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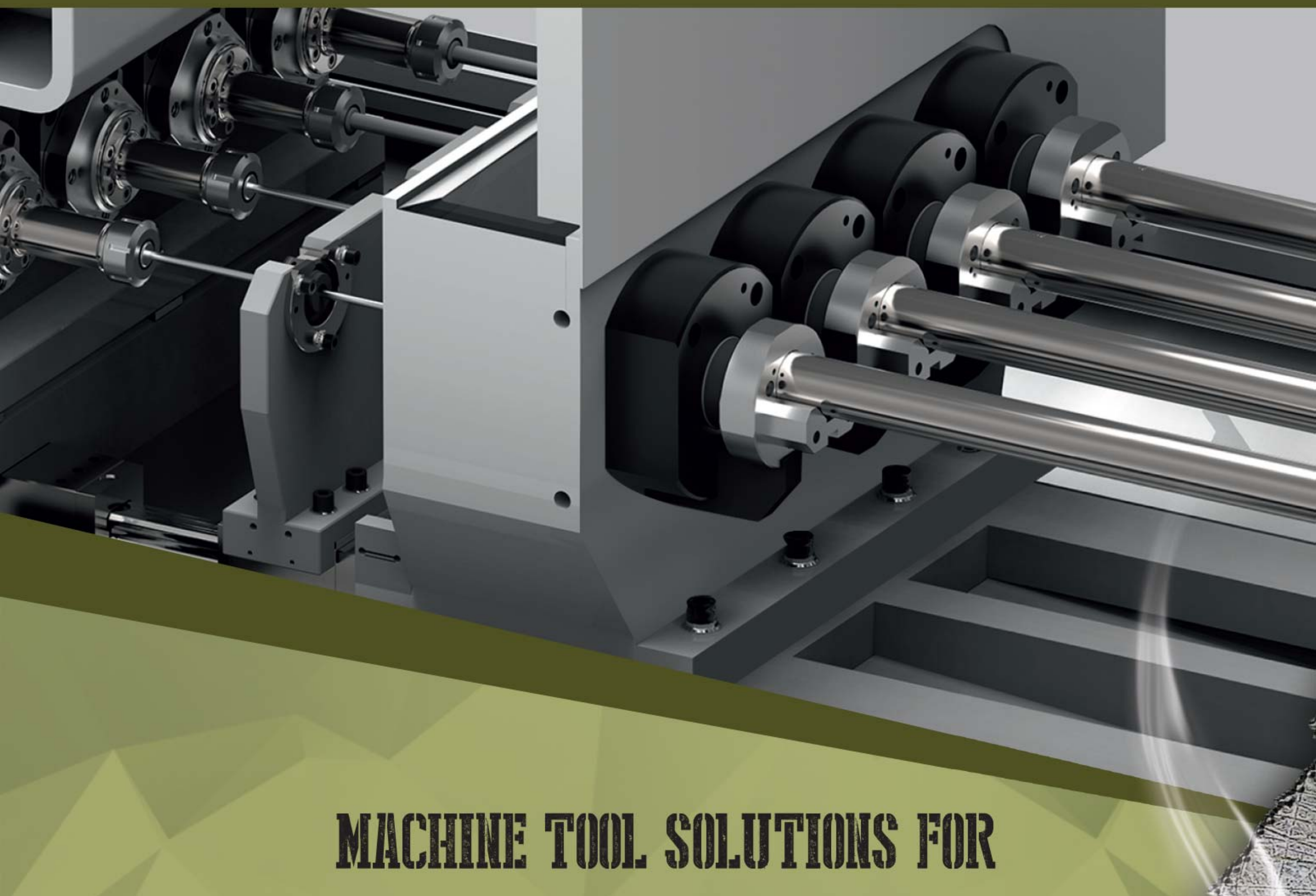

MACHINE TOOL SOLUTIONS FOR

GUN BARREL

MANUFACTURING

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Precihole Machine Tools is a leader in providing solutions to the defense and firearm industry for the past 35 years. These machines are in operation all across the globe in over 30 countries spread across 5 continents. These solutions for gun barrel manufacturing are designed with continuous production in mind. Precihole machines are built from concept to finish by a team of highly experienced and talented individuals. Machines are tested to the highest standards before dispatch to ensure accuracy, repeatability and performance. Precihole works with the best importers and distributors all over the world to provide local service and support to new and existing customers.

The Precihole Advantage

- Over 30 years of experience manufacturing barrel making machines
- Wide variety of solutions all made by one company
- Solutions can be customized to suit needs of individual project
- Machines are designed to cover complete range of small to large caliber weapon systems
- Solutions are industry proven with a great reputation for performance and reliability
- Solutions provide an excellent return on investment

Machines for Small Arms Gun Barrel Manufacturing

The firearms industry is a robust and essential component of our economy. To assist firearm manufacturers looking to bring barrel making in-house or expand their current operations, Precihole can provide individual machines or a complete cell depending on the needs of the customer.

- Gun Drilling Machines
- Pull Reaming Machines
- Vertical Honing Machines
- Button Rifling Machines
- Cut Rifling Machines
- Lapping Machines
- Pistol Broaching Machines
- Facing and Chamfering Machines
- Barrel Straightening Press

Machines for Medium and Large Caliber Gun Barrel Manufacturing

Precihole specializes in producing machines to manufacture medium caliber barrels from 20 mm caliber to 155 mm caliber for artillery systems and mortar tubes from 40 mm to 120 mm calibers. These machines are well-designed, robust and production ready. They have been tested and battle hardened over the course of many decades in the field all around the world.

- BTA Deep Hole Drilling Machines
- Pull Boring Machines
- Horizontal Honing Machines
- Broach Rifling Machines

These machines can be customized for maximum length of barrel and other features depending on specific requirements of the customer and weapon system. A highly experienced Precihole expert can review your requirements and help you with your needs.

GUN DRILLING

Gun drilling operation is considered one of the most critical operations in the barrel making process. This process really decides the quality of the finished barrel. Precihole Gun drilling machines for barrels offer the best combination of output parameters like hole straightness, surface finish and bore tolerance. They are designed to be reliable and repeatable to achieve high volume production. These machines are complete solutions that are being used in a 24X7 mode by many customers.

SALIENT FEATURES

- Robot readiness for easy integration in an automated cell
- Part counter rotation for good hole straightness
- Quick clamping arrangement for ease of loading and unloading parts
- High pressure coolant and fine filtration system
- Oil chilling and Auto Lubrication included
- Mitsubishi PLC controls with well-designed operator friendly screens

Model		GVN12C	GVN20C
Drilling Diameter Range (Ø)	mm	5 -13	5 - 20
	in	0.2 - 1	0.2 - 0.75
Spindles	nos.	1 / 2 / 4	1/2
Max. Drilling Depth	mm	600 / 800 / 1000	
	in	24 / 30 / 40	
Barrel OD Range	mm	20 - 50	20 - 80
	in	0.75 - 2	0.75 - 3
Gun Drilling Feed Range	mm / min	0 - 200	
	in / min	0 - 8	
Max. Component Weight	kg	30	40
	lbs	65	88
Power Per Spindle	kW	2.2	5.5
	hp	3	7.5
Spindle Speed	rpm	1000 - 6400	700 - 6400

PULL REAMING

Precihole Pull Reaming machines provide all necessary features to improve the surface finish and size consistency in the bore of a gun barrel. This operation is next after gun drilling. Pull reaming removes all irregularities in the hole by improving surface finish and preparing the hole for rifling. The machine can be configured to be robot ready. This includes automation for reamer insertion and retrieval as well as auto door opening and closing.

SALIENT FEATURES

- Robot readiness for easy integration in an automated cell
- Automation for reamer insertion and retrieval
- Integrated unibody design for a compact footprint
- component indexing arrangement for ease of loading and unloading parts
- High pressure coolant and fine filtration system
- Oil chilling and Auto Lubrication
- Mitsubishi PLC controls with well-designed operator friendly screens

MODEL		PRVN12
Reaming Diameter Range (Ø)	mm	5 - 13
	in	0.2 - 1
Spindles	nos.	1 / 2 / 4
Max. Reaming Depth	mm	600 / 800 / 1000
	in	24 / 30 / 40
Barrel OD Range	mm	20 - 50
	in	0.75 - 2
Max. Component Weight	kg	30
	lbs	65
Reamer Feed Range	mm/min	0 - 500
	in/min	0 - 20
Power Per Spindle	kW	1.5
	hp	2
Spindle Speed	rpm	10 - 3000

GUN DRILLING & PULL REAMING COMBO

If you're serious about barrel manufacturing, stop wasting time with outdated, split-process setups. Precihole's Gun Drilling and Pull Reaming Combo Machine delivers two critical operations on one compact powerhouse, giving you unmatched *productivity, accuracy, and return on investment.*

Why buy two machines when one does it better?

- Up to 500 barrels / month on the single-spindle model
- Up to 1000 barrels / month on the twin-spindle model
- All in a footprint small enough to fit in any shop floor layout

This machine isn't just "convenient", it's a production multiplier. With ultra-fast changeover from gun drilling to pull reaming, your team stays productive instead of doing endless setups. No compromises. No shortcuts. Just perfect straightness, superior surface finish, and rock-solid repeatability. This isn't just machine capability—it's your competitive advantage.

This machine is perfect for Growing Barrel Manufacturers. It's ideal for Small and mid-sized shops to punch far above their weight class. It's compact, aggressive, and engineered for shops that want to scale quickly, impress customers, and own their market.

MODEL		GPRM12
Reaming Diameter Range (Ø)	mm	5 - 13
	in	0.2 - 1
Spindles	nos.	1 / 2
Max. Reaming Depth	mm	600 / 800
	in	24 / 30
Barrel OD Range	mm	20 - 50
	in	0.75 - 2
Max. Component Weight	kg	30
	lbs	65
Reamer Feed Range	mm/min	0 - 500
	in/min	0 - 20
Power Per Spindle	kW	2.2
	hp	3
Spindle Speed	rpm	1000 - 6500

VERTICAL HONING

High precision barrel manufacturing requires the bore to be honed to precision before rifling. The surface pattern, surface finish and taper ovality achieved on these machines is excellent. Precihole vertical honing machines incorporate all the features necessary to upgrade the quality of gun barrels to make them high precision. Honing solutions offered by Precihole are complete solutions comprising of the machine, tooling, tooling accessories as well as recommendations on honing oil suited for this fine machining operation.

SALIENT FEATURES

- Use of servo technology for precision control over linear motion, spindle rotation and tool expansion
- Modular design to support single or multiple spindles
- Operator friendly self-learning controls with custom screens
- Fine coolant filtration system with oil chilling and rare earth magnetic separator for optimal process performance
- Option of linear indexing table and part loading fixtures for multistage high production honing requirements

Model		VHM12	VHM20
Honing Diameter Range (Ø)	mm	Ø5 - Ø13	Ø5 - Ø20
	in	Ø0.2 - Ø1	Ø0.2 - Ø0.78
Spindles	nos.	1 / 2 / 3	
Max. length of Barrel	mm	600 / 800 / 1000	
	in	24 / 30 / 40	
Barrel OD Range	mm	20 - 50	
	in	0.75 - 2	
Max. Part Weight	kg	30	40
	lbs	65	88
Stroking Speed	m/min	10 - 30	
	ft/min	33 - 100	
Spindle Speed	rpm	10 - 1800	10 - 1500

BUTTON RIFLING

Precihole Button Rifling Machines incorporate state of the art features to form precision grooves in small caliber gun barrels. The rifling button is pulled and rotated precisely through the barrel. The machine uses anti-backlash helical guides and rotary encoder to interpolate linear and rotary motions. This combination produces highly precise twists in the barrel. Rifling operation is extremely fast at 40-50 IPM pull feeds.

SALIENT FEATURES

- Robot readiness for integration in an automated cell
- Automation for insertion of rifling button and retrieval back to original position
- Auto barrel clamping and unclamping
- Auto tool clamping and unclamping
- Auto lubrication of tool and barrel for smooth operation
- Customized screens with graphing for operator friendly usage

MODEL		BRVN12
Rifling Size Range (Ø)	mm	5 -13
	in	0.2 -1
Spindles	nos.	1
Max. Rifling Depth	mm	600 / 800 / 1000
	in	24 / 30 / 40
Barrel OD range	mm	20 - 50
	in	0.75 - 2
Max. Part Weight	kg	30
	lbs	65
Max. Rifling Feed	mm/min	0 - 2000
	in/min	0 - 80
Rifling Pull Force	tons	12

CUT RIFLING

Precihole Cut Rifling Machines produce extremely accurate and precise barrels by cutting grooves using a single point cutting tool. Work piece is clamped rigidly in a self-centering vice. Servo controls ensure precision indexing and pulling to cut grooves. Cycle repeats till the intended depth of grooves is reached. Typically, depth of cut is programmed to be about 0.004 mm or 0.00015". This rifling process can be used where very high precision and repeatability are required in the barrel for a weapon system like a sniper rifle or a match gun. This process is capable of rifling conventional grooves or 5R rifling grooves and can handle progressive or gain twists.

SALIENT FEATURES

- Compact unibody design for space saving
- Clamping of barrel in self-centering vice for a rigid hold required during rifling operation
- Tool supports to reduce any vibration during rifling operation
- Use of latest servo technology for precision and high repeatability of tool position for every pass
- Customized screens for operator friendly usage
- Complete solution including machine and tooling from one soucre

MODEL		CRVN12
Rifling Size Range (Ø)	mm	5 - 13
	in	0.2 - 1
Spindles	nos.	1 / 2
Max. length of Barrel	mm	600 / 800 / 1000
	in	25 / 30 / 40
Barrel OD range	mm	20 - 50
	in	0.75 - 2
Max. Part Weight	kg	30
	lbs	65
Max. Rifling Feed	mm/min	0 - 10000
	in/min	0 - 400
Progressive Twist		Yes

BROACH RIFLING (PISTOL BARRELS)

Precihole's BRM Series Vertical Broach Rifling Machines use a broach (a long cutter with progressive teeth) to pull and rotate through the bore of a barrel to cut the grooves. Each tooth on the broach is very slightly taller than the previous one. The first teeth just scratch shallow grooves. Later teeth gradually deepen and finish those grooves in one continuous pass. The tool and workpiece are coordinated in linear + rotational motion so the grooves form a helix (the "twist"). It's a single-pass, multi-tooth cutting process. The machine is well designed and produces repeatability and high volume. It's offered in a single spindle and twin spindle variant with independent slides. Blanks with rough bores can be smoothed on one side and then grooved on the other side. All calibers from 0.22 to 50 BMG are possible on this machine.

SALIENT FEATURES

- Precision linear pulling system with high load capacity suitable for all small caliber pistol sizes
- Controlled helical interpolation (twist generation) using servo motors and ball screws
- Rigid holding mechanism for Broach tool clamping
- Use of latest servo technology for precision and high repeatability in every cycle
- Robust coolant and chip handling systems
- Customized screens for operator friendly usage

MODEL		BRM12
Rifling Size Range (Ø)	mm	5 - 13
	in	0.2 - 1
Spindles	nos.	1 / 2
Max. length of Barrel	mm	150
	in	6
Barrel OD range	mm	20 - 50
	in	0.75 - 2
Max. Part Weight	kg	5
	lbs	12
Max. Rifling Feed	mm/min	0 - 1000
	in/min	0 - 40

BROACH RIFLING (GRENADE LAUNCHER BARRELS)

Precihole Broach Rifling Machines incorporate state-of-the art features to form precision grooves in grenade launcher barrels. The broach tool is pulled and rotated precisely through the barrel. The machine uses anti-backlash helical guides and rotary encoders to interpolate linear and rotary motions. This combination produces highly precise twists in the barrel. Rifling operation is extremely fast at 40–50 IPM pull feeds.

SALIENT FEATURES

- This machine is a rifling machine that uses a broach tool to cut grooves in barrels
- The barrel is chucked in the 3 jaw self-centering chuck for rigidity and complete support
- The broach rifling tool is clamped on the spindle
- The program to broach grooves is brought up on the HMI console with the preferred options
- The guide rod advances through the barrel and the operator loads the tool on the other side
- The cutting oil is filtered and recirculated back into the system

MODEL		BRVN 20-40
Mode of Operation		Tool Rotating and pulling through a stationary barrel
No of Rifling Stations	Nos	1
Rifling Caliber	mm	20 - 40
	in	0.8 - 1.6
Max Component OD (Ø)	mm	70
	in	2.75
Maximum Barrel Length	mm	300
	in	12
Twist Rate		Programmable on console
Movement Direction		Left Hand / Right Hand
Rifling Tool Change		Manual
Feed Rate (Working Stroke)	mm / min	0 - 7000
	ft / min	0 - 275
Rapid Rate (Rapid Traverse)	mm / min	7000
	ft / min	275
Maximum Cut Rifling Force	N	10000
	kgf	10000

LAPPING

Precihole Lapping Machines lap/polish the bores and grooves in the barrel after button rifling or cut rifling. This process helps improve the surface finish by getting rid of any burr or surface deformities like deep tool or chatter marks on the ID. This is the last process in barrel ID making before chambering and profiling. The machine is capable of handling cast lead or hard nylon brush tool during operation. Choice of using cast lead or hard nylon tool depends on the level of polishing needed on the barrel.

MODEL		LPVN12
Lapping Size Range (Ø)	mm	5 - 13
	in	0.2 - 0.51
Spindles	nos.	1 / 2 / 4 / 8
Length of barrel	mm	600 / 800 / 1000
	in	24 / 30 / 40
Barrel OD Range (Ø)	mm	20 - 50
	in	0.75 - 2
Max. Barrel Weight	kg	30
	lbs	65
Max. Lapping Feed	m / min	0 - 50
	ft / min	0 -164
Lapping Technology		Cast Lead or Hard Nylon / Brass Brush with Lapping Paste

CLEANING STATION

Barrels need to be cleaned thoroughly during many intermittent steps of the manufacturing process. Barrel cleaning ensures that the barrel ID is void of any debris that might have been collected during the drilling, reaming, honing, rifling or lapping processes. Any debris left could cause issues with tool life and accuracy of the barrel. Precihole has developed a cleaning station that manages to clean the bore and grooves with a solvent or air.

MODEL		CLSN12
Cleaning size range	mm	5 - 13
	in	0.2 - 0.51
Length of barrel	mm	600 / 800 / 1000
	in	24 / 30 / 40
Barrel OD Range (Ø)	mm	20 - 50
	in	0.75 - 2
Cleaning Technology		By Air and Solvent
No of cleaning stations		2 (Independent)

FACING & CHAMFERING

Precihole provides a facing and chamfering machine for barrel rods to be end machined quickly and accurately. The quality of the face and chamfer on rods is critical to achieving good straightness on the subsequent gun drilling operation. The operation is done simultaneously on both ends with special tools. This eliminates the need for the rod to be inserted into chucks on a machining center and reversing it again to machine the other side. Cycle time is around 30s for facing and chamfering resulting in high volume production. Automation for loading and unloading barrels can be added. This includes use of a conveyor or robot.

MODEL		FCVN 50
Barrel OD Range (Ø)	mm	20 - 50
	in	0.75 - 2
Spindles	nos.	2 (one at either end)
Max. Barrel Length	mm	600 / 800 / 1000
	in	24 / 30 / 40
Barrel Clamping System		Self- Centering Vices
Max. Component Weight	kg	30
	lbs	65
Spindle Speed	rpm	500 - 2500
Power Per Spindle	kW	5.5
	hp	7.5

STRAIGHTENING PRESS

Barrels need to be straightened during various stages of conversion between a rod to a finished barrel. Precihole provides a compact and precise solution for this operation. Barrel blank straightness is a critical factor that determines the final accuracy of the weapon system. Barrels are long and slender shafts that bend during heat treatment, machining or stress relieving. This press helps to correct the deflection by holding the barrel in a simply supported configuration and pressing the area with the bend in the opposite direction.

MODEL		BSP10
Barrel OD Range	mm	20 - 50
	in	0.78 - 2
No of Stations	nos.	1
Max. Lengt of Barrel	mm	600 / 800 / 1000
	in	24 / 30 / 40
Push Forcet	tons	19
Pressing Stroke	mm	100
	in	4

BTA DRILLING

Precihole Deep Hole Drilling Machines are built to manufacture medium and large caliber artillery barrels. Machines incorporate the latest drilling technology available for this process in the world. Machines are customized to suit length and size requirements of the barrel and provide excellent straightness, surface finish and bore tolerance. These machines can drill holes from Ø20 mm to Ø155 mm. The design of the machine is robust to endure high torque generated during the drilling process. Length to diameter ratios of up to 150 are possible. Counter boring, Pull boring can be added on same machine as options.

SALIENT FEATURES

- Component Counter rotation to ensure excellent straightness
- Use of anti-backlash rack and pinion systems and servo drives for linear motion
- Vibration dampeners to provide adequate tube support
- Three jaw self centering chuck for job clamping
- High pressure coolant and 25 micron filtration system
- Fanuc / Siemens CNC controls with customized screens

MODEL		BVN40	BVN65	BVN100	BVN155
Solid Drilling Diameter Range (Ø)	mm	20 - 40	20 - 65	30 - 100	50 - 160
	in	0.78 - 1.57	0.78 - 2.5	1.2 - 4	2 - 6.5
Part Counter rotation		Yes	Yes	Yes	Yes
Countering Boring Diameter Range (Ø)	mm	-	65 - 100	100 - 125	150 - 200
	in	-	2.55 - 4	4 - 5	6 - 8
Pull Boring	mm	-	40 - 100	40 - 125	50 - 200
	in	-	1.57 - 4	1.57 - 6	2 - 8
No. of Spindles	nos.	1	1	1	1
Maximum length of Barrel	mm	3000	4000	5000	10000
	in	120	157	196	400
Maximum Barrel OD	mm	100	150	150	250
	in	4	6	6	10
Max. barrel weight	kg	200	570	700	2500
	lbs	450	1250	1540	5500
Power Per Spindle	kW	15	22	37	75
	hp	20	30	50	100
Spindle Speed	rpm	400 -2500	250 -1750	100 - 1300	50 - 800

HORIZONTAL HONING

Precihole Horizontal Honing Machines cover the requirements of honing the complete range of medium and large caliber artillery barrels from Ø20 mm to Ø155 mm. The maximum length of the barrel can be up to 5000 mm. The honing solution includes the machine as well as all the tooling and tooling accessories needed. The design of the machine is optimized to allow quick loading and unloading of barrel. Precision control of depth and diameter of the barrel are ensured by using PLC controls and servo drives.

SALIENT FEATURES

- Use of precision rack and pinion and servo drives for reciprocating linear motion
- Special fixturing for quick component location and clamping
- 10 micron fine coolant filtration system
- Fanuc / Siemens CNC controls
- User friendly machine operation

MODEL		HHM40	HHM120	HHM155
Honing Diameter Range (Ø)	mm	20 - 40	30 - 125	50 - 160
	in	0.78 - 1.57	1.2 - 5	2 - 6.5
Configuration		Part Stationary - Tool Rotating and Feeding		
No. of Spindles	nos.	1	1	1
Max. length of Barrel	mm	3000	5000	10000
	in	120	196	400
Max. Barrel OD	mm	100	150	250
	in	4	6	10
Max. Barrel Weight	kg	200	900	2500
	lbs	450	2000	5500
Spindle Speed	rpm	10 - 500	10 -300	10 - 300
Feed Range	m / min	0 - 30		
	ft / min	0 - 100		

BROACH RIFLING

Precihole is proud to be in a very small elite group of machine manufacturers in the world that can provide a broach rifling machine for medium and large caliber weapon systems. Broach rifling creates spiral grooves in the barrel using a hook cutter. The linear and rotary motion of the hook cutter are precision controlled for accuracy using a servo drive and ball screw or rack and pinion mechanism. The broach cutters are progressive in size and each cutter cuts a size slightly bigger than the previous one.

SALIENT FEATURES

- Use of ball screw or precision rack and pinion and servo drives for reciprocating linear motion
- Precision interpolation and control of linear and rotary axes of the spindle
- Special fixturing for quick component location and clamping
- 10 micron fine coolant filtration system
- Fanuc / Siemens CNC controls
- User friendly machine operation

MODEL		BRM40	BRM100	BRM155
Rifling Diameter Range (Ø)	mm	20 - 40	20 - 100	50 - 160
	in	0.78 - 1.57	1.18 - 5	2 - 6.5
Configuration		Part Stationary - Tool Rotating and Pulling	Part Stationary - Tool Rotating and Pulling	Part Stationary - Tool Rotating and Pulling
No. of Spindles	nos.	1	1	1
Max. length of Barrel	mm	3000	5000	10000
	in	120	196	400
Max. Barrel OD	mm	100	150	250
	in	4	6	10
Max. Barrel Weight	kg	200	900	2500
	lbs	450	2000	5500
Max. Broaching Force	N	30,000	1,00,000	1,50,000
Feed Range	m / min	0 - 8		
	ft / min	0 - 25		

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Complete barrel making solution from one vendor

Machines for Small, Medium and Large Caliber barrels

Proven solutions, optimized continuously

High Volume 24X 7 operation capability

Complete barrel cell automation

Precise, Reliable and Accurate Machines

Local Service and Support

Best Value and ROI on your investment

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