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KEN

Focus On High Speed & 5-Axis



Asia's Only Professional 5-Axis Machining Center Manufacturer

KEN ICHI MACHINE is the only company in Asia that specializes in 5-axis machining centers for the aircraft and automotive industries. We integrate European design and European key components with high-speed 5-axis machine manufacturing professionals in Taiwan, to satisfy the needs of the following industries:

Aircraft Industry

Aluminum components:
Aluminum extrusion profiles, floor beams, frames, rib spars, flap tracks, frame boards, fuel tank side covers, etc.

Very tough materials: (Titanium, inconel, stainless steel, special steel, alloy steel) High precision aircraft components, engine casings, engine brackets, blisks.

Automotive Industry

Stamping die and mold: fenders, engine covers, door panels, body sides, etc.

Plastic injection molding: bumpers, dashboards, lamp molds, inner door panels, plastic interior components, etc.

General Machining Industry

Heavy-duty components for: machine structures, boats, railways, wind turbines, gearboxes, etc.

Focus On High Speed & 5-Axis

Aircraft Industry

Aluminum Structures
Titanium Structures
Engine Casings
Turbine Blades & Blisks

Automotive Industry

Stamping Die and Mold
Plastic Injection Mold

General Machining

Heavy-duty Components



JET Series



Giant Series



Loader Series



Titan Series



Linmax Twin Series



Linmax Series



Compact Series



Rotor Series



Rhino Series



HIGH TORQUE Series

ROTOR **RHINO** **TITAN** **Loader** **GIANT**



HIGH SPEED Series

JET **COMPACT** **LinMAX** **LinMAXTwin**

Rotor High Speed 5-Axis Machine Center

Aircraft Industry | Blisks, Engine Casings
Automotive Industry | Car Lamp Molds, Mold Cores



European Imported Rotary Tables

A/C Axis rotation is driven by a high torque direct-drive motor with reduced wear parts (worm and gears, belts, etc.), achieving long lasting accuracy.



260 Nm High Torque Spindle

Uses a European imported high torque spindle, suitable for the machining of titanium, stainless steel, and superalloys, etc.

500 rpm Turning Functions

Rotor-100 C-axis rotary table, also performs direct 500rpm turning operations



Rotor-100 A-Axis Swing with Exclusively-designed Hydraulic Balancing System

Rotary table can maintain stability and precision at high-speeds and at different loads.

Spindle

| | rpm | 24,000 | 12,000 | 8,000 |
|---------------------|------|---------|----------|----------|
| Max. Speed | rpm | 24,000 | 12,000 | 8,000 |
| Spindle Type | type | HSK A63 | HSK A100 | HSK A100 |
| Max. Spindle Power | kW | 55 | 50 | 26 |
| Max. Spindle Torque | Nm | 87 | 314 | 260 |

Rotor



| Spec. / Model | Unit | Rotor-100 |
|----------------------------------|-------|-----------|
| Travel | | |
| X-axis | mm | 1,180 |
| Y-axis | | 1,250 |
| Z-axis | | 800 |
| Max. Machining Size | | 1,400 |
| Swivel Table A&C Axis | | |
| Torque Motor Direct Drive | | |
| Table Size | mm | Ø1,000 |
| Rotation Speed | rpm | 30/50 |
| Feedrate | | |
| X/Y/Z-axis Rapid Feedrate | m/min | 50/50/40 |

Rhino

Horizontal Type Mobile Crossbeam 5-Axis Lathe / Milling Machine Center

Aircraft Industry | Engine Casings
General Machining | Bevel Gear Wheels, Gearboxes



Crossbeam with Up and Down Travel

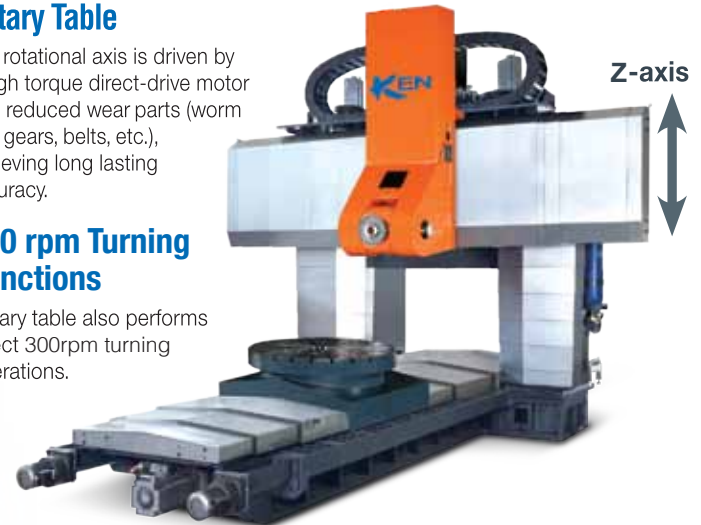
The Y-axis design uses a crossbeam that moves up and down so the spindle head can travel to any position, while ensuring rigidity and cutting precision.

European Imported Rotary Table

The rotational axis is driven by a high torque direct-drive motor with reduced wear parts (worm and gears, belts, etc.), achieving long lasting accuracy.

300 rpm Turning Functions

Rotary table also performs direct 300rpm turning operations.



European Imported High Torque Swing Milling Head

1,200Nm high torque spindle, can machine titanium, inconel, stainless steel, special steel, alloy steel, as well as other hard-to-cut materials.



Spindle

| | | |
|----------------------------|-------|-------|
| Tool Shank | BT-50 | |
| Max. Spindle Power S6-40% | kW | 40 |
| Max. Spindle Torque S6-40% | Nm | 1,200 |
| Max. Speed | rpm | 5,000 |

Rhino



| Spec. / Model | Unit | Rhino-1250 | Rhino-1600 | Rhino-2200 |
|---------------------------|-------|-------------------|------------|------------|
| Travel | | | | |
| X-axis | mm | 2,200 | 2,200 | 3,000 |
| Y-axis | | 2,350 | 2,350 | 2,800 |
| Z-axis | | 1,400 | | |
| Swivel Table | | | | |
| Torque Motor Direct Drive | | | | |
| Table Size | mm | Ø1,250 | Ø1,600 | Ø2,200 |
| Rotation Range | deg | 360° (Continuous) | | |
| Turning rpm | rpm | 300 | 230 | 180 |
| Feedrate | | | | |
| X/Y/Z-axis Rapid Feedrate | m/min | 24/24/24 | | |

Titan

Fixed Column Mobile Crossbeam 5-Axis Machine Center

**Aircraft Industry | Titanium Alloy Components,
Aircraft Landing Gears**
General Machining | Heavy-Duty Machining



Outstanding High Rigidity Cutting Capabilities

Crossbeam with Up and Down Travel

Crossbeam up and down moving design has no ram overhang vibration problems, so when spindle travels to any position, this ensures rigidity and cutting precision.



Z-axis

European Imported High Torque Mechanical Transmission Milling Head

- 1,200Nm high torque spindle, can machine titanium, inconel, stainless steel, special steel, alloy steel, as well as other hard-to-cut materials.
- B-axis rotation center shifts down so it can be closer to the working table surface, effectively increasing the machining area.

MTK



Spindle

| Spindle Type | | MTK | |
|----------------------------|-----|-------|--|
| Tool Shank | | BT-50 | |
| Max. Spindle Power S6-40% | kW | 40 | |
| Max. Spindle Torque S6-40% | Nm | 1,200 | |
| Max. Speed | rpm | 5,000 | |

Titan



| Spec. / Model | Unit | Titan-1630 | Titan-2240 | Titan-3050 |
|--|-------|------------------------|-------------|-------------|
| Travel | | | | |
| X-axis | mm | 3,000 | 4,000 | 5,000 |
| Y-axis | | 2,350 | 2,900 | 3,700 |
| Z-axis | | 750 | 1,000 | 1,250 |
| W-axis | | 300 | 300 | 300 |
| Distance Between Column | | 1,650 | 2,200 | 3,000 |
| Two-axis Milling Head (B&C Axis) High Torque Mechanical Transmission Milling Head | | | | |
| Max. Torque B/C | Nm | 4,500 / 3,500 | | |
| Clamping Torque B/C | | 4,500 | | |
| Measuring Resolution B&C | +/- | 0.001 / 0.001 | | |
| Rotation Angle B/C | | +10° to -105° / ± 185° | | |
| Table | | | | |
| Table Size | mm | 3,000x1,350 | 4,000x1,850 | 5,000x2,600 |
| Feedrate | | | | |
| X/Y/Z-axis Rapid Feedrate | m/min | 24 | | |

Loader

Moving Column Type 5-Axis Machine Center

General Machining | Heavy-Duty Machining



Spacious Working Area

All the axes of this machine (X/Y/Z/B/C axis) can travel along the moving column. Also the fixed worktable design ensures this machine is suitable for heavy-duty cutting, high precision and large component machining, and also provides a spacious working area.

X/Y Axis Drive

X/Y Axis uses a European imported double servo motor with electronic backlash eliminating technology. By combining a high-grade decelerator with a high accuracy rack and pinion drive, this provides high precision, no backlash, low noise, low maintenance, and extended service life.



European Imported High Torque Mechanical Transmission Auto Indexing Milling Head



Index

European Imported High Torque Mechanical Transmission Milling Head

B-axis rotation center shifts down so it can be closer to the working table surface, effectively increasing the machining area.



MTK

| Spec. / Model | Unit | Loader-33 | Loader-43 | Loader-53 |
|---|-------|--|-----------|--|
| Travel | | | | |
| X-axis | mm | 8,000 or more | | |
| Y-axis | | 4,300 | 5,300 | 6,300 |
| Z-axis | | 1,200 | 1,600 | 1,600 |
| Distance Between Column | | 3,300 | 4,300 | 5,300 |
| Table Width | | 2,800 | 3,300 | 4,300 |
| Two-axis Milling Head (B&C Axis) | | High Torque Mechanical Transmission Auto Indexing Milling Head | | High Torque Mechanical Transmission Milling Head |
| Control axis | Axis | 3+2-Axis | | 5-Axis Continue |
| Max. Torque B/C | Nm | — | | 4,500 / 3,500 |
| Clamping Torque B/C | | 15,000 / 15,000 | | 4,500 |
| Measuring Resolution B&C | +/- | 2.5°(Opt. 1°/ 5°) | | 0.001 / 0.001 μ m |
| Rotation Angle B/C | | 120°/ 185° | | +10° to -105° / \pm 185° |
| Table | | | | |
| Table Length | mm | 8,000 or more | | |
| Table Width | mm | 2,800 | 3,800 | 4,800 |
| Feedrate | | | | |
| X/Y/Z-axis Rapid Feedrate | m/min | 30/30/20 | | |

Spindle

| Spindle Type | | Index | MTK |
|----------------------------|------|-------|-------|
| Tool Shank | type | BT-50 | BT-50 |
| Max. Spindle Power S6-40% | kW | 46 | 40 |
| Max. Spindle Torque S6-40% | Nm | 1,200 | 1,200 |
| Max. Speed | rpm | 4,000 | 5,000 |

Loader



Giant

Moving Column Mobile Crossbeam Type 5-Axis Machine Center

General Machining | Heavy-Duty Machining



Spacious Working Area

All the axes of this machine (X/Y/Z/W/B/C axis) can travel along the moving column. Also the fixed worktable design ensures this machine is suitable for heavy-duty cutting, high precision and large component machining, and also provides a spacious working area.

W-Axis Crossbeam

This machine features a W-axis crossbeam up and down moving design with no ram overhang vibration problems, so when spindle travels to any position this ensures rigidity and cutting precision.

X/Y Axis Drive

X/Y Axis uses a European imported double servo motor with electronic backlash eliminating technology. By combining a high-grade decelerator with a high accuracy rack and pinion drive, this provides high precision, no backlash, low noise, low maintenance, and extended service life.



European Imported High Torque Mechanical Transmission Auto Indexing Milling Head



Index

European Imported High Torque Mechanical Transmission Milling Head

B-Axis rotation center shifts down so it can be closer to the working table surface, effectively increasing the machining area.



MTK

| Spec. / Model | Unit | Giant-33 | Giant-43 | Giant-53 |
|---|-------|--|--|------------------------|
| Travel | | | | |
| X-axis | mm | 8,000 or more | | |
| Y-axis | | 4,300 | 5,300 | 6,300 |
| Z-axis | | 1,200 | 1,500 | 1,500 |
| W-axis | | 1,500 | 2,000 | 2,000 |
| Distance Between Column | | 3,300 | 4,300 | 5,300 |
| Table Width | | 2,800 | 3,300 | 4,300 |
| Two-axis Milling Head (B&C Axis) | | High Torque Mechanical Transmission Auto Indexing Milling Head | High Torque Mechanical Transmission Milling Head | |
| Control axis | Axis | 3+2-Axis | 5-Axis Continue | |
| Max. Torque B/C | Nm | — | | |
| Clamping Torque B/C | | 15,000 / 15,000 | | |
| Measuring Resolution B&C | +/- | 2.5° (Opt. 1° / 5°) | | 0.001 / 0.001 |
| Rotation Angle B/C | | 120° / 185° | | +10° to -105° / ± 185° |
| Table | | | | |
| Table Length | mm | 8,000 or more | | |
| Table Width | mm | 2,800 | 3,800 | 4,800 |
| Feedrate | | | | |
| X/Y/Z-axis Rapid Feedrate | m/min | 30/30/20 | | |

Spindle

| Spindle Type | | Index | MTK |
|----------------------------|------|-------|-------|
| Tool Shank | type | BT-50 | BT-50 |
| Max. Spindle Power S6-40% | kW | 46 | 40 |
| Max. Spindle Torque S6-40% | Nm | 1,200 | 1,200 |
| Max. Speed | rpm | 4,000 | 5,000 |

Giant



JET

Moving Column Type Long Base 5-Axis Machine Center

**Aircraft High-Speed | Floor Beams, Extrusion Profiles,
Long & Narrow Components**

Fixed Type Worktable

With a fixed worktable and moving column design, the X/Y/Z/B/C axes all travel along the long and narrow worktable, so when manufacturing extrusion profiles this machine can meet professional design demands.



Rapid Feed Rate Up to 60,000 mm/min

The X-Axis uses a European imported double servo motor with electronic backlash eliminating technology. By combining a high-grade decelerator with a high accuracy rack and pinion drive, this provides high precision, no backlash, low noise, low maintenance, and extended service life.

**European Imported
Torque Motor Drive
Milling Head**

VS-24



TCH-20



TCH-L13



| Spec. / Model | Unit | JET-3 | JET-5 | |
|--|--------|-----------------------|---------------|---------------|
| Travel | | | | |
| Crossbeam | Set | 1 | 2 | more |
| X-axis | mm | 8,000, 16,000 or more | | |
| Y-axis | | 1,000 | 1,300 | |
| Z-axis | | 700 | 760 | |
| Distance Between Column | | 1,000 | 1,300 | |
| Five-axis Milling Head (B&C Axis) | | | TCH-20(A63) | TCH-L13 |
| Rotation Speed | rpm | | 50 / 50 | |
| Max. Torque (S1-100%) | Nm | | 1,400 / 1,300 | 312 / 447 |
| Clamping Torque | | | 4,000 / 4,000 | 2,000 / 2,000 |
| Rotation Angle | degree | | ±100° / ±240° | ±100° / ±240° |
| Feedrate | | | | |
| X/Y/Z-axis Rapid Feedrate | m/min | | 60/60/40 | |

Spindle

| Spindle Type | | VS-24 | TCH-20(A63) | TCH-L13 |
|---|-----|----------|-------------|----------|
| Tool Shank | | HSK A-63 | HSK A-63 | HSK A-63 |
| Max. Spindle Power S1-100% (S6-40%) | kW | 18 (23) | 42 (55) | 22 (25) |
| Max. Spindle Torque S1-100% (S6-40%) | Nm | 29 (37) | 67 (87) | 28 (32) |
| Max. Speed | rpm | 24,000 | 24,000 | 20,000 |

JET



JET

Compact

Gantry Type High-Speed 5-Axis Machine Center

Automotive Industry | Automotive Plastic Injection Molds
Aircraft High-Speed | Aluminum Alloy Components



One Piece Structure Design

Improves the overall structural rigidity and ensures the stability and precision of the mechanical performance.

Linear Motor Drive

X/Y Axes are driven by a linear motor drive, the advantages are no backlash, no wear and tear, easy maintenance, and extended service life.



Compact, Minimal Interference Torque Motor Driven Two-Axis Milling Head

This machine offers three different torque motor driven two-axis milling heads specially designed for the molding industry.

TCH-19



L13EVO



| Spec. / Model | Unit | Compact-1625 | Compact-2232 |
|---|--------------|---------------|--------------------------|
| Travel | | | |
| X-axis | mm | 2,500 | 3,200 |
| Y-axis | | 1,600 | 2,200 |
| Z-axis | | 1,000 | 1,000 |
| Distance Between Column | | 2,310 | 2,910 |
| Two-axis Milling Head (B&C Axis) | | | |
| Torque Motor Direct Drive | | TCH-L13(EVO) | TCH-19(A63) TCH-19(A100) |
| Rotation Speed B/C | rpm (360°/S) | 50/50 | |
| Max. Torque B/C | Nm | 312 / 447 | 1,100 / 900 |
| Clamping Torque B/C | | 2,000 / 2,000 | 4,000 / 4,000 |
| Measuring Resolution B/C | Arc.sec | ±3/±3 | |
| Feedrate | | | |
| X/Y/Z-axis Rapid Feedrate | m/min | 60 | |

Spindle

| Spindle Type | type | L13EVO | TCH-19 (A63) | TCH-19 (A100) |
|--------------------------------------|------|---------|--------------|---------------|
| Tool Shank | | HSK A63 | HSK A63 | HSK A100 |
| Max. Spindle Power S1-100% (S6-40%) | kW | 28 (33) | 42 (55) | 50 (65) |
| Max. Spindle Torque S1-100% (S6-40%) | Nm | 39 (56) | 67 (87) | 96 (124) |
| Max. Speed | rpm | 24,000 | 24,000 | 15,000 |

COMPACT



Linmax

Gantry Type High-Speed 5-Axis Machine Center

Automotive Industry | Stamping Dies and Molds
Aircraft High-Speed | Aluminum Alloy Components

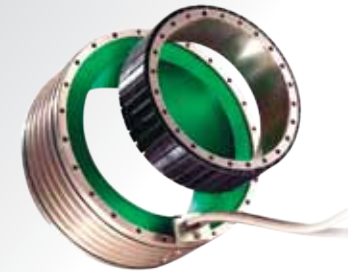
Gantry Structure

As all the axes move along the crossbeam and fixed worktable, it can handle very heavy workpieces without affecting the efficiency and precision of the machining.



Linear Motor Drive

X/Y Axes are driven by a linear motor drive, the advantages are no backlash, no wear and tear, easy maintenance, and extended service life.



Torque Motor Driven Two-Axis Milling Head

TCH-20



TCH-30F



| Spec. / Model | Unit | Linmax-25 | Linmax-30 | Linmax-40 |
|---|--------------------|---------------|-----------------------|--------------------------|
| Travel | | | | |
| X-axis | mm(in) | 4,000 / 5,000 | 5,000 / 6,000 / 8,000 | 6,000 / 8,000 / 10,000 |
| Y-axis | | 2,500 | 3,000 | 4,000 |
| Z-axis | | 1,000 | 1,100 (Opt. 1,250) | 1,100 (Opt. 1,250/1,500) |
| Two-axis Milling Head (B&C Axis) | | TCH-20(A63) | TCH-20(A100) | TCH-30F |
| Torque Motor Direct Drive | | | | |
| Rotation Speed B/C | rpm (360°/S) | 50 / 50 | | |
| Max. Torque B/C | Nm | 1,400 / 1,300 | | 2,400 / 2,200 |
| Clamping Torque B/C | | 4,000 / 4,000 | | 8,000 / 8,000 |
| Measuring Resolution B/C | Arc.sec | ±3 / ±3 | | |
| Rotation Angle B/C | +/- | ±100°/ ±240° | | |
| Feedrate | | | | |
| X/Y/Z-axis Rapid Feedrate | m/min | 50 | | |
| X/Y/Z-axis Acceleration | m/sec ² | 4 | | |

Spindle

| Spindle Type | | TCH-20(A63) | TCH-19(A100) | TCH-30F |
|--------------------------------------|-----|-------------|--------------|-----------|
| Tool Shank | | HSK A63 | HSK A100 | HSK A100 |
| Max. Spindle Power S1-100% (S6-40%) | kW | 42 (55) | 50 (65) | 40 (55) |
| Max. Spindle Torque S1-100% (S6-40%) | Nm | 67 (87) | 96 (124) | 248 (314) |
| Max. Speed | rpm | 24,000 | 15,000 | 12,000 |

Linmax



Linmax Twin

Double Gantry Type High-Speed 5-Axis Machine Center

Aircraft High-Speed | Extra-large / Extra-long Components



Linear Motor Drive

X/Y/Z Axes are driven by a linear motor drive, the advantages are no backlash, no wear and tear, easy maintenance, and extended service life.



Torque Motor Driven Two-Axis Milling Head

TCH-20

TCH-30F



Highly Efficient Machining

The double crossbeam design is combined with highly efficient milling heads, resulting in high performance manufacturing.

Spindle

| Spindle Type | type | TCH-20(A63) | TCH-30F |
|--------------------------------------|------|-------------|----------|
| Tool Shank | | HSK A63 | HSK A100 |
| Max. Spindle Power S1-100% (S6-40%) | kW | 42 (55) | 50 (65) |
| Max. Spindle Torque S1-100% (S6-40%) | Nm | 67 (87) | 96 (124) |
| Max. Speed | rpm | 24,000 | 15,000 |

| Spec. / Model | Unit | LinmaxTwin | |
|---|--------------------|---------------------------|-------------|
| Travel | | | |
| X-axis | mm (in) | 12,000 or more | |
| Y-axis | | 4,000 | 5,000 |
| Z-axis | | 1,500 | |
| Two-axis Milling Head (B&C Axis) | | Torque Motor Direct Drive | |
| | | TCH-30F | TCH-20(A63) |
| Rotation Speed B/C | rpm (360°/S) | 50 / 50 | |
| Rotation Angle B/C | +/- | ± 100° / ± 240° | |
| Feedrate | | | |
| X/Y/Z-axis Rapid Feedrate | m/min | 50 | |
| X/Y/Z-axis Acceleration | m/sec ² | 4 | |

Linmax Twin





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