

Industry-specific

QAD SOLUTIONS

Manufacturing Applications

User Guide

QAD Multi-Level Pegging

Features of MLP
Setting Up MLP
Finding Sources of Supply
Finding Sources of Demand
MLP Messages
MLP Control File



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MFG/PRO eB, eB2, and eB2.1
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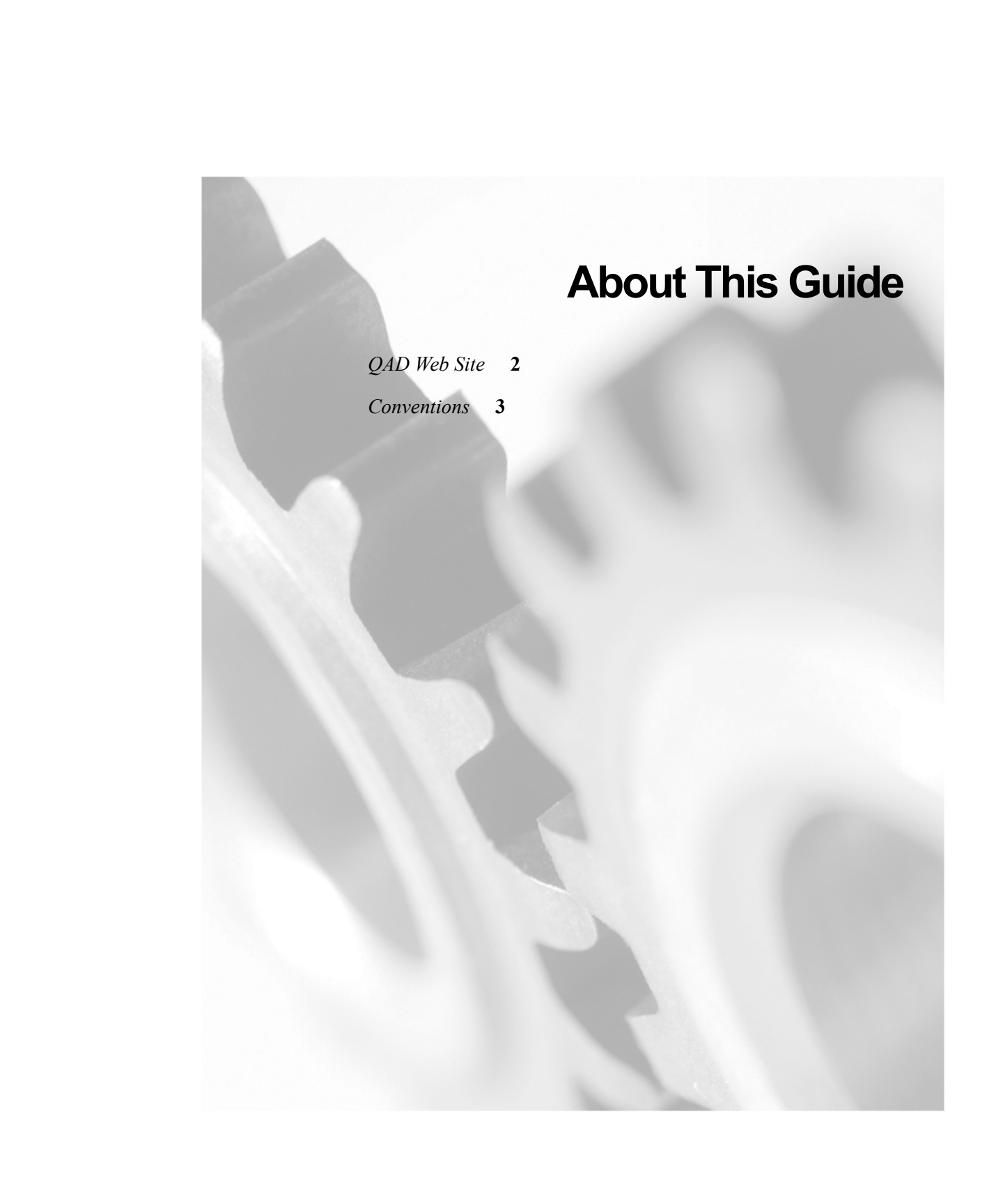
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About This Guide

QAD Web Site **2**

Conventions **3**

This guide covers the features of Multi-Level Pegging. It is divided into six chapters:

- Chapter 1, “Features of MLP,” on page 5.
- Chapter 2, “Setting Up MLP,” on page 7.
- Chapter 3, “Finding Sources of Supply,” on page 11.
- Chapter 4, “Finding Sources of Demand,” on page 23.
- Chapter 5, “MLP Messages,” on page 39.
- Chapter 6, “MLP Control File,” on page 45.

QAD Web Site

The QAD Web site provides a wide variety of information about the company and its products. You can access the Web site at:

<http://www.qad.com>

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

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

You can register for a QAD Web account by accessing the Web site and clicking the Accounts link at the top of the screen. Your customer ID number is required. Access to certain areas is dependent on the type of agreement you have with QAD.

Most user documentation is available in two formats:

- Portable document format (PDF) files can be downloaded from the QAD Web site to your computer. You can view and print them with the free Adobe Acrobat Reader.
- HTML files let you view user documentation through your Web browser and use search tools for easily locating topics of interest.

Features of ServiceLinQ also include an online searchable solution database to help answer questions about setting up and using QAD products. Additionally, the site has information about training classes and other services that can help you learn about QAD products.

Conventions

This document uses the text or typographic conventions listed in the following table.

If you see:	It means:
monospaced text	A command or file name.
<i>italicized monospaced text</i>	A variable name for a value you enter as part of an operating system command; for example, <i>YourCDROMDir</i> .
indented command line	A long command that you enter as one line, although it appears in the text as two lines.
Note	Alerts the reader to exceptions or special conditions.
Important	Alerts the reader to critical information.
Warning	Used in situations where you can overwrite or corrupt data, unless you follow the instructions.



Chapter 1

Features of MLP

This chapter provides an overview and describes the features of Multi-Level Pegging (MLP).

Overview **6**

Features **6**

Overview

Companies who are assemble-to-order or make-to-order businesses need to be able to relate items from a purchase order to those on a sales order. In this way, they can track the entire path of a customer's order through their production process. Multi-Level Pegging (MLP) is a tool that enables such linking of purchase order items to sales order items. MLP allows you to track in two directions, so you can track the supplying orders for a given request and also the demanding orders for a given supplying order.

MLP creates a direct relationship between the demand for an item and the supply of that item. It lets you track the relationship between orders that create demand and those supply orders that satisfy the demand.

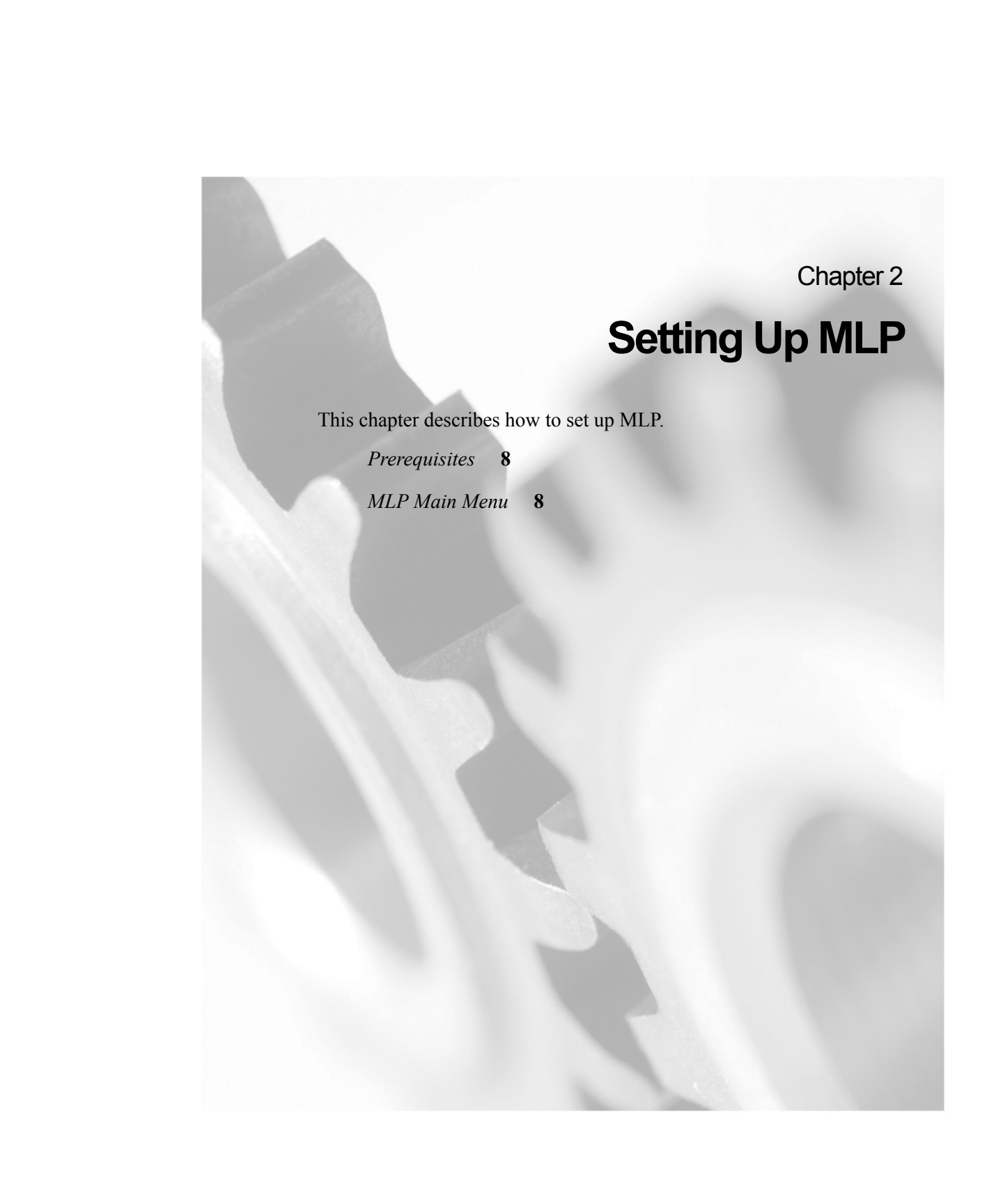
Features

MLP features support the linking of supply and demand orders.

The features of MLP that enable such linking are:

- It integrates with MFG/PRO.
- It shows the relationships of various types of demand orders to the various types of supply orders.
- It shows a view of the situation, rather than making changes to it. Therefore, it is a monitoring tool to be used in the control of manufacturing and sales.

MLP is run independently from MFG/PRO. Use MLP to view the pegging results for newly approved Purchase Requisitions. After creating Purchase Order from Purchase Requisitions, use MLP to apply (transfer) pegging of Purchase Orders to Sales Orders.

The background of the page is a grayscale image of several interlocking gears. The gears are of different sizes and are positioned in a way that they appear to be meshing together. The lighting creates highlights and shadows on the teeth of the gears, giving them a three-dimensional appearance. The overall tone is technical and industrial.

Chapter 2

Setting Up MLP

This chapter describes how to set up MLP.

Prerequisites **8**

MLP Main Menu **8**

Prerequisites

Before you use MLP, check to ensure that all the necessary information is already entered into MFG/PRO. You must do this before MLP can display results. Any of the following entities that are associated with the items in the orders you wish to track must exist in MFG/PRO. If any need to be added, use the appropriate options listed below:

- Site (1.1.13)
- Location (1.1.18)
- Customer (2.1.1)
- Supplier (2.3.1)
- Product BOM:
 - Items (1.4.1)
 - Product Structure (13.5)
- Routings (14.13.1)

MLP Control flags (60.24) must exist for the various types of orders that MLP will use. See “MLP Control File” on page 46, for details.

MLP Main Menu

MLP is a separate non-intrusive module and can be approached in a separate menu (60 MLP).

Fig. 2.1
MLP Main Menu
(60)

```

.....Your Name Here : qaddb.....
.mfmenu                      60. MLP                      28/06/01
.....
.
.....
. 1. Order Progress Inquiry      13.
. 2. Order Progress Report      14.
. 3.                            15.
. 4. Multi-Level Pegging Inquiry 16.
. 5. Multi-Level Pegging Report 17.
. 6.                            18.
. 7. Mlp Run                    19.
. 8.                            20.
. 9. MLP message Maintenance    21.
. 10. MLP Message Inquiry       22.
. 11. MLP Message Report        23.
. 12.                           24. MLP Control File
.....
Please select a function.  F4 or blank to EXIT.
.....

```

Using MLP Run to Link Demand and Supply

The Material Requirements Planning (MRP) run in MFG/PRO matches every demand in the system with a supply. In order to link the demands and supplies, you must use the MLP Run (60.7) option before using any other MLP functions.

You must also use the MLP Run option whenever the results of the Materials Plan functions change. This will ensure that the other MLP functions produce valid results.

mlpmain.p mlp7060.7 Mlp Run28/06/01

Item Number:

To:

Site:

To:

Output:

Batch ID:

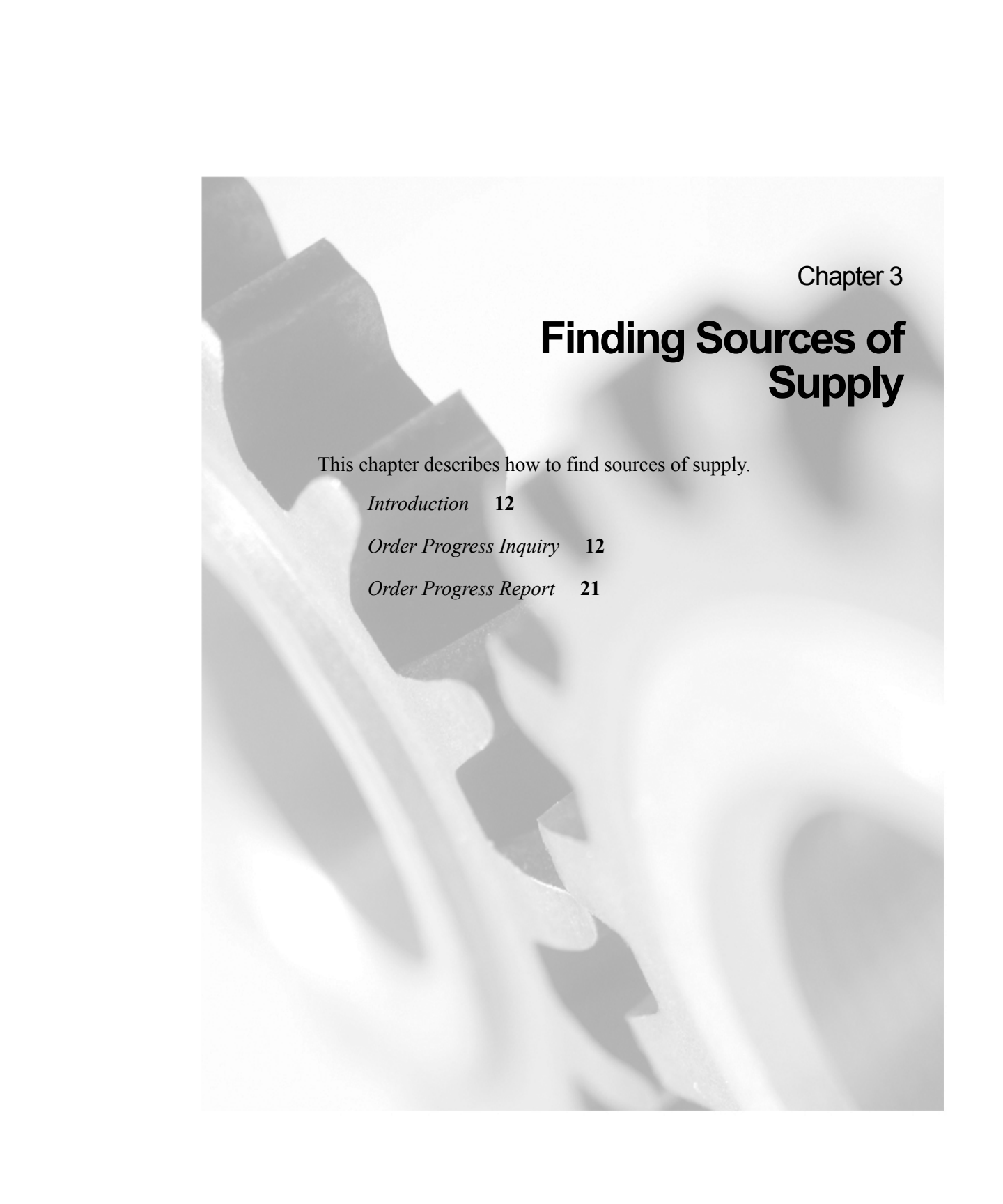
Fig. 2.2
MLP Run Option
(60.7)

You can specify a range of items for which you want to create links by entering the *from* number in the Item Number field, and the *to* value in the To field. To specify all items, leave both fields empty.

You can specify a range of sites by entering the *from* number in the Site field, and the *to* value in the To field. To specify all sites, leave both fields empty.

You can also specify the Batch ID in the Batch ID field.

Press F2 (Go) to create the links. When they are completed, the system displays a message saying the list is complete.



Chapter 3

Finding Sources of Supply

This chapter describes how to find sources of supply.

Introduction **12**

Order Progress Inquiry **12**

Order Progress Report **21**

Introduction

Two options allow you to find out about the supplying orders for a particular sales order: Order Progress Inquiry and Order Progress Report.

Use Order Progress Inquiry to examine details of the orders. Use Order Progress Report to send the order detail to a printer or save it to a file.

Order Progress Inquiry

The figure below shows the first screen of Order Progress Inquiry (60.1).

Fig. 3.1
Order Progress
Inquiry (60.1)

mlpsoiq.p mlp70	60.1 Order Progress Inquiry	28/06/01
.....		
. Type:	Item Number:	Site:
.....		
.Reference:	Qty:	Through level:
. Line/ID:	Due Date:	Only for type:
.....		

Click the look-up icon next to the Type field or press the Help key to display the look-up browse screen for the Type field. This is shown in the next figure. Use the arrow keys to select the option you want from the look-up browse screen.

Fig. 3.2
Look-up Browse
Screen

mlpsoiq.p mlp70	60.1 Order Progress Inquiry	28/06/01
.....		
. Type:	Demand Types.....	
.Reference:	Type [V]CS	.
. Line/ID:		
.....		
. Type	Description	
.....		
. >CS	.Customer Schedule ..	
. FC	.Forecast ..	
. IR	.Intersite Request ..	
. SB	.Seasonal Build ..	
. SO	.Sales Order ..	
. SR	.Scrap Requirement ..	
. SS	.Safety Stock ..	
. WO	.Work Order ..	
.....		
.	.	
.....		

Figure 3.1 on page 13 lists the input fields. The input fields are those that appear in Figure 3.1 on page 12. When you press F2, the screen changes as shown in Figure 3.2 on page 12, and the fields listed in Table 3.3 on page 16 are displayed.

Table 3.1
Input Fields

Field	Description	Comment
Input		
Type	Enter the type of order you want to track.	The possible entries are Top-Level Demand types and Other Demand types. See the look-up browse.
Reference	The usage of these fields is different for different values of Type. See Table 3.2 on page 14.	Use the browse and select.
Item Nbr		Use the browse and select.
Line/ID		Use the browse and select.
Site		Use the browse and select.
Qty	The system fills this field.	
Due Date	The system fills this field.	
Through level	Specify the number of levels of the order chain that you want to view.	Leave this blank to show all levels.
Only for type	The possible entries are Other Demand types and Supply types. If you want to look at only a certain type of order, specify that type here. You cannot enter SO for Sales Order because a Sales Order cannot derive from either a Work Order or a Sales Order.	Leave this blank to show all levels.

Table 3.2
Types

No.	Type	Field	Browse Description	Selection of One Line From Browse	Remarks
1	SO	Reference SKIP Item Number Line/ID	Shows Sales Order Headers. Shows lines per selected Sales Order.	Fills Reference with Sales Order Number. Populates all relevant fields.	 Should not be used in combination with Reference.
2	SO	SKIP Reference Item Number	Shows Sales Order Lines.	Populates all relevant fields.	
3	CS	Reference Item Number	Shows Scheduled Sales Orders. Scheduled Order Items.	Populates Reference. Populate all relevant fields.	 Overwrites Sales Order if selected before.
4	CS	Reference Line/ID	Shows Scheduled Sales Orders. Scheduled Orders.	Populates Reference. Populates all relevant fields.	
5	CS	SKIP Reference Item Number	Scheduled Order Items.	Populates all relevant fields.	

No.	Type	Field	Browse Description	Selection of One Line From Browse	Remarks
6	FC	Item Number Site Line/ID	Forecast (Item Year Site). (no browse). Weeknumber + qty.	Populates only Item Number; remembers Site Year. Populates all relevant information.	Field may not be protected for manual entry.
7	IR	Reference	Intersite Demand requests.	Does not show any details	see (9)
8	IR	SKIP reference Item Number	Intersite requests.	Populates all relevant fields.	
9	IR	Reference Item Number Site Line/Id	<i>Fill manually.</i> <i>SKIP.</i> <i>Fill with DEMAND site.</i> <i>Fill with SUPPLY site.</i>		
10	SB	Item Number	Shows seasonal build records for specific items.	Populates all relevant fields.	
11	SR	Item Number Site	Shows all items. No browse.	Populates Item Number.	
12	SS	Item Number Site	Shows all items Standard site browse	Populates Item Number.	Type SS also shows negative stock.

No.	Type	Field	Browse Description	Selection of One Line From Browse	Remarks
13	WO	Reference	Shows all work orders, initially sorted per FSM type.	Select one order.	
14	WO	item Number	Shows all work orders; initially sorted per Item.	Only Item Number is populated.	

Table 3.3
Output Fields

Output		
Level	Shows the level in the Product Structure of the line displayed. 1 is the highest level, 2 the next, then 3, and so on.	
Ref	The reference number of the WO or SO.	
Line/ID	The line/ID of the item.	
Tp	The type of order displayed.	The possible entries are Other Demand types and Supply types.
Item Nbr	The reference number of the item. Highlight this and press Enter to see details of the order.	
Qty	The quantity of the item. See the section “Quantity” on page 19.	
Due Date	The date the supplying order is due.	

mlpsoiq.p mlp70		60.1 Order Progress Inquiry			28/06/01	
.....						
Type: so		Item Number: 90-110			Site: 10000	
Reference: 10001		Qty: 200.0			Through level:	
Line/ID: 3		Due Date: 26/01/98			Only for type:	
.....						
.....Supplied by:.....						
Level	Ref	Line/ID	Tp	Item Nbr	Qty	Due Date
.....						
..1	04050001	30000	IR	90-110	200.0	05/04/00*
...2	03100021	401940	WO	90-110	270.0	08/04/94*
....3	03030006	20000	IR	88-300	100.0	09/03/94*
....3	03100049	20000	IR	88-300	670.0	06/04/94*
....4	03030009	401474	WO	88-300	670.0	10/03/94*
....3	PO1009	1	PO	90-4000	500.0	11/06/92*
....3	PO1012	1	PO	90-4000	17.5	12/06/92*
....3	PO1015	1	PO	90-2001	5,000.0	12/06/92*
....3			ST	88-300	230.0	
....3			ST	90-2001	6,499.0	
....3			ST	90-4000	232.5	
.....						

Fig. 3.3
Order Progress
Inquiry, Second
Screen

The second screen lists orders containing items needed for the order specified in the first screen. Each row has an order (Sales or Work) reference and a line ID, and shows the details of that order and line item.

If, however, the full quantity of an item can be taken from stock, then no orders for that item or its components are shown.

The second screen shows a work order for each component item that is not sourced from stock and shows a work order for the end item, which was specified in the first screen. If the item in the first screen does not have any lower-level components, then only the work order for the item itself is shown. See “Stock” on page 20 for information on the way stock is shown.

Note that an order that has passed its due date is shown with a single asterisk after the due date. This is the same as using Work Order Inquiry (16.2.)

The following screen is displayed.

Fig. 3.4
Detail of Supplying
Order

mlpsoiq.p mlp70		60.1 Order Progress Inquiry		28/06/01
.....Work Order Details.....				
Work Order: 03100021		ID: 401940		
Item Number: 90-110		KOOLAIRE(TM) MEDIC-GRADE		
Type:		COOLER CONDITIONER		
Site: 30000				
.....				
Qty Ordered: 1,000.0		Order Date: 12/03/94		
Qty Completed: 0.0		Release Date: 07/04/94		
Qty Reject: 0.0		Due Date: 08/04/94		
Status: P		Site: 30000		
Sales/Job:		Routing Code:		
Supplier:		BOM/Formula: 90-110		
Yield: 100.00%				
Remarks:		Post variances at SFC: yes		
.....				

In Figure 3.4, the Qty Ordered field shows the total quantity ordered.
Press the spacebar to return to the Order Progress Inquiry screen.

Fig. 3.5

```
mlpsoiq.p mlp70                60.1 Order Progress Inquiry                28/06/01
```

```
Type: so                      Item Number: 10-15000                     Site: 10000
Reference: SO10025             Qty: 125.0                             Through level: 2
Line/ID: 2                    Due Date: 03/03/94                       Only for type:
```

```
.Supplied by:.....
```

Level	Ref	Line/ID	Tp	Item Nbr	Qty	Due Date
..1	03030003	401470	WO	10-15000	125.0	03/03/94*
..2	03030008	401473	WO	88-100	500.0	11/03/94*
..2	03030014	401479	WO	55-110	1,000.0	10/03/94*
..2	03030087	401537	WO	44-110	500.0	25/03/94*
..2	03030088	401538	WO	44-110	500.0	01/04/94*
..2	03030097	401547	WO	88-100	500.0	18/03/94*

```
mlpsoiq.p mlp70                60.1 Order Progress Inquiry                28/06/01
```

```
Work Order Details.....
Work Order: 03030003          ID: 401470
Item Number: 10-15000         NOMAD(TM) COOLING SYSTEM
Type:                          AUTOMOTIVE UNIT
Site: 10000
```

Qty Ordered: 1,000.0	Order Date: 03/03/94
Qty Completed: 0.0	Release Date: 03/03/94
Qty Reject: 0.0	Due Date: 03/03/94

Status: R	Site: 10000
Sales/Job:	Routing Code:
Supplier:	BOM/Formulas:
Yield: 100.00%	

```
Remarks:
```

```
Post variances at SFC: yes
```

Quantity

The quantity of an item displayed in the results screen depends on the level of the item in the Product Structure. For example, for items that are at level 1, the quantity is that which will fulfill the order specified in the first screen. The order for the component, level 1, item may be actually for more than is needed for the order in the first screen. In the example: qty required in the Sales Order = 125; the work order quantity of WO 03030003 = 1000.

In contrast, for all items at level 2 or higher, the quantity shown in the second screen is the *full* amount to satisfy the total quantity of the order one level higher in the structure. Thus in Figure 3.5, the five work orders on level 2, together will satisfy all three components for order 03030003, each component required at 1000 ea.

Units of Measurement

For each entry displayed, whether it is the order and item specified in the first screen, or a line in the second screen, the quantity is expressed in the units of measurement defined for that item number. This means that the quantities will usually be in various different units of measurement and cannot be added together.

Stock

Items sourced from stock are listed in a similar way to those sourced from work orders; however the Item Number of the stock item is listed under the Ref heading, and the site is listed under the Line/ID heading. MLP uses the abbreviation defined for stock under the Tp heading. In the example below, the abbreviation is ST. You cannot view more details about stock the way you can with a work order.

The figure below shows that the 200 units of 10-15001, specified in the first screen, can all be supplied from stock, as shown by the first line on the second screen.

Fig. 3.6
Order Progress
Inquiry, Showing
Stock

mlpsoiq.p mlp70		60.1 Order Progress Inquiry				28/06/01	
.....							
Type: so		Item Number: 10-15001			Site: 15000		
Reference: SO10025		Qty: 200.0		Through level: 1			
Line/ID: 3		Due Date: 03/03/94			Only for type:		
.....							
Supplied by:.....							
Level	Ref	Line/ID	Tp	Item Nbr	Qty	Due Date	
.....							
..1			ST	10-15001	200.0		
.							

Order Progress Report

The Order Progress Report (60.2) shows the same information as the Order Progress Inquiry. The differences are:

- You can send the output of the Report to a printer or save it in a file.
- You cannot view the extra detail of an order as you can with the Inquiry.

For an explanation of how to interpret Quantity, Units of Measurement, and Stock, see the appropriate sections starting on page 19.

mlpsorp.p mlp70		60.2 Order Progress Report				28/06/01	
.....							
Type: so		Item Number: 90-110		Site: 10000			
Reference: 10001		Qty: 200.0		Through level:			
Line/ID: 3		Due Date: 26/01/98		Only for type:			
				Output: terminal			
.....							
.....Supplied by:.....							
Level	Ref	Line/ID	Tp	Item Nbr	Qty	Due date	
.....							
..1	04050001	30000	IR	90-110	200.0	05/04/00*	
..2	03100021	401940	WO	90-110	270.0	08/04/94*	
...3	03030006	20000	IR	88-300	100.0	09/03/94*	
...3	03100049	20000	IR	88-300	670.0	06/04/94*	
....4	03030009	401474	WO	88-300	670.0	10/03/94*	
...3	PO1009	1	PO	90-4000	500.0	11/06/92*	
...3	PO1012	1	PO	90-4000	17.5	12/06/92*	
...3	PO1015	1	PO	90-2001	5,000.0	12/06/92*	
.....							

Fig. 3.7
Order Progress
Report (60.2), First
Screen

The Order Progress Report Screen has a field for specifying where the output is to go. The remaining fields are the same as the Inquiry screen, and you enter the same information in the same way.



Chapter 4

Finding Sources of Demand

This chapter describes how to find sources of demand.

Introduction **24**

MLP Inquiry **25**

MLP Report **32**

Introduction

Both MLP Inquiry (60.4) and MLP Report (60.5) track the sources of demand for the following:

- Work Order
- Purchase Order
- Purchase Requisition
- Intersite Request
- Stock

The output returned by these options comprises:

- Sales Orders
- Intersite Requests
- Scrap Requirements
- Safety Stock
- Work Orders

Just as the Order Progress options differ, so do these. The differences between the two are summarized in the following table:

Table 4.1
Summary of
Differences, MLP
Inquiry and MLP
Report

MLP Inquiry	MLP Report
Allows specification of: <ul style="list-style-type: none"> • Supply type • Reference • Line/ID • Item Number • Site 	Allows extra selection criteria: <ul style="list-style-type: none"> • Supplier • Work Center • Machine
Allows selection of only one Reference and Line/ID.	Allows, for a specified type of supply, the selection of a range of: <ul style="list-style-type: none"> • Reference • Line/ID • Due Date
Shows only the top level source of demand.	Shows the top level and the intermediate level sources of demand.
Can be directed to a printer or a file, as well as the screen.	Cannot be directed to a printer or a file.

Finding Purchase Requisitions

Purchase Requisitions are tracked against Sales Orders once they are approved. If you run MLP, then look up in Purchase Requisition Inquiry (5.1.5), the requisition numbers for the item numbers you specify are displayed. Using one of these Purchase Requisition numbers in MLP Report or MLP Inquiry, shows which Sales Orders are the sources of demand for the items in the Purchase Requisitions.

Before Purchase Requisitions are approved you can look them up as Work Orders.

Finding Purchase Orders

When a Purchase Order is entered, it does not show on Order Progress Inquiry (7.19.2) until MLP is run. After MLP is run, you can enter the Purchase Order and Line Number to find which Sales Order it relates to.

MLP Inquiry

You use MLP Inquiry (60.4) to find the sources of demand for a given source of supply; for example, which Sales Order creates demand for a specified Work Order. The following sections describe inputs to this screen and the results obtained, as well as how to interpret Dmnd Qty, Qty, and Stock.

mlpwoiq.p mlp70

60.4 Multi-Level Pegging Inquiry

28/06/01

.....

Supply Type:

Item Number:

Site:

Reference:

Qty:

Due Date:

Line/ID:

Output:

.....

Fig. 4.1
MLP Inquiry
(60.4), First Screen

Clicking the look-up icon next to the Supply Type field or pressing the Help key displays the look-up browse screen for the Supply Type field. This is shown in Figure 4.2, below. You can select the option you want from the look-up browse screen using the arrow keys.

Fig. 4.2
MLP Inquiry, First
Screen with Look-
up Browse

mlpwoiq.p mlp70	60.4 Multi-Level Pegging Inquiry	28/06/01
.....		
. Supply Ty.....Supply Types.....		
. Referen. Type [V]IR		
. Line/.....		
.....	Type	Description
.....		
. .	>IR	.Intersite Request
. .	PO	.Purchase Order
. .	PR	.Purchase Requisition
. .	ST	.Stock
. .	WO	.Work Order
. .		
. .		
. .		
.....		
.....		

Selecting the option and pressing Return displays the Product Structure Inquiry screen (13.6).

Example data

Fig. 4.3
Product Structure
Inquiry (13.6)

bmpsiq.p f+	13.6 Product Structure Inquiry	28/06/01
.....		
. Parent Item: w10	test item MLP	EA
. As Of: 28/06/01	Levels:	Rev:
. PCO Number:	ID:	Database:
.....		
.....		
.Level	Component Item	Description
.....		
.1	w11	test item MLP
.1	w12	test item MLP
.1	w13	test item MLP
.1	w20	test item MLP
.....		

Fig. 4.4
Sales Orders

Item: w10		test item MLP			
Order	Sold-To	Name	Ln	Qty	Open UM Due
mlp900	0100	Hans Maier GmbH	1	10.0	EA 01/05/00
mlp900	0100	Hans Maier GmbH	2	14.0	EA 15/05/00
mlp900	0100	Hans Maier GmbH	3	20.0	EA 01/06/00

Item Number	Work Order	ID	Qty	Open	Rel Date	Due Date	Sts
w10	test item MLP	04110001	8	13.0	29/05/00	01/06/00	P
w10	test item MLP	mlp900	6	15.0	28/06/01	10/05/00	R
w10	test item MLP	mlp901	7	16.0	28/06/01	20/05/00	R
w11	test item MLP	04110002	9	93.0	06/04/00	28/06/01	P
w11	test item MLP	04110003	10	39.0	24/05/00	29/05/00	P
w12	test item MLP	04110004	11	279.0	06/04/00	28/06/01	P
w12	test item MLP	04110005	12	117.0	24/05/00	29/05/00	P
w13	test item MLP	04110006	13	465.0	06/04/00	28/06/01	P
w13	test item MLP	04110007	14	400.0	24/05/00	29/05/00	F

Fig. 4.5
Work Orders

Item Number	UM	Description
w20	EA	test item MLP
Req	Site	PO Site Supplier Qty UM Release
04110008	10000	10000 62.0 EA 07/04/00
04110009	10000	10000 26.0 EA 26/05/00

Fig. 4.6
Purchase Requisitions/
Purchase Orders

mlpwoiq.p mlp70		60.4 Multi-Level Pegging Inquiry			28/06/01	
.....						
Supply Type: wo		Item Number: w10		Site: 10000		
Reference: mlp900		Qty: 15.0		Due Date: 10/05/00		
Line/ID: 6		Output: terminal				
.....						
Ref	Line/ID	Tp	Site	Dmd Qty	Qty	Qty Per
	Item Nbr			Description		Due Date
.....						
mlp900	1	SO	10000	10.0	10.0	1.0
	w10			test item MLP		01/05/00
mlp900	2	SO	10000	14.0	5.0	1.0
	w10			test item MLP		15/05/00
.....						
List complete.						

Fig. 4.7
MLP Inquiry,
Second Screen

As with Order Progress Inquiry, there is a look-up/browse for the Item field. You can find orders by specifying either the Item or the Reference. The remaining data is filled in automatically. Note that MLP also tracks demand at other sites.

The input and output fields are detailed in the table below:

Table 4.2
Input and Output
Fields

Field	Description	Comment
Input		
Supply Type	Enter the type of order you want to track. What you enter in this field controls what the next fields to be completed are: <ul style="list-style-type: none"> • For either WO or PO fill in Reference then Line/ID. • For IR, fill in Reference then Site. • For PR, fill in Reference. • For ST, fill Item Number then Site. 	It can be any of the supply types.
Reference	Enter the Reference number of the order you want to track.	Use the drop-down list and select the order.
Line/ID	Enter the line ID of the item you want to track.	Use the drop-down list and select the order.
Item Number	Complete this field if you are tracking a Stock order. For other types of supply the system will fill in this field if it finds a match.	
Qty	The system fills this field.	
Due Date	The system fills this field.	
Site	Complete this field for either an Intersite Request or a Stock order. For other types of supply, the system fills in this field if it finds a match.	
Output	Choose the output to be to a printer, the terminal, or type in a filename to save the output in a file.	The printer must already be defined in MFG/PRO.
Output		
Ref	The reference number of the order.	

Field	Description	Comment
Line/ID	The line/ID of the item.	
Tp	The type of order displayed.	The possible contents are top-level demand types and other demand types, and supply types, except PO PR, IR and ST.
Site	The site on which the item is produced, or from which it is sold.	
Dmd Qty	The total order quantity of the order listed in this line. See “Interpreting Dmd Qty and Qty” on page 30.	
Qty	The quantity of the item. See “Interpreting Dmd Qty and Qty” on page 30.	
Qty Per	The quantity of each supplying item needed for each parent item.	
Item Nbr	The reference number of the item.	
Description	Description of the item.	
Due Date	The date the supplying order is due.	

Fig. 4.8
MLP Inquiry,
Result

mlpwoiq.p mlp70		60.4 Multi-Level Pegging Inquiry			28/06/01	
.....						
. Supply Type: wo		Item Number: w13		Site: 10000		
. Reference: 04110006		Qty: 465.0		Due Date: 28/06/01		
. Line/ID: 13		Output: terminal				
.....						
.Ref	Line/ID	Tp	Site	Dmd Qty	Qty	Qty Per
.	Item Nbr			Description		Due Date
.....						
.mlp900	1	SO	10000	10.0	10.0	15.0
.	w10			test item MLP		01/05/00
.mlp900	2	SO	10000	14.0	5.0	15.0
.	w10			test item MLP		15/05/00
.mlp900	2	SO	10000	14.0	9.0	15.0
.	w10			test item MLP		15/05/00
.mlp900	3	SO	10000	20.0	7.0	15.0
.	w10			test item MLP		01/06/00
.						
.						
.....						
List complete.						

This screen shows that the demand for Works Order 04110006, which is for 465 units of item w13, is created by three Sales Order Lines (Sales Order mlp900; lines 1,2,3) The requirement needed for line 2 is apparently created through two different Work Orders.

Interpreting Dmd Qty and Qty

The Dmd Qty column shows the total amount of an item required by the order in the same results line (Dmd Qty = 20.0; Order = mlp900; Line = 3), whereas the Qty column shows how much of that total demand is satisfied by the order specified in the first screen. Note that the quantity mentioned in the Qty field may not be sufficient to fulfill the quantity in the Dmd Qty column. The Qty column lists the quantity of items in the row that use items from the order in the first screen, however small the used quantity may be.

The value of having these two amounts displayed is that you can immediately see what the consequences would be if the order you specified in the first screen were to be delayed or cancelled. In the case below, the Qty column shows the quantity of items in the Sales Order that would be affected.

The screen in the figure below, shows the three Sales Order Lines as the sources of demand for Work Order 04110006, which is for 465 liters of item w13.

Fig. 4.9
MLP Inquiry,
Second Screen
Showing
Relationship of
Dmd Qty and Qty

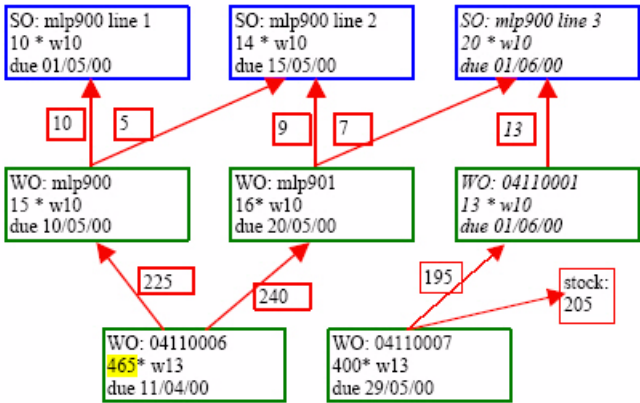
mlpwoiq.p mlp70		60.4 Multi-Level Pegging Inquiry			28/06/01	
Supply Type: wo		Item Number: w13			Site: 10000	
Reference: 04110006		Qty: 465.0 — 1			Due Date: 28/06/01	
Line/ID: 13					Output: terminal	
Ref	Line/ID	Tp	Site	Dmd Qty	Qty	Qty Per
	Item Nbr			Description		Due Date
mlp900	1	SO	10000	10.0	10.0	15.0
	w10			test item MLP		01/05/00
mlp900	2	SO	10000	14.0 — 3	5.0	15.0
	w10			test item MLP		15/05/00
mlp900	2	SO	10000	14.0	9.0	15.0
	w10			test item MLP		15/05/00
mlp900	3	SO	10000	20.0	7.0	15.0
	w10			test item MLP		01/06/00
List complete.						

The annotations to the figure above are explained in the table below.

No.	Explanation
1	Work Order 04110006 is for 465 liters of item w13.see graphic, start at bottom
2	It is the Sales Order Lines, mlp900; lines 1,2 and 3, that are the sources of demand, not the top level WO that would be seen in Order Progress Inquiry.
3	mlp900 line 1 is for 10 units of w10; line 2 is for 14 units of w10, and line 3 is for 20 units. line 2 is split up because there are 2 different intermediate work orders.
4	Each unit of item w10 needs 15 liters of item w13

Table 4.3
Annotations for
Dmd Qty and Qty

Fig. 4.10
Relationship of
Dmd Qty and Qty



Note The amount in the first screen may not be sufficient for all the orders shown in the second screen. Other Work Orders may also contribute.

It is important to remember that MLP Inquiry only shows the top-level source of demand for the item in the first screen. There may well be intermediate orders that contribute components.

Stock

Fig. 4.11
MLP Inquiry,
Second Screen
Showing How
Stock is Shown

mlpwoiq.p mlp70		60.4 Multi-Level Pegging Inquiry		28/06/01	
.....					
. Supply Type: wo		Item Number: w13		Site: 10000	
. Reference: 04110007		Qty: 400.0—1		Due Date: 29/05/00	
. Line/ID: 14				Output: terminal	
.....					
.Ref	Line/ID	Tp Site	Dmd Qty	Qty	Qty Per
.	Item Nbr		Description		Due Date
.....					
.mlp900	3	SO 10000	20.0	13.0—2	15.0
.	w10		test item MLP		01/06/00
.		ST		205.0—3	
.	w13				
.					
.					
.					
.					
.....					
List complete.					

The annotations to the figure above are explained in the table below.

Table 4.4
Stock Annotations

No.	Explanation
1	Work order 04110007 is for 400 liters of w13.
2	The Sales Order requested 13 * 15 liters of w13; thus 195 liters are taken from the 400 produced by WO 04110007. Note that the Qty column uses the unit of measure on the ow, which can be different from the one in the first frame.
3	The remaining 205 liters go to Stock. Stock is treated as a source of demand for the Works Order. This allocation of the extra units to stock is only visible at the top level.

MLP Report

As noted earlier, the MLP Report (60.5) lets you specify ranges of Reference, Line/ID and Due Date, as well as offering some extra selection criteria. In addition, MLP Report shows the intermediate sources of demand.

mlpwrap.p mlp70

60.5 Multi-Level Pegging Report

28/06/01

.....

Supply Type:

Reference: To:

Line/ID: To:

Due Date: / / To: / /

.....

Site:

Item Number:

Supplier:

Work Center:

Machine:

.....

Detail/Summary: Summary

Output:

Batch ID:

.....

Fig. 4.12
MLP Report (60.5)

The input fields are detailed in the table below.

Field	Description	Comment
Input		
Supply Type	Enter the type of order you want to track. It can be any of the supply types.	This field must be filled in.
Reference	Enter the range of references of the orders you want to track in these fields.	If the To field is left blank, all items equal or greater than that in the From field will be displayed.
Line/ID	Enter the range of Line ID of the item you want to track in these fields.	If the To field is left blank, all items equal or greater than that in the From field will be displayed.
Due Date	Enter the range of due dates for the items you want to track in these fields.	If the To field is left blank, all items equal or greater than that in the From field will be displayed.
Site	Complete this field for either an Intersite Request or a Stock order.	
Item Number	Complete this field if you are tracking a Stock order.	
Supplier	Specify the supplier of the items, only if you are tracking a Purchase Order.	
Work Center	Enter the Work Center, only if you are tracking a Work Order.	

Table 4.5
Input Fields

Fig. 4.15
MLP Report, Detail

mlpwork.p mlp70

Page: 1

60.5 Multi-Level Pegging Report

Your Name Here

Date: 28/06/01

Time: 16:03:46

Supply Type: WO

Reference: 04110006

Item Number: w13

Order Qty: 465.0

Line/ID: 13

test item MLP

Due Date: 28/06/01

Site: 10000

Level	Ref	Line/ID	Tp	Item Nbr	Qty Due Date	MLP Dmd Qty	MLP Sup Qty
.1	mlp900	6	WO	w10	15.0 10/05/00	225.0	225.0
** .2	mlp900	1	SO	w10	10.0 01/05/00	10.0	10.0
** .2	mlp900	2	SO	w10	14.0 15/05/00	14.0	5.0
.1	mlp901	7	WO	w10	16.0 20/05/00	240.0	240.0
** .2	mlp900	2	SO	w10	14.0 15/05/00	14.0	9.0
** .2	mlp900	3	SO	w10	20.0 01/06/00	20.0	7.0

Supply Type: WO

Reference: 04110007

Item Number: w13

Order Qty: 400.0

Line/ID: 14

test item MLP

Due Date: 29/05/00

Site: 10000

Level	Ref	Line/ID	Tp	Item Nbr	Qty Due Date	MLP Dmd Qty	MLP Sup Qty
.1	04110001	8	WO	w10	13.0 01/06/00	195.0	195.0
** .2	mlp900	3	SO	w10	20.0 01/06/00	20.0	13.0
** .1			ST	w13	205.0		205.0

Note Some lines are marked with asterisks showing that it is a top-level order.

Table 4.6
Output

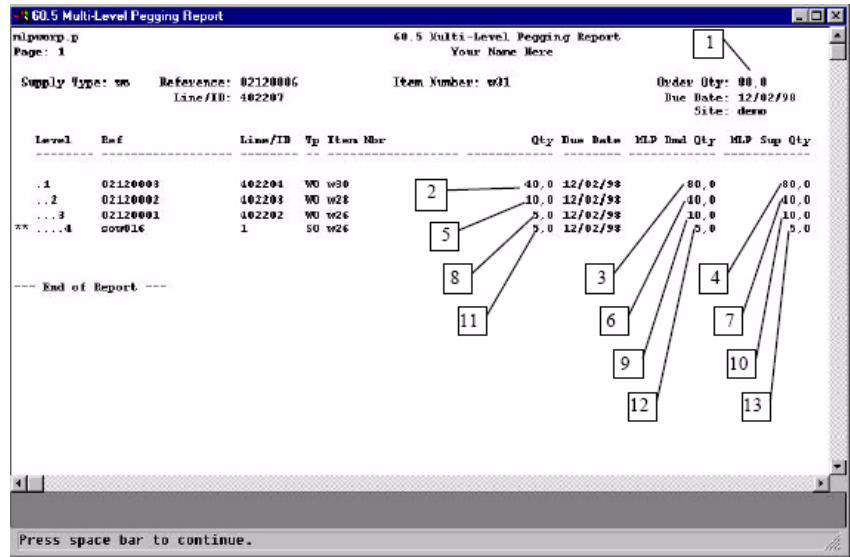
Output		
Level	This column shows to which level of the order chain the items belong.	If Summary is selected, only top-level items are displayed; they are indicated by asterisks.
Ref	The reference number of the order.	
Line/ID	The line/ID of the item.	
Tp	The type of order displayed.	The possible contents are top-level demand types and other demand types, and supply types, except PO and PR.
Item Nbr	The reference number of the item.	
Qty	The total order quantity of the order listed in this line.	
Due Date	The date the supplying order is due.	

Output		
MLP Dmd Qty	Shows the quantity of the item on the previous level that is needed to satisfy the total demand of the order in this line. See “MLP Dmd Qty and MLP Sup Qty,” below.	
MLP Sup Qty	Shows the quantity of the item on the previous level that is used to satisfy the demand in the current line. See “MLP Dmd Qty and MLP Sup Qty,” below.	

MLP Dmd Qty and MLP Sup Qty

Figure 4.16 is annotated to explain the relationship between MLP Dmd Qty and MLP Sup Qty.

Fig. 4.16
Dmd Qty and Sup
Qty Relationship



Each demand order can demand supplies from more than one supplying order, and each supplying order can supply more than one demand order. To accurately monitor this many-to-many relationship, three quantities are shown in the second screen as labeled in Figure 4.16.

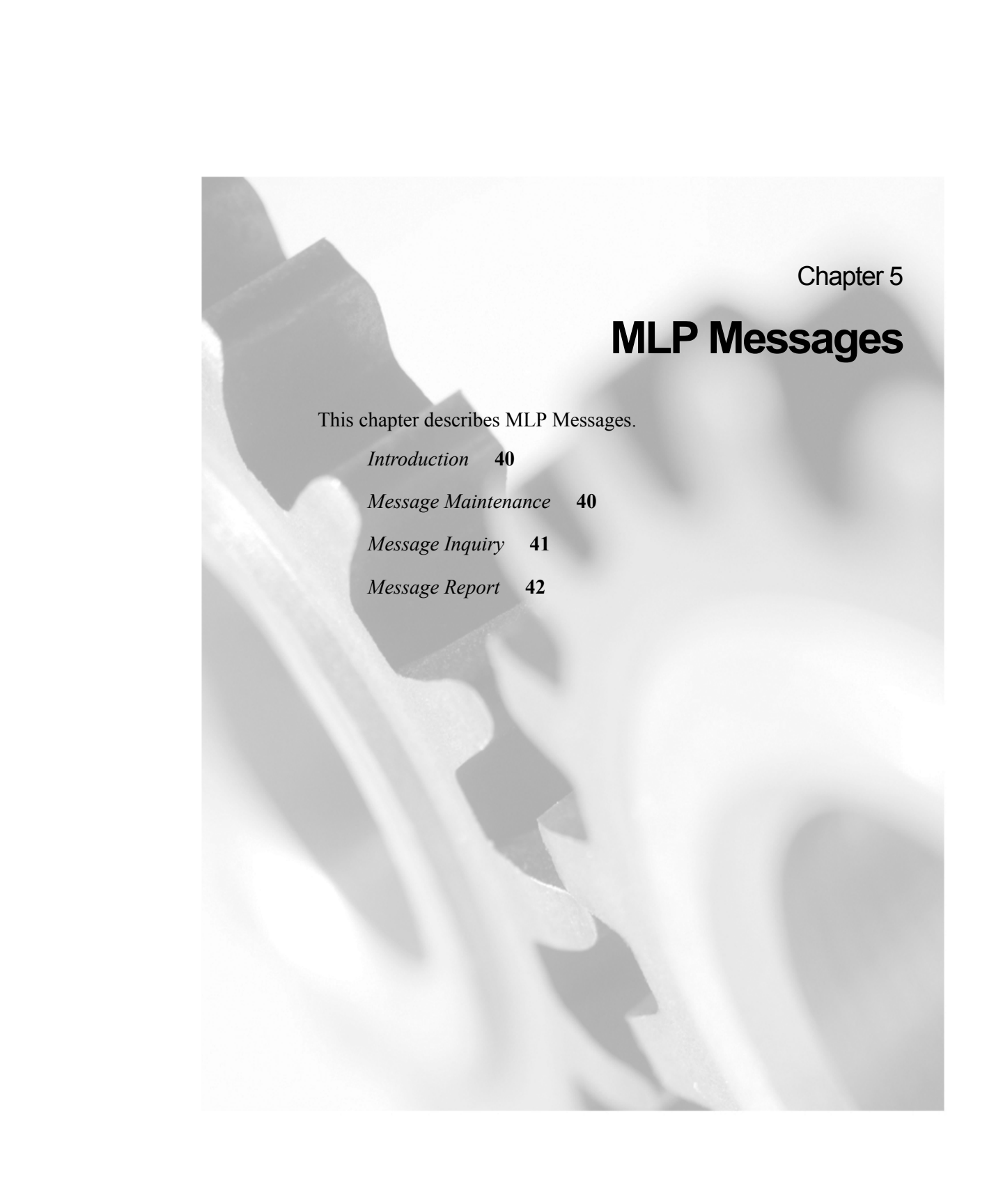
First, every order displays the total quantity of which the order comprises. These are in the Qty column above (labeled 2, 5, 8, 11). For example, the total order quantity of 02120001 shows as 5.0 units of item w26, and is labeled 8. (The units of measurement for these 5.0 are the same as for item w26.)

Next, the quantity that the order demands (or needs) from its supplying order to completely satisfy its completion is displayed as the MLP Dmd Qty. For order 02120001, this is 10.0 units (of item w28 from the supplying order 02120002) and is labeled 9. The units of measurement are the same as for item w28, the item being supplied from the level below. Note that these 10.0 may not be all that 02120002 produces.

Finally, there is the quantity the supplying order actually supplies. This is the MLP Sup Qty, and, in the case of order 02120001, it is 10.0 of item w28, and is labeled 10. The labels are explained in the table below.

No.	Explanation
1	The total order quantity of WO 02120006 is 80 units of w31.
2	The total order quantity of WO 02120003 is 40 units of w30.
3	To complete WO 02120003 (40 units of w30) requires the 80 units of w31 from WO 02120006.
4	WO 02120006 supplies 80 units of w31 to WO 02120003.
5	The total order quantity of WO 02120002 is 10 units of w28.
6	To complete WO 02120002 (10 units of w28) requires the 40 units of w30 from WO 02120003.
7	WO 02120003 supplies 40 units of w30 to WO 02120002.
8	The total order quantity of WO 021200001 is 5 units of w26.
9	To complete WO 02120001 (5 units of w26) requires the 10 units of w28 from WO 02120002.
10	WO 02120002 supplies 10 units of w28 to WO 02120001.
11	The total order quantity of SOW016 is 5 units of w26.
12	To complete SOW016 (5 units of w26) requires the 5 units of w26 from WO 02120001.
13	WO 02120001 supplies 5 units of w26 to SOW016.

Table 4.7
Labels

The background of the page is a grayscale image of several interlocking gears. The gears are of different sizes and are positioned in a way that they appear to be meshing together. The lighting creates highlights and shadows on the teeth of the gears, giving them a three-dimensional appearance. The overall tone is technical and industrial.

Chapter 5

MLP Messages

This chapter describes MLP Messages.

Introduction **40**

Message Maintenance **40**

Message Inquiry **41**

Message Report **42**

Introduction

You can use MLP messages to do the following:

- Maintain the MLP messages, using the Message Maintenance function, (60.9).
- Use Message Inquiry (60.10) to list messages by specifying the language and the number of the first message you require.
- Use the Message Report function (60.11) to list messages by specifying the language and the range of message numbers you require.

Note In the case of both the Inquiry and Report functions, you can specify a printer instead of the terminal. Any printer you specify must already have been defined in MFG/PRO.

Message Maintenance

Using Message Maintenance (60.9), you can modify existing messages.

- 1 To modify a message, choose the Language ID in the Message Maintenance screen. You can use the scroll button to view a list of languages. When you have selected the language, press Go.
The second screen is displayed. The Nbr field shows the message number, and the Msg field contains the message text.
- 2 Use the arrow keys to scroll through the messages to find the one you want to modify. (Alternatively, you can type the message number directly into the Nbr field.)
- 3 To change the text in the message you have selected, press Go and type the text in the field that is displayed.
- 4 Press Go to save the new text, or press End to leave the message unchanged.
After you press Go to save the text, you can modify another message.
- 5 When you have finished modifying messages, press End to return to the first screen.

Note You cannot add new messages. This is for developer-use only.

Message Inquiry

You can use Message Inquiry (60.10) to display messages in a selected language, print messages, and save messages to a file.

Display, print, or save messages

- 1 Select the language; then, in the From Number field, enter the number of the first message you want to display.
- 2 In the Output field, specify one of the following:
 - Terminal - to display the list on the screen
 - The name of a printer - to output the list to a printer
 - A filename - to save the list to a file

Note The file will be created in the MFG/PRO working or start-up directory.

- 3 Press Go to display (or print or save) the list.



Fig. 5.1
Message Inquiry
(60.10), First
Screen

The results appear in the second screen:

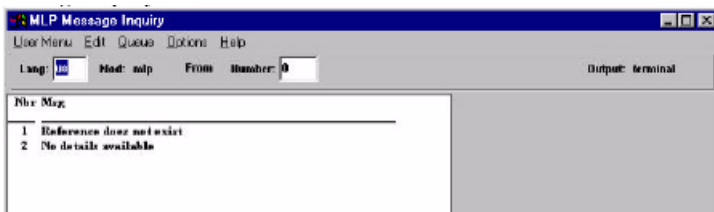


Fig. 5.2
Message Inquiry,
Second Screen

- 4 You can either select a further language or range of messages or press End to leave this screen.

Message Report

Use Message Report (60.11) to display or print a report on a specified range of messages. You specify the language of the messages using the Lang field, as described in “Message Inquiry” on page 41.

- 1 To specify a range of numbers, use the Number field for the number of the first message in the range, and the To field for the number of the last message. If the number in the To field is smaller than that in the Number field, the report will be empty.

Fig. 5.3

MLP Message
Report (60.11)

- 2 When you have finished entering data, press either Go or Print. The following screen is displayed:

Fig. 5.4

Printer Options

- To display the list of messages to the screen, select Terminal in the Output box.
- To print the list, select a printer.
- To save the list to a file, check the Output to a file box.

- 3 Press Go or click OK. MLP lists the messages to the specified destination.

If you chose Output to a file, the following screen is displayed.



Fig. 5.5
Print to File

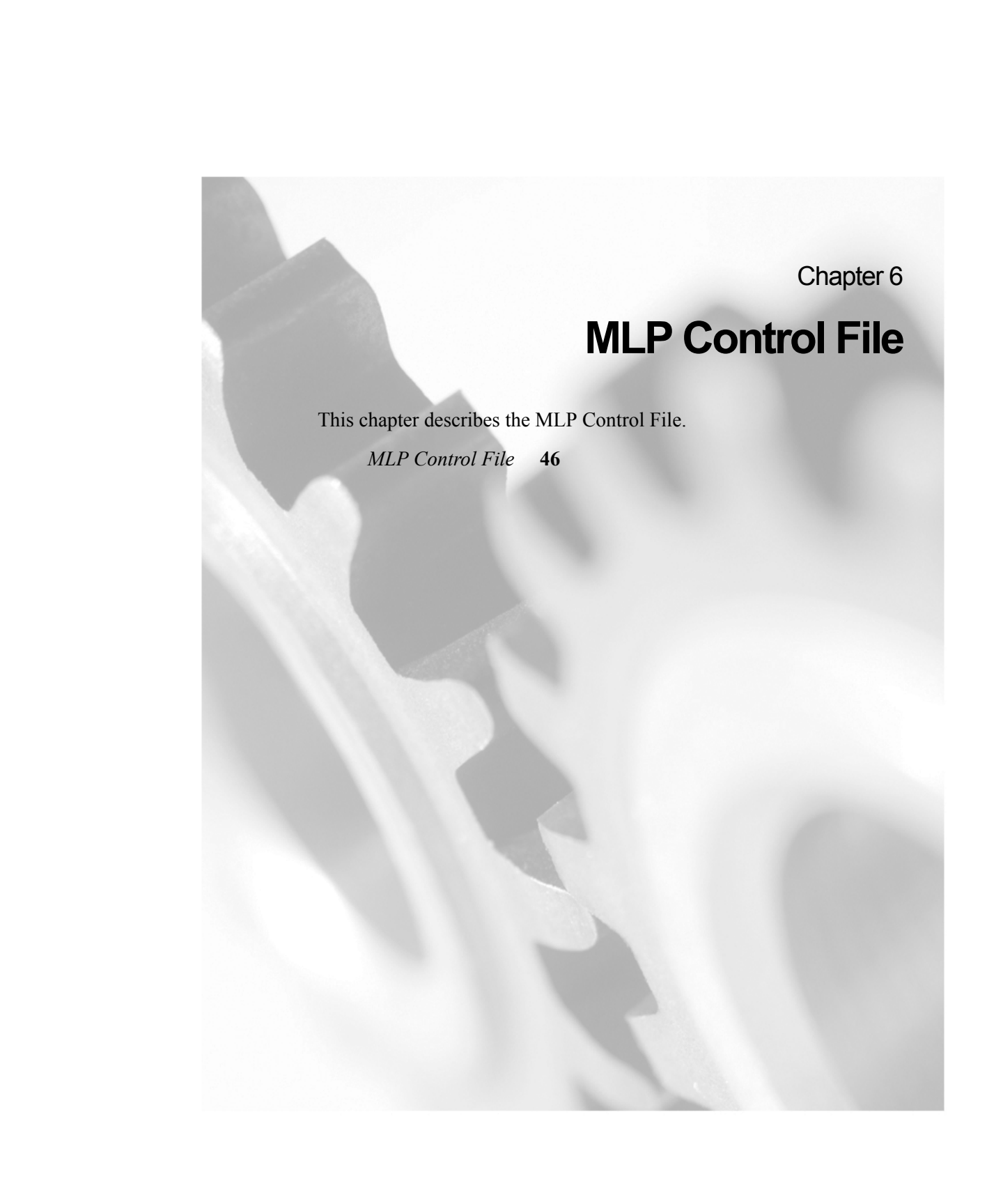
Type the filename in the box and press Go, or click OK.

Note The file will be created in the MFG/PRO working, or start up, directory.

If you choose to display the messages onscreen, the following screen is displayed:



Fig. 5.6
MLP Message
Report Output
Screen

The background of the page is a grayscale image of several interlocking gears. The gears are of different sizes and are positioned in a way that they appear to be meshing together. The lighting creates highlights and shadows on the teeth of the gears, giving them a three-dimensional appearance. The overall tone is technical and industrial.

Chapter 6

MLP Control File

This chapter describes the MLP Control File.

MLP Control File **46**

MLP Control File

The MLP Control File (60.24) lets you specify what abbreviations are used for each of the various types of orders that MLP monitors. The screen is shown below.

Fig. 6.1
MLP Control File
(60.24)

mlmlpm.p mlp70	60.24 MLP Control File	28/06/01
.....		
. Customer Schedule: CS		
. Intersite Request: IR		
. Forecast: FC		
. Purchase Order: PO		
. Purchase Requisition: PR		
. Work Order: WO		
. Sales Order: SO		
. Safety Stock: SS		
. Scrap Requirement: SR		
. Stock: ST		
. Seasonal Build: SB		
.....		

You select a type of order and enter the abbreviation you wish to use. Figure 6.1 shows the commonly used abbreviations. The following list explains the various types of demand and supply:

- Top-level demand types:
 - Customer Schedule
 - Forecast
 - Sales Order
 - Safety Stock
- Other demand types:
 - Intersite Request
 - Work Order
 - Scrap
- Supply types:
 - Intersite Request
 - Purchase Order
 - Purchase Requisition
 - Work Order
 - Stock