Product Guide

Transforming your ideas into valuable intelligent products

CHEVALIER®

Grinding / Turning / Milling

We shape your ideas.™

Introduction

Established in 1978, Falcon Machine Tools Co., Ltd. is an innovative, Taiwan-based CNC machine manufacturer with facilities in the United States (Chevalier Machinery Inc.) and agents in Europe, the Middle East, Mainland China and South America. The company is publicly traded on the Taiwan Stock Exchange.

To meet our customers' high standards, we assemble our grinding, turning and milling machines in our own ISO 9001-certified factories with departments that include R&D, sheet metal production and electronics.

We're committed to providing superior solutions in a variety of industries including: Aerospace, Automotive, Defense, Wind Turbine, Gas & Oil Products, Medical, Semiconductor and Tool & Die.

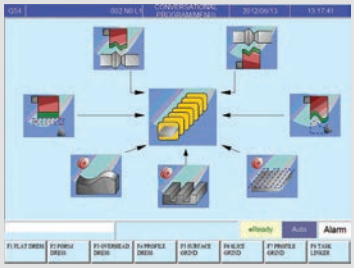
Our extensive network of highly qualified dealers delivers our products on time, at a competitive price and always backed by legendary service. Chevalier branded products are regularly exhibited at leading national and international trade shows.

Advanced SMART iControl include auto grinding, autodressing and constant-contact dressing modes

Integration and automation development produce precise parts quickly to meet current and emerging technologies

Core Technologies

User-friendly PC-based SMART iControls make it easy to learn and operate machines. Conversational programming permits operators to create custom programs without an engineering degree.



Exclusive iMachine Communications System™ (iMCS) software provides comprehensive remote monitoring anywhere in the world, anticipating problems before they occur to avoid downtime and increase productivity.

Advanced programming increases shop productivity by automating processes that simplify production and reduce the need for manual labor.

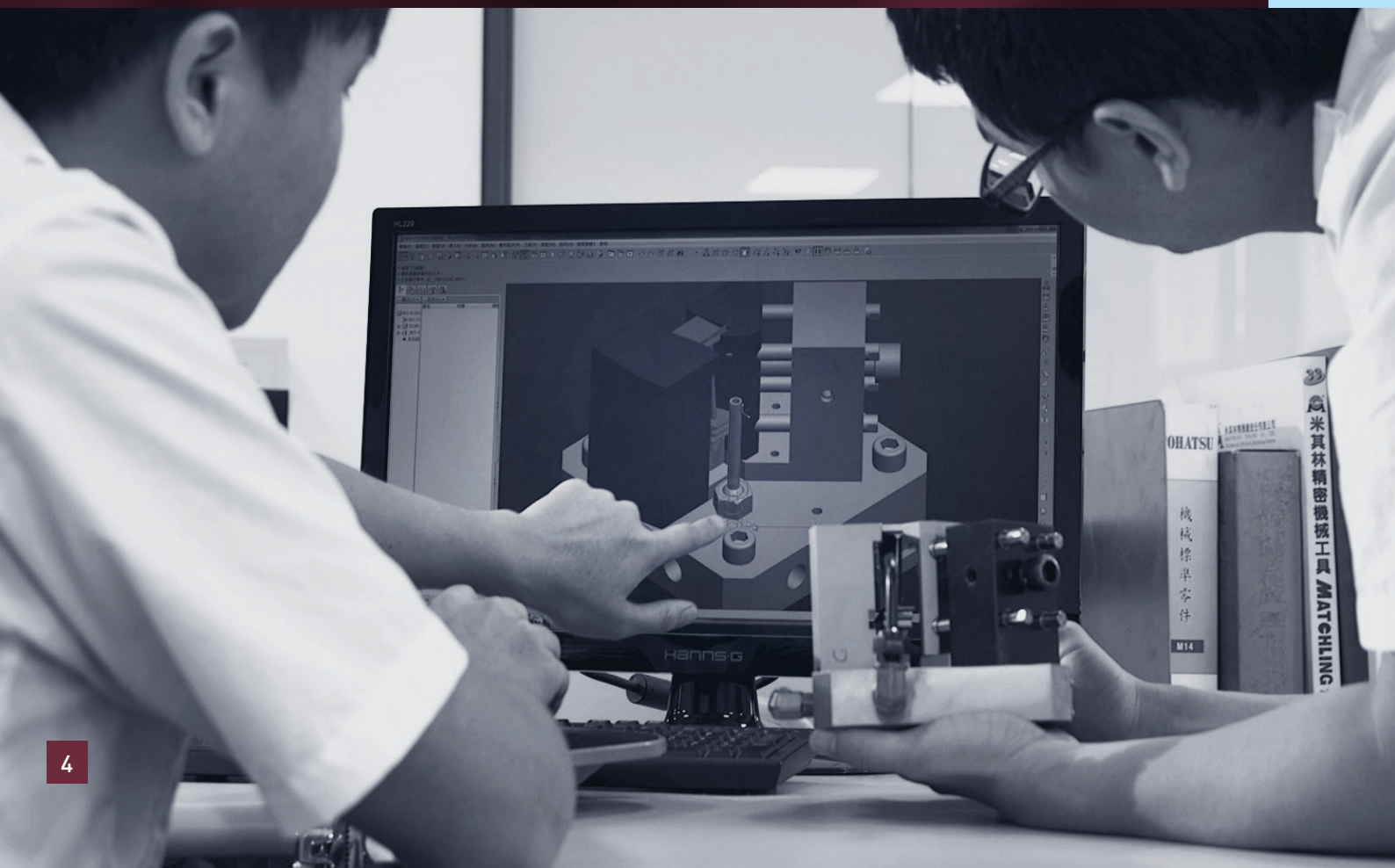
New machining techniques use a wide range of diverse materials to produce precise custom parts for specific applications.

Turnkey applications add value and innovation by delivering complete solutions that fulfill customers' quality and cycle-time requirements.

Research and Development

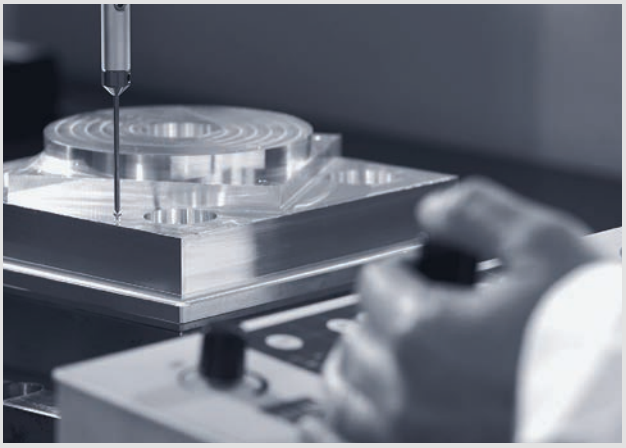
Maximum accuracy, flexibility and rigidity are the hallmarks of every Chevalier machine. To achieve these standards, our R&D Department uses 3D software for Finite Element Analysis and dynamic simulation throughout all phases of the design process.

Chevalier provides superior grinding, turning and milling solutions for a variety of precision-based industries



Quality Assurance

To meet exacting ISO 9001 standards, we follow a stringent quality control process from casting to assembly to final testing. To verify that all aspects of the manufacturing process meet our clients' specific requirements, we use laser calibration and ball-bar test equipment after assembly to assure precise verification and compensation for increased accuracy and repeatability.



All machines are assembled in our ISO 9001-certified facilities in Taiwan, which includes R&D, machining, sheet metal production and electronic departments

Manufacturing Facilities

We complete most precision machining processes in-house using dedicated CNC manufacturing machines. All structural assembly work—including electrical and controls—are assembled by our team of highly trained and experienced engineers.

Sales, Service and Parts

Customer satisfaction is always the highest priority for Falcon Machine Tools Co., Taiwan and U.S.A. based Chevalier Machinery. Our main factory in Taiwan and a modern warehouse facility in the Los Angeles area maintains a comprehensive inventory of parts for all machines including thorough service training programs for our dealers and end-users.

Our goal is to produce machines with built-in value that meet our customers' ever-changing needs

New intelligent gantry-type automatic aluminum wheel production equipment

Our highly efficient Intelligent Gantry-Type Automatic Production Line is designed to make sure each machine meets customers' expectations for design, features, precision, quality and reliable performance for years to come.

This automatic production line, developed and tested by our R&D department and application team, includes vertical lathes and vertical machine centers along with automatic loading and unloading systems, workpiece identifying, positioning, flipping, cleaning and in-process measuring systems.

We significantly increased the system's production efficiency by using high-speed, double-jaw robot arm movements, vertical direction at 60 m/min and horizontal direction at 80 m/min.

As a result, our professional team can study customers' requirements and design a complete integrated production line—including an automatic loading and unloading system—to meet their specifications.

Grinding machines

Double Column Grinding Machines

FPG-60120DC • 60160DC • 60200DC • 100160DC • 100200DC • 100240DC • 100400DC • 100480DC • 120200DC • 120515DC Series (Available in other sizes)

- SMART iControl and Moving Beam Type
- Table Size: up to 3,000 x 13,000 mm (118.1" x 511.8")
- Max. Table Load: up to 80,000 kg (176,000 lbs.)
- Spindle Speed: 500 to 2,000 rpm
- Horizontal Head: 30 kW (40 HP), Vertical Head: 15 kW (20 HP)

FSG-4060DC • 4080DC • 40120DC • 40160DC • 5060DC • 5080DC • 50120DC • FSG-6060DC • 6080DC • 60120DC • 60160DC Series (Available in other sizes)

- SMART iControl and Fixed Beam Type
- Table Size: up to 1,500 x 4,000 mm (59.1" x 157.5")
- Max. Table Load: up to 35,000 kg (77,000 lbs.)
- Spindle Speed: 500 to 2,000 rpm
- Spindle Motor: up to 22 kW (30 HP) on Horizontal Head

Production CNC Grinder

FMG-1632CNC-HD

- Siemens/Fanuc Control
- Table Size: 410 x 810 mm (16.1" x 31.9")
- Max. Table Load: 1,500 kg (3,300 lbs.)
- Moving Column with Creep Feed Function
- Spindle Speed: 500 to 1,800 rpm
- Spindle Motor: up to 55 kW (75 HP)

FSG-H/B818CNC • FSG-C1224CNC Series

- Siemens/Fanuc Control
- Table Size: up to 305 x 610 mm (12" x 24")
- Moving Column With Creep Feed Function
- Spindle Speed: 500 to 3,500 rpm
- Spindle Motor: up to 37 kW (50 HP)

Surface and Profile CNC Grinders

FMG-B1224

SMART iControl

Table Size: 300 x 600 mm (11.8" x 23.6")

Max. Table Load: 420 kg (925 lbs.)

Spindle Motor: up to 30 kW (40 HP)

Spindle Speed: 600 to 3,600 rpm

SMART-B818III • B1224III • B1640III • B2440III • B2460III • B2480III Series

SMART iControl

Table Size: up to 600 x 2,000 mm (23.6" x 78.7")

Spindle Motor: up to 18.5 kW (25 HP)

Spindle Speed: 500 to 1,800 rpm (B818III 1,000 to 7,000 rpm),
Higher Speed Available

SMART-H818III • H1224III • H1640III • H2440III • H2460III • H2480III Series

SMART iControl

Table Size: up to 600 x 2,000 mm (23.6" x 78.7")

Hydraulic-driven X-axis

Spindle Motor: up to 18.5 kW (25 HP)

Spindle Speed: 500 to 1,800 rpm (H818III 1,000 to 7,000 rpm) ,
Higher Speed Available

Grinding machines

Fully-automatic Grinders

FSG-2040ADIV • 2060ADIV • 2440ADIV • 2460ADIV • 2480ADIV Series

- iSurface Control
- Table Size: up to 600 x 2,000 mm (23.6" x 78.7")
- Auto. Dressing and Compensation (Optional)
- Elevation Driven by Servo Motor
- Precisely Scraped Turcite-B on X- and Z-axis
- Spindle Motor: up to 18.5 kW (25 HP)
- In-Machine Dynamic Balancing

FSG-1224ADIV • 1632ADIV • 1640ADIV Series

- iSurface Control
- Table Size: up to 400 x 1,000 mm (15.7" x 39.4")
- Auto. Dressing and Compensation (Optional)
- Elevating and Crossfeed Driven by Servo Motor
- Elevating and Crossfeed Equipped with Ballscrew
- Needle Roller Guide Way
- Spindle Motor: up to 7.5 kW (10 HP)
- In-Machine Dynamic Balancing

Double-sided Fine Grinders

FDG-700

- iSurfaceDS Control
- Wheel Dia.: Ø700 mm (27.6")
- Max. Workpiece Dia.: Ø205 mm (Ø8.1")
- Max. Workpiece Grinding Thickness: 25 mm (1")
- Max. Load Pressure: 600 kPa
- Upper Disk: Motor 5.5 kW (7.5 HP) / Speed 60 Hz, 125 rpm
- Lower Disk: Motor 5.5 kW (7.5 HP) / Speed 60 Hz, 125 rpm
- Inner Disk: Motor 2 kW (2.7 HP) / Speed 60 Hz, 75 rpm

Fully-automatic Grinders

FSG-3A818 • 3A1224 Series

3-axis Automatic
Table Size: up to 300 x 600 mm (11.8" x 23.6")
Double "V" Turcite-B Saddles Ways
Spindle Speed: up to 3,450 rpm
Spindle Motor: up to 3.7 kW (5 HP)

Semi-automatic Grinders

FSG-2A618 • 2A818 • 2A1224 Series

2-axis Automatic: X-Axis by Hydraulic System Z-axis by Motor
Table Size: up to 300 x 600 mm (11.8" x 23.6")
Z-axis with Double "V" Ways and Electric Motor
Hand Scrapped Turcite-B Used on X- and Z-axis (2A1224)
Spindle Speed: 1,750 rpm (2A618), 3,500 rpm (2A818, 2A1224)
Spindle Motor: 1.5 kW (1 HP) (2A618), 3.7 kW (5 HP) (2A818, 2A1224)

Manual Grinders

FSG-618M Series

Ball Table Ways
Double "V" + Turcite-B on Z-axis
Table Size: 175 x 480 mm (6.9" x 18.9")
Chuck Size: 150 x 450 mm (5.9" x 17.7")
Table Surface to Spindle Center: 450 mm (17.7")
Spindle Speed: 3,450 rpm
Spindle Motor: 1.5 kW (1 HP)

FSG-612SP • 618SP • 818SP Series

Double "V" + Turcite-B on Z-axis
Table Size: up to 200 x 450 mm (7.9" x 17.7")
Ballscrew on Crossfeed
Spindle Speed: 3,450 rpm
Spindle Motor: 1.5 kW (1 HP)
Table Surface to Spindle Center: 500 mm (19.7")

Turning machines

Vertical Turning Lathes

FVL-1250 • 1600 • 2000VTC+C Series

Fanuc/Siemens Control	Table Dia.: up to Ø2,000 mm (Ø78.7")
Box Way Structure	Max. Weight: up to 12,000 kg (26,000 lbs.)
Spindle Motor: up to 75 kW (100 HP)	Transmission: 2-Speed Gearbox
Max. Swing Dia.: up to Ø2,500 mm (Ø98.4")	Optional with C axis and Power Milling Spindle

FVL-8 • 12 • 20 • 24 Series

Fanuc Control	Spindle Speed: 50 to 1,500 rpm
Box Way Structure	Chuck Size: up to 530 mm (21")
Spindle Motor: up to 50 kW (70 HP)	Turret No.: up to 2 sets
Max. Swing Dia.: up to Ø850 mm (Ø33.5")	

Multi-axis Turning/Milling Lathes

FBL-250Y/SY • 320Y/SY Series

Fanuc Control	Max. Turning Dia.: Ø460 mm (Ø18.1")
Multi Tasking Lathe with Y-axis Milling and Sub Spindle	Max. Turning Length: 558 mm (22")
Spindle Motor: 15 kW (20 HP)	Bar Capacity: up to 75 mm (3")
Spindle Speed: up to 4,500 rpm	BMT Live Turret
Max. Swing Dia.: Ø600 mm (Ø23.6")	Servo Tailstock

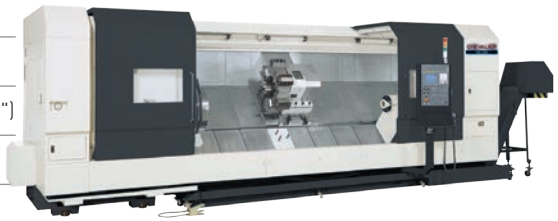
FNL-220Y/LY/LSY

Fanuc Control	Max. Turning Dia.: Ø270 mm (Ø10.6")
Multi-tasking Lathe with Y-axis Milling and Sub Spindle	Max. Turning Length: 510 mm (20")
Spindle Motor: 15 kW (20 HP)	Bar Capacity: up to 65 mm (2.6")
Spindle Speed: up to 4,500 rpm	BMT Live Turret
Max. Swing Dia.: Ø620 mm (Ø24.4")	Programmable Tailstock

Heavy-duty Horizontal Turning Lathes

FBL-500 Series

Slant Bed, Heavy-Duty, Large Bore Lathe with Fanuc Control	Chuck Size: up to 800 mm (32")
Dual Chuck Capability	Spindle Bore: up to 381 mm (15")
Swing Over Bed: up to 1,000 mm (39")	Turning Length: up to 4,000 mm (157.5")
Spindle Motor: up to 45 kW (60 HP)	Live Tooling and C-axis Available
Transmission: 2-4 Speed Gear Box	Programmable Tailstock



FBL-360 • 460 Series

Fanuc Control	Chuck Size: up to 381 mm (15")
45-degree Slant Bed Lathe with Highly Rigid Box Way	Bar Capacity: up to 140 mm (5.5")
Swing Over Bed: up to 840 mm (33")	Turning Length: up to 2,026 mm (80")
Spindle Motor: up to 37 kW (50 HP)	Live Tooling and C-axis Available
Transmission: 2-speed Gearbox	Programmable Tailstock

FBL-230 • 200L • 300 Series

Fanuc Control	Chuck Size: up to 305 mm (12")
45-degree Slant Bed Lathe with Highly Rigid Box Way	Bar Capacity: up to 77 mm (3")
Swing Over Bed: up to 654 mm (25.7")	Turning Length: up to 1,554 mm (61.2")
Spindle Motor: up to 18.5 kW (25 HP)	Live Tooling and C-axis Available

New machining techniques use a wide range of diverse materials to produce precise custom parts for specific applications

Milling machines

5-axis Vertical Machining Center

UNi5X-800

Fanuc/Siemens/Heidenhain Control
Table Size: Ø800 mm (Ø31.5")
Max. Table Load: 1,300 kg (2,860 lbs.)
Travel X/Y/Z: 800/900/650 mm (31.5"/35.4"/25.6")
Workpiece Dimensions: Ø800 x H600 mm (Ø31.5" x H23.6")

UNi5X-400

Fanuc/Siemens/Heidenhain Control
Transmission Type Direct Drive
Table Size: Ø320 mm (Ø12.6")
Max. Table Load: 100 kg (220 lbs.)
Travel X/Y/Z: 750/610/550 mm (29.5"/24"/21.6")
Workpiece Dimensions: Ø400 x H350 mm (Ø15.7" x H13.7")

High-speed VMC

QP1620-L • 2033-L • 2040-L • 2440-L • 2560-L Series

SMART/Fanuc/Siemens/Mitsubishi/Heidenhain Control
Roller Guide Way Design
Table Size: up to 635 x 1,650 mm (25" x 65")
Max. Table Load: up to 1,500 kg (3,300 lbs.)
Spindle Speed: up to 15,000 rpm
Spindle Motor: up to 18.5 kW (25 HP)
Tool Change: Arm Type

EM1620L • 2033L • 2040L Series

SMART/Fanuc/Siemens/Mitsubishi/Heidenhain Control
Linear Guide Way
Table Size: up to 510 x 1,200 mm (20.1" x 47.2")
Max. Table Load: up to 600 kg (1,320 lbs.)
Spindle Speed: up to 10,000 rpm
Spindle Motor: up to 15 kW (20 HP)
Tool Change: Arm Type

Grinding Machines

SMART Grinding Machines

Turning Machines

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