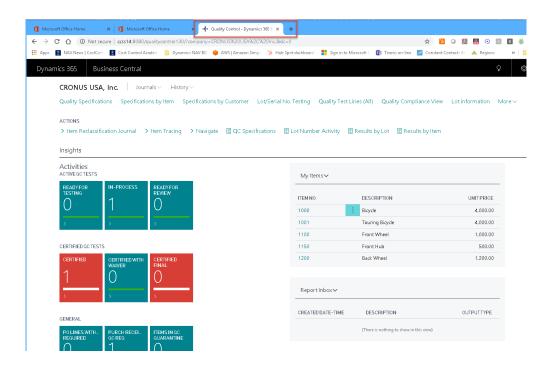


Quality Control Workflow Guide

For Microsoft Dynamics 365 Business Central



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Quick Start Video:

"Quality Control Overview of the Testing Procedures"

https://www.screencast.com/t/3p2TMvPENCyT

Application Description

Quality Control is designed for Microsoft Dynamics 365 Business Central.

Quality Control enables testing of incoming Raw Materials with Lot or Serial Number or Finished Goods with Lot or Serial Numbers placed into Inventory. For each Inventory Item to be tested, you will first set up your Item's Quality Specifications for both Measures and Methods.

Actual Test results will be entered into a test results Page, which enables you to compare your Low and High Limits to the Target Test Results. Non-Conforming test results will be flagged as exceptions.

Quality Control is built around Dynamics 365 Business Central's Item Tracking Granule. Item Tracking enables Lot Number Tracking on either Finished Goods or Raw Materials. (Purchased Items or Produced Items)

Quality Control is designed to enable Customer Specific Specifications on each Item. The Item Specifications will also hold multiple Versions and Effective Dates on each Version. (Similar to a Production Bill of Materials) This way a Customer can notify you of future Specification Requirements prior to your Production Cycles. When a Lot is tested it is tested against your internal specifications. A Certificate of Analysis can be generated after the test is certified.

When Lot items are shipped, it is possible to print a Certificate of Analysis for that specific Lot Number. The Shipment's Certificate of Analysis can be printed showing your company's Specifications or your Customer's Specifications. Any Non-Conformance Lines will be indicated.

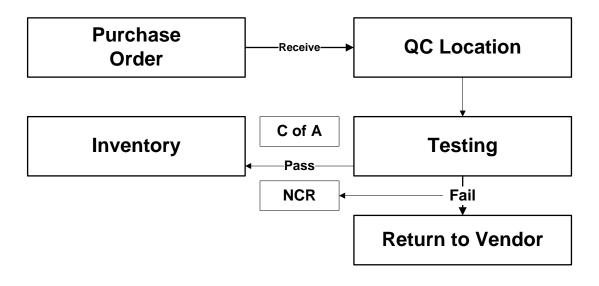
Lot Numbers are typically selected by the Customer Service Representatives to assure conformance to a Customer's Specified Quality Measures. The Shipment Document has been modified to display the desired Lot Numbers to pick and ship that meets that Customer's Specifications. A fresh Certificate of Analysis can be generated directly from the Posted Shipment Document at any time.

Actual Test Results can be printed immediately upon completion of a given test, or can be printed in Batch at the end of any time period. All test results are stored in a Testing Results Log for reporting and historical purposes.

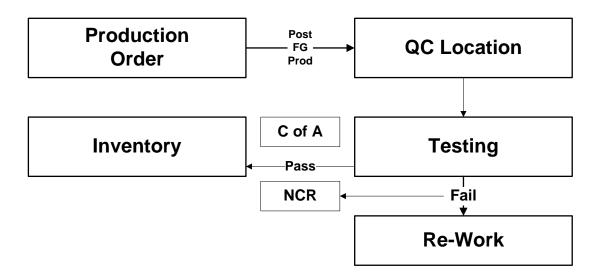
Dependencies: Item Tracking Granule, Location Codes (Recommended)

Quality Control Design

Raw Material Receiving



Finished Good Production



Workflow

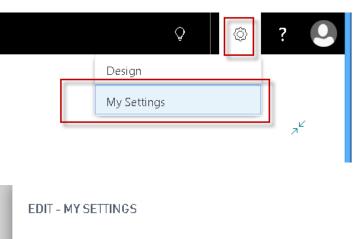
Quality Control was developed to allow users to enter LOT NUMBER "Test Results" and then compare the results to internal Company Quality Standards or Customer Specific Standards (Specifications).

These Specifications are pre-defined for each Inventory Item that is to be tested. (See Page 14 of the "Setup Guide" for full instructions) This step should be completed before you start entering actual test results. We recommend you also have an Inventory Item with Lot Number information in that Item's Ledger Entries before you begin.

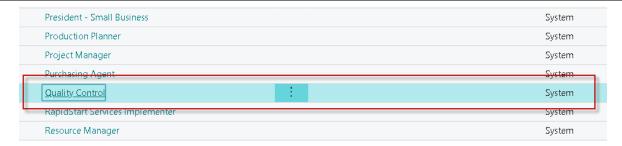
Did you complete the Setup? If not, go back and do the setup first.

Let's Get Started:

- Open up the Quality Control Role Center





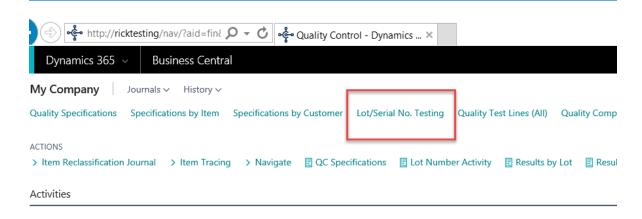


Also, ensure you have an Inventory Item that is set to "Item Tracked". I recommend you have received some Quantity On-hand of this item, with the Lot Number showing in the Item Ledger Entries too.

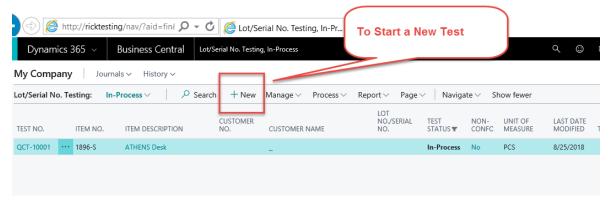
Let's Walk Through your first QC Test of one of your Raw Material Items:

Before you begin; be sure you have Quantity on Hand of a Lot Number to be tested. If you don't, use the Business Central Purchase Order to Issue and Receive into your QC LOC one of your Inventory Items. Then you will be ready to test this item.

- 1) Open the Quality Control Profile Role Center
- 2) Select the Lot/Serial No. Testing Action

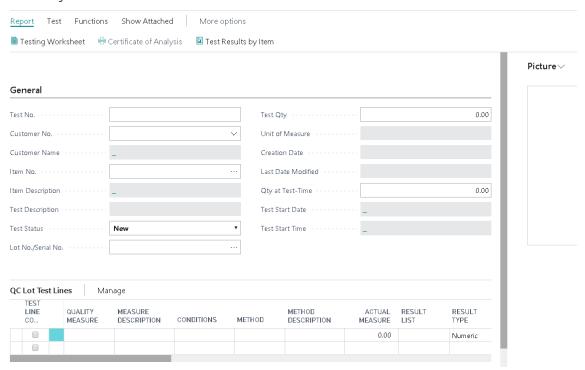


3) Start a New Test using the +New option:

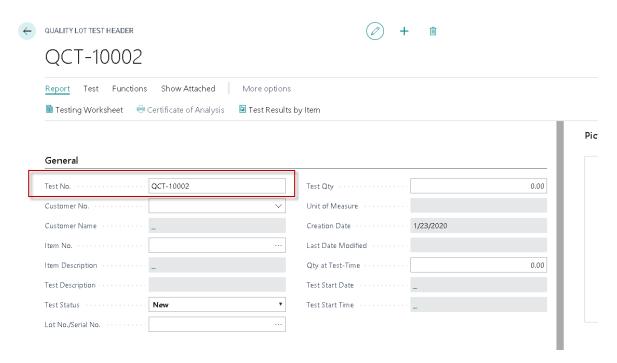


4) You will be taken to the Quality Lot Test Card. Blank Card, ready for entry.

Quality Lot Test Header

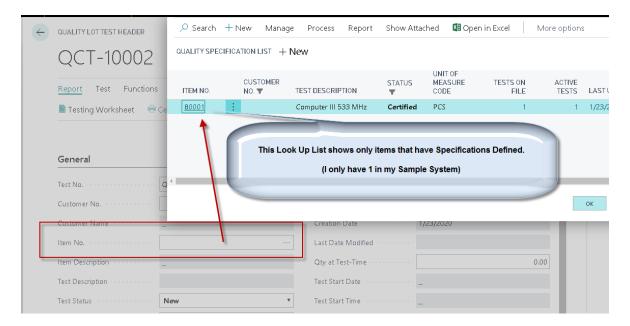


5) Press Enter/Return to create new Test Number. (As shown below)

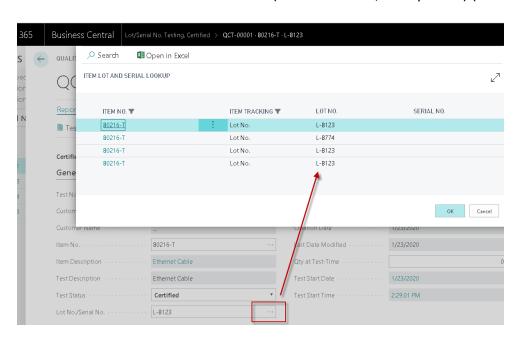


From the QC Testing Card follow these steps to record a new Test:

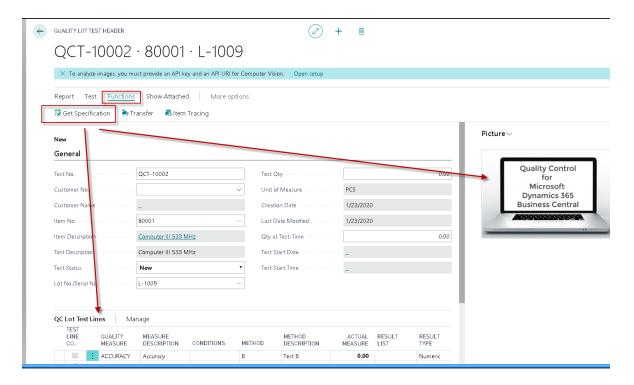
- 1. If not done so already, select "New" to start the new test, the press "Enter" to get the next Test Number.
- Select the Item Number to be tested.(Only Items with Certified Specifications will show)



3. Select the Lot Number to be tested. (Recommended, but optional) (see below image)



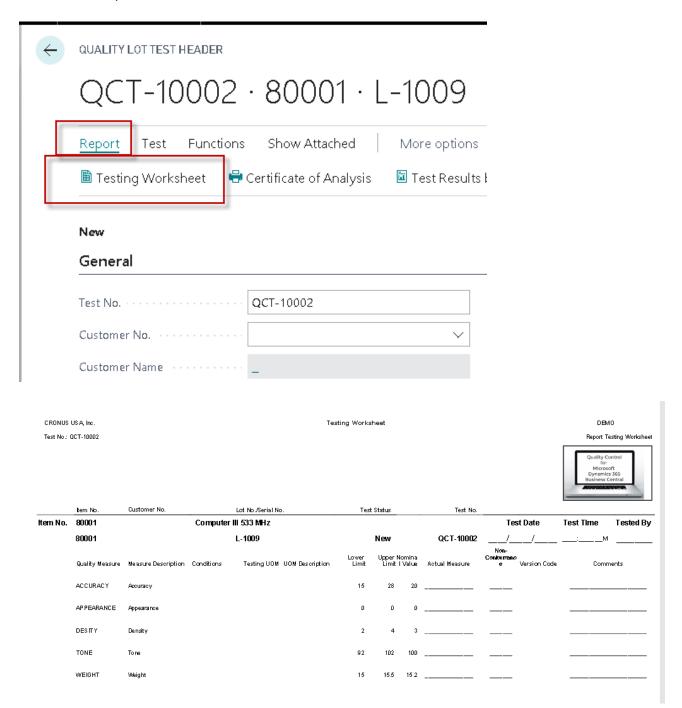
4. Run the Function to "Get Specifications", from the ribbon, or manually add the Quality Measures.



The Sub-Form will be filled in with that Item's Quality Specifications that were setup previously. (See Setup Guide) If there are multiple Versions, the system will pull in the most current and "Certified" Version.

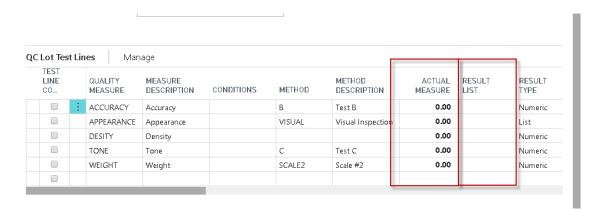
NOTE: Specifications MUST be setup for each item to be tested.

5. **Optional:** Print the Testing worksheet using ribbon choice. (Put on a clip board for the Lab Technician)



Put this report on your clip board and go get the test results!

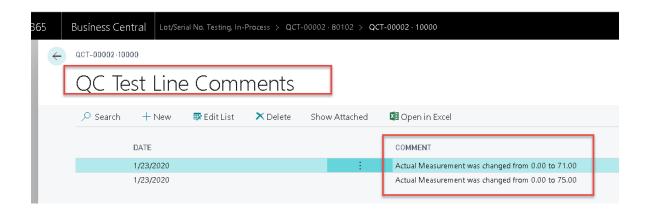
6. Enter the "Actual Measures" or "Results List" values in the Columns shown below.



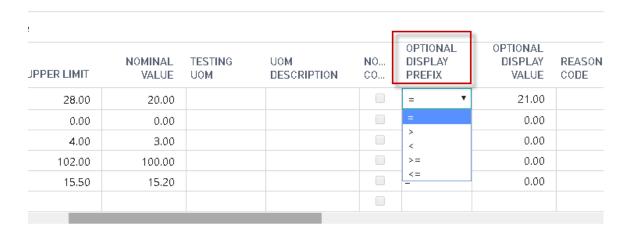
- 7. Notice that any test results that are outside of the Limits established will automatically be flagged as "Non-Conforming" and show in red. Also, each Test Line will be Flagged Complete as you enter your test results, seen in first column of lines. (See above image for example of Non-Conforming for the Hardness Test for 8.0)
- 8. Notice that the Line's Test Date and Time are filled in automatically as you enter the test results.
- 9. Notice that there are "Line Comments" available for you to record any special comments about the particular Line Entry. There are also Test Comments available from the standard Comment Icon.



Every entry to Enter, Lower, or Raise the Test Value will be automatically recorded in the Line's Comments. (Change Log)



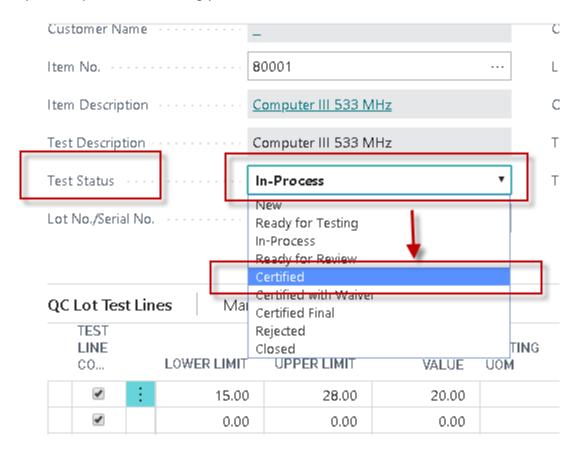
10. Optional Display Prefix.



Optional Display Prefix and Optional Display Value gives you the flexibility of reporting results within a "greater than" or "less than" value instead of a single fixed value. The printing of the test results is actually printing the Optional Display Prefix and Optional Display Value. The default is always "equals to" the Optional Display Value which defaults to the Actual test value.

If the specifications only call for the test results to be greater than a value, then you can change the Optional Display Prefix to be the greater than sign (>). The system will default the Lower limit value into the Optional Display Value field. You may edit the optional display value as long as it stays within the specification limits or is accurate related to the actual value. The same process works using the less then (<) sign in the Optional Display Prefix.

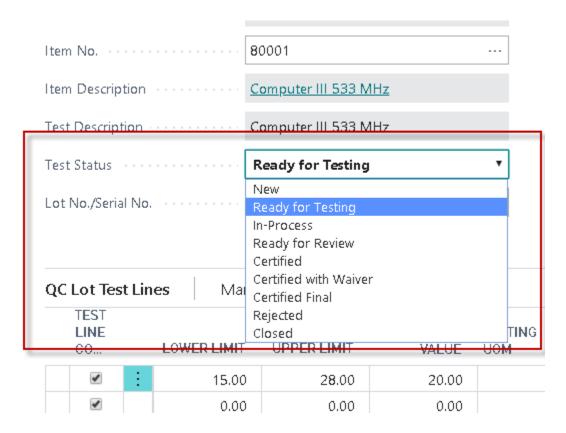
11. Upon completion of entering your test results, set the status of the test to "Certified"



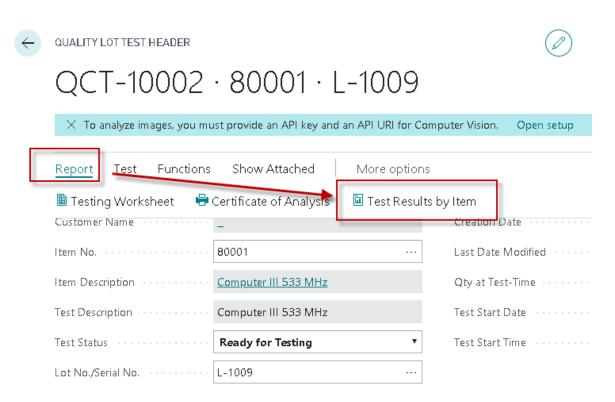
Typically, Test Status would be set to "Certified" or "Rejected".

Set Test Status to "In-Process" if you have to leave and come back later to finish the test results. You cannot edit test results in Certified or Rejected Status.

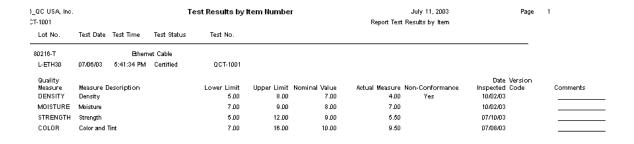
12. Option: Set to "Ready for Testing" if you are assigning a test to a Lab Technician.



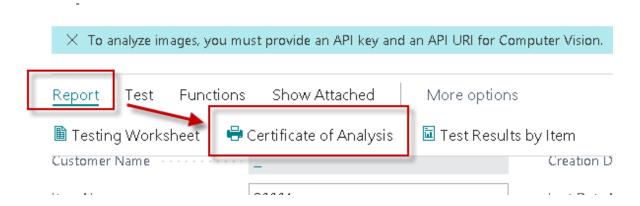
12. Print the "Test Results by item Number Report".



If you have entered the actual test results, the "Test Results by Item Number" Report will print the test results if you need a printed copy of your actual test.



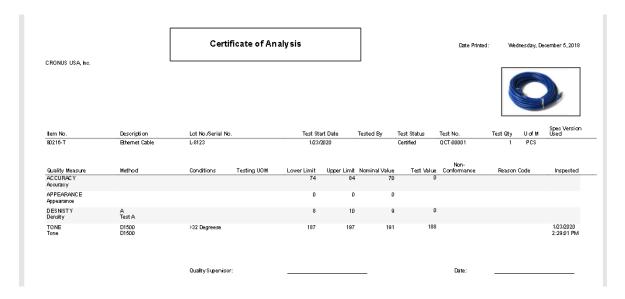
13. Certificate of Analysis



You may print a "Certificate of Analysis" Report at this stage to document the Test Results of this Lot Number's Test.

It is only available for "Certified" Tests.

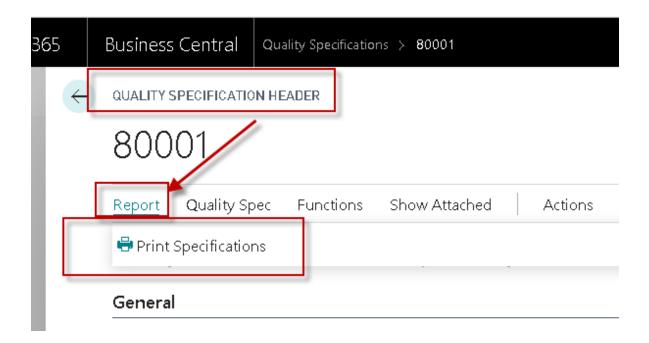
Many companies will include this report in with the shipment to the customer.



Quality Control Reports:

Quality Control provides 4 pre-defined reports:

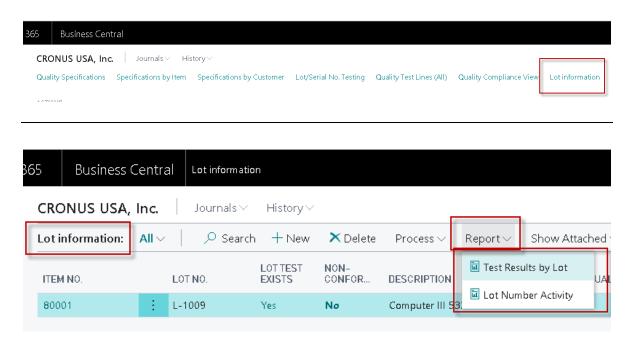
1. Print Quality Specifications



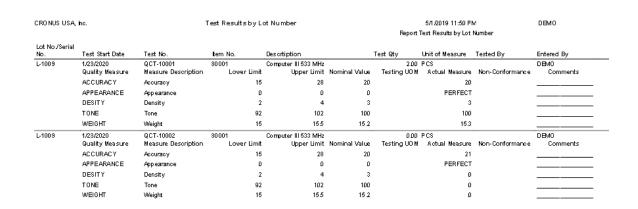
This is a print out of the Item's or Customer's MASTER Quality Measure Specifications.



2. Print Lot Number Activity



This report is by Lot Number and shows all in/out activity for each Lot Number printed. Use filters as needed to limit the scope of this report.



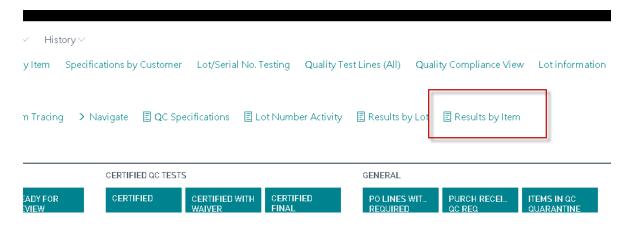
3. Print Test Results by Lot Number Activity

This report is a detailed print out of the Activity per Lot in the Item Ledger Entries.

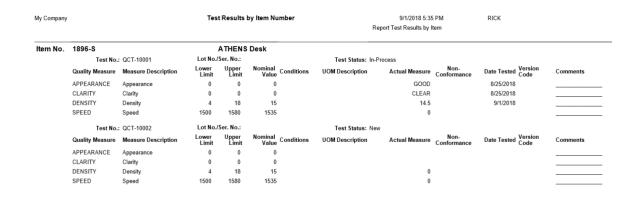
Use filters as needed to limit the scope of this report.

CRONUS USA, Inc.		Lot Number Activity				5/1/2019 11:51 PM Report Lot Number Activity				DBM0		
Lot No.	Posting Date	Item No.	Description	Source No.	Entry Type	Document No.	Description	Quantity	Remaining Source Quantity Type	External Document No.	Cost Amount (Actual)	Sales Amount (Actual)
L-1009	•		•				•					
L-1009	1/23/2020	80001	Computer III 533	01863656	Purchase	107044		40	40 Vendor		5,000.00	0.00
				"Total for "Lot No.		L-1009		40	40		5,000.00	0.00
											5 000 00	0.00

4. Test Results by Item Number



This report is a detailed print out on the test results of each Item Number's Lots. Use filters as needed to limit the scope of this report.

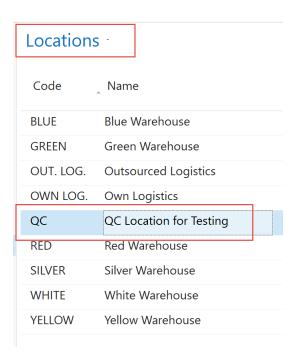


Inventory Movement

The Quality Control module works closely with Item Tracking & Location Codes. Some of the first decisions you need to make are related to where your inventory is to be located.

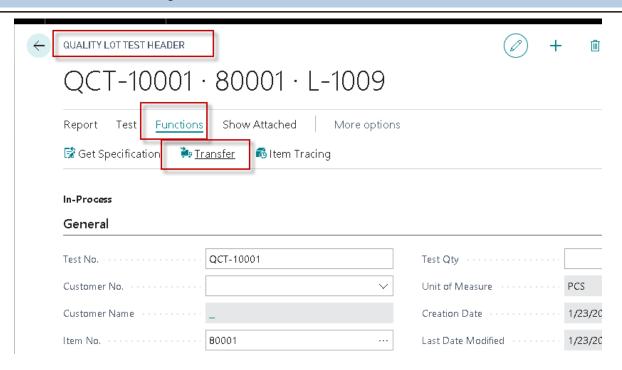
Example: When you receive Raw Material, do you put it in in General Available Inventory or into "Quarantine" until it passes the QC inspection? If so, just receive to a LOC = QC until the testing is complete.

We recommend you setup at least one "Location" to temporarily store your incoming items that need to be tested:

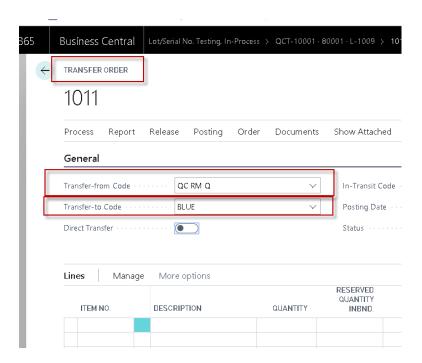


You could even have a Location Code for your Raw Materials and another Location Code for your Finished Goods that need to be tested.

Upon completion of your Testing use the Transfer option to move from LOC = QC to LOC = BLUE.



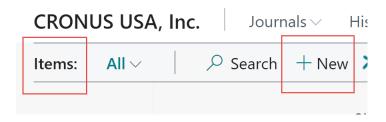
Inventory that Passes Quality specification should go to the location code(s) from which you sell product. (IE: BLUE) Perhaps Inventory that does not pass will go back to your Vendor. Below is a Transfer Order from QC RM Q to BLUE Location.



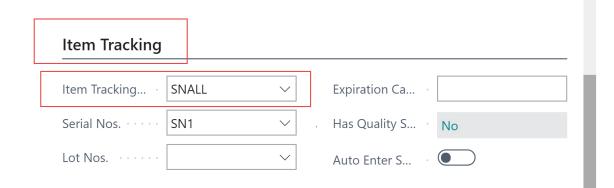
Let's review the above steps just to double check your workflow.

Inbound Raw Material Workflow (Review):

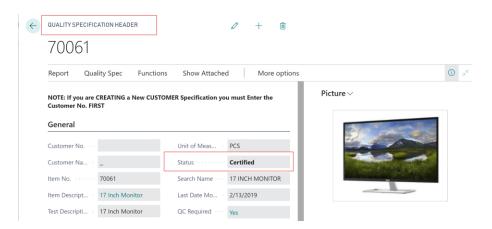
1. You added a "new" Raw Material Item in Inventory or used an existing Inventory Item.



2. Check to be sure the Item's Lot Tracking information is setup.



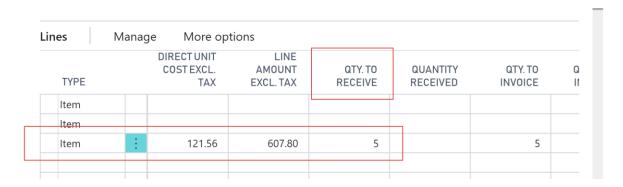
3. You then created the Item's Quality Specifications that are to be tested. Be sure to set to "Certified".



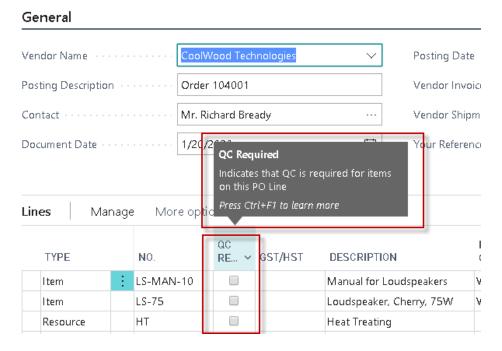
4. You then created a Purchase Order for your Raw Material Item.



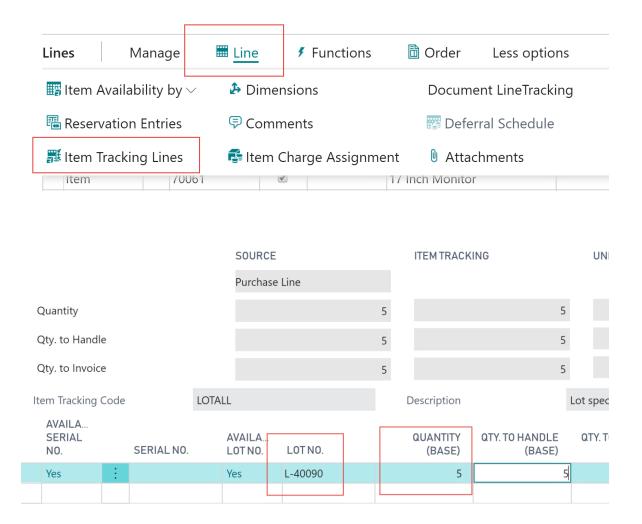
Get ready to receive in the Quantity on the Purchase Order Line.



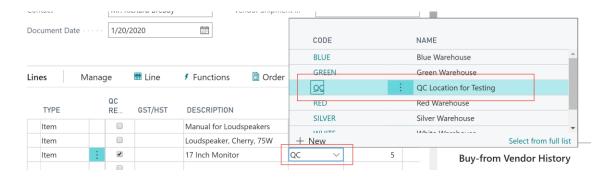
You may notice on the PO Line the option "QC required". This field fills in automatically if you have setup your QC Requirements to display a YES in this field.



5. Before you can Post the PO Receipt, you must enter the S/N or Lot Number of the item(s). This process is standard Business Central procedures.

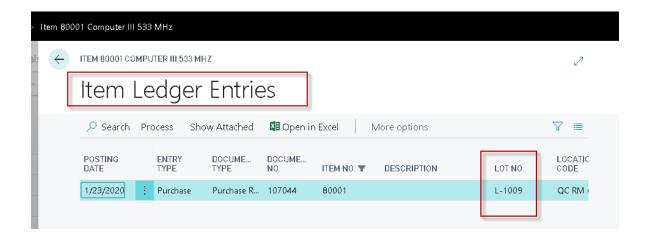


6. We suggest you receive your item to the "QC" location first. Put "QC" in the LOC CODE on the Purchase Order Line.



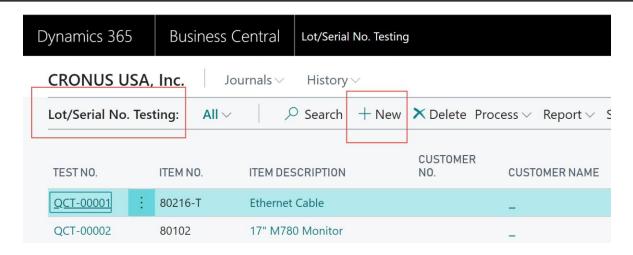
User Standard process to enter the Vendor's Lot Number, or enter one of your own.

Complete your normal Item Receiving Process.

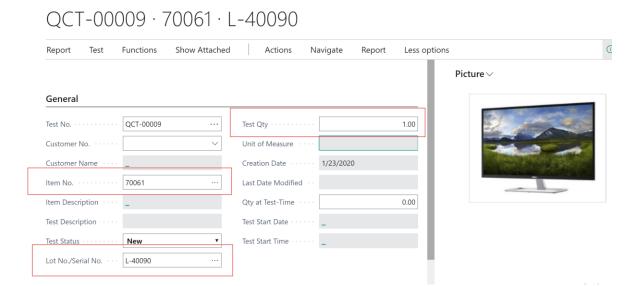


7. With your Item now in Stock and with the Lot Number showing on the Item Ledger Entries, you are ready to perform your "New" QC test. (In LOC= QC)

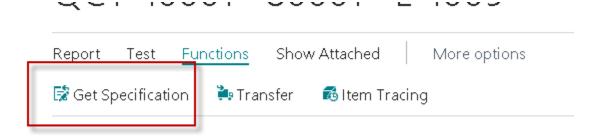
Select "New" for New Quality Control Test.



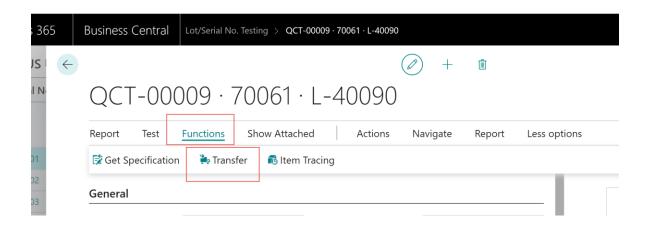
Enter your Item Number to be tested and look up the Lot Number.



8. Pull in the testing Lines with "Get Specifications". Enter your test line values.

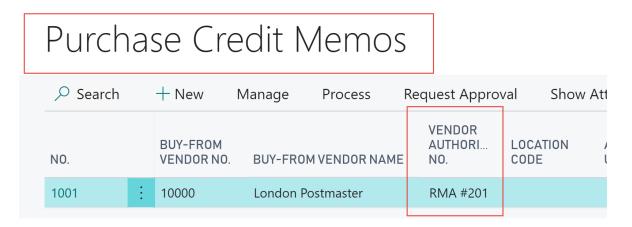


8. If the Item passes inspection, transfer the inventory out of the temporary Location (QC) and transfer to the selling location(s). (IE: LOC = BLUE)



TIP: You can also use the Item Journal, Warehouse Journal, or Transfer Orders to perform inventory transfers.

9. If an Item fails the test, (Non-Compliant), you can do a "Return to Vendor" Credit Memo.



Tips: Purchase Order Processing

When you are purchasing items that are to be "lot tracked" it is important (mandatory) to record the received Lot Numbers prior to Post of the Purchase Order.

This entering of the Lot Number or Serial Number is done on each Line of each Purchase Order.

Notice that you can receive multiple LOTS on one receiving Line. You will use the "Item Tracking Line" Window to enter the Vendor's Lot Number and the Quantity of that Lot to receive.

It is possible to let Microsoft Dynamics 365 Business Central assign the Lot Numbers, but we recommend you use the Vendor's Number. Once the Lot Number and Quantities have been entered, just press OK to close this allocation window. You will return to the PO's Line. Select the next Line or next PO to record the next Lot Number(s).

We recommend you review this process carefully with your Receiving Department. Accuracy is very important for later Testing and Tracking of your Lot Numbers.

Normal PO processing occurs from this point forward.

Sales Order Processing with Lot Numbers

We will assume that your Item has now been tested. (FG or RM)

This section focuses on Customer-Specific Specifications but applies to all the Lot-Picking process.

In this example, there are several Lot Numbers in-stock for this Item. But, only some of the Lot Numbers have been tested against the Customer's Specifications.

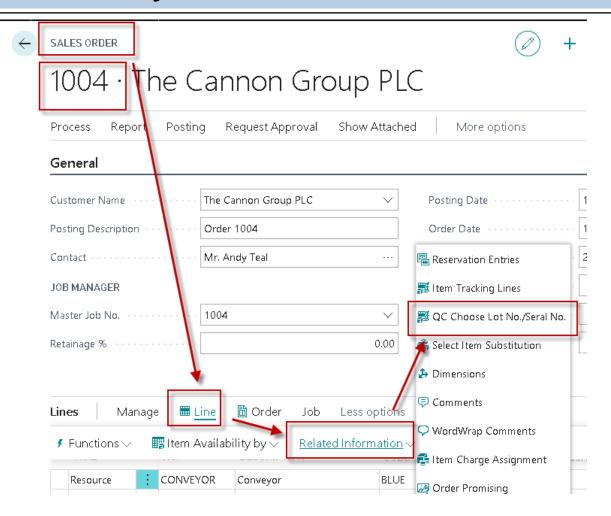
But, now your Customer is placing an order for your Item. The challenge is to be sure the Lot Number that we ship matches this Customer's Specifications. (which may be more, or less stringent than your own Item Specs.)

With this new Customer Order we must be sure that we PICK a Lot that is in compliance with the Customer's Specifications (assuming they Exist for this Customer). It becomes the job of the Customer Service Representatives to notify the Shipping Department which Lot Number to pull, so that the specifications comply. (Not just entering the Lot Number the picker pulls.)

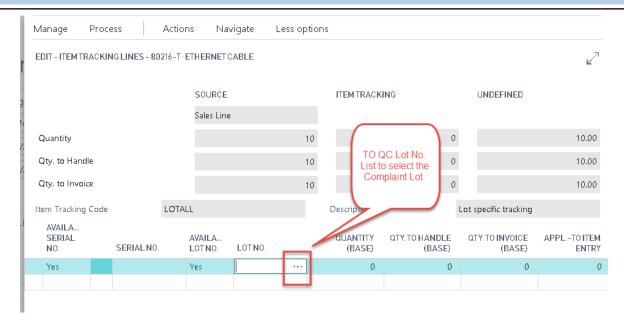
Let's follow the steps:

1. A special Page on the Sales Order Card, "Item Tracking Summary" Page, has been designed to ensure you Pick the right Lot Numbered Item.

To reach this Page from the Sales Order Card, go to Related Information, then Select the Sales Order Line with a Tracked Item, and choose "QC Choose Lot No./Serial No." from the Line Action. (Shown below)



2. The Item Tracking Summary Page is then opened from the Edit Assist button on the Lot No. Field on the Item Tracking Lines Page:



3. Select the Lot Number you want to be "Picked" from the list.

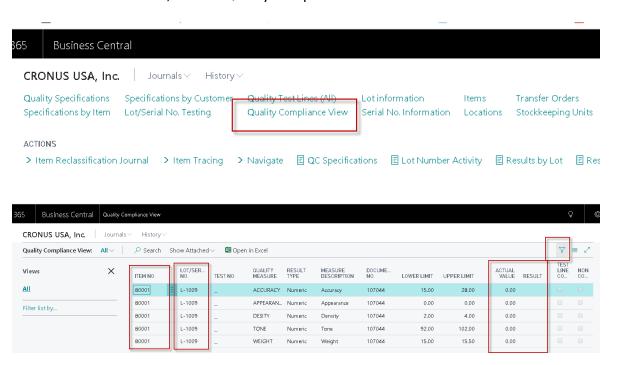


- 4. From the above Item Tracking Summary Page, the Customer Service Representative can see a comprehensive list showing the following for each and every Lot of the Item:
- 1. Whether Item (our) and/or Customer Specifications Exist for the Item.
- 2. Whether Item and/or Customer Lot-Tests Exist for the Item.
- 3. Whether those Item and/or Customer Lot Tests are in Compliance.
- 4. "QC Conformance" Suggestions, providing an at-a-glance guidance as to which Lot(s) are fully in Compliance ("Yes"), which might require customer/supervisory "variance" approval (and why), and which are simply a "No".

Note that the "Yes" Lot(s) are in Bold, further speeding the Lot-selection process.

Customer's QC Compliance View

1. From the Role Center, select "Quality Compliance View"



This Compliance View will show the details of Actual Test Results compared against the Specifications. If an Item is out of Compliance the Customer could be notified for acceptance ("variance") on this non-compliance test, or a different Lot Number could be selected that is compliant (a "Yes" Lot).

From the Item Compliance Page, you can either:

- Press ESC to return to the Lot Number Selection Page.
- Click OK to select your desired Lot Number to ship.

Then, Repeat this selection process for any other Sales Order Line Items.

When finished, Ship and Invoice the product to the customer. (Follow normal Microsoft Dynamics 365 Business Central procedures)

Table of Conditions and Results for the "Item Tracking Summary" Page

NOTE: "n/a" means that that condition (column) does not matter for that line (row).

NOTE: To use the "Item Tracking Summary" Page (and this table of "Results", for Orders to Customers that do <u>not</u> have Customer-Specific Specifications or Tests, simply refer to the Table Entries below where the "Customer No." Column has an "N" in it (lower half of the table).

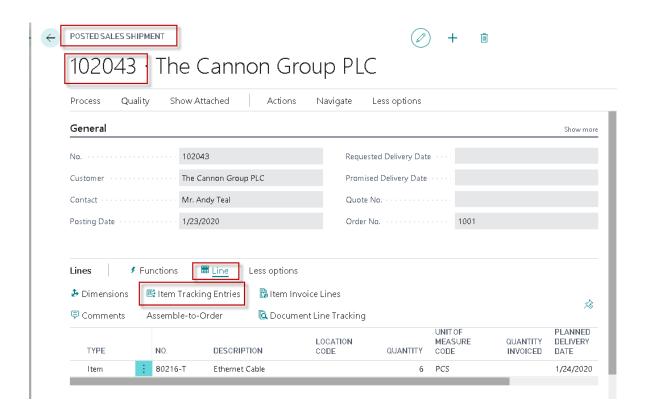
Customer	Item	Item	Cust	Cust Test	Item Non	Cust Non	QC Compliance
No.	Spec	Test	Spec		Compliance	Compliance	
Υ	Ν	n/a	N	n/a	n/a	n/a	NO SPECS
Υ	Υ	N	N	n/a	n/a	n/a	NO TESTS
Υ	Υ	Υ	N	N	N	n/a	YES
Υ	n/a	n/a	Υ	N	n/a	n/a	NO CUST TEST
Υ	n/a	n/a	Υ	Υ	n/a	Υ	NO
Υ	n/a	n/a	Υ	Υ	n/a	N	YES
Υ	Υ	Υ	Υ	Υ	Υ	Υ	NO
Υ	Υ	Υ	Υ	Υ	N	Υ	FAILED CUST TEST
N	Ν	n/a	N	n/a	n/a	n/a	NO SPECS
N	Υ	N	n/a	n/a	n/a	n/a	NO CO. TESTS
N	Υ	Υ	N	n/a	N	n/a	YES
N	N	n/a	n/a	n/a	n/a	n/a	NO SPECS
N	N	n/a	n/a	n/a	n/a	N	NO SPECS
N	N	n/a	n/a	n/a	n/a	Υ	NO SPECS
N	Υ	Υ	n/a	n/a	Υ	n/a	NO
N	Υ	Υ	n/a	n/a	N	n/a	YES

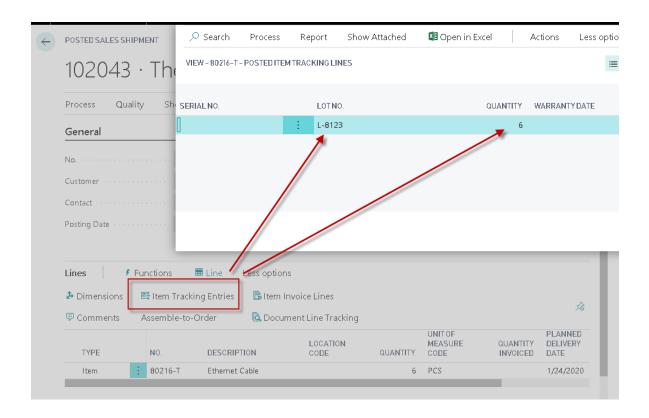
Posted Shipments

When a Sales Order is POSTED "Shipped", the values in the Compliance View are also POSTED to a "QC Posted Compliance View" Table for audit purposes.

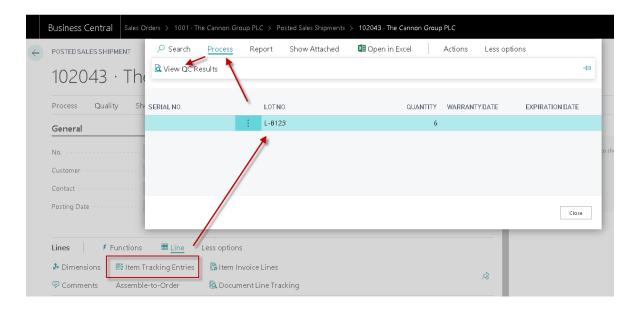
Let's see this in action:

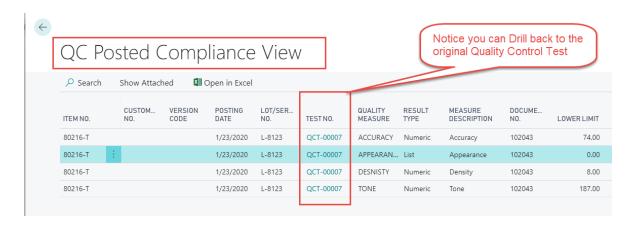
1. From a "Posted Sales Shipment", select the "Line" and then Item Tracking Entries.



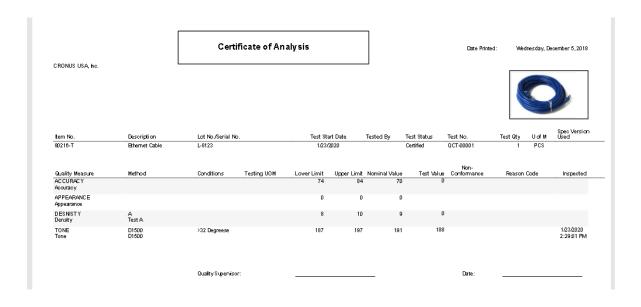


- 2. Now you see the Posted Item Tracking Lot or Serial Numbers selected for this shipment line.
- 3. From the "Process" option you can "View QC Results". (Back Door to the View)



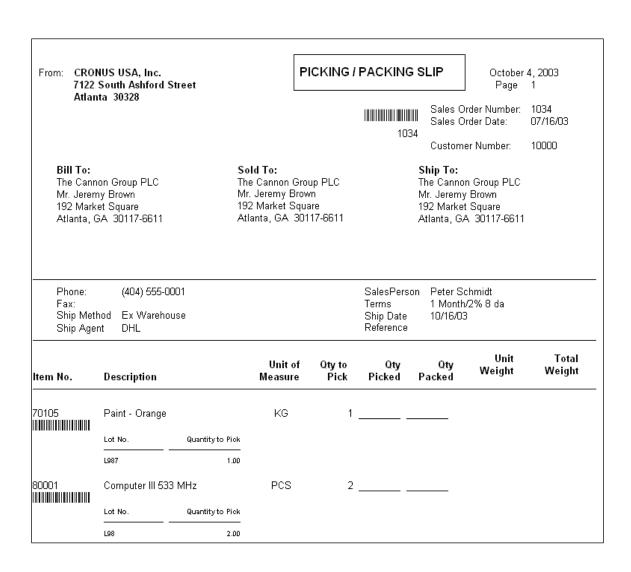


5. Notice you can Drill Down to the Original test and Re-Print the Certificate of Analysis



6. Since the Order Entry Department is driving the selection of the Lot Number to be picked, it is suggested that you design and print a Picking List that will include the desired Lot Number to be picked.

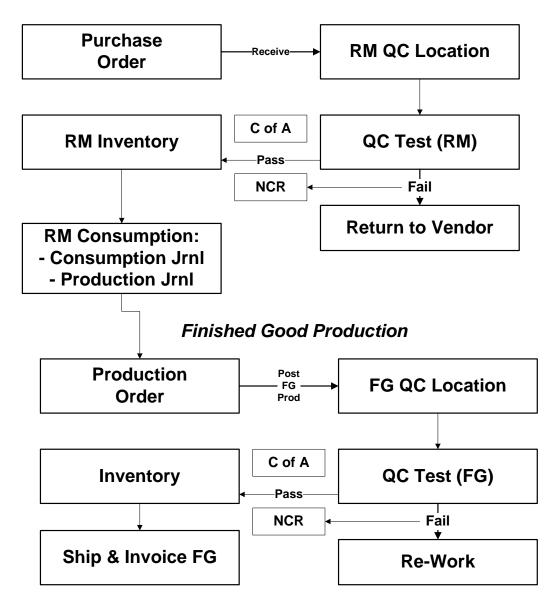
This document is only available if you have purchased our "Reports Pack" bundle of 60 Reports.



Microsoft Dynamics 365 Business Central Manufacturing and Quality Control

Quality Control for Manufacturing

Raw Material Receiving



For Manufacturing Customer: (Premium Edition is Required)

Here are some additional comments for our "Manufacturing" type of customers.

Let's review the steps for Finished Goods that YOU are producing: Similar to Raw Material Receipts but you are MAKING, NOT BUYING.

Three (3) Easy Steps - Production of Finished Goods Workflow (FG):

- Use your "Production Journal" to Post Finished Good to the QC Location. (Follow your Manufacturing instructions for this process)
- Now you have Quantity On-Hand of the FG Item with a Lot Number or S/N.
- 3. Follow the same procedures as shown above to perform a QC Test of the Item.

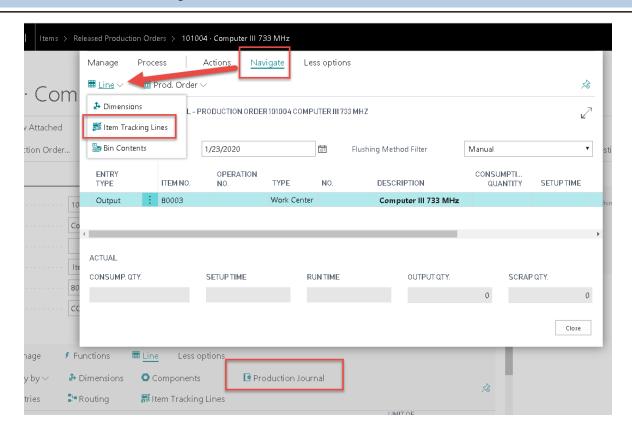
Production Order Processing Tip:

Some companies will produce a Finished Good Item that is to be put into Finished Goods Inventory with a Lot Number. In this case the Company is assigning the Lot Number themselves to the Finished Good Item.

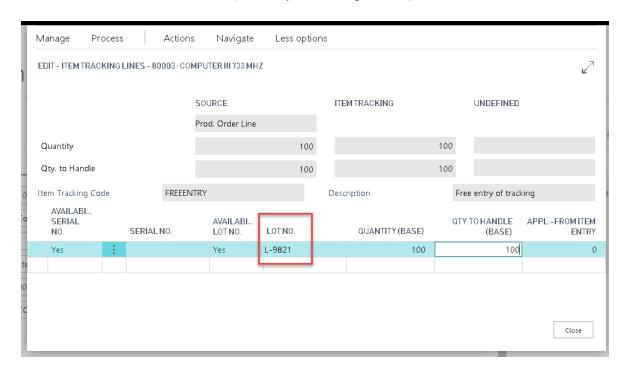
The item must be produced into Finished Goods Inventory before Lot Number Testing can begin.

Be sure to follow normal Manufacturing steps and record the Finished Good's Lot Number in the Production Journal process.

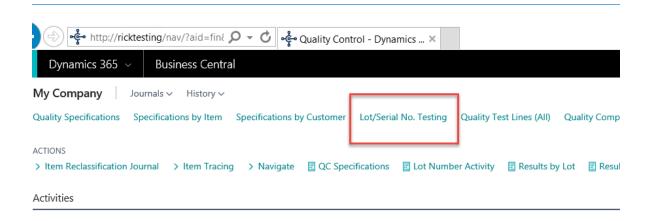
1. During your recording of the Qty Produced in the Output Journal (or Production Journal), go to the "Item Tracking Lines" and enter the desired Lot Number to assign to your Finished Good Item. This will put your FG and Lot No. into the Item Ledger Entries.



2. Now enter the Lot Numbers. (Or let system Assign them)



- 3. Close the Item Tracking Line Window. This will be the Lot Number to be placed into the Item Ledger and into the Lot Information Card. Notice that it is possible to split a production run into multiple Lot Numbers if needed.
- 4. Go to the Lot Number Information Card. Find the Lot Number just produced.
- 5. Open the "Lot/Serial No. Testing" Card.



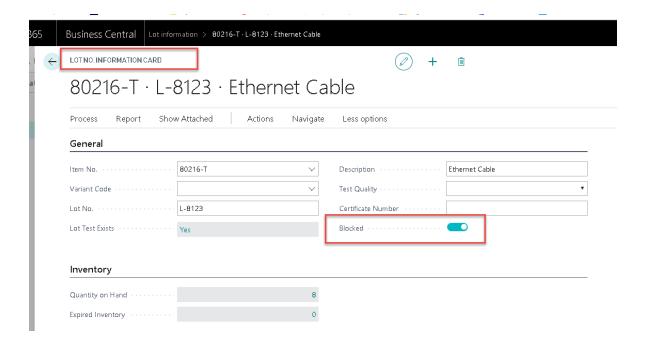
- 6. Record the Test Results as discussed above.
- 7. Print a Certificate of Analysis Report if needed.

Blocking Lots

From time to time it may become necessary to BLOCK a specific Lot.

From the Lot No Information Card, just click YES to set the field to block. This will prevent any further Sales Order Processing until the Block is removed.

Ideal for NCR (Non-Conformance Reporting) and Blocking further processing.



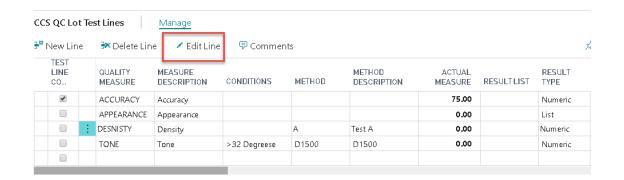
What's New for Microsoft Dynamics 365 Business Central:

1. "Edit Line" controls at the QC Test Lines Level.

"Test Line Complete" is a Toggle.

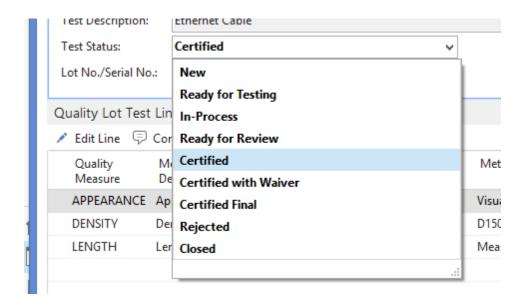
Again, this is tied-in with the "QC Manager" concept.

Un-Check the Completed Status to Edit the Test Results.



2. Increased Statuses

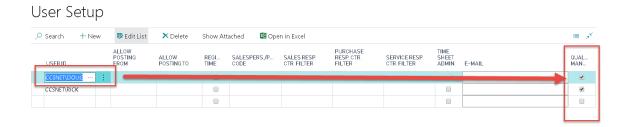
We added "Ready for Testing" and "Ready for Review" for the QC Manager to assign a Test to a Lab Technician.



3. Change Status Logic

This is the concept of who is allowed to change the status to Certified.

If you want everyone to be able to certify a QC test then set all Users in User Setup to "Quality Manager".



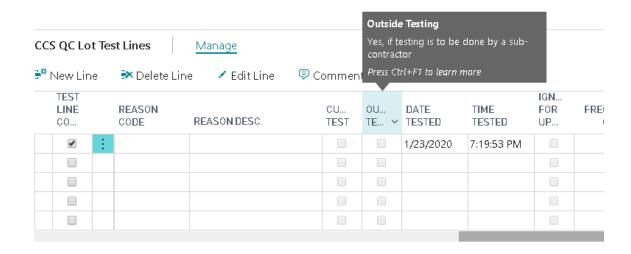
4. Auto-Creation of Test Header Comment upon Test Status Change

There is a new option in QC Setup that automatically creates Test Line Comments.



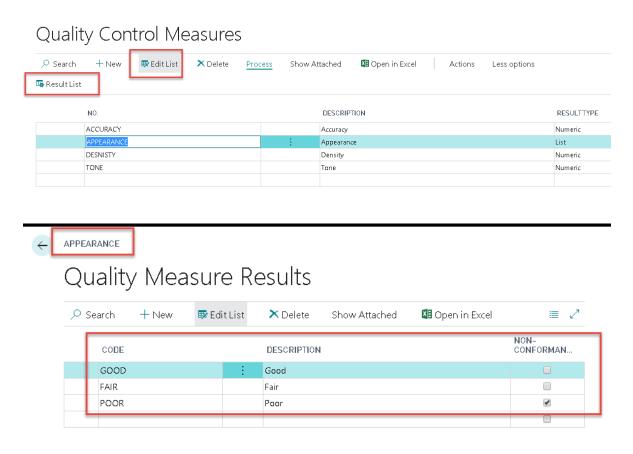
5. Outside Testing:

You can now mark a Specification Line to require an outside lab to do the testing.



6. We made it easier to access the "Results List" from the "Measures" in Set Up of Specifications.

This is the values that Pop-Up when Line Result Type = LIST.



7. The Ability to Add "Ad-Hoc" Test Lines

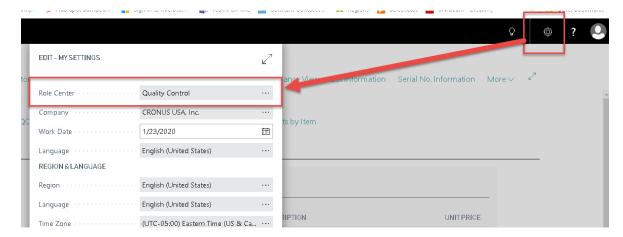
You now have the ability to add additional Test Lines as needed. These are Test Lines that are NOT part of the "base Specification".

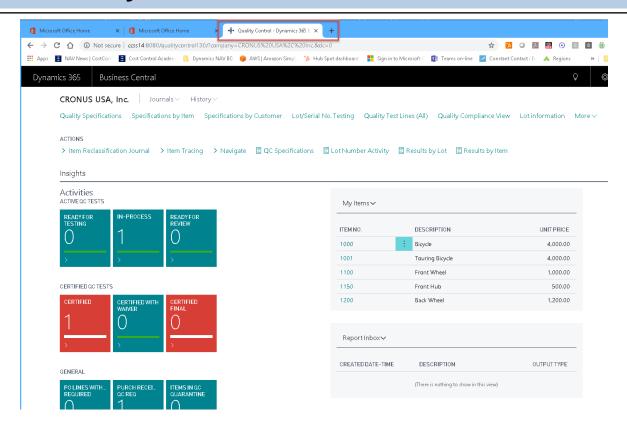
Note: You must be logged in as a QC Manager in User Setup.

8. Prevent the Printing of "CoA"s unless a certain Test Status is achieved

There is a new QC Setup Boolean to control the "Certified-Class" Statuses that will allow Printing of a CoA.

- 9. There will only be ONE "Certified Final" Test per "Lot/SN".
- New in Microsoft Dynamics 365 Business Central Quality Control Role Center
 Be sure to use this great Role Center.





This Role Center, like all Role Centers, can be adjusted or personalized if needed.

11. More features are being added based on End User Feedback.

If you have a product improvement or suggestion we would love to hear from you.

12. Road Map -

We plan to add "In-Line" Testing for QC Testing DURING the Manufacturing Process per Router Operation. (ETA – Fall of 2019)

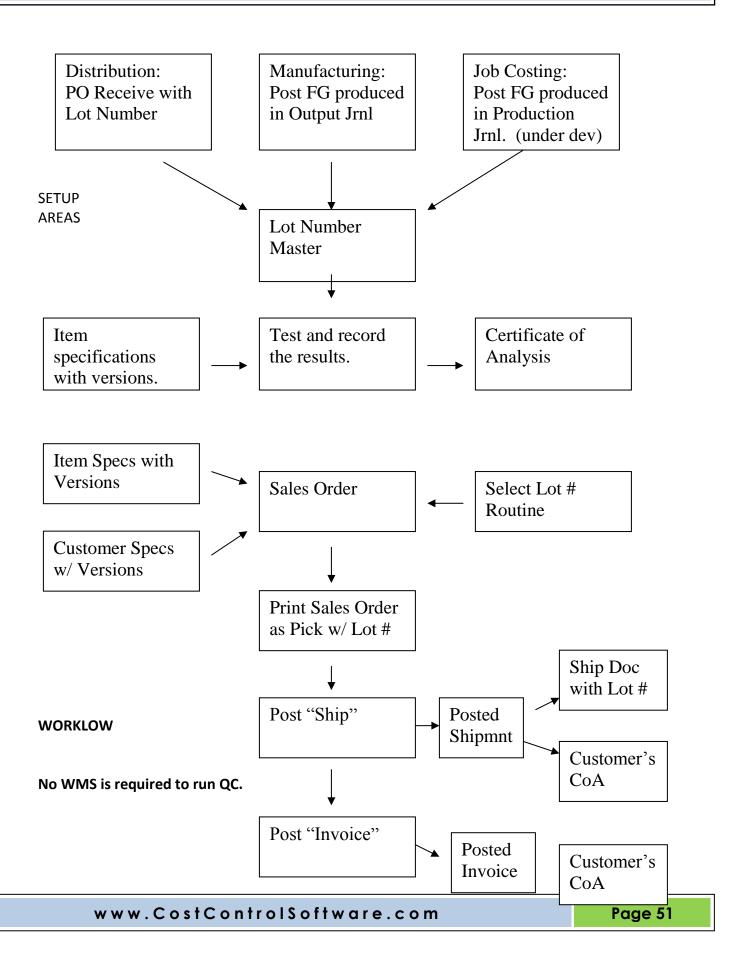
Some additional comments on Quality Control

If a lot is tested several times and there are several certified tests available for that lot, all the tests are stored. However, the lookup from the sales line will find the most current test per quality measure. If the most recent set of quality measurements are compliant then the lot will be flagged compliant.

The Status "Certified" on a lot test does not mean totally compliant. It means the test is complete and it could possibly be acceptable to some customer for sale. If a lot is flagged non-compliant from the sales line that means at least one quality measure on the most recent measurements on the lot was out of compliance. The user can drill to a view of the most recent measurement tests to see which measurement was out of compliance and by how much.

Tip: You can adjust the Stop Light Indicators in Cue Setup.





Support

Congratulations on your purchase of Quality Control! We couldn't be more thrilled for you. Soon, you will be on your way to enjoying and utilizing the features and functionality of this product.

Cost Control Software sincerely appreciates your trust in our products.

Should you have any questions or comments regarding our product, we encourage you to contact us.

Cost Control Software provides many add-on products that may be just the solution you were looking for. Ask for a Catalog of our products. You may also check out our website to see available add-on products as well.

Visit: http://costcontrolsoftware.com/quality-control/ for more information.

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