

TASK I

To complete the first task, I followed instructions and entered 100 units in the cell for Minimum Lot Size.

The screenshot displays the SAP 'Change Material S59771 (Raw materials)' interface. The top navigation bar includes 'Material', 'Edit', 'Goto', 'Environment', 'System', and 'Help'. Below this, a secondary bar contains 'Other Material', 'Additional Data', 'Org. Levels', 'Check Screen Data', 'Lock material', and 'Services for Object'. The main navigation tabs are 'Basic data 1', 'Basic data 2', 'Ext. SPP Basic Data', 'Purchasing', 'Intl Trade: Import', 'Purchase order text', 'MRP 1' (selected), 'MRP 2', 'MRP 3', 'MRP 4', 'Advanced Planning', and 'Extended SPP'.

Material: S59771
* Descr: Right Blade
Plant: 1010 Plant 1 DE

General Data

* Base Unit of Measure: PC Piece MRP Group:
Purchasing Group: 001 ABC Indicator:
Material Status: Valid From:

MRP Procedure

* MRP Type: PD Forecast Consumption, No Planning Time Fence
Reorder Point: Planning Time Fence:
Planning Cycle: MRP Controller: 001

Lot-Size Data

Lot Sizing Procedure: EX Lot-for-lot order quantity
Minimum Lot Size: 100 Maximum Lot Size:
Fixed Lot Size: Maximum Stock Level:
Lot-Size-Ind. Costs: Storage Costs Code:
Assembly Scrap (%): Takt Time:
Rounding Profile: Rounding Value:

MRP Areas

MRP Area Exists: ☐ MRP Areas

Abbildung 1MLS

Manage Material Coverage

Materials (7)

Search

S59991 -30 FC
Scissors
Plant 1010
5 days overdue

S59771 -30 FC
Right Blade
Plant 1010
today

S59772 -60 FC
Handle
Plant 1010
today

S59773 -30 FC
Left Blade
Plant 1010
today

S59774 -30 FC
Screw
Plant 1010
today

S59881 -30 FC
Right Side
Plant 1010
today

S59882 -30 FC
Left Side
Plant 1010
today

Material Details

S59771 -30 FC
Right Blade (Plant 1010)
today

STOCK/REQUIREMENTS LIST

Stock/Requirements List (1 Shortage)

Shortage Definition: MRP Standard

Date	MRP Element	Actions	Additional Information	Rescheduling	Quantity	Available
14.11.2024	Stock		No Safety Stock		0 FC	0 FC
22.11.2024	DepReq 4334-1		S09881		-30 FC	-30 FC
25.11.2024	DepReq 4335-1		S09881		-70 FC	-100 FC
25.11.2024	PurReq 10008609-10	Edit	Not yet specified		100 FC	0 FC
25.11.2024	PurReq 10008610-10	Edit	Not yet specified		70 FC	

Start MRP Run Open...

Abbildung 2 BEFORE MRP MLS

Manage Material Coverage

Materials (7)

Search

S59991 -30 FC
Scissors
Plant 1010
5 days overdue

S59771 -30 FC
Right Blade
Plant 1010
processed

S59772 -60 FC
Handle
Plant 1010
today

S59773 -30 FC
Left Blade
Plant 1010
today

S59774 -30 FC
Screw
Plant 1010
today

S59881 -30 FC
Right Side
Plant 1010
today

S59882 -30 FC
Left Side
Plant 1010
today

Material Details

S59771 -30 FC
Right Blade (Plant 1010)
today

STOCK/REQUIREMENTS LIST

Stock/Requirements List (1 Shortage)

Shortage Definition: MRP Standard

Date	MRP Element	Actions	Additional Information	Rescheduling	Quantity	Available
14.11.2024	Stock		No Safety Stock		0 FC	0 FC
22.11.2024	DepReq 4334-1		S09881		-30 FC	-30 FC
25.11.2024	DepReq 4335-1		S09881		-70 FC	-100 FC
25.11.2024	PurReq 10008736-10	Edit	Not yet specified		100 FC	0 FC

Start MRP Run Open...

ABBILDUNG 3 AFTER MRP MLS

Screen 2 shows information about the right blade before the MRP run, whereas screen 3 represents the result after running it. MRP run is needed to check the stock availability and, in this case, to request a delivery of 100 parts because there is not a unit in the stock so far. A cumulated request is to demand 100 units, which is suggested to be

proceeded. There are 0 units available after the purchase because S59771 is a raw material which is needed in the production of in-house manufactured material that later is used to manufacture scissors for Customer59.

TASK II

The screenshot displays the SAP 'Change Material S59771 (Raw materials)' interface, specifically the 'MRP 2' tab. The material is identified as 'S59771' with the description 'Right Blade'. The plant is set to '1020'. The 'Procurement' section shows 'Procurement Type: F' and 'Batch Entry' as an option. The 'Scheduling' section indicates a 'Planned Delivery Time' of 3 days. The 'Net Requirements Calculation' section shows a 'Safety Stock' of 100 and a 'Safety Time Int.' of 1 day. The 'Service level (%)' is set to 90, and the 'Range of Coverage Profile' is set to 1. The 'Safety Time' is set to 1 day. The 'Profile for Sat. Time' is set to 1. The 'Status' is 'Released'.

Change Material S59771 (Raw materials)

Material: S59771
Description: Right Blade
Plant: 1020

Procurement

Procurement Type: F
Special Procurement: ☐
Batch Entry: ☐
Batch:
JIT Delivery Schedule: ☐
Bulk Material: ☐
Production Storage Location: 1020A
Proposed Supply Area:
Store Location for Ext. Proc.: 1020A
Stock Determination Group:

Scheduling

Goods Rec. Proc. Time: 1 days
Scheduling Margin Key:
Planned Delivery Time: 3 days
Planning Calendar:

Net Requirements Calculation

Safety Stock: 100
Minimum Safety Stock:
Safety Time Int.: 1 days
Profile for Sat. Time:
Service level (%): 90
Range of Coverage Profile: 1
Safety Time: 1 days

Status: Released

Abbildung 4 SAFETY STOCK

To complete the first task, I followed instructions and entered 100 units as safety stock. Furthermore, I deleted 100 units from the minimum lot size that I entered in the first task.

Material Details

S59771 -130 PC today

Right Blade (Plant 1010)

STOCK/REQUIREMENTS LIST MATERIAL INFORMATION NOTES

Stock/Requirements List (1 Shortage)

Date	MRP Element	Actions	Additional Information	Rescheduling	Quantity	Available
14.11.2024	Stock		Safety Stock 100 PC		0 PC	-130 PC
22.11.2024	DepReq 4334-1		S59801		-30 PC	-130 PC
25.11.2024	PurReq 10008755-10	Edit	Not yet specified		100 PC	100 PC

Abbildung 5 SAFETY STOCK BEFORE MRP

Material Details

S59771 -130 PC today

Right Blade (Plant 1010)

STOCK/REQUIREMENTS LIST MATERIAL INFORMATION NOTES

Stock/Requirements List (1 Shortage)

Date	MRP Element	Actions	Additional Information	Rescheduling	Quantity	Available
14.11.2024	Stock		Safety Stock 100 PC		0 PC	-130 PC
22.11.2024	DepReq 4334-1		S59801		-30 PC	-130 PC
25.11.2024	PurReq 10008755-10	Edit	Not yet specified		110 PC	0 PC
25.11.2024	PurReq 10008756-10	Edit	Not yet specified		70 PC	

Abbildung 6 SAFETY STOCK AFTER MRP

Screen 5 shows information about the right blade before the MRP run, whereas screen 6 represents the result after running it. Here, the system sees that out of 100 units required as a reserve (safety stock), we have 0 units. This situation caused two purchase requests for 130 and 70 units. After the completion of a proposed delivery, there could be a safety stock containing 100 units delivered to stock and a supply request of 100

units to cover a demand of 100 right blades from the case study whereby 30 units are produced at first, and a time later, the rest of the application (70 pieces) would be fulfilled.

TASK III

Abbildung 7 CHANGE MATERIAL – HANDLE I

Abbildung 8 CHANGE MATERIAL – HANDLE II

Before starting task III, I deleted the safety stock from S59771 so that the data there is the same as after completing a case study.

In order to proceed with objectives, a calculation of several dependent values is a requirement. Given are Lot Size/Average Demand per day (ØD) for the handle and the screw with 20 and 10 pieces accordingly, as also a Lead Time (LT) that equals 4 days. The following formulas are given:

$$SS(\text{Safety Stock}) = 3 \times \text{ØD}$$

$$OQ(\text{Order Quantity/Fixed Lot Size}) = 2.5 \times LT$$

$$ROP(\text{Reorder Point}) = SS + LT \times \text{ØD}$$

For handle, I have got SS=60, OQ=10 and ROP=140.

The screenshot displays the SAP 'Manage Material Coverage' interface for material S59772 (Handle). The left sidebar lists various materials with their respective stock levels. The main area shows the 'Stock/Requirements List (1 Shortage)' for material S59772. The table below represents the data shown in the screenshot.

Material	Stock	Requirements	Shortage
S59991	-30		
S59771	-30		
S59772	-60		60
S59773	-30		
S59774	-30		
S59881	-30		
S59882	-30		

Date	MRP Element	Actions	Additional Information	Rescheduling	Quantity	Available
25.11.2024	Stock		Safety Stock 60 PC		0 PC	-60 PC
	PurReq 10000001-10	Edit	Not yet specified		60 PC	140 PC
	PurReq 10000002-10	Edit	Not yet specified		140 PC	

Figure 9 Handle before MRP run

The screenshot displays the SAP 'Manage Material Coverage' interface for material S59772 (Handle). The left sidebar lists materials with their status (e.g., -30 PC, -60 PC) and overdues. The main area shows the 'Stock/Requirements List (1 Shortage)' for material S59772. The table below details the requirements and stock levels.

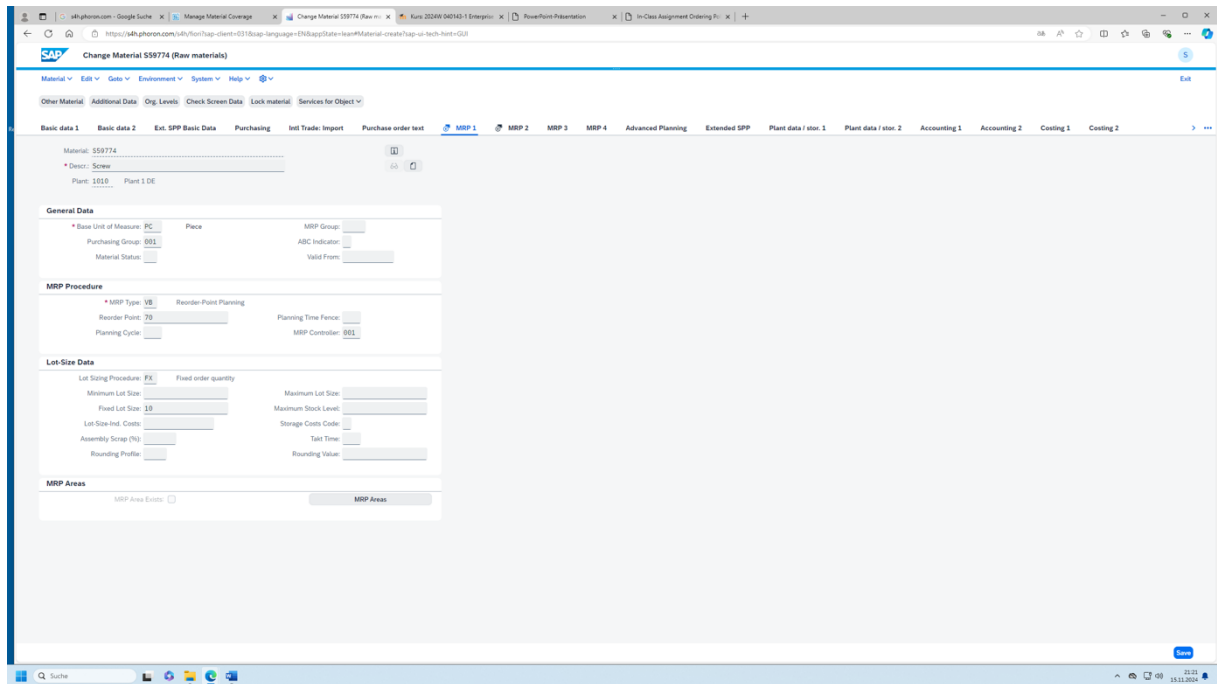
Date	MRP Element	Actions	Additional Information	Rescheduling	Quantity	Available
26.11.2024	Stock		Safety Stock 60 PC		0 PC	-60 PC
	PurReq 10000901-10	Edit	Not yet specified		10 PC	80 PC
	PurReq 10000902-10	Edit	Not yet specified		10 PC	
	PurReq 10000903-10	Edit	Not yet specified		10 PC	
	PurReq 10000904-10	Edit	Not yet specified		10 PC	
	PurReq 10000905-10	Edit	Not yet specified		10 PC	
	PurReq 10000906-10	Edit	Not yet specified		10 PC	
	PurReq 10000907-10	Edit	Not yet specified		10 PC	
	PurReq 10000908-10	Edit	Not yet specified		10 PC	
	PurReq 10000909-10	Edit	Not yet specified		10 PC	
	PurReq 10000910-10	Edit	Not yet specified		10 PC	
	PurReq 10000911-10	Edit	Not yet specified		10 PC	
	PurReq 10000912-10	Edit	Not yet specified		10 PC	
	PurReq 10000913-10	Edit	Not yet specified		10 PC	
	PurReq 10000914-10	Edit	Not yet specified		10 PC	

Figure 10 Handle after MRP run

Insofar as the handle is used twice as a raw material in the production of a single scissors, the required amount to be delivered is doubled as well. Here, it is possible to see that after the MRP run, a system suggests 14 purchase requisitions where, in each lot, 10 units are delivered, and at the end, 140 units are brought, which corresponds to the reorder point. After handling, it could be observed that 80 units are available out of 140 units because 60 units are a safety stock for this raw material.

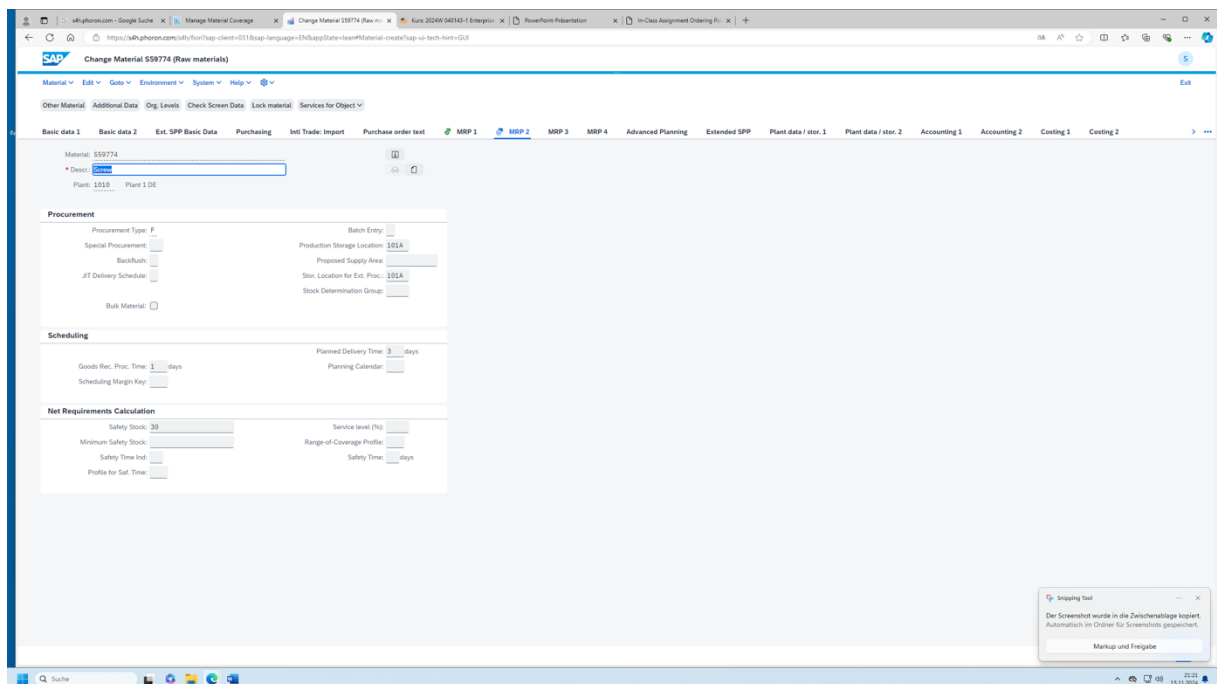
A screw is used only once in the production of scissors. Thus, the numbers are differentiated from those in the handle. The following was calculated: SS=30, OQ=10

and ROP=70.



The screenshot shows the SAP 'Change Material S59774 (Raw materials)' interface. The 'MRP 1' tab is active. The material is 'S59774' with description 'Screw' and plant '1010'. The 'General Data' section shows 'Base Unit of Measure' as 'PC' (Piece) and 'Purchasing Group' as '001'. The 'MRP Procedure' section shows 'MRP Type' as 'VB' (Reorder Point Planning), 'Reorder Point' as '70', and 'MRP Controller' as '001'. The 'Lot-Size Data' section shows 'Lot Sizing Procedure' as 'FX' (Fixed order quantity) and 'Fixed Lot Size' as '10'. The 'MRP Areas' section is empty.

Figure 11 CHANGE MATERIAL – SCREW I



The screenshot shows the same SAP 'Change Material S59774 (Raw materials)' interface, but with the 'MRP 2' tab active. The 'Procurement' section shows 'Procurement Type' as 'F' (Purchase) and 'Production Storage Location' as '101A'. The 'Scheduling' section shows 'Goods Rec. Proc. Time' as '1' day and 'Planned Delivery Time' as '3' days. The 'Net Requirements Calculation' section shows 'Safety Stock' as '30' and 'Service level (%)' as '90'. A 'Shipping tool' dialog box is visible in the bottom right corner.

Figure 12 CHANGE MATERIAL – SCREW II

As a result, figures 13 and 14 show the processing of the entered data before and after the MRP run.

Material Details

S59774
Screw (Plant 1010)

Stock/Requirements List (1 Shortage)

Date	MRP Element	Actions	Additional Information	Rescheduling	Quantity	Available
25.11.2024	PurRep 10008329-10	Edit	Safety Stock 30 FC		0 FC	-30 FC
28.11.2024	PurRep 10008330-10	Edit	Not yet specified		70 FC	70 FC

Figure 13 Screw before MRP run

Material Details

S59774
Screw (Plant 1010)

Stock/Requirements List (1 Shortage)

Date	MRP Element	Actions	Additional Information	Rescheduling	Quantity	Available
25.11.2024	PurRep 10008995-10	Edit	Safety Stock 30 FC		0 FC	-30 FC
	PurRep 10008996-10	Edit	Not yet specified		10 FC	40 FC
	PurRep 10008997-10	Edit	Not yet specified		10 FC	
	PurRep 10008998-10	Edit	Not yet specified		10 FC	
	PurRep 10008999-10	Edit	Not yet specified		10 FC	
	PurRep 10009000-10	Edit	Not yet specified		10 FC	
	PurRep 10009001-10	Edit	Not yet specified		10 FC	

Figure 14 Screw after MRP run

Here, it is mentioned that the SAP system, after running MRP, supposes 7 deliveries, which corresponds to the point of reordering. 40 units could be available due to the safety stock of 30 units. That is why not all 70 units supposed to be delivered are displayed as available.

In all given tasks, a negative amount given is displayed because the purchase requisition must be at first accepted. Only after acceptance and actual delivery they might turn to 0.