



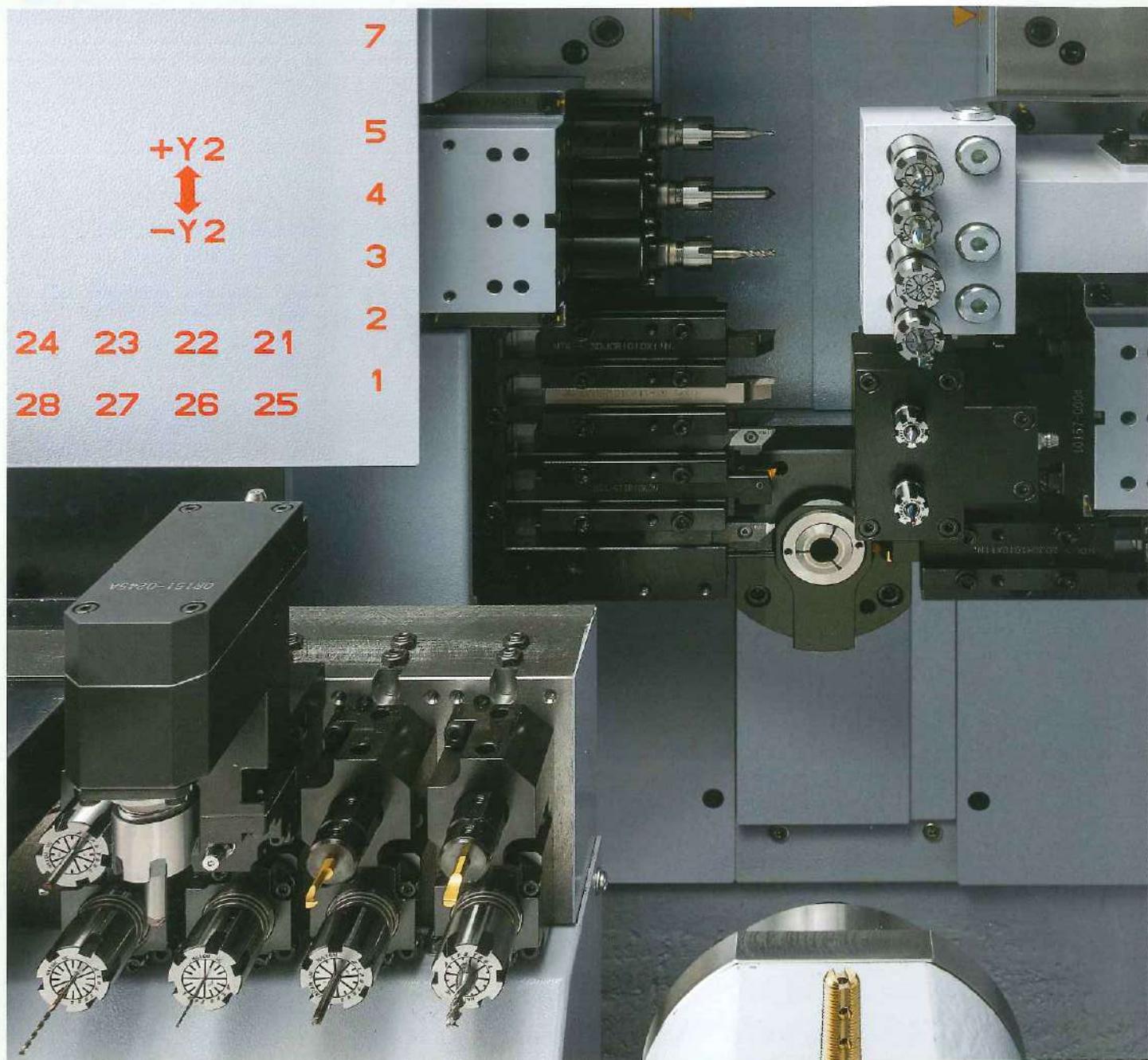
SWISS TYPE AUTOMATIC LATHE equipped with star motion control system 

# SW-12R11



SWISS TYPE AUTOMATIC LATHE equipped with star motion control system

# SW-12R11



The SW-12R11 is designed for production of small/complicated components for a variety of industries. This machine is designed with G.B./N.G.B. type switching to accommodate work for long and short parts. This machine is designed for production of a variety of small parts with complex design where precision and high productivity are required.



## The Latest SW Model Heading for the Highest capability in Machining of Small Diameter Workpieces

# SW-12RII has state-of-the-art technology for production of the small and complex components.

## Major features of SW-12R II

- 01** The opposing gang-type tool post is independently controlled to carry out simultaneous machining of turning, cross drilling, milling and face working.
- 02** Variety of tool blocks available for a broad range of complex machining.
- 03** In addition, a guide bush/non-guide bush type switching function allows selection of the most suitable machining for both short and long workpieces.

**A combination of the opposing gang-type tool post and the tool post designed for back 8-spindle unit with Y-axis control function eases quick and flexible machining of complicated parts.**



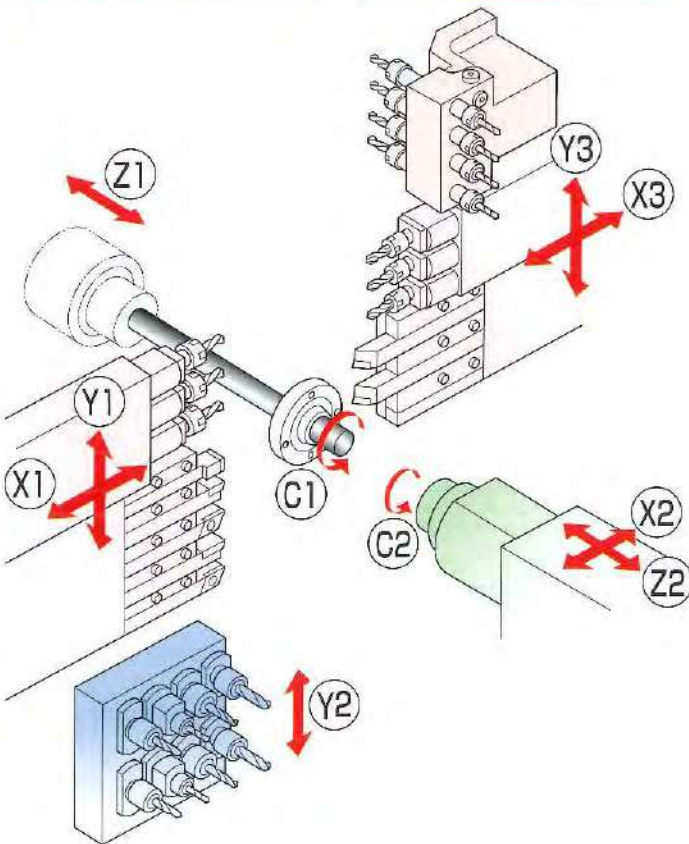
Reduced cutting time by simultaneous machining

**Independently controlled opposing gang-type tool post**



Upgraded complex machining capability on the back side

**8-spindle backworking unit with Y-axis control function**



### Improved productivity

Overall reduction of cycle time on the main and back-working operation.

- The opposing gang-type tool posts are independently controlled and allows various types of simultaneous machining.
- The tool post especially designed for the back 8-spindle unit with Y-axis control function achieves efficient overlapping machining on the back side
- The Star Motion Control System drastically reduces idle time.

### Realization of higher functionality

Substantial functions such as complex machining capability to enable flexible machining.

- The gang-type tool post can accommodate a variety of power tool units for enhanced complex machining capabilities.
- The tool post designed for the back 8-spindle unit with Y-axis control function improves complex machining capabilities on the back side.
- The guide bush and non-guide bush types can be switched over depending on the total workpiece length, and drastically reduces remnant material lengths.

### Pursuing higher accuracy

Smooth spindle movement and precise indexing to achieve high accuracy.

- The Star Motion Control System eliminates machine vibration by controlling the smooth spindle movement.
- The built-in type main and sub spindles achieve improved indexing accuracy.

By the program optimization, the time required for the processes of [Disengagement], [Next tool selection] and [Approach] can be minimized to reduce the non-cutting time.

## Star Motion Control System

### 1 Concept of reduction of non-cutting time

Conventional CNC-controlled machining



Machining through Star motion control system



### 2 Concept of cutting time reduction

Conventional CNC-controlled machining



Machining through Star motion control system



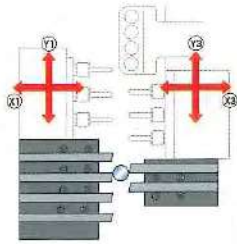
# The Ultra High Productivity Machine

## SW-12R11 – Machining variations

### 01 Front-end working

The independently controlled opposing gang-type tool post allows various types of simultaneous machining and reduces the machining time.

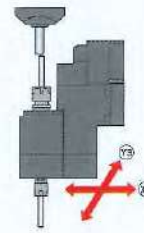
#### Balance cutting



#### VARIATION 01



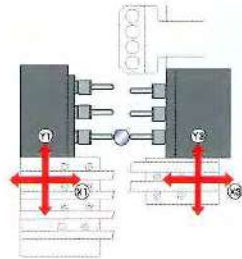
#### Front off-center drilling/milling



#### VARIATION 02



#### Opposing simultaneous cross drilling



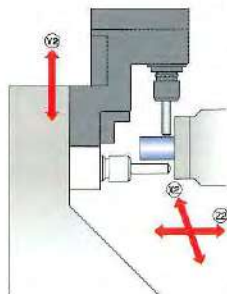
#### VARIATION 03



### 02 Rear-end working

Varied back workings allowed by back 8-spindle unit with Y-axis control for optimum machining.

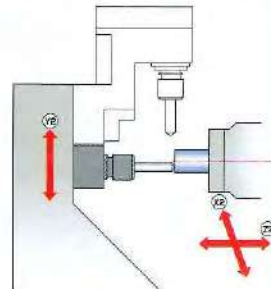
#### Back cross drilling



#### VARIATION 01



#### Back off-center face drilling/milling



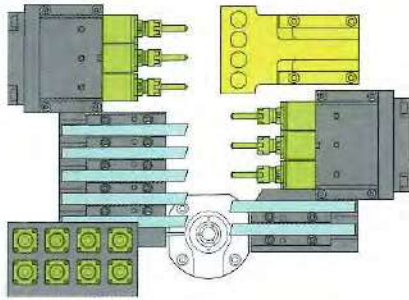
#### VARIATION 02



Thread whirling, angular hole drilling, polygon turning, hobbing and other capability for diverse operations.

**SW-12R II – Tooling System**

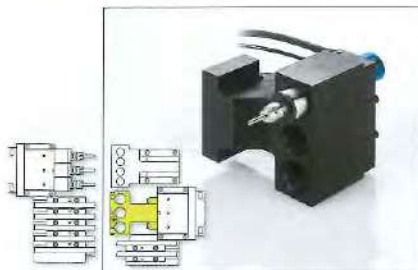
**Opposing gang-type tool post**



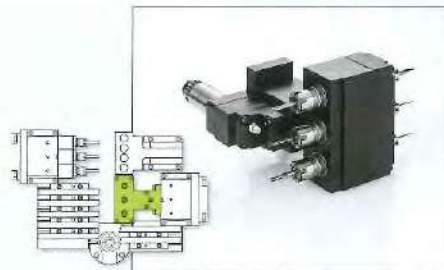
Milling unit ER11



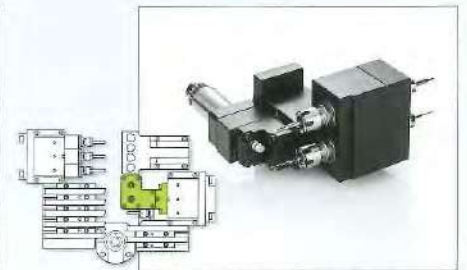
Milling unit ER8



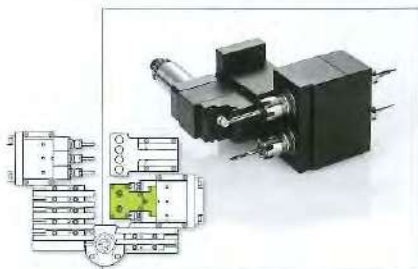
Triple holder for high-speed drilling unit



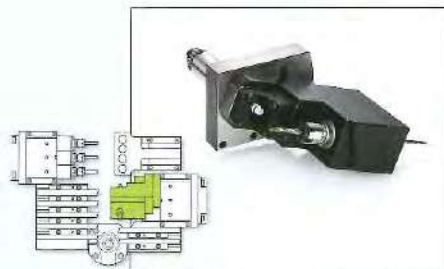
3-spindle opposing type front drilling unit



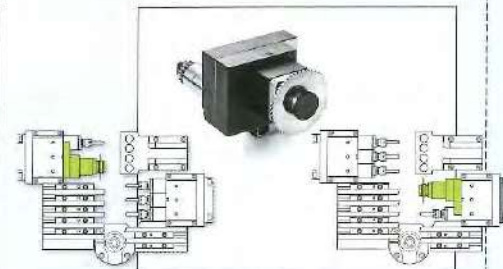
2-spindle opposing type front drilling unit (Type L)



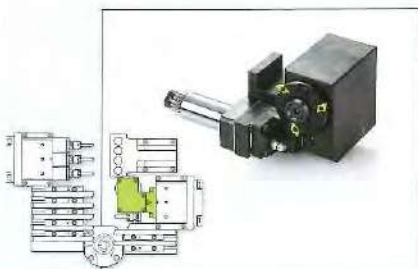
2-spindle opposing type front drilling unit (Type T)



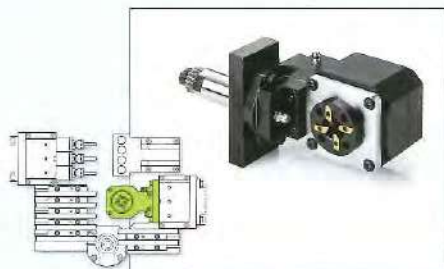
Angular hole drilling unit adjustable type



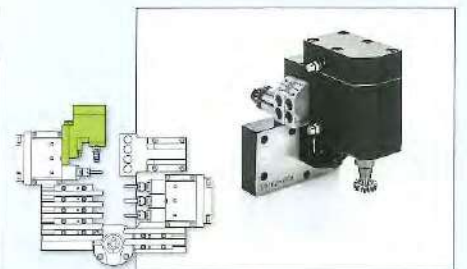
Slotting unit



Polygon machining unit



Thread whirling unit



Hob machining unit

**8-spindle backworking unit**



Milling unit ER11 (for back working)



Slotting unit (for back working)



Cross drilling unit (for back working)

## □ Standard Machine Specifications

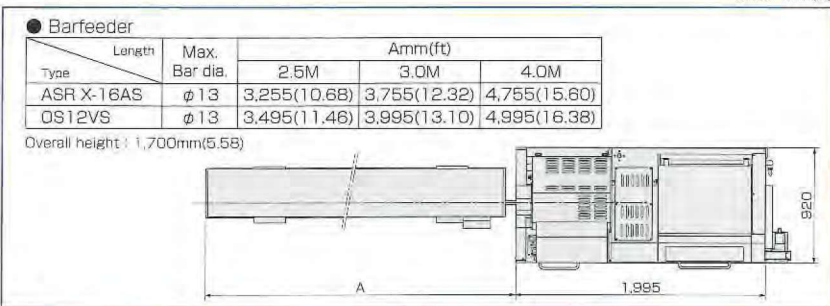
Item		Specifications
Max. machining diameter		φ13mm (33/64in)
Max. headstock stroke	Standard	135mm (5-5/16in)
	R.M.G.B. type	95mm(3-47/64in) : OP
Tool post configuration	N.G.B. type	Bar diameter×2.5(Max.30mm)(Max.1-3/16in)
	Front	Turning tool+Power-driven tool
Tool	Rear	Turning tool+4-spindle sleeve holder+Power-driven tool
	Number of tools	5 tools
Tool shank	Front	2 tools
	Rear	□10mm
4-Spindle sleeve holder	Number of tools	Front 4 tools
		Rear 4 tools
Max. drilling capability		φ8mm (5/16in)
	Max. tapping capability	M8×P1.25
Number of tools	Front	3pos.
	Rear	3pos.
Power driven att.	Max. drilling capability	φ5mm (3/16in)
	Max. tapping capability	M4×P0.7
Spindle speed		Max.12,000min <sup>-1</sup>
Drive motor		1.0kw(continuous)/1.2kw(5min./30%ED)
Rapid feed rate		35m/min(X2, Y1, Y3, Z1, Z2)
Main spindle indexing angle		24m/min(X1, X3), 15m/min(Y2)
Main spindle speed		C-axis control
Main spindle motor		Max.15,000min <sup>-1</sup>
Coolant tank capacity		2.2kw(continuous)/3.7kw(10min./25%ED)
Dimensions (W×D×H)		1,995×920×1,700mm
Center height		1,090mm
Weight		2,100kg
Power consumption		4.4KVA
A-weighted sound pressure : note-1		79dB

## □ Backworking Attachment Specifications

Item		Specifications
Max. chucking diameter		φ13mm (33/64in)
Max. length for front ejection		80mm (3-5/32in)
Max. parts projection length		20mm (25/32in)
8-spindle backworking unit	Number of tools	Stationary tool Max. 8 tools
		Power driven tool Max. 8 tools
	Max. drilling capability	Stationary tool φ8mm (5/16in)
		Power driven tool φ5mm (3/16in)
Max. tapping capability	Stationary tool	M6×P1.0
	Power driven tool	M4×P0.7
Power-driven att. spindle speed		Max.12,000min <sup>-1</sup>
Power-driven att. drive motor		1.0kw(continuous)/1.2kw(5min./30%ED)
Sub spindle indexing angle		C-axis control
Sub spindle speed		Max.15,000min <sup>-1</sup>
Sub spindle motor		2.2kw(continuous)/3.7kw(10min./40%ED)

## □ External Dimensions

unit : mm(ft)



## □ Standard Accessories and Functions

- CNC unit FANUC 31i-B5
- Operation panel 10.4-inch color LCD display
- Pneumatic unit
- Automatic centralized lubrication unit
- Coolant level detector
- Door interlock system
- Broken cut-off tool detector
- Parts ejection detector
- Drive unit for revolving guide bush
- Revolving guide bush unit
- Cs contouring control (main/sub)
- Spindle clamp unit (main/sub)
- Main/Sub collet
- 5-station tool holder □10mm
- 2-station tool holder □10mm
- Drive unit for power-driven attachment (front/rear)
- 4-spindle sleeve holder
- 8-spindle backworking unit with Y axis control function
- Drive unit for power-driven attachment (8-spindle backworking unit)
- Air purge unit for revolving guide bush
- Sub spindle air purge unit
- Automatic bar feeder interface
- RS-232C interface
- Work light
- Leakage breaker

## □ Optional Accessories and Functions

- Coolant flow detector
- Water removal unit
- Beacon
- Rotary magic guide bush unit
- For pneumatic unit rotary magic guide bush
- Guide bush mount
- Parts conveyor
- Parts receptacle
- Parts separator unit A
- Main spindle inner tube
- Sub spindle air blow unit
- Parts ejector (Spring type)
- Parts ejector (Air cylinder type)
- Parts ejector with guide tube
- Parts stopper unit
- Coolant unit (6.9MPa/2.5MPa/0.7MPa)
- Coolant unit signal cable
- Coolant unit power cable
- Coolant valve
- Coolant pipings
- Transformer
- Transformer CE marking version
- Cable for CE marking version
- CE marking version

### Note)

The machining capacities apply to SUS303 material. The machining capacities may differ from listed values depending on the machining conditions, such as the material to be machined or the tools to be used.

### note-1 :

- Measures conforming to ISO standard.
- A-weighted sound pressure is a general assessment standard characteristic that corrected the sound level to human acoustic sense.

※Design features, specifications and technical execution are subject to change without prior notice.

※This product is an export control item subject to the foreign exchange and foreign trade laws. Thus, before exporting this product, or taking it overseas, contact your STAR MICRONICS dealer.

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