Defects and Quality Quick Start Guide

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How to Configure Defect Types

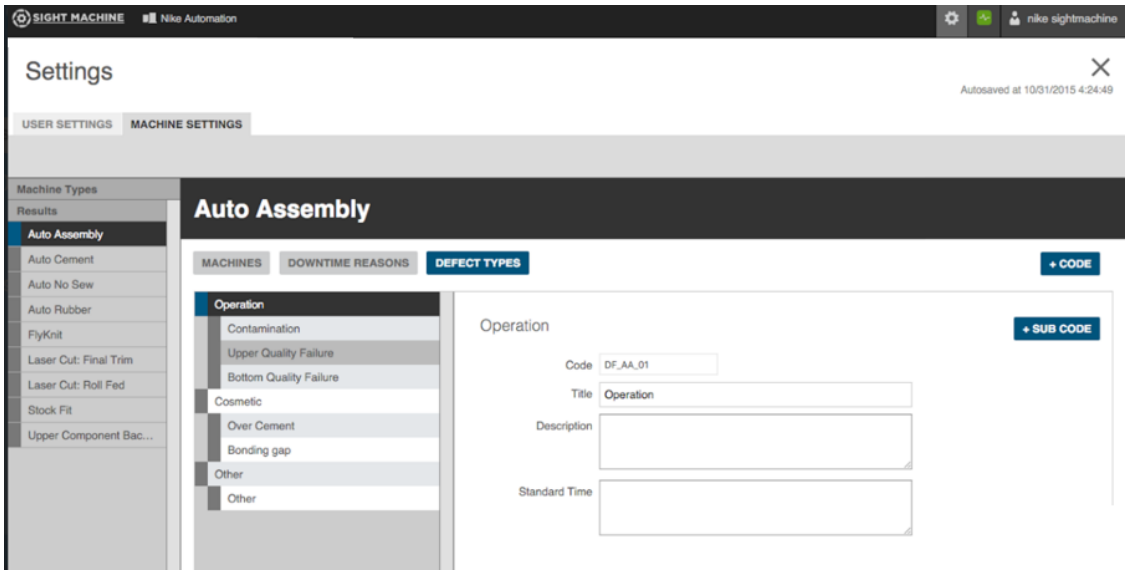
In order to identify defects in a way that can be measured, a manager at your organization must configure defect types in the Settings view. Once configured, these defect types are available throughout the Sight Machine application.

Note: Defect type configuration is limited to an organization's manager to ensure Sight Machine provides consistent and clear data. If anyone could add defect types on the fly, the opportunity for inconsistent data would increase, rendering the data meaningless. (i.e. two or more employees might enter a different defect type for the same type of defect, making it difficult to ascertain the meaning of these different types.)

The manager designated to configure defect types can enter as many defect types as needed for your organization.

Use the following instructions to configure a defect type in Sight Machine.

1. Click the Gear icon in the Toolbar to display the Settings view.
2. Click on the Machine Settings tab.



3. Click the Defect Types button.
4. Click the Code or Sub Code button to display the Add Defect Type dialog box.

   Note: If you are entering a defect type sub code, be sure to select a current code in the list of defect types first, in order to indicate to which code the sub code will be subordinate.

5. Enter appropriate values in the fields and click Save. The defect type you just added displays in the list of defect types and throughout Sight Machine's tabs and workflows.

   See xx for details on where defects are entered in Sight Machine.

Quick Start: Defect Entry

There are three ways to enter manufacturing defects into Sight Machine, which are configurable based on the machines/processes in place at a particular location.

1. Batch defect entry. This method is available from the Sight Machine Data Tab, and conventionally used for batch entry by line/plant managers or QA/QC labs.
2. Line operator entry. This method is for single-defect entry using a tablet or computer and has been configured for low burden entry aimed at line operators.
3. Automated Inspection: This method relies on in-line automated inspection systems to provide real-time feedback directly to the data platform. An example of this would be a pass/fail camera system for automated quality inspection.

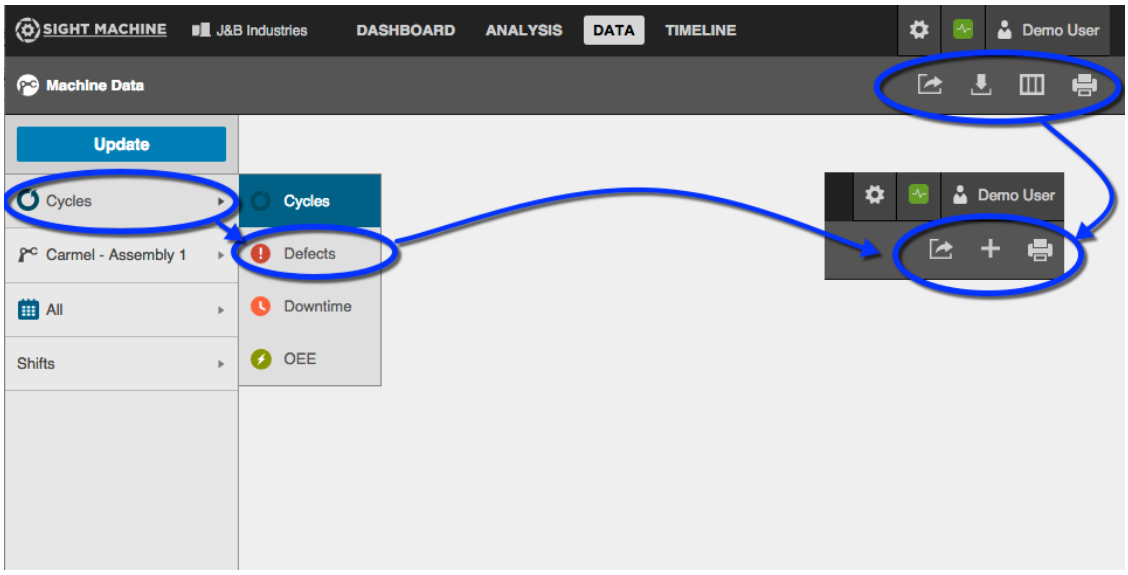
Note: The aforementioned three ways are traditionally how defect entry is performed in the Sight Machine platform. With that said, the Sight Machine application is flexible enough to consume input from virtually any input device on any machine. Should you have a feature request for a different means of ingesting defects, please reach out to the Sight Machine team.

Batch Defect Entry

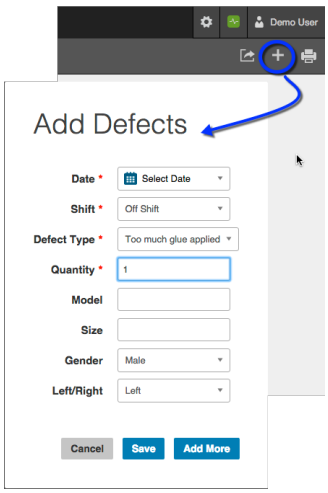
A manager or a QA lab technician might record multiple defects at a time after reviewing output at the end of a shift. For example, if it's your company's policy to check the first and last item of every batch, and discard an entire batch if that first and last item are defective, you'll use the cloud-based Sight Machine application's Data tab to enter all the defects at once.

The instructions below are steps for entering a batch of defects.

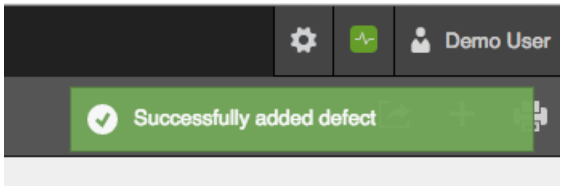
1. On the Data tab, select Defects from the Update Menu to toggle the Resource toolbar (upper right corner of the screen) to display the Add (+) icon.



2. Click the Add icon to display the Add Defects dialog box.



3. Enter details for the defect and click Save. A message displays at the top right of the application indicating that your defect has been added.



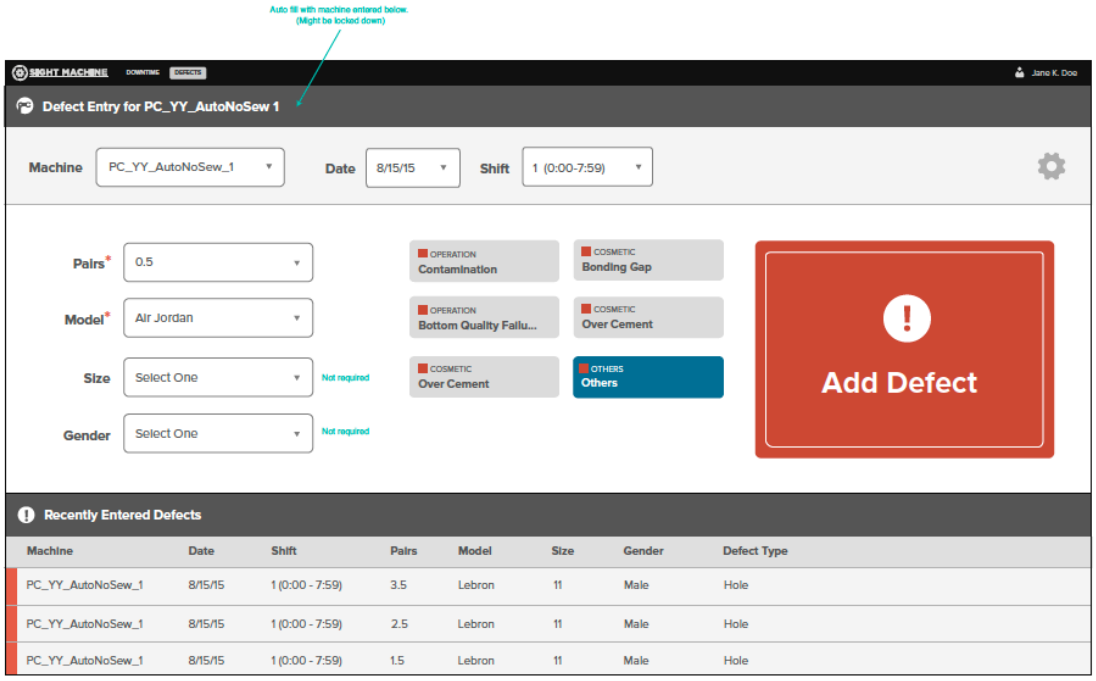
Line Operator Defect Entry

A line operator can use a tablet to enter a defects at the machine or line at the time in which they are detected. This real-time defect entry does not require a working Internet connection. If the Internet connection goes down, the line operator will still be able to add a defect, and the added defects will be synchronized to the cloud pending Internet availability.

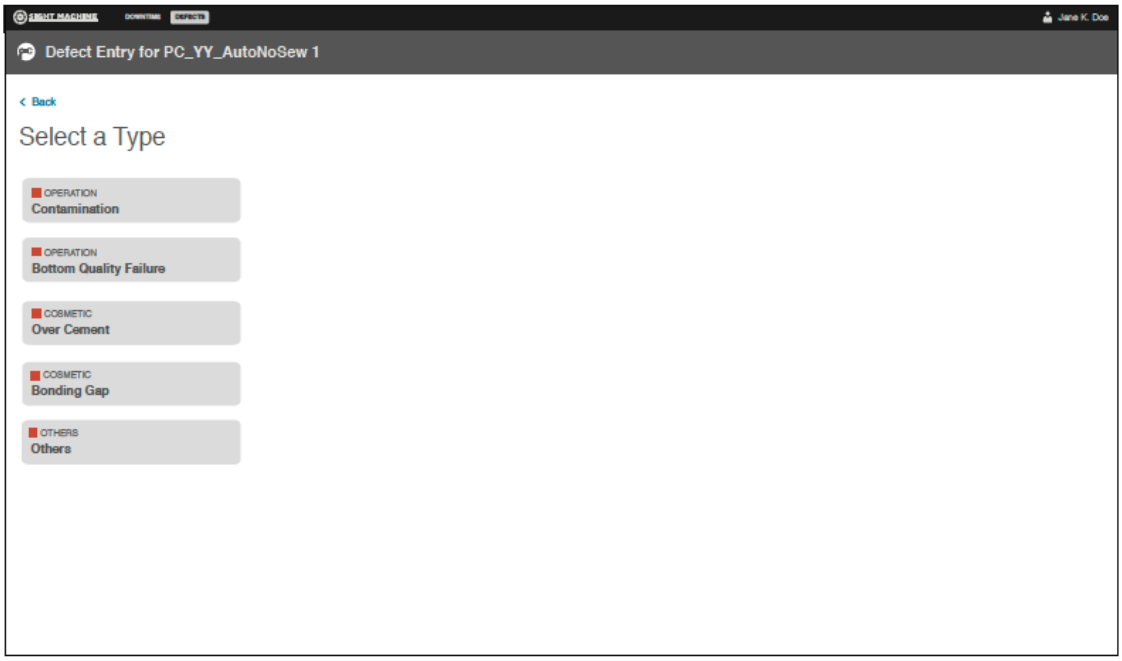
Consider the example of a line operator responsible for catching discolored shoe parts. That line operator would follow these instructions to record a defective item.

Note: The images below are only examples and your tablet display will appear differently, with defect types unique to the machine type of interest. These defect types are configurable from the Settings view.

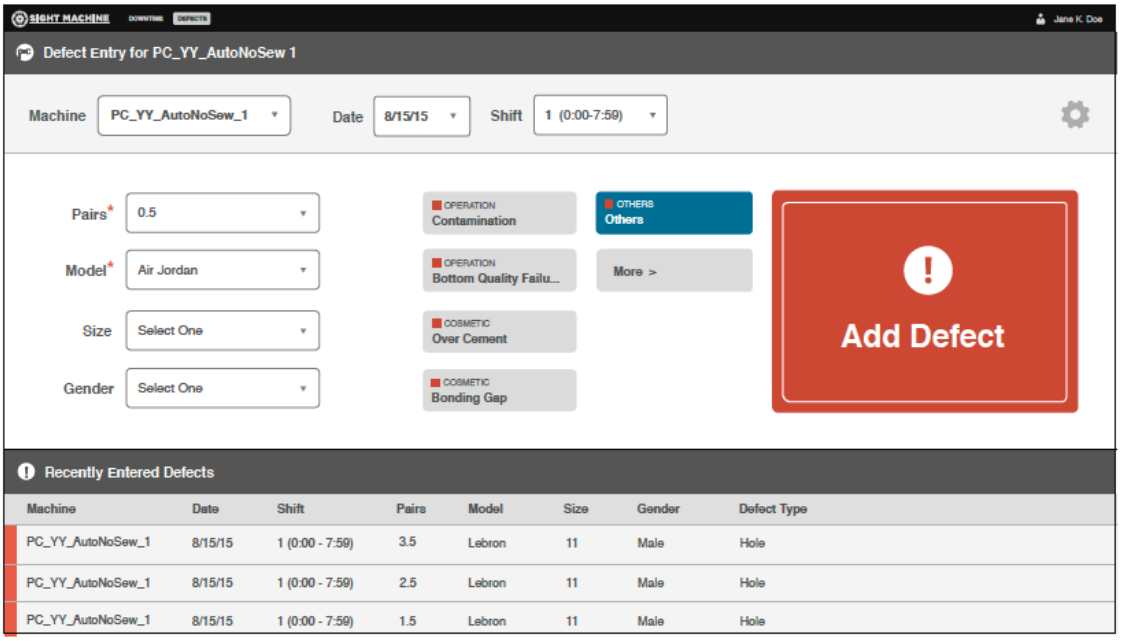
1. Select a machine from the Machine drop-down list and then tap the Add Defect button.



This displays the Defect Entry screen.



2. Select a defect type and then tap the Back link at the top left to return to the Add Defect screen.



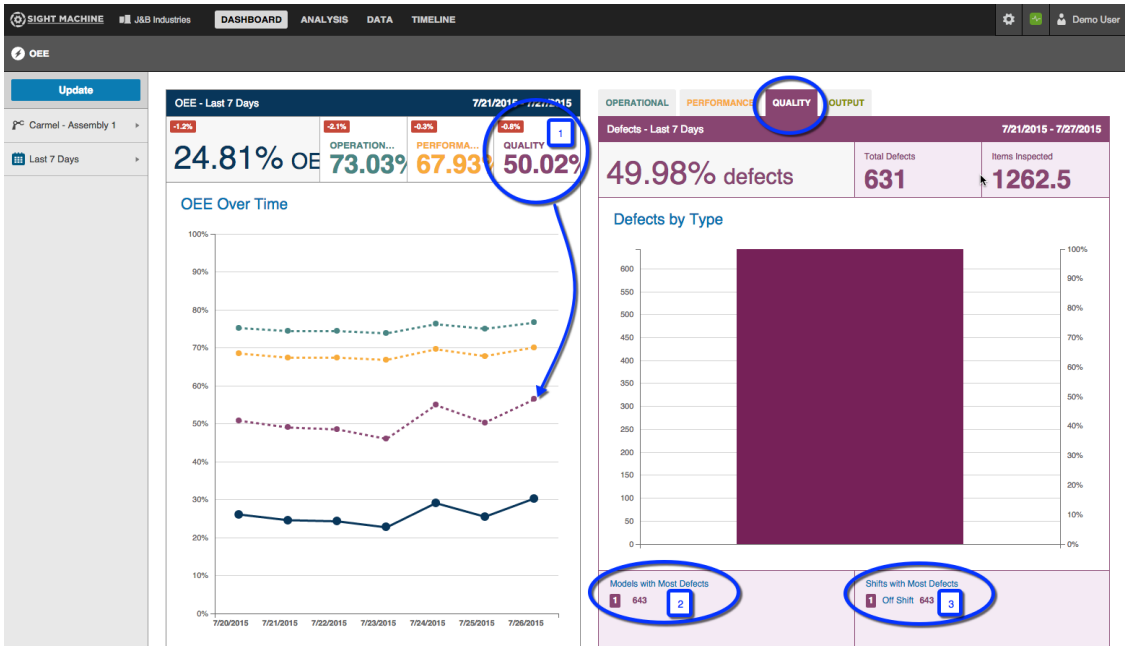
Automated Inspection

Sight Machine can create defects directly from automated inspection of machine data. If your machine can produce a signal to indicate detection of a defect, Sight Machine can track the detections automatically and generate defect models.

Each time a defect is reported by a machine's signal, it is automatically recorded in the Sight Machine application. These defects can include rich information, such as a picture of the defect, when something goes wrong. Sight Machine grabs that image along with any other captured data.

You can view auto-inspected defects as a summary from the Dashboard tab or in detail on the Data tab.

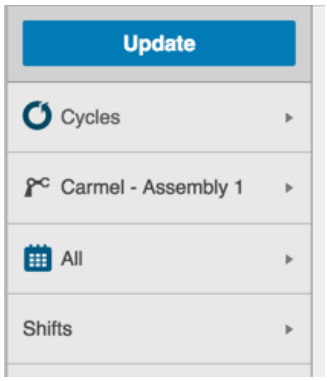
Auto-Inspected Defects on the Dashboard Tab



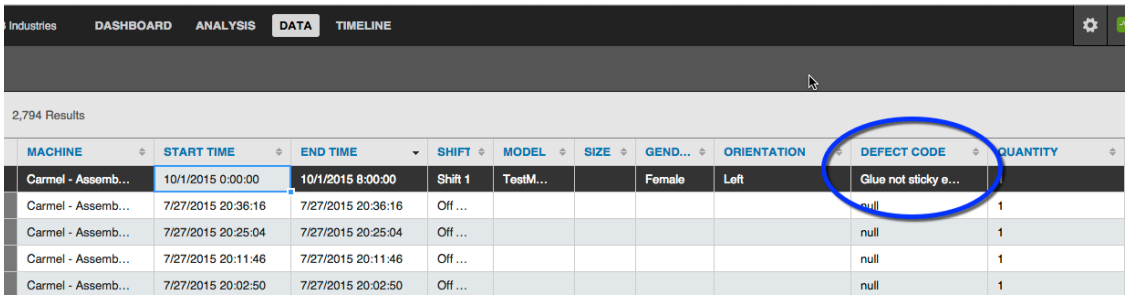
Click one of the Quality links (1, 2, or 3 above) to display the Data tab with detailed defect information.

Auto-Inspected Defects on the Data Tab

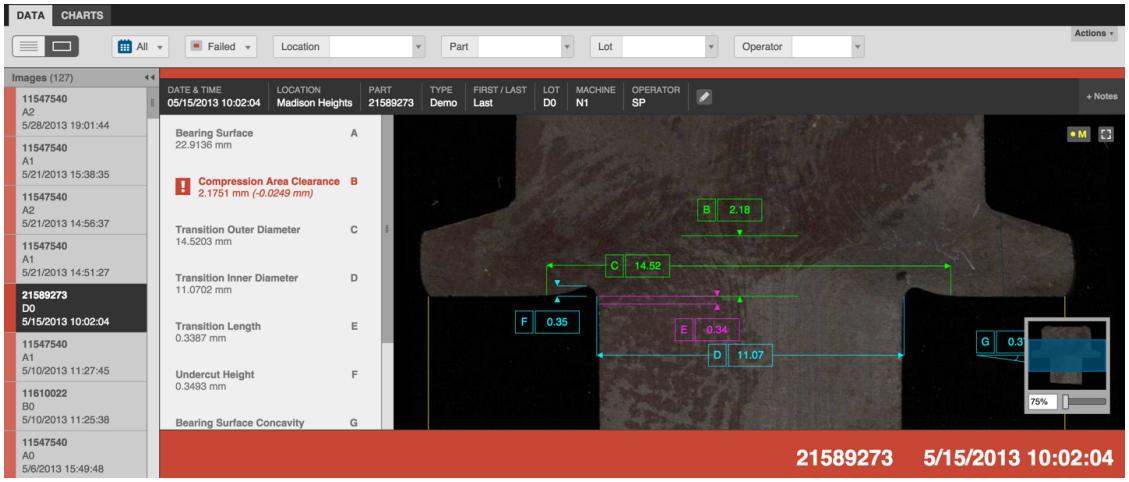
To view reports for auto-detected defects, navigate to the Data tab and select options from the Update pane to customize report configuration and filtering.



Click any column header to sort the defect entries in ascending order by that column.



Sight Machine can track defects that occur from automated inspection systems, including image data and measurement overlays for later review.



Viewing Quality Data

Qaulity data displays in the following locations in Sight Machine:

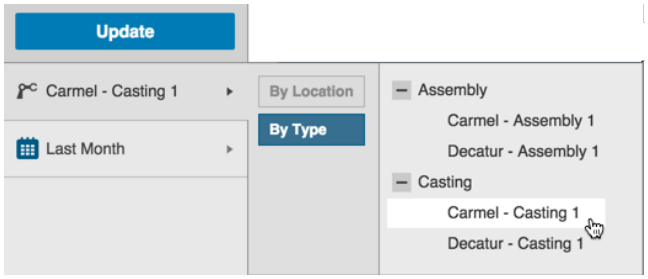
- Dashboard (OEE) tab
  - Quality Pareto charting
- Analysis tab/KPI Chart
  - Comparing quality by time and factory, machine, machine type, or single plot

Quality Data on the Dashboard (OEE) Tab

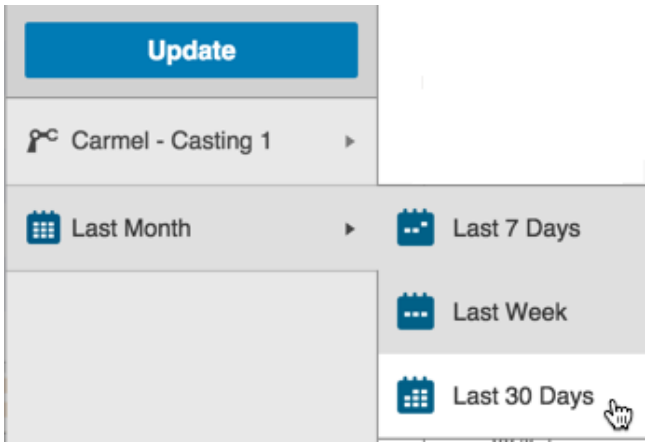
Manufacturing quality appears as a Pareto chart on the Dashboard tab's Quality subtab. Use the following steps to refine and view quality metrics from the Dashboard tab.

Note: The Quality subtab may be labeled differently to a unique name specific to your organization.

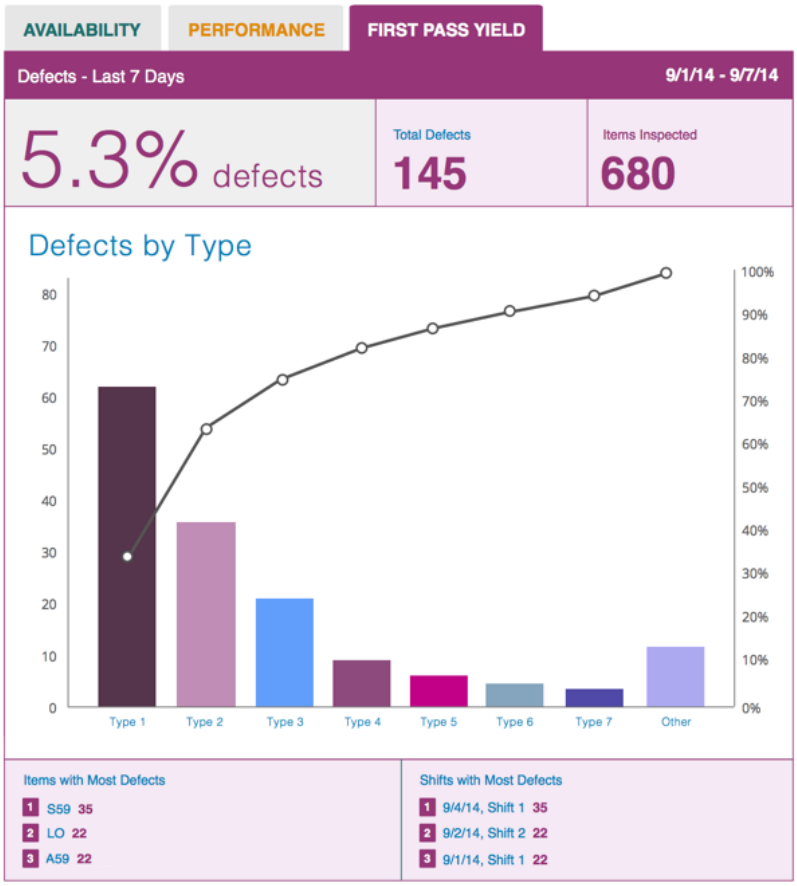
1. In the Update pane, select a manufacturing site and machine from the site picker.



2. Select a date range from the Date picker.



3. Click Update to apply your selections to the data.
4. Click the Quality subtab to display the Pareto chart showing Defects by Type as a percentage of total items inspected for the time period.

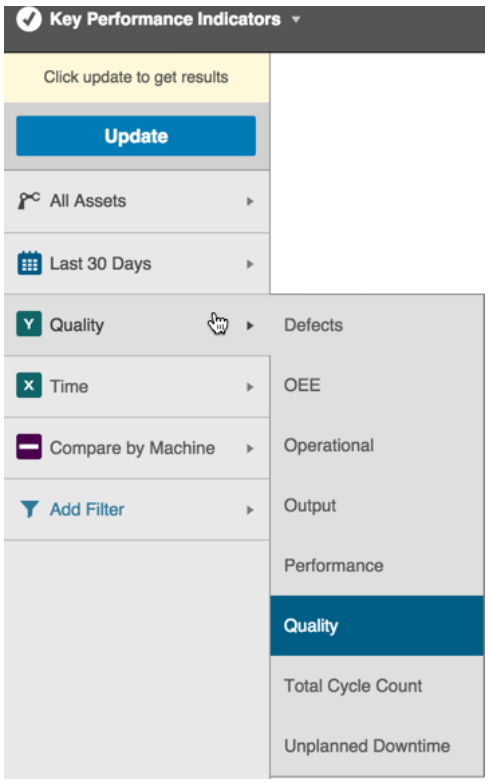


For more details, click any of the text links in the lower two panes to display the Data tab (i.e. "Items with Most Defects" or "Shifts with Most Defects" and the links under each of those).

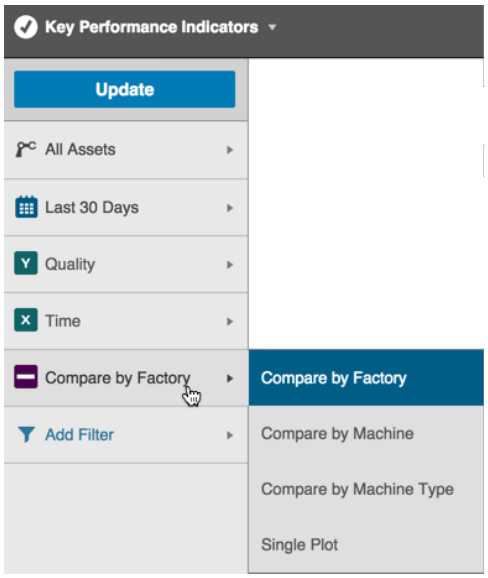
KPI Charting on the Analysis Tab

The KPI chart on teh Analysis tab is another view into your manufacturing quality by time and factory, machine, machine type, or single plot. Use the following steps to view this data.

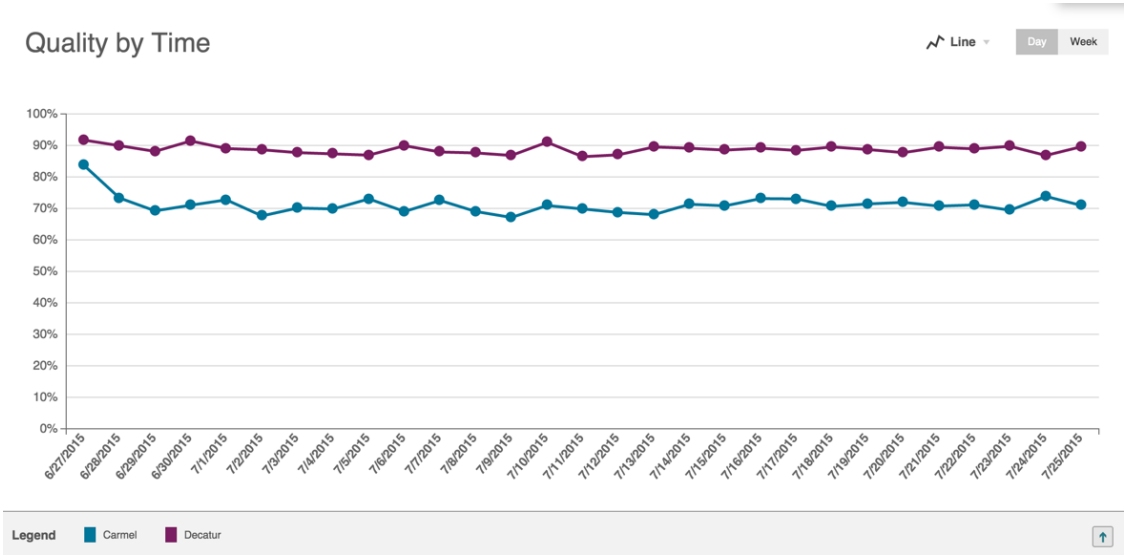
1. Click the Analysis tab.
2. On the Update panel, select the criteria for your review from the Asset and Date pickers, specifically choosing Quality from the Defect picker.



3. Select Time from the Time/Shift picker and the option of your choice from the Comparison picker (see image below).



4. Click Update to view quality manufacturing production as measured by facility over time.



5. Click any point along the KPI chart graphs to display the Data tab with more details.