

***MIYANO MODEL ABX-64TH2
10-AXIS CNC SUPER
TURNING CENTER W/ (3)TURRETS, (2) SPINDLES,
(2) Y-AXIS SLIDES & (36) REVOLVING TOOL STATIONS***



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CNC TURNING CENTER W/ (3)TURRETS, (2) SPINDLES,
(2) Y-AXIS SLIDES, & (36) REVOLVING TOOL STATIONS

ABX-64TH2

2.5" Diameter bar capacity for left spindle
2.0" Collet capacity for right spindle
5" Maximum turning length for left spindle
5" Maximum turning length for right spindle

STANDARD FEATURES

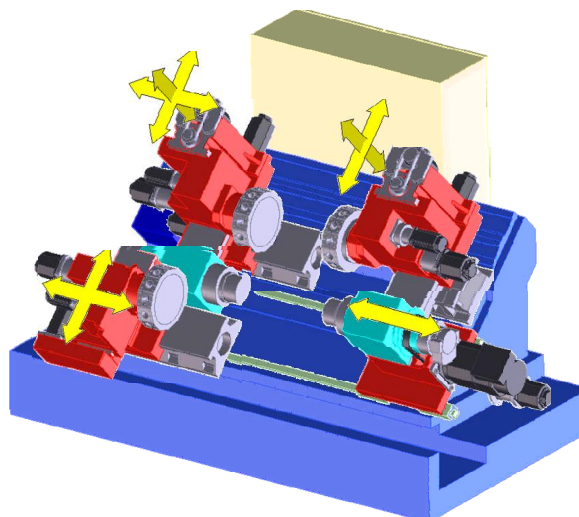
FANUC 16i-TB for 10-axis control
(2) 12 Station upper turrets by servo indexing motors that can each be tooled up to 24 I.D. tools
(1) 12 Station lower turret by servo indexing motor that can be tooled up to 24 I.D. tools
Left spindle for first operation work
Right spindle for secondary operation work
40 to 4,000 RPM left spindle speed
50 to 5,000 RPM right spindle speed
20 Horsepower Fanuc AC left spindle drive motor
10 Horsepower Fanuc AC right spindle drive motor
0.25 Second/station turret indexing (lower & upper turrets)
Bi-directional turret indexing
Left & right spindle synchronous control
Full C-axis left & right spindle control
Y-axis slide on both upper turrets
Revolving tool attachment possible for live tooling on every station for all three turrets
40-4,000 RPM revolving tool speed on all three turrets
Servo driven revolving tools make rigid tapping possible with upper and lower turrets
3.4 HP drive unit for upper & lower turret live tooling
H-S26 left spindle stationary collet chuck system for bar work
H-S22 right spindle stationary collet chuck system for bar work
Automatic work piece transfer from left to right spindle
Right spindle provides the capability to finish both sides of a work piece from bar stock
10-Axis simultaneous machining
First and secondary operation can be performed simultaneously
Chuck work can be machined simultaneously by both the left and right spindles
One turret can be indexing while the other two are machining parts to reduce idle time
Cycle time of a complicated part can be reduced by as much as 65 % compared to 3 -Axis machine
Increased productivity machining over 2, 3, and 4 axis machines
Free position indexing of each cutting tool
45 degree slant bed design provides extra rigidity, better chip flow, & minimizes heat distortion
Left & right spindle orientation for hexagon and square bar work part transfer
Set of Miyano tool holders
Exclusive left and right spindle combination tool holders reduce turret indexing
Inner right spindle high-pressure coolant with air purge
1-Year warranty on machine
2-Year warranty on Fanuc control

STANDARD ACCESSORIES

Signal tower – 3-Step
Spindle disk brake for both left and right spindles
Flood coolant system
High-pressure coolant system
Air blow system for left spindle
Air blow system for right spindle
Programmable swing type parts catcher (controlled by servo motor)
Part conveyor
Work ejector (Air cylinder type) for right spindle
Cut-off confirmation by spindle torque check using M-Code
Manual handle retrace
Total & preset counter
Automatic lubrication system
Built in work light
Filler tube assembly
Splash guard door with safety interlock
Hand tools and toolbox
Instruction manual
Fanuc control manual
Parts list
Electrical diagram
Leveling screws and plates

OPTIONAL EQUIPMENT

Long shaft work (LSW)
Revolving tools for drilling, milling, and tapping for upper and lower turrets
6" Diameter 3-jaw chuck for left & right spindle
6" Diameter 2-jaw chuck for left & right spindle
Chip conveyor (Hinge type) Low (Required with LSW)
Chip conveyor (Hinge type) (Goose neck) (Not used with LSW)
Coolant level switch
460 Volt transformer
Additional part program storage
High-speed bar feed systems
Graphic display
Chip cart
Automatic power shut off



MIYANO FANUC 16i-TB CONTROL
STANDARD FEATURES

10-axis control
Upper and lower turrets balance turning
Synchronized mix control
Simultaneous control of two axes in the same direction (e.g. upper Z1 with right spindle Z3 -axis)
Controlling two turrets working on a part from two different directions
Least input increment 0.0001 inch, .001mm, .001deg
Least command increment 0.0001 inch
Machine lock on all axes
Interlock
Emergency stop
Expanded stored stroke check 1
Tool post interference check
Chamfering on/off
Backlash compensation
MDI operation
Sequence number search
Program number search
Dry run
Single block
Manual handle feed rate x1, x10, x100
Positioning (G00)
Linear interpolation (G01)
Circular interpolation (G02, G03)
Dwell (per second) (G04)
Skip function (G31)
Reference point return (G28)
Reference point return check (G27)
2nd reference point return check (G30)
Optional block skip (8 Total)
Feed per minute inch/min (G98)
Feed per revolution inch/rev (G99)
Automatic acceleration/deceleration
Feed override 0 to 150% (10% Steps)
Manual continuous feed
Thread cutting, synchronous feed (G32)
Reset
Feed hold
Automatic coordinate system setting
Decimal point input
Programming input of offset data (G10)
Chamfering/corner R control
Tool nose radius compensation (G40, 41, 42)
Canned cycles (G90, 92, 94)
Multiple repetitive cycles (G70-G76)
X-axis diameter/radius programming



Manual pulse generator
C-Axis control for both spindles
Custom macro B
Waiting codes (M900-M999)
Coordinate setting (G50)
Counter input of offset value
Radius designation on arc
EIA/ISO automatic recognition
Miscellaneous function M-3 digit
S-4/S-5 digit command single analog output
Constant surface speed control (G96)
Spindle speed orientation 50 to 120%
Tool function T2+2
Tool offset memory +6 digits, 32 pairs + 32 pairs + 32 pairs
Tool geometry/wear offset
Direct input of offset value
Part program storage length 131 Ft. + 131 Ft. + 131 Ft.
Registered programs 63 pieces + 63 pieces + 63 pieces
Memory protect
Multi-language display English
Run hour and parts counter display
Display of spindle speed and T code at all screens
Actual speed display
Self-diagnosis function
Status display
Reader/puncher interference by RS-232C
Memory card interface
10.2" CRT/MDI (Full key type) high-resolution monochrome
Manual handle retrace
Soft key interlock release
Polar coordinate interpolation (G12.1, G13.1)
Cylindrical interpolation (G07.1)
Start interlock
Alarm display
Background editing

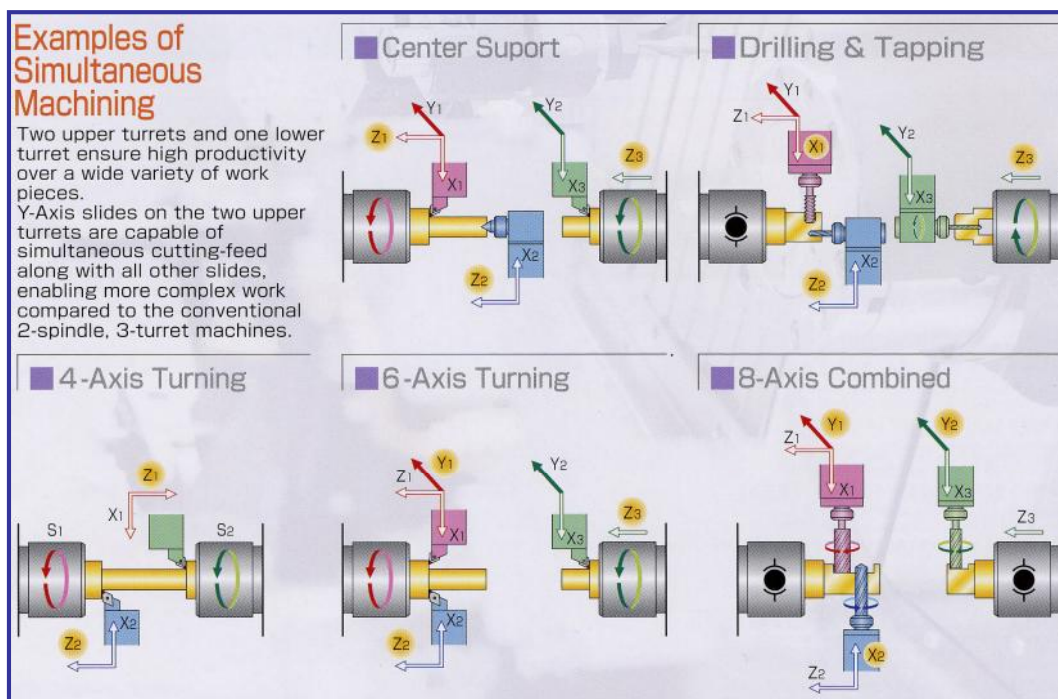


(2) UPPER AND (1) LOWER TURRET

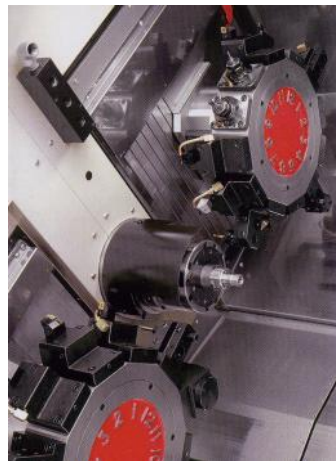
Three independently controlled turrets provide 10-axis machining capability. These three turrets are identical size and capacity, and can accept revolving tools on all stations. There are (2) upper turrets and (1) lower turret. Each turret has 12-stations for machining. Typically the upper turret on the left side will machine the first operation on the left spindle together with the lower turret. In addition, the upper turret on the right side is responsible for backside operations on the right spindle to finish the part complete. The movement of the turrets is coordinated by using M900 -M999 waiting codes in each program.

There are many combinations of machining operations possible with this (3) turret design. Here are just a few examples.

- Center support work for long parts can be achieved by using lower turret with live center for supporting work on left spindle while upper left turret is turning O.D. of the supported part all while the upper right turret is working the right spindle.
- Live tool work by both the upper left and lower turret can be performed on the left spindle which is locked down by the spindle brake all while the upper right turret completes live tool operation on right spindle.
- Turning 4-Axis simultaneously can be accomplished by upper left and lower turret both working in X & Z at the same time on a work piece which is supported by both spindles which are synchronized in RPM.
- Turning 6-Axis simultaneously is possible by upper left and lower turret both turning 2 -Axis profiles on the left spindle while the upper right turret is machining 2 -Axis profile on the right spindle.
- Machining 10-Axis combined is possible by locking both spindles with disk brakes. The upper left turret can mill in X, Y, & Z on the left spindle at the same time the lower turret mills in X & Z on the left spindle. Meanwhile the upper turret on the right side mills in X & Y on the right spindle, which simultaneously moves in Z.



Cutting tools can be mounted on both sides of the upper left and lower turrets for machining on both the left and right spindles. Additional cutting tools can be mounted on one side of the upper right turret for machining exclusively on the right spindle. These high quality tool holders and flexible tooling selection combined with free position turret indexing, allow each cutting tool on all three turrets to be indexed anywhere around the part, and permits more efficient programming that can substantially reduce cycle time.



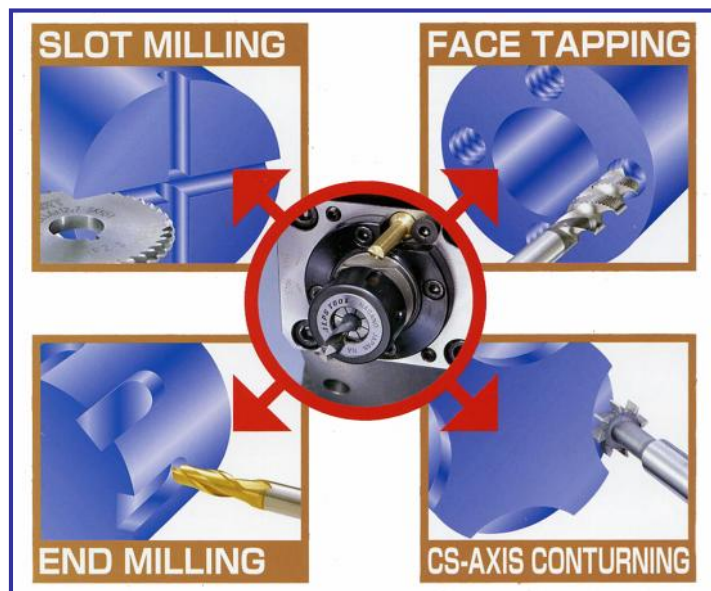
All three turrets provide fast station-to-station servo indexing of 0.25 second due to the new non-lift curvic coupling design. Bi-directional turret indexing allows the turrets to automatically take the shortest path to the next selected cutting tool station. The turrets are interference free, providing ample clearance between each tool station and the work piece, allowing any combination of O.D. or I.D. tools to be used.

Y-AXES SLIDES

Y-axis machining on both spindles by upper turrets at the same time is possible on the ABX-64TH2. Pure Y-axis movement occurs along each slide, which is perpendicular to the slant base. Similar to the other axes, a ball screw and servomotor through the use of the CNC programming control drive these new slides. Now, more complicated machining from the bar is possible to be able to finish the parts complete in one set up.

REVOLVING TOOL ATTACHMENT UPPER AND LOWER TURRETS (RTA)

The revolving tool attachment allows multiple machining operations to be performed by using live revolving tools attached to all three turrets. The optional revolving tools allow cross/end drilling, tapping, and milling operations to be performed on a part to finish it complete in one set-up on the machine. Parts are completed in one continuous cycle. All three turrets accept up to 12 revolving tools each, providing a wide selection of machining capability on the left and right spindles. Both spindles are equipped with C-axis spindle positioning, which provides indexing in 0.001-degree increments. Programmable revolving tool spindle speed range is from 40 to 4,000 RPM for all three turrets. A 3.4 horsepower Fanuc servo drive motor is used on all three turrets. Servo driven revolving tool motors make rigid tapping possible with all three turrets.



LEFT AND RIGHT SPINDLE C-AXIS CONTROL

The left and the right spindle are equipped with a C-axis control for 10-axis machining. The C-axis combined with the right spindle work transforms the machine into a MANUFACTURING CELL that produces complex parts in one set up. The spindle's C-axis movement can be combined with either X or Z-axis to perform milling operation on the diameter of the part. The spindle C-axis movement is controllable from 0.001 degree to 360 degree at any desirable feed rate. Complex machining can be performed in one set up on the part eliminating the need for a secondary operation. Polar and cylindrical coordinate is standard with the C-axis to program complicated contours by giving a minimum point, almost eliminating the need for a CAD system and complex calculations.

SLANT BED DESIGN

The 45-degree slant bed design provides rigidity for heavy cutting and large swing for unobstructed machining. Tooling is easily accessible for fast set-up. Part loading and unloading is performed quickly and easily with less operator fatigue. All chips flow freely downward into the chip bed area without interfering with parts cutting.

The head stock construction and slant bed design are free from heat influence and distortion. The spindle headstock, turret slides, and spindle drives are mounted on the same 45-degree composing plain. This construction heat-symmetry against the spindle centerline minimizes dimensional fluctuation caused by heat rise.

LEFT SPINDLE DRIVE

A 20 horsepower maximum rated Fanuc AC wide range spindle drive motor with a spindle speed range from 40 to 4,000 RPM provides an infinitely variable spindle speed selection through direct RPM spindle programming. The AC spindle drive motor allows powerful cutting throughout the RPM range.

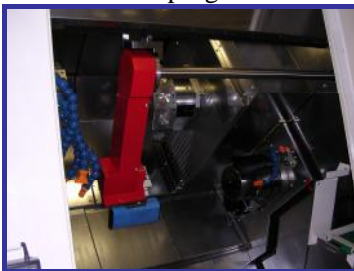
RIGHT SPINDLE AND AIR CYLINDER TYPE WORK EJECTOR

The right spindle is powered by a 10 horsepower Fanuc AC spindle drive motor with an infinitely variable spindle speed range from 50 to 5,000 RPM. The right spindle is mounted on a heavy-duty hand scraped, hardened, and ground slide. An additional servomotor, that allows precise positioning along the Z3-axis, positions the slide.

Upon completion of the first side of a part by the left spindle, the right spindle synchronizes to the same RPM as the left spindle for pickup and then cutoff operation is performed. This operation can also be performed with constant surface speed command, allowing improved tool life. The right spindle allows various secondary operations such as turning, boring, facing, and threading (single point and tapping) to be completed on the cutoff side of the part. Inner right spindle coolant and air purge helps flush the chips out during machining which is especially helpful when parts have a through hole. After machining is completed, a CNC controlled pneumatic air cylinder type work ejector ejects the finished part out of the right spindle into a parts catcher. Therefore, maintaining complete machining of the part in one set up. Consequently, first and second operation machining is completed at the same time, thereby reducing total part cycle time by as much as 65%.

PROGRAMMABLE PARTS CATCHER WITH PARTS CONVEYOR

The parts conveyor operates in conjunction with the programmable servo type swing arm parts catcher to maintain uninterrupted bar work production. After machining the backside of the workpiece on the right spindle, the part is ejected into the parts catcher. The catcher then places the finished workpiece onto the conveyor where it is transferred outside of the machine into a parts pan. The servo parts catcher can be programmed to traverse to the main or sub spindle.



FLOOD COOLANT SYSTEM

Two standard coolant pumps are provided for coolant flow over the left and right spindle to help flood the workpiece with coolant. The pump supplies a pressure of 60 PSI.

HIGH PRESSURE COOLANT SYSTEM

Five 160-PSI high-pressure coolant pumps are provided to feed various components, such as through the right spindle inner coolant, chip flow control, and each turret for the station in use to the tip of the cutting tool. Each program controls the coolant start/stop. The high-pressure coolant system operates independently from the flood coolant system for maximum chip flushing. This high pressure is supplied to help increase tool life to reduce machine down time.

LEFT AND RIGHT SPINDLE AIR BLOW

Left and right spindle air blow is standard on the ABX Series. Using a blast of air, chips are removed from the work piece and the chuck face.

TOTAL AND PRESET COUNTER

The total and preset counter allows a pre-determined number of parts to be manufactured and then stops the machining cycle. The preset counter can also be used as an aid in production control and tool life management. The total counter will maintain a record for the number of parts machined in that production run.

TOOL SETTER

The Miyano ABX Series comes standard with a tool setter. Using this feature, the operator can easily set any tool's geometry allowing for shorter set up time.



MANUAL HANDLE RETRACE

Manual handle retrace is provided by Miyano for the ABX -64TH2. This feature allows the setup person a means to easily prove out all three programs (for making one part) by manually moving the pulse generator clockwise to go forward or counterclockwise to go backwards in the program. All axis movements and turret indexing will take place according to the programs as the pulse generator is rotated by the operator. This allows the setup person to check all tooling clearances as well as make sure all movements look good before running cycle full speed.

CUT-OFF CONFIRMATION

Cut-off confirmation feature allows the machine to physically check that the part cut -off has actually occurred before the right spindle goes back to home position. By commanding an M-Code the machine will rotate one spindle and checking that there is no torque being applied to the other spindle. If for any reason the part has not been cut-off, due to cut-off tool breakage for example, the cut-off confirmation feature will immediately stop the machining cycle.



LEFT AND RIGHT SPINDLE SYNCHRONOUS CONTROL

Both spindles are synchronized through out the RPM range during the pick off operation. This feature allows the transfer of parts from left to the right spindle without any marking on the part. Round or hex material can be transferred without stopping both spindles therefore reducing machining time.

COLLET SYSTEM

The left spindle accepts the H-S26 collet pad system, while the right spindle utilizes the H-S22 pad system. The left and right spindle can also be equipped for other optional collet systems.

This collet system is a stationary (dead length) type to allow for the smooth transfer between the two spindles while maintaining the parts accuracy.

MIYANO FANUC 16i-TB CONTROL

Miyano simplifies 10-axis programming with the latest control technology by using three separate programs, one for each upper turret and lower turret and the simultaneous operation of these programs are coordinated with waiting M-codes.

Miyano's work coordinate system setting function automatically sets the tool indexing position for all three turrets, simplifying programming and tool set-up, and reducing machining time. Free position turret indexing allows each turret station to be indexed anywhere along the slide axes, either in front or alongside of the work piece. By specifying only the tool number (T-code) and the indexing position in the program, the tool indexing position is automatically set. Cutting tool approach distance is shortened and chip-to-chip time is kept to a minimum.

Tool geometry offset programming provides easy programming and tool setting on the machine. Tool settings have been simplified and setup time reduced. The operator simply takes a trial cut on the work piece, measure the cut diameter or length, and inputs this measurement value by MDI (Manual Data Input) to the CNC control. This establishes the reference of the actual tool relative to the part zero point.

Standard control features include 10-axis programming, constant cutting speed control, decimal-point programming, corner chamfering and corner rounding, multiple repetitive cycles, canned cycles, manual pulse generator, tool nose radius compensation, RS232C (Serial) interface, and memory card interface for remote data input and output.



STANDARD TOOL HOLDER PACKAGE

Qty.	Part No.	Description
(14)	1X78010A	Turning Holder A
(2)	1X78020A	Turning Holder B
(6)	1X78040A	Double Plain Head
(2)	1X78050A	Turning & Plain Holder
(8)	1X78420A	Double Plain Head B
(1)	2X78230A	Cut-off Tool Holder
(1)	2X78240A	Cut-off Tool Holder
(2)	6F788300	Plain Holder B
(2)	6P788050	Sleeve 1-1/2"
(3)	5W78500A	Round Hole Bushing (1/4")
(3)	5W78510A	Round Hole Bushing (3/8")
(3)	5W78520A	Round Hole Bushing (1/2")
(3)	5W78530A	Round Hole Bushing (5/8")
(3)	5W78540A	Round Hole Bushing (3/4")



Turning Holder A
(1X78010A)



Turning Holder B
(1X78020A)



Double Plain Head
(1X78040A)



Turning & Plain Holder
(1X78050A)



Double Plain Head B
(1X78420A)



Cut-off Tool Holder
(2X78230A)



Cut-off Tool Holder
(2X78240A)



Plain Holder B
(6F788300)



Round Hole Bushing
(15 Piece Set)



Sleeve 1-1/2"
(6P788050)

Note: Actual tool holders may differ slightly from those shown above. Tool holders shown above accept 3/4" x 3/4" shank & 1.0" diameter tooling.

OPTIONAL REVOLVING TOOLS

Part No.	Description	Drill/Mill Collet / (Max Capacity)	Tapping Collet
2X785600	X-Drill/Mill	ER20 / (13mm)	ET1-20
2X785500	Z-Drill/Mill	ER20 / (13mm)	ET1-20



X-Drill/Mill
(2X785600)



Z-Drill/Mill
(2X785500)

Note: Actual revolving tools may differ slightly from those shown above.

CHUCK (OPTION)

The ABX series can be equipped with an optional 6" diameter high-speed 2 or 3-jaw hydraulic chuck for the left spindle. The right spindle can be optionally equipped with a 6" diameter high-speed 2 or 3-jaw hydraulic chuck. Changeover from bar work to chuck work can be performed in 20 minutes. Concentricity is accurate to .0005" T.I.R. and can be operated up to 4000 RPM.

COOLANT LEVEL SWITCH (OPTION)

The optional coolant level switch will monitor the machine's coolant level during operation. If the coolant falls below a sufficient level for proper tool and part cooling, the machining cycle will stop.

CHIP CONVEYOR (OPTION)

A chip conveyor is available to provide automatic chip disposal. When equipped with the chip conveyor, chips are channeled out of the machine into an optional chip cart to provide a clean machining environment.

HIGH SPEED BAR FEED SYSTEMS (OPTION)

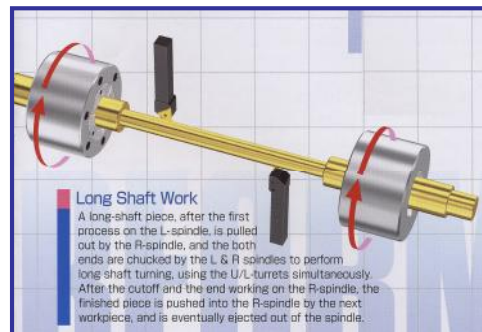
A variety of hydrodynamic bar feed systems can be used with the ABX-64TH2. Refer to our recommended selection of bar feeders.

LONG SHAFT WORK (LSW) (OPTION)

The long shaft work option allows up to 42mm (1 -5/8") diameter parts to be completely machined from bar stock in a continuous single operation. The shaft is swallowed through the right spindle and transferred into a long shaft bucket to the outside of the right spindle. Depending on the cutting condition, the machine is capable of machining a shaft for up to the length of the material supplied.

Certain lengths may require modification of LSW tray. Contact Miyano Sales department for further information.

* Picture is used to show LSW function only.
May not depict actual LSW for ABX.



MACHINE INSTALLATION

At your plant facility machine installation and start-up service is provided by a factory-trained service engineer who will assist in the set-up and production of your first part run.

WARRANTY

Miyano warrants the machine, FANUC control and the products furnished to be free from defects in material and workmanship for one year (2 years on FANUC control) from date of delivery to the original purchaser if given normal and proper usage, care and maintenance.



MODEL ABX-64TH2 SPECIFICATIONS

BAR WORK

Round collet capacity left and right spindles 2.5"

CHUCK WORK

Chuck size (left spindle) 6"
 (right spindle) 6"

WORK LENGTH

Maximum turning length left and right spindles 5"

MACHINING CAPACITY

Maximum turning diameter (left spindle) 6.65"
 (right spindle) 6.65"
 Maximum turning length 5.0"
 Swing diameter of turret
 Upper left 20.8"
 Upper right 20.8"
 Lower 20.8"

LEFT SPINDLE

Collet capacity 2.5"
 Spindle speed range (infinitely variable) 40 to 4,000 RPM
 Variable speed steps Direct drive
 Spindle drive motor (30 minute rating) AC 20 HP
 Motor Type AC type
 Spindle nose A2-6

RIGHT SPINDLE

Collet capacity 2.0"
 Spindle speed range (infinitely variable) 50 To 5000 RPM
 Spindle drive motor (variable speed) maximum rating AC 10 HP
 Spindle nose A2-6
 Slide movement (Z3-axis) NC Control
 Slide stroke (Z3-axis) 25.59"
 Rapid traverse rate (Z3-axis) 1181 IPM
 Thrust force (Z3-axis) 1,022 Lbs.
 Type of slide Linear Guide

UPPER TURRET LEFT

Number of tool stations	12
Slant bed	45 Degrees
Maximum slide stroke (X1-axis)	7.48"
(Z1-axis)	11.81"
(Y1-axis).....	+/-1.57"
Rapid traverse rate (X1-axis)	630 IPM
(Z1-axis)	787 IPM
(Y1-axis).....	472 IPM
Turret indexing time	0.25 Sec/pos
Turret indexing type	Bi-directional
Thrust force (X1, Z1, Y1)	(1,700Lbs., 1,278Lbs., 1,700Lbs.)
Slide type	Box way

UPPER TURRET RIGHT

Number of tool stations	12
Slant bed	45 Degrees
Maximum slide stroke (X3-axis)	7.48"
(Z3-axis)	25.59"
(Y3-axis).....	+/-1.57"
Rapid traverse rate (X3-axis)	630 IPM
(Z3-axis)	1181 IPM
(Y3-axis).....	472 IPM
Turret indexing time	0.25 Sec/pos
Turret indexing type	Bi-directional
Thrust force (X3, Z3, Y3)	(1,700Lbs., 1,022Lbs., 1,700Lbs.)
Slide type	Box way

LOWER TURRET

Number of tool stations	12
Slant bed	45 degrees
Maximum slide stroke (X2-axis)	7.48"
(Z2-axis)	19.6"
Rapid traverse rate (X2-axis)	630 IPM
(Z2-axis)	787 IPM
Turret indexing time	0.250 Sec/pos
Turret indexing type	Bi-directional
Thrust force (X2, Z2)	(1,700Lbs., 1,278Lbs.)
Slide type	Box way

PARTS CATCHER

Maximum part diameter	2.0"
Maximum part length	5.0"

REVOLVING TOOL ATTACHMENT TURRETS

Number of positions (upper left & upper right & lower turret)	36
Drive motor maximum rating (upper turret)	AC 3.4 HP
Speed range (infinitely variable)	40 to 4000 RPM
Revolving tool axis	X and Z
Maximum drill diameter capacity	(1/2")
Maximum tapping capacity	(5/16"-18 UN)

C-AXIS SPINDLE CONTROL (LEFT & RIGHT)

Spindle positioning	360 Degrees
Minimum command increment	0.001 Degree
Positioning system	C-axis control built in motor
Simultaneous 2-axis movement	(X-C) or (Z-C)
C-axis repeatability	+/-0.017 Degree
C-axis positioning accuracy	+/- 0.2 Degree
Rapid feed rate.....	33 RPM

CHUCK (OPTION)

Chuck diameter (main spindle)	6"
(Sub spindle)	6"
Type	Hydraulic
Model	Howa & Kitagawa
Maximum speed	4000 RPM
Concentricity total indicator reading.....	0.0005"

TURRET TOOLING

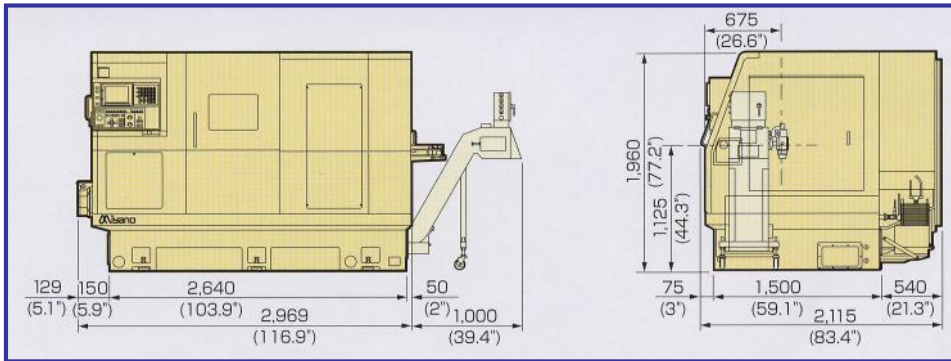
Cutting tool size (both upper turret)	3/4" Sq.
(lower turret)	3/4" Sq.
Tool holder diameter (both upper turret)	1"
(lower turret)	1"

GENERAL SPECIFICATIONS

Power required	60 KVA
Voltage required	220 Volts + 5% -10% @60HZ
Amperage required	175 Amp
Compressed air required	80 PSI
Lubrication tank capacity	(1 gallon)
Hydraulic tank capacity	(2.6 gallon)
Coolant tank capacity	(52.8 gallon)

MACHINE DIMENSIONS

Width 84.1”
Height 77.2”
Length 131.3”
Length (including gose neck chip conveyor) 159.7”
Machine weight 21,164 Lbs.



Miyano Machinery USA Inc.
Quote
ABX-64TH2 (C-RTA)
January 2008
20

TERMS: 10 % down with order. Balance net 30 days after delivery.

Order: The end user customer is to place their purchase order to:
Miyano Machinery, Inc.
940 N. Central Ave.
Wood Dale, IL 60191

FOB: Point of shipment – Wood Dale, IL or US Port of Entry

Specifications and prices are subject to change without notice.

The fulfillment of accepted orders is contingent on accidents, fire, strikes, or other causes beyond our control.

Thank you for the opportunity to quote on your machining requirements.

Sincerely,

Miyano Machinery, Inc.

