UNISIG

Deep Hole Drilling Machines
钻深孔 机床和设备

UNISIG deep hole drilling systems are designed and manufactured in the USA and consist of machines, durable tooling, and automation.

Systems are chosen by industry leading manufacturers for the ability to consistently meet vital demands of hole tolerance adherence in a variety of materials.

UNISIG钻深孔系统在美国设计和制造，由主机、工具系统和自动化系统组成。

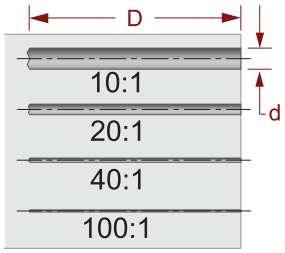
系统选用行业领先的制造厂的产品，能满足孔径公差的关键需求，适合多种材料。

A deep hole has a depth to diameter ratio (D:d) of 10:1 or greater. Applications exist in many industries, and UNISIG develops equipment to meet each industry's requirements.

Systems include the integration of premium global components, metric hardware, and are designed to follow all applicable ISO, DIN, and IEC standards.

深孔的深径比 (D:d) 为10:1或以上。可用于多种行业，UNISIG 研发的设备符合每个行业的要求。

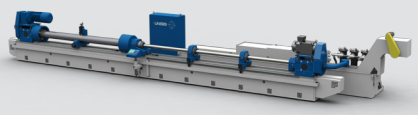
系统包括全球顶尖的部件集成，公制五金件，严格按现行ISO、DIN和IEC标准设计。



Please visit www.unisig.com for more information.

更多信息，请登录 www.unisig.com 。

MACHINES 主机



B-Series Ballscrew | B系列滚珠丝杠进给机
B380 | B500 | B600 | B700

BTA drilling of large diameter, on-center holes in long, round workpieces.

这些机床用于圆形工具钻中心孔，可处理的工件长、钻孔直径大。

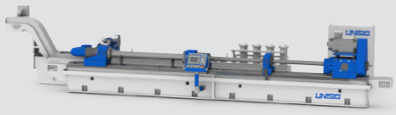
Tooling | 工具系统:	BTA
Max Solid Drill | 最大实心钻头:	200 mm
Max Counterbore | 最大锪孔头:	300 mm
Max Drill Depth | 最大钻孔深度:	6000 mm

B-Series Rack & Pinion | B系列齿条齿轮传动装置
B600R | B630 | B1000 | B1200 | B1600 | B2000 | B2400

Longer workpieces use rack and pinion drive to maintain straightness and accuracy at more extreme drilling depths.

采用齿条齿轮传动能处理更长的工件，钻孔更直、精度更大，可达极端钻孔深度。

Tooling | 工具系统:	BTA
Max Solid Drill | 最大实心钻头:	500 mm
Max Counterbore | 最大锪孔头:	1000 mm
Max Drill Depth | 最大钻孔深度:	30,000 mm

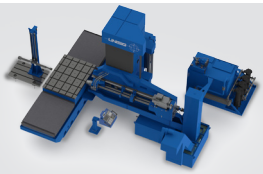


S-Series Skiving Machines | S系列斜面切割机
S380 | S500 | S600 | S700

Optimized for efficient, accurate finishing of hydraulic cylinders.

S系列机经过优化，效率高、切割额滚轮打磨精确、干净，适用于液压油缸等应用。

Tooling | 工具系统:	Skive-Burnishing 斜切割与打磨
Max Skive Diameter | 最大斜切割直径:	300 mm
Max Counterbore | 最大锪孔头:	300 mm
Max Drill Depth | 最大钻孔深度:	6000 mm



USC Column Type Machines | USC柱式机
USC25 | USC38 | USC50 | USC75 | USC75H | USC100

Precision hole drilling in heavy, non-round workpieces.

这些机床用于精密钻孔，钻孔工件为非圆形，重量达50吨。

Tooling | 工具系统:	BTA, Gundrill | BTA、枪钻
Max BTA Diameter | 最大BTA直径:	102 mm
Max Gundrill Diameter | 最大枪钻直径:	75 mm
Max Drill Depth | 最大钻孔深度:	2800 mm

USC-M Drilling and Milling | USC-M 钻铣中心
USC-M38 | USC-M50

Combine milling and drilling processes, reducing setups and changeover, and revolutionizing mold manufacturing.

USC-M机床能完成多项钻铣工序，缩短夹装和切换时间，实现了模具制造的革命性变革。

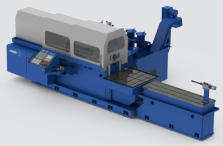
Tooling | 工具系统:	BTA, Gundrill | BTA、枪钻
Max BTA Diameter | 最大BTA直径:	50 mm
Max Gundrill Diameter | 最大枪钻直径:	50 mm
Max Drill Depth | 最大钻孔深度:	1830 mm

USC-TS Tube Sheet Machines | USC-TS管板机
USC-TS32 | USC-TS50 | USC-TS65

USC-TS machines precisely drill the thousands of holes required for heat exchanger tube sheets.

热交换器管板需要成千上万个精密孔。USC-TS 机床设有多达5轴，钻孔精确。

Tooling | 工具系统:	BTA, Gundrill | BTA、枪钻
Max BTA Diameter | 最大BTA直径:	65 mm
Max Gundrill Diameter | 最大枪钻直径:	50 mm
Max Drill Depth | 最大钻孔深度:	1000 mm

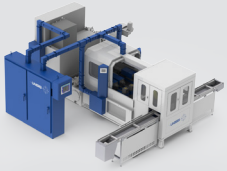


USK Knee Type Machines | USK立式升降台式机床
USK25 | USK37 | USK50 | USK75

USK machines are highly versatile, for on or off center drilling in a range of diameters, depths, and materials.

USK立式升降台式机床通用性强，能精密钻中心孔和偏心孔，钻孔直径、深度和材料范围广。

Tooling | 工具系统:	BTA, Gundrill | BTA、枪钻
Max BTA Diameter | 最大BTA直径:	75 mm
Max Gundrill Diameter | 最大枪钻直径:	50 mm
Max Drill Depth | 最大钻孔深度:	4000 mm

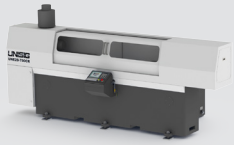


UNI Production Machines | UNI生产机床
Modular Options | 模块化构造选项

UNI machines are often paired with automation for high accuracy and efficiency in a production environment.

UNI生产中心往往配有自动化系统，生产零件机器精密，效率特别高。

Tooling | 工具系统:	BTA, Gundrill | BTA、枪钻
Max Drill Diameter | 最大钻头直径:	50 mm
Max Drill Depth | 最大钻孔深度:	2000 mm
Number of Spindles | 主轴数量:	1-8/axis | 每轴1~8根



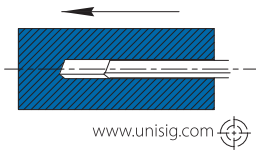
UNE Gundrilling Machines | UNE紧凑型枪钻机床
UNE6 | UNE12 | UNE12-2 | UNE20

Job shops can add gundrilling to in-house capabilities with accuracy and ease of use.

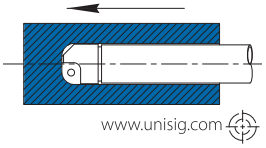
车间可轻易增加枪钻，满足特点性能要求。机床精度高，使用方便，容易适应车间环境。

Tooling | 工具系统:	Gundrill | 枪钻
Max Drill Diameter | 最大钻头直径::	20 mm
Max Drill Depth | 最大钻孔深度:	750 mm
Number of Spindles | 主轴数量:	1-2

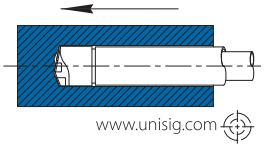
CUTTING METHODS 切割方法



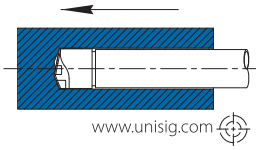
Gundrilling | 枪钻 1- 50 mm
Internal Coolant | 内部冷却液,
High pressure coolant is introduced through the machine spindle and tool, chips are discharged through a groove in the tool body.
高压冷却液通过机床主轴和刀具流入，碎屑通过刀具系统上的沟槽排出。



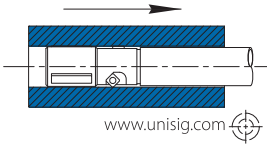
Bottom Forming | 底部成形 20 - 500 mm
External Coolant | 外部冷却液,
Special forms finish a profile at the bottom of a hole, often in radius, step, or flat bottom.
在孔的底部形成特殊轮廓形式的表面，通常形成半径、子口或平底面形式。



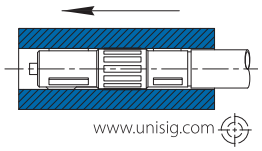
Ejector Drilling | 喷射钻孔 20 - 200 mm
Internal and External Coolant | 内外冷却液,
System of drill head, and dual tubes, with coolant introduced between tubes, and chips discharged through the inner tube.
系统由钻头、外管和内管组成。高压冷却液通过外管流入，碎屑通过内管排出。



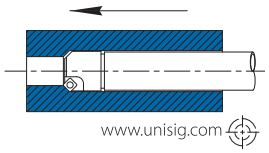
BTA | BTA 20 - 630 mm
External Coolant | 外部冷却液,
High pressure coolant is introduced around the tool head, chips are discharged through the tool and spindle.
高压冷却液围绕刀具外部流入，碎屑通过刀具和主轴排出。



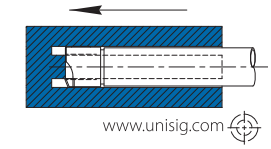
Pull Counterboring | 拉镗孔 20 - 630 mm
External Coolant | 外部冷却液,
Tool enlarges an existing bore as it is pulled back through the workpiece, tensioned for improved straightness.
刀具用于现有孔扩孔，通过工件向后拉刀具时，使用张紧镗杆，可改善直线度。



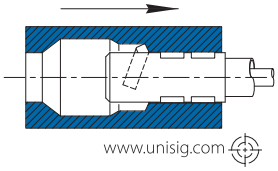
Skiving & Burnishing | 斜切割与滚轮打磨 20 - 500 mm
External Coolant | 外部冷却液,
This method uses skiving knives to cut the hole to diameter, and roller burnishing to cold-work the surface finish.
这种双工序单道方法使用多块刀片精确切割表面直径，滚轮采用冷作加工，形成镜面表面。



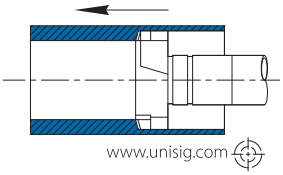
Counterboring | 镗削 20 - 630 mm
External Coolant | 外部冷却液,
This method enlarges an existing hole. Tools can pilot off of finished or pre-bore for diameter or concentricity requirements.
镗削用于现有孔的扩孔刀具能根据直径要求扩成孔，也可同心预钻孔。



Trepanning | 套料钻 55 - 500 mm
External Coolant | 外部冷却液,
Tool leaves a solid core in the hole, rather than creating all chips. This allows a larger diameter with the same power.
刀具在孔的中心留一根实心，而不是形成碎屑。钻孔直径大，功率相对较小。



Bottle Boring | 瓶子无聊
External Coolant, Special Application | 外部冷却液, 特殊应用
Actuators control the tool cutting surfaces within the workpiece to create an internal profile of the hole.
致动器控制切割工件内表面，以创建一个内部轮廓的工具。



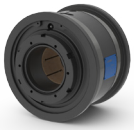
Tube Finishing Large Diameter Counterbore 300 - 1200 mm
管子精加工 - 大径镗孔
Internal Coolant | 内部冷却液,
Extremely large counterboring requires specialized tooling and process to handle the increased amount of coolant required.
超大径镗孔要求专用工具系统和设计，以便管理增加的冷却液量。

BTA DURABLE TOOLING BTA经久耐用的工具系统

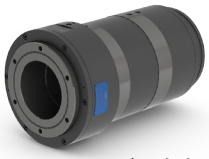
Durable tooling is essential in handling rotating tools, heavy or long workpieces, and handling coolant effectively. Tooling is made by UNISIG in the USA.
经久耐用的工具系统对使用旋转刀具、重型工件和长工件以及有效处理冷却液至关重要。工具系统由美国UNISIG制造。

Drill Tubes | 钻管
Drill tube systems include standard connection types and adapters.
钻管系统包括标准的接头类型和转接头。

Driver System | 驱动系统
Drill tube drivers, split clamps, and seal rings secure the tube to the spindle.
钻管驱动器分离夹和密封圈把钻管固定在主轴上。

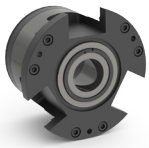


Vibration Dampeners | 减振器
Vibration dampeners fit around drill tubes to guide them and dampen vibrations.
减振器围绕钻管安装，用于导向，并减小优质表面的振动。



Pressure Heads | 压力头
Rotating assemblies work to locate the workpiece, guide the drill, and introduce cutting fluid.
这些旋转总成的作用是使工件定位，导向钻头，并引导切削液。

Workholding | 工件夹紧
Workholding chucks locate and secure workpieces to the pressure head.
工件夹头将工件定位并固定在压力头上。



Bushings | 衬套
Master bushings and bushing systems fit around each tool diameter
主衬套和衬套系统，围绕每个刀具直径方向装配。

EXPERTISE 技术专长

UNISIG employs a highly experienced staff including capable engineers and technicians. Application, mechanical design, and project engineers work together to develop solutions for a range of applications in locations across the globe. Electrical and software engineers can handle programming for complex, powerful, and accurate machines. Technicians and other staff provide customer support during the sales process, installation and training, as well as post-installation service.

Training is conducted both at the UNISIG facility and on-site, and tailored to each customer's unique application. Service after installation is handled urgently, and can be diagnosed remotely or on-site. Independent representatives and service technicians are hand chosen for their expertise and reputation, and trained on UNISIG equipment to be able to provide quick service around the world.

UNISIG的员工经验丰富，工程师和技术员的能力非常强。应用工程师、机械设计工程师和项目工程师能密切合作，共同研发解决方案，用于全球多种应用。 电气工程师和软件工程师能处理复杂强劲精密机床的编程。技术员及其他职员能为客户提供售中支持、安装和培训及安装后服务。

培训在UNISIG工厂和现场培训，根据客户的具体应用定制培训课程。安装后的服务需要紧急处理，可远程和现场诊断。独立的销售代表和服务技术人员技术过硬、信誉良好，接受过UNISIG设备的专门培训，能快速提供全世界服务。

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