

YASDA PRECISION CENTER



CNC 5 AXES CONTROL

**H30i**

**YASDA**

YASDA PRECISION TOOLS

450

**5 AXES**



Bulletin No. H30i99004-E

**H30i**



# DYNAMIC, STREAMLINED DESIGN



S-H30i99001A

**A fully integrated machine tool designed for high-precision, simultaneous 5-axis machining in one chucking set-up.**

The **H30i**, a uniquely integrated machine tool with CNC 5-axis control, based on the YASDA H 40 High-speed Machining Center, provides reliable, high-precision machining, in one set-up for a variety of applications.

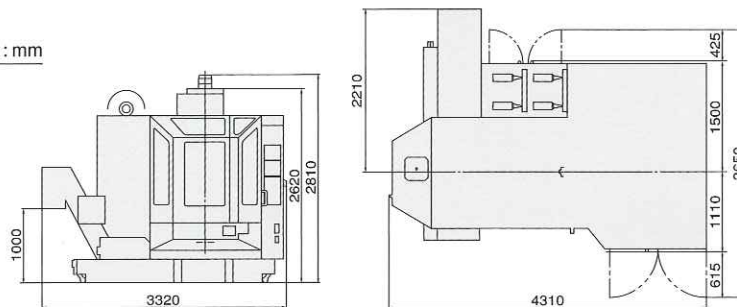
The machine allows for precision machining from five faces to complex shapes, all in a compact, space-saving footprint, that employs the latest technology for quick response and high reliability.

The **H30i** performs consistent, high-speed, long-cycle machining for a variety of materials, including aluminum, die cast, and steel, resulting in increased profitability and achieving new levels of machining quality.

Equipped with :

- Optical scale feedback system, which relays highly precise positioning information from X, Y, Z, A and B-axes (Resolution : 0.001mm, 0.001°)
- Curvic coupling design for pallet chucking.
- ATC and APC servo mechanism employed for quickness and reliability.
- Rapid traverse rate : 40m/min.

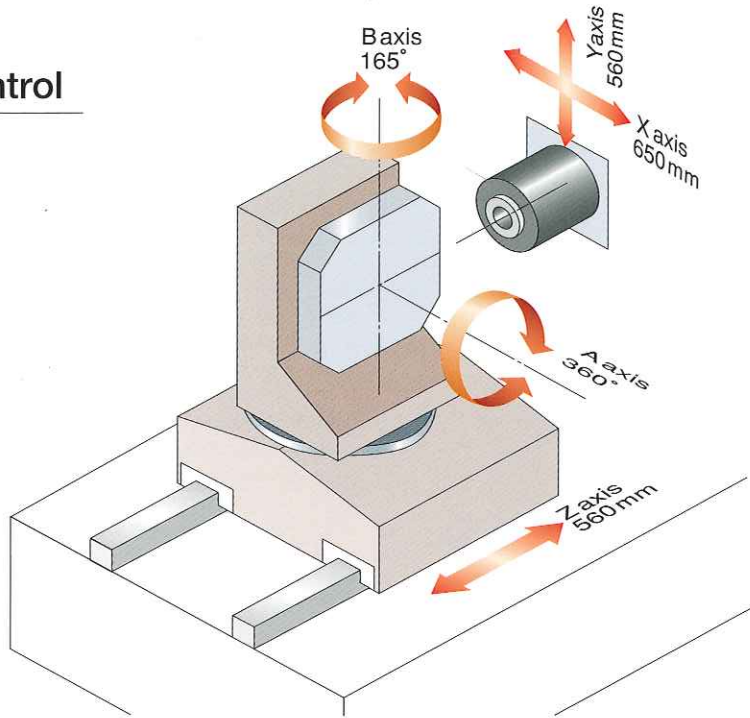
**OUT LINE** unit : mm





# INNOVATIVE MECHANISM

## H30i 5-axis control



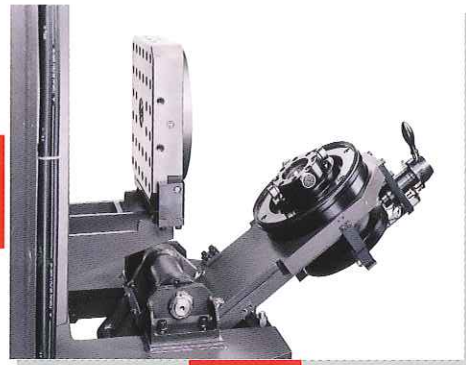
## Automatic pallet exchange from set-up to machining

1 L/U stand under set-up

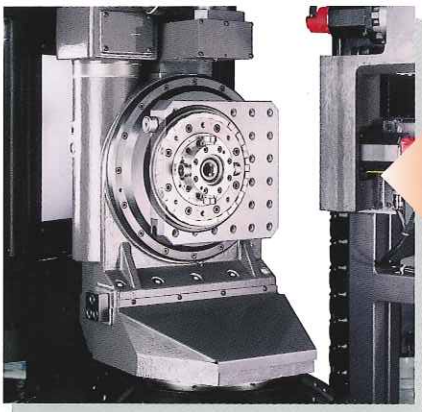


S-H30I99002A

2 Transferring pallet to changer

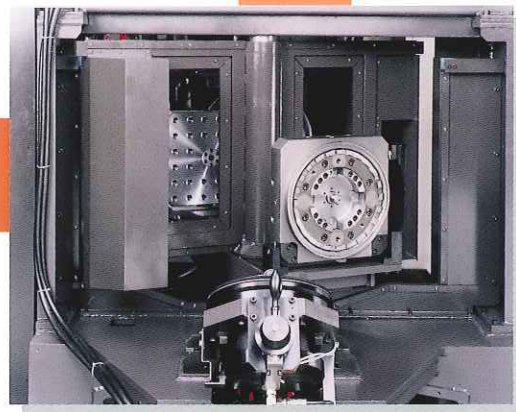


S-H30I99003A



S-H30I99005A+006A

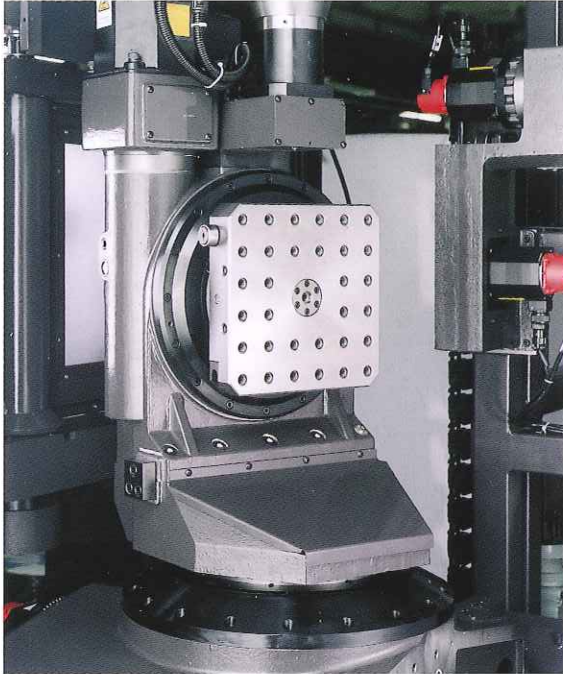
4 Exchange complete



S-H30I99004A

3 Exchanging pallets

# TABLE High-precision NC rotary tables are equipped on both the A and Baxes.



S-H30I99006A

The NC rotary table employs a ① highly precise and rigid, double-lead worm drive system, and a ② closed loop feed back system using highly precise optical scales for ultimate positioning control and indexing accuracy.

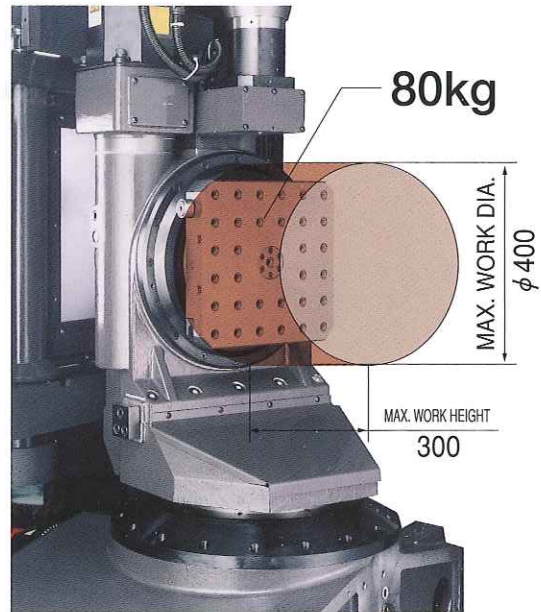
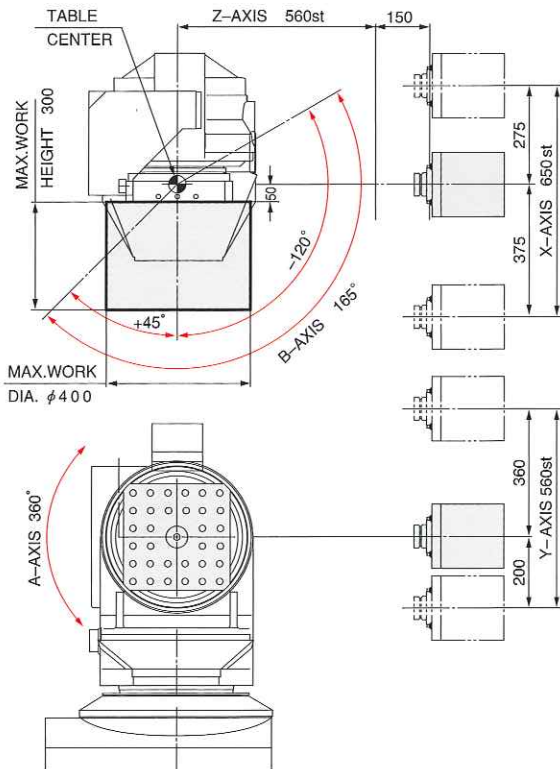
③ Large-diameter and highly rigid, cross-roller bearings are employed for smooth and reliable rotary action.

In addition, the NC rotary table employs a disc brake system that provides precise rotational accuracy and excellent dampening capability for heavy-duty cutting and precision machining.



S-60N-91012A

## WORK DIMENSIONS



S-H30I99006A

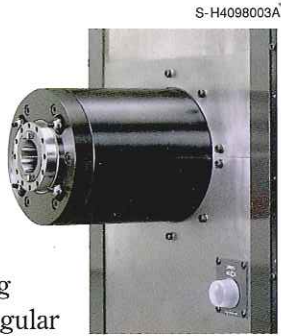


# COMPONENTS

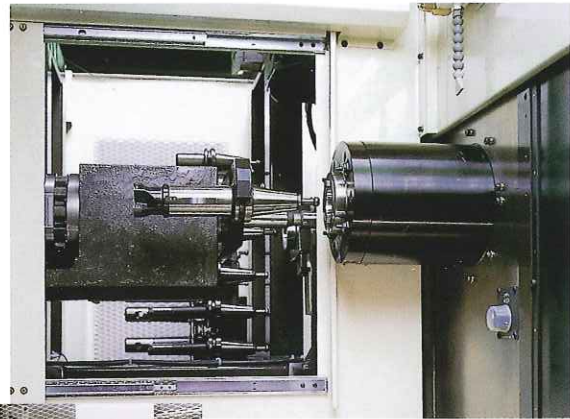
## SPINDLE

High-precision spindle with reduced power loss and thermal deformation.

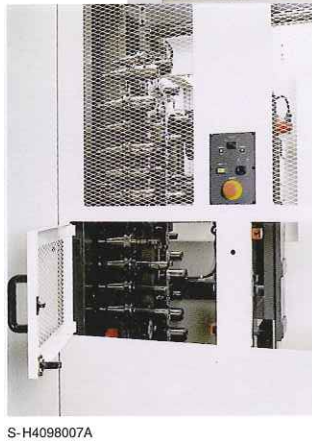
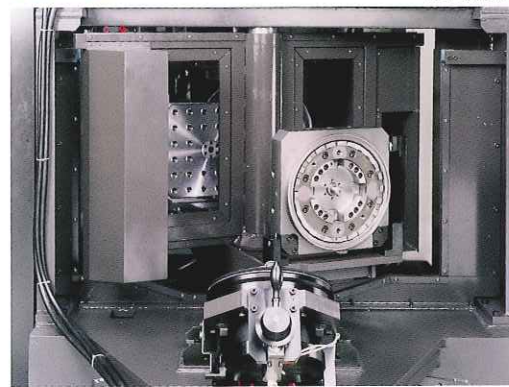
The spindle employs a micro fog lubrication mist that keeps the angular contact bearings running at their optimum temperature, which enables high revolution accuracy and minimizes power loss. Additionally, the spindle also employs a highly efficient inverter jacket cooling system, which is specially designed to reduce thermal distortion and maintain high revolution accuracy.



## ATC & TOOLSTOCKER



## APC



Tool change time is 3.9 seconds (chip to chip)  
High-speed automatic tool changer

Servo drive system with absolute servo motor enables high-speed and easy maintenance.

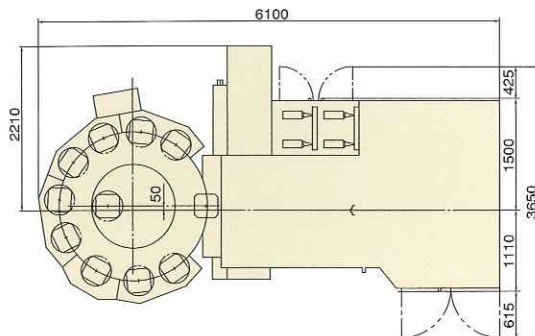
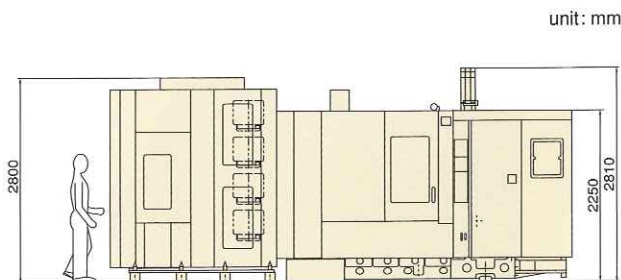
■ TOOL STOCKER  
Number of stored tools : 60 and 120

Automatic pallet changer achieves chucking repeatability of  $\pm 0.002$  mm

The APC employs a large-diameter (250mm) Curvic coupling chucking mechanism for highly accurate chucking. The APC utilizes a pair of 24 teeth along the Curvic circle at a 30° angle, which engages without backlash, resulting in high chucking rigidity and repeatability of  $\pm 0.002$ mm.

The APC uses an absolute servomotor that facilitates high-speed pallet changes and easy maintenance.

## 32 PALLETS DIMENSIONS



The H30i-32PLS, with a multiple-stage pallet system ensures reliable, long-term operation for high-quality machining of various materials and lot sizes. (Maximum capacity : 32 pallets)

# SPECIFICATIONS

## 1. Base Machine Standard Specifications

<b>1-1 Travel</b>	
X axis travel	650mm
Y axis travel	560mm
Z axis travel	560mm
Distance between B-axis center to spindle center	-375~275mm (X axis)
Distance between A-axis center to spindle center	-200~360mm (Y axis)
Distance between B-axis center to spindle nose	150~710mm (Z axis)
X,Y,Z minimum increment	0.0001mm
<b>1-2 Table (A-axis)</b>	
Pallet working surface	300×300mm
Pallet loading capacity	80kg
Max. loading moment	8kgf·m
Max. rotating diameter	φ400mm
Max. loading height	300mm
Table min. index	0.0001°
<b>1-3 Table (B-axis)</b>	
Swivel range	-120°~+45°
Table min. index	0.0001°
<b>1-4 Spindle</b>	
Spindle speed	120~12,000 min. <sup>-1</sup>
Spindle taper	7/24 taper No.40 (Big Plus)
Spindle diameter	φ70 mm
Spindle motor	AC22/18.5kW
<b>1-5 Feedrate</b>	
Rapid feed	60,000 mm/min. (X,Y axis) 40,000 mm/min. (Z axis)
Feedrate	Max. 20,000 mm/min.
Jog feedrate	Max. 5,000 mm/min.
Table indexing	A axis Max. 15 min <sup>-1</sup> B axis Max. 10 min <sup>-1</sup>

## 2. Machine Standard Equipment

<b>2-1 Numerical control</b>	FANUC 31i-A5
10.4" color LCD	
Custom macro B	Common variable #100~149, #500~531
Number of tool offsets	99 pairs
Part program storage length	640 m
Number of registered programs	200 programs
<b>2-2 Hydraulic unit</b>	
<b>2-3 Automatic lubrication system for axis bearings</b>	
<b>2-4 Automatic Tool Changer</b>	
Number of tools	60 tools
Tool shank type	MAS BT40
Pull stud type	MAS 403 P40T-1
(Center through)	(JIS 40P)
Max. tool diameter	φ100 mm
Max. tool length	300 mm
Max. tool weight	7kg

<b>2-5 Automatic Pallet Changer</b>	
Tapped pallet	2 pallets
Pallet working surface	300×300mm
Pallet chucking mechanism	Curvic coupling
<b>2-6 Spindle head cooling system</b>	
<b>2-7 Coolant system</b>	Tank capacity/500L Nozzle/4 flood nozzles
<b>2-8 Splash guard</b>	With roof
<b>2-9 Optical scale feedback system</b>	X,Y,Z,A,B axes
<b>2-10 Twin-screw type chip conveyor inside base machine</b>	
<b>2-11 Coolant system with lift-up chip conveyor</b>	
<b>2-12 Shower coolant system</b>	
<b>2-13 Manual pulse generator</b>	
<b>2-14 Rigid tapping</b>	
<b>2-15 High-speed machining system</b>	HAS-0
<b>2-16 Work light</b>	
<b>2-17 Ground detecting breaker</b>	
<b>2-18 Automatic power-off function</b>	
<b>2-19 Input/output interface</b>	
<b>2-20 Leveling screws</b>	
<b>2-21 Mass of machine (including ATC &amp; APC)</b>	11,000 kg
<b>2-22 Required power supply (standard specifications)</b>	49KVA, AC220V, 60Hz
<b>2-23 Required pneumatic supply</b>	0.5~0.8MPa, 800NL/min.

## 3. Optional Equipment

<b>3-1 Basic options</b>	
<b>3-1-1 Spindle center through coolant system</b>	Pressure 2.0, 3.5MPa Cutting oil temperature control unit is required. (Pull stud type JIS40P)
<b>3-1-2 Cutting oil temperature control unit</b>	3480W (60Hz)
<b>3-1-3 Automatic measuring and centering system</b>	
<b>3-2 Other options</b>	
<b>3-2-1 High-speed spindle</b>	200~20,000 min. <sup>-1</sup>
<b>3-2-2 8 preload stands with 6 pallets</b>	
<b>3-2-3 4-step preload stand-32 sets with a loading station and 30 pallets</b>	
<b>3-2-4 Spare pallet</b>	
<b>3-2-5 Automatic tool changer</b>	120, 240 tools
<b>3-2-6 High-speed machining system</b>	HAS-1
<b>3-2-7 Oil mist collector</b>	
<b>3-2-8 Automatic tool length compensation and tool breakage sensor</b>	
<b>3-2-9 Work condition indication lamp</b>	
<b>3-2-10 Anchor unit</b>	
<b>3-2-11 Special paint color</b>	

## 4. CNC Optional Equipment (Fanuc 16i)

<b>4-1 Additional common variable</b>	#100~199, #500~999
<b>4-2 Number of tool offsets</b>	200, 400, 999 pairs
<b>4-3 Part program storage length</b>	1280, 2560, 5120m
<b>4-4 Number of registered programs</b>	400, 1000 programs

※All specifications are subject to change without notice.

# YASDA

**YASDA PRECISION TOOLS K.K.**

URL <http://www.yasda.co.jp>

### Main Office & Factory:

1160 Hamanaka, Satosho-cho, Okayama, 719-0303, Japan  
PHONE:+81/865-64-2511 FAX:+81/865-64-4535

### Representative Office:

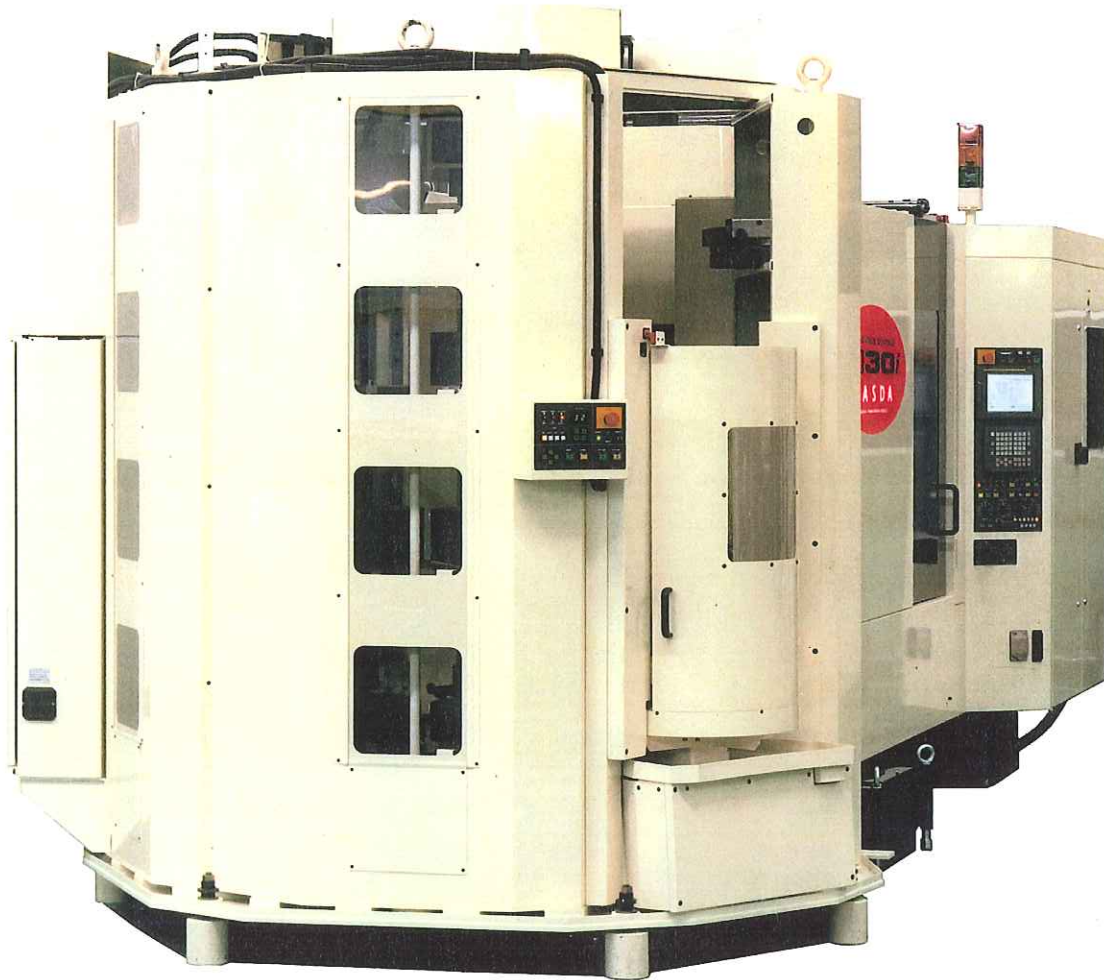
Firtz-Vomfelde Strasse 34,D-40547 Düsseldorf,Germany  
PHONE:+49/211-53-883214 FAX:+49/211-53-883174

**YASDA PRECISION AMERICA CORPORATION** URL <http://www.yasda.co.jp>

62 North Lively Boulevard Elk Grove Village,IL60007 U.S.A.  
PHONE:+1/847-439-0201 FAX:+1/847-439-0260

\* The export of the product in this catalog is subject to approval of the government in the country from where the product is exported.

*Stabilized machining high accuracy and productivity*



CNC 5 AXES CONTROL

**H30i**

**32PLS**

**32PLS Specifications**

Pallet working surface	300 X 300mm
Max. loading capacity	80kg (8kgf · m)
Max. work size	φ 400 X 300mm
Preload stand	4-step X 8
L/U station	360° rotation (Manual)

■ **OUT LINE** unit:mm

