

# Material Requirements Planning (MRP)

You would use an MRP system to plan and control your inventory, production and scheduling.

## Projected performance gains



### Improved

- Cashflow
- Inventory levels and availability
- Procurement processes
- Management of Bills of Materials
- Productivity, due to improved scheduling

## What investment is needed to understand the concept?

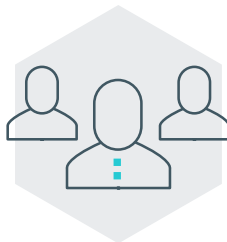
### DIFFICULTY



### Difficult

Requires the purchase and integration of an MRP system (software and hardware). Usually also requires support from specialist consultants to help specify and introduce the system.

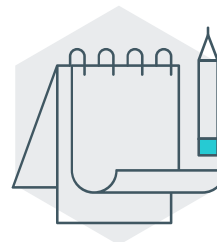
### ACTIVITY



### Team

Best results come from a team of Procurement, Supply Chain, Finance, Logistics and Production employees.

### EQUIPMENT



### Yes

Software and hardware IT systems.

## Explanation of the concept

MRP is a system for planning and controlling inventory, production and scheduling by focussing on two key areas of the business - customers and resources. Customer forecasts and orders are used to create a Master Production Schedule (MSP). The MRP system converts the MSP into a detailed schedule from which accurate and timely orders for raw materials and components can be placed.

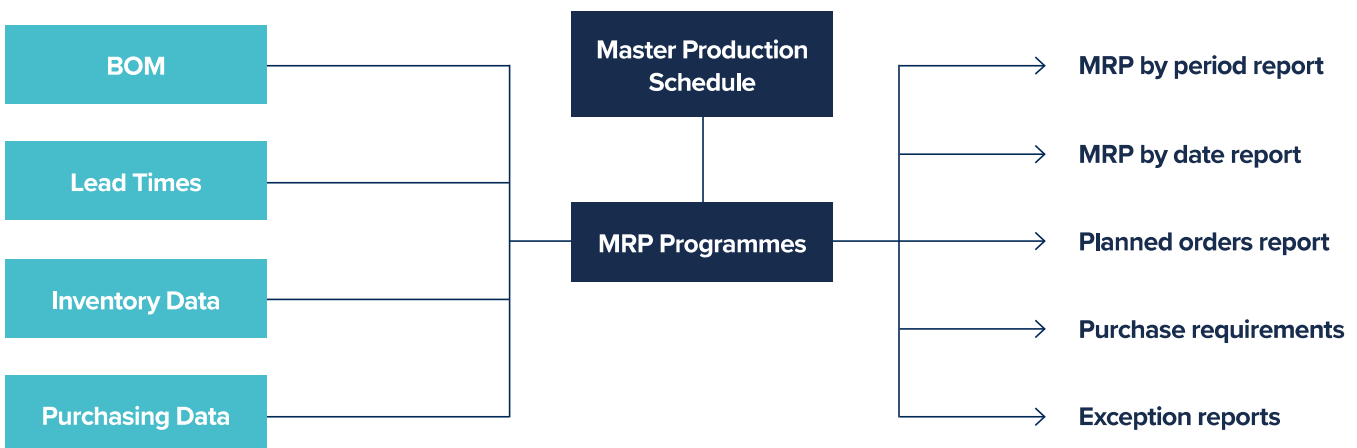
MRP enables businesses to order materials or products to arrive in a timely fashion and in accurate quantities, rather than keeping large inventories, thereby improving cash flow.

### Tips for success

#### Data accuracy is key:

- Ensure data is kept up to date e.g. stock levels, dates on open sales orders.
- Update your lead times regularly to ensure accuracy.
- Adjust your forecast regularly.
- Make sure that parameters are set up correctly. E.g. manufacturing and purchasing lead times, safety stock.
- Review MRP reports with all stakeholders and take actions accordingly.

## Structure of the MRP System



## Who can benefit from MRP?

Companies of almost any size can benefit from an MRP system, for example by reducing human error, improving production times and reducing human input. For very small businesses however, this investment may be wasteful and actually cost the company more time.

### When implementing an MRP system:

#### 1. Choose the right software

#### 2. Ensure data is accurate

Consider the following features:

- Flexibility of the software
- Workflow support
- Integration into multiple environments
- Drill-down capability to get the data you need
- Visibility of the supply chain
- Forecasting ability
- Expectation management
- Software support

## What action should I take?

1.



Gather together a team of Procurement, Supply Chain, Logistics and Production employees

2.



Explain the concepts behind MRP

3.



Develop a User Requirements Specification (URS)

4.



Identify potential MRP systems that meet the URS

5.



Seek guidance from existing MRP users to understand their experiences

6.



Select an MRP system

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## Recommended resources



Ptak, C. A. & Smith, C. (2011). Orlicky's Materials Requirements Planning. McGraw Hill.  
ISBN: 978-0071755634

Bicheno, J. (2004). The New Lean Toolbox. Picsie Books.  
ISBN: 0-9541-2441-3

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## Glossary

**MPS:** Master Production Schedule, the name for the data input that contains orders and forecast

**BOM:** Bill of Materials, the full parts/quantity list for a product

**URS:** User Requirement Specification, the documented requirements that the MRP system must meet

**Just-In-Time (JIT) AKA the Toyota Production System (TPS):** Receiving materials only as they are needed in the production process

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For more advice, case studies and additional factsheets visit: [www.businessgrowthhub.com/manufacturing](http://www.businessgrowthhub.com/manufacturing)

**WEEK COMMENCING:**

NO	TASK DESCRIPTION	FREQ	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SATURDAY		SUNDAY	
			S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2		
14	Check air pressure on taper (80-85 PSI)	Shift	✓	✓	✓	✓										
15	4 tape roller sensors, 1 case sensor light indicators	Shift	✓													
15	Test e-stops and interlocks on taper	Weekly	✓	✓	1											
16	Alignment and wear of blue belts and padde springs	Shift	✓	✓												
16	Infeed gate operation (timing of eye sensor and cylinder)	Shift	✓	✓												
16	Kicker operation (range of motion and micro switches)	Shift	✓	✓												
17	Drag chain condition and alignment (bigfoot)	Shift	✓	✓												
17	Check paddle functions	Shift	✓	✓												
17	Test both e-stops on bigfoot	Weekly	✓													
18	Test gate micro switch on bigfoot	Shift	✓	✓												
18	Check pressure for bigfoot (80-85 PSI) (no air leaks)	Shift	✓	✓												
19	Check chaing alignment and condition (case shaker)	Shift	✓	✓												
20	Check shaker infeed, kicker and micro switches	Shift	✓	✓												
21	Test e-stops and interlocks on case shaker	Weekly	✓													
7	No fiber dust and debris on taper (vacuum)	Shift	✓	✓												
7	Tape head, cut off knife and rollers - remove tape build up	Shift	✓	✓												
8	No fiber dust and debris on bigfoot (vacuum)	Shift	✓	✓												
9	No fiber dust and debris on case shaker (vacuum)	Shift	✓	✓												
		Operator Signoff	✓	✓												
		Supervisor Signoff	✓	✓												
		Shift Manager Signoff	✓	✓												

**KEY:**  
 Inspection Number  
 Frequency of Inspection  
 Inspection Point  
 Cleaning Point  
**S1** = Days  
**S2** = Nights

PROBLEM NO	PROBLEM	CORRECTIVE ACTION
1	Record Abnormalities	Record Corrective Action
2		
3		
4		
5		
6		
7		
8		

