UNISIG

SOLUTIONS FOR THE MEDICAL INDUSTRY

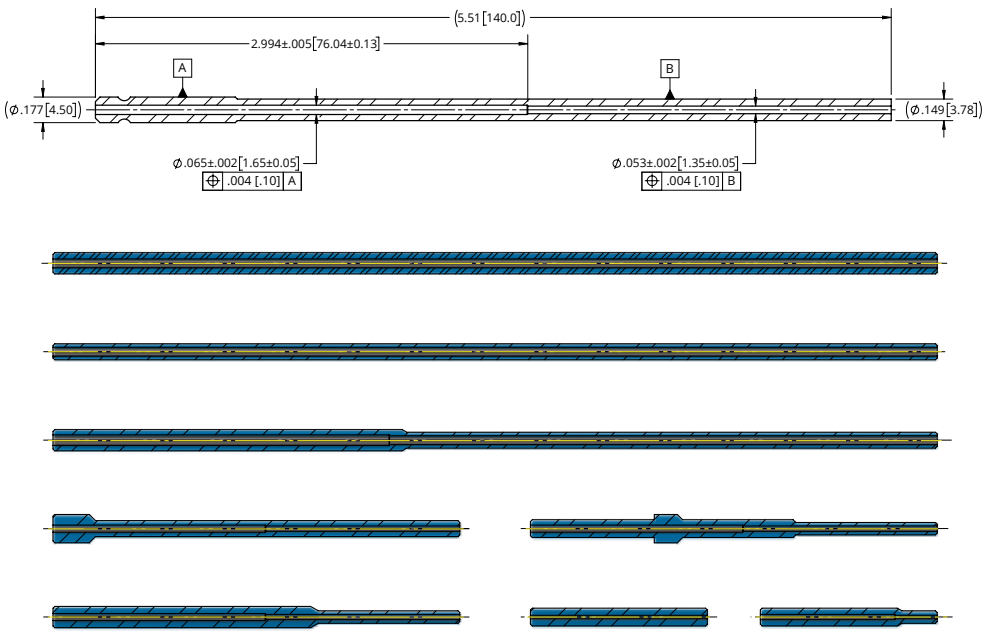
SMALL DIAMETER GUNDRILLING MACHINES

Gundrilling extremely precise workpieces for the medical industry is difficult without the right machines, tools, and process.

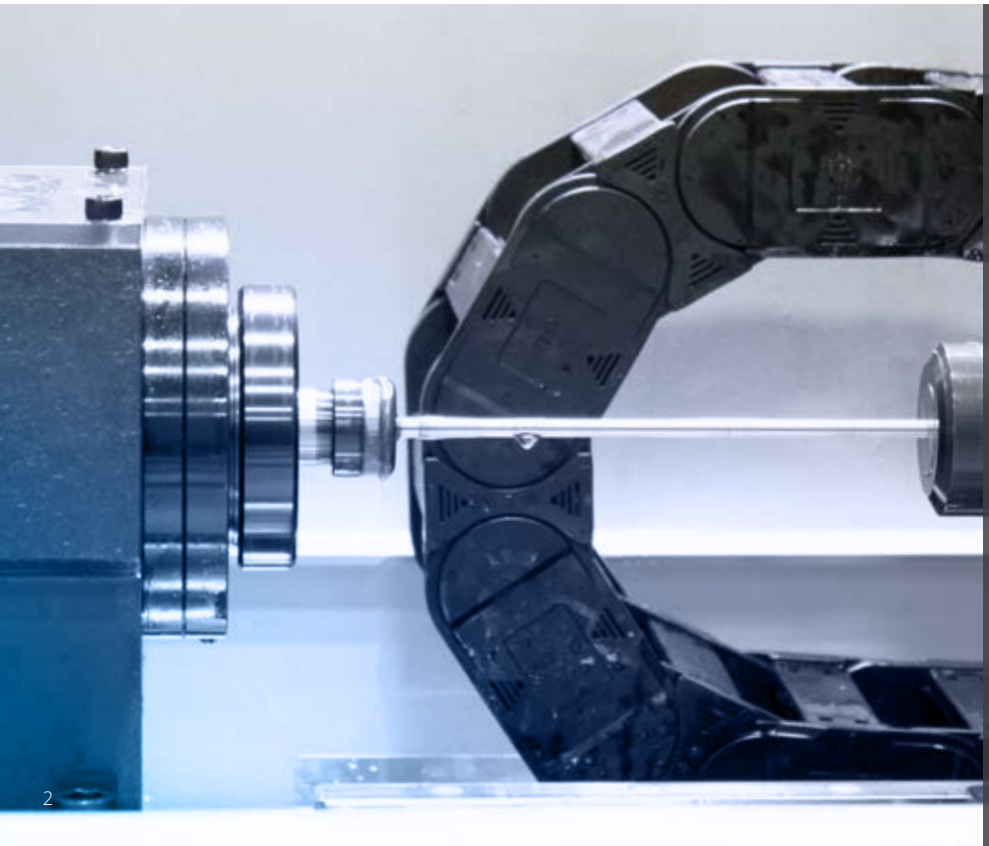
The **UNISIG UNE6 series machines** make it possible and reliable.

WE UNDERSTAND YOUR UNIQUE CHALLENGES

1. Gundrilling small diameter, deep holes, ranging from 0.8 - 6 mm [0.03 - 0.25 in] in diameter
2. Depth to diameter ratios from 20:1 to over 100:1
3. Hole straightness with concentricity to external diameter features
4. Complex features such as stepped holes with inspection dimensions at depth and transitions
5. Thin wall conditions on the workpiece
6. Difficult workpiece materials



UNISIG HAS THE RIGHT SOLUTION.



UNISIG UNE6 TECHNOLOGY

- Counter-rotating tool and workpiece
- Tool life monitoring and broken tool detection
- Exceptional process control
- Intuitive smart control interface with program storage

UNISIG UNE6 PERFORMANCE

- 24,000 rpm Integral motor spindles
- 28,000 rpm total drilling speed with counter-rotation
- 3,000 psi (207 bar) Flow-based coolant system
- Available integrated automation

UNISIG SOLUTIONS FOR THE MEDICAL INDUSTRY

SIMPLIFIED SOLUTIONS FOR SURGICAL TOOLING
Manufacturers of surgical instruments can rely on UNISIG's decades of experience collaborating to solve your complex problems and provide the confidence to use your newly installed system to its fullest capabilities.

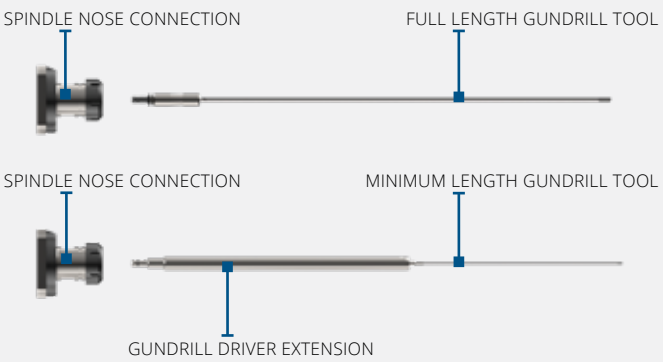
BRING GUNDRILLING IN-HOUSE
Eliminate variables and lost time from outside sources and improve throughput by incorporating a UNE6 machine into your Swiss turning cells.

GUNDRILL WITH ACCURACY AND REPEATABILITY
Achieve tight tolerances every time with our precision-aligned machines, workholding specialized for medical instruments, and intelligent machine controls.

EXPAND CAPABILITIES AND AUTOMATE GUNDRILLING
Flexible workholding configurations with UNISIG's lantern chuck and robotic integration for the ultimate in manufacturing automation for medical gundrilling.

OUR INDUSTRY-LEADING GUNDRILLING STRATEGIES FOR SMALL DIAMETER DRILLING

Utilize the shortest, most rigid tool possible



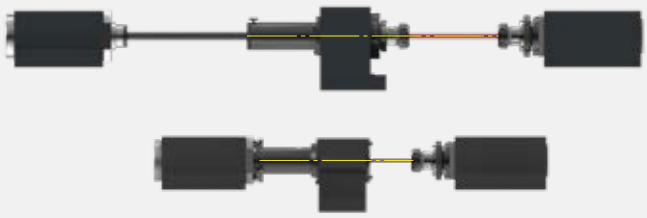
Achieve extreme concentricity through workpiece counter-rotation

Select the right tooling system for the holes you are drilling

CONVENTIONAL GUNDRILLING TOOL SYSTEM

Traveling whip guide supports for long workpieces over 250 mm [10 in] long.

HIGH SPEED GUNDRILLING TOOL SYSTEMS



Extended drivers and supported tools for workpieces with very small diameters up to 250 mm [10 in] long without whip guide supports.

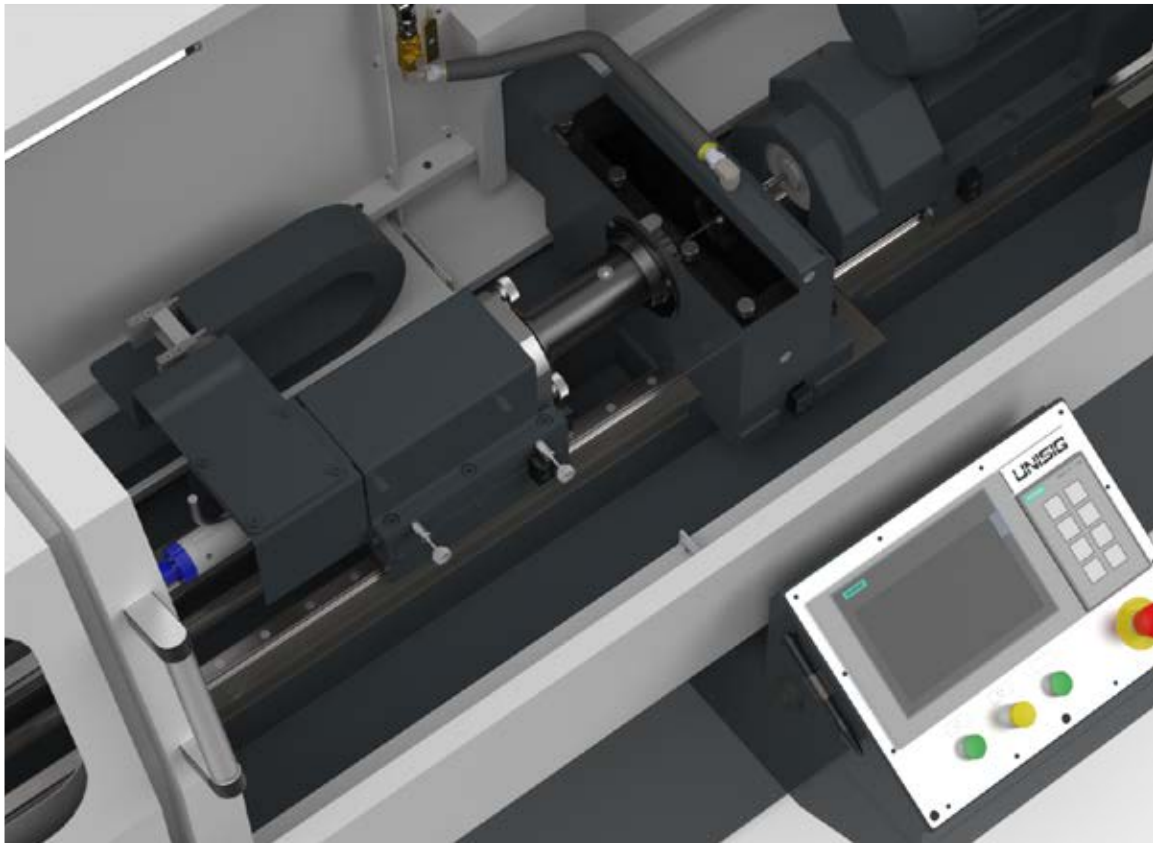
Rely on UNISIG UNE6 machines designed for gundrilling small diameter holes with extreme accuracy and productivity

1. **Increased spindle speeds:** provide a 100% improvement in penetration rates without sacrificing tool life as diameters decrease
2. **Very high coolant pressures with programmable delivery and precise temperature control:** sense when something is wrong to reliably drill the smallest holes
3. **Machine controls that provide clear feedback:** maintain full control of the gundrilling parameters and manage setpoints for automatic interruption in case of a problem
4. **Optimized machine alignment, workholding, and tool systems:** quick setup for frequent changeovers

UNE6-750-CR
SINGLE SPINDLE SMALL DIAMETER GUNDRILLING

UNISIG TECH SPOTLIGHT
UNE6 SERIES MACHINES

24,000 RPM INTEGRAL MOTOR SPINDLES provide reduced vibration and very high feed rates. Tool holding options include modular quick change holders and driver extensions.



FEATURES

- In a compact package, the UNE6-750-CR single spindle gundrilling machine offers everything needed to gundrill the most difficult workpieces in any shop environment
- Geared towards precision instrumentation work, this machine utilizes a counter-rotating workpiece headstock to achieve extremely high concentricity with a wide range of depth-to-diameter ratios
- UNISIG's powerful and intuitive machine control provides an easy to use interface for monitoring processes. Automatic interruption allows lights-out production and prevents damage to the drill and workpiece during an interrupt

SPECIFICATIONS

GUNDRILLING	UNE6-750-CR	
Number of spindles	1	
Hole diameter minimum	0.8 mm	0.03 in
Hole diameter maximum	6 mm	0.25 in
Part length maximum	750 mm	30 in
PERFORMANCE		
Tool spindle speed maximum	24,000 rpm *with balanced tool holders*	
Work spindle speed maximum	4,000 rpm	
Combined drilling speed maximum	28,000 rpm	
Coolant pressure maximum	207 bar	3,000 psi
INSTALLED DIMENSIONS		
A — Width	4,350 mm	171 in
B — Length	2,300 mm	91 in

MACHINE CONFIGURATION

1 Integral motor gundrilling spindle high spindle speeds with low vibration

2 Servo driven ballscrew feeds the gundrill to the workpiece

3 Chip box system precision guide bushing and workpiece location

4 Counter-rotating workpiece headstock produces extremely high concentricity

5 Servo driven ballscrew positions the workhead and clamps the workpiece

6 Full enclosure ensures a dry floor and quiet operation

7 Coolant system automatically manages coolant process

8 Coolant temperature control efficiently maintains proper coolant temperatures *(energy efficient chiller or heat exchanger options)*

9 Coolant filtration system removes particles from coolant, electronically monitored filter condition

10 Programmable coolant pumps delivers correct flow and pressure to the gundrill tip

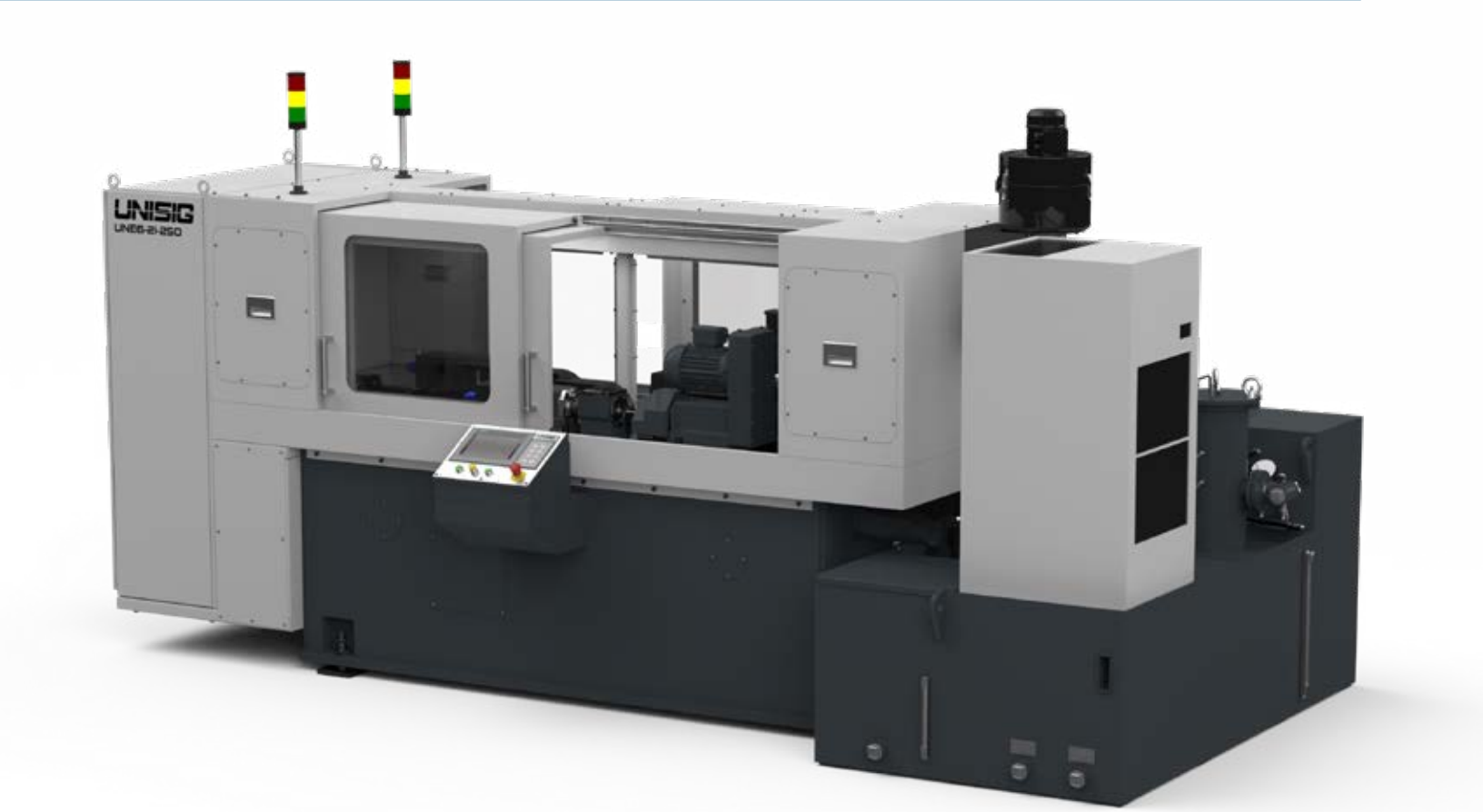
11 UNISIG industrial controls built with Siemens components

12 Intuitive control easy to use, powerful HMI provides real time feedback

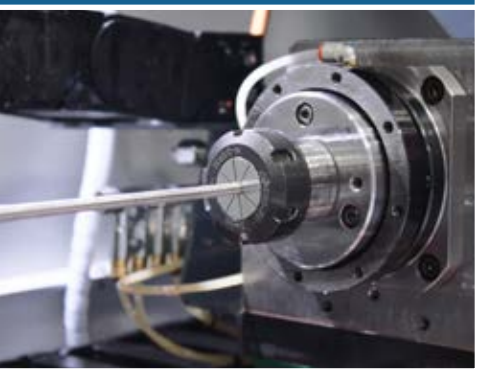
13 Mist collector *(optional)*

UNE6-2i-250-CR

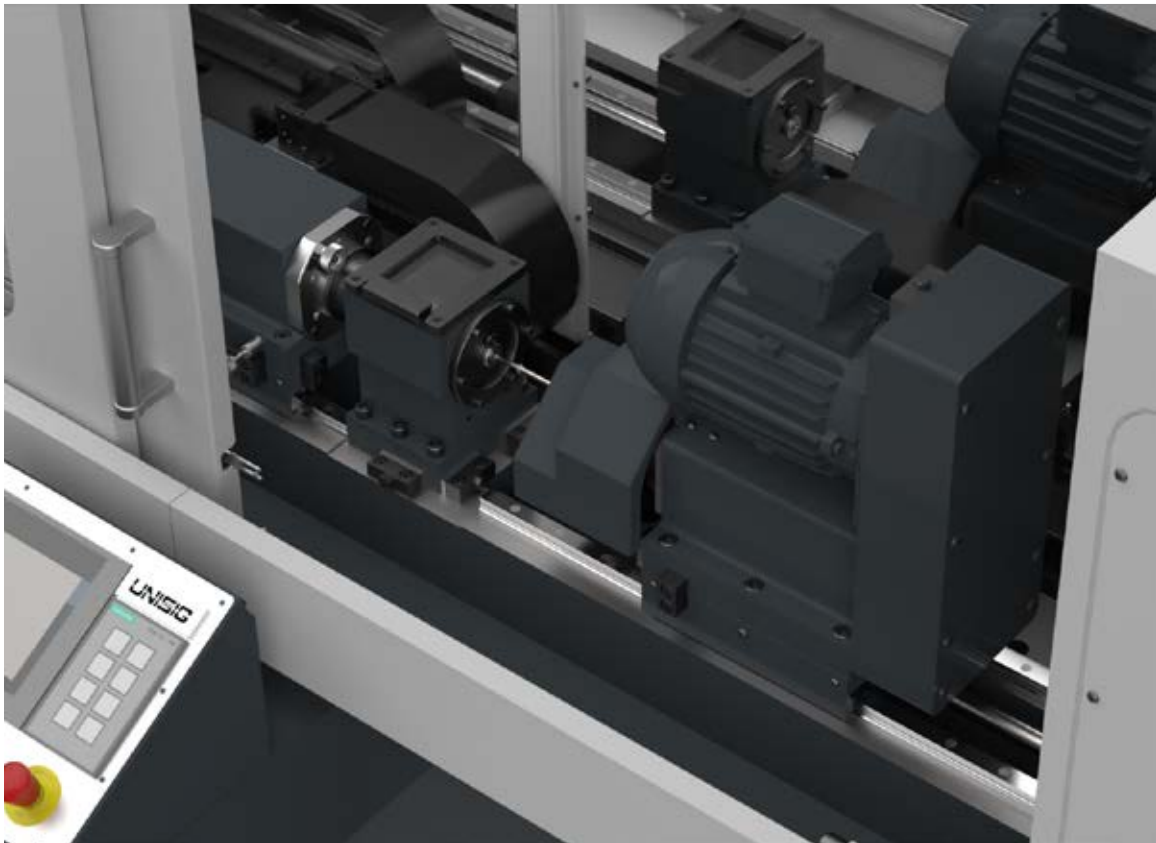
INDEPENDENT DUAL SPINDLE GUNDRILLING — DOUBLE SIDE



UNISIG TECH SPOTLIGHT
UNE6 SERIES MACHINES



COUNTER-ROTATING WORKPIECE SPINDLES are designed for improved concentricity in high accuracy applications. Spindle rigidity is engineered for high accuracy workholding chucks.



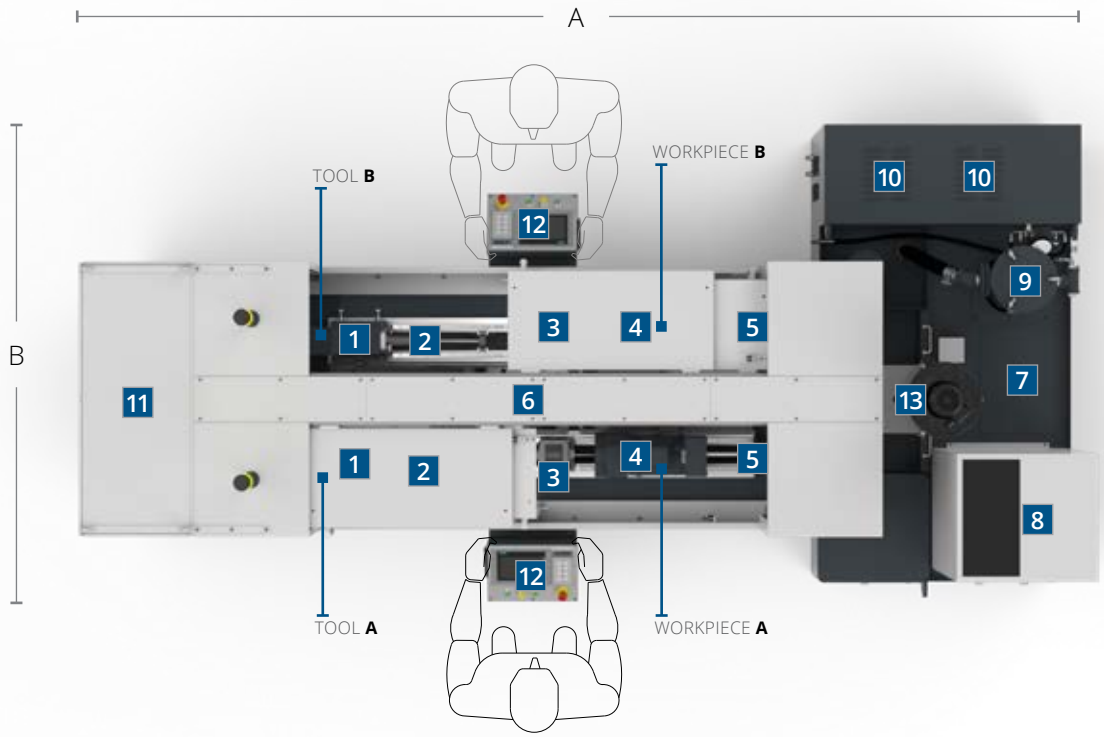
FEATURES

- A twin spindle configuration, the UNE6-2i-250-CR contains two gundrilling spindles each operating independently on either side of the machine
- Dual-sided operation allows drilling to proceed on one spindle, while the spindle on the other side can be setup and begin a gundrilling operation separately
- Dual operator consoles provide operation access and process monitoring to both sides of the machine. Our screen mirroring HMI can show either front or back screen from either of the two sides

SPECIFICATIONS

GUNDRILLING	UNE6-2i-250-CR	
Number of spindles	2	
Hole diameter minimum	0.8 mm	0.03 in
Hole diameter maximum	6 mm	0.25 in
Part length maximum	250 mm	10 in
PERFORMANCE		
Tool spindle speed maximum	24,000 rpm *with balanced tool holders*	
Work spindle speed maximum	4,000 rpm	
Combined drilling speed maximum	28,000 rpm	
Coolant pressure maximum	207 bar	3,000 psi
INSTALLED DIMENSIONS		
A — Width	5,050 mm	199 in
B — Length	2,200 mm	86 in

MACHINE CONFIGURATION



1 Integral motor gundrilling spindle high spindle speeds with low vibration

2 Servo driven ballscrew feeds the gundrill to the workpiece

3 Chip box system precision guide bushing and workpiece location

4 Counter-rotating workpiece headstock produces extremely high concentricity

5 Servo driven ballscrew positions the workhead and clamps the workpiece

6 Full enclosure ensures a dry floor and quiet operation

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10 Programmable coolant pumps delivers correct flow and pressure to the gundrill tip

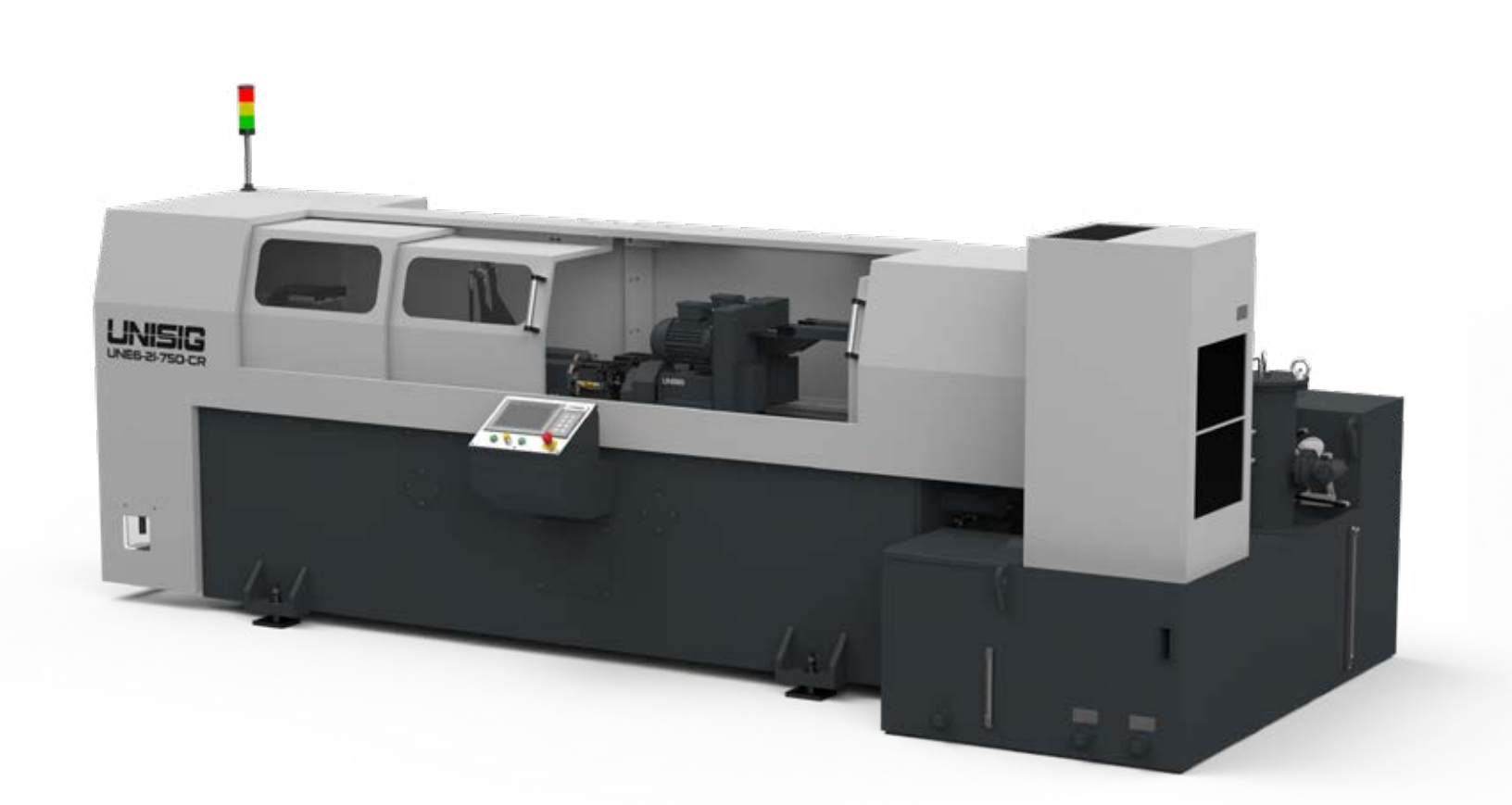
11 UNISIG industrial controls built with Siemens components

12 Intuitive control easy to use, powerful HMI provides real time feedback

13 Mist collector *(optional)*

UNE6-2i-750-CR

INDEPENDENT DUAL SPINDLE GUNDRILLING — SINGLE SIDE



UNISIG TECH SPOTLIGHT
UNE6 SERIES MACHINES

PROGRAMMABLE COOLANT SYSTEM with dedicated pumps for each spindle and very high 3,000 psi [207 bar] coolant pressure, and energy efficient options for precise temperature control.

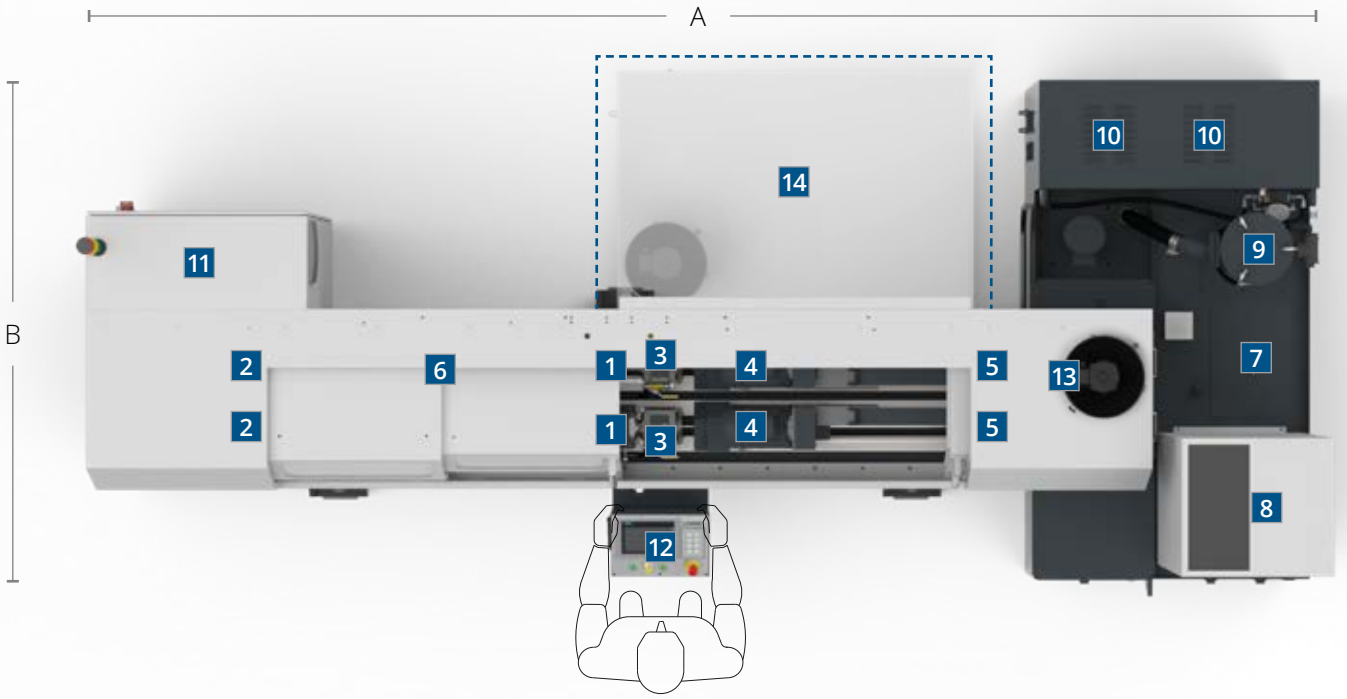
FEATURES

- The most capable twin-spindle machine in the industry, the UNE6-2i-750-CR is the solution for complex, small diameter medical gundrilling
- Fully independent dual spindle operation is accessible from a single side of the machine making the ideal one-piece flow possible when manually loaded
- Lights-out production is possible with this compact, easy to set up machine, and optional, rear-installed, in-machine robotic automation

SPECIFICATIONS

GUNDRILLING	UNE6-2i-750-CR	
Number of spindles	2	
Hole diameter minimum	0.8 mm	0.03 in
Hole diameter maximum	6 mm	0.25 in
Part length maximum	750 mm	30 in
PERFORMANCE		
Tool spindle speed maximum	24,000 rpm *with balanced tool holders*	
Work spindle speed maximum	4,000 rpm	
Combined drilling speed maximum	28,000 rpm	
Coolant pressure maximum	207 bar	3,000 psi
INSTALLED DIMENSIONS		
A — Width	5,100 mm	200 in
B — Length	2,400 mm	95 in

MACHINE CONFIGURATION



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12 Intuitive control easy to use, powerful HMI provides real time feedback

13 Mist collector *(optional)*

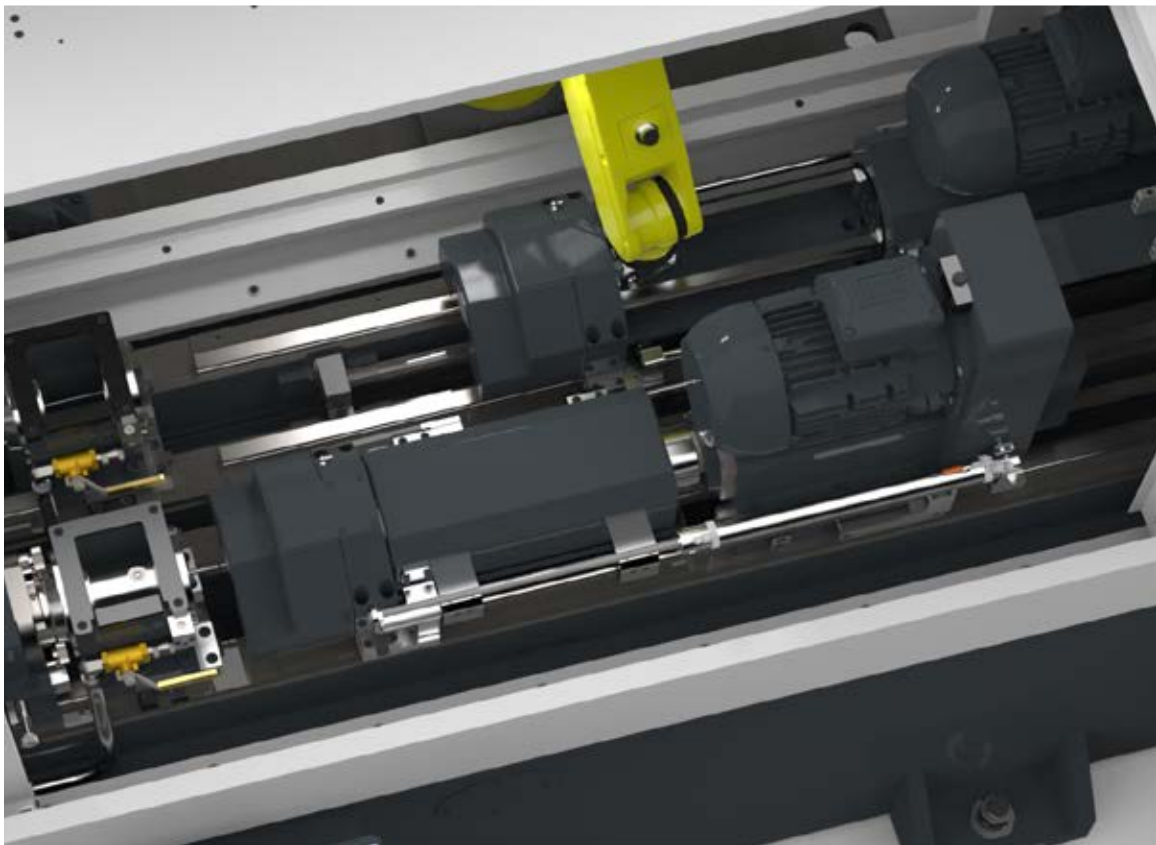
14 Robotic Automation Ready move parts between spindles and load/unload part trays *(optional)*

UNE6-2i-750-CR IN-MACHINE ROBOTIC AUTOMATION

INDEPENDENT DUAL SPINDLE GUNDRILLING

UNISIG TECH SPOTLIGHT
UNE6 SERIES MACHINES

MANUAL AND AUTOMATIC WORKHOLDING SYSTEMS adapt processes easily for very high accuracy gundrilling across families of parts.



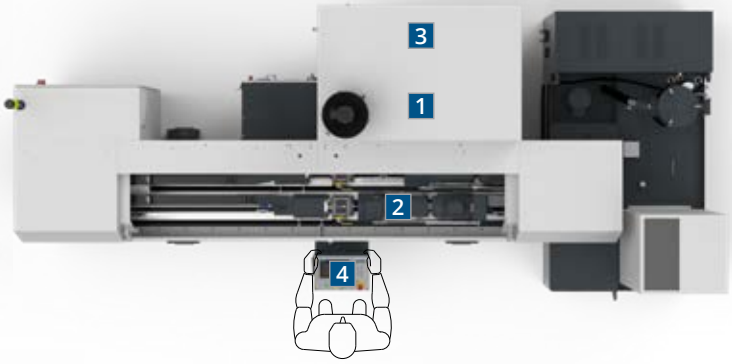
FEATURES

- The UNE6-2i-750-CR with robotics makes gundrilling difficult, extremely precise surgical instruments for the medical industry possible and automatic
- The process reliability of this machine opens the door to fully-automated production of these workpieces allowing lights-out gundrilling of the most complex components
- Embedded robotic automation services both spindles and transfers workpieces between them. Interchangeable workpiece tray systems fit different workpiece types and are compatible with irregular OD Swiss-turned blanks
- Automation allows manual operation from the front of the machine without reconfiguration

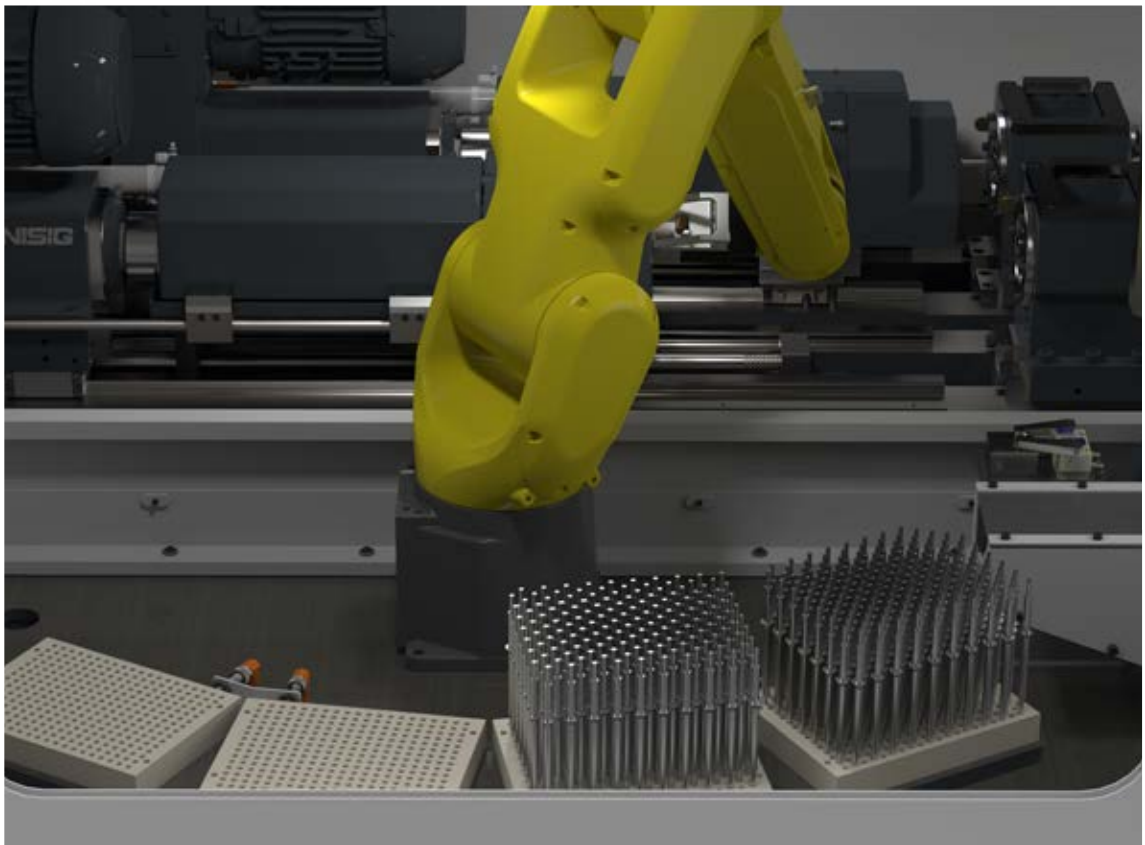
UNISIG INNOVATION

UNISIG's unique lantern chuck technology enables automation to exchange workpieces without manual removal of the collet.

MACHINE CONFIGURATION



1. Robotic automation transfers workpieces between spindles and allows drilling of different diameters from each end
2. Lantern chuck system allows workpiece loading into rear of automatic collet chuck, making accurate workholding possible for uniquely shaped workpieces
3. Interchangeable workpiece tray system allows robot to extend automatic run time of the machine. Trays can be changed out for different workpiece types and used for transport to downstream operations
4. Robotic controls embedded in the HMI allow operator to manage machine and robot simultaneously



UNISIG TECH SPOTLIGHT
UNE6 SERIES MACHINES

UNISIG MACHINE CONTROLS, powered by Siemens industrial electronics, are easy to set up and make unattended drilling possible with process monitoring and automatic interruption.

WITH YOU FROM START TO FINISH

Our combination of engineering expertise and process collaboration ensures that manufacturers confidently understand and utilize the full capabilities of their UNISIG system upon installation. Only UNISIG gives you the maximum proficiency for the application of deep hole drilling in your part production operation. **We make complex processes simple.**

APPLICATIONS AND TRAINING

EXTENSIVE SPARE PARTS INVENTORY

FIELD SERVICE

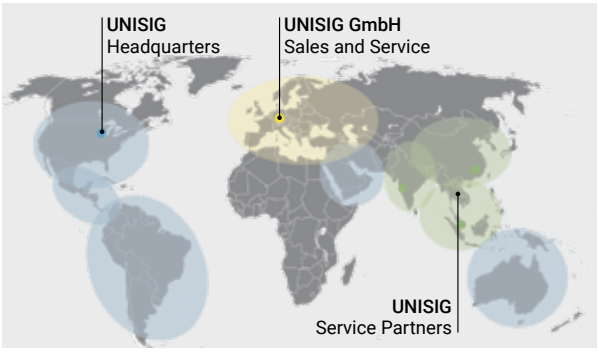
UNISIG offers a complete package. Contact UNISIG about our expert applications support, factory OE parts, and trained service technicians. Our customers count on us every day to keep their deep hole drilling operations up and running smoothly.

GET STARTED WITH UNISIG

Visit **unisig.com** for full model details, videos, and submit your request for a quote.

UNISIG
DEEP HOLE DRILLING SYSTEMS

UNISIG.COM



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