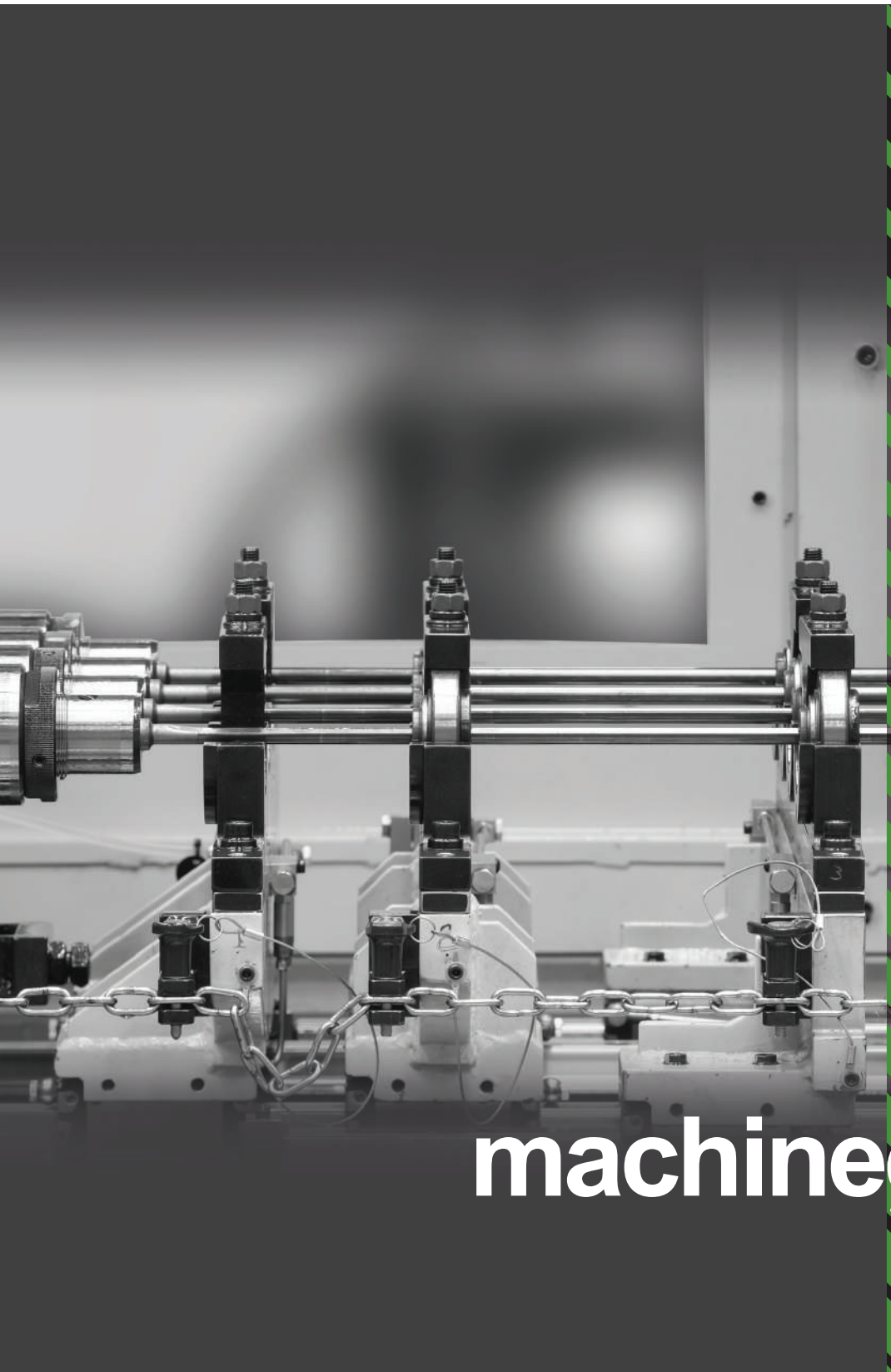
WIDMA®

Deep Hole Drilling Machines



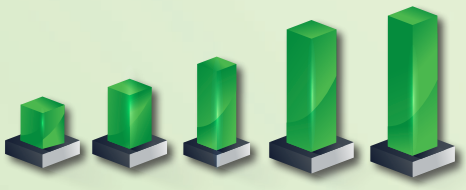
machineering™
tomorrow

WIDMA - machineering™ tomorrow

For over three decades, WIDMA has been a leading player in providing customized metal cutting CNC machines covering a wide spectrum of 'finishing' operations that demand high accuracy and productivity. Leveraging its 75,000 sq. ft state-of-the-art manufacturing unit in Bengaluru, India, WIDMA hosts inhouse manufacturing and assembly capabilities for building complex machines, backed by a strong team of sales, engineering, design, manufacturing, assembly, application and service support professionals – all under one roof. Today, WIDMA has over 4000+ installations across Asia, Europe and the Americas.

Having produced India's first indigenous gundrilling machine in 1984, WIDMA continues to lead the way in this product category. Our competitive edge lies in understanding the entire deep hole drilling process combined with advanced design capabilities and metal-cutting expertise. Our close association with world-renowned tooling brands, access to global application databases, and the ability to design customized machines with automation and tooling has helped us innovate and deliver customer delight. We provide our customers with single-source turnkey solutions in deep-hole drilling applications.

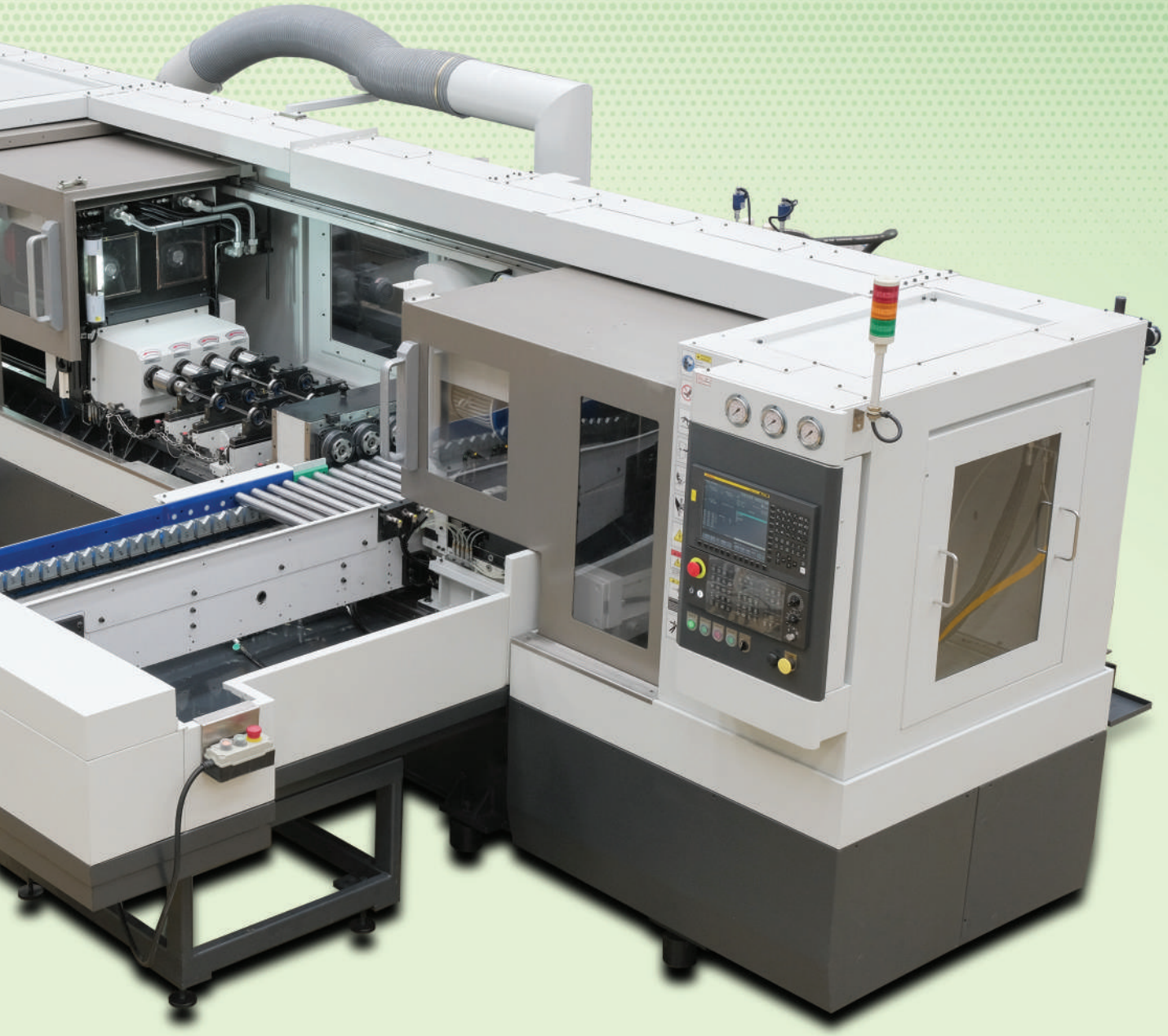
Hole Diameter 1mm
Drill Depth 100mm



Hole Diameter 200mm
Drill Depth 3000mm

Industries Served

- Automotive
- Construction Equipment
- Farm Equipment
- General Engineering
- Energy
- Aerospace
- Railways



Product Range

Gun Drilling Machines	
SG Series	Ø2 - 40mm upto 2000mm depth
MG Series	Ø1 - 06mm upto 200mm depth
UG-K Series	Ø2 - 30mm upto 1000mm depth
UG-C Series	Ø5 - 40mm upto 2000mm depth
BTA Machines	
BTH Series	Ø20 - 175mm upto 3000mm depth
BTA Machines (for Front Fork)	
BTV / BTH Series	Ø25 - 50mm upto 450mm depth
Skiving & Roller Burnishing Machines	
SRB Series	Ø40 - 200mm upto 3000mm depth

Key Custom Solutions

- 2 Way 4 Spindle Machines for Cam Shaft and Cylinder Head
- 2 Way 8 Spindle Machine for Injector Body
- 6 Axis 4 Spindle Machine for Cylinder Block
- 7 Axis Universal Machine for Graphite Block
- 12 Spindle Machining Cell for Nozzle Holder
- Six Axis Machine with Rotary Table for Cylinder Block

Standard Gundrilling Machine

SG series

The SG series of machines are developed on a modular design platform to reduce manufacturing time and improve flexibility. These machines are suited for round-the-clock production and are successfully running at major auto OEMs and other general engineering companies. These machines are generally used for machining shaft components. Automation is available as an optional feature with the SG Series machines.

Features	Units	Models			
		SG-12	SG-20	SG-25	SG-40
Diameter	mm	5 –12 (16*)	8 – 20	8 – 25	10 - 40
		(2 – 12)*	(5 – 20) *	(5 – 30) *	
Drilling depth	mm	300 | 600 | 1000			1000 | 1500 | 2000
Component length range	mm	400 | 700 | 1100			1100 | 1600 | 2100
No. of spindles		1 | 2 | 3 | 4		1 | 2	1

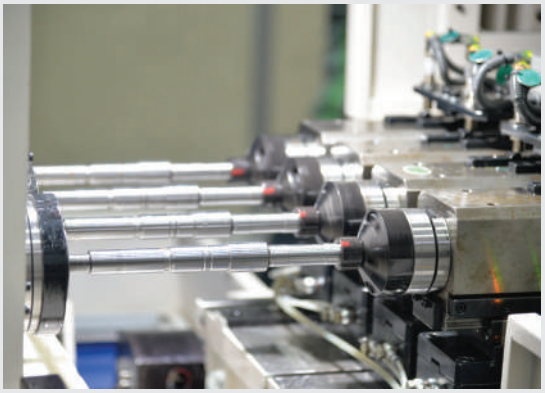
* Custom solutions for specific application can be configured based on requirement

Features

- Rigid structures with high stiffness
- Precision LM guides and ball screws
- High power spindles
- High pressure coolant system with chiller unit
- 3 stage filtration unit- 20-micron filtration level
- Machine controls through CNC System
- Suitable for insert type gun drills
- Fault diagnostics and alarm on CNC screen

Optional Features

- Job counter rotation
- AC servo spindle
- Part handling mechanism | Automation
- Tool monitoring system
- Mist collector
- Safety light curtain and safety relays
- Industry 4.0 enabled IoT features



Precision and Accuracy

Strength and Rigidity

Customizable

Ease of Maintenance

Internet of Things

Automation

Micro Gundrilling Machine

MG series

The MG series of machines are suitable for drilling deep holes of diameter ranging from 1mm up to 6mm, finding application in automotive and medical equipment. The machine hosts a motorized spindle for the high RPM needs of such small diameter drilling. These machines are available in both standard and customized configurations and are suited for round-the-clock production. These machines are successfully running at major auto components manufacturers and general engineering companies. They can also be equipped with automation.

Features		Models
	Units	MG-06
Diameter	mm	1 - 6
Spindle speed	rpm	18000
Drilling depth	mm	200
Component length range	mm	300
No. of spindles		1 | 2 | 3 | 4

* Custom solutions for specific application can be configured based on requirement

Features

- Rigid structures with high stiffness
- Precision LM guides and ball screws
- Integral spindle (motorized) for tool spindles
- High pressure coolant system with chiller unit
- 3 Stage filtration unit- 20-micron filtration level
- Machine controls through CNC System
- Fault diagnostics and alarm on CNC screen

Optional Features

- Part handling mechanism | Automation
- Tool monitoring system
- Mist collector
- Safety light curtain and safety relays
- Industry 4.0 enabled IoT features
- Job counter rotation

Precision and Accuracy

Strength and Rigidity

Customizable

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Internet of Things

Automation

Universal Gundrilling Machines

UGK Series

These gundrilling machines are standardized with three linear CNC axes and are available in various configurations of axes strokes and load-carrying capacities. UGK series machines can also be configured with multiple spindles to match higher productivity requirements in the auto sector. Horizontal and vertical table positioning in UGK Series machines helps to achieve precise hole location and tolerance on various components. These proven machines are designed and manufactured considering flexibility and performance. These machines are generally used for machining PCD holes on shaft components as well as cooling holes on small dies.

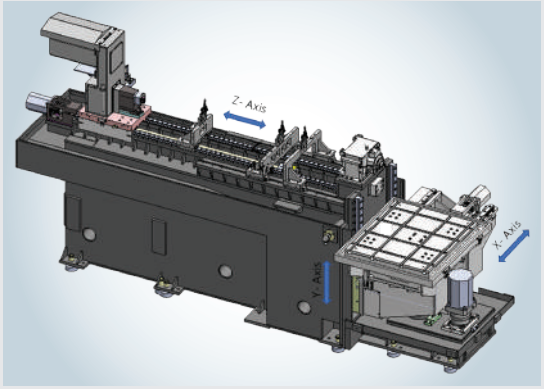
Features		Model		
	Units	UGK-12	UGK-20	UGK-25
Diameter	mm	5 – 12 (16*)	8 – 20	8 – 25
		(2 – 12)*		(5 – 20) *
Drilling depth	mm	300 | 600 | 1000		
Positional axes strokes (X | Y)	mm	500 | 300 or 800 | 500		
Table size (L X W) (Based on X | Y stroke selection)	mm	800 x 700 or 1500 x 1000		
Maximum table load (Based on table size selection)	kg	1000 | 2000		
No of spindles		1 | 2 | 3 | 4		1 | 2

Features

- Rigid structures with high stiffness
- Precision LM guides and ball screws
- High power spindles
- High pressure coolant system with chiller unit
- 3 Stage filtration unit- 20-micron filtration level
- Machine controls through CNC System
- Suitable for insert type gun drills
- Fault diagnostics and alarm on CNC screen

Optional Features

- AC servo spindle
- Robo / Gantry automation
- Tool monitoring system
- Mist collector
- Safety light curtain and relays
- Industry 4.0 enabled IoT features



Precision and Accuracy

Strength and Rigidity

Ease of Maintenance

Multi-axis Configuration

Turnkey Solutions

Internet of Things

Automation

Universal Gundrilling Machines

UGC Series

The column type universal gundrilling machines can be configured from three CNC axes up to seven axes, including rotary axis to perform complex and heavy-duty machining in a single setup. UGC Series machines combine the benefit of deep hole drilling with milling, drilling, and tapping operations in a single machine. Typically suited for applications like large dies and molds machining, heat exchanger plates and graphite blocks, these proven machines are designed and manufactured considering flexibility and performance.

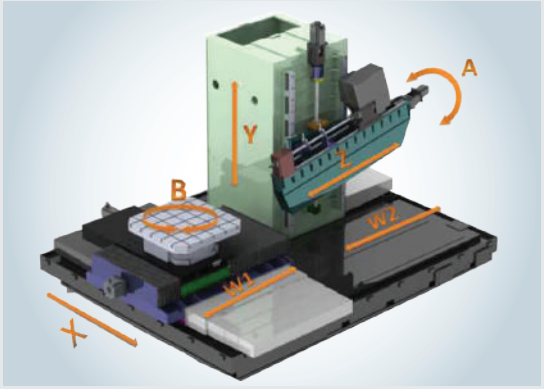
Features	Models				
	Units	UGC 1200	UGC 1600	UGC 2000	UGC 3000
Diameter	mm	5 - 25 (30*)	5 - 25 (30*)	5 - 40	5 - 40
X-axis stroke	mm	1200	1600	2000	3000
Y-axis stroke	mm	1000 (1200*)	1000 (1200*)	1200 (1500*)	1200 (1500*)
Z-axis stroke	mm	1200	1200	1600	1600
Drilling depth	mm	1200	1200	1600	1600
				2000 (Without Spindle tilting)	2000 (Without Spindle tilting)
No. of axes		3 | 4 | 5 | 6 | 7			
Maximum table load	kg	2000 | 5000	10000	20000	30000

Features

- Milling, drilling and tapping features
- AC servo spindle motor
- BT 50 spindle taper
- High pressure coolant system with chiller unit
- Fine filtration unit with chip conveyor
- Completely enclosed machine guard
- Fault diagnostics and alarm on CNC screen

Optional Features

- A-axis for spindle tilting
- B-axis CNC rotary table
- Component positioning axis (W1-axis)
- Column positioning axis (W2-axis)



Precision and Accuracy

Strength and Rigidity

Ease of Maintenance

Multi-axis Configuration

Turnkey Solutions

Internet of Things

Automation

BTA Boring Machines for Front Fork

WIDMA pioneers in offering BTA boring machines designed specifically for boring of front fork outer tube of motorcycles and scooters. These machines are designed to meet the critical accuracies of bore size, surface finish (0.1-0.2 µRa) and geometrical accuracies as required on a typical outer tube component. A unique feature of the machine is the option of both horizontal and space saving vertical configuration, making it compact.

Vertical Configuration

Model		Vertical Configuration		Horizontal Configuration	
	Units	BTV-42/450	BTV-50/450	BTH-42/400	BTH-50/400
Diameter range	mm	25-42	25-50	25-42	25-50
Boring depth	mm	250-450		250-400	
Component length	Mm	300-500		250-450	
Machine dimensions (W X D X H)	m	2.9 x 4.8 x 3.5		4.2 x 4.3 x 1.9	4.2 x 4.8 x 1.9

Features

- Machine control through CNC
- Variable spindle speed with VFD
- High pressure coolant system with chiller unit
- 2 stage filtration system - upto 20 microns level
- Hydraulic component clamping
- Fault diagnostics and alarm on CNC screen
- Complete machine enclosure

Optional Features

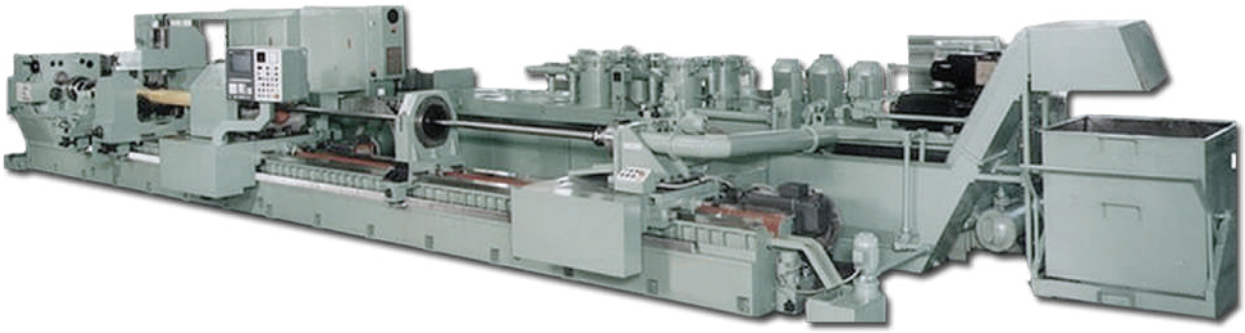
- Mist collector unit
- Paper band filter
- Auto door with safety light curtain
- Safety light curtain and relays
- Industry 4.0 enabled IoT features

Horizontal Configuration

BTA Drilling Machines

BTH Series

BTH series of machines from WIDMA meet customers' requirement of deep hole drilling applications using the BTA process. These machines are built considering high rigidity requirements for heavy duty applications at required spindle torque and power.

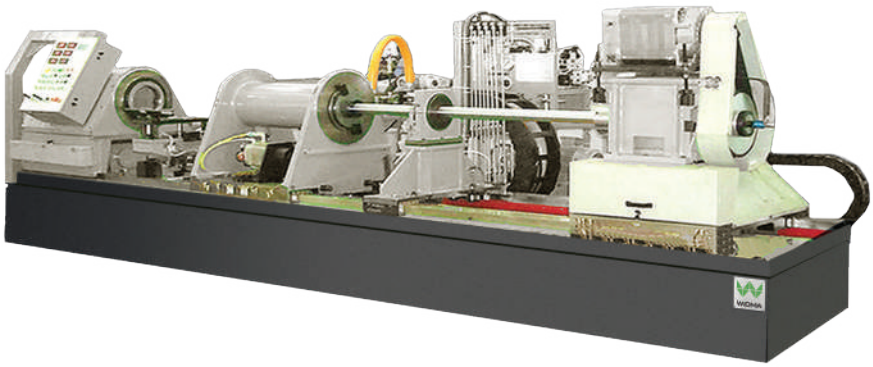


Features	Unit	BTH-40	BTH-65	BTH-100	Custom Solutions
Diameter	mm	20-40	20-65	20-100	>100
Counter boring diameter	mm	60	100	175	>175
Drilling depth range	mm	500-3000	1000-3000	1000-3000	>3000

Skiving and Roller Burnishing Machines

SRB Series

The Skiving and Roller Burnishing Machines are used by hydraulic cylinder manufacturers as an effective, highly productive, and reliable solution for the skiving and burnishing process, ensuring diameter and surface finish with maximum efficiency as against honing process. These machines come with work handling equipment as an option.



Features	Unit	SRB-80	SRB-150	SRB-200	Custom Solutions
Diameter	mm	40-80	40-150	40-200	>200
Drilling depth	mm	500-3000	500-3000	500-3000	>3000

Gun Drill Re-sharpening Machine

WIDMA's gun drill re-sharpening machines come with three grinding wheels and 5-6 adjustable fixtures that ensure required accuracies without highly skilled manpower unlike single spindle resharpening machines. All the grinding wheels are mounted on an integral motorized spindle and have precision bearings. This machine is ideal for single lip gun drills.

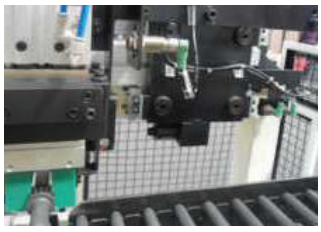
Features:

- Re-sharpening gun drill diameter : 5 to 25mm
- Maximum gun drill length : 1300mm
- No. of spindles : 3

Automation

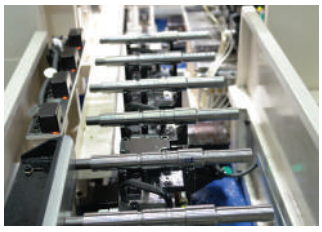
WIDMA offers workpiece handling solutions through automation and robotics for higher productivity and difficult loading conditions. The machines are designed with gantry, walking beam, robotic arm and part conveyors for auto loading / unloading of components, helping customers achieve desired flexibility.

Chain Conveyor



Gantry System

Robotic Arm



Walking Beam

IoT Compatibility

WIDMA deep hole drilling machines are offered with IoT compatibility as an optional feature.

Data fetched from the machine using various sensors can be used for production data visualization, machine health monitoring, predictive maintenance, and process monitoring using third party client software and ERP system .

Production Data Visualization

OEE, Downtime Analysis, Production Counts, Cycle Times, etc.

Process Monitoring

Tool Life Monitoring, Tool Performance (Vibrations, Acoustics and Power Consumption Trend Study)

Machine Health Monitoring

FFT Analysis of Vibrations, Temperature Rise Trend, Power Consumption Trend, etc.

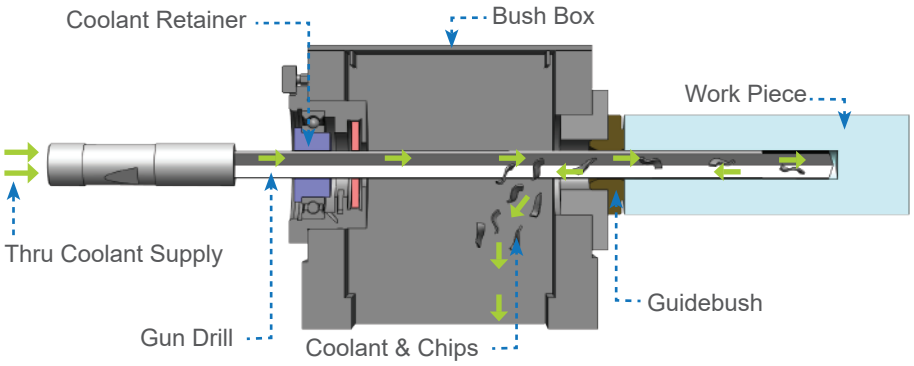
Predictive Maintenance

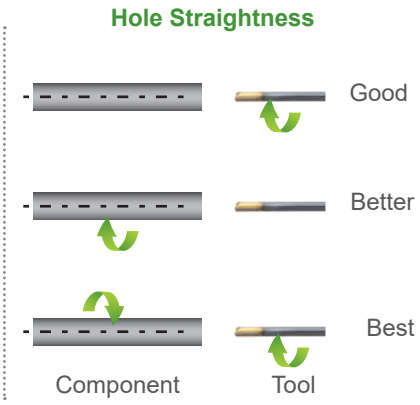
Maintenance Alerts, Warnings with Possible Failure details

Gun Drill System

Gun Drilling is one of the oldest and most reliable machining process to produce deep holes at modest cost. Tooling used for gun drilling process can be solid carbide, brazed lug or insert type. Pressurized coolant is fed through the drill for evacuation of chips.

The coolant also lubricates the guide pads which guides the drill as well as burnish the drilled hole. This results in fine surface finish and close hole tolerances eliminating the requirement of reaming process.



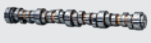


General arrangement of gundrilling system where the drill rotates and job is held stationary

Segments

Automotive


Connecting Rods


Cam Shafts


Common Rails


Transmission Shafts


Cylinder Blocks


Cylinder Heads

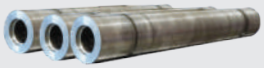

Outer Tube | Front Forks


Fuel Injection Body Parts

Energy | Oil & Gas | Defense


Graphite Blocks


Tube sheet


Barrels

Infrastructure | General Engineering

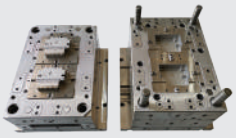

Engine Blocks


Hydraulic cylinder



Plates & Structures

Die and Mold


Injection Mold Dies


Dies for Auto Parts


Glass Molds

www.widma.com

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WIDMA Machining Solutions Group is part of Kennametal India Limited

Standard Gundrilling Machine

SG series

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Features	Units	Models			
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Diameter	mm	5 –12 (16*)	8 – 20	8 – 25	10 - 40
		(2 – 12)*	(5 – 20) *	(5 – 30) *	
Drilling depth	mm	300 | 600 | 1000			1000 | 1500 | 2000
Component length range	mm	400 | 700 | 1100			1100 | 1600 | 2100
No. of spindles		1 | 2 | 3 | 4		1 | 2	1

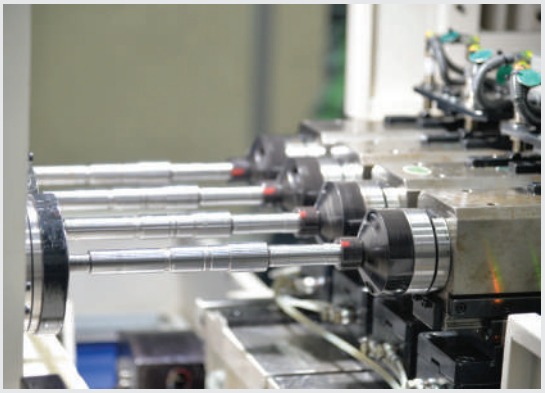
* Custom solutions for specific application can be configured based on requirement

Features

- Rigid structures with high stiffness
- Precision LM guides and ball screws
- High power spindles
- High pressure coolant system with chiller unit
- 3 stage filtration unit- 20-micron filtration level
- Machine controls through CNC System
- Suitable for insert type gun drills
- Fault diagnostics and alarm on CNC screen

Optional Features

- Job counter rotation
- AC servo spindle
- Part handling mechanism | Automation
- Tool monitoring system
- Mist collector
- Safety light curtain and safety relays
- Industry 4.0 enabled IoT features



Precision and Accuracy

Strength and Rigidity

Customizable

Ease of Maintenance

Internet of Things

Automation

Micro Gundrilling Machine

MG series

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Features		Models
	Units	MG-06
Diameter	mm	1 - 6
Spindle speed	rpm	18000
Drilling depth	mm	200
Component length range	mm	300
No. of spindles		1 | 2 | 3 | 4

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Features

- Rigid structures with high stiffness
- Precision LM guides and ball screws
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