

# Webinar - Assemblies, Bill of Materials & Work Orders

Last Modified on 03/12/2021 4:10 pm EST

## Helpful Resources -

- [Assembly and Creating a Bill of Materials](#)
- [Production Cycle](#)
- [Drill Down a Work Order](#)
- [Enable Split, Drill Down, Flatten Features on a Work Order](#)
- [Production Category](#)

### Captions:

Okay, so welcome to our Webinar series, we put on these webinars for our customers every second weekend.

Today's topic is Bill of Materials and work orders. I'm going to start off from ten of the beginning on creating a Bill of Materials. If you have any questions, feel free to use the chat and we'll get to those questions - I usually do a presentation followed by a Q&A.

I hope everybody can see my screen and I'm looking at the dashboard home screen of Order Time and I see a calendar event here, I can see here that we created an event associated with a particular work order. So the way we did that is simply we created a work order and then we created an event for that, which is actually still going on, so once it's finished it'll go to that. Actually it is already completed, so that's why it's in the activity history. So what we're gonna do is we're gonna just kind of lay the groundwork a little bit for what a Bill of Material is all about.

Go to the production, workflow production cycle, and kind of have an understanding of how the

system gets put together.

So, the bill of materials is a recipe, it's basically a list of components that go into raw materials or components or cost inputs that go to build a single unit of a finished product. Okay, so we're always working in terms backwards into the primary, to the unit of measure of the finished product.

So let's go ahead and create a new item that has a bill of materials and when we do, when we create an item that has a bill of materials, it has a certain type. And the type of an item is an assembly. So if you want to categorize, have different categories for your bills of materials, you would create one or more item groups that have an item type called "assembly".

I have a few item groups over here at assembly group, I have assembly items, I can just change this to Finish Goods. But you can see they all share one thing called Item Type, which is a system parameter that basically tells the system that this item should have a bill of material, and this is another type of or another item group or category called men's and women's serum.

You can see that the item type is always ascended so all these item groups, whether its assembly group or finished goods or men or women serum, all have the type of assembly, and that's what makes the system give it a bill of materials.

So when I create a new item, I'm gonna go ahead and create a new item, I want to pick the group that has the bill of materials, so here's that one over here. Then I'm going to give my item, so there's a group, I'm going to give my item a new number so that number I can use the automatic number sequencing that we have in our system, or I can just type in a unique name.

We'll just call this FG00, and there is the unit of measure that we're going to use when we give it a sales description and a price, we can start off the price so we can leave that blank for now. The purchasing, the cost is going to be rolled up from the sum of its components, so we'll just leave that as is.

Okay, so that's really all we need. If this finished product, you also want to track serial numbers or lot numbers, for example it's a chemical or it's some kind of food or beverage product or pharmaceutical, nutraceutical or a piece of machinery, cell phone, computer, anything like that, you would say that this item has that you want to track the lot/serial numbers of those items.

I'm going to go ahead and save that, and when I save that, automatically it has a bill of material structure.

Now that I've created the item, I can go ahead and press edit Bill of Materials and I'm gonna get to where I can start entering the components into my bill of materials.

Now, there are two ways to find a bill of materials. You can either filter the items list by type, by group, or by assembly type, or I can go to a listing of all the Bill of Materials that I have.

Alright, so here is a listing of all the bills of materials that I have in the system and there is a bill of materials.

So I'm going to go ahead and edit that bill of materials, and I'm back to my bill of materials editor and this bill of materials is, like I said as a recipe, it's going to be used over and over again in work orders that actually build this doc. So as you can see, it just kind of has one step and you can add, so the idea of a step is basically to have the large bill of materials broken up into multiple logical

steps of operation.

And you set up your steps in the profile list. So where to find the profile list, you go to the management of the settings, and kind of your admin panel which is in the top right corner of the company name. So I'm just gonna kind of click and open that and I get to my admin and I want to go with my profile list, I go all the way over to production and I see steps.

Okay, so I can create as many steps as I want. So for example, the picking step, which I change the name of, is usually called default. This has a description that says pick raw materials and it can happen in any one of the locations.

So if you have outsourced steps, example weld I can say that it happens in a completely different location. Okay so that's the way you're kind of able to identify where your inventory, where your work orders are, and a particular kick in a particular sense by using steps. We'll just go back to this building material and like I add a step.

There is a question and I'll answer it right away. Here the question was, "If we have multiple steps, do we have to create a new location?" You don't have to create a new location, you can use existing locations. It's basically where the inventory is, where the raw material is at that particular step. So when you have a step that uses another location in order to consume that inventory at that location, that inventory has to be at that location first.

Alright so we'll just go back here and we'll just add another step here and we'll just add cutting. So here we just put in you know what typically how much time a step would take, and you have different units of measure here. So you can just put any value here and let's say it takes 15 minutes to do this cutting step, so I can put that and it means it's active. I have the step here and at every step I can put in different components.

I can edit the step, so if I want to edit this step, I can just click on the right here, I can remove the step. 'All work' or 'all bills of materials' must have at least one step, you can't delete the originating or you know one step I'd have to have at least one step back in here.

The little box over here allows you to move the steps around, to kind of reorder them, so I kind of moved them around. That's what that little button is.

Just like any other list, by default the steps are always ordered by the line number and so we can't really change that. That's one of the things that we can't change.

So now, to each step I want to add different components. The way to add a component is basically click the "Add" button. Once you highlight the step that you want to use, you click the "Add component" button and then you basically pick one of your items that you want.

This line instruction is not the actual description of the item, it's instructions basically to whomever is going to read this bill of materials as to what to do with this particular component. So you can put any character, any number of characters, here. For example, line up unit to left and let's say we're gonna use one quantity per. So now we start off we see that as we're adding this component, we have a standard cost.

Your cost for this component, we have a standard cost for this component for one each, which is \$22, and it starts to build up the cost of this entire bill of materials. We'll just continue to add a couple of components here.

Now you'll notice here as well there's another thing that it says is one time and the quantity per. When we have the quantity per and we do a work order, it basically said let's say i want to create 10 of the finished product. It'll multiply the quantity per by 10, so we'll need 10 of this component, unless you say that it's a one time. One-time is basically used for things like set up, so you can put that in as a one-time.

We're gonna add one more component here, this time we're gonna add something called liquid ice. Liquid ice is a bit different in that I buy this in kilograms, but we use it in ounces, and in order to achieve this, I set up what's called multiple units of measure.

So if we go to this item over here, you'll notice that I have a unit of measure set, which has kilograms to pounds. I'm gonna go to my admin here real quick and show you how I set that up.

I basically enabled the unit of measure sets in my preferences, then I set up the unit of measure called kilograms to pounds and the primary unit of measure is kilograms. So we inventoried in kilograms, we buy it in pounds, so I have a purchase as pounds, and I have a used as in ounces. This is the way I set up this unit of measure set and in my bill of materials, I have the ability to now have that reflected in ounces.

As you can see as I'm editing this, let's say we need 40 ounces and it'll increase the cost. So you can see here as we're adding items, it's kind of calculating what the cost is, what the margin is, and you can kind of play with these with your price or your margins to calculate what the price should be.

So let's say I want a \$90 margin, it will give me a price, or I want to calculate a particular margin percentage, it'll calculate the price for me. Now most of the items I've added here so far are our parts, are just inventory just regular inventory parts. I could add other bills of materials on here as well and that's called Nested Bill of Materials.

When you have one bill of materials into another bill of materials, that's when you have what's called Nested Bill of Materials, and when we have this concept of the phantom bill of materials that fits in.

I'm gonna go to my bill of materials list and I'm going to take a look at a filter here where I want to see is phantom bill of materials, I want to see all my phantoms. This I got to set an example of a phantom bill of materials like I created and it just has kind of one machine. This phantom basically, I just checked this box, and when I do a work order for a phantom bill of materials, it gives me the opportunity to flatten the entire structure. I'm going to show you that in a second.

So I'm gonna go back to this bill of materials here and I'm going to add that machine as one of the components. There it is, we add one. I'm gonna put that just so it can remind me exactly what we can do with a bill of materials that's in another bill of materials.

Another type of component I can add is any service item or non-inventory part or other charges. And that is when you want to kind of include a fully landed cost type of bill of materials, so if you have labor that goes into an item, called repair labor, which has a quantity basically \$25 per hour the unit. So it takes you know whatever number of hours and it'll add that, it'll put in the non-part costs as well. So that will build up the cost and this cost will go into the bill of materials and be included into the cost of the item when you create it. So that's the way to include labor.

And you can include other inventory or non-inventory and other charges as well like rent components, if you have things like thread that you use, you don't really want to track the

quantities of that, you would set up a non-inventory item and include that in here as well. So you can add as many components as you want.

Now I'm going to go click on the other step and as you can see that if I click on that step, it's basically making my bill of materials into logical or two logical steps. One of them is picking one, one of them is cutting, and I might have other components in here as well.

You also have in addition to the line item instructions, you have a global instructions below for the entire bill of materials. So this is just free flowing text that you can add step one, step two, in terms to provide instruction to whoever's building this bill of materials.

So it's kind of an example of setting up a bill of materials. I know there's a question I'm going to get to that in a minute, we'll get to that.

Now that I have this completed bill of materials here, I'm going to show you a little bit about creating a work order. In order to create a work order, I go to create new, and I create a work order. So all my bills of material are here, I just have to basically select that one. Then I want to start by saying here's the instructions, they get copied over.

One other thing that I might want to do is in the bill of materials, there's a field called the build point. So I'm going to put in how, this is kind of like a reorder point, so you can kind of determine. I use the reorder analysis to build the bill of materials as well. So you can do that as well.

Then I also have this field called the "make time". Let's say this is in days, so let's say it takes me a full week including weekends to build, so I'm going to say that there's a couple of other things you can add directly to that. That's kind of the build point, the max quantity, and the sales lead time.

Back to creating the work order now. Notice what the build time did - it automatically added seven days to my promise date.

We know that if we enter a work order today, that it's going to take seven days to build. So that's what the build point does.

Then you can also add custom fields, so you know if you feel more comfortable using custom fields as opposed to the steps, which are a little bit more complicated, that can be done as well.

Another thing you can do using the statuses. Here's a memo, so we're gonna produce 10 and when we do that, basically all the components get multiplied, all the quantity per gets multiplied, and you have a couple of columns here. You have the required, the remaining, and you also have added a column called available.

The column called available is not a standard column, but you can add it going to your column lists and adding them. I've also added track lot and serial numbers, I want to see which one of my components have a serialized item.

So there's a couple of options. I mentioned that one of these components is a phantom bomb and the phantom bomb is used with the flattened structure. So I'm just going to show you real quick what this does. When I flatten, as you can see, I no longer have the bill of materials inside this work order. In fact, I only have the machine itself, which is the component of the machine. So what it does is it basically takes all the components that are in, strips out the structure, and then puts that into the work order. That's one option that you can use.

I'm going to create another work order, I'm going to show you another thing that you can do when you have a nested bill of materials. Now another thing with this bill of materials here, I don't have any in stock they're not available, and I want to create, I don't want to do a flatten, I actually want to go through a work order to build this bill of materials.

So one thing I can do is I can create the work order. The other thing I can do is I can create a link to work order, or I can use this function called drill down.

The drill down will make all the linked, all the nested work orders all the way down. So if this bill of materials had another bill of material, had another, it would recurse through all the bills of material structure and create all your work orders by default.

This drill down function and the flatten function are not visible in order. To make them visible, you would again go to your preferences, your production preferences, and you would enable them.

Okay, so here's all enable drill down and enable flattened, which I have enabled. So when I drill down a work order, it will create a linked work order automatically for the machine.

Alright, so now I have a work order for that machine, and there's the steps that I need in that particular work order. So that's another way of creating work orders pretty quickly.

So let's start with the work order, the just flatten one that has just components, not other bill of materials. So I want to push this work order along and I want to be able to order the stock I need for the work order.

First thing I generally do is allocate. Now I can allocate the entire work order or I can allocate individual steps within the work order. Allocating basically reserves the inventory for this work order, it doesn't take it out of stock, but it makes it unavailable for other work orders.

I can click one of them to allocate, so allocate one step at a time. As you can see, as I'm allocating, it'll start allocating the quantity, but certain of these are called what's remaining. That means that this step is still waiting.

Waiting means that not all the components have been allocated or I can click that one unit and allocate that completely.

Now in this particular case, I don't have enough stock to go. I'm going to show you a couple of things that we can do in terms of the work order that are different than the other work order, than other types of systems.

Firstly, I can delta any one of these components and replace it with another component, so I can easily add another component to this.

I know that one is in stock and I've added, I can edit these components right here if I wanted to.

So I can edit right in line, it's called in-line editing. I can edit the quantity so I can delete a component and it doesn't affect the original bill of material, so it only affects this particular work order.

The other thing I can do is I can allocate more than what we actually required. So let's say I use more, you can see here that the remaining is negative, meaning that we over applied it. The reason may be we destroyed one, or for whatever reason.

What's going to happen then is that the unit of costs for this particular work order is going to be higher than the standard. That's all that's going to happen, but it's going to consume that extra piece of inventory, so if your order, if you do purchase orders by work order, at this point I can do a link PO that will kind of give me everything that I might need to purchase for this particular bill of materials.

We'll just add the same vendor here and we'll go ahead and create that purchase order. So I'm going back to my work order.

Now I have a couple of other links and this one in particular to a purchase order. So I'm just going to go ahead quickly and approve my purchase order, receive my purchase order, and change the status to received.

Once I do that I should be able to kind of go and completely allocate this. Well there's one of them that is still, this one Machine A. Let's go back to the dependency here and let's just go quickly create this finish and create this particular work order so we can finish off the other work order.

So I need two of them, I only have one of them in stock, so I'm just gonna check here what I have in order to see if I can receive any of those. I don't.

Alright, so let's just receive it in with a quick receiver, then this is a serialized item. So I can just start scanning in my serial, so these can receive a bunch.

Now I receive those go and back to this order.

Because this is an allotted item or serialized item, before I finish it, I have to introduce the two serial numbers. That's the first one, that's the second one.

So once I have the quantity produced, I can go ahead and just finish. I don't have to finish one step at a time.

Once that's done, that work order is done, it'll create the quantity and I can complete now at any point. I could have put this in production, so I could have put one step at a time in production or the entire work order in production.

In order to put one step at a time in production, I open up the step, now edit this step, and I change its status to in production. So when I do that now I can monitor on my work order list each work order and what the current step is.

So I'm gonna go ahead and back into here and finish that step and put the next step into production.

So I can do that one step at a time so we can see and then you can filter the work order list, show me the current step. I have a few more of those.

Now I can also change the status from the work order list. So for example, let's say this is a global status, I wanted to change the status from this work order list, I would now want to use this. So I can do that on that as well.

Now since this doesn't have a lot number, I can just come in here and press finished, and it'll create.

At this point, I finished my work order and all the components have gone out of stock and they're

now in inventory of the finished goods.

So there's a couple of reports that you can use for the Bill of Materials. We have a bill of materials report, so if I look at, I'm gonna filter and customize this report, the item ID, and I just want the FG the one I just did.

Here's a bid, the total cost, all the components cutting. I can also if I wanted to separate all the steps as well, I can make the steps into a section. So now I have the cutting step and just sort by step name. I want the step line number.

Now I can also flip this around and instead of making the item name the section or the step the section, I can make the component the section itself.

So we go and the component up here, make that the section, and this filter. So now we have a report that basically tells me if I have a component, which bill of materials they're using.

You can call then, you can say that as a new report, call it components, use them, that's a very useful report.

The other reports are regarding all the work order reports here, so these are all the open work order reports. The open work orders current step the production dashboard mostly works off of work orders, so these are the open work orders.

I click into here, and this is a kind of count of work order by different statuses, items, what's been produced, and what's actually been used. So this report is all the components that have been consumed on the work order over 12 months.

So if you want to know what's been consumed, you can start with this report over here and then you can customize it. So if you wanted to do last month and now the report is different.

I'm going to open it up first.

I know there's some questions and Michael has been going through some of these questions and answering them. Are there any other questions that you can think of right now?

Okay, I think kind of a general discussion, I'm just creating the work orders, creating the bill of materials, some ideas about what a flattened does, what phantom bill of materials, drill down. There are other things on the work order that if you have any questions and if you want any topics kind of more deep dive into work orders, we can definitely do another session for that.

So if there's no more questions, thank you very much for your time and have a great day!