

Deep Hole Drilling & Hole Finishing Solutions

Precihole[®]
Inspire - Innovate - Deliver



Precihole Machine Tools

Precihole Machine Tools is a leader in providing state-of-the-art solutions for deep hole drilling and hole finishing processes. Precihole has over three decades of experience supplying machine tools solutions for a variety of industries all across the globe. Precihole Machine Tools is an ISO 9000 certified company that values product quality, its customers and employees.

Precihole machines are built in-house from concept to finish with a talented team of experienced and qualified individuals. Machines are tested to the highest standards before dispatch to ensure accuracy, repeatability and performance. Our business processes and operational methodologies ensure that we can offer competitive pricing and aggressive delivery commitments.

Precihole Machine Tools is your partner in providing valuable and cost effective solutions that adhere to the highest levels of quality. Precihole has appointed distributors all over the world to be able to provide service, support and training locally to our esteemed clientele.



Precihole Machine Tools is a leader in design and manufacture of deep hole drilling and hole finishing solutions since its conception in 1988. We strive to inspire the industry by innovating new technology and products while keeping high standards in quality and customer satisfaction.

Design and Construction of the Machine, User Friendliness of Controls, Machine Performance, Reliability and Level of Service and Support are some of the major factors why customers are attracted repeatedly towards buying Precihole Solutions.

Precihole has over 1000 successful installations of machines spread all over the world. There are over 150 different applications in industries like Automotive, Die and Mold, Defense, Oil and Gas, Aerospace, Energy, Medical Implants, Hydraulic Cylinders, Heavy Engineering etc. where Precihole machines have been installed.

Precihole's Machine Tool Solutions can be broadly classified into the following categories:

Deep Hole Drilling

- Micro Gun Drilling Machines
- Single Axis Gun Drilling Machines
- Multi Axis Gun Drilling Machines
- BTA (STS) Drilling Machines
- Ejector Drilling Machines

Hole Finishing

- Skiving & Burnishing Machines
- Honing Machines
- Reaming Machines
- Lapping Machines

Special Purpose Machines

- Customized Deep Hole Drilling Machines
- Facing, Centering and Chamfering Machines
- Broaching Machines

The Precihole Advantage

- Over three decades of proven experience in providing machine tools to the industry
- One stop shop for all deep hole drilling and hole finishing solutions
- Solutions are customized to suit individual project requirements and scale
- Solutions are industry proven for reliability, repeatability and accuracy
- Solutions provide an excellent return on investment
- Worldwide delivery and local technical support in all major markets

Single Axis Gun Drilling Machines

Precihole's GVN Series Gun Drilling Machines are built to manufacture high precision parts. Machines incorporate the latest technology available for this process in the world. Machines are customized to suit volume requirements and provide excellent straightness, surface finish and bore tolerance. Length to diameter ratios of up to 125 are possible. These machines are complete solutions that include features needed for continuous and repeatable performance over many years.



- Award Winning Design, continuously improved and proven over the past 3 decades
- Offers Best Value and Return on Investment in the Industry
- Modular Construction that allows high level of flexibility for standard components
- Option for 2 spindle or 4 spindle configuration provides high productivity
- Touch Screen and Programmable Logic Controls for ease of use
- Quick and Operator Friendly Setup change-overs
- Multiple types of automation can be incorporated

Salient Features

- Component Counter rotation to ensure excellent straightness
- Use of ball screw and servo drives for linear motion
- Multiple tool steadies to provide tube support
- Rotating Cone or Self Centering chuck arrangement for part clamping
- High pressure coolant and fine filtration system
- Oil chilling and Automatic Lubrication
- Mitsubishi / Siemens PLC controls with touch screen HMI
- Integrated design to reduce overall machine footprint

| MODEL | | GVN08C | GVN12C | GVN25C | GVN40C |
|-------------------------|--------------------|--|---------------|------------|---------------|
| Drilling Diameter Range | mm | Ø2 - Ø8 | Ø3 - Ø12 | Ø5 - Ø25 | Ø8 - Ø40 |
| | in | Ø0.08 - Ø0.3 | Ø0.12 - Ø0.47 | Ø0.19 - Ø1 | Ø0.31 - Ø1.57 |
| Spindles | nos. | 1 / 2 / 4 | | 1 / 2 | |
| Max. Drilling Depth | mm | 400 / 600 / 1000 / 1200 | | | |
| | in | 16 / 24 / 40 / 48 | | | |
| Part OD Range | mm | 10 - 50 | | 15 - 75 | 15 - 100 |
| | in | 0.4 - 2 | | 0.6 - 3 | 0.6 - 4 |
| Part Clamping System | | Hydraulic Cone Clamping / Chuck Clamping | | | |
| Max. Component Weight | kg | 30 | | 50 | 70 |
| | lbs | 67 | | 111 | 155 |
| Counter Rotation Speed | rpm | 250 | | 200 | 150 |
| Drill Feed Range | mm/min | 0 - 1000 | | | |
| | in/min | 0 - 40 | | | |
| Rapid Traverse | mm/min | 4000 | | | |
| | in/min | 150 | | | |
| Power per Spindle | kW | 1.5 | 2.2 | 7.5 | 15 |
| | hp | 2 | 3 | 10 | 20 |
| Spindle Speed | rpm | 2000 - 12000 | 1200 - 10000 | 500 - 7500 | 300 - 3200 |
| Coolant Tank Capacity | liters | 800 | 1200 | 2000 | 3000 |
| | gal | 211 | 320 | 530 | 800 |
| Max. Coolant pressure | kg/cm ² | 100 | 90 | 80 | 70 |
| | psi | 1500 | 1350 | 1200 | 1000 |

Specifications subject to change without notice due to continued product improvement.



Micro Gun Drilling Machines

Precihole's GVN Series Micro Gun Drilling Machine is designed to accommodate requirements for micro gun drilling applications in medical, aerospace and automotive industries. Machine can be customized to accommodate production volume requirements and provide excellent straightness, surface finish and bore tolerance. Length to diameter ratios of up to 75 are possible on this machine. Precihole's own component manufacturing experience over 30 years helps ensure that all the necessary complexities in small hole drilling of such applications are incorporated in the design of key features on this machine.

Salient Features

- Ultra high speed precision motorized spindle
- Component Counter rotation to ensure excellent straightness
- Use of ball screw and servo drives for linear motion
- Multiple tool steadies to provide appropriate tube support
- Three jaw self-centering chuck clamping arrangement
- High pressure coolant and fine filtration system
- Oil chilling and Automatic Lubrication
- Mitsubishi / Siemens PLC controls with touch screen HMI
- Tool monitoring system to ensure tool breakage prevention

| MODEL | | GVN06C |
|--------------------------------|--------|---------------|
| Drilling Diameter Range | mm | Ø1 - Ø6 |
| | in | Ø0.04 - Ø0.25 |
| Spindles | nos. | 1 - 2 |
| Drilling Depth | mm | 300 |
| | in | 12 |
| Drill Feed Range | mm/min | 0 - 1000 |
| | in/min | 0 - 40 |
| Power per Spindle | KW | 1.5 |
| | hp | 2 |
| Spindle Speed Range | rpm | 1000 - 24000 |
| Component Outer Diameter (Max) | mm | Ø40 |
| | in | Ø1.5 |
| Foot Print (L x W) | mm | 3000 x 2000 |
| | ft | 10 x 6.5 |

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Three Axis Gun Drilling Machines

Precihole's XYGVN Series Knee Type Multi Axis Gun Drilling Machines are designed to accommodate requirements for drilling multiple holes in small and medium size molds in Die and Mold industry. Machine can be customized to accommodate size and stroke requirements for various prismatic parts. These machines provide excellent location accuracy and repeatability, straightness, surface finish and bore tolerance. Length to diameter ratios of up to 100 are possible on these machines.

Salient Features

- Versatile and operator friendly machine design
- Adequate axes strokes to accommodate small and medium size mold bases
- Use of ball screw and servo drives for linear motion
- Multiple tool steadies to provide adequate tube support
- High pressure coolant and fine filtration system
- Oil chilling and Automatic Lubrication
- Fanuc / Siemens CNC controls with customized screens for monitoring machine parameters

| MODEL | | XYGVN12 | XYGVN25 | XYGVN40 |
|--------------------------------------|--------|-----------------|------------|--------------|
| Drilling Diameter Range | mm | Ø2 - Ø12 | Ø5 - Ø25 | Ø8 - Ø40 |
| | in | Ø0.08 - Ø0.5 | Ø0.2 - Ø1 | Ø0.30 - Ø1.5 |
| Spindles | nos. | 1 - 2 | 1 | |
| Drilling Depth | mm | 600 / 1000 | | |
| | in | 24 / 40 | | |
| Drill Feed Range | mm/min | 0 - 1000 | | |
| | in/min | 0 - 40 | | |
| Rapid Traverse | m/min | 8 | | |
| | in/min | 320 | | |
| Power per Spindle | kW | 2.2 | 7.5 | 15 |
| | hp | 3 | 10 | 20 |
| Spindle Speed Range | rpm | 1200 - 12000 | 500 - 7500 | 300 - 3200 |
| X Axis Travel | mm | 500 x 300 | | |
| Y axis Travel | in | 20 x 12 | | |
| Working Envelope | mm | 500(W) x 300(H) | | |
| | in | 20(W) x 12(H) | | |
| Max. Component Weight on Table | kg | 1000 | | |
| | lb | 2200 | | |
| Spindle Center Height from Table Top | mm | 50 - 350 | | |
| | in | 2 - 14 | | |

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BTA Deep Hole Drilling Machines

Precihole's BVN Series BTA (STS) Deep Hole Drilling Machines are built to operate in continuous production mode for drilling large holes in shafts. Machines feature state of the art technology that produces holes with excellent straightness, bore tolerance and surface finish. These machines are complete solutions that include all features needed for continuous and repeatable performance over many years.

Salient Features

- Rigid and Robust design to allow precise and vibration free movement of machine elements
- Use of ball screw or rack and pinion with servo drives for linear motion
- Proprietary pressure head design to allow optimum oil flow and tool guiding
- Vibration dampeners to absorb vibrations and reduce tube whipping to improve hole straightness
- Self centering chuck clamping at both ends on rotating setup for quick setup of parts
- High pressure coolant and fine filtration system
- Oil chilling and Automatic Lubrication
- Fanuc / Siemens CNC controls with customized screens for monitoring machine parameters
- Provision for adding other processes like Counter boring, Trepanning, Pull Boring, Skiving and Roller Burnishing, Bottle Boring on same machine



| MODEL | | | BVN40P | BVN65P | BVN100P | BVN180P | BVN250P |
|----------------------|---------------------|-----|---------------|--------------|--------------|--------------|------------|
| Solid Drilling Range | mm | | Ø12.7 - Ø38.1 | Ø19 - Ø65 | Ø19 - Ø100 | Ø30 - Ø180 | Ø50 - Ø250 |
| | in | | Ø0.5 - Ø1.5 | Ø0.74 - Ø2.5 | Ø0.74 - Ø3.9 | Ø1.2 - Ø7 | Ø2 - Ø10 |
| Counter Boring (Max) | mm | | -- | Ø100 | Ø175 | Ø300 | Ø400 |
| | in | | -- | Ø4 | Ø7 | Ø12 | Ø16 |
| Drilling Length | mm | | 500 - 2000 | 1000 - 3000 | 1500 - 6000 | 2000 - 20000 | |
| | in | | 20 - 80 | 40 - 120 | 60 - 240 | 80 - 780 | |
| Tool head | Spindle Power | kW | 15 | 22 | 37 | 74 | 113 |
| | | hp | 20 | 30 | 50 | 100 | 151 |
| | Spindle Speed Range | rpm | 200 - 2600 | 80 - 1350 | 50 - 1350 | 20 - 1100 | 10 - 700 |
| Work Head | Spindle Power | kW | 3.7 | 11 | 18 | 30 | 37 |
| | | hp | 5 | 15 | 24 | 40 | 50 |
| | Spindle Speed | rpm | 100 - 200 | 40 - 100 | | 25 - 75 | 10 - 50 |
| Coolant System | Coolant Flow | LPM | 300 | 500 | 900 | 1500 | 2000 |
| | | GPM | 80 | 133 | 238 | 397 | 529 |
| | Tank Capacity | L | 2500 | 4000 | 6000 | 10000 | 12000 |
| | | G | 660 | 1060 | 1600 | 2600 | 3200 |

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Facing & Chamfering Machines

Precihole manufactures a special purpose, highly versatile machine for facing, chamfering and centering of cylindrical shafts. Accuracy and repeatability on these operations is critical for the parts to be located and aligned properly during further machining operations. If the part is improperly faced or chamfered, the part does not seat properly in the cone leading to inaccuracies in gun drilling operations. This machine engages the component simultaneously at both ends. The combined facing and chamfering operation uses a special tool that ensures high productivity. Two hydraulically operated self-centering work holding vices hold the part accurately. Total cycle time is generally less than 30s. Automation for loading and unloading of parts can be added as an option on the machine.

Salient Features

- Use of ball screw and servo drives for linear motion
- Simultaneous facing and chamfering operation at both ends using special tools
- Hydraulic self centering work holding vices for part clamping
- Mitsubishi / Siemens PLC controls with touch screen HMI
- User friendly screens, simplified machine operation
- Chip conveyor and filtration system for flushing chips

| MODEL | | FCVN 60 |
|-----------------------|--------|---|
| Part OD range (Ø) | mm | 12 - 60 |
| | in | 0.47 - 2.36 |
| Spindles | nos. | 2 (one at either end) |
| Max. Part Length | mm | 600 / 1000 / 1200 |
| | in | 24 / 40 / 48 |
| Part Clamping System | | Hydraulically Operated Self Centering Vices |
| Max. Component Weight | kg | 40 |
| | lbs | 89 |
| Feed Range | mm/min | 0 - 500 |
| | in/min | 0 - 20 |
| Rapid | mm/min | 5000 |
| | in/min | 200 |
| Spindle Speed | rpm | 500 - 3500 |
| Power Per Spindle | KW | 5.5 |
| | hp | 7.5 |

Specifications subject to change without notice due to continuous product development For custom requirements that do not fit the standard machine specifications mentioned above, please contact us at sales@precihole.com



Precihole's Vertical honing machines are next gen solutions that provide state of the art features and world class performance while providing the best value in the industry. They are designed to hone holes from Ø5 mm(0.2") to Ø50 mm (2") and part lengths of upto 1500 mm (60") long. Precihole has combined 30+ yrs of deep hole drilling and hole finishing machine development experience into these solutions. They are complete solutions comprising of machine, tooling, tooling accessories and honing oil suited perfectly for gun barrel honing.

Salient Features

- All electric servo motors for linear motion, spindle rotation and tool expansion
- Precision manufactured vertical column to support single or multiple spindles
- Operator friendly self learning controls with custom screens
- Five micron fine coolant filtration systems with oil chilling and magnetic separator for optimal performance
- Optional air gauging systems for automatic size control
- Quick change liner indexing table and part loading fixtures
- Double expansion technologies for larger diameter holes

| MODEL | | VHM20 | VHM50 | VHM125 | VHM250 |
|---------------------------|--------|---|-----------|------------|------------|
| Honing Diameter Range (Ø) | mm | Ø5 - Ø20 | Ø10 - Ø50 | Ø30 - Ø125 | Ø50 - Ø250 |
| | in | Ø0.2 - Ø0.78 | Ø0.4 - Ø2 | Ø1.18 - Ø5 | Ø2 - Ø10 |
| Spindles | nos. | 1 / 2 | | 1 | |
| Max. Honing Depth | mm | 1500 | | 2000 | |
| | in | 60 | | 78 | |
| Part OD Range | mm | 15 - 60 | 20 - 100 | 40 - 200 | 60 - 300 |
| | in | 0.59 - 2.36 | 0.78 - 4 | 1.57 - 8 | 2.36 - 12 |
| Clamping System | | Cone / Chuck Clamping / Special Fixturing | | | |
| Max. Component Weight | kg | 40 | 100 | 250 | 500 |
| | lbs | 89 | 220 | 555 | 1110 |
| Stroking Speed | m/min | 10 - 30 | | | |
| | ft/min | 33 - 100 | | | |
| Power Per Spindle | kW | 1.5 | 2.2 | 5.5 | 7.5 |
| | hp | 2 | 3 | 7 | 10 |
| Spindle Speed | rpm | 10 - 1500 | | 10 - 500 | |
| Coolant Tank Capacity | liters | 500 | 500 | 1000 | 1000 |
| | gal | 132 | 132 | 265 | 265 |

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Column Type Multi-Axis Deep Hole Drilling Machines

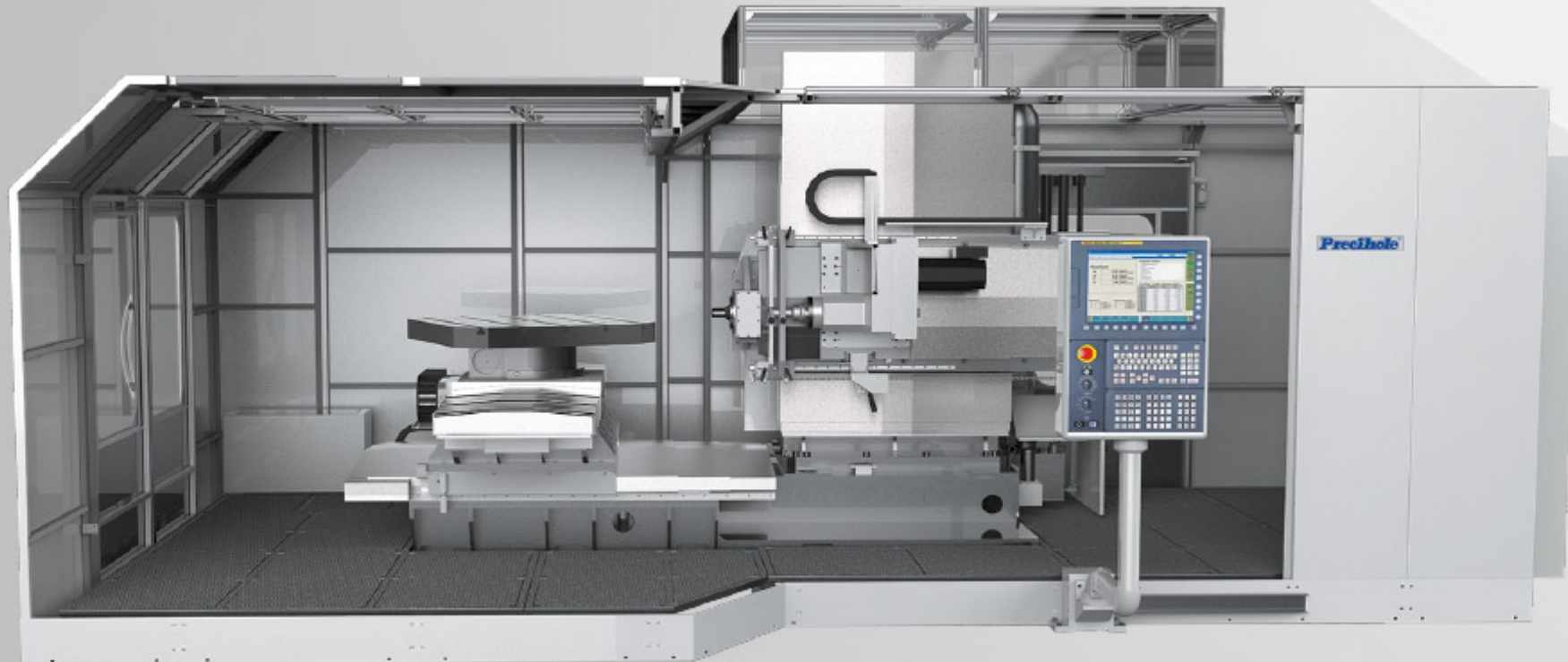
Precihole's XYGVNC Series Column Type Multi Axis Gun Drilling Machines satisfy all requirements for drilling of multiple deep holes in large size molds for Die and Mold industry and Tube sheets. Machines can be customized to accommodate size and stroke requirements. These machines provide excellent location accuracy and repeatability, straightness, surface finish and bore tolerance. Length to diameter ratios of up to 100 are possible on these machines.

Salient Features

- Adequate axes strokes to accommodate large size mold bases
- Use of ball screw and servo drives for linear motion
- Rigid cast iron column construction to provide required accuracy
- High pressure coolant and fine filtration system
- Oil chilling and Automatic Lubrication
- Fanuc / Siemens CNC controls with customized screens for monitoring machine parameters

| MODEL | | XYGVNC25 | XYGVNC40 | XYGVNC65 |
|---------------------------|------|-------------|-------------|-------------|
| Max. Weight of Mold Plate | kg | 8000 | 15000 | 20000 |
| | lbs | 17600 | 33000 | 44000 |
| Drilling Stroke | mm | 1000 | 1500 | 2000 |
| | in | 40 | 60 | 80 |
| Drilling Size | mm | 5 - 25 | 8 - 38 | 15 - 65 |
| | in | 0.2 - 1 | 0.3 - 1.5 | 0.6 - 2.5 |
| Table Size | mm | 1000 x 1000 | 1500 x 1500 | 2000 x 2000 |
| | in | 40 x 40 | 60 x 60 | 80 x 80 |
| Spindle Power (Drilling) | kw | 7.5 | 15 | 22 |
| | hp | 10 | 20 | 30 |
| Spindle Power (Milling) | kw | 7.5 | 15 | 15 |
| | hp | 10 | 20 | 20 |
| X Axis | mm | 1000 | 1500 | 2000 |
| | in | 40 | 60 | 80 |
| Y Axis | mm | 1000 | 1000 | 1500 |
| | in | 40 | 40 | 60 |
| B Axis | deg. | 360° | 360° | 360° |
| W Axis | mm | 450 | 600 | 750 |
| | in | 18 | 24 | 30 |

Specifications subject to change without notice due to continued product improvement.



Skiving and Roller Burnishing Machines

Precihole's SBN Series Skiving and Roller Burnishing Machines are built to operate in a high production mode for sizing and polishing hydraulic cylinder tubes. Machines incorporate use of state of the art technology that enables cycle times to be 30-40 times faster than honing. Machines are customized to suit volume requirements and provide excellent surface finish and wall thickness consistency across the length of the tube. These machines are complete solutions that include features needed for continuous and repeatable performance over many years.

Salient Features

- Rigid and Robust design to allow precise and vibration free movement of machine elements
- Use of ball screw or rack and pinion with servo drives for linear motion
- Multiple tool steadies to provide tube support
- Hydraulic vice clamping for clamping tubes
- High pressure coolant and fine filtration system
- Oil chilling and Automatic Lubrication
- Fanuc / Siemens CNC controls with customized screens for monitoring machine parameters

| Model | | SBN150 | SBN250 |
|-----------------------------|-----|--|------------|
| Skiving & Burnishing Range | mm | Ø40 - Ø150 | Ø50 - Ø250 |
| | in | Ø1.57 - Ø6 | Ø2 - Ø10 |
| Skiving & Burnishing Length | mm | 1000 - 10000 | |
| | in | 40 - 394 | |
| Configuration | | Tool Rotating and Feeding, Part Stationary | |
| Tool Head | | | |
| Spindle Power | KW | 51 | 74 |
| | hp | 68 | 99 |
| Spindle Speed Range | rpm | 80 - 1800 | 50 - 1200 |
| Coolant System | | | |
| Coolant Flow | LPM | 600 | 1000 |
| | GPM | 159 | 264 |
| Tank Capacity | L | 4000 | 6000 |
| | G | 1057 | 1585 |
| Coolant Pump Power | KW | 11 | 50 |
| | hp | 15 | 67 |

Specifications subject to change without notice due to continued product improvement.



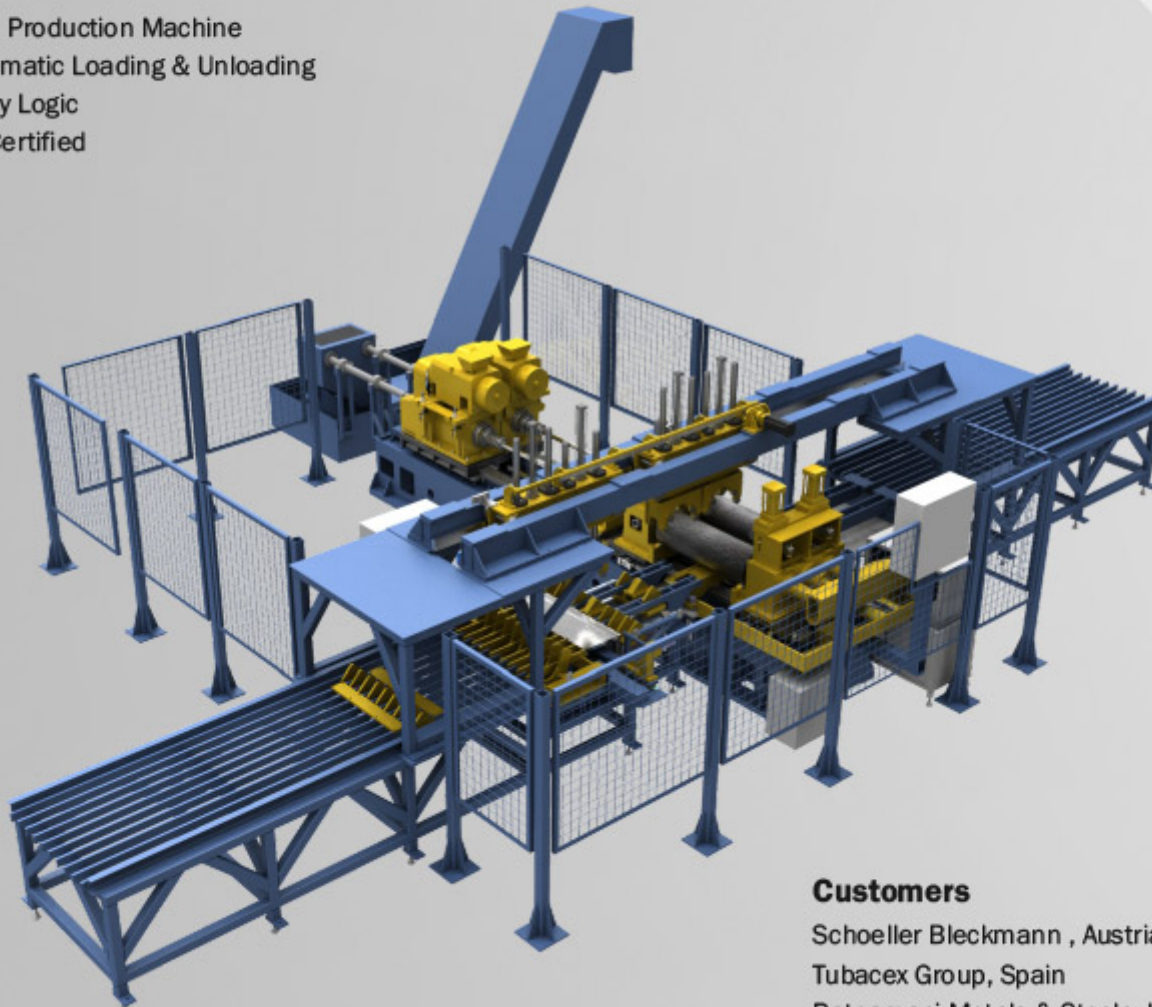
Special Purpose Deep Hole Drilling Machines

Precihole Machine Tools specializes in design and manufacturing of special purpose machines for deep hole drilling and hole finishing applications. We have experience in manufacturing machines for over 150 special applications in various industries where the requirements did not fit any of our standard machines. Our team of highly experienced engineers works closely with the customer to define requirements, study the underlying process, come up with a concept, then design, manufacture and prove out the machine. Every special machine undergoes thorough testing on the floor before dispatch to ensure smooth working in production mode.

Twin Spindle Automatic BTA Drilling Machine

Salient Features

- High Production Machine
- Automatic Loading & Unloading
- Fuzzy Logic
- CE Certified



| | | |
|--------------------------------|--------|-------------------------|
| Drilling Range | mm | Ø25 - Ø80 |
| Drilling Depth | mm | 320 - 950 |
| Component | | Billets |
| Component Material | | Alloy Steel, SS, Duplex |
| Component Diameter | mm | Ø180 - Ø350 |
| Component Loading / Unloading | | Automatic |
| Number of Spindles | | 2 |
| Chip collecting system | | Scraper Type Conveyor |
| Spindle Motor | kW | 51 per Spindle |
| Coolant Tank Capacity | | 7500 Liters |
| Total Connected Electric Power | kW | 275 |
| Spindle Speed | RPM | 250 - 1250 |
| Feed Rate | mm/min | 20 - 400 |
| Rapid Rate | mm/min | 5000 |
| Floor Area | sq. mm | 11200 x 6800 |

Customers

Schoeller Bleckmann , Austria

Tubacex Group, Spain

Ratnamani Metals & Steels, India

Tooling Accessories and Gun Drill Regrinding Machine

Precihole manufactures high quality, precision spares and tooling accessories for their deep hole drilling and hole finishing machines. These accessories fit perfectly on the machine. Precihole guarantees good performance and life on these OEM parts. Customers are highly encouraged to buy and use machine spares and tooling accessories from Precihole only.

Gun Drilling



BTA



Gun Drill Regrinding Machine

Precihole's Gun Drill Regrinding Machines are built for precise resharpener of gun drills in a single setup. These machines are versatile and improve turnover for sharpening gun drills. They are operator friendly and incorporate a range of drills from $\varnothing 2.5$ mm to $\varnothing 30$ mm

Salient Features

- Compact and Operator friendly Ergonomic Design
- All-in-one solution incorporating all necessary features
- Rigid Cast iron Construction for long life
- Precise and Controlled movement of dials for better setting
- Special double-sided diamond wheel
- Magnifying glass and Light included
- Storage and Electrical Cabinet



A trusted name in machine tools, recognized globally

