

star

# ECAS 32T

SWISS TYPE AUTOMATIC LATHE equipped with Star NICS



Experience the outstanding machining performance !

□ TOOL POST



□ WORK SIZE (MAX.)



□ CONTROL SYSTEM

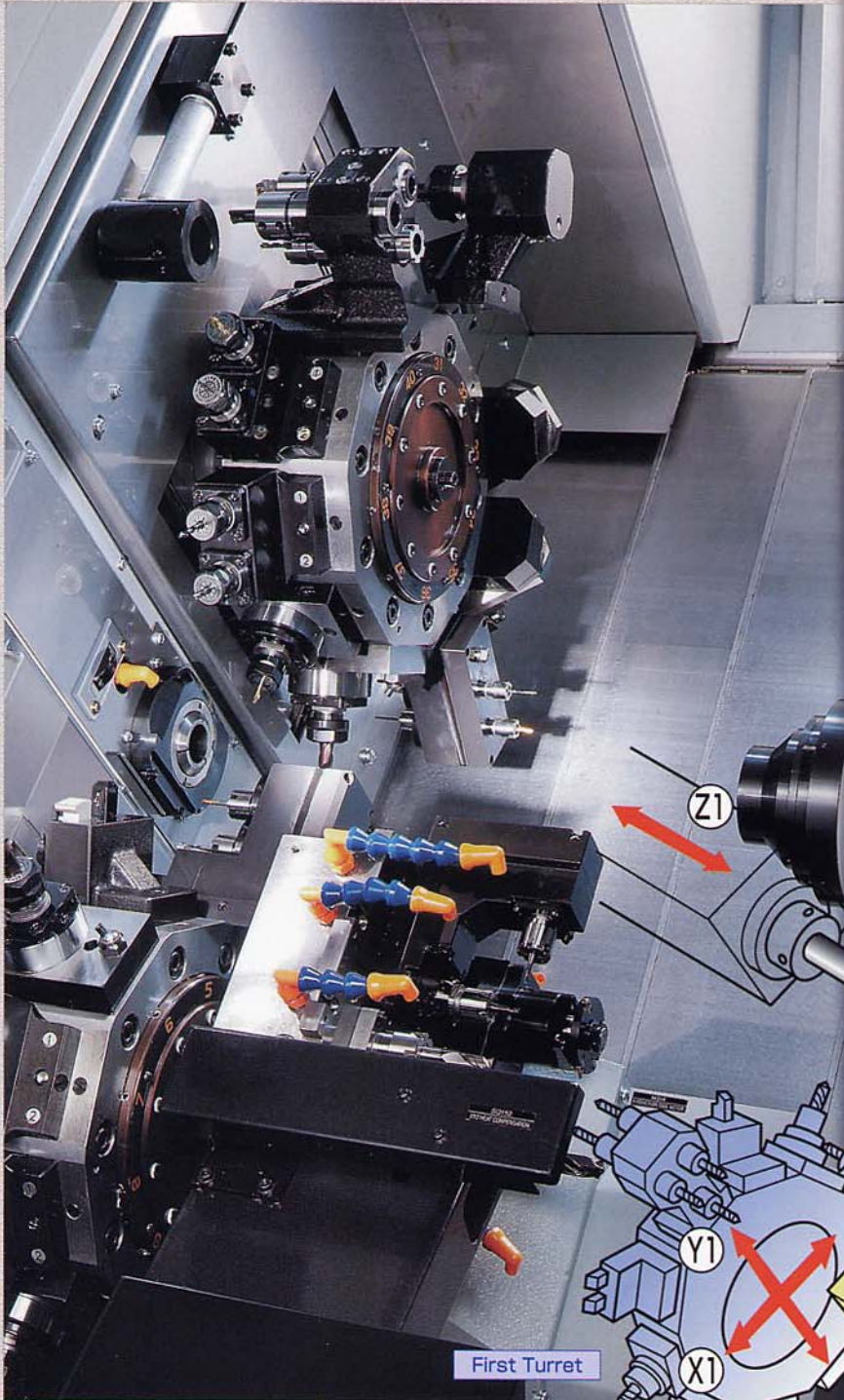


MOTION CONTROL SYSTEM

# Welcome to the outstanding world of complex machining

ECAS 32T provides the "ideal" in machining performance as far as precision complex components for the medical and aerospace industries are concerned.

A twin turret configuration combined with a comprehensive backworking tool post, the ECAS 32T provides incomparable machining capability and outstanding productivity employing the 11 axes control configuration and the Star motion control system.



## ☐ Tool Post & Tooling

### Twin Turrets

First Turret ● 10 stations  
 Second Turret ● 10 stations

Turning Tool ● Max. 2 tools/station  
 Sleeve ● Max. 3 sleeves/station  
 Power-driven Tool ● Max. 2 tools/station

### Backworking Tool Post

8 positions

Turning Tool ●  
 Sleeve ● } Max. 8 tools  
 Power-driven Tool ●

First Turret

Second Turret

Backworking Tool Post



Complex Machining C

ng capability!

(Motion Control System)  
Overwhelming Productivity

High Productivity

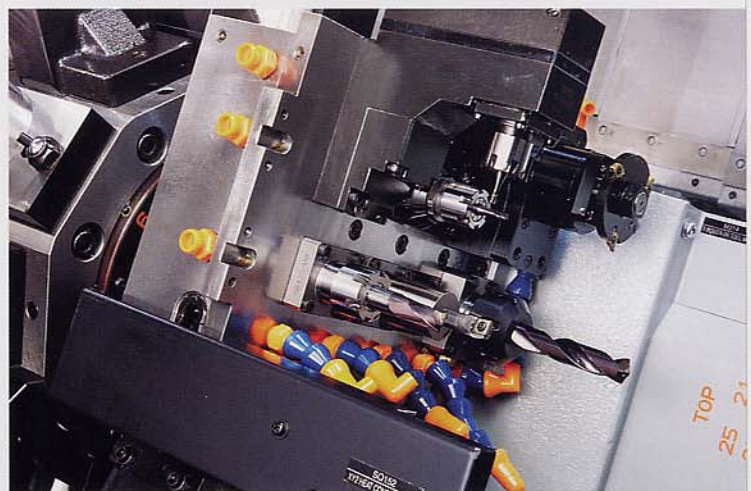
Complex Machining Capability

High Performance + High Productivity Model

(Twin Turrets)

Versatile Machining Performance

● Backworking Tool Post



**COMPLEX MACHINING CAPABILITY**

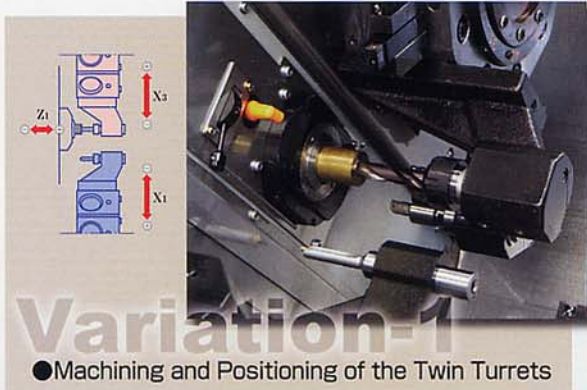
- The twin turret configuration enables simultaneous turning milling and drilling. The lower first turret is 2-axis controlled (X,Y) and the upper second turret is 3-axis controlled (X,Y,Z), each having 10 stations.
- The 4-axis controlled sub spindle (X,Y,Z,C) and the backworking tool post extend the variations of complex back machining.
- Deep hole drilling is available on front and back sides with the high-pressure coolant unit (OP).
- Long parts (up to 350 mm) are supported in a single chucking with the revolving guide bush unit.
- C-axis control is provided as standard for both main and sub spindles.

**HIGH PRODUCTIVITY**

- Tool change time is significantly reduced by mounting multiple tool units on the twin turrets.
- Idle time is reduced or eliminated by employing the STAR motion control system.
- Productivity is greatly improved by independent machining at main/sub spindles.

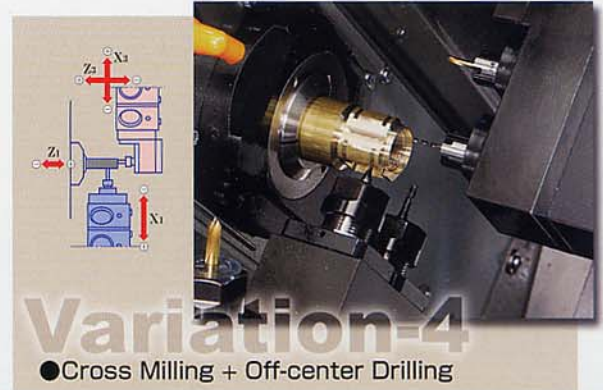
Capability & High Productivity

Outstanding machining capability expands the machine for complex components.



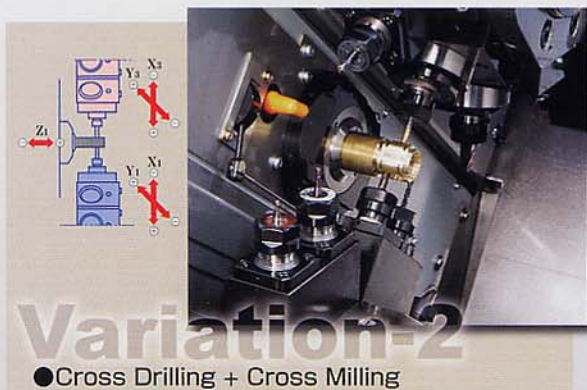
**Variation-1**  
 ●Machining and Positioning of the Twin Turrets

The independent control enables mutually independent operations of the twin turrets.



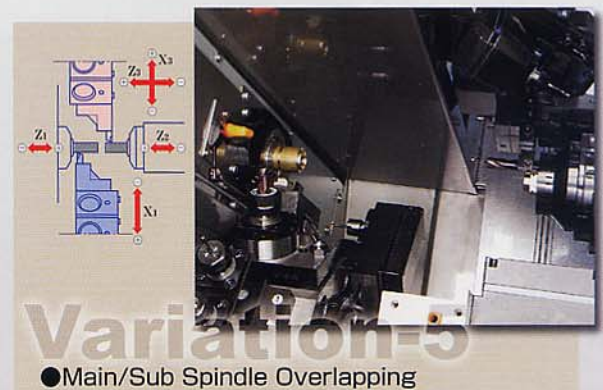
**Variation-4**  
 ●Cross Milling + Off-center Drilling

The Z3-axis control of the second turret enables simultaneous machining: cross milling by the first turret and off-center drilling by the second turret.



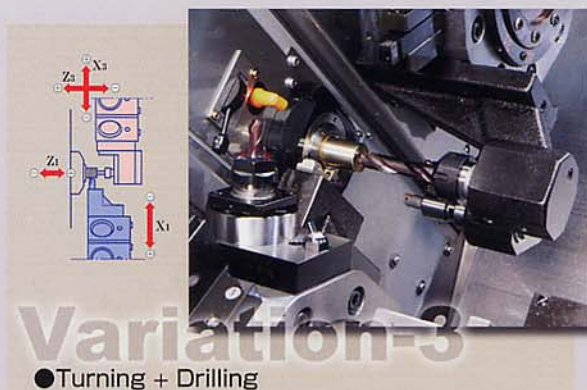
**Variation-2**  
 ●Cross Drilling + Cross Milling

The independent control enables simultaneous counter-face machining by the twin turrets.



**Variation-5**  
 ●Main/Sub Spindle Overlapping

Overlap machining is available by <the main spindle and the first turret> and <the sub spindle and the second turret>.



**Variation-3**  
 ●Turning + Drilling

The Z3-axis control of the second turret enables simultaneous machining: turning by the first turret and drilling by the second turret.



**Variation-6**  
 ●Thread Whirling

The C-axis control enables efficient threading directly from the raw material sizes.

# ining variations

- First Turret . . . . .
- Second Turret . . . . .
- Backworking Tool Post . . . . .

**Variation-7**  
 ● Angle Hole Drilling (photo: back side)

The unit is angled by 0 to 90 degrees (0 to 180 degrees for both sides). Drilling of any angle is available.

**Variation-9**  
 ● Back Cross Milling

The backworking tool post is equipped with the tool drive unit as standard, realizing diversified secondary machining.

**Variation-8**  
 ● Independent Back Machining

The 4-axis controlled sub spindle and the backworking tool post improve capability of independent back machining.

**Variation-10**  
 ● Deep Hole Drilling (photo: back side)

Deep hole drilling is available on front and back sides with the high-pressure coolant unit (OP).

## ☐ Tool Units for Turret Use



2-spindle front drilling unit



Cross drilling unit



2-spindle angled hole drilling unit



Sleeve holder for deep hole drilling



Angle hole drilling unit (Back)



Thread whirling unit

## ☐ Tool Units for Backworking Tool Post



2-Station tool holder



Polygon machining unit



Cross drilling unit

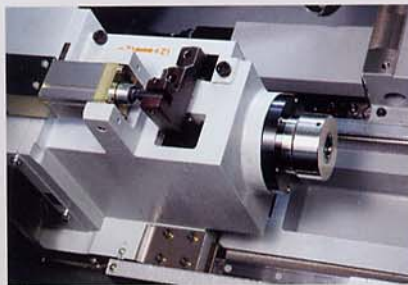


Slotting unit

# The ECAS-32T realizes higher productivity and greater precision configuration and satisfies environmental issues as well.

## HIGH PRODUCTIVITY

- The twin turrets oppose the machine centre line, each having 10 stations on which multiple tools are mounted. Tool index time is significantly reduced.
- The opposed twin turret configuration enables simultaneous complex machining by two or more tools (Variation-2).
- The second turret is positioned longitudinally by the Z3-axis control. Various simultaneous machining operations are available : Turning + Drilling (Variation-3) and Cross Milling + Off-center Drilling (Variation-4).
- The C-axis control of the main/sub spindles realizes diversified secondary operations. A single machine covers multiple machining processes.
- Overlap machining by the twin turrets is available, specifically by <the main spindle and the first turret> and <the sub spindle and the second turret>. (Variation-5).
- The 4-axis controlled sub spindle and the backworking tool post realizes an independent back machining (Variation-8). Optimization of the main and back operations significantly reduces machining time.
- The backworking tool post is equipped with the tool drive unit as standard. Diversified secondary machining operations are available such as slotting and polygon machining. Turning on the back side is also available.
- The high speed chucking unit allows collet operation even during high speed rotation of the main/sub spindles. The collet is servo controlled, which shortens the time of the clamp/unclamp operation.
- Deep hole drilling is available on front and back sides with the high-pressure coolant unit (OP).
- The motion control system optimizes program execution. Idle time (calculating time, waiting time, etc.) is significantly reduced.



□ Main spindle



□ Sub spindle

## OUTSTANDING PRECISION

- Optimization of the control data by the Star motion control system vastly improves and smooths the tool changes and slideway movements throughout the program.
- The main/sub spindles are built-in spindles, which improve C-axis control accuracy.

**ECAS 32T**

Complex Machining C

n, and pursues a user-friendly



## Safety

- Compatible with CE standard (EC machinery directive and EMC directive).
- The protective cover and door interlock unit are equipped as standard.
- Various safety devices are equipped: Broken Cut-off Tool Detector, Part Ejection Detector, Coolant Oil Level Detector Unit, Lubrication Oil Level Detector, Coolant Oil Flow Sensor (OP).

Free position operation panel



## Operability

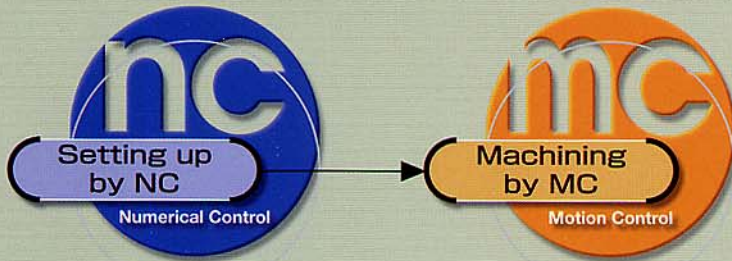
- Tool presetter (OP) allows external installation of the tool units on the twin turrets.
- Chucking force of the main/sub collets is automatically adjusted.
- The slant bed configuration provides a comfortable working environment. The operator easily changes tools.
- The free position operation panel provides a comfortable working environment. Working efficiency is improved.

## Environmental Features

- Machining time reduction cuts down energy consumption per product.
- Hydraulic unit is removed, reducing standby power and waste oil.
- The Built-in spindle configuration eliminates noise from the belts.

## Star NICS = Star New Integrated Control System

( Numerical Control ) + ( Motion Control )



### Setting up process

- Creation of a machining program
- Confirmation of the program (dry run)

Numerical Control is used from programming through test. Conventional NC user operates the machine easily.

### Continuous machining

- High Speed Precision Cutting (minimal idle time)
- High Speed, Precision Secondary Machining

Motion Control is used for continuous machining. High speed and high precision machining is available by program optimization.

## Easy Programming Process by ECAS!

### NC program writing

- Creation by NC code (PC side)
- Input by NC code (Machine side)

### Program optimisation

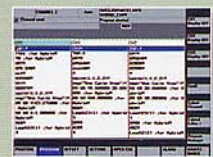
- Automatic conversion to motion control data (Machine side)

### Machining

- Machining by motion control



▲ NC program



▲ Motion control data

Capability & High Productivity

## Standard Machine Specifications

Item	Specifications	
Max. machining diameter	φ32mm(1-1/4in)	
Max. headstock stroke	350mm(13-25/32in) *	
Tool Post	First turret	10 stations
	Second turret	10 stations
Number of turning tools	Max. 2 tools/station	
Tool shank	□16mm	
Sleeve holder	Number of tools	Max. 3 tools/station
	Max. drilling capacity	φ23mm(29/32in)
	Max. tapping capacity	M12×P1.75
Power driven att.	Max. die cutting capacity	M12×P1.75
	Number of tools	Max. 2 tools/1 station
	Max. drilling capacity	φ10mm(25/64in)
	Max. tapping capacity	M8×P1.25
Power driven att.	Max. milling capacity	φ12mm(1/2in)
	Max. slotting capacity	2mm(W)×10mm(D)
Main spindle min. indexing degree	0.01° (C-axis control)	
Main spindle speed	Max. 7,000min <sup>-1</sup>	
Main spindle motor	Built-in motor drive 5.5w(continuous)/7.5kw(5min)	
Power-driven att. spindle speed	Max. 5,700min <sup>-1</sup>	
Power-driven att. drive motor	AC servo drive 1.8kw	
Coolant tank capacity	230 ℓ	
Dimensions(Width×Depth×Height)	3,175×1,745×1,860mm	
Center height	1,084mm(3.56ft) [including leveling pads]	
Weight	5,700kg	
Power consumption	8.0KVA	

\* With rotary magic guide bush unit : 320mm(12-19/32in)

## Backworking Attachment Specifications OP : Option

Item	Specifications		
Max. chucking diameter	φ32mm(1-1/4in)		
Max. length for front ejection	150mm(5-7/8in)		
Max. parts projection length	100mm(4in)		
Sub spindle min. indexing angle	0.01° (C-axis control)		
Sub spindle speed	Max. 7,000min <sup>-1</sup>		
Sub spindle motor	Built-in motor drive 2.2kw(continuous)/3.7kw(15min)		
Backworking tool post	Number of tools	8 tools	
	Turning tool	Max. 4 tools, □16mm : OP	
	Max. drilling capacity	Stationary tool	φ13mm(1/2in)
		Power driven tool	φ8mm(5/16in)
	Max. tapping capacity	Stationary tool	M10×P1.5
		Power driven tool	M6×P1.0
	Max. milling capacity	φ10mm(25/64in)	
	Power-driven att. spindle speed	Max. 6,000min <sup>-1</sup>	
	Power-driven att. drive motor	AC servo drive 1.3kw	

Note)

The 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.

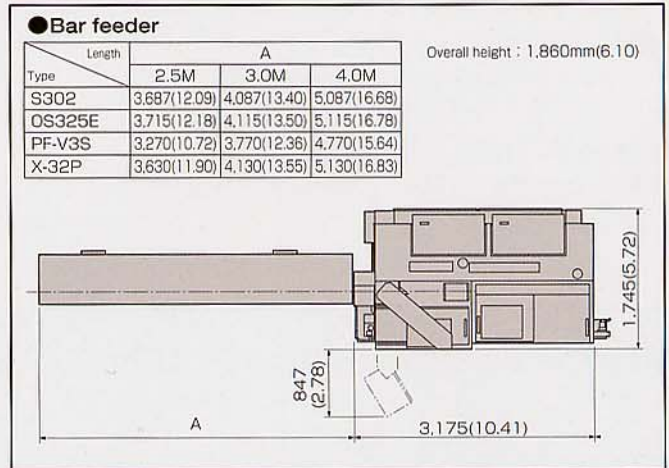
## Standard Accessories and Functions

- Pneumatic Regulator Unit
- Stand-Alone Coolant Tank
- Coolant Oil Level Detector Unit (Lower Limit)
- Automatic Centralized Lubrication Unit (with Oil Level Detection Function)
- Door Interlock Unit
- C-Axis Control Unit (Main Spindle, Sub Spindle)
- Clamping Unit (Main Spindle, Sub Spindle)
- Broken Cut-Off Tool Detector
- Backworking Tool Post
- Sub Spindle Air Blow Unit
- Part Ejection Detector
- Main Spindle Chuck Sleeve
- Sub Spindle Chuck Sleeve
- Revolving Guide Bush Unit
- Air Purge Unit for Revolving Guide Bush
- Drive Unit for Power-Driven Attachment (Turret, Backworking Tool Post)
- Parts Conveyor
- Work Light
- Manual Pulse Generator
- Leakage Breaker

## Optional Accessories and Functions

- Transformer
- Parts Stopper
- Tool Presetter
- Rotary Magic Guide Bush Unit
- Barstock Gripping Unit
- Coolant Oil Flow Sensor
- Long Parts Ejector with Guide Tube
- Full Set of Accessories for Long Parts Ejector
- Coolant Oil Unit, 1.5MPa
- High Pressure Coolant Piping
- High Pressure Coolant Piping, B
- Tool Unit for Turret (Stationary tools, Power-driven tools)
- Tool Unit for Backworking Tool Post (Stationary tools, Power-driven tools)

## 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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