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Toyota Control Charts 1950's Example

Quality control has a long history within both Toyoda the parent loom company and Toyota the automotive manufacturing company. Sakichi Toyoda started making looms in the late 1890's. His work culminated in the impressive 1924 Type G Auto Loom ([click for image of sample machines](#)).

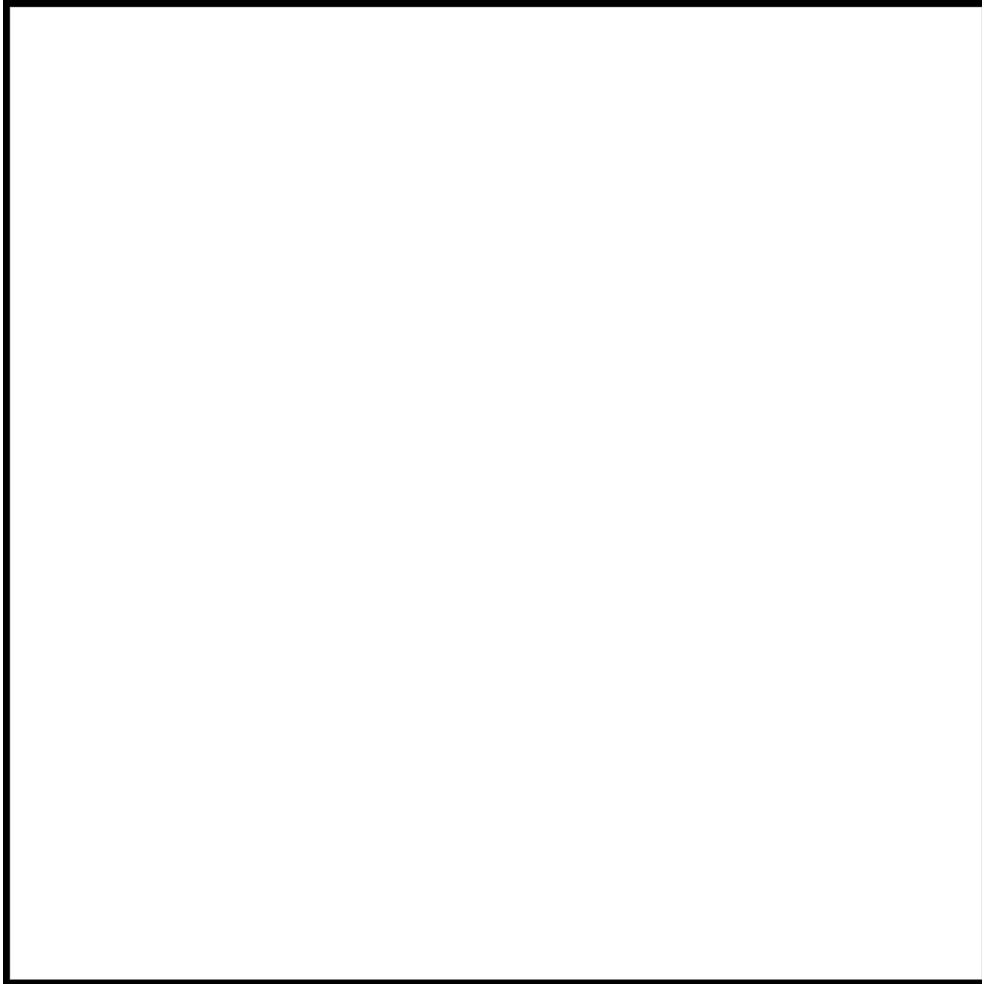
The Type G loom was noted for its non stop shuttle change and the concept of "[Jidoka](#)" or built in quality. The machine would stop when a thread broke helping to ensure 100% quality in the product. Manufacture of the loom however was still mainly driven by inspection and use of various gauges and measuring devices.

In the 1920's [Walter Shewart devised his famous control chart while working at Bell Labs](#). The chart came to the attention of W. Edward Deming who became one of the foremost proponents of the chart and Shewart's work. Use of the control chart slowly spread around the world and usage was evident in a few limited places in Japan even in the 1930's according to Prof. Nonaka of Josai University (Refer to Chapter 16 – The Recent History of Managing for Quality in Japan in J.M. Juran's book [A History of Managing for Quality](#)).

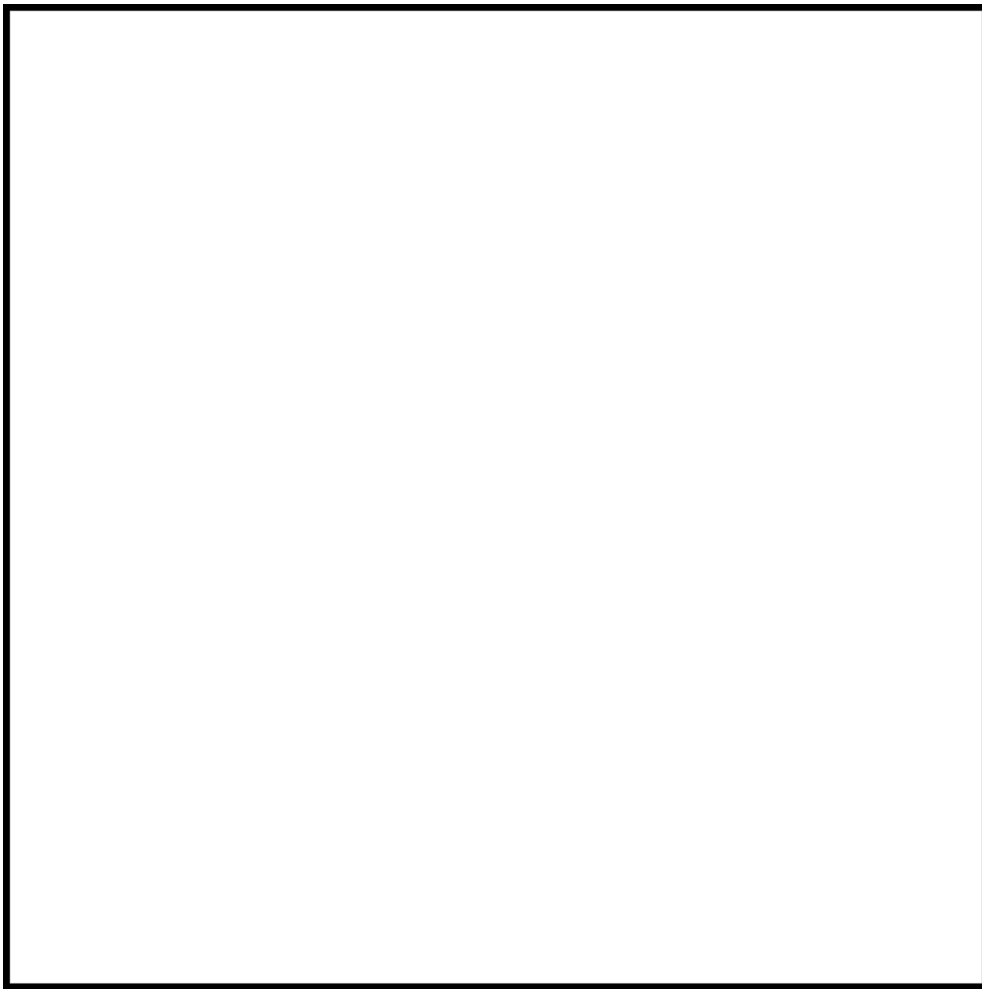
The end of WWII however saw a much more pronounced spread

of control charts in Japan during the occupation period after the war ended. Lectures by Deming and other statistical experts put the tool and other key quality concepts in the hands of Japanese companies.

Here is a quite old example of a initial quality control chart used in Toyota in the 1950's. The dimensions of the crank shaft journals are measured using a measuring device and recorded onto a chart next to the line.



Here is an example of such a control chart in Japanese for a steering knuckle.



By the time I worked for Toyota in the latter part of the 1980's these manual charts were essentially gone. Toyota had worked hard for decades at removing the sources of common cause and special cause variation to the point where process control levels were extremely high. [Click here for an example of a QC circle activity.](#)

Over time the act of charting essentially became unnecessary work. Instead period checks were conducted to audit the level of process control by production. Quality Control further audited the checks performed by manufacturing on a sampling basis and validated the process control of the machine. Precision items like the crankshaft journals above are 100% measures by automated measuring machines in the line today. Control charts are now automatically generated and displayed as needed on a CRT type device or on an LCD screen. As was the case with Sakichi Toyoda's automatic looms the process today would signal when a defect

occured and automatically stop the line (i.e. Jidoka concept).

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