



Deep Hole Drilling Machines



machining[™]
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.



Industries Served





Product Range

Gun Drilling Machines

SG Series $\varnothing 2 - 40\text{mm}$ upto 2000mm depth

MG Series $\varnothing 1 - 06\text{mm}$ upto 200mm depth

UG-K Series $\varnothing 2 - 30\text{mm}$ upto 1000mm depth

UG-C Series $\varnothing 5 - 40\text{mm}$ upto 2000mm depth

BTA Machines

BTH Series $\varnothing 20 - 175\text{mm}$ upto 3000mm depth

BTA Machines (for Front Fork)

BTV / BTH Series $\varnothing 25 - 50\text{mm}$ upto 450mm depth

Skiving & Roller Burnishing Machines

SRB Series $\varnothing 40 - 200\text{mm}$ 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 | Units | Models |
|------------------------|-------|---------------|
| | | 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



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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.



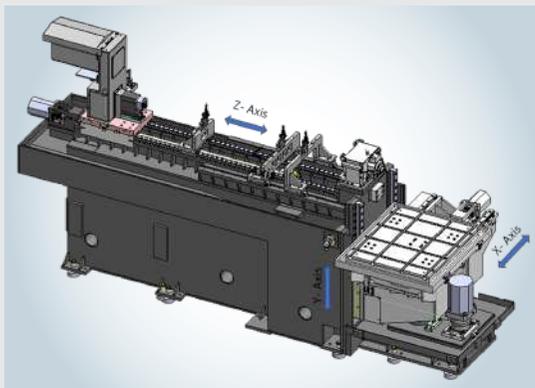
| Features | Units | Model | | |
|---|-------|--------------------------|--------|------------|
| | | UGK-12 | UGK-20 | UGK-25 |
| Diameter | mm | 5 – 12 (16*) | 8 – 20 | 8 – 25 |
| | | (2 – 12)* | | (5 – 20) * |
| Drilling depth | mm | 300 600 1000 | | |
| Positional axes strokes (X Y) | mm | 500 300 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.



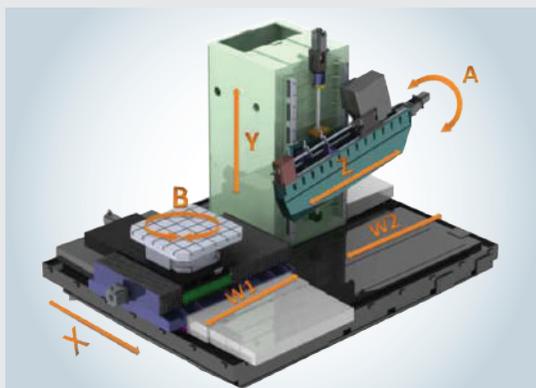
| Features | Models | | | | |
|--------------------|--------|-------------------|--------------|--------------------------------|--------------------------------|
| | Units | UGC 1200 | UGC 1600 | UGC 2000 | UGC 3000 |
| Diameter | mm | 5 - 25 (30*) | 5 - 25 (30*) | 5 - 40 | 5 - 40 |
| X-axis stroke | 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 μ Ra) 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 | Units | Vertical Configuration | | Horizontal Configuration | |
|--------------------------------|-------|------------------------|------------|--------------------------|-----------------|
| | | 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



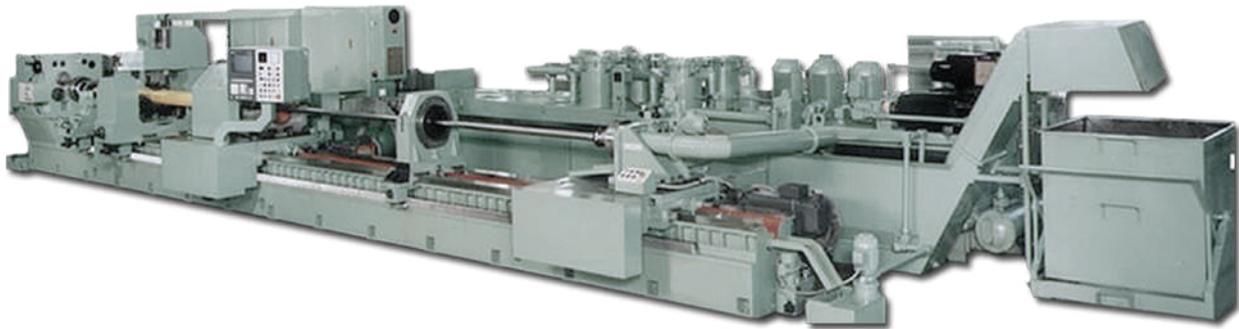
Horizontal Configuration

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-125 | SRB -200 | Custom Solutions |
|----------|------|---------------------|----------|---------------------------------|
| Diameter | mm | 40-125 | 40-200 | Can be offered based on request |
| Depth | M | 2M, 3M, 4M, 6M & 8M | | |

Note: Maximum skiving roller burnishing depth for smaller diameters to be checked with manufacturer.

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 resharpener 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

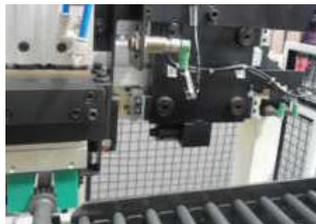
Automation

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.

health monitoring, predictive maintenance, and process monitoring using third party client software and ERP system .

Data fetched from the machine using various sensors can be used for production data visualization, machine

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)

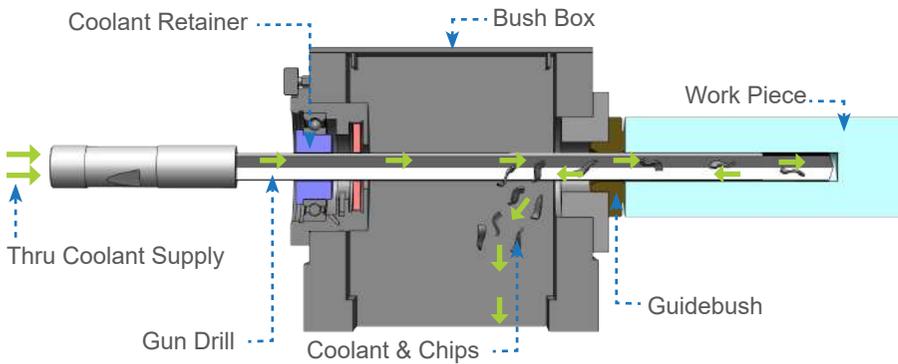
Machine Health Monitoring
 FFT Analysis of Vibrations, Temperature Rise Trend, Power Consumption Trend, etc.

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



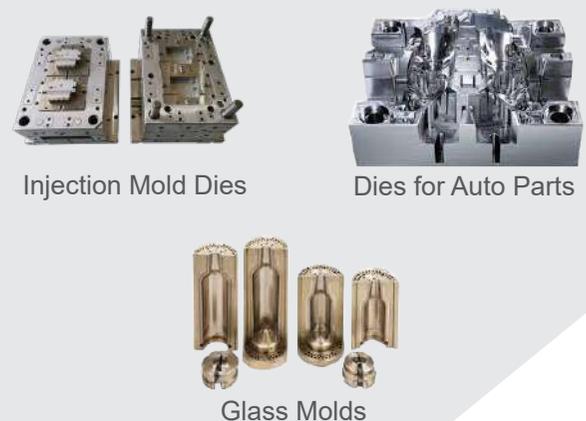
Energy | Oil & Gas | Defense



Infrastructure | General Engineering



Die and Mold





www.widma.com

WIDMA Machining Solutions Group

CIN : L27109KA1964PLC001546

8/9th Mile, Tumkur Road,
Bengaluru 560 073 INDIA

Phone: +91 80 43281137 / 141 / 349 / 350

k-in.widma@kennametal.com

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