

MEMORANDUM

TO: MATT FORD
FROM: BEN SCHULTZ
SUBJECT: MATERIAL REQUIREMENTS PLANNING (MRP) FOR FISKARS BRANDS, INC.
DATE: 12/4/2006

Introduction:

This memo: (1) outlines the design of the Fiskars scissors by means of a product tree, (2) serves as a detailed layout of the material planning function in the manufacturing of component parts and their assembly into finished scissors, while (3) providing a description of what and when items will be ordered in order to fulfill the customer’s request.

Summary:

We will be able to complete the order for Emmons Business Interiors by the last day of the given 6 day period, if all parts are ordered from suppliers and assembled as outlined in the Table 1 (MRP Timeline).

Analysis:

Table 1 (the MRP Timeline) summarizes by means of a backwards schedule what and when supplies need to be ordered, as it is the objective of an MRP system to provide the right parts at the right time to meet the customer’s request. The idea of a backwards schedule is to start everything as late as possible and still be able to meet the deadline. “MRP begins with a schedule for finished goods that is converted into a schedule of requirements for subassemblies, component parts and raw materials needed to produce the finished items in the specified time frame.”¹ This is the heart of an MRP system.

Table 1
MRP Timeline

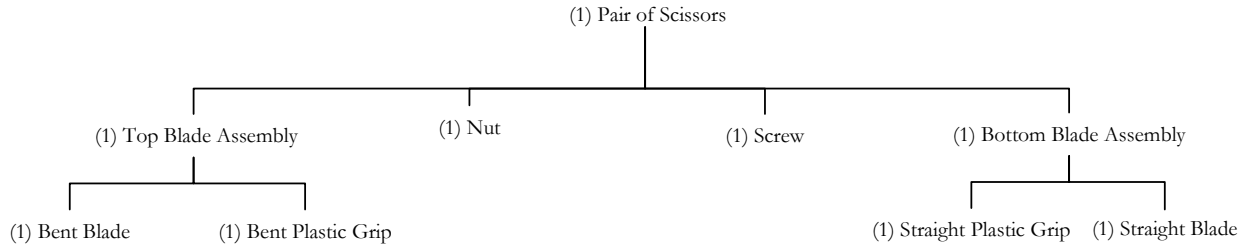
					Deliver to Customer (600 Scissors)
				Final Scissor Assembly (600 Scissors)	
			- Subassemble Blades from Supplier (560 Top and 600 Bottom) - Order Nuts & Screws from Supplier (600 each)		
		Order Blades from Supplier (210 Bent and 400 Straight)			
	Order Plastic Grips from Supplier (560 Bent and 600 Straight)				
Received order from Emmons Business Interiors for 600 Scissors					
1	2	3	4	5	6
Days					

Figure 1 (the product tree) offers a visual depiction of the requirements in a bill of materials, where all components are listed by levels. A product tree also presents a listing of all of the raw materials, parts, subassemblies, and assemblies needed to produce one unit of a product.²

¹ The University of Texas at Dallas. MRP and ERP. www.utdallas.edu/~kxz024000/13-MRP.ppt, November 28, 2006.

² The Pennsylvania State University. Material Requirements Planning: MRP. www.personal.psu.edu/faculty/c/u/cul/hrim350/Chap015.ppt, November 28, 2006.

**Figure 1
The Product Tree**



Additionally, the Aggregate Table 2 (the MRP tables) offers a practical visual image, demonstrating the ideology of a backwards ordering and assembling schedule in an effort to meet the customer's request. Table 3 (MRP Legend)³ provides a description for each line item on the MRP tables.

**Aggregate Table 2
MRP Tables**

<u>Final Scissor Assembly</u>						
Period (Days)	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Gross Requirements						600
On Hand						
Net Requirement						<u>600</u>
Planned Order Receipts						600
Planned Order Releases					600	

<u>Top Blade Assembly</u>						
Period (Days)	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Gross Requirements						600
On Hand	40	40	40	40	40	
Net Requirement					<u>560</u>	
Planned Order Receipts					560	
Planned Order Releases				560		

<u>Bottom Blade Assembly</u>						
Period (Days)	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Gross Requirements						600
On Hand						
Net Requirement						<u>600</u>
Planned Order Receipts						600
Planned Order Releases				600		

<u>Bent Blades</u>						
Period (Days)	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Gross Requirements						560
On Hand	350	350	350	<u>350</u>		
Net Requirement				<u>210</u>		
Planned Order Receipts				210		
Planned Order Releases			210			

<u>Straight Blades</u>						
Period (Days)	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Gross Requirements						600
On Hand	200	200	200	<u>200</u>		
Net Requirement				<u>400</u>		
Planned Order Receipts				400		
Planned Order Releases			400			

<u>Bent Plastic Grip</u>						
Period (Days)	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Gross Requirements						600
On Hand	40	40	40	<u>40</u>		
Net Requirement				<u>560</u>		
Planned Order Receipts				560		
Planned Order Releases		560				

<u>Straight Plastic Grip</u>						
Period (Days)	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Gross Requirements						600
On Hand						
Net Requirement					<u>600</u>	
Planned Order Receipts					600	
Planned Order Releases		600				

<u>Lead Times (days)</u>						
Bent Plastic Grip						2
Straight Plastic Grip						2
Bent Blades						1
Straight Blades						1
Bottom Blade Assembly						1
Top Blade Assembly						1
Final Scissors Assembly						1
Nuts & Screws						1

<u>Nuts and Bolts</u>						
Period (Days)	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Gross Requirements						600
On Hand						
Net Requirement					<u>600</u>	
Planned Order Receipts					600	
Planned Order Releases				600		

³ The University of Texas at Dallas. MRP and ERP. www.utdallas.edu/~kxz024000/13-MRP.ppt, November 28, 2006.

Table 3
MRP Legend

Gross Requirements	Total expected demand for an item or raw material in a time period
On Hand	Expected amount of inventory that will be on hand at the beginning of each time period
Net Requirements	The actual amount that we need to procure in each time period
Planned Order Receipts	The quantity expected to be received by the beginning of the period in which it is shown
Planned Order Releases	Planned amount to order in each time period; planned-order receipts offset by lead time

Assumptions/Limitations:

The above account is presented with known and constant lead times, which can often change in reality. Also, this memo is based on assumptions that feature a dependent demand, adequate capacity, good demand forecasts, predictable scrap rates, and accurate inventory records.⁴

⁴ University of California, Berkeley. Mechanical Engineering 101: Lecture #15.
http://www.me.berkeley.edu/ME101/Lectures/2006_lecture_15f.pdf