



Plane Cutting Head Catalog

Function \ Model	BLT310 Series	BLT4XX Series	BLT6X2H Series	BLT8X0H Series	BLT6X2M Series	BLT9X0MA Series	BLTA140M Series
	≤4kW	≤40kW	≤60kW	≤20kW	≤40kW	≤40kW	≤80kW
Collision Protection	✓	✓	✓	✓	✓	✓	✓
Protective Window Monitoring	✓	✓	✓	✓	✓	✓	✓
Bottom Stray Light Monitoring		✓ *	✓	✓	✓	✓	✓
Closed-Loop Monitoring	✓	✓	✓	✓	✓	✓	✓
Fast Focusing	✓	✓	✓	✓	✓	✓	✓
Built-In Amplifier	✓	✓	✓	✓	✓	✓	✓
Nozzle Cooling	✓	✓	✓	✓	✓	✓	✓
Amplifier Water Cooling	✓	✓	✓	✓	✓	✓	✓
Cutting Gas Pressure Monitoring	✓	✓	✓	✓	✓	✓	✓
Smart Laser Off		✓	✓	✓	✓	✓	✓
Plane/Bevel Cutting		✓					
Focusing Lens Temperature Monitoring			✓	✓	✓	✓	✓
Stray Light Monitoring			✓	✓	✓	✓	✓
Smart Piercing			✓	✓	✓	✓	✓
O2/N2 Process Monitoring			✓	✓	✓	✓	✓
Protective Window Anti-Explosion		✓ *	✓	✓	✓	✓	✓
Co-edge Piercing Monitoring			✓	✓	✓	✓	✓
Variable Beam Shape				✓		✓	
Cutting Path Monitoring					✓	✓	✓
Coaxial Monitoring					✓	✓	✓
Nozzle Quality Monitoring					✓	✓	✓
Nozzle Misalignment Monitoring					✓	✓	✓
Auto Centering					✓	✓	

* BLT421, BLT441 do not support Protective Window Anti-Explosion feature;
BLT462, BLT482, BLT4102 support Protective Window Anti-Explosion;
BLT421 does not support Bottom Protective Cartridge Sealing

BLT310 Series Plane

Focus Range: ±40mm

Focus Speed: 300mm/s

Laser Wavelength: 1030-1090nm

Reposition Precision: ±0.01mm

Max Gas Pressure: 25Bar

Cutter Model	BLT310 Series
Support Power Range	≤4kW
Fiber Interface	QBH、EOC
Focal Length (mm)	150、200



BLT310 Series Features //

Water Cooling

More Stable Cutting //

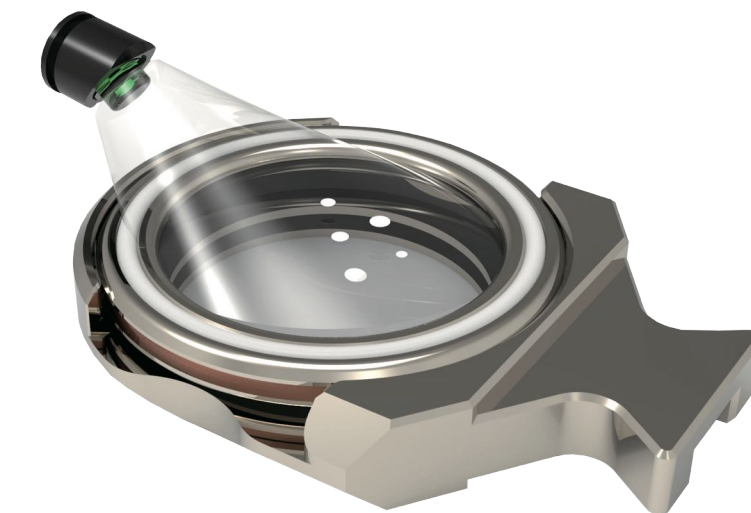
The cutting head water circuit is protected with an anti-corrosion coating to prevent corrosion over prolonged use, which can lead to block-ages and reduced cooling effectiveness.



Protective Window Temperature Monitoring

More Stable Performance //

The sensor does real time temperature monitoring. When contamination detected, it will automatically turn off laser and give alarm, this way to limit risk of protective window shattering.

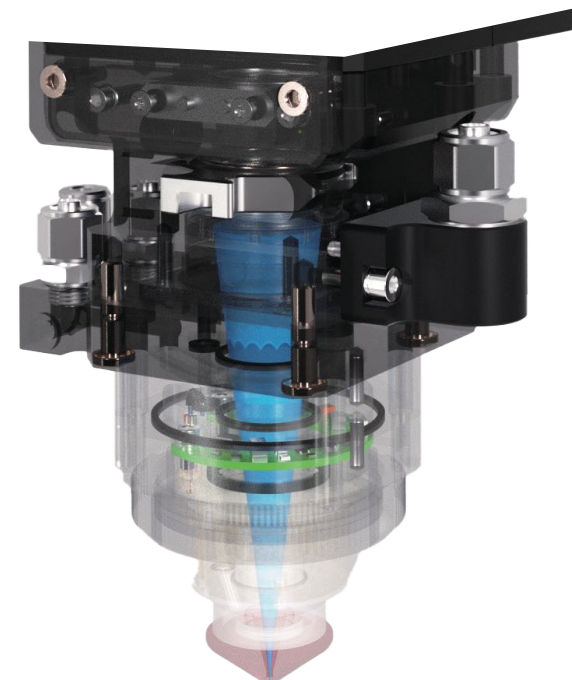


BLT310 Series Features //

Gas Pressure Monitoring Sensor

More Stable Cutting //

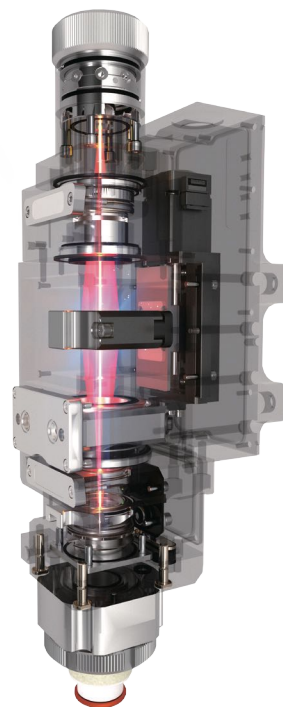
Real-time monitor the gas output to mitigate the impact on cutting quality.



Fast Focusing

Higher Efficiency //

Focal position vertically adjusted by collimating lens, realizing higher efficiency.

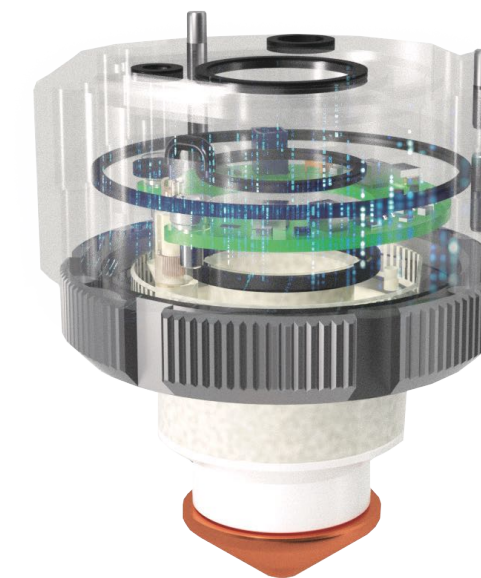


BLT310 Series Features //

Amplifier Sensor

Higher Cutting Precision //

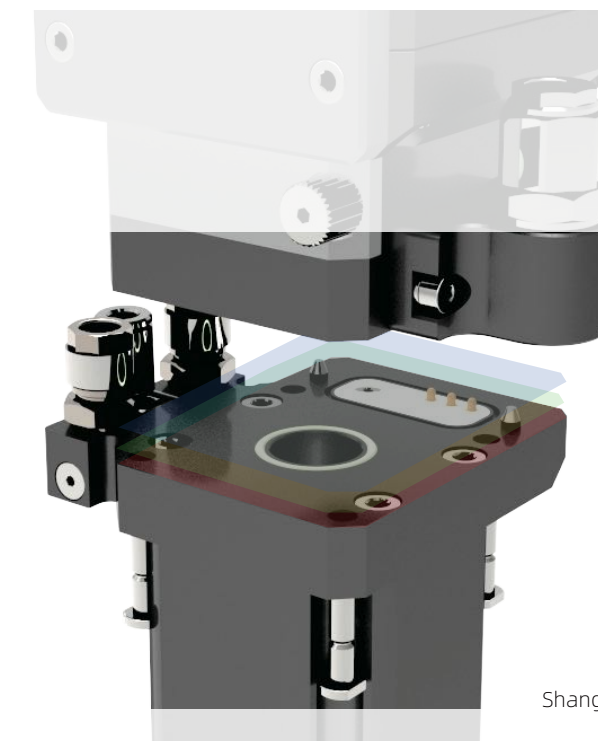
Integrated capacitance amplifier sensor makes a more precise and stable following.



Collision Protection

Simpler Maintenance //

Protective Screws keep cutting head from damage.
No time wasting on Depot Repair.



BLT4XX Series

Plane/ Bevel

- Focus Range: ±50mm
- Focus Speed: 500mm/s
- Laser Wavelength: 1030-1090nm
- Reposition Precision: ±0.01mm
- Max Gas Pressure: 25Bar

Cutter Model	BLT421/BLT421S Series	BLT441 Series	BLT462 Series	BLT482 Series	BLT4102 Series
Support Power Range	≤8kW	≤15kW	≤20kW	≤30kW	≤40kW
Fiber Interface	QBH、EOC	Q+、QD、QBH、ADD			
Focal Length (mm)	150、200	200	200	200、300	300



BLT4XX Series Features

Collision Protection

Simpler Maintenance

Protective Screws keep cutting head from damage.
No time wasting on Depot Repair.

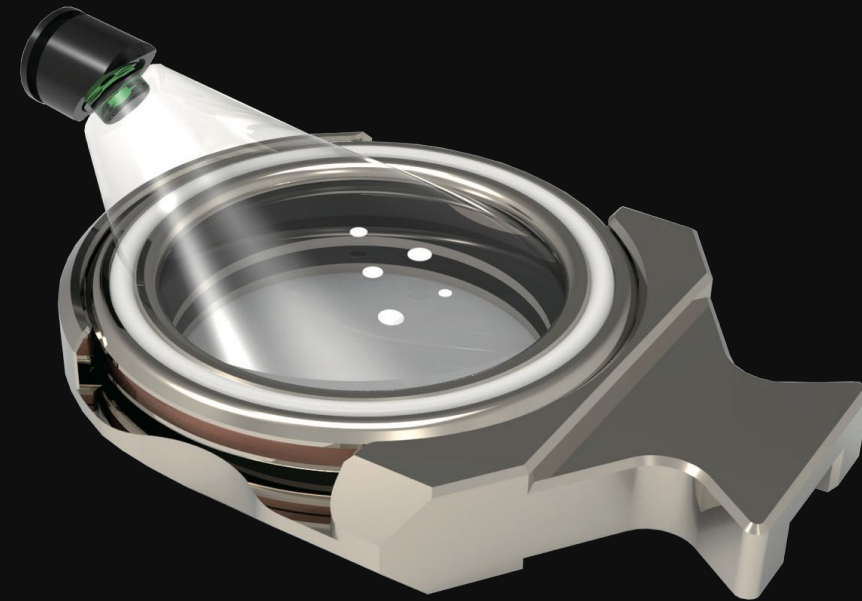


BLT4XX Series Features //

Protective Window Monitoring //

Improve Cutting Quality //

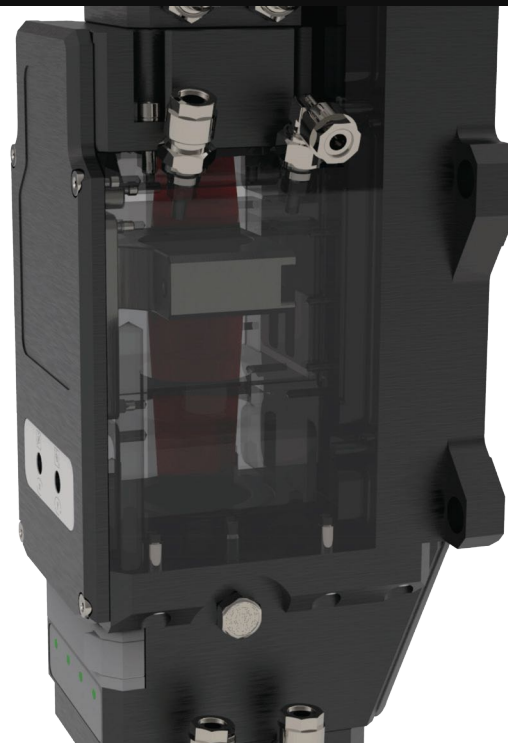
Monitor the contamination to avoid its impact on cutting quality.



Fast Focusing //

Less Focusing Time //

Collimating lens is used to adjust the focal position vertically.



BLT4XX Series Features //

Bevel Cutting //

One Time Forming //

With AB swing axis can support cutting V, Y, X and other types of bevels, maximum $\pm 45^\circ$ bevel and one time forming, reducing beveling process, reducing cost and increasing efficiency.



Closed-Loop Monitoring //

Smarter and More Efficient //

Built-in multi-sensor, real time closed-loop intelligent monitoring, rapid diagnosis of problems and early warning.



Water Cooling //

Full Body Water Cooling //

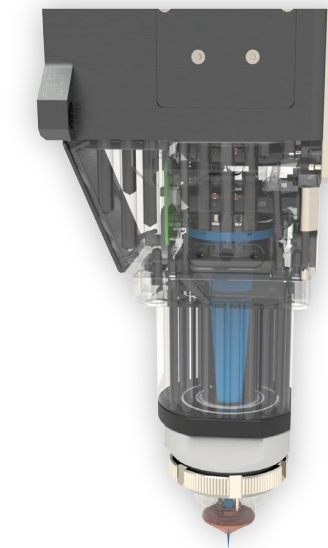
Cover 90% of the cutting head to improve cutting stability.



Gas Pressure Monitoring //

More Stable Cutting //

Real-time monitor the gas output to reduce the impact on the cutting quality.



BLT6X2H Series

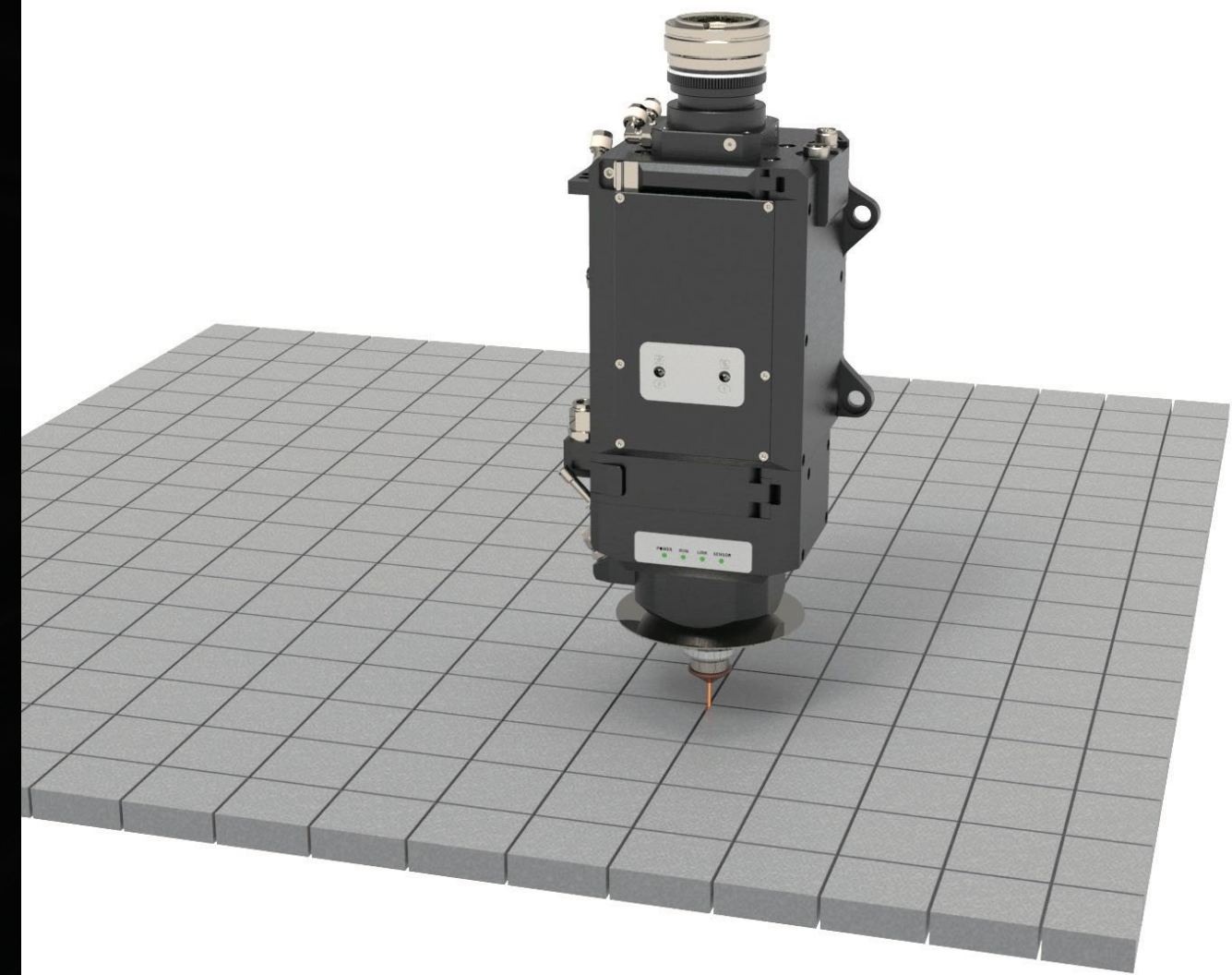
Plane

- Focus Range: ±50mm
- Reposition Precision: ±0.01mm
- Focus Speed: 500mm/s
- Max Gas Pressure: 25Bar
- Laser Wavelength: 1030-1090nm

Cutter Model	BLT642H Series	BLT662H Series	BLT682H Series	BLT6102H Series	BLT6120H Series
Support Power Range	≤15kW	≤20kW	≤30kW	≤40kW	≤60kW
Fiber Interface	Q+, QD, QBH, ADD				
Focal Length (mm)	200	200	200、300	300、400	300



BLT6X2H Series Features //



Co-edge Piercing Monitoring

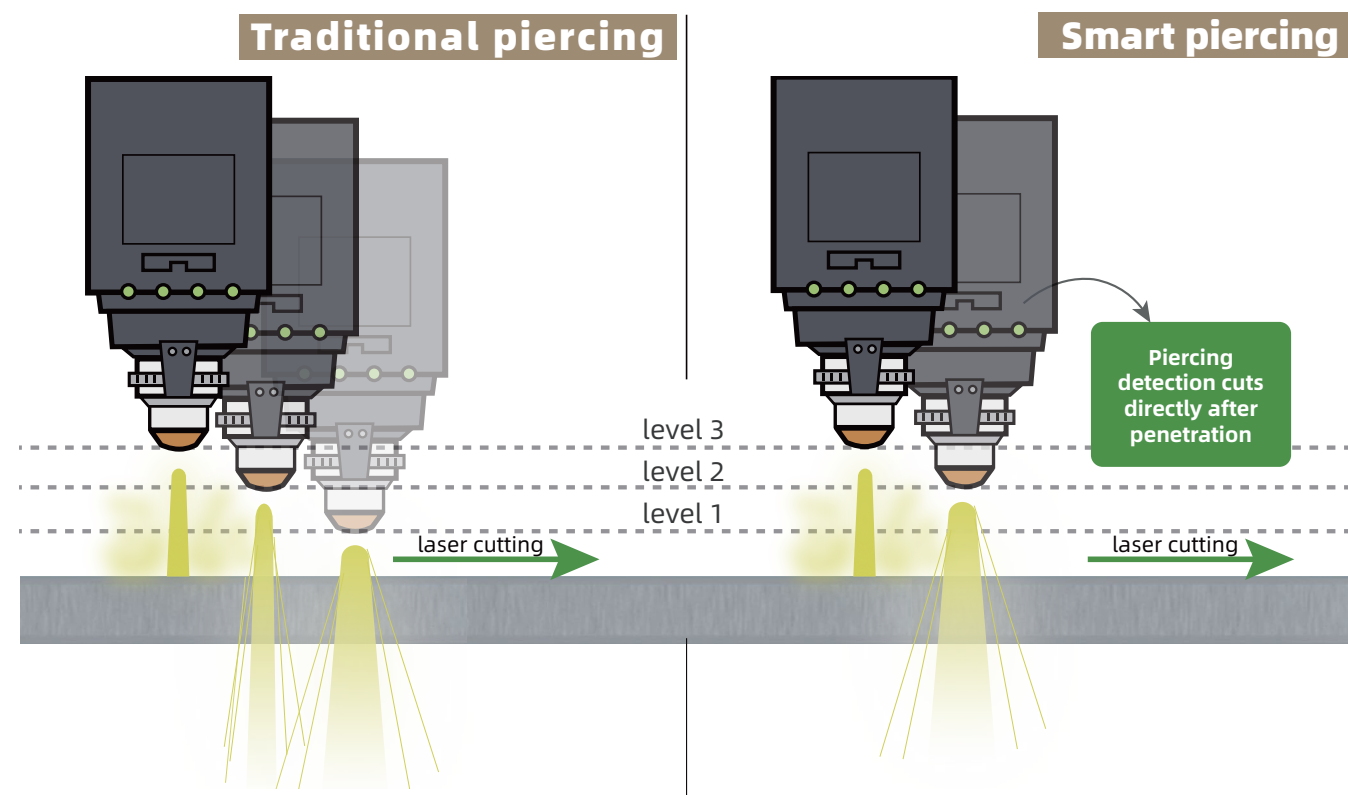
Improve Cutting Efficiency //

Detect whether piercing is required at co-edged positions.

Smart Piercing

Enhance Piercing Efficiency

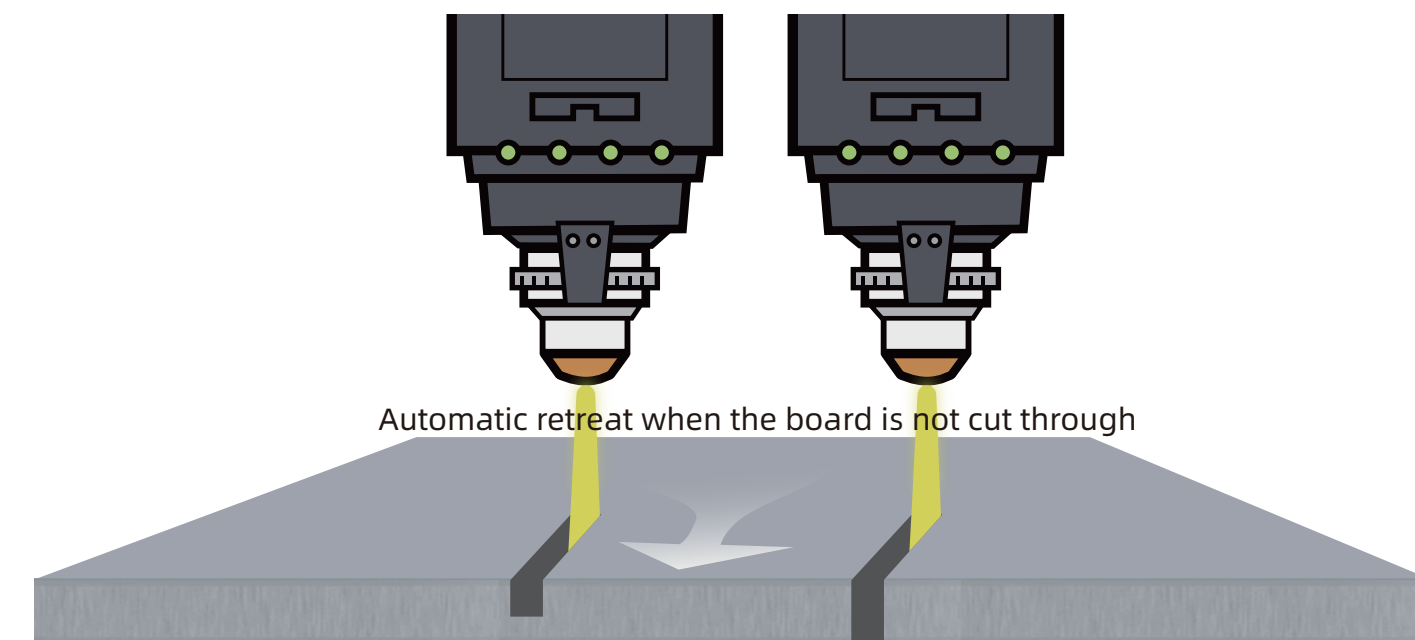
Monitor the piercing and cut immediately after piercing to improve the efficiency and reduce costs.



Auto ReCut

Stable and Efficient Cutting

If an part is not cut through, the cutting head will return and cut it again.



BLT6X2H Series Features //

Stray Light Monitoring

Easy Troubleshooting //

Monitor the stray light to prevent damages to the cutting head and to prevent poor cutting.



BLT6X2H Series Features //

Protective Window Anti-Explosion

Safer Production //

Contamination sensor and system algorithms are upgraded to monitor the stray light of the protective window in real-time.



BLT8X0H Series Variable Beam Cutting Head

Focus Range: ±50mm

Reposition Precision: ±0.01mm

Focus Speed: 500mm/s

Max Gas Pressure: 25Bar

Laser Wavelength: 1030-1090nm

Cutter Model	BLT840H Series	BLT860H Series
Support Power Range	≤15kW	≤20kW
Fiber Interface	Q+, QD	
Focal Length (mm)	200	
Variable Beam Shape	Gaussian Distribution/Homogeneous Distribution	



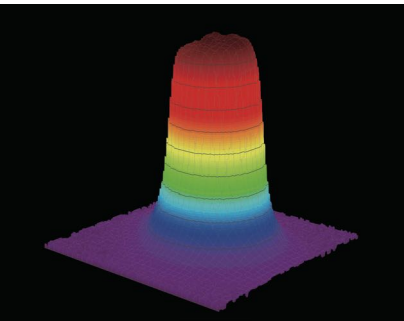
BLT8X0H Series Features //



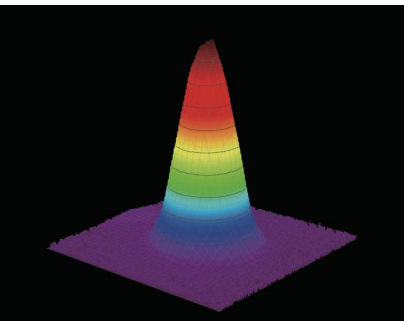
Variable Beam Shape

More Efficient Cutting //

The beam pattern can be switched at any time for different plates, advanced in cutting both thick and thin plates, doubling the efficiency.



Homogeneous
"Flat Top" distribution



Gaussian distribution

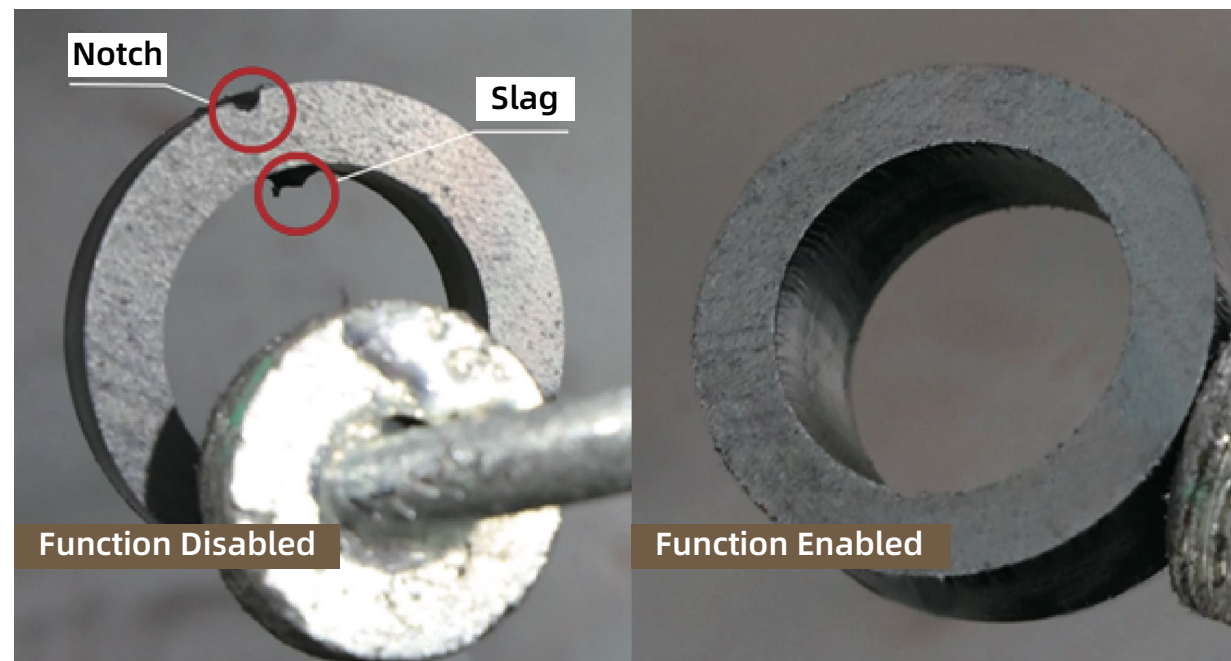


BLT8X0H Series Features ///

Smart LaserOff

Improve Cutting Quality ///

Section and surface finish of inner and outer contours of parts are smooth without slag.



BLT8X0H Series Features ///

Collision Protection

Simpler Maintenance ///

Protective Screws keep cutting head from damage.
No time wasting on Depot Repair.



BLT6X2MA Series

Cutting Path Monitor

Focus Range: ±50mm

Reposition Precision: ±0.01mm

Focus Speed: 500mm/s

Max Gas Pressure: 25Bar

Laser Wavelength: 1030-1090nm

Cutter Model	BLT662M Series	BLT682M Series	BLT6102M Series
Support Power Range	≤20kW	≤30kW	≤40kW
Fiber Interface	Q+, ADD		
Focal Length (mm)	200	300	300、400



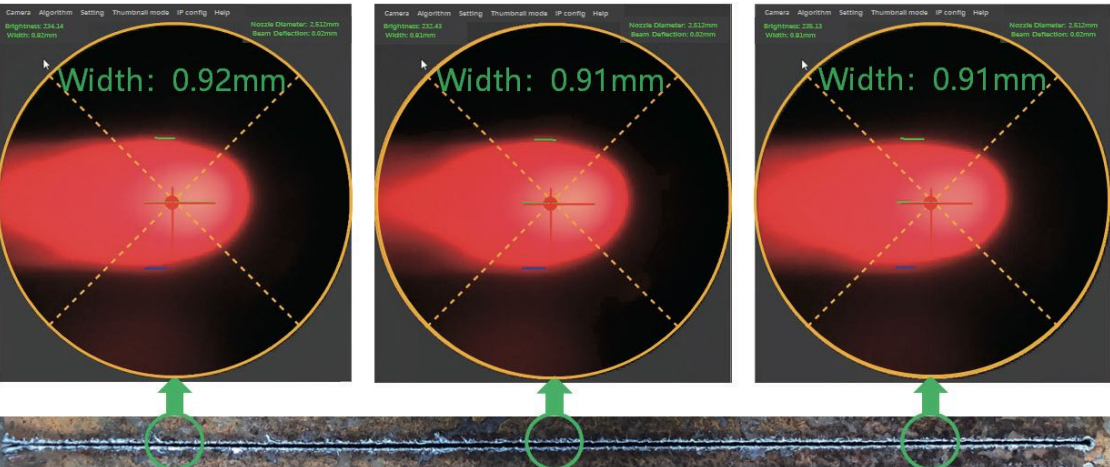
BLT6X2MA Series Features //

Cutting Path Monitoring

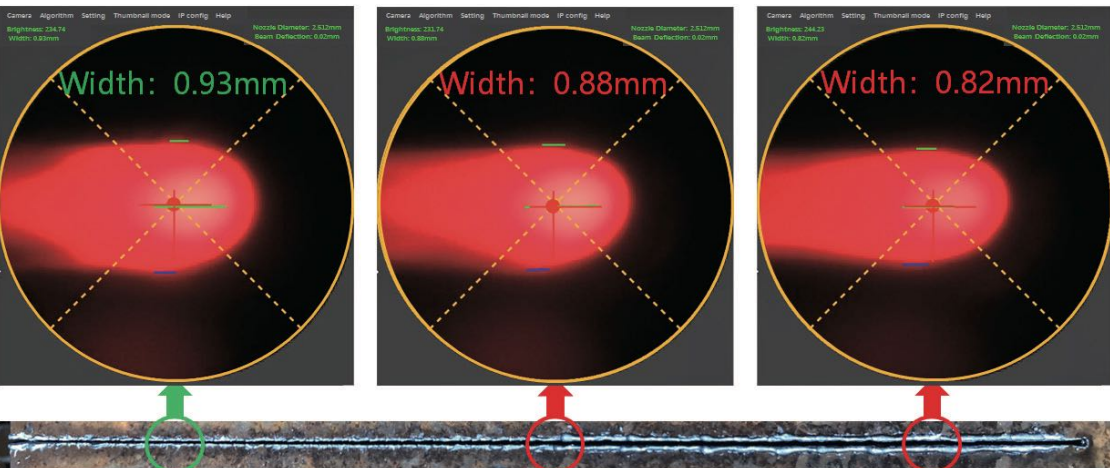
More Stable Cutting //

Solve the pain point of temperature drift by monitoring the seam width in real time during the cutting process
Intelligent adjustment of focus to ensure consistent cutting results over a long period of time.

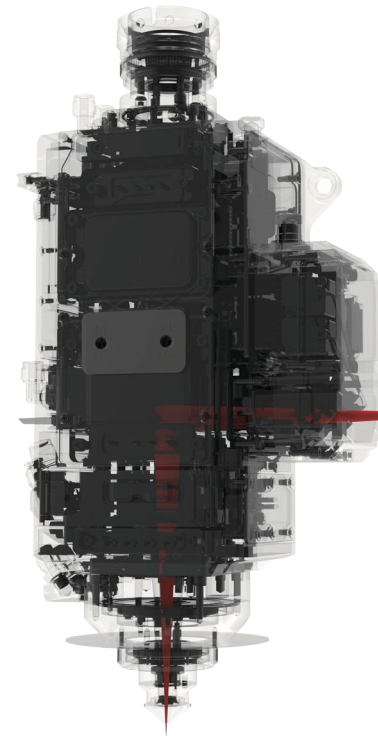
☑ Molten pool Width Closed-loop Control



☐ Molten pool Width Closed-loop Control



BLT6X2MA Series Features //



Coaxial Monitoring

Efficient and Precise Adjustment //

Detect the coaxial deviation of the optical core by visual imaging of the melt pool, so that the coaxial adjustment more convenient and accurate.



Auto Centering

Intelligent Cutting //

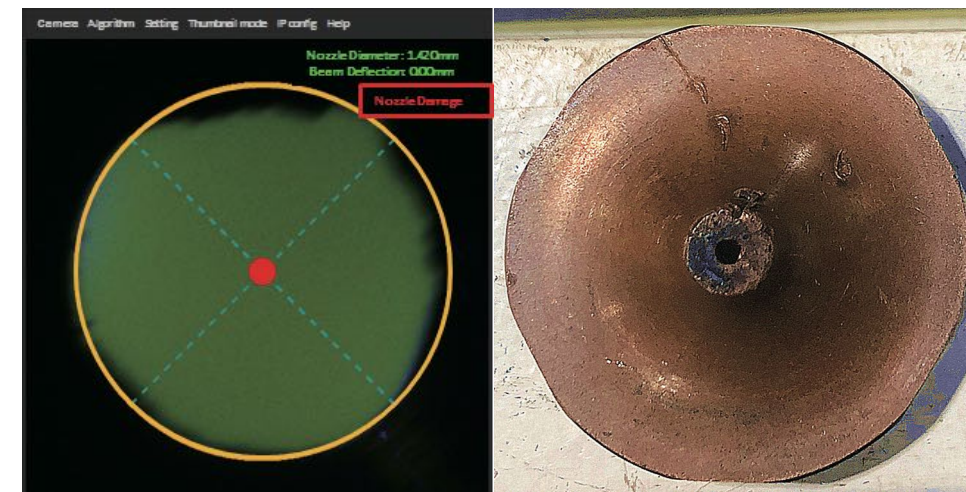
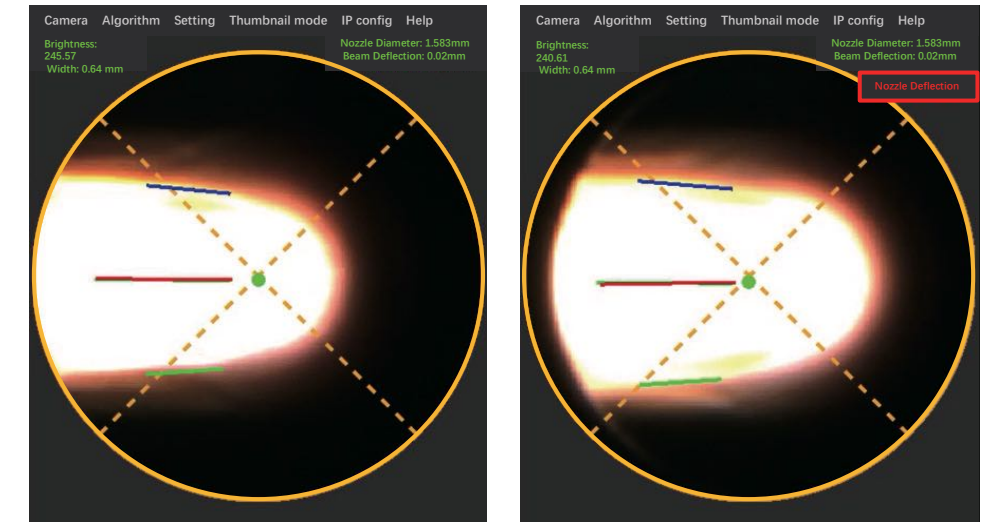
By collecting molten pool image, the sensor detects any coaxial deviation of the laser beam and automatically adjust it in real-time, ensuring consistent cutting quality.

BLT6X2MA Series Features //

Nozzle Misalignment Monitoring

Easy to Maintain //

Intelligent monitoring of nozzle misalignment caused by minor cuts and bumps using coaxial vision, and trigger warning alerts when necessary.



Nozzle Quality Monitoring

Safe and Efficient //

Real-time monitoring of nozzle profile and determination of damage deformation. Alarm alerts according to the degree of damage.

BLT9X0MA Series

Variable Beam Shape

Focus Range: +70~-150(mm)

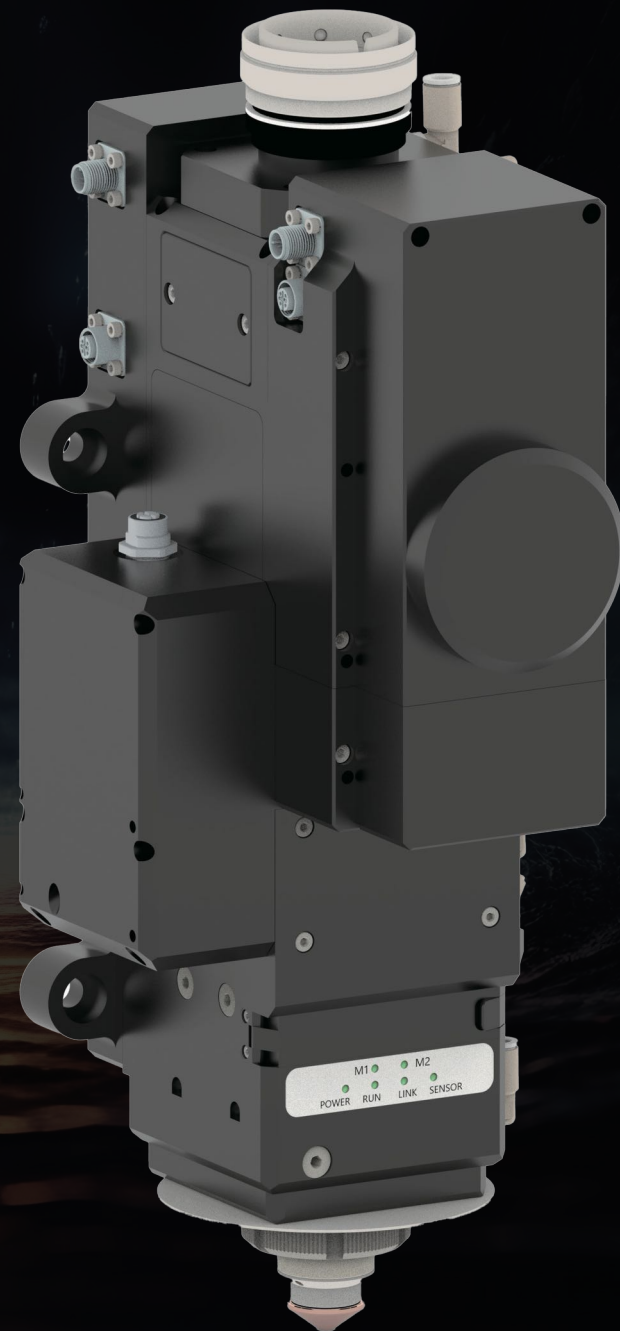
Focus Speed: 500mm/s

Laser Wavelength: 1030-1090nm

Reposition Precision: ±0.01mm

Max Gas Pressure: 25Bar

Cutter Model	BLT9100MA
Support Power Range	≤40kW
Fiber Interface	Q+、ADD
Focal Length (mm)	200 & 400
Variable Beam Shape	M=2.0/M=4.0



BLT9X0MA Series Features



Variable Beam Shape

Efficient Cutting

The switching between small and large beam spots is used for ultrahigh-power cutting of thin/thick plates, support both air and oxygen cutting, improving cutting efficiency and quality.



Auto Centering

Intelligent Cutting

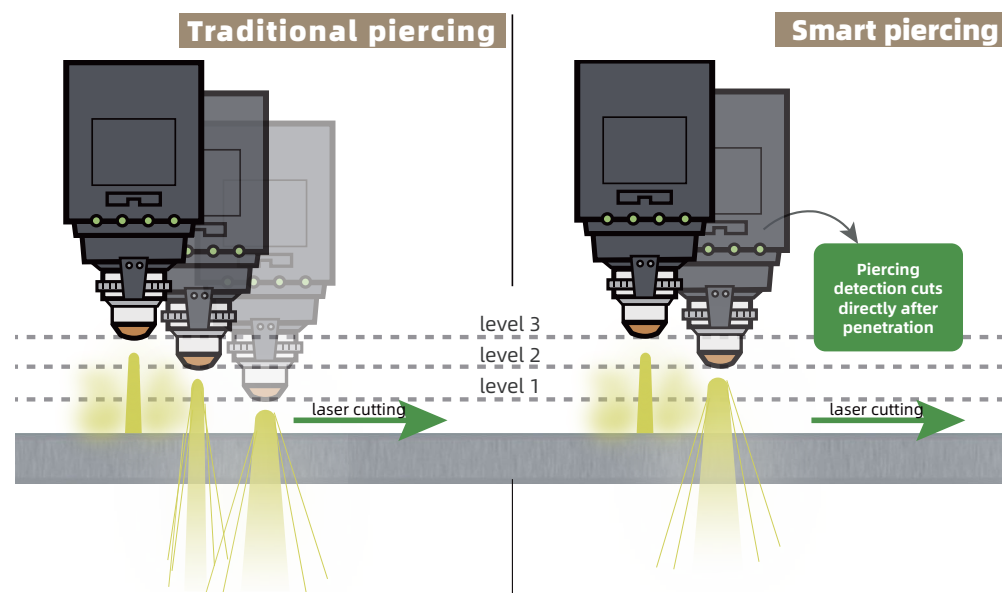
By collecting molten pool image, the sensor detects any coaxial deviation of the laser beam and automatically adjust it in real-time, ensuring consistent cutting quality.

BLT9X0MA Series Features

Smart Piercing

Enhance Piercing Efficiency

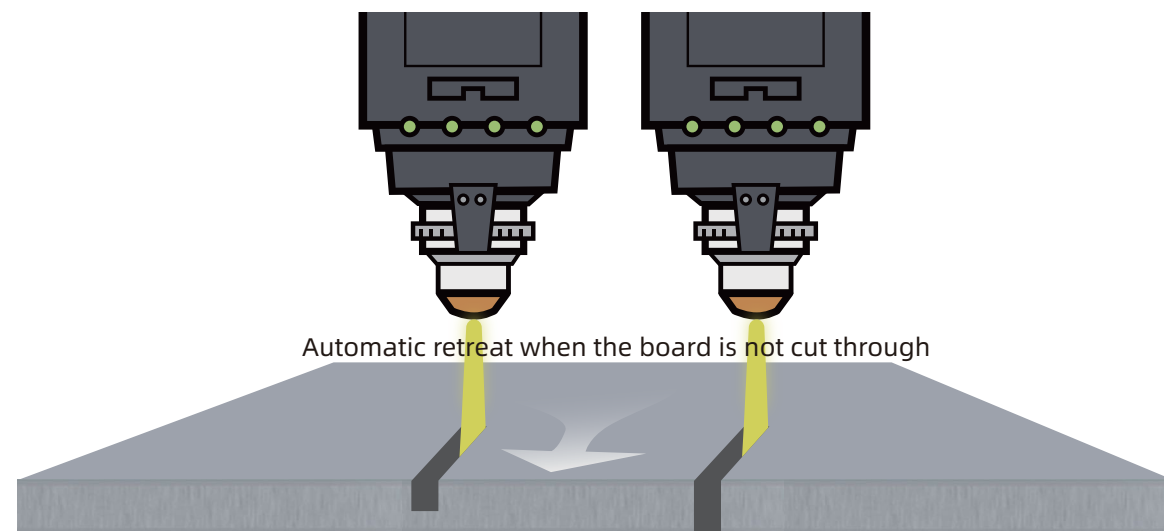
Monitor the piercing and cut immediately after piercing to improve the efficiency and reduce costs.



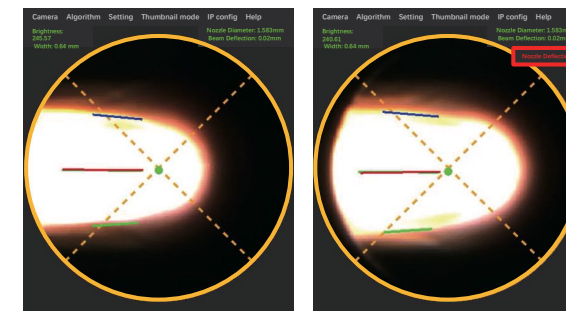
Auto ReCut

Stable and Efficient Cutting

If an part is not cut through, the cutting head will return and cut it again.



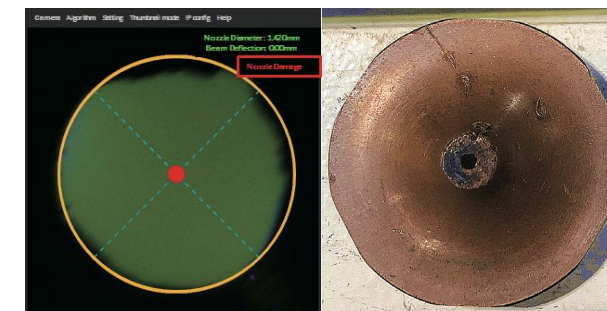
BLT9X0MA Series Features



Nozzle Misalignment Monitoring

Easy to Maintain

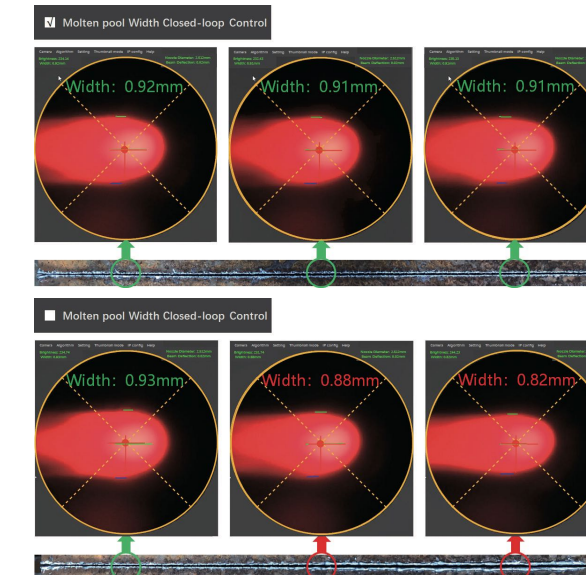
Intelligent monitoring of nozzle misalignment caused by minor cuts and bumps using coaxial vision, and trigger warning alerts when necessary.



Nozzle Quality Monitoring

Safe and Efficient

Real-time monitoring of nozzle profile and determination of damage deformation. Alarm alerts according to the degree of damage.



Cutting Path Monitoring

More Stable Cutting

Solve the pain point of temperature drift by monitoring the seam width in real time during the cutting process. Intelligent adjustment of focus to ensure consistent cutting results over a long period of time.

BLTA140M Series

Ultrahigh Power



Focus Range: +70~-150(mm)

Reposition Precision: $\pm 0.01\text{mm}$

Focus Speed: 500mm/s

Max Gas Pressure: 25Bar

Laser Wavelength: 1030-1090nm

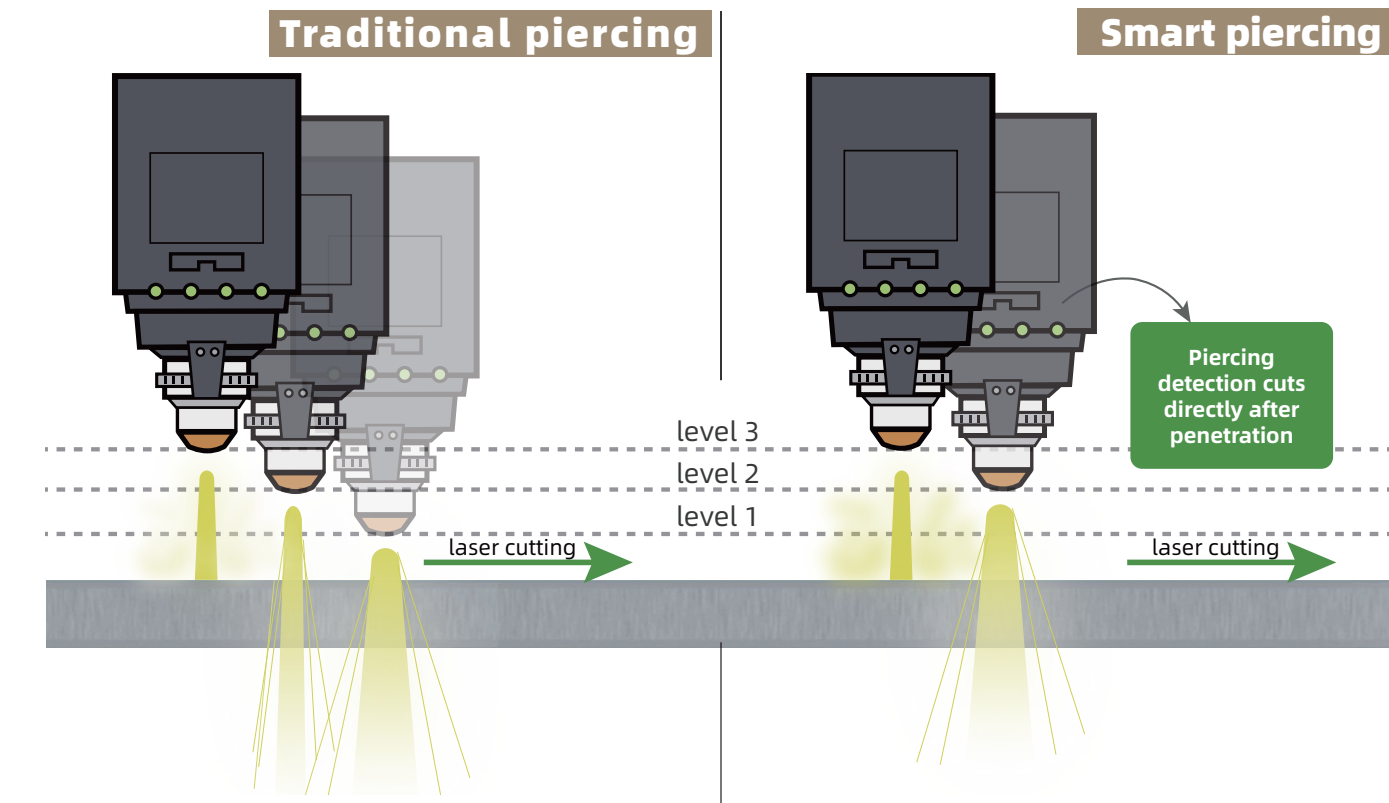
Cutter Model	BLTA140M Series
Support Power Range	$\leq 80\text{kW}$
Fiber Interface	Q+, ADD
Focal Length (mm)	300

BLTA140M Series Features //

Smart Piercing

Enhance Piercing Efficiency //

Monitor the piercing and cut immediately after piercing to improve the efficiency and reduce costs.

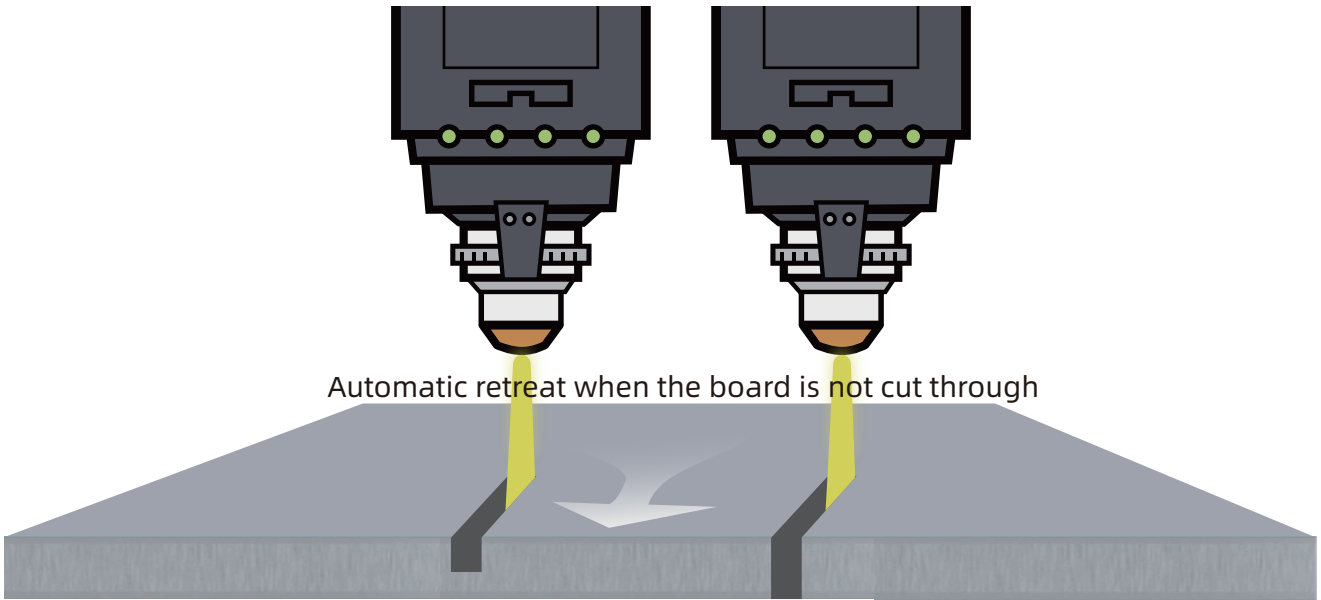


BLTA140M Series Features //

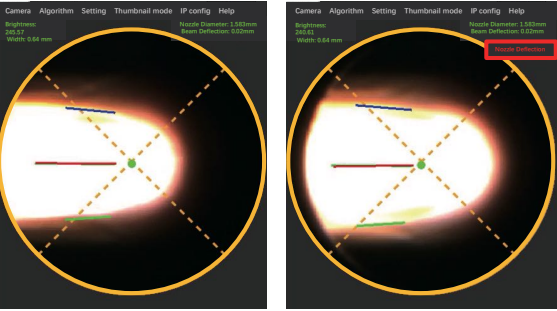
Auto ReCut

Stable and Efficient Cutting //

If an part is not cut through, the cutting head will return and cut it again.



BLTA140M Series Features //



Nozzle Misalignment Monitoring

Easy to Maintain //

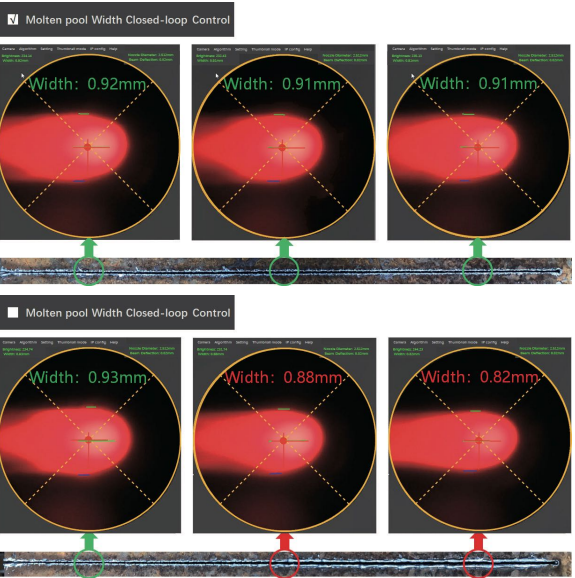
Intelligent monitoring of nozzle misalignment caused by minor cuts and bumps using coaxial vision, and trigger warning alerts when necessary.



Nozzle Quality Monitoring

Safe and Efficient //

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Cutting Path Monitoring

More Stable Cutting //

Solve the pain point of temperature drift by monitoring the seam width in real time during the cutting process. Intelligent adjustment of focus to ensure consistent cutting results over a long period of time.



BLT3X0T Series



BLT4X1T Series



BLT5X0H Series

3D Cutting Head Catalog

Function \ Model	BLT310T Series	BLT4X1T Series	BLT5X0H Series
	≤4kW	≤20kW	≤20kW
Closed-Loop Monitoring	✓	✓	✓
Fast Focusing	✓	✓	✓
Built-In Amplifier	✓	✓	✓
Protective Window Monitoring	✓	✓	✓
Cutting Gas Pressure Monitoring	✓	✓	✓
Collision Protection	✓	✓	✓
Bottom Protective Cartridge Sealing		✓ *	✓
Pipe Bevel Cutting		✓	✓
Smart LaserOff		✓	✓
Smart Piercing			✓
O2/N2 Process Monitoring			✓

* BLT421 does not contain Bottom Protective Cartridge Sealing.

BLT310T Series

Pipe Cutting

- Focus Range: ±60mm
- Focus Speed: 300mm/s
- Laser Wavelength: 1030-1090nm
- Reposition Precision: ±0.01mm
- Max Gas Pressure: 25Bar

Cutter Model	BLT310T Series
Support Power Range	≤4kW
Fiber Interface	QBH、EOC
Focal Length (mm)	200、250



BLT310T Features //

Protective Window Temperature Monitoring

Better Performance //

Real time temperature monitoring to limit risk of protective window shattering, enhance processing stability.



Gas Pressure Monitoring

More Stable Cutting //

Real-time monitor the gas output to mitigate the impact on cutting quality.

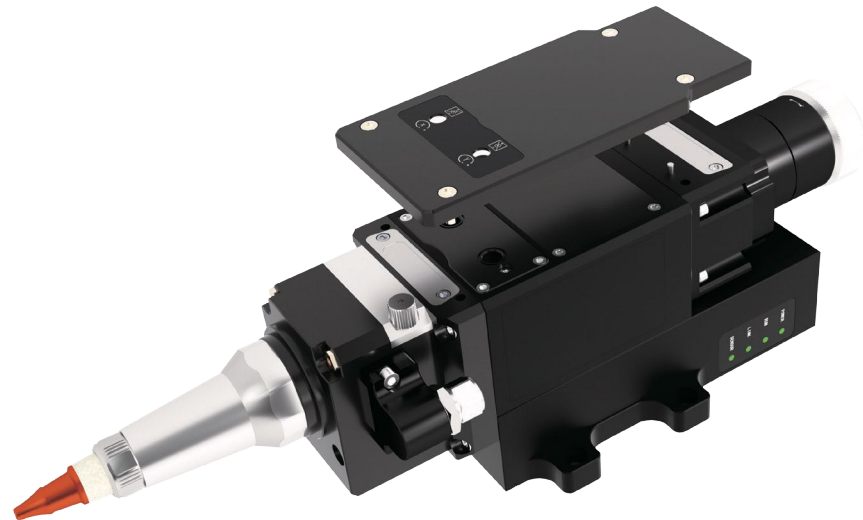


BLT310T Features //

Front Cover Plate

Stronger Sealing //

Anti-dust cover plate is additionally added to the optical module, extending lifespan of core windows.



3 Sets of Protective Windows

Optic Protection / Longer Windows Lifespan //

Multiple enhanced protection ensures an excellent dust-proof environment.

BLT310T Features //



Collision Protection

Simple Maintenance //

Protective screws keep cutting head from damage. No time wasting on Depot Repair.



Built-in Amplifier

Stable Capacitance //

Superior immunity against interference, stabilize capacitance.



3D Sensing Head

Multi-Type Tube Cutting //

Achieve cutting of various tube types such as round/square tube, U/H beam etc.

BLT4X1T Series

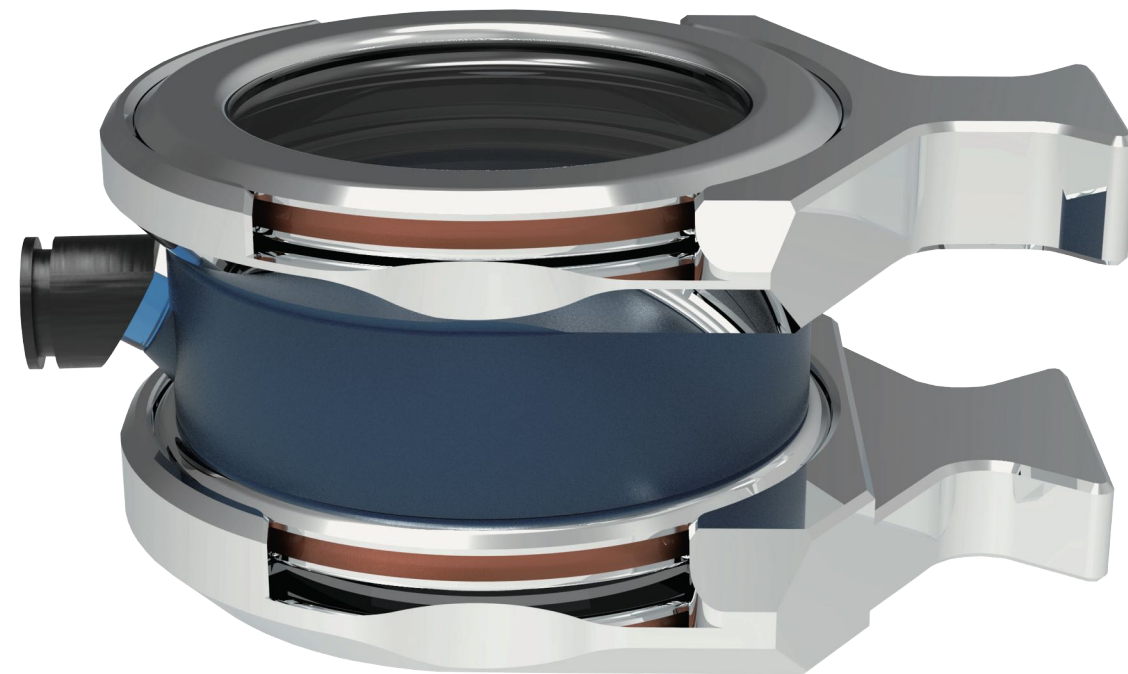
Pipe Cutting

- Focus Range: ±50mm
- Reposition Precision: ±0.01mm
- Focus Speed: 500mm/s
- Max Gas Pressure: 25Bar
- Laser Wavelength: 1030-1090nm

Cutter Model	421T/421TS Series	BLT441T Series	BLT461T Series
Support Power Range	≤8kW	≤15kW	≤20kW
Fiber Interface	QBH、EOC	QBH、Q+、QD、ADD	
Focal Length (mm)	200、250	200、250	250



BLT4X1T Series Features //



Bottom Protective Cartridge Sealing

Protect the Protective Windows //

Monitor the sealing of the protective windows cartridge for stable production.

BLT4X1T Series Features //

Dust-proof Cover

Stronger Sealing //

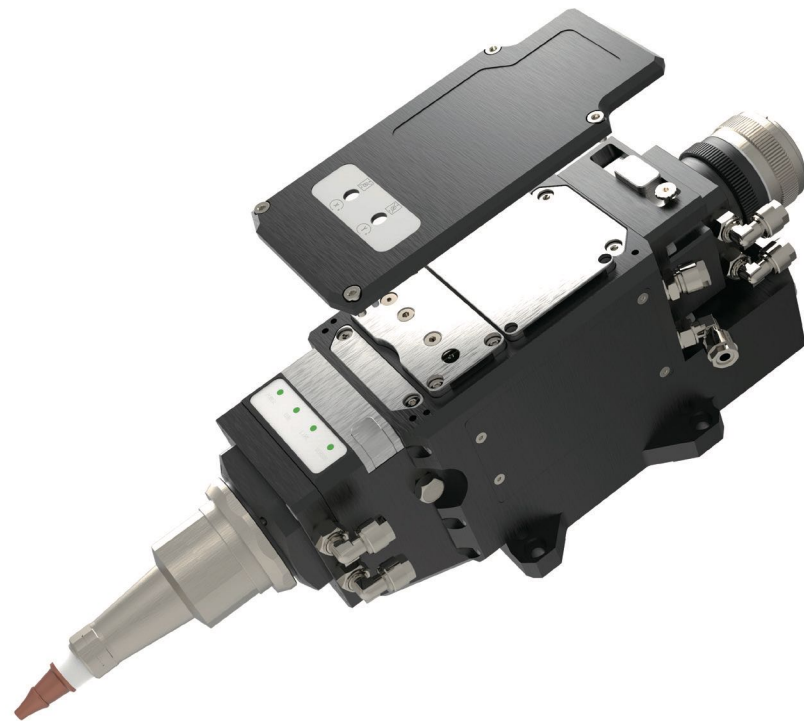
Added to optics cartridge to extend the lifespan of focusing and collimating lens.



4 Sets of Protective Windows

Extend Core Lens Lifespan //

Protect the focusing and collimating lens and improve the cartridge sealing.



BLT4X1T Series Features //



Built-In Amplifier

More Stable Capacity //

Enhance the anti-interference capability.



Collision Protection

Easy Maintenance //

Replace it yourself and lower the cost to return it to the manufacture.



Three-Dimensional Sensing Head

Multi-Type Pipe Cutting //

Can achieve cutting of different types of pipes. Round pipe, square pipe, channel steel and I-beam etc.

BLT5 Series

Pipe/Bevel cutting

- Focus Range: ±50mm
- Reposition Precision: ±0.01mm
- Focus Speed: 500mm/s
- Max Gas Pressure: 25Bar
- Laser Wavelength: 1030-1090nm

Cutter Model	BLT510 Series	BLT520/BLT520H Series	BLT540H Series	BLT560H Series
Support Power Range	≤8kW	≤8kW	≤15kW	≤20kW
Fiber Interface	QBH、EOC		QBH、QD、Q+、ADD	
Focal Length (mm)	200、250			



BLT5X0H Series Features



Bevel Cutting

One Time Forming

The maximum ±45 bevel cut can be achieved. The B LT5X0H (250 focal length) can cut I-beams up to 400mm x 400mm in one pass, reducing the beveling process and improving efficiency.

BLT5X0H Series Features //

L-Shape

Stronger Sealing //

L shape cutting head can reduce the oscillation angle of the fiber, effectively extend the fiber life.



BLT5X0H Series Features //



Collision Protection

Easy Maintenance //

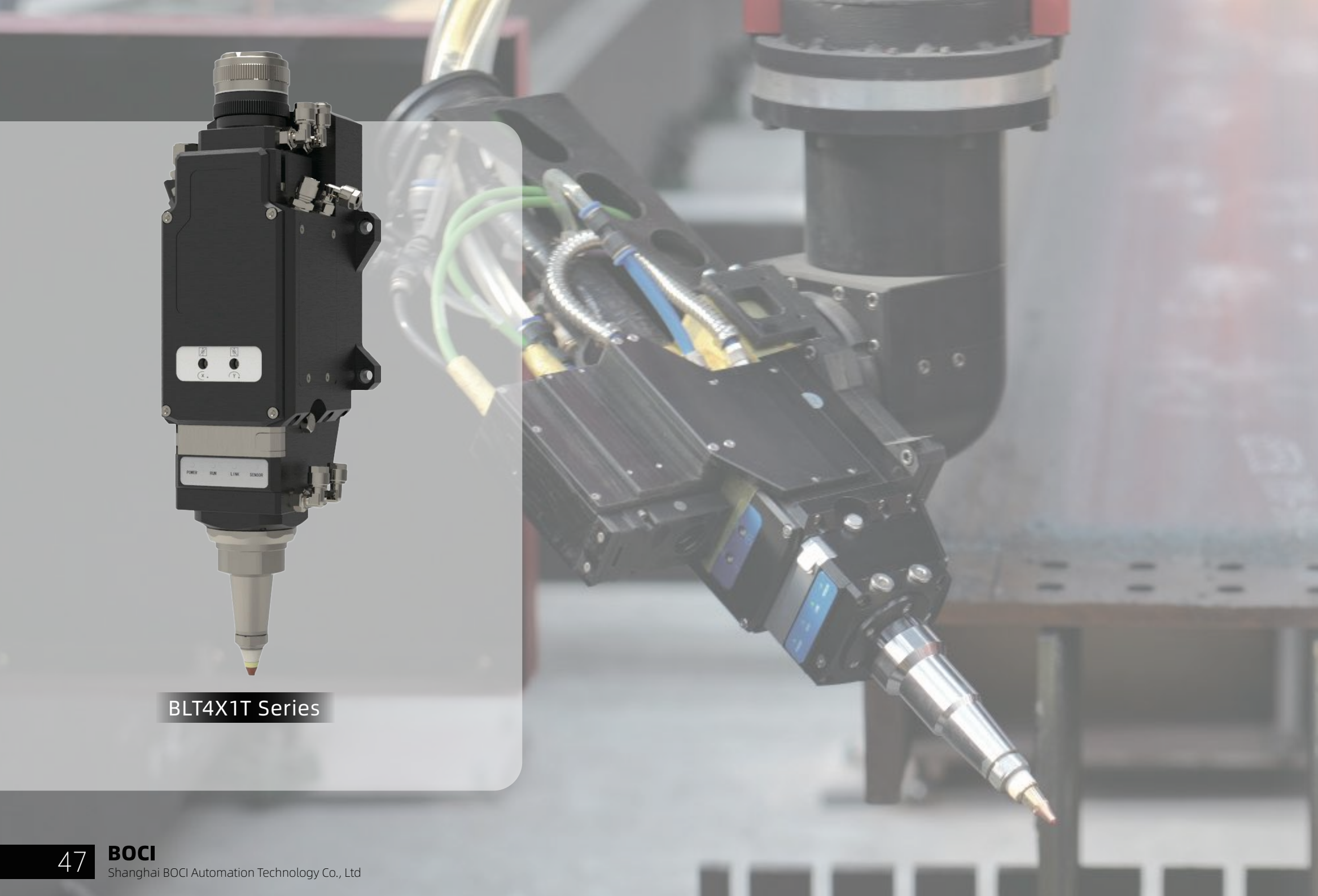
Replace it yourself and lower the cost to return it to the manufacture.



Gas Pressure Monitoring

More Stable Cutting //

Real-time monitor the gas output to reduce the impact on the cutting quality.



BLT4X1T Series

Structural Steel Cutting Head

Function \ Model	BLT4X1T Series
	≤20kW
Closed-Loop Monitoring	✓
Fast Focusing	✓
Built-In Amplifier	✓
Protective Window Monitoring	✓
Cutting Gas Pressure Monitoring	✓
Collision Protection	✓
Bottom Protective Cartridge Sealing	✓ *
Pipe Bevel Cutting	✓
Smart LaserOff	✓

* BLT421 does not contain Bottom Protective Cartridge Sealing.



BLT4X1T Series

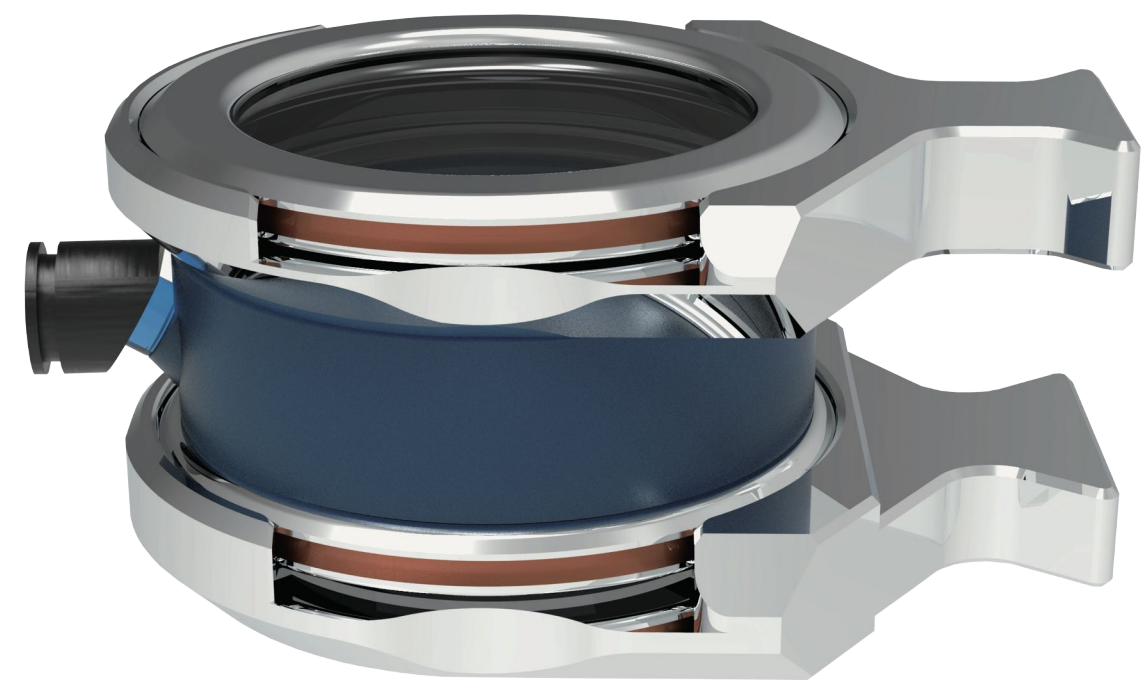
Structural Steel

- Focus Range: ±50mm
- Reposition Precision: ±0.01mm
- Focus Speed: 500mm/s
- Max Gas Pressure: 25Bar

Laser Wavelength: 1030-1090nm

Cutter Model	BLT441T Series	BLT461T Series
Support Power Range	≤12kW	≤20kW
Fiber Interface	QBH、Q+、QD、ADD	
Focal Length (mm)	200、250	250

BLT4X1T Features //



Bottom Protective Cartridge Sealing

Protect the Protective Windows //

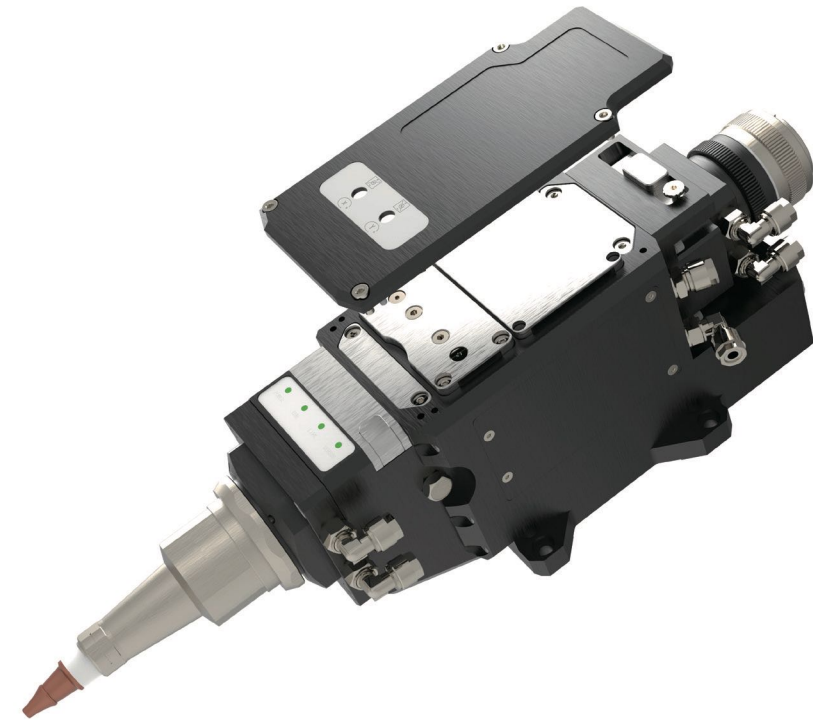
Monitor the sealing of the protective windows cartridge for stable production.

BLT4X1T Features //

Dust-proof Cover

Stronger Sealing //

Added to optics cartridge to extend the lifespan of focusing and collimating lens.



4 Sets of Protective Windows

Extend Core Lens Lifespan //

Protect the focusing and collimating lens and improve the cartridge sealing.

BLT4X1T Features //



Built-In Amplifier

More Stable Capacity //

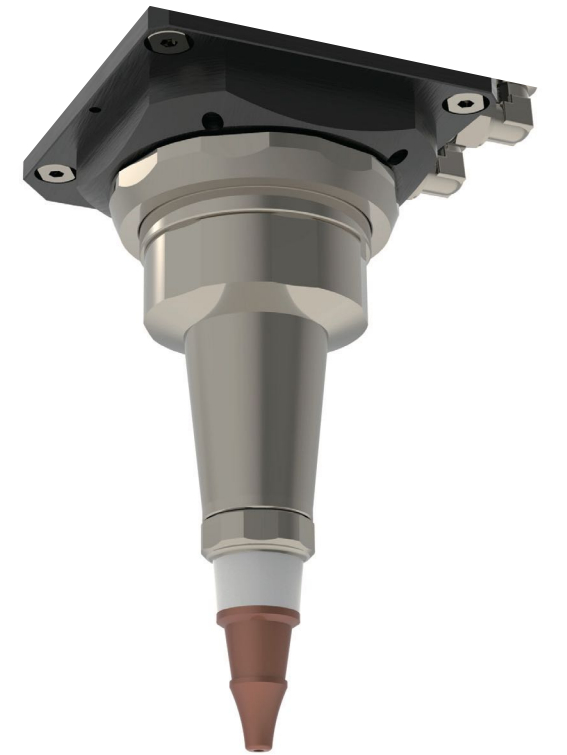
Enhance the anti-interference capability.



Collision Protection

Easy Maintenance //

Replace it yourself and lower the cost to return it to the manufacture.



Three-Dimensional Sensing Head

Multi-Type Pipe Cutting //

Can achieve cutting of different types of pipes. Round pipe, square pipe, channel steel and I-beam etc.

Applications

