1.11) to reprice and print sales orders and sales quotes for a specified range of order numbers.

Fig. 3.25
Sales Order
Repricing (7.1.11)

Use the Sales Order, Sold-To, Bill-To, and Ship-To fields to narrow the range of sales orders to be processed. Leave blank to include all orders. Use the Last Price Date, Order Date, and Due Date fields to select orders to process by date.

Check Credit. Enter Yes to check customer credit limits and past-due invoices, and generate an audit report. Enter No to bypass credit check and generate audit report only; default is Yes. If Yes, you can change the values of related credit check fields.

Print Sales Order. If Yes, the Print flag is set to Yes on all orders that are repriced. This allows them to be selected for printing even if they have been printed before.

Set/Clear Action Status. If Check Credit is Yes, enter Yes (the default) to check customer credit status prior to release or No to bypass status check. If Yes, the value of New Action Status is assigned to the Action Status field on the sales order for orders exceeding credit limits.

New Action Status. If Set/Clear Action Status is Yes, leave blank to clear the status, Hd to place on hold, or any other valid status code; default is blank. Make sure that codes are entered consistently by entering the allowed codes into Generalized Codes Maintenance (36.2.13) for field so_stat.

Check Credit Hold. If Yes, the system checks the customer Hold flag before clearing the Action Status of an order. If the Hold flag is Yes, indicating the customer is on credit hold, the Action Status of orders is not cleared.

Hold Over Credit Limit. If Yes, the system compares the customer balance to the customer credit limit. The customer balance includes open invoices and, optionally, open sales order amounts. If the customer balance is less than the predefined credit limit and the action status is blank, the order is not placed on hold.

Check Past Due Invoices. Used in combination with Automatically Set Action Status flag. If both are Yes, then sales orders for customer with credit problems are automatically placed on hold by setting the action status flag to the value specified. Otherwise, sales orders are simply listed with all the credit status information

Include Sales Orders. If Yes, the system adds open sales order values to open invoice totals in determining the credit limit. See the description for Hold Over Credit Limit.

Days. The number of days after which the system considers an invoice past due when checking past due invoices.

Amount. The maximum total invoice amount allowed to be overdue after which the system places orders on credit hold for past due invoices.

Combine Sales Orders. If Yes, the system combines sales orders with matching values based on the Yes/No settings in the four Match fields: sold-to, ship-to, bill-to, and purchase order number.

Include RMA Issues. If Yes, the system includes RMA issues in sales order repricing.

Use Sales Order Price Inquiry (1.10.1.17) or Sales Quote Price Inquiry (1.10.1.18) to verify if items are priced correctly.

Repricing in Sales Order Maintenance

Sales Order Repricing (7.1.11) reprices a range of sales orders at one time. You can also reprice individual sales orders or lines directly in Sales Order Maintenance (7.1.1).

This kind of repricing is controlled with the Reprice field. Reprice always defaults to No in Sales Order Maintenance and cannot be modified for new orders.

On existing orders, enter No to have repricing only occur when requested for a particular line. This protects orders from inadvertent changes and minimizes the number of times pricing history records are updated.

For existing orders, Reprice has two functions in Sales Order Maintenance:

- If Yes, you can update List Price, Discount, and Net Price fields during line item entry.
- If Yes, and Fixed Price is No, and prices were determined automatically, the system automatically recalculates the best price for the item, using current data.

Table 3.4 summarizes the effect of the Reprice field on sales order lines.

Table 3.4
Reprice Field
Settings and Pricing
Updates

Modify Sales Order Line	For lines with manual override price	For lines with automatically calculated price
If Reprice = Yes	1. No automatic calculation. 2. Allow update of price.	1. Recalculate the best price. 2. Allow update of price.
If Reprice = No	No price updating.	No price updating.

Reprice Field and the Sales Order Header

Reprice works differently in the sales order header than in the sales order line. When Reprice is Yes in the header, Reprice is set to Yes for each line and cannot be changed.

Additionally, setting Reprice to Yes in the header lets all order lines be candidates for repricing, even if only one line item is entered or maintained. This is useful where items are similar, have the same break category, or the same item number.

If Reprice is No in the header, you can still reprice at the line level by setting Reprice to Yes for each relevant line.

Repricing and Manual Prices

If you manually specify a price for a line item, the system does not automatically change this price, even if you request repricing. To manually adjust the price again, set Reprice to Yes for the order or the line item. Then you can update the List Price, Net Price, and Discount fields during order entry.

Although repricing a manually priced line never changes the manual entry, it may adjust discounts based on current information. This processing logic supports posting to the intended discount accounts as identified in price list records. It also enables you to track discount programs in the general ledger.

Pricing History File

The system maintains history records for pricing changes. These records detail the source of each price and discount per order/line. Use Sales Order Pricing Report (7.15.7) to view this information.

Pricing history is also maintained for manually entered prices, and gives a complete record of the source (manual or price list) of each price on file for a sales order. Using this information, the system preserves manually entered prices even when Reprice is Yes.

Tip
Pricing history documents the source of the current prices only.

Pricing history ensures that out-of-balance posting to discount accounts does not occur. When posting discounts to the general ledger, price list history is used, not the difference between list and net, since there can be many discounts, each with different account numbers.

Understanding Sales Order Maintenance Fields

Several fields in Sales Order Maintenance (7.1.1) relate to best pricing.

Fig. 3.26
Pricing Fields in
Sales Order
Maintenance
(7.1.1)

Line Pricing field	San Diego CA 92131 United States	San Diego CA 92131 United States
Manual field	Order Date: 05/05/98 Required Date: 05/05/98 Promise Date: 05/05/98 Due Date: 05/05/98 Pricing Date: 05/05/98	Line Pricing: no Manual: <input type="text"/> Site: 15000 Channel: <input type="text"/> Project: <input type="text"/>
Fixed Price field	Purchase Order: <input type="text"/> Remarks: <input type="text"/> Entered By: hme	Confirmed: yes 05/05/98 Currency: USD Language: <input type="text"/> Taxable: no <input type="text"/> / <input type="text"/> Fixed Price: yes Credit Terms: 2/45-60 Credit Terms Int: 0.00 Reprice: no
Reprice field		

Line Pricing. Affects only newly created orders. On existing orders, it defaults to No and cannot be changed. For new orders, it defaults from Price SO by Line in the Pricing Control File (1.10.1.24). Enter Yes to have the system recalculate price breaks for the order as lines are entered. Enter No to recalculate only once, when order entry is complete.

Manual. Enables you to manually enter a price list code to be considered for order lines. This price list must be set up with Manual set to Yes in Price List Maintenance (1.10.1.1). Manual price lists do not necessarily determine the order line price, but are used in conjunction with other price list search algorithms to determine the best price.

Fixed Price. Sets the default for each line added to the order. Only lines with Fixed Price set to No are updated by Sales Order Repricing (7.1.11). Defaults from the Fixed Price setting defined for the Sold-To address.

This use of fixed price should not be confused with fixed prices as used in service pricing, which enable the customer to be invoiced for a fixed price regardless of the actual cost of items, labor, and expenses recorded.

Tip
This field only affects the current maintenance session.

Reprice. Enter Yes at the order header to have the system reprice modified line items. The system also reprices other line items belonging to the same break category as a modified item. Otherwise, enter No. If No, you can still reprice line items individually in the

order detail pop-up window. If Reprice is No on the order header and you enter a new line, the system automatically reprices it.

Important The value of Fixed Price, not Reprice, determines which orders are repriced by Sales Order Repricing.

Fig. 3.27
Sales Order Line
Item Price Fields

Sales Order Line						
Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
1	44-100	1.0	EA	1,000.00	0.0	1,000.00
Description: CONTROL UNIT, HOME Sales Acct: Location: 12000 Site: 10000 Disc Acct: Lot/Serial: Confirmed: yes Project: Qty Allocated: 0.0 Pricing: 04/01/97 Cred Terms Int: 0.00 Qty Picked: 0.0 Pricing Date: Type: Qty Shipped: 0.0 Credit Terms Int: UM Conv: 1.0000 Qty to Invoice: 0.0 Reprice: Consume Fcst: yes USD Cost: 0.00 Manual: <input type="text"/> Detail Alloc: no Salesperson[1]: 00000005 Multiple: no Taxable: no Comm%[1]: 10.00% Fixed Price: yes Comments: no						
Line Item						
Price fields						
Pricing Pop-Up						
Line Item						
Fixed Price						

Pricing Date. Defaults to the Pricing Date specified on the order header. Used as the effective date in determining prices for this line item. This field is editable if Vary Pricing Date by SO Line in the Sales Order Control File is Yes. Otherwise, the Pricing Date of the order header is used and cannot be changed.

Credit Terms Int. Credit terms interest for this line. Editable only if Vary Pricing Date by SO Line in the Sales Order Control File is Yes.

Reprice. Editable only if Reprice is No in the order header. In this case, you can select individual line items for repricing. When set to Yes for a line, the List Price, Discount, and Net Price fields can be edited, and if the original price was calculated by the system, it is automatically recalculated.

Manual. Defaults from the Manual field in the sales order header. You can specify a different manual price list for this line, as needed. This field only has effect if Reprice is Yes.

Fixed Price. Initially defaults from the order header, but can be unique for each line. Determines whether this sales order line is considered by Sales Order Repricing (7.1.11) and whether automatic repricing can occur for this line item in Sales Order Maintenance.

Using List/Discount Table Pricing

List/discount table pricing is an alternative to the best pricing model. It is used for pricing different kinds of orders than best pricing, including scheduled orders, purchase orders, returns to suppliers, and receipts in RMA Maintenance.

In this model, prices are defined when an item is set up in the item master. Price lists are used to store other pricing structures, including prices in foreign currencies, prices or discounts for a certain unit of measure such as a case or full truckload, discounts at different quantity levels, or prices calculated as a percentage markup over GL cost.

Price lists and discount tables can be associated with suppliers and customers, and provide defaults for transactions where they are used.

Note Service/Support functions use price lists in a slightly different way. For RMA receipts, the price list is derived from the warranty or contract associated with the item being returned. The RTS, however, is exactly like a purchase order, and derives a price list from the supplier master record.

Four types of price lists can be defined in Price List Maintenance (1.10.2.1):

- Type M. Percent markups or markdowns from item GL cost.
- Type D. Percent discounts from item master price.
- Type P. Fixed discount prices, used primarily for net pricing and foreign currency pricing.
- Type L. Multiple list price tables.

Discount price lists can also be used for quantity-break pricing. During transaction entry, the system looks for one price list when calculating net item price on scheduled orders or RMA returns, and when calculating cost on purchase orders. If an applicable price is not found, either the item master list price is used, or GL cost minus overhead.

Note RMA returns are an exception; if no price is found on the list, the return price defaults to zero.

Use Price List Maintenance (1.10.2.1) to maintain list and discount price tables. During implementation, use Price List Generation by Item (1.10.2.6) to create price tables from existing item master file list prices.

Once price lists are created, you can quickly create lists in other currencies using Price List Copy (1.10.2.5).

Creating Price Lists

Each item has a base price expressed in base currency. Price lists are used to store other pricing structures, such as prices in other currencies, prices or discounts for a certain unit of measure (for example, a case or full truckload), discounts at different quantity levels, or prices calculated as a percentage markup over GL cost.

The system looks for a matching price list in the following order:

- 1 Currency, price list, item number, unit of measure
- 2 Currency, price list, item number
- 3 Currency, price list, product line (with item number blank)
- 4 Currency, price list (with product line and item number blank)

If no match is found, the item base price displays, converted to the currency of the order.

Default price lists are derived in different ways, depending on the kind of transaction.

- Purchase Orders: Price lists are associated with suppliers in Supplier Maintenance and provide defaults when purchase orders are created.
- Scheduled Orders: Price lists are associated with customers in Customer Maintenance and provide defaults when scheduled orders are created.
- Return to Supplier (RTS): These service orders follow the same processing as purchase orders.
- Return Material Authorizations: A credit price list is associated with warranty and contract types. This price list provides the default in RMA Maintenance and is used for RMA receipt line credits.

Only one price structure can be applied to each order. You cannot set up a price list with base prices in a foreign currency and then access another price list to apply quantity discounts to those foreign currency prices.

You can create price lists and discount tables under the same pricing code. If you do, remember to consider the following. If you create minimum or maximum price ranges, you must ensure that they include any range set on the associated discount table. This is because the minimum and maximum prices on price tables take precedence over discount table prices.

Different price structures can be entered for specific units of measure. This enables you to set up discounts so that if, for example, you buy a case (CS), you get a better price than if you buy only one unit (EA).

Total This Level GL Cost and Total GL Cost are display-only fields. The categories whose elements are included are: material, labor, burden, and subcontract. Total GL cost is the total GL cost for the item's default site. It includes all cost elements for this level and lower levels. Total This Level GL Cost is used as the default purchase price. It includes this-level costs, excluding any overhead cost elements. Both purchase and selling prices are for one unit of the item using the item unit of measure.

Fig. 3.28
Price List
Maintenance
(1.10.2.1)

Min Qty	Discount %	Min Qty	Discount %	Min Qty	Discount %
1	1.0	0	0.0	0	0.0
10	20.0	0	0.0	0	0.0
100	50.0	0	0.0	0	0.0
1000	65.0	0	0.0	0	0.0
0	0.0	0	0.0	0	0.0

Price List. Enter a code identifying the price list.

Currency. Specifies the currency of the transactions that are subject to this price list. A price list is used only if the currency of the transaction is the same as the price list currency.

Product Line. Enter the product line associated with this price structure. This field can be left blank. Since each item in the system

belongs to a product line, pricing by product line lets you set up price structures for a group of items rather than enter them individually.

Item Number. Enter an item number if this price applies only to this item. Leave blank to set up price structures by product line or for all items.

Price lists by item are often used to set up foreign currency prices, enabling you to enter a specific base price for an item stated in terms of another currency. This also lets you define different prices at each site. Item prices are also used if you offer special pricing to a customer for only one or a few items, whether specific prices, discounts, or markups.

UM. The unit of measure associated with this price list structure. This field can be left blank if the pricing applies to any unit of measure. Unit of measure is useful for defining special prices based on the unit of measure of the transaction.

Start/Expire. Enter dates if the list should only be considered effective for a defined period of time. If blank, the system considers the prices to be effective indefinitely.

Amount Type (L/P/D/M). Determines whether the price list is a list price table or discount table:

- L: List price table
- P: Discount table (net price)
- D: Discount table (discount %)
- M: Discount table (markup %)

Item Master List Price. Displays the price for one unit of the item, using the item stocking unit of measure, at the item's default site.

Total This Level GL Cost. Displays the total GL cost for the item's default site. It includes all cost elements for this level and lower levels.

Total GL Cost. Displays the default purchase price. It includes this-level costs, excluding any overhead cost elements.

Price Table List Price. Price or cost for one unit of the item, using the price table unit of measure. Overrides the item master list price or cost.

Minimum Price/Maximum Price. A range of acceptable values for the line item net price/cost (list price/cost minus any discounts). If the line item net price/cost is outside this range, the system displays an error message.

Generating Price Lists by Item

After defining item prices in the item master, you can create price tables automatically. Use Price List Generation by Item (1.10.2.6) to create price tables from item master prices. You can create prices for one or a range of items and product lines.

Price List Generation by Item uses only item master list prices, not item cost, to calculate the new list price. It creates only type L price lists, using the default item stocking UM as the price list UM. Once the lists are created, use Price List Maintenance to add minimum/maximum prices and change prices.

Fig. 3.29
Price List
Generation by Item
(1.10.2.6)

Item Number/To. Enter a range of item numbers for which price tables are to be created.

Prod Line/To. Enter a range of product lines for which price tables are to be created.

Target Price Table. Assign a price list code to the price tables being created.

Target Currency. Assign a currency code to the price tables being created.

Target Start. Assign a start date to the price tables being created.

Target Update Option (S/C/E). Determines how the system handles items that already have a target price list. The default is S.

- Skip: Skips the item and does not create a price table for it.
- Clear: Deletes the existing price table and creates a new one.
- Expire: Sets the expire date of the existing price table to start date minus one day, and creates a new target price table.

Update(Y/N). If No, the system prints a simulated transaction report. If Yes, the system creates the target price tables.

Copying Price Lists

Use Price List Copy (1.10.2.5) to quickly create alternate price lists from one base price list and automatically recalculate prices based on the Cur Conv Factor. You can also adjust existing price lists by increasing or decreasing prices with an adjustment percent.

Fig. 3.30
Price List Copy
(1.10.2.5)

Source Price List. Enter a valid price list code to be used as the source of the data copied to the target price list.

Target Price List. Enter the code to be used as the destination of the copy. Target and source can be the same. In this case, an ending effective date is added to the source list and a starting effective date to the target. If the target list is not the same as the source and does not exist, it can be created. If it does exist, it can be either cleared or added to.

Source Currency. Enter the currency of the prices being copied. Pricing information and currency rate from the source price list are copied to the target price list for the range of item numbers specified.

Target Currency. Enter the currency for the system to use on the target prices. The source and target currency can be the same—leave blank for the system to default to the source currency. If you are copying from one currency to another, the system calculates and a default Cur Conv Factor using the exchange rate effective on the price list start date. The system adjusts prices on the target list using the conversion factor you specify.

Item and To. Enter a range of item numbers to be used as selection criteria in choosing prices to be copied.

Start. Start date defaults to today's date and defines the start date for the new pricing structure created by the copy. This field is applied differently by the system in different situations:

- If the source and target codes and currency are the same and the date entered matches the start date currently on the source price list, a new price list is not created. Instead, the existing price list is modified according to any adjustment percentage entered.
- In other cases where the source and target codes and currency are the same, the system uses the Start Date as the start effective date on the target list and adds an ending effective date on the source list (one day before target's start date).
- If the source and target codes are different, the start date is used on the target and the source list is not affected.

Expire. If specified, the system uses the Expiration date as the end effective date for the target price list.

Adjustment %. Defaults to 100.00%. Specific prices (Amount Type P) are multiplied by the adjustment percent, then rounded to the specified number of decimal places. Discount and markup percentages (Amount Type D and M) are also multiplied by the adjustment percent. If the percentage is greater than 100%, amounts are increased. If the percentage is less than 100%, amounts are decreased.

Cur Conv Factor. Enter a conversion factor to use when the source and target price list currencies are not the same. The system calculates and displays a default Cur Conv Factor using the exchange rate in effect on the price list start date. If effective exchange rates are not found, Cur Conv Factor defaults to 1. you can modify the conversion factor, if needed. However, the value cannot be 0.

Tip
Specify rates in Exchange Rate Maintenance (26.4).

Clear Supplier Price. Determines if the supplier prices are cleared before copying in the new prices.

- If No, prices are added to the existing Supplier Item file.
- If Yes, existing prices in the Supplier Item file are cleared and the new prices are added.

Price List Copy can be used to create supplier-item quotes. When Create Supplier Item is Yes, you are prompted to enter a supplier code. All adjusted prices are calculated and copied into the Supplier Item file as the Quote Cost for that supplier. Quote prices are accessed by purchasing to display the current price quoted by a supplier. Other supplier-item information is also available but must be adjusted manually.

Clear Target List. Defaults to No. Determines if the target price list should be cleared before copying the new prices. If No, adds the prices to the existing target price list. If Yes, clears the target price list first and then copies the new prices.

Update Item Price. Indicates if the item base price should be adjusted during this process.

- If Yes, the item base price in the Item Master File is set to the target price. Two other conditions must be true: the source price list must have a P or L amount type, and the target price list currency must be the base currency. Each item number on the price list is updated with the first price on the price list.
- If No, item base prices are not affected.

Create Supplier Item. Defaults to No and indicates that if the supplier item price does not exist, it should be created. If this is Yes, a new price is created if one does not exist. If this is No, a list is not created. If Create Supplier Item is Yes and the price exists, the value of Clear Supplier Price determines if the price is cleared before the copy, or if an end effective date is added to the old price.

Create Target List. Defaults to Yes and indicates that if the target price list does not exist, it should be created. If this is Yes, a new list is created if one does not exist. If this is No, a list is not created. If Create Target List is Yes and the list exists, the value of Clear Target List determines if the list is cleared before the copy or if an end effective date is added to the old prices.

Round to Two Decimal Places, Round to Nearest Whole Number, Round to Nearest Ten, Round to Nearest One Hundred, Round to Nearest One Thousand (x000.00) (Y/N). Set only one of these to Yes, indicating the rounding method to be used when creating the new price list structure.

Update. Defaults to No. Determines if the target price list is actually updated based on the parameters specified. No is generally specified to create a report of potential changes before they are made. It is recommended that you run Price List Copy first, using the report-only option by setting Update to No and Print Audit Trail to Yes. This lets you review changes before actually creating or updating the target price.

Print Audit Trail. Defaults to No. Indicates if an audit report should be printed. If Yes, a report prints showing the effect of applying the copy parameters to the target price list. If No, a report does not print.

Processing List/Discount Prices

Use list/discount price tables for purchasing, scheduled orders, and some service transactions. The following example shows how they are used on purchase orders, but the process is similar for other transactions.

When entering an order, the Price Tbl and Disc Tbl fields display in the header. These fields record the price table and discount table code for the transaction. Values for both default from the supplier, but you can override them if necessary. Using control file options, you can require users to enter price and discount tables.

To calculate the net cost, the system does two things.

- From the price table, it selects the unit cost for the line item due date or the order entry date, depending on what you specified in the Purchasing Control File. If pricing is by item due date, the due date defaults from the due date in the order header, but you can override it for individual lines from single-line entry mode.
- If a discount table is specified, the system applies the percentage from the discount table for the line or order due date to calculate the extended net cost for the line item quantity. You can override this net cost manually.

If the price table has a minimum and/or maximum cost, the system verifies the calculated or user-entered net price against it. If the net cost is outside the minimum/maximum range, the system displays a warning message and replaces the line item net cost with either the maximum or minimum price from the price table, as appropriate.

Pricing Setup

Settings in two control files affect list/discount pricing:

- Purchasing Control File (5.24), for purchase orders and RTSs
- Sales Order Control File (7.1.24) for scheduled orders

Enter appropriate values for the following fields.

Discount Table Required. This flag determines how strictly discount tables are used to control order entry.

- If No, items can be entered whether or not a discount table exists.
- If Yes, only items from an existing discount table can be entered, and only if the price list item, unit of measure, and currency match the order item, unit of measure, and currency exactly.

In searching for a valid price, blank is *not* considered a match. If discount tables are set up with a blank item or unit of measure, a price is never found. If you are pricing by product line rather than item number, this flag should be set to No. Prices can be overridden unless the field is password-protected.

Price Table Required. This flag determines how strictly price lists are used to control order entry.

- If No, items can be entered whether or not a price list exists.
- If Yes, only items from an existing price list can be entered, and only if the price list item, unit of measure, and currency match the order item, unit of measure, and currency exactly.

In searching for a valid price, blank is *not* considered a match. If price lists are set up with a blank item or unit of measure, a price is never found. If you are pricing by product line, this flag should be set to No. Prices can be overridden unless the field is password-protected.

Price by Line Due Date. Specifies whether the system selects the list and discount price based on order date or line item due date.

Product Change Control

MFG/PRO's Product Change Control (PCC) lets you control and monitor product changes. Approval cycles let you control how and when suggested changes are incorporated into your database.

Introduction **88**

PCR/PCO Life Cycle **91**

Setting Up PCC **94**

Creating PCRs and PCOs **107**

Routing PCRs and PCOs for Approval **120**

Approving PCRs and PCOs **121**

Incorporating PCOs into Production **122**

Closing PCRs and PCOs **127**

Importing and Exporting PCRs and PCOs **127**

Setting Up PCC Security **128**

Introduction

MFG/PRO's Product Change Control (PCC) module is a flexible information storage tool that enables you to control and monitor product changes from inception through implementation. With PCC, you can modify item engineering data, product structures, routings, formulas, processes, and item specifications without affecting the files that control activity in your database. You can define an approval cycle for product changes. After approval, changes can be incorporated into the database files that manage product definition.

PCC is built around two types of documents:

- Product change requests (PCRs) record requests for product changes. PCRs only affect your product definitions when incorporated into a product change order (PCO). Typically, they are not strictly controlled. More than one PCR can exist per item.
- Product change orders (PCOs) manage the introduction of changes into your product definitions. PCOs are usually strictly controlled through an approval process. Only one PCO can exist for an item at any one time.

PCRs and PCOs can be used to control changes to most item-related data in a manufacturing environment, including the following:

- Basic item master data maintained in Item Data Maintenance (1.4.3).
- Additions, changes, and removals of product structure and formula records, including alternate BOMs, maintained in Product Structure Maintenance (13.5) and Formula Maintenance (15.5).
- Additions, changes, and removals of product routings and processes maintained in Routing Maintenance (14.13.1), Routing Maintenance (Rate Based) (14.13.2), Process Definition Maintenance (15.13), and Process/Formula Maintenance (15.18).
- Additions, changes, and removals of item specification and test steps developed in Item Specification Maintenance (19.1.13).

A single PCO can affect numerous item numbers, formulas, product structures, routings, processes, or item specifications. New item numbers required by PCOs or PCRs can be added to the database using a screen similar to Item Data Maintenance (1.4.3), accessed from PCR and PCO

Tip
PCC replaces the engineering change order (ECO) programs available from menu 13.13.

Maintenance. The revision number of an item added this way is blank until the PCO adding it is finally implemented.

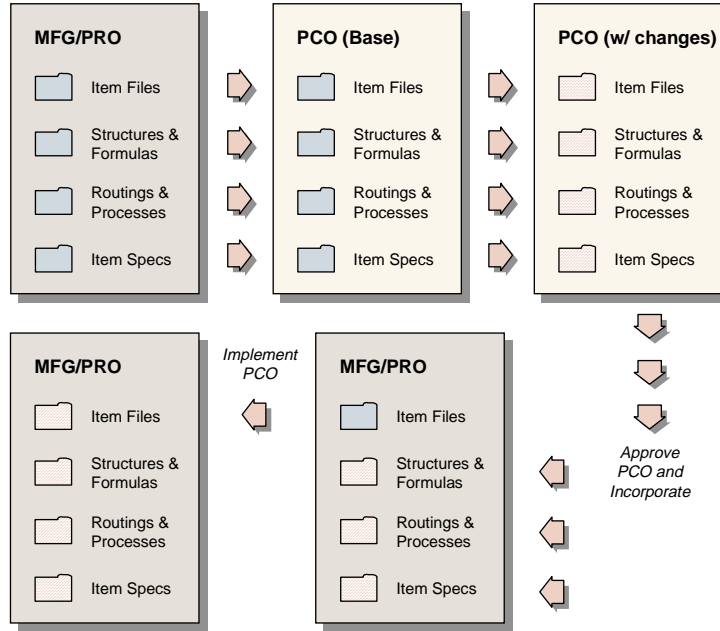
Add new items needed by a PCR or PCO with an inactive status to ensure they do not appear prematurely on production reports, and are not visible to MRP. While new items are inactive, you can set up additional data, such as inventory, planning, and costing. When implemented, a PCO can change an inactive item's status to active.

Note You cannot maintain item/site data using PCC functions. It is usually better to maintain such data locally by sites. You also cannot use PCC to maintain alternate routings or co/by-product structures.

To use PCRs and PCOs, you first create new production and planning records, or copy existing records into PCRs/PCOs from MFG/PRO database files. If you copy records, you can modify them in the PCO and specify the required product changes. These changes do not affect database files used for production and planning until the PCO is approved and incorporated. When this happens, modified records and any new records are copied from the PCO back into the production environment.

Figure 4.1 illustrates the process of copying data into a PCO, making changes, and updating the production files.

Fig. 4.1
PCO Change
Process



Product changes are copied into MFG/PRO production and planning files after an effective date is set for a PCO. The effective date becomes the start date for new MFG/PRO records. This way, product changes can be used for planning before the actual effective date arrives and before the records are used for production.

Any changes made by a PCO to item records are copied into MFG/PRO's master item files in a separate implementation step on the PCO effective date.

PCR/PCO Life Cycle

Figure 4.2 represents the PCR/PCO life cycle.

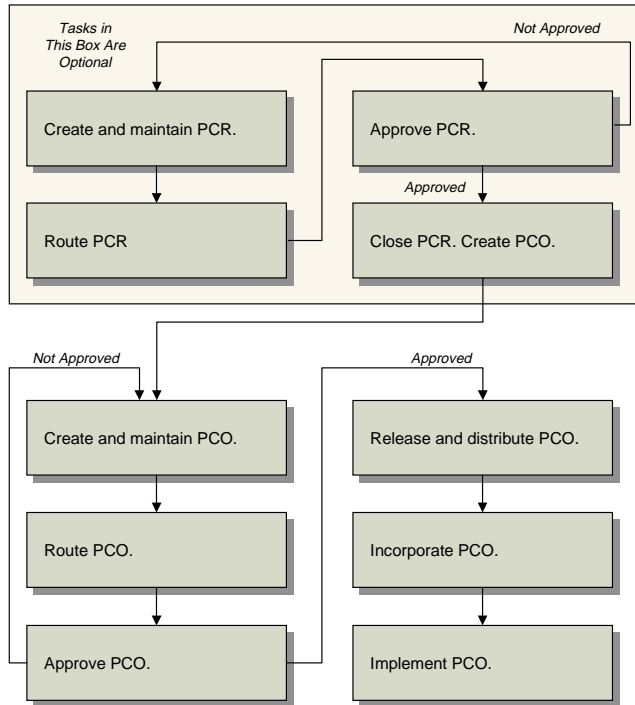


Fig. 4.2
PCR/PCO Life
Cycle

PCR Life Cycle

PCRs can contain the same information as PCOs, but cannot be taken past the approval stage to release. They are useful for companies that receive requests from various sources, such as customers or field representatives, and hold the requests for further processing. You can set up PCC to require a PCR approval process. Once approved, PCRs are typically closed or converted into PCOs. A PCR, approved or not, has no effect on the system until converted into a PCO.

Creating and Maintaining PCRs

Create PCRs in PCR Maintenance (1.9.2.1). Also use PCR Maintenance to capture and modify item, product structure, formula, routing, process, and item specification records. The Type/Design Group combination determines the PCR routing slip and distribution group.

Routing PCRs for Approval

When a PCR is ready for review, comment, and approval, route it using Route PCR for Approval (1.9.2.4). Groups and users who must approve the PCR can be notified with E-mail or printed output that the PCR is ready for review. PCRs that have been routed for approval can be revoked, if necessary, for revision or correction.

Approving PCRs

Use PCR/PCO Approval (1.9.6.1) to monitor the queue of submitted PCRs, add comments, and approve or disapprove each PCR. Disapproved PCRs can be routed back to reviewers for reapproval. The order of approvals is determined by the routing slip attached to each PCR. Once a PCR has been approved electronically by all necessary personnel, it can be closed, or converted into a PCO using PCR Maintenance (1.9.2.1).

PCO Life Cycle

The life cycle of a PCO is more extensive than that of a PCR, since PCOs typically affect production data.

Creating PCOs

Create PCOs in PCO Maintenance (1.9.2.13). Also use PCO Maintenance to capture and modify item, product structure, formula, routing, process, and item specification records. You can also create PCOs by copying or combining existing PCOs or PCRs, or by converting PCRs.

Routing for PCOs for Approval

When a PCO is ready for review, comment, and approval, route it using Route PCO for Approval (1.9.2.16). Groups and users who must approve the PCO can be notified by E-mail or printed output that the PCO is ready for review. PCOs that have been routed for approval can be revoked, if necessary, for revision or correction.

Approving PCOs

Use PCR/PCO Approval (1.9.6.1) to monitor the queue of submitted PCOs, add comments, and approve or reject each PCO. Disapproved PCOs can be routed back to reviewers for reapproval. The order of approvals is determined by the routing slip attached to each PCO. Once the PCO has been approved electronically by all necessary personnel, it is ready to be released.

Release and Distribution

You can release only approved PCOs to manufacturing. Use Release and Distribution (1.9.7.1) to monitor the queue of approved PCOs and choose PCOs to release. If necessary, you can revoke approval of a PCO before release and return it for revision or correction.

Once released and distributed, the PCO can no longer be rejected or modified. Any changes affecting the PCO must be released as separate PCOs. At distribution time, MFG/PRO automatically generates either hard-copy release notices or E-mail for a defined group of users, either immediately or through batch print queues.

Once a PCO has been officially released, the manufacturing organization is responsible for implementing the changes. Engineering can specify a mandatory date for changes, or allow manufacturing to select a changeover date based on least cost, minimum disruption, or other relevant factors.

Incorporating PCOs

Use Incorporation Planning Report (1.9.7.3) to display inventory levels and monetary values of inventory affected by a PCO. This can help in planning effective dates for changes.

Use Incorporation Selection (1.9.7.4) to monitor and assign effective dates. Then, incorporate it into production using Incorporation (1.9.7.5). You can modify an effective date by incorporating a PCO again with a different date.

Once a PCO is incorporated, MRP uses the effective dates of product changes to plan future orders. However, until the effective date is reached, PCO changes do not affect current operations.

Implementation

When a PCO's effective date has arrived and all changed items, product structures, formulas, routings, processes, and item specifications are in production, use Implementation (1.9.7.13) to move the new item revision numbers and other item data into the corresponding item master files.

Setting Up PCC

To set up PCC:

- 1 Prepare data in other parts of MFG/PRO for use with PCC.
- 2 Set up the PCC Control File.
- 3 Define user groups.
- 4 Define approval routings.
- 5 Define document change types.
- 6 Set up PCC security.

▶ See “Setting Up PCC Security” on page 128 for details.

Preparing Data for Use with PCC

To prepare data in other parts of MFG/PRO for use in PCC, do the following.

- 1 Print existing ECOs, if any, using ECO by ECO Number Report (13.13.3). Implementing PCC disables ECO functions. You print ECOs in order to reenter them as PCOs.
- 2 Determine which manufacturing processes you want to control with PCC, and activate the appropriate sections. There are four possible activation programs:
 - Execute Enable PCC Structure Maintenance (13.13.22). Set Structures to Yes to control product structures. This automatically disables ECO functionality in menu 13.13.
 - Execute Enable PCC Routing Maintenance (14.22). Set Routings to Yes to control product routings.
 - Execute Enable PCC Formula Maintenance (15.22). Set Formulas and Processes to Yes to control formulas and processes.
 - Execute Enable PCC Item Spec Maintenance (19.1.22). Set Item Specifications to Yes to control item specification.

Important Once you enable PCC and thereby disable ECO functions, do not use the ECO functions. Enabling PCC makes changes to your MFG/PRO database that cannot be reversed.

- 3 Set up E-mail definitions for your system in E-Mail Definition Maintenance (36.4.20). PCC uses E-mail to contact users during the approval process and life cycle of change documents.
- 4 Create user IDs in User Maintenance (36.3.18). PCC users must be defined before they can be added to groups involved in PCC activities. Assign user passwords, or have users select their own. You can increase PCC security by requiring users to reenter passwords before accessing PCR/PCO Approval.

If you are using E-mail to notify users of PCC activities, make sure that each user has a valid E-mail address and definition.

- 5 Set up printers and batch IDs (36.13.2, 36.14.1, 36.14.3). Users can be notified at various points in the PCC life cycle either by printed reports or E-mail. Batch IDs are useful for running large print jobs

▶ See *User Guide Volume II: Manager Functions* for information on E-Mail Definition Maintenance.

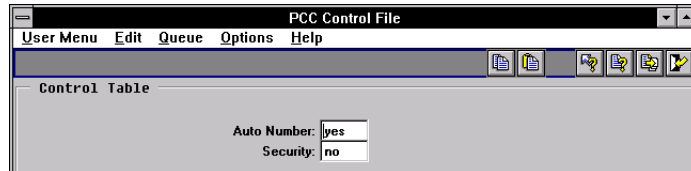
during off-hours. Also, PCOs can be distributed (1.9.7.1), incorporated (1.9.7.5), and implemented (1.9.7.13) using batch IDs that execute nightly.

- 6 Initialize PCOs in the PCC Control File (1.9.24). The first time you enter the PCC Control File, you are prompted to initialize PCOs to current revision level. Answer Yes to have the system create PCO *000000*, which records current revision numbers for all items in the system. The initial revision numbers serve as a starting point for Item Revision History Browse (1.9.9.6).

Setting Up the PCC Control File

Use the PCC Control File (1.9.24) to specify how PCRs and PCOs are processed.

Fig. 4.3
PCC Control File
(1.9.24)



Auto Number. Enter Yes to generate document numbers automatically when a new PCR or PCO is created. Enter No to enter numbers manually when creating PCRs or PCOs.

Security. Enter Yes to verify user identity when PCR/PCO Approval (1.9.6.1) is accessed. If Yes, users are prompted to enter a password before the screen displays. To use this feature, set Security Option in the Security Control File (36.3.24) to U to require a user ID, or to B to require both a password and user ID.

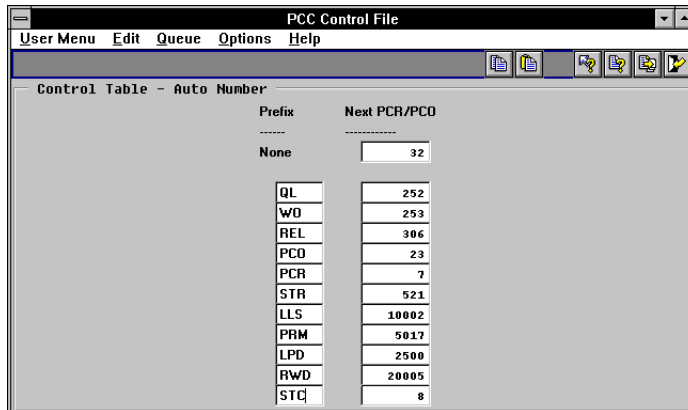


Fig. 4.4
PCC Control File,
Auto Number
Frame

Prefix. If Auto Number is Yes, the system assigns a prefix based on the PCR/PCO Type specified and associates the prefix with the Next PCR/PCO field to create a unique number. Multiple prefixes can be specified. Use the null prefix for types that do not reference a specific prefix.

Next PCR/PCO. The next number available for an associated prefix. When the prefix is used to label a new document, the portion of the number after the prefix is determined by this field.

Tip
Types are defined in PCR/PCO Type Maintenance (1.9.1.9).

Defining Groups, Routing Slips, and Change Types

Three kinds of data are defined in the PCC setup menu: groups, routing slips, and document change types. These three data structures work together to form a model of your company’s product change and approval process.

Figure 4.5 shows how PCC groups, routing slips, and change types are used.

Fig. 4.5
PCC Setup
Functions

Creating Groups

In PCC, groups represent users with different functional responsibilities. Groups are used in three ways.

- Design. Groups designate which users have authority to create and maintain PCRs and PCOs. For example, members of an engineering team might make up one design group. PCRs and PCOs are organized by type and design group, since the design group is the driving force behind change development.
- Distribution. Groups designate which users are notified automatically when a PCO has been released.
- Approval. Groups designate which users have authority to approve PCRs and PCOs.

Use Group Maintenance (1.9.1.1) to define PCC groups.

Fig. 4.6
Group Maintenance
(1.9.1.1)

In the first frame, enter a unique group name and a brief description. Use the second frame to add users to the group, and specify group attributes.

Important Users added to groups must be previously defined with User Maintenance (36.3.18).

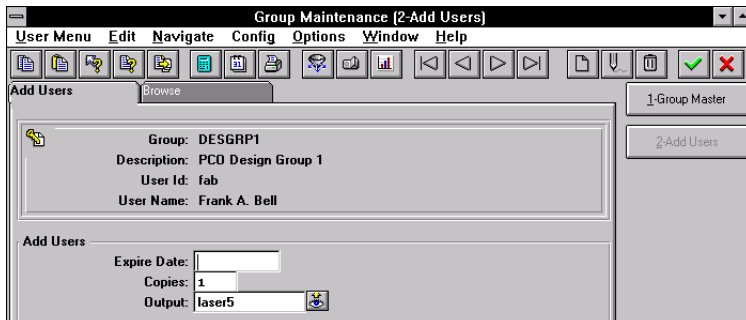


Fig. 4.7
Group Maintenance, Add Users

Expire Date. Optional. Enter a date when the user is no longer considered an active member of the group.

Copies. Enter the number of printed copies to be printed on the printer specified in Output. Enter zero to have the user notified by E-mail.

Output. Typically, the printer on which PCC-related notices are printed.

Tip
Specify the E-mail address in User Maintenance (36.3.18).

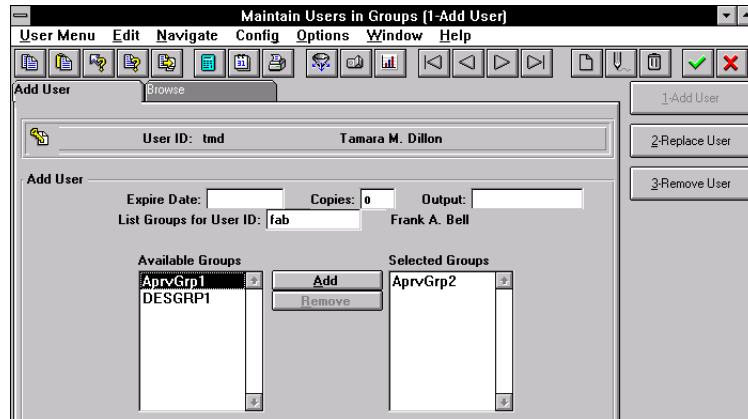
Changing Group Memberships

Use Maintain Users in Group (1.9.1.3) to change group memberships. You can add, remove, or replace users, or change user-related settings (Expire Date, Copies, Output). Changes can be made to more than one group at a time, as when a user in several design groups transfers to another department or leaves the company.

Adding Users to Groups

Add users to groups in the Add User frame.

Fig. 4.8
Maintain Users in
Groups (1.9.1.3),
Add User



User ID. Enter a valid user ID, previously defined in User Maintenance (36.3.18).

Expire Date, Copies, Output. To modify these user attributes, enter new values.

List Groups. Optional. Specify groups, or leave blank to display all defined PCC groups to which the user being added does not currently belong. Specifying groups can be useful to define one user's membership so that it resembles that of another user.

Available Groups. Select a group to add the user to, and choose Add. Select multiple groups by holding down Shift during selection.

Selected Groups. To deselect a group, highlight it and choose Remove.

Replacing Users in Groups

Replace users in groups in the Replace User frame.

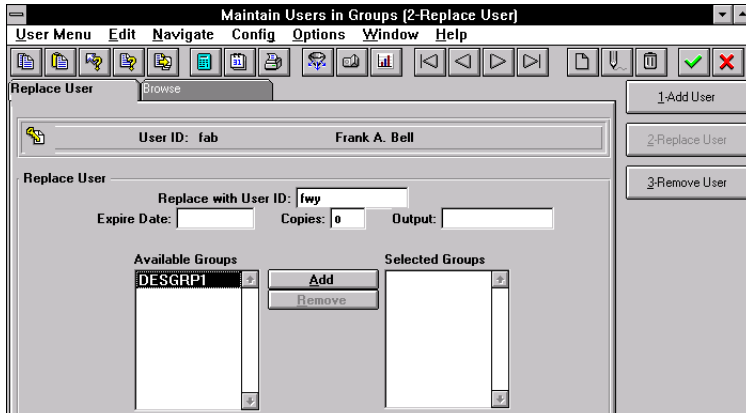


Fig. 4.9
Maintain Users in Groups, Replace User

User ID. Enter the user ID of the old user.

Replace with User ID. Enter the user ID of the new user.

Expire Date, Copies, Output. Modify these user attributes as needed.

Available Groups. The list box includes all groups to which the old user belongs. Select a group and choose Add to move it to the Selected Groups list. Select multiple groups by holding down Shift during selection.

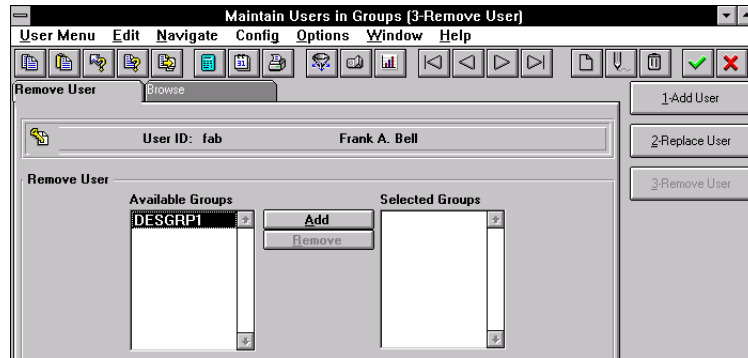
Selected Groups. To deselect a group, highlight it and choose Remove.

Tip
You can modify a user's attributes by specifying the same user in both User ID fields.

Removing Users from Groups

Remove users from groups in the Remove User frame.

Fig. 4.10
Maintain Users in
Groups, Remove
User



User ID. Enter the user ID of the user being removed.

Available Groups. The list box includes all groups to which the user being removed belongs.

Defining Approval Routings

Approval routings specify who needs to approve a change, and in what order approvals are required. Approval routings are represented by routing slips, which can be created manually or copied from routing templates and modified. Routing slips also indicate who is to be notified when documents are approved. Every PCR and PCO requiring approval must have a routing slip.

Create original routing slips in Routing Slip Maintenance (1.9.1.5), or copy existing routing slip templates and make required modifications. If you modify a routing template, the changes only affect new PCRs and PCOs.

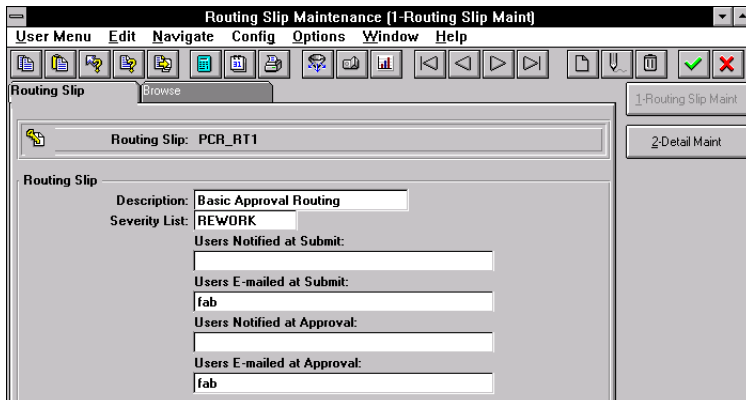


Fig. 4.11
Routing Slip
Maintenance
(1.9.1.5)

Routing Slip. Enter a unique code identifying the routing.

Description. Enter a description of the routing.

Severity List. Enter a code indicating the severity list to be used for this routing. Severity lists are predefined lists of defects, ranked according to how severe each defect is considered. For example, a severity list of hardware defects might appear as follows, with higher numbers being more severe.

5	Cosmetic/typographical correction
10	Minor drawing/layout change
20	Major drawing/layout change
30	Wrong dimensions
40	Missing part

Create severity lists in Reason Codes Maintenance (36.2.17) by defining typical defects and assigning them severity rankings. Group reason codes by a type such as PCC.

When a member of a group with authority to reroute an approval rejects a change in PCR/PCO Approval, a prompt for severity level displays.

Users Notified at Submit or Approval. A routing slip can include a list of users to be notified at the beginning and end of the approval cycle. Users notified must be defined as MFG/PRO users, but do not have to be members of PCC groups. The system determines the appropriate E-mail address from data specified in User Maintenance.

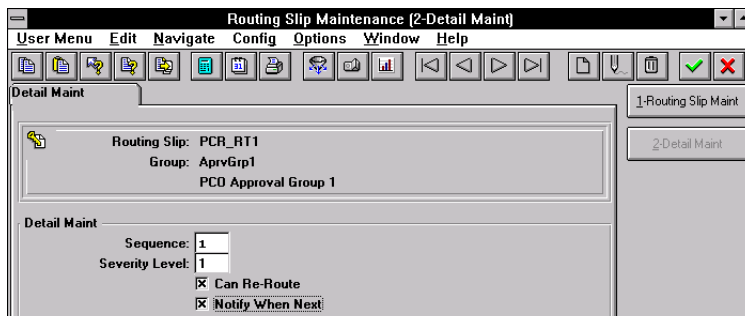
Tip
Separate multiple
user IDs with
commas.

Tip
Check E-mail addresses carefully to avoid errors. This field cannot be validated.

Users E-Mailed at Submit or Approval. Enter E-mail addresses of persons outside your organization, such as key suppliers, who are to be notified at the beginning and end of an approval cycle. Enter full E-mail addresses, maximum 240 characters. Leave blank to notify only internal personnel.

Enter approval routing details in the Routing Slip Detail frame.

Fig. 4.12
Routing Slip Maintenance, Detail Maint



Sequence. Enter a number from 0 to 999 specifying the group’s sign-off position relative to other groups in the routing. If zero, groups can review the document in any order.

Table 4.1 illustrates three types of approval sequences.

Table 4.1
Sample Approval Sequences

Hierarchical		Semi-Hierarchical		Non-Hierarchical	
Engineering	0	Engineering	0	Engineering	0
Production	10	Production	0	Production	0
QA	20	QA	0	QA	0
Finance	30	Finance	10	Finance	0

When a non-hierarchical order is used, groups can review the document in any order. Skip some sequence numbers to facilitate addition of groups in the future.

When a hierarchical or semi-hierarchical order is used, you can use the Notify When Next flag in combination with the Next Only flag in PCR/PCO Approval to display only those PCOs approved by all subordinate groups.

Severity Level. Enter a number indicating what severity of defect results in PCRs and PCOs being rerouted to this group. Lower numbers mean that minor defects are rerouted to this group. If you are not using severity levels, enter zero.

Tip
The severity level acts as a filter to prevent needless review and streamline the PCO approval process.

The system reroutes a PCO to a group whenever the group in question has approved the change document *and*:

- The change document is rejected by another group on the routing slip that has reroute authority (Can Re-Route is Yes), *and*
- The rejecting group sets the reroute level to a number greater than or equal to the severity level in this field.

Can Re-Route. Enter Yes to indicate that this group has the authority to reroute a PCO when they reject it. To effectively disable rerouting, enter No for all routing slips.

Important Disabling rerouting means that *every* group on a routing slip must reapprove a corrected document.

Notify When Next. Check this box to have the system notify each group when it is next, based on sequence number, in an approval routing. Users to notify should have valid E-mail addresses.

Routing Slip Copy

Create new routing slips based on existing routing slip templates in Routing Slip Copy (1.9.1.7).

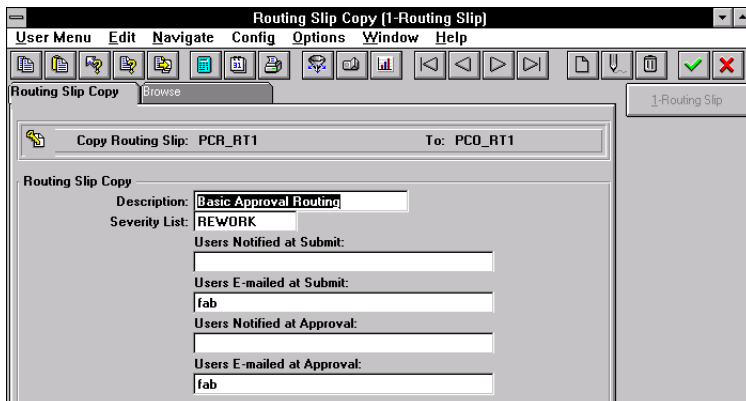


Fig. 4.13
Routing Slip Copy
(1.9.1.7)

The list of users to notify at submission and approval defaults from the source routing and can be modified. When you press Go, you are prompted to copy the routing detail. Respond Yes to have the system copy approval routing details for each group from the source routing to the new routing. If you respond No, groups can still be added later using Routing Maintenance.

Defining Document Change Types

Use PCR/PCO Type Maintenance (1.9.1.9) to set up codes for PCR and PCO types. The type code determines whether the change document is a PCR or a PCO, and determines the routing slip, distribution group, prefix, and number.

Defining document change types requires careful planning. Some criteria to consider are:

- Purposes of the PCO, such as to enhance safety, upgrade functionality, reduce cost
- Product lines affected by the PCO
- Design areas affected by the PCO, such as electrical, mechanical, or pneumatic
- Approvals required for the PCO

Fig. 4.14
PCR/PCO Type
Maintenance
(1.9.1.9)

The screenshot shows a window titled "PCR/PCO Type Maintenance" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. The main area contains the following fields:

Type:	PCOTYPE1
Design Group:	DesGrp1
Description:	Basic Change Order
Document Type:	PCO
Prefix:	PCO
Routing Slip:	PCO_RT1
Distribution:	Group1

Type. Enter a code identifying this type of change document.

Design Group. Enter a group defined in Group Maintenance that has design responsibility for this type of change document.

Description. Enter up to 24 characters describing this document type.

Document Type. Indicate whether this type is used for PCRs or PCOs.

Prefix. An optional, three-character prefix for document numbers, used to distinguish different kinds of changes. Prefixes and number sequences are defined in the PCC Control File and used when Auto Number is Yes to determine the number for a new PCO or PCR. If you enter a prefix that is not set up in the control file, a warning displays.

Routing Slip. Enter the routing slip associated with documents of this type. The routing slip determines which groups must approve the document and in what order.

Distribution. Enter the group to be notified when documents of this type are released and distributed with Release and Distribution (1.9.7.1).

Creating PCRs and PCOs

This section focuses on creating PCOs in PCO Maintenance (1.9.2.13). PCR Maintenance (1.9.2.1) is almost identical to PCO Maintenance and is not described separately. It contains two additional functions that enable you to create a PCO based on an approved PCR.

PCO Maintenance (1.9.2.13) is a large and complex program used to create PCOs and add and modify all product change data, including any of the following types:

- Basic header data
- Text detail
- Item detail
- Product structure/formula detail
- Routing/process detail
- Item specification detail
- Trailer data

Submenus in PCO Maintenance enable you to navigate from one PCO section to another.

The header frame of PCO Maintenance contains basic information about the PCO.

Fig. 4.15
PCO Maintenance
(1.9.2.13), Header
Frame

The screenshot shows a window titled "PCO Maintenance" with a menu bar containing "User Menu", "Edit", "Queue", "Options", and "Help". Below the menu bar is a toolbar with several icons. The main area contains the following information:

Number:	PCD00023	ID:		Database:	PCO
Type:	PCOTYPE1	Design Group:	DesGp1	Created By:	fab
					07/15/97

Below this information are several form fields:

- Title: Major Redesign of Coolers
- Reason: A major enhancement to the motor installed as part of the OASIS Cooler is required to increase its competitive advantage
- Class: Design
- Originator: Field
- User Code [1]:
- User Code [2]:

▶ See “Routing PCRs and PCOs for Approval” on page 120 for details.

A PCO is uniquely identified by a combination of Number, ID, and Database fields. If you enter a combination that does not already exist in the database, a new PCO is created. An error displays if you try to perform maintenance on a distributed PCO, and a warning displays if you open a PCO already routed for approval. If you continue despite the warning, any approvals are essentially revoked, and the document must be rerouted for approval.

If you do not enter a number and Auto Number is Yes in the PCC Control File, the system automatically generates a number based on your entries in PCO Type and Design Group. PCO Type determines the prefix and number, which default from the PCC Control File.

ID. Enables you to create multiple PCOs with the same PCO number for grouping purposes. Typically used to divide large PCOs into smaller ones for ease of implementation. When you open a PCO with a shared number and different ID, you are warned that related PCOs exist.

Database. User-defined. Specifying a database does not automatically create any physical link to, or interaction with, another MFG/PRO database. This field is intended for multi-database installations where product development and manufacturing are performed at separate locations. In this case, the same change can have different implementation details at different factories, accommodating variations in specific item numbers, work centers, and so on. Database then becomes an important selection criterion in PCR/PCO Import/Export (1.9.13).

Type and Design Group. This combination must be defined in PCR/PCO Type Maintenance (1.9.1.9). The values specified determine the approval cycle, distribution group, and document change type. If a number is not entered and autonumbering is used, this combination also determines the PCO number.

Once you have created or accessed a PCO, you can enter and change Title, Reason, Class, Originator, and User Codes. These are user-defined and typically used to provide PCO reference summaries. They do not affect PCO processing, but display in PCO Browse (1.9.2.14), Print PCR/PCO (1.9.9.1), and Release and Distribution (1.9.7.1).

After entering basic PCO data, a section menu enables you to navigate elsewhere in PCO Maintenance.

Tip
Review routing slip and distribution group data for a PCO in the trailer, using the Trailer Maintenance menu. The same information displays in PCR/PCO Close (1.9.14).

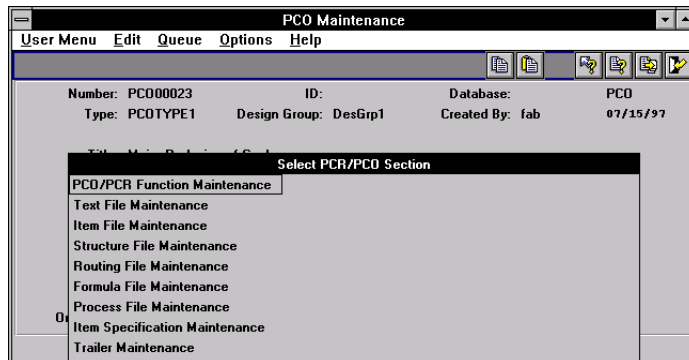


Fig. 4.16
PCO Maintenance, Section Menu

Using PCR/PCO Function Maintenance

This program provides several utilities to support the copying and merging of PCOs and PCRs. A submenu displays several choices.

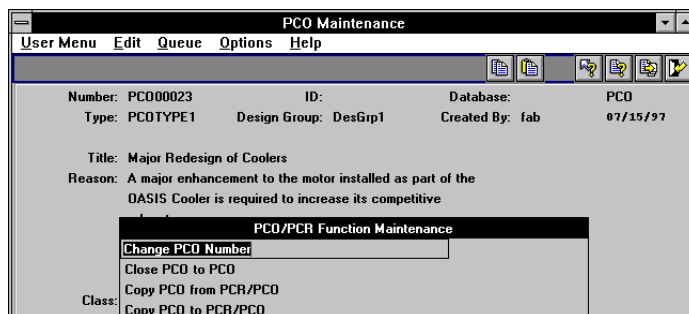
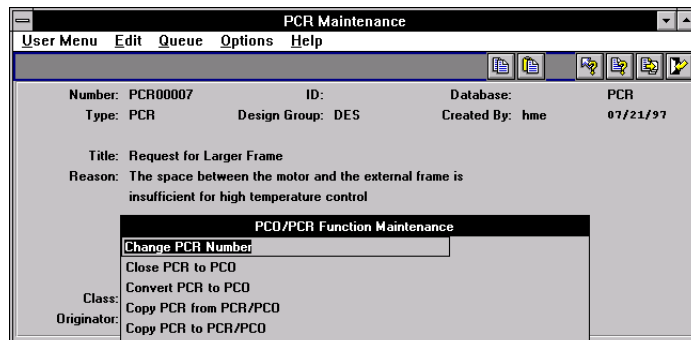


Fig. 4.17
PCO/PCR Function Maintenance Menu

- **Change PCO Number.** Used to change the Number, ID, and/or Database fields of the PCO you are currently editing. Enter new values for these fields to have the system execute the required change immediately. Once completed, the PCO can no longer be accessed using the old number/ID/database values.
- **Close PCO to PCO.** Used to merge detail from the PCO currently being edited into another existing PCO, then close the current PCO. If the same item, product structure, or formula records exist in the target PCO, the corresponding records are not copied.
- **Copy PCO from PCR/PCO.** Used to copy all or part of the detail from another PCO/PCR into your current document. If the same records already exist in the target PCO, they are not copied.
- **Copy PCO to PCR/PCO.** Used to copy all or part of the detail from your PCO to another one. If the same records are already included in the target PCR/PCO, they are not copied.

Two additional functions are available from PCR Maintenance, illustrated in Figure 4.18.

Fig. 4.18
PCO/PCR Function
Maintenance Menu



- **Close PCR to PCO.** Used to merge the detail from the PCR you are currently editing into an existing PCO and then close the current PCR. If the same records exist in the target PCO, they are not copied. This is the only way a PCR can affect the production system, since PCRs cannot be released and distributed.

- **Convert PCR to PCO.** Converts the PCR you are currently modifying to a PCO. You are prompted for a new PCO type and design group, since the current type is designed for PCRs. Once you enter a valid PCO type and design group combination, the PCR becomes a PCO with the same number.

Maintaining Text Files

Select Text File Maintenance to enter multiple pages of text and associate it with a PCO. Another submenu offers two options.

- **Add, Modify, Delete PCO Text Files.** Enables entry of transaction comments for a PCO.
- **Copy Text from Master Comments into PCO.** Enables master comments to be attached to the requested PCO. You can enter the master reference and type in a pop-up frame or leave the fields blank to display a selection list of existing master comments. Select one or more of them for copying into the PCO.

You can use master comments to create reusable text templates that can be pulled into change documents and then edited. They might include legal disclaimers, checklists, standard operating procedures, company policies, or internal surveys.

Tip
Define master comments with Master Comment Maintenance (1.12).

Maintaining Item Files

Select Item File Maintenance to enter changes in item master data. Item-site data, item planning data, inventory data, cost and price data cannot be updated. Only data specified with Item Data Maintenance (1.4.3) can be modified. Another submenu offers two selections.

- **Add, Modify, Delete PCO Item Files.** Enables you to change item master data fields for an existing item. Standard validation prevents the same item master from being changed by more than one undistributed PCO.

Tip
You cannot add new item numbers with this function.

Fig. 4.19
Add, Modify,
Delete PCO Item
Files

Key fields in the program are as follows.

End Product. Specify the end product affected by the PCO. Often, PCO details apply to low-level components that are meant to affect higher-level items. Specifying the end product enables MFG/PRO to generate reports of PCOs affecting that product, even when the effect is indirect.

Comments. Enter Yes to attach comments regarding the change.

New Rev. Enter a revision level indicator for the item. The item's revision level is updated when the PCO is implemented. Revision levels are alphanumeric codes such as 1b, aa, B3, c.34, 6q3. To use strictly numeric values, fill the number with zeros (0001, 0002, and so on).

The New Rev value must be greater than the Released Rev value, which shows the revision level of the most recently released PCO affecting the item.

Status. New items created for a PCO can be given an item status that prevents their use in live transactions. The status field on the PCO can be set so that at implementation the restricted status is replaced with an active one.

- **Direct Item Master Access.** Enables you to add a new item number and/or enter item master data directly into the production database. This is the only function in PCO Maintenance that directly affects production files. All others build data for incorporation after an approval process.

Item numbers are created in real time rather than in the engineering work space, since important functions may require that they exist

Tip

Revision levels can be skipped, but cannot be specified in descending sequence.

Tip

This function is just like Item Data Maintenance (1.4.3).

before the PCO is released. Impact analysis and the creation of a quotation request are examples of functions that depend on the existence of item numbers.

Maintaining Product Structure Files

Important To use these functions, Product Structures must be Yes in Enable PCC Structure Maintenance (13.13.22). Otherwise, Structure File Maintenance is not available from the Select PCR/PCO Section submenu.

Select Structure File Maintenance to enter product structure additions, changes, and removals. Formula-controlled items must be updated in Formula File Maintenance.

Another submenu offers four selections.

- **Copy Product Structure into PCO.** Copies product structure records into the PCO to serve as a basis for further modification. Displays the current indented bill of material for a given parent item, through a requested number of levels. Copied product structures contain the same field values as production files. You can modify these values using PCR/PCO Detail Maintenance.

Tip
To attach comments to changes made with these functions, set Comments to Yes.

The screenshot shows a software window titled "PCO Maintenance" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. The main area displays the "Copy Product Structure into PCO" dialog with fields for "Number: PC000023", "ID:", "Database: PCO", and "Title: Major Redesign of Coolers". Below this is a "Structure/Formula Copy" section with a table showing parent item details. At the bottom is a detailed bill of materials table.

Parent Item	Description	UM	Eff Date	Rev	Levels
10-10000	OASIS(TM) COOLING SY	EA	07/16/97		99

Level	Component Item	Description	Reference
.2	44-5000	CONTROL PANEL,LCD,S	R4
.2	44-7000	PROCESSOR,PRE-PROG	R6
1	55-100	EVAPORATOR,SERIES 1	STANDARD
* 1	55-100	EVAPORATOR,SERIES 1	STANDARD
1	66-100	MOTOR,440AC3PHASE	MOTOR
1	66-100	MOTOR,440AC3PHASE	MOTOR
* 1	66-110	MOTOR,7500WATT 110/	MOTOR
1	66-110	MOTOR,7500WATT 110/	MOTOR

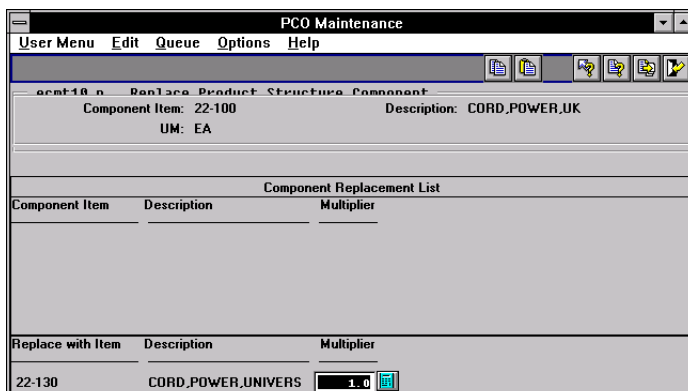
Use Up and Down arrows to move through list of steps, then Enter to select.

Fig. 4.20
Copy Product Structure into PCO

- **Copy Where Used into PCO.** Works the same as Copy Product Structure into PCO, except it displays an indented where-used bill of material screen, and lets you select product structure records to copy into the PCO. This is useful if you are making the same change to several product structures.
- **PCR/PCO Detail Maintenance–Product Structures.** Used for adding items to product structures, deactivating product structure records, and editing product structure changes already added to the PCO. Records are not actually deleted. Deactivating a record sets an ending effective date when the PCO is incorporated.
- **Replace Product Structure Component.** Used in conjunction with other PCO functions to replace one component item with another across multiple bills of material.

Enter an existing component item number followed by a new one. The system accesses product structure records already included in the PCO, searching for occurrences of the requested component. It marks these product structures Deactivated (end effective date set) and adds new product structures for the same parent items, substituting the new component for the old one.

Fig. 4.21
Replace Product Structure Component



Multiplier. Modifies the Qty Per value for the new component. The quantity per of the old component is multiplied by this number to determine the quantity per for the new component. As an example, an old component has a quantity per of 2. The multiplier is set to 0.5. The quantity per for the new component is 1.

Other detailed product structure data, such as Scrap % and Op, are copied from the existing record, although you can use other PCO Maintenance functions to change them.

To replace one component item with another across all bills of material, create a PCO and use Copy Where-Used into PCO to include every product structure record that used the old component. Then, use Replace Product Structure Component to deactivate the existing product structure records and add new ones that specify the new component. In this way, you can set up mass component maintenance on a PCO in two relatively simple steps.

Maintaining Routing Files

Important To use these functions, Routings must be Yes in Enable PCC Routing Maintenance (14.22).

Select Routing File Maintenance to make additions, changes, and removals to both standard and rate-based routings. To modify processes, use Process File Maintenance.

The Routing File Maintenance submenu has three selections.

- **Add/Edit/Deactivate Routing.** Used to add operations to a routing, deactivate operation steps, and edit routing changes already added to a PCO. Records are not actually deleted. Deactivating a record sets an ending effective date when the PCO is incorporated.

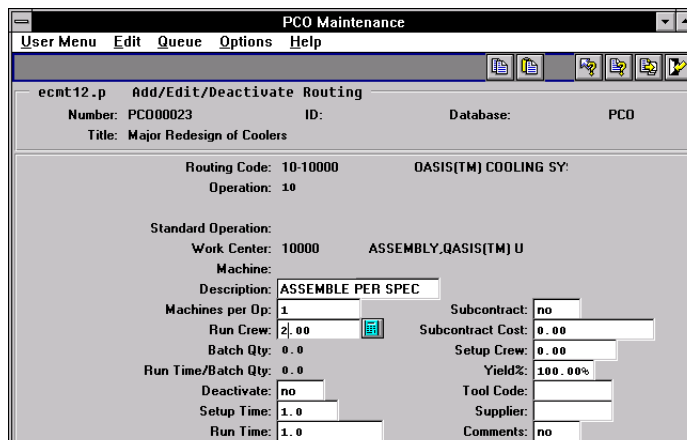
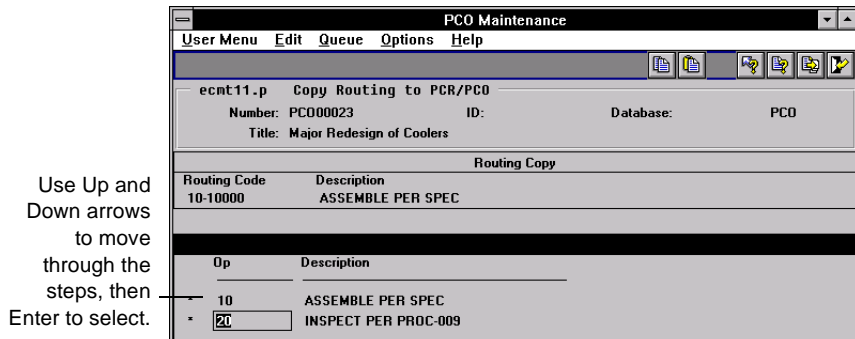


Fig. 4.22
Add/Edit/
Deactivate Routing

- **Add/Edit/Deactivate Routing (Rate Based).** Works just like Add/Edit/Deactivate Routing, except for differences in maintained data fields. The differences are the same as those between standard Routing Maintenance (14.13.1) and Routing Maintenance (Rate Based) (14.13.2).
- **Copy Routing to PCR/PCO.** Copies routing records into the PCO. Displays the operation for a routing and enables you to select any number of steps for inclusion in the PCO. Once copied, operations can be modified with Add/Edit/Deactivate Routing.

Fig. 4.23
Copy Routing to
PCR/PCO



Maintaining Formula Files

Important To use these functions, Formulas must be Yes in Enable PCC Formula Maintenance (15.22).

Select Formula File Maintenance to do the following.

- Copy formulas into a PCO
- Copy where-used data into a PCO
- Maintain PCR/PCO formula details
- Replace formula components

See “Maintaining Product Structure Files” on page 113.

These functions work just like the Product Structure Maintenance functions, except for differences in maintained data fields. The differences are the same as those between Product Structure Maintenance (13.5) and Formula Maintenance (15.5)

Maintaining Process Files

Important To use these functions, Processes must be Yes in Enable PCC Formula Maintenance (15.22).

Use Process File Maintenance to add, edit, deactivate, and copy processes. These functions work just like the Routing File Maintenance functions, except for differences in maintained data fields. The differences are the same as those between Routing Maintenance (14.13.1) and Process Definition Maintenance (15.13).

▶ See “Maintaining Routing Files” on page 115.

Maintaining Item Specifications

Important To use these functions, Item Specifications must be Yes in Enable PCC Item Spec Maintenance (19.1.22).

Use Item Specification Maintenance to manage changes to quality tests associated with an item. You can copy item specifications defined in MFG/PRO Quality Management and modify them in the PCO.

A submenu provides two selections.

- **Add/Edit/Deactivate Item Specification.** Used to add, modify, and deactivate, test steps for an item specification that has already been added to a PCO. Records are not actually deleted. Deactivating a record sets an ending effective date when the PCO is incorporated.

Fig. 4.24
Add/Edit/
Deactivate Item
Specification

- **Copy Item Specification From Quality Module.** Copies item specification records into the PCO. Displays the current sequence of steps for a given parent item and routing.

Fig. 4.25
Copy Item
Specification From
Quality Module

Use Up and
Down arrows
to move
through the
steps, then
Enter to select.

Seq	Op	Characteristic	Specification	Measure
10		Alcohol Content	Should be at least 25%	Percentage
20		Odor	Pass Panel Approval	Subjective

Maintaining Trailers

Tip
PCR/PCO Close
(1.9.14) displays
almost the same
information.

Use Trailer Maintenance to maintain important PCO data fields, and to close or reopen a PCO. This program displays release process information such as routing slip, distribution group, date submitted, and date approved. It is the only option that appears in the PCO Maintenance section menu for closed (but undistributed) PCOs.

Fig. 4.26
PCO Trailer
Maintenance

Closed. If Yes, the PCO is closed. If No, the PCO is opened. A PCO cannot be reopened once it is distributed.

Expected Cost. Optional. The expected cost of the PCO.

Disposition. Optional. A user-defined code to describe the arrangement, grouping, or urgency of the PCO. Validated against

codes set up in Generalized Codes Maintenance (36.2.13) for field *ecm_ecr_dspn*.

PCO Ref. Information-only. A cross-reference comment for a closed PCO.

Mandatory. Optional. The latest date on which the PCO must be implemented. A warning message is generated in Incorporation Selection (1.9.7.4) if an effective date is assigned to the PCO that is later than this date.

Tip

The mandatory date is an engineering instruction to manufacturing, since the manufacturing group is responsible for PCO incorporation.

Reviewing PCO Data

Use PCR/PCO Detail Inquiry (1.9.2.8) to display PCR or PCO details.

Use Print PCR/PCO (1.9.9.1) to select and print a range of PCO/PCR details. Selection criteria include number, type, and created by. Set a comment page range to include comment pages attached to the PCO.

The Approvals flag determines whether or not approvals are printed. To print PCOs in various life-cycle stages, use the status flags: Pre-submission, Submitted, Approved, Released, Incorporated, Implemented, Closed.

Use PCO Status Browse (1.9.11) to review the current status of PCRs and PCOs. Statuses reflect the position of the PCR or PCO in the change life cycle.

- Submitted
- Approved
- Distributed (PCO only)
- Implemented (PCO only)
- Rejected
- Released (PCO only)
- Incorporated (PCO only)
- Closed

Use Approval Browse (1.9.6.2) to review sign-offs for a given PCO, including pending and completed approvals, individual approvers, and date of the approvals.

Routing PCRs and PCOs for Approval

Tip
Use 1.9.2.4 for
PCRs.

Route PCOs for approval using Route PCO for Approval (1.9.2.16). To route PCRs, use Route PCR for Approval. After a PCO is submitted, it can be approved with PCR/PCO Approval.

Once a PCR or PCO has been routed, the system restricts changes to the document to ensure that the approved document is the most current. If a routed PCR or PCO is accessed in the maintenance function, a warning displays. If you continue despite the warning, you can modify the PCO, but all approvals are reset to No, and each group on the routing must reapprove.

If a group disapproves a PCO and severity levels apply, the PCO can be rerouted to selected groups based on the severity of changes required. Only approvals of groups that need to review the document are reset.

Fig. 4.27
Route PCO for
Approval (1.9.2.16)

The screenshot shows a window titled "Route PCO for Approval" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. Below the menu is a header section with fields: Number: PCO00010, ID:, DBase:, DocType: PCO, Type:, Dsgn Grp:, By:, and Unsubmt Only: yes. Below this is a table listing PCOs:

Number	ID	Database	Title	By	Sub Date
PCO00019			Changes required for 99-10	ljm	
PCO00021			Minor upgrade for 22-100	vxb	
PCO00022			Performance Ehnhancemen	ljm	
PCO00023			Major Redesign of Coolers	fab	

Below the table is another table with columns: Number, ID, Database, Title, By, Sbmt, and Cmmt. The row for PCO00023 shows: Major Redesign of Coolers, fab, and Sbmt set to yes and Cmmt set to no.

Tip
Set Unsubmt Only
to No if you want to
revoke a submitted
PCO.

Route PCO for Approval lists PCOs in order, beginning with the number you enter in the first frame. Select PCOs to display by PCO Type, Design Group, and By (Created By). Use Unsubmt Only to display unsubmitted PCOs, or set it to No to see both submitted and unsubmitted PCOs.

Select a PCO for submittal, and set Sbmt to Yes in the bottom frame. The system displays a submit date for the PCO. To unsubmit a submitted PCO for which no approvals have been given, set Sbmt to No. A partially approved PCO must first have all electronic approvals changed from Yes to No. Once unsubmitted, additional changes can be made, and the approval cycle started again.

To attach comment pages, set Cmmt to Yes.

Approving PCRs and PCOs

Approve PCOs using PCR/PCO Approval (1.9.6.1). Designated reviewers can enter electronic approvals or disapprovals, along with comments.

PCR/PCO Approval lists approval records by criteria you enter at the top of the screen. Enter a PCO number to have approvals listed starting with that PCO. Either PCRs or PCOs can be listed depending on the value entered in DocType. When multiple approval records exist for a document, they are listed by approval sequence.

Specify an approval group to display only approvals required of that group. Specify a user ID to display only approvals required of groups that include that user.

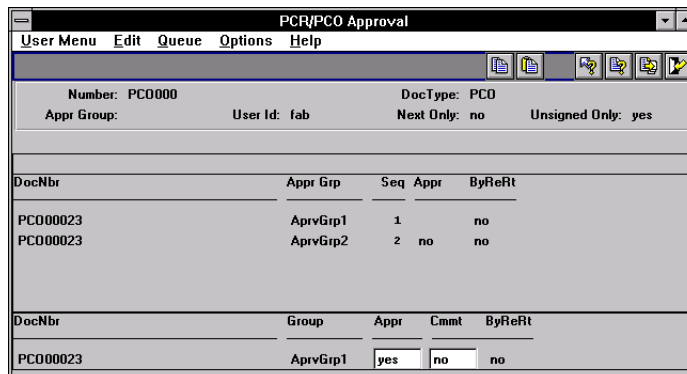


Fig. 4.28
PCR/PCO
Approval (1.9.6.1)

Unsigned Only. Enter Yes to display pending approvals. If Yes, documents are excluded from the display when only one of several groups has given approval.

Enter No to display both approved/disapproved and pending approvals. For each required approval, the group designated to perform the approval displays.

Appr. Enter No to disapprove previously approved PCOs. Enter Yes to approve previously disapproved PCOs.

▶ See “Defining Approval Routings” on page 102 for details.

Rerouting PCOs

If the reviewer disapproving a change document belongs to a group with Can Re-Route set to Yes on the routing slip, PCR/PCO Approval prompts for a reroute level. Reroute level signifies the magnitude of the problem noted by the reviewer. If you do not want to reset approvals, enter zero for the reroute level. Higher reroute levels require more groups to reapprove the document.

When a reroute level is specified, the system examines Severity Level for each group on the routing slip. If Severity Level is less than or equal to the reroute level, the system changes the approval to No, indicating that the group must review the document again. To enter explanations for the reroute, set Cmmt to Yes.

When a document requires approval as a result of this process, the ByReRt flag in PCR/PCO Approval is set to Yes.

Detail Approval Maintenance

To change or override the standard approval process, use Detail Approval Maintenance (1.9.6.13). Typically, this program is password controlled, since it provides an administrative override to the standard approval function.

While it lets you override the normal approval process, it does not exactly duplicate it. For example, disapproved documents are not rerouted. To reroute, use PCR/PCO Approval.

Incorporating PCOs into Production

Once a PCO is approved, use the PCO Implementation menu (1.9.7) to update production data, as follows.

- 1 Use Release and Distribution (1.9.7.1) to release the PCO and notify members of the distribution group.
- 2 Use Incorporation Planning Report (1.9.7.3) to analyze the impact of the PCO on current inventory and help determine the best effective date for incorporation.
- 3 Use Incorporation Selection (1.9.7.4) to specify an effective date.

- 4 Run Incorporation (1.9.7.5) on a daily basis to incorporate PCO changes into production files. Changes become effective on the date specified in step 3.
- 5 Run Implementation (1.9.7.13) on a daily basis to copy changes to item data records from PCOs effective on the current date into the item master file.

PCO Release and Distribution

After a PCO is approved, it is ready to be released and distributed. Releasing a PCO typically means transferring ownership of it from a design organization to a manufacturing or production organization. Distributing means notifying members of a distribution group of a PCO’s release. This can be done with hard-copy reports or E-mail, depending on how the routing slip is set up.

Use Release and Distribution (1.9.7.1) to release and distribute PCOs. Release and distribution are initiated at the same time, but are recorded as separate points in the PCO life cycle. When a released PCO is distributed through a standard MFG/PRO batch processing queue, significant time may elapse between release and actual distribution. Once a PCO is distributed, its release is final.

Tip
 Since PCRs cannot be released to production, they are never listed on the screen.

Release and Distribution (1.9.7.1) lists PCOs by criteria entered at the top of the screen. Enter a PCO number to list PCOs beginning with that number.

The screenshot shows a software window titled "Release and Distribution" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. Below the toolbar, there are fields for "Number: PCO00023", "ID:", "Database:", "Type:", "Created By:", and "Unreleased Only: yes".

Number	ID	Database	Title	Sub Date	Batch ID
PCO00023			Major Redesign of Coolers	07/16/97	no
pg1a			Reroute to new work center		no
pg1b			Modify product structure		no
pg1c			Increase Run Time for Oper		no

Number	ID	Database	Title	Rele	Comt	Batch ID
PCO00023			Major Redesign of Coolers	yes	yes	

Fig. 4.29
 Release and Distribution (1.9.7.1)

Unreleased Only. Enter Yes to view only unreleased PCOs. Enter No to view both released and unreleased PCOs, or to revoke a previously released, but not yet distributed, PCO.

Rel.s. Enter Yes to release the PCO, or No to unrelease it, assuming the PCO has been released but not yet distributed.

Batch ID. Specify a batch queue for printing release notices. Leave blank to print notices immediately. Since actual distribution of PCOs occurs only after reports are printed, queuing may result in lag time between release and distribution.

Incorporation Planning Report

Incorporation Planning Report (1.9.7.3) helps planning personnel evaluate the impact on inventory of implementing a PCO on a given effective date. To run the report, enter a specific PCO number, ID and/or database, site, effective date, and cost method.

Tip
This summary is similar to the Materials Summary Report (13.8.20).

The report shows the summarized BOM/formula of each parent item from all product structure/formula records changed by the PCO. It lists components from all levels of the item's BOM or formula. The Qty Per values are extended to show the total quantity required per end item, rather than per single-level parent.

Table 4.2 summarizes the information displayed for each component.

Table 4.2
Component
Amounts

Information	Amount
Original Qty Req'd	Quantity per end-item for the currently effective product structures/formula records.
Final Qty Req'd	Quantity per end-item for product structure/formula records after the PCO has been implemented.
Qty On Hand	Current on-hand inventory balance for the component.
Qty On Order	Total quantity of supply on order for the component due on or before the entered effective date.
Projected Usage	Total demand quantity required for the component due on or before the entered effective date.

Information	Amount
Balance	Total of Qty On Hand + Qty On Order – Projected Usage, yielding the component’s expected on-hand inventory balance as of the entered effective date.
Value	Total monetary cost of the component inventory quantity in the Balance field, using the item costs associated with the entered Cost Method.

Use this report to estimate the future cost of obsolete inventory as of a given effective date. Run the report with different effective dates to determine which effective date minimizes inventory scrap/rework costs.

Typically, this report is considered in combination with other factors, such as the impact of changed routings/processes, new tooling, scrap and rework costs, purchased part lead times, and the mandatory date for the change. Nonetheless, future component inventory balances are relevant in almost all situations and provide valuable planning information.

Incorporation Selection

Use Incorporation Selection (1.9.7.4) to set PCO effective dates. Released and distributed PCOs display in order beginning with the PCO entered in the first frame. Enter criteria such as Type and Created By to show only PCOs matching those criteria.

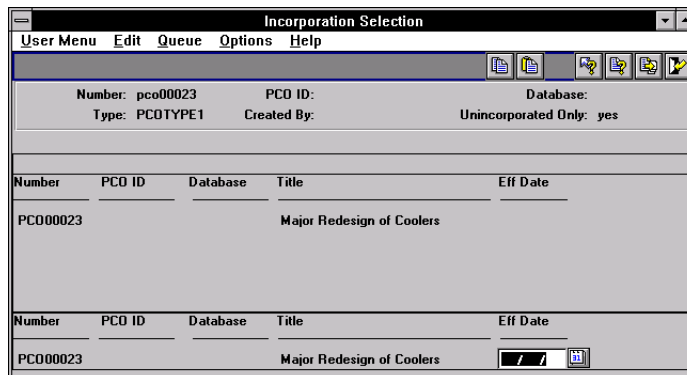


Fig. 4.30
Incorporation
Selection (1.9.7.4)

Unincorporated Only. Enter Yes to view only PCOs that are distributed but not yet incorporated. Enter No to view all distributed PCOs.

If different PCOs change item master data for the same item, MFG/PRO (and standard practice) requires them to be incorporated in revision level sequence. The system displays an error if you set PCO effective dates out of sequence or give more than one PCO the same effective date.

If a PCO has a mandatory date, a warning displays if the effective date is not on or before this mandatory date.

Incorporation

Once a PCO effective date is established, the PCO can be incorporated into MFG/PRO product definition files. At this point, you can still change PCO effective dates or even remove PCOs from the production system. Any incorporated PCO not yet implemented can be unincorporated or reincorporated by changing the PCO effective date.

Incorporation (1.9.7.5) updates the MFG/PRO database with changes from PCOs for which effective dates have been set. Incorporation makes change data available to MRP, DRP, and the other preproduction modules.

Incorporation generates an audit trail report of database updates and any errors encountered. For example, if two PCOs with the same effective date update the same records, only changes from the first PCO are incorporated. The second is highlighted as an error on the report.

Assuming that Incorporation Selection has been run, PCO Incorporation is essentially a batch update process requiring no input from the user. Typically it is set up and executed as a daily batch job.

After incorporation, MRP and DRP automatically use the new effective dates in all planning processes.

Implementation

Once the effective date of a PCO is reached, the revision level of changed item numbers must be updated. This field displays in the Current Rev field of Item Data Maintenance.

Implementation (1.9.7.13) copies changes to item data records, from PCOs effective on the current date, into MFG/PRO's item master file. Implementation is designed to be a daily batch job requiring no user input.

Closing PCR and PCOs

Use PCR/PCO Close (1.9.14) to close or reopen any PCO that has not been assigned an effective date in Incorporation Selection (1.9.7.4). You can close PCOs that have been released and distributed but not incorporated. Close undistributed PCOs in the trailer of PCO Maintenance.

Closed. If Yes, the PCR or PCO is closed. This field is reference-only, and does not establish a link to another PCO in the same way as Close PCO to PCO function in PCO Maintenance.

PCO Ref. Optionally, enter a value as a cross-reference.

Closing a PCR or PCO in this way makes a PCO available for export to another MFG/PRO database.

Tip
Also use this program to close PCRs that are not closed by becoming part of a PCO.

▶ See page 118 for details on PCO/PCR trailer fields.

Importing and Exporting PCR and PCOs

Use PCR/PCO Import/Export (1.9.13) to export closed PCO data to an ASCII file for import into another database or application, such as a Product Data Management system.

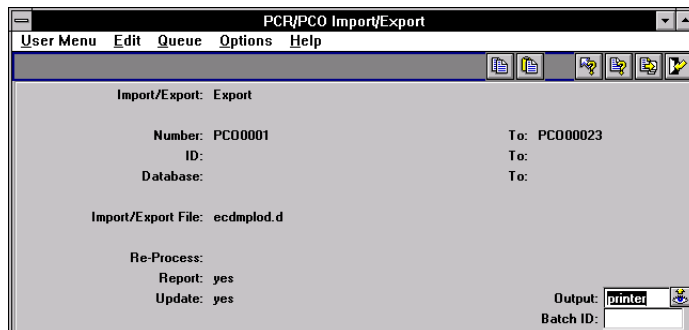


Fig. 4.31
PCR/PCO Import/Export (1.9.13)

Use the import function to restore archive files created by PCR/PCO Delete/Archive (1.9.15), which is similar to standard MFG/PRO delete/archive programs.

Re-Process. Only available when you are importing data. Enter Yes to have the Type and Design Group of imported PCRs and PCOs set to blank. The closed status is also removed and set to blank. This

enables you to assign new types and design groups appropriate for the new database. If No, a PCO with a Type and Design Group combination that does not exist in the new database is not imported.

Setting Up PCC Security

Since PCC activities can affect your production environment, the following security steps are advised.

▶ See “Setting Up the PCC Control File” on page 96 for details.

- Set Security in the PCC Control File to Yes for additional control of approvals.
- Place menu-level security on PCR and PCO Maintenance programs, and on update functions elsewhere in MFG/PRO.

Access to PCO Maintenance Detail Functions

Each submenu in PCR and PCO Maintenance exists as a menu entry in the Product Change Utility Menu (1.9.25). Using Menu Password Maintenance (36.3.1) to restrict access to a program on menu 1.9.25 also restricts access to the corresponding program in PCO Maintenance.

Example Restricting access to Item File Maintenance (1.9.25.3) also restricts access to the Item File Maintenance screen of PCR or PCO Maintenance.

Restricting Access to Other MFG/PRO Functions

Once PCC is implemented, prevent direct modification of controlled records by setting menu security on the following programs.

- For product structures, Product Structure Maintenance (13.5), Product Structure Copy (13.9), Component Change (13.10), Alternate Structure Maintenance (13.15), and Configured Structure Maintenance (8.1)
- For routings, Routing Maintenance (14.13.1), Routing Maintenance (Rate Based) (14.13.2), Routing Copy (14.13.6), Routing Update (14.13.7)
- For formulas, Formula Maintenance (15.5), Formula Copy (15.8), Batch Quantity Change (15.9)

- For processes, Process Definition Maintenance (15.13), Process Definition Copy (15.16), Process/Formula Maintenance (15.18)
- For item specifications, Item Specification Maintenance (19.1.13)

Additionally, set password protection on Detail Approval Maintenance (1.9.6.13). Only use this program in situations that require immediate modifications of PCO approvals.

Addresses

MFG/PRO enables you to associate addresses and other information with address codes that can be used throughout MFG/PRO.

<i>Introduction</i>	132
<i>Setting Up Company Addresses</i>	135
<i>Setting Up Salesperson Addresses</i>	136
<i>Setting Up Customer Addresses</i>	137
<i>Adjusting Credit Limits</i>	141
<i>Setting Up Supplier Addresses</i>	142
<i>Setting Up Employee Addresses</i>	143
<i>Setting Up Carrier Addresses</i>	143
<i>Setting Up Customer/Supplier Bank Addresses</i>	144
<i>Setting Up Credit Terms and Trailer Codes</i>	146
<i>Setting Up Freight Charges</i>	151
<i>Changing or Merging Address Codes</i>	156

Introduction

Tip
Use MFG/PRO Payroll to enter employee records.

Addresses functions enable you to enter a wide range of records used elsewhere in MFG/PRO—from customers and suppliers to credit terms and freight codes.

Table 5.1 lists programs in the Addresses/Taxes menu and shows where address codes are used.

Table 5.1
Addresses/Taxes
Menu (2)

Menu	Name	Where Used
2.1	Customers Menu	Sales Orders/Invoices, Accounts Receivable, and Service/Support Management modules.
2.3	Suppliers Menu	Purchasing, Accounts Payable, and Service/Support Management modules.
2.5	Salespersons Menu	Sales Orders/Invoices, Accounts Receivable, and Service/Support Management modules.
2.7	Employees Menu	Service/Support Management, Shop Floor Control, Repetitive, Payroll.
2.9	Address List Type Maintenance	Address maintenance
2.10	Address List Type Browse	Address maintenance
2.11	Address Code Change	Address maintenance
2.12	Company Address Maintenance	System reports and screens. Bill-to/ship-to addresses in Purchasing. Ship-to address in Accounts Payable. Printed on outgoing documents such as sales orders, invoices, service contracts, and statements. Addresses for taxes when GTM is used. Addresses for sites when Enterprise Material Transfer (EMT) is used.
2.13	Global Tax Management (GTM)	See “Taxes” on page 199.
2.15	Taxes	See “Taxes” on page 199.
2.17	Carriers Menu	Shipping functions
2.18	Shipping Group/Document Menu	Shipping functions. For information on shipping groups, see <i>User Guide Volume 2: Distribution</i> .

Menu	Name	Where Used
2.19	Credit Terms/Trailer Codes Menu	Transactions for sales, purchasing, service/support, accounts payable, and accounts receivable.
2.20	Freight Charges Menu	Transactions for sales, purchasing, service/support, accounts payable, and accounts receivable.
2.21	Customer/Supplier Banks Menu	Accounts Payable and Receivable.
2.22	Intrastat	See Chapter 6, "Intrastat," on page 157.
2.24	Addresses/Taxes Control File	Address functions

Except for employee addresses, all addresses are stored in the same address file in the database, ensuring consistency of information. An eight-character address code assigned to each address is the key identifier of that address.

An address code can be associated with different address types. For example, an employee address code can be used as a salesperson address for sales and commission reporting, and as a supplier address for reimbursement of expenses.

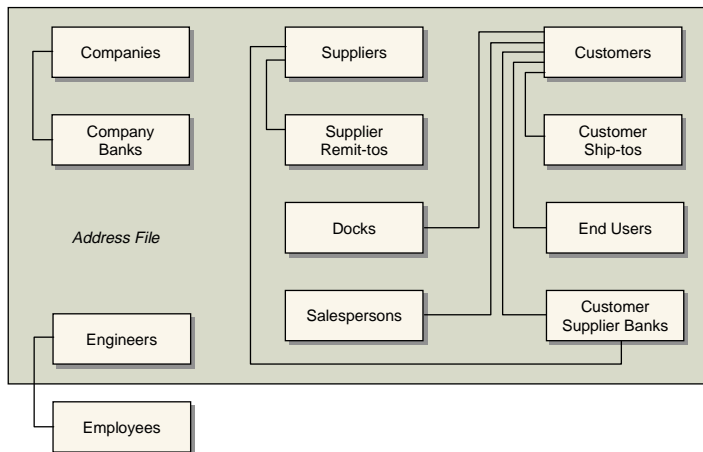


Fig. 5.1
Address File
Relationships

The system stores information on customers, suppliers, and salespersons in master files, using address codes as an index. A cross-reference file (ls_mstr) describes the links between these files and the centralized address file.

Address List Types

Since addresses are stored in a common file, the system automatically assigns each a list type code. The list types in Table 5.2 are reserved for use by the system.

Table 5.2
Address List Types

List Type	Originating Function
C/S_Bank	Customer/Supplier Bank Maintenance
Carrier	Carrier Maintenance
Company	Company Address Maintenance
Customer	Customer Maintenance
Dock	Dock Maintenance
Enduser	End User Address Maintenance
Engineer	Engineer Maintenance
Our_Bank	Bank Maintenance
Remit-to	Supplier Remit-to Maintenance
Ship-to	Customer Ship To Maintenance
Slsprsn	Salesperson Maintenance
Supplier	Supplier Maintenance

To group addresses in other ways, you can manually assign an unlimited number of additional list type codes to any address. Use Address List Type Maintenance (2.9) to create your own address groups.

List types determine which addresses are included in look-up browses and reports. For example, when presenting look-up information in the Customer field of Sales Order Maintenance, the system includes only addresses with the list type Customer.

Setting Up Company Addresses

Use Company Address Maintenance (2.12) to set up addresses for each of your company sites.

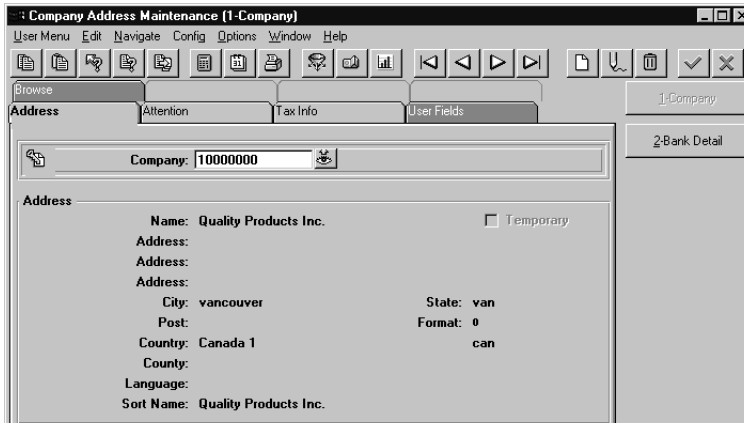


Fig. 5.2
Company Address
Maintenance (2.12)

Your company name and address automatically prints on quotes, orders, and invoices. To display your company name and address on menus and reports, set up the following special address codes.

- *~screens* defines the company name that appears on all menus.
- *~reports* defines the company name that is printed at the top of all reports.

Company Banks

Use Company Address Maintenance to associate banks with company addresses. Bank information prints on Accounts Receivable drafts and Accounts Payable check forms. Bank information includes mailing address, account type, branch code, and tax IDs. If the account is for electronic funds transfer, an EDI number is specified.

▶ See “Setting Up Customer/Supplier Bank Addresses” on page 144.

Company Addresses for Purchase Orders

Tip

Take care to set up company address codes and site codes differently to avoid unintentional matches between them.

Use Company Address Maintenance (2.12) to enter a company's bill-to and ship-to addresses for purchasing. If the site code on a purchase order line corresponds to a company address code, that company address is used as a ship-to address when printing purchase orders. When using distributed order processing, this allows a single purchase order to be printed for multiple ship-to addresses.

Company Address and Taxes

MFG/PRO Purchasing and Accounts Payable use ship-to addresses to determine tax rates for U.S. sales taxes and Canadian PST. Company addresses can also be printed on outgoing forms created in Sales and Accounts Receivable.

For GTM, taxes are calculated by company address rather than by site. Set up each site with a company address record that uses the same address code as the site code. To provide defaults for missing address codes, set up a special address code called *~taxes*.

Setting Up Salesperson Addresses

Tip

Use MFG/PRO's Sales Analysis to establish monthly quotas and generate quota reports. See *User Guide Volume 2: Distribution*.

Use Salesperson Maintenance (2.5.1) to set up salesperson codes. For each salesperson, specify a default commission percentage and a user-defined territory code. Enter detailed commission percentages for product lines and/or customers. Commission reports calculate amounts from net sales prices or gross margins (net price less standard cost) on posted invoices. Commissions are not reported from debit/credit memos.

Fig. 5.3
Salesperson
Maintenance
(2.5.1)

Set up salesperson codes before setting up customer codes. Up to four default salesperson codes and commission percentages can be associated with each customer. These associations are used as defaults in Sales Quotations, Sales Orders/Invoices, Service/Support Management, and Accounts Receivable.

Use Salesperson Payments Report (2.5.16) to review paid invoices and unapplied payments, sorted by salesperson.

Setting Up Customer Addresses

Customer addresses are used for sales quotations, sales orders, invoices, and in accounts receivable. They are also used for service/support documents such as calls, contracts, and return material authorizations (RMAs). Values associated with customer addresses determine default values elsewhere in MFG/PRO, and how customer transactions are processed. For example, Credit Hold determines whether orders for a customer are automatically put on credit hold.

In MFG/PRO, a sales order or sales quotation references three customer addresses. The addresses can be the same or each one different.

- *Sold-to customer.* The customer placing the order.
- *Bill-to customer.* The customer paying the invoice.
- *Ship-to customer.* The customer receiving the order.

Many sales order fields derive defaults from customer address records. Sales order header information such as default credit terms and currency are determined by bill-to customer, as is trailer information such as accounts receivable accounts. Other fields default from the sold-to customer, unless a customer record was entered for the ship-to address for the order. These include site, language, price list information, taxable status, tax code, salesperson, commission, remarks, ship via, and FOB point.

There are several ways to set up sold-to, bill-to, and ship-to customers, depending on the extent to which they share defaults.

If site, language, price list information, and so on are the same for sold-to and ship-to customers, set up these addresses in one step using Customer

Ship-to Maintenance (2.1.13). If the defaults differ, set up the addresses in both Customer Maintenance (2.1.1) and Customer Ship-to Maintenance.

During order entry, the bill-to address defaults to the sold-to unless a different bill-to address is assigned. The ship-to address also defaults to the sold-to. Alternate ship-to addresses can be set up in advance or entered as needed for one-time drop shipments. There can be more than one ship-to address for a single sold-to or bill-to customer.

Add temporary ship-to addresses during quote or order entry. These are deleted automatically by Closed AR Delete/Archive (27.23) when no open records remain for the ship-to address. Make temporary ship-to addresses permanent in Customer Ship-to Maintenance (2.1.13) by setting Temporary to No.

Fig. 5.4
Customer
Maintenance
(2.1.1)

Customer Address				
Customer:	10010001			
Name:	WESTWOOD HALLMARK			
Address:	WESTWOOD SHOPPING CEN			
Address:	70 SUNSET STRIP			
Address:	BLOCK B-2			
City:	WESTWOOD	State:	CA	
Post:	89029	Format:	0	
Country:	United States of America		County:	001
Attention:	MRS. SUSAN KNAPPER	[2]:		
Telephone:	213-923-0293	Ext.:	[2]:	
Fax/Telex:		[2]:		
		Ext.:		
		Added:	10/09/88	

Customer Data			
Sort Name:	WESTWOOD HALLMARK		
Salespsn1:	00000001	Multiple:	no
Ship Via:	CONSOLIDATED	Region:	10
AR Acct:	1200	Currency:	USD
Resale:	89-02-03 X88P	Language:	
Remarks:	STORE HOURS BETWEEN 10:30 AND 5 P	Site:	train
		Class:	
		Partial OK:	yes
		Price Tbl:	
		Disc Tbl:	10
		Fixed Price:	yes
		Type:	RET
		Taxable:	no
			1

City, State, Province, County. Used for tax calculations. If GTM is active, a country code must be specified and validated.

Format. Enter 0 to have the postal code appear after the city, state, or province. Enter 1 to have the postal code appear before the city, state, or province.

Multiple. Enter Yes to enter up to four salesperson codes.

Type, Region, Class. Enter types, regions to be used for sales analysis reporting. Enter classes to indicate customer priority, as when not all orders can be filled.

Currency/Language. Associate currencies and languages with customers located in different countries. Language codes enable you to access foreign language comments. Define currency codes in Currency Maintenance (26.1) and exchange rates in Exchange Rate Maintenance (26.4).

Site. This is the default ship-from site for this customer. Typically, enter the site closest to the customer.

Price and Discount Table. These provide defaults for scheduled orders only. Sales orders use the best pricing model.

▶ See Chapter 3, “Pricing,” for more details.

Fixed Price. Enter Yes to indicate that prices negotiated with the customer are fixed. Enter No to indicated that prices negotiated with the customer are not fixed. Prices not fixed are subject to batch updates based on changes in price lists.

Customer Credit Data

Set up credit information for each customer. The system uses this information during order entry.

Customer Credit Data		
Credit Limit: 1,000	Disc %: 0.00%	Bill-To:
Terms: 30	Finance Chg: yes	Last Credit Review: / /
Credit Hold: no	Statement: yes	Last Credit Update: 12/16/94
Credit Rating: 3	Stmt Cycle: 1	High Credit: 1,000
DB Number:	Dun Letter: yes	High Date: 02/10/94
PO Required: no	Last Payment:	Last Sale:

Fig. 5.5
Customer Credit
Data Frame

Credit Terms. Assign a credit terms code defining this customer’s normal payment terms.

Credit Hold. Specifies the customer’s credit limit. When an order exceeds the limit, a warning displays. If the Sales Order Control File (7.1.24) requires an order to be put on hold when limits are exceeded, the order’s Action Status is set to HD (hold). You cannot print pick/packing lists for an order until credit holds are removed.

▶ See “Setting Up Credit Terms and Trailer Codes” on page 146 for details.

Disc %. Enter a discount value if the customer normally receives a total order discount in addition to pricing discounts. If the customer qualifies for a volume discount higher than this, the system uses the volume discount.

Finance Chg. Enter Yes if this customer is subject to finance charges.

Stmt Cycle. Indicate how often statements are printed, such as monthly or quarterly. This is used as a selection criteria when printing dunning letters and calculating finance charges.

Dun Letter. Enter Yes if customer receives dunning letters for past-due invoices.

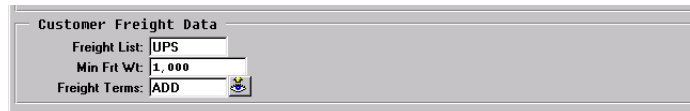
Last Credit Review. Enter the date of the last review of the customer's credit status.

Last Credit Update. Indicates the last time the customer's credit limit status was updated. This date is automatically updated by Customer Credit Limit Adjustment (2.1.7).

Customer Freight Data

Set up freight information for each customer. The system uses this information during order entry.

Fig. 5.6
Customer Freight
Data Frame



Customer Freight Data	
Freight List:	UPS
Min Frt Wt.:	1,000
Freight Terms:	ADD

▶ See “Setting Up Freight Charges” on page 151 for details.

Freight List. Enter a freight list code identifying a set of shipping rates normally used for this customer. This list defaults to the order header for new orders for this customer.

Min Frt Wt. Enter the minimum weight to use with bulk freight lists for this customer. Shipments that weigh less than this amount are charged based on minimum weight, not the actual shipment weight.

Freight Terms. Enter a code identifying how freight charges are typically calculated for this customer.

Other Customer Data

Two other frames display in Customer Maintenance.

- The Enterprise Material Transfer Data frame is described in *User Guide Volume 2: Distribution*.

- The Bank Accounts frame in Customer Maintenance is the same as the one in Supplier Maintenance.

▶ See “Setting Up Customer/Supplier Bank Addresses” on page 144.

Adjusting Credit Limits

Use Customer Credit Limit Adjustment (2.1.7) to automatically increase or decrease customer credit limits defined in Customer Maintenance (2.1.1). Select a range of customers based on address code, region, class, current credit limit, date of last credit review, or date of last credit update.

Adjustment %. Enter a percentage for adjusting the credit of selected customers. Indicate decreases with negative percentages.

Compound/Simple. The system uses one of three methods to calculate a new credit limit amount. N is the number of days since the last time the customer’s credit limit was updated.

Method	Formula
Compound Interest	Old credit limit x (1 + Adjustment % /100)N
Simple Interest	Old credit limit x (1 + N x Adjustment % /100)
Fixed Interest	Old credit limit x (1 + Adjustment % /100)

Table 5.3
Interest Calculation
Methods

Values entered here determine the method used to adjust credit limit amounts. Table 5.4 identifies the settings required for each method.

To Choose This Method...	Set Cumulative/ Fixed to...	Set Compound/ Simple to...
Compound Interest	Cumulative	Compound
Simple Interest	Cumulative	Simple
Fixed Percentage	Fixed	

Table 5.4
Calculation of
Credit Limit

Cumulative/Fixed. Specifies whether the adjustment percentage is a fixed percentage or a cumulative daily percentage, applied to every day since the last credit limit update.

Update Credit Limit. Enter Yes to update the customer’s credit limit and set the last credit update date to the system date in Customer Maintenance (2.1.1). Enter No to review the report without updating the customer record.

Setting Up Supplier Addresses

Set up supplier addresses in Supplier Maintenance (2.3.1) and Supplier Remit-to Maintenance (2.3.13). Supplier addresses are used in many places in MFG/PRO including Purchasing, Accounts Payable, and Service/Support Management.

Fig. 5.7
Supplier
Maintenance
(2.3.1)

The screenshot shows a window titled "Supplier Maintenance" with a menu bar (User, Menu, Edit, Queue, Options, Help) and a toolbar. The main area is divided into two sections: "Supplier Address" and "Supplier Data".

Supplier Address

Supplier:	22222	Temporary:	no
Name:	Ford Foundation		
Address:	River Rouge		
Address:			
Address:			
City:	Detroit	State:	MI
		Post:	30000
		Format:	1
Country:	United States of America	usa	County:
Attention:		[2]:	
Telephone:		[2]:	Ext:
Fax/Telex:		[2]:	Added: 07/11/97

Supplier Data

Sort Name:	Ford Foundation		Bank:	ab	Check Form:	1
Type:			Currency:	USD	Language:	
Pur Acct:	5100	0100	Purchase Contact:			
AP Account:	2100	0100	AP Contact:			
Ship Via:			Promotion Group:			
Remarks:					Misc Creditor:	no

Supplier addresses, like customer addresses, determine default field values and affect how supplier transactions are processed elsewhere in MFG/PRO. Remit-to addresses are used when payments created in Accounts Payable must be sent to an address different from the supplier address. Each supplier can have only one remit-to address.

Setting Up Employee Addresses

Use Employee Maintenance in either Addresses/Taxes (2.7.1) or Payroll (29.15.1) to enter employee address records. At least one employee record is required for the Shop Floor Control and Repetitive modules. Employee records must be created before defining engineers in the Service/Support Management module.

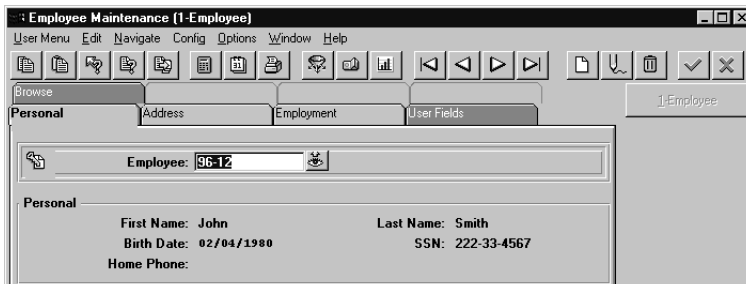


Fig. 5.8
Employee
Maintenance
(2.7.1)

Setting Up Carrier Addresses

Use Carrier Maintenance (2.17.1) to create carrier names and addresses, telephone and FAX numbers, contact names, and the carrier's tax ID on printed shipping documents. MFG/PRO provides an address type specifically for carriers, and lets you enter a series of carriers. This activity is defined within each address in a shipping group. A carrier cannot be deleted if it is currently in use by any shipment, shipping group, or tax history record.

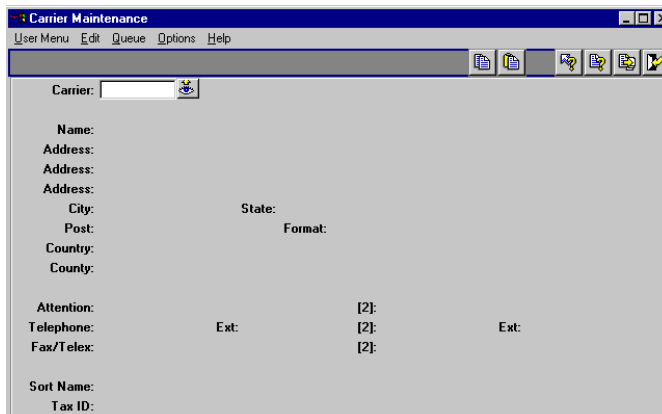


Fig. 5.9
Carrier
Maintenance
(2.17.1)

Setting Up Customer/Supplier Bank Addresses

Customer banks are banks your customers use to pay your company. Supplier banks are banks your suppliers use to receive payments from your company.

Use Customer/Supplier Bank Maintenance (2.21.1) to set up customer, supplier, and company bank addresses, specifying any number of accounts for each bank. Specify bank branch codes and begin/end dates for using the accounts on payments. If you transfer funds electronically, record each bank's mailing address, tax IDs, and EDI IDs.

Fig. 5.10
Customer/Supplier
Bank Maintenance
(2.21.1)

To set up bank addresses to be used in payments:

- 1 Set up bank address information.
- 2 Define bank accounts.

Tip
You can also set up customer banks, although these are not used by Accounts Receivable.

Use Customer/Supplier Bank Maintenance (2.21.1) to set up a record for each supplier bank that receives your EFT payments. This information can be included in the printout or file you send to your bank whenever you process EFT payments. The system assigns customer and supplier banks an address list type of c/s_bank.

Use Customer/Supplier Bank Browse (2.21.2) or Report (2.21.3) to review your setup.

Use Supplier Maintenance (2.3.1) to specify accounts for each supplier bank. Record the bank code, account type, and other information for each account. The first bank (in alphanumeric sequence) is the default supplier bank for each new voucher. Be sure to specify at least one type 1 (ALL) account for each supplier.

Tip

For reference purposes, you can also record customer bank accounts in Customer Maintenance (2.1.1).

The screenshot shows a window titled "Supplier Maintenance" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. The main area is divided into two sections: "Supplier Address" and "Bank Accounts".

Supplier Address

Supplier: 5001000 Temporary: no
 Name: General Supply Corporation
 Address: 720 East College Avenue
 Address: Building B-2
 Address:
 City: Los Angeles State: CA Post: 90293 Format: 0
 Country: U.S.A. 400 County: LA
 Attention: Mr. Richard Avery [2]: Mr. Ralph Hutton
 Telephone: 213-923-0392 Ext: [2]: Ext:
 Fax/Telex: 213-923-0022 [2]: Added: 06/14/87

Bank Accounts

Bank	Acct Type	EDI	Branch	Bank Account	Begin Date	End Date
bank	10				/ /	/ /

Fig. 5.11

Bank Accounts Frame in Supplier Maintenance (2.3.1)

Bank. Enter a code identifying the payment bank.

Account Type. Enter a type code to distinguishes multiple bank accounts for the same bank. You can define up to 10 account types. The following three types already exist in the system.

- 1 (ALL). The default. Indicates that the supplier bank account accepts both wire transfers and printed checks.
- 2 (PRT). Indicates an account that accepts only printed checks. Type 2 accounts are not used for electronic funds transfers (EFTs). Record these accounts for reference only.
- 3 (EDI). Indicates an electronic data interchange account.

EDI. Optional EDI number, not currently used by the system. Available for reference.

Branch. Optional and not currently used by the system. Available for reference.

Bank Account. The bank account code can have up to 23 characters. Set the System/Account Control File (36.1) to validate 11- and 12-digit customer and supplier bank account codes.

Tip

Designate at least one bank account as type 1 (ALL) so that the AP check selection and printing programs can always find a bank account for payments.

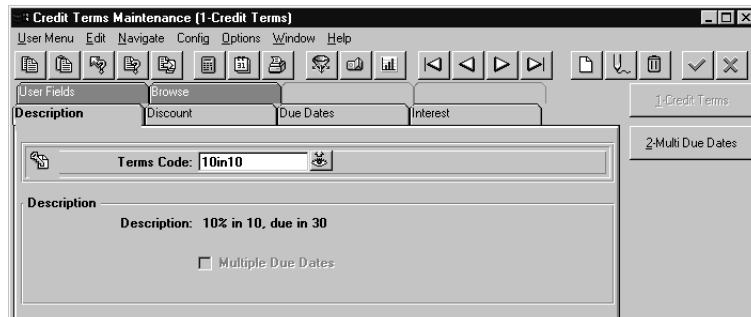
Begin/End Dates. Enter the time period in which this bank is valid for supplier payments. When you run Payment–Automatic Checks (28.9.9), the system selects this bank as the supplier’s destination bank for the payment only if the check date falls within the begin/end date range. The beginning date defaults to the system date. The end date remains open unless you specify one. These dates can be modified at any time.

Setting Up Credit Terms and Trailer Codes

Set up credit terms codes in Credit Terms Maintenance (2.19.1). MFG/PRO uses credit terms codes to calculate the default due date, discount date, and discount for any goods and services bought or sold. Each of these fields can be overridden manually. Credit terms codes are also used for processing customer payments, debit/credit memos, vouchers, and checks. Due dates and discount dates can be fixed, or calculated from the invoice date, end of month, end of fortnight, or end of week.

For terms requiring multiple due dates or discount dates, set up two-tiered, compound credit terms.

Fig. 5.12
Credit Terms
Maintenance
(2.19.1)



Proximo Terms. Proximo terms are a type of credit term used in France and some other countries. They enable you to manage due dates so that you process most payments only once a week, once a fortnight, or monthly, ensuring that customers have adequate time to pay. Specify the minimum number of days that must elapse between the invoice date and the payment due date.

Base Date. Specify a base date as the start date for due date calculations. Do this in situations where goods are shipped in advance of a negotiated invoice date but payment is made relative to the invoice date.

Credit Terms Interest. Specify a credit terms interest percentage for recalculating line item prices. You can also give favored customers a grace period on the payment due date by specifying the base days. Both the Disc Date From and Due Date From fields support end of fortnight (option 3) and end of week (option 4), as well as invoice date (option 1) and end of month (option 2).

Proximo Terms

Define proximo terms if your company processes payments only on certain days of the month. All payments may be due the same day (for example, the 10th of next month), regardless of invoice date. In MFG/PRO, you specify this by setting Due Date From to 2, indicating the end of month.

In another example, invoices for the first half of the month are due on the 15th of the following month. Invoices for the second half of the month are due on the last day of the following month. For these terms, set Due Date From to 3 (end of fortnight).

Similarly, invoices for the first week are due at the end of the first week of the following month, invoices for the second week are due at the end of the second week of the following month, and so on. For these terms, set Due Date From to 4 (end of week).

However, if you specify only the Due Date From, the amount of time between the invoice date and the payment due date may be too short for a reasonable response. For example, for the end of month proximo terms described above, an invoice dated September 30 would be due October 10. To prevent this situation, specify the Min Due Days. This feature moves the due date to the next period whenever the number of days between the invoice date and the payment due date is too short for a reasonable response.

There are many ways to set up proximo terms. Table 5.5 through Table 5.7 illustrate sample proximo terms defined with Credit Terms Maintenance.

Table 5.5

Proximo Terms:
One Month

Due Days = 10
Due Date From = 2
(End of Month)
Min Due Days = 15

If Invoice Date Is:
June 1–30,

You want to process payments on the 10th of the month, and there must be at least 15 days between the invoice date and the payment due date. For monthly proximo terms, Due Days identifies the calendar day of the payment month. Specify Due Days only for end-of-month proximo terms.

Payment Due Date Is:
July 10

Table 5.6

Proximo Terms:
Bimonthly
(Fortnight)

Due Date From = 3
(End of Fortnight)
Min Due Days = 30

Invoice Dates:
June 1–14
June 15–30

Your payment due date is either the 15th or the 30th of the following month, depending on the invoice date. Customers always have at least 15 days to pay.

For end of fortnight, the system uses 15th of the month during discount/due date calculations if transaction date is prior to 15th of the month. If transaction date is after 15th, the system uses end of current month in its calculations. Finally, if transaction date falls on 15th or last day of month, transaction date is used.

Payment Due Dates:
July 15 and July 31

Table 5.7

Proximo Terms:
Weekly

Due Date From = 4
(End of Week)
Min Due Days = 30

Invoice Dates:
June 1–3
June 4–10
June 11–17
June 25–July 1

Your payment due dates are the Saturday of every week in the following month, depending on the invoice date. Customers always have at least 15 days to pay.

For end of week, the system uses the date of the subsequent Saturday during discount/due date calculations. If the transaction occurs on a Saturday, it uses the transaction date.

Payment Due Dates:
July 8
July 15
July 22
July 29
August 5

Base Date

Base Date lets you specify a start date for due and discount date calculations. This enables you to calculate dates that match customer expectations. For example:

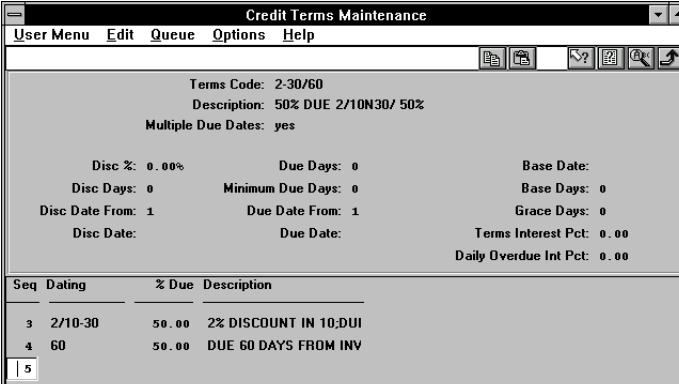
- In inflationary environments where pricing is time-dependent.
- For special promotions.
- If your company has a tightly negotiated contract with a significant cash flow effect. In this case you may want to specify a credit terms code with a base date to ensure that the customer does not have to pay too soon.

When you specify a Base Date, the system uses the later of the invoice/ship date or the base date when calculating discount and due dates.

Credit Terms Interest

Credit terms interest percentages enable you to:

- Accrue estimated inflation increases included in sales and purchases.
- Track the interest component of an item price or cost separately from its list price component. Separate postings to accounts for credit terms interest applied and accrued are required under generally accepted accounting principles, since currency gain/loss is only an estimate.



Credit Terms Maintenance

User Menu Edit Queue Options Help

Terms Code: 2-30/60
 Description: 50% DUE 2/10N30/ 50%
 Multiple Due Dates: yes

Disc %: 0.00% Due Days: 0 Base Date:
 Disc Days: 0 Minimum Due Days: 0 Base Days: 0
 Disc Date From: 1 Due Date From: 1 Grace Days: 0
 Disc Date: Due Date: Terms Interest Pct: 0.00
 Daily Overdue Int Pct: 0.00

Seq	Dating	% Due	Description
3	2/10-30	50.00	2% DISCOUNT IN 10;DUI
4	60	50.00	DUE 60 DAYS FROM INV

5

Fig. 5.13
Credit Terms
Maintenance
(2.19.1)

Base Days

In hyperinflationary environments, it is a common practice to offer a favored customer a due date that is later than the standard due date. These free days are not subject to credit terms interest. In MFG/PRO, you can specify these days as Base Days in the credit terms code. When the system calculates due dates, it appends the Base Days to the calculated due date.

Note There is no connection between Base Date and Base Days, nor between Base Days and Due Days. In the latter case, Due Days specifies a time period that increments the Due Date From. Base Days specifies an interval that increments the calculated due date.

On sales and purchasing transactions, the credit terms interest percentage defaults from the transaction header credit terms code for the customer or supplier. You can change it if necessary. If you do, the system does not automatically update the credit terms interest percentage. A warning displays if the percentage in the header does not match the percentage for the credit terms code.

On sales transactions, a pop-up in the line item frame displays the credit terms interest percentage from the header, which you can override for the line item if necessary.

When you press Go, the system increments and displays the item's price based on the interest percentage. The line item discount, if any, is applied to calculate the item's net price.

On purchasing transactions, GL entries are created at PO receipt (5.13.1). Credit terms interest applied is debited and accrued interest is credited. These accounts are specified in the Purchasing Control File (5.24).

On sales transactions, GL entries are created at invoice post (7.13.4). Credit terms interest applied is credited and accrued interest is debited. These accounts are specified in the Sales Order Control File (7.1.24).

Note Currently, the system does not calculate adjusting entries on late payments.

Trailer Codes

In addition to line item charges and tax amounts, orders often have miscellaneous charges such as freight and service associated with them. Use Trailer Code Maintenance (2.19.13) to set up trailer codes prior to entering sales orders.

Trailer codes can be marked as taxable and associated with a GL account. For U.S. sales taxes, enter the tax exemption code if the charge is tax-exempt. For Canadian GST, value-added taxes (VAT), or GTM, enter the tax class of this trailer code. Trailer items are not subject to commission.

Once established, the three most frequently used taxable and nontaxable trailer codes can be specified as defaults in the Sales Order Control File (7.1.24). These defaults display on the trailer of every order but can be changed manually. Trailer codes for contracts in Service/Support Management can be specified in the Contract Control File (11.5.24).

Setting Up Freight Charges

Many companies add freight charges to sales orders and RMAs. When MFG/PRO calculates freight terms, it takes into account the shipper, ship-from site, ship-to address, shipment weight, currency, minimum weight, and other factors. Data affecting freight charges is derived from three sources:

- The order.
- Customer information.
- Freight information entered in the Freight Charges menu. Table 5.8 lists the programs in that menu.

Number	Name	Program
2.20.1	Freight List Maintenance	socn001.w
2.20.2	Freight List Browse	sobr002.p
2.20.4	Freight Zone Maintenance	sofrzmt.p
2.20.5	Freight Zone Browse	sobr006.p
2.20.7	Freight Class Maintenance	sofrclmt.p
2.20.8	Freight Class Browse	sobr001.p
2.20.10	Freight Charges Maintenance	sofrcmt.p

Table 5.8
Freight Charges
Menu (2.20)

Number	Name	Program
2.20.11	Freight Charges Browse	sobr005.p
2.20.12	Freight Charges Report	sofrcrp.p
2.20.13	Freight Terms Maintenance	sofrtmt.p
2.20.14	Freight Terms Browse	sobr003.p
2.20.24	Freight Control File	sofrctmt.p

▶ See *User Guide Volume 2: Distribution* for details on how freight is calculated for a sales order.

Freight terms determine how shipping costs are displayed on the order. A customer’s freight costs can appear on the order trailer or be added to each line item unit cost.

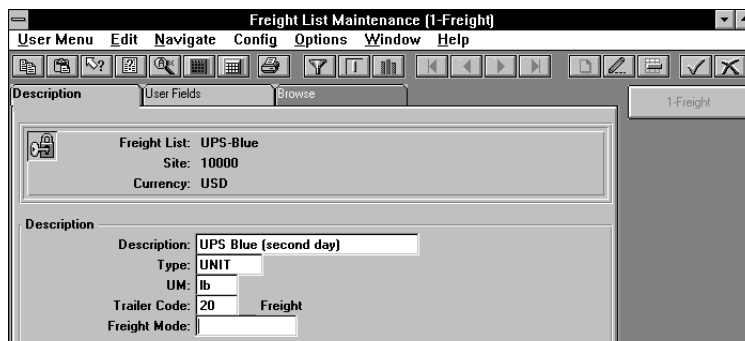
Once freight lists and terms are defined, assign default lists and terms to customers in Customer Maintenance. Each new sales quote order created for the customer uses these values. Freight list, zone, and class are used to determine the freight charge for an order. The freight zone is based on the ship-to postal code. Freight class is determined by the item sold.

Freight List Maintenance

Use Freight List Maintenance (2.20.1) to define charges that apply to sales quotes and orders. Typically, you need at least one freight list for each shipping company you use. More than one freight list may be needed if the shipping company supports different types of transportation. For example, a shipping company may ship by train, by truck, by refrigerated truck, and by regular semi-trailer.

Set up freight lists for different currencies if your shipper delivers to other countries. You can also define lists per site if the same shipper transports from more than one warehouse or manufacturing site.

Fig. 5.14
Freight List Maintenance (2.20.1)



Type. This value determines if freight charges are based on a unit charge or a bulk charge. Unit charge is per item on the order. Bulk charge applies to the order as a whole.

Trailer Code. This value links a freight list with the appropriate GL account to use when charging amounts on the sales quote, sales order, or pending invoice trailer.

Freight Mode. An optional code that can be used to describe the transportation method. Define values in Generalized Codes Maintenance for field *fr_mode*.

Freight Zone Maintenance

The distance an item is shipped can be an important factor in determining an order's freight charges. Use Freight Zone Maintenance (2.20.4) to set up geographical areas related to freight lists. Relate zones to sites by specifying values in the Site field.

Fig. 5.15
Freight Zone
Maintenance
(2.20.4)

Zones are bounded by a beginning and ending range of postal codes. Assign a starting and ending effective date, as needed.

Freight Zone Maintenance only sets up zones. Use Freight Charges Maintenance (2.20.10) to determine charges.

Freight Class Maintenance

Use Freight Class Maintenance (2.20.7) to set up classes used in calculating the freight charges defined in Freight Charges Maintenance. Freight class distinguishes different types of shipments requiring different charges. For example, a fragile class is charged at a higher rate because it requires extra handling.

Fig. 5.16
Freight Class
Maintenance
(2.20.7)

Associate freight classes with items in Item Master Maintenance (1.4.1).

Freight Charges Maintenance

Use Freight Charges Maintenance (2.20.10) to relate a freight list, class, and zone, and to specify how charges are calculated. Use start and end dates to phase in new charges if fees rise or fall after a certain date.

Fig. 5.17
Freight Charges
Maintenance
(2.20.10)

Maximum Weight. Enter the highest weight that can be used with a freight charge.

Freight Charge. Indicates a flat rate per shipment. The amount to be charged per order or per item as determined by the Type field in Freight List Maintenance.

Freight Charges Per UM Over Minimum. Indicates a surcharge over minimum. The freight charge per unit of measure over the minimum listed for this freight list in the Minimum Weight field. This is calculated per order or per item, based on the Type field in Freight List Maintenance.

Freight Charge Per Freight List UM. Indicates a weight-based fee. The freight charge for the unit of measure specified for the freight list in Freight List Maintenance.

Use any combination of these three types when defining freight charges. You can charge a flat rate plus a rate based on weight. Or you can charge a weight-based rate but with an additional charge for amounts over a certain minimum.

Freight Terms Maintenance

Freight Terms Maintenance is not directly related to the other freight maintenance functions. Terms are not related to a specific freight list or charge. Instead, they are specified for a particular customer in Customer Maintenance (2.1.1), or for a particular sales order, quote, or invoice.

Freight terms determine:

- Whether to apply freight charges to a particular order, or specify them in general for a particular customer.
- How freight charges are calculated. Table 5.9 lists the six methods for calculating freight charges.

Type	Description
Add	Freight is calculated and placed on the trailer.
Allow	Freight is calculated and shown as a negative amount on the trailer.
Collect	Accrued freight charges are calculated and placed on the trailer.
Include	Freight is calculated and added to the item's unit price (after you exit the order line item screen).
Prepaid	Freight is not calculated—it was prepaid or is a part of the selling price.
Will Call	Freight is not calculated—the customer is responsible for the shipping arrangements.

Table 5.9
Freight Term Types

By defining freight terms, you can assign your own codes and descriptions to these six types.

Changing or Merging Address Codes

To change or merge address codes, use Address Code Change (2.11).

Merging is allowed only if the old and new address codes both have a single, common list type. Customer and end user list types are considered the same for purposes of merging. For example, an address code for a customer can only be merged with an address code for another customer. An address code used for both a customer and a supplier cannot be merged.

Fig. 5.18
Address Code
Change (2.11)



▶ See *User Guide Volume 2: Distribution* for information on shipping groups.

If you merge address codes, and both old and new address codes are already associated with a shipping group or shipment, the old address code is deleted rather than changed. This prevents duplication in the group.

Intrastat

European Union (EU) regulations require member nations to submit reports concerning Intra-EU trade. The term *Intrastat* (for *Intra-EU Trade Statistics Reporting*) refers to the system used by customs officials to monitor this trade. MFG/PRO fully supports Intrastat reporting requirements.

Introduction **158**

Implementing Intrastat **160**

Recording Intrastat Data for Orders **169**

Manually Creating Intrastat History **171**

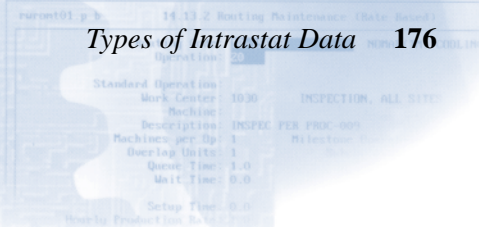
Printing Intrastat Declarations **172**

Reprinting Intrastat Declarations **174**

Reviewing Intrastat History Information **175**

Deleting and Archiving Intrastat History **175**

Types of Intrastat Data **176**



Operation	Description	Machine	Rate
Standard Operation			
Work Center	1030	INSPECTION, ALL SITE	
Machine			
Description	INSPEC PER PROX-000		
Machines per Op	1		
Overlap Units	1		
Queue Time	1.0		
Wait Time	0.0		
Setup Time	0.0		

Introduction

Intrastat offers powerful tools for companies doing business in EU member countries and for those wanting written documentation of inventory movements. You can:

- Generate Intrastat reports that are fully compliant with Intrastat legislation.
- Maintain tables with valid values for Intrastat codes such as terms of delivery and country codes.
- Assign Intrastat codes to items.
- Enter country codes for ship-to customers and suppliers.
- Record Intrastat codes for practically all MFG/PRO order types.
- Create automatic entries for qualifying Intra-EU inventory movement transactions.
- Edit Intrastat data manually before final declaration printing.
- Print and reprint Intrastat declaration reports.
- Create Intrastat inquiries by order, by invoice, or by voucher.

Table 6.1 lists the functions on the Intrastat menu.

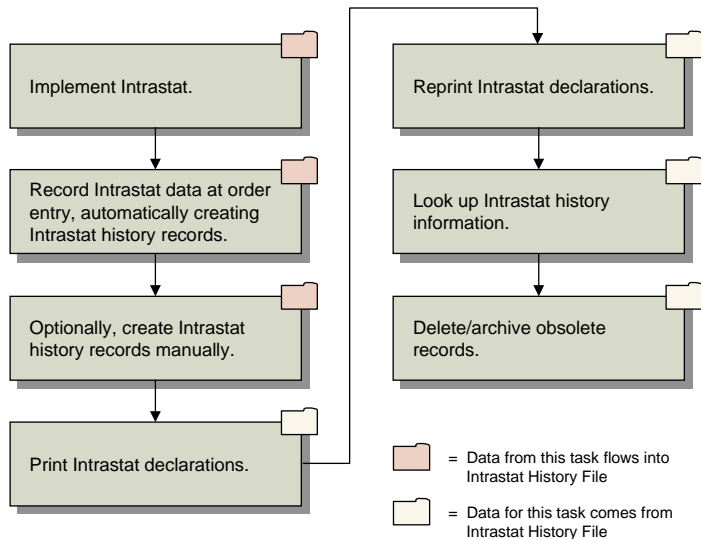
Table 6.1
Intrastat Menu
(2.22)

Number	Menu Label	Program
2.22.1	Intrastat Setup Menu ...	
2.22.1.1	Flow Indicator Maintenance	ieflowmt.p
2.22.1.2	Flow Indicator Browse	iebr002.p
2.22.1.4	Terms of Delivery Maintenance	ietodmt.p
2.22.1.5	Terms of Delivery Browse	iebr008.p
2.22.1.7	Nature of Transaction Maintenance	ienotmt.p
2.22.1.8	Nature of Transaction Browse	iebr004.p
2.22.1.10	Country Code Maintenance	adctrymt.p
2.22.1.11	Country Code Browse	adbr015.p
2.22.1.13	Mode of Transport Maintenance	iemotmt.p
2.22.1.14	Mode of Transport Browse	iebr003.p
2.22.1.16	Port Maintenance	ieportmt.p
2.22.1.17	Port Browse	iebr005.p
2.22.1.19	Statistical Procedure Maintenance	iespmt.p

Number	Menu Label	Program
2.22.1.20	Statistical Procedure Browse	iebr007.p
2.22.1.22	Region Maintenance	ieregmt.p
2.22.1.23	Region Browse	iebr006.p
2.22.3	Commodity Code Maintenance	iecommt.p
2.22.4	Commodity Code Browse	iebr001.p
2.22.6	Item Intrastat Data Maintenance	ieptmt.p
2.22.7	Item Intrastat Data Inquiry	ieptiq.p
2.22.11	Order Intrastat Data Maintenance	iedmt.p
2.22.12	Order Intrastat Data Report	ieordrp.p
2.22.13	Intrastat Maintenance	iehmt.p
2.22.14	Intrastat Inquiry	iehiq.p
2.22.15	Intrastat Inquiry by Invoice	iehinviq.p
2.22.16	Intrastat Inquiry by Voucher	iehvoui.p
2.22.17	Intrastat Inquiry by Order	iehordiq.p
2.22.19	Intrastat Declaration Print	iehpri.p
2.22.20	Intrastat Declaration Reprint	iehrpri.p
2.22.23	Intrastat Delete/Archive	iehup.p
2.22.24	Intrastat Control File	iepm.p

Before Intrastat data can be collected and reports generated, you must set up and initialize several Intrastat codes and an Intrastat control file. These codes and settings are used during sales and purchase order processing. Figure 6.1 shows a general work flow for Intrastat.

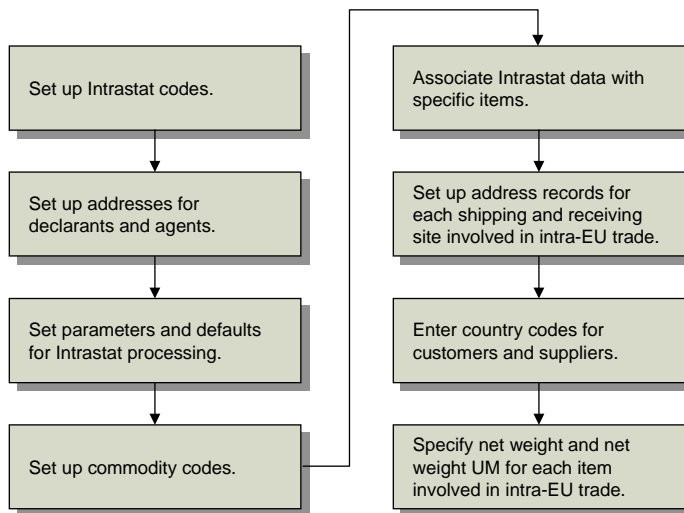
Fig. 6.1
General Intrastat
Work Flow



Implementing Intrastat

Figure 6.2 outlines typical steps for implementing Intrastat.

Fig. 6.2
Intrastat
Implementation
Work Flow



Setting Up Intrastat Codes

Figure 6.3 outlines typical steps for setting up Intrastat codes.

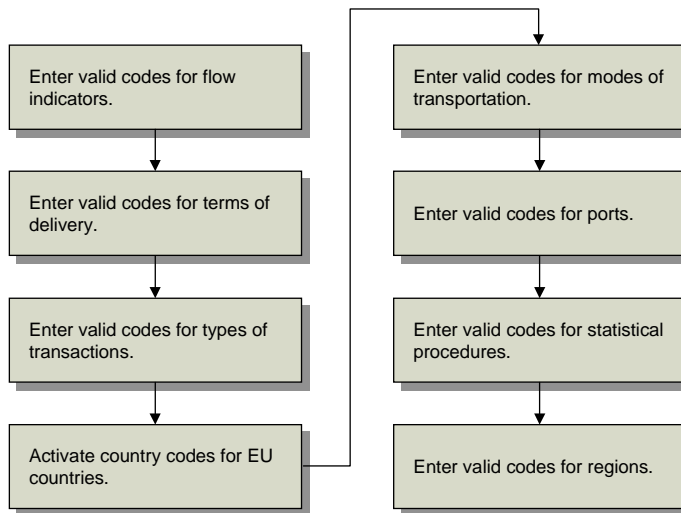


Fig. 6.3
Intrastat Code
Setup

Depending on the requirements of the country where you use Intrastat, some codes are required and others are optional. For each maintenance program, there is a corresponding browse.

- Use Flow Indicator Maintenance (2.22.1.1) to define at least two flow indicators: one for Arrivals transactions and one for Dispatches transactions.
- Use Terms of Delivery Maintenance (2.22.1.4) to enter valid codes if your country requires this information.
- Use Nature of Transaction Maintenance (2.22.1.7) to enter valid codes if your country requires this information.
- Use Country Code Maintenance (2.22.1.10) to define countries where your company does business.

Enter Yes in the EU Country field to indicate that a country is a member of the EU. The system can then determine automatically when transactions involve Intra-EU inventory movements. The system uses this information to validate the Country of Destination/Dispatch and Country of Origin fields.

- Use Mode of Transport Maintenance (2.22.1.13) to enter valid codes if your country requires this information.
- Use Port Maintenance (2.22.1.16) to enter valid codes if your country requires this information. The system uses the information to validate the Port of Arrival/Dispatch and Port of Transshipment fields.
- Use Statistical Procedure Maintenance (2.22.1.19) to enter valid codes if your country requires this information for EDI transactions.
- Use Region Maintenance (2.22.1.22) to enter valid codes if your country requires this information.

Setting Up Addresses for Declarants and Agents

When printing Intrastat Declarations for declarants and agents, the system prints company address information in the declaration header. Use the Intrastat Control File (2.22.24) to establish defaults for declarant and agent addresses.

▶ See “Setting Up a Company Address for Each Site” on page 167.

It is common for companies to submit one consolidated Intrastat declaration monthly, requiring the setup of only one company address. If multiple monthly declarations are required, as when company sites are located in different countries, you must set up multiple company addresses.

Setting Up the Intrastat Control File

Use the Intrastat Control File (2.22.24) to set system-wide parameters for Intrastat processing and system-wide defaults for Intrastat data fields.

Fig. 6.4
Intrastat Control
File (2.22.24)

The screenshot shows the 'Intrastat Control File' window with the following parameters:

Use Intrastat:	no		
Imp/Exp Default:	no		
Intrastat Net Weight UM:	KG		
Intrastat Net Weight Minimum:	0.00		
Flow Indicator - Arrivals:			
Flow Indicator - Dispatches:			
Reference Date Logic:	1		
Include Memo Items:	no		
Declarant:		Branch ID:	
Agent:		Branch ID:	
Commodity Code:		Statistical Procedure:	
Mode of Transport:		Port of Arr/Disp:	
Terms of Delivery:		Port of Transshipment:	
Nature of Transaction:			

Use Intrastat. Enter No if you do not want the system to automatically create Intrastat history records. If No, you can still create records manually.

▶ See “Manually Creating Intrastat History” on page 171.

Enter Yes to have the system automatically create Intrastat history records for applicable invoice and receiver lines.

- Invoice Post (7.13.4) automatically creates an Intrastat history record for each sales invoice line that relates to both an Intrastat item and a shipment to or receipt from another EU country.
- All programs that create purchase receivers (prh_hist records) automatically create an Intrastat history record for each receiver line that relates to both an Intrastat item and a shipment to or receipt from another EU country.

The system determines whether a sales invoice or receiver line is involved in Intra-EU inventory movement by comparing the country codes associated with the ship-from or receipt site and the Country of Destination/Dispatch for the related order line. If the codes are not the same and both relate to EU countries, the transaction is an Intra-EU transaction. If source and destination countries are the same, the transaction is considered domestic.

An invoice or receiver line is considered an Intrastat item when Intrastat Item is Yes in the corresponding order line.

Imp/Exp Default. This field determines the default for Imp/Exp on many order maintenance programs. Imp/Exp controls whether the Intrastat Data frame appears during order maintenance. Enter Yes if most of your sales orders and other order types are subject to Intra-EU reporting. Otherwise, enter No.

Intrastat Net Weight Unit of Measure. Enter the unit of measure code you use to indicate kilograms, the unit of measure in which the net weight of Intrastat transactions must be reported. If the net weight in the item master is not expressed in this unit, the system converts it.

Intrastat Net Weight Minimum. Enter the minimum legal net weight to be reported for an Intrastat transaction. The system rounds up the extended net weight for the transaction to this value.

Tip

Define these codes first in Flow Indicator Maintenance (2.22.1.1).

Flow Indicator Arrivals/Flow Indicator Dispatches. Enter the codes used in your country to indicate Intrastat arrival and dispatch transactions.

Reference Date Logic. Enter 1, 2, or 3 to indicate the method you use to assign a reference date to purchasing-related Intrastat history records.

1. Inventory transaction effective date
2. Voucher date
3. Tax point or voucher date. The system records whichever date falls earlier in the month. The tax point date is the 15th day of the month following the transaction effective date.

For sales-related Intrastat transactions, the reference date is always set to the invoice effective date.

The reference date assigned to an Intrastat history record determines when it is reported. Reference date is the main criterion for selecting Intrastat history records for reporting.

Include Memo Items. Enter Yes if you typically create Intrastat history records for memo items. Otherwise, enter No. This value becomes the default for Include Memo Items on order headers. You can override it during order entry.

Declarant Branch ID and Agent Branch ID. Optional. Enter the company address codes to use as the default declarant and default agent in Intrastat Declaration Print (2.22.19).

Commodity Code. Enter the commodity code to use when an Item Intrastat Data record does not exist.

Mode of Transport and Port of Transshipment. Enter the default transportation code values for Intrastat orders. You can change these values during order entry. These are optional fields.

Automatically Updating Intrastat History Records at Vouchering

Voucher Maintenance (28.1) automatically updates the Intrastat history record associated with each voucher receiver line when the line closes.

The screenshot shows the 'Voucher Maintenance' window with the following data:

Batch: 1001		Control: 39,000.000	Total: 39,000.000
Voucher: 1001	Control: 0.00	Effective: 05/28/98	ERS: no
	Total: 0.00	Tax Date: 05/28/98	
Order: 10000	Supplier: 5001000	METAL SUPPLY CO	720 EAST COLLEGE
10000			LOS ANGELES CA
	Remit-To: 50010001	METAL SUPPLY CO	
	Ship-To: 10000000	QUALITY PRODUCTS COMP	
Currency: USD	Bank: AA	Daybook:	
Invoice: []	Acct: 2100	Prepay Amt: 0.00	
Date: 05/28/98	Disc Acct: 5200	Hold Amt: 0.00	
Terms: 2/10-30	Entity: 1000	Non-Disc Amt: 0.00	
Disc Date: / /	Remark: []	Tax[1]: 6.25%	
Due Date: / /	Supp Bk: []	[2]: 1.50%	
Exp Date: / /	Type: []	Separate Ck: no	[3]: 0.50%
	Ck Form: 1	Auto Select: no	

Fig. 6.5
Voucher
Maintenance (28.1)

The following Intrastat data is recorded for each voucher receiver line.

- Reference date (if reference logic is 2 or 3)
- Statistical value in base currency
- Invoice value in transaction currency
- Voucher number
- Invoice value in base currency
- Voucher date

▶ See “Reference Date Logic” on page 164.

Setting Up Commodity Codes

Use Commodity Code Maintenance (2.22.3) to set up codes for classifying goods for Intrastat reporting. Create codes for each EU country, since each has its own coding scheme for the last four digits.

Note Intrastat commodity codes are distinct from the corporate commodity codes defined in Commodity Code Maintenance.

▶ See page 21 for details.

Fig. 6.6
Commodity Code
Maintenance
(2.22.3)

Country. Enter a valid country code for each country in which your company has sites.

Commodity Code. Enter a commodity code.

Description. Enter a description of the commodity.

Supplementary UM. Optional. Enter a supplementary unit of measure. For conversions, this value must be defined in Unit of Measure Maintenance (1.13).

Some commodity codes require that an item be tracked in a specified unit of measure. If the line UM differs from the supplementary UM when Intrastat history records are created, the line quantity is converted to the supplementary UM.

Setting Up Intrastat Item Data

Use Item Intrastat Data Maintenance (2.22.6) to associate Intrastat data with inventory items involved in Intra-EU transactions. The values entered here appear in orders as defaults, and can be changed at order entry. Create a record for each EU country.

Fig. 6.7
Item Intrastat Data
Maintenance
(2.22.6)

Authority. For Intrastat purposes, always set this to INSTAT.

Country. Enter a country code.

Item Number. Enter an item number.

Commodity. Enter a commodity code. To associate a commodity code with a country, you must also associate it with that country in Commodity Code Maintenance (2.22.3).

Country of Origin. Enter a country of origin code.

Intrastat Item. Enter Yes to have the system automatically create Intrastat history records for the item. For items for which you do not want Intrastat records created, such as intangible goods or items related to motorized vehicles, enter No.

Setting Up a Company Address for Each Site

Use Company Address Maintenance (2.12) to set up address records for each shipping and receiving site used in Intra-EU inventory movements. This program also lets you associate each site with a country and region code.

Addresses must be the site code entered in Site Maintenance (1.1.13).
Country Code field is not labeled.
Enter a region code in the State field if one is required on Intrastat declarations.

Fig. 6.8
Company Address Maintenance (2.12)

Address. Enter an address code. If the code you entered is for a new record, enter the address in the address fields.

Entering Country Codes for Customers and Suppliers

Country codes entered in the following programs become defaults for Country of Destination/Dispatch on customer and supplier orders. You can change these codes at order entry. This is useful when the shipping/receiving site of the supplier/customer is in a different country from where the order is sent (*triangulation*).

- Use Supplier Maintenance (2.3.1) to enter country codes for suppliers.
- Use Customer Maintenance (2.1.1) to enter country codes for customers.
- Use Ship-To Maintenance (2.1.13) to enter ship-to addresses for customers.

Entering Net Weights for Intrastat Items

Use Item Master Maintenance (1.4.1) or Item Inventory Data Maintenance (1.4.5) to specify net weight and net weight unit of measure (UM) for each item involved in Intra-EU inventory movements.

Fig. 6.9
Item Master Maintenance (1.4.1), Item Shipping Data

The screenshot shows the 'Item Master Maintenance' window. The 'Item Shipping Data' section is active, displaying the following fields:

Ship Weight:	10.10	Net Weight:	10.00	Unit of Measure:	KG
Freight Class:		Volume:	200.00	Unit of Measure:	CC

The Unit of Measure field is to the right of the Net Weight field. The system calculates net weight when creating Intrastat history records.

Net Weight. Enter item net weight.

Unit of Measure. Enter item unit of measure.

Recording Intrastat Data for Orders

Once Intrastat is set up, you can record Intrastat data using either standard order maintenance programs or Order Intrastat Data Maintenance (2.22.11).

Entering Intrastat Data in Sales Order Maintenance

This section describes how to enter Intrastat data in Sales Order Maintenance (7.1.1). The same steps can be used to record Intrastat data in most other standard order maintenance programs.

- 1 Use Sales Order Maintenance (7.1.1) to enter an order as usual.

The screenshot shows the 'Sales Order Maintenance' window. At the top, it displays 'Order: 1014', 'Sold-To: 3005000', 'Bill-To: 3005000', and 'Ship-To: 3005000'. Below this, there are two columns for 'Sold-To' and 'Ship-To' addresses, both pointing to 'WORLDWIDE OFFICE SUPPL EUROPEAN DISTRIBUTION I' at '600 rue de Champlain, PARIS, France 70293'. The bottom section contains various options: 'Salesperson[1]:', 'Multiple: no', 'Commission[1]: 0.00%', 'Freight List:', 'Frt Min Wt: 0', 'Freight Terms:', 'Calculate Freight: yes', 'Display Weights: yes', 'Consume Forecast: yes', 'Detail Allocations: no', 'Allocate Days: 10', 'Comments: no', and 'Imp/Exp: yes'. An arrow points to the 'Imp/Exp: yes' field with the label 'Imp/Exp field'.

Fig. 6.10
Sales Order
Maintenance
(7.1.1)

Imp/Exp. Enter Yes to record Intrastat data for this order. When the Intrastat frame displays, enter Intrastat data.

If No, no special processing takes place during order maintenance. You can still add Intrastat data later using Intrastat Maintenance (2.22.13).

Fig. 6.11
Sales Order Maintenance, Intrastat Frame (7.1.1)

Record Intrastat data in the Intrastat frame of the order header. Fields default from the Intrastat Control File. Defaults to the country code associated with the ship-to customer.

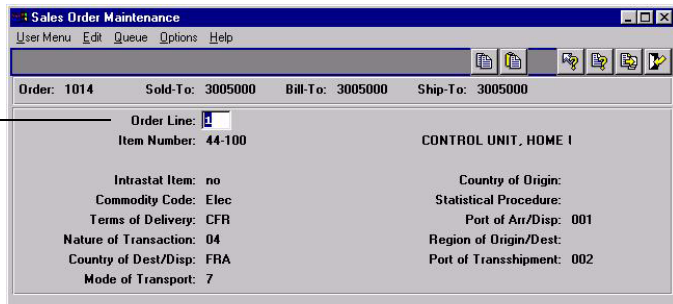


2 Choose Go to enter order lines.

The system automatically copies the Intrastat header data to each order line. When all order lines and the order trailer are entered, you are prompted to view or edit import/export data. Choose Yes to display the following window.

Fig. 6.12
Viewing Intrastat Data in Sales Order Maintenance (7.1.1)

Scroll through the order lines by positioning the cursor in the Order Line field and pressing the Up or Down arrow keys.



In most cases, Intrastat codes entered in the order header apply to all order lines. Where there are exceptions to this, Intrastat information can be entered and maintained at the line level.

Entering Data in Order Intrastat Data Maintenance

Use Order Intrastat Data Maintenance (2.22.11) to enter all Intrastat data in one frame and to review and modify Intrastat data at any time between order entry and shipment. However, you can only *delete* order data using the appropriate order maintenance program. At invoice posting, this information is recorded in the Intrastat history file.

Use Order Intrastat Data Maintenance to enter all Intrastat data in one frame.

Fig. 6.13
Order Intrastat Data Maintenance (2.22.11)

Manually Creating Intrastat History

Use Intrastat Maintenance (2.22.13) to add and modify Intrastat records directly in the Intrastat history file. This is useful for data that are not entered automatically.

- DRP transactions
- Straight inventory transfers that use transactions on the Inventory Transfer Menu (3.4)
- Installed base item movements in Installed Item Move (11.3.13)
- Goods sent out for processing in the Advanced Repetitive module using the programs on the Subcontract Shipping Menu (18.22.5)

▶ See “Printing Intrastat Declarations” on page 172.

Note You cannot modify Intrastat history records that have been declared on a final print.

Fig. 6.14
Intrastat Maintenance (2.22.13)

Invoice Value. Enter the invoice value in transaction currency.

Invoice Cur. Enter the currency designation for this invoice.

Statistical Value. Enter the statistical value of the order. This field defaults from the invoice value in base currency.

Net Weight. Enter the weight of the transaction in the net weight per stocking unit of measure specified in the item master (cannot be zero). If this UM is different from the Intrastat Net Weight in the Intrastat Control File, the system converts it.

Supplementary Units. Enter a secondary unit of measure, usually the same as the UM on the commodity code for this item (units, length, cubic meters, and so on). This is a required field for some commodity codes. The system uses the line quantity UM as the supplementary UM. If line quantity UM is different from the supplementary UM in the commodity code, the system converts it.

Reference. Specify which document contains the Intrastat data. This field is normally updated by the system and displays the order type, order number, and order line or reference (invoice number or receiver number).

Printing Intrastat Declarations

Use Intrastat Declaration Print (2.22.19) to print Intrastat declarations that are fully compliant with Intrastat regulations. You can print declarations for arrivals, dispatches, or both, in any of four forms: trial, final, summary, or detail. The Intrastat declaration report layout is generic, allowing it to be customized locally using standard PROGRESS tools.

Fig. 6.15
Intrastat
Declaration Print
(2.22.19)

Reference Date and Site. Enter a range of reference dates or sites for Intrastat history records to be included in the declaration.

Print Intrastat Declaration Arrivals and Dispatches. Enter Yes in both fields to print both kinds of declarations.

Trial/Final. Enter Trial to print a draft of the declaration. Enter Final to print the declaration in final form. The system prompts you to confirm that the declaration printed correctly. Choose No to reprint the document. Choose Yes to update selected Intrastat history records so they are not included on another declaration. Records are updated as follows.

- Reference to the declaration on which the record was reported (Period, Submit Date, and Declarant field).
- Reported invoice value and statistical value.
- Reported flag is set to Yes.
- Intrastat Declaration ID is added to each declared record

Summary/Detail. Enter Summary to print a summary report organized by the following:

- Commodity Code
- Terms of Delivery
- Nature of Transaction
- Country of Dest/Disp
- Mode of Transport

Tip
Intrastat Declaration Print only selects Intrastat history records that have not been reported on a final declaration.

- Country of Origin
- Port of Arr/Disp
- Region of Origin/Dest
- Port of Transshipment
- Statistical Procedure

Enter Detail to print each record as an individual line item.

Year, Period, Declarant, Agent. Specify for which year, period (month of year), submit date, declarant, and agent you are printing the Intrastat declaration.

Submit Date. Defaults to the system date. This date prints on the declaration.

Reprinting Intrastat Declarations

Use Intrastat Declaration Reprint (2.22.20) to reprint declarations submitted in the past. You have the option of reprinting in summary or detail, regardless of how the original was printed.

Fig. 6.16
Intrastat
Declaration Reprint
(2.22.20)

Declaration ID. Enter the ID of the declaration to be reprinted. This is a unique identifier automatically assigned to all Intrastat history records included in a final Intrastat declaration. This ID is printed on the Intrastat declaration. Use the Up and Down arrows to scroll through history records to find the declaration you want to reprint.

Reviewing Intrastat History Information

Four inquiries are available for reviewing Intrastat history information. All show the same information, but differ by search criteria and sort methods.

- Use Intrastat Inquiry (2.22.14) to review Intrastat history records by transaction ID (the sequence in which the system creates them).
- Use Intrastat Inquiry by Invoice (2.22.15) to review Intrastat history records by invoice number.
- Use Intrastat Inquiry by Voucher (2.22.16) to review Intrastat history records by voucher number.
- Use Intrastat Inquiry by Order (2.22.17) to review Intrastat history records by order number.

Deleting and Archiving Intrastat History

Use Intrastat Delete/Archive (2.22.23) to delete or archive Intrastat history records. Use Archive File Reload (36.16.5) to return history records to the MFG/PRO database.

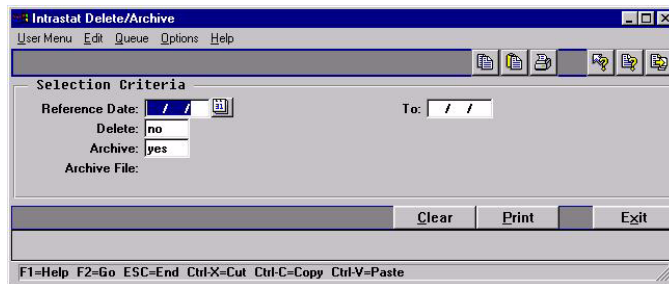


Fig. 6.17
Intrastat Delete/
Archive (2.22.23)

Delete. Enter yes to delete information or No to review selected records.

Archive. Enter Yes to copy each selected record to the disk file displayed in the Archive File field.

Types of Intrastat Data

Recorded data for each Intrastat history record can be classified into three groups.

- *Qualitative information* describes inventory movement and helps customs officials understand trends in the flow of goods.
- *Quantitative information* describes the value, net weight, and supplementary UM (if required) of the inventory movement. This information gives customs officials the currency value of the shipment both in net and unit measurements.
- *Audit trail information* gives you a way to match Intrastat data to the business transactions from which it originated. This is useful for responding to customs inquiries and audits.

Table 6.2 lists the various data fields that belong to the three types of Intrastat data.

Table 6.2
Intrastat Data Types

Qualitative Information	Quantitative Information	Audit Trail
Reference Date	Invoice Value in Transaction Currency	Reference to the underlying sales invoice or receiver line; that is, Order Type, Order Number, Order Line, Receiver/Invoice
Country of Dest/Disp	Invoice Value in Base Currency	
VAT Registration Number	Supplementary Units in the UM as required for the Commodity Code	Quantity in the item's stocking UM or order line UM for memo items
Flow Indicator	Statistical Value in Base Currency	Address, Site, and Item Number
Mode of Transport	Net Weight in the Intrastat Net Weight UM	
Region of Origin/Dest		
Commodity Code		
Country of Origin		
Port of Transshipment		
Terms of Delivery		
Statistical Procedure		
Port of Arr/Disp		
Nature of Transaction		

Note MFG/PRO does not automatically calculate the statistical value because every EU country has its own definition of the statistical value calculation. Instead a user exit program, iestatvl.i, is provided to calculate the statistical value. Customize this program to insert a new formula.

Inventory Control

MFG/PRO's Inventory Control supports a broad range of activities including management of inventory transactions, lot/serial tracing, and inventory counting.

Introduction **178**

Setting Up the Inventory Control File **178**

Creating Inventory Detail Records **180**

Creating Inventory Transactions **180**

Creating Inventory Transaction History **183**

Creating Lot/Serial Number History **185**

Performing Cycle Counts **186**

Creating Inventory Reports **189**

Checking Inventory Availability **192**

Routing Code: 10-15000 MFG/PRO: CDR.LIN.
 Operation: 20

Standard Operation		
Work Center	1030	INSPECTION, ALL SITE
Machines		
Description	INSPEC PER PROC-000	
Machines per Op	1	Allocation
Overlap Units	1	
Queue Time	1.0	
Wait Time	0.0	
Setup Time	0.0	
Ready Production	0.0	

Introduction

Inventory Control supports a broad range of inventory activities. You can:

- Create inventory transactions such as unplanned issues and receipts or inventory transfers.
- Monitor inventory transactions and history records created elsewhere in MFG/PRO, including lot/serial tracing.
- Generate reports and inquiries on the value and availability of inventory.
- Perform cycle counts to verify inventory quantities on hand.

Receipts to inventory and issues from inventory change a location's inventory balance and affect the General Ledger (GL). Inventory Control provides a complete audit trail of all inventory transactions, and enables you to track tools, documents, and non-inventory items (but not work-in-process items).

Use it to verify inventory by performing inventory counts and comparing actual quantities with system quantities. Two counting methods are supported: cycle counting and physical inventory counting.

▶ See Chapter 8, “Physical Inventory,” for details.

Setting Up the Inventory Control File

The Inventory Control File (3.24) contains three types of settings.

- **Inventory Count Parameters.** These determine how the system handles inventory balance variations during cycle counting and physical inventory. Tolerances can be set based on item ABC class.
- **Accounting Parameters.** These determine costing issues, whether GL transactions are created for inventory transactions, and other inventory accounting parameters.
- **Picking Logic.** Before the system can move inventory, it must know what inventory to select, or *pick*. The picking logic specified here determines how the system picks inventory.

▶ See “ABC Class Code” on page 186.

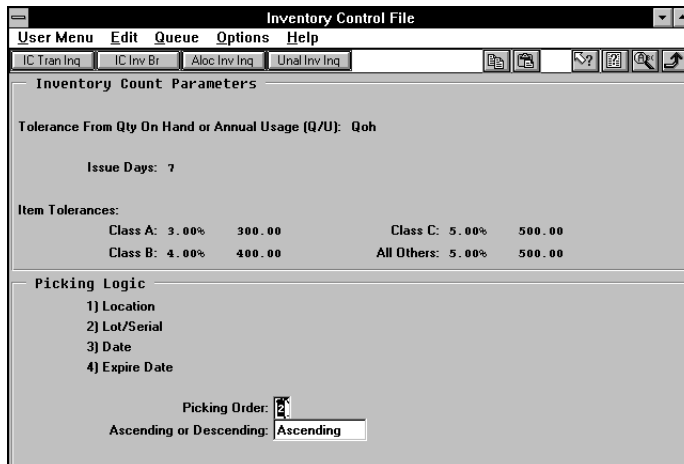


Fig. 7.1
Inventory Control
File (3.24)

Picking Order. Enter the method to use for selecting inventory during detail allocation.

1–Location. The system first looks for inventory by location, then by lot/serial number.

2–Lot/Serial. The system first looks for inventory by lot/serial number, then by location.

3–Date. The system first looks for inventory by the date the item was created or received, then by location and lot/serial number.

4–Expire Date. The system first looks for inventory by item expiration date, then by location and lot/serial number.

Ascending or Descending. Enter Ascending to have the system pick the oldest or lowest number first. Enter Descending to have the system pick the newest or highest number first. As an example, if Picking Order is by Date and Ascending order is specified, the first item picked is that with the oldest create or receipt date.

Creating Inventory Detail Records

Inventory detail records precisely define inventory balances and locations. Each record includes:

- Item number
- Site
- Location (if used)
- Lot/serial number (if used)
- Lot reference (if used)

The system calculates total item inventory by adding all on-hand balances from inventory detail records. Records also provide details on inventory status codes and expiration dates, grades, and assay percentages.

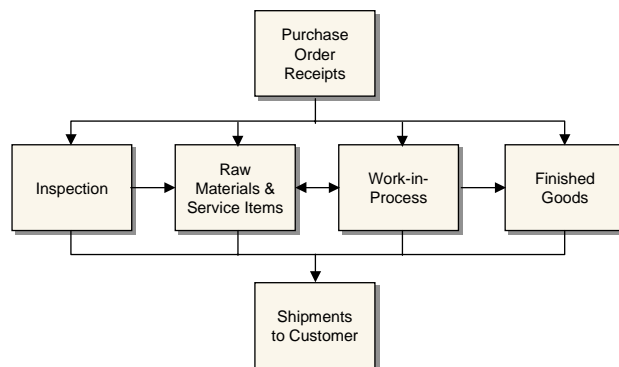
Modify inventory attributes using Inventory Detail Maintenance (3.1.1) or Detail Maintenance by Item/Lot (3.1.2). Use Inventory Detail by Lot Inquiry (3.1.13) to generate a report.

Creating Inventory Transactions

Inventory transactions move inventory to or from a location. Examples of inventory transactions include:

- Issuing existing inventory to a work order
- Receiving purchased materials into inventory
- Shipping goods

Fig. 7.2
Inventory
Transaction Flow



Use the programs in Table 7.1 to create inventory transactions.

Menu Number	Program
3.4.1	Transfer–Single Item
3.4.2	Transfer–Multi Item
3.4.3	Transfer With Lot/Serial Change
3.4.4	Batchload Transfer With Lot/Serial Change
3.7	Issues–Unplanned
3.8	Issues–Return to Supplier
3.9	Receipts–Unplanned
3.10	Receipts–Sales Order Return
3.11	Receipts–Return to Stock
3.12	Receipts–Backward Exploded

Table 7.1
Inventory Transfer Menu (3.4)

Transfers

A transfer is a movement of inventory to a new location. MFG/PRO uses three kinds of inventory transfers: single item, multi-item, and transfer with lot/serial change.

- Use Transfer–Single Item (3.4.1) to transfer a specified quantity of a single item from one location to another. If inventory status codes specified in the From and To fields differ for an item, you can select the one to be used.
- Use Transfer–Multi Item (3.4.2) to transfer more than one item from one location to another. Only entire quantities are transferred—not partial quantities. This transaction generates a report showing the items and quantities transferred.
- Use Transfer With Lot/Serial Change (3.4.3) to transfer a specified quantity of a single item from one location to another *and* change the lot/serial and lot reference numbers associated with the item.
- Use Batchload Transfer With Lot/Serial Change (3.4.4) for the same purpose as 3.4.3. However, this program also supports CIM loading of inventory information by allowing you to specify values for fields that are prompted for interactively in the standard Transfer With Lot/Serial Change.

♦ See *User Guide Volume 11: Manager Functions* for details on CIM.

▶ See *User Guide Volume 10A: External Interfaces*.

This is especially important, for example, with the Warehousing Interface, which relies on CIM load to transfer data between the MFG/PRO database and an external warehouse

If Verify GL Accounts is Yes in the System/Account Control File, the system checks the GL calendar to ensure that the effective date specified for a transfer is within an open fiscal period. The default effective date is the system date. If a shipping group exists for a transfer, you can create a shipper for the transferred items.

Receipts

A receipt is when inventory is brought into a location. Receipts increase the quantity on hand of an item at a particular location. Use the following programs to receive inventory that does not have an existing or open order.

- Use Receipts–Unplanned (3.9) to receive miscellaneous inventory such as floor stock items sent back from production, or materials from a manufacturing order that has been closed from an accounting standpoint.
- Use Receipts–Sales Order Return (3.10) to tag a receipt as a return only if you do not use Sales Orders/Invoices. This is not a complete return since it does not update sales or commission history, and does not generate a credit invoice.
- Use Receipts–Return to Stock (3.11) to return to stock miscellaneous items that have been temporarily moved elsewhere.
- Use Receipts–Backward Exploded (3.12) to increase inventory quantity for an item at a designated site and location and decrease inventory for its components. Backward-exploded receipts are often used in kitting or simple assembly operations, where there is no need for a work order. Recording receipt of a finished item indicates that an associated set of items was used.

Issues

An issue sends inventory to a different location. For example, when components are issued to a work order, they are removed from the stocking location and issued to the work-in-process (WIP) location. Inventory issues reduce quantities on hand at the issuing location.

- Use Issues–Unplanned (3.7) to record miscellaneous inventory issues such as floor stock items sent to production or materials sent to engineers for testing. You can also issue items to a manufacturing order that closed from an accounting standpoint.
- Use Issues–Return to Supplier (3.8) to tag an issue as a return. This is not a complete return since it does not update purchasing or receiving history, or current cost. To process a complete return, use MFG/PRO Purchasing.

Shipping Documents

Many countries require that formal shipping documents accompany any movement of goods, even when goods are merely transferred, not sold. If you are using shipping groups, you can record shipping information and generate shipping documents from all the inventory transfer programs.

▶ See the Shipping chapter in *User Guide Volume 2: Distribution* for details.

Creating Inventory Transaction History

Every inventory transaction creates a record in the inventory transaction history file. Each record has a unique, sequential transaction number, a transaction type, and includes the following information:

- Transaction data
- Inventory data
- Cost data
- GL transaction data
- User ID of person entering the transaction

The transaction type code identifies the function used to initiate the inventory change. Table 7.2 lists the transaction type codes included in inventory history records.

Transaction Type	Description
CST-ADJ	Standard cost adjustment
CYC-CNT	Cycle count adjustment
CYC-ERR	Cycle count error
CYC-RCNT	Cycle count recount

Table 7.2
Transaction Types

Transaction Type	Description
ISS-CHL	Inventory Detail Maintenance location change issue
ISS-DO	Distribution order shipment
ISS-FAS	Configured item component issue
ISS-PRV	Purchase order return to vendor (supplier)
ISS-RV	Inventory return to vendor (supplier)
ISS-SO	Sales order shipment (issue)
ISS-TR	Inventory transfer issue
ISS-UNP	Inventory unplanned issue
ISS-WO	Work order issue, component backflush
ORD-PO	Purchase order booking
ORD-SO	Sales order booking
RCT-CHL	Inventory Detail Maintenance location change receipt
RCT-DO	Distribution Order Receipt
RCT-FAS	Configured product receipt
RCT-PO	Purchase order receipt
RCT-RS	Inventory return to stock
RCT-SOR	Inventory sales order return
RCT-TR	Inventory transfer receipt
RCT-UNP	Inventory unplanned receipt
RCT-WO	Work order receipt, repetitive receipt
RJCT-WO	Work order reject
TAG-CNT	Physical inventory update
WIP-ADJ	Work-in-process adjustment

Use the programs on the Transaction History Menu (3.21) to view inventory transaction history.

- Use Transactions Detail Inquiry (3.21.1) to display detailed inventory transaction history records ordered by transaction number.
- Use Transactions by Item Browse (3.21.2) to display inventory transaction history for an item number ordered by transaction date, starting with the most recent.
- Use Transactions by Order Report (3.21.13) to display inventory transaction history by sales order or work order number.

- Use Transactions by Item Report (3.21.14) to display inventory transaction history by item number.
- Use Transactions Accounting Report (3.21.16) to display the costed GL transactions created for each transaction.
- Use Average Cost Accounting Report (3.21.17) to list selected transactions involving average cost computations. The report shows quantity, unit cost, and inventory value for the beginning balance, the change data, and the ending balance.
- Use Transactions Delete/Archive (3.21.23) to remove transactions from the system when online history is no longer needed.

Creating Lot/Serial Number History

Lot/serial control is an inventory attribute assigned in Item Master Maintenance. When you mark an item as lot/serial controlled, you cannot issue or receive the item without specifying a number.

As transactions are processed for an item, its lot/serial number is included in transaction history. Lot/serial numbers provide greater tracking control by creating records of an item's movement through the manufacturing process.

To review lot/serial history information, use the programs on the Lot/Serial Number Menu (3.22).

- Use Lot Transactions by Date Browse (3.22.1) to review an item's inventory transactions by date.
- Use Lot Transactions by Tran Browse (3.22.2) to review an item's inventory transactions by transaction number.
- Use Lot Actual Bill Inquiry (3.22.3) to display components used to make a lot/serial controlled item.

Show Duplicates. Enter Yes to allow transactions to appear more than once in an inquiry display. For example, a purchase receipt (RCT-PO) can appear once in relation to a work order issue (ISS-WO) and again in relation to an inventory status change (ISS-CHL). Enter No to have transactions appear only in the first sequence found.

Max Workfiles. Enter a number telling the system how many workfiles to create during execution. The default is 500. Entering a

value greater than your system's processing capacity can cause the system to fail. To reduce the number of workfile records, narrow the range of items selected.

- Use Lot Where-Used Inquiry (3.22.4) to display all top-level items containing a lot/serial numbered component.

Show Duplicates. Enter Yes to allow transactions to appear more than once in an inquiry display. Enter No to have transactions appear only in the first sequence found.

Performing Cycle Counts

MFG/PRO enables you to count and compare actual, on-hand inventory balances with system-maintained quantities. MFG/PRO supports two counting methods.

- Cycle counting (Inventory Control)
- Physical counting (Physical Inventory)

In each method, you count inventory by site, location, item, and lot/serial number. Cycle counting involves counting groups of items on a regular or cyclic schedule. A physical count involves counting all items, usually once a year.

During cycle counting, you enter manual count figures in the system. The system then compares the manual count figures with its figures. If there are discrepancies, the system checks the error tolerances defined in the Inventory Control File. If a count figure is within tolerance, it is accepted and the system's figure is updated. If a count figure is not within tolerance, the item in question must be recounted. The system accepts recount quantities that are out of tolerance.

ABC Class Code

The ABC class code classifies items by their importance in a manufacturing system and determines count frequencies. Class A items are counted more frequently than class B items. Class B items are counted more frequently than class C items.

Use Item Master Maintenance (1.4.1) or Item Inventory Data Maintenance (1.4.5) to assign ABC class. You can also have the system

▶ See Chapter 8, "Physical Inventory," for details.

calculate it automatically by running Item ABC Status Report/Update (1.5.9 or 3.6.3).

For each ABC class, assign item tolerances (percentage and amount) in the Inventory Control File. When count discrepancies arise, the system checks item tolerances by class.

Cycle Counting Procedure

Whether you select items for cycle counting or have the system select them, the basic steps are as follows.

- 1 Print a cycle count worksheet.
- 2 Count the items listed on the worksheet.
- 3 Enter the initial count quantity in the system.
- 4 Review the results and enter recount quantities if necessary.

Printing Cycle Count Worksheet

Use Cycle Count Worksheet Print (3.13) to print a worksheet listing items selected for cycle counting, their locations, ABC code, last count date (if applicable), and the quantity on hand. Use the worksheet to record the count quantities.

The system selects items by comparing the current date with the item's last count date. If the elapsed time is greater than the period specified in the Cycle Count Interval field in Item Master Maintenance, the system selects the item for cycle counting. If this is the first time you are cycle counting an item, the system selects it by item number.

Entering Initial Count

Enter the count quantity in Cycle Count Results Entry (3.14). When entering the initial count quantity, set Cycle Count Type to I (Initial).

If an item's count quantity does not match the system's, the system checks to see if the count is within both the percent tolerance and the amount tolerance. If it is, the system updates its quantity accordingly. If the count is not within tolerance, the item must be recounted.

Tip
Tolerances are specified in the Inventory Control File by ABC class.

Fig. 7.3
Cycle Count
Results Entry
(3.14)

Entering a Recount

Use Cycle Count Results Entry (3.14) to enter recount figures. Set Cycle Count Type to R (Recount). If a recount quantity is still out of tolerance, the system alerts you to this, but nevertheless updates its figures.

Reporting Cycle Count Results

After completing the cycle count, use Cycle Count Results Report (3.15) to generate a count report showing:

- Items counted
- In-tolerance quantity
- In-tolerance percent
- Items recounted

Creating Inventory Reports

Use the reports on the Inventory Reports Menu (3.6) to check inventory statuses and values (current and GL).

Stock Status Report

Use Stock Status Report (3.6.1) to review an item's total quantity on hand and quantity on order by site. The report gives information for each location containing the item. Location information shows each item's lot/serial number, reference number, and quantity on hand.

Reorder Report

Use Reorder Report (3.6.2) to see if an item is below the reorder point or safety stock. The report shows all locations containing the item and indicates those below the reorder point or safety stock. Also shown are any open orders for the item, the quantity open, and the supplier name.

Item ABC Status Report/Update

Use Item ABC Status Report/Update (3.6.3) by product line or site to calculate item ABC class codes. Calculations can be made by a combination of either sales or issues and cost or gross profit. Three fields can be updated for existing records:

- ABC class codes
- Item average usage
- Cycle count intervals

You can also change default ABC classification percentages. Depending on the option selected, the report lists items in descending sales or issue value, and shows an item's old and new ABC classifications.

Inventory Detail Report

Use Inventory Detail Report (3.6.5) to see inventory availability status in detail or summary format. The summary report lists item inventory information at the site level.

- Quantity on hand
- Available quantity on hand
- Non-nettable quantity
- Quantity required
- Quantity allocated
- Quantity on order

The detail report adds detailed information by location within the site.

- Quantity on hand
- Quantity allocated
- Item characteristics such as expire date, grade, assay %, and inventory status

Inventory Detail by Location

Use Inventory Detail by Location (3.6.6) to see item inventory information by location.

- Quantity on hand
- Item characteristics such as expire date, grade, assay %, and inventory status

Current Surplus Inventory Report

Use Current Surplus Inventory Report (3.6.8) to review current surplus quantities and GL value by product line within a site. The system determines surplus by the absence of issue activity based on a user-specified issue date.

Reports can be generated in detail or summary format. The summary report shows information for product lines within a site. The detail report shows item information for each product line in the site. In both reports,

totals are shown for expired value and value on hand, by site and for the report.

Projected Surplus Inventory

Use Projected Surplus Inventory (3.6.9) to review projected surplus inventory for a future effective date based either on MRP requirements or average use. Choose either current cost or GL cost for surplus cost computations. For these calculations, the expiration date for items is the system date, not the effective date. You can include firm planned orders or MRP planned orders on the report, which are marked On Order.

Reports can be generated in summary or detail format. The summary shows the total expired value and ending value for each product line within a site. The detail report shows item information within each product line in the site, total expired value, ending value, quantity on order, expired quantity, and ending quantity.

Inventory Valuation Reports

Inventory valuation reports display the inventory value of quantities on hand by product line or location. Some reports show inventory values as of a specified date. You can include negative inventory in each report, and on some you can select whether items with an initial GL value of zero are valued using this initial zero or the first available cost.

- Use Inventory Valuation Report (3.6.13) to review the value of inventory in a site by product line or item number. The total value of each item is shown, with a grand total for the product line.
- Use Inventory Valuation by Location (3.6.14) to review the value of inventory in each location of a site by product line or item number. The total value of each location is shown, with a grand total for the site.
- Use Inventory Valuation as of Date (3.6.15) to review the value of all items in a product line as of a user-specified date. The total inventory in each site is shown, with a grand total for the product line.
- Use Inventory Valuation as of by Loc (3.6.16) to review the value of inventory in each location of a site on a user-specified date. The total value of each location is shown, with a grand total for the site.

Checking Inventory Availability

Use the following programs to quickly check inventory locations and availability.

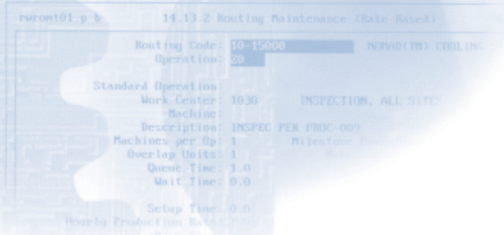
Tip
Nettable inventory is available to allocate.

- Use Inventory Detail by Item Browse (3.2) to see an item's total nettable and non-nettable inventory, sorted by site. Item location information is also shown.
- Use Inventory Detail by Site Browse (3.3) to see the total quantities on hand by site, sorted by item number. Item location information is also shown.
- Use Stock Availability Browse (3.17) to review stock availability in a single site or in all sites.
- Use Allocated Inventory Inquiry (3.18) to review total item quantities on hand for a site. Allocated and unallocated quantities for an item are also shown. Allocated quantity detail information includes:
 - Type of order (sales order or work order)
 - Order number
 - Quantity allocated
 - If it is a detail (Picked) or a general (Qty Alloc) allocation
- Use Unallocated Inventory Inquiry (3.19) to review non-detail-allocated inventory for a specified item, by site and location. Site information shows quantity on hand and quantity allocated. Location information shows unallocated quantity for the location. Expiration date and grade are also shown. Unallocated quantity can include quantities reserved by general allocations.

Physical Inventory

This chapter explains how to use MFG/PRO to determine how much physical inventory is actually on hand.

<i>Introduction</i>	194
<i>Deleting/Archiving Old Tags</i>	194
<i>Freezing Inventory Balances</i>	195
<i>Creating/Printing Tags</i>	195
<i>Entering Initial Tag Counts</i>	196
<i>Reviewing Results</i>	197
<i>Zeroing/Voiding Unused Tags</i>	197
<i>Updating Inventory Balances</i>	198



Routing Maintenance (Basic Screen)	
Routing Code:	10-15000
Operation:	20
Standard Operation	
Work Center:	1030
Machines:	INSPECTION, ALL SITES
Description:	INSPEC PER PROC-000
Machines per Op:	1
Overlap Units:	1
Queue Time:	1.0
Wait Time:	0.0
Setup Time:	0.0
Ready Production:	0.0

Introduction

▶ See “Performing Cycle Counts” on page 186 for details.

Physical Inventory enables you to count and compare actual, on-hand inventory balances with on-hand quantities maintained in MFG/PRO. This can also be done with cycle counting.

To perform a physical inventory count, first determine the items you want to count and the count frequency. Each item to be counted must have a system-generated count tag, used to record item count information.

The steps for conducting a physical inventory are:

- 1 Delete the tags from the previous physical inventory.
- 2 Freeze inventory balances.
- 3 Create and print tags.
- 4 Enter initial tag counts.
- 5 Review results and enter recounts if necessary.
- 6 Void/zero count unused tags.
- 7 Update inventory balances.

Deleting/Archiving Old Tags

Before creating new tags for an inventory count, delete tags from the last count using Tag Delete/Archive (4.23). This program:

- Deletes specified tags.
- Archives deleted tag information.
- Generates a report showing all deleted tags.

Typically, you delete only tags that have been posted using Inventory Balance Update (4.21).

Delete. Enter No to review tags selected for deletion without actually deleting them. The system generates a report showing tag numbers selected for deletion and whether they have been posted or voided. Enter Yes to actually delete selected tags.

Archive. Enter Yes to have deleted tag information archived.

Archive File. Enter the file to which you want the system to archive deleted tag information.

Freezing Inventory Balances

After deleting old tags, freeze the inventory to be counted using Inventory Balance Freeze (4.4). The system records the current quantity on hand for all selected inventory and uses this record to carry out the inventory count.

Note Freezing inventory does not prevent the system from processing regular inventory transactions. Changes to inventory during a count must be included for the count to be accurate.

Select inventory to be frozen using one or more of the following criteria.

- Site
- Location
- Product Line
- Item Number
- ABC Class

Tip
Specify a single selection (site 10000) or a range (site 10000 to 20000). To select all items, leave the range blank.

Creating/Printing Tags

Each item to be counted needs a tag showing the item's site, location, and item number. Then record count information on the tag. In the event of a recount, recount information goes on the same tag.

MFG/PRO provides two types of count tags: item and bulk. Use Item Tag Create (4.1) to create tags for selected items. You can select items by item

number, site, product line, or ABC class. Enter no selection criteria to create tags for all items in the item master file.

Use Bulk Tag Create (4.2) to create bulk tags. Bulk tags are the same as item tags, except that the item information on bulk tags is blank. Use bulk tags to count items that do not have item tags.

To find out how many bulk tags you need, use any one of the following.

- Tag Inquiry (4.8)
- Tag Report (4.13)
- Uncounted Tag Report/Update (4.15)

Tip

In the event of errors, delete incorrect tags using Tag Delete/Archive (4.23), then recreate and print new ones.

After creating count tags, use Tag Print (4.6) to print both types of tags. You can print tags on most standard-size forms. Default forms are set to print on 3 x 5 inch card stock. You can optionally print the tag number in bar code format if your system is formatted to do so.

Note Before deleting bulk tags, void the tags using Tag Void Status Update (4.7).

Entering Initial Tag Counts

Tip

At this point, only the frozen inventory quantities are updated.

After counting tagged items, enter the count in the system using Tag Count Entry (4.11). Tag Count Entry accepts all quantities, even those that are out of tolerance. Enter any changes resulting from post-freeze inventory transactions.

Example The frozen quantity of Item Z is 100. After inventory freeze, 50 units of Item Z are issued. The inventory count shows 47 units of Item Z on hand. Enter a count quantity of 97 (50 + 47).

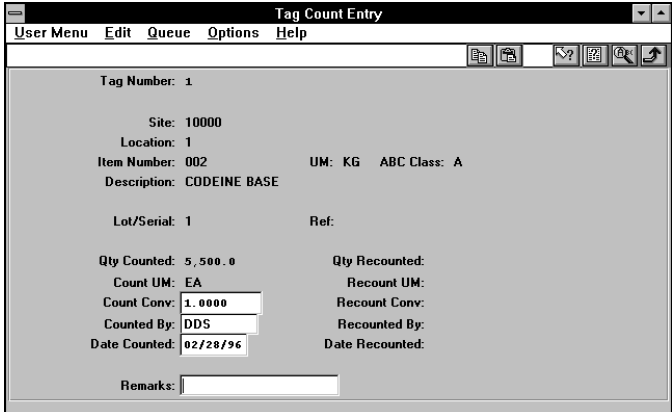


Fig. 8.1
Tag Count Entry
(4.11)

Reviewing Results

After entering count results, review the results using Inventory Variance Report (4.18). Look for out-of-tolerance quantities or other problems. You can print the report by variance amount.

Recount out-of-tolerance items. Use Tag Recount Entry (4.12) to enter recount information on the same item tags or bulk tags used for the initial count.

Zeroing/Voiding Unused Tags

Before a count is complete, all tags must be either counted or voided. Use Uncounted Tag Report/Update (4.15) to ensure that all item and bulk tags are accounted for. This report shows only tags that have not been voided or set to zero.

Set Tag Count to Zero. Some tags may be left over, either because items were not found or were counted using bulk tags. These cannot be voided. Set this flag to Yes for leftover tags.

Use Tag Void Status Update (4.7) to declare unused bulk tags void. Only voided bulk tags can be deleted.

Updating Inventory Balances

When all tags are accounted for and count results are satisfactory, use Inventory Balance Update (4.21) to update quantity-on-hand balances. The system changes each item's quantity on hand to the difference between the frozen quantity on hand and the count quantity.

Example The frozen quantity of Item Z is 100. The count quantity (50 issued, 47 counted) is 97. The update quantity is -3 . The updated quantity on hand for Item Z is 97.

SECTION 2

Taxes

This section describes how to set up and use the various tax options available in MFG/PRO.

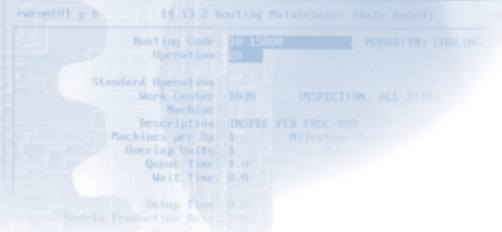
Introduction to Taxes **201**

Regional Tax Systems **207**

Implementing GTM **213**

Processing GTM **253**

GTM Conversions **289**



Routing Maintenance (Date Based)

Routing Code:	10-15000	MANUFACTURING
Operation:	20	
Standard Operation:		
Work Center:	1030	INSPECTION, ALL SITE
Machines:		
Description:	INSPEC PER PROC-000	
Machines per Op:	1	
Overlap Units:	1	
Queue Time:	1.0	
Wait Time:	0.0	
Setup Time:	0.0	
Ready Production:		

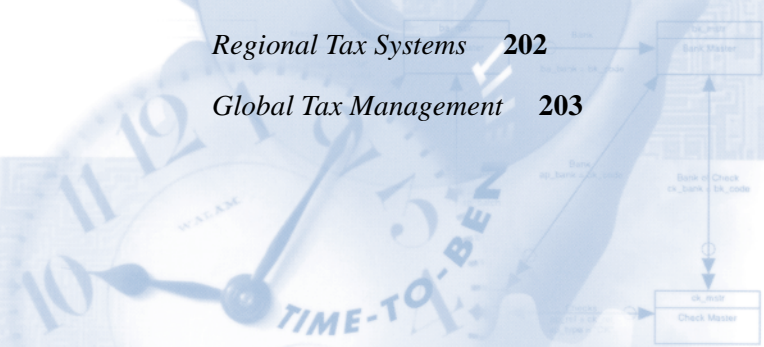
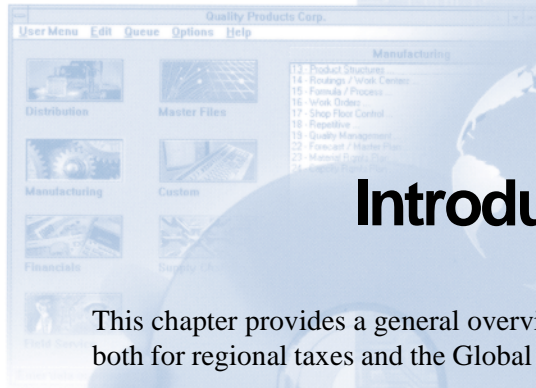
Introduction to Taxes

This chapter provides a general overview of MFG/PRO's tax features, both for regional taxes and the Global Tax Management (GTM) module.

Taxes in MFG/PRO **202**

Regional Tax Systems **202**

Global Tax Management **203**



Routing Maintenance (Date Based)	
Routing Code:	10-15000
Operation:	20
Standard Operation	
Work Center:	1030
Machines:	INSPECTION, ALL SITE
Description:	INSPEC PER PROC-000
Machines per Op:	1
Overlap Units:	1
Queue Time:	1.0
Wait Time:	0.0
Setup Time:	0.0

Taxes in MFG/PRO

You can set up MFG/PRO to support three specific tax legislative systems.

- U.S. sales tax (default if no other system is selected)
- Canadian tax
- Value Added Tax (VAT), used in Europe and Asia

If you select one of these three alternatives, your database is limited to that system. However, MFG/PRO also offers a fourth, much more powerful option—Global Tax Management (GTM), which lets your company use multiple tax systems within the same database.

Set the System/Account Control File (36.1) to activate the appropriate routines for tax calculation. Only one of the three tax fields can be Yes.

Fig. 9.1
System/Account
Control File (36.1)

Verify GL Accounts:	yes
Verify Projects:	no
Sub-Module Sub-Account Length:	2
Base Currency:	USD
Rounding Method:	2
Entity:	1000
Canadian Tax:	no
Value Added Tax:	no
Use Tax Management:	no
Bank Acct Validation:	
Default System Language:	US
Audit Trail:	yes

If all three tax fields are No, the system defaults to U.S. sales tax.

Regional Tax Systems

In a simple tax environment—one where your company and all its customers and suppliers use the same tax system—select the appropriate regional tax system.

With a minimum of setup, MFG/PRO automatically calculates taxes, while still providing the flexibility to override many default settings on individual sales orders or purchase orders.

However, for more complex tax situations involving multiple national or regional tax systems, use Global Tax Management.

Global Tax Management

Global Tax Management (GTM) supports multinational enterprises in calculating taxes on business transactions. The types of taxes, the formulas used to calculate them, and when taxes are assessed often vary considerably between countries. GTM can process taxes for multiple countries within the same database.

Advantages

GTM offers an unlimited number of taxes and rates—each associated with customers, suppliers, or items. You can also define when taxes are calculated, the formula used to calculate them, and the amount subject to tax.

GTM also supports the following situations and conditions.

- Taxes based on geographic location, effective date range, tax class, item usage, or the nature of a company's business
- Tax exemptions
- Taxation by line item or by order total
- Taxes based on a percentage of the item amount
- Trailer charges with multiple tax classes
- Luxury taxes for item amounts greater than a specified value
- Capped taxes that cannot exceed a specified maximum
- Taxes that include other tax amounts
- Purchase taxes recoverable against tax collected on sales
- Ability to override system-calculated tax amounts during transaction entry
- Reverse calculation of tax amounts from line items and trailer charges that already include tax
- Taxes your company absorbs rather than passes on to the customer
- Remittance of purchase taxes directly to the government instead of to the supplier
- Exclusion of credit term discounts from tax amounts

- Ability to generate general ledger entries for purchase taxes at receipt of goods or supplier invoice

Since GTM accommodates a variety of taxation conditions, manual overrides of automated calculations are usually not needed. Furthermore, once GTM is set up, updates are very simple.

Considerations

- To operate GTM in a multi-database distributed processing environment, GTM implementation must be identical in all databases. Multiple databases must have the same base currencies specified in the System/Account Control File (36.1).
- GTM does not currently support unit-based taxes, such as \$0.05 per can of soda.
- GTM does not calculate taxes on distribution orders generated by the Distribution Requirements Planning module. In this situation, generate sales orders instead of distribution orders.
- GTM does not adjust sales commission reporting in the Sales Analysis module. Commissions are always based on item prices including tax. Adjust your commission structure to compensate.

Tax Elements

Every country in the world has a unique system for assessing taxes. However, most systems share common elements.

- Business transactions can be subject to many kinds of taxes—sales taxes, domestic import duties, inventory transfer taxes, royalty fees, and so on. In GTM, a tax that is peculiar to a region and individually calculated and reported is a *tax type*.
- Regions that assess tax include countries (or groups of countries), states, provinces, counties, districts, and cities. In GTM, a region that assesses tax is a *tax zone*.
- Within a tax zone, a tax type can affect all people and items, or only some of them. In GTM, customers, suppliers, and items can be grouped by *tax class*. Similarly, a tax can be assessed at a different rate based on a customer's operation or how items are used. GTM can group people and items by *tax usage*.

- The three factors that can determine which tax types apply to a transaction are the ship-from and ship-to tax zones and the tax class of the customer or the supplier. In GTM, the set of tax types for a specific ship-to/ship-from zone and tax class combination is a *tax environment*.
- A tax type can have multiple *tax rates* for different item tax classes, tax usages, and transaction tax dates. GTM selects the rate most appropriate for a particular transaction.

Example Figure 9.2 illustrates how these factors interact. A German automobile manufacturer exports luxury cars to the United States. U.S. tax rates depend on the class of the vehicle. For example, the rate for luxury cars is 30%.

In Global Tax Management, Germany and the U.S. are tax zones. The automobile manufacturer is a customer tax class subject to the U.S. import tax. Luxury cars are an item tax class subject to a rate of 30% for the import tax. The sales order tax environment associates the import tax with the order, and GTM selects the tax rate based on the item tax class for luxury cars.

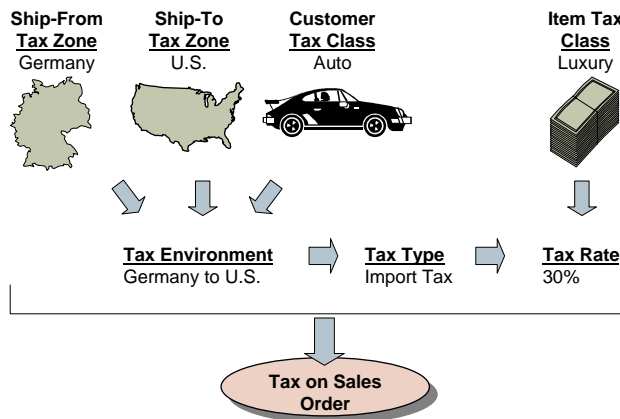


Fig. 9.2
GTM Example

Regional Tax Systems

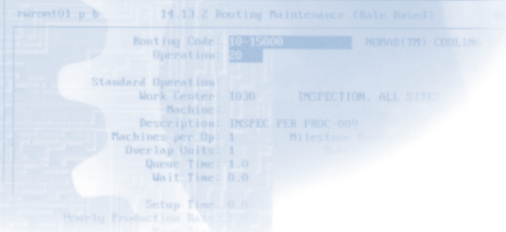
This chapter describes how to set up and manage tax rates and other necessary tax controls using the regional tax systems supported in MFG/PRO.

Introduction **208**

U.S. Sales Tax **209**

Value Added Tax (VAT) **210**

Canadian Taxes **211**



Routing Maintenance (Date Based)

Routing Code:	10-15000	MANUFACTURE COILING
Operation:	20	
Standard Operation		
Work Center:	1030	INSPECTION, ALL SITES
Machines:		
Description:	INSPEC PER PROC-000	
Machines per Op:	1	
Overlap Units:	1	
Queue Time:	1.0	
Wait Time:	0.0	
Setup Time:	0.0	

Introduction

Tip

Unless you use GTM, a database can have only one tax system.

When you have set a tax system—U.S., Canadian, or VAT—for your database in the System/Account Control File (36.1), use the Addresses/Taxes module to set up tax rates and other necessary tax controls.

Table 10.1 shows the programs that support each type of tax system.

Table 10.1
Regional Taxes in
MFG/PRO

Tax System	Menu Number	Name
U.S. Sales Tax	2.15.1.1	U.S. Sales Tax Rate Maintenance
	2.15.1.2	U.S. Sales Tax Rate Browse
	2.15.1.3	U.S. Sales Tax Report
	2.15.1.4	Tax Exemption Code Maintenance
Value Added Tax	2.15.2.1	VAT Class Browse
	2.15.2.2	VAT Class Maintenance
	2.15.2.8	EC Sales Listing Report
	2.15.2.9	VAT Registration Number Report
	2.15.2.13	VAT-AR by Transaction Report
	2.15.2.14	VAT-AR by VAT Class Report
	2.15.2.16	VAT-AP by Transaction Report
	2.15.2.17	VAT-AP by VAT Class Report
	2.15.2.24	VAT Control File
	2.15.2.25.2	VAT Class Start Date Reformat
Canadian Tax	2.15.3.1	GST Class Maintenance
	2.15.3.2	GST Class Browse
	2.15.3.4	PST Browse
	2.15.3.13	GST-AR by Transaction Report
	2.15.3.14	GST-AR by GST Class Report
	2.15.3.16	GST-AP by Transaction Report
	2.15.3.17	GST-AP by GST Class Report

Customers, suppliers, product lines, and items have flags that determine whether or not they are normally taxable.

Tax codes are used differently depending on the sales tax method. For U.S. taxes, tax codes specify reasons for tax exemption and are used only on nontaxable transactions. For VAT and Canadian taxes, tax codes are

used for both taxable and nontaxable transactions, specifying the VAT classes and GST classes respectively.

Figure 10.1 shows how MFG/PRO determines the default tax rates on purchasing and sales transactions.

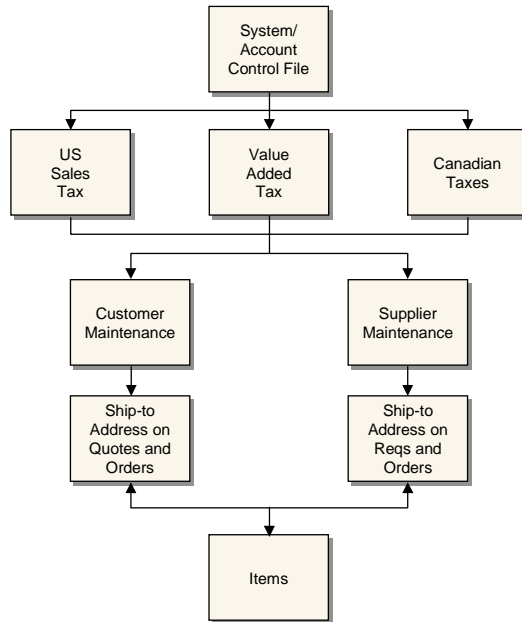


Fig. 10.1
Default Tax Rates

U.S. Sales Tax

U.S. sales tax rates can be set up for state, county, and city. Tax exemption codes indicate purpose such as charity, nonprofit, or government. The system bases tax calculations on the ship-to addresses associated with orders, memos, and vouchers.

MFG/PRO requires an exact match between the state, county, and city entered for tax rates and those entered in customer, supplier, and company addresses. Tax rates can include up to three separate component tax rates and accounts to automatically distribute to multiple tax accounts for state, county, and city taxes.

You can also set up a single tax account and manually distribute the tax amounts to the general ledger with U.S. Sales Tax Report (2.15.1.3).

Tip

You can override default tax settings at either the header or line-item level on sales quotes, sales orders, and purchase orders.

Taxable status and the tax exemption code for the sales quote and sales order default from the ship-to customer. On line items, they default from the item master, except when the order is not taxable and the item is. Then, they default from the header.

Taxable status and tax exemption code for the purchase order default from the supplier. Line items default from the PO header.

Although the system calculates taxes on sales order invoices and in accounts receivable, U.S. Sales Tax Report includes only taxes from invoices posted in the Sales Orders/Invoices module.

Value Added Tax (VAT)

Define VAT classes and set up the VAT Control File before entering customers, suppliers, product lines, or items. When you implement other modules in the system, you indicate the VAT class and VAT taxable status. The Tax Included field in the customer master indicates whether prices normally include tax.

VAT classes and effective dates control tax rates. A VAT class consists of a class code, a tax rate, and GL accounts for accounts receivable and accounts payable. At least one VAT class with a tax rate of zero is required for nontaxable transactions. The VAT Control File determines the default VAT class for items and whether VAT is calculated before credit terms discounts are applied in the Accounts Payable and Accounts Receivable modules.

MFG/PRO calculates VAT on sales quotations, sales orders, accounts receivable memos, and accounts payable vouchers. You can set taxable status independently for each line on a purchase order, sales quotation, or sales order.

Sales Quotations/Sales Orders

Sales quotations and sales orders are assigned a default VAT class and designated as taxable or nontaxable based on the *ship-to* customer. This customer also determines whether an item's net sales price normally includes VAT. Each line can include a taxable status and VAT class. The default taxable status and VAT class are determined by the item except

when the order is not taxable and the item is. Then, they are determined by the order.

All of these defaults can be overridden. A single quote or order can specify as many as three VAT classes, including trailer codes. The VAT calculated for invoices is posted to accounts receivable by Invoice Post (7.13.4).

Accounts Receivable/Accounts Payable

The system uses VAT classes to automatically calculate VAT in accounts receivable and accounts payable. The calculated amounts can be overridden.

Canadian Taxes

Most modules calculate Canadian taxes, Provincial Sales Tax (PST), and Federal Goods and Services Tax (GST) with some exceptions.

- Purchasing does not calculate GST. GST *is* calculated correctly when included in PST.
- Accounts Payable does not calculate PST. You must enter PST manually in that module.

In MFG/PRO, PST is similar to U.S. Sales Tax. You can set up PST rates for a province and city, and rates can optionally include GST. PST is calculated automatically on sales quotations, sales orders, purchasing, and accounts receivable based on the ship-to address. You can set GST class and tax status for GST and PST independently for each line on a sales quotation or sales order.

Set up GST rates based on GST classes and effective dates. The system automatically calculates GST on sales quotations, sales orders, accounts payable, and accounts receivable.

Define PST rates and GST classes before entering customers, suppliers, product lines, or items. When you implement features in other modules, you indicate the GST class, GST taxable status, PST taxable status, GST ID and/or PST ID. The Tax Included field in the customer master indicates whether prices normally include GST.

On sales quotes and orders, the ship-to customer determines the default GST class and the default taxable/nontaxable status for GST and PST. The ship-to customer also determines whether GST is normally included in the net sales price and provides the PST and/or GST identification numbers.

Each line can include a taxable status and GST class. The default taxable status and GST class are determined by the item except when the order is not taxable and the item is taxable. Then, they default to the value in the header. You can override any of these defaults.

A quote or order can include up to three GST classes, including trailer codes. The GST calculated for invoices is posted to accounts receivable by Invoice Post (7.13.4).

Implementing GTM

▶ See
“Implementing
Special Taxes”
on page 243.

This chapter describes the data required to set up GTM.

<i>Implementation Overview</i>	214
<i>Setting Up Country Codes</i>	215
<i>Setting Up State, Province, County Codes</i>	216
<i>Setting Up Tax Zones</i>	216
<i>Setting Up Tax Types</i>	220
<i>Setting Up Tax Classes and Usages</i>	221
<i>Setting Up Rounding Methods</i>	223
<i>Setting Up Tax Environments</i>	224
<i>Setting Up Trailer Charges</i>	228
<i>Setting Up Tax Bases</i>	229
<i>Setting Up GL Accounts</i>	231
<i>Setting Up Tax Rates</i>	232
<i>Setting Up the GTM Control File</i>	239
<i>Updating Other MFG/PRO Records</i>	240
<i>Switching to Live GTM Processing</i>	243
<i>Implementing Special Taxes</i>	243

Implementation Overview

Table 11.1 lists the activities and MFG/PRO programs used to implement Global Tax Management.

Table 11.1
MFG/PRO
Programs Used to
Implement GTM

Activity	MFG/PRO Programs
Setting up country codes	Country Code Maintenance (2.13.3.1)
Setting up state/province and county codes	Generalized Codes Maintenance (36.2.13)
Setting up tax zones	Tax Zone Maintenance (2.13.3.13)
Setting up tax types	Tax Type Maintenance (2.13.1.1)
Setting up tax classes and tax usages	Tax Class Maintenance (2.13.1.5) Tax Usage Maintenance (2.13.1.9)
Setting up rounding methods	Rounding Method Maintenance (2.13.1.17)
Setting up tax environments	Tax Environment Maintenance (2.13.5.1)
Setting up trailer charges	Trailer Code Maintenance (2.19.13) Trailer Tax Detail Maintenance (2.13.1.21)
Setting up tax bases	Tax Base Maintenance (2.13.1.13)
Setting up general ledger accounts	Account Code Maintenance (25.3.13) Sub-Account Code Maintenance (25.3.17) Cost Center Code Maintenance (25.3.20)
Setting up tax rates	Tax Rate Maintenance (2.13.13.1) Tax Rate Copy/Update (2.13.13.5)
Setting up the control file	Global Tax Management Control File (2.13.24)
Updating existing MFG/PRO records	Customer Maintenance (2.1.1) Supplier Maintenance (2.3.1) Product Line Maintenance (1.2.1) Item Master Maintenance (1.4.1)
Switching to live GTM processing	System/Account Control File (36.1)

▶ See *User Guide Volume 10A: External Interfaces*.

Note U.S. and Canadian taxes can also be calculated using an external Sales and Use Tax system. In this case, GTM must be set up based on special requirements.

Setting Up Country Codes

Records for tax zones, addresses, and transactions use alphanumeric country codes. To make data entry easier, consider using significant alphabetic rather than numeric codes.

Set up country codes in Country Code Maintenance (2.13.3.1). To verify data setup, use Country Code Browse (2.13.3.2) and Report (2.13.3.3).

Tip
The European Community (EC) and other areas may require numeric codes.

The screenshot shows a window titled "Country Code Maintenance" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. The main area displays the following fields:

Country Code:	BEL
Name:	Belgium
Alternate Code:	
EC Country:	yes
NAFTA Country:	no
DEA Country:	no
GATT Country:	yes
Country Group:	
Country Type:	
Comments:	no

Fig. 11.1
Country Code Maintenance (2.13.3.1)

Country Code. Enter a 3-character code identifying countries specified on tax zones and address records. If a group of countries is subject to the same tax type, set up a country code for the group.

Name. Enter the name of the country. Since the name displays on printed addresses, enter the complete name of the country rather than an abbreviation. You cannot specify the same country name for two country codes.

Alternate Code. Optionally, enter an alternate code for a subgroup of countries or for sorting reports other than by country code or name. This code also can provide an alternate sort order on reports.

EC Country. This code identifies member countries of the European Union (EU). MFG/PRO uses this information to determine whether an inventory transaction relates to an intra-EU inventory movement that should be included in Intrastat reporting. This field is not used for GTM.

▶ See Chapter 6, "Intrastat," on page 157.

NAFTA Country. Reference only. Identifies member countries of the North American Free Trade Agreement.

DEA Country. Reference only. Identifies countries under the jurisdiction of the United States Drug Enforcement Administration.

GATT Country. Reference only. Identifies countries as members of the General Agreement on Tariffs and Trade.

Country Group. Use this field to categorize countries. Use letter codes such as those assigned by current Export Administration Regulations.

Country Type. Reference only. Use this field to categorize countries. Use letter codes such as those assigned by current Export Administration Regulations. This field is for reference only.

Comments. Enter Yes to display a screen for recording special requirements, restrictions, or other GTM specifications.

▶ See “Setting Up the GTM Control File” on page 239 for details.

After defining country codes, specify the default code for most tax zones records in the Global Tax Management Control File (2.13.24).

Setting Up State, Province, County Codes

▶ See *User Guide Volume 11: Manager Functions* for information on generalized codes.

GTM uses state/province and county codes to determine the correct tax zone for an address. If these codes are inconsistent, the system may assign the wrong tax zone. Use Generalized Codes Maintenance (36.2.13) to require users to enter a valid state, province, or county code by setting up values for fields `ad_state` and `ad_county`.

Note After you set up validation, you cannot leave these fields blank during data entry.

Setting Up Tax Zones

Tax zones identify geographic regions subject to the same set of tax types and levels of tax reporting. All customer, supplier, and company address records belong to a tax zone. On sales, purchasing, and other transactions, the system uses tax zones to determine the tax environment.

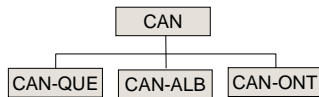
A separate tax zone is required for each country, state, province, county, city, and postal zone that has distinct tax reporting requirements. Since one tax zone can include reporting and tax calculations for another, tax zones are organized into hierarchies. Set up higher-level zones before

lower-level ones. For example, set up countries before their component states, states before counties, and so on.

Tax Zone Hierarchies

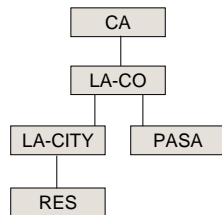
How you set up a tax zone depends on its position in the hierarchy. To include a tax zone in the tax total and reporting for another zone, specify the first zone's *sums-into* zone. The sums-into zone can be at a higher level or at the same level. For example, a city tax zone included in provincial tax reporting sums into the provincial tax zone. Or, a tax zone for a suburb included in metropolitan tax reporting sums into the city tax zone. In the tax zone record, specify whether the first zone has its own subtotal on the main report and whether it also has its own reporting.

Parent-Component Hierarchy



<u>Tax Zone</u>	<u>Subtotal This Level</u>	<u>Reporting Zone</u>
CAN	Yes	Yes
CAN-QUE	Yes	Yes
CAN-ALB	Yes	Yes
CAN-ONT	Yes	Yes

Phantom Hierarchy



<u>Tax Zone</u>	<u>Subtotal This Level</u>	<u>Reporting Zone</u>
CA	Yes	Yes
LA-CO	Yes	Yes
LA-CITY	Yes	Yes
RES	No	No
PASA	No	Yes

Fig. 11.2 Tax Zone Hierarchies

Figure 11.2 illustrates two hypothetical tax zone hierarchies.

- *Parent-Component Hierarchy.* The Canadian provinces Quebec, Alberta, and Ontario are subject to both federal and provincial taxes. The component tax zones CAN-QUE, CAN-ALB, and CAN-ONT sum into zone CAN. All four zones are reporting zones in their own right and are subtitled.
- *Phantom Hierarchy.* Reseda, a suburb of Los Angeles, is taxed in the same way as Los Angeles and does not have a subtotal on the city tax report. Tax zone RES sums into LA-CITY but is not subtitled and is not a separate reporting zone.

Pasadena is subject to Los Angeles county tax and does not have a subtotal on the county tax report. Tax zone PASA sums into zone LA-CO. It is not subtotaled but is a distinct reporting zone.

Tax Zone Maintenance

Set up tax zones in Tax Zone Maintenance (2.13.3.13). To verify data setup, use Tax Zone Browse (2.13.3.14) and Report (2.13.3.15). To verify sums-into relationships, use Tax Hierarchy Browse (2.13.3.17) and Report (2.13.3.18).

Fig. 11.3
Tax Zone
Maintenance
(2.13.3.13)

Tax Zone. Enter a 16-character code to identify a unique geographic region for tax types. Set up tax zones for every level at which separate tax calculations and reporting are required, starting with the top level and working downward. For example, set up countries before states, states before counties, and so on.

Description. Enter the description of the tax zone. MFG/PRO does not prevent you from entering the same description for multiple tax zones. The description prints on most reports and browses, as space permits.

Country Code. This code identifies the country that assesses tax. For new tax zones, the default country code is the one specified in the Global Tax Management Control File (2.13.24).

State. Enter the code for the state or province included in the tax zone.

County. Enter the code for the county included in the tax zone.

City. Enter the name of the city included in the tax zone.

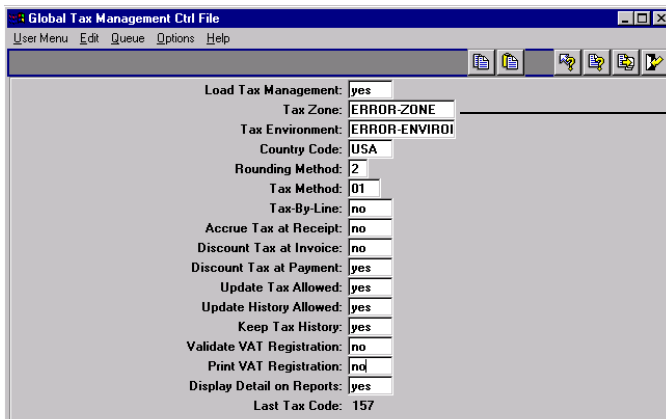
Post. If necessary, enter the postal code included in the tax zone. If taxes never vary by postal code, do not set up tax zones by postal code.

Subtotal This Level. Enter Yes or No to determine whether custom tax reports can show subtotals for this tax zone. MFG/PRO does not include standard reports that show tax amounts by tax zone.

Reporting Zone. Enter Yes or Not to identify whether the tax zone directly assesses tax.

Sums-Into Tax Zone. Enter Yes or No to identify the tax zone that actually assesses tax for the geographic region defined above. Specify a sums-into zone to display its description, country code, state, county, city, and postal code.

In addition to the geographic tax zone codes, set up an error code and specify it in the Global Tax Management Control File (2.13.24). When you enter or update an address record, GTM attempts to match the address to a tax zone for the country, state/province, county, and city. If it cannot find a tax zone for the country, it assigns the error zone. To make it easier to identify error conditions, you should set up a meaningful code, such as ERROR-ZONE.



GTM uses the Error Tax Zone code when it cannot find a matching tax zone for an address record.

Fig. 11.4
Global Tax Management Control File (2.13.24), Tax Zone Field

Setting Up Tax Types

Tax types are individually calculated and reported as regional taxes or tax exemptions. Examples include Canadian PST/GST, California sales tax, federal excise tax. On transactions, the system calculates taxes for line items and trailer charges based on the tax types specified in their tax environments.

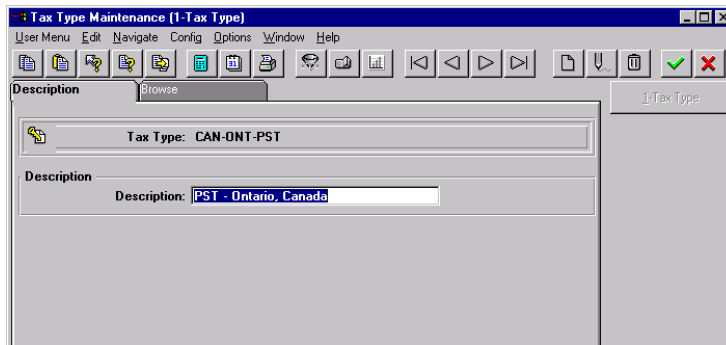
Tip

Preface the type with the country code or state/province.

A separate tax type is required for each tax or tax exemption you report separately. The tax detail reports print in alphanumeric order by tax type code. Consider this when assigning codes for tax types.

Set up tax types in Tax Type Maintenance (2.13.1.1). To verify data setup, use Tax Type Browse (2.13.1.2) and Report (2.13.1.3).

Fig. 11.5
Tax Type
Maintenance
(2.13.1.1)



Tax Type. Enter a 16-character code for a tax or tax exemption that is separately calculated and reported to a specific jurisdiction.

Description. Enter the description of the tax type. Description prints on most reports and browses, as space permits.

Setting Up Tax Classes and Usages

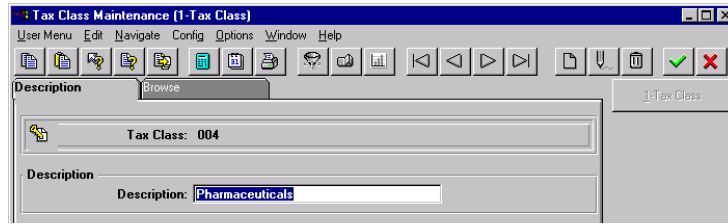
Depending on your tax system, set up tax class and/or tax usage codes to accommodate differences in taxation within a tax zone. Table 11.2 lists some typical situations and describes how to implement them.

Table 11.2
Tax Classes vs Tax Usages

Situation	Implementation
Customers and/or suppliers in a tax zone are subject to different tax types or tax exemption types.	Set up tax classes for these customers and/or suppliers.
Product lines and/or items are subject to different tax types or tax exemption types.	Items are always subject to the tax types in the line item tax environment. There is no way to override this. You can set up tax classes for product lines and items. However, they are only used to select tax rates.
On sales transactions, trailer charges are subject to different tax types or tax exemption types.	Trailer charges are always subject to the tax types in the transaction tax environment. There is no way to override this. You can set up tax classes for trailer charges; however, they are only used to select tax rates.
Customers and/or suppliers are subject to different tax rates for a tax type.	Set up tax usages for these customers and suppliers.
Items are subject to different tax rates for a tax type.	If items have the same rates on all transactions, set up tax classes. However, if rates can differ by transaction, based on the intended usage of the item, set up the tax usage codes to reference during transaction entry
Trailer charges are subject to different tax rates for a tax type.	Set up tax classes for these trailer charges.

Set up tax class codes in Tax Class Maintenance (2.13.1.5). To verify data setup, use Tax Class Browse (2.13.1.6) and Report (2.13.1.7).

Fig. 11.6
Tax Class
Maintenance
(2.13.1.5)



Tax Class. Enter a 3-character code that identifies a group of customers, suppliers, product lines, items, or trailer charges subject to special taxation. For customers and suppliers, the tax class helps determine the tax environment. For product lines, the tax class determines the tax rate for new items. For items and trailer charges, the tax class helps determine the tax rate for tax types in the tax environment. For more detailed tax exemption reporting, remember to set up tax classes for exemptions.

Description. Enter a description of the tax class. The description prints on most reports and browses, as space permits.

Set up tax usage codes in Tax Usage Maintenance (2.13.1.9). To verify data setup, use Tax Usage Browse (2.13.1.10) and Report (2.13.1.11).

Fig. 11.7
Tax Usage
Maintenance
(2.13.1.9)



Tax Usage. Enter an 8-character code that identifies a group of customers, suppliers, or items subject to special taxation on a specific transaction.

Description. Enter a description of the tax usage. The description prints on most reports and browses, as space permits.

Setting Up Rounding Methods

During transaction entry, the system calculates numbers that must be rounded up or down to the nearest tenth, hundredth, or other unit before they can be printed on reports or displayed on the screen.

Rounding conventions vary by country and tax requirements. In GTM, you can define multiple rounding methods and assign the appropriate one to each tax type in the tax environment.

Three rounding methods are supplied with MFG/PRO.

- 0 (rounding to ones)
- 1 (rounding to tenths)
- 2 (rounding to hundredths)

If you need additional rounding methods, define them in Rounding Method Maintenance (2.13.1.17). To verify data setup, use Rounding Method Browse (2.13.1.18) and Report (2.13.1.19).

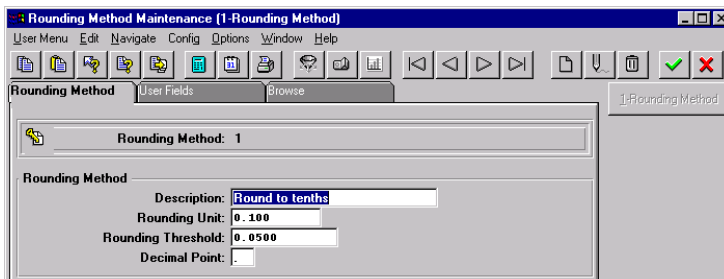


Fig. 11.8
Rounding Method
Maintenance
(2.13.1.17)

Rounding Method. Enter a 1-character numeric code that identifies a method for rounding calculated amounts. Codes 0, 1, and 2 are supplied with MFG/PRO.

Description. Enter a description of the rounding method. The description prints on most browses and reports, as space permits.

Rounding Unit. The rounding unit must be an integer or a decimal that is a power of 10 multiplied by the numbers 1 or 5. Common rounding units are 1, 10, 0.01, and 0.10. You cannot change the rounding unit for standard methods 0, 1, and 2.

Rounding Threshold. Specify the point at which transaction tax amounts are rounded up or down. For methods 0, 1, and 2, the default rounding thresholds are 0.5, 0.05, and 0.005, respectively. Amounts less than these thresholds are rounded down, and amounts higher than or equal to higher amounts are rounded up.

The rounding threshold can be any number for rounding to the nearest dime, nickel, quarter, centavo, pfennig, and so on. Rounding is based on the absolute value of the amount to be rounded. (-9.99 rounds to -10.0 just as 9.99 rounds to 10.0.) You can change the rounding threshold for standard methods 0, 1, and 2.

Decimal Point. Specify whether the decimal point is a period or a comma.

Setting Up Tax Environments

Transactions are subject to the tax laws of both your company and the customer or supplier. Before the system calculates taxes, it determines which taxes (state sales tax, local tax, VAT, etc.) apply to the addresses that ship and receive the goods. A tax environment is the set of tax types that applies to a combination of ship-from and ship-to tax zones and optionally a customer or supplier tax class.

Before you set up tax environments, identify the combinations of tax types that transactions are subject to. Then, determine the tax zones and customer/supplier tax classes that are subject to these tax groups.

You can simplify setup of tax environments. If all shipments to or from a tax zone are taxed the same way, leave the tax zone blank. You may be able to specify a *sums-into* tax zone that encompasses many lower-level zones. Finally, you can leave the tax class blank if the tax types apply to all customers and suppliers in the indicated tax zones.

Each tax type in the environment has a calculation sequence and rounding method. The sequence determines the priority for calculating taxes when there are multiple tax types in the environment. The rounding method determines how the tax type is rounded.

Example Suppose that shipments that start and end in the U.S. state of Florida can be subject to (1) state tax only, (2) state and county tax, or (3) state, county, and city tax. Sample tax environments are illustrated in Tables 11.3 through 11.5. The tax types apply to all tax zone combinations in the environments.

Ship-From Zone	Ship-To Zone	Tax Class	Tax Type	Sequence	Rounding
FL	FL	-	FL-STATE	1	2
		DRUG			
		FOOD			

Table 11.3
Default Florida State Tax Environment (1)

Ship-From Zone	Ship-To Zone	Tax Class	Tax Type	Sequence	Rounding
FL	FL-ALTSP	-	FL-STATE	1	2
FL	FL-LMARY	DRUG	FL-SEMCO	2	2
FL	FL-LONGW	FOOD			
FL	FL-SANFO				
FL	FL-WINSP				

Table 11.4
Environment for Cities Subject to Florida Tax and Seminole County Tax (2)

Ship-From Zone	Ship-To Zone	Tax Class	Tax Type	Sequence	Rounding
FL	FL-APOPK	-	FL-STATE	1	2
FL	FL-LUNDE	DRUG	FL-ORACO	2	2
FL	FL-OCOEE	FOOD	FL-ORLAN	3	2
FL	FL-OVIED				
FL	FL-WINPK				

Table 11.5
Environment for Cities Subject to Florida Tax, Orange County Tax, and Orlando City Tax (3)

Set up tax environments in Tax Environment Maintenance (2.13.5.1). To verify data setup, use Tax Environment Browse (2.13.5.2) and Report (2.13.5.3).

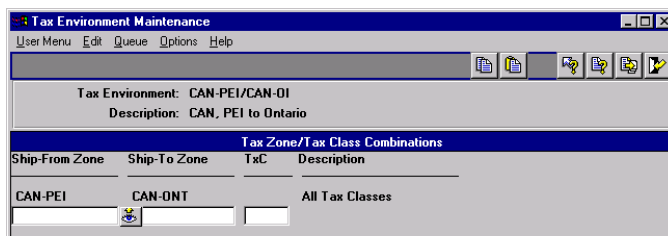


Fig. 11.9
Tax Environment Maintenance (2.13.5.1), Tax Zones/Tax Class Combinations

Tax Environment. Enter a 16-character code that identifies a set of tax types for a tax zone/tax class combination. On transactions, this code identifies the transaction or line item tax environment.

Description. Enter a description of the tax environment. MFG/PRO does not prevent you from entering the same description for multiple tax environments. The description prints on most reports and browses, as space permits.

Ship-From Zone. You can specify the tax zone from which goods are shipped. However, if all shipments to the environment's ship-to zone are taxable regardless of origin, leave the ship-from zone blank.

Ship-To Zone. You can specify the tax zone to which goods are shipped. However, if all shipments from the environment's ship-from zone are taxable regardless of destination, leave the ship-to zone blank.

TxC (Tax Class). You can enter tax classes for customers and/or suppliers subject to the tax types in the environment. If all shipments are taxable regardless of customer or supplier, leave the tax class blank. Do not enter item tax classes; GTM only uses these to select tax rates.

Description. This field contains a description of the combination of ship-from, ship-to, and tax class.

Fig. 11.10
Tax Environment Maintenance (2.13.5.1), Tax Types, Sequences, and Rounding Methods

The screenshot shows a window titled "Tax Environment Maintenance" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. The main area displays "Tax Environment: CAN-PEI/CAN-OI" and "Description: CAN, PEI to Ontario". Below this is a table with two main sections: "Tax Zone/Tax Class" and "Tax Types".

Tax Zone/Tax Class		Tax Types	
Description	Tax Type	Sq R	Type Description
All Tax Classes	CAN-GST	1 2	GST - Canada
	CAN-ONT-PST	2 2	PST - Ontario, Canada

Description. Displays the description of the combination of ship-from, ship-to, and tax class.

Tax Type. Enter the type codes to include in the environment. The codes you enter apply to all combinations of ship-froms, ship-tos, and tax classes in the environment.

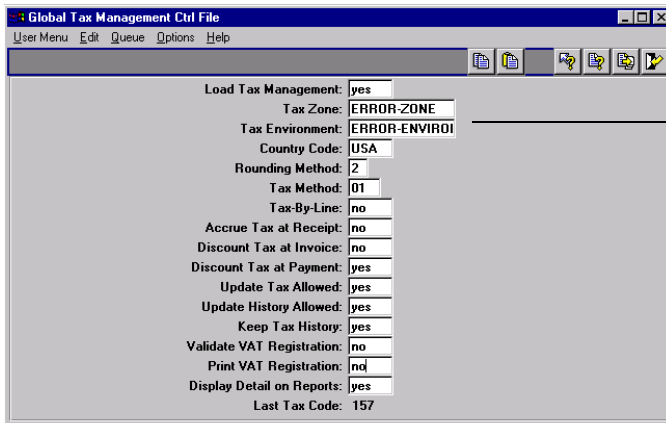
Seq (Sequence). Specify the priority in which tax types are calculated in a tax environment. The tax type that is calculated first must have a lower sequence number than the other tax type. If all taxes are calculated independently of each other, leave the sequence number for all tax types set to 1.

In tax-on-tax situations in which a tax includes another tax amount, enter a lower sequence number for the tax that is calculated first. For example, in some Canadian provinces, provincial sales tax (PST) is based on the item amount plus the goods and services tax (GST). GST has a lower sequence number than PST.

R (Rounding Method). Rounding method determines how tax amounts for the tax type are truncated. The rounding method defaults from the Global Tax Management Control File (2.13.24), but you can override it if the tax type requires a different method.

Type Description. This field contains the tax type description.

See “Tax-on-Tax” on page 247.



GTM uses the Error Tax Environment code when it cannot find a matching tax environment during transaction entry.

Fig. 11.11
Global Tax Management Control File (2.13.24), Tax Environment Field

In addition to the other tax environment codes, set up an error code and specify it in the Global Tax Management Control File (2.13.24). When you enter a transaction, GTM attempts to match the ship-to/ship-from tax zones and customer or supplier tax class to a tax environment. If it cannot find one, it assigns the error environment. To make it easier to identify error conditions, set up a meaningful code such as ERROR-ENVIRON.

Setting Up Trailer Charges

Sales transactions often have additional charges such as freight, service, and labor that are independent of individual line items. In MFG/PRO, these charges are known as trailer charges because they appear at the end of the transaction.

Each trailer charge has a default taxable status and an optional default tax class. This information is defined in the trailer code record. However, in GTM, you can also set up trailer charge detail records to support exception conditions when a trailer charge has a different taxable status and/or tax rate for some tax types and customer tax classes.

Example If service charges are normally exempt from California sales tax but professional services are taxable at 5%, you can set this up in at least two ways.

- If you defined tax types for tax exemptions, define a taxable trailer code. Set up a taxable trailer tax detail for the tax type/tax class combination. Finally, set up a 0% tax rate for exempt trailer charges and a 5% rate for the professional services class.
- If you plan to report all exempt amounts under tax type NON-TAX, define a non-taxable trailer code. Set up a taxable trailer tax detail for the tax type/tax class combination. Finally, set up a 5% tax rate for the professional services class. You do not need a 0% tax rate because MFG/PRO already has one.

If you have not already implemented trailer code records, do so in Trailer Code Maintenance (2.19.13). Then, identify the exception conditions and set up the corresponding records in Trailer Tax Detail Maintenance (2.13.1.21). To verify data setup, use Trailer Code Browse (2.19.14) for trailer codes and the Trailer Tax Detail Browse (2.13.1.22) and Report (2.13.1.23) for trailer tax details.

Fig. 11.12
Trailer Tax Detail
Maintenance
(2.13.1.21)

Trailer Code. Enter a trailer code previously set up in Trailer Code Maintenance (2.19.13). You can set up trailer tax details for a maximum of 99 trailer codes. However, you can set up an unlimited number of trailer tax details per trailer code.

Tax Type. Specify the tax type subject to special treatment for this trailer charge.

Taxable. Specify whether amounts for this trailer code are taxable for the tax type/tax class combination.

Tax Class. If applicable, enter the tax class subject to special treatment for this trailer charge.

Setting Up Tax Bases

By default, tax is based on 100% of the item amount, exclusive of any other tax amounts. However, an item's tax can be based on some amount that is greater or less than the item amount. In these situations, set up a tax base record.

A tax base record is required whenever tax is based on a percentage of the item amount. A tax base is also required whenever tax is based on the item amount plus a previously calculated tax amount. This situation is sometimes called *tax-on-tax*.

▶ See "Tax-on-Tax" on page 247.

Example

- In Brazil, whenever you sell an old fixed asset and replace it with a new one, tax is assessed on a percentage of the old asset's sale price.
- In some Canadian provinces, PST (Provincial Sales Tax) includes the GST (Goods and Services Tax) in the taxable base for PST.

Assign a tax base to multiple tax types and tax rates if the percentage of value is the same for all situations. When you assign a tax type to a tax base, the tax base becomes part of all tax environments that use tax type.

Set up tax bases in Tax Base Maintenance (2.13.1.13), shown in Figure 11.13. To verify data setup, use Tax Base Browse (2.13.1.14) and Report (2.13.1.15).

Fig. 11.13
Tax Base
Maintenance
(2.13.1.13)

Line	Tax Type	Description
1	CA-SLS	California Sales Tax
2	NJ-SLS	New Jersey Sales Tax
3		

Tax Base. Enter an 8-character code that describes an item amount subject to tax. This amount can either be a percentage of sales price or the sales price plus other tax amounts. For a tax-on-tax situation, set up the tax base for the tax that is included in the taxable base for the other tax. Once you start live processing for GTM, MFG/PRO displays a warning message if you try to update a tax base that has already been used in other records.

Description. Enter the description of the tax base. The description prints on most reports and browses, as space permits.

Base Percent. Identify the percentage of the item's price or cost to use in tax calculations for this tax base. The default value is 100%. Percentages can be either positive or negative. Negative percentages indicate tax credits. The base percent must be the same for all tax types assigned to the tax base. Otherwise, you must set up separate tax bases.

On transactions, the system uses the base percent for the tax type to calculate the taxable base amount for each line item or trailer charge.

Base Value. Identify the type of item amount for the taxable base. *Do not change this setting.* The only supported type is sales price. Line item and trailer charge amounts are taxed based on the price at which you buy or sell them. GTM does not support tax based on general ledger cost.

Line. The system automatically assigns a line number when you assign a tax type to the tax base. Assign up to 99 tax types to a tax base. When you add a new tax base, the system assigns the next sequential line number. To display a previously entered tax type, enter its line number. To delete a line, press F5 or Ctrl+D.

Tax Type. Assign the tax base to its tax types. During tax calculations, the tax rate for the tax type is applied to the taxable base portion of the item amount.

Description. This field contains a description of the tax type.

Setting Up GL Accounts

GTm calculates tax amounts separately for each tax rate. Before you set up tax rate records, verify that you have all the necessary tax accounts, sub-accounts, and cost centers in the general ledger (GL) chart of accounts. If any are missing, set them up.

Depending on the nature of your tax rates, some or all of the tax amounts listed in Table 11.6 are represented in the general ledger.

Amount	Explanation
Sales tax	A liability credited for sales tax payable. It is updated by Invoice Post (7.13.4) and AR DR/CR Memo Maintenance (27.1).
Sales tax absorbed	A liability credited whenever your company absorbs tax instead of charging it to the customer. This occurs, for example, when your company gives an item to a customer but you still pay tax on it even though the sales price is zero. It is updated by Invoice Post (7.13.4) and DR/CR Memo Maintenance (27.1).
Recoverable tax	An asset debited for recoverable amounts or a liability when treated as a contra account to sales tax payable. It is updated by Purchase Order Receipts (5.13.1), PO Shipper Receipt (5.13.20), and confirmed AP vouchers (28.1, 28.6, 28.7).
Retained tax	A liability credited when you withhold tax on purchases and remit it directly to the government instead of to the supplier. It is updated by Purchase Order Receipts (5.13.1), PO Shipper Receipt (5.13.20), and the AP voucher confirmation programs (28.6, 28.7).

Table 11.6
Tax Amounts
Posted to GL

The relevant general ledger maintenance functions are as follows.

- Account Code Maintenance (25.3.13)
- Sub-Account Code Maintenance (25.3.17)
- Cost Center Code Maintenance (25.3.20)

▶ See *User Guide Volume 4: Financials*.

To verify data setup, use browse and report programs in the General Ledger Setup Menu (25.3).

After you update your chart of accounts, specify the default codes for new tax rate records in the System/Account Control File (36.1). If necessary, you can later override these codes for individual tax rates.

Warning To display the GTM accounts in the control file, you must temporarily reset the Use Tax Management field to Yes. To avoid conflicts with other users who could be creating taxable transactions, perform this activity only when you are sure no one else is using the system. You cannot use any other MFG/PRO tax system when GTM is activated.

Setting Up Tax Rates

GTM tax rate records enable you to configure the software to support many different kinds of taxes and transaction conditions. The major decision points are as follows. Not all decisions apply to all tax types in all countries.

▶ See “Implementing Special Taxes” on page 243.

- The tax type, tax class, tax usage, and starting/ending date range to which the tax rate applies
- The percentage used to calculate tax
- Whether taxes are calculated by item or by transaction total
- The taxable base, or item amount subject to tax
- The minimum/maximum item amounts subject to tax
- The amount of purchase tax that is recoverable against sales tax
- The tax calculation method
- Whether a user is allowed to override system-calculated tax amounts
- Whether tax amounts are reverse-calculated from item amounts that already include tax
- The general ledger accounts, sub-accounts, and cost centers to which tax amounts involving this tax rate are posted.
- Whether the tax on purchased items sold as part of a service contract are absorbed rather than collected

- Whether purchase tax amounts are retained and paid directly to the government rather than remitted to suppliers
- Whether purchase taxes are accrued for general ledger reporting upon receipt of goods or the supplier invoice
- Whether taxes are based on sales minus credit terms discounts or on the full sales amount

Note Set up tax rates by tax class or tax usage only for exception conditions. Otherwise, leave these fields blank so that the system can apply the tax rate to as many transactions as possible.

These fields provide default values for new Tax Rate records.

Fig. 11.14
Global Tax Management Control File (2.13.24), Default Tax Rate Values

Before you set up tax rate records, define the following default values in the Global Tax Management Control File (2.13.24). For more information on these fields, See the indicated pages.

- Tax Method (page 235)
- Tax-By-Line (page 235)
- Accrue Tax at Receipt (page 237)
- Discount Tax at Invoice (page 237)
- Discount Tax at Payment (page 237)
- Update Tax Allowed (page 235)

You can later override these values for individual tax rates. Subsequent changes to the control file do not update existing rates.

Tax Rate Maintenance

To define tax rates, use Tax Rate Maintenance (2.13.13.1). To verify data setup, use Tax Rate Browse (2.13.13.2) and Report (2.13.13.3).

Note If you change a tax rate once you start using it on transactions, a warning displays. The system recalculates taxes on open transactions whenever you access the transaction record.

Fig. 11.15
Tax Rate
Maintenance
(2.13.13.1)

Tax Type:	EEC-L	Tax Code:	35
Item Tax Class:	003	Description:	
Tax Usage:	7-S	Tax Rate:	10.00%
Effective:	06/11/97		
Tax Base:		Sales Tax Account:	1400 0100
Min. Taxable:	0.00	Sales Tax Absorbed:	2450 0100 no
Max. Taxable:	999,999,999.99	AP Tax Account:	1400 0100
Percent Recoverable:	0.00%	AP Tax Retained:	2450 0100 no
Tax Method:	01	Expiration Date:	/ /
Update Tax Allowed:	yes	Accrue Tax at Receipt:	yes
Allow Tax Included:	no	Discount Tax at Invoice:	no
EC Sales List:	yes	Discount Tax at Payment:	yes
EC Process Work:	yes	Comments:	no

Tax Type. Enter the tax type to which the rate applies.

Item Tax Class. If the tax rate applies only to a specific line item or trailer charge tax class, enter it here. Leave this field blank if the tax rate applies regardless of tax class. Do not set up rates by customer or supplier tax class.

Tax Usage. If the tax rate applies only to a specific tax usage, enter it. Leave blank if the tax rate applies regardless of tax usage.

Effective. Specify the starting date for using this tax rate in tax calculations. If you do not specify a date, the system inserts the record creation date. When you enter multiple tax rates, the default effective date is the one in the last record entered.

Tax Code. Enter a code identifying this tax rate. If you do not enter a code, the system increments it automatically from the Last Tax Code in the Global Tax Management Control File (2.13.24). You can use prefixes to designate groups of tax rates, but be aware that future tax rates will have the same prefix unless you override it. Tax code has no significance for auditing or accounting purposes.

Description. Enter the description of the tax rate. Description prints on most reports and browses, as space permits.

Tax Rate. Specify the percentage used to calculate tax amounts for this tax rate. How the rate is used in the calculation depends on the tax method specified. To use tax types to report tax exemptions, also set up zero-percent tax rates.

Tax-By-Line. Specify whether taxes on line item amounts are calculated individually or by order total. On sales transactions, taxes on trailer charges are always totaled for the order regardless of the Tax-By-Line setting. This setting has no influence on accounts receivable and accounts payable tax calculations; debit/credit memos always calculate tax by total and vouchers always calculate by line.

Tax Base. If necessary, enter the code that identifies the portion of the item amount subject to taxation. Leave this blank if the taxable base for this tax rate is always 100% of the item price.

▶ See “Tax Based on Partial Item Amounts” on page 244.

Min. Taxable. If necessary, enter the minimum transaction taxable base amount to which this tax rate should be applied. How this field is used in tax calculations depends on the tax method specified. Leave blank if the tax rate applies equally to all item amounts.

▶ See “Luxury Taxes” on page 246.

Max. Taxable. If necessary, enter the maximum transaction taxable base amount to which this tax rate should be applied. How this field is used in tax calculations depends on the tax method specified. Leave blank if the tax rate applies equally to all item amounts.

▶ See “Capped Taxes” on page 246.

Percent Recoverable. Specify a recoverable tax percentage if you are able to offset some or all purchase tax amounts for this rate against the amounts for this rate that you collect on sales. Otherwise, leave set to 0.00%.

▶ See “Recoverable Taxes” on page 246.

Tax Method. Specify which calculation routine to use when this tax rate is applied. The standard tax methods are 01, 02, 11, and 12. You can also define custom methods, but be sure to follow the program naming convention.

▶ See “Custom Tax Calculation Methods” on page 244.

Update Tax Allowed. Decide whether users can use the View/Edit Tax Detail option during transaction entry to change system-calculated taxable base and tax amounts. This feature is useful for overriding the system if there is a need to match amounts on manually issued documents. However, the system does not maintain an audit trail of

▶ See “Correcting Transaction Tax Amounts” on page 261.

changes, so in your environment, your government may require you to set this to No.

▶ See “Reverse-Calculated Taxes” on page 250.

Allow Tax Included. Specify whether this tax rate reverse-calculates taxes from line item and trailer charge amounts on transactions for customers and suppliers whose Tax In (tax included) status is Yes. If you reset Allow Tax Included to Yes, GTM reverse-calculates tax based on the tax rate’s percentage and tax method.

EC Sales List. This setting is used only on tax rates for European Community countries with recoverable value-added taxes. If Yes, sales and purchases that use these tax rates are included in the EC Sales Listing (2.13.15.8), a report submitted to the government as verification that recoverable purchase VAT claimed back by your company is correct for the amount of VAT it collected on sales.

EC Process Work. This setting identifies tax rates that apply to work performed in another European Community country.

Sales Tax Account. Identify the sales tax liability credited whenever tax is calculated on sales to a customer. Account, sub-account, and cost center default from the System/Account Control File (36.1), but you can override them.

▶ See “Absorbed Taxes” on page 249.

Sales Tax Absorbed. Identify the sales tax liability credited whenever your company pays tax instead of charging it to the customer. If the tax rate is for an absorbed tax, set to Yes. Account, sub-account, and cost center default from the System/Account Control File (36.1), but you can override them.

AP Tax Account. Identify the asset debited for recoverable purchase and accounts payable taxes, or liability when treated as a contra account to sales tax payable. Account, sub-account, and cost center default from the System/Account Control File (36.1), but you can override them.

▶ See “Retained Taxes” on page 249.

AP Tax Retained. Identify the liability account credited whenever your company remits tax amounts directly to the government instead of to the supplier. If the tax rate is for a retained tax, set this option to Yes. Account, sub-account, and cost center default from the System/Account Control File (36.1), but you can override them.

Expiration Date. Use this field to phase in expiration dates for obsolescent tax rates. This date is the last day when the tax rate can be used on transactions.

Accrue Tax at Receipt. This setting determines whether the system creates general ledger entries for purchase tax amounts upon receipt of goods or receipt of the supplier invoice. By default, the tax point is goods receipt. However, for recoverable tax rates, reset Accrue Tax at Receipt to No, because you cannot deduct the recoverable portion of tax paid on purchases against tax collected on sales until you confirm the voucher for the supplier invoice. The tax point does not affect tax calculations on transactions; they still display tax amounts regardless of when MFG/PRO creates the general ledger entries.

▶ See “General Ledger Effects” on page 262.

Discount Tax at Invoice. This setting determines whether the tax rate calculates taxes based on the sales amount minus credit terms discounts, but displays an order net total of full sales amount plus discounted tax amount. If tax is based on the full sales amount, set this to No.

▶ See “Discounted Taxes” on page 248.

Discount Tax at Payment. This setting is similar to Discount Tax at Invoice, except that the net order total is the discounted sales amount plus the discounted tax amount.

Comments. Set to Yes to record transaction comments for the tax rate. This is useful for recording government regulations and other legally required text for tax reports.

Tax Rate Copy/Update

To streamline the task of entering tax rates, group the required rates for a tax type/item tax class/tax usage/effective date combination. Set up a generic rate first, then copy with Tax Rate Copy/Update (2.13.13.5) and customize it as necessary.

Fig. 11.16
Tax Rate Copy/
Update (2.13.13.5)

Current Tax Code: 57	New Tax Code: 157
Tax Type: 513	
Item Tax Class: 513	
Tax Usage: 513	
Current Effective Date: 10/30/97	New Effective Date: 11/13/97
Current Tax: 8.00%	New Tax: 7.00%
Description: Madera Tax Rate	

Current Tax Code. Enter the tax code of the tax rate to copy. The tax type, item tax class, tax usage, current effective date, current tax rate percentage display for the selected rate.

New Tax Code. Leave blank for the system to assign the next available tax code, incremented from the Last Tax Code value in the Global Tax Management Control File (2.13.24.). Alternately, enter a previously unassigned value.

New Effective Date. Specify the starting date for using the new tax rate in tax calculations. If you do not specify a date, the system inserts the record creation date. When you enter multiple tax rates, the default effective date is the one in the last record entered.

New Tax. Enter the percentage for the new tax rate.

Tax Rate Copy/Update redisplay information from the source tax rate and allows you to customize settings.

Setting Up the GTM Control File

In the Global Tax Management Control File (2.13.24), enter the following values to complete setup of the control file.

The screenshot shows a window titled "Global Tax Management Ctrl File" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. The main area contains the following settings:

- Load Tax Management: yes
- Tax Zone: ERROR-ZONE
- Tax Environment: ERROR-ENVIRO1
- Country Code: USA
- Rounding Method: 2
- Tax Method: 01
- Tax-By-Line: no
- Accrue Tax at Receipt: no
- Discount Tax at Invoice: no
- Discount Tax at Payment: yes
- Update Tax Allowed: yes
- Update History Allowed: yes
- Keep Tax History: yes
- Validate VAT Registration: no
- Print VAT Registration: no
- Display Detail on Reports: yes
- Last Tax Code: 157

To set up GTM codes in address records, set Load Tax Management to Yes.

Fig. 11.17
Global Tax Management Control File (2.13.24)

These fields affect tax history and reporting.

Load Tax Management. Enter Yes to activate the tax pop-up window in company, customer, and supplier address maintenance programs. Changing this flag while other people are creating transactions does not cause problems.

Country. Enter a code to be used as a default value for country codes in Tax Zone Maintenance. This code represents the top-level in the tax zone hierarchy.

Update History Allowed. This setting determines whether users can change tax history detail records. This control setting is relevant only if Keep Tax History is also Yes.

Keep Tax History. This setting determines whether MFG/PRO creates tax history records. Tax history records are always created on a per-item basis. This setting must be Yes if Update History Allowed is Yes.

Validate VAT Registration. Enter Yes for MFG/PRO to validate that VAT registration numbers recorded in the Address Tax Window of the address maintenance programs are in one of the required formats for European Union countries.

If you set this to Yes because most of your business is within Europe, but you also trade with non-EU countries, you must override the

default validation logic so that you can leave the Tax ID–State (VAT Registration) field blank for the non-EU addresses. To do this, set up a blank generalized code for Tax ID–State (vat_ccode) in Generalized Codes Maintenance (36.2.13).

Print VAT Registration. This setting specifies whether MFG/PRO prints VAT registration numbers on documents. Set it to Yes to print the relevant VAT registration numbers on documents such as sales quotes, sales orders, invoices, DR/CR memos, purchase orders, blanket orders, shippers, vouchers, service/repair orders, and service engineer orders.

Display Detail on Reports. This setting determines whether you can print a summary of tax amounts on printed documents such as purchase orders, receipts, sales quotes, sales orders, and invoices. You can print tax summaries in document print programs only if both the control file setting and the Print Trailer flag are set to Yes. Tax detail information prints only on documents that have a trailer.

Updating Other MFG/PRO Records

Company and Site Addresses

In GTM, company sites require a corresponding company address record because taxes are calculated by address, not site. Every company site must have an address record with the same address code as the site code. Create records in Company Address Maintenance (2.12). Add city, county, state, and country, and tax information to new records.

As a precaution, create a ~taxes record to provide a default tax zone whenever a transaction is missing a company site code.

Customers, Suppliers, and End Users

You can set up default tax data for customers, suppliers, and end users, which is then used on transactions (Figure 11.18).

Note End users are defined in the Service/Support Management module.

Fig. 11.18
Address Tax Data
Window

Update this information in Customer Maintenance (2.1.1), Supplier Maintenance (2.3.1), and End User Address Maintenance (11.9.1).

Taxable. For non-taxable addresses, change this setting to Yes if you report tax exemptions by tax type in GTM.

Tax Zone. The system selects the default tax zone based on the city, county, state or province, and country in the address.

Tax Class. Enter the tax class.

Tax Usage. Enter the tax usage.

Tax In. Set Tax In to Yes if items shipped to or from the address have tax already included in the line item price.

Tax ID–Federal. For reference and documentation purposes, enter a federal tax identification number.

Tax ID–State or VAT Registration. For reference and documentation purposes, enter either a state or provincial tax identification number or a value-added tax registration number.

If you activated VAT registration in Global Tax Management Control File (2.13.24), numbers for European Union countries must have one of the formats listed in Table 11.7. These formats are built as follows:

- First two letters are the country code.
- X is letters A-Z or numbers 0-9.
- A is letters A-Z only.
- 9 is 0-9 only.

Table 11.7
VAT Registration
Number Formats

Country	VAT Registration Format
Austria	ATXXXXXXXXXX
Belgium	BE999999999
Denmark	DK999999999
Finland	FI999999999
France	FR999999999999
Germany	DE999999999
Greece	EL999999999
Ireland	IE9X99999X
Italy	IT999999999999
Luxembourg	LU999999999
Netherlands	NL999999999B99
Norway	NO999999999
Portugal	PT999999999
Spain	ESX9999999X
Sweden	SE999999999999
United Kingdom	GB999999999 or GB999999999999

Note For the Netherlands, the tenth character must be the letter B.

When you enter an ID in a customer or supplier record, MFG/PRO checks that it has a valid EU country prefix. If it does, the system verifies that the rest of the number matches the format for that country. If either the prefix or number is invalid, an error displays.

However, MFG/PRO does not match the prefix country code against the country code in the customer or supplier address. The system does not prevent you from entering a French tax ID for a German supplier.

Tax ID–Misc 1, 2, 3. For reference and documentation purposes, enter any other tax identification numbers that are useful.

▶ See *User Guide*
Volume 10A:
External
Interfaces.

In City. This setting determines whether the address is in the city limits for taxation purposes. It affects only GTM processing that occurs in conjunction with the Sales and Use Tax Interface for U.S. tax processing.

Product Lines and Items

In Product Line Maintenance (1.2.1) and Item Master Maintenance (1.4.1), enter the GTM item tax class in all product line and item records. If necessary, change the taxable status to Yes to accommodate exemption reporting.

If you are using the Service/Support Management module, assign tax classes to service categories.

▶ See *User Guide Volume 8A: Service/Support Management*.

Switching to Live GTM Processing

To activate GTM for live transaction processing, reset Use Tax Management to Yes in the System/Account Control File (36.1).

Implementing Special Taxes

This section provides additional information on how to implement certain kinds of taxes in GTM.

Tax Exemptions

In GTM, tax exemptions are set up by tax type. You can implement separate tax types for each exemption, or group all exemptions into one tax type. Select the approach that supports the level of detail required for governmental reporting.

Reporting by Exemption

- 1 In Tax Type Maintenance (2.13.1.1), set up a separate tax type for each exemption.
- 2 In Tax Environment Maintenance (2.13.5.1), assign the type to each tax environment affected by the exemption.
- 3 In Tax Rate Maintenance (2.13.13.1), set up 0% tax rates for each exemption tax type.

If the exemption is by customer or supplier, set up 0% rates by usage code. If the exemption is by item or trailer charge, set up 0% rates by item tax class.

- 4 In the respective maintenance programs, set the Taxable status of all exempt customers, suppliers, product lines, items, and trailer charges to Yes.

Transactions whose Taxable status is No do not calculate tax, but you will be unable to report the reason, since GTM cannot match the exempt amounts to the exemption tax types in the tax environment.

Aggregate Reporting

- 1 In Tax Environment Maintenance (2.13.5.1), assign the default tax type NON-TAX to each tax environment in which exemptions can be reported in aggregate.

You do not have to set up this type; MFG/PRO already has it. Once you do this, GTM automatically classifies all non-taxable transaction amounts as type NON-TAX.

- 2 In the respective maintenance program, set the Taxable status of all exempt customers, suppliers, product lines, items, and trailer charges to No.

When MFG/PRO encounters a non-taxable transaction amount, it applies a 0% tax rate to it. This rate is already set up in MFG/PRO.

Tax Based on Partial Item Amounts

By default, GTM calculates tax for 100% of the item amount. However, tax can be based on a smaller percentage. In these situations, set up a tax base record in Tax Base Maintenance (2.13.1.13), specifying the appropriate Base Percent. Assign this tax base to multiple tax types and tax rates if the Base Percent is the same for all situations.

Custom Tax Calculation Methods

The transaction detail screen displays the following tax-related amounts for line items and trailer charges.

- Total line item or trailer charge amount
- Line item or trailer charge amount not subject to tax
- Line item or trailer charge amount that is subject to tax
- Total tax amount

- Recoverable and nonrecoverable tax amounts
- For sales transactions, any tax your company absorbs rather than passes on to the customer
- For purchase transactions, any tax your company retains for direct payment to the government

To calculate tax amounts, GTM can use one of several standard calculation programs. Alternately, to resolve a localization issue, write a custom program. Specify a default program and override it as necessary for individual tax rates.

Table 11.8 summarizes the differences between the standard MFG/PRO tax calculation methods.

Method	Program	Explanation
01	txmeth01.p	<p>This generic method supports most taxes.</p> <p>$\text{Tax Amount} = \text{Tax Rate} \times \text{Item Amount}$</p> <p>Note: For reverse-calculated taxes, $\text{Tax Amount} = \text{Tax Rate} \times [\text{Item Amount} / (1 + \text{Tax Rate})]$</p> <p>$\text{Taxable Base} = \text{Item Amount} \times \text{Tax Base Percent}$</p> <p>If Taxable Base < Min. Taxable, Tax Amount = Min. Taxable</p> <p>If Taxable Base > Max. Taxable, Tax Amount = Max. Taxable</p> <p>Recoverable Amount = Tax Amount x Recoverable Percent</p>
02	txmeth02.p	<p>Same as method 01 except that it supports luxury taxes and capped taxes that are assessed only on specific taxable base amounts.</p> <p>If Taxable Base < Min. Taxable, Tax Amount = 0</p> <p>If Taxable Base > Max. Taxable, Tax Amount = 0</p>
11	txmeth11.p	<p>Same as method 01 but has a regressive calculation for reverse-calculated taxes.</p> <p>$\text{Tax Amount} = \text{Tax Rate} \times \text{Item Amount}$</p>

Table 11.8
Standard GTM Tax Methods

For custom programs, the file naming convention is txmeth##.p, where ## is the numeric identifier referenced in MFG/PRO. Use an identifier from 50 to 99; identifiers 00 through 49 are already reserved for QAD use.

To implement the custom tax method, specify the identifier as the Tax Method in Tax Rate Maintenance (2.13.13.1). If the custom method is the

default method for new tax rates, also specify it in the Global Tax Management Control File (2.13.24).

Luxury Taxes

Luxury taxes are assessed only on transaction amounts that exceed a specified minimum. For example, a 30% luxury tax applies only to automobiles costing more than \$30,000.

Two settings in Tax Rate Maintenance (2.13.13.1) govern setup of luxury taxes.

Min. Taxable. This setting identifies the minimum amount subject to tax. In the above example, Min. Taxable is \$30,000.

Tax Method. For luxury taxes, set Tax Method to 02. Whenever the transaction taxable base amount is less than the Min. Taxable amount for the tax rate, the final tax amount is zero.

Capped Taxes

Capped taxes are assessed only on transaction amounts less than a specified maximum. For example, a 10% capped tax applies only to transaction amounts under \$1,000.

Two settings in Tax Rate Maintenance (2.13.13.1) govern setup of capped taxes:

Max. Taxable. This setting identifies the maximum amount subject to tax. In the above example, Max. Taxable is \$1,000.

Tax Method. For luxury taxes, set Tax Method to 02. Whenever the transaction taxable base amount exceeds the Max. Taxable amount for the tax rate, the final tax amount is zero.

Recoverable Taxes

Taxes are recoverable whenever your company is eligible to offset a percentage of tax on purchases against tax collected on sales. Recoverable taxes are common in Europe.

The following settings in Tax Rate Maintenance (2.13.13.1) govern setup of recoverable taxes.

Percent Recoverable. The percentage of purchase tax that can be recovered for the tax rate.

AP Tax Account. General ledger account, sub-account, and cost center for posting recoverable tax amounts. This account is used by Purchase Order Receipts (5.13.1), PO Shipper Receipt (5.13.20), and confirmed accounts payable vouchers (28.1, 28.6, 28.7). A recoverable tax is an asset when debited for recoverable purchase and accounts payable taxes, or a liability when treated as a contra account to sales tax payable. The default general ledger settings are specified in the System/Account Control File (36.1), but you can override them.

EC Sales List. Set to Yes to include sales and purchases that use these tax rates in the EC Sales Listing (2.13.15.8), a report submitted to the government as verification that recoverable purchase VAT claimed by your company is correct for the amount of VAT it collected on sales.

Accrue Tax at Receipt. Determines when general ledger entries for purchase tax amounts are created. For recoverable taxes, reset this to No because the tax point is receipt of supplier invoice.

Tax-on-Tax

In a tax-on-tax situation, one tax amount is included in the calculation for another tax amount. For example, in some Canadian provinces, Provincial Services Tax (PST) is based on the item amount plus the federal Goods and Services Tax (GST).

To set up a tax-on-tax, define the calculation priority of the two taxes and assign the included tax as the tax base of the other tax.

- 1 In Tax Environment Maintenance (2.13.5.1), assign both tax types to the tax environment. Assign the included tax type a lower sequence number than the other tax type. This ensures that the included tax is calculated first. In the Canadian example, GST has a lower sequence.
- 2 In Tax Base Maintenance (2.13.1.13), define a tax base and assign it to the included tax type. In the Canadian example, GST is the included type.

- 3 In Tax Rate Maintenance (2.13.13.1), set up tax rates for both tax types. In the rate for the tax-on-tax, specify the tax base for the included tax. In the Canadian example, you would set up rates for both GST and PST, then specify the tax base in the PST rates.

Discounted Taxes

In the United Kingdom and some other countries, tax is assessed only on what the customer actually pays—that is, on the sales amount minus credit terms discounts. When taxes are discounted, the net order amount can vary, depending on whether the credit terms discount is applied to the tax amount.

In Tax Rate Maintenance (2.13.13.1), two settings govern the setup of discounted taxes: Discount Tax at Invoice and Discount Tax at Payment.

- For both settings, the order tax amount is the discounted sales amount multiplied by the tax rate.
- For discounting at invoice, the net order amount is the full sales amount plus the discounted tax amount. When payment is received, MFG/PRO checks that the customer has paid within the discount period. If the customer is still eligible for the discount, MFG/PRO discounts the sales amount and adds it to the discounted tax amount to recalculate the net order amount.
- In contrast, for discounting at payment, the net order amount is calculated later as the *discounted* sales amount plus the discounted tax amount.
- Under both systems, if the discount period expires, both the accounts receivable and accounts payable payment programs automatically adjust tax amounts upward. The net order amount is recalculated as the full sales amount plus the full tax amount.

Example If the sales amount is 100.00, the credit terms are 2% Net 30, and the tax rate is 10%, MFG/PRO does the following calculation for discounting at invoice.

```
Disc Sales Amt 100.00 - (100.00 x 2%) = 98.00
Disc Tax Amt (98.00 x 10%) = 9.80
Net Order Total (100.00 + 9.80) = 109.80
```

Initially, only the tax is discounted. If the customer is still eligible for the discount when payment is received, the sales amount is discounted to 98.00 and the payment amount to apply changes to 107.80.

For discounting at payment, the calculation is as follows.

```
Disc Sales Amt 100.00 - (100.00 x 2%) = 98.00
Disc Tax Amt (98.00 x 10%) = 9.80
Net Order Total (98.00 + 9.80) = 107.80
```

If the customer is late, the discount tax amount reverts to the non-discounted tax amount of 10.00 and the payment amount to apply changes to 110.00.

Retained Taxes

In some countries, the government declares that large customers of small suppliers are required to remit tax amounts directly to the government instead of to the supplier. Customers of these suppliers pay the purchase amount minus tax to the supplier but are required to calculate, post, and periodically pay the tax amounts on their purchases directly to the government.

Use Tax Rate Maintenance (2.13.13.1) to specify the general ledger accounts, sub-accounts, and cost centers for AP Retained Tax. To designate a tax rate as a retained tax, set the flag to Yes.

Absorbed Taxes

Absorbed sales tax is a liability you can incur whenever your company is liable for tax but does not charge it to the customer. For example, if you give an item to a customer, you may still pay tax even though the item's sales price is zero. Absorbed sales tax is also called withheld or retained sales tax.

Use Tax Rate Maintenance (2.13.13.1) to specify the general ledger accounts, sub-accounts, and cost centers for Sales Tax Absorbed. To designate a tax rate as an absorbed tax, set the flag to Yes.

Reverse-Calculated Taxes

Sometimes, item amounts already include tax. For transaction documents and reporting, you must reverse-calculate the tax from the item amount.

The system reverse-calculates tax from the line item price on sales and the item cost on purchases. On sales transactions, it reverse-calculates the taxable base by subtracting the tax amount from the total amount on the line/trailer.

GTM supports two kinds of reverse calculations, as specified by the tax method in the tax rate.

Example For tax method 01, the calculation works as follows.

$$\begin{aligned} \text{Tax Amount} &= \text{Tax Rate} \times (\text{Item Price} / 1 + \text{Tax Rate}) \\ 0.10 \times (100.00 / 1.10) \\ 0.10 \times 90.90 &= 9.09 \\ \text{Tax Base} &= \text{Item Price} - \text{Tax Amount} \\ 100.00 - 9.09 &= 90.91 \end{aligned}$$

In contrast, for tax method 11 (regressive taxation), the calculation is as follows.

$$\begin{aligned} \text{Tax Amount} &= \text{Item Price} \times \text{Tax Rate} \\ 100.00 \times 0.10 &= 10.00 \\ \text{Tax Base} &= \text{Item Price} - \text{Tax Amount} \\ 100.00 - 10.00 &= 90.00 \end{aligned}$$

To set up a reverse-calculated tax, do the following.

- 1 In the respective customer and/or supplier maintenance program, set Tax In to Yes. The tax included status for the customer/supplier ship-to address determines the default tax included status on transactions. The transaction tax included status determines how trailer charges are taxed and becomes the default status for line items.
- 2 In Tax Rate Maintenance (2.13.13.1), set Allow Tax Included to Yes for all tax rates applied to items that already include tax. In addition, specify Tax Method 01 or 11.

Tax is reverse-calculated only for transactions in which the transaction or item Tax In status is Yes and the tax rate Allow Tax Included status is Yes.

Note The ability to reverse-calculate taxes in GTM does not affect sales commission reporting in the Sales Analysis module. Commissions are always based on item prices inclusive of tax. For items that include tax, you may have to adjust your commission structure.

Processing GTM

This chapter describes how GTM processes tax transactions. It also discusses general ledger transactions created for tax amounts under standard and average costing.

Calculating Taxes **254**

Specifying Tax Data **257**

Viewing Tax Amounts **259**

Correcting Transaction Tax Amounts **261**

General Ledger Effects **262**

Reporting **287**

Fixing Common Tax Problems **288**

Field	Value	Text
Routing Code	10-15000	MANUFACTURE CHG.LIN.
Operation	20	
Standard Operation	1030	INSPECTION, ALL SITE
Work Center	1030	
Machine	1030	
Description	INSPEC PER PROC-000	
Machines per Op	1	
Overlap Units	1	
Queue Time	1.0	
Wait Time	0.0	
Setup Time	0.0	

Calculating Taxes

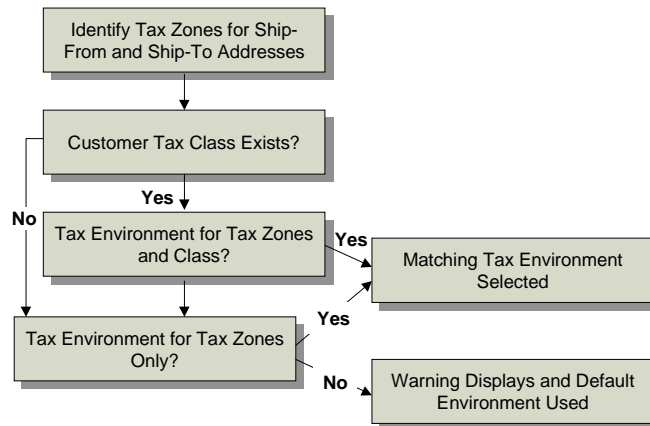
To calculate taxes on transactions, GTM first identifies the tax environment—the set of tax types for each line item and trailer charge. It then determines the most appropriate tax rate for each tax type in the environment.

GTM searches for an optimal tax environment based on a combination of transaction conditions.

- Ship-from tax zone for the line item
- Ship-to tax zone for the transaction
- Customer or supplier tax class, if any

Figure 12.1 summarizes GTM’s search priority for selecting a tax environment.

Fig. 12.1
Selection of Tax Environment



If GTM finds a matching environment, it assigns this environment to the transaction. Otherwise, the following message displays.

Warning: No tax environment found, using default.

▶ See “Fixing Common Tax Problems” on page 288.

The system then uses the error environment from the Global Tax Management Control File (2.13.24). If this happens, investigate and correct the problem.

Table 12.2 describes the tax environment selection criteria for different transaction amounts.

Item	Ship-To Tax Zone	Ship-From Tax Zone	Tax Class
Inventory items	Transaction ship-to tax zone	Line item ship-from tax zone	Transaction tax class, if any
Memo items	Transaction ship-to tax zone	Transaction ship-from tax zone	Transaction tax class, if any
Trailer charges	Transaction ship-to tax zone	Transaction ship-from tax zone	Transaction tax class, if any

Table 12.1
Tax Environment Selection Criteria

Next, GTM searches for the tax rate for each tax type in the tax environment. For each tax type, GTM searches for an optimal tax rate based on a combination of transaction and line item conditions.

- Tax class
- Tax usage
- Transaction tax date

Figure 12.2 summarizes the search priority for selecting a tax rate for a tax type. GTM selects a rate only if there is a complete match between the conditions of the transaction and the tax rate. Any nonmatching criteria must be blank. For example, if a tax rate has a matching item tax class and tax date but a different tax usage, it is not selected.

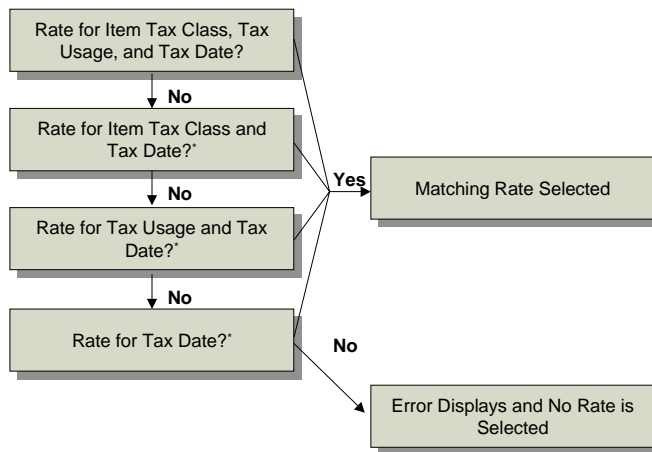


Fig. 12.2
Selection of Tax Rate

* Remaining tax rate fields must be blank.

If GTM finds a matching rate, it uses this rate for the tax calculation. Otherwise, the following message displays.

```
Error: Tax rate does not exist.
      "Tax Type" "Tax Class" "Tax Usage"
```

◆ See “Fixing Common Tax Problems” on page 288.

The message displays the tax type, tax class, and tax usage not found, and no tax is calculated. If this happens, investigate the problem.

Table 12.2 describes the tax rate selection criteria for different transaction amounts.

Table 12.2
Tax Rate Selection
Criteria

Item	Tax Class	Tax Usage	Tax Date
Inventory items	Item tax class, if any	Transaction tax usage, if any	Transaction tax date
Memo items	Transaction tax class, if any	Transaction tax usage, if any	Transaction tax date
Trailer charges	(1) Tax class from trailer charge detail, if any (2) Trailer charge tax class, if any (3) Transaction tax class, if any	Transaction tax usage, if any	Transaction tax date

Specifying Tax Data

All MFG/PRO transactions subject to tax have tax data windows accessible in the header, line item, and trailer frames. Figure 12.3 illustrates the tax pop-up in the Sales Order Maintenance (7.1.1) header. Most values specified in the header can be modified for each line.

The screenshot shows a window titled "Sales Order Maintenance" with a menu bar (User Menu, Edit, Queue, Options, Help). The main area displays order information: Order: S014404, Sold-To: 010101, Bill-To: 010101, Ship-To: 010101. Below this, there are sections for "Sold-To" and "Ship-To" addresses, both for Morris Electrical Supply at 2343 Manchester Boulevard, Los Angeles, CA 90045, United States of America. A central "Tax" section contains fields for Tax Usage (dropdown), Tax Environment (USA-CA001), Tax Class (RSE), Taxable (yes), and Tax Inc. (no). To the right of these fields are checkboxes for "yes" and "no" next to dates and other settings. At the bottom, there are fields for Order Date (11/24), Required Date (11/25), Promise Date (11/25), Due Date (11/25), Pricing Date (11/24), Purchase Order, Remarks, Entered By (mmb), USD Language (yes RSE), Fixed Price (yes), Credit Terms (0.00), and Reprice (no).

Fig. 12.3
Sales Order
Maintenance
(7.1.1), Header
Frame

Tax Date. The transaction tax date is used to select tax rates. At order entry, the default tax date is the order due date. At shipment and receipt, the default tax date is the transaction effective date. In some situations, you should specify another tax date. For example, when processing a return, you can enter the original order date. You cannot override the transaction tax date for individual line items and trailer charges. GTM does not use a tax rate if the transaction's tax date is outside the tax rate's effective date range.

Tax Usage. Tax usage is used to select tax rates. The customer or supplier tax usage, if any, is the default usage for the transaction. You can override the transaction tax usage for line items but not for trailer charges.

Tax Environment. The tax environment is used to select tax types for the transaction. The default transaction tax environment is the one for the ship-from/ship-to tax zones and tax class, if any. A line item can have a different tax environment if its ship-from tax zone is different from the one for the rest of the transaction.

Tax Class. Tax class is used to select the transaction tax environment and/or tax rates for items and trailer charges. The customer or

supplier tax class, if any, is the default tax class for the transaction. For inventory items, the default tax class is the item tax class. For memo items, the default tax class is the transaction tax class. For trailer charges, the tax class is the one for the (1) trailer tax detail, (2) trailer charge, or (3) transaction, depending on which one the system finds first.

Taxable. The taxable status determines how tax types apply to the transaction. If Taxable is No, the amount is nontaxable. However, if Taxable is Yes, the amount can also be nontaxable if you use tax types and zero-percent tax rates to report tax exemptions.

The customer or supplier taxable status determines the default status of the transaction. If the transaction taxable status is No, the entire order has this status. For inventory items, the default status is the item status. For memo items, the default status is the transaction taxable status. For trailer charges, the status is the one for the (1) trailer tax detail, (2) trailer charge, or (3) transaction, depending on which one the system finds first.

Tax In. Tax In (tax included) determines whether tax is already included in line item amounts. If it is, the system reverse-calculates the tax from the item amount and displays it along with the other tax amounts.

The customer or supplier Tax In status determines the default status of the transaction. You can override this status for line items but not trailer charges. For an amount to be tax included, Tax In must be Yes, and the Allow Tax Included setting for the tax rate must be Yes.

Viewing Tax Amounts

In the transaction trailer frame, review system-calculated tax amounts by setting View/Edit Tax Detail to Yes. The screen displays the total nontaxable and taxable line item and trailer charge amounts, the tax date, and tax amounts by category.

Fig. 12.4
Sales Order Maintenance (7.1.1), View/Edit Tax Detail Option

In the tax detail frame, scroll through the Line and Trailer fields to view the tax rate information for each tax type.

Note You cannot change tax amounts unless Update Tax Allowed for the tax rate is Yes.

Fig. 12.5
Sales Order Maintenance (7.1.1), Transaction Tax Detail Frame

Line. Tax amounts for line items and trailer charges are identified by line number. Use the Up/Down arrows to scroll through the amounts for each tax type.

0: Line items taxed by total.

1 through 99998: Line items taxed by line. The line number in the tax detail corresponds to the order line item number.

99999: Trailer charges.

Trailer. For trailer charges, enter the code of the trailer charge subject to the tax.

Tax By. Output only. Total indicates that the tax rate was applied to the order total for all items and trailer charges taxed at this rate. Line indicates that the tax rate was applied separately to each item and trailer charge.

Edited. Output only. This setting indicates whether the tax amount was ever changed from the system-calculated amount.

The system also displays the factors GTM used to calculate the tax: transaction tax date, tax rate, tax code, tax environment, tax type, item or trailer charge tax class, and tax usage.

Depending on how you set up the tax rate, you may be able to change some of the following values. To change values, Update Tax Allowed must be Yes.

Trnx Amt. This value is the total transaction amount, excluding tax.

Nontaxable Base. This is the nontaxable portion of the transaction amount.

Taxable Base. This is the taxable portion of the transaction amount.

Tax Amt. This is the tax amount for the tax type. For line 0, it is the transaction tax amount for the tax type. For lines 1-99999, it is the amount for the line item or trailer charge.

Recoverable Tax. This is the recoverable portion of purchase tax.

Non-Recover Tax. This is the non-recoverable portion of purchase tax.

Absorb/Retain. On sales and accounts receivable transactions, this is the sales tax that was absorbed and therefore not included in the transaction total. On purchasing and accounts payable transactions, it is the purchase tax that was retained for direct payment to the government.

Correcting Transaction Tax Amounts

Depending on how you set up GTM, you can selectively override system-calculated tax amounts. The default behavior is determined first by Update Tax Allowed in the Global Tax Management Control File (2.13.24) then by the same field in individual tax rate records (2.13.13.1).

In transactions, View/Edit Tax Detail always lets you review how the system calculated taxes. If Update Tax Allowed is Yes, you can also change the taxable base, tax, and recoverable tax amounts.

Use this feature to match amounts on manually issued documents. Typically, you edit tax amounts only when transaction tax amounts must exactly match an external document. You can also edit taxes when entering transactions for which you have not set up standard rates. However, the system does not maintain an audit trail of changes, so accounting regulations may prevent you from using this capability.

If you do edit tax amounts, one of the following messages displays when you exit transactions.

Recalculate Tax. Enter Yes to recalculate tax and taxable base amounts based on the current data you entered in the transaction. Do this if you ship or receive a different quantity than originally entered.

Copy Edited Tax Values. Enter Yes to copy previously edited tax amounts to this transaction or No to recalculate taxes based on current transaction information.

For example, when you enter a purchase order, you can manually edit the system-calculated tax amounts. When you process the receipt, copy the edited tax values from the order or recalculate taxes based on the current information. If you did not manually edit the taxes in the order, taxes are automatically recalculated at receipt.

If you enter Yes, the system copies tax amounts from the earlier transaction to the one you are currently working on. If you enter No, the system recalculates taxes. Taxes are copied exactly. The system does not adjust for quantity or price differences between the two transactions.

General Ledger Effects

During transaction processing, the tax point for the tax rate determines when and for which accounts MFG/PRO creates general ledger (GL) entries for tax amounts. The tax point defaults first from Accrue Tax at Receipt in the Global Tax Management Control File (2.13.24), then from the same setting in individual tax rate records (2.13.13.1).

When the tax point is goods receipt, MFG/PRO creates GL entries when you record the receiving transaction. When the tax point is invoice receipt, the system creates entries later—when you enter a confirmed voucher or confirm an existing voucher.

For each tax point, exact GL entries vary by cost system. Table 12.3 summarizes the elements that influence GL entries. The subsequent sections for standard costing and average costing illustrate tax accruals in more detail.

Table 12.3
Elements that
Influence GL
Entries for Each
Tax Point

Costing System at Site, Tax Amount	Taxable Amount	See...
Standard, Recoverable	Inventory Items	page 264
	Purchase Price Variances	page 265
	AP Usage Variances	page 266
	AP Rate Variances	page 267
	Memo Items	page 268
	Returned Items	page 268
Standard, Non-Recoverable	Inventory Items	page 270
	Purchase Price Variances	page 271
	AP Usage Variances	page 272
	AP Rate Variances	page 273
	Memo Items	page 274
Average, Recoverable	Returned Items	page 268
	Inventory Items	page 276
	AP Usage Variances	page 278
	AP Rate Variances	page 279
	Memo Items	page 280
Average, Non-Recoverable	Returned Items	page 280
	Inventory Items	page 282

Costing System at Site, Tax Amount	Taxable Amount	See...
	AP Usage Variances	page 284
	AP Rate Variances	page 285
	Memo Items	page 286
	Returned Items	page 286

Standard Cost

This section shows tax accruals for a simple purchase order and voucher, first for recoverable taxes, then for non-recoverable taxes.

▶ To review the entries for average cost, see “Average Cost” on page 275.

Recoverable Tax

Most European countries have a sales tax system that allows recovery of tax on purchases. A recoverable purchase tax amount is one that you are allowed to offset against sales tax payable. Such tax amounts are tracked separately in the GL. For Global Tax Management, they update the AP Tax account for the tax rate. For recoverable taxes, the tax point is normally invoice receipt. However, as a comparison, this section shows the entries for both tax points.

Inventory Items

Figure 12.6 shows the GL entries for purchases of inventory items. The tax point determines whether the update to AP Tax Recoverable occurs at goods receipt or invoice receipt. Inventory items are items you purchase to use in manufacturing or to sell to customers.

Fig. 12.6
GL Entries for
Inventory Item
(Standard Cost/
Recoverable Tax)

GL Entries for Inventory Item (Standard Cost, Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Inventory	Purchase Order Receipts	AP Tax Recoverable
	100.00 ①	① 100.00 ② 10.00	10.00 ②

Voucher Confirmation: Entries created for item cost (3) and tax (4)	Purchase Order Receipts	Accounts Payable
	100.00 ③ 10.00 ④	③ 100.00 ④ 10.00

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not for tax	Inventory	Purchase Order Receipts
	100.00 ①	① 100.00

Voucher Confirmation: Entries created for item cost (2) and tax (3)	Purchase Order Receipts	Accounts Payable	AP Tax Recoverable
	100.00 ②	② 100.00 ③ 10.00	10.00 ③

Variations

Three kinds of variations occur during the purchasing/accounts payable cycle: purchase price variance, AP usage variance, and AP rate variance.

Purchase Price Variance. Purchase price variance occurs when an inventory item’s PO cost does not match its GL cost. This variance does not occur for memo items, which have no standard cost.

Figure 12.7 shows the GL entries for purchase price variance. The tax point determines whether the update to AP Tax Recoverable occurs at goods receipt or invoice receipt.

**GL Entries for Purchase Price Variance
(Standard Cost, Recoverable Tax)**

Fig. 12.7
GL Entries for Purchase Price Variance (Standard Cost, Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1), variance (2), and tax on item cost + variance (3)	Inventory	Purchase Order Receipts	
	100.00	100.00	
	25.00	25.00	
	12.50	12.50	
	Purchase Price Variance	AP Tax Recoverable	
	25.00	12.50	

Voucher Confirmation: Entries created for item cost (4), variance (5), and tax (6)	Purchase Order Receipts	Accounts Payable	
	100.00	100.00	
	25.00	25.00	
	12.50	12.50	

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) and variance (2) but not for tax	Inventory	Purchase Order Receipts	Purchase Price Variance	
	100.00	100.00	25.00	
		25.00	25.00	

Voucher Confirmation: Entries created for item cost (3), variance (4), and tax on item cost + variance (5)	Purchase Order Receipts	Accounts Payable	AP Tax Recoverable	
	100.00	100.00	12.50	
	25.00	25.00	12.50	

AP Rate and Usage Variance. AP rate variance occurs when an item’s invoice cost does not match its PO cost. AP usage variance occurs when an item’s invoice quantity does not match its PO quantity and you close the receiver line in the voucher.

Figure 12.8 and Figure 12.9 show GL entries for inventory items. Entries for memo items update Expensed Item Receipts instead of Purchase Order Receipts, and Expensed Purchases instead of Inventory. In addition, for memo items, an option in the Accounts Payable Control File (28.24) allows variances to update Expensed Item Receipts instead of the variance accounts.

Fig. 12.8
GL Entries for AP Usage Variance (Standard Cost, Recoverable Tax)

GL Entries for AP Usage Variance
(Standard Cost, Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Inventory	Purchase Order Receipts	AP Tax Recoverable
	100.00 ①	① 100.00 ② 10.00	10.00 ②
Voucher Confirmation: Entries created for item cost (3), variance (4), tax on item cost (5), and tax on variance (6)	Purchase Order Receipts	Accounts Payable	
	100.00 ③ 10.00 ⑤	③ 100.00 ④ 40.00 ⑤ 10.00 ⑥ 4.00	
	AP Usage Variance	AP Tax Recoverable	
	40.00 ④	4.00 ⑥	

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not tax	Inventory	Purchase Order Receipts	
	100.00 ①	① 100.00	
Voucher Confirmation: Entries created for item cost (2), variance (3), tax on item cost (4), and tax on variance (5)	Purchase Order Receipts	Accounts Payable	
	100.00 ②	② 100.00 ③ 40.00 ④ 10.00 ⑤ 4.00	
	AP Usage Variance	AP Tax Recoverable	
	40.00 ③	10.00 ④ 4.00 ⑤	

GL Entries for AP Rate Variance
(Standard Cost, Recoverable Tax)

Fig. 12.9
GL Entries for AP
Rate Variance
(Standard Cost,
Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Inventory	Purchase Order Receipts	AP Tax Recoverable
	100.00 ①	① 100.00 ② 10.00	10.00 ②

Voucher Confirmation: Entries created for item cost (3), variance (4), tax on item cost (5), and tax on variance (6)	Purchase Order Receipts	Accounts Payable
	100.00 ③ 10.00 ④	③ 100.00 ④ 30.00 ⑤ 10.00 ⑥ 3.00

AP Rate Variance	AP Tax Recoverable
30.00 ⑤	3.00 ⑥

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not tax	Inventory	Purchase Order Receipts
	100.00 ①	① 100.00

Voucher Confirmation: Entries created for item cost (2), variance (3), tax on item cost (4), and tax on variance (5)	Purchase Order Receipts	Accounts Payable
	100.00 ②	② 100.00 ③ 30.00 ④ 10.00 ⑤ 3.00

AP Rate Variance	AP Tax Recoverable
30.00 ③	10.00 ④ 3.00 ⑤

Memo Items

Memo items are non-inventory items such as office supplies. By definition, such items have no standard cost. Figure 12.10 shows GL entries for memo items. The tax point determines whether the update to AP Tax Recoverable occurs at goods receipt or invoice receipt.

Fig. 12.10
GL Entries for
Memo Item
(Standard Cost,
Recoverable Tax)

GL Entries for Memo Item (Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Expensed Purchases	Expensed Item Receipts	AP Tax Recoverable
	100.00 ①	① 100.00 ② 10.00	10.00 ②

Voucher Confirmation: Entries created for item cost (3) and tax (4)	Expensed Item Receipts	Accounts Payable
	100.00 ③ 10.00 ④	③ 100.00 ④ 10.00

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not for tax	Expensed Purchases	Expensed Item Receipts
	100.00 ①	① 100.00

Voucher Confirmation: Entries created for item cost (2) and tax (3)	Expensed Item Receipts	Accounts Payable	AP Tax Recoverable
	100.00 ②	② 100.00 ③ 10.00	10.00 ③

Returned Items

When you return items, MFG/PRO clears the item cost and the tax from the accounts updated by the original receipt and the voucher, if you processed the return after paying the supplier invoice.

Non-Recoverable Tax

You cannot offset a non-recoverable purchase tax amount against sales tax payable. Usually, such taxes are already included in the item cost. Purchasing transactions back-calculate the tax from the item amount, assuming you set up the supplier and tax rate records to support this. The following section illustrates the GL entries if taxes were not included.

Inventory Items

Figure 12.11 shows the GL entries for purchases of inventory items. The tax point determines whether the update to AP Tax Recoverable occurs at goods receipt or invoice receipt. Inventory items are items you purchase to use in manufacturing or to sell to customers.

Fig. 12.11
GL Entries for
Inventory Item
(Standard Cost,
Non-Recoverable
Tax)

GL Entries for Inventory Item (Standard Cost, Non-Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Inventory		Purchase Order Receipts	Purchase Price Variance
	100.00	①	① 100.00	10.00 ②
			② 10.00	

Voucher Confirmation: Entries created for item cost (3) and tax (4)		Purchase Order Receipts	Accounts Payable
	100.00	③	③ 100.00
	10.00	④	④ 10.00

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not for tax	Inventory		Purchase Order Receipts
	100.00	①	① 100.00

Voucher Confirmation: Entries created for item cost (2) and tax (3)	Purchase Order Receipts	Accounts Payable	Inventory
	100.00	② 100.00	10.00 ③
		③ 10.00	

Variations

Three kinds of variations occur during the purchasing/accounts payable cycle: purchase price variance, AP usage variance, and AP rate variance.

Purchase Price Variances. Purchase price variance occurs when an inventory item’s PO cost does not match its GL cost. This variance does not occur for memo items, which have no standard cost. Figure 12.12 shows the GL entries for purchase price variance. The tax point determines whether the update to AP Tax Recoverable occurs at goods receipt or invoice receipt.

GL Entries for Purchase Price Variance
(Standard Cost, Non-Recoverable Tax)

Fig. 12.12
GL Entries for Purchase Price Variance (Standard Cost, Non-Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1), variance (2), and tax on item cost + variance (3)	Inventory		Purchase Order Receipts	Purchase Price Variance
	100.00	①	① 100.00	25.00 ②
			② 25.00	12.50 ③
			③ 12.50	
Voucher Confirmation: Entries created for item cost (4), variance (5), and tax (6)		Purchase Order Receipts	Accounts Payable	
	100.00	④	④ 100.00	
	25.00	⑤	⑤ 25.00	
	12.50	⑥	⑥ 12.50	

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) and variance (2) but not for tax	Inventory		Purchase Order Receipts	Purchase Price Variance
	100.00	①	① 100.00	25.00 ②
			② 25.00	
Voucher Confirmation: Entries created for item cost (3), variance (4), and tax on item cost + variance (5)		Purchase Order Receipts	Accounts Payable	AP Tax Recoverable
	100.00	③	③ 100.00	12.50 ⑤
	25.00	④	④ 25.00	
			⑤ 12.50	

AP Rate and Usage Variances. AP rate variance occurs when an item’s invoice cost does not match its PO cost. AP usage variance occurs when an item’s invoice quantity does not match its PO quantity and you close the receiver line in the voucher.

Figure 12.13 and Figure 12.14 show GL entries for inventory items. Entries for memo items update Expensed Item Receipts instead of Purchase Order Receipts, and Expensed Purchases instead of Inventory. In addition, for memo items, an option in the Accounts Payable Control File (28.24) allows variances to update Expensed Item Receipts instead of the variance accounts.

Fig. 12.13
GL Entries for AP Usage Variance (Standard Cost, Non-Recoverable Tax)

GL Entries for AP Usage Variance
(Standard Cost, Non-Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Inventory	Purchase Order Receipts	Purchase Price Variance
	100.00 ①	① 100.00 ② 10.00	10.00 ②
Voucher Confirmation: Entries created for item cost (3), variance (4), tax on item cost (5), and tax on variance (6)	Purchase Order Receipts	Accounts Payable	AP Usage Variance
	100.00 ③	③ 100.00 ④ 40.00 ⑤ 10.00	40.00 ④ 4.00 ⑥
	10.00 ⑤	⑥ 4.00	

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not tax	Inventory	Purchase Order Receipts
	100.00 ①	① 100.00
Voucher Confirmation: Entries created for item cost (2), variance (3), tax on item cost (4), and tax on variance (5)	Purchase Order Receipts	Accounts Payable
	100.00 ②	② 100.00 ③ 40.00 ④ 10.00 ⑤ 4.00
	AP Usage Variance	Inventory
	40.00 ③ 4.00 ⑤	10.00 ④

GL Entries for AP Rate Variance
(Standard Cost, Non-Recoverable Tax)

Fig. 12.14
GL Entries for AP Rate Variance (Standard Cost, Non-Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Inventory	Purchase Order Receipts	Purchase Order Receipts	Purchase Price Variance
	100.00 ①	① 100.00 ② 10.00	100.00 10.00	10.00 ②
Voucher Confirmation: Entries created for item cost (3), variance (4), tax on item cost (5), and tax on variance (6)	Purchase Order Receipts	Accounts Payable	AP Rate Variance	
	100.00 ③	③ 100.00	30.00 ④	
	10.00 ⑤	④ 30.00 ⑤ 10.00	3.00 ⑥	
		⑥ 3.00		

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not tax	Inventory	Purchase Order Receipts
	100.00 ①	① 100.00
Voucher Confirmation: Entries created for item cost (2), variance (3), tax on item cost (4), and tax on item cost + variance (5)	Purchase Order Receipts	Accounts Payable
	100.00 ②	② 100.00 ③ 30.00 ④ 10.00 ⑤ 3.00
AP Rate Variance	Inventory	
30.00 ③ 3.00 ⑤	10.00 ④	

Memo Items

Memo items are non-inventory items such as office supplies. By definition, such items have no standard cost. Figure 12.15 shows GL entries for memo items. The tax point determines whether the update to AP Tax Recoverable occurs at goods receipt or invoice receipt.

Fig. 12.15
GL Entries for
Memo Item
(Standard Cost,
Non-Recoverable
Tax)

GL Entries for Memo Item (Non-Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt:
Entries created for received
item cost (1) and tax (2)

Expensed Purchases		Expensed Item Receipts	
100.00	①	①	100.00
10.00	②	②	10.00

Voucher Confirmation:
Entries created for item
cost (3) and tax (4)

Expensed Item Receipts		Accounts Payable	
100.00	③	③	100.00
10.00	④	④	10.00

Tax Accrual at Invoice Receipt

Goods Receipt:
Entries created for received
item cost (1) but not for tax

Expensed Purchases		Expensed Item Receipts	
100.00	①	①	100.00

Voucher Confirmation:
Entries created for item
cost (2) and tax (3)

Expensed Item Receipts		Accounts Payable		Expensed Purchases	
100.00	②	②	100.00	10.00	③
		③	10.00		

Returned Items

When you return items, MFG/PRO clears the item cost and the tax from the accounts updated by the original receipt and the voucher, if you processed the return after paying the supplier invoice.

Average Cost

This section shows tax accruals for a simple purchase order and voucher, first for recoverable taxes, then for non-recoverable taxes.

For average costing, the system re-averages item costs at both receipt and voucher confirmation. If the tax point is goods receipt, the cost basis for re-averaging calculations includes tax at both receipt and voucher confirmation. However, if the tax point is invoice receipt, the cost basis includes tax only at voucher confirmation.

▶ To review the entries for standard cost, see “Standard Cost” on page 263.

Recoverable Tax

Most European countries have a sales tax system that allows recovery of tax on purchases. A recoverable purchase tax amount is one that you are allowed to offset against sales tax payable. Such tax amounts are tracked separately in the GL. For Global Tax Management, they update the AP Tax account for the tax rate. For recoverable taxes, the tax point is normally invoice receipt. However, as a comparison, the following examples show the entries for both tax points.

Inventory Items

Figure 12.16 shows the GL entries for purchases of inventory items. The tax point determines whether the update to AP Tax Recoverable occurs at goods receipt or invoice receipt. Inventory items are items you purchase to use in manufacturing or to sell to customers.

Fig. 12.16
GL Entries for
Inventory Item
(Average Cost,
Recoverable Tax)

GL Entries for Inventory Item (Average Cost, Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Inventory	Purchase Order Receipts	AP Tax Recoverable
	100.00 ①	① 100.00 ② 10.00	10.00 ②

Voucher Confirmation: Entries created for item cost (3) and tax (4)	Purchase Order Receipts	Accounts Payable
	100.00 ③ 10.00 ④	③ 100.00 ④ 10.00

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not for tax	Inventory	Purchase Order Receipts
	100.00 ①	① 100.00

Voucher Confirmation: Entries created for item cost (2) and tax (3)	Purchase Order Receipts	Accounts Payable	AP Tax Recoverable
	100.00 ②	② 100.00 ③ 10.00	10.00 ③

Variations

Two kinds of variations occur during the purchasing/accounts payable cycle: AP usage variance and AP rate variance.

AP Rate and Usage Variations. AP rate variance occurs when an item's invoice cost does not match its PO cost. AP usage variance occurs when an item's invoice quantity does not match its PO quantity and you close the receiver line in the voucher.

Figure 12.17 and Figure 12.18 show GL entries for inventory items. Entries for memo items update Expensed Item Receipts instead of Purchase Order Receipts, and Expensed Purchases instead of Inventory. In addition, for memo items, an option in the Accounts Payable Control File (28.24) allows variations to update Expensed Item Receipts instead of the variance accounts.

Fig. 12.17
 GL Entries for AP Usage Variance (Average Cost, Recoverable Tax)

GL Entries for AP Usage Variance (Average Cost, Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Inventory	Purchase Order Receipts	Purchase Order Receipts	AP Tax Recoverable
	100.00 ①	① 100.00	② 10.00	10.00 ②
Voucher Confirmation: Entries created for item cost (3), variance (4), tax on item cost (5), and tax on variance (6)		Purchase Order Receipts		Accounts Payable
	100.00 ③		③ 100.00	
	10.00 ⑤		④ 40.00	
			⑤ 10.00	
			⑥ 4.00	
		AP Usage Variance		AP Tax Recoverable
	40.00 ④		4.00 ⑥	

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not tax	Inventory	Purchase Order Receipts		
	100.00 ①	① 100.00		
Voucher Confirmation: Entries created for item cost (2), variance (3), tax on item cost (4), and tax on variance (5)		Purchase Order Receipts		Accounts Payable
	100.00 ②		② 100.00	
			③ 40.00	
			④ 10.00	
			⑤ 4.00	
		AP Usage Variance		AP Tax Recoverable
	40.00 ③		10.00 ④	
			4.00 ⑤	

GL Entries for AP Rate Variance
(Average Cost, Recoverable Tax)

Fig. 12.18
GL Entries for AP
Rate Variance
(Average Cost,
Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	<u>Inventory</u>	<u>Purchase Order Receipts</u>	<u>AP Tax Recoverable</u>
	100.00 ①	① 100.00 ② 10.00	10.00 ②

Voucher Confirmation: Entries created for item cost (3), variance (4), tax on item cost (5), and tax on variance (6)	<u>Purchase Order Receipts</u>	<u>Accounts Payable</u>
	100.00 ③ 10.00 ④	③ 100.00 ④ 30.00 ⑤ 10.00 ⑥ 3.00

<u>AP Rate Variance</u>	<u>AP Tax Recoverable</u>
30.00 ⑤	3.00 ⑥

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not tax	<u>Inventory</u>	<u>Purchase Order Receipts</u>
	100.00 ①	① 100.00

Voucher Confirmation: Entries created for item cost (2), variance (3), tax on item cost (4), and tax on variance (5)	<u>Purchase Order Receipts</u>	<u>Accounts Payable</u>
	100.00 ②	② 100.00 ③ 30.00 ④ 10.00 ⑤ 3.00

<u>AP Rate Variance</u>	<u>AP Tax Recoverable</u>
30.00 ③	10.00 ④ 3.00 ⑤

Memo Items

Memo items are non-inventory items such as office supplies. Figure 12.19 shows GL entries for memo items. The tax point determines whether the update to AP Tax Recoverable occurs at goods receipt or invoice receipt.

Fig. 12.19
GL Entries for
Memo Item
(Average Cost,
Recoverable Tax)

GL Entries for Memo Item (Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Expensed Purchases	Expensed Item Receipts	AP Tax Recoverable
	100.00 ①	① 100.00 ② 10.00	10.00 ②
Voucher Confirmation: Entries created for item cost (3) and tax (4)	Expensed Item Receipts	Accounts Payable	
	100.00 ③ 10.00 ④	③ 100.00 ④ 10.00	

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not for tax	Expensed Purchases	Expensed Item Receipts	
	100.00 ①	① 100.00	
Voucher Confirmation: Entries created for item cost (2) and tax (3)	Expensed Item Receipts	Accounts Payable	AP Tax Recoverable
	100.00 ②	② 100.00 ③ 10.00	10.00 ③

Returned Items

When you return items, MFG/PRO clears the item cost and the tax from the accounts updated by the original receipt and the voucher, if you processed the return after paying the supplier invoice.

Non-Recoverable Tax

You cannot offset a non-recoverable purchase tax amount against sales tax payable. Usually, such taxes are already included in the item cost. Purchasing transactions then back-calculate the tax from the item amount, assuming you set up the supplier and tax rate records to support this. The following section illustrates the GL entries if taxes were not included.

Inventory Items

Figure 12.20 shows the GL entries for purchases of inventory items. The tax point determines whether the update to AP Tax Recoverable occurs at goods receipt or invoice receipt. Inventory items are items you purchase to use in manufacturing or to sell to customers.

Fig. 12.20
GL Entries for
Inventory Item
(Average Cost,
Non-Recoverable
Tax)

GL Entries for Inventory Item (Average Cost, Non-Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Inventory		Purchase Order Receipts		Inventory
	100.00	①	① 100.00	②	10.00 ②

Voucher Confirmation: Entries created for item cost (3) and tax (4)		Purchase Order Receipts		Accounts Payable	
	100.00	③	③ 100.00	④	10.00

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not for tax	Inventory		Purchase Order Receipts	
	100.00	①	① 100.00	

Voucher Confirmation: Entries created for item cost (2) and tax (3)		Purchase Order Receipts		Accounts Payable		Inventory
	100.00	②	② 100.00	③	10.00	10.00 ③

Variations

Two kinds of variations occur during the purchasing/accounts payable cycle: AP usage variance and AP rate variance.

AP Rate and Usage Variations. AP rate variance occurs when an item's invoice cost does not match its PO cost. AP usage variance occurs when an item's invoice quantity does not match its PO quantity and you close the receiver line in the voucher.

Figure 12.21 and Figure 12.22 show GL entries for inventory items. Entries for memo items update Expensed Item Receipts instead of Purchase Order Receipts, and Expensed Purchases instead of Inventory. In addition, for memo items, an option in the Accounts Payable Control File (28.24) allows variations to update Expensed Item Receipts instead of the variance accounts.

Fig. 12.21
 GL Entries for AP Usage Variance
 (Average Cost, Non-Recoverable Tax)

GL Entries for AP Usage Variance
 (Average Cost, Non-Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	<u>Inventory</u>		<u>Purchase Order Receipts</u>	
	100.00	①	①	100.00
	10.00	②	②	10.00
Voucher Confirmation: Entries created for item cost (3), variance (4), tax on item cost (5), and tax on variance (6)		<u>Purchase Order Receipts</u>	<u>Accounts Payable</u>	<u>AP Usage Variance</u>
	100.00	③	③	100.00
	10.00	⑤	④	40.00
			⑤	10.00
			⑥	4.00
				⑥

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not tax	<u>Inventory</u>		<u>Purchase Order Receipts</u>	
	100.00	①	①	100.00
Voucher Confirmation: Entries created for item cost (2), variance (3), tax on item cost (4), and tax on variance (5)		<u>Purchase Order Receipts</u>	<u>Accounts Payable</u>	
	100.00	②	②	100.00
			③	40.00
			④	10.00
			⑤	4.00
	<u>AP Usage Variance</u>		<u>Inventory</u>	
40.00	③	10.00	④	
4.00	⑤			

GL Entries for AP Rate Variance
(Average Cost, Non-Recoverable Tax)

Fig. 12.22
GL Entries for AP Rate Variance (Average Cost, Non-Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Inventory	Purchase Order Receipts		
	100.00	100.00	10.00	
	10.00	10.00		
	①	①		
	②	②		

Voucher Confirmation: Entries created for item cost (3), variance (4), tax on item cost (5), and tax on variance (6)	Purchase Order Receipts	Accounts Payable	AP Rate Variance		
	100.00	100.00	30.00		
	10.00	30.00	3.00		
		③	④	⑤	
		④	⑤	⑥	
		⑤	⑥		

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not tax	Inventory	Purchase Order Receipts		
	100.00	100.00		
		①	①	

Voucher Confirmation: Entries created for item cost (2), variance (3), tax on item cost (4), and tax on item cost + variance (5)	Purchase Order Receipts	Accounts Payable			
	100.00	100.00	30.00		
		②	③	④	
			④	⑤	
			⑤	⑤	

AP Rate Variance	Inventory		
30.00	10.00	③	④
3.00		⑤	

Memo Items

Memo items are non-inventory items such as office supplies. Figure 12.23 shows GL entries for memo items. The tax point determines whether the update to AP Tax Recoverable occurs at goods receipt or invoice receipt.

Fig. 12.23
GL Entries for
Memo Item
(Average Cost,
Non-Recoverable
Tax)

GL Entries for Memo Item (Non-Recoverable Tax)

Tax Accrual at Goods Receipt

Goods Receipt: Entries created for received item cost (1) and tax (2)	Expensed Purchases	Expensed Item Receipts
	100.00 ①	① 100.00
	10.00 ②	② 10.00

Voucher Confirmation: Entries created for item cost (3) and tax (4)	Expensed Item Receipts	Accounts Payable
	100.00 ③	③ 100.00
	10.00 ④	④ 10.00

Tax Accrual at Invoice Receipt

Goods Receipt: Entries created for received item cost (1) but not for tax	Expensed Purchases	Expensed Item Receipts
	100.00 ①	① 100.00

Voucher Confirmation: Entries created for item cost (2) and tax (3)	Expensed Item Receipts	Accounts Payable	Expensed Purchases
	100.00 ②	② 100.00	10.00 ③
		③ 10.00	

Returned Items

When you return items, MFG/PRO clears the item cost and the tax from the accounts updated by the original receipt and the voucher, if you processed the return after paying the supplier invoice.

Reporting

Printing Tax Information on Documents

To print tax detail information on documents such as sales orders, two fields must be Yes.

- Print Tax Detail on Reports in the Global Tax Management Control File (2.13.24)
- Print Trailer in the document print program

Note GTM does not store calculated tax amounts. It recalculates amounts whenever tax rates change. This practice ensures that tax rates used are the most current. However, it can result unusual situations, such as when duplicate invoices are printed with different tax amounts.

Tax Reports

Tax reports are located in the Tax History Menu (2.13.15).

- Tax Detail by Transaction Inquiry (2.13.15.2)
- Tax Detail by Transaction Report (2.13.15.3)
- EC Sales Listing (2.13.15.8)
- VAT Registration Number Report (2.13.15.9)
- AR Tax by Transaction Report (2.13.15.13)
- AR Tax by Tax Rate Report (2.13.15.14)
- AP Tax by Transaction Report (2.13.15.16)
- AP Tax by Tax Rate Report (2.13.15.17)

Note These reports do not necessarily satisfy local tax laws. You often must write custom reports.

Fixing Common Tax Problems

Table 12.4 describes common tax processing problems and possible causes.

Table 12.4
Common Tax
Processing
Problems

Problem	Possible Cause
Warning: No tax environment found, using default.	<p>GTM could not find a tax environment for the ship-from/ship-to tax zone combination, so it inserted the error code from the Global Tax Management Control File (2.13.24).</p> <p>GTM can also select the wrong environment if the tax zone was wrong in the address records for your company, the customer, or the supplier.</p>
Error: Tax rate does not exist.	<p>a) No tax rate exists for the tax type, item or trailer charge tax class, item or transaction tax usage, and/or transaction tax date.</p> <p>b) If the system finds a tax class or tax usage specific rate for an item or trailer charge, it expects to find one for all applicable tax types.</p>
<p>The transaction has the right tax environment but the wrong tax type.</p> <p>Tax was calculated incorrectly.</p>	<p>The tax environment has the wrong tax type.</p> <p>Field settings in your transaction must be consistent with corresponding settings for the tax rate. For example, for tax to be reverse-calculated, Tax In must be Yes in both the transaction line item frame and the tax rate record.</p> <p>Occasionally, the system calculates tax correctly but they do not match the value on a printed document.</p>

GTM Conversions

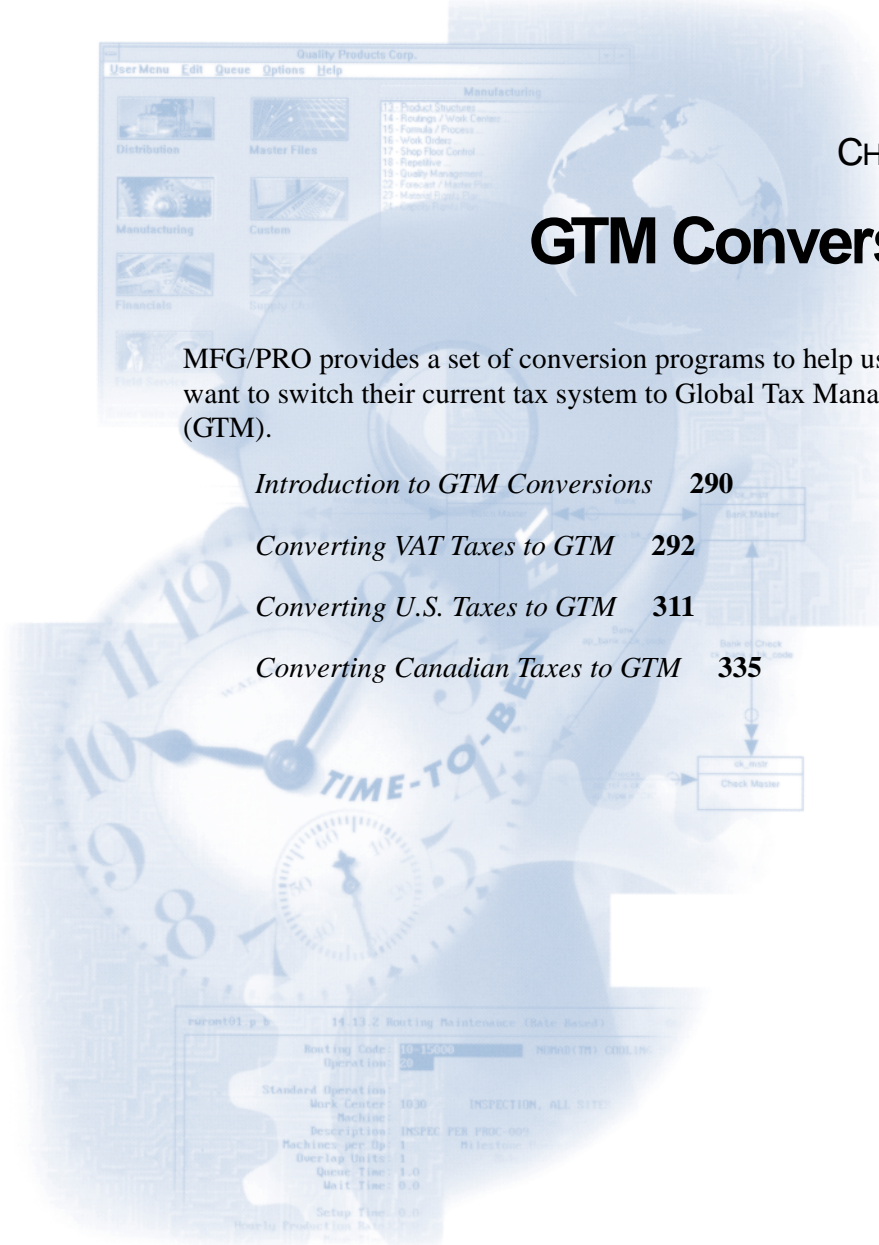
MFG/PRO provides a set of conversion programs to help users who want to switch their current tax system to Global Tax Management (GTM).

Introduction to GTM Conversions **290**

Converting VAT Taxes to GTM **292**

Converting U.S. Taxes to GTM **311**

Converting Canadian Taxes to GTM **335**



Routing Maintenance (Date Based)	
Routing Code:	10-15000
Operation:	20
Standard Operation	
Work Center:	1030
Machine:	INSPECTION, ALL SITE
Description:	INSPEC PER PROC-000
Machines per Op:	1
Overlap Units:	1
Queue Time:	1.0
Wait Time:	0.0
Setup Time:	0.0
Ready Production:	0.0

Introduction to GTM Conversions

MFG/PRO has four tax processing systems.

- Value-added tax (VAT)
- United States taxes
- Canadian taxes
- Global Tax Management (GTM)

Of the four systems, GTM offers the most precise tax calculations and the greatest flexibility for calculating taxes for multiple countries. For these reasons, many companies want to convert from the system they currently use in MFG/PRO to GTM.

GTM automates many of the conversion tasks (Table 13.1). These programs generate GTM codes and update existing MFG/PRO records. They also create records required for tax reporting.

Table 13.1
GTM Conversion
Programs

Menu Number	Program
2.13.22.1	VAT to GTM–Setup
2.13.22.2	VAT to GTM–Masters
2.13.22.3	VAT to GTM–Transactions
2.13.22.5	USA to GTM–Setup
2.13.22.6	USA to GTM–Masters
2.13.22.7	USA to GTM–Transactions
2.13.22.9	CAN to GTM–Setup
2.13.22.10	CAN to GTM–Masters
2.13.22.11	CAN to GTM–Transactions

MFG/PRO Prerequisites

GTM conversions operate within the same MFG/PRO release. They do not convert data between releases.

Before you run the GTM conversion, verify that the correct version of MFG/PRO is implemented. You need Version 8.6C or later. If you have an earlier version of MFG/PRO, you must upgrade before you can use the GTM conversion programs.

Pre-conversion Planning

To save time and reduce the likelihood of errors, address the following issues before you start the GTM conversion process.

Timing. Perform the conversion at any point in the transaction processing cycle. You do not have to close open transactions or post transactions to the general ledger beforehand. However, for a clearer division of reporting, consider converting at the beginning of a new financial period.

To prevent record-contention conflicts, run the conversion programs only when no other users are on the system. It is dangerous to switch tax systems when other users are creating new transactions or modifying system records.

It is not necessary to switch your tax system to GTM before beginning the conversion. You can still use your current system during the basic GTM setup. However, you must switch over to GTM before you convert master files and transactions.

Records to Convert. Determine the range of records to convert. Master records such as customers and items are converted first, followed by transaction records. Records must be converted in the order in which their selection options display on the conversion screen. Finally, transactions that are prerequisites for other transactions must be converted first. For example, purchase order receipts must be converted before their respective vouchers.

The conversion programs select records by number, not creation date or effective date. To convert records for a specific date range, specify the first record number for the starting date and/or the last record number for the ending date.

The conversion programs do not perform cross-checks on your selection of records to convert. For example, for accounts payable, they do not verify that selected payment records are the ones associated with the selected voucher records.

Code Naming Conventions. Each conversion has default naming conventions for GTM tax classes, tax zones, and tax environments. Review these and decide if they are what you want.

Integration of GTM Enhancements. The objective of the conversion is to move your existing tax processing configuration into GTM. You

Tip

Practice running the conversion on a copy of your live database. You can identify problems in existing records, as well as familiarize yourself with the conversion process.

must complete the conversion before you can incorporate new GTM features. There are two reasons for this. First, your current configuration does not have the data to support these features. Second, some of the conversion subprograms expect to encounter specific data values. They will not run correctly if you change these values prematurely.

Custom Programming. For some situations, custom programming is required. An example of such a situation is the need to merge two VAT class codes to one GTM tax class code without using GTM tax usage codes.

Post-conversion Procedures

Once you complete the conversion, you still have to exercise some controls to ensure a clean division for pre- and post-GTM reporting.

Handling of Closed Transactions. Closed transactions that were not included in the conversion should never be reversed or deleted once you start using GTM.

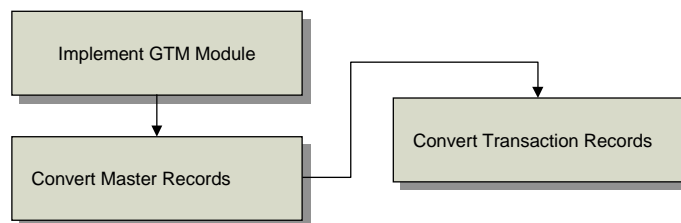
Effective Date for Tax Reports. Tax reports should be printed with a post-conversion tax date, to exclude transactions you did not bring into GTM.

Converting VAT Taxes to GTM

This section describes how to convert to GTM from MFG/PRO's VAT system.

Note The information in this chapter applies only to Versions 8.6C and higher of MFG/PRO. Earlier versions of MFG/PRO do not have these VAT conversion programs.

Fig. 13.1
VAT to GTM
Conversion Process



The VAT to GTM conversion translates VAT data to GTM equivalents and updates existing MFG/PRO records. Figure 13.1 summarizes the conversion work flow, which revolves around three sets of activities.

Implementing GTM. To implement GTM for VAT, you make some planning decisions and then run a setup program. How this program works can depend on whether a country is a member of the European Community.

▶ See “Setting Up GTM” on page 294.

Converting Master Records. Run a program that populates database files for customer and supplier addresses, items, product lines, and other master records with GTM data values.

▶ See “Converting Master Records” on page 300.

Converting Transaction Records. Run a second program that populates transaction records. All transactions subject to tax are affected, including sales, purchasing, accounts payable, accounts receivable, and service/support management.

▶ See “Converting Transaction Records” on page 304.

Important After each of these activities, review the corresponding reports and audit trails. Mistakes can be pervasive and costly.

Table 13.2 lists the MFG/PRO programs used during the conversion.

Activity	MFG/PRO Programs
Implementing GTM	Country Code Maintenance (2.13.3.1) VAT to GTM–Setup (2.13.22.1)
Converting master records	VAT to GTM–Masters (2.13.22.2)
Converting transaction records	VAT to GTM–Transactions (2.13.22.3)

Table 13.2
MFG/PRO Programs Used to Convert VAT to GTM

Setting Up GTM

An automated setup program can create most of the codes you need to implement GTM, based on how your VAT taxes are defined. Before executing this program, you should understand the options it provides and the default logic it uses.

Country Codes and Tax Environments

The first step in implementing VAT taxes in GTM is to ensure that all countries are defined in Country Code Maintenance (2.13.3.1). Countries that are part of the European Community must have the EC flag set to Yes. This is important because two options are available during the automated setup.

- 1 You can create tax zones and tax environments with countries summing into one of two predefined tax zones: a union and non-union zone. To do this, you must specify a code representing the union. By default, this is EU. The system then creates two tax zones—EU and NON-EU. These zones correspond to special country code values of ~1 (EU) and ~0 (NON-EU).

This approach results in a minimum number of tax environments:

- One environment for each country defined in the country master.
 - IN-EU for transactions within the union but outside the borders of one country.
 - FROM-EU for transactions between a member of the union and a nonmember.
 - TO-EU for transactions from a nonmember to a member of the union.
 - NON-EU for transactions between two countries that are both nonmembers of the union.
- 2 You can create tax zones and environments based on each defined country without summing into a union. This option results in the maximum number of tax environments—one for each combination of ship-from and ship-to countries. If, for example, you do business with 10 countries, 100 tax environments are created.

If you choose this option, you do not need to specify a union code, and the setup program does not create the EU and NON-EU zones or the ~1 and ~0 countries.

Defining Custom Tax Class and Usage Codes

By default, the conversion setup generates tax classes that directly correspond to your VAT classes, without associated GTM tax usage codes. You can override this by creating your own map for the setup program and specifying it in the Class File field. The same class file is also referenced in the programs that convert master files and transaction records.

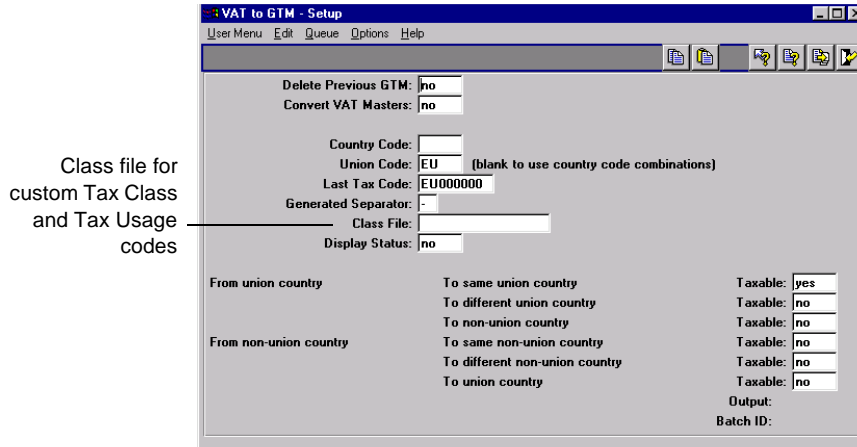


Fig. 13.2
Class File in VAT to
GTM-Setup
(2.13.22.1)

You should create a class file if:

- Your company plans to change its tax class codes during the GTM conversion.
- Within a tax class, a company can be taxed based on its nature of operation or the way it intends to use an item. In GTM, these conditions are identified by tax usage codes.

The class file is an ASCII file with text strings in the following format.

```
"Current VAT Class" "GTM Tax Class" "GTM AP Tax Usage"
"GTM AR Tax Usage"
```

GTM tax classes are a maximum of three characters, and tax usage codes are eight characters. An unused optional value is represented by a null string (either “ ” or “”).

Tip

A .csv file is a Windows comma-separated value file format for saving values recorded in a spreadsheet.

The class file can have any name or extension. However, code values in .csv files must be separated by commas instead of blank characters. The file must be located in the home directory for the PROGRESS session.

The class file accommodates companies that use different tax class and/or tax usage codes for AP and AR processing. If you use one set of codes for both kinds tax processing, simply specify the same usage code for both.

Example Your current VAT classes are 1 and 2. You want to map VAT class 1 to GTM tax class A, tax usage code FOOD, and VAT class 2 to GTM tax class B, tax usage DRUG.

```
"1" "A" "FOOD" "FOOD"
"2" "B" "DRUG" "DRUG"
```

AP and AR usage codes are applied differently during the conversion to master records and transactions.

Table 13.3
AP and AR Usage Codes

Usage Code	Applied to...
AP Usage Codes	The master conversion applies AP usage codes to supplier records. The transaction conversion uses them to update purchasing and accounts payable records.
AR Usage Codes	The master conversion applies AR usage codes to customers, warranty types, and contract types. The transaction conversion uses them to update sales, accounts receivable, and service/support management transactions.

Processing Logic

VAT to GTM–Setup creates MFG/PRO records as described in Table 13.4.

Type of Record	Explanation
Tax zones	Based on the value of Union Code, setup builds the tax zone hierarchy for EU and non-EU countries in your current system or tax zones for all countries.
Tax types	Setup creates a tax type of VAT and NON-TAX.
Tax environments	Based on the value of Union Code, setup either generates sums-into tax environments or environments for all ship-to/ship-from country combinations.
Tax rates	Based on VAT rates, setup generates tax rates for the tax jurisdictions and percentages used in your current system, as well as a nontaxable tax rate.
Tax classes	By default, setup generates tax classes based on your current VAT classes and a NOT-TAX class for nontaxable transactions. To create different classes, define a class file (see “Defining Custom Tax Class and Usage Codes” on page 295).
Tax usages	By default, setup does not generate tax usages. However, you can create these with a class file.
Country code	The setup generates a record for the default country code you specify when you run the setup. If you enter a union code, setup creates ~1 and ~0 country codes.
Company addresses and address list types	In GTM, company sites require a corresponding company address record because taxes are calculated by address, not site. The setup verifies that each company site has an address record and creates any missing ones, along with any needed address list type records. The setup also creates a ~taxes address record to provide a default tax address whenever a transaction is missing a company site code.

Table 13.4
New GTM Records

GTM Control File Settings

Setup defines the Global Tax Management Control File (2.13.24) as described in Table 13.5.

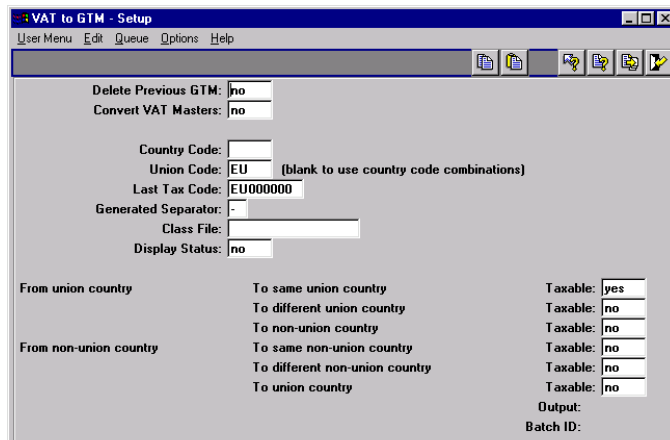
Table 13.5
Updates to GTM
Control File
Settings

Field	Explanation
Load Tax Management	Yes
Country Code	Value specified in VAT to GTM–Setup
Tax Method	01
Tax-By-Line	Yes
Accrue Tax at Receipt	No
Discount Tax at Invoice	Same setting as in VAT Control File (2.15.2.24)
Discount Tax at Payment	Same setting as in VAT Control File (2.15.2.24)
Last Tax Code	Value specified in VAT to GTM–Setup
Rounding Method	Value specified in the System/Account Control File (36.1)

VAT to GTM–Setup

Based on your implementation decisions, use VAT to GTM–Setup (2.13.22.1) to set up GTM for VAT tax processing.

Fig. 13.3
VAT to GTM–
Setup (2.13.22.1)



Delete Previous GTM. This option determines whether the setup deletes previously created GTM records from the database. If you select this option, the setup deletes tax zones, tax types, tax environments, transaction tax details, and other GTM records.

- Enter No if you have not yet tried to convert your database to GTM.
- Enter Yes to clean up the database if it contains GTM records from unsuccessful conversion or installation attempts.

Convert VAT Masters. This option determines whether setup generates GTM records based on country codes and VAT classes.

- Enter Yes to create GTM records corresponding to VAT classes.
- Enter No if you are deleting previous GTM records.

Country Code. Specify the default country code for the GTM control file.

Union Code. Enter a three-character code (default is EU) representing the European Union if you want countries to sum into a union and non-union zone. Leave blank if you want tax environments to be created for each combination of ship-to and ship-from countries.

Last Tax Code. Enter a value to update the corresponding field in the Global Tax Management Control File. In GTM, tax codes identify individual tax rates. Codes are generated sequentially based on the value of Last Tax Code in the GTM control file.

The default Last Tax Code is the union code followed by zeros. For example, for union code EU, the default Last Tax Code is EU000000. This value is recommended if you specified a value in Union Code.

If you are not summing into a union code, enter the default country code followed by zeros.

Generated Separator. Enter a character to be used as a separator in system-generated tax zones and environments. Using a separator can improve the readability of the component elements of these codes.

The default separator is the dash (–), but you can enter any character. A sample GTM code that uses the dash separator is PAR–FR for Paris, France. If you do not want to use separators, enter blank. However, you cannot use blank as a separator character.

Class File. To provide custom mapping of VAT classes to GTM classes and usage codes, specify an ASCII file with conversion information.

Tip

The system generated nontaxable tax type is NON-TAX, regardless of the separator you specify.

♦ See “Defining Custom Tax Class and Usage Codes” on page 295.

Display Status. This setting determines whether the system displays status messages online during the conversion. These messages list database tables and their indexes as they are converted. If you select this option, messages display on the screen and the printed report.

Taxable (Y/N). Enter the appropriate values for the six possible combinations of transactions between EC countries and non-EC countries. Yes indicates the transaction is taxable; no indicates it is not.

Converting Master Records

Once you finish implementing VAT processing in GTM, the next activity is to update tax settings in the following master records.

- Suppliers
- Customers
- Product lines
- Items
- Trailer codes
- Service categories
- Service agreement terms

GTM has additional fields and sometimes requires different values for existing fields.

VAT to GTM–Masters

To convert master records, run VAT to GTM–Masters (2.13.22.2).

	All	From:	To:
Suppliers:	no		
Customers:	no		
Countries For Addresses:	no		
Zones For Addresses:	no		
Product Lines:	no		
Items:	no		
Trailer Codes:	no		
Service Categories:	no		
Service Agreement Terms:	no		

Class File:

Display Status:

Output:

Batch ID:

Fig. 13.4
VAT to GTM–
Masters (2.13.22.2)

In addition to updating the tax settings in the master records, this program assigns tax zone codes to supplier, customer, and company address records. For verification of changes, the program generates an audit trail.

For each type of record, you can convert all records, a range of records, or individual records. The program converts records in the same order as the options on the screen. For separate audit trails, run the report separately for each type of record.

If you created a class file during the setup step, specify its name in the Class File field. Display status, output, and Batch ID are the same as in the setup program.

▶ See page 295.

Master Conversion Audit Trail

The master conversion prints a report of changed records. The format varies depending on the records included in the conversion. For each group of converted records, the report shows the record number and name followed by the before and after tax information, such as country code, tax zone code, taxable status, whether tax is included in item amounts, tax class, and tax usage.

Groups of converted records are printed in the same order as the screen selection criteria, and each group is separated by a page break. Warning and error messages identify potential conversion problems.

If you specified a class file, the report prints the VAT class and the corresponding GTM tax class and tax usage if any.

Figure 13.5 and Figure 13.6 show representative audit trail formats.

Fig. 13.5
Customer Audit Trail

Processing: Customers						
Address Name		Taxable	Tax	In	TxC	TaxUsage
10000001 Consolidated Industries Ltd.	Before	No	No	E		1-P-MFG
	After	No	No	E		1-P-MFG
10000002 Office Automation B.V.	Before	Yes	No	H		1-P-MFG
	After	Yes	No	H		1-P-MFG
10000003 MMB Verkehrssysteme GmbH	Before	Yes	No	G		1-P-MFG
	After	Yes	No	G		1-P-MFG

Fig. 13.6
Countries for Addresses Audit Trail

Processing: Countries For Addresses						
Address Name		Ctry	Country			
10000001 Consolidated Industries Ltd.	Before		United Kingdom			
	After	UK	United Kingdom			
10000002 Office Automation B.V.	Before		Netherlands			
	After	NL	Netherlands			
10000003 MMB Verkehrssysteme GmbH	Before		Germany			
	After	D	Germany			

Troubleshooting the Master Conversion

The error messages in the audit trail identify conditions you should analyze and address before you convert transactions. Table 13.6 lists some common problems along with explanations. Before you make corrections, restore the database from backup.

Warning Do not proceed to the transaction conversion until the master conversion audit trail is free of errors.

Table 13.6
Troubleshooting the Master Conversion

Error	Explanation
Tax class cannot be converted.	The class file does not contain a VAT class that matches the one in the master record.
Blank tax class not allowed.	The VAT class is blank in the class file.
Tax class cannot exceed 3 characters (xxx).	The VAT class in the class file is longer than three characters. The message shows the first three characters.
Tax class does not exist (x).	The VAT class in the class file does not exist in the VAT master.

Error	Explanation
Tax class is not unique (<i>x</i>).	The VAT class occurs in multiple places in the class file.
Tax class does not exist (<i>xxx</i>).	The GTM tax class in the class file does not exist in the GTM tax class master.
Tax usage cannot exceed 8 characters (<i>xxxxxxxx</i>).	A GTM tax usage in the class file is longer than eight characters. The message shows the first eight characters.
Tax usage does not exist (<i>xxxxxxxx</i>).	The GTM tax usage in the class file does not exist in the GTM tax usage master.
Tax class/tax usage combination is not unique (<i>xxx xxxxxxxx</i>).	The GTM tax class and tax usage combination occurs in multiple places in the class file.

Note *x*, *xxx*, and *xxxxxxxx* are placeholders for the actual codes displayed in the error message

How the Conversion Changes Master Records

The following information is provided to assist developers and others who require technical information on how the master conversion updates the database.

The menu-level program for VAT to GTM–Masters is txvatmst.p. This program calls subprograms that set the GTM tax values in the individual database files. These programs can either set the existing VAT class value or retrieve an alternate value from a class file.

Table 13.7 lists the affected database files and summarizes the changes.

Database File	Summary of Changes
ad_mstr	<p>In supplier records, txvatvd.p sets ad_taxable from vd_taxable. It also sets ad_taxc and ad_tax_usage from ad_taxc or from the class file with AP usage if any.</p> <p>In customer records, txvatcm.p sets ad_taxable from cm_taxable and ad_tax_in from cm_tax_in. It also sets cm_taxc, ad_taxc, and ad_tax_usage from cm_taxc and from the class file with AR tax usage if any.</p> <p>In all address records, txvatct.p sets ad_ctry from ad_country and vice versa. txvatzn.p calls txtxzget.p to set ad_tax_zone.</p>
fsc_mstr	txvatfsc.p sets fsc_taxc from fsc_taxc or from the AR tax usage if any.

Table 13.7
Changes to Master Records

Database File	Summary of Changes
pl_mstr	txvatpl.p sets pl_taxc from pl_taxc or from the class file if any.
pt_mstr	txvatpt.p sets pt_taxc from pt_taxc or from the class file if any.
sv_mstr	txvatsv.p sets sv_taxc from sv_taxc or from the class file with AR tax usage if any.
trl_mstr	txvattrl.p sets trl_taxc from trl_taxc or from the class file if any.

Converting Transaction Records

Once you finish converting master records, you can convert the following transaction records.

- Purchase orders and receipts
- Accounts payable vouchers and payments
- Service contracts, calls, and return material authorizations
- Sales quotes and orders
- Accounts receivable memos, invoices, and payments

In GTM, every transaction subject to tax has a transaction tax detail record. This record stores the information used to calculate tax. It also separates the tax into component elements such as recoverable and non-recoverable amounts.

VAT to GTM—Transactions

To convert existing transaction records so they are accessible in GTM, run VAT to GTM—Transactions (2.13.22.3).

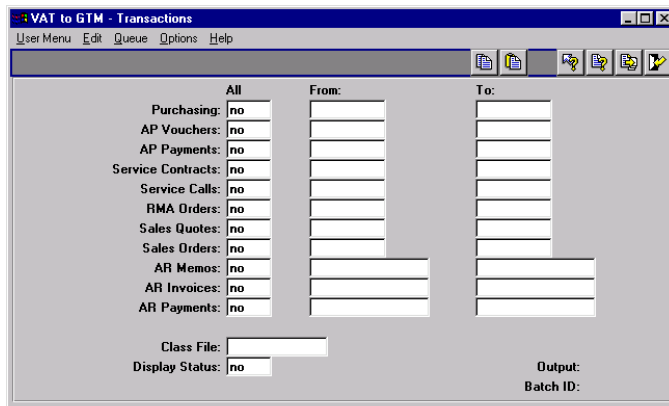


Fig. 13.7
VAT to GTM—
Transactions
(2.13.22.3)

In addition to updating transactions, this program generates an audit trail for verification of changes.

You can convert all records, a range of records, or individual records. The program converts records in the same order they display on the screen.

Note In some cases, the record sequence is important. Purchasing transactions must be converted before accounts payable vouchers and vouchers before payments. Accounts receivable memos and invoices must be converted before payments.

If you created a class file during the setup step, specify its name in the Class File field. Display status, output, and Batch ID are the same as in the setup program.

▶ See page 295.

Transaction Audit Trail

The transaction conversion prints a report of changed records. The format varies depending on the records included in the conversion. For each group of converted records, the report shows the transaction number and name followed by the before and after tax information for each line item, such as taxable status, tax environment, tax class, and tax usage. Groups

of converted records are printed in the same order as the screen selection criteria, and each group is separated by a page break.

Warning and error messages identify potential conversion problems. Messages that appear at the end of a transaction apply to the entire transaction; those that appear between the Before and After line apply only to that line. If you specified a class file, the report prints the VAT class and the corresponding GTM tax class and tax usage if any.

Figure 13.8 and Figure 13.9 show representative audit trail formats.

Fig. 13.8
Purchasing Audit Trail

Processing: Purchasing									
Order	Receiver	Ln		Tax	TxC	TaxUsage	Tax	Env	prh_tax_at

01104533			Before	No					
			After	No	E			BE-NE	
		1	Before	Yes	e				
			After	Yes	E			BE-NE	
	RC1290	1	Before	e					E
			After	E				BE-NE	Yes

Fig. 13.9
Service Calls Audit Trail

Processing: Service Calls									
Call ID	Call/SR	Line	Record		Tax	TxC	TaxUsage	Tax	Env

CA127			Call	Before	No	0			
				After	No	0	1-P-MFG	GER-NE	
	CA127	1	Item	Before	No	0			
				After	No	0	1-P-MFG	GER-NE	
	CA127	1	Billing	Before	No	0			
				After	No	0	1-P-MFG	GER-NE	

Troubleshooting Transaction Conversion

The warning and error messages in the audit trail identify conditions you should analyze and address before you resume live GTM processing. Table 13.8 lists some common problems along with explanations. Before you make corrections, restore the database from backup.

Warning Do not resume live processing until the transaction conversion audit trail is free of errors.

In addition to examining the audit trail, you should review the Tax Detail by Transaction Report (2.13.15.3). This report shows the tax environments, tax types, and tax amounts for the converted records. Verify that tax calculations are what you expect.

Note Converted transactions may have minor differences in before/after tax amounts. These can occur because GTM uses a different calculation algorithm or rounding method than your current system. To synchronize the general ledger with the converted transactions, record adjusting entries.

Error	Explanation
Detail tax environment must match header.	In accounts payable vouchers and accounts receivable debit/credit memos, the tax environment must be the same in both the header and detail lines.

Table 13.8
Troubleshooting
the Transaction
Conversion

Warning Do not correct transaction records programmatically. This approach often causes additional problems.

To eliminate ambiguity, the audit trail shows before and after values for purchasing, accounts payable, and accounts receivable records by their PROGRESS database field name, not their screen label. For example, the audit trail displays voucher line types in the vod_type column.

Use Table 13.9 through Table 13.13 as you interpret the audit trail for the transaction conversion. These tables summarize the nature of before/after tax values.

Status	Tax System	pod_taxable	prh_tax_at
Taxable	VAT	Yes	VAT class
	GTM	Yes	"Yes" ^a
Nontaxable	VAT	No	"0" ^b
	GTM	No	Blank

Table 13.9
VAT to GTM,
Purchasing
Transactions

- a. Quotation marks indicate an untranslatable value.
- b. First VAT class with a zero percentage.

Table 13.10
VAT to GTM, AP
Voucher Receiver
Lines

Status	Amt	Tax System	Tax	TxC	vod_type	vod_tax	vod_tax_at
Taxable	Item	VAT	No	VAT class	“R” ^a	Blank	VAT class
		GTM	Yes	Tax class	“R”	Blank	“Yes”
	Tax	VAT	No	Blank	Blank	VAT class	Blank
		GTM	No	Blank	“T”	“t”	“No”
Nontaxable	Item	VAT	No	VAT class	“R”	Blank	VAT class
		GTM	No	Tax class	“R”	Blank	Blank
	Tax ^b	VAT	No	Blank	Blank	VAT class	Blank
		GTM	–	–	–	–	–

- a. Quotation marks indicate an untranslatable value.
- b. The conversion deletes VAT tax lines resulting from nontaxable amounts.

Table 13.11
VAT to GTM, AP
Voucher Memo
Lines

Status	Amt	Tax System	Tax	TxC	vod_type	vod_tax	vod_tax_at
Taxable	Item	VAT	No	Blank	Blank	Blank	VAT class
		GTM	Yes	Tax class	Blank	Blank	“Yes” ^a
	Tax	VAT	No	Blank	Blank	VAT class	Blank
		GTM	No	Blank	“T”	“t”	“No”
Nontaxable	Item	VAT	No	Blank	Blank	Blank	“0” ^b
		GTM	No	Tax class	Blank	Blank	“No”
	Tax ^b	VAT	No	Blank	Blank	VAT class	Blank
		GTM	–	–	–	–	–

- a. Quotation marks indicate an untranslatable value.
- b. The conversion deletes VAT tax lines resulting from nontaxable amounts.

Status	Amt	Tax System	TxC	ard_tax	ard_tax_at
Taxable	Item	VAT	Blank	VAT class	Blank
		GTM	Tax class	Blank	Tax class
	Tax	VAT	Blank	Blank	VAT class
		GTM	Blank	“t” ^a	“No”
Nontaxable	Item	VAT	Blank	Blank	“0” ^b
		GTM	Tax class	Blank	Tax class
	Tax ^c	VAT	Blank	“0”	Blank
		GTM	–	–	–

Table 13.12
VAT to GTM, AR
Invoices

- a. Quotation marks indicate an untranslatable value.
- b. First VAT class with a zero percentage.
- c. The conversion deletes VAT tax lines resulting from nontaxable amounts.

Status	Amt	Tax System	TxC	ard_tax	ard_tax_at
Taxable	Item	VAT	Blank	Blank	VAT class
		GTM	Tax class	Blank	“Yes” ^a
	Tax	VAT	Blank	VAT class	Blank
		GTM	Blank	“t”	“No”
Nontaxable	Item	VAT	Blank	Blank	“0”
		GTM	Tax class	Blank	“No” ^b
	Tax ^b	VAT	Blank	“0” ^c	Blank
		GTM	–	–	–

Table 13.13
VAT to GTM, AR
DR/CR Memos

- a. Quotation marks indicate an untranslatable value.
- b. The conversion deletes VAT tax lines resulting from nontaxable amounts.
- c. First VAT class with a zero percentage.

How the Conversion Changes Transaction Records

The following information is provided to assist developers and others who require technical information on how the transaction conversion updates the database.

The menu-level program for VAT to GTM–Transactions is *txvattrn.p*. This program calls subprograms that set the GTM tax values in the individual database files. For all transactions, the conversion also generates corresponding tax detail records in the *tx2d_det* file.

When setting the GTM tax class value, these programs can either set the existing VAT class value or retrieve an alternate value from a class file.

Table 13.14 lists the affected database files and summarizes the changes.

Table 13.14
Changes to
Transaction
Records

Database File	Summary of Changes
ard_det	For debit/credit memos, txvatarm.p sets ard_tax, ard_tax_at, ard_taxc, and ard_tax_usage from the class file with AR usage if any. For invoices, txvatari.p sets ard_taxc and ard_tax_usage from the class file with AR tax usage if any, and ard_tax and ard_tax_at. Duplicate records for unique keys are merged into one record.
ar_mstr	For debit/credit memos, txvatarm.p sets ar_tax_env.
ca_mstr	txvatca.p sets ca_taxc and ca_tax_usage from ca_taxc or from the class file with AR tax usage if any. It also sets ca_tax_env using txtxeget.p.
idh_hist	txvatari.p sets idh_taxc and idh_tax_usage from idh_taxc or from the class file with AR tax usage if any. It also sets idh_tax_env using txtxeget.p.
ih_hist	txvatari.p sets ih_taxc and ih_tax_usage from ih_taxc or from the class file, with AR tax usage if any. It also sets ih_tax_env using txtxeget.p.
itm_det	If itm_prefix is CA and itm_type is any value except INV, txvatca.p sets itm_taxc and itm_tax_usage from itm_taxc or from the class file with AR usage if any. It also sets itm_tax_env using txtxeget.p.
pod_det	For inventory items, txvatpo.p sets pod_taxc and pod_tax_usage from pod_taxc or from the class file, with AP tax usage if any. For memo items, txvatpo.p sets pod_taxc from po_taxc and pod_tax_usage from po_tax_usage.
po_mstr	txvatpo.p sets po_tax_pct[1], po_tax_pct[2], and po_tax_pct[3] to 0. It sets po_tax_usage from ad_tax_usage and po_taxc from ad_taxc. It also sets po_tax_env using txtxeget.p.
prh_hist	For inventory items, txvatpo.p sets prh_taxc and prh_tax_usage from prh_taxc or from the class file, with AP tax usage if any. For memo items, txvatpo.p sets prh_taxc from pod_taxc and prh_tax_usage from pod_tax_usage. For all items, txvatpo.p also sets prh_tax_at from pod_taxable.
qod_det	txvatqo.p sets qod_taxc and qod_tax_usage from qod_taxc or from the class file with AR usage if any. If qo_taxable and qod_taxable are No and the quote is for an inventory item, txvatqo.p sets qod_taxc from pt_taxc. It also sets qod_tax_env.

Database File	Summary of Changes
qo_mstr	txvatqo.p sets qo_tax_pct[1], qo_tax_pct[2], and qo_tax_pct[3] to 0. txvatqo.p also sets qo_taxc and qo_tax_usage from qo_taxc or from the class file with AR usage if any. It also sets qo_tax_env.
rma_mstr	txvatrma.p sets rma_taxc from rma_taxc or from the class file with AR usage if any.
sad_det	txvatpsc.p sets sad_taxc and sad_tax_usage from sad_taxc or from the class file with AR usage if any. txvatpsc.p sets sad_tax_env from sa_site and sa_taxc using txtxeget.p.

Converting U.S. Taxes to GTM

This section describes how to convert to GTM from MFG/PRO's U.S. tax system.

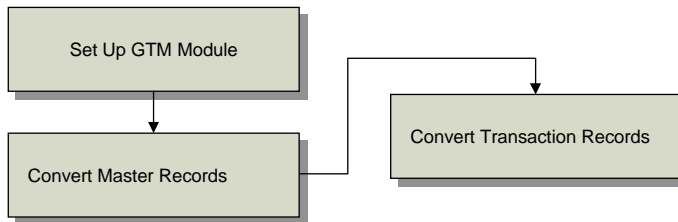


Fig. 13.10
USA to GTM
Conversion Process

The USA to GTM conversion process translates United States tax data to GTM equivalents and updates existing MFG/PRO records. Figure 13.10 summarizes the conversion work flow, which revolves around three sets of activities.

Implementing GTM. Run a setup program to implement GTM for U.S. tax processing. ▶ See page 312.

Converting Master Records. Run a second program to populate database files for customer and supplier addresses, items, product lines, and other master records with GTM data values. ▶ See page 323.

Converting Transaction Records. Run a third program to populate transaction records. All transactions subject to tax are affected, including sales, purchasing, accounts payable, accounts receivable, and service/support management. ▶ See page 327.

Note After each of these activities, it is crucial to review the corresponding reports and audit trails. Mistakes can be pervasive and costly.

Table 13.15 lists the MFG/PRO programs used during the conversion.

Table 13.15
MFG/PRO Programs Used to Convert U.S. Taxes to GTM

Activity	MFG/PRO Programs
Implementing GTM	USA to GTM–Setup (2.13.22.5)
Converting master records	USA to GTM–Masters (2.13.22.6)
Converting transaction records	USA to GTM–Transactions (2.13.22.7)

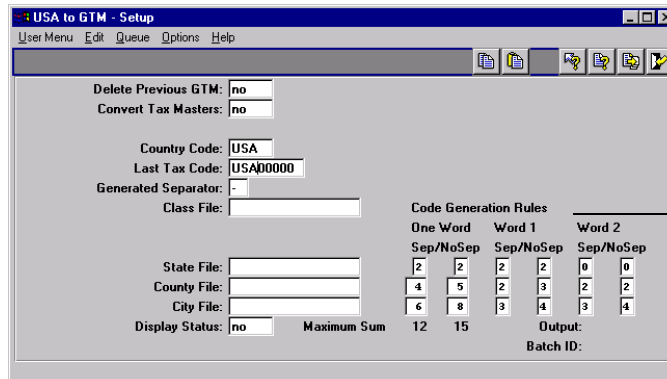
Setting Up GTM

An automated setup program creates the codes you need to implement GTM, based on how your US taxes are currently defined. Before executing this program, you should understand the options it provides and the default logic it uses

Code Generation Rules

GTM codes for tax types, tax zones, and tax environments consist of text strings that uniquely identify the state, county, and city of a tax jurisdiction. Manual setup of these codes would be a tedious process, since there are thousands of them.

Fig. 13.11
Code Generation Rules in USA to GTM–Setup (2.13.22.5)



Used to generate codes for Tax Types, Tax Zones, and Tax Environments

Therefore, by default, USA to GTM–Setup creates codes based on a set of rules (Figure 13.11). These rules systematically select characters from the state code, county name, and city name in the tax master file.

To determine if the generated codes are appropriate for your company, run the setup and review the audit trail. If you need a different coding scheme, read the rest of this section and settings for the code generation rules as necessary. Then, rerun the setup with Delete Previous GTM set to Yes and Convert Tax Masters set to Yes.

Table 13.16 lists the default generated code formats for U.S. taxes.

Code	Format	Explanation
Tax zones and tax environments	SS-CCCC-cccccc	SS is the 2-character state code, CCCC is the 4-character county name, and cccccc is the 6-character city name. Each text string is separated by a dash (–).
Tax Types	SS-CCCC-cccccc-#	This format is the same as the previous one, except that tax types have an extra digit (#) to identify whether the tax type applies to the state (1), county (2), or city (3).

Table 13.16
Default Generated
Code Formats in
USA to GTM–
Setup (2.13.22.5)

The rules that determine the characters to select depend on two factors.

- Whether the U.S. code or name used to generate the text string consists of one word or multiple words (text strings separated by blank spaces).
- Whether separator characters are used.

Table 13.17 lists the default number of characters for each text string under the different conditions. However, you can change the number of characters and use a different separator or no separator, as long as the total number of generated characters—including the separator and any ending integers—is 16 or less.

Table 13.17
Code Generation Rules in USA to GTM–Setup (2.13.22.5)

Code	One Word		Multiple Words			
			Word 1		Word 2	
	Sep	No Sep	Sep	No Sep	Sep	No Sep
State	2	2	2	2	0	0
County	4	5	2	3	2	2
City	6	8	3	4	3	4
Maximum Total Characters, With Separator						12
Maximum Total Characters, Without Separator						15

Tip
To override duplicate strings such as AR for the states Arkansas and Arizona, see “Defining Custom Codes for States, Counties, and Cities” on page 315.

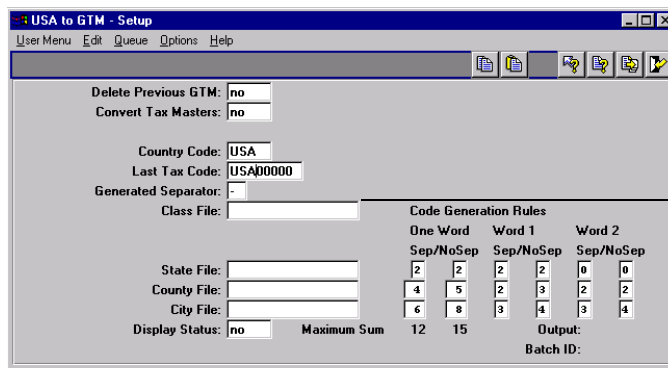
Example If the original state code for Arkansas is ARKA, the generated text string is AR regardless of whether separators are used. For the county of Orange, the generated text string is Oran if separators are used and Orang if they are not. For the city of North Hollywood, the generated text string is NorHol if separators are used and Northoll if they are not.

The setup retains the capitalization from the original U.S. code or name. If the original code or name contains punctuation such as a period, the code generation rules treat it the same as any other non-blank character.

Defining Custom Tax Exemption Codes

By default, the conversion generates corresponding GTM tax classes for your current tax exemption codes. For example, for tax exemption 1, the conversion generates GTM tax class 1. You can override this by creating your own map for the setup program and specifying it in the Class File field. The same class file is also referenced in the programs that convert master files and transaction records.

Fig. 13.12
Class File in USA to GTM–Setup (2.13.22.5)



Class file for custom tax exemption codes

You should create a class file if:

- Your company plans to change its tax exemption codes during the GTM conversion.
- You want to convert exemption codes to tax usages instead of tax classes.

The class file is an ASCII file with text strings in the following format.

```
"Current Tax Exemption Code" "GTM Tax Class"
"GTM Tax Usage"
```

GTM tax classes can have a maximum of three characters and tax usage codes eight characters. An unused optional value is represented by a null string (either "" or "").

The file name can have any name or extension. However, code values in .csv files must be separated by commas instead of blank characters. The file must be located in the home directory for the PROGRESS session.

Example Your current exemption codes are 1 and 2. You want to map these to GTM tax classes 01 and 02.

```
"1" "01" " "
"2" "01" " "
```

Defining Custom Codes for States, Counties, and Cities

The generated codes for tax zones, tax environments, and tax types consist of text strings that identify the state, county, and city. By default, the code generation rules define the structure of these text strings. However, if you need a different naming convention, you can create geographic files for state codes, county names, and/or city names.

In addition to supporting alternate naming conventions, such files can resolve code generation conflicts. For example, for state codes ARIZ and ARKA, the generated GTM code is AR. A state file is necessary to provide unique values.

Tip

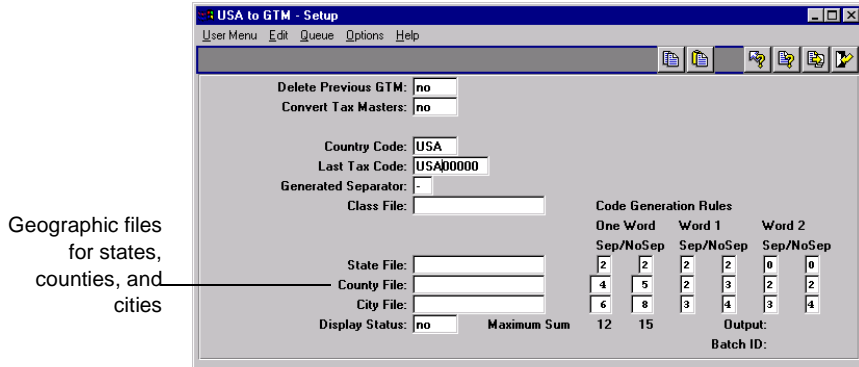
A .csv file is a Windows comma-delimited file format that saves values recorded in a spreadsheet.

▶ See “Updates to Company Addresses” on page 321.

Tip

You only need to define codes for conditions not supported by the code generation rules.

Fig. 13.13
State, County, and
City Files in USA
to GTM–Setup
(2.13.22.5)



Create a separate file for each kind of text string and reference the file in USA to GTM–Setup as shown in Figure 13.13. A geographic file is the same as a class file, except that the file is formatted as follows.

“Current Code or Name” “GTM Text String”

Example To create unique codes for Arizona and Arkansas, create a state file with these lines.

“ARIZ” “AZ”
“ARKA” “AR”

Processing Logic

USA to GTM–Setup creates MFG/PRO records as described in Table 13.18.

Table 13.18
New GTM Records

Type of Record	Explanation
Tax zones	Based on code generation rules or a class file, setup builds the tax zone hierarchy for the country and all state/county/city combinations in your current system.
Tax types	Based on code generation rules or a class file, setup generates tax types for all state/county/city combinations in your current system.
Tax environments	Based on code generation rules or a class file, setup generates tax environments for all ship-to tax zones. In the U.S., the tax environment’s ship-from tax zone is the default country code, and the customer or supplier tax class is blank.

Type of Record	Explanation
Tax rates	Based on code generation rules or a class file, setup generates tax rates for the tax jurisdictions and percentages in the tax master file.
Tax classes	By default, the setup generates corresponding tax classes for existing U.S. tax exemption codes. However, if you reference a class file, the mappings in the class file determine the actual exemption codes generated.
Tax usages	By default, the setup does not generate tax usages. However, you have the option to do so in the class file.
Rounding method	The setup enters the rounding method specified in the System/Account Control File (36.1) as the GTM rounding method in the Global Tax Management Control File (2.13.24).
Country code	The setup generates a record for the default country code you specify when you run the setup. This country code is the top-level zone in the tax zone hierarchy.
Company addresses and address list types	In GTM, company sites require a corresponding company address record because taxes are calculated by address, not site. The setup verifies that each company site has an address record and creates any missing ones, along with any needed address list type records. The setup also creates a ~taxes address record to provide a default tax address whenever a transaction is missing a company site code.

GTM Control File Settings

The setup also resets the Global Tax Management Control File (2.13.24) as described in Table 13.19.

Field	Explanation
Load Tax Management	Yes
Country Code	As specified during the setup.
Tax Method	01
Tax-By-Line	No
Accrue Tax at Receipt	Yes
Discount Tax at Invoice	No
Discount Tax at Payment	No

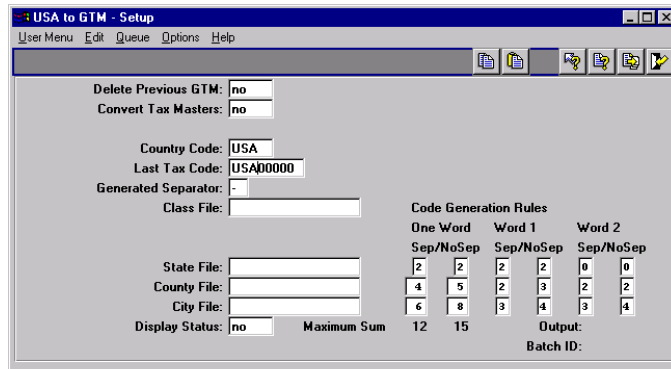
Table 13.19
Updates to GTM
Control File
Settings

Field	Explanation
Last Tax Code	As specified during the setup.
Rounding Method	Value specified in the System/Account Control File (36.1)

USA to GTM–Setup

Based on your implementation decisions, use USA to GTM–Setup (2.13.22.5) to set up GTM for U.S. tax processing.

Fig. 13.14
USA to GTM–
Setup (2.13.22.5)



Warning As noted previously, the purpose of the conversion is to replicate your existing tax processing setup in GTM. Do not attempt to implement new GTM functionality until after the entire conversion is complete. Do not change settings in the new GTM records or in Global Tax Management Control File (2.13.24). If you do, the master and/or transaction conversions may fail.

Delete Previous GTM. This option determines whether the setup deletes previously created GTM records from the database. If you select this option, the setup deletes tax zones, tax types, tax environments, transaction tax details, and other GTM records from the database.

- Enter No if you have not yet tried to convert your database to GTM.
- Enter Yes to clean up the database if it contains GTM records from unsuccessful conversion or installation attempts.

Convert Tax Masters. This option determines whether the setup generates the GTM master records from USA tax master records.

- Enter Yes to create corresponding GTM records for the USA tax master: tax classes, tax types, tax zones, tax environments, tax rates, and so on. The audit trail shows the USA tax master records and the new tax zone codes.
- Enter No if you are deleting previous GTM records.

Country Code. This country code is the top-level tax zone in the tax zone hierarchy. All other tax zones sum into this one.

If the Global Tax Management Control File (2.13.24) already has a country code, it displays here. Otherwise, the setup sets the default country code to USA. If you override the value here, the setup assigns it to the control file.

Last Tax Code. Enter a value to update the corresponding field in the Global Tax Management Control File. In GTM, tax codes identify individual tax rates. Codes are generated sequentially based on the value of Last Tax Code in the GTM control file.

The default Last Tax Code is an 8-character value that consists of the GTM country code and a right-justified integer with placeholder zeros. For example, for country code USA, the default Last Tax Code is USA00000. The system assigns the number USA00001 to the first tax rate record created in GTM and increments this number for subsequent rates.

If you want tax codes to have a different format, enter a different prefix. Codes display alphanumerically in screens and reports. Tax codes that are totally numeric are left-justified and have no placeholder zeros. For example, codes 1 through 30 display in a report column as follows.

```

1
...
19
2
20
...
30

```

Generated Separator. Enter a character to be used as a separator in system-generated tax zone, type, and environment codes. Using a separator can improve the readability of the component elements of these codes.

The default separator is the dash (–), but you can enter any character. A sample GTM code that uses the dash separator is CA–SBa–SBa for Santa Barbara, California. If you do not want to use separators, enter blank. However, you cannot use blank as a separator character.

▶ See page 314.

Class File. To provide custom mapping of US tax exemption codes to GTM classes and usage codes, specify an ASCII file with conversion information.

▶ See page 315.

State, County, City File. To override default code generation rules, specify specific values for geographic locations in an ASCII file.

▶ See page 312.

Code Generation Rules. Enter appropriate values for your organization.

Display Status. This setting determines whether the system displays status messages online during the conversion. These messages list database tables and their indexes as they are converted. If you select this option, messages display on the screen and the printed report.

Updates to Company Addresses

In GTM, company sites require a corresponding company address record because taxes are calculated by address, not site. The setup creates any missing company address records for company sites. However, the setup does not populate these new address records with the city, county, state, and country. You must supply this information manually in Company Address Maintenance (2.12).

You must also set up tax zone codes to support these new addresses if the setup did not already generate codes for these tax jurisdictions. Do this in Tax Zone Maintenance (2.13.3.13). Then, assign the tax zone to the address.

Setup Audit Trail

USA to GTM–Setup prints an audit trail of updated tax master records. For each record, the report shows the state/county/city combination, tax effective date, the tax rates for the effective date, and the taxable status of trailer charges. It also shows the corresponding generated tax zone and its sums-into tax zone.

Figure 13.15 shows the audit trail format.

Processing: Create GTM from tax masters										
State	County	City	Effective	Tax	Tax	Tax	Tax Trl	Tax Zone	Sums-Into	Tax Zone
FL	ORANGE	KISSIMMEE	08/07/97	8.00%	2.00%	6.00%	NO	FL-ORAN-KISSIM	USA	
FL	ORANGE	ORLANDO	10/17/92	7.00%	0.00%	9.00%	NO	FL-ORAN-ORLAND	USA	

Fig. 13.15 Setup Audit Trail

Troubleshooting GTM Setup

After you run USA to GTM–Setup, verify that the GTM setup is correct before you continue with the conversion. The problems listed in Table 13.20 can cause errors or unexpected values. Before you proceed to the master conversion, review the audit trail, the GTM reports for the new records, and the Global Tax Management Control File settings. Correct any problems before continuing.

Subsequent setups do not automatically overwrite records created by previous ones. To set up new records, you must first delete the old ones.If

you rerun the setup, you must remove the records created by the earlier setup attempt by setting Delete Previous GTM to Yes and Convert Tax Masters to Yes.

Note If you must rerun the setup after you have run any of the other conversion programs, restore the database first. Then, rerun the setup and any other conversion programs you ran previously. This is necessary to perpetuate changes to master files, transactions, and tax details.

Table 13.20
Troubleshooting
the GTM Setup

Error	Explanation
Tax system must be USA.	The USA to GTM setup can only be run on a US tax system.
Must delete previous GTM when converting.	When you set Convert Tax Masters to Yes, you must also set Delete Previous GTM to Yes.
Tax-trailers has changed, cannot convert prior to this date.	The setup can convert only the current tax environment, not previous variations. If the taxable status of trailer charge codes was changed in the span of time included in the conversion, the setup creates tax environments only for current conditions.

Warning Do not correct records programmatically. This approach often causes additional problems.

How the Setup Changes GTM Records

The following information is provided to assist developers and others who require technical information on how the setup updates the database.

The menu-level program for USA to GTM–Setup is txusacnv.p. This program calls subprograms (primarily txusatax.p) that set the GTM tax values in the individual database files. Table 13.21 lists the affected database files and summarizes the changes.

Table 13.21
Changes to GTM
Records

Database File	Summary of Changes
ad_mstr	txusatax.p creates one ~taxes record for the database. It also scans the si_mstr file and creates an address record for any company site that does not already have one.
code_mstr	<p>For the nine U.S. exemption codes in the tax_mstr file, txusatax.p creates corresponding tax classes. If a class file is referenced, it creates the specified tax classes.</p> <p>For each of the three rates that tax_mstr stores for U.S. tax jurisdictions, txusatax.p creates a tax type. For non-taxable transactions, it also creates a default NON-TAX tax type.</p> <p>Finally, for each ship-to tax zone, txusatax.p creates a tax environment and assigns it the tax types associated with the tax zone.</p>
ctry_mstr	txusatax.p creates a record for the default country code specified in the selection data.
ls_mstr	txusatax.p creates an ls_mstr record for each new ad_mstr record, if any.
tx2_mstr	For each of the three rates that tax_mstr stores for U.S. tax jurisdictions, txusatax.p creates a tax rate. It also runs txtx2_nt.i to create a non-taxable tax rate and txtxmeth.i to create tax method 01.
txc_ctrl	txusatax.p sets txc_ctry_code and txc_tax_code from the selection data. It sets txc_method to 01, txc_by_line, txc_inv_disc, and txc_pmt_disc to No, and txc_rcpt_tax_point to Yes.
txe_mstr	txusatax.p creates tax environment zone detail records for every tax environment code it generates for the code_mstr file.
txed_det	txusatax.p creates tax environment tax type detail records for every tax environment code it generates for the code_mstr file.
txz_mstr	txusatax.p creates a top-level sums-into tax zone for the new ctry_mstr record. For each state/county/city combination in tax_mstr, it creates a ship-to tax zone.

Converting Master Records

Once you finish the GTM setup, the next activity is to update tax settings in the following master records.

- Suppliers
- Customers
- Product lines
- Items

- Trailer codes
- Service categories
- Service agreement terms

GTM has additional fields and sometimes requires different values for existing fields.

USA to GTM—Masters

To convert master records, run USA to GTM—Masters (2.13.22.6).

Fig. 13.16
USA to GTM—
Masters (2.13.22.6)

All	From:	To:
Suppliers: no		
Customers: no		
Countries For Addresses: no		
Zones For Addresses: no		
Product Lines: no		
Items: no		
Trailer Codes: no		
Service Categories: no		
Service Agreement Terms: no		

Class File:

Display Status: no

Output:
Batch ID:

In addition to updating the tax settings in the master records, this program assigns tax zone codes to supplier, customer, and company address records. For verification of changes, the program generates an audit trail.

Important Before you run USA to GTM—Masters, do the following.

- Run USA to GTM—Setup (2.13.22.5).
- To avoid record-contention conflicts with other users, shut down the database. When you restart it, verify that no other users are on the system.
- In System/Account Control File (36.1), set Use Tax Management to Yes. Answer Yes to the warning message that confirms your intent to change the company tax structure.

For each type of record, you can convert all records, a range of records, or individual records. This program converts records in the same order as the options on the screen. For separate audit trail reports, run the report separately for each type of record.

If you created a class file during the setup step, specify its name in the Class File field. Display status, output, and Batch ID are the same as in the setup program.

▶ See “Defining Custom Tax Exemption Codes” on page 314.

Master Conversion Audit Trail

The master conversion prints a report of changed records. The format varies depending on the records included in the conversion. For each group of converted records, the report shows the record number and name followed by the before and after tax information, such as country code, tax zone code, taxable status, whether tax is included in item amounts, and tax class.

Groups of converted records are printed in the same order as the screen selection criteria, and each group is separated by a page break. Warning and error messages identify potential conversion problems.

Figure 13.17 and Figure 13.18 show representative audit trail formats.

Processing: Customers					
Address	Name		Taxable	TxC	TaxUsage
32174893	Consolidated Industries Inc.	Before	No	1	
		After	No	1	
32174895	Asheville Manufacturing	Before	Yes		
		After	Yes		
32174897	Hartford Electronics	Before	Yes		
		After	Yes		

Fig. 13.17
Customer Audit Trail

Processing: Countries For Addresses					
Address	Name		Ctry	Country	
32174893	Consolidated Industries Inc.	Before		United States	
		After	USA	United States	
32174895	Asheville Manufacturing	Before		United States	
		After	USA	United States	
32174897	Hartford Electronics	Before		United States	
		After	USA	United States	

Fig. 13.18
Countries for Addresses Audit Trail

Troubleshooting the Master Conversion

The error messages in the audit trail identify conditions you should analyze and address before you convert transactions. Table 13.22 lists some common problems along with explanations. Before you make corrections, restore the database from backup.

Warning Do not proceed to the transaction conversion until the master conversion audit trail is free of errors.

Table 13.22
Troubleshooting
the Master
Conversion

Error	Explanation
Tax class cannot be converted.	The class file does not contain a tax exemption that matches the one in the master record.
Blank tax class not allowed.	The tax exemption is blank in the class file.
Tax class cannot exceed 3 characters (xxx).	The tax exemption in the class file is longer than three characters. The message shows the first three characters.
Tax class does not exist (x).	The tax exemption in the class file does not exist in the U.S. tax master.
Tax class is not unique (x).	The tax exemption occurs in multiple places in the class file.
Tax class does not exist (xxx).	The GTM tax class in the class file does not exist in the GTM tax class master.

Note x, xxx, and xxxxxxxx are placeholders for the actual codes displayed in the error message

How the Conversion Changes Master Records

The following information is provided to assist developers and others who require technical information on how the master conversion updates the database.

The menu-level program for USA to GTM–Masters is txusamst.p. This program calls subprograms that set the GTM tax values in the individual database files.

When setting the GTM tax class value, these programs can either set the existing tax exemption code or retrieve an alternate value from a class file.

▶ See “Defining Custom Tax Exemption Codes” on page 314.

Table 13.23 lists the affected database files and summarizes the changes.

Database File	Summary of Changes
ad_mstr	<p>In supplier records, txusavd.p sets ad_taxable from vd_taxable. It also sets ad_taxc and ad_tax_usage to blank.</p> <p>In customer records, txusacm.p sets ad_taxable from cm_taxable and ad_tax_in from cm_tax_in. It also sets cm_taxc, ad_taxc, cm_taxc, and ad_tax_usage from cm_taxc or from the AR class file, if any.</p> <p>In all address records, txusact.p sets ad_ctry from ad_country and visa versa. txusazn.p calls txtzget.p to set ad_tax_zone.</p>
fsc_mstr	txusafsc.p sets fsc_taxc from fsc_taxc or from the AR class file if any.
pl_mstr	txusapl.p sets pl_taxc from pl_taxc or from the class file, if any.
pt_mstr	txusapt.p sets pt_taxc from pt_taxc or from the class file, if any.
sv_mstr	txusasv.p sets sv_taxc and sv_tax_usage from sv_taxc or from the AR class file, if any.
trl_mstr	txusatrl.p sets trl_taxc from trl_taxc or from the class file, if any.

Table 13.23
Changes to Master Records

Converting Transaction Records

Once you finish converting master records, you can convert the following transaction records.

- Purchase orders and receipts
- Accounts payable vouchers and payments
- Service contracts, calls, and return material authorizations
- Sales quotes and orders
- Accounts receivable memos, invoices, and payments

In GTM, every transaction subject to tax has a transaction tax detail record. This record stores the information used to calculate tax.

USA to GTM–Transactions

To convert existing transaction records, run USA to GTM–Transactions (2.13.22.7).

Fig. 13.19
USA to
GTM–Transactions
(2.13.22.7)

All	From:	To:
Purchasing: <input type="checkbox"/> no	<input type="text"/>	<input type="text"/>
AP Vouchers: <input type="checkbox"/> no	<input type="text"/>	<input type="text"/>
AP Payments: <input type="checkbox"/> no	<input type="text"/>	<input type="text"/>
Service Contracts: <input type="checkbox"/> no	<input type="text"/>	<input type="text"/>
Service Calls: <input type="checkbox"/> no	<input type="text"/>	<input type="text"/>
RMA Orders: <input type="checkbox"/> no	<input type="text"/>	<input type="text"/>
Sales Quotes: <input type="checkbox"/> no	<input type="text"/>	<input type="text"/>
Sales Orders: <input type="checkbox"/> no	<input type="text"/>	<input type="text"/>
AR Memos: <input type="checkbox"/> no	<input type="text"/>	<input type="text"/>
AR Invoices: <input type="checkbox"/> no	<input type="text"/>	<input type="text"/>
AR Payments: <input type="checkbox"/> no	<input type="text"/>	<input type="text"/>
Class File: <input type="text"/>		
Display Status: <input type="checkbox"/> no		Output: Batch ID: <input type="text"/>

In addition to updating transactions, this program generates an audit trail for verification of changes.

Important Before you run USA to GTM–Transactions, do the following.

- Run USA to GTM–Setup (2.13.22.5) and USA to GTM–Masters (2.13.22.6).
- To avoid record-contention conflicts with other users, shut down the database. When you restart it, verify that no other users are on the system.

Tip

For separate audit trail reports, run the report separately for each type of record.

You can convert all records, a range of records, or individual records. The program converts records in the same order they display on the screen.

Note In some cases, the record sequence is important. Purchasing transactions must be converted before accounts payable vouchers and vouchers before payments. Accounts receivable memos and invoices must be converted before payments.

- ▶ See “Defining Custom Tax Exemption Codes” on page 314.

If you created a class file during the setup step, specify its name in the Class File field. Display status, output, and Batch ID are the same as in the setup program.

Transaction Audit Trail

The transaction conversion prints a report of changed records. The format varies depending on the records included in the conversion. For each group of converted records, the report shows the transaction number and name followed by the before and after tax information for each line item, such as taxable status, tax environment, and tax class. Groups of converted records are printed in the same order as the screen selection criteria, and each group is separated by a page break.

Warning and error messages identify potential conversion problems. Messages that appear at the end of a transaction apply to the entire transaction; those that appear between the Before and After line apply only to that line.

Figure 13.20 and Figure 13.21 show representative audit trail formats.

Processing: Purchasing									
Order	Receiver	Ln		Tax	TxC	TaxUsage	Tax	Env	prh_tax_at

01104533			Before	No	1				
			After	No	1			NJ-TRENT	
		1	Before	Yes	B				
			After	Yes	B			NJ-TRENT	
	RC1290	1	Before		B				B
			After		B			NJ-TRENT	B

Fig. 13.20
Purchasing Audit Trail

Processing: Service Calls									
Call ID	Call/SR	Line	Record		Tax	TxC	TaxUsage	Tax	Env

CA127			Call	Before	No	1			
				After	No	1		1-P-MFG	NJ-TRENT
	CA127	1	Item	Before	No	1			
				After	No	1		1-P-MFG	NJ-TRENT
	CA127	1	Billing	Before	No	1			
				After	No	1		1-P-MFG	NJ-TRENT

Fig. 13.21
Service Calls Audit Trail

Troubleshooting Transaction Conversion

The error messages in the audit trail identify conditions you should analyze and address before you resume live GTM processing. Table 13.24 lists some common problems along with explanations. Before you make corrections, restore the database from backup.

Table 13.24
Troubleshooting
the Transaction
Conversion

Error	Explanation
Detail tax environment must match header.	In accounts payable vouchers and accounts receiveable debit/credit memos, the tax environment must be the same in both the header and detail lines.

Warning Do not resume live processing until the transaction conversion audit trail is free of errors. Do not correct transaction records programmatically. This approach often causes additional problems.

In addition to examining the audit trail, it is advisable to review the Tax Detail by Transaction Report (2.13.15.3). This report shows the tax environments, tax types, and tax amounts for the converted records. Verify that tax calculations are what you expect.

Converted transactions may have minor differences in before/after tax amounts. These can occur because GTM uses a different calculation algorithm or rounding method than your current system. To synchronize the general ledger with the converted transactions, record adjusting entries.

To eliminate ambiguity, the audit trail shows before and after values for purchasing, accounts payable, and accounts receivable records by their PROGRESS database field name, not their screen label. For example, the audit trail displays voucher line types in the vod_type column.

As you interpret the audit trail for the transaction conversion, it can be helpful to see Table 13.25 through Table 13.29. These tables summarize the nature of before/after tax values.

Table 13.25
USA to GTM,
Purchasing
Transactions

Status	Tax System	pod_taxable	prh_tax_at
Taxable	USA	Yes	“y” ^a
	GTM	Yes	“Yes”
Non-taxable	USA	No	“n” or blank ^b
	GTM	No	Blank

a. Quotation marks indicate an untranslatable value.

b. An item is non-taxable if pod_taxable is n (No). If the transaction is non-taxable, the tax exemption code is optional.

Status	Amt	Tax System	Tax	TxC	vod_type	vod_tax	vod_tax_at
Taxable	Item	USA	No	Blank	“R” ^a	Blank	“y”
		GTM	Yes	Tax class	“R”	Blank	“Yes”
	Tax	USA	No	Blank	Blank	“y”	Blank
		GTM	No	Blank	“T”	“t”	“No”
Non-taxable	Item	USA	No	Exemption code or blank ^b	“R”	Blank	Blank
		GTM	No	Tax class	“R”	Blank	Blank
	Tax ^c	USA	No	Blank	Blank	“y”	Blank
		GTM	–	–	–	–	–

Table 13.26
USA to GTM, AP
Voucher Receiver
Lines

- a. Quotation marks indicate an untranslatable value.
- b. An item is non-taxable if its taxable status is No. If the transaction is non-taxable, the tax exemption code is optional.
- c. The conversion deletes U.S. tax lines resulting from non-taxable amounts.

Status	Amt	Tax System	Tax	TxC	vod_type	vod_tax	vod_tax_at
Taxable	Item	USA	No	Blank	Blank	Blank	Y
		GTM	Yes	Tax class	Blank	Blank	“Yes” ^a
	Tax	USA	No	Blank	Blank	y	Blank
		GTM	No	Blank	“T”	“t”	“No”
Non-taxable	Item	USA	No	Blank	Blank	Blank	n or blank ^b
		GTM	No	Tax class	Blank	Blank	“No”
	Tax ^c	USA	No	Blank	Blank	y	Blank
		GTM	–	–	–	–	–

Table 13.27
USA to GTM, AP
Voucher Memo
Lines

- a. Quotation marks indicate an untranslatable value.
- b. An item is non-taxable if its taxable status is n (No). If the transaction is non-taxable, the tax exemption code is optional.
- c. The conversion deletes USA tax lines resulting from non-taxable amounts.

Table 13.28
USA to GTM, AR
Invoices

Status	Amt	Tax System	ard_tax	ard_tax_at	ard_taxc
Taxable	Item	USA	Blank	Blank	Blank
		GTM	Blank	Tax class	Tax class
	Tax	USA	Blank	Blank	Blank
		GTM	“t” ^a	“No”	Blank
Non-taxable	Item	USA	Blank	Blank	Blank
		GTM	Blank	Tax class	Tax class
	Tax ^b	USA	–	–	–
		GTM	–	–	–

- a. Quotation marks indicate an untranslatable value.
- b. In the U.S. tax system, no tax records are created for non-taxable amounts, so the conversion creates no new records for GTM.

Table 13.29
USA to GTM, AR
DR/CR Memos

Status	Amt	Tax System	ard_tax	ard_tax_at	ard_taxc
Taxable	Item	USA	Blank	“y” ^a	Blank
		GTM	Blank	“Yes”	Tax class
	Tax	USA	“y”	Blank	Blank
		GTM	“t”	“No”	Blank
Non-taxable	Item	USA	Blank	“n” [*]	Blank
		GTM	Blank	“No” [*]	Tax class
	Tax ^b	USA	–	–	–
		GTM	–	–	–

- a. Quotation marks indicate an untranslatable value.
- b. In the U.S. tax system, no tax records are created for non-taxable amounts, so the conversion creates no new records for GTM.

How the Conversion Changes Transaction Records

The following information is provided to assist developers and others who require technical information on how the transaction conversion updates the database.

The menu-level program for USA to GTM–Transactions is txusatrn.p. This program calls subprograms that set the GTM tax values in the individual database files. For all transactions, the conversion also generates corresponding tax detail records in the tx2d_det file.

When setting the GTM tax class value, these programs can either set the existing tax exemption code value or retrieve an alternate value from a class file.

◆ See “Defining Custom Tax Exemption Codes” on page 314.

Table 13.30 lists the affected database files and summarizes the changes.

Database File	Summary of Changes
ard_det	For debit/credit memos, txusaarm.p sets ard_tax and ard_tax_at.
ar_mstr	For debit/credit memos, txusaarm.p sets ar_tax_env using txtxeget.p.
ca_mstr	txusaca.p sets ca_taxc and ca_tax_usage from ca_taxc or from the class file, if any. It also sets ca_tax_env using txtxeget.p.
idh_hist	txusaari.p sets idh_taxc and idh_tax_usage from idh_taxc or from the class file, if any. It also sets idh_tax_env using txtxeget.p.
ih_hist	txusaari.p sets ih_taxc and ih_tax_usage from ih_taxc or from the class file, if any. It also sets ih_tax_env using txtxeget.p.
itm_det	If itm_prefix is CA and itm_type is any value except INV, txusaca.p sets itm_taxc and itm_tax_usage from itm_taxc or from the class file, if any. It also sets itm_tax_env using txtxeget.p.
pod_det	If pod_taxable is Yes, txusapo.p sets pod_taxc to blank and sets pod_tax_env using txtxeget.p. If pod_taxable is No, txusapo.p sets pod_tax_env from po_tax_env.
po_mstr	txusapo.p sets po_tax_pct[1], po_tax_pct[2], and po_tax_pct[3] to 0. It sets po_tax_usage from ad_tax_usage and po_taxc from ad_taxc. It also sets po_tax_env using txtxeget.p.
prh_hist	txusapo.p sets prh_taxc to blank if prh_tax_at is “y”. It also sets prh_tax_env from pod_tax_env. If pod_taxable is Yes, txusapo.p sets prh_tax_at to “Yes”; otherwise, to blank.
qod_det	txusaqo.p sets qod_taxc and qod_tax_usage from qod_taxc or from the class file, if any. It also sets qod_tax_env using txtxeget.p.
qo_mstr	txusaqo.p sets qo_tax_pct[1], qo_tax_pct[2], and qo_tax_pct[3] to 0. txusaqo.p also sets qo_taxc and qo_tax_usage from qo_taxc or from the class file, if any. It also sets qo_tax_env using txtxeget.p.
rma_mstr	txusarma.p sets rma_taxc from rma_taxc or from the class file, if any.
sad_det	txusasc.p sets sad_taxc and sad_tax_usage from sad_taxc or from the class file, if any. txusasc.p sets sad_tax_env from sa_site and sa_taxc using txtxeget.p.
sa_mstr	txusasc.p sets sa_tax_pct[1], sa_tax_pct[2], and sa_tax_pct[3] to 0. It sets sa_taxc and sa_tax_usage from sa_taxc or from the class file, if any. It also sets sa_tax_env using txtxeget.p.

Table 13.30
Changes to
Transaction
Records

Database File	Summary of Changes
sfb_det	txusaca.p sets sfb_taxc and sfb_tax_usage from sfb_taxc or from the class file, if any. txusaca.p sets sfb_tax_env using txtxeget.p.
sod_det	txusaso.p sets sod_taxc and sod_tax_usage from sod_taxc or from the class file if any. txusaso.p sets sod_tax_env using txtxeget.p.
so_mstr	txusaso.p sets so_tax_pct[1], so_tax_pct[2], and so_tax_pct[3] to 0. txusaso.p sets so_taxc and so_tax_usage from so_taxc or from the class file, if any. txusaso.p sets so_tax_env using txtxeget.p.
tx2d_det	<p>txusapo.p creates tax details for purchase orders (GTM transaction type 20), receivers (21), reconciliations (23), and returns (25).</p> <p>txusaapv.p creates tax details for vouchers (22) and recurring vouchers (32).</p> <p>txusaapp.p creates tax details for accounts payable tax on discount at payment (29).</p> <p>txusaqo.p creates tax details for sales quotes (10).</p> <p>txusaso.p creates tax details for invoiced service calls (38), return material authorizations (36), sales orders (11), and pending invoices (13).</p> <p>txusaarm.p creates tax details for debit/credit memos (18).</p> <p>txusaari.p creates tax details for invoices (16).</p> <p>txusaarp.p creates tax details for accounts receivable tax on discount at payment (19).</p> <p>txusasc.p creates tax details for service quotes (33) and service contracts (34).</p>
vod_det	txusaapv.p sets vod_taxable, vod_taxc, vod_tax_usage, vod_tax, vod_tax_at, vod_type, and vod_tax_env. If vod_type is “r” and vod_tax_at is “Y”, vod_taxc is set to blank.
vo_mstr	For vouchers, txusaapv.p sets vo_tax_pct[1], vo_tax_pct[2], and vo_tax_pct[3] to 0. It also sets vo_taxable, vo_taxc, vo_tax_usage, and vo_tax_env.

Converting Canadian Taxes to GTM

This section describes how to convert to GTM from MFG/PRO’s Canadian tax system.

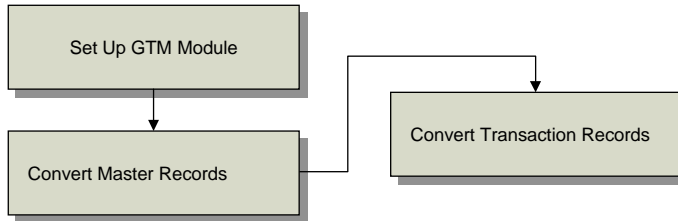


Fig. 13.22
Canadian to GTM
Conversion Process

The Canadian to GTM conversion process translates Canadian tax data to GTM equivalents and updates existing MFG/PRO records. Figure 13.22 summarizes the conversion work flow, which revolves around three sets of activities.

Implementing GTM. You run a setup program that implements GTM for Canadian tax processing.

▶ See page 336.

Converting Master Records. You run a second program that populates database files for customer and supplier addresses, items, product lines, and other master records with GTM data values.

▶ See page 347.

Converting Transaction Records. You run a third program that populates transaction records. All transactions subject to tax are affected, including sales, purchasing, accounts payable, accounts receivable, and service/support management.

▶ See page 352.

Note After each of these activities, it is crucial to review the corresponding reports and audit trails. Mistakes can be pervasive and costly.

Table 13.31 lists the MFG/PRO programs used during the conversion.

Activity	MFG/PRO Programs
Implementing GTM	CAN to GTM–Setup (2.13.22.9)
Converting master records	CAN to GTM–Masters (2.13.22.10)
Converting transaction records	CAN to GTM–Transactions (2.13.22.11)

Table 13.31
MFG/PRO
Programs Used to
Convert Canadian
Taxes to GTM

Setting Up GTM

An automated setup program creates most of the codes you need to implement GTM, based on how your Canadian taxes are defined. Before executing this program, you should understand the options it provides and the default logic it uses.

Code Generation Rules

GTM codes for tax types, tax zones, and tax environments consist of text strings that uniquely identify the province, county, and city of a tax jurisdiction. In Canada, manual setup of these codes would be a tedious process, since there are thousands of them.

Fig. 13.23
Code Generation
Rules in CAN to
GTM–Setup
(2.13.22.9)

One Word		Word 1		Word 2	
Sep/NoSep	Sep/NoSep	Sep/NoSep	Sep/NoSep	Sep/NoSep	Sep/NoSep
3	3	3	3	0	0
4	4	2	2	2	2
7	9	4	5	3	4

Used to generate
codes for Tax
Types, Tax
Zones, and Tax
Environments

Therefore, by default, CAN to GTM–Setup generates codes based on its code generation rules (Figure 13.23). These rules systematically select characters from the province code, county name, and city name in the tax master file.

To determine if generated codes are suitable for your company, run the setup and review the audit trail. If you need a different coding scheme, read the rest of this section and change the settings for the code generation rules as necessary. Then, rerun the setup with Delete Previous GTM set to Yes and Convert Tax Masters set to Yes.

For Canadian taxes, the default generated code format for tax zones, tax types, and tax environments is:

```
PPP-CCCC-ccccccc
```

PPP is the 3-character province code, *CCCC* the 4-character county or district name, and *ccccccc* the 7-character city name. Each text string is separated by a dash (-).

The rules used to determine the characters to select depend on two factors.

- Whether the Canadian code or name used to generate the text string consists of one word or multiple words (text strings separated by blank spaces).
- Whether separator characters are used.

Table 13.32 lists the default number of characters for each text string under the different conditions. However, you can change the number of characters and use a different separator or no separator, as long as the total number of generated characters—including the separator and any ending integers—is 16 or less.

Code	One Word		Multiple Words			
			Word 1		Word 2	
	Sep	No Sep	Sep	No Sep	Sep	No Sep
Province	3	3	3	3	0	0
County	4	4	2	2	2	2
City	7	9	4	5	3	4
Maximum Total Characters, With Separator						14
Maximum Total Characters, Without Separator						16

Table 13.32
Code Generation Rules in CAN to GTM-Setup (2.13.22.9)

Example If the original province code for Alberta is ALBA, the generated text string is ALB regardless of whether separators are used. For the city of Southampton, the generated text string is Southam if separators are used and Southampt if they are not. For the city of Thunder Bay, the generated text string is ThunBay if separators are used and ThundBay if they are not.

The setup retains the capitalization from the original Canadian code or name. If the original code or name contains punctuation such as a period,

the code generation rules treat it the same as any other non-blank character.

Defining Custom Tax Class and Tax Usage Codes

By default, the setup generates tax classes that directly correspond to your Canadian GST master records. To distinguish the two sets of codes, it appends the letter P to the GST + PST code. For example, if your current GST classes are 0, 1, and 2, the generated GTM classes are 0, 1, and 2 (for GST only) and 0P, 1P, and 2P (for GST + PST). The system does not automatically generate tax usages.

You can override this by creating your own map for the setup program and specifying it in the Class File field. The same class file is also referenced in the programs that convert master files and transaction records.

Fig. 13.24
Class File in CAN
to GTM—Setup
(2.13.22.9)

Class file for custom Tax Class and Tax Usage codes

Code Generation Rules		
One Word	Word 1	Word 2
Sep/NoSep	Sep/NoSep	Sep/NoSep
3	3	0
4	4	2
7	9	4

You should create a class file if:

- Your company plans to change its tax class codes during the GTM conversion. In this situation, you must define custom codes for GST only and GST + PST.
- Within a tax class, a company can be taxed based on its nature of operation or the way it intends to use an item. In GTM, these conditions are identified by tax usage codes.

The class file is an ASCII file with text strings in the following format.

```
"Current GST Class" "GST Class" "GST Usage" "Class for GST
+ PST" "Usage for GST + PST"
```

GTM tax classes can have a maximum of three characters, and tax usage codes eight characters. An unused optional value is represented by a null string (" " or "").

The class file can have any name or extension. However, code values in .csv files must be separated by commas instead of blank characters. The file must be located in the home directory for the PROGRESS session.

Example Your current GST codes are 0, 1, and 2, and you want to change them to A, B, and C, plus add a G to indicate GST only.

```
"0" "AG" "" "A" ""
"1" "BG" "" "B" ""
"2" "CG" "" "C" ""
```

Tip
A .csv file is a Windows comma-separated values file format that saves values recorded in a spreadsheet.

Defining Custom Codes for Provinces, Counties, and Cities

The generated codes for tax zones, tax environments, and tax types consist of text strings that identify the province, county, and city. By default, the code generation rules define the structure of these text strings. However, if you need a different naming convention, you can create geographic files for province codes, county names, and/or city names.

See "Code Generation Rules" on page 336.

Geographic files for provinces, counties, and cities

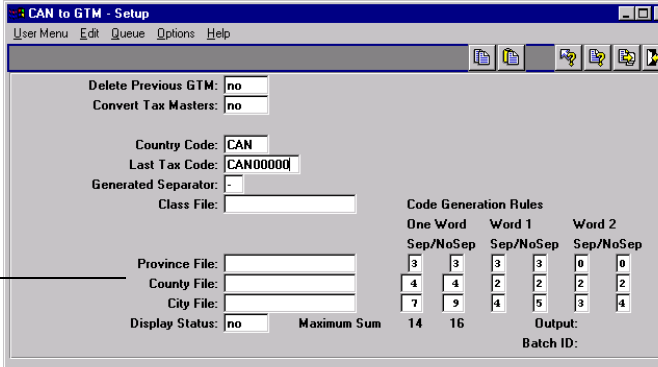


Fig. 13.25
Province, County, and City Files in CAN to GTM-Setup (2.13.22.9)

Tip

You only need to define codes for conditions not already supported by code generation rules.

Create a separate file for each kind of text string and reference the file in CAN to GTM–Setup as shown in Figure 13.25. A geographic file is the same as a class file, except that the file is formatted as follows.

```
"Current Code or Name" "GTM Text String"
```

Example To map province codes for the provinces of Manitoba and Quebec, create a province file with these lines.

```
"MANI" "MB"  
"QUE" "QB"
```

Processing Logic

This program creates MFG/PRO records as described in Table 13.4.

Table 13.33
New GTM Records

Type of Record	Explanation
Tax zones	Based on code generation rules or a class file, setup builds the tax zone hierarchy for the country and all province/county/city combinations used in your current system.
Tax types	Based on code generation rules or a class file, setup generates tax types for the province/county/city combinations used in your current system.
Tax environments	Based on code generation rules or a class file, setup generates tax environments for all ship-to tax zones.
Tax rates	Based on code generation rules or a class file, setup generates tax rates for the tax jurisdictions and percentages used in your current system.

Type of Record	Explanation
Tax classes	<p>By default, the setup generates tax classes based on your Canadian GST master records, in which GST and PST are represented as separate codes. However, the GTM setup generates tax classes for GST only and GST + PST. It sets up PST only as GST + PST with a GST tax rate of 0%. It sets up non-taxable as GST only with GST and PST tax rates of 0%.</p> <p>To distinguish the generated codes, the setup appends the letter P to the GST + PST code. For example, if your current GST classes are 0, 1, and 2, the generated GTM classes are 0, 1, and 2 (for GST only) and 0P, 1P, and 2P (for GST + PST). The system does not automatically generate tax usages.</p> <p>You can choose to bypass the default setup behavior by defining a class file. For more information, see “Defining Custom Codes for Provinces, Counties, and Cities” on page 339.</p>
Tax usages	<p>By default, setup does not generate tax usages. However, you can do this with a class file.</p>
Country code	<p>The setup generates a record for the default country code you specify when you run the setup. This country code is the top-level zone in the tax zone hierarchy.</p>
Company addresses and address list types	<p>In GTM, company sites require a corresponding company address record because taxes are calculated by address, not site. The setup verifies that each company site has an address record and creates any missing ones, along with any needed address list type records. The setup also creates a ~taxes address record to provide a default tax address whenever a transaction is missing a company site code.</p>

GTm Control File Settings

Setup defines the Global Tax Management Control File (2.13.24) as described in Table 13.5.

Field	Explanation
Load Tax Management	Yes
Country Code	As specified during the setup.
Tax Method	01

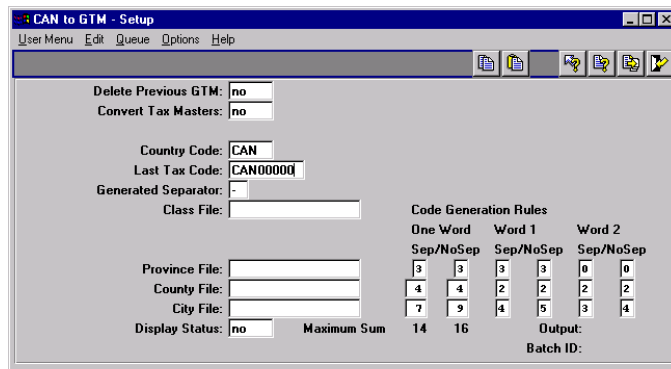
Table 13.34
Updates to GTM Control File Settings

Field	Explanation
Tax-By-Line	No
Accrue Tax at Receipt	Yes
Discount Tax at Invoice	No
Discount Tax at Payment	No
Last Tax Code	As specified during the setup.
Rounding Method	Value specified in the System/Account Control File (36.1)

CAN to GTM–Setup

Based on your implementation decisions, use CAN to GTM–Setup (2.13.22.9) to set up GTM for Canadian tax processing.

Fig. 13.26
CAN to GTM–
Setup (2.13.22.9)



Warning As noted previously, the purpose of the conversion is to replicate your existing tax processing setup in GTM. Do not attempt to implement new GTM functionality until after the entire conversion is complete. Do not change settings in the new GTM records or in Global Tax Management Control File (2.13.24). If you do, the master and/or transaction conversions may fail.

Delete Previous GTM. This option determines whether the setup deletes previously created GTM records from the database. If you select this option, the setup deletes tax zones, tax types, tax environments, transaction tax details, and other GTM records from the database.

- Enter No if you have not yet tried to convert your database to GTM.
- Enter Yes to clean up the database if it contains GTM records from unsuccessful conversion or installation attempts.

Convert Tax Masters. This option determines whether the setup generates the GTM master records from the master files for Canadian GST and PST.

- Enter Yes to create GTM records corresponding to Canadian tax masters: tax classes, tax types, tax zones, tax environments, tax rates, and so on. The audit trail shows the new GTM records.
- Enter No if you are deleting previous GTM records.

Country Code. This country code is the top-level tax zone in the tax zone hierarchy. All other tax zones sum into this one.

If the Global Tax Management Control File already has a country code, it displays here. Otherwise, the setup sets the default country code to CAN. If you override the value here, the setup assigns it to the control file.

Last Tax Code. Enter a value to update the corresponding field in the Global Tax Management Control File. In GTM, tax codes identify individual tax rates. Codes are generated sequentially based on the value of Last Tax Code in the GTM control file.

The default Last Tax Code is an 8-character value that consists of the GTM country code and a right-justified integer with placeholder zeros. For example, for country code CAN, the default Last Tax Code is CAN00000. The system assigns the number CAN00001 to the first tax rate record created in GTM and increments this number for subsequent rates.

If you want tax codes to have a different format, enter a different prefix. Codes display alphanumerically in screens and reports. Tax codes that are totally numeric are left-justified and have no placeholder zeros. For example, codes 1 through 30 display in a report column as follows.

1
...
19
2

20

...

30

Generated Separator. Enter a character to be used as a separator in system-generated tax zones, types, and environments. Using a separator can improve the readability of the component elements of these codes.

The default separator is the dash (–), but you can enter any character. A sample GTM code that uses the dash separator is BC–Van for Vancouver, British Columbia. If you do not want to use separators in codes, enter blank. However, you cannot use blank as a separator character.

▶ See page 338.

Class File. To provide custom mapping of Canadian tax classes to GTM classes and usage codes, specify an ASCII file with conversion information.

▶ See page 339.

Province, County, City File. To override default code generation rules, specify specific values for geographic locations in an ASCII file.

▶ See page 336.

Code Generation Rules. Enter appropriate values for your organization.

Display Status. This setting determines whether the system displays status messages online during the conversion. These messages list database tables and their indexes as they are converted. If you select this option, messages display on the screen and the printed report.

Updates to Company Addresses

In GTM, company sites require a corresponding company address record because taxes are calculated by address, not site. The setup creates any missing company address records for company sites. However, the setup does not populate these new address records with the city, county, province, and country. You must supply this information manually in Company Address Maintenance (2.12).

You must also set up tax zone codes to support these new addresses if the setup did not already generate codes for these tax jurisdictions. Do this in Tax Zone Maintenance (2.13.3.13). Then, assign the tax zone to the address.

Setup Audit Trail

CAN to GTM–Setup prints a report of updated tax master records for GST and PST rates. For GST rates, the report shows the GST class, description, starting and ending effective dates, the GST percent, and the general ledger tax accounts for accounts payable and accounts receivable. For PST, the report shows the province/county/city, tax effective date, tax rate for the effective date, whether PST is based on GST, and the generated GTM tax zone and sums-into zone.

Figure 13.27 and Figure 13.28 show the audit trail formats.

Processing: Create GTM GST from GST masters

GST Class	Description	Start	Eff	End	Eff	GST Pct	AP	GST Acct	AR	GST Acct
0	GST 0	01/01/97				0.00%	1400			2400
1	GST 1	01/01/97				5.00%	1400			2400
2	GST 2	05/29/97		12/31/99		7.00%	1400			2400
3	GST 3	07/02/97		12/31/99		10.00%	1400			2400

Fig. 13.27
GST Audit Trail

Processing: Create GTM PST from PST masters

Province	County	City	Effective	Tax	On GST	Tax Zone	Sums-Into Tax Zone
ALB		Calgary	01/01/96	0.00%	No	ALB-Calgary	ALB
BC		Vancouver	01/01/96	7.00%	Yes	BC-Vancouv	BC
NFL		Bay Roberts	01/01/96	8.00%	No	NFL-BayRob	NFL
ONT		Bala	01/01/96	8.00%	Yes	ONT-Bala	ONT
PEI		Souris	01/01/96	10.00%	Yes	PEI-Souris	PEI

Fig. 13.28
PST Audit Trail

Troubleshooting GTM Setup

After you run CAN to GTM–Setup, verify that the GTM setup is correct before you continue with the conversion. The problems listed in Table 13.35 can cause errors or unexpected values. Before you proceed to the master conversion, review the audit trail, the GTM reports for the new records, and the Global Tax Management Control File settings. Correct any problems before going on.

Subsequent setups do not automatically overwrite records created by previous ones. To set up new records, you must first delete the old ones. If you rerun the setup, you must remove the records created by the earlier setup attempt. To do this, rerun the setup with Delete Previous GTM set to Yes and Convert Tax Masters set to Yes.

Note If you must rerun the setup after you have run any of the other conversion programs, restore the database first. Then, rerun the setup and any other conversion programs you ran previously. This is necessary to perpetuate changes to master files, transactions, and tax details.

Table 13.35
Troubleshooting
the GTM Setup

Error	Explanation
Tax system must be Canadian.	The CAN to GTM setup can only be run on a Canadian tax system.
Must delete previous GTM when converting.	When you set Convert Tax Masters to Yes, you must also set Delete Previous GTM to Yes.
On GST has changed, cannot convert prior to this date.	The setup can convert only the current tax environment, not previous variations. If a city's GST Only status was changed in the span of time included in the conversion, the setup creates tax environments only for current conditions.

Warning Do not correct records programmatically. This approach often causes additional problems.

How the Setup Changes GTM Records

The following information is provided to assist developers and others who require technical information on how the setup updates the database.

The menu-level program for CAN to GTM–Setup is `txcancnv.p`. This program calls subprograms (primarily `txcantax.p`) that set the GTM tax values in the individual database files.

Table 13.36 lists the affected database files and summarizes the changes.

Table 13.36
Changes to GTM
Records

Database File	Summary of Changes
ad_mstr	txcantax.p creates one ~taxes record for the database. It also scans the si_mstr file and creates an address record for any company site that does not already have one.
code_mstr	For each vt_mstr record, txcantax.p creates tax classes for GST only and GST + PST. If a class file is referenced, it creates the specified tax classes and tax usages, if any. For the GST rate in the vt_mstr file and each PST rate in the tax_mstr file, txcantax.p creates a tax type code. For non-taxable transactions, it also creates a default NON-TAX tax type. Finally, for each ship-to tax zone, txcantax.p creates a tax environment and assigns it the tax types associated with the tax zone.
ctry_mstr	txcantax.p creates a record for the default country code specified in the selection data.
ls_mstr	txcantax.p creates an ls_mstr record for each new ad_mstr record, if any.
tx2_mstr	For each vt_mstr record, txcantax.p creates a tax rate for GST only and GST + PST. For each tax_mstr record, txcantax.p creates multiple tx2_mstr records, one for each combination of (1) GST only and GST + PST and (2) each GST class. (For example, if there are three GST classes, the setup generates six tx2_mstr records.) It also runs txtx2_nt.i to create a non-taxable tax rate and txtxmeth.i to create tax method 01.
txc_ctrl	txcantax.p sets txc_ctry_code and txc_tax_code from the selection data. It sets txc_method to 01, txc_by_line to Yes, txc_inv_disc and txc_pmt_disc to No, and txc_rept_tax_point to Yes.
txbd_det	txcantax.p creates a tax base record for PST + GST.
txe_mstr	txcantax.p creates tax environment zone detail records for every tax environment code it generates for the code_mstr file.
txed_det	txcantax.p creates tax environment tax type detail records for every tax environment code it generates for the code_mstr file.
txz_mstr	txcantax.p creates a top-level sums-into tax zone for the new ctry_mstr record. For each province/county/city combination in tax_mstr, it creates a ship-to tax zone.

Converting Master Records

Once you finish the GTM setup, the next activity is to update tax settings in the following master records.

- Suppliers
- Customers
- Product lines
- Items
- Trailer codes
- Service categories
- Service agreement terms

GTM has additional fields and sometimes requires different values for existing fields.

CAN to GTM—Masters

Use CAN to GTM—Masters (2.13.22.10) to convert master records.

Fig. 13.29
CAN to GTM—
Masters
(2.13.22.10)

	All	From:	To:
Suppliers:	no		
Customers:	no		
Countries For Addresses:	no		
Zones For Addresses:	no		
Product Lines:	no		
Items:	no		
Trailer Codes:	no		
Service Categories:	no		
Service Agreement Terms:	no		
Class File:			
Display Status:	no		
			Output:
			Batch ID:

In addition to updating the tax settings in the master records, this program assigns tax zone codes to supplier, customer, and company address records. For verification of changes, the program generates an audit trail.

Important Before you run CAN to GTM—Masters, do the following.

- Run CAN to GTM—Setup (2.13.22.9).
- To avoid record-contention conflicts with other users, shut down the database. When you restart it, verify that no other users are on the system.

- In System/Account Control File (36.1), set Use Tax Management to Yes. Answer Yes to the warning message that confirms your intent to change the company tax structure.

You can convert all records, a range of records, or individual records. This program converts records in the order in which their selection options display on the screen. For separate audit trail reports, run the report separately for each type of record.

If you created a class file during the setup step, specify its name in the Class File field. Display status, output, and Batch ID are the same as in the setup program.

▶ See “Defining Custom Tax Class and Tax Usage Codes” on page 338.

Master Audit Trail

CAN to GTM–Master prints a report of changed records. The format varies depending on the records included in the conversion. For each group of converted records, the report shows the record number and name followed by the before and after tax information, such as country code, tax zone code, GST and PST taxable status, whether tax is included in item amounts, tax class, and tax usage.

Groups of converted records are printed in the same order as the screen selection criteria, and each group is separated by a page break. Warning and error messages identify potential conversion problems.

Figure 13.30 and Figure 13.31 show representative audit trail formats.

Processing: Customers			GST	PST	Tax	In	TxC	TaxUsage
Address	Name							
10000000	Harris Steel	Before	No	No	No		0	
		After	No		No		0	
10000001	Computer Services	Before	Yes	Yes	No		1	
		After	Yes		No		1P	
10000002	Niagara Byteworks	Before	Yes	Yes	No		2	
		After	Yes		No		2P	

Fig. 13.30
Customers Audit Trail

Fig. 13.31
Countries for
Addresses Audit
Trail

```

Processing: Countries For Addresses
-----
Address  Name                               Ctry Country
-----
10000000 Harris Steel                 Before  Canada
                                         After  CAN   Canada
10000001 Computer Services           Before  Canada
                                         After  CAN   Canada
10000002 Niagara Byteworks          Before  Canada
                                         After  CAN   Canada
    
```

Troubleshooting Master Conversions

The error messages in the audit trail identify conditions you should analyze and address before you convert transactions. Table 13.37 lists some common problems along with explanations. Before you make corrections, restore the database from backup.

Warning Do not proceed to the transaction conversion until the master conversion audit trail is free of errors.

Table 13.37
Troubleshooting
the Master
Conversion

Error	Explanation
Tax class cannot be converted.	The class file does not contain a GST class that matches the one in the master record.
GST class must exist 0%.	The GST class master must have at least one GST class with a zero percentage.
Blank tax class not allowed.	The GST class is blank in the class file.
Tax class cannot exceed 3 characters (xxx).	The GST class in the class file is longer than three characters. The message shows the first three characters.
Tax class does not exist (x).	The GST class in the class file does not exist in the GST master.
Tax class is not unique (x).	The GST class occurs in multiple places in the class file.
Tax class does not exist (xxx).	The GTM tax class in the class file does not exist in the GTM tax class master.
Tax usage cannot exceed 8 characters (xxxxxxxx).	A GTM tax usage in the class file is longer than eight characters. The message shows the first eight characters.
Tax usage does not exist (xxxxxxxx).	The GTM tax usage in the class file does not exist in the GTM tax usage master.

Error	Explanation
Tax class/tax usage combination is not unique (xxx xxxxxxx).	The GTM tax class and tax usage combination occurs in multiple places in the class file.
Conversion will ignore tax class (x).	The class file does not have an entry for a GST class that is in the class master.

Note x, xxx, and xxxxxxx are placeholders for the actual codes displayed in the error message.

How the Conversion Changes Master Records

The following information is provided to assist developers and others who require technical information on how the master conversion updates the database.

The menu-level program for CAN to GTM–Masters is txcanmst.p. This program calls subprograms that set the GTM tax values in the individual database files.

When setting the GTM tax class value, these programs can either set the existing tax class code or retrieve an alternate value from a class file.

▶ See “Setting Up GTM” on page 336.

Table 13.38 lists the affected database files and summarizes the changes.

Database File	Summary of Changes
ad_mstr	In supplier records, txcanvd.p sets ad_taxable from vd_taxable. It also sets ad_taxc and ad_tax_usage from ad_taxc or from the class file, if any. If vd_taxable is No, ad_taxc is GST only; otherwise, GST + PST. In customer records, txcancm.p sets ad_taxable from cm_taxable and ad_tax_in from cm_tax_in. It also sets cm_taxc and ad_tax_usage from cm_taxc or from the class file, if any. If cm_pst is No, the tax class is GST only; otherwise, GST + PST. In all address records, txcanct.p sets ad_ctry from ad_country and visa versa. txcanzn.p calls txtxzget.p to set ad_tax_zone.
fsc_mstr	txcanfsc.p sets fsc_taxc from fsc_taxc or from the class file if any. Tax class is set to GST only.
pl_mstr	txcanpl.p sets pl_taxc from pl_taxc or from the class file, if any. If pl_pst is No, the tax class is GST only; if it is Yes, to GST + PST.

Table 13.38
Changes to Master Records

Database File	Summary of Changes
pt_mstr	txcanpt.p sets pt_taxc from pt_taxc or from the class file, if any. Tax class is set to GST only.
sv_mstr	txcansv.p sets sv_taxc and sv_tax_usage from sv_taxc or from the class file, if any. Tax class is set to GST only.
trl_mstr	txcantrl.p sets trl_taxc from trl_taxc or from the class file, if any. It also sets trl_taxable to Yes. If trl_pst is No, the tax class is GST only; if it is Yes, to GST + PST.

Converting Transaction Records

Once you finish converting master records, you can convert the following transaction records.

- Purchase orders and receipts
- Accounts payable vouchers and payments
- Service contracts, calls, and return material authorizations
- Sales quotes and orders
- Accounts receivable memos, invoices, and payments

In GTM, every transaction subject to tax has a transaction tax detail record. This record stores the information used to calculate tax.

CAN to GTM—Transactions

Use CAN to GTM—Transactions (2.13.22.11) to convert existing transaction records.

All	From:	To:
Purchasing: <input type="checkbox"/> no		
AP Vouchers: <input type="checkbox"/> no		
AP Payments: <input type="checkbox"/> no		
Service Contracts: <input type="checkbox"/> no		
Service Calls: <input type="checkbox"/> no		
RMA Orders: <input type="checkbox"/> no		
Sales Quotes: <input type="checkbox"/> no		
Sales Orders: <input type="checkbox"/> no		
AR Memos: <input type="checkbox"/> no		
AR Invoices: <input type="checkbox"/> no		
AR Payments: <input type="checkbox"/> no		

Class File:

Display Status: no

Output: Batch ID:

Fig. 13.32
CAN to GTM–
Transactions
(2.13.22.11)

In addition to updating transactions, this program generates an audit trail for verification of changes.

Important Before you run CAN to GTM–Transactions, do the following.

- Run CAN to GTM–Setup (2.13.22.9) and CAN to GTM–Masters (2.13.22.10).
- To avoid record-contention conflicts with other users, shut down the database. When you restart it, verify that no other users are on the system.

You can convert all records, a range of records, or individual records. This program converts records in the same order they display on the screen.

In some cases, the record sequence is important. Purchasing transactions must be converted before accounts payable vouchers and vouchers before payments. Accounts receivable memos and invoices must be converted before payments.

If you created a class file during the setup step, specify its name in the Class File field. Display status, output, and Batch ID are the same as in the setup program.

Transaction Audit Trail

The transaction conversion prints a report of changed records. The format varies depending on the records included in the conversion. For each group of converted records, the report shows the transaction number and name followed by the before and after tax information for each line item,

Tip
For separate audit trail reports, run the report separately for each type of record.

▶ See “Defining Custom Tax Class and Tax Usage Codes” on page 338.

such as taxable status, tax environment, tax class, and tax usage. Groups of converted records are printed in the same order as the screen selection criteria, and each group is separated by a page break.

Warning and error messages identify potential conversion problems. Messages that appear at the end of a transaction apply to the entire transaction; those that appear between the Before and After line apply only to that line.

Figure 13.33 and Figure 13.34 show representative audit trail formats.

Fig. 13.33
Accounts Payable
Audit Trail

Processing: AP Vouchers											
Ref	Type	Supplier	Ln	GST	TxC	TaxUsage	Tax	Env	vod_type	vod_tax	vod_tax_at
105	VO	32487432		Before	No						
				After	Yes	0P		PEI-GG			
			1	Before	No	1			R		1
				After	Yes	1		PEI-GG	R		Yes
			2	Before	No					1	
				After	No				T	t	No

Fig. 13.34
Service Calls Audit
Trail

Processing: Service Calls											
Call ID	Call/SR	Cust	Cust	Ln	Record	GST	PST	TxC	TaxUsage	Tax	Env
CA124		10000000	Yes	1	Call	Before	Yes	1			
						After	Yes	1P			NB
CA125		10000001	Yes	1	Item	Before	Yes	Yes 1			
						After	Yes	1P			NB
CA126		10000002	Yes	1	Billing	Before	Yes	Yes 1			
						After	Yes	1P			NB
				2	Billing	Before	No	Yes 0			
						After	Yes	1P			NB

Troubleshooting Transaction Conversions

The error messages in the audit trail identify conditions you should analyze and address before you resume live GTM processing. Table 13.39 lists some common problems along with explanations. Before you make corrections, restore the database from backup.

Warning Do not resume live processing until the transaction conversion audit trail is free of errors. Do not correct transaction records programmatically. This approach often causes additional problems.

In addition to examining the audit trail, it is advisable to review the Tax Detail by Transaction Report (2.13.15.3). This report shows the tax environments, tax types, and tax amounts for the converted records. Verify that tax calculations are what you expect.

Converted transactions may have minor differences in before/after tax amounts. These can occur because GTM uses a different calculation algorithm or rounding method than your current system. To synchronize the general ledger with the converted transactions, record adjusting entries.

Error	Explanation
GST class must exist 0%.	The GST class master must have at least one GST class with a zero percentage.
Freight, brokerage, or duty charges cannot be converted.	There is no equivalent ability in GTM.
Detail tax environment must match header.	In accounts payable vouchers and accounts receivable debit/credit memos, the tax environment must be the same in both the header and detail lines.

Table 13.39
Troubleshooting
the Transaction
Conversion

To eliminate ambiguity, the audit trail shows before and after values for purchasing, accounts payable, and accounts receivable records by their PROGRESS database field name, not their screen label. For example, the audit trail displays voucher line types in the vod_type column.

As you interpret the audit trail for the transaction conversion, it can be helpful to see Table 13.40 through Table 13.44. These tables summarize the nature of before/after tax values.

Status	Tax System	pod_taxable	prh_tax_at
Taxable	CAN	Yes	Tax class
	GTM	Yes	"Yes" ^a
Non-taxable	CAN	No	"0"
	GTM	Yes	"Yes"

Table 13.40
CAN to GTM,
Purchasing
Transactions

a. Quotation marks indicate an untranslatable value.

Table 13.41
CAN to GTM, AP
Voucher Receiver
Lines

Status	Amt	Tax System	GST	TxC	vod_type	vod_tax	vod_tax_at
Taxable	Item	CAN	Yes	GST class	“R” ^a	Blank	GST class
		GTM	Yes	Tax class	“R”	Blank	“Yes”
	Tax	CAN	No	Blank	Blank	GST class	Blank
		GTM	No	Blank	“T”	“t”	“No”
Non-taxable	Item	CAN	No	Blank	“R”	Blank	0% GST class
		GTM	Yes	Tax class	“R”	Blank	Blank
	Tax ^b	CAN	No	Blank	Blank	GST class	Blank
		GTM	–	–	–	–	–

- a. Quotation marks indicate an untranslatable value.
- b. The conversion deletes Canadian tax lines resulting from non-taxable amounts.

Table 13.42
CAN to GTM, AP
Voucher Memo
Lines

Status	Amt	Tax System	GST	TxC	vod_type	vod_tax	vod_tax_at
Taxable	Item	CAN	Yes	Blank	Blank	Blank	GST class
		GTM	Yes	Tax class	Blank	Blank	“Yes” ^a
	Tax	CAN	No	Blank	Blank	GST class	Blank
		GTM	No	Blank	“T”	“t”	“No”
Non-taxable	Item	CAN	No	Blank	Blank	Blank	0% GST class
		GTM	Yes	Tax class	Blank	Blank	“No”
	Tax ^b	CAN	No	Blank	Blank	GST class	Blank
		GTM	–	–	–	–	–

- a. Quotation marks indicate an untranslatable value.
- b. The conversion deletes Canadian tax lines resulting from non-taxable amounts.

Table 13.43
CAN to GTM, AR
Invoices

Status	Amt	Tax System	ard_tax	ard_tax_at	ard_taxc
Taxable	Item	CAN	Blank	GST class	Blank
		GTM	Blank	Tax class	Tax class
	Tax	CAN	GST class or blank ^a	Blank	Blank
		GTM	“t” ^b	“No”	Blank

Status	Amt	Tax System	ard_tax	ard_tax_at	ard_taxc
Non-taxable	Item	CAN	Blank	0% GST class	Blank
		GTM	Blank	Tax class	Tax class
	Tax ^c	CAN	0% GST class	Blank	Blank
		GTM	–	–	–

- a. Blank for PST.
- b. Quotation marks indicate an untranslatable value.
- c. The conversion deletes Canadian tax lines resulting from non-taxable amounts.

Table 13.44
CAN to GTM, AR
DR/CR Memos

Status	Amt	Tax System	ard_tax	ard_tax_at	ard_taxc
Taxable	Item	CAN	Blank	GST class	Blank
		GTM	Blank	“Yes” ^a	Tax class
	Tax	CAN	GST class ^b	Blank	Blank
		GTM	“t”	“No”	Blank
Non-taxable	Item	CAN	Blank	0% GST class	Blank
		GTM	Blank	“No”	Tax class
	Tax ^c	CAN	–	–	–
		GTM	–	–	–

- a. Quotation marks indicate an untranslatable value.
- b. DR/CR memos do not calculate PST.
- c. The conversion deletes Canadian tax lines resulting from non-taxable amounts.

How the Conversion Changes Transaction Records

The following information is provided to assist developers and others who require technical information on how the transaction conversion updates the database.

The menu-level program for CAN to GTM–Transactions is txcantrn.p. This program calls subprograms that set the GTM tax values in the individual database files. For all transactions, the conversion also generates corresponding tax detail records in the tx2d_det file.

▶ See “Defining Custom Tax Class and Tax Usage Codes” on page 338.

When setting the GTM tax class value, these programs can either set the existing tax class code value or retrieve an alternate value from a class file.

Table 13.45 lists the affected database files and summarizes the changes.

Table 13.45
Changes to
Transaction
Records

Database File	Summary of Changes
ard_det	For debit/credit memos, txcanarm.p sets ard_tax and ard_tax_at. It also sets ard_taxc (GST only), ard_tax_usage, and ard_tax_at.
ar_mstr	For debit/credit memos, txcanarm.p sets ar_tax_env.
ca_mstr	txcanca.p sets ca_taxc and ca_tax_usage from ca_taxc or from the class file, if any. If cm_pst is No, ca_taxc is GST only; otherwise, it is GST + PST. It also sets ca_tax_env using txtxeget.p.
idh_hist	txcanari.p sets idh_taxc and idh_tax_usage from idh_taxc or from the class file, if any. It sets idh_taxable to Yes. If idh_pst is No, idh_taxc is GST only; otherwise, it is GST + PST. It also sets idh_tax_env using txtxeget.p.
ih_hist	txcanari.p sets ih_taxable to Yes and ih_pst_pct to 0. It sets ih_taxc (GST only) and ih_tax_usage from ih_taxc or from the class file, if any. It also sets ih_tax_env using txtxeget.p.
itm_det	txcanca.p sets itm_taxc (GST + PST) and itm_tax_usage from itm_taxc or from the class file, if any. It sets itm_taxable to Yes. It also sets itm_tax_env using txtxeget.p.
pod_det	txcanpo.p sets pod_taxable to Yes and pod_tax_env using txtxeget.p. If pod_pst is No, then pod_taxc is 0; otherwise, pod_taxc is 0P.
po_mstr	txcanpo.p sets po_tax_pct[1], po_tax_pct[2], and po_tax_pct[3] to 0. It sets po_taxable to Yes. It sets po_taxc and po_tax_usage from the ad_taxc value for the corresponding supplier. It also sets po_tax_env using txtxeget.p.
prh_hist	txcanpo.p sets prh_taxc from pod_taxc, prh_tax_usage from pod_tax_usage, and prh_tax_env from pod_tax_env. Since po_taxable is Yes, it sets prh_tax_at to Yes.
qod_det	txcanqo.p sets qod_taxable to Yes. It sets qod_taxc and qod_tax_usage from qod_taxc or from the class file, if any. It sets qod_taxable to Yes. If qod_pst is No, tax class is GST only; otherwise, it is GST + PST. It also sets qod_tax_env using txtxeget.p.

Database File	Summary of Changes
qo_mstr	txcanqo.p sets qo_tax_pct[1], qo_tax_pct[2], and qo_tax_pct[3] to 0. It sets qo_taxable to Yes and qo_pst_pct to 0. It sets qo_taxc and qo_tax_usage from qo_taxc or from the class file, if any. If cm_pst is No, tax class is GST only; otherwise, it is GST + PST. It also sets qo_tax_env using txtxeget.p.
rma_mstr	txcanrma.p sets rma_taxc from rma_taxc or from the class file, if any. It sets rma_taxable to Yes. If cm_pst is No, tax class is GST only; otherwise, it is GST + PST.
sad_det	txcansc.p sets sad_taxc and sad_tax_usage from sad_taxc or from the class file, if any. It sets sad_taxable to Yes. If sad_pst is No or sa_prefix is QA, tax class is GST only; otherwise, it is GST + PST. It also sets sad_tax_env from sa_site and sa_taxc using txtxeget.p.
sa_mstr	txcansc.p sets sa_tax_pct[1], sa_tax_pct[2], and sa_tax_pct[3] to 0. It sets sa_taxable to Yes and sa_can_tax to 0. It sets sa_taxc and sa_tax_usage from sa_taxc or from the class file, if any. If cm_pst is No, tax class is GST only; otherwise, it is GST + PST. It also sets sa_tax_env using txtxeget.p.
sfb_det	txcanca.p sets sfb_taxc from itm_taxc and sfb_tax_usage from itm_tax_usage. It sets sfb_taxable to Yes. It also sets sfb_tax_env using txtxeget.p.
sod_det	txcanso.p sets sod_taxc and sod_tax_usage from sod_taxc or from the class file if any. It sets sod_taxable to Yes. If sod_pst is No, tax class is GST only; otherwise, it is GST + PST. It also sets sod_tax_env using txtxeget.p.
so_mstr	txcanso.p sets so_taxable to Yes and so_pst_pct to 0. It sets so_tax_pct[1], so_tax_pct[2], and so_tax_pct[3] to 0. It sets so_taxc and so_tax_usage from so_taxc or from the class file, if any. If cm_pst is No, tax class is GST only; otherwise, it is GST + PST. It also sets so_tax_env using txtxeget.p.

Database File	Summary of Changes
tx2d_det	<p>txcanpo.p creates tax details for purchase orders (GTM transaction type 20), receivers (21), reconciliations (23), and returns (25).</p> <p>txcanapv.p creates tax details for vouchers (22) and recurring vouchers (32).</p> <p>txcanapp.p creates tax details for accounts payable tax on discount at payment (29).</p> <p>txcanqo.p creates tax details for sales quotes (10).</p> <p>txcanso.p creates tax details for invoiced service calls (38), return material authorizations (36), sales orders (11), and pending invoices (13).</p> <p>txcanarm.p creates tax details for debit/credit memos (18).</p> <p>txcanari.p creates tax details for invoices (16).</p> <p>txcanarp.p creates tax details for accounts receivable tax on discount at payment (19).</p> <p>txcansc.p creates tax details for service quotes (33) and service contracts (34).</p>
vod_det	<p>txcanapv.p sets vod_taxable to Yes. It sets vod_taxc (GST only) and vod_tax_usage from vod_tax_at. It sets vod_tax, vod_tax_at, and vod_type. It also sets vod_tax_env using txtxeget.p.</p>
vo_mstr	<p>For vouchers, txcanapv.p sets vo_tax_pct[1], vo_tax_pct[2], and vo_tax_pct[3] to 0. It sets vo_taxable, vo_taxc, and vo_tax_usage. It also sets vo_tax_env using txtxeget.p.</p>

Index

Symbols

~reports 135
~screens 135
~taxes 136

Numerics

1.1.1 32
1.1.13 30
1.1.18 30, 31
1.2.1 27
1.2.13 27
1.2.17 27
1.4.1 16
1.4.3 88, 111
1.4.5 16, 20
1.4.7 16
1.4.9 16
1.4.16 16
1.4.17 16
1.4.18 16, 23
1.5.9 20
1.5.12 19
1.8.1 44
1.8.7 46
1.8.19 46
1.8.20 48
1.9.1.1 98
1.9.1.3 99
1.9.1.5 103
1.9.1.7 105
1.9.1.9 106, 109
1.9.2.1 107
1.9.2.4 92
1.9.2.8 119
1.9.2.13 107
1.9.2.16 93, 120
1.9.6.1 93, 96, 121
1.9.6.2 119

1.9.6.13 122
1.9.7.1 93, 107, 109, 123
1.9.7.3 94, 124
1.9.7.4 94, 125, 127
1.9.7.5 94, 126
1.9.7.13 126
1.9.9.1 119
1.9.9.6 96
1.9.11 119
1.9.13 108, 127
1.9.14 109, 127
1.9.24 96
1.10.1.24 41
1.10.2.5 81
1.10.2.6 80
2.1.1 138
2.1.7 141
2.1.13 137
2.3.1 142, 145
2.3.13 142
2.5.1 136
2.5.16 137
2.11 156
2.12 135, 240
2.13.1.1 220
2.13.1.2 220
2.13.1.3 220
2.13.1.5 221
2.13.1.6 221
2.13.1.7 221
2.13.1.9 222
2.13.1.13 229
2.13.1.17 223
2.13.1.18 223
2.13.1.19 223
2.13.1.22 228
2.13.1.23 228
2.13.3.1 215

2.13.3.14	218	3.9	182
2.13.3.15	218	3.10	182
2.13.5.1	225, 226	3.11	182
2.13.13.1	234	3.12	182
2.13.13.5	237	3.13	187
2.13.22.1	298	3.14	187, 188
2.13.22.2	301	3.15	188
2.13.22.3	305	3.17	192
2.13.22.5	318	3.18	192
2.13.22.6	324	3.19	192
2.13.22.7	328	3.21	184
2.13.22.9	342	3.21.1	184
2.13.22.10	348	3.21.2	184
2.13.22.11	352	3.21.13	184
2.13.24	227, 239	3.21.14	185
2.15.1.3	209	3.21.16	185
2.17.1	143	3.21.23	185
2.19.1	146	3.22	185
2.20.1	152	3.22.1	185
2.20.4	153	3.22.2	185
2.20.7	154	3.22.3	185
2.20.10	154	3.22.4	186
2.21.1	144	3.23	30
2.21.2	144	3.24	20, 178
2.21.3	144	4.2	196
2.22.1.16	162	4.4	195
2.22.1.19	162	4.6	196
2.22.1.22	162	4.7	197
2.22.3	165	4.8	196
2.22.11	170, 171	4.12	197
2.22.13	171	4.13	196
2.22.19	172	4.15	196, 197
2.22.20	174	4.18	197
3.3	192	4.21	195, 198
3.4.1	181	4.23	194, 196
3.4.2	181	5.13.1	150
3.4.3	181	5.24	85, 150
3.4.4	181	7.1.11	68
3.6.1	189	13.5	88
3.6.2	189	13.13.3	95
3.6.3	20, 189	13.13.22	95
3.6.5	190	14.22	95
3.6.6	190	15.5	88
3.6.8	190	15.22	95
3.6.9	191	19.1.13	88
3.6.13	191	19.1.22	95
3.6.14	191	36.2.17	103
3.6.15	191	36.3.24	96
3.6.16	191	36.13.2	95
3.7	183	36.14.1	95
3.8	183	36.14.3	95

A

- ABC class codes 20, 186
- ABC Status Report/Update 20
- absorbed taxes 249
- accounts
 - inventory 27
 - product line 26
 - sales 27
- accounts payable (AP)
 - tax account 247
- Accounts Payable Control File
 - tax variances 266
- accrual
 - price list 51, 61
- action status
 - sales order repricing 70
- activating
 - Intrastat 163
- additive discounts 41
- Address Code Change 156
- addresses 132–155
 - address file relationships 133
 - banks 144
 - bill-to 136
 - carriers 143
 - company 135
 - GTM 240
 - customer 137
 - declarants and agents 162
 - employee 143
 - Intrastat 167
 - list type 134
 - merging 156
 - printing on forms 136
 - salesperson 137
 - ship-to 136
 - site
 - GTM 240
 - supplier 142
- agent
 - selecting for Intrastat print 174
- aggregate taxes 244
- allocate single lot 21
- Allocated Inventory Inquiry 192
- alternate
 - product line accounts 27
- amount type
 - accrual 51
 - credit terms 51
 - discount % 51
 - discount amt 51
 - freight list 51
 - freight terms 51
 - list price 51
 - list/discount table pricing 79
 - markup 51
 - net price 51
- Analysis Code Copy 48
- Analysis Code Detail Build 46
- Analysis Code Detail Inquiry 48
- Analysis Code Detail Maintenance 47
- Analysis Code Link Maintenance 46
- Analysis Code Maintenance 44
- Analysis Code Report 44
- Analysis Code Selection Maintenance 44
- Analysis Code Where-Used Inquiry 48
- analysis codes 42–48
 - Automatic AC Regen 41
 - automatic build 47
 - building 46
 - child 46
 - combining into groups 46
 - conditions 44, 45
 - copying 48
 - customer conditions 45
 - item conditions 45
 - linking 46
 - parent codes 46
 - planning 40
 - rules 46
 - setting up 42
- AP Tax by Tax Rate Report 287
- AP Tax by Transaction Report 287
- approval
 - group for PCC 104
 - product change order 102, 121
- Approval Browse 119
- AR Tax by Tax Rate Report 287
- AR Tax by Transaction Report 287
- archive/delete
 - Intrastat records 175
- automatic
 - analysis code regeneration 41
 - locations 30
 - lot numbers 20
- average cost
 - non-recoverable tax 281
 - purchase variances 277
 - recoverable tax 275
 - tax accrual for memo items 280
 - tax accrual for returned items 281
 - tax calculation 275
 - tax for inventory items 276
- average interval 20

B

- banks
 - addresses 144
 - company address 135
 - defining accounts 145
 - supplier 144
- base date 147
- base days
 - base date and 150
 - in inflationary environments 150
- Batchload Transfer With Lot/Serial Change 181
- best pricing 38–75
 - analysis codes 42
 - calculating 54
 - combining discounts 52
 - configured items 54
 - control file defaults 41
 - discount types 51
 - planning 39
 - price lists 58
 - reports 65
 - repricing 68
 - Sales Order Maintenance 72
- break categories 39, 49, 53
- Break Category field 49
- building
 - analysis codes 47
- Bulk Tag Create 196
- burden
 - item cost category 23

C

- CAN to GTM—Masters 347–352
- CAN to GTM—Setup 336–347
- CAN to GTM—Transactions 352–360
- Canadian taxes 211
 - conversion to GTM
 - class files 338
 - code generation rules 336
 - geographic files 339
 - master audit trail 349
 - master records 347
 - setup 336
 - setup audit trail 345
 - transaction audit trail 353
 - transactions 352
 - Goods and Services Tax (GST) 211
 - Provincial Sales Tax (PST) 211
- capped taxes 246
- Carrier Maintenance 143
- cascading discounts 41
- category

- break 49
- CIM interface
 - inventory transfer 181
- class files
 - Canadian taxes to GTM 338
 - U.S. sales tax to GTM 314
 - VAT to GTM 295
- classes
 - freight 153
 - tax 221
- Closed AR Delete/Archive
 - temporary addresses 138
- closing
 - PCO to PCO 110
 - PCR/PCO 127
- codes
 - vs master comments 19
- combinable discounts 52
- commissions 136
- Commodity Code Maintenance 165
- commodity codes 164, 165
 - associating with a country 167
- Company Address Maintenance 135
 - GTM requirements 240
 - Intrastat addresses 167
- company addresses
 - banks 135
 - converting tax info 240
 - country code field 167
 - purchase order 135
 - setting up for Intrastat 167
 - taxes 136
- compound interest
 - credit limit calculation 141
- configured items
 - pricing 54, 60
- control file
 - Global Tax Management 239
 - Intrastat 162
 - Inventory 178
 - Pricing 41
 - VAT 210
- conversion
 - GTM 289
 - PCR to PCO 111
- cooperative marketing 40
- copying
 - analysis codes 48
 - PCOs from PCRs/PCOs 110
 - PCOs to PCR/PCO 110
 - price lists
 - best prices 63

- list/discount table 81
- tax rates 237
- cost data 16
- Country Code Browse 215
- Country Code Maintenance 161, 215
- Country Code Report 215
- country codes 215
 - alternate 215
 - DEA country 216
 - EC country 215
 - for company address 167
 - for customers and suppliers 168
 - GATT country 216
 - groups 216
 - NAFTA country 215
 - name 215
 - setting up 215
 - type 216
- Country of Dest/Disp field 163
- country codes
 - GTM 216
- credit limit
 - adjusting 141
 - calculating 141
 - checking in sales order repricing 70
 - methods of calculating 141
 - update 141
- credit terms 146
 - adjusting entries not calculated 150
 - base date 147
 - base days 150
 - interest 147
 - price list 51
 - proximo 146
 - purchasing transactions 150
 - sales transactions 150
 - two levels 146
- credit terms interest 149, 150
- default 150
- Credit Terms Maintenance 146, 149
 - proximo terms 147
- currency
 - price lists 58
- Current Surplus Inventory Report 190
- Customer Credit Limit Adjustment 141
- Customer Item Maintenance 24
- Customer Maintenance 138
 - Intrastat country codes 168
- Customer Orders by Price List Inquiry 67
- Customer Ship-to Maintenance 137
- Customer/Supplier Bank Browse 144
- Customer/Supplier Bank Maintenance 144

- Customer/Supplier Bank Report 144
- customers 137
 - analysis codes regeneration 41
 - banks 144
 - bill-to 137
 - country codes 168
 - credit data 139
 - default GTM tax data 240
 - freight data 140
 - ship-to 137
 - sold-to 137
- Cycle Count Results Entry 187, 188
- Cycle Count Results Report 188
- Cycle Count Worksheet Print 187
- cycle counting 33, 187
 - initial counts 187
 - interval 20
 - recounts 188
 - results report 188

D

- date
 - PCO effective 125
 - pricing effective 41
 - reference 164
- declarant
 - selecting for Intrastat print 174
- Declarant Branch ID field 164
- declarations
 - printing Intrastat 172
 - reprinting 174
 - selecting for final print 173
- delete/archive
 - Intrastat records 175
 - inventory tags 194
- Detail Approval Maintenance 122
- discount tables 76
 - requiring 85
- discount types
 - accrual 51
 - credit terms 51
 - discount % 51
 - discount amt 51
 - freight list 51
 - freight terms 51
 - list price 51
 - markup 51
 - net price 51
- discounted taxes 248
- discounts 41
 - additive example 56
 - base 52

- base-combinable 52
- cascading example 56
- combinable 52
- combination type 41
- exclusive 52
- pricing 68
- quantity 69
- sequence order 56
- volume 41, 69
- volume discounts 41

distribution group 107

E

- EC Sales Listing 247, 287
- ECOs
 - printing 95
 - replaced by PCC module 88
 - turning off functionality 95
- effective dates
 - setting for PCOs 125
- E-mail
 - during PCC routing 104
- Employee Maintenance 143
- employees 143
- Enable PCC Formula Maintenance 95
- Enable PCC Item Spec Maintenance 95
- Enable PCC Routing Maintenance 95
- Enable PCC Structure Maintenance 95
- entities
 - general ledger (GL) 29
 - Site Maintenance 29
- environments
 - tax 224
- error codes
 - GTM environment 227
 - GTM tax zone 219
- EU. *See* European Union (EU)
- European Community (EC) 215
 - EC process work 236
 - EC sales list 236, 247
- European Union (EU)
 - Country Code Maintenance 215
 - Intrastat reporting 157
- exemptions 243
- exploded nodes
 - analysis codes 47
- export
 - PCR/PCO 127

F

- factors 41
- fixed interest (credit limit calculation) 141

- fixed prices
 - sales orders 69
- Flow Indicator Maintenance 161
- formats
 - VAT registration 241
- Formula Maintenance 88
- freezing inventory balances 195
- freight charges 151–155
 - freight class 153
 - freight lists 152
 - freight terms 155
 - freight zones 153
- Freight Charges Maintenance 154
- Freight Class Maintenance 154
- Freight List Maintenance 152
- freight lists
 - price list 51
- freight terms 155
 - price list 51
- Freight Zone Maintenance 153

G

- general ledger (GL)
 - accrued tax at receipt 247
 - AP tax account 247
 - cost categories 23
 - GTM effects 262
 - tax accounts 231
- Generalized Codes Maintenance
 - county codes 216
 - province codes 216
 - state codes 216
- geographical area 40
- Global Tax Management (GTM)
 - calculating taxes
 - custom methods 244
 - standard methods 245
 - concepts 204
 - conversion 289
 - Canadian taxes to GTM 335
 - overview 290
 - planning 291
 - post-conversion procedures 292
 - prerequisites 290
 - U.S. sales tax to GTM 311
 - VAT to GTM 292
 - correcting amounts 261
 - GL effects 262
 - implementing 213
 - limitations 204
 - overview 202
 - partial item amounts 244

- processing taxes 253
 - rounding methods 223
 - sample scenario 205
 - setup
 - addresses 240
 - control file 239
 - country codes 215
 - customer tax data 240
 - customers 240
 - GL accounts 231
 - item tax class 243
 - tax bases 229
 - tax classes 221
 - tax environments 224
 - tax rates 232
 - tax types 220
 - tax usages 221
 - tax zones 216
 - tax calculation logic 254
 - tax data windows 257
 - tax exemptions 243
 - tax methods 245
 - troubleshooting 288
 - viewing tax amounts 259
 - Global Tax Management Control File 239
 - country code 216
 - Tax Environment field 227
 - Goods and Services Tax (GST) 211
 - Group Maintenance 98
 - adding users 99
 - groups
 - PCC 98
 - adding users 100
 - approval 104
 - distribution 107
 - replacing users 101, 102
 - GST. *See* Goods and Service Tax (GST)
 - GTM. *See* Global Tax Management (GTM)
- I**
- Implementation (PCO) 126
 - import
 - PCR/PCO 127
 - Incorporation (PCO) 94, 126
 - Incorporation Planning Report 94, 124
 - Incorporation Selection 94, 125, 127
 - initializing PCOs 96
 - inquiries
 - Intrastat 175
 - memory considerations 185
 - workfiles and 185
 - Intrastat 157–176
 - audit trail information 176
 - data for orders 169
 - delete/archive records 175
 - features 158
 - inquiries and reports 175
 - manual update of records 171
 - order maintenance
 - example 169
 - printing declarations 172
 - qualitative information 176
 - quantitative information 176
 - region code 167
 - setting up 160
 - addresses for declarants and agents 162
 - codes 161
 - commodity codes 165
 - company addresses 167
 - country codes 168
 - Intrastat item data 166
 - item net weight 168
 - Intrastat Control File 162
 - Intrastat Declaration Print 172
 - Intrastat Declaration Reprint 174
 - Intrastat Inquiry 175
 - Intrastat Inquiry by Invoice 175
 - Intrastat Inquiry by Order 175
 - Intrastat Inquiry by Voucher 175
 - Intrastat Item flag
 - changing to Yes 171
 - Intrastat Maintenance 169, 171
 - Intrastat Net Weight Minimum field 163
 - Intrastat Net Weight Unit of Measure field 163
 - inventory 177–192
 - accurate balances 33
 - availability 32
 - checking availability 192
 - data 16, 19
 - detail records 180
 - impact of PCO 124
 - issues
 - restrictions 32
 - location 30
 - negative balances 33
 - nettable 32
 - not available 32
 - overissue 34
 - overissue flag 33
 - picking 178
 - sites 28
 - status codes 32
 - total 180
 - transaction effective date 164

- transactions 33
 - updating balances 198
 - Inventory Account Maintenance 27
 - Inventory Balance Freeze 195
 - Inventory Balance Update 195, 198
 - inventory codes
 - ABC Class 20
 - allocate single lot 21
 - automatic lot numbers 20
 - average interval 20
 - cycle count interval 20
 - location 20
 - location type 20
 - lot/serial control 20
 - shelf life 20
 - site 20
 - Inventory Control File 178
 - ABC tolerances 187
 - cycle counting 186
 - location search order 30
 - Site 20
 - Inventory Detail by Item Browse 192
 - Inventory Detail by Location 190
 - Inventory Detail by Site Browse 192
 - Inventory Detail Report 190
 - inventory reports
 - Current Surplus Inventory Report 190
 - Inventory Detail by Location 190
 - Inventory Detail Report 190
 - Inventory Valuation as of by Loc 191
 - Inventory Valuation as of Date 191
 - Inventory Valuation by Location 191
 - Inventory Valuation Report 191
 - Item ABC Status Report/Update 189
 - Projected Surplus Inventory 191
 - Reorder Report 189
 - Stock Status Report 189
 - Inventory Status Code Maintenance 32
 - inventory transactions 180, 181
 - issues 182, 183
 - receipts 182
 - shipments 183
 - Inventory Valuation as of by Location 191
 - Inventory Valuation as of Date 191
 - Inventory Valuation by Location 191
 - Inventory Valuation Report 191
 - Inventory Variance Report 197
 - Invoice Post
 - Intrastat records created 163
 - Value Added Tax (VAT) 211
 - issues 182
 - inventory transactions 182
 - Issues–Return to Supplier 183
 - Issues–Unplanned 183
 - Item ABC Status Report/Update 189
 - Item Data Maintenance 88, 111
 - Item Intrastat Data Maintenance 166
 - item inventory data 20
 - Item Inventory Data Maintenance 20
 - Cycle Count Interval field 187
 - Item Master Comments Report 19
 - Item Master Maintenance 16
 - Cycle Count Interval field 187
 - Price Break Cat field 50
 - Item Revision History Inquiry 96
 - Item Specification Maintenance 88
 - items 15–24
 - ABC classification 19
 - alternate unit of measure 18
 - analysis codes regeneration 41
 - and generalized codes 17
 - cost data 23
 - customer items 24
 - data 16
 - general data 17
 - GL cost 23
 - groups 18
 - in multiple sites 16
 - Intrastat setup 166
 - inventory data 19
 - net weight for Intrastat 168
 - numbering 17
 - numbers as indexes 17
 - PCR/PCO update of 111
 - planning 21, 22
 - price break categories 39, 49
 - price default 23
 - Pur/MFG code 22
 - supplier items 24
 - types 18
 - unit of measure 18
 - Item-Site Cost Maintenance 23
- L**
- life cycle of a PCR/PCO 91
 - linking
 - analysis codes 43, 46
 - List Price price list 62
 - list type (address) 134
 - list/discount table pricing 76–86
 - Location Maintenance 30, 31
 - locations 30–34
 - and picklists 30
 - automatic 30

- naming conventions 30
- overview 30
- permanent/temporary 30
- single item 31
- types 31
- Lot Actual Bill Inquiry 185
- lot control
 - Item Master Maintenance 20
- Lot Transactions by Date Browse 185
- Lot Transactions by Tran Inquiry 185
- Lot Where-Used Inquiry 186
- Lot/Serial Number History Menu 185
- luxury taxes 246

M

- Maintain Users in Groups 99
 - adding users 100
 - removing users 102
 - replacing users 101
- manual price lists 74
- master
 - comments
 - copying text into PCO 111
 - vs codes 19
- material requirements planning (MRP)
 - item planning data 21, 22
- memo items
 - Intrastat 164
 - tax accrual 274
- Menu Password Maintenance
 - PCO update access 128
- minimum price 41
- Mode of Transport field 164
- Mode of Transport Maintenance 162
- multiple databases
 - site codes 29

N

- NAFTA 215
- Nature of Transaction Maintenance 161
- net weight
 - item data for Intrastat 168
- nodes
 - analysis codes 47
- non-recoverable tax 269
- notification
 - PCC approvals 103
- numbers
 - items 17
 - PCR/PCO 96

O

- OR logic 43, 46
- Order Intrastat Data Maintenance 170, 171
- overissues 33, 34

P

- PCC
 - auto numbering 96
 - security 96
 - setting up 94
 - user IDs 95
- PCC Control File 96
- PCO
 - adding, modifying, and deleting text files 111
 - approval 93, 121
 - auto numbering of 108
 - changing numbers 110
 - closing 127
 - closing PCO to PCO 110
 - copying from PCR/PCO 110
 - copying to PCR/PCO 110
 - data affected by 88
 - database 108
 - distribution 123
 - effective dates 90, 125
 - evaluating impact on inventory 124
 - ID 108
 - implementation 94, 126
 - importing and exporting 127
 - incorporating into production files 126
 - incorporation 94
 - initializing 96
 - item file maintenance 111
 - item/site data not maintained by 89
 - life cycle 91, 92
 - master comment 111
 - multi-database installations and 108
 - overview 89
 - prefixes for numbers 97
 - printers and batch IDs 95
 - process file maintenance 117
 - product structures in 113
 - release 123
 - release and distribution 93
 - reopening 118
 - rerouting 122
 - revision levels 112
 - routing for approval 93, 120
 - security issues 128
 - text file maintenance 111
 - trailer maintenance 118
 - types of data in 107

- viewing data 119
- PCO Maintenance 107–119
 - Formula File Maintenance
 - Copy Formula into PCO 116
 - Copy Where Used into PCO 116
 - PCR/PCO Detail Maintenance–Formulas 116
 - Replace Formula Component 116
 - header 108
 - Item File Maintenance 111
 - Add, Modify, Delete PCO Item Files 111
 - Direct Item Master Access 112
 - Item Specification Maintenance
 - Add/Edit/Deactivate Item Specification 117
 - Copy Item Spec From Quality Module 118
 - PCO/PCR Function Maintenance
 - Change PCO Number 110
 - Close PCO to PCO 110
 - Copy PCO from PCR/PCO 110
 - Copy PCO to PCR/PCO 110
 - Process File Maintenance 117
 - Routing File Maintenance
 - Add/Edit/Deactivate Routing 115
 - Add/Edit/Deactivate Routing (Rate Based) 116
 - Copy Routing to PCR/PCO 116
 - Section Menu 109
 - Structure File Maintenance 113
 - Copy Product Structures into PCO 113
 - Copy Where Used into PCO 113, 114
 - Product Structure detail 114
 - Replace Product Structure Component 114
 - Text File Maintenance 111
 - Add, Modify, Delete PCO Text Files 111
 - Copy Text from Master Comments 111
 - Trailer Maintenance 118
- PCO Status Browse 119
- PCR
 - approval 92
 - life cycle 91
 - routing for approval 92, 120
 - types of data in 107
- PCR Maintenance 107
 - PCO/PCR Function Maintenance
 - Close PCR to PCO 110
 - Convert PCR to PCO 111
- PCR/PCO Approval 93, 96, 121
- PCR/PCO Close 109, 127
- PCR/PCO Detail Inquiry 119
- PCR/PCO Import/Export 108, 127
- PCR/PCO Type Maintenance 106, 109
- permanent locations 30
- physical inventory 193–198
 - creating and printing tags 195
 - deleting/archiving old tags 194
 - freezing inventory balances 195
 - reviewing results 197
 - Tag Recount Entry 197
 - Updating Inventory Balances 198
- picking logic 178
 - inventory 178
 - options 179
- planning
 - data 16, 21, 22
- PO Receipt 150
- Port Maintenance 162
- Port of Transshipment field 164
- Price by Line Due Date field 86
- Price List Copy (1.10.1.8) 63
- Price List Copy (1.10.2.5) 81
- Price List Generation by Item 80
- Price List Inquiry 62
- Price List Maintenance (1.10.1.1) 58
- Price List Maintenance (1.10.2.1) 76
- Price List Report 62
- price lists
 - accrual 61
 - Combination Type field 59
 - copying 63
 - creating 50
 - Disc Sequence field 60
 - incremental 52
 - List Price 62
 - manual 74
 - Quantity Type field 59
 - requiring 86
 - unit of measure 58
- Price Lists by Customer Inquiry 62
- Price Lists by Item Inquiry 62
- pricing
 - analysis codes 42
 - assigning lower net 55
 - best pricing 38
 - break categories 39, 49
 - calculating best 55
 - effective date 41, 42
 - inquiries 66
 - introduction 36
 - list/discount table 76
 - promotional discount 40
 - tables 76
- Pricing Control File 41
- Pricing What-If Inquiry 66
- Print PCR/PCO 119
- printing
 - cycle count worksheets 187

ECO 95
 Intrastat declarations 172
 tax information 287
 VAT registration numbers 240
 processes
 PCR/PCO update of 117
 product change control. *See* PCC
 product change orders. *See* PCO
 product change request. *See* PCR
 product definition 7, 13
 Product Line Maintenance 27
 product lines 25–28
 accounts 26
 alternate accounts 27
 defining 25
 Product Structure Maintenance 88
 product structures
 maintaining in PCR/PCO 113
 Projected Surplus Inventory 191
 promotions prefix
 pricing 42
 province codes 216
 GTM 216
 Provincial Sales Tax (PST) 211
 company address 136
 proximo terms 146
 use of 147
 ways to set up 147
 PST. *See* Provincial Sales Tax (PST)
 pt_um 18
 Pur/Mfg code 22
 purchase price variance 270
 purchase receivers
 and Intrastat 163
 Purchasing Control File 150
 pricing fields 85

Q

quality management
 PCC control of item specifications 117
 quotes. *See* sales quotes

R

rates
 GTM tax 232
 Reason Codes Maintenance
 severity lists 103
 receipts
 inventory 182
 Receipts–Backward Exploded 182
 Receipts–Return to Stock 182
 Receipts–Sales Order Return 182

Receipts–Unplanned 182
 recoverable taxes 246, 263
 account 231
 Reference Date Logic field 164
 region code
 for Intrastat declarations 167
 Region Maintenance 162
 registration
 VAT 241
 Release and Distribution 93, 107, 109, 123
 Reorder Report 189
 reports
 Intrastat 175
 tax 287
 Reprice field 72
 repricing
 sales orders and quotes 68
 reprinting
 Intrastat declarations 174
 retained tax account 231
 retained taxes 249
 returned items
 tax accrual 274
 reverse-calculated taxes 250
 revision levels
 PCC 112
 Rounding Method Browse 223
 Rounding Method Maintenance 223
 Rounding Method Report 223
 rounding methods
 global tax management (GTM) 223
 thresholds 224
 unit 223
 Route PCO for Approval 93, 120
 Route PCR for Approval 92
 Routing Slip Copy 105
 Routing Slip Maintenance 103
 details 104

S

Sales Account Maintenance 27, 28
 Sales Order Control File
 accounts 150
 pricing fields 85
 Sales Order Maintenance
 Global Tax Management (GTM) 257
 Intrastat data 169
 pricing fields 74
 repricing 72
 Transaction Tax Detail frame 259
 View/Edit Tax Details 259
 Sales Order Manual Allocations

- allocate single lot 21
 - Sales Order Price Inquiry 68, 71
 - Sales Order Pricing Report 73
 - Sales Order Repricing 68
 - sales orders
 - customer address 137
 - Display SO Discounts as 42
 - price lists. *See* best pricing
 - Price SO by Line 42
 - repricing 68
 - SO Default Price Date 42
 - SO Factor Rounding 42
 - tax adjustments 251
 - Value Added Tax (VAT) 210
 - Sales Quote Price Inquiry 71
 - sales quotes
 - customer address 137
 - Display QO Discounts as 41
 - Price QO by Line 41
 - QO Default Price Date 41
 - QO Factor Rounding 41
 - repricing 68
 - sales tax
 - absorbed account 231
 - account 231
 - U.S. 209
 - Salesperson Maintenance 136
 - Salesperson Payments Report 137
 - salespersons
 - commissions 136
 - territory codes and 136
 - security
 - PCR/PCO 96
 - Product Change Control module 128
 - Security Control File
 - PCO and PCR security 96
 - sequences
 - discount 56
 - GTM tax types 227
 - setting up
 - country codes 215
 - Intrastat
 - addresses for declarants and agents 162
 - PCC module 95
 - severity level 105
 - severity list 103
 - shelf life 20
 - ship-to addresses
 - temporary 138
 - Ship-To Maintenance
 - Intrastat country codes 168
 - simple interest (credit limit calculation) 141
 - single item locations 31
 - Site Maintenance 29, 30
 - sites 28–30
 - address records 240
 - multiple databases 29
 - overview 28
 - setting up 28
 - uses of 28
 - standard cost
 - GTM taxes 263
 - inventory items 264
 - non-recoverable tax 269
 - recoverable tax 263
 - tax for returned items 274
 - taxes for inventory items 270
 - taxes for memo items 268
 - taxes for returned items 269
 - variances 265
 - state codes 216
 - GTM 216
 - Statistical Procedure Maintenance 162
 - statistical value
 - calculating Intrastat 176
 - status
 - inventory 32
 - PCR/PCO 119
 - Stock Availability Browse 192
 - Stock Status Report 189
 - sums-into relationships 218
 - sums-into zone 217
 - Supplier Item Maintenance 24
 - Supplier Maintenance 142
 - bank account window 145
 - banks 145
 - Intrastat country codes 168
 - Supplier Remit-to Maintenance 142
 - suppliers 142
 - banks 144
 - country codes 168
 - System/Account Control File
 - product line accounts 25
 - tax system 208
- T**
- Tag Count Entry 197
 - Tag Delete/Archive 194, 196
 - Tag Inquiry 196
 - Tag Print 196
 - Tag Recount Entry 197
 - Tag Report 196
 - Tag Void Status Update 197
 - tax accrual 270

- Tax Base Maintenance 229
 - tax bases 229
 - Tax Class Browse 221
 - Tax Class Maintenance 221
 - Tax Class Report 221
 - tax classes 221
 - Value Added Tax (VAT) 210
 - Tax Detail by Transaction Inquiry 287
 - Tax Detail by Transaction Report 287
 - Tax Environment Maintenance 225, 226
 - tax environments 224
 - examples 225
 - selection criteria 255
 - setting up 225
 - tax exemptions
 - GTM 243
 - U.S. sales tax 210
 - Tax Rate Copy/Update 237
 - Tax Rate Maintenance 234
 - tax rates 232
 - copying 237
 - selecting 255
 - setting up 234
 - Value Added Tax (VAT) 210
 - tax reporting
 - aggregate tax 244
 - by exemption 243
 - Tax Type Inquiry 220
 - Tax Type Maintenance 220
 - Tax Type Report 220
 - tax types 220
 - Tax Usage Maintenance 222
 - tax usages 221
 - Tax Zone Inquiry 218
 - Tax Zone Maintenance 218
 - Tax Zone Report 218
 - tax zones 216
 - error codes 219
 - hierarchies 216, 217
 - sums-into 217
 - taxes
 - absorbed 249
 - accrued 237
 - Canadian 211
 - capped 246
 - company address 136
 - correcting 261
 - discounted 248
 - introduction 208
 - luxury 246
 - overview 202
 - processing 253
 - recoverable 246, 263
 - reporting 287
 - reports 287
 - retained 249
 - reverse-calculated 250
 - rounding methods 223
 - tax-on-tax 247
 - troubleshooting 288
 - U.S. sales 209
 - viewing amounts 259
 - tax-on-tax 229
 - temporary locations 30
 - terms
 - credit 146
 - delivery 161
 - freight 155
 - Terms of Delivery Maintenance 161
 - Trailer Code Maintenance 151, 228
 - trailer codes
 - defaults 151
 - tax status 228
 - taxable 151
 - Trailer Tax Detail Browse 228
 - Trailer Tax Report 228
 - Transaction by Item Inquiry 184
 - Transaction Detail Inquiry 184
 - Transaction History Menu 184
 - Transactions Accounting Report 185
 - Transactions by Item Report 185
 - Transactions by Order Report 184
 - Transactions Delete/Archive 185
 - Transfer With Lot/Serial Change 181
 - Transfer–Multi Item 181
 - transfers
 - inventory 181
 - Transfer–Single Item 181
 - triangulation
 - Intrastat 168
 - troubleshooting
 - common GTM problems 288
 - type
 - location 31
 - PCR/PCO 106
 - tax 220
- U**
- U.S. sales tax 209
 - company address 136
 - conversion to GTM
 - class file 314
 - code generation rules 321
 - master records 323

- setup 312
- setup audit trail 321
- transaction audit trail 329
- transaction records 327
- U.S. Sales Tax Report 209
- Unallocated Inventory Inquiry 192
- Uncounted Tag Report/Update 196, 197
- unit of measure 18
 - acceptable values 18
 - alternates 18
- USA to GTM—Masters 323–327
- USA to GTM—Setup 312–323
- USA to GTM—Transactions 327–334
- usages
 - tax 221
- Use Intrastat field 163
- User Maintenance
 - PCC groups 95
- users
 - adding to PCC groups 99

V

- Value Added Tax (VAT) 210
 - class codes
 - mapping to GTM 300
 - conversion to GTM
 - converting master records 300
 - custom tax classes 295
 - master audit trail 301
 - setup 294

- transaction records 304
- registration formats 241
- registration numbers
 - printing 240
- sales orders 210
- variable overhead 23
- VAT Control File 210
- VAT registration
 - number formats 242
- VAT Registration Number Report 287
- VAT to GTM—Masters 300–304
- VAT to GTM—Setup 294–300
- VAT to GTM—Transactions 304–311
- VAT. *See* Value Added Tax (VAT)
- Void/Zero Count Unused Tags 197
- volume discounts 41
- voucher date
 - Intrastat 164
- Voucher Maintenance
 - Intrastat effect 165

W

- Work Order Bill Maintenance
 - allocate single lot 21

Z

- Zero Balance Delete/Archive 30
- zones
 - freight 153
 - GTM 216