

Manufacturing Management Module

Manufacturing is a process of converting raw materials or components into finished goods or products. For a company which handle large quantity of manufacturing products have to track every manufacturing orders efficiently. The Manufacturing Module in Odoo help you to handle the complexity of Production, Manage Bills of Materials, Plan Manufacturing Orders, and Track Work Orders etc. Manufacturing module is one of the basic application in Odoo. You have to install 'Manufacturing' app from Odoo Apps to avail this module on your ERP. Since the Manufacturing module is highly integrated with Inventory Management, you can keep your inventory automatically updated with each manufacturing process.

Following features make Odoo manufacturing module an efficient one.

- **Manage**

- Manufacturing orders

- Manage your products into assembly lines or manual assembly.

- Work orders

- Launch production of items needed in the final assembly of your products. Repair orders

- Manage repairs of items under warranty or as a service.

- **Schedule & plan**

- Plan manufacturing

- Get a clear view on your whole planning and easily reschedule manufacturing. Organize work orders

- Have access to all available resources and plan ahead with your production. Manage Bill of Materials

- Keep track of availability of items in stock and production time.

- WorkCentre Capacity

- MRP II scheduler using capacities and schedules of WorkCentre.

- **Define Flexible Master Data**

- Create multi-level Bills of Materials

- Set a Bill of Materials within another in order to manufacture components of a product in another Bill of Materials.

- Optional routing

Create new routings for work orders in order to sequence your production depending on the routing used.

Version changes

Allow your products to evolve and add configurable options when creating orders. Phantom of Bill of Materials

Create phantom BoM to manufacture and sell products in kits or to build replacement parts.

• Quality

Control Points

Automatically trigger quality checks for the manufacturing department.

Quality Checks

Deploy your statistical process control easily with checks.

Quality Alerts

Organize your work using the Kanban view of quality alerts.

Business Intelligence

Get detailed analysis report on your production line, analyze the performance of your work centers and production, plan alternative production strategies etc. are some of the qualitative measures Odoo BI engine can suggest to you in manufacturing module.

System Users

By default there are two types of user in manufacturing modules.

Manager: He is the one who manages everything, including Create BOM, Work Order, Routing procedure etc.

User: Generally he can create a manufacturing order and process it. But manager can grant more permission to this user if needed

Manufacturing Order Management

There are two ways we can produce a product with Odoo manufacturing App. We can create a manufacturing order with simple default stages and complete the production. Or we can customize our work order by setting up work center and routing mechanisms.

Manufacturing > Manufacturing

Operations > Orders

Manufacturing Orders / MO/00008

Save Discard 7 / 7 < >

Check availability Produce Cancel Scrap **Raw materials are available** Confirmed In Progress Done

MO/00008

Product [PCSC234] Computer SC234 Deadline Start 10/07/2020 14:59:21

Quantity To Produce 1,000 Units() Update Responsible TSBA

Bill of Material [PCSC234] Computer SC234 Source

Consumed Materials	Finished Products	Miscellaneous		
Product	Unit of Measure	Quantity Available	To Consume	Consumed
[E-COM11] Mouse, Optical	Units()	0.000	1.000	0.000
Apple Wireless Keyboard (White)	Units()	0.000	1.000	0.000
[CARD] Graphics Card	Units()	0.000	1.000	0.000

- Choose a product from list (or you may create new one)
- Choose Bill of Material
- Finished product tab will show you the number of finished products.
- Consumed Material tab will display the material consumed for the production
- Click “Check availability” to see the availability of raw materials in inventory.

Manufacturing Orders / MO/00008

Save Discard 7 / 7

Produce Cancel Scrap Unreserve Confirmed In Progress Done

MO/00008

Product [PCSC234] Computer SC234 Deadline Start 10/07/2020 14:59:21

Quantity To 1.000 Unit(s) Update Responsible TSBA

Bill of Material [PCSC234] Computer SC234 Source

Consumed Materials Finished Products Miscellaneous

Product	Unit of Measure	Quantity Available	To Consume	Consumed
[E-COM13] Mouse, Optical	Unit(s)	1.000	1.000	0.000
Apple Wireless Keyboard (White)	Unit(s)	1.000	1.000	0.000
[CARD] Graphics Card	Unit(s)	1.000	1.000	0.000

- Once the product Quantity are Available to product the final product.
- Click on **Produce** button to start the production.

✱ Produce

Product [PCSC234] Computer SC234

Quantity 1.000 Unit(s)

Record Production Cancel

- And click on **Record Production** to start the process of manufacturing.

Manufacturing Orders / MO/00008

Edit Create Print Attachments Action 7 / 7

Mark as Done Post Inventory Scrap Unreserve Confirmed In Progress Done

MO/00008

Product [PCSC234] Computer SC234 Deadline Start 10/07/2020 14:59:21

Quantity To 1.000 Unit(s) Update Responsible TSBA

Bill of Material [PCSC234] Computer SC234 Source

Consumed Materials Finished Products Miscellaneous

Product	Unit of Measure	Quantity Available	To Consume	Consumed
[E-COM13] Mouse, Optical	Unit(s)	1.000	1.000	1.000
Apple Wireless Keyboard (White)	Unit(s)	1.000	1.000	1.000
[CARD] Graphics Card	Unit(s)	1.000	1.000	1.000

Inventory Moves

- Then click on **Mark as Done** to finalize the process.
- To view the Stock Moves click on **Inventory Moves** smart button.

Manufacturing Orders / MO/00008 / Stock Moves

Create Import Search...

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Expected Date	Date	Source Document	Product	Quantity	Unit of Measure	Status
10/07/2020	10/07/2020	MO/00008	[CARD] Graphics Card	1.000	Unit(s)	Done
10/07/2020	10/07/2020	MO/00008	Apple Wireless Keyboard (White)	1.000	Unit(s)	Done
10/07/2020	10/07/2020	MO/00008	[E-COM13] Mouse, Optical	1.000	Unit(s)	Done
10/07/2020	10/07/2020	MO/00008	[PCSC234] Computer SC234	1.000	Unit(s)	Done

Create a Manufacturing Order (Advanced Method)

Comparing to simple method, advanced method provide each company to configure more detailed manufacturing process such as setting up Work Centers, Routing, Work Order management etc.

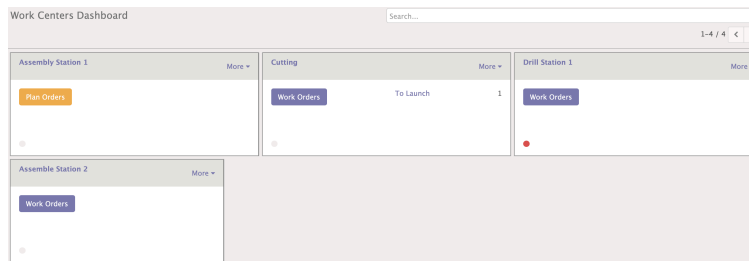
To enable this feature: **Manufacturing > Settings > Manufacturing Order**

Manufacturing Order

Product Variants	<input type="radio"/> No variants on products <input checked="" type="radio"/> Products can have several attributes, defining variants (Example: size, color,...)
By-Products	<input checked="" type="radio"/> No by-products in bills of materials (A + B --> C) <input type="radio"/> Bills of materials may produce residual products (A + B --> C + D)
Routings & Planning	<input checked="" type="radio"/> Manage production by manufacturing orders <input type="radio"/> Manage production by work orders

Enable 'Manage Production By Work Orders'

This will enable new menu in dashboard to manage Work Center, Routing and Work Order.



Manufacturing > Operations > Manufacturing Order > Create

Manufacturing Orders / MO/00005

Save Discard 4 / 4

Check availability Create Workorders Cancel Scrap **Create Work Order** Confirmed In Progress Done

MO/00005

Product [FURN001] Computer Desk Deadline Start 10/07/2020 14:43:07

Quantity To Produce 1.000 Units Update Responsible Administrator

Bill of Material [FURN001] Computer Desk Source

Product	Unit of Measure	Quantity Available	To Consume	Consumed
[FURN004] Bolt	Units	0.000	4.000	0.000
[FURN001] Table Leg	Units	0.000	4.000	0.000
[FURN002] Table Head	Units	0.000	1.000	0.000

- Fill the fields same as before.
- Select a 'Routing' mechanism, this will be automatically filled once you choose theBoM.

The Status bar will give you a new option **Create Work Order**, Click it to create the work order according to your routing plan.

Unlike in simple method now you just created a Work Order, the production process has not started yet.

Manage Production

- Open a manufacturing order and Click **“Work Order”** button in the form.

MO/00005

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Work Orders

Product	[FURN001] Computer Desk	Deadline Start	10/07/2020 14:43:07
Quantity To Produce	1.000 Unit(s) Update	Responsible	Administrator
Bill of Material	[FURN001] Computer Desk	Source	
Routing	Assemble Furniture		

Consumed Materials		Finished Products	Miscellaneous		
Product	Unit of Measure	Quantity Available	To Consume	Consumed	
[FURN004] Bolt	Unit(s)	4.000	4.000	0.000	
[FURN003] Table Leg	Unit(s)	4.000	4.000	0.000	
[FURN002] Table Head	Unit(s)	1.000	1.000	0.000	

- You will see all the work orders listed there with their status.

Manufacturing Orders / MO/00005 / Work Orders				Search...		1 - 3 / 3 < > [icon] [icon] [icon]		[icon]
<input type="checkbox"/> Work Order	Scheduled Date Start	Work Center	Manufacturing Order	Product	Original Production Quantity	Unit of Measure	Status	
<input checked="" type="checkbox"/> Cutting		Cutting	MO/00005	[FURN001] Computer Desk	1.000	Unit(s)	Ready	
<input type="checkbox"/> Drilling		Drill Station 1	MO/00005	[FURN001] Computer Desk	1.000	Unit(s)	Pending	
<input type="checkbox"/> Assembly		Assemble Station 2	MO/00005	[FURN001] Computer Desk	1.000	Unit(s)	Pending	

- Select the Tasks from Work Order one by one and complete it.

Manufacturing Orders / MO/00005 / Work Orders / Cutting

Attachment(s)

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Start Working Scrap Pending Ready In Progress Finished

To Produce [FURN001] Computer Desk
Quantity Produced 0.000 / 1.000 Unit(s)
[Ready to produce](#)

Work Instruction Current Production Time Tracking Miscellaneous

Cleaning Steps

1. Clean and degrease the workpiece.
 - A. Bracket holders (4 x 1).
 - B. Flange plate (metal surface).
 - C. Sliding blocks (4 each).
2. Use the wire brush, air hose, rag and/or solvent to remove more concentrated spatter or debris.
3. Apply "Zip Strip" spray to rest of bracket holders.
4. If spatter or debris can not be removed using these methods contact Team Leader or Set-up Person.

Bracket Holders

Critical Points

The "Zip Strip" spray can remove most spatter and debris causing more uncontrolled downtime.

Be cautious not to damage sensors while cleaning.

Make sure "Holes of Cables" always remain clean.

Slits

Do not leave gaps inside the weld cavity.

Clean Spatter From These Areas

Sliding Blocks

Control of push points

- Use **‘Pause’**, **‘Block’**, **‘Done’** Buttons to control the progress of Task.
- Done** means the Task is completed or the Task Status changes to Finished and you can automatically move to next Task in the Work Order.

Work Order	Scheduled Date Start	Work Center	Manufacturing Order	Product	Original Production Quantity	Unit of Measure	Status
<input type="checkbox"/> Cutting		Cutting	MO/00005	[FURN001] Computer Desk	1.000	Unit(s)	Finished
<input checked="" type="checkbox"/> Drilling		Drill Station 1	MO/00005	[FURN001] Computer Desk	1.000	Unit(s)	Ready
<input type="checkbox"/> Assembly		Assemble Station 2	MO/00005	[FURN001] Computer Desk	1.000	Unit(s)	Pending

- Complete all the processes in the Work Order.
- Once you complete all the process in Work order then you can add the product into the inventory.

Product	Unit of Measure	Quantity Available	To Consume	Consumed
[FURN002] Table Head	Unit(s)	1.000	1.000	1.000
[FURN003] Table Leg	Unit(s)	4.000	4.000	4.000
[FURN004] Bolt	Unit(s)	4.000	4.000	4.000

- Then you can finalized the Manufacturing Order by marking as Done to complete the production.

Bill of Materials

BoM is the basic building block of any manufacturing process. It is the list of raw material needed to produce a product. So while creating a manufacturing order for a particular product we need to select corresponding BoM from the list. BoM will help us to create the inventory updated during manufacturing process. So before creating BoM we first need to add the Raw material to our product list in inventory.

Manufacturing > Master Data > Bill of Materials

Product	Product Quantity	Product Unit of Measure	Variables	Consumed in Operation
[FURN002] Table Head	1.000	Unit(s)	Cutting	B
[FURN003] Table Leg	4.000	Unit(s)	Drilling	B
[FURN004] Bolt	4.000	Unit(s)	Assembly	B

- Select a product from list.
- Go to **Settings > Manufacturing Order > Product variant** option to enable select product variant option. (In case you produce a product Variant)
- **Reference** field is used to distinguish Different BoM for same product.
- Click **Add an Item** field and add the raw materials for your product.
- **“Routing”**, field is used to specify the WorkCentre routing of manufacturing process.
- Under the **Miscellaneous** tab in BoM, **Sequence** defines the order in which your BoMs will be selected for production orders, with lower numbers having higher priority.

Work center

As the name indicates, it is the Physical place in your firm where different manufacturing processes are done. You can create you work center details with all its performance indices. Later you can use this data to analyze the efficiency and other details of each work center.

Manufacturing - Master Data > Work Centers

Work Center Name: Code:

Working Time:

General Information

Efficiency Factor: % Time before prod.: minutes

Capacity: Time after prod.: minutes

OEE Target: %

Description

Description of the work center...

- Add all the necessary information including the process done here and the performance factors etc. in field
- Click <Save> and mark <Active> to make it available for use.

Routings

Each product have its own routes. Manufacturing process is not a single step process it may contain many Work Centers and each work centers have its own processes and process time. From this menu, we can set the order or route of each manufacturing. It's purely depends on the manufacturing company process. Some company has same type of manufacturing process. Then we create one routing. Some company has different manufacturing process for different products. Then we create each multiple routing.

Manufacturing > Master Data > Routings

Routing Name: Production Location:

Work Center Operations

Operation	Work Center	Duration
Manual Assembly	Assembly Station 1	60:00

Add an item

- Give Routing a **Name**
- Click **Add an Item** to add the work centers included in this route
- Click <Save> and <Mark Active>

Work Order

Once you have created and confirmed Manufacturing Order with a specific Rout. All the processes in the Rout are listed as work orders. So in order to complete a production, we must complete all the associated processes in work order. We can access Work Order related to a Manufacturing Order, either from Manufacture Order form or directly from **Manufacturing > Operations > Work Orders**

Scrap

One of the most useful features of Odoo is that you can create Scrap at any stage of production line. You can always see a Scrap button almost all the stages of the production line. Click this button to create instant scrap entry in inventory. You can create fresh scrap entry from **Manufacturing > Operations > Scrap > Create**

Or you can make a quick entry by clicking on Scrap button available on almost all forms of production.

Fill the fields and Click **“Done”**. It will automatically inserted into the inventory.

Unbuild Orders




Another useful feature in Manufacturing is Unbuild. We can unbuild the products into its bill of materials. This is actually a reverse process of production.

Manufacturing > Operations > Unbuild Orders

- Select the product which need to Unbuild,
- Select the bill of materials and quantity.
- If you need to specify a particular Manufacturing Order we can mention it here.
- Click <**Done**> and <**Save**>

Reporting

Odoo Reporting tools can produce concise yet very effective reports. You can view different types of report on Manufacturing Orders, Work orders, Work center Performance etc. under Reports menu.

Manufacturing Orders		
Measures ▾   		
	+ Total	
	Count	Quantity To Produce
— Total	8	14.00
— September 2020	4	10.00
+ [FURN001] Computer Desk	1	1.00
+ [HDD-DEM] HDD on Demand	1	1.00
+ [LAP-CUS] Laptop Customized	1	5.00
+ [PCSC234] Computer SC234	1	3.00
— October 2020	4	4.00
+ [FURN001] Computer Desk	1	1.00
+ [PCSC234] Computer SC234	3	3.00