Experience the outstanding machining performance!

- TOOL POST
- WORK SIZE (MAX.)
- CONTROL SYSTEM

MOTION CONTROL SYSTEM
Welcome to the outstanding world of complex machinery.

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

Backworking Tool Post
- 8 positions
- Turning Tool: Max. 2 tools/station
- Sleeve: Max. 3 sleeves/station
- Power-driven Tool: Max. 2 tools/station
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,G) 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 (CIP).

Long parts (up to 350 mm) are supported in a single chucking with the revolving guide bush unit.

G-axis control is provided as standard for both main and sub spindles.

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.
Outstanding machining capability expands the machine's capability for complex components.

**Variation 1**
- Machining and Positioning of the Twin Turrets
- The independent control enables mutually independent operations of the twin turrets.

**Variation 2**
- Cross Drilling + Cross Milling
- The independent control enables simultaneous counter-face machining by the twin turrets.

**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 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 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 6**
- Thread Whirling
- The C-axis control enables efficient threading directly from the raw material sizes.
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 (CP).

Tool Units for Turret Use
- 2-spindle front drilling unit
- Cross drilling unit
- 2-spindle angled hole drilling unit
- 2-Station tool holder
- Polygon machining unit
- Sleeve holder for deep hole drilling
- Angle hole drilling unit (Back)
- Thread whirling unit
- Cross drilling unit
- Slotting unit

Capability & High Productivity
The ECAS-32T realizes higher productivity and greater precision in 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 (CP).
- The motion control system optimizes program execution. Idle time (calculating time, waiting time, etc.) is significantly reduced.

**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.
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 silent 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.

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).

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

Capability & High Productivity
## Standard Machine Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. machining diameter</td>
<td>ø32mm (1-1/4 in)</td>
</tr>
<tr>
<td>Max. headstock stroke</td>
<td>350mm (13-3/8 in)</td>
</tr>
<tr>
<td>Tool Post</td>
<td>10 stations</td>
</tr>
<tr>
<td>Number of turning tools</td>
<td>Max. 2 tools/station</td>
</tr>
<tr>
<td>Sleeve holder</td>
<td>□ 16mm</td>
</tr>
<tr>
<td>Max. number of tools</td>
<td>Max. 3 tools/station</td>
</tr>
<tr>
<td>Max. drilling capacity</td>
<td>ø23mm (23/32 in)</td>
</tr>
<tr>
<td>Max. tapping capacity</td>
<td>M12 x P1.75</td>
</tr>
<tr>
<td>Max. die cutting capacity</td>
<td>M12 x P1.75</td>
</tr>
<tr>
<td>Number of tools</td>
<td>Max. 2 tools/station</td>
</tr>
<tr>
<td>Max. drilling capacity</td>
<td>ø10mm (3/8 in)</td>
</tr>
<tr>
<td>Max. tapping capacity</td>
<td>M8 x P1.25</td>
</tr>
<tr>
<td>Max. milling capacity</td>
<td>ø10mm (3/8 in)</td>
</tr>
<tr>
<td>Max. slotting capacity</td>
<td>2mm (0.08 in)</td>
</tr>
<tr>
<td>Main spindle min. indexng degree</td>
<td>0.01° (C-axis control)</td>
</tr>
<tr>
<td>Main spindle speed</td>
<td>Max. 7,000 rpm</td>
</tr>
<tr>
<td>Main spindle motor</td>
<td>6atm motor drive 5.5kW (continuous) / 7.5kW (5min)</td>
</tr>
<tr>
<td>Power-driven att. drive</td>
<td>AC servo drive 1.8kW</td>
</tr>
<tr>
<td>Coolant tank capacity</td>
<td>230 l</td>
</tr>
<tr>
<td>Dimensions (Width x Depth x Height)</td>
<td>3,175 x 1,745 x 1,850 mm</td>
</tr>
<tr>
<td>Center height</td>
<td>1,084mm (42.562 in) (including leveling pads)</td>
</tr>
<tr>
<td>Weight</td>
<td>5,700kg</td>
</tr>
<tr>
<td>Power consumption</td>
<td>8.0kVA</td>
</tr>
</tbody>
</table>

* With rotary magnetic guide bush unit : ø32mm (12-1/8 in)

## Standard Accessories and Functions

1. Pneumatic Regulator Unit
2. Stand-Alone Coolant Tank
3. Coolant Oil Level Detector Unit (Lower Limit)
4. Automatic Centralized Lubrication Unit (Oil Lubrication Function)
5. Door Interlock Unit
6. C-Axis Control Unit (Main Spindle, Sub Spindle)
7. Clamping Unit (Main Spindle, Sub Spindle)
8. Broken Out-Off Tool Detector
9. Backworking Tool Post
10. Sub Spindle Air Blow Unit
11. Part Ejection Detector
12. Main Spindle Chuck Sleeve
13. Sub Spindle Chuck Sleeve
14. Rotating Guide Bush Unit
15. Air Purge Unit for Rotating Guide Bush
16. Drive Unit for Power-Driver Attachment (Turret, Backworking Tool Post)
17. Parts Conveyor
18. Work Light
19. Manual Pulse Generator
20. Leakage Breaker

## Optional Accessories and Functions

1. Transformer
2. Parts Stacker
3. Tool Presetter
4. Rotary Magic Guide Bush Unit
5. Barstock Clamping Unit
6. Coolant Oil Flow Sensor
7. Long Parts Ejector with Guide Tube
8. Tool Set of Accessories for Long Parts Ejector
9. Coolant Oil Unit, 1.5MPa
10. High Pressure Coolant, Piping, B
11. Tool Unit for Turret
12. Stationary tools, Power-driven tools
13. Tool Unit for Backworking Tool Post
14. Stationary tools, Power-driven tools

## Backworking Attachment Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. chucking diameter</td>
<td>ø32mm (1-1/4 in)</td>
</tr>
<tr>
<td>Max. length for front ejection</td>
<td>150mm (5-7/8 in)</td>
</tr>
<tr>
<td>Max. parts projection length</td>
<td>100mm (4 in)</td>
</tr>
<tr>
<td>Sub spindle min. indexng angle</td>
<td>0.01° (C-axis control)</td>
</tr>
<tr>
<td>Sub spindle speed</td>
<td>Max. 7,000 rpm</td>
</tr>
<tr>
<td>Sub spindle motor</td>
<td>6atm motor drive 2.2kW (continuous) / 2.7kW (5min)</td>
</tr>
<tr>
<td>Number of tools</td>
<td>8 tools</td>
</tr>
<tr>
<td>Turning tool</td>
<td>Max. 4 tools, □ 8mm : OP</td>
</tr>
<tr>
<td>Max. drilling capacity</td>
<td>ø12mm (1/2 in)</td>
</tr>
<tr>
<td>Max. tapping capacity</td>
<td>M10 x P1.5</td>
</tr>
<tr>
<td>Max. milling capacity</td>
<td>M6 x P1.0</td>
</tr>
<tr>
<td>Max. slotting capacity</td>
<td>ø10mm (3/8 in)</td>
</tr>
<tr>
<td>Power-driven att. spindle</td>
<td>AC servo drive 1.3kW</td>
</tr>
<tr>
<td>Backworking tool post</td>
<td></td>
</tr>
</tbody>
</table>

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.

## External Dimensions and Floor Space

<table>
<thead>
<tr>
<th>Unit</th>
<th>mm(ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar feeder</td>
<td>Dural height : 1,880mm (62.1 ft)</td>
</tr>
<tr>
<td>Type</td>
<td>2.5M</td>
</tr>
<tr>
<td>S322</td>
<td>3,680 (121 ft)</td>
</tr>
<tr>
<td>OS32ER</td>
<td>3,710 (122 ft)</td>
</tr>
<tr>
<td>PA1003</td>
<td>3,260 (107 ft)</td>
</tr>
<tr>
<td>X-32P</td>
<td>3,980 (130 ft)</td>
</tr>
</tbody>
</table>

## Machine Tools Division

**Division Headquarters**
1500-34 Hinoya, Misawa, Aomori, Aomori, Aomori, 030-8033 Japan
Phone: +81-33-69-6509
Fax: +81-33-69-6509

**Parts Center Factory**
1500-34 Hinoya, Misawa, Aomori, Aomori, 030-8033 Japan
Phone: +81-33-69-6509
Fax: +81-33-69-6509

**Sales & Marketing Department**
3-16 Nozukicho, Shinagawa, 122-0054 Japan
Phone: +81-3-55-32-3000
Fax: +81-3-55-32-3005

**STAR MICRONICS AG**
Lietzstrasse CH 1411 Dietlikon, Switzerland
Phone: +41-44-411-6000
Fax: +41-44-411-6006

**LAGRO Werkzeugmaschinen - Handels GmbH & Co.KG**
Unterbaumstr. 4, 53065 Neuwied, Germany
Phone: +49-2821-7905-0
Fax: +49-2821-7905-20

**STAR MICRONICS GB LIMITED**
Cheapside Street London Docklands E17 1HUK
Phone: +44-1381-664455
Fax: +44-1381-664455

**Shanghai Xingang Machinery Co., Ltd.**
220 Fuhao Road, Nagano, Fudan Town, Shanghai 200131, China
Phone: +86-21-5658-2169
Fax: +86-21-5658-2169

---

*Design features, specifications and technical executions are subject to changes 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.*