



S.F.Y.

SPEED

POWERFUL

ACCURACY

EFFICIENT

REVOLUTION

QUALITY



CNC

Double Column

High Speed

Engraving & Milling

Machining Center

High Speed

High Accuracy

High Efficiency

Extremely Efficient Machining At

Super-High Speeds And High Precision Of Engraving

S.F.Y. CNC Double Column Engraving & Milling Machining Center

– It is a machine tool with the function of milling & engraving.

It widely used for precision molds, precision processing and mock-up industries... It is applied to advanced capacitive molds (high-level mobile phone) 、 precision powder metallurgy molds 、 small precision steel molds 、 industries precision molds 、 injection molds 、 extruding molds 、 stamping molds 、 precision knife molds 、 zipper molds 、 precision electrode molds 、 precision shoe molds 、 precision eyeglasses molds 、 letters and pattern embossment 、 3D embossment 、 ABS precision mock-up 、 precision metal model 、 precision aluminum alloy model... Ultra-precision semiconductor wafer (chip) precision machining 、 semiconductor wafer (chip) ultra-high-accuracy drilling 、 high-precision watch case processing, high-precision watch surface machining, advanced watch movement parts processing, precision ceramic processing and drilling, advanced acrylic panel processing 、 watch case processing 、 precision drill 、 precision panel cutting 、 aluminum alloy polishing 、 large size panel cutting, etc.

Dear Customers:

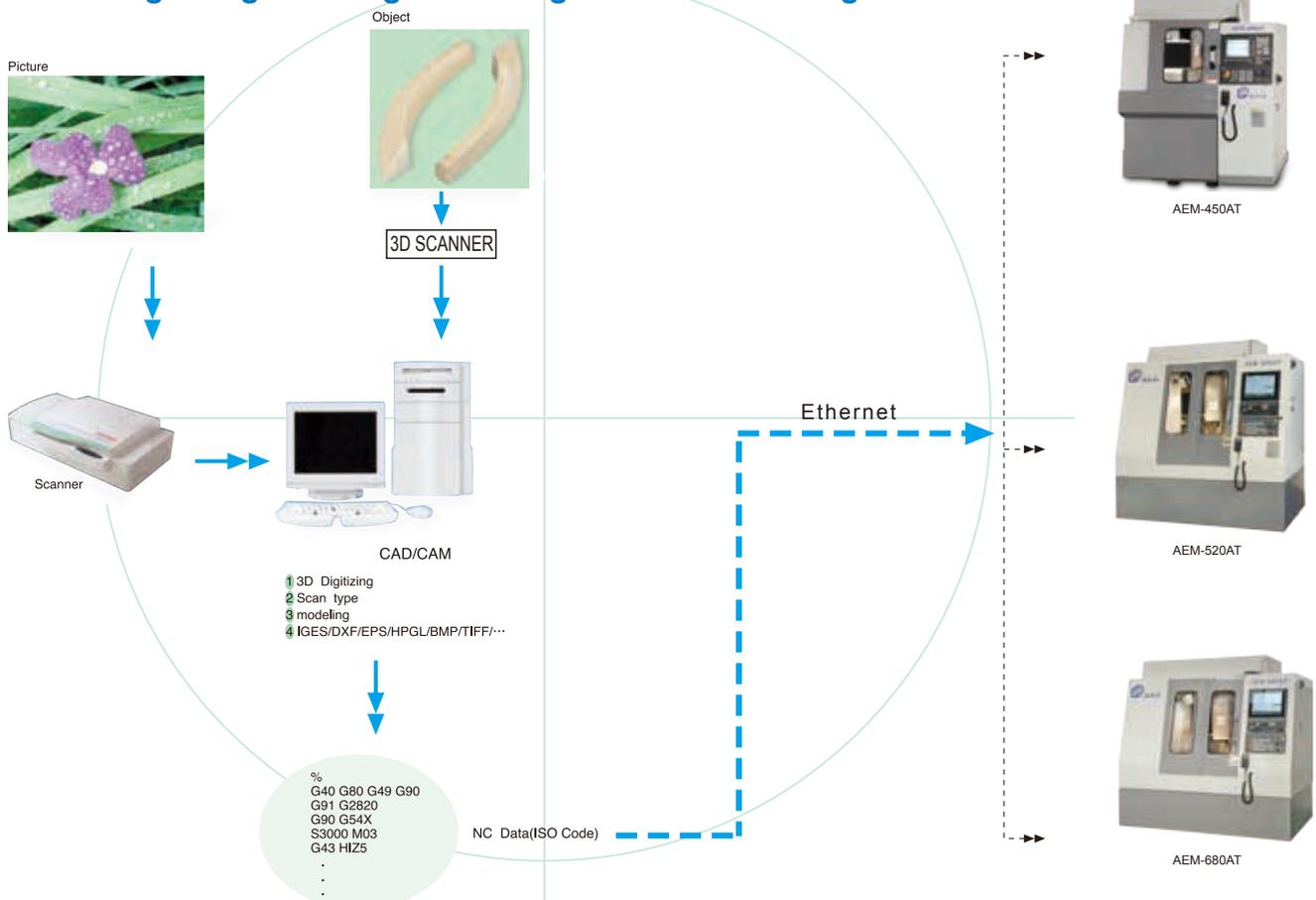
Now is the time focus on high quality, high efficient and low wastage. Do you have any problems on search for a suitable machine tool? S.F.Y. independently designed and manufactured all series of CNC double column high speed engraving machine to conform to different customers' various demands. No matter you make traditional engraving upgrade or specialized precision process, S.F.Y.' s machines, provide you high revolution, high speed and more precision than you ever had.

Features in Design:

1. High rigidity small double column structure, conform to the request of spindle high speed and machine structure high movement reaction.
2. Multiple built-in high speed spindles selecting from 30,000rpm, 40,000rpm, 50,000rpm, etc.
3. Quality controller is with Ethernet function and bigger capacity of IC memory card to improve the transmission speed, high pre-reading buffer, allowing smooth, continuous machining without breaking off.
4. Equipped with 3 axes (4 axes) AC servo motor which is supplied with the controller.
5. All serious machines are with repeat positioning accuracy within $\pm 0.003\text{mm}$.

S.F.Y. works very hard on developing and manufacturing double column high speed machines. Expecting develop and growth up with the customers. In the future, S.F.Y. still needs your instruction and support. Our utmost delight is from customers' satisfactory. Any suggestion from you is valuable and welcome.

CNC Engraving & Milling Machining Center Processing Procedure



MITSUBISHI Controller M80 / M800 Series

- Touch operation provides you unprecedented ease of use of the CNC.
- Adopting "SSS-4G Control" to realize high-speed, high-precision, and high-quality machining: SSS-4G control can optimize the acceleration and deceleration characteristics of each axis, and also greatly shorten the processing time. In addition, SSS-4G is capable of reducing machine vibration during high-speed cutting.
- This CNC offers features that bring out the full potential of each axis and minimize non-cutting time, leading to higher productivity.
- Tolerance control function provides a smooth motion within specified error tolerances. Desired machining results can be achieved using simple parameter adjustment.
- "Variable-acceleration pre-interpolation acceleration/deceleration" optimizes the acceleration in accordance with the axis motion.
- "OMR-FF control" makes servo control smoother and more accurate, enabling optimal position loop gain adjustment suited to each axis.
- Needs for automation are increasing, which can be realized more easily with lower cost.



FANUC Controller 0iMF / 31iB Series



- High-quality machining achieved by coordination between "High-precision operation in Nanometers" and "State-of-the-Art Servo Technology". Nano interpolation that computes position commands for the digital servo control unit in nanometers. Servo HRV control and Spindle HRV control for which the control cycle is made faster and FANUC servo motor with a high-resolution pulse coder are used and make up: Nano CNC System", which achieves high-speed, high-quality machining.
- Smooth tolerance control, which is easy to adjust the machining accuracy, automatically generates a smooth path within the tolerance range according to the specified machining tolerance, and easily changes the machining accuracy. Even if the continuous micro-line commands of the metal mold processing, the path can be smooth, so as to reduce the impact of the machine tool and improve the quality of the finished surface.
- Smart overlap, shortening the machining cycle time of components, even can overlapping cutting feeds and fast-moving blocks to shortening the cycle time. The amount of inner cutting error can be easily confirmed by the automatic calculation screen of the path error.
- Smart overlap, shortening the machining cycle time of components, even overlapping between cutting feeds and fast moving blocks, for shortening the cycle time. The amount of inscribed error can be easily confirmed by the automatic calculation screen of the path error.
- Meet automation requirements, control workpiece loading and unloading with G code.

SIEMENS Controller 828D / 840D Series

- Siemens controllers are equipped with Qwerty CNC keyboard with shortcut keys and a high resolution color display, can be simply operated. CNC data can be transferred quickly and easily using USB, Compact Flash (CF) card and RJ45 interfaces at the operator panel front. The fully graphical user interface and the structure of the CNC direct keys facilitate fast operation with just a few keystrokes. Turning and milling machines are operated in an identical fashion.
- Use advanced surface processing technology to display full machine functions.
- High-speed setting cycle is easy to use, and simplifies the parameterization of the mold making applications - using only a few parameters, SINUMERIK can be set to a specific processing industry and the required processing tolerances. The job includes roughing, precision machining, or semi-finishing processing.



HEIDENHAIN Controller ITNC620 / ITNC640 Series



- Very high contour accuracy and surface quality TNC controls from HEIDENHAIN are known for their jerk-smoothed as well as velocity- and acceleration-optimized motion control. In this way you can ensure optimized surface quality and workpiece accuracy.
- The pre-reading function of the TNC 620 can recognizes directional changes beforehand and adapts the traversing speed to the course of the contour and the surface to be machined. You simply program the maximum machining velocity as feed rate and, in Cycle 32 TOLERANCE, enter in the control the maximum permissible deviations from the ideal contour. The TNC 620 automatically adapts the machining to the tolerance that you define. No contour damage occurs with this method.
- Advanced Dynamic Prediction (ADP) expands the previous advance calculation of the permissible maximum feed rate profile. ADP compensates differences in feed rate profiles resulting from point distribution on neighboring paths, especially in NC programs from CAM systems. This provides, among other things, a particularly symmetrical feed rate behavior on the back-and-forth path during bidirectional finish milling, and very smooth feed rate curves on parallel milling paths.

Please refer to each controller manufacturer's specification e-book for each controller's characteristics.

CNC High Speed Engraving & Milling Machining Center AEM-1200AT \ AEM-1200ATH

◆ Adoption of world advanced controller and servo system

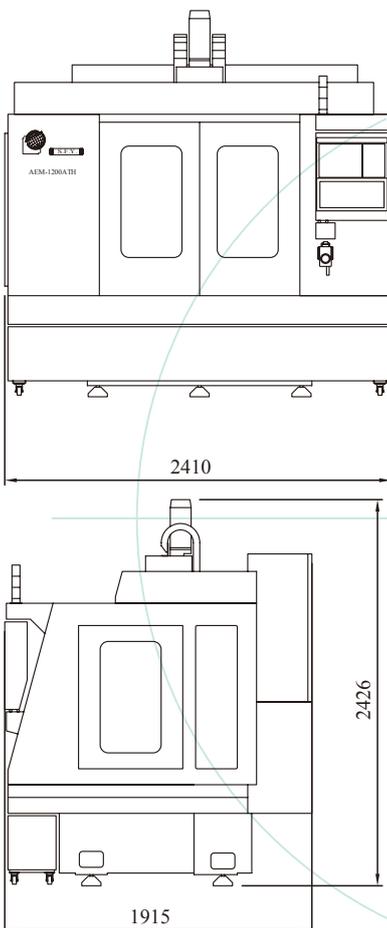
- MITSUBISHI numerical controller M80 / M800 series
- FANUC controller 0iMF / 31iB series
- SIEMENS Controller 828D / 840D Series
- HEIDENHAIN controllers iTNC620 / iTNC640 series
- Each controller has a large capacity memory, high-speed pre-reading buffer, and network transmission functions.
- Can be used for 3D 3-axis control, 3D 4 axis engraving at the same time, 3D 5 face auto turning, 4 axis engraving at the same time.

◆ With built-in HF spindle.

- All are built-in HF motor design.
- Using ceramic bearings, suitable for high-speed engraving.
- With high precision dynamic balance, suitable for precision engraving.

◆ The optional rotary table combine with the machine design completely.

◆ 40,000RPM \ 50,000RPM spindles and various controllers are available on request.



Model	AEM-1200AT	AEM-1200ATH
● Travel		
X, Y, Z Axis Travel	1200 x 600 x 200 mm	1200 x 600 x 400 mm
Spindle Nose To Table Surface	120~320 mm	130~530 mm
● Table		
Table Dimension	1260 x 620 mm	1260 x 620 mm
Max. Loading Weight	500 KGS	500 KGS
T-Slots (W x NO. x P)	16 mm x 5 x 100 mm	16 mm x 5 x 100 mm
● Spindle		
Max. Spindle Speed	30,000 RPM	30,000 RPM
Spindle Speed Range	3,000~25,000 RPM	3,000~25,000 RPM
Spindle Taper	HSK E40	HSK E40
Spindle Motor	3 KW / 4 HP	6.4 KW / 8.5 HP
● Feedrate		
Rapid Traverse of X, Y, Z Axis	20000 mm/min	20000 mm/min
● Tools		
ATC NO. Of Tools	16	16
● X,Y,Z Axis Driver	AC Servo Motor	AC Servo Motor
● Machine Weight(N.W.)	4000 KGS	4500 KGS
● Machine Size	2410 x 1885 x 2045 mm	2410 x 1915 x 2420 mm
● Power Capacity	12 KVA	17 KVA
● Air Source	6 kgf / cm ²	6 kgf / cm ²

All specifications dimensions, and design characteristics are subject to change without prior notice.

Standard Accessories

1. Coolant system for cutting
2. Coolant system for spindle
3. Coolant system for electric controlled box
4. Working light

Optional Accessories

1. Collet chuck \ collet
2. Auto tool length measurement
3. 3-axis linear scale
4. Auto voltage regulator (AVR)
5. CNC 4th or 5th axis rotary table
6. Pneumatic freezing drying