

Introduction:

Syil was started years ago out of necessity for inexpensive entry level CNC mills, this X3 mill was targeted towards home hobbyist and entry level manufactures, The X3 mill at its inception was a very successful product, and sold over 500 units worldwide.

The X3 was a retrofit to the sieg x3 manual mills, these converted CNC mills were a great concept and inexpensive. Though through trial and error we seen the difficulties in having too many manufactures adding components on to the machines, this lead to quality control issues, and electronic issues. Syil as a company was too dependent on sieg and other manufacturers, and their quality.

After the x3, we seen the global need for a this type of product; though a higher overall quality. We were so confident in the decision that syil immediately invested in to 4 floor 40,000 sq ft factory located in Yayao China.

Syil as then went in to full production and grew in size overnight, We hired many mechanical engineers, electronic engineers and production workers. All of the employees that were hired had previous experience in the CNC machinery market in china, this allowed us to quickly assemble a strong research and development team.

With this strong research and development team we felt it was imperative to focus our efforts on manufacturing our own proprietary CNC electronics. Our team search the world and found that they were not happy with the current electronics on the market and seen the benefit to producing propriety electronics.

Syil Is proud to say all CNC electronics that are installed in our machines are proprietary to Syil and only Syil , Syil does not sell our proprietary electronics to any other manufacture.

Our original loyal team are still employees of Syil china, and are enthusiastic of the direction that syil is going. Syil Currently has 2 electronic engineers on staff, And utilizes our 14 person electronic engineering firm for research and development of new electronics.

Products:



x4 plus

X4+ CNC Mill

After making so important realizations and now having our own proprietary CNC electronics we felt it was time to launch the x4 product line. For the launch of the X4 syil contracted their own casting company for the frames of the machines. Syil prides themselves on the quality of our casting, one must remember that once just because frames of the CNC table top mill looks the same (they are not). There are currently 20+ casting companies in China that cast this style of frame.

Our research and development team has checked the quality of all of these casting companies and chose the best one (not the most inexpensive).

The x4+ is one of the only CNC mills on the market today that can be used both as a CNC mill and can be used for machining in manual mode with no computer attached. This again is directly related to Syil's development of our own proprietary electronics.

To date the x4 has been a very successful product line with well over 1500 in service on the market today, We feel that this is due to , quality, accuracy and cost.

The X4 Plus utilizes the most advanced manual digital interface for manual machining capabilities with CNC precision. The user can easily switch between mm and inches. The High Resolution Screen located on the front of the machine works like a DRO, providing pertinent positioning information. This advanced proprietary interface also allow for use of the MPG in manual mode.

The highly competitive pricing of the X4 standard makes X4 a great option for those that want CNC manufacturing capabilities, but do not want to spend large amounts. On this principal, the X4 allows for effective business growth. The optional CNC 4th axis has precision table guides for placement anywhere on the milling table. The X4 options, like high speed retractable air

spindle, Power draw bar and auto tool changer demonstrate the true versatility of the X4 standard.

X4 Technical Specifications

Coordinate Table	Solid concrete polymer on a steel base, precision guides
X Travel Distance	Maximum 11" in CNC Mode
Y Travel Distance	Maximum 7" in CNC mode
Z Travel Distance	Maximum 11" in CNC mode
Repeatability	0.0004"
Max distance bottom of spindle to table	12" in CNC mode
Face mill capacity	Up to 2" - Larger tooling requires direct R8
End mill capacity	Up to 1"
Drill capacity	1" - Step drilling at slower feeds recommended for larger bit sizes.
Table effective size	21.5" x 6.25"
Spindle taper	R8
T-slot size	12mm
Machine Dimensions (L x W x H)	29.9" x 28.4" x 36.6"
Driving System	Digital Stepper motor; precision stainless steel ball screw
Lubrication and Cooling System	Lubrication – Automatic dispenser to all axis. Coolant - GCODE controlled
Machining Spindle	1 kW high-frequency GCODE controlled spindle, 300 - 3500 rpm
Control System	Mach 3
Feed Rates	Optimal - X: 150imp Y: 150imp Z: 70imp Maximum - X: 220imp Y:220imp Z:100imp
Weight	Approx. 580lbs
Shipping Carton	Wood Crate/td>

X4+ Features

- 3.1 Inch single blue LCD display screen
- Manual and CNC capable
- Onboard DRO
- Manual or CNC operated spindle
- 5 axis capable proprietary electronics
- 21.65" x 6.3" of table
- 5000rpm High Speed Precision Spindle
- 110v AC power supply
- R8 imperial spindle
- pre-installed high-speed cooling fan
- High quality casting materials
- Compact Footprint
- Class 5 double nut ballscrews
- Covered Ways
- CE and CCC Safety Certification
- Waterproof Axis plugs
- 4th axis quick disconnect switch
- Automatic lubrication system pre-installed
- pre-installed fourth axis interface
- pre-installed computer arm
- Optional SyiL Pneumatic Draw Bar System®
- Optional retractable high speed air spindle
- Optional ATC (late april)
- Optional Mach3 control MPG
- Optional Siemens 802c control
- Optional full enclosure
- Optional Servo upgrade (late april)
- Extended warranty available
- Training available



x5 plus

X5 Linear CNC Mill

Syil has designed and developed the x5 linear table top CNC mill, Syil is in total control of both the design and manufacture, this involves approval of drawings of the castings, designing and developing the electronics, testing and quality control. Everything goes through a rigorous analysis and testing process before being incorporated into the design. Manufacturing and final test is audited by people who are employees of Syil China. . Syil currently holds a patent on the design and structure of the x5 linear CNC mill.

Our English rep / dealer/ designer is generally in china every 3-4 months and works directly with in house engineers to consistently advance product lines and develop new machines, as well of our external components are engineered in and machined in Canada.

High-speed, high accuracy, high repeatability, and rapid positioning have been our motivation for developing the new X5. The new generation of the X5 series has achieved our effective business-to-market solution; a low-cost, high-precision CNC mill that the machining industry demands. We are offering a full range of models using high-speed linear rails. The benefit to linear rails include processing and positioning accuracy of less than 0.00019 inches. Syil has revised the base casting to enhance stability, and this base casting is proprietary to only Syil.

The x5 has a stylish industrial design with the capability of processing precision parts. The x5 utilizes the highest quality cast materials and high precision double nut circulating ball screws, allowing for high-precision repositioning and unmatched repeatability. The x5 footprint is small enough to allow for easy placement in a machine shop, garage or home.

Syil | 赛利

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COMPANY INFO / BUYERS_GUIDE

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Our linear guideways, carry both **ISO-9001** and **ISO-14001** certifications.

Advantages and features of linear Guideways:

(1) High Positional accuracy

When a load is driven by a linear motion guideway, the friction contact between the load and the bead is rolling contact. The coefficient of friction is only 1/50th of traditional contact, and the difference between the dynamic and the static coefficient of friction is small. Therefore, there would be no slippage while the load is moving.

(2) Long life with high motion accuracy

With a traditional slide, errors in accuracy are caused by the counter flow of the oil film. Insufficient lubrication causes wear between the contact surfaces, which become increasingly inaccurate. In contrast rolling contact has little wear; therefore, machines can achieve a long life with high accuracy. With a positioning accuracy of less than >0.00019 inches.

(3) High speed motion is possible with a low driving force

Because linear guideways have little friction resistance, only a small driving force is needed to move a load. This results in greater power savings, especially in the moving parts of a system. This is especially true for the reciprocating parts.

(4) Equal load capacity in all directions

With this special design, these linear guideways can take loads in either the vertical or horizontal directions. Conventional linear slides can only take small loads in the direction parallel to the contact surface. They are also more likely to become inaccurate when they are subjected to these loads.

(5) Easy lubrication

With traditional sliding systems, insufficient lubrication causes wear on the contact surfaces. Also, it can be quite difficult to supply sufficient lubrication to the contact surfaces because finding an appropriate lubrication point is not very easy. With linear motion guideways, grease can be easily supplied through the grease nipple / port on the linear guideway block. It is also possible to utilize a centralized lubrication system by piping the oil directly to the piping joint.

X5 Technical Specifications

Coordinate Table	Solid cast HIWIN OEM high precision linear guideways
X Travel Distance	Maximum - X axis: 11.6"
Y Travel Distance	Maximum - Y axis: 5.86"
Z Travel Distance	Maximum - Z axis: 10.47"
Repeatability	-≤0.00019"
Max distance bottom of spindle to table	12" in CNC mode
Face mill capacity	Up to 2" - Larger tooling requires direct R8
End mill capacity	Up to 1"
Drill capacity	1" - Step drilling at slower feeds recommended for larger bit sizes.
Table effective size	21.5" x 6.25"
Spindle taper	R8
T-slot size	- 3 T - Slots .47"
Machine Dimensions (L x W x H)	- 36.2" x 31.1" x 37.4"
Driving System	Digital Stepper motor; precision - double nut ballscrews P5 class
Lubrication and Cooling System	Lubrication – Automatic dispenser to all axis and ball screws Coolant - GCODE controlled
Machining Spindle	- 1.48HP/1.1KW -200~5000rpm/min
Control System	Mach 3 Optional Siemens 802c control
Feed Rates	Optimal - X: 200imp Y: 200imp Z: 75imp Maximum - X: 220imp Y:220imp Z:100imp
Weight	- 770lbs
Shipping Carton	Wood Crate/td>

X5 Features

- Ultra high precision linear rails
- 3.1 Inch single blue LCD display screen
- Manual and CNC capable
- Onboard DRO
- Manual or CNC operated spindle
- 5 axis capable proprietary electronics
- 20.47" x 6.3" table
- 5000rpm High Speed Precision Spindle
- 110v AC power supply
- R8 imperial spindle
- pre-installed high-speed cooling fan
- High quality casting materials
- Compact Footprint
- Class 5 double nut ballscrews
- Lubrication provided to ballscrew nut
- Covered Ways
- CE and CCC Safety Certification
- Waterproof Axis plugs
- 4th axis quick disconnect switch
- Automatic lubrication system pre-installed
- pre-installed fourth axis interface
- pre-installed computer arm
- Optional Syil Pneumatic Draw Bar System®
- Optional retractable high speed air spindle
- Optional ATC (late april)
- Optional Mach3 control MPG
- Optional Siemens 802c control
- Optional full enclosure
- Optional Servo upgrade (late april)
- Extended warranty available
- Training available



x6

X6+ CNC Mill

After the X5 was developed we again seen the demand a mid-size CNC, that would easily integrate in a machine shop or a home base shop. This robust CNC mill Allow users to immediately step in to production situation and due to the relatively low cost it will not take long to recover you initial investment.

The X6 Plus utilizes the most advanced manual communication interface, which allows for manual machining capabilities with CNC precision. The user can easily switch between mm and inches. This advanced proprietary interface also allows for use of the MPG in manual mode. The MPG can be used in millimetres or inches.

The X6 table size is robust and allows for the maximum working envelope of any machine in this class. If you find that you would like a extended table on the x6 this is only a \$500 option, Optional extended table 40" x 12" (allow for a 2 week lead time)

The precise gibbs and ways provide the necessary rigidity to allow for large depth of cut. The total rigidity is due to the structural design of the high quality base casting, though we have been able to maintain an elegant, compact structure.

Syil has taken into account that the consumer has been looking for a ridged CNC with the maximum working area. We feel that this expectation has been surpassed.

The X6 plus is a versatile machine allowing for processing of both small and large high-precision processing. All Syil machines utilize high precision double nut circulating ball screws, these ball screws allow for high-precision repositioning and unmatched repeatability.

The X6 plus series utilizes a z-axis liner rails rather than gibbs and ways. This greatly increases the accuracy of rapid positioning and repeatability. The benefit to linear rails are processing and positioning accuracy of less than >0.00019 inches. The Z- axis also utilizes an internal centrally mounted gas strut, aiding in the rapid positioning of the z-axis

X6+ Technical Specifications

Overall Dimensions(L x W x H)	- 49.2" x 47.2" x 80.7"
Packing Dimensions(L x W x H)	- 51.1" x 50" x 85.8"
Table size	- 31.6" x 11.8"
T Slot Dimensions	- 3 T - Slots .62"
Weight	- 1430lbs
Axis travel	- X axis: 19.6" - Y axis: 11.8" - Z axis: 9.45"
Spindle speed	- 200~3500rpm/min
Spindle drive power	- 2.0HP/1.5KW
Spindle taper	- R8/MT3/SK30
Input voltage	-220v/240v/120v AC
Repeatability	-≤0.0004"
Cutter dia	- 0.0125"~2.0"
Motor torque	- X axis motor: NM42/576IN-OZ - Y axis motor: NM42/576IN-OZ - Z axis motor: NM42/576IN-OZ
Ballscrews	-double nut ballscrews P5 class
Linear guideway	-HIWIN OEM high precision linear
Output	- plus 25pin parallel port - plus 15pin parallel port

X6 Features

- Ultra high precision Z axis linear rails
- 3.1 Inch single blue LCD display screen
- Manual and CNC capable
- Onboard DRO
- Manual or CNC operated spindle
- 5 axis capable proprietary electronics
- 31.6" x 11.8" table
- 3500rpm High Speed Precision Spindle
- 110v AC power supply
- R8/SK30 spindle
- pre-installed high-speed cooling fan
- High quality casting materials
- Compact Footprint
- Class 5 double nut ballscrews
- CE and CCC Safety Certification
- Waterproof Axis plugs
- 4th axis quick disconnect switch
- Automatic lubrication system pre-installed
- pre-installed fourth axis interface
- pre-installed computer arm
- Optional extended table 40" x 12"
- Optional power draw bar(coming soon)
- Optional retractable high speed air spindle
- Optional ATC (coming soon)
- Optional Mach3 control MPG
- Optional Siemens 802c control
- Optional full enclosure(coming soon)
- Optional Servo upgrade (late april)
- Extended warranty available
- Training available



x7 plus

X7 Plus CNC Mill

Syil has been working hard to meet the demand of all of our customers, This full linear CNC mill will meet the needs for all customers, this due to its size, full linear, and 6000 rpm spindle. This machine will be available for many future upgrades, like full enclosure, Siemens 802c control, 10 turret automatic tool changer, and more!

The x7 plus Plus utilizes the most advanced manual digital interface for manual machining capabilities with CNC precision. The user can easily switch between mm and inches. The High Resolution Screen located on the front of the machine works like a DRO, providing pertinent positioning information. This advanced proprietary interface also allow for use of the MPG in manual mode.

The X7 Plus has all the same desired specifications as the X7 standard, like high-speed, high power, high efficiency, large work envelope, high spindle torque, fast feed rate and positioning accuracy measured in microns. The X7 Plus utilizes the most advanced manual communication interface for manual machining capabilities with CNC precision, and the user can easily switch between mm and inches. This advanced proprietary interface also allows for use of the MPG in manual mode. The MPG can be used in millimetres or inches.

The X7 line of CNC mills comes standard with a 6000 rpm spindle, this gives the X7 the versatility of processing both small and large parts. The full X7 line comes standard with an oil lubrication system which provides lubrication precisely to all the linear rails increasing the accuracy, repeatability and service life of the machine.

The X7 is great for all metal types; aluminum, steel, titanium and even inconel. It is also suitable for plastics, polymers, ceramics and wood. All Syil machines utilize high precision double nut circulating ball screws, these ball screws allow for high-precision repositioning and unmatched repeatability.

X7 Plus Technical Specifications

Overall Dimensions(L x W x H)	- 41.3" x 49.2" x 66.9"
Packing Dimensions(L x W x H)	- 55.1" x 51.1" x 82.6"
Table size	- 31.4" x 9.84"
T Slot Dimensions	- 3 T - Slots .47"
Weight	- 1980lbs
Axis travel	- X axis: 15.7" - Y axis: 9.45" - Z axis: 15.7"
Spindle speed	- 200~6000rpm/min
Spindle drive power	- 2.95HP/2.2KW
Spindle taper	- R8/MT3/NT30
Input voltage	-220v/
Repeatability	-≤0.00019"
Cutter dia	- 0.0125"~2.0"
Motor torque	- X axis motor: NM42/576IN-OZ - Y axis motor: NM42/576IN-OZ - Z axis motor: NM42/864IN-OZ
Ballscrews	- double nut ballscrews P5 class
Linear Guideway	- HIWIN OEM high precision linear
Output	- standard 25pin parallel port - standard 15pin parallel port

X6 Features

- Ultra high precision linear rails
- 3.1 Inch single blue LCD display screen
- Manual and CNC capable
- Onboard DRO
- Manual or CNC operated spindle
- 5 axis capable proprietary electronics
- 31.4" x 9.84" table
- 6000rpm High Speed Precision Spindle
- 110v AC power supply
- R8/NT30 spindle
- pre-installed high-speed cooling fan
- High quality casting materials
- Compact Footprint
- Class 5 double nut ballscrews
- CE and CCC Safety Certification
- Waterproof Axis plugs
- 4th axis quick disconnect switch
- Automatic lubrication system pre-installed
- pre-installed fourth axis interface
- pre-installed computer arm
- Optional power draw bar(coming soon)
- Optional retractable high speed air spindle
- Optional ATC (coming soon)
- Optional Mach3 control MPG
- Optional Siemens 802c control
- Optional full enclosure(coming soon)
- Optional Servo upgrade (late April)
- Extended warranty available
- Training available

Market place and the Internet:

In this market one must be careful about what they read, we as a manufacture try to scan the internet to provide the truths. What we have found is that Tormach is the closest to Syil in the CNC market and both companies have many similarities. Many of the other companies in the small to mid-size CNC market are assemblers / “integrators”, these companies rely on OEM manufactures like SIEG or How-Mau

Similarities

- (1) Syil And Tormach machines are produced in China.
- (2) Both have north American Support
- (3) Both have North American Designers and engineers
- (4) Both have North American Quality control
- (5) Both design and develop in-house components for their own products.
- (6) Both have a North American warehouse and stock replacement parts for their machines.
- (7) Both have similar products, both in size and style
- (8) Both offer “indirect support” like cnczone and other forums
- (9) Both Claim to have proprietary frames
- (10) Both have good North American market place.

Differences

- (1) Syil has 9 cnc products (Tormach has 2)
- (2) Syil has 43 dealers / reps in the world (Tormach has 1)
- (3) Syil machines and are not available from any other source
(Tormach style mill is for sale in china through their manufacture)
<http://www.jinxingjichuang.com/en/ProductShow.asp?ID=153>)
- (4) Syil produces proprietary electronics (Tormach does not)
- (5) Syil in now offering either mach3 control or Siemens 802c control (Tormach does not)
- (6) Syil will be offering a 10 turret automatic tool changer(Tormach does not)

We have even compared documentation and fact from both companies:

http://www.tormach.com/document_library/TechnicalDocuments/TDCNC_Buyers_Guide.pdf

Excerpt from Tormach's Small CNC Buyer's Guide

Tormach's definition of an integrator:

"Integrators are companies who create a finished CNC mill by bringing together various components through a combination of application engineering and assembly. The main element is a complete machine frame, designed and built in China, and delivered to the integrator's facility."

Tormach - *"In China, Syil is an integrator, (meaning we just put parts together) but usually shows up through USA based resellers (see below). While they may have some influence on details of the frame design, the frames are primarily developed elsewhere. We're lead to believe that Syil and Mikini use the same frame on some models."*

Tormach: *"We don't own the factory where the frame is built, but we are intimately involved with every aspect of manufacturing. We initiate the design concept, approve the detailed drawings, advise on manufacturing, and specify final test procedures. Tormach manufactures some of the electronics, while sourcing others. Everything goes through a rigorous analysis and testing process before being incorporated into the design. Manufacturing and final test is audited by people who work for us, not the factory. They are members of our China based quality team. We use a similar process with more than a dozen different vendors throughout China. While there may be others in the future, at this time Tormach is the only USA company we know of acting as design/build supplier for personal CNC. The frame of the Tormach mill is unique to Tormach and does not appear under any other brand names."*

According to Tormach's own document and definition this then would classify themselves also as an integrator.

One of the only apparent differences between Syil and Tormach is, their OEM factory may have in house casting capabilities. And they have provided engineering specifications to the OEM manufacture.

Syil also Provides in house design and engineering for many of our own products, We currently hold a patent on the design and structure of the x5 linear CNC mill.

Syil At this time does not cast CNC frames in house, Though our research and development team has sourced out the base castings to a company that specializes in this type of casting. Syil's Table top CNC frames may appear the same as other companies, one must remember that just because frames of the CNC table top mill looks the same (they are not) there are currently 20+ casting companies that cast machine frames in china. Syil Has contracted the best casting company for our frames, not the most inexpensive.

Tormach's definition of a Design/build:

Tormach: "A design/build supplier is one who is in total in control of both design and manufacture. This involves everything from approving drawings of the iron castings to developing software configurations. It can involve sourcing components, like motors and ballscrews, and developing test conformance criteria. Tormach is a full design/build company"

Again according to Tormach's own document and definition this then would Make both Syil And Tormach similar companies, Except for the in house Casting. We feel that by manufacturing our own proprietary CNC electronics this more than compensates for the fact we do not cast in house.

Tormach: "The frame of the Tormach mill is unique to Tormach and does not appear under any other brand names. "

We at Syil are lead to believe the Tormach manufacture (Shandong Linyi Jinxing Machine Tool Company) in fact does sell their machine, under the name XK7120 though this machine comes with the option to have Siemens control.

Tormach: