

star

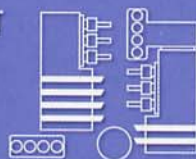
ECAS 12 ECAS 20

SWISS TYPE AUTOMATIC LATHE equipped with Star NICS



The Star NICS system is an evolutionary development of the group's commitment to pursuing a user friendly concept. ECAS was born as an achievement and a great improvement in workability, operability and productivity.

□ TOOL POST



□ WORK SIZE (MAX.)

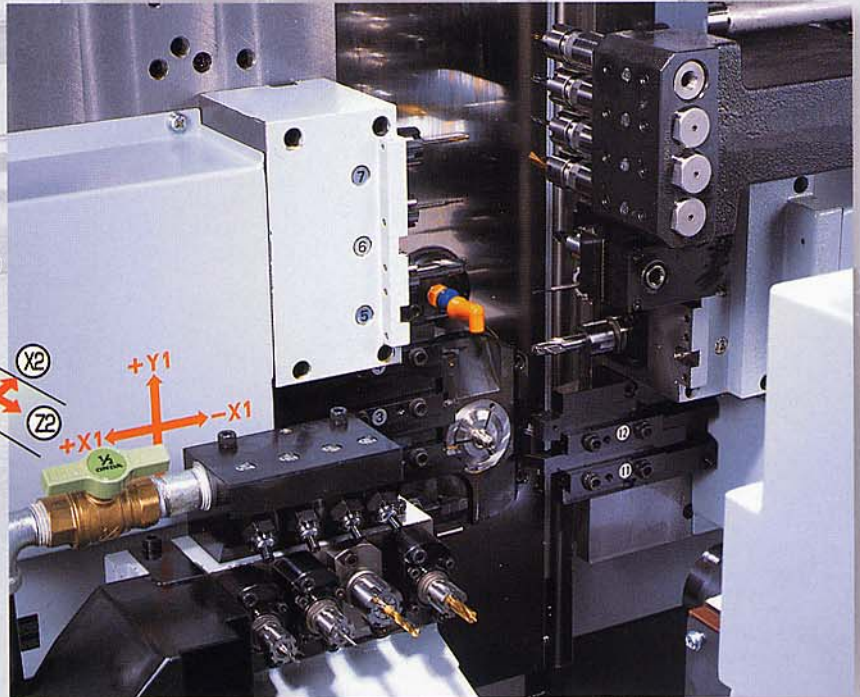
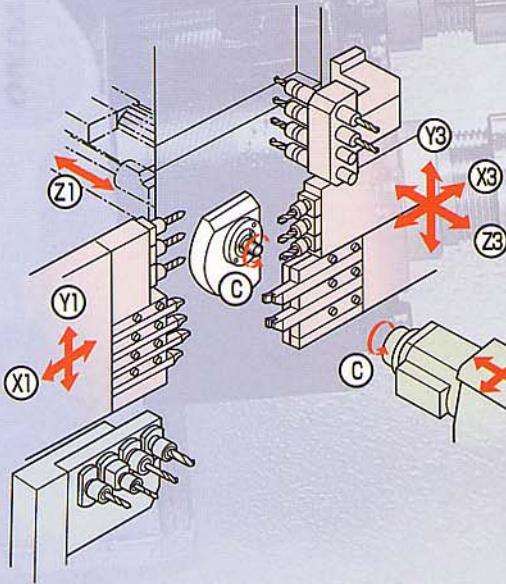


□ CONTROL SYSTEM



[Setting-up by NC, then machining by MC]

This is the way to facilitate machining simpler operation at a higher speed by



Tool Post & Tooling

a Counter-face gang type tool post

Turning tool	6 tools
Front-end working stationary tool	4 tools (Back end tool post)
Rear-end working stationary tool	2 tools (Back end tool post)
Power-driven tool	6 tools

Independent control of counter-face tool post

[Patent granted (Major European countries, USA and Japan)]

By controlling both longitudinal and vertical movements of the tool posts counter-facing the main spindle, the idle time for selecting tools has been drastically reduced. It has also made simultaneous machining of various operations feasible, reduced cutting time and achieved a remarkable improvement of productivity.

b 4-Spindle Back Working Unit

Stationary tool	4 tools
Power-driven tool	4 tools(Max. ★)

★Power-driven tool is option (for specification equipped with driving unit B for tool turning)

ECAS... The Star NICS machine that allows setting-up by the NC system and machining by the new MC system. This function is an ideal partner for a super, efficient, precision machine.

Star NICS Flow

01 Setting up process using the familiar NC system

The NC system is used for the creation of a machine programme to start with, and then confirmation of the machine operation thereafter. Operators familiar with the NC systems will be more than capable of handling machines with the motion control system.

02 Continuous machining using the motion control system

Continuous operation is achieved with the Star Micronics original motion control system by driving all elements of the machine, to achieve the most accurate components in the fastest possible cycle time.



- Creation of a machining programme
- Confirmation of the programme (dry run)
- High Speed Precision Cutting (minimal idle time)
- High Speed, Precision Secondary Machining

Star NICS (Star New Integrated Control System)

(An objective of ultimate high speed, high precision and ideal operability has been realised with this revolutionary control system.)

of complete profile parts with using the Star NICS system.



Processes from creation of ECAS data to starting of machining operation...

- | | | |
|---|--|---|
| <p>01 NC program writing</p> <ul style="list-style-type: none"> <input type="checkbox"/> Creation by SD-EDITOR (PC side) <input type="checkbox"/> Creation by e camo (PC side) <input type="checkbox"/> Creation by NC code (PC side) <input type="checkbox"/> Input by NC code (Machine side) | <p>02 Program optimisation</p> <ul style="list-style-type: none"> Conversion to motion control data <input type="checkbox"/> Automatic conversion in a batch (Machine side) | <p>03 Machining</p> <ul style="list-style-type: none"> <input type="checkbox"/> Motion control (All machining processes by MC control) |
|---|--|---|

★ **SD-EDITOR**

- Complicated secondary machining program can be generated only by inputting any parameters for tool location, machining conditions, etc in dialog method.
- Machining path can be displayed when creating or editing program. Each process can be displayed in 3-dimension.
- Machining geometry, time and interference checks using on screen 3D simulation make it a simple process to confirm on the actual machine.

★ **Using Easy Cam (e camo)**

- With this system it is so easy to define geometry and complete machining data supported by a menu selection system with setting value input.
- Machining geometry, time and interference checks using on screen 3D simulation make it a simple process to confirm on the actual machine.
- Machining data, once created can be stored in the memory and made available for future use. The data store makes programme creation faster and simpler.
- Programme editing and modification can be achieved with complete ease.

PROCESSING VARIATION

Balance cut machining including milling

Simultaneous machining

Back-face turning

Front off-center hole drilling + cross milling

Counter-face cross milling

Back eccentric machining

Pursuing high productivity

- Simultaneous machining plus drilling by counter-face tool post becomes possible, by which the cycle time of machining can substantially be reduced.
- Using the motion control system, tool selection is optimised and formation of continuous tool path without interference is realised.
- Machine construction that completely separates front and back machining is adopted. Division of processes is optimised by which reduction of machining time is realised.
- Development of the high-speed chucking unit has made it possible to have the chuck opened/closed without revolution variation of the main spindle.
- Easy CAM [e camo] developed exclusively by Star greatly reduces the time and labour needed for creating programmes.
- By adopting a non-hydraulic system (electrical system), the idle time between activities of each axis has been significantly reduced.
- By supplying the motor on the sub spindle with the same power as the main spindle, the back face machining capability is enhanced and the freedom to programme efficiently is improved.

Pursuing High Precision

- By using high-speed and high-precision servo controls, machining of corners during turning is improved.
- Greater accuracy when thread cutting is also assured.

Improved operability

- The machine can also be operated in the same way as traditional CNC machines. For operators who are experienced with NC machines, they will set and operate the machine with ease.
- By e camo simulation system, time and labour for the work such as interference checks on the actual machine can substantially be reduced.

■ **Standard Machine Specifications** OP : Option

Item		ECAS-12	ECAS-20
Max. machining diameter		φ 13mm(1/2in)	φ 20mm(25/32in)
Max. headstock stroke	Standard	205mm(8in)	
	with gripping unit	205mm(8in)	
Tool Post	Front	Turning tool + Power-driven tool	
	Rear	Turning tool+End working stationary tool+Power-driven tool	
Tool	Number of tools	4 tools	
	Tool shank	□10mm □12mm/□16mm : OP	
4-spindle sleeve holder	Number of tools	4 tools(Rear-end working stationary tool 2 tools : OP)	
	Max. drilling capacity	φ 10mm(25/64in)	
	Max. tapping capacity	M8×P1.25	
	Max. die cutting capacity	M8×P1.25	
Power driven att.	Number of tools	3 tools : OP	
	Max. drilling capacity	φ 8mm(5/16in)	
	Max. tapping capacity	M6×P1.0	
	Max. slotting capacity	1.5mm(W)×4mm(D)	
Main spindle min. indexing degree		0.01° (C-axis control)	
Main spindle speed		Max. 12,000min ⁻¹ Max. 10,000min ⁻¹	
Main spindle motor		Built-in motor drive 2.2kw(continuous)/3.7kw(30min)	
Power-driven att. spindle speed		Max. 8,000min ⁻¹	
Power-driven att. drive motor		AC servo motor 0.75kw	
Coolant tank capacity		120 ℓ	
Dimension(Length×Width×Height)		2,588×1,150×1,765mm	
Weight		3,500kg	
Power consumption		8.0KVA	

■ **Backworking Attachment Specifications** OP : Option

Item		ECAS-12	ECAS-20
Max. chucking diameter		φ 13mm(1/2in)	φ 20mm(25/32in)
Max. length for front ejection		80mm(3-5/32in)	
Max. parts projection length		30mm(1-3/16in)	
4-spindle attachment (for back working side)	Number of tools	4 tools	
	Max. drilling capacity	Stationary tool φ 10mm(25/64in)	
	Power driven tool capacity	φ 8mm(5/16in) : OP	
	Max. tapping capacity	Stationary tool M8×P1.25	
Power driven tool capacity	M6×P1.0 : OP		
Sub spindle min. indexing angle		0.01° (C-axis control)	
Sub spindle speed		Max. 12,000min ⁻¹ Max. 10,000min ⁻¹	
Sub spindle motor		Built-in motor drive 2.2kw(continuous)/3.7kw(30min)	
Power-driven att. spindle speed		Max. 8,000min ⁻¹ : OP	

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.

■ **Standard Accessories and Functions**

- Coolant oil level detector(lower limit)
- Automatic centralized lubrication unit
- Door interlock
- Pneumatic regulator unit
- Coolant oil flow sensor
- Parts separator
- 4-Station toolholder □10mm(front side) *
- 4-Station toolholder □12mm(front side) **
- 2-Station toolholder □10mm(rear side) *
- 2-Station toolholder □12mm(rear side) **
- 4-Spindle end working sleeve holder
- Drill sleeve for end working(301-25×4)
- Revolving guide bush unit
- Air purge system for revolving guide bush unit
- Drive system for power driven attachment(on gang tool)
- Cross milling/drilling unit(331-50×6)
- Main spindle C-axis control unit
- Sub spindle C-axis control unit
- Sub spindle air blow unit
- Parts ejection detector
- Back 4-spindle unit(stationary type)
- Drill sleeve for backworking(541-21×4)

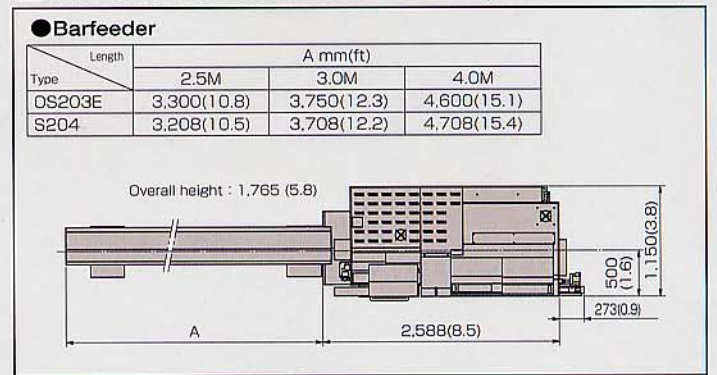
* ECAS-12 ** ECAS-20

■ **Optional Accessories and Functions**

- Drive system for power-driven attachment B
- Parts conveyor
- Barstock gripping unit
- 4-Station toolholder □16mm(front side) **
- 2-Station toolholder □16mm(rear side) **
- Tool setter
- Warning light
- Long parts ejector unit
- Parts Stocker
- Leakage Breaker
- Transformer CE marking specifications
- Rotary magic guide bush unit

* ECAS-12 ** ECAS-20

■ **External Dimensions and Floor Space** unit : mm(ft)



※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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