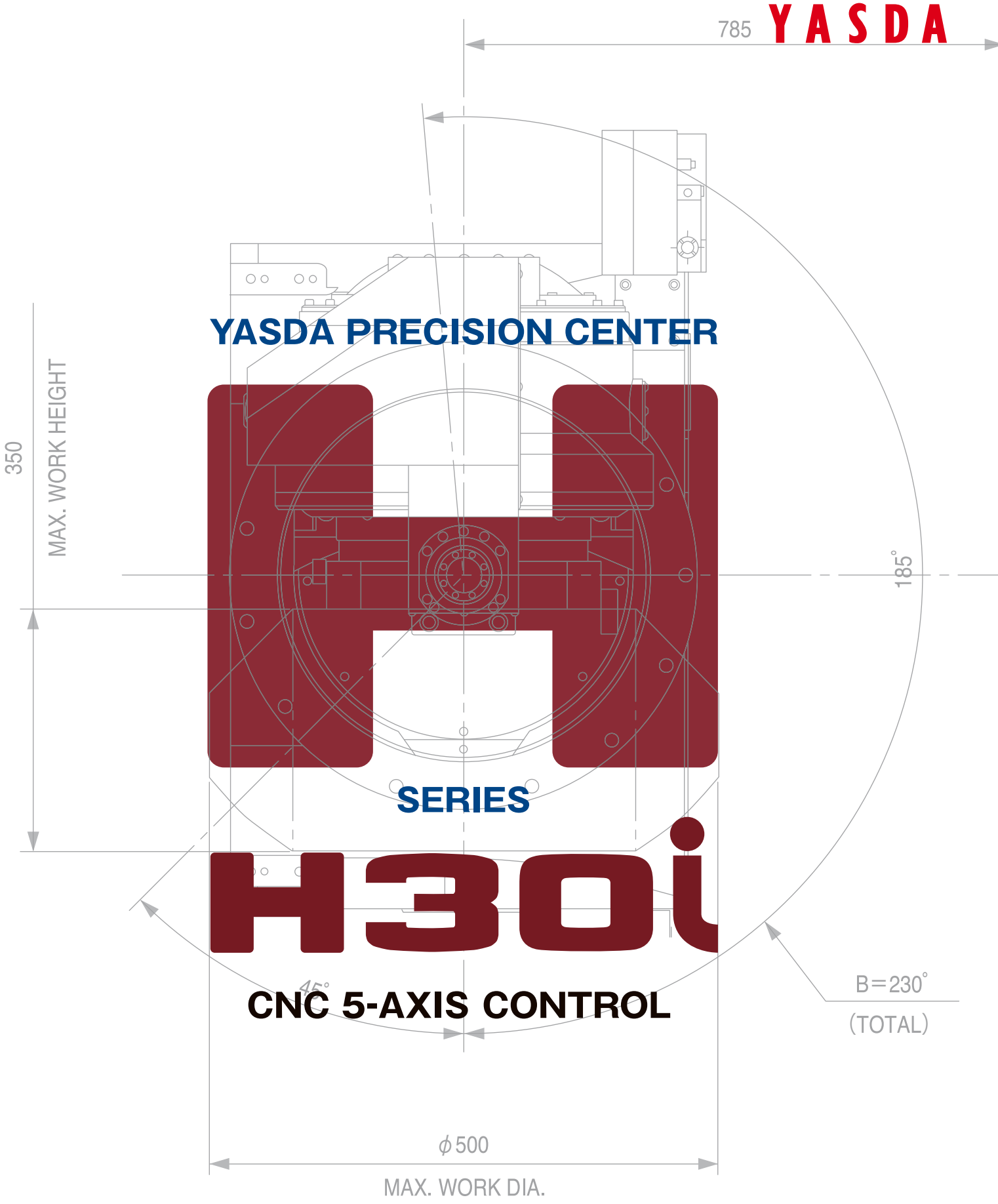
YASDA



YASDA PRECISION CENTER

SERIES

H30i

CNC 5-AXIS CONTROL

E

Bulletin No.H30i99006-E

DYNAMIC, STREAMLINED DESIGN

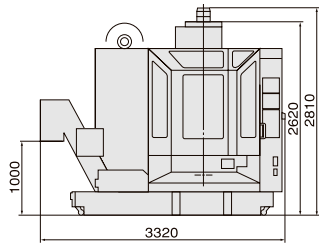
A fully integrated machine tool designed for high-precision, simultaneous 5-axis machining in one chucking set-up.

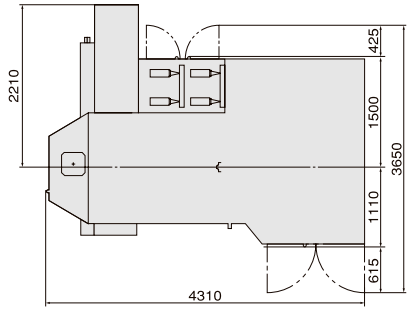
The **H30*i***, a uniquely integrated machine tool with CNC 5-axis control, based on the YASDA H 40 High-speed Machining Center, provides reliable, high-precision machining, in one set-up for a variety of applications. The machine allows for precision machining from five faces to complex shapes, all in a compact, space-saving footprint, that employs the latest technology for quick response and high reliability. The **H30*i*** 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 : 0.0001mm, 0.0001°)
- Curvic coupling design for pallet chucking.
- ATC and APC servo mechanism employed for quickness and reliability.
- Rapid traverse rate : 40m/min.

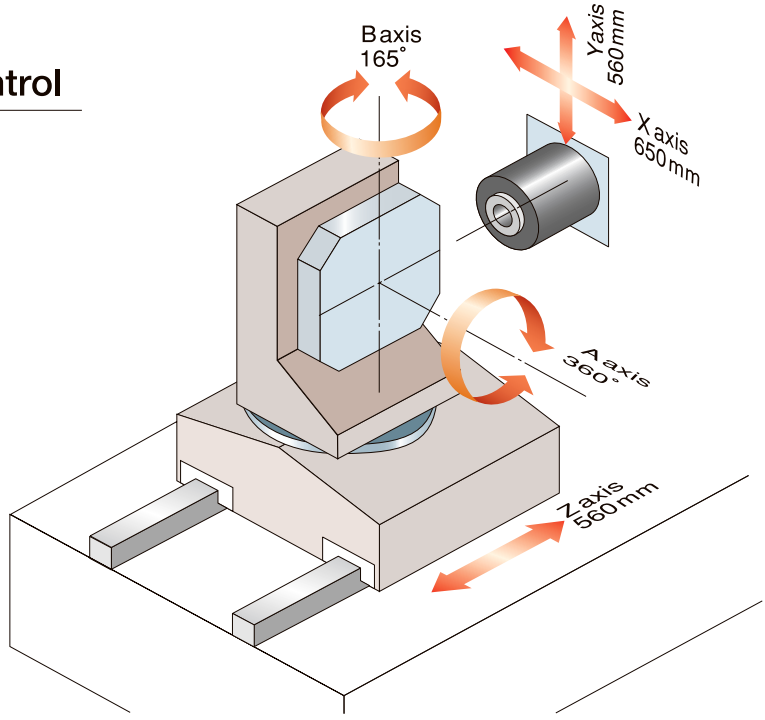
OUT LINE unit : mm





INNOVATIVE MECHANISM

H30*i* 5-axis control

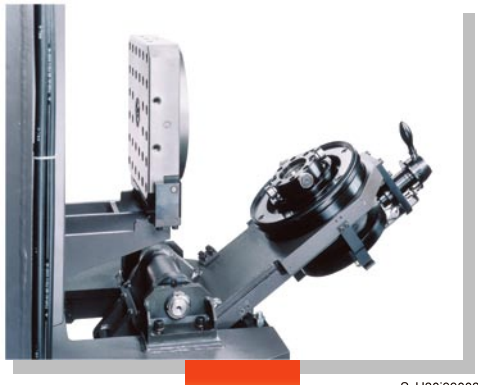


Automatic pallet exchange from set-up to machining

1 L/U stand under set-up

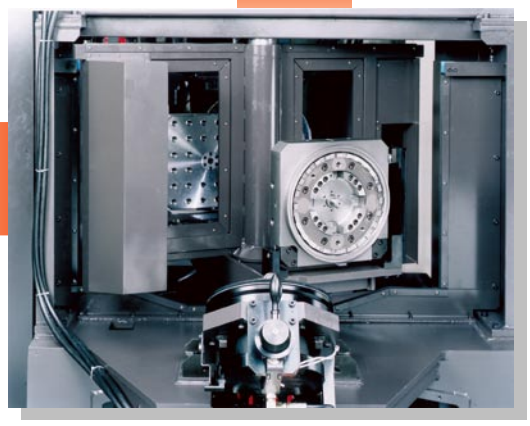
S-H30i99002A

2 Transferring pallet to changer



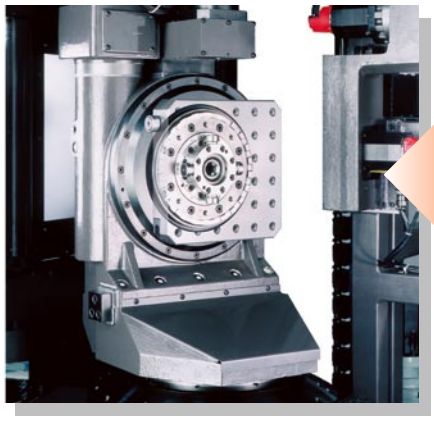
S-H30i99003A

3 Exchanging pallets



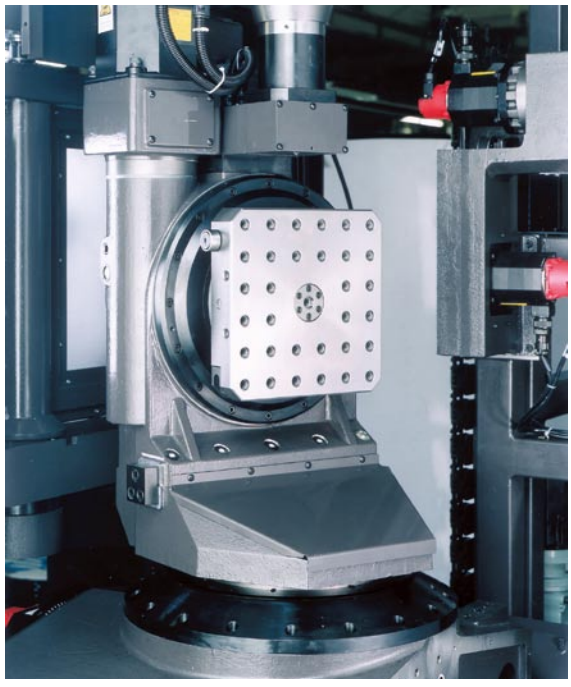
S-H30i99004A

4 Exchange complete



S-H30i99005A+006A

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



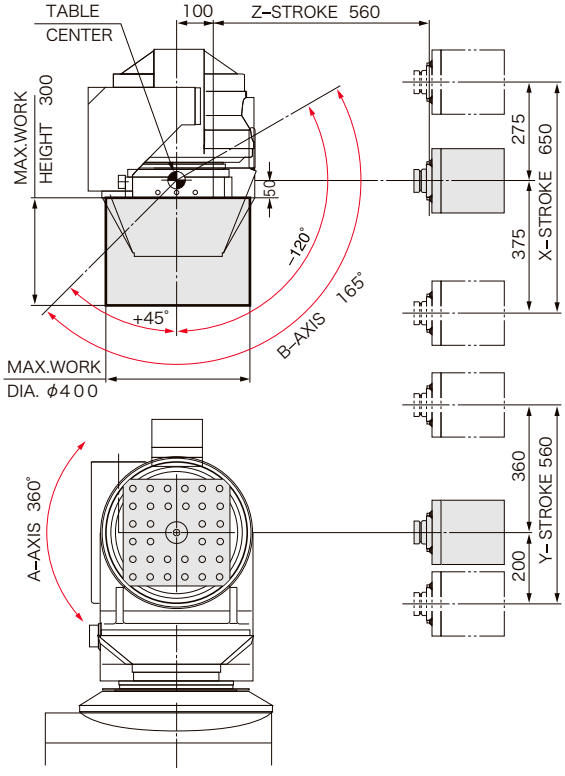
S-H30i99006A

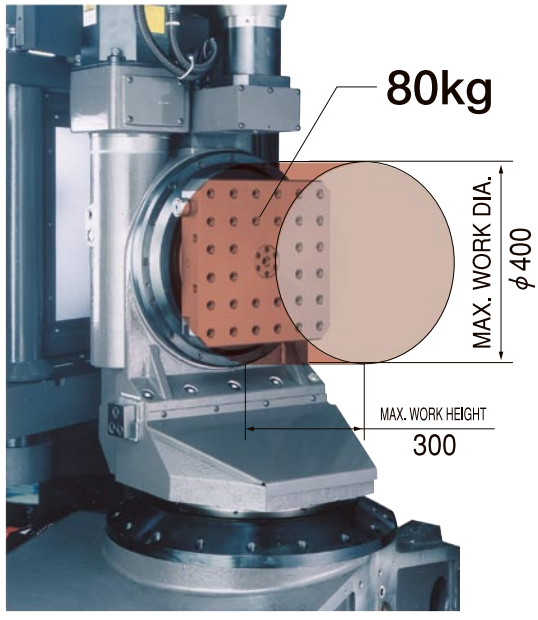
The NC rotary table employs a ❶ highly precise and rigid, double-lead worm drive system, and a ❷ closed loop feed back system using highly precise optical scales for ultimate positioning control and indexing accuracy.
❸ Large-diameter and highly rigid, cross-roller bearings are employed for smooth and 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



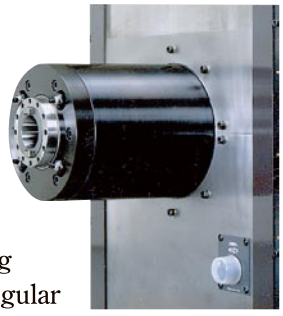


S-H30i99006A

COMPONENTS

SPINDLE

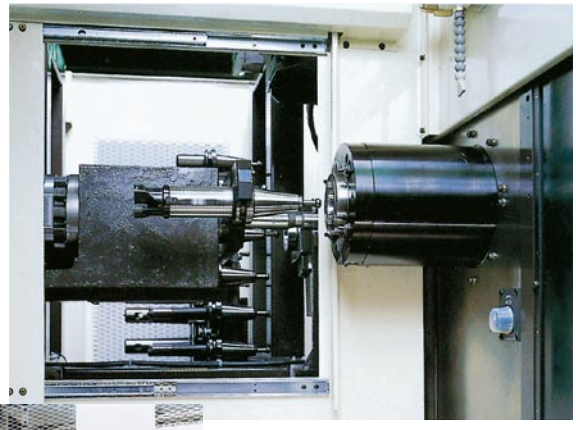
S-H4098003A



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



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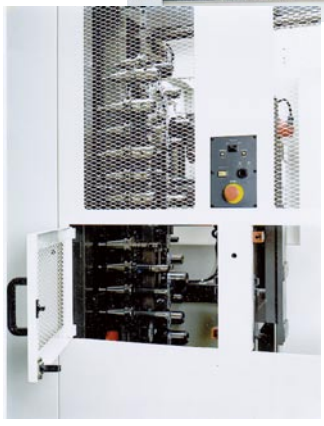


S-H4098007A

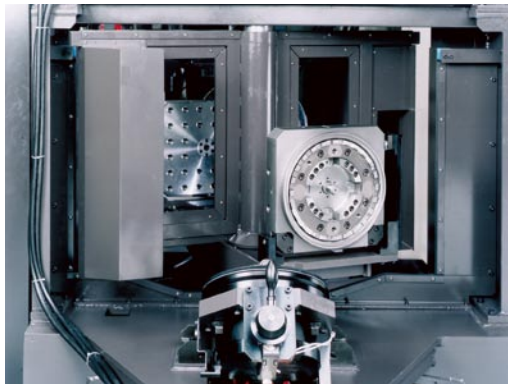
Tool change time is 3.9 seconds (chip to chip) High-speed automatic tool changer

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

■ TOOL STOCKER
Number of stored tools : 60 and 120

APC

S-H30i99007A

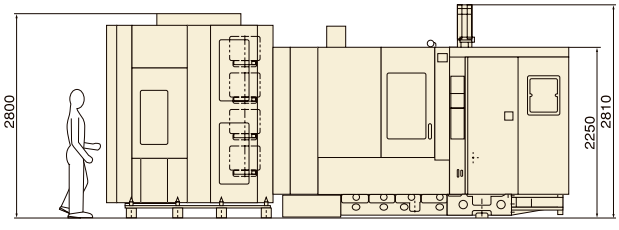


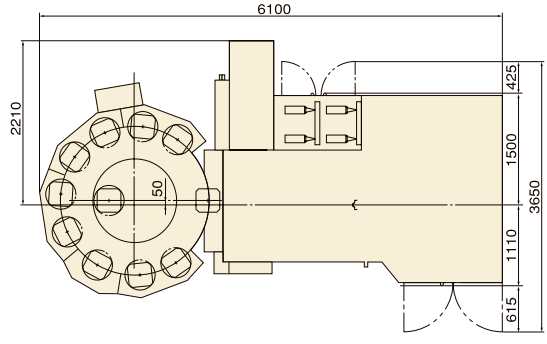
Automatic pallet changer achieves chucking repeatability of ±0.002 mm

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 ±0.002mm.
The APC uses an absolute servomotor that facilitates high-speed pallet changes and easy maintenance.

32 PALLETS DIMENSIONS

unit: mm





The **H30*i*-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

1-1	**Travel**	
	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	100～660mm (Z axis)
	X,Y,Z minimum increment	0.0001mm
1-2	**Table** (A-axis)	
	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°
1-3	**Table** (B-axis)	
	Swivel range	−120°～＋45°
	Table min. index	0.0001°
1-4	**Spindle**	
	Spindle speed	120～12000 min.$^{-1}$
	Spindle taper	7/24 taper No.40 (Big Plus)
	Spindle diameter	φ70 mm
	Spindle motor	AC22/18.5kW
1-5	**Feedrate**	
	Rapid feed	60000mm/min.(X,Y axis) 40000mm/min.(Z axis)
	Feedrate	Max. 20000mm/min.
	Jog feedrate	Max. 5000mm/min.
	Table indexing	A axis Max.15min^{-1}
		B axis Max.10min^{-1}

2. Machine Standard Equipment

2-1	**Numerical control**	FANUC 31i-A5
	Display unit	10.4″color LCD
	Custom macro	Common variable #100~149, #500~549
	Part program storage length	640m
2-2	**Hydraulic unit**	
2-3	**Automatic lubrication system for axis bearings**	
2-4	**Automatic Tool Changer**	
	Number of tools	60 tools/120 tools stand
	Tool shank type	MAS 403 BT40
	Pull stud type	MAS 403 P40T-1
	Max. tool diameter	φ100 mm
	Max. tool length	300mm
	Max. tool weight	7kg
2-5	**Automatic Pallet Changer**	
	Tapped pallet	2 pallets
	Pallet working surface	300×300mm
	Pallet chucking mechanism	Curvic coupling
2-6	**Spindle head cooling system**	
2-7	**Coolant system**	Tank capacity/850L
		Nozzle/4 flood nozzles
2-8	**Splash guard**	With roof
2-9	**Optical scale feedback system**	X,Y,Z,A,B axis
2-10	**Twin-screw type chip conveyor inside base machine**	
2-11	**Coolant system with lift-up chip conveyor**	
2-12	**Shower coolant system**	
2-13	**Manual pulse generator**	
2-14	**Rigid tapping**	
2-15	**High-speed machining system**	HAS-0
2-16	**Work light**	
2-17	**Ground detecting breaker**	
2-18	**Automatic power-off function**	
2-19	**Input /output interface**	
2-20	**Leveling screws**	
2-21	**Mass of machine (including ATC & APC)**	11000 kg
2-22	**Required power supply (standard specifications)**	55KVA,AC200/220V 50/60Hz
2-23	**Required pneumatic supply**	0.8m^3/min(Normal)

3. Optional Equipment

3-1	**Spindle center through coolant system**	Pressure 2.0, 3.5MPa
	Cutting oil temperature control unit is required.	(Pull stud type JIS40P)
3-2	PLS(Preload stand)	12/24PLS
3-3	**Automatic measuring and centering system**	
3-4	**High-speed spindle**	200～20000 min.$^{-1}$
3-5	**4-step preload stand-32 sets with a loading station and 30 pallets**	
3-6	**Spare pallet**	
3-7	**Automatic tool changer**	120, 240 tools
3-8	**High-speed machining system**	HAS-3
3-9	**Oil mist collector**	
3-10	**Automatic tool length compensation and tool breakage sensor**	
3-11	**Work condition indication lamp**	
3-12	**Anchor unit**	
3-13	**Special paint color**	

※All specifications are subject to change without notice.

YASDA

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