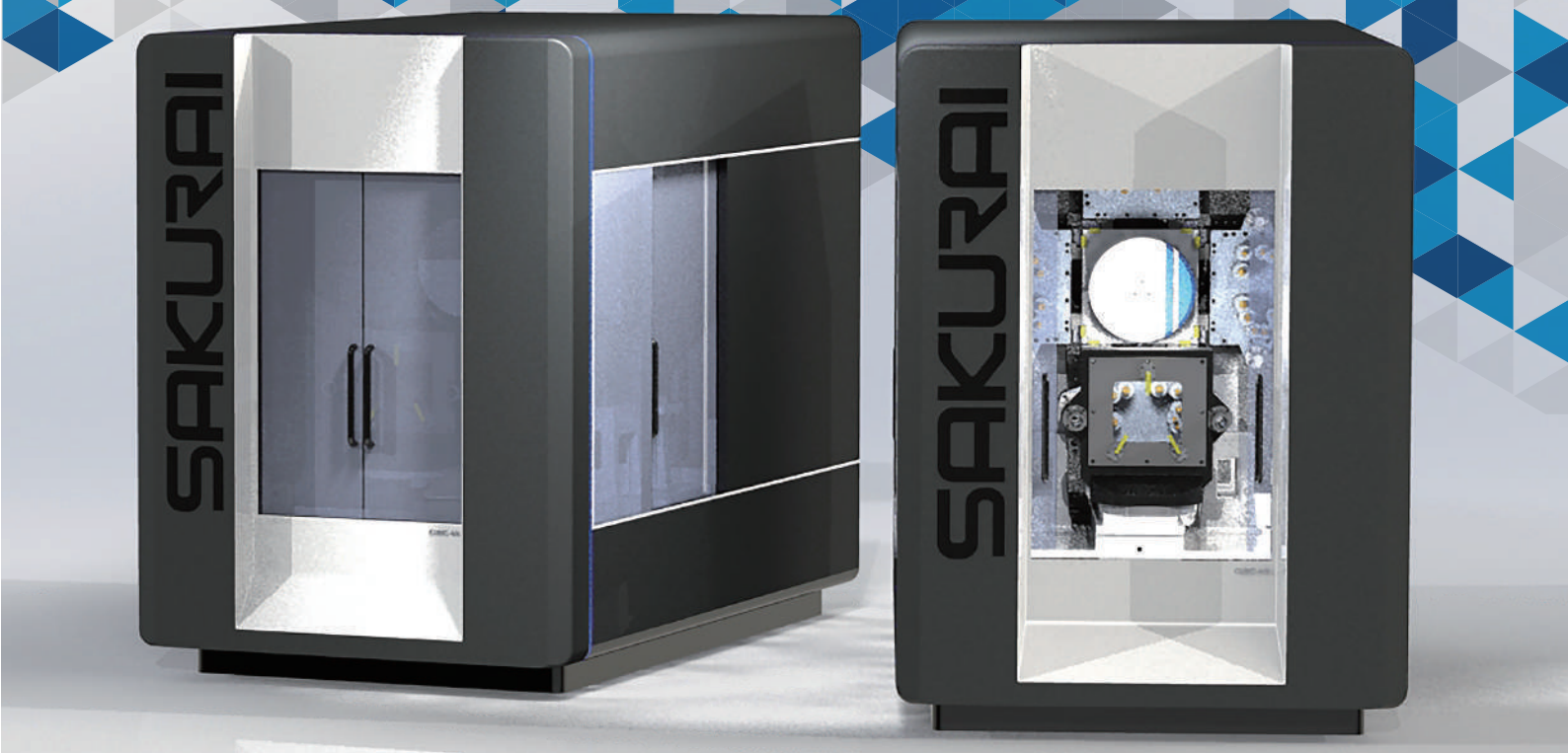
株式会社 桜井 製作所

One machine, absolute result

Cubic Series

THE GREATEST IDEAS
OF SAKURAI TO THE WORLD



https://www.sakurai-net.co.jp/

Cubic Series

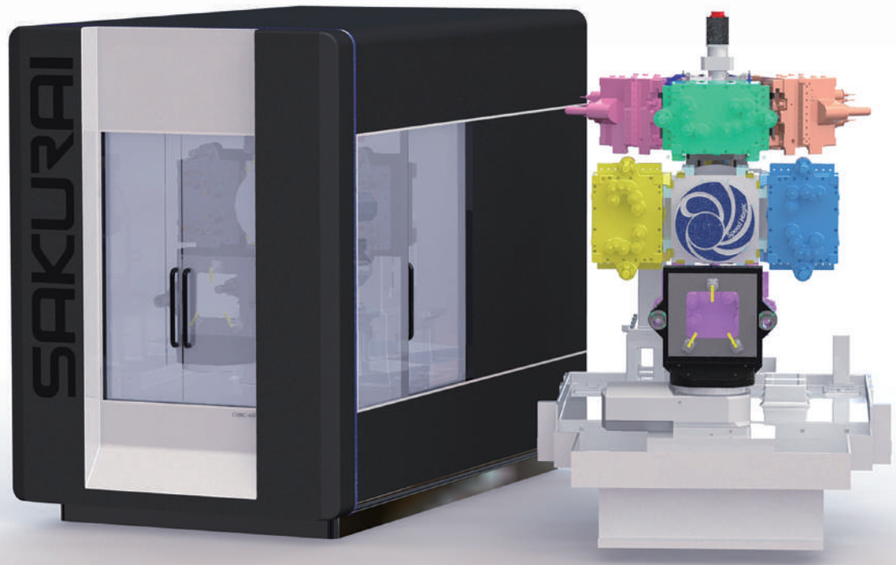
Cubic4,6&7
Cubic Speed Magic

Problem solving with Cubic series

One machine-Absolute result

Brand New Concept

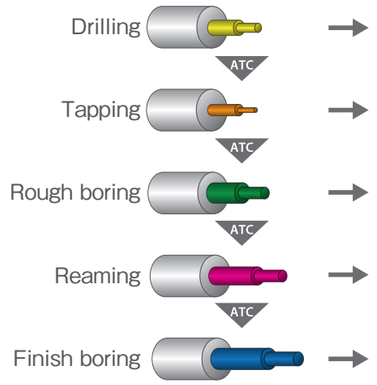
Cubic is cutting edge hole processing machine which provides excellent flexibility and versatility. Its ability of combining processes and reducing the required amount of traditional machines helps to make huge cost savings. Cubic can not only make manpower saving possible but also achieve high quality products.



Incredible machining capability of Cubic

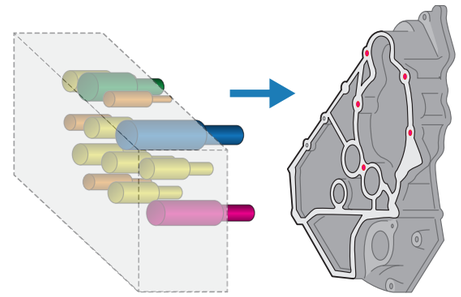
By adopting multi-spindle heads, many holes can be processed in a shot and it makes hole machining much more efficient. Cubic brings process integration and process optimizaiton, that significantly reduces machining time. The incredible machining capability of Cubic ensures significant shorter cycle times than machining center.

Before By using machining center



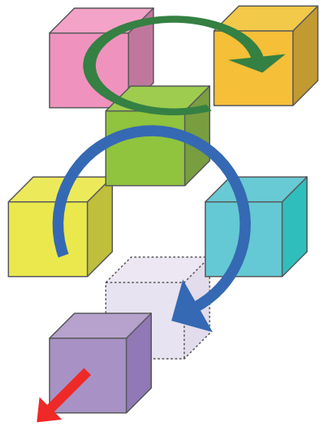
Machining center is usually equipped with a single spindle, that is unable to meet variety of hole machining requirements at one time, and for different processes, changing cutting tools becomes necessary, therefore, it makes longer cycle times.

After By using Cubic

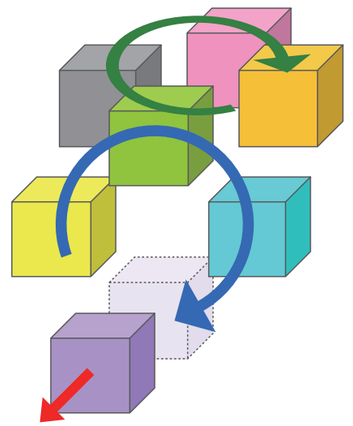


As picture shown above, by adopting multi-spindle head, multiple types of hole processing tasks such as drilling, tapping, rough boring and finish boring can be handled without changing cutting tools. Cubic series is able to accomplish hole machining tasks about 2.5 times faster than machining center.

Each machine is equipped standard with 4 multi-spindle heads and has the option to be equipped with 6 or 7 heads.



6 heads



7 heads

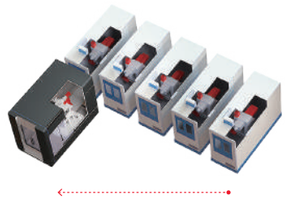
Cubic

MERITS OF PROCESS INTEGRATION

Cubic series is able to efficiently combine processes and reduce required number of conventional machines, which not only cuts initial cost and running cost, but also provides simplified and low-cost manufacturing.

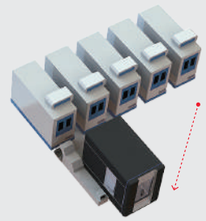
Space saving

By replacing from 3 to 6 NC equipment with one Cubic, up to 80% production space can be saved. SAKURAI offers the best produciton line planning and optimization.



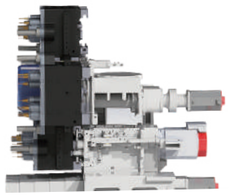
Energy saving

One Cubic can replace from 3 to 6 traditional NC equipment, that helps to conserve energy and protects environment.



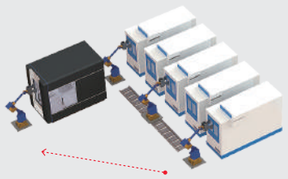
Attachment device· transport system

Cubic can effectively reduce the number of attachment device or eliminate transportation waste. For example, over 80% of hydraulic tank, toolant tank, robots and gantry loader can be cut.



Maintainance

Reduction on the number of line machines helps to decrease monthly and yearly maintenance activities. Cubic provides great reliability with easy to maintain features.



Manpower saving· Robots saving

Reduction on line machines leads to reduction on the number of machine operators, that not only helps to sovle manpower shortage but also save labor costs. The number of robots can be also reduced.

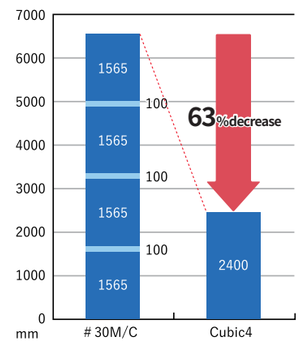
Efficient space ultilization

Compared with machining center line type, through process integration of Cubic, line layout can be optimized, that allows manufacturers to save over 50% of factory floor space, therefore, efficient floor space ultilization can be achieved.

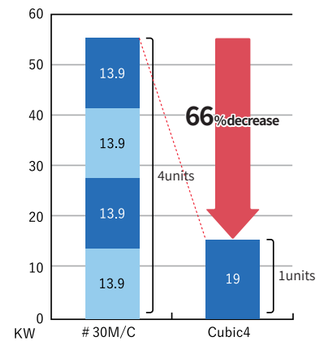
Initial cost and Running cost

When investing a new production line, Cubic helps to reduce initial investment costs and maximize production efficiency right from the start.
Cubic can also contribute to labor saving, efficient space ultilization and energy reservation.(63% factory floor space and 66% energy can be saved. <SAKURAI data>)

M/C setting(Lateral length)

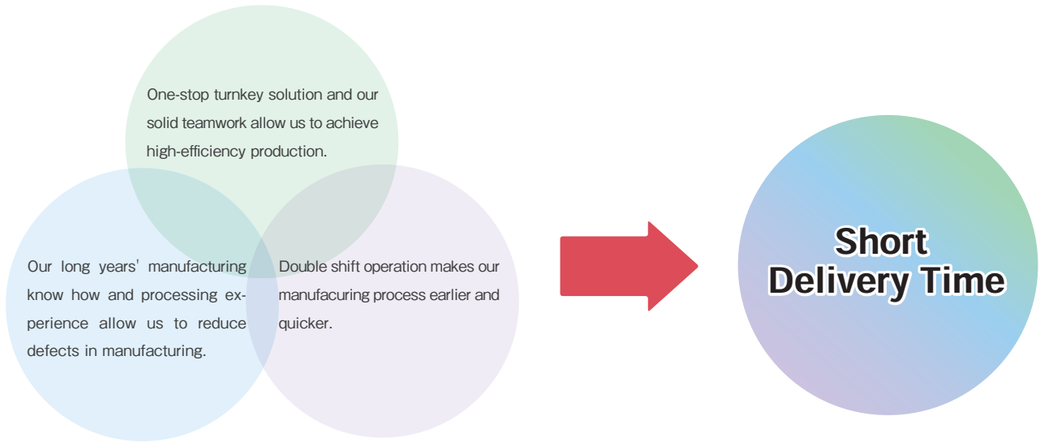


Electricity consumption



Short delivery time

SAKURAI oversees all aspects of production through its one-stop turnkey solution. One-stop turnkey solution and our solid teamwork allow us to achieve high-quality production, reliable quality management and quick delivery.



The flow from received order to shipment

Multi-spindle head・Various fields

Always Create A New Value

According to evolving needs in various fields, our ability to develop cutting-edge technology brings products with high added value to the world market. Customer satisfaction is always our first priority.

Automobile

We has obtained very satisfying results in processing cylinder block, cylinder head, and transmission case. Our machine tools are the result of the synergy of innovative craftsmanship skills and cutting-edge technologies.

Motorcycle

We demonstrate our ability to develop machine tools with great flexibility and offer high value added products and services to motorcycle industry across the world, which has brought SAKURAI an excellent reputation in the world market.

Construction Equipment

We not only supply parts to construction industry but also design and develop machine tools for construction equipment according to complex production process or special parts specifications. We have achieved excellent result in developing machine tools with originality, rigidity and durability.

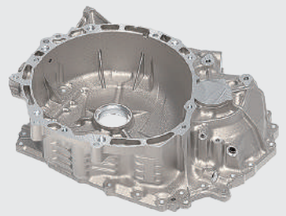
General-purpose parts

Our ability to develop from single machine tool to special-purpose production line system gives us the possibility to take a world with a wide range of products that include outboard motor parts, agricultural machinery parts and so on.

Industrial Machinery

Our machine tools and lines are flexible enough to handle different production in various fields such as automotive and industrial machinery. SAKURAI offers the most appropriate method.

Multi-spindle head・Machining results

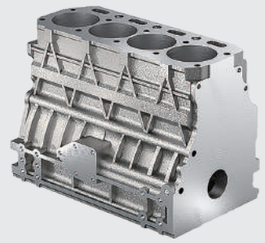


Transfermission case

Processing content	Drilling,Tapping, Reaming, RB, FB
Processing surface	Joint face, Cover face, Oil pan joint face
Material	Aluminum(Equivalent to ADC12)

Cylinder head

Processing content	Drilling,Tapping, Reaming, RB, FB
Processing surface	Cover face,Exhaust joint face,Piston hole face
Material	Gray cast iron or Aluminum(Equivalent to ADC12)

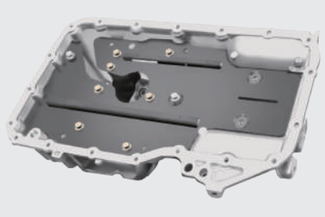


Cylinder block

Processing content	Drilling,Tapping, Reaming, RB, FB, Side cutting
Processing surface	Joint face,Front&Rear face,Oil pan joint face,Pump joint face
Material	Gray cast iron or Aluminum(Equivalent to ADC12)

Side cover

Processing content	Drilling,Tapping, Reaming, RB, FB
Processing surface	Joint face
Material	Gray cast iron or Aluminum(Equivalent to ADC12)

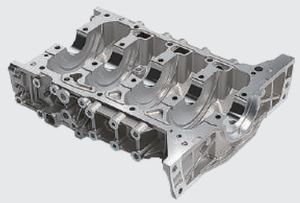


Oil pan

Processing content	Drilling,Tapping, Reaming
Processing surface	Joint face
Material	Aluminum(Equivalent to ADC12)

Differential carrier

Processing content	Drilling, Reaming, RB, FB
Processing surface	Joint face
Material	Cast iron(FC250, FCD450)



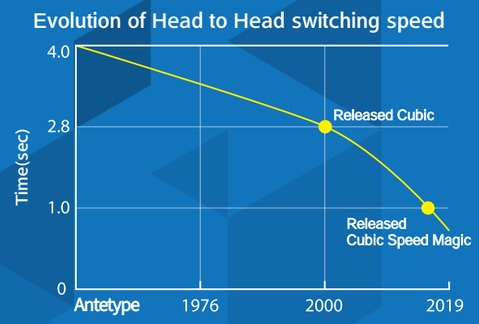
Cylinder lower block

Processing content	Drilling,Tapping, Reaming, RB, FB, Side cutting
Processing surface	Joint face, Cover face
Material	Ductile cast iron or Aluminum(Equivalent to ADC12)

Structure of Cubic will keep evolving

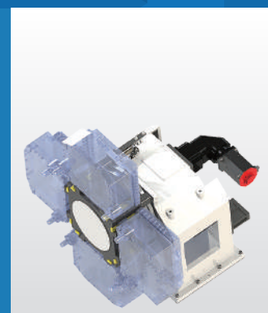
SAKURAI,Japan Boasts to the world

Cubic series has won international recognition and will continue to evolve with the times.
It has been 30 years since the first model of Cubic was developed. To respond to the needs of high speed and compact size, various options are provided. SAKURAI continues to meet expectations of customers.



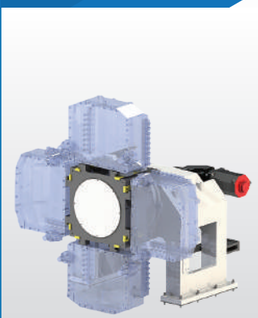
AHC

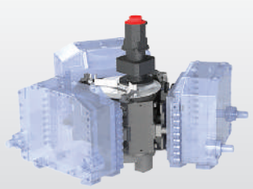
Each Cubic is equipped standard with AHC(Automatic Head Changer), which allows Cubic to switch its heads at high speed automatically according to the process.



High Speed Head Changer

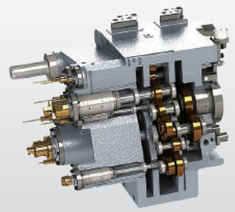
The "Chip to Chip" time is only 4.5 seconds, although each head is weighting in about 300kg with tooling. The head switching speed has been 2.5 times faster than the first model and it will continue to be improved.





AHS

Cubic has the option to be equipped with 6 or 7 heads through AHC on the top of the machine which can be also used as AHS(Automatic Head Stocker), therefore, AHS not only helps to accommodate various workpiece models but also brings production flexibility.



Head

Our original multi-spindle heads are the result of cutting edge technology and innovative craftmanship, that gaurrantees high quality production and accuracy. We have a track re- cord of mounting 50 spindles into one head.

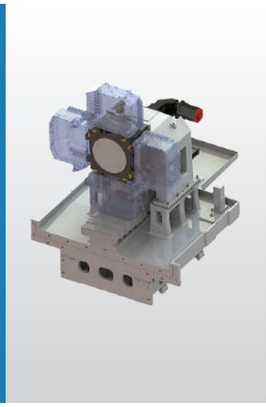
Cubic series

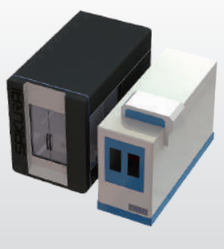
High Speed Rotation

Our high speed spindle enhances high-speed, rigidity and accuracy to finally reduce machining time and down time. The spindle speed is up to 12,000rpm (1,600rpm for tapping). We make the most of our originality.

Standardized Body

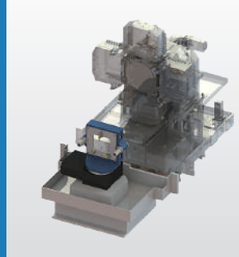
The body of Cubic is standardized with design of great originality. Over 30 years of proven track record, it has showed reliability.





A compact Body Design

While having incredible machining capability, Cubic achieves a compact body, that helps to save factory floor space. (The body size is almost equivalent to #40 machining center)



Flexible Structure of Machine Bed

Machine bed is designed to be easily removed partly on both sides, therefore, it is easy to arrange Cubic to customers' line layout or line concept. After production of one workpiece model ends, Cubic can be easily arranged to another mass production line.

Control Device

It is convenient to equip Cubic with devices and the IoT can connect those devices equipped with identification, communication and processing capabilities. The IoT intelligent systems enable remote control and rapid response to manufacturing detects.

Energy Saving

Although Cubic owns greater processing capability than conventional machining center, its energy consumption is almost same as #40 machining center or even less. Cubic is eco-friendly equipment which reduces running cost for manufacturers in long term.

Various specifications and options

According to customers' budget, planning and factory environment, SAKURAI offers various specifications and options. We continue to meet expectation of customers.

Cubic(Basic configuration)

Over 30 years of proven track record, standard Cubic has showed reliability. Our ability to develop cutting-edge technology continues to bring products with high added value. SAKURAI will keep evolving with the times.

3WAY(FMC type)

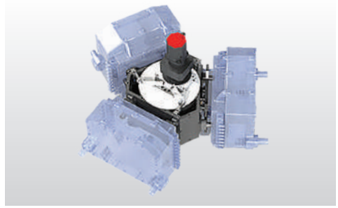
3WAY can be considered as FMC which consists of three units of Cubic. Three advanced head changers are of T-like allocation around automatic pallet changer on which three index tables are installed, therefore, two sided machining can be completed in one chucking. 3WAY has the machining capacity which is equivalent to about 12 units of conventional MC. In addition, it can also help to eliminate transportation waste on the factory floor.

Transfer line

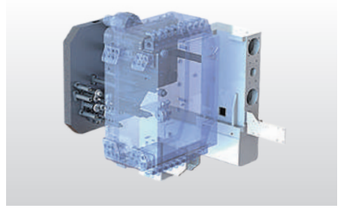
Transfer line can be a combination of several units of Cubic sequential arranged, that efficiently combine processes and reduce required number of conventional machines. It can sometimes replace half of conventional machining center on a mass production line. By combining processes such as machining and measuring, transfer line can increase productivity and improve precision. Transfer line can be also developed by making use of both Cubic and machining center.

Options

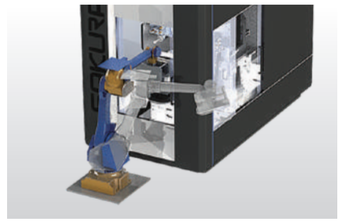
Automatic Head Stocker



Cutting Tool Breakage Detector

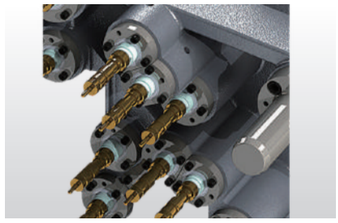


Transportation System



with robot

Head

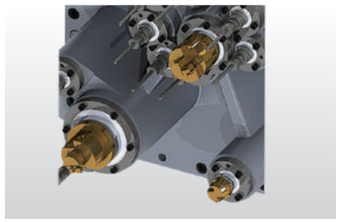


Drilling tools

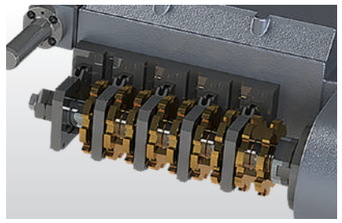
Tapping tools

Reamer

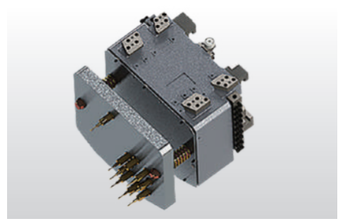
Head



Boring tools

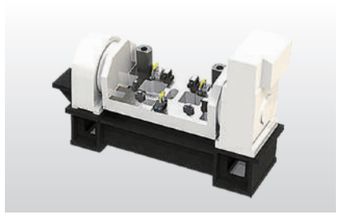


Side cutter

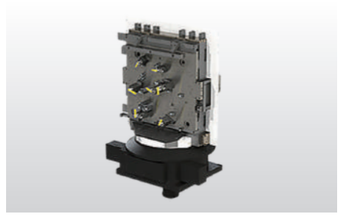


Cleaning tools

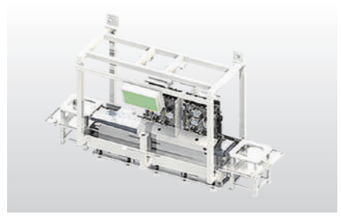
Index Jig



A-axis index table



B-axis index table



Shift unit type

Control Device

MITSUBISHI ELECTRIC
Changes for the Better

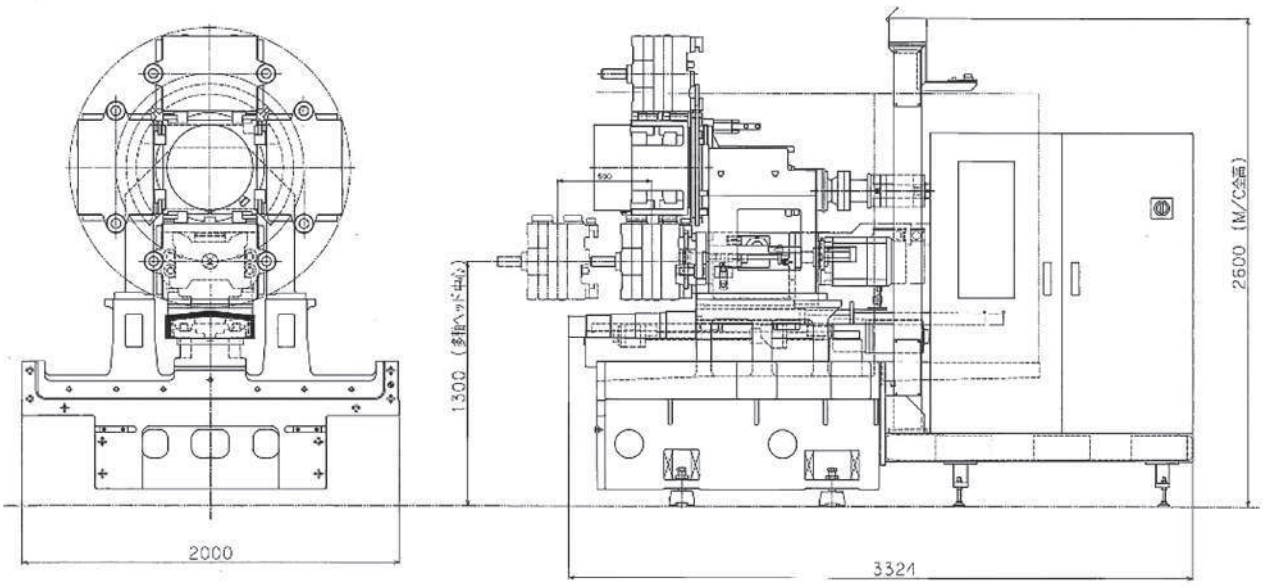
FANUC

Specification

Model	Cubic 4&6	SpeedMagic
Control	FANUC35i-MB	
Axis control	1axis control	
Max stroke	500mm	
Workpiece size	500mm×450mm	
Spindle motor	Max 15Kw	Max 37Kw
Rotation speed	Max 3,500rpm	Max 12,000rpm
Head to Head	2.0sec	1.0sec
Chip to Chip	7.5sec	4.4sec

Feed motor	AC4.0kw(Model22/3000i)	
Index drive system	FANUC35i-MB α12/3000i	
Number of multi-spindle heads	4sets/6sets	
Size of each multi-spindle head	500mm×600mm	400mm×500mm
Hydraulic tank unit	30L(インバーター付)	60L
Multi-spindle head clamp system	メカ式(Mech)	
Machine size(W×L×H)	2200mm×3300mm×2600mm	
Total weight	8,000Kg	11,000Kg

Specifications are subject to change without prior notice.



株式会社 桜井 製作所
053-434-3511
営業時間 08:00-16:50
sales@sakurai-net.co.jp
https://www.sakurai-net.co.jp/

■本社
〒431-3124 静岡県浜松市東区半田町720
TEL.053-432-1711(代) FAX.053-433-6116

■工機部／船岡工場
〒431-3124 静岡県浜松市東区半田町720
TEL.053-434-3511(代) FAX.053-433-6115

■部品部／細江工場
〒431-1304 静岡県浜松市北区細江町中川7000-18
TEL.053-523-2411(代) FAX.053-523-2419