



Auto-Count Quality Module User Guide

Version 2026.1



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 Auto-Count | Auto-Count Quality Module User Guide

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Introduction

Welcome to Auto-Count 4D Quality module. During production, operators are often required to perform quality checks and tests before proceeding with a run or during a run. Auto-Count can display these tests and questions on the screen for the operator to complete. You must install and use the Quality module to create WIP quality tests and questions for your operators.

Note This is license-specific module of Auto-Count and requires a password to successfully install and use. Please contact Support to obtain this password.

Contact Information

Support

Web Site:	https://customer.efi.com/support
US Phone:	1.855.EFI.4HLP
UK Phone:	+44 (0) 800.783.2737
EU Phone:	+49.2102.745.4500
E-Mail:	dmi.support@efi.com

Regular Service Desk hours are 8:00 AM to 5:00 PM Eastern Time, Monday – Friday. Outside of these hours, you may leave a voice mail message and an on-call support representative will be paged. Response time is based on the severity of the issue.

Note For problems involving infrastructure (i.e., computers, networks, operating systems, backup software, printers, third-party software, etc.), contact the appropriate vendor. We cannot support these types of issues.

Getting Started

About This Guide

Use this guide to learn how to use the Quality module for the Auto-Count 4D product.

Resources

To learn how to install the Quality module, please see *Auto-Count Quality Module Installation Guide*.

To learn more about how to install Plant Manager and Auto-Count, including Plant Manager Browser, please see the *Plant Manager and Auto-Count Installation Guide*.

To learn how to use the report writing tool, Label Designer, please see *Auto-Count Label Designer Install & User Guide*.

What are Quality Questions and Tests?

The Quality module is used to create Quality Questions and Quality Tests. But what's the difference? Both are created in the same way, triggered mostly by the same types of events like end of output or time elapsed. The key is to understand that questions are used to gather information pertaining to the machine or materials during the entire run. Questions are linked to production – the process that produces the output. For example, asking the operator to check the oven temperature of an extruder machine to ensure it is ready for production. Or check the quality of the material on the infeed. Questions are used to prompt the operator to check the process or state of the machine prior to or during production.

Tests are designed to gather information **specifically on the output** product like a roll or pallet. Once it has completed production, is it up to specification? To determine this, an operator must perform a quality check on the product to ensure proper specifications have been achieved. This can be machine-based or specific to a job like checking if the customer's corporate color is correct. Other examples include, measure the thickness of material, check for warping, measure the compressibility, etc. Sometimes the operator must take a sample and send it to the lab. While tests can be used to check machine attributes like questions, they are mostly used to test output product attributes.

The information gathered through the quality questions and tests is then sent to the MIS system which can act on the information as needed.

Tests Sent Directly from Radius

The Radius MIS can also send quality questions created in Radius directly to Auto-Count. This was an older method for the Quality Question functionality. To determine if a test or question came directly from your Radius system, open the Plant Manager SQL database, and open the QualityQuestion table. If there is a value in the AutoCount ID column, then that question was not created using the Quality Question module.

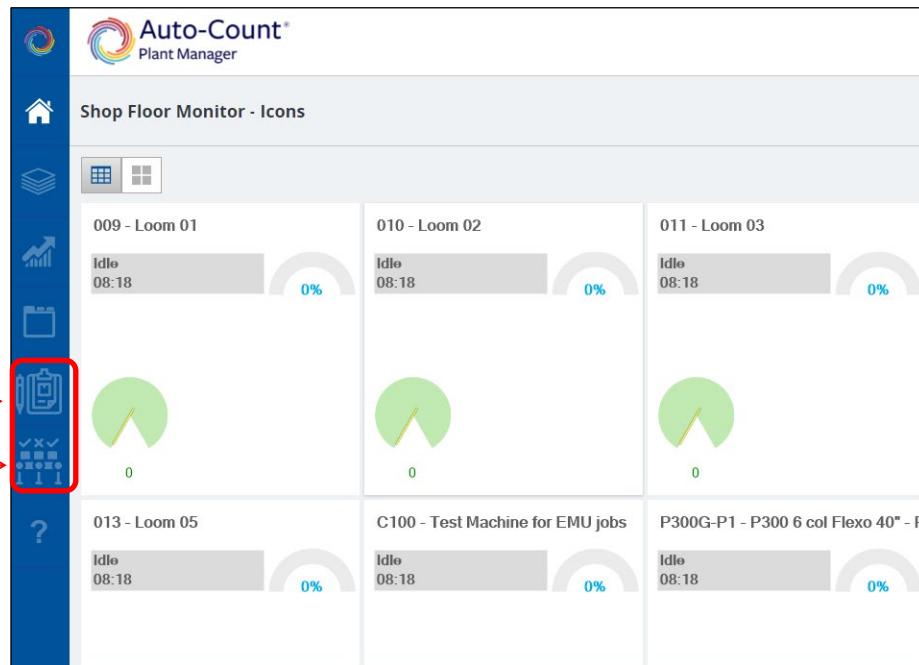
Tip When troubleshooting, if a question keeps displaying but you cannot find it in your list of questions in the Quality module, then check the QualityQuestion table in the Plant Manager database to confirm if the test came directly from Radius. If it has an AutoCount ID, then it came directly from Radius. You can make it inactive if needed.

Creating Tests and Questions

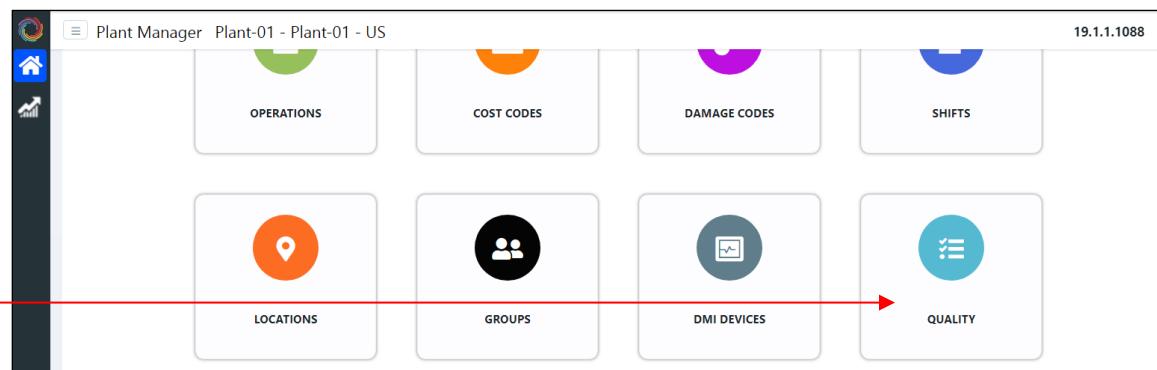
Once you have installed the Quality module, you can access it from Plant Manager Browser or the Quality module in Plant Manager Web.

Note The Test Dashboard, where you can access pending, failed, or passed tests, is only available in Plant Manager Browser.

Plant Manager Browser



Plant Manager – Web



Tests

The Test page is where you will create and manage tests. Depending on the operator's entry and the type of test, Auto-Count determines whether the test passed or failed and sends this to the MIS.

To create a test click **Create**.

How does an Operator Answer a Test?

Quality Questions automatically open on screen where the operator can answer the question. With Tests, unless the test parameter Answer at 4D is selected, a window will open (depending on your settings) which alerts the operator to perform the test. The operator then must open the [Dashboard](#) and search for Pending items to complete the test.

Note The test results dashboard page will now timeout after 30 seconds if there is no user interaction. The operator will have to log in again after 30 seconds of inactivity. To change the default of 30 seconds, your administrator can edit the app-config.json file (C:\Program Files (x86)\EFI\PlantManagerBrowser\WIPTest).

What if the operator opens multiple browser windows?

If an operator opens multiple pages of AC4D, it's possible that Quality Questions could be duplicated on the same screen. If this happens simple refresh the browser (<F5>) on the page where you will answer the questions.

Are Test Results Recorded?

When an operator answers a quality test, Auto-Count records this value in a Plant Manager database table called **QualityTestAudit**. Any changes to the test results are logged as a new record in this table so that you can not only track all test results but operator and time. Test results are also recorded in the XML message **TxnSkidTest**.

Questions

The Quality Question page is where you will create and manage questions. Questions usually collect information about the machine itself or necessary setup details. The answers are sent back to the MIS.

The screenshot shows the 'Quality' screen in the Auto-Count Quality Module. At the top right, there is a blue 'Create' button with a '+' icon, which is highlighted with a red box and a red arrow pointing down to it. Below the button is a table with columns: Text, Trigger, and Active. A row in the table is labeled 'QQ Text 1 NUM' and has 'First Output' and 'ACTIVE' status. The main title bar says 'Plant Manager Plant-01 - Plant-01 - US'. The 'Quality' tab is selected. In the bottom right corner of the main window, there is a small green 'ACTIVE' indicator.

Define Quality Question

Test Header

- Quality Class: Question
- Priority: 0
- Type: (dropdown menu)
- Required Response: (dropdown menu)
- Trigger: (dropdown menu)
- Response Required
- Quality Technician

Test Criteria

- > Auto-Count: Select All
- > Customers: Select All

Buttons: Cancel, Save

Parameters

Field	Description
Priority	For display purposes only. This value (numeric) tells Auto-Count 4D in which order to display the questions/ tests if there are multiples in a single dialog window. Auto-Count will display them in descending order, meaning higher values will display first in the list. For example, a question with a priority of '5' will display above a question with a priority of '4' in the list. When there is no priority specified, Auto-Count will display the questions in the order in which they were created.
Text	Enter the Test text which displays to the operator. For example, <i>Check the material thickness.</i>
Type	Below are the types of questions and tests you can create. Each type has different parameters. Numeric Entry: User enters a number value. Set the Minimum and Maximum range which determines if the test passes or fails. Text Entry: The operator enters any basic text value (alphanumeric.) If a word they use to answer the question matches the one word in the Response field, then the test passes.

For example, say the test text is “*What color is the cardboard?*” and the Response field value is **blue**. If the operator types *cardboard is blue* (or just *blue*), then the test passes. If they type *cardboard is green* (or just *green*), then the test fails. The text entered does not need to match the case of the text in the response field.

We highly recommend using only one word as the Response value. The text which the user enters must match exactly the text in the Response field to pass. If the Response field is *red yellow blue* and they enter *blue red yellow*, it will fail.

Options List: User picks from a drop-down list of options. In Response, select which option is considered passing. (If the Required Response does not exist in the list of options, then Auto-Count displays the question with a strikethrough which alerts you to inspect the question itself for errors.)

To create the options list, click: 

Yes/No: User selects Yes or No. Yes is passing the test and No is failing.

Check list: The user must select items from a checklist. When all items are checked, the test is considered passed.

To create the checklist, click: 

Document: If the job loaded on the AC4D contains a URL to manufacturing instruction documents, then this type of quality question will require the operator to open those documents before proceeding with the job. Typically, the trigger is Start of Job.

Response	The required response. Depending on the test Type (above) this is the value which must be met for the test to be considered passed. Entries outside of this response value are failed.
-----------------	--

Trigger	Auto-Count can trigger a test/question during certain scenarios. The following are the trigger types.
----------------	---

Opcode Start: Start of a specific operation code. Choose one from the **Operation** field.

Job Start/End: When the job is loaded onto the Home screen (start) or when the job is completed (end). This will also trigger if you suspend a job and you've met the run end percent threshold.

Makeready Start/End: When the machine enters or exits any Makeready operation code. If you have set up external inputs (buttons, etc.) to go into production, the operator must correctly answer the question before the input is applied. (An operator cannot avoid the questions with external inputs.) If you have a zero makeready workflow and want the operator to answer a question when the job begins, then use the Job Start trigger.

Note The Makeready End trigger is not compatible with the **Detect stops in makeready** machine setup option in Plant Manager. Do not enable it if you need this trigger.

Do not use the Makeready End trigger on a quality question that could be used on a Manual Auto-Count type of machine or any Auto-Count which has a Net Pulse or Net Counter (ending by net pulse or count.) Use the Makeready Start or Job Start triggers instead.

Net Count: When Auto-Count reaches the net count (in the primary net count unit of the machine) set in the Frequency field, it triggers a test/question. If set to repeat, then it will trigger on every multiple of that value.

Gross Count: When Auto-Count reaches the gross count (in the UOM of the machine) set in the Frequency field, then it triggers a test/question. If set to repeat, then it will trigger on every multiple of that value.

Output Count: Depending on the Frequency set, trigger the test/question when an output completes. For example, if the frequency is set to 5, then Auto-Count will trigger the test when the 5th output completes. If set to repeat, then it will trigger every 5 outputs.

	<p><u>Run time:</u> Number of minutes during a Production opcode. Enter the minutes value in Frequency. For example, if you want to trigger a question/test after the first 5 minutes of production time, you will enter 300 in Frequency.</p> <p><u>Percent Done:</u> The job quantity percentage completed. Enter the percentage value in Frequency. If you enter a percentage over 100, then you can trigger a question/test for overrun scenarios.</p> <p><u>Job Time:</u> Number of minutes that have elapsed during the entire run including makeready, downtime, production, overrun, etc. Enter the minute value in Frequency.</p> <p><u>First/Last Output:</u> These triggers are not based on frequency but simply trigger on the first or last output produced.</p> <p><u>Manual:</u> (Question) Use Manual when you want to add information to an output during the run. For example, the operator must enter the expiration date for the current product on the run. This can be printed on tickets and attached to the outputs.</p> <p>Note To access a Manual question, click the blue arrow between the infeed and outfeed icons on the AC4D Home screen. See Example 3: Text Question – Manual.</p> <p><u>Output After New Input:</u> When a new input material starts (which includes the first one on the job), then set a trigger for the question. Once the first output for that material completes, display the Quality Question for the operator. This allows the operator to confirm the new input material is correct and of proper quality. Select Repeat to make sure the question triggers for each new input material beyond the first input.</p>
Response Required	(Questions only) When enabled, the operator must answer the question(s) to proceed. If the Trigger is Job Start or Makeready Start/End and this option is enabled, then there will be a Suspend button on the question window. If you have a mix of questions that are required and not required on the same trigger, then AC4D will display the required questions on the first window. You must answer those properly before the non-required questions are displayed.
Quality Technician	(Questions only) Select if this question must be answered by an employee designated as a Quality Technician in Plant Manager > Employee. They must enter a password to access and answer the question.
All or One Track	(Tests only) If you do not want to test on all tracks, also called outputs, then here you can choose to use a test on a specific track(s) instead. You can choose first, last, even or odd. This is useful if you produce outputs in sets – odd and even.
Action on Pass/Fail	(Tests only) Select the action to attach to the output when a test is considered passed and failed. This information is then sent to the MIS in the XML message's Result attribute for that output. If the output is used again on Auto-Count, then the appropriate action will be taken. For example, if an output is sent back to the MIS with a result of Supervisor, then if an operator scans this output to use in another step of the production, Auto-Count will warn them they need a Supervisor override before allowing the output.
Report	(Test only) Select a report to be printed when a test is triggered.
Frequency	The value used to determine when a test/question should be triggered. This unit of value changes depending on what type of question you are creating. For example, for count triggers (Net Count, Output Count) this is an absolute value like net count quantity or an output. For percentage triggers this is a percentage like 50% or 75%. For time-based triggers this is number of minutes.

Test Previous Output	(<i>Test only</i>) If the test fails, then this option will ask the operator to test the previous output produced. It will continue to ask the operator until it finds a test which passed.
Repeats	Select this if you want the Frequency value to be repeated. For example, if the frequency of Output Count is set to 5, then Auto-Count will trigger the test when the 5th output starts building. If set to repeat, then it will trigger every 5 outputs. If you selected the Output After New Input trigger, then select Repeat to trigger the question for every new input material.
Display at 4D	(<i>Test only</i>) When selected, a test prompt will automatically open on screen. When not selected, Auto-Count will simply display an alert in the Alerts area at the top of the screen to remind the operator to perform a test. See the examples below.
Answer at 4D	(<i>Test only</i>) This option is only available if Display at 4D is enabled. Allows operator to answer the test directly at the AC4D. If the test passes, then you do not need to do anything in the Dashboard . If the operator enters a value that doesn't pass the test, then Auto-Count marks it as a Pending test. The operator then must open the Dashboard and filter on Pending to find the test. Pending tests do not send a fail message back to the MIS – they must be dealt with by an operator in Dashboard.

Setting Up Tests - Important Notes

Tests are only recorded when outputs are created. If you set up a test and it triggers before an output is created, you will not see the test in the Dashboard. It is important to understand the following when setting up your triggers for tests.

- Time and quantity-based test triggers are applied against the last completed output. Not the currently building output.
- Tests which are triggered before an output has been created are ignored since there is nothing to test. For example, if you set up a test to trigger when the run time reaches 5 minutes, but no outputs were created in the first 5 minutes of production, Auto-Count will not create the test.
- If you trigger on the creation of an output or multiple of an output, then the test is applied to that output when it is created.
- The technician along with the date and time are recorded when a test is completed. This information is sent to the MIS and you can search on it in the [Dashboard](#).
- All time-based triggers are in minutes.
- **Answer at 4D** type tests will always be set to a status of Pending if they fail at the 4D. This allows you to address a failed test.

Test Criteria

When creating tests and questions, the default is to apply them to all machines and all customers. You can, however, choose specific machines and customers for which to apply tests/questions. Simply uncheck **Select All** and then open the Auto-Count or Customer area. From here you can choose specific machines or customers.

The screenshot shows the 'Add Quality Test' dialog. At the top, there are fields for 'Type' (Numeric Entry), 'Minimum' (1), 'Maximum' (10), and 'Trigger' (Output Count). Below these are sections for 'All or One track' (All Tracks), 'Report' (Frequency 1), and various toggle switches for 'Test previous output', 'Repeats', and 'Display at 4D'. A red box highlights the 'Test Criteria' section, which contains two expandable categories: 'Auto-Count' and 'Customers', each with a 'Select All' checkbox. Below this is a detailed view of the 'Auto-Count' selection interface, showing an 'Available' list on the left containing items like 'Search', 'Test Machine -weigh / (Machine Config 1)', etc., and a 'Selected' list on the right containing 'Test Machine / 1'. Between them are four blue navigation buttons: a single arrow pointing right, a double arrow pointing right, a double arrow pointing left, and a single arrow pointing left. At the bottom are 'Cancel' and 'Save' buttons.

Quality Module Dashboard

The Quality Dashboard is where you can access a list of tests which were triggered and their status. If there is a Pending status, this means the operator must complete the test. Sort the columns to find items more easily.

Sortable columns.

Date	Auto-Count	Job number	Form number	Barcode	Question	Minimum	Maximum	Status
14/12/2020	P300G-P1	810110	1250-P300 6 col Flexo 40" - Plant 1	P10000036117	Check thickness	1	10	Pending

To answer a Pending test or edit a result, click **Edit**. If it is a pending test, then the result will be assigned to the output when the test was triggered.

Edit

Date	Auto-Count	Job number	Form number	Barcode	Question	Minimum	Maximum	Status
14/12/2020	P300G-P1	810110	1250-P300 6 col Flexo 40" - Plant 1	P10000036117	Check thickness	1	10	Pending

Quality test response entry

Check thickness

Enter numeric response

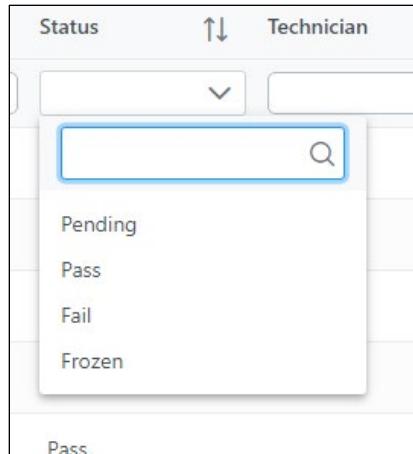
[Cancel](#) [Save](#)

Once the operator has completed the test, their login username, and the date they completed the test are recorded.

Quality Tests							
	Barcode	Question	Minimum	Maximum	Status	Technician	Test Date
k 01	P10000040605	Check List	0	0	Fail	efipm	13/04/2021 07:44
k 01	P10000040637	Check List	0	0	Fail	efipm	13/04/2021 07:44
k 01	P10000040662	Check List	0	0	Pass	efipm	13/04/2021 07:44
k 01	P10000040689	Check List	0	0	Fail	efipm	13/04/2021 07:44
k 01	P10000040827	Are there cracked scores?	0	0	Fail	efipm	13/04/2021 07:44

Status

Status	
Pending	The operator has not completed this test.
Pass	The test has passed based on the information entered by the operator.
Fail	The test has failed based on the information entered by the operator.
Frozen	The test is no longer open and cannot be edited. The MIS must send a job status update with status set to open to re-open this test.



Supervisor Override

There is a supervisor override feature which, when enabled, Auto-Count will display a Supervisor Override button for failed questions.

In this example, the operator has answered each question, but the third question is marked red because the answer is not within the accepted range. Because there is a question which failed, Auto-Count displays the Supervisor Override button.

Quality Questions

- 1 Question with options Yes
- 2 Text X
- 3 Required 6 **6**
- 4 Please Enter a Number 1

II **Supervisor Override**

The Supervisor must select their user and enter their password to proceed.

Supervisor Password

Select Supervisor

	alisonw - 0123456 789 012345678 901234 56789012 34567890	JM1 James Maskell
	JM1 - James Maskell	Password

Next

If the password is correct, the Question answers are submitted to the MIS system along with an entry in the TxEvent database table. (The Supervisor name and id is logged in the Note and Response fields.)

Setting up Supervisor Override

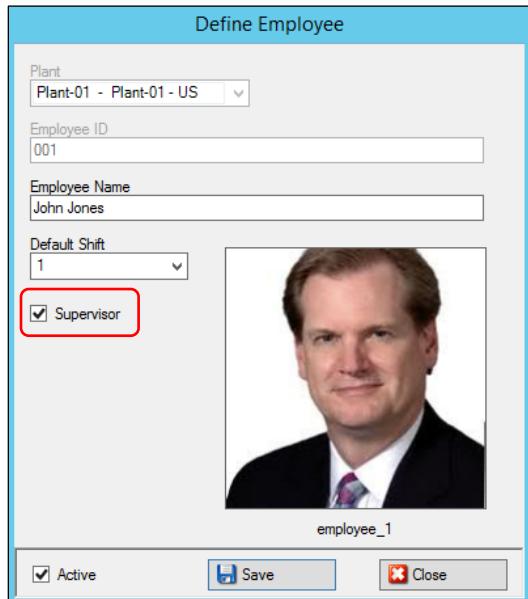
To set up a question which requires a Supervisor to override a failed answer, you must choose the **Response Required** option when setting up the question. Also, the only questions which currently support Supervisor override are those triggered on **Makeready Start/End** and **Job Start**.

The screenshot shows the 'Edit Record' dialog box with the following fields:

- Test Header** section:
 - Quality Class: Question
 - Priority: 0
 - Text: This is Makeready Start
- Type** section:
 - Type: Yes/No
 - Required Response: Yes
 - Trigger: Makeready Start
- Test Criteria** section:
 - Auto-Count: Select All
 - Customers: Select All
- Buttons at the bottom: Cancel and Save.

Two specific fields are highlighted with red boxes: 'Response Required' (under Type) and 'Trigger' (under Test Criteria).

You must also have an Auto-Count employee set to be a Supervisor. You can do this in Plant Manager > Employee.



Note If there is no Supervisor user, then the Supervisor button will not display, regardless of the answers.

Examples

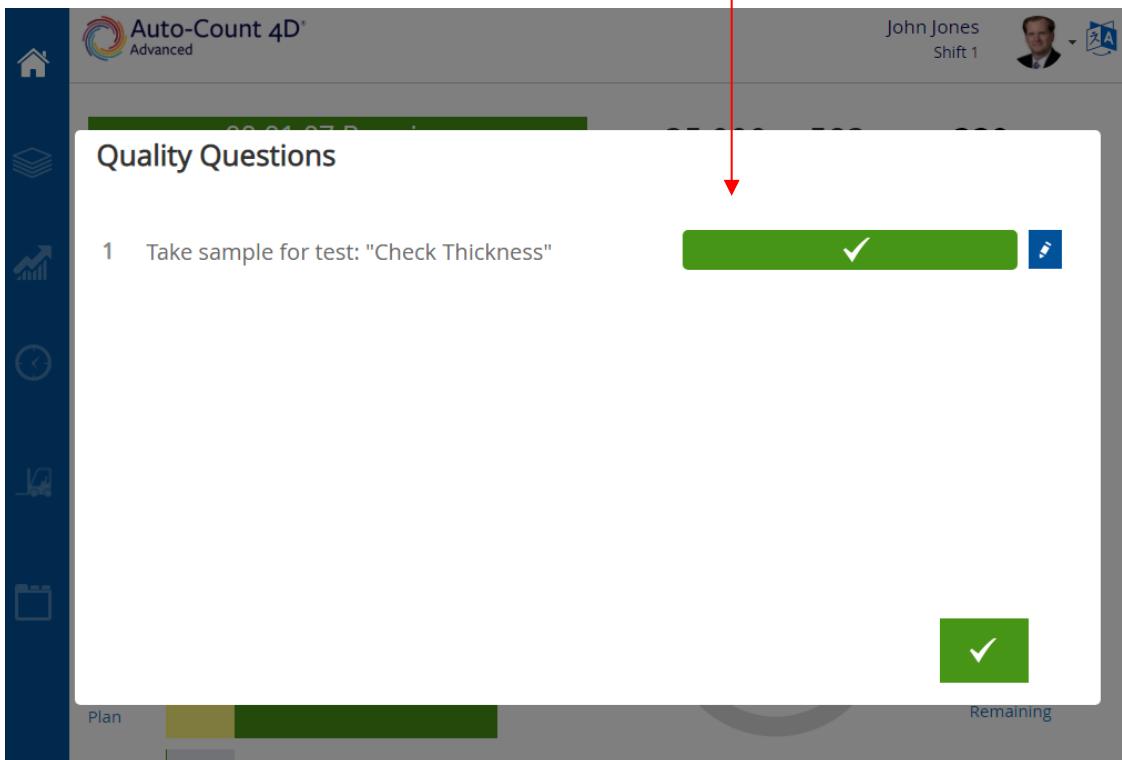
In this section we'll show you the test parameters and the result in 4D.

Example 1: Numeric Entry - Output Count

Test Header

Quality class Test	Number 1	Text Check thickness
Type Numeric Entry	Minimum 1	Maximum 10
Trigger Output Count		
All or One track	Action on pass Allow	Action on fail Warning
Report	Frequency 3	
<input type="checkbox"/> Test previous output	<input type="checkbox"/> Repeats	<input checked="" type="checkbox"/> Display at 4D
<input checked="" type="checkbox"/> Active		

In this example, Auto-Count 4D will display the Test prompt in a dialog box once the third output completes. The operator will check it to close the prompt.



The operator must open the Dashboard to answer this test. You can see the Status is 'Pending'. Click **Edit** to enter the test results.

Date	Auto-Count	Job number	Form number	Barcode	Question	Minimum	Maximum	Status
14/12/2020	P300G-P1	810110	1250-P300 6 col Flexo 40° - Plant 1	P10000036117	Check thickness	1	10	Pass
14/12/2020	P300G-P1	0019	1-Form 1	P10000036153	Check thickness	1	10	Fail
14/12/2020	P300G-P1	003	001-Step 1	P10000036180	Check thickness	1	10	Pending

Quality test response entry

Check thickness

Cancel **Save**

And now the test has **Passed** because the value was within the tolerance of 1-10 (min/max). If the operator had entered a value outside the tolerance of 1-10, then the test would have failed.

Date	Auto-Count	Job number	Form number	Barcode	Question	Minimum	Maximum	Status
14/12/2020	P300G-P1	810110	1250-P300 6 col Flexo 40° - Plant 1	P10000036117	Check thickness	1	10	Pass
14/12/2020	P300G-P1	0019	1-Form 1	P10000036153	Check thickness	1	10	Fail
14/12/2020	P300G-P1	003	001-Step 1	P10000036180	Check thickness	1	10	Pass

Example 2: Test Option List – Net Count

This test is an option list with three options: Red, Yellow, Blue. Red is passing. This question will trigger when the Net Count reaches 500. It will only display an alert on the Auto-Count. If it Fails, then the Result will send back Fail with a Supervisor on the message.

Define Quality Test

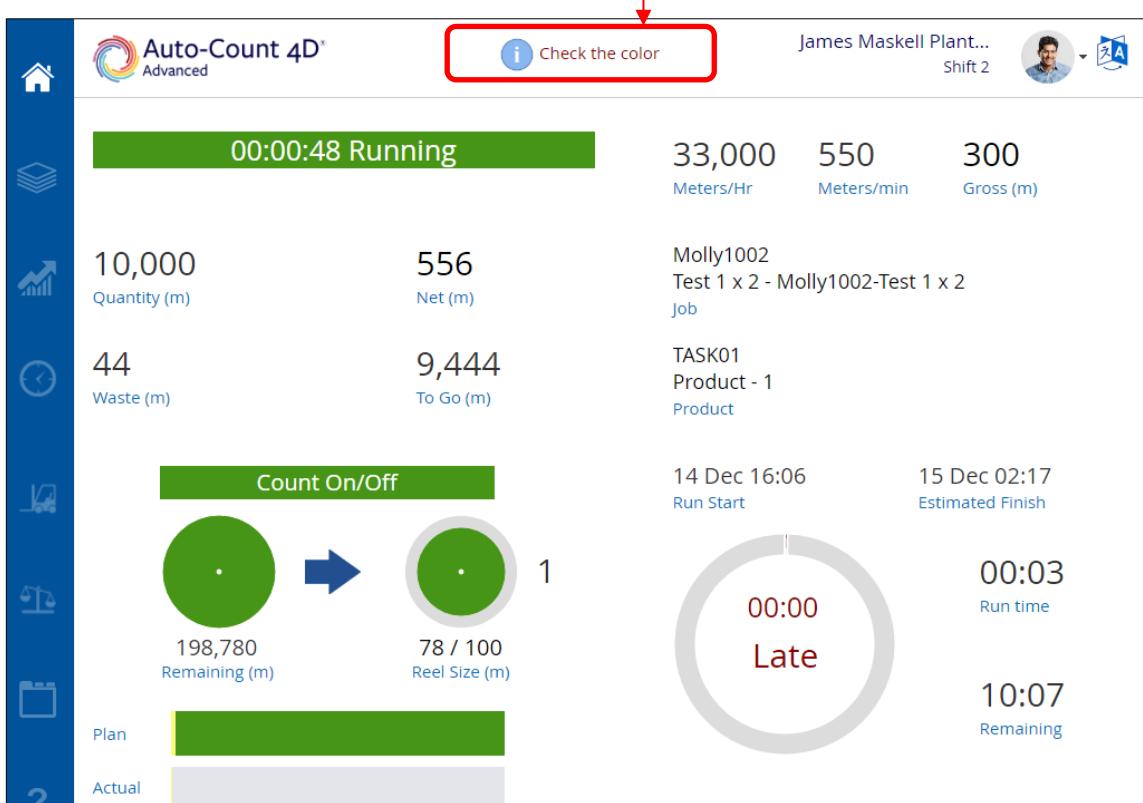
Test Header

Quality Class	Priority	Text
Test	0	Check the color!

Type	Options +	Required Response
Option List	x v	<div style="border: 1px solid #ccc; padding: 5px; width: 100%;"> Red Yellow Blue </div>

All or One track		Frequency (Quantity)
	x v	500

Test previous output
 Repeats
 Display at 4D



The screenshot shows the Auto-Count 4D Advanced interface. At the top, there's a navigation bar with icons for Home, Reports, Shifts, and Help. The main area displays various metrics: Quantity (m) at 10,000, Net (m) at 556, and Gross (m) at 300. Below these are Waste (m) at 44 and To Go (m) at 9,444. A large green button labeled 'Count On/Off' has two circular indicators: one green circle with '198,780 Remaining (m)' and another grey circle with '78 / 100 Reel Size (m)'. To the right, there are time-related fields: Run Start at 14 Dec 16:06, Estimated Finish at 15 Dec 02:17, Run time at 00:03, and Remaining at 10:07. A circular gauge in the center says 'Late'.

On the Dashboard the operator can now answer this question. Let's fail it to see what happens!

Quality Tests										
Date	Auto-Count	Job number	Form number	Barcode	Question	Minimum	Maximum	Status		
14/12/2020	P300G-P1	810110	1250-P300 6 col Flexo 40° - Plant 1	P10000036117	Check thickness	1	10	Pass		
14/12/2020	P300G-P1	0019	1-Form 1	P10000036153	Check thickness	1	10	Fail		
14/12/2020	P300G-P1	003	001-Step 1	P10000036180	Check thickness	1	10	Pass		
14/12/2020	P300G-P1	DMI-4648	TASK01-Task 01	P10000036206	Check thickness	1	10	Pending		
14/12/2020	P300G-P1	Molly1002	TASK01-Task 01	P10000036231	Check the color	0	0	Pending		
14/12/2020	P300G-P1	Molly1002	TASK01-Task 01	P10000036235	Check thickness	1	10	Pending		

Quality Tests										
Date	Auto-Count	Job number	Form number	Barcode	Question	Minimum	Maximum	Status		
14/12/2020	P300					10		Pass		
14/12/2020	P300					10		Fail		
14/12/2020	P300					10		Pass		
14/12/2020	P300					10		Pending		
14/12/2020	P300					0		Pending		
14/12/2020	P300G-P1	Molly1002	TASK01-Task 01	P10000036235	Check thickness	1	10	Pending		

Quality test response entry
Cancel
Save

Check the color

Red

Blue

Yellow

Quality Tests										
Date	Auto-Count	Job number	Form number	Barcode	Question	Minimum	Maximum	Status		
14/12/2020	P300G-P1	810110	1250-P300 6 col Flexo 40° - Plant 1	P10000036117	Check thickness	1	10	Pass		
14/12/2020	P300G-P1	0019	1-Form 1	P10000036153	Check thickness	1	10	Fail		
14/12/2020	P300G-P1	003	001-Step 1	P10000036180	Check thickness	1	10	Pass		
14/12/2020	P300G-P1	DMI-4648	TASK01-Task 01	P10000036206	Check thickness	1	10	Pending		
14/12/2020	P300G-P1	Molly1002	TASK01-Task 01	P10000036231	Check the color	0	0	Fail		
14/12/2020	P300G-P1	Molly1002	TASK01-Task 01	P10000036235	Check thickness	1	10	Pending		

Example 3: Text Question – Manual

Edit Record

Test Header

Quality class	Number	Text
Question	1	Manual Question

Type	Response	Trigger
Text Entry	Yes	Manual

Frequency	1
-----------	---

Repeats
 Active

Test Criteria

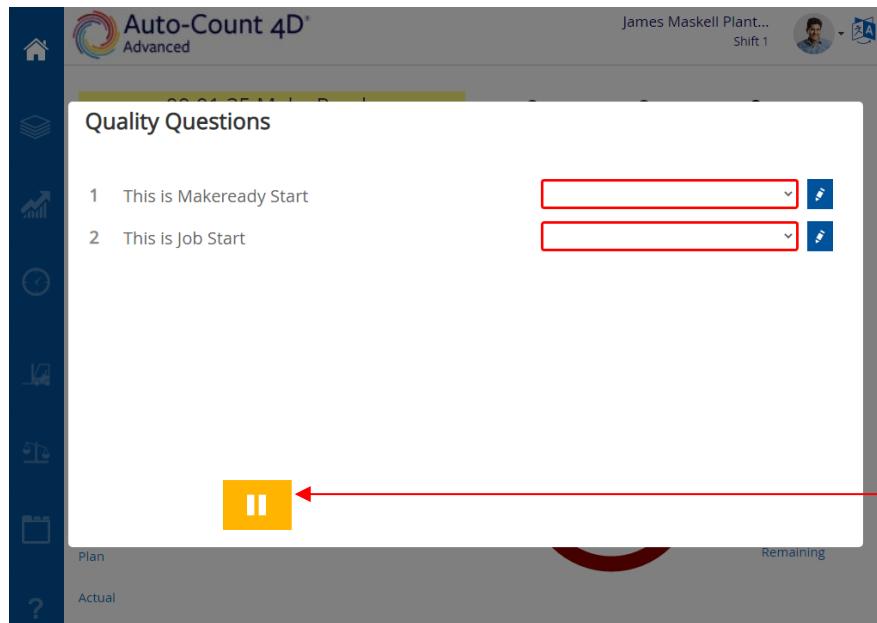
> Auto-Count <input checked="" type="checkbox"/> Select All > Customers <input checked="" type="checkbox"/> Select All	Cancel Save
---	--

When the Trigger type is Manual, the operator must click the blue arrow between the infeed and outfeed icons on the AC4D Home screen to answer the question.

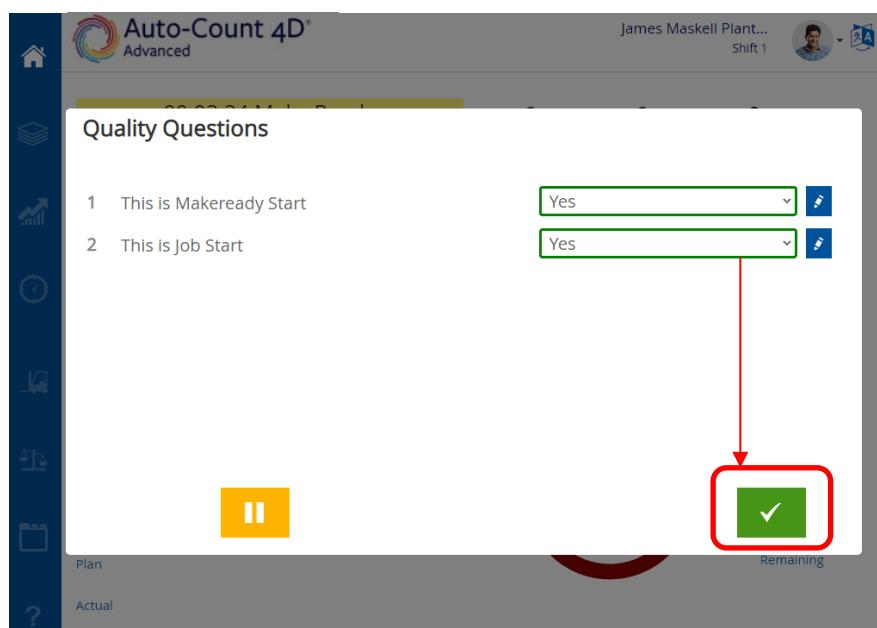
The screenshot shows the Auto-Count 4D Advanced software interface. On the left is the main Home screen with various data displays and controls. A red box highlights the 'Count On/Off' button, which has a blue arrow icon in the center. A red arrow points from this button to a 'Quality Questions' dialog box on the right. The dialog box contains a single item: '1 Manual Question' with an 'Enter text here' input field and a green checkmark button at the bottom right.

Example 4: Required Response / Pause Button

When using the Required Response feature with the Job Start or Makeready Start/End triggers, the operator must answer the question(s) with a passing value, or they are forced to suspend the job.



Note: If you have a mix of questions that are required and not required on the same trigger, then AC4D will display the required questions on one window, and you must answer those properly before the non-required questions are displayed.



Only the Suspend button is available until the questions are properly answered.

Example 5: Question Option List – Not Required

If the Required Response does not exist in the list of options, Auto-Count displays the question with strikethrough text. This allows the operator to choose any response and proceed but indicates that there may be an issue with the question which should be reviewed. For example, the MIS may have incorrectly formed and sent the question to Auto-Count.

1	Makeready Checklist		
2	Enter your ID		
3	Enter Thickness		
4	Strikethrough?		
5	Job Start	4 5	

Example 6: Check List – First Output Test

Test Header

Quality Class	Number	Text
Test	6	Check List
Type	Options +	Trigger
Check List	x v	First Output

Action on pass

Allow	x v	Action on fail
Test previous output	x v	Warning

Action on fail

Warning	x v	Report
	x v	PalletsByJob

Test Criteria

- Auto-Count
- Customers

Options + Trigger

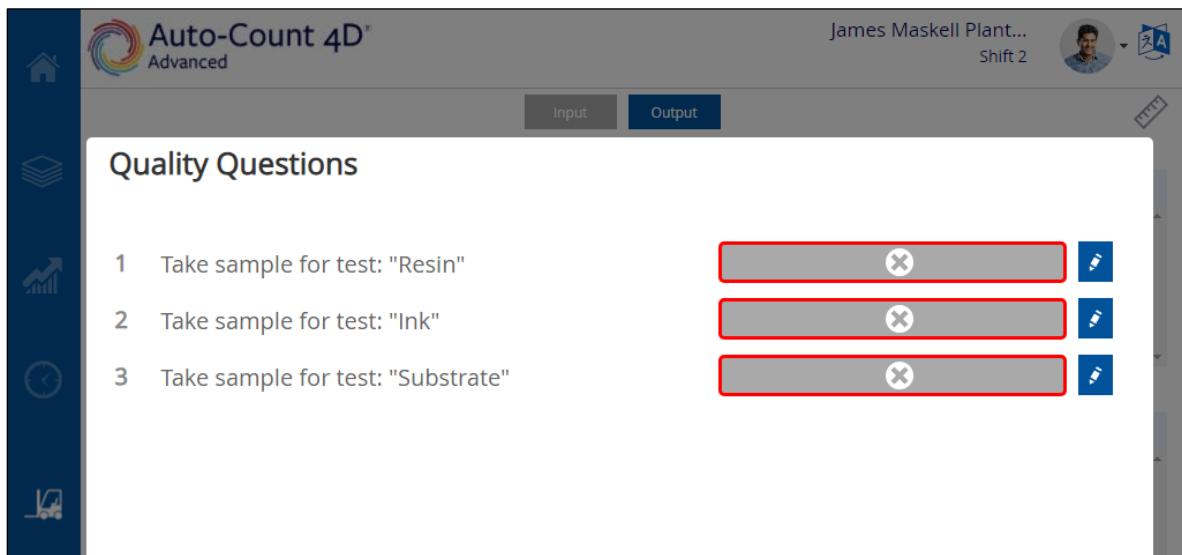
Enter the option

- Resin
- Ink
- Substrate

Select All

Cancel Save

Once the first output completes, this test will display at the 4D.



The operator must select all checkboxes to continue.

This screenshot shows the same "Quality Questions" screen after the operator has selected all three checkboxes. The checkboxes are now filled with a green checkmark. A large green button with a white checkmark is centered at the bottom of the list.

- 1 Take sample for test: "Resin" (checkbox is checked)
- 2 Take sample for test: "Ink" (checkbox is checked)
- 3 Take sample for test: "Substrate" (checkbox is checked)

Example 7: Answer Test at 4D

Define Quality Test

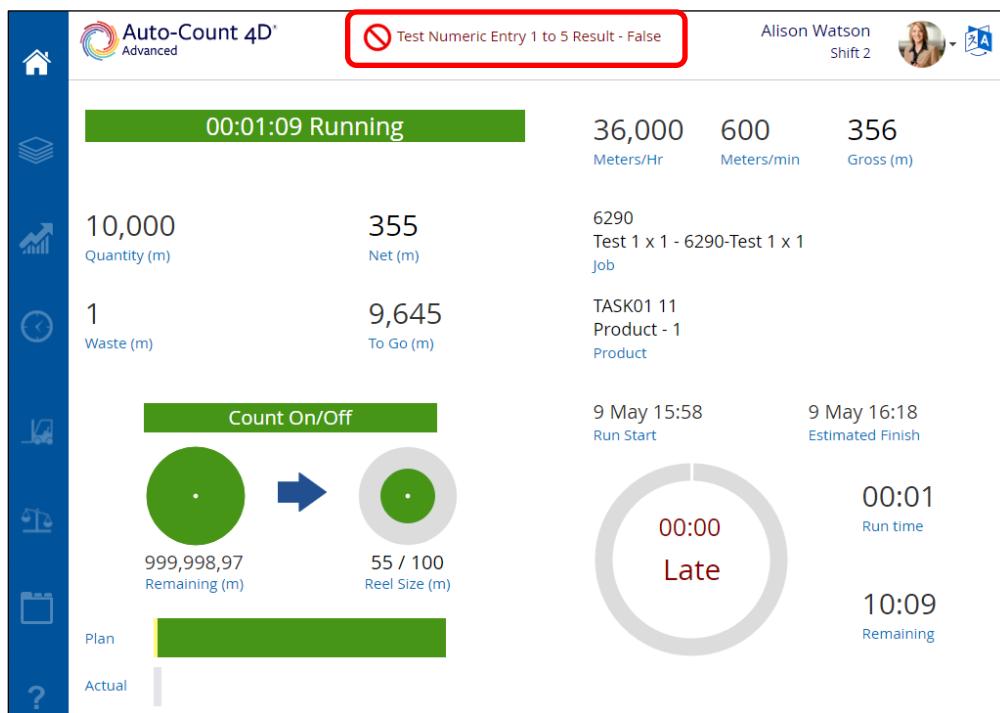
Test Header			
Quality Class	Priority	Text	
Test	0	Check the thickness	
Type	Minimum	Maximum	Trigger
Numeric Entry	1	5	Net Count
All or One track	Action on pass	Action on fail	
First Track	Warning	Warning	
Report	Frequency (Quantity)		
	100		
<input type="checkbox"/> Test previous output	<input type="checkbox"/> Repeats	<input checked="" type="checkbox"/> Display at 4D	<input checked="" type="checkbox"/> Answer at 4D
<input checked="" type="checkbox"/> Active			

Enter a value outside the 'pass' value. In this example we entered 7.

Quality Questions

1 Numeric Entry 1 to 5	<input type="text" value="7"/>	
------------------------	--------------------------------	--

Auto-Count will display the result of the test, pass or fail.



To re-test the sample, open Dashboard and filter on 'Pending' status.

The screenshot shows the Plant Manager software interface. On the left, there is a sidebar with icons for Home, Reports, Metrics, Schedule, and Help. The main area is titled "Quality Tests". A search/filter bar at the top includes fields for Date (09/05/2022), Status (Pending), Auto-Count (P300G-P1), Job number (6290), Form number, Barcode, Question, and Minimum. Below the search bar, a table lists one row of data: "09/05/2022 Pending P300G-P1 6290 TASK01-Task 01 P10000049787 Numeric Entry 1 to 5 1".

Example 8: Quality Technician Required

This example question requires a Quality Technician type user to answer before proceeding.

Note In Plant Manager > Employee, choose Quality Technician to designate an employee as a quality technician.

Define Quality Question

Test Header

Quality Class	Priority	Text
Question	0	Makeready End Checks

Type

Yes/No	Required Response	Trigger
	Yes	Makeready End

Response Required
 Quality Technician
 Active

Test Criteria

Auto-Count	<input checked="" type="checkbox"/> Select All
Customers	<input checked="" type="checkbox"/> Select All

Cancel Save

Quality Questions

1 Makeready End Checks

The operator can choose to suspend the job if the Quality Technician user is not available.

Technician Password

Select Technician

JM1 - James Maskell Plant 1

001 - John Jones

JM1 James Maskell Plant...

Password



Quality Questions

1 Makeready End Checks

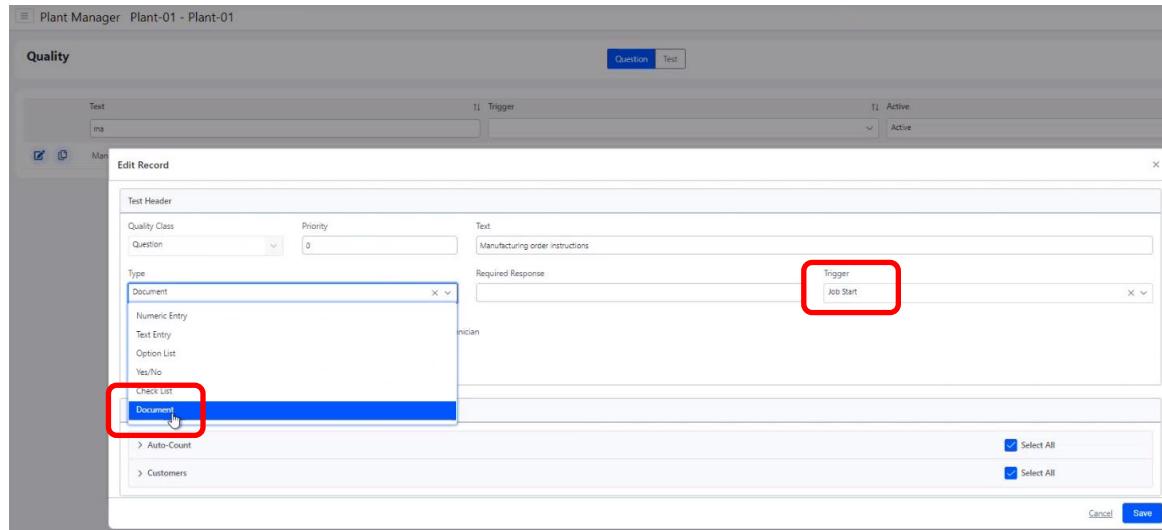
Yes 

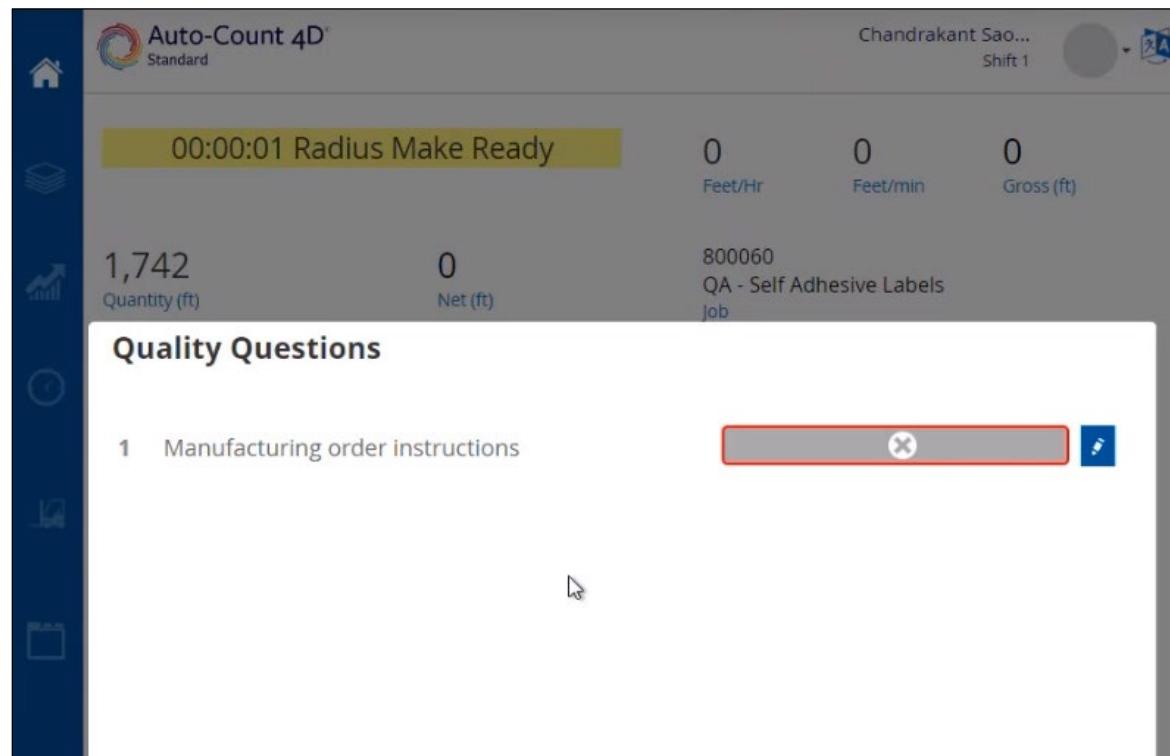
Example 9: Document Type of Question for Manufacturing Instructions

You can create a Quality Question which will require the operator to read a document(s) before running a job. This is very useful for when the operator must adhere to specific manufacturing instructions, especially if those instructions are updated frequently.

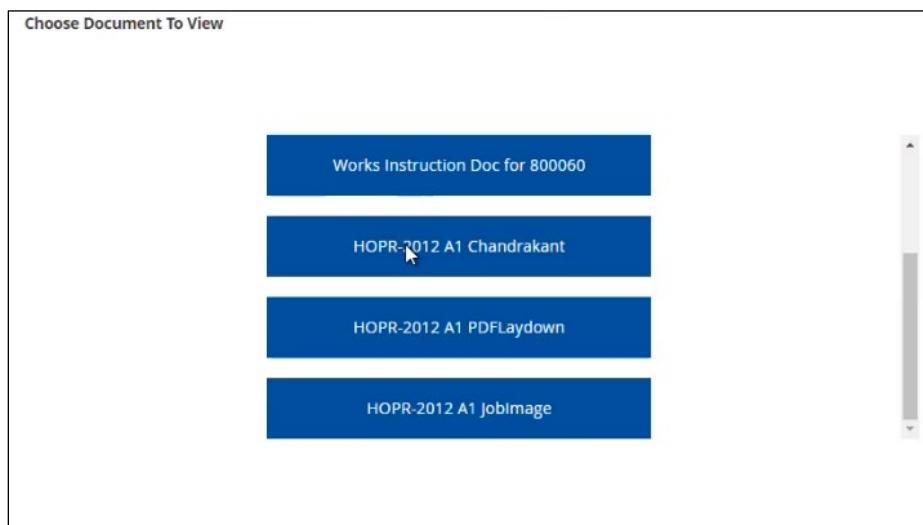
Note This feature is only available if your manufacturing instructions are accessible via a URL address. Please see the Auto-Count Setup and User Guides for details.



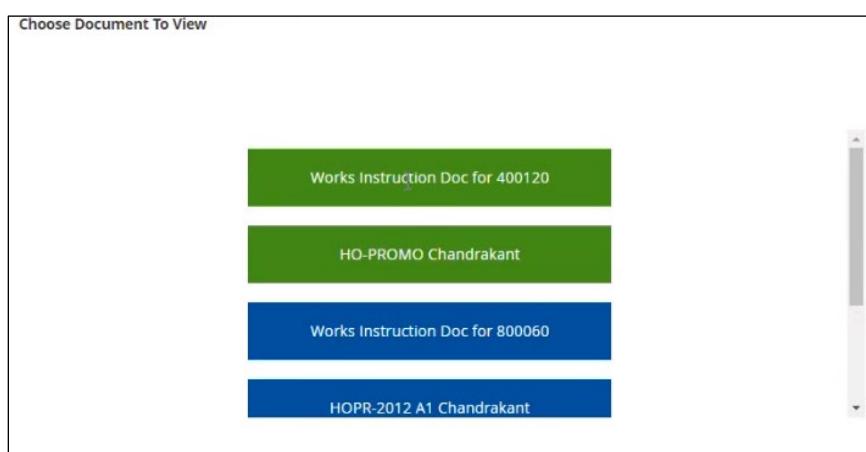
Once the feature is set up, operators will be prompted to open work instruction documents.



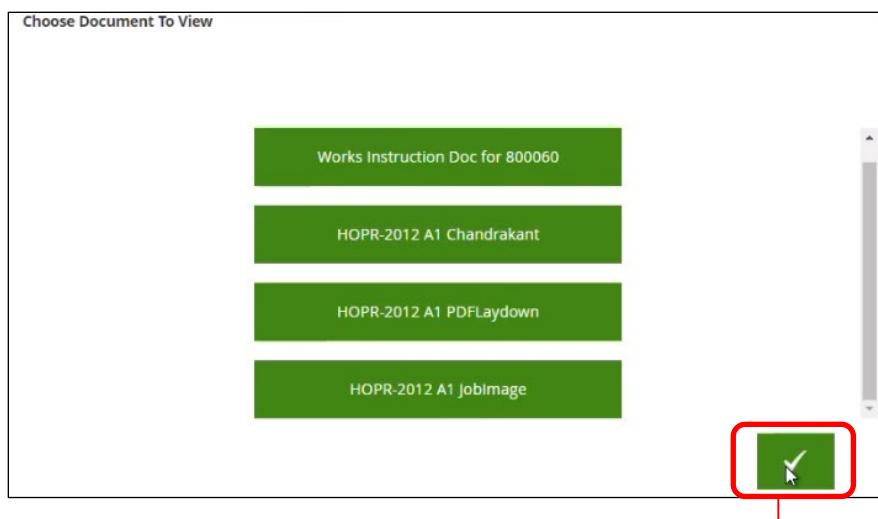
The operator will then choose a document to view.



Documents that have been previously opened are displayed in green so the operator can keep track of what they've reviewed if there are several documents.



Once all the documents have been reviewed, the operator can close the documents window, complete the Quality Question and proceed with the job.



Quality Questions

1 Manufacturing order instructions



Adding Quality Data to Output Ticket/Label Reports

Notes To create reports, you should be familiar with creating SQL statements and navigating your Plant Manager SQL database.

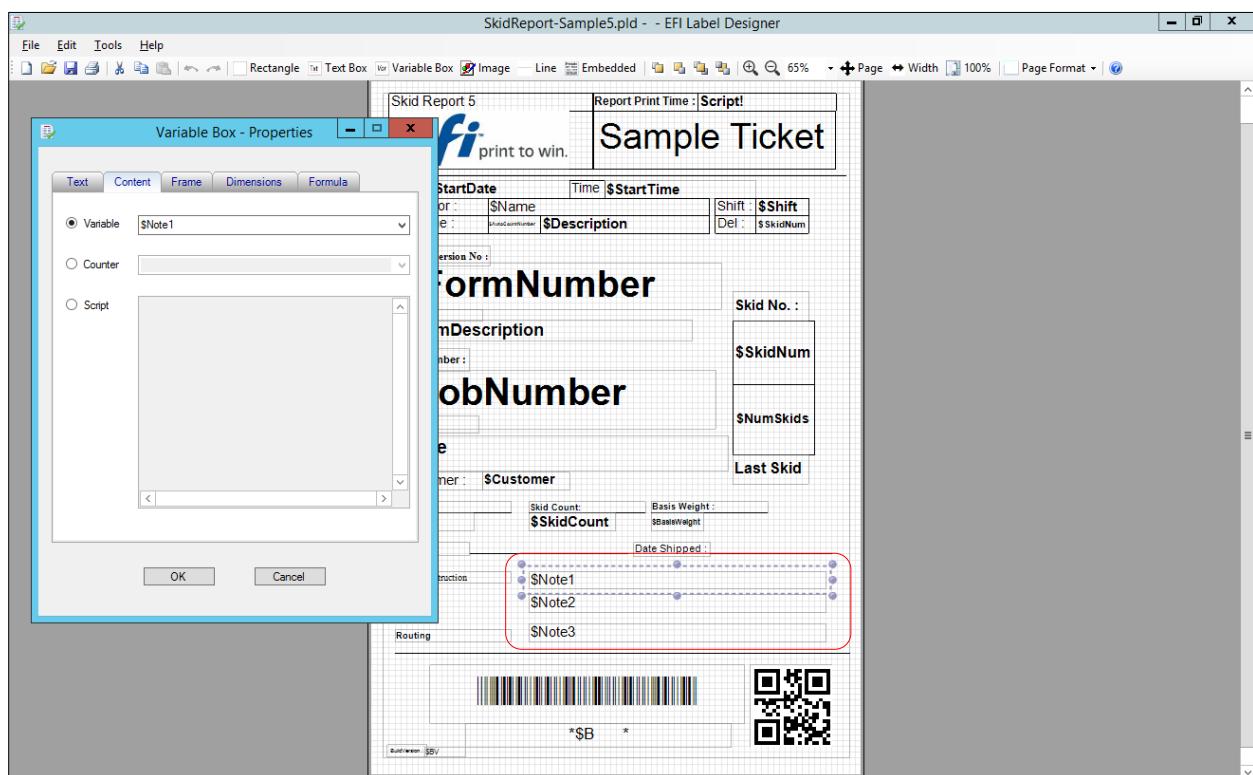
For more information on how to install and use Label Designer, please see *Auto-Count Label Designer – Install & User Guide*.

You may want operators to enter information during a run and have that information automatically printed on a pallet ticket. You can set up a manually triggered question and the operator must enter or scan the information which they want to be printed on the output ticket or label. For example, as the operator is loading infeed product, they may need to enter an expiration date which comes with that infeed material but is not part of the job information from the MIS system. The operator must manually enter it during the run because the expiration date is very important for downstream processes so it must be on the pallet ticket. You can use the Quality Questions feature to capture this information and then print it on the output tickets or labels.

To do this, you must create your ticket/label reports using Label Designer or Crystal Reports.

Label Designer Example

This is an example ticket template with Note1, Note2 and Note3. These fields are variables which pull information from the Plant Manager database.



Below is an example SQL query which creates the Note variables used in the ticket report. SQL creates the Note1 variable which is then used by the report to extract the quality question and the operator's answer for the ticket.

```

select
(select BuildVersion from BuildVersion) as BV,
e.Description Name,
j.Description Title,
s.StartDateTime StartDate,
RIGHT('0'+CAST(DATEPART(hour, s.StartDateTime ) as varchar(2)),2) + ':' +
RIGHT('0'+CAST(DATEPART(minute, s.StartDateTime )as varchar(2)),2) StartTime,
f.Description FormDescription,
C.CustomerNumber Customer,
c.Description CustomerDescription,
sh.Shift Shift,
SkidType,
SkidCount,
SkidNum,
NumSkids,
LastSkidFlag,
AveragePieceWeight,
SpecialInstructions,
Net,
Routing,
Barcode,
a.AutoCountNumber AutoCountNumber,
a.Description Description,
e.Employee Employee,
j.JobNumber JobNumber,
f.FormNumber FormNumber,
BasisWeight,
f.FormWidth FormWidth,
f.FormLength FormLength,
s.AddrLine1 AddrLine1,
s.AddrLine2 AddrLine2,
s.AddrLine3 AddrLine3,
s.AddrLine4 AddrLine4,
(select Top 1 e.Description + ' ' + e.Response from TxnSummary t, TxnEvent e where
s.runId = t.RunId
and s.AutoCountId = t.AutoCountId
and t.TxnSummaryId = e.TxnSummaryId
and e.TxnDateTime <= s.TxnDateTime
and e.EventCode = '25' and e.ProductIndex = 1000001 order by t.TxnSummaryId desc) Note1,
(select Top 1 e.Description + ' ' + e.Response from TxnSummary t, TxnEvent e where
s.runId = t.RunId
and s.AutoCountId = t.AutoCountId
and t.TxnSummaryId = e.TxnSummaryId
and e.TxnDateTime <= s.TxnDateTime
and e.EventCode = '25' and e.ProductIndex = 1000002 order by t.TxnSummaryId desc) Note2,
(select Top 1 e.Description + ' ' + e.Response from TxnSummary t, TxnEvent e where
s.runId = t.RunId
and s.AutoCountId = t.AutoCountId
and t.TxnSummaryId = e.TxnSummaryId
and e.TxnDateTime <= s.TxnDateTime
and e.EventCode = '25' and e.ProductIndex = 1000003 order by t.TxnSummaryId desc) Note3
from TxnSkid s, AutoCount a, Employee e, Job j, Form f, Plant p, Customer c, TxnDetail d,
TxnSummary t, Shift sh
Where
a.AutoCountId = s.AutoCountId and
p.PlantId = a.PlantId and

```

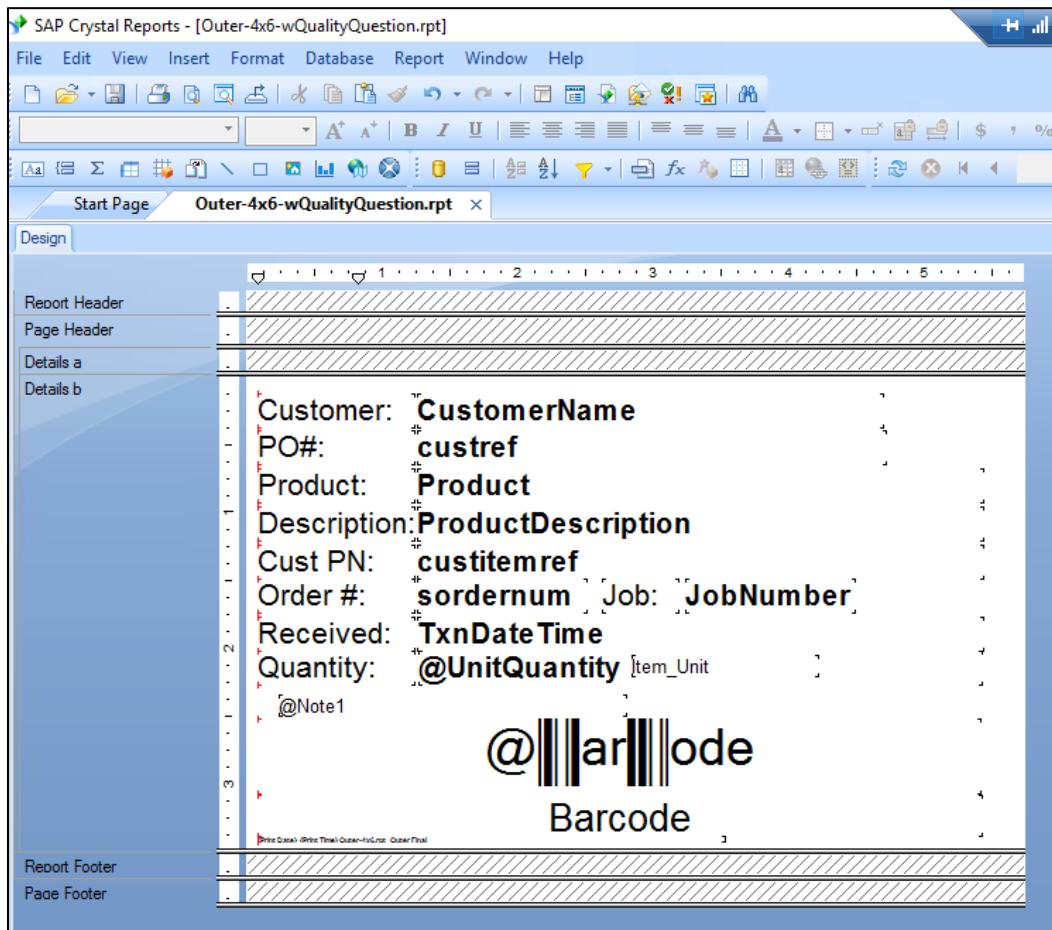
```

e.EmployeeId = s.EmployeeId and
j.JobId = s.JobId and
f.FormId = s.FormId and
j.CustomerId = c.CustomerId and
d.TxnDetailId = s.TxnDetailId and
t.TxnSummaryId = d.TxnSummaryId and
sh.ShiftId = t.EmployeeShiftId and
s.Barcode = '{BARCODE}'

```

Crystal Reports Example

Here is an example ticket report in Crystal Reports using Note 1.



Below is an example SQL query which creates the Note variables used in the ticket report. The highlighted text shows how SQL creates the Note1 variable which is then used by the report to extract the quality question and the operator's answer for the ticket.

```

SELECT
    a.AutoCountNumber,
    a.Description ACDescription,
    a.EquipmentTypeId,
    c.CustomerNumber,
    c.Description CustomerName,
    e.Description EmployeeName,
    e.Employee,
    f.BasisWeight,
    f.Description FormDescription,
    f.FormNumber,
    f.FormLength,
    f.FormWidth,
    f.MisTask,
    j.JobNumber,
    j.Description JobDescription,
    pd.Product,
    pd.ProductDescription,

    -- Radius default MIS Data Values
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:sordernum[1]',
        'nvarchar(30)') as sordernum,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:custref[1]',
        'nvarchar(30)') as custref,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:addtcustf[1]',
        'nvarchar(30)') as addtcustref,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:sorderlinenum[1]',
        'nvarchar(30)') as sorderlinenum,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:custpolineref[1]',
        'nvarchar(30)') as custpolineref,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:soitemtypecode[1]',
        'nvarchar(30)') as soitemtypecode,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:itemcode[1]',
        'nvarchar(30)') as itemcode,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:itemdesc[1]',
        'nvarchar(30)') as itemdesc,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:custitemref2[1]',
        'nvarchar(30)') as custitemref2,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:custitemref[1]',
        'nvarchar(30)') as custitemref,

    -- Radius MIS Data from Custom Properties
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:Item_Class[1]',
        'nvarchar(30)') as Item_Class,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:Item_GSM[1]',
        'nvarchar(30)') as Item_GSM,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:Item_Unit[1]',
        'nvarchar(30)') as Item_Unit,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:Est_Module[1]',
        'nvarchar(30)') as Est_Module,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:prof_blank_length[1]',
        'nvarchar(30)') as prof_blank_length,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:prof_blank_width[1]',
        'nvarchar(30)') as prof_blank_width,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:prof_dim_A[1]',
        'nvarchar(30)') as prof_dim_A,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:prof_dim_B[1]',
        'nvarchar(30)') as prof_dim_B,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:SAL_Die_Repeat[1]',
        'nvarchar(30)') as SAL_Die_Repeat,
    pd.MISData.value('/*:AdditionalFields[1]/*:AdditionalFieldsRow[1]/*:SAL_Die_NumDown[1]',
        'nvarchar(30)') as SAL_Die_NumDown,

```

```

s.Barcode,
s.ContainerDescription,
s.FinalTask,
s.LastSkidFlag,
s.Net,
s.NumSkids,
s.Routing,
s.SkidCount,
s.SkidType,
s.SkidNum,
s.StartDateTime,
s.TxnDateTime,
s.UOM,
sh.Shift,
case_qty_per.Qty,
case_qty_per.qty_per_case,
case_qty_per.PartialQty,
case_qty_per.qty_per_partial_case,

-- Subquery to extract quality questions label and data, information will be stored in field labeled Note1
--Product index value can be found in QualityQuestion table as QualityQuestionID
--Event code = 25 for QualityQuestions & WIP Quality Tests
--Add additional subqueries for Multiple Quality Questions

(select Top 1 e.Description + ' ' + e.Response from TxnSummary t, TxnEvent e where s.runId = t.RunId
and s.AutoCountId = t.AutoCountId
and t.TxnSummaryId = e.TxnSummaryId
and e.TxnDateTime <= s.TxnDateTime
and e.EventCode = '25' and e.ProductIndex = 1000002 order by t.TxnSummaryId desc) Note1

FROM TxnSkid      s
LEFT JOIN AutoCount    a    ON (s.AutoCountId = a.AutoCountId)
LEFT JOIN Plant       p    ON (a.PlantId = p.plantId)
LEFT JOIN Employee     e    ON (s.EmployeeId = e.EmployeeId)
LEFT JOIN Job          j    ON (s.JobId = j.JobId)
LEFT JOIN Form          f    ON ((s.FormId = f.FormId) AND (s.JobId = f.JobId))
LEFT JOIN Customer     c    ON (j.CustomerId = c.CustomerId)
LEFT JOIN Product      pd   ON (s.ProductId = pd.ProductId)
LEFT JOIN Shift         sh   ON (e.ShiftId = sh.ShiftId)
LEFT JOIN TxnDetail     d    ON (d.TxnDetailId = s.TxnDetailId)
LEFT JOIN TxnSummary    t    ON (t.TxnSummaryId = d.TxnSummaryId)

LEFT JOIN
( SELECT Container, MAX(Qty) AS Qty, MAX(skidcount) AS qty_per_case, MIN(Qty) AS PartialQty, MIN(skidcount) AS
qty_per_partial_case
    FROM ( SELECT COUNT(*) AS Qty, t1.container, t1.skidcount
            FROM txnskid t1
            GROUP BY t1.container, t1.skidcount ) d
GROUP BY Container ) case_qty_per
    ON case_qty_per.container = s.Barcode

WHERE
a.PlantId = {?PlantSelection} and
s.Barcode = '{?Barcode}'

```