

CNC SWISS TYPE AUTOMATIC LATHE SA-16R

star

Standard Machine Specifications

OP : Option

| Item | Specifications |
|---|---|
| Max. machining diameter | φ 16mm(5/8in) |
| Max. headstock stroke | Standard 135mm(5-3/10in) with gripping unit 120mm(4-7/10in) with revolving GB unit 100mm(4in) with Gripping unit & Revolving 90mm(3-1/2in) |
| Tool | Number of tools 6tools Tool shank □10×95~125mm |
| 4-Spindle attachment (for front working side) | Number of tools 4tools : OP Max. drilling capacity φ 7mm(9/32in) Max. tapping capacity M6×P1.0 Max. die cutting capacity M6×P1.0 |
| Power-driven attachment | Number of tools 3tools : OP Max. drilling capacity φ 4mm(5/32in) Max. tapping capacity M3×P0.5 Max. milling capacity φ 4mm(5/32in) |
| Main spindle min. indexing degree | 15° : OP / 1° : OP |
| Main spindle speed | Max. 12,000min ⁻¹ |
| Main spindle motor | Built-in motor drive 2.2kw(Continuous) / 3.7kw(15min) |
| Power-driven att. spindle speed | Continuous/5,000min ⁻¹ Intermittent/7,500min ⁻¹ |
| Power-driven att. drive motor | AC servo motor 0.4kw |
| Coolant tank capacity | 80 ℓ |
| Dimension(Length×Width×Height) | 2,090×770×1,650mm |
| Weight | 1,700kg |
| Power consumption | 6.0KVA |

Standard Accessories and Functions

1. Back working attachment
2. 4-spindle attachment
3. Pneumatic regulator
4. Main spindle position coder
5. Synchronous revolving guide bush unit
6. Tool holder
7. Coolant oil level detector (Lower limit)
8. Automatic centralized lubrication unit (with oil level detector)
9. Door interlock
10. Tool setter Interface
11. Parts separator
12. Sub spindle air blow unit
13. Broken cut-off tool detector
14. Parts ejection detector
15. Main/Sub spindle movement synchronous control
16. Main/Sub spindle speeds synchronous control
17. Absolute position detection function
18. Custom macro B
19. Background editing function
20. Servo torque limit & servo monitor function

Optional Accessories and Functions

1. Main spindle 1° indexing version
2. Main spindle 15° indexing version
3. 3-spindle cross drilling unit
4. Stationary guide bushing body
5. Stationary guide bushing sleeve
6. Parts conveyor
7. Bar stock gripping unit
8. Sub spindle position coder *
9. Sub spindle torque up version
10. Sub spindle 1° indexing version *
11. Sub spindle 15° indexing version *
12. Tool setter
13. Automatic power supply shut-off function

Rotary magic guide bush unit

- * Exclusive for sub spindle torque up version
- * Standard for sub spindle torque up version

Backworking Attachment Specifications

| Item | Standard | Torque up specification |
|---|-----------------------------|-----------------------------|
| Max. chucking diameter | φ 16mm(5/8in) | |
| Max. length for front ejection | 85mm | |
| Max. parts projection length | 30mm(1-3/16in) | |
| 4-Spindle attachment (for backworking side) | Number of tools 4 tools | |
| Max. drilling capacity | φ 4mm(5/32in) | φ 7mm(9/32in) |
| Max. tapping capacity | M3×P0.5 | M6×P1.0 |
| Sub spindle min. indexing degree | — | 15° : OP / 1° : OP |
| Sub spindle motor | Max. 8,000min ⁻¹ | Max. 9,000min ⁻¹ |
| Sub spindle speed | 0.5kw * | 0.5 / 1.1kw ** |

Marked * is AC servo motor Marked ** is AC spindle motor

Note)
The above machining capacities apply to S45C (AISI 1045, DIN C45) 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.

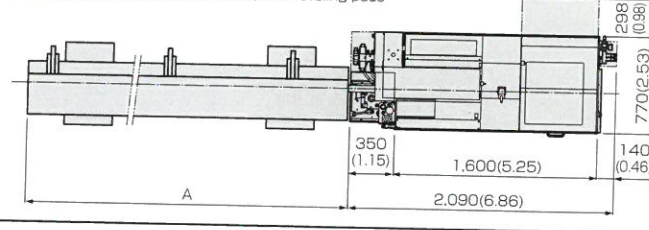
External Dimensions and Floor Space

unit : mm(ft)

Barfeeder

| Type | Length | | |
|----------|--------------|--------------|--------------|
| | 2.5M | 3.0M | 4.0M |
| S12A | 3,042(9.98) | 3,542(11.62) | 4,542(14.90) |
| SA16S | 3,058(10.02) | 3,558(11.67) | 4,558(14.95) |
| OS121 | 3,154(10.34) | 3,654(11.98) | 4,654(15.26) |
| OS203 | 3,410(11.18) | 3,860(12.66) | 4,715(15.46) |
| PF-V1S | 3,183(10.44) | 3,683(12.08) | 4,683(15.36) |
| ASR X-20 | 3,505(11.50) | 4,005(13.14) | 5,005(16.42) |

Overall height : 1,660 (5.45) Except for leveling pads



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

※This machine is subject to foreign exchange and foreign trade control act as one of the strategic commodities. Thus, before exporting this product, or taking it overseas, contact your STAR MICRONICS dealer.



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CNC SWISS TYPE AUTOMATIC LATHE

SA-16R

New Ace Machine
High Productivity Versatile Capacity and Space Saving



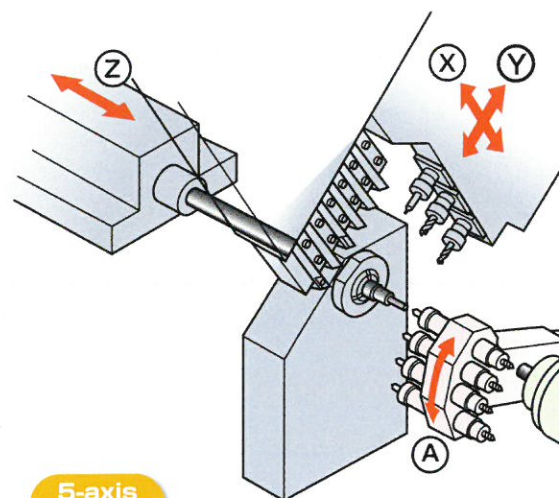
Network

Looking to future in speed and compact design

Small parts machining with even more speed and flexibility looking to developing industries. Here, our presentation of a new innovative "A Class" machine

Tool Post and Tooling

| Gang tool Post | 4-Spindle Attachment |
|---------------------------|-----------------------------|
| Turning tool 6 tools | Drilling tool 4 tools/front |
| Power-driven tool 6 tools | Drilling tool 4 tools/back |



5-axis control

The development of the latest SA-16R has been created by the highly successful SA-12/16. The latest enhancements provide more features for industry to reach its manufacturing goals in small part production.

Pursuing higher productivity from all angles

- ① Use of the gang tool post for rapid tool change along with pre-positioning of the 4 axis attachment.
- ② Jog speed increased to 78.5m/min in A axis and 20m/min in respective X, Y, Z and ZB axis.
- ③ Execution of various machining programs reducing cycle time is achieved by front-back simultaneous drilling and overlap machining.
- ④ The introduction of a 0.4kw motor for cross milling, the machining time has further been reduced.
- ⑤ Threading with the sub spindle has become possible. ★1

The space saving design enables effective utilization of shop floor space. The slant bed design ensures the depth of the machine is kept to a minimum of 770mm.

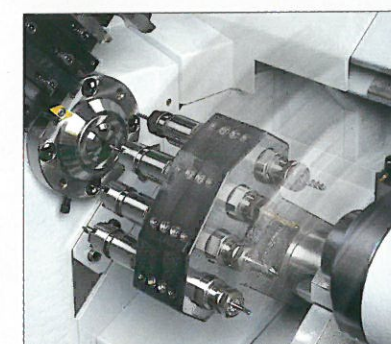
Composite machining of simultaneous cutting with a rotary tool and other tools

- ① Up to 17 tools including machine attachments and rotary tools can be mounted in the working area, improving the machine capability superior to other machines in its class.
- ② Optional main spindle indexing of 1 and 15 degrees increases capability for secondary machining.
- ③ Driven tool attachments driven by servo motor enables rigid tapping capability.
- ④ Simultaneous machining possibilities.

Improvements of machining accuracy and operability

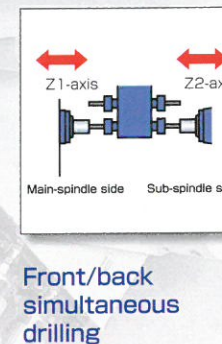
- ① Mounting of a built-in motor has realized low noise and maintenance-free operation. Also faster acceleration.
- ② Mounting of a built-in motor has enabled high precision thread cutting.
- ③ The machine has the capability to adjust the gripping power of the main collet and adjust the clearance between the guide bush and material.

★1. In this case the positioning encoder version or the sub spindle torque up version must be selected (both option)



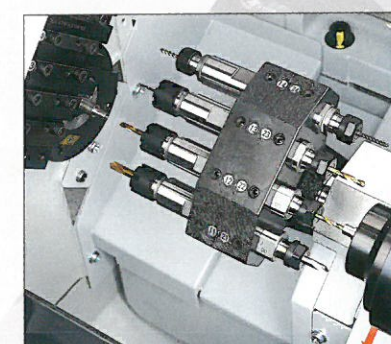
Independent acting type 4-axis attachment

By mounting of independent 4-axis attachment, dual approach movement is possible between the attachment and the gang type tool holder.



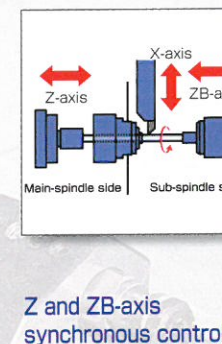
Front/back simultaneous drilling

By mounting a counter-face type tool unit on the 4-axis attachment, front/back simultaneous drilling (photograph) as well as simultaneous tapping can be operated.



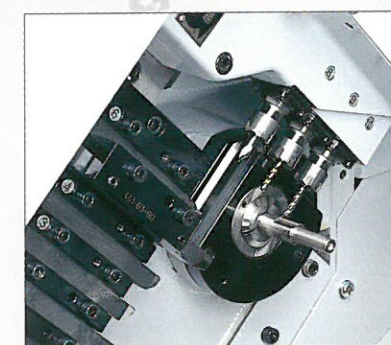
Overlap machining

By combining the main spindle with gang type tool holder, and sub spindle with 4-axis attachment, it is possible to carry out overlap machining.



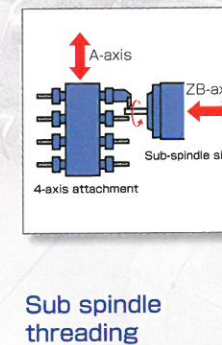
Z and ZB-axis synchronous control

The function of main spindle and sub spindle synchronous control is equipped as the standard specification. This enables to make cut-off operation while high precision chasing and rear end machining.



Composite machining with "plus α" additional operation items

With a 0.4kw motor for cross milling and by the function of 1 and 15 indexing, composite machining such as cross hole drilling, tapping and cross milling is feasible.



Sub spindle threading

By selecting positioning encoder specification of sub spindle (both option), threading by sub spindle becomes possible.

Mounting of AC spindle motor on sub spindle further widens the sphere of machining variations.

Appearance of new sub spindle torque up model

★ Back face machining performance

By improved maximum revolution speed (9000min⁻¹) and increased torque level up (about twice the standard specification), back face machining capacity has been largely increased.

Back face drilling capacity

φ4mm ▶ φ7mm

Back face tapping capacity

M3×P0.5 ▶ M6×P1.0

★ Sub spindle back threading

Threading is feasible by sub spindle.

★ Phase synchronous rotation control

Phase synchronous rotation control function enables sub spindle taking up non-standard shape material such as hexagonal bar processed by the main spindle side.

★ Spindle 1°/15° indexing option

Secondary machining of back face in relation to a front end operation becomes possible.

