UNISIG

Deep Hole Drilling Systems

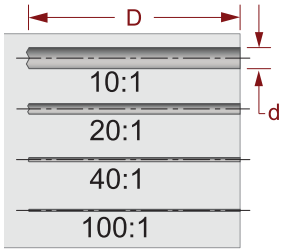
Deep Hole Drilling Machines

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.

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, and are designed to follow all applicable ISO, DIN, and IEC standards.



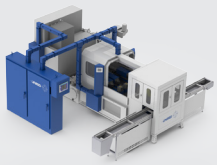
MACHINES

UNE Compact Gundrilling Machines

UNE6, UNE12, UNE12-2, UNE20

Job shops can easily add gundrilling to their in-house capabilities with the UNE. Machines drill accurately, have a compact footprint and short lead time.

Tooling:	Gundrill
Max Drill Diameter:	20 mm 0.79 in
Max Drill Depth:	750 mm 30.0 in
No. Of Spindles:	1-2

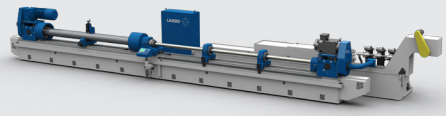


UNI Production Machines

UNI6, UNI12, UNI20, UNI25, UNI38, UNI50

UNI production centers are often paired with automation capabilities to result in production parts with extremely high accuracy and efficiency.

Tooling:	BTA, Gundrill
Max Drill Diameter:	50 mm 2.00 in
Max Drill Depth:	3000 mm 120 in
No. Of Spindles:	1-6 per axis

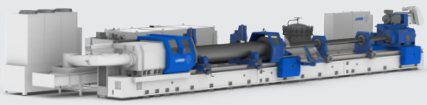


B-Series Ballscrew Feed

B380 | B500 | B600 | B700

These machines drill on-center holes in round workpieces, and can handle long workpieces with drilling diameters.

Tooling:	BTA
Max Solid Drill:	200 mm 8.00 in
Max Counterbore:	300 mm 12.0 in
Max Drill Depth:	6000 mm 20.0 ft

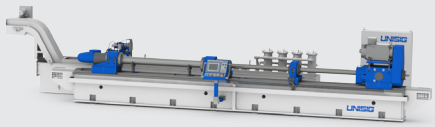


B-Series Rack and Pinion Drive

B630 | B850 | B1000 | B1200 | B1600 | B2000

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

Tooling:	BTA
Max Solid Drill:	500 mm 19.7 in
Max Counterbore:	630 mm 24.8 in
Max Drill Depth:	20,000 mm 65.6 ft

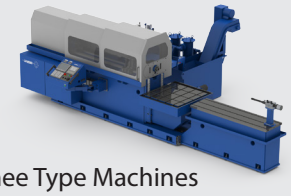


S-Series Skiving Machines

S380 | S500 | S600C | S700C

S-Series machines are optimized for efficient, accurate, and clean skiving and roller burnishing for applications such as hydraulic cylinders.

Tooling:	Skiving and Burnishing
Max Skive Diameter:	305 mm 12.0 in
Max Counterbore:	305 mm 12.0 in
Max Drill Depth:	6000 mm 20.0 ft

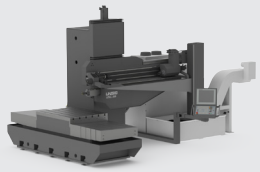


USK Knee Type Machines

USK25 | USK37 | USK50 | USK75

USK knee machines are highly versatile, and can handle a range of drilling diameters, depths, workpieces, materials, and tooling.

Tooling:	BTA, Gundrill
Max BTA Diameter:	75 mm 3.00 in
Max Gundrill Diameter:	50 mm 2.00 in
Max Drill Depth:	4000 mm 157.4 in



USC Column Type Machines

USC25 | USC38 | USC50 | USC75 | USC75H | USC100

These machines drill precise holes in non-round workpieces up to 50 tons. USC machines are heavy-duty, yet have a compact footprint.

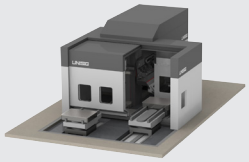
Tooling:	BTA, Gundrill, Milling
Max BTA Diameter:	102 mm 4.00 in
Max Gundrill Diameter:	75 mm 3.00 in
Max Drill Depth:	2800 mm 110.2 in

USC-TS Tube Sheet Machines

USC-TS32 | USC-TS50 | USC-TS65

Heat exchanger tube sheets
require thousands of accurate holes. USC-TS machines handle these with precision.

Tooling:	BTA, Gundrill
Max BTA Diameter:	65 mm 2.60 in
Max Gundrill Diameter	50 mm 2.00 in
Max Drill Depth:	1000 mm 40.0 in



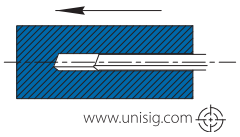
USC-M Drilling and Milling Center

USC-M38 | USC-M50

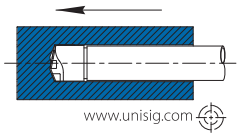
USC-M drilling centers allow mold manufacturers to use multiple operations such as drilling and milling on all sides of a single workpiece, with one setup.

Tooling:	BTA, Gundrill, Machining
Max BTA Diameter:	50 mm 2.00 in
Max Gundrill Diameter:	50 mm 2.00 in
Max Drill Depth:	1830 mm 72.0 in

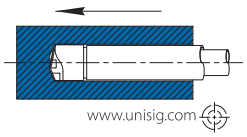
CUTTING METHODS



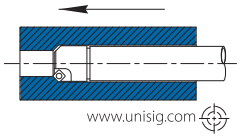
Gundrilling
Internal Coolant, 1 - 50 mm
High pressure coolant is introduced through the machine spindle and tool, chips are discharged through a groove in the tool body.



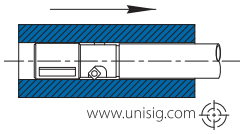
BTA
External Coolant, 20 - 630 mm
High pressure coolant is introduced around the tool exterior, and chips are discharged through the tool and spindle.



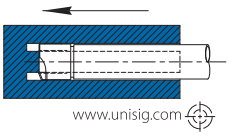
Ejector Drilling
Internal and External Coolant, 20 - 200 mm
System consisting of drill head, outer tube, and inner tube. High pressure coolant is introduced between the tubes, chips are discharged through the inner tube.



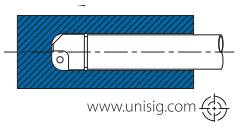
Counterboring
External Coolant, 20 - 630 mm
Counterboring enlarges an existing hole. Tools can pilot off either finished bore for diameter requirements, or pre-bore for concentricity.



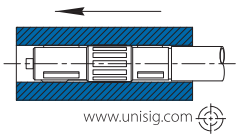
Pull Counterboring
External Coolant, 20 - 630 mm
The tool enlarges an existing bore as it is pulled back through the workpiece, on a tensioned boring bar for improved straightness.



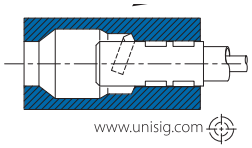
Trepanning
External Coolant, 55 - 500 mm
Tool leaves a solid core in the middle of the hole, rather than creating all chips. This allows a larger diameter with the same relative power.



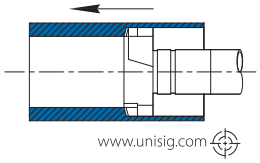
Bottom Forming
External Coolant, 20 - 500 mm
Special forms finish a profile at the bottom of a hole, often in radius, steps, or flat bottoms.



Skiving and Roller Burnishing
External Coolant, 20 - 500 mm
This two-process, one-pass method uses multiple skiving knives to cut the surface to close diameter, and rollers cold-work the surface to create a mirror-finish.

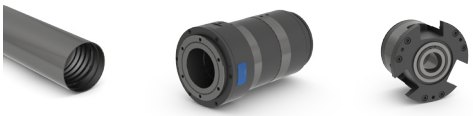


Bottle Boring
External Coolant, special application
Actuators extend and retract the tool to create an internal profile within the workpiece, where the chamber is larger than the entry and exit diameters.

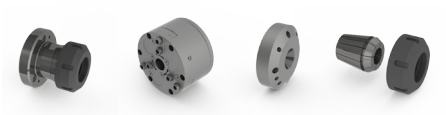


Tube Finishing - Large Diameter Counterboring
Internal Coolant, 300 - 1200 mm
Specially configured counter boring tools use the push-counterboring process, with a gundrilling type coolant supply, and BTA indexable tooling.

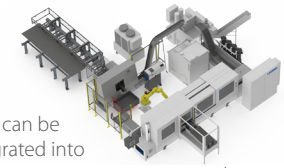
TOOLING AND AUTOMATION



BTA Durable Tooling includes drill tube systems, pressure head assemblies, bushing systems, vibration dampeners, and clamping and support accessories. Tooling integrates into machines to provide stability and support, and contribute to overall accuracy of finished holes.



Gundrill Durable Tooling includes presetting tooling, driver systems, bushing systems, whip guide assemblies, and clamping and support accessories. Gundrill tooling works with gundrilling machines to ensure precision drilling, even at smaller diameters.



Automation can be seamlessly integrated into deep hole drilling systems to increase productivity, accuracy, and safety. Automation can be machine mounted, or used to combine multiple machines or operations. Automation is desiged by our experienced team for the most simple and effective approach.

EXPERTISE

UNISIG employes 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.

EN-US
Updated April 2016

UNISIG
DEEP HOLE DRILLING SYSTEMS
N58W14630 Shawn Circle
Menomonee Falls, WI 53051, USA
PH. 262-252-3802 FX. 262-252-4075
www.unisig.com