



# G Plus

## SERIES

The industry leading, feature packed wire EDM machine





# G Plus series

## High Precision

- Smart Corner Control
- Stable Discharge Module
- SFC Super Finish Circuit
- High rigidity mechanical structure

## Efficiency

- DPM module
- Entrance mark control
- EF Electrolysis Free generator system
- Auto Measurement and Correction

## Cost Saving

- Intelligent Power Management
- Save Wire Consumption
- Low running cost



## Intelligent Networking

- Remote monitor and management
- Connects to all your controllers
- Portable device monitor

## Auto Wire Threading

- High speed Auto Wire Threading
- Workpiece Transfer Robot
- Threading break point
- Threading under submerged condition
- AWT under Multi-workpiece condition



High-rigidity casting design where the machine body are designed under Finite element analysis, for best support (RIB)

Designed to support the column which can reduce the deformation caused by the stress of casting and for achieving the basic elements of high precision

▶ HIGH EFFICIENCY UV with robust Design of Shaft castings which provides stability for precision cutting accuracy

▶ Stainless steel surface with hardness of HRC 50°

▶ The lower arm is circulated with cooling water for maintaining a fixed temperature and to achieve the optimization of accuracy

▶ AC servo motor which provides high response to ensure accuracy

▶ Wide machine base structure with span design

▶ The robust box base structure of casting design with high precision





# V400G Plus

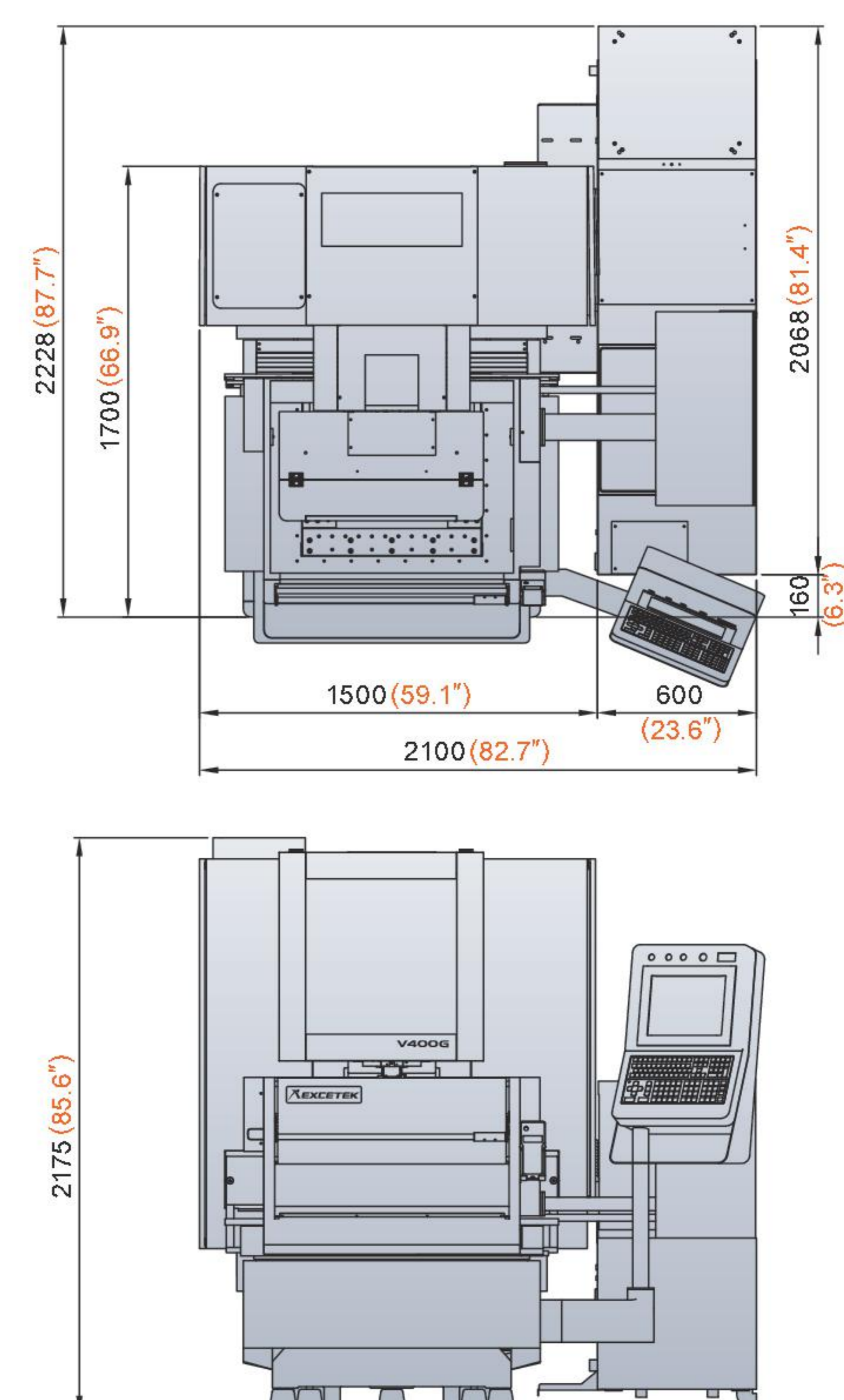
Compact size



## SUBMERGED TYPE

Maximum workpiece	750 x 550 x 215 mm 29.5" x 21.7" x 8.5"
Max workpiece weight	500 kg 1,102 lb
Travel of X/Y axes	400 x 300 mm 15.7" x 11.8"
Travel of U/V axes	80 x 80 mm 3.1" x 3.1"
Travel of Z axis	220 mm 8.7"
Wire diameter	0.15 ~ 0.3 mm 0.004" ~ 0.012"
Number of axes controlled	5 Axis AC servo motor
Max taper angle	±22°/80 mm ±22°/3.1" (with wide diamond guide and nozzle)
Machine size	2100 x 2230 x 2175 mm 82.7" x 87.8" x 85.6"
Machine weight	2700 kg 5952 lb
Water tank capacity	650 L

## DIMENSIONS





# V500G Plus

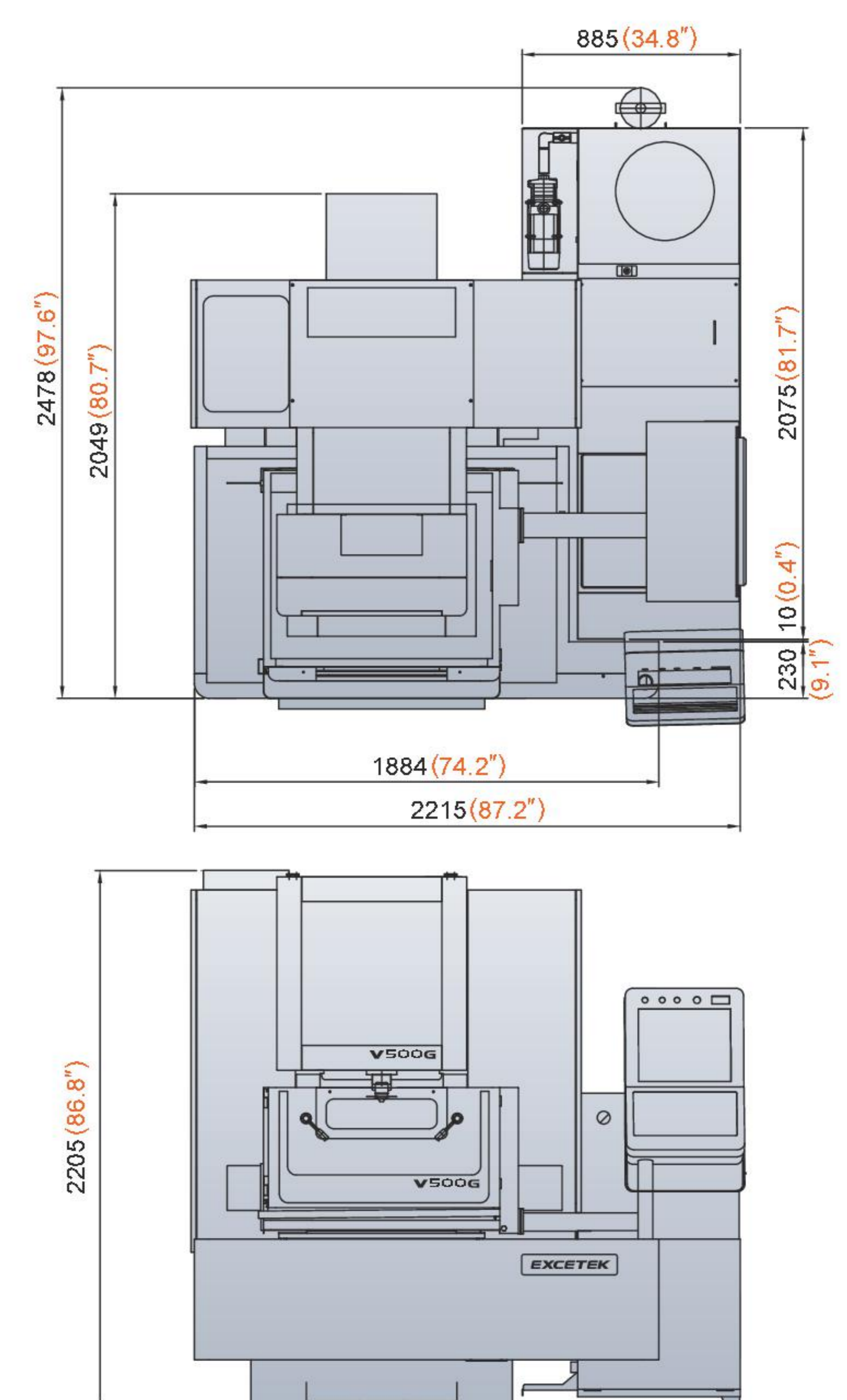
Our most popular delicate size machine



## SPECIFICATIONS

Maximum workpiece	850 x 600 x 255 mm 33.5" x 23.6" x 10"
Max workpiece weight	600 kg 1323 lb
Travel of X/Y axes	500 x 300 mm 19.7" x 11.8"
Travel of U/V axes	120 x 120 mm 4.7" x 4.7"
Travel of Z axis	260/310 mm (Option) 10.2"
Wire diameter	0.15 ~ 0.3 mm 0.004" ~ 0.012"
Number of axes controlled	5 Axis AC servo motor
Max taper angle	±26°/100 mm ±26°/3.9" (with wide diamond guide and nozzle)
Machine size	2215 x 2480 x 2205 mm 87.2" x 97.6" x 86.8"
Machine weight	3500 kg 7716 lb
Water tank capacity	750 L

## DIMENSIONS





# V650G Plus

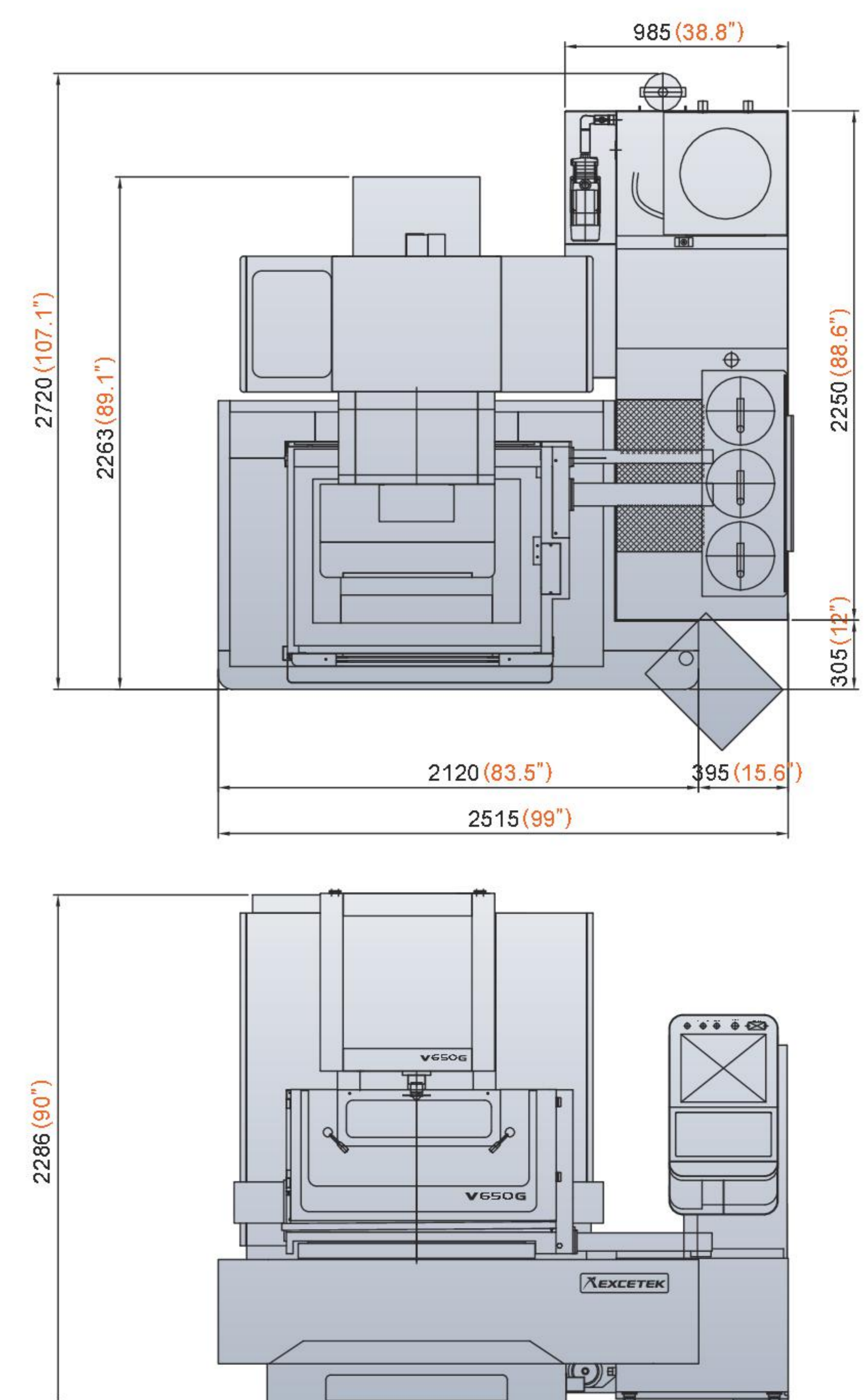
Diligence model



## SPECIFICATIONS

Maximum workpiece	1000 x 700 x 345 mm 39.4" x 27.6" x 13.6"
Max workpiece weight	800 kg 1764 lb
Travel of X/Y axes	650 x 400 mm 25.6" x 15.7"
Travel of U/V axes	160 x 160 mm 6.3" x 6.3"
Travel of Z axis	350/410 mm (Option) 13.8"
Wire diameter	0.15~0.3 mm 0.004" ~ 0.012"
Number of axes controlled	5 Axis AC servo motor
Max taper angle	±30°/100 mm ±30°/3.9" (with wide diamond guide and nozzle)
Machine size	2520 x 2720 x 2290 mm 99.2" x 107.1" x 90.2" (89")
Machine weight	4400 kg 9700 lb
Water tank capacity	850 L

## DIMENSIONS





# V850G Plus

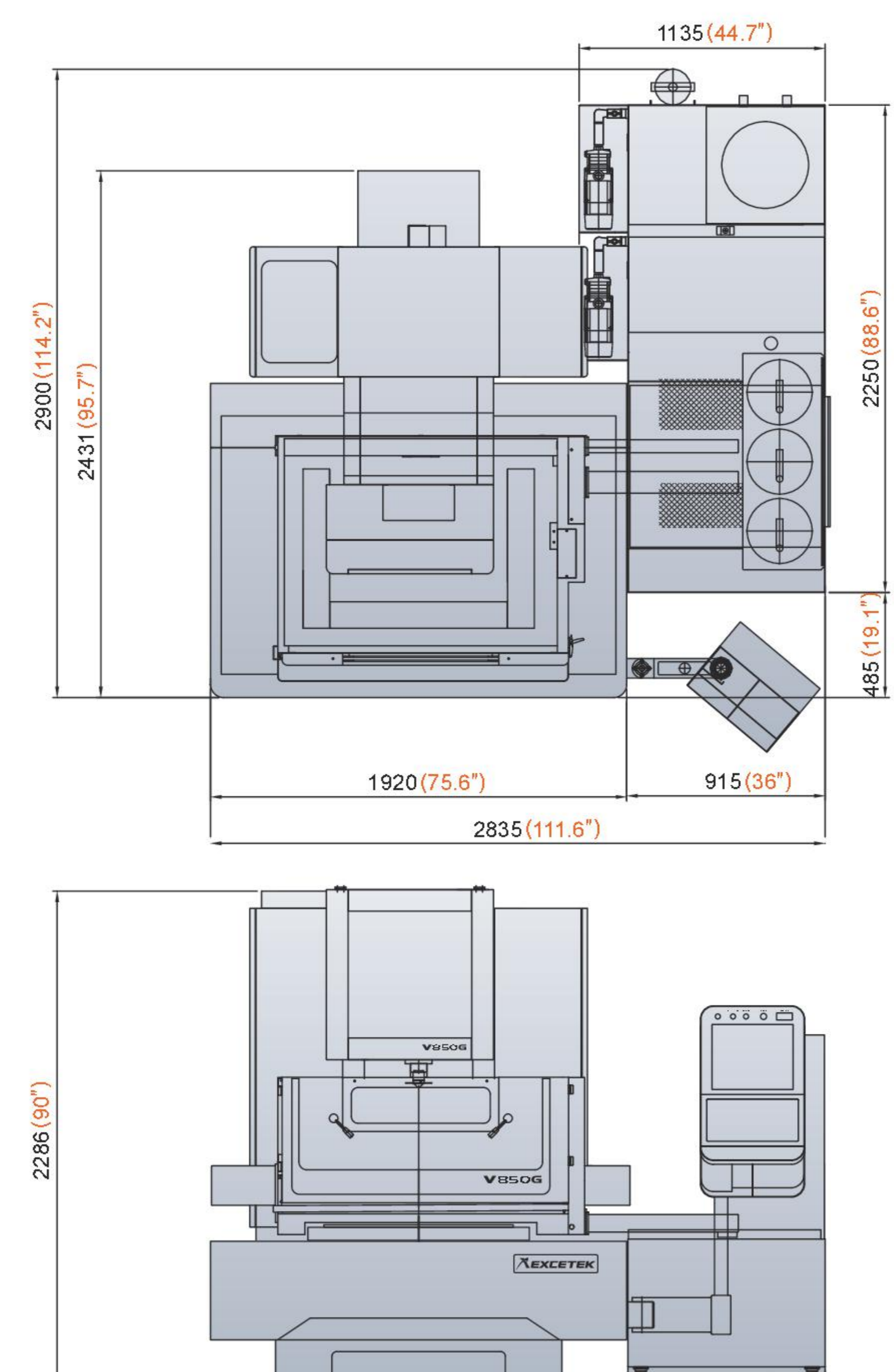
Cost effective model



## SPECIFICATIONS

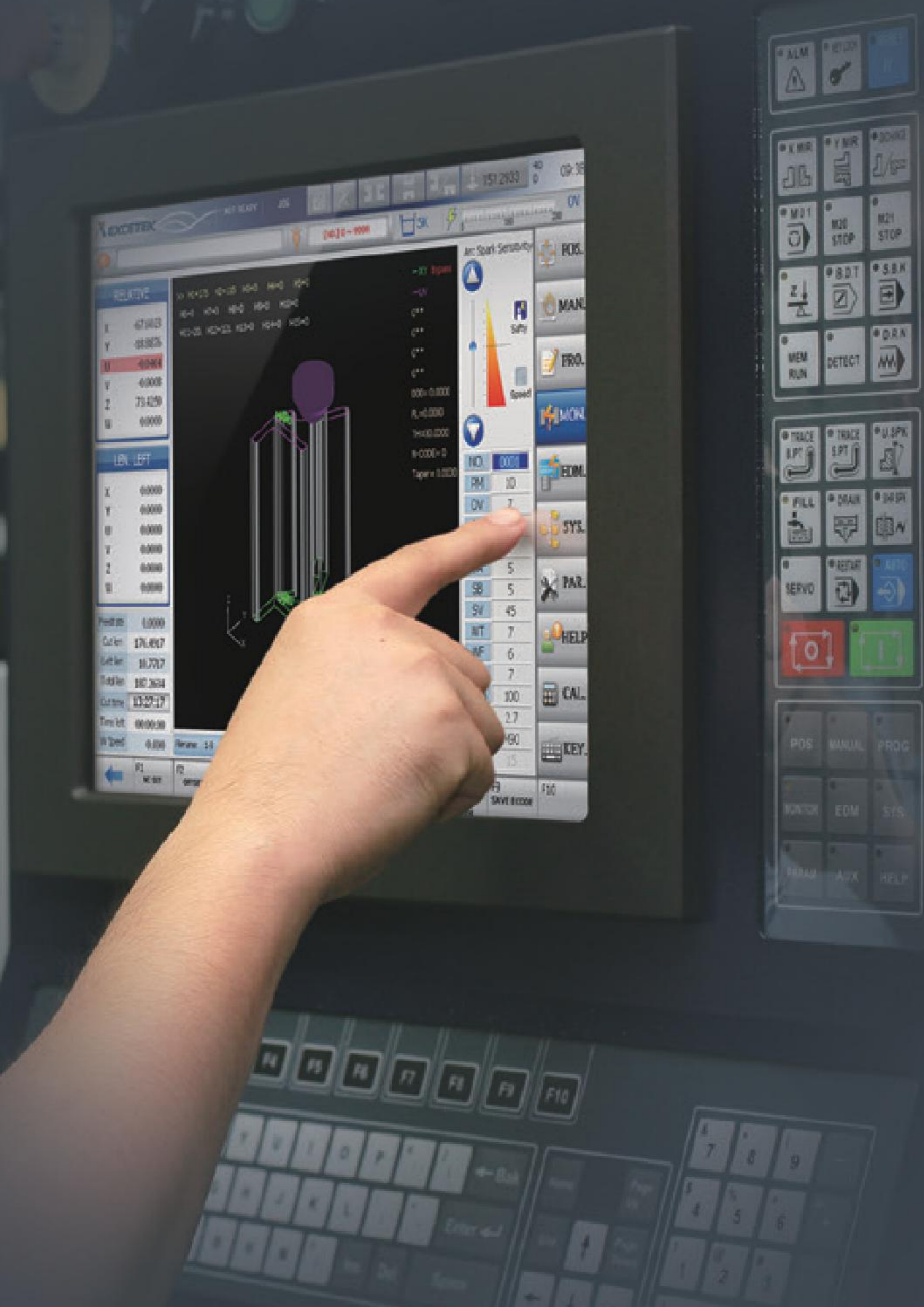
Maximum workpiece	1100 x 850 x 405 mm 43.3" x 33.5" x 15.9"
Max workpiece weight	1100 kg 2425 lb
Travel of X/Y axes	800 x 500 mm 31.5" x 19.7"
Travel of U/V axes	160 x 160 mm 6.3" x 6.3"
Travel of Z axis	410 mm 16.1"
Wire diameter	0.15~0.3 mm 0.004" ~0.012"
Number of axes controlled	5 Axis AC servo motor
Max taper angle	±30°/100 mm ±30°/3.9" (with wide diamond guide and nozzle)
Machine size	2840 x 2900 x 2290 mm 111.8" x 114.2" x 90.2" (89")
Machine weight	5000 kg 11023 lb
Water tank capacity	1050 L

## DIMENSIONS





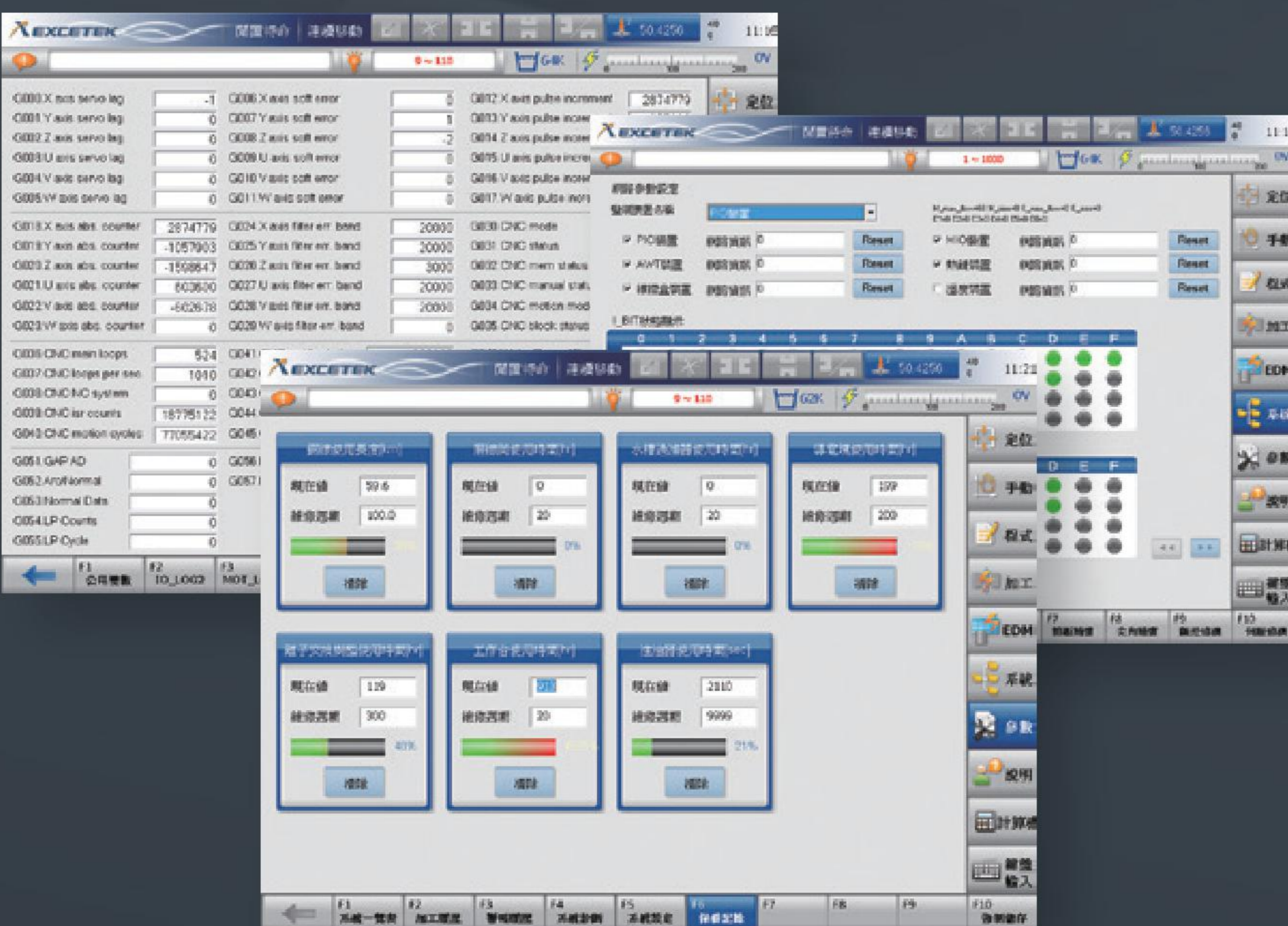
# Generator and controller system



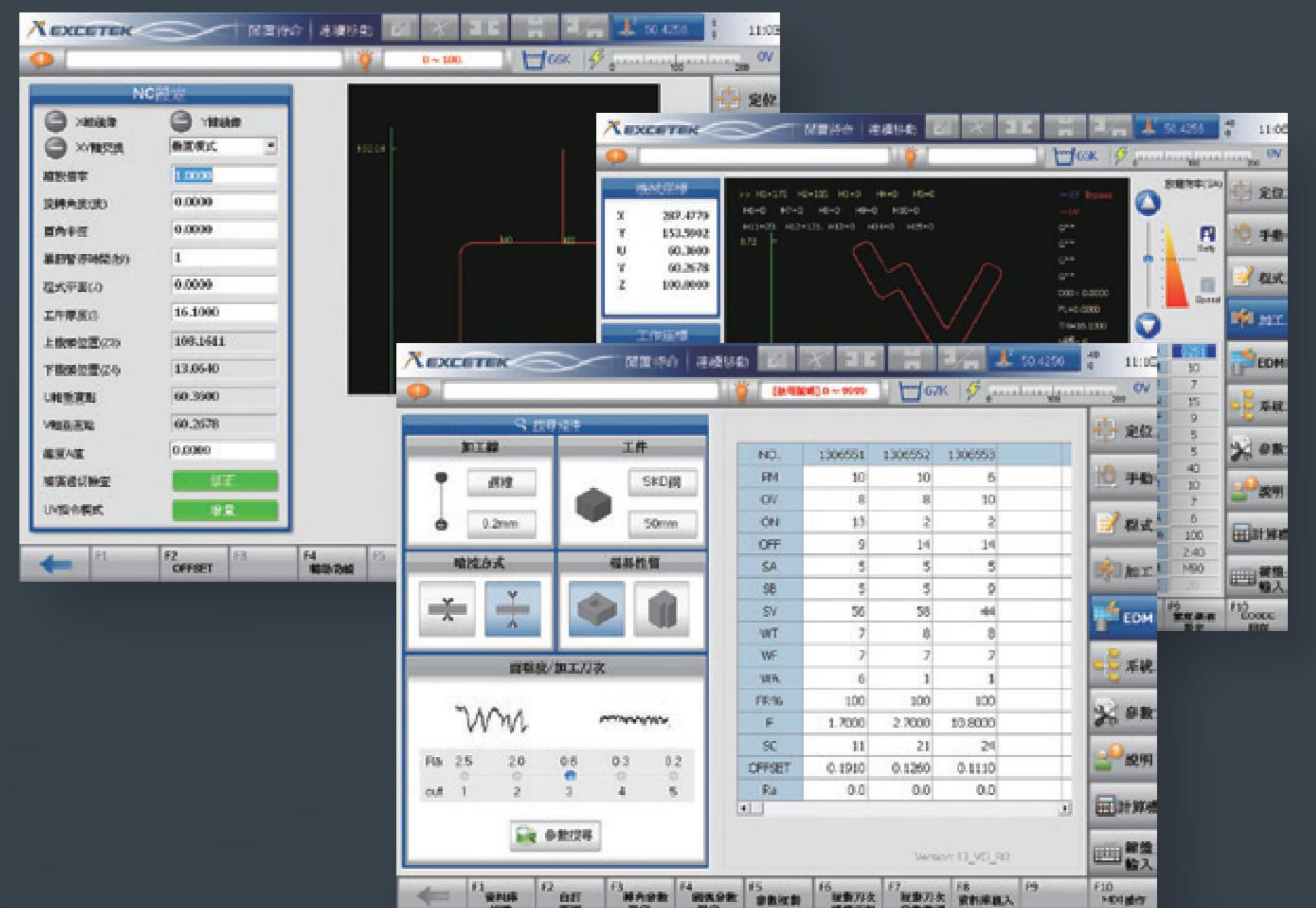
## The W6 controller is designed to deliver

- CNC Device: Industrial PC
- CPU: 64-bit high speed CPU
- Operation Interface: 15" LCD touch-screen, Keyboard, Mouse
- Input Interface: LAN, USB driver, RS-232
- Memory capacity: 32 GB SSD
- Min. command unit: 0.0001 mm
- Max. programmable dimension: ±9999.9999 mm
- Unit: Metric/Inch Switch able

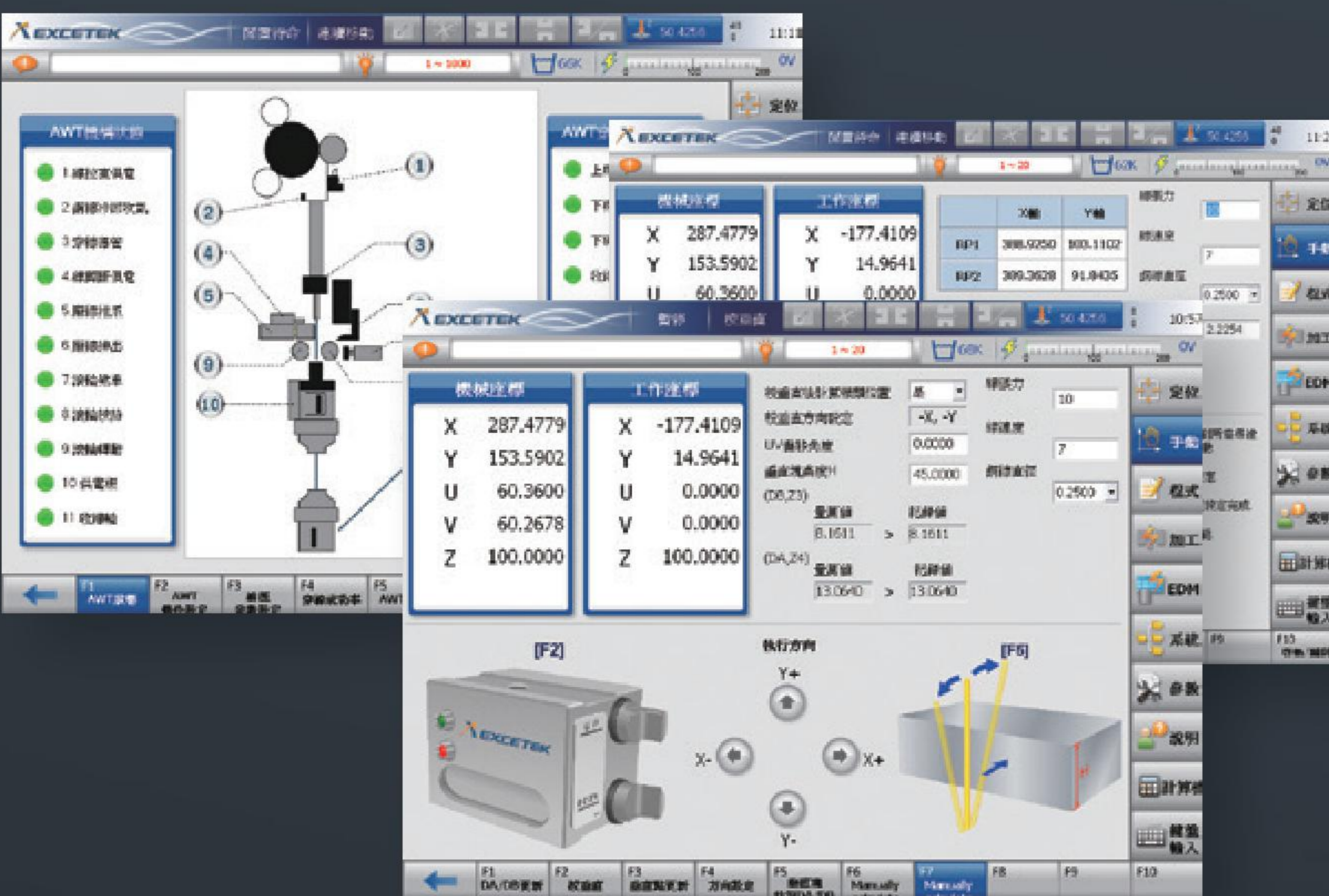
### Machine maintenance and diagnosis information



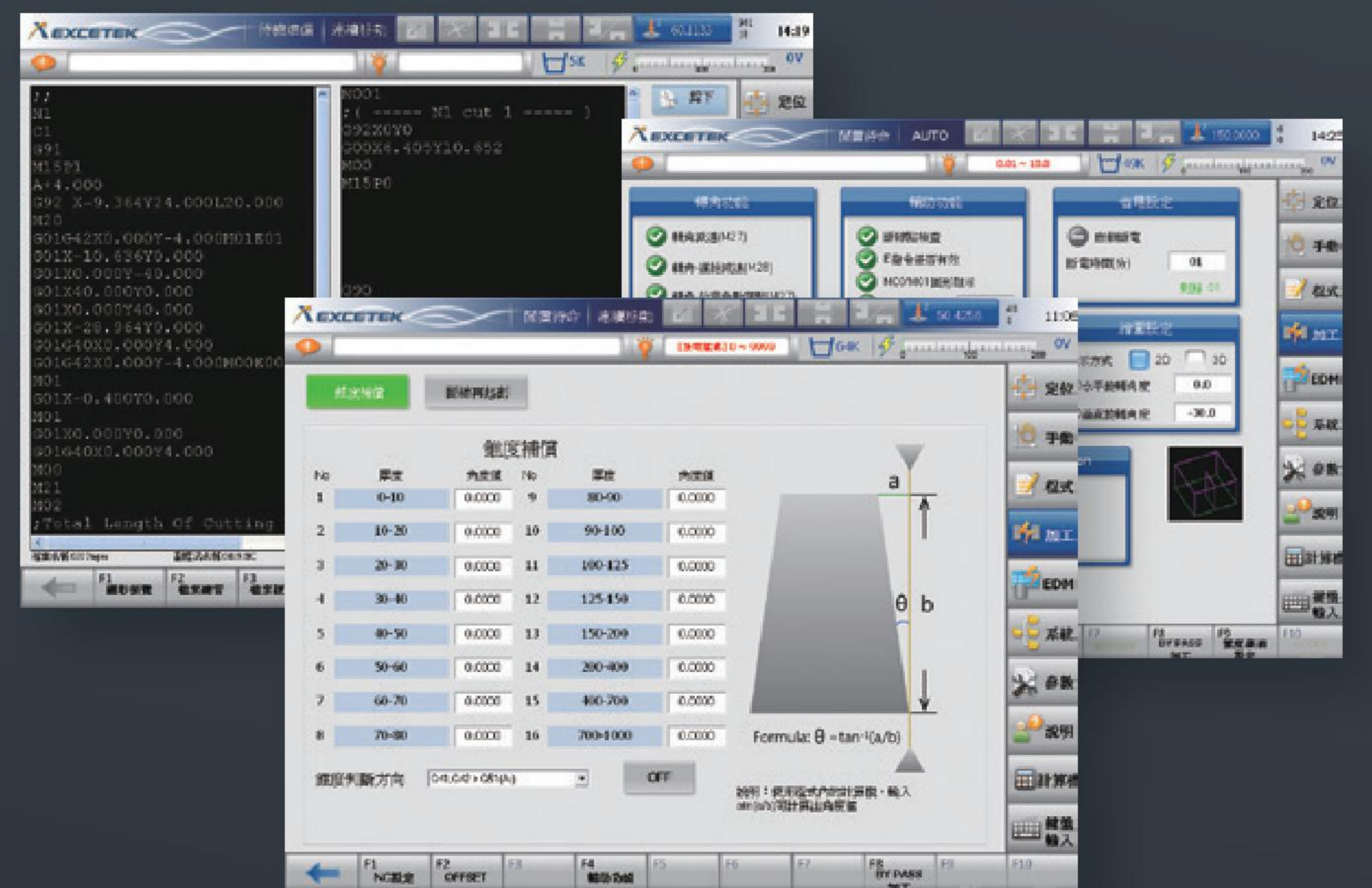
### Working set condition



### Convenient operation and user-friendly graphical interface



### Convenient feature function





# Embedded Power System

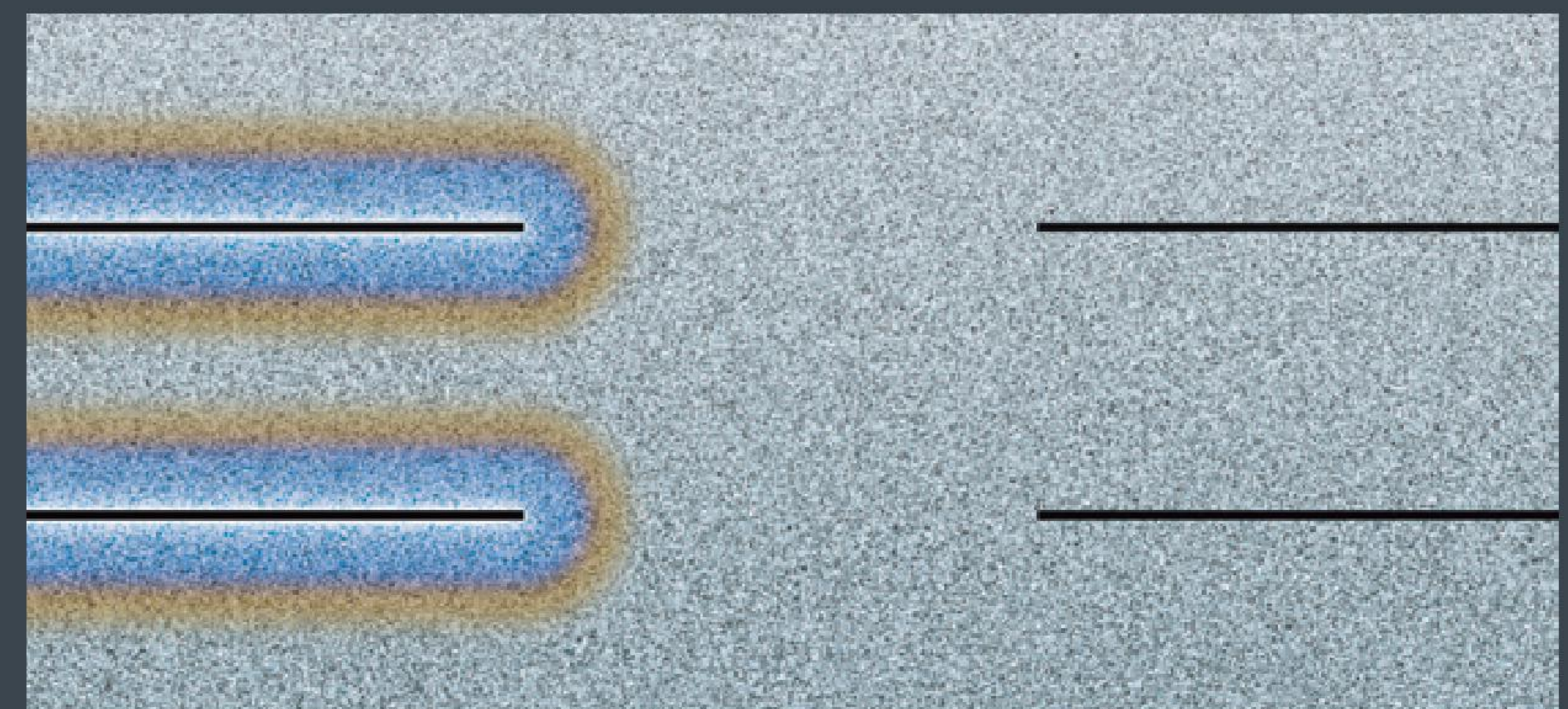
## Discharge frequency and control system

- Our Embedded system design reduces system load and improves system stability and control.
- We use ASIC chip which helps to increase circuit stability and discharge performance.
- Real-time feedback of the discharge cutting status, which can stabilize cutting and improve Cutting speed and accuracy.



## Modular power system design

It is most suitable for electric circuit modularization which gives LED signal instructions for each module of output and input (I/O), providing after-sales service error diagnosis and helps for faster maintenance services.

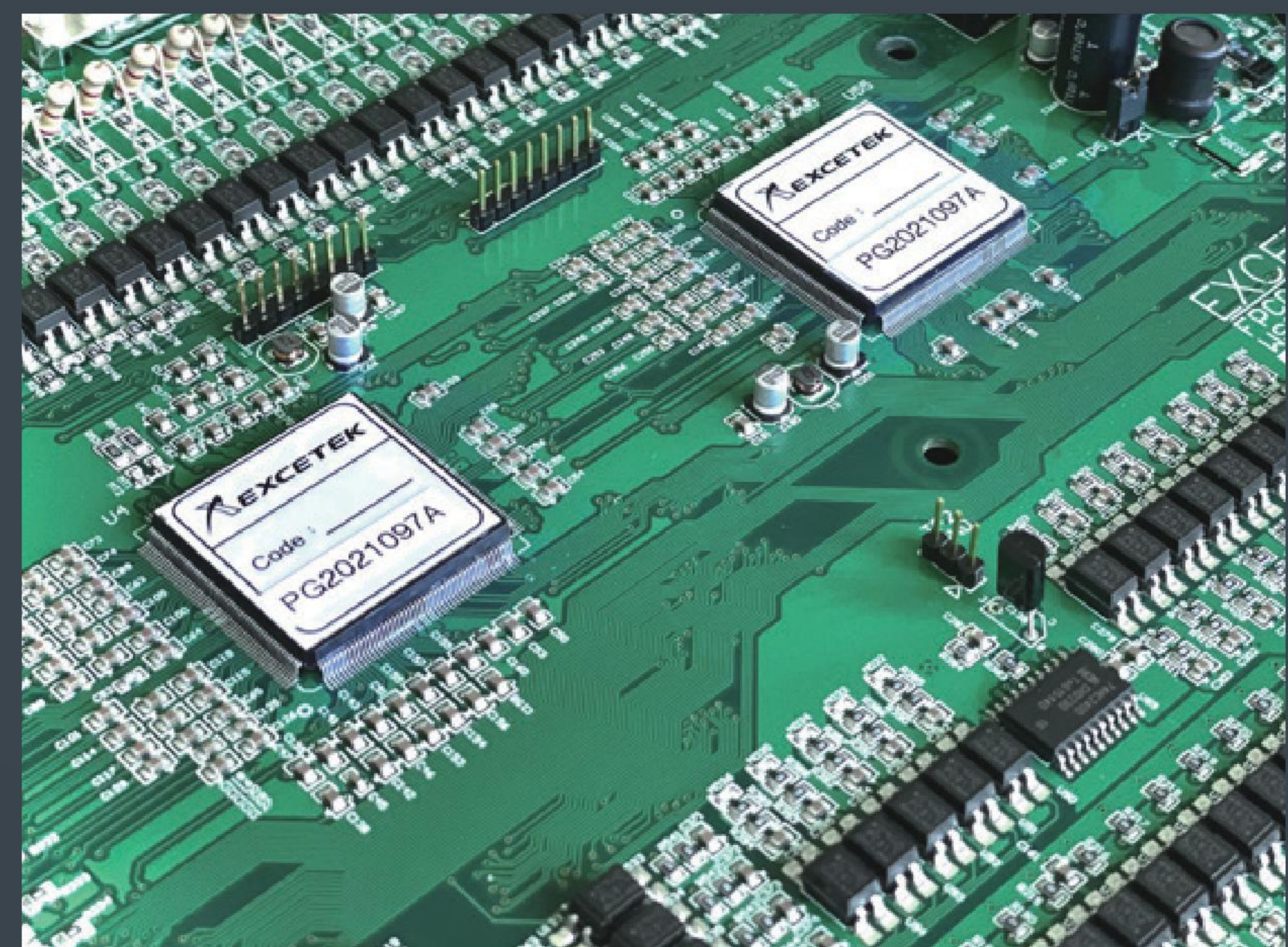


DC discharge

EF [non-electrolytic] discharge

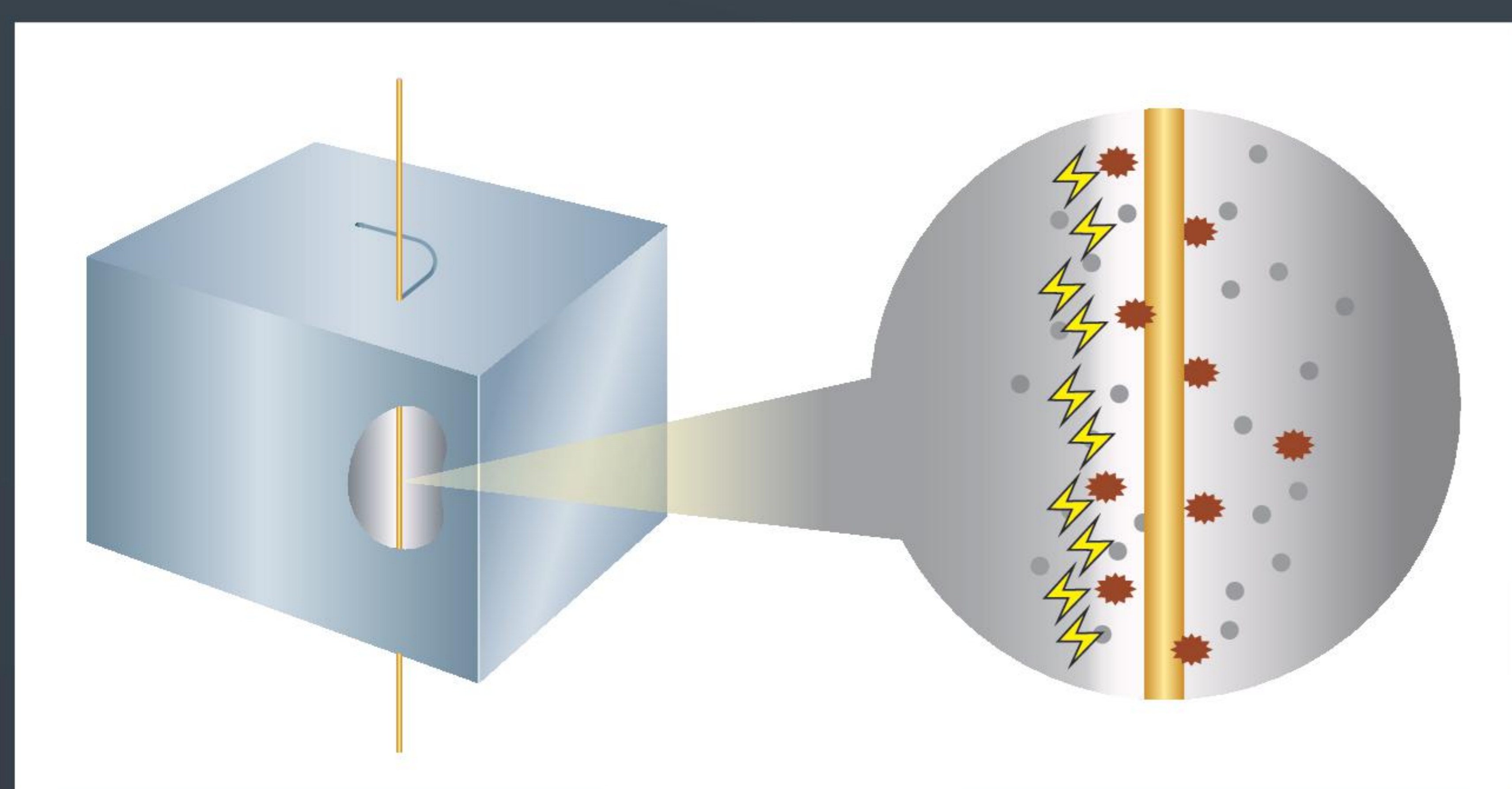
## Electroless discharge power system

The electroless power system is the new upgraded design which enhance cutting Efficiency and speed. It greatly reduces the phenomenon of heating work piece during discharge, thereby extending the life of the mold and increasing the process and cutting speed more than 10%.



## Corner break prevention which leads to increase the workpiece processing speed.

Disconnection rate reduces by 90% and speed increases by 35%



⚡ Effective discharging    ⚡ Ineffective discharging    ● Chips

## RTS (Real Time Sparking)

Short response time provides feedback to ineffective discharges and adjusts conditions to improve cutting efficiency.

Increase the discharge protection mechanism which effectively prevent the corner breakage probability of thick workpieces.



workpiece material: SKD -11 steel

- thickness: 100 mm
- wire type: 0.25 mm brass wire
- cutting speed : 150 mm<sup>2</sup>/min

- thickness: 50~80 mm
- wire type: 0.3 mm brass wire
- cutting speed : 250 mm<sup>2</sup>/min

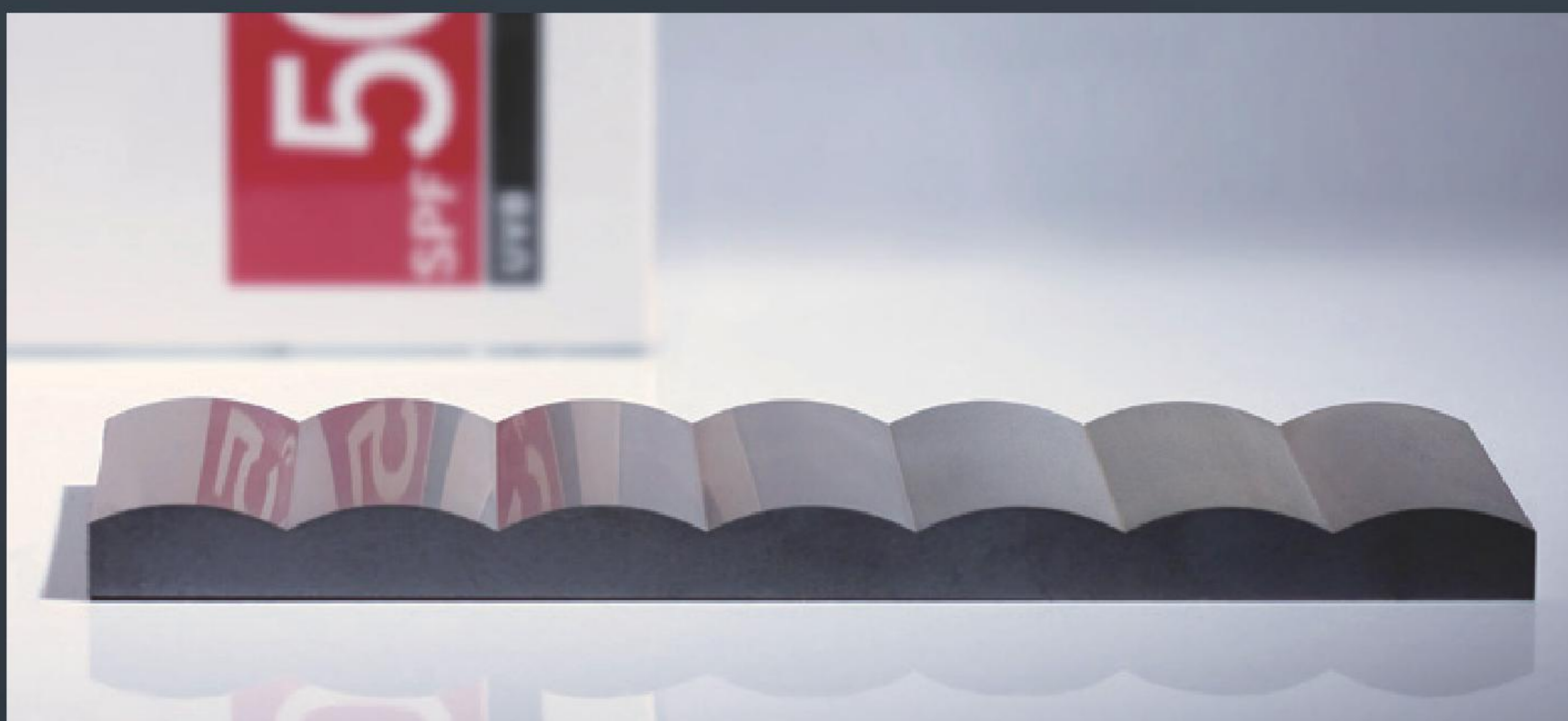


# Digital Power Management **DPM**

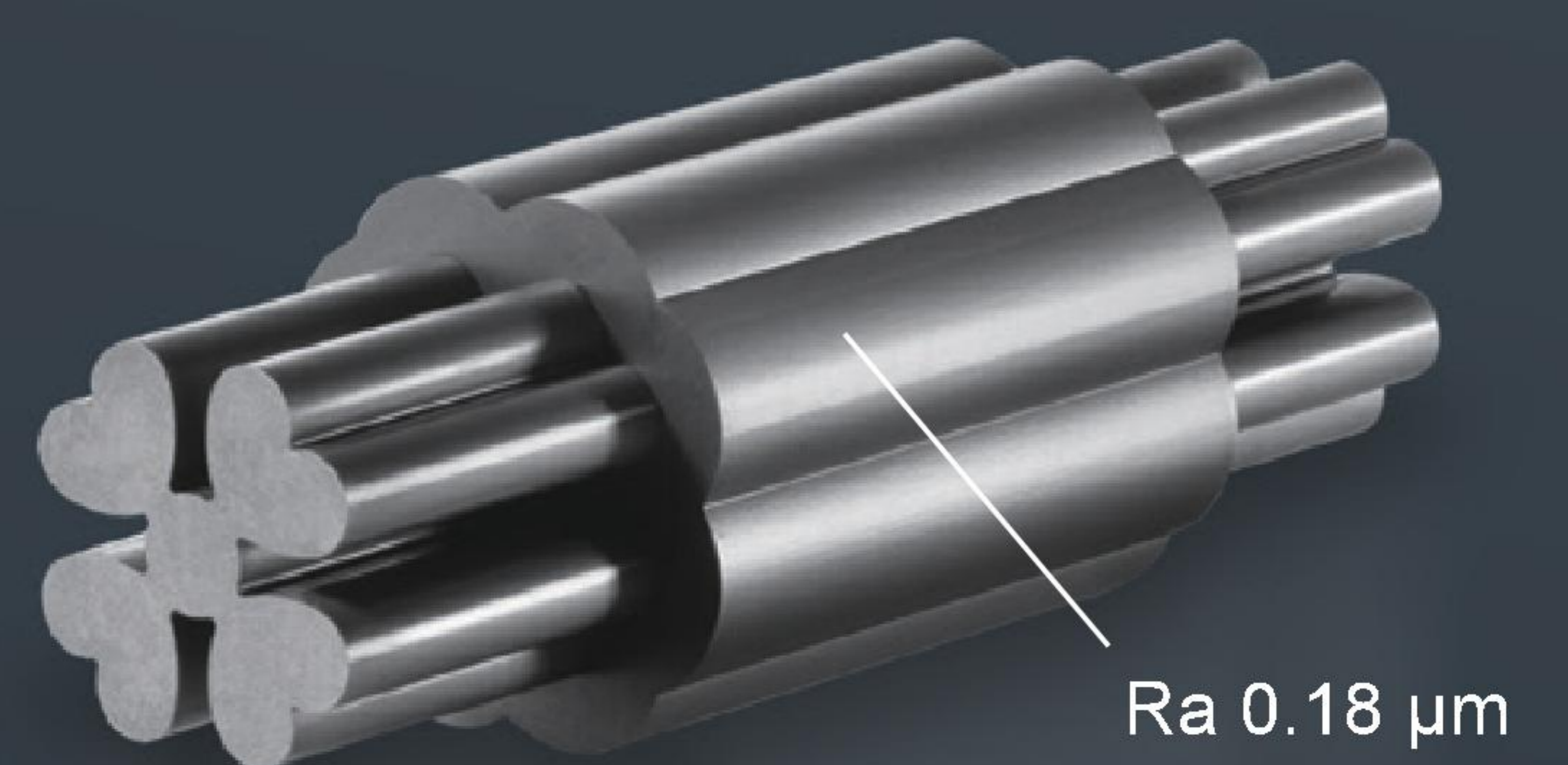
- Step processing condition
- Stable processing module
- Intelligent corner control
- Lead-in control
- Corner arc control
- High speed working condition

## SFC - Super Finish Circuit

Standard surface roughness Ra 0.3  $\mu\text{m}$ , optional SFC circuit Ra 0.14  $\mu\text{m}$



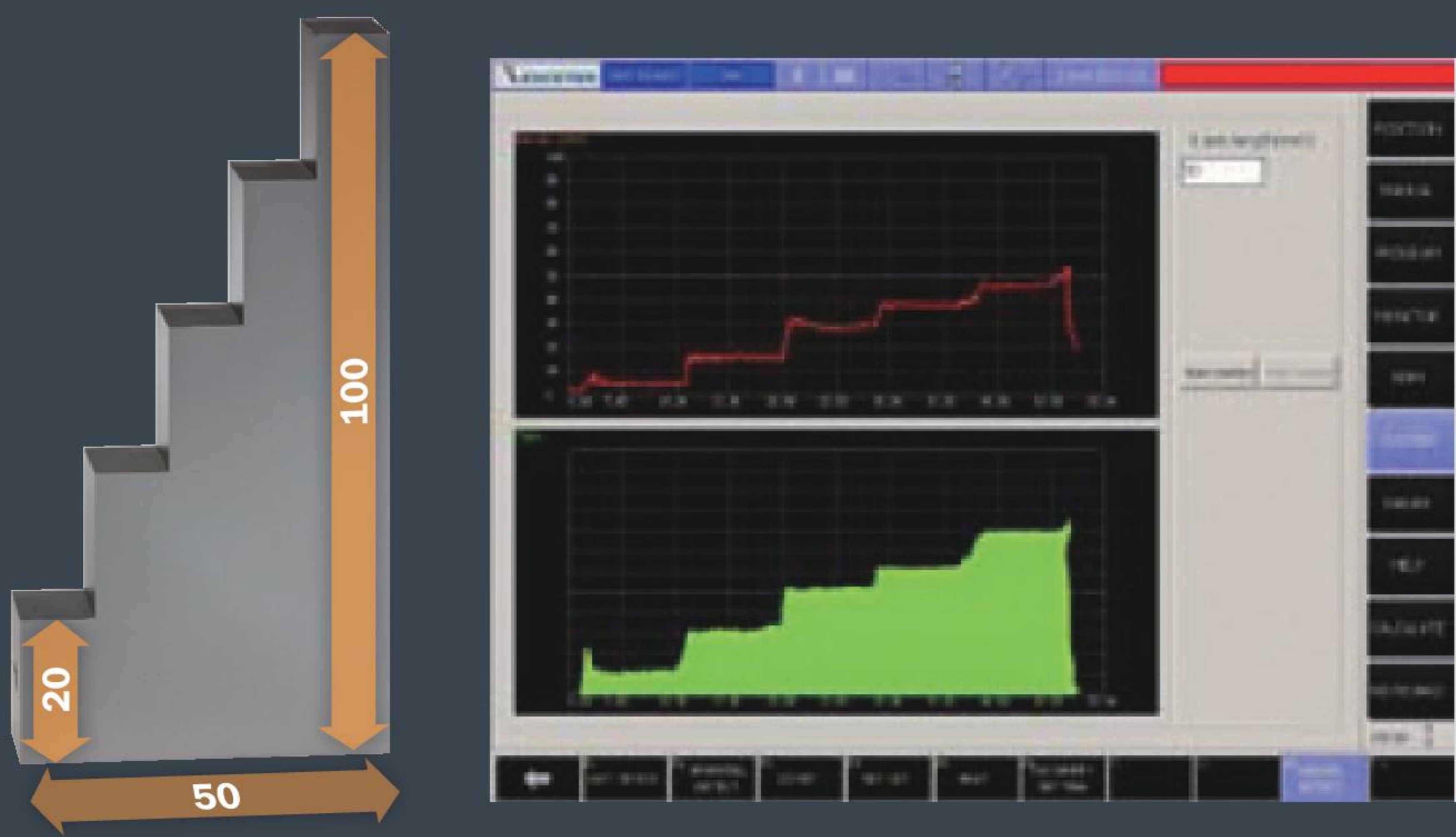
Material: Tungsten carbide  
Thickness: 30 mm (best surface roughness Ra 0.14  $\mu\text{m}$ )



Material: Tungsten carbide  
Thickness: 50 mm



# Digitally controlled discharge technology



The digital signal helps to detect the discharge density which are used, where the CNC controller will calculate the discharge area according to the discharge capacity, which it improves more precisely and control the discharge energy, wire tension, and water flow. This improves the speed and accuracy of the step difference and the plane processing number.

DPM Technology Comparison Chart	Mode	With	without
	Speed condition	39 min	58 min
Accuracy condition		$\pm 15 \mu\text{m}$	$\pm 15 \mu\text{m}$

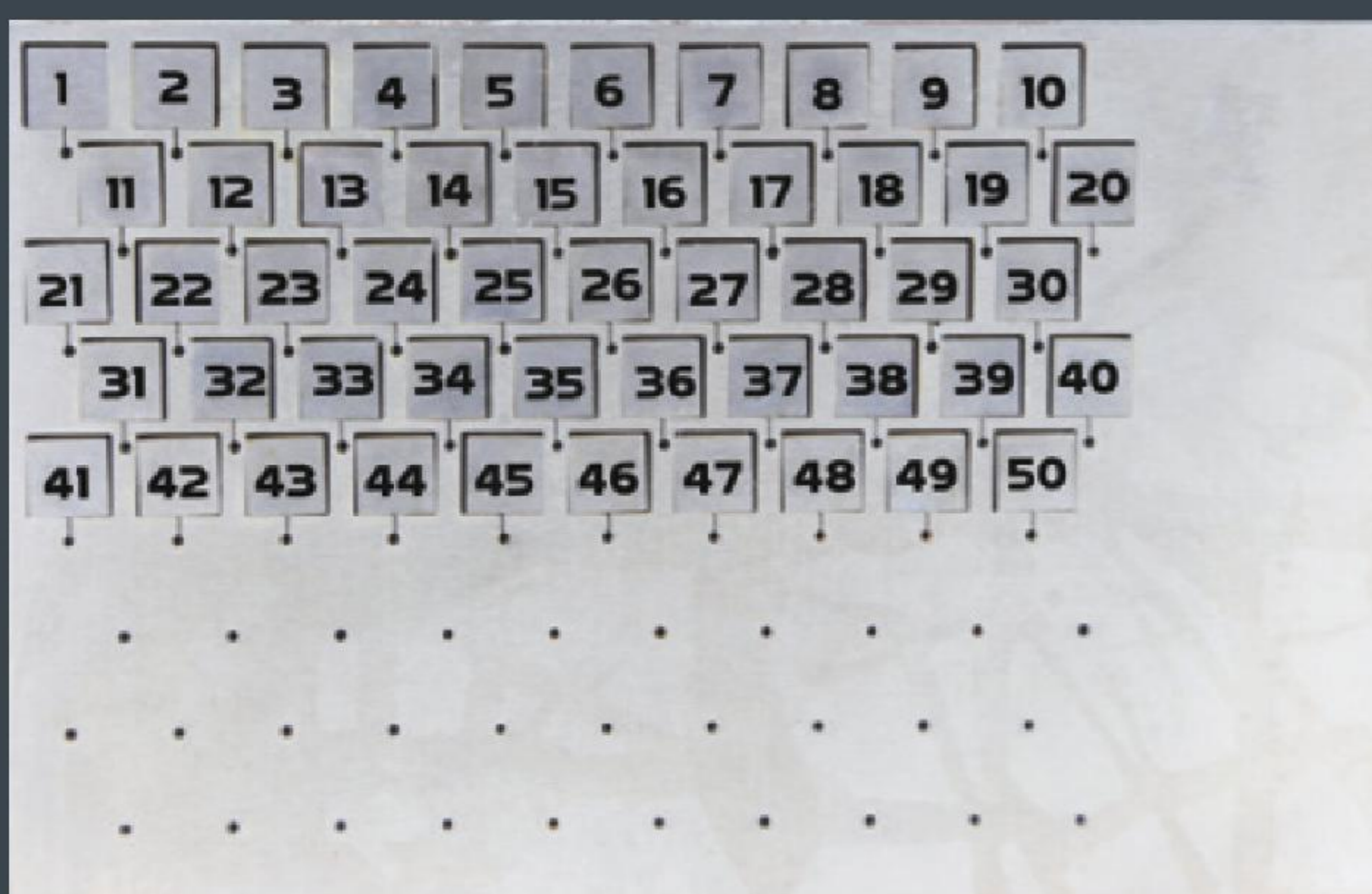
Under factory test condition

## Stable discharge module

50 Continuous hole cutting, shape accuracy control  $4 \mu\text{m}$  (inner)



50 holes continuous cutting, shape accuracy control

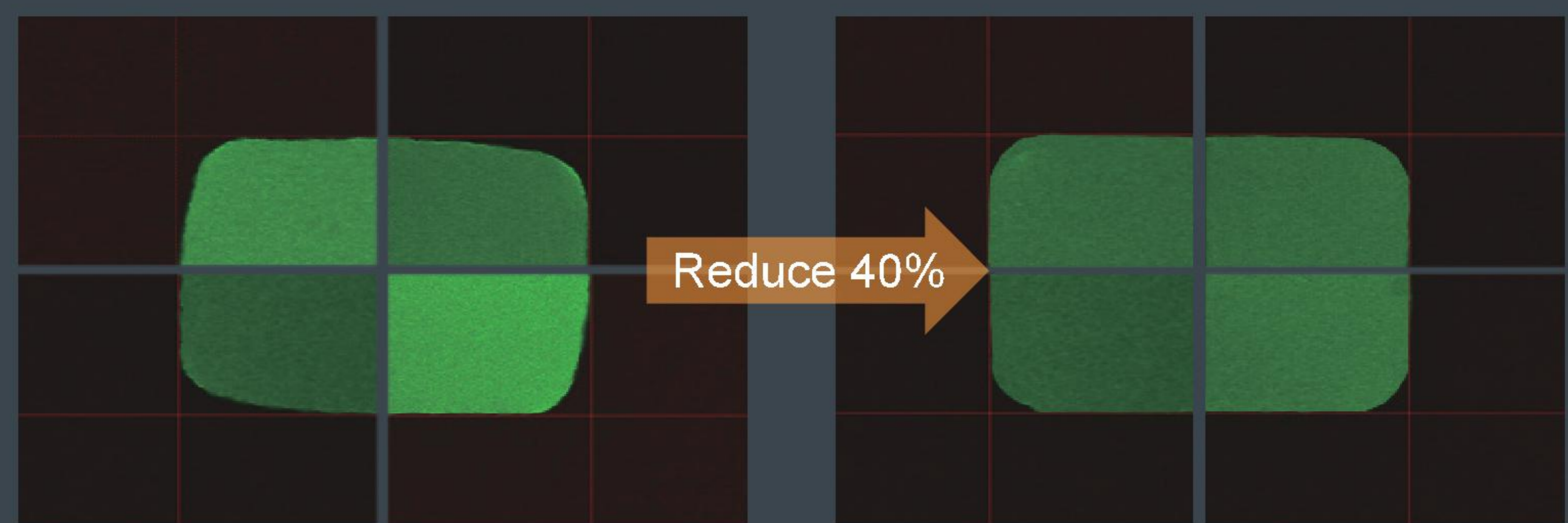


SGS certified

## Smart corner control



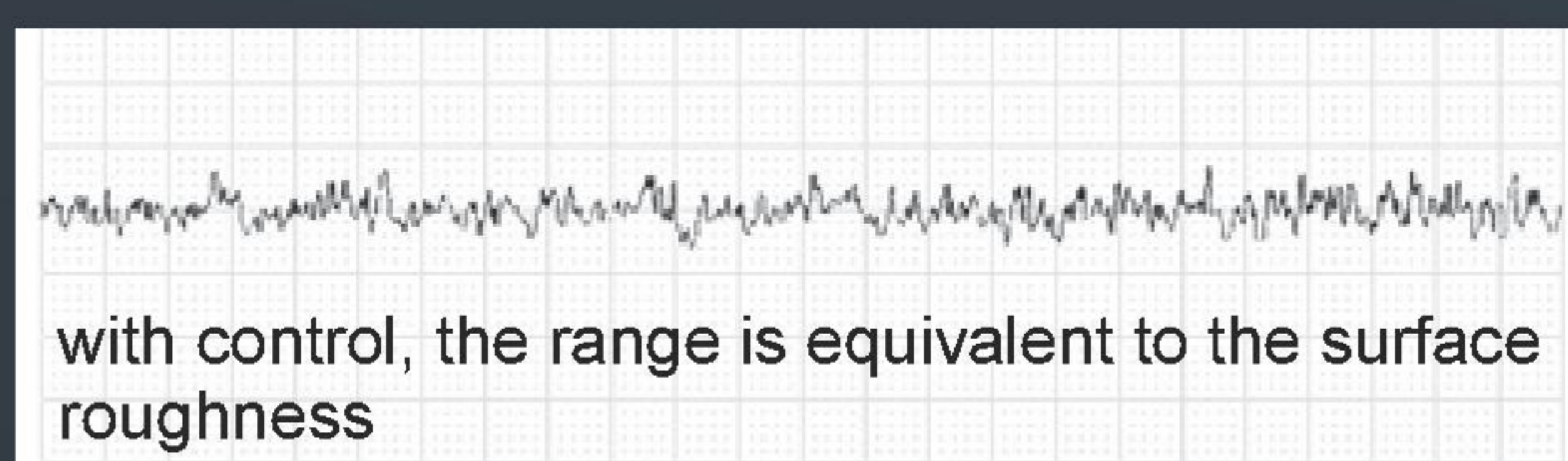
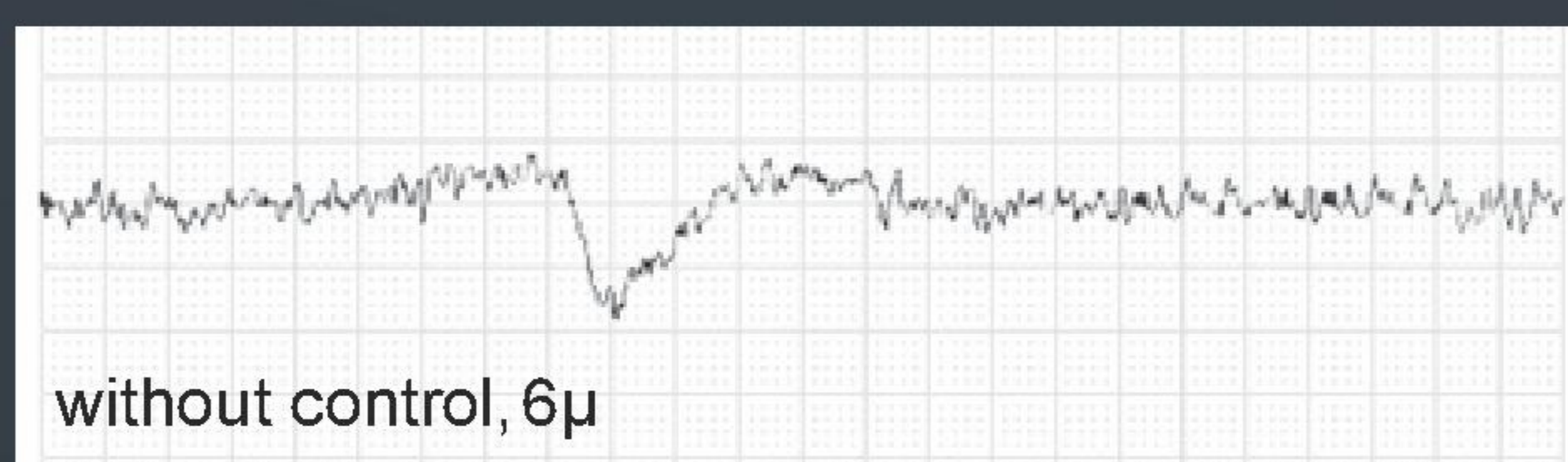
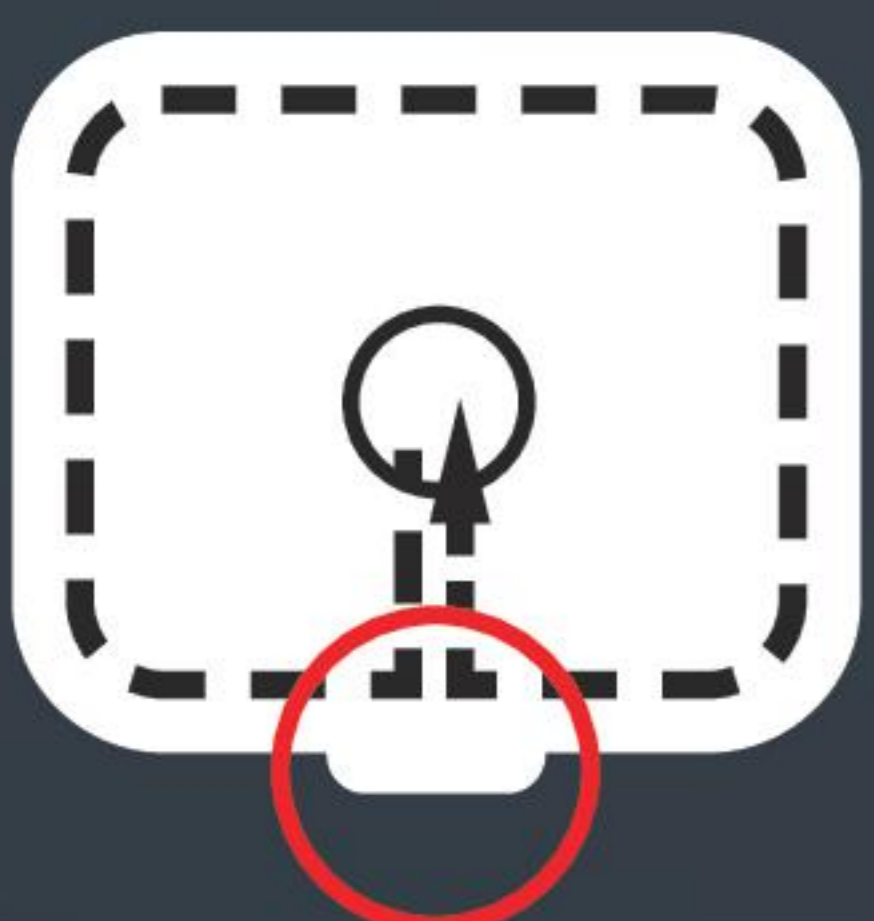
50% reduction in corner erosion



40% reduction in Shape error

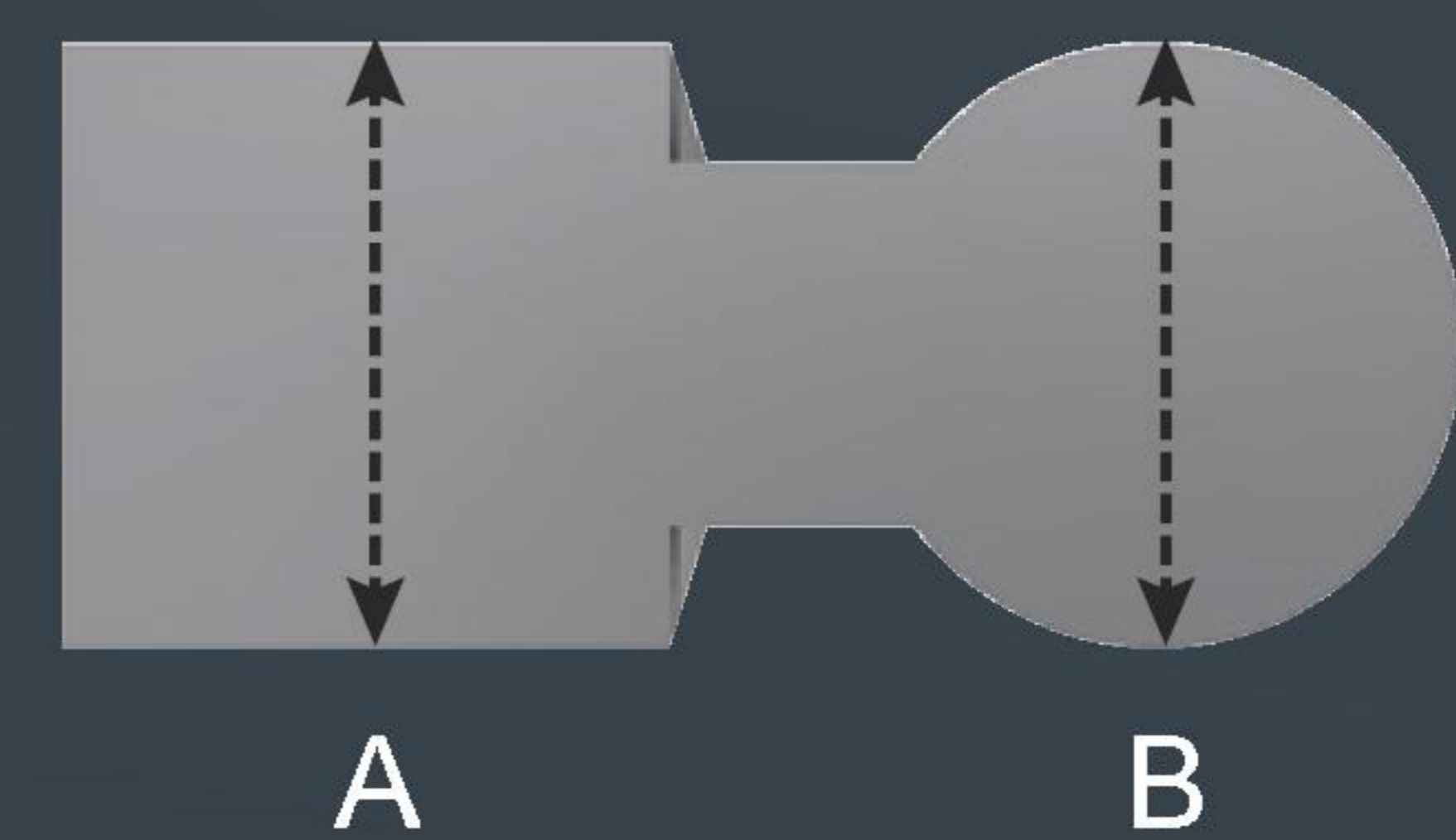
## Lead-in control

The lead-in helps to control and reduce line marks which improves the range of the surface roughness of the workpiece and reduces the polishing time after the workpiece is completed.



## Corner arc control

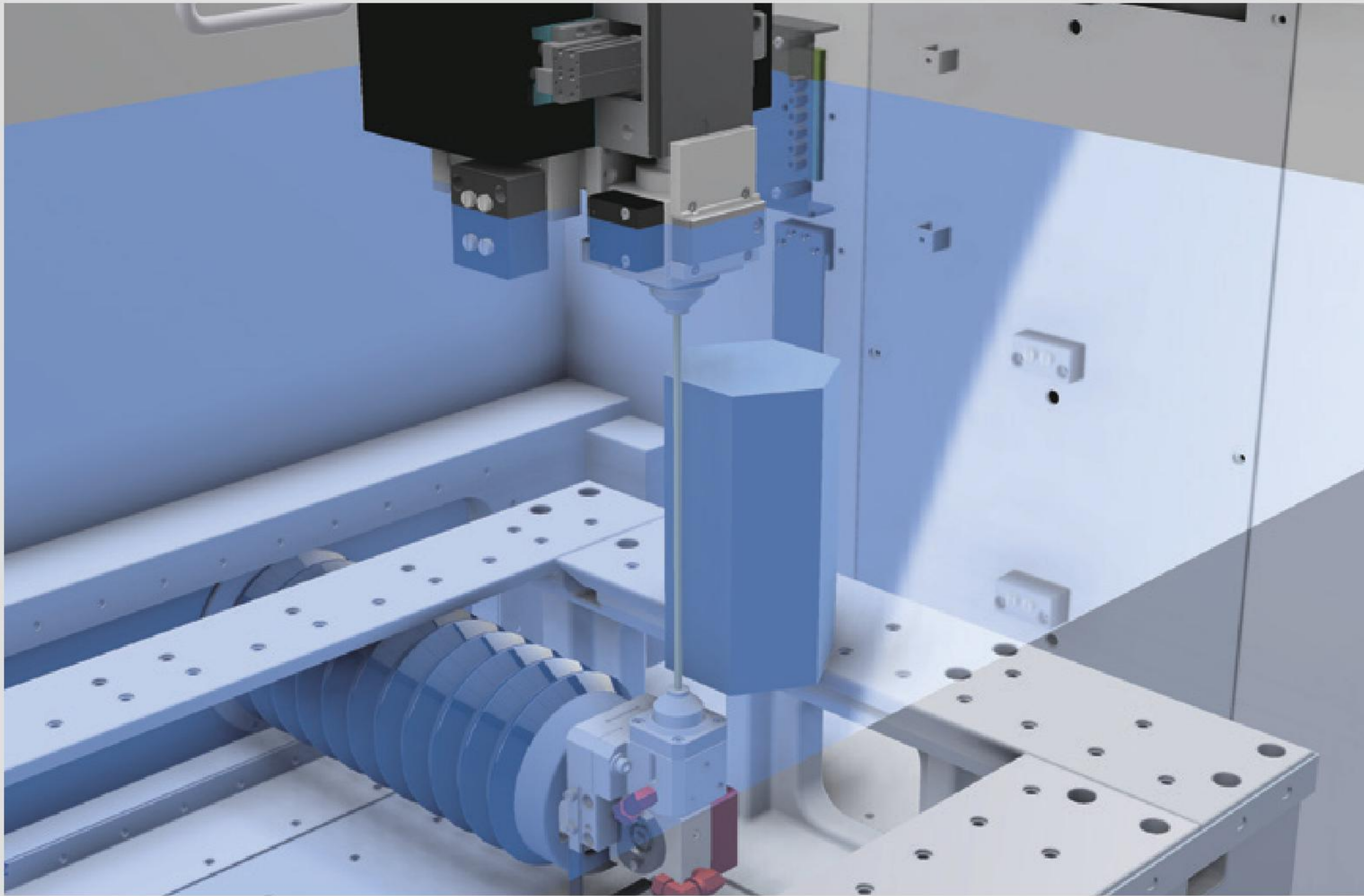
The square and circle shape error is controlled within  $3 \mu\text{m}$



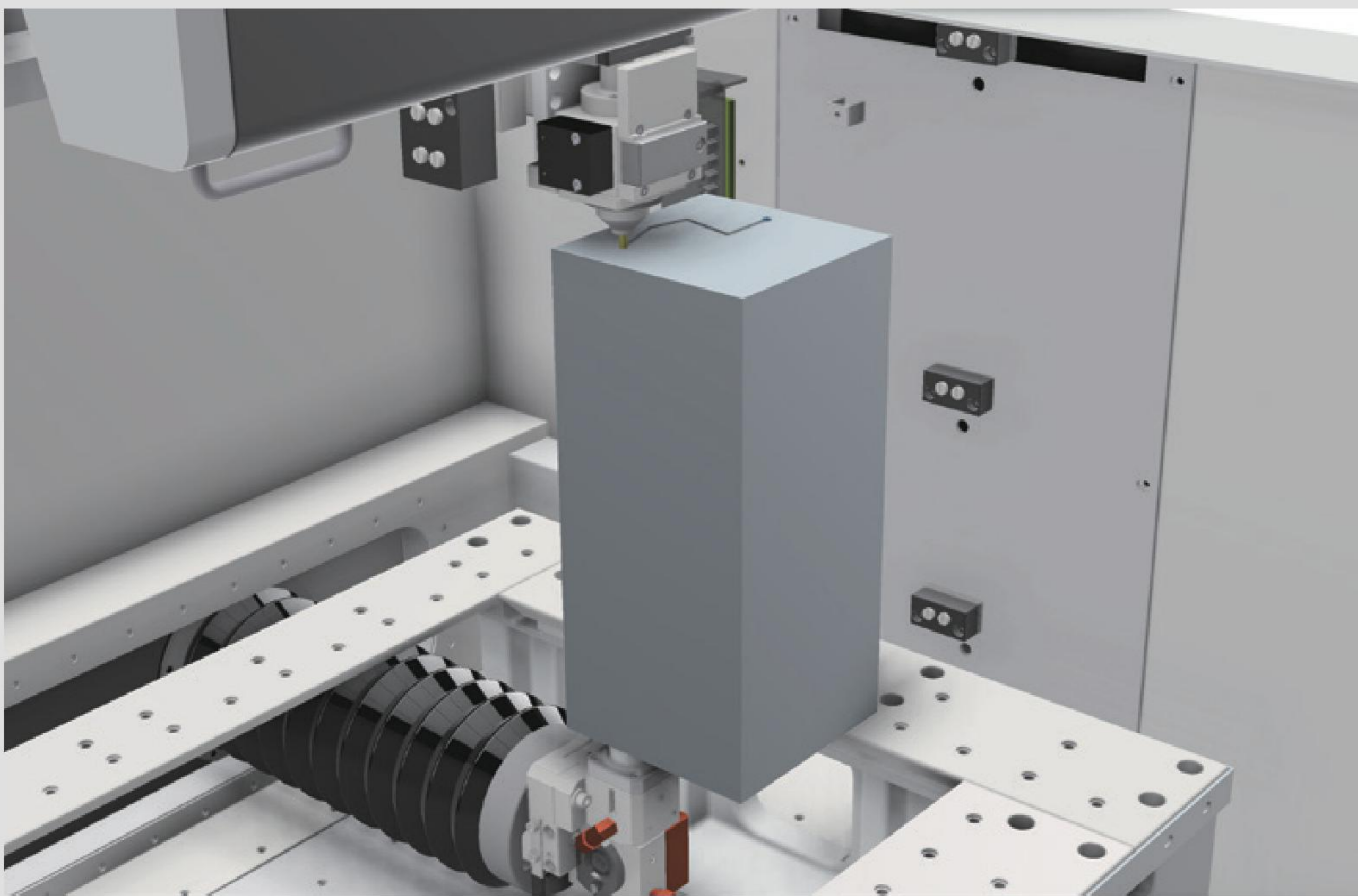
	Without control	With control
A	5.001 mm	5.001 mm
B	4.994 mm	4.999 mm
error	7 $\mu\text{m}$	2 $\mu\text{m}$



# Auto Wire Threading



■ 400mm Submerged threading



■ 400mm thickness threading in break point

## High speed Auto Wire Threading System



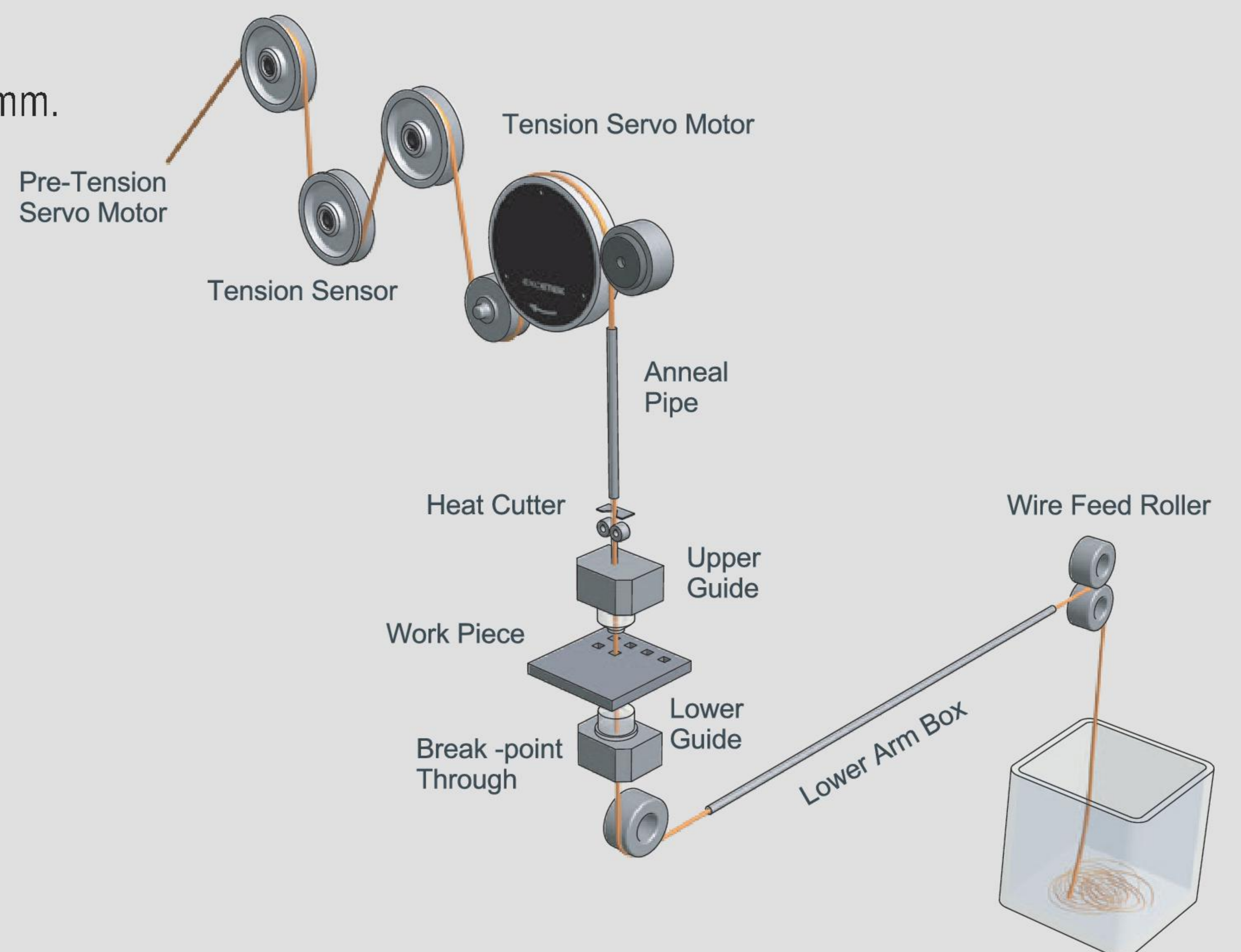
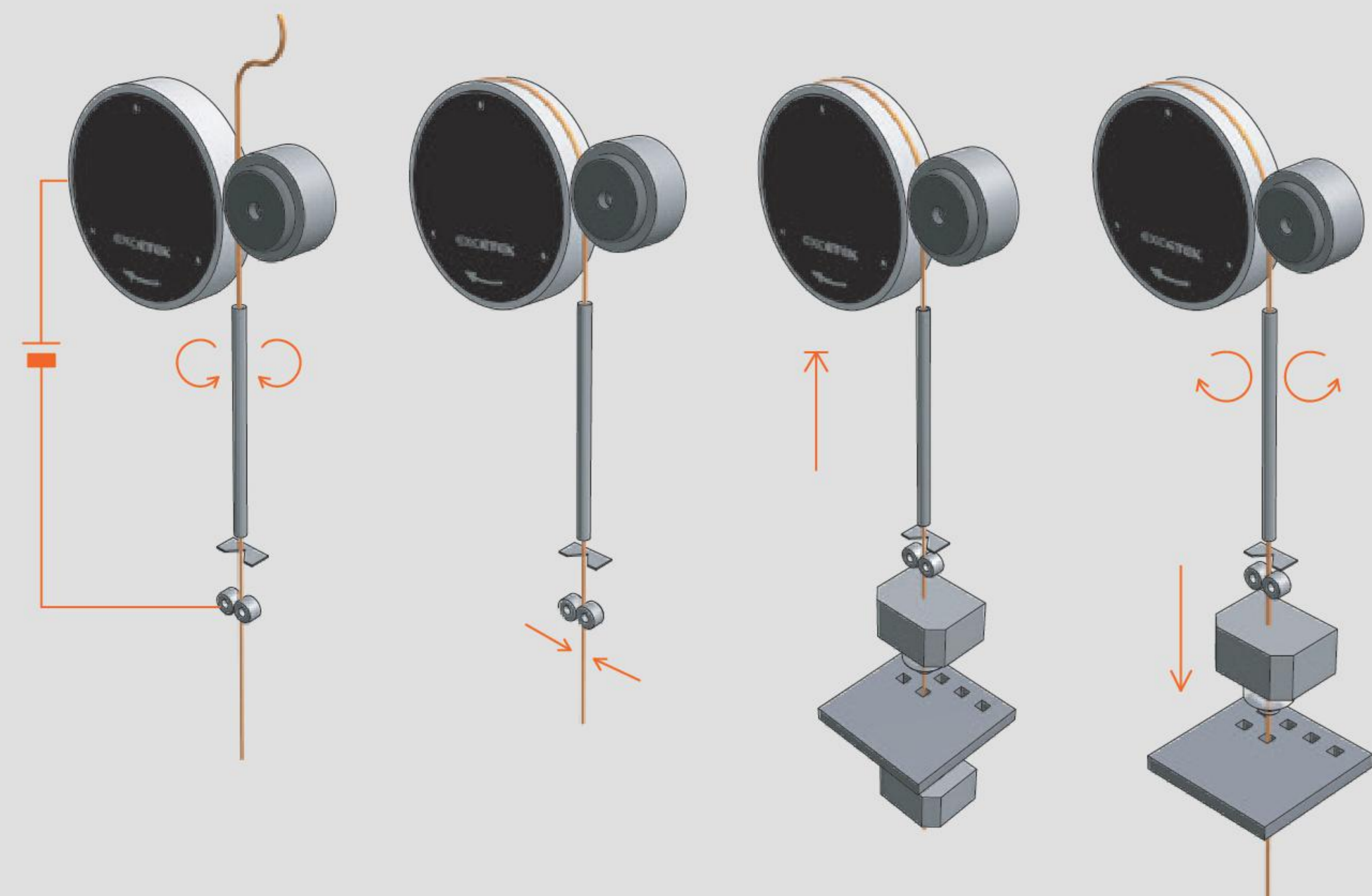
**Workpiece thickness 100mm**

Wire annealing and cutting: 10 sec  
Threading: 10 sec

## Reliable Auto Wire Threading system

The EXCETEK AWT is very sophisticated design that provides continuous unmanned operation day and night. Unlike other systems it can thread at the point of wire breakage.

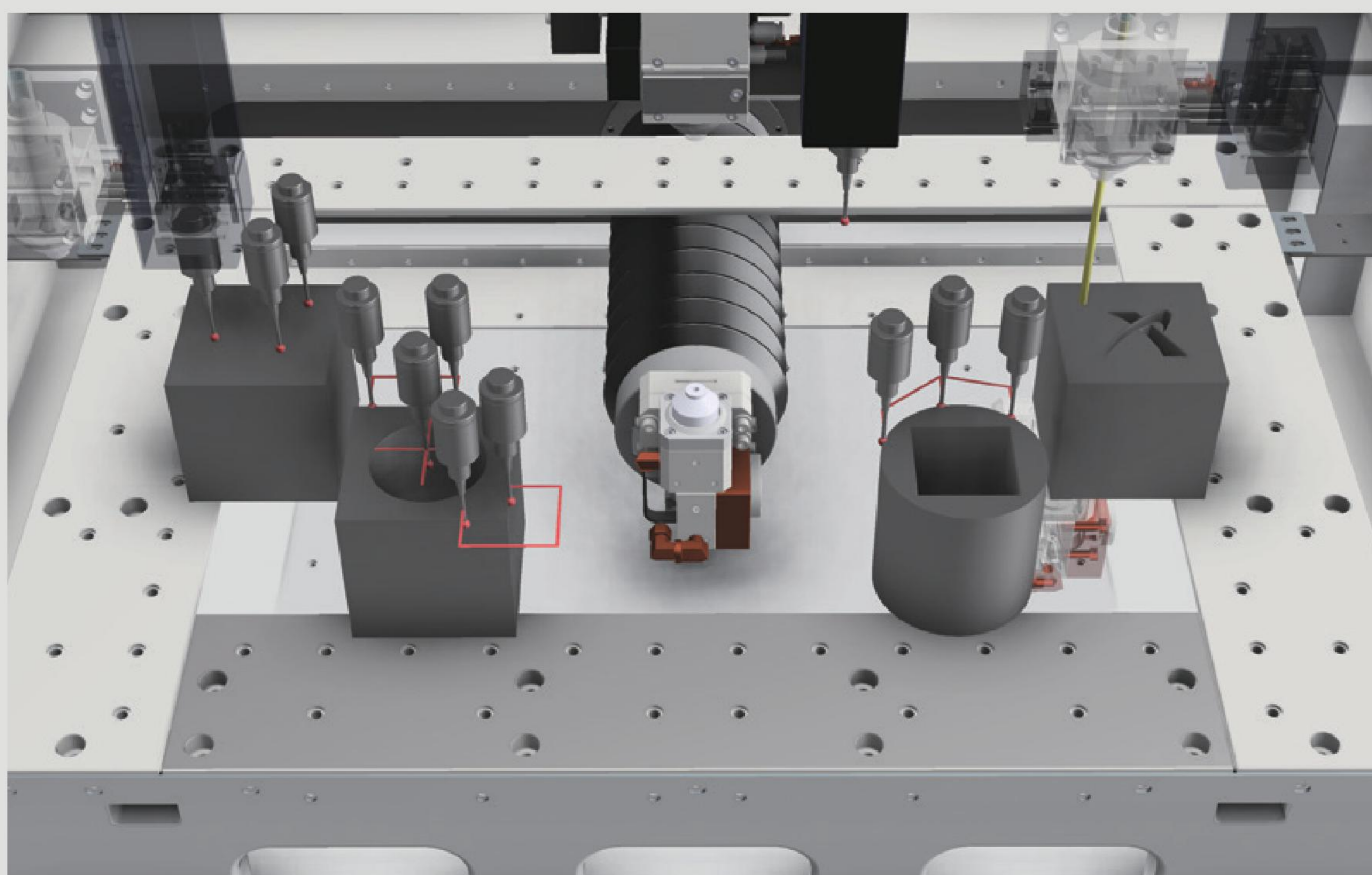
A water jet function enables the machine to thread workpieces up to 400mm.





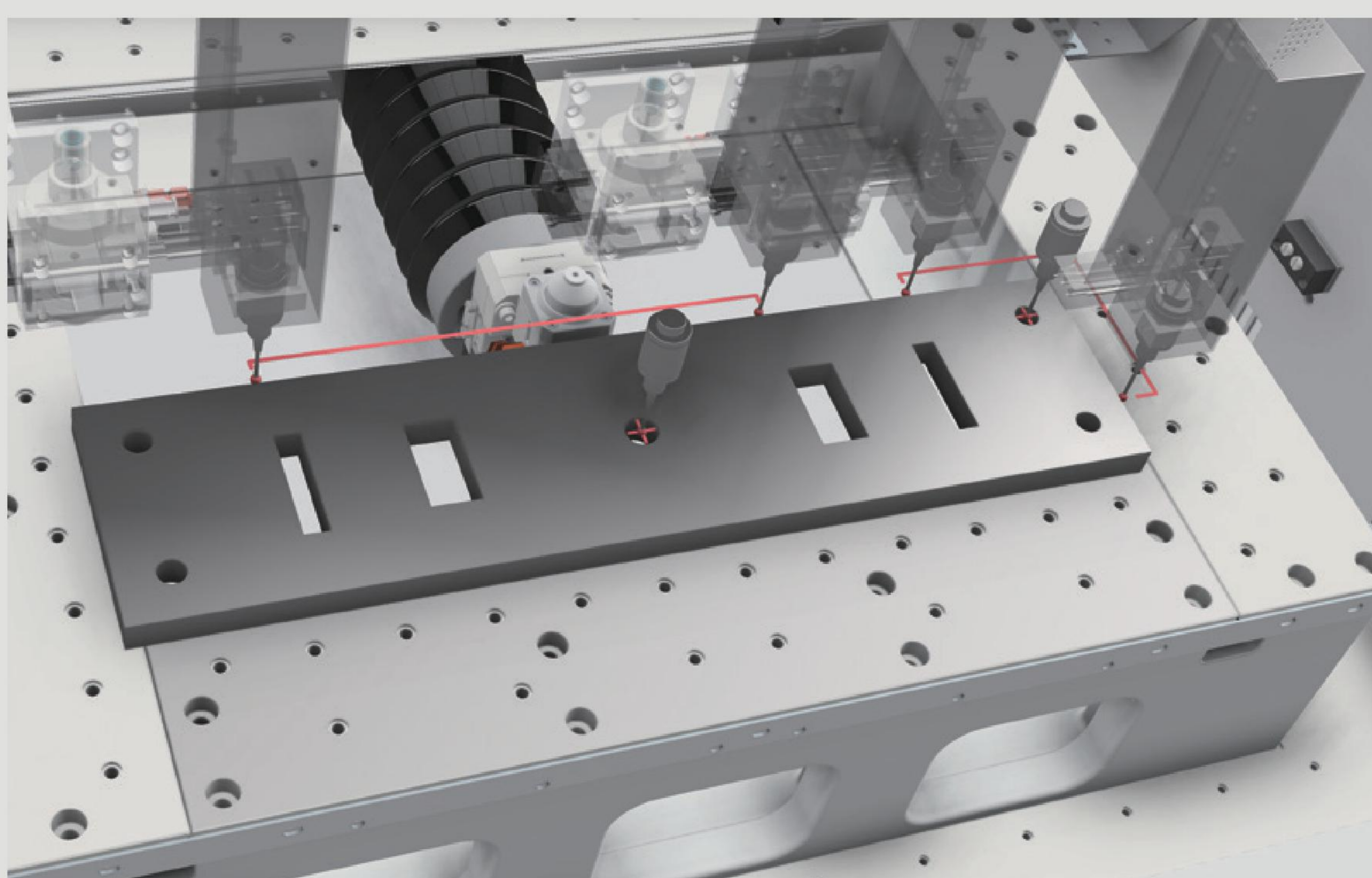
# Auto measurement system

- using auto measurement system, you can be able to find the inclination measurement, AR correction and reference point.
- EXCETEK provide a probe to measure the accuracy and auto-calibrate the precision mold before machining which reduce the pre-processing time.
- With macro instruction, it automatically measure and correct the reference point to improve the mold processing accuracy.
- After processing, the accuracy test is performed directly on the workbench, which saves the repeated disassembly time of the workpiece and avoid the processing errors caused by repeated disassembly.



## Multiple workpiece machining

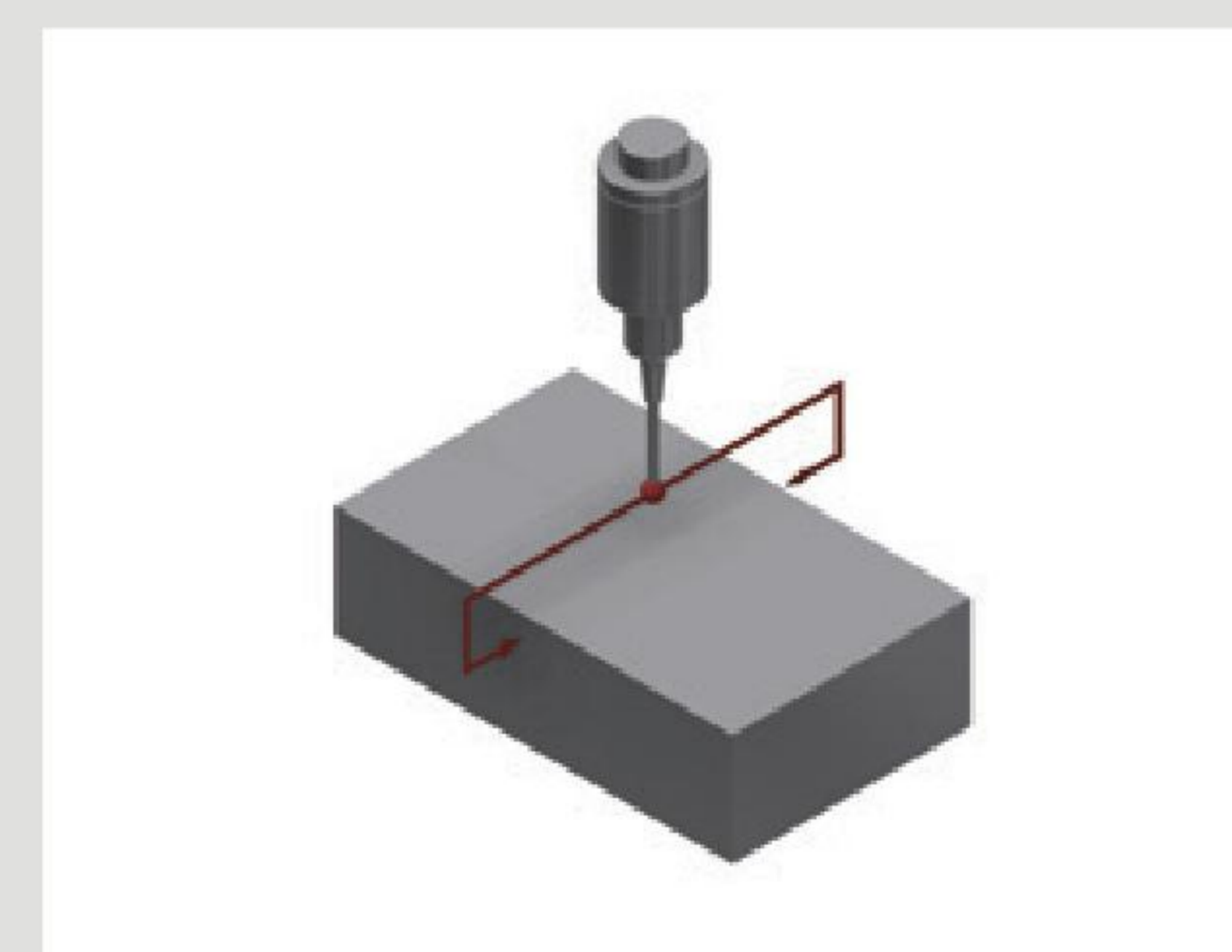
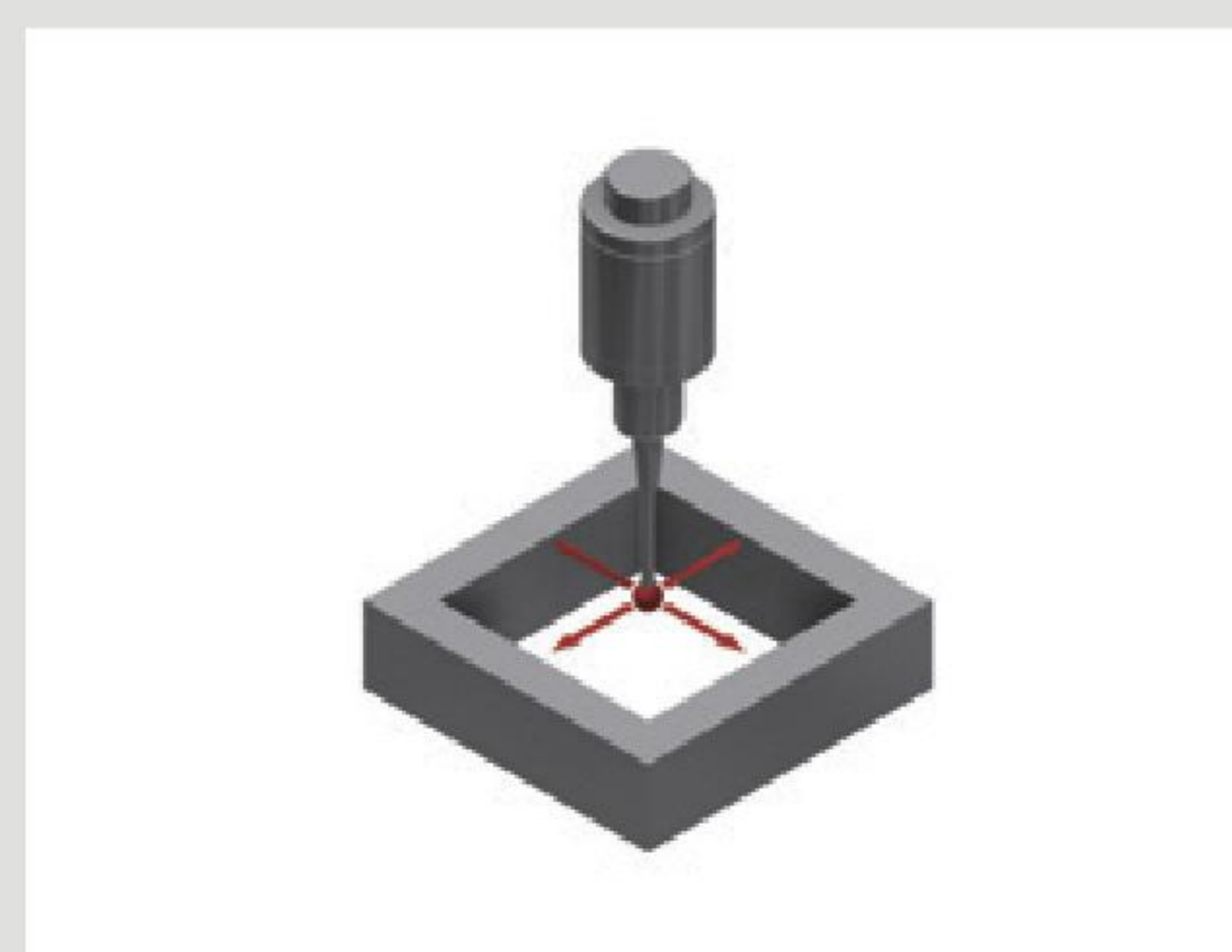
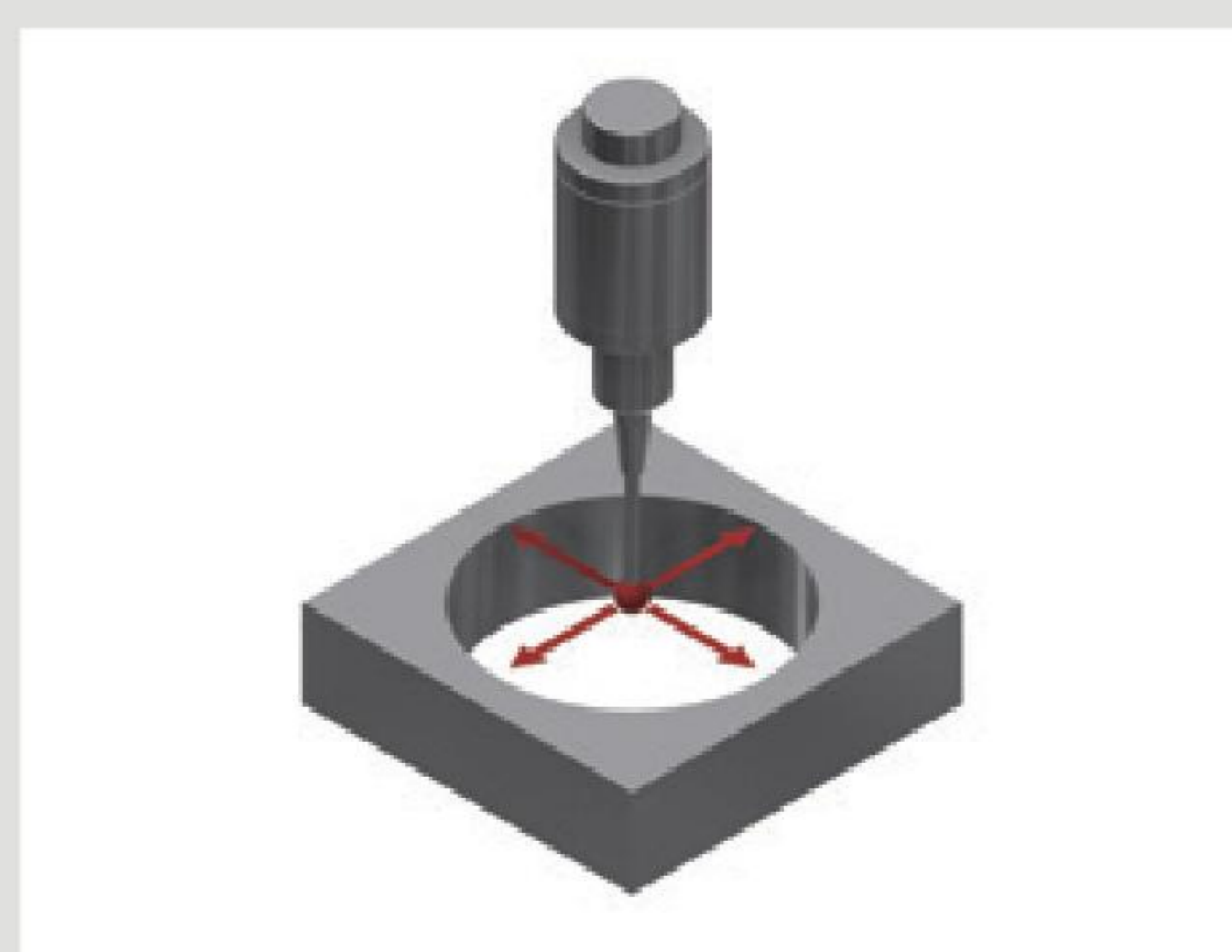
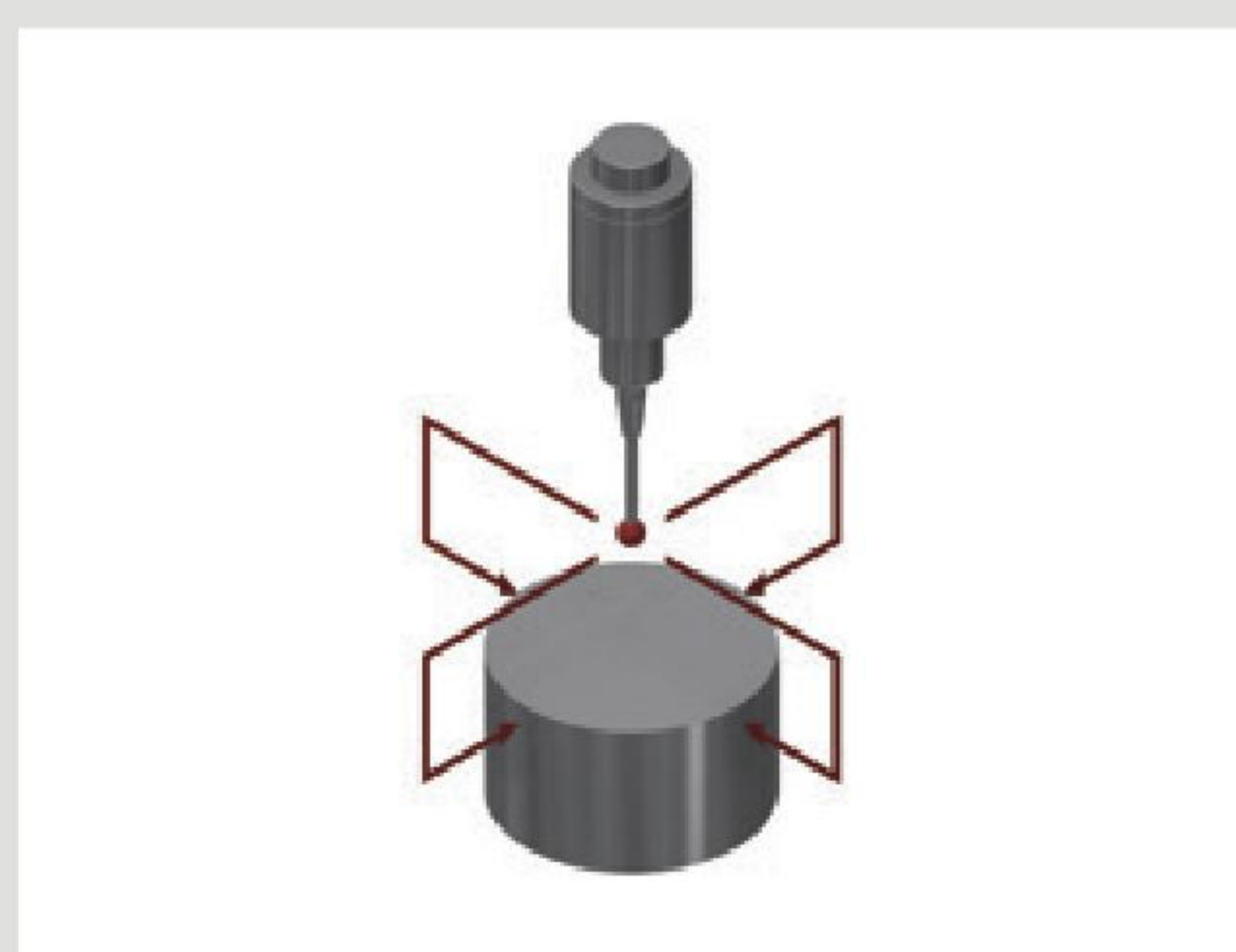
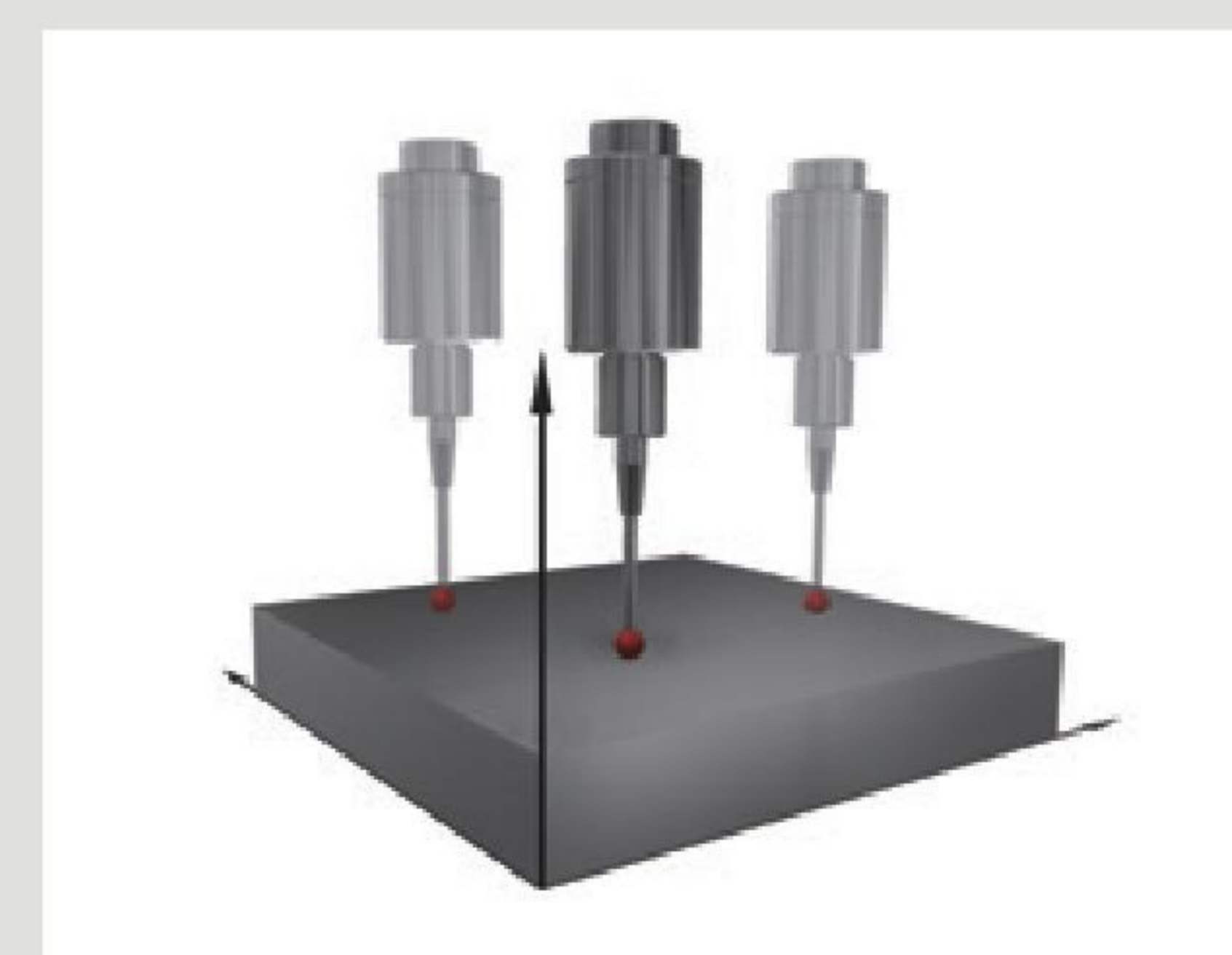
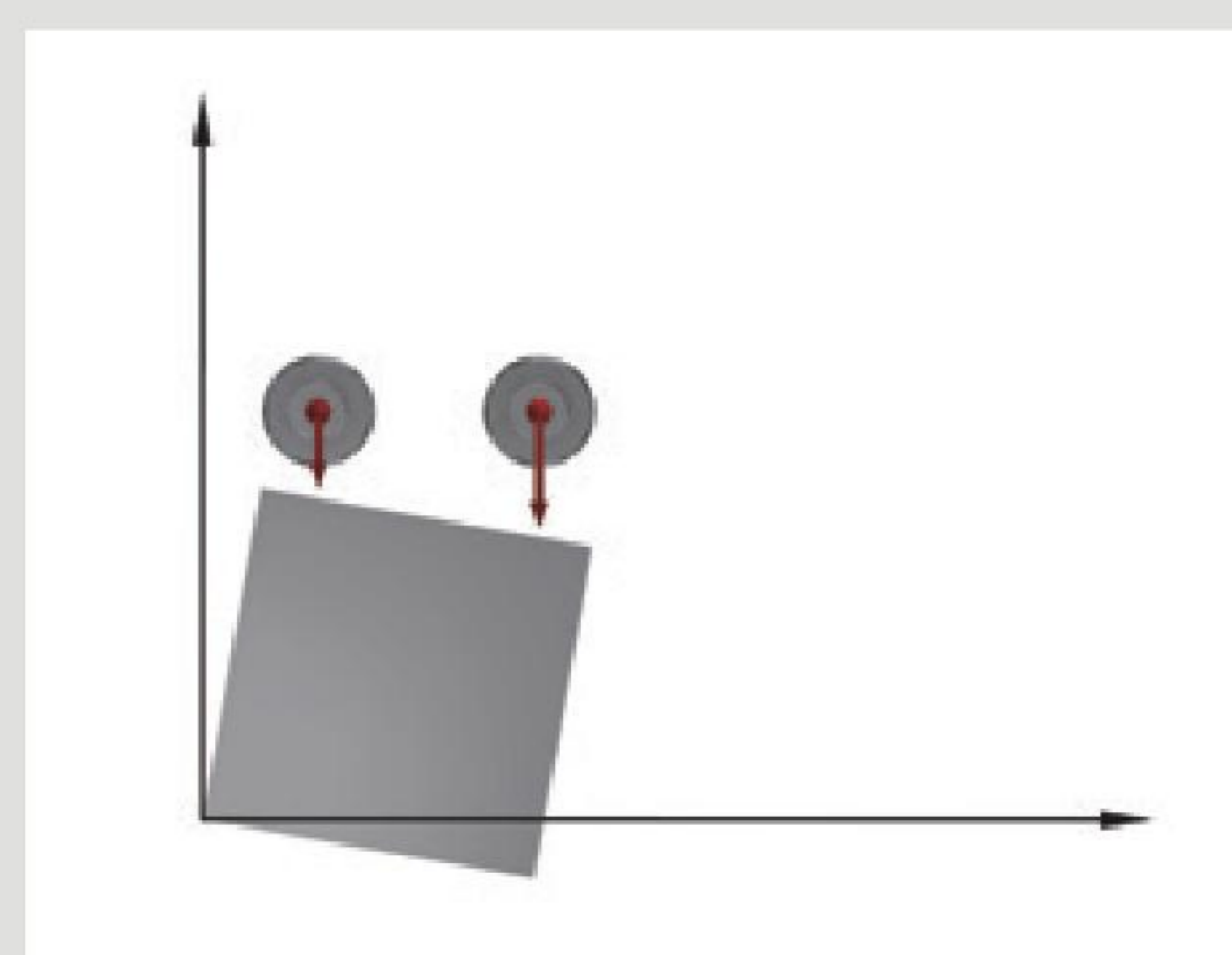
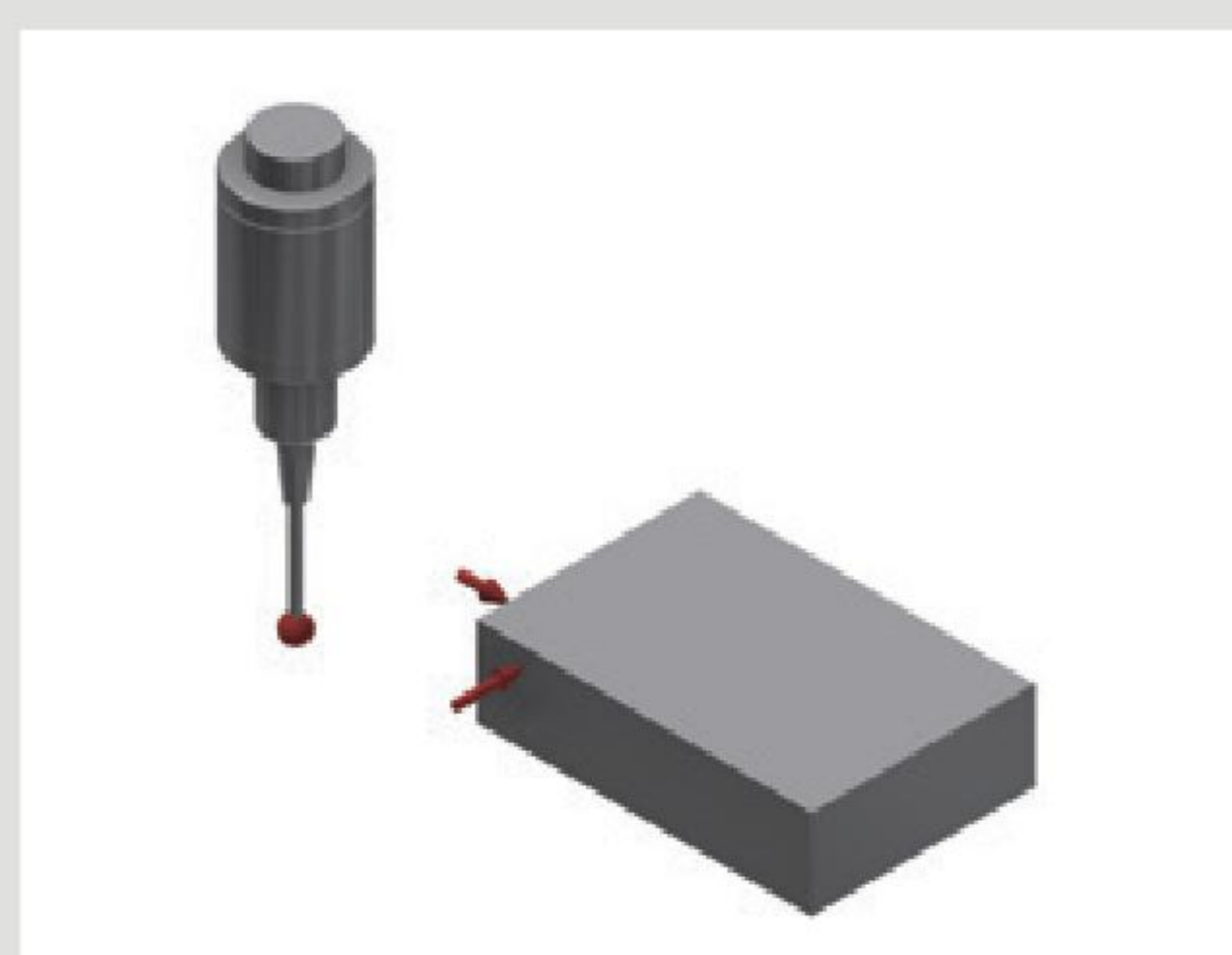
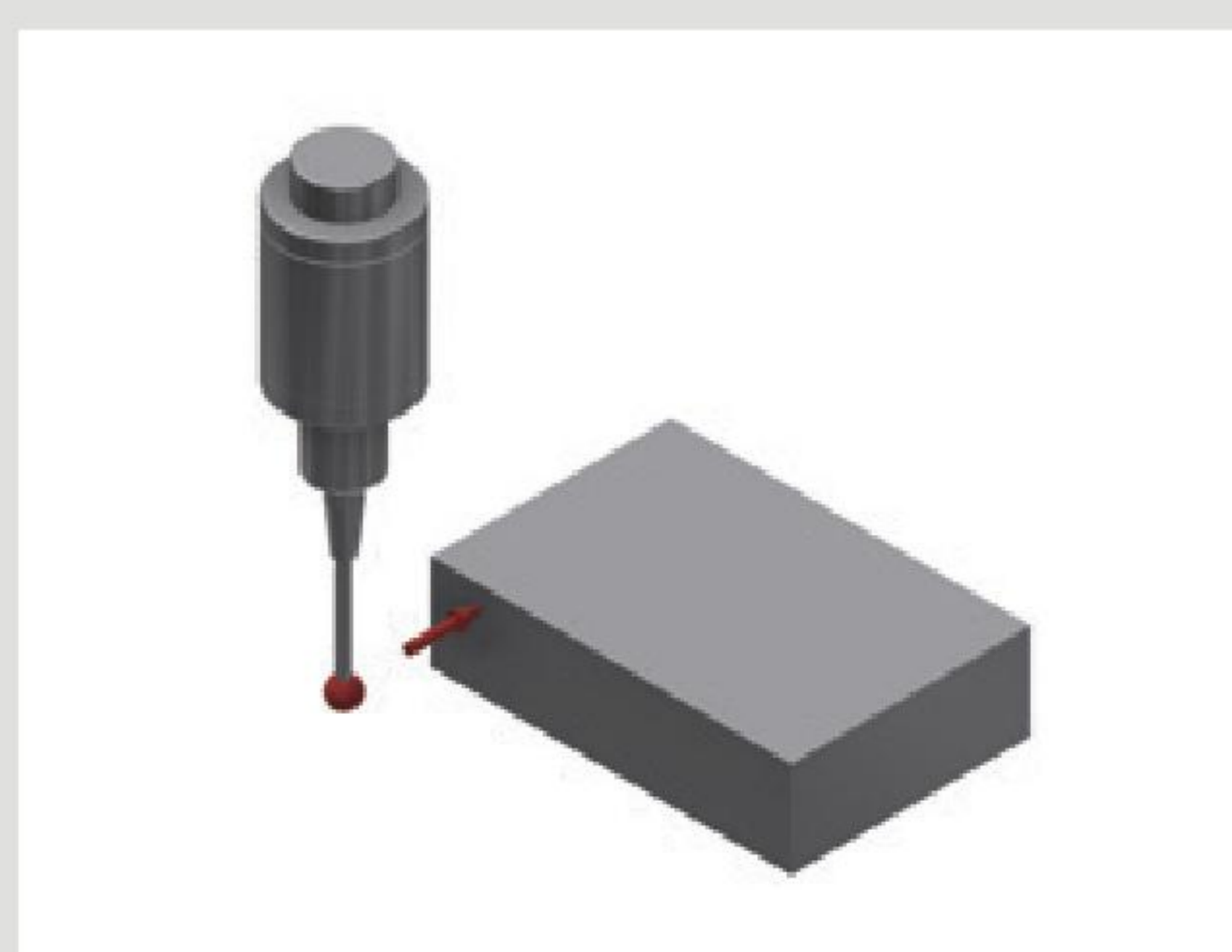
- ▶ Compensating the 3D flatness of workpiece.
- ▶ Compensating the Axis rotation of workpiece (AR).
- ▶ Measuring the processing of reference point.
- ▶ Then, It processes auto wire threading (AWT).
- ▶ At last, It automatically processes to next workpiece after completion of the working.



## Processing automation

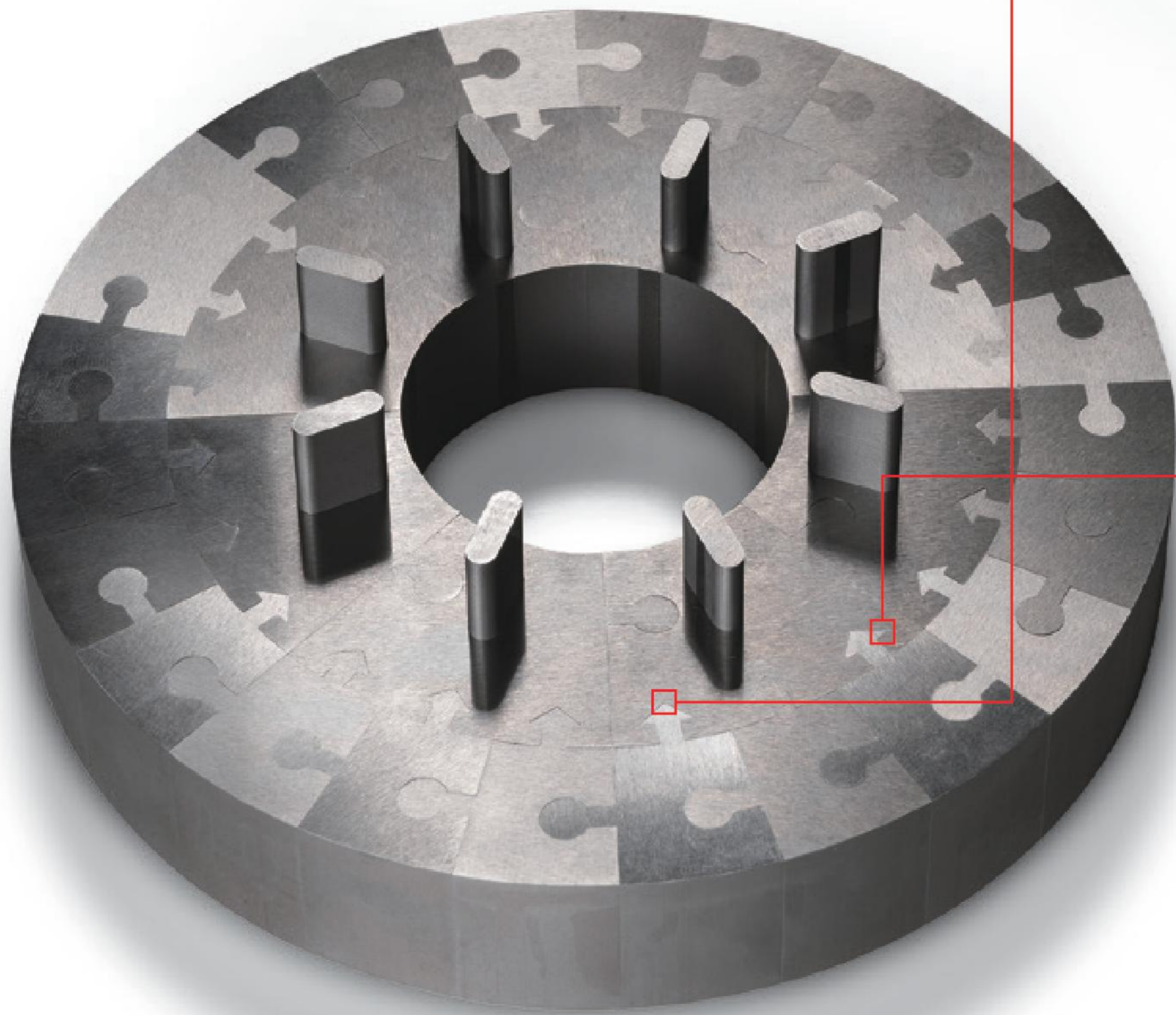
- ▶ Compensating axis rotation (AR) of workpiece.
- ▶ Calibration of reference point.
- ▶ Processing automatic wire Threading (AWT).
- ▶ Automatically measures the results after machining.
- ▶ Export the measurement report.

## Applications Of Auto Measurement System

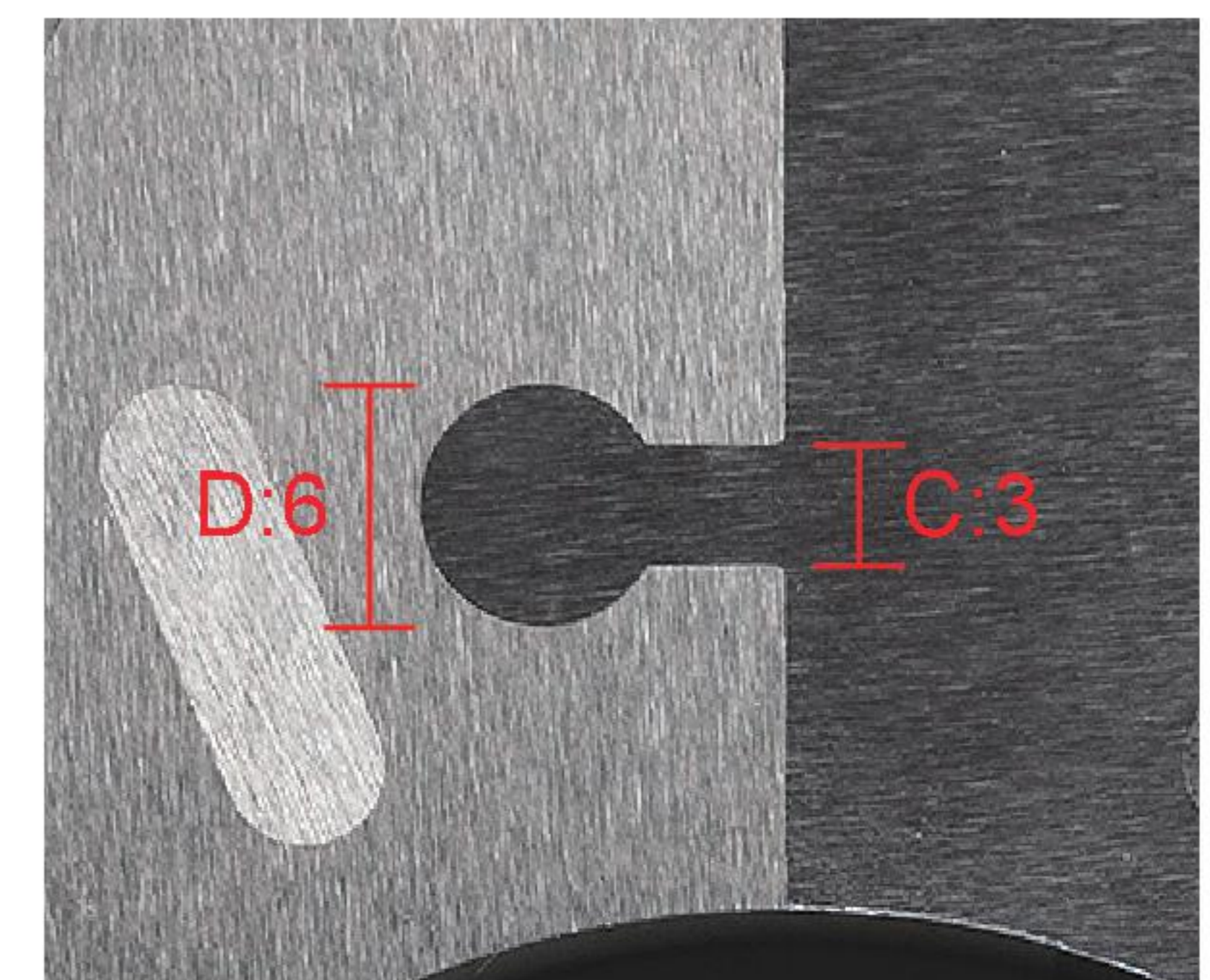
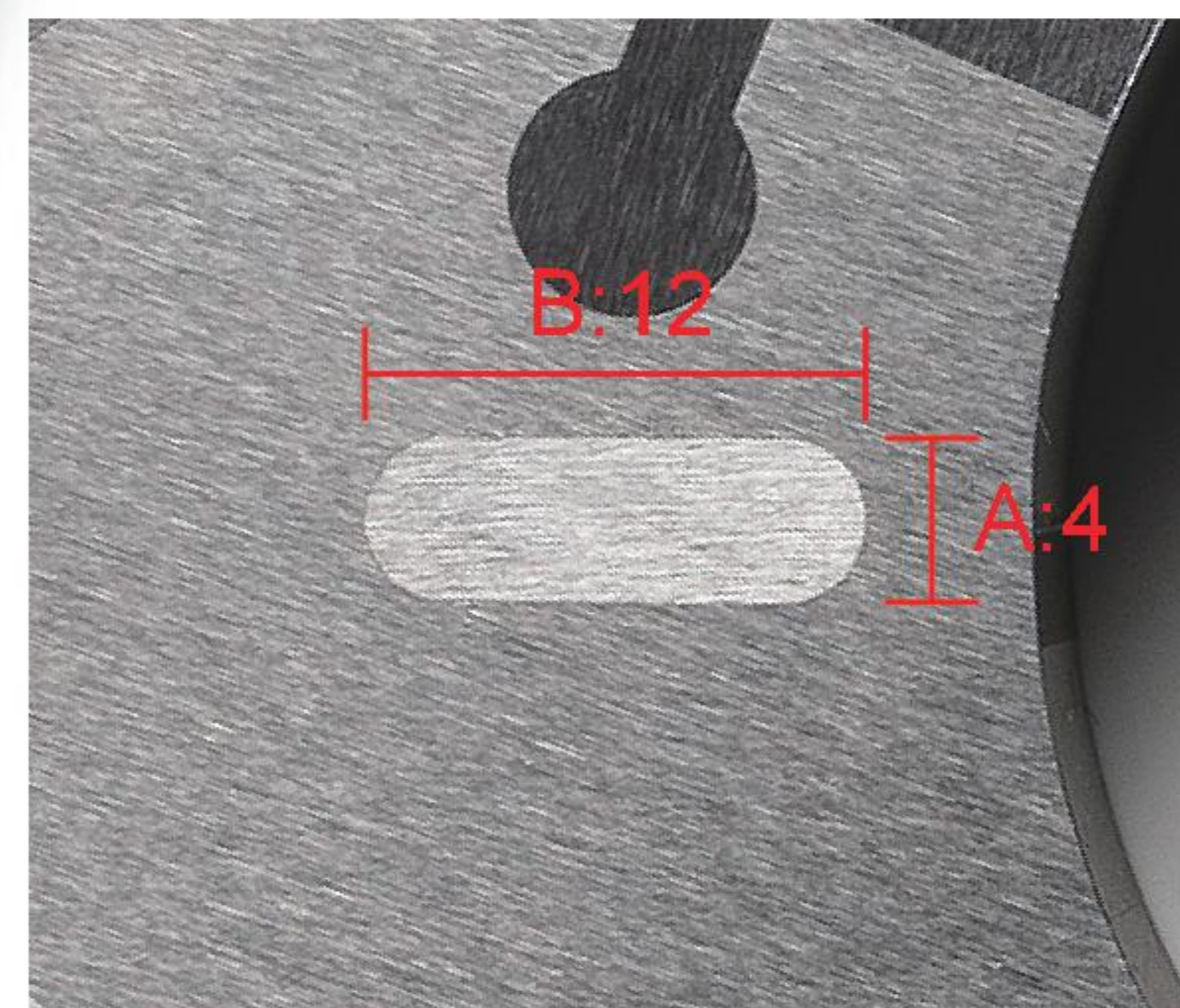
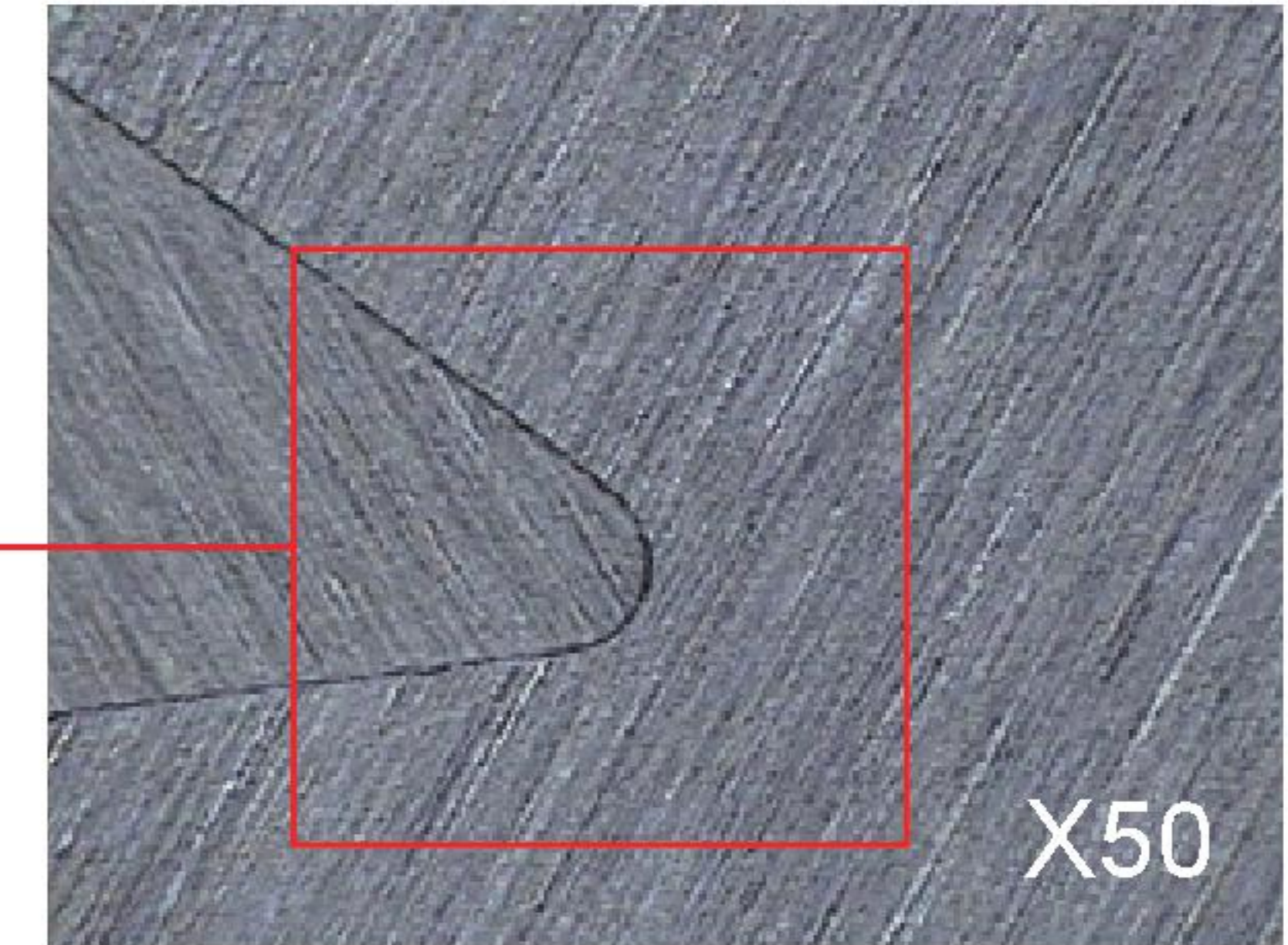
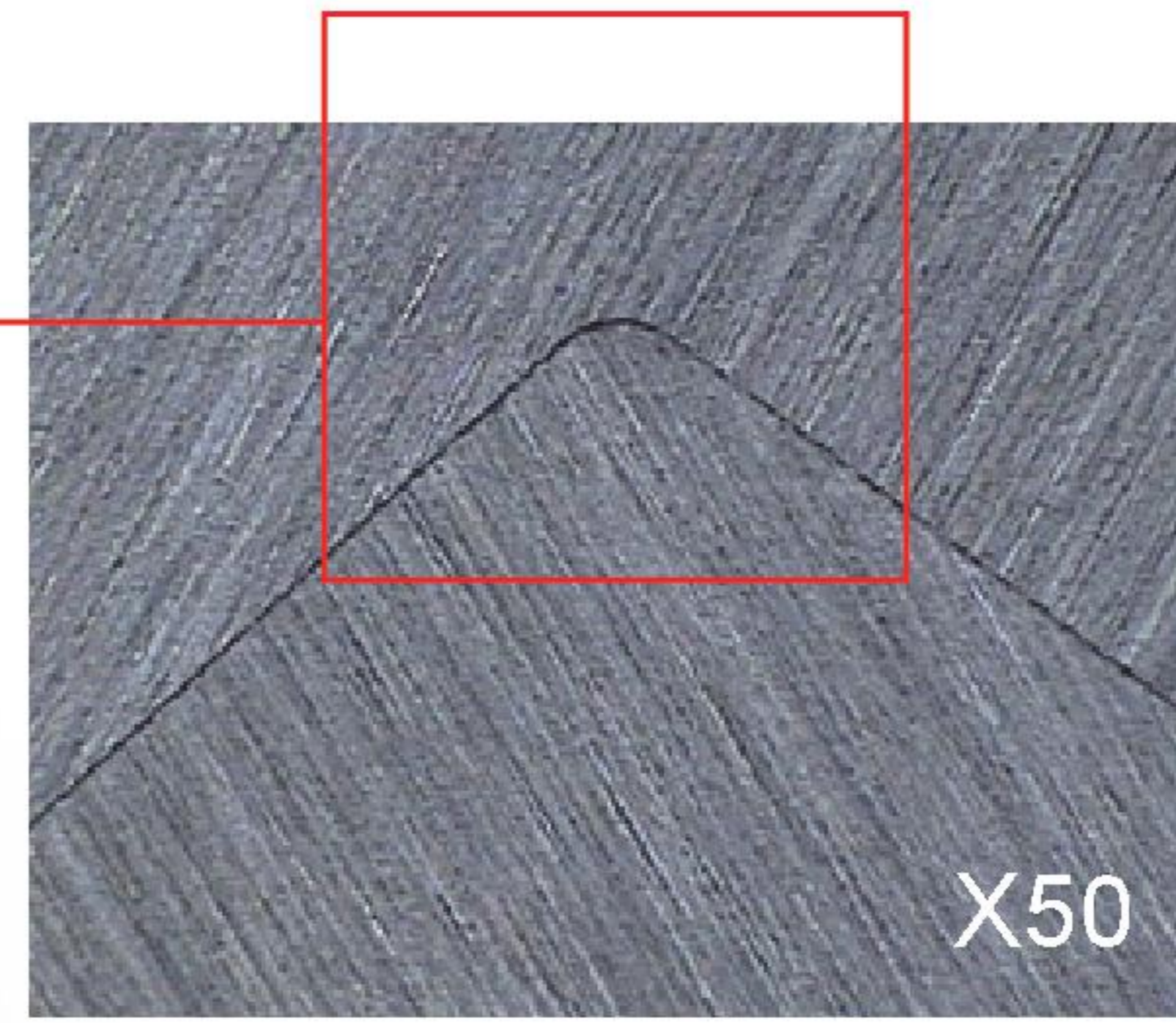




# Cutting Technology



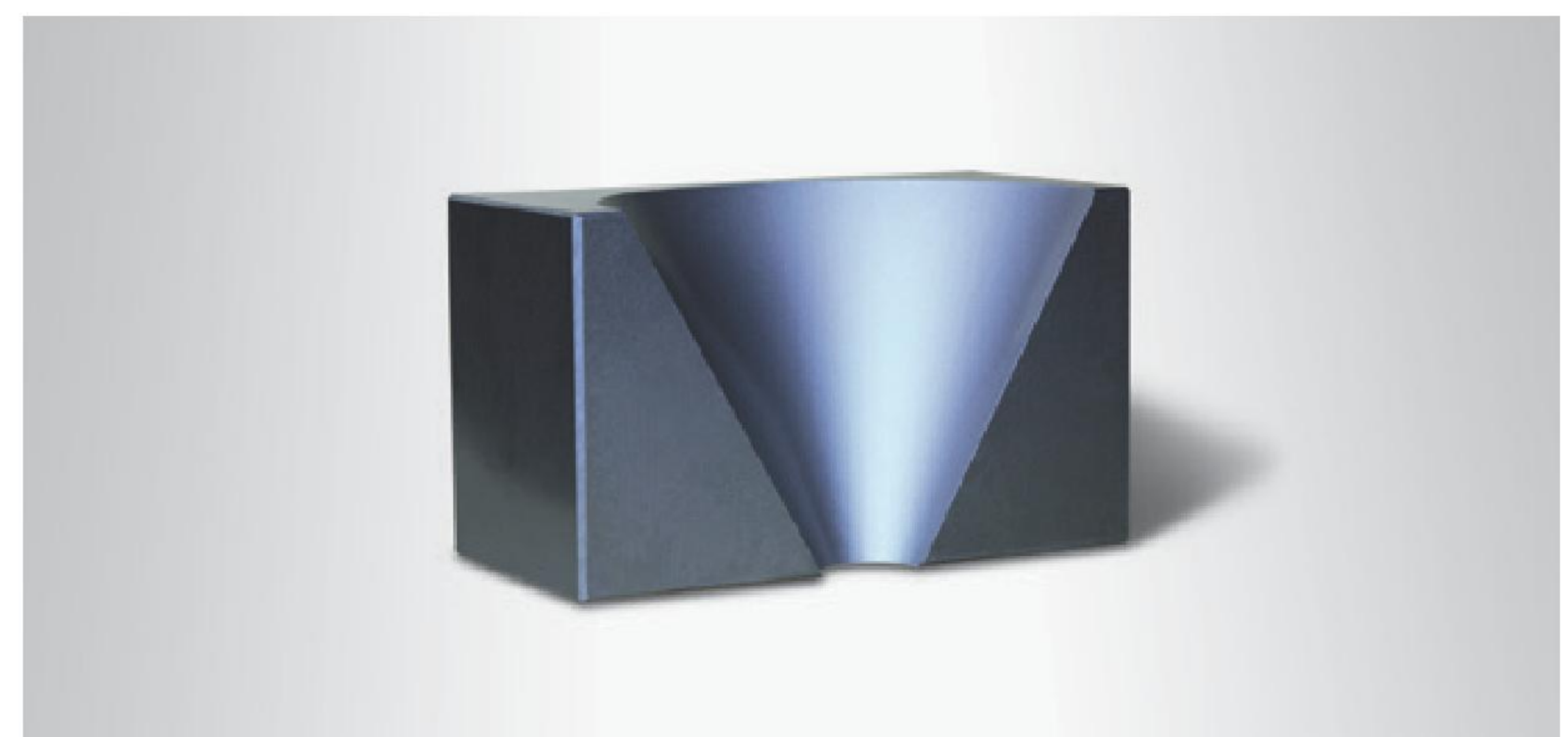
Workpiece: SKD-11  
 Thickness: 20 mm  
 No. of cut: 1 cut 2 skim



	A	B	C	D
With control	0	0~-2 μ	0	0~-2 μ
Without control	0	-8~-10 μ	0	-8~-10 μ



Workpiece	SKD-11
Wire	0.2 mm / Brass
Thickness	50 mm
No. of cut	1 cut 2 skim



Workpiece	SKD-11
Wire	0.25 mm / Brass
Angle of taper	30°
Thickness	50 mm
No. of cut	1 cut 3 skim



Workpiece	SKD-11
Wire	0.25 mm / Brass
Thickness	200 mm
No. of cut	1 cut 2 skim



Workpiece	Tungsten carbide
Wire	0.2 mm / Brass
Thickness	50 mm
No. of cut	1 cut 4 skim / Ra 0.18 μm



# E-LINK Remote monitoring system (optional)



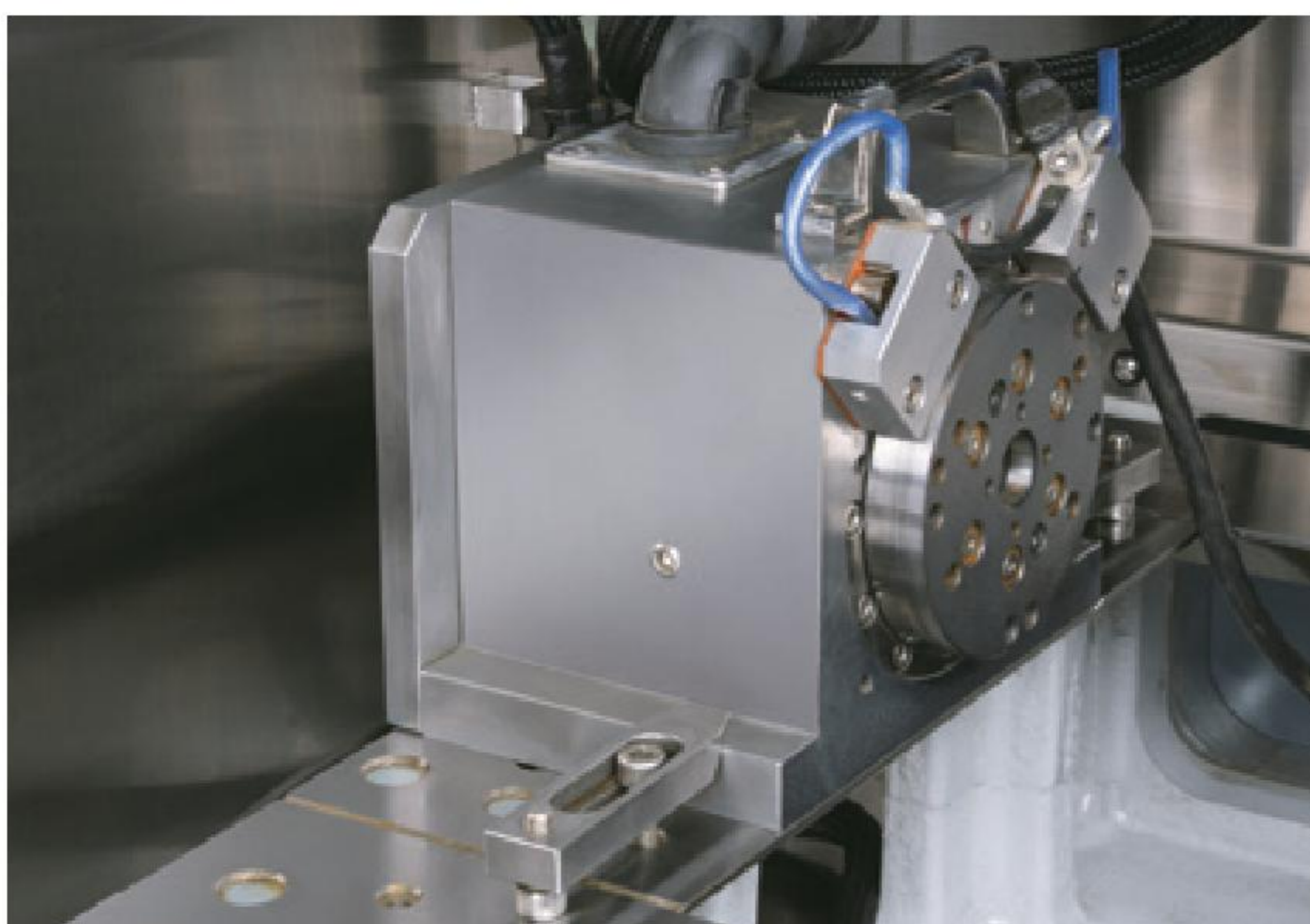
## Standard Accessories

- Ion exchange resin x 10L
- Paper filter x 2 pcs
- Diamond guide x 2 pcs
- Upper and lower flushing nozzle x 2 sets
- Conductive plates x 2 pcs
- Brass wire x 1 spool
- Clamping tool x 1 set
- Vertical alignment jig x 1 set

## Optional Accessories

- XY axis linear scale
- Clamping Beam
- AWT
- AVR 15KVA
- Transformer 15KVA
- Remote Monitor System
- Auto Measurement System
- Wire Chopper
- Super Finish Circuit
- Rotary Table
- Jumbo Feeder L-50A
- Double Door
- Signal Tower
- CAD/CAM

Rotary Table



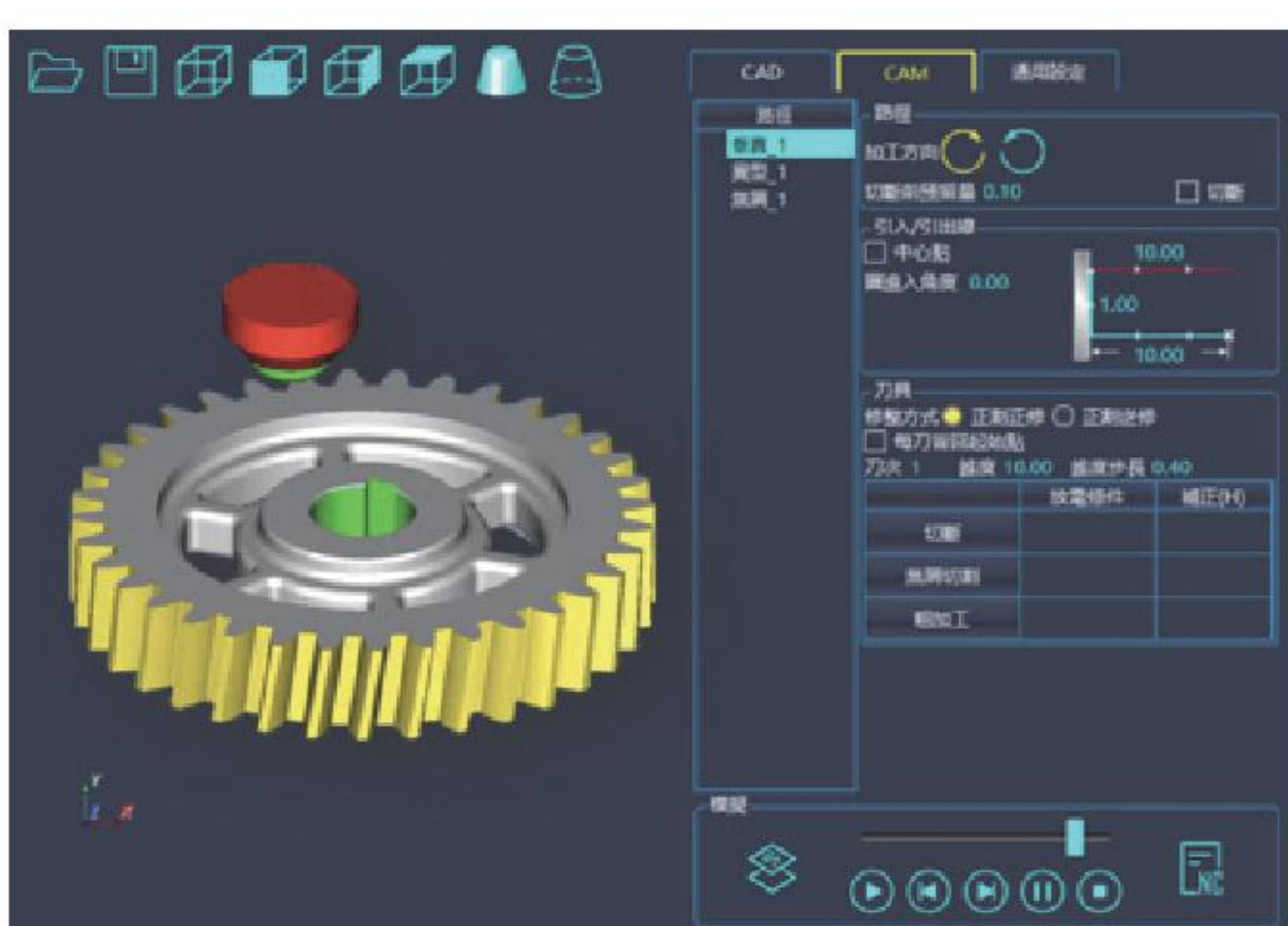
Double Door



Wire Chopper



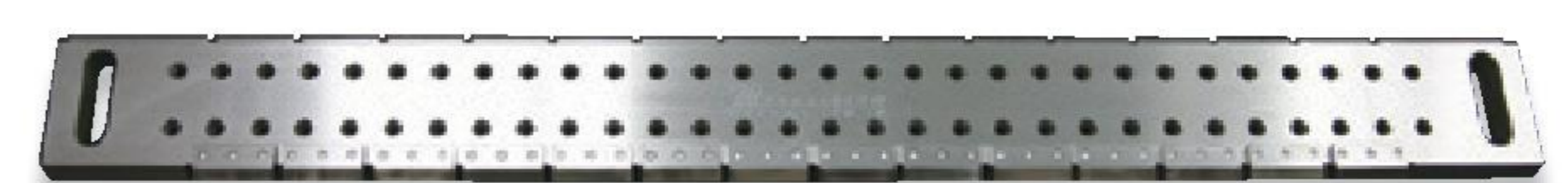
CAD/CAM



Jumbo Feeder



Clamping Beam





# G Plus

## SERIES

The industry leading, feature packed  
wire EDM machine



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