

The First 10 Milwaukee-Matic Model II Machines

Robert Pipes 2011

In our attempt to document the history of K & T, one of the important subjects is the birth of the Numerically Controlled Machining Center. Based on what we have read in the patent suits, published newspaper accounts and company manufacturing records and literature the following appears to be true.

The first MM IIs were built in 1958 in the hiway 100 plant by standard products division. We have to believe that the Model II was first built as part of the Hughes Machine project, and I say that based on Engineering Development Numbers (E.D.) and the statements made in the Patent Suits.

When the Engineering Department was developing a new product they would assign an ED #. After that, all labor, parts, machining hours etc. were reported against account numbers in the ED project.

Project ED #74 was the Hughes Machine Project. ED # 77 was the Milwaukee Matic MM II Project. I believe the MM II started as part of ED # 74 and was separated out during the development process when it became apparent that the Hughes project was not going to work out. I need to see the depositions in the patent suits to prove or disprove that.

For those that might not know:

Everything manufactured at K&T was given a lot # for record and control purposes. Lot #s were a 4-digit number and Theodore Trecker recorded the very first one June 3, 1898.

The K&T Lot Book lists the Lot #, a quantity, a description and a ship date.

Lot Cards record the machine serial number, ship date, customer name & address and sometimes order info for each machine or item on the order. (A lot could be 1 machine or 50 machines. Lot #s were also given to attachments and other manufactured units.)

In some cases, machines built on ED #s by Engineering were brought out to the production floor, assigned a lot # and Serial Number and then sold. That is what happened, I believe, with the first 5 MM IIs. Some of them were in fact used as “Demonstrator” machines or used in Production in the Machine Shop for a few years and then rebuilt and sold. The ship dates tell the story. Machine # 2 of the first lot went directly to a customer in January of '59 and became the famous “First MM II Machining Center to be sold”. The customer was GE of course. Machine # 3 also went directly to GE in New York in May of '59.

The K&T Lot Book records the first two lots of MM IIs as being built in 1958. The first Lot # used was lot #8680. In the Lot book it is described as “ED #74 Servo Control Milling”. (Note that it says ED#74.)

In the Lot Cards for lot 8680, there is a note that the machines on this lot were added to the cards in 1971 because a Lot Card had not been completed in 1958. Lot 8680 had 5 machines assigned to it and the machine serial numbers at that time were based on the lot #. The first machine was then 86800100, 2nd was 86800200 etc.

The second Lot was #8740 for 5 more machines. They were then 87400100, 87400200, 87400300, etc.

I will list each of the 10 machines by serial number and then what I know about each one.

Lot 8680 – 5 machines in Serial Number Order

S/N 86800100 Order # B2273, This was the first Model II built. (by serial # anyway) It must have been completed sometime between July and December of 1958. It was used as a demonstrator at K&T and possibly as a production machine from mid '58 until early in '63. It was pulled from use in early '63, rebuilt, updated and sold to Numeric Machining in Minneapolis. It shipped in May of 1963. It had a GE Tube Type Control (Serial # 10908) when it went to Numeric. Jim Donndelinger adds: "The first machine was installed just outside the door going to the shop at Hwy 100 in a fenced-in area, where it stayed until the N/C demo room was set up in the middle of the plant. This is the machine that was shown on the cover of Business Week. It had been assembled on the floor surrounded by temporary walls until it was demonstrated to employees in December 1958. After the demo John Joerger threw a party for all those who had been involved in the project."

S/N 86800200 Order # B1324, This is the machine that was started on ED # 74, completed in December of '58 and sold to GE in Waynesboro, Va. It shipped in January of '59 with great fan fare. The K&T newspaper had an article and it was also announced in all the local newspapers as the President of GE came to Milwaukee personally to accept it for GE. This was then the "official" first MM II Machining Center sold commercially. It had a GE Tube Type control. Jim Donndelinger adds: "The second machine was shipped to GE Waynesboro (GE's Control Division) without the control. Its purpose was to be a test machine for GE's K&T controls. GE also assigned two full-time employees at K&T for support and liaison for nearly two years. To my knowledge, the Waynesboro machine was never used there for production."

S/N 86800300 Order # not known, I am not sure when this machine was completed but probably in '58 or early '59. This machine was sold to GE Schenectady, NY and shipped on 05-14-59. This would be the 2nd machine shipped. It was returned to K&T after a few months, rebuilt and modified and sold to GE in Burlington, Vermont and shipped to them in December of 1960. It had a GE Tube Type Control. Jim Donndelinger tells me "The GE Schenectady machine was the only early MMII I am aware of that shipped to a production facility without a shuttle. When the machine was returned and resold to Burlington a shuttle was added (that is what the "rework" was about)."

"GE Burlington manufactured the Vulcan machine gun and other armament. The installation was pretty much of a flop until a few years later after they hired Ray Matheu away from Chandler Evans who did a great job of getting the machine running production."

S/N 86800400 Order # B01477, This machine was also completed in '58 or '59 and used at K&T and sold to Gisholt Machine Tool in Madison, Wi. in March of 1966. Shipped with a GE Tube Type Control.

S/N 86800500 Order # B01502, This machine has the same story as # 4 above. It also went to Gisholt in Madison in March of 1966. Had a GE Tube Type control.

Lot 8740 – 5 machines in Serial Number Order

S/N 87400100 Order # B01497, This machine shipped 05/59 and went to United Nuclear in Conn. I believe it was the 3rd MM II to ship to a customer. It had a GE Tube Type Control. Jim Donndelinger adds this: "The United Nuclear machines were purchased to machine the ends of fuel cells."

S/N 87400200 Order # B01501, This machine shipped 07/59 and went to United Nuclear in Conn. I believe it was the 6th MM II to ship to a customer. It had a GE Tube Type Control.

S/N 87400300 Order # B01516, This machine shipped to CVA Ltd. in England on 06/59 and was installed in their machining facility. It was the first N/C machine to be shipped to CVA. It had a GE Tube Type Control. I believe it was # 4 shipped. Peter Groves and I believe this machine is in storage at the Science Museum archives in London, England

S/N 87400400 Order # B01498, Shipped to Colt Industries in Conn. on 06/59. It had a GE Tube Type Control. I believe it was # 5 shipped.

S/N 87400500 Order # B011643, Shipped 08/59 to Raytheon in Mass. Jim Donndelinger tells me: "The machine at Raytheon, Andover was used to produce gimbal blocks for Hawk and Sparrow missiles. I was involved with that sale from beginning to end. Three of the top Raytheon manufacturing personnel attended the acceptance test. The cycle time was approximately eight minutes and all three of the representatives missed seeing it because the operation was completed before they realized it had begun. They had provided five castings for test and runoff purposes and the one used for acceptance was the last raw casting. In order to prove that the machine actually machined the part I had the operator turn off the coolant for visibility and rerun the cycle with the same part in the fixture. No chips were cut. The group was totally impressed by the repeatability and walked from the demo room to the sales office and wrote the order after confirming the P.O. number with Raytheon."

KEARNEY & TRECKER NEWS

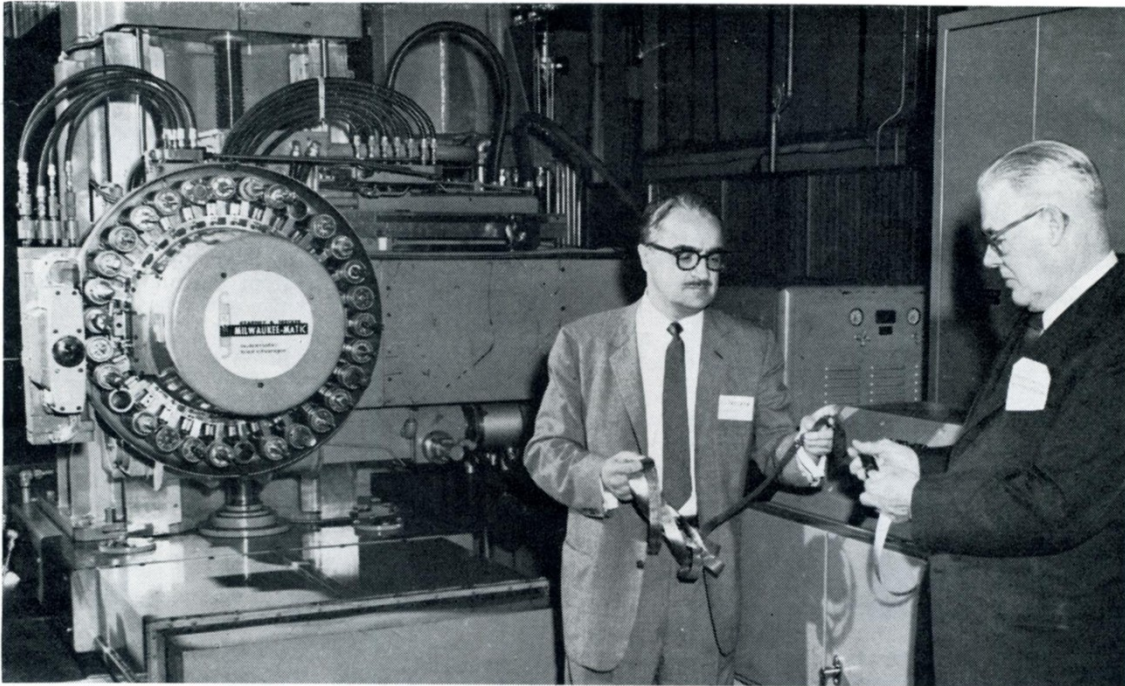
February, 1959

Visiting Officials Inspect Milwaukee-Matic



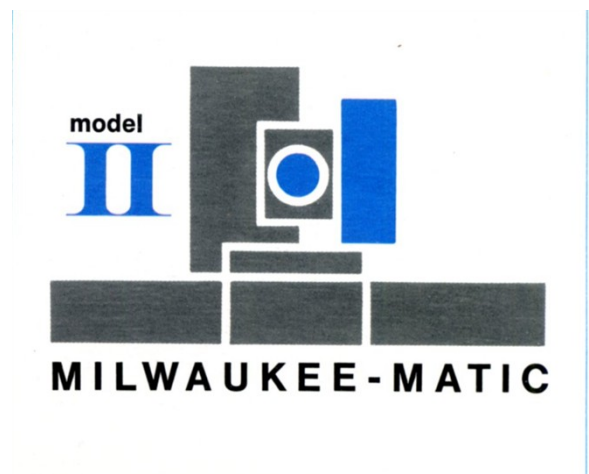
K & T PRESIDENT Francis J. Trecker directs the attention of Robert Paxton (center), president of General Electric co. to an operating highlight of the Milwaukee-Matic on a recent visit here. W. E. Brainard, chief engineer, servo-machine tool division, holds mike as he explains the program cycle. In the background, responding to Mr. Trecker's point are (left to right) Robert Klubertanz, K & T foreman, Dr. L. T. Rader, general manager of G-E special control department, and Edgar W. Trecker, a K & T director. In the photo at the right, John R. Joerger, sales manager, servo-machine tool division, discusses the drilling cycle of the machine with Mr. Paxton.

G-E President Views Milwaukee-Matic



Discussing features of the numerical control system of the Milwaukee-Matic are (left to right) Francis J. Trecker, President of K & T, and Robert Paxton, President, General Electric co. The recent demonstration was presented in conjunction with a scheduled program for Paxton on his visit to Milwaukee when he accepted delivery of the Milwaukee-Matic, the first to be built for commercial use.

G-E President Accepts Milwaukee-Matic for Advance Manufacturing Laboratory



Machine Answers the Challenge of Rising Production Costs

Robert Paxton, president of the General Electric company, made a special visit to Kearney & Trecker in January to officially take delivery of the first Milwaukee-Matic.

"Automated program controlled machine tools are one of the keys to boosting employee productivity," Paxton stated. Our experience in G-E, and we have approximately 30 modern program controlled machines in our plant operations, has proven that program controlled machines give us increased productivity at a lower cost."

Francis J. Trecker, president of K & T, acknowledged Paxton's comments by observing that the new combination machine was the most significant achievement of the machine tool industry in the last 50 years.

G-E Develops Controls

The presentation ceremony was held Friday, January 30, at the special machinery plant of Kearney & Trecker. A demonstration of the new machine was given for Paxton, his associates, and representatives of the press.

While the machine was performing all production steps of milling, drilling, reaming, boring and tapping, Mr. Trecker summed up its advantages by stating the unit would, "bridge the gap between job shop mechanization and automation.

"This machine will bring to small and medium lot size manufacturers, for the first time, the benefits that previously have been available only to certain high volume, repetitive parts manufacturer," Mr. Trecker said.

General Electric, which developed the numerical tape control system for the new machine tool, will use the machine at its

advance manufacturing laboratory at Schenectady, N. Y.

In accepting the Milwaukee-Matic, Paxton cited statistics from the U. S. bureau of labor which showed that productivity had increased only 15% since 1950, against a 50% rise in the same period in average hourly earnings.

"Every manufacturer today is faced with the challenge of rising costs without a corresponding increase in productivity," he said. "We recognize Kearney & Trecker's new machine tool as one of the important new developments in flexible automation."

The significance of this machine tool "becomes more evident," Mr. Trecker added, "when it is realized that 75% of all industrial manufacturers in this country make products in lots of 25 units or less."

Under heretofore conventional manufacturing methods, parts had to be machined in quantity (See MILWAUKEE-MATIC, Page 3)

Milwaukee-Matic

(Continued from page 1)

to justify the costs of production and reach an economic breakeven point. A high inventory usually resulted from this process.

Mr. Trecker went on to say that the machine can perform actual metal cutting work as high as 90% of the operator's time, against only 15% to 25% of the time for the average conventional machine tool. This means maximum utilization of manpower and equipment, and offers "a tremendous gain in the use of the capital investment," he added.

To date the company has received orders for 16 Milwaukee-Matics. Inquiries exceed several hundred, with more coming in every day.

This is Machine Serial Number 86800100. The first Model II Milwaukee-Matic. The machine was built in B-Bay and looks to be just south of the main east-west aisle. This photo is looking north in B-Bay.

