



Shanghai BOCI Automation Technology Co., Ltd.

BLT Functional Sensor Applications FAQ

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Please complete the relevant operations under the guidance
of the manufacturer's professional technicians!

1. Process Monitoring

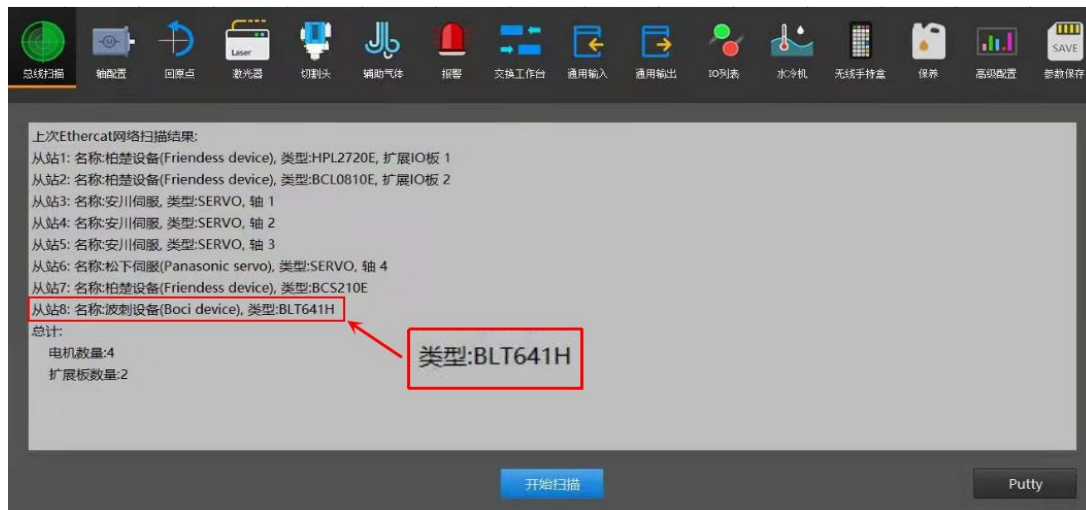
1.1 Function Description

- **Scenario:** Process monitoring is currently applied to air and nitrogen cutting.
- **Background:** Based on the uneven material of the plate and other factors, plasma will be generated during the cutting process, resulting in impermeable cutting, in order to ensure stable production, it is generally "reduced speed cutting" or "a person has been watching the equipment at any time to manually pause".
- **Application:** The process monitoring function monitors the cutting process in real time through the internal sensors of the cutting head. When the plasma is monitored to be generated, it will automatically back off for tool replenishment, which greatly improves the processing efficiency and stability.

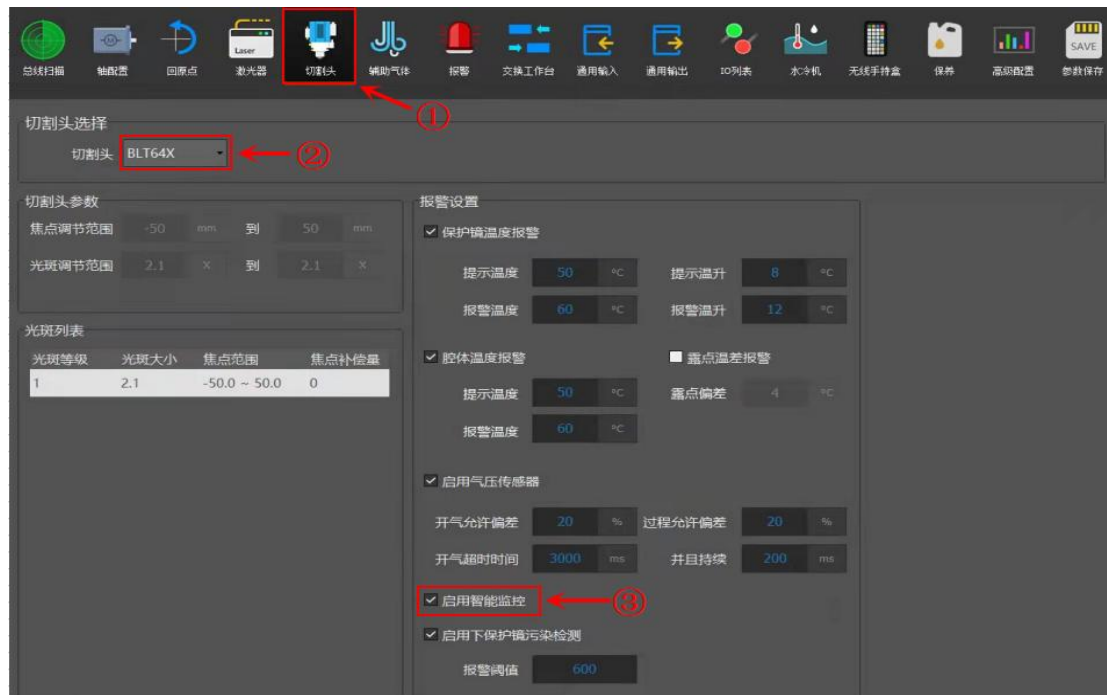
1.2 Function opening steps

Note: The process monitoring function is currently only implemented in the 8000 system with BLTXXXH cutting head, please confirm whether the current configuration meets the application requirements before commissioning.

Step 1: Bus scan to confirm if the current cutting head type is BLTXXXH, e.g. BLT661H.

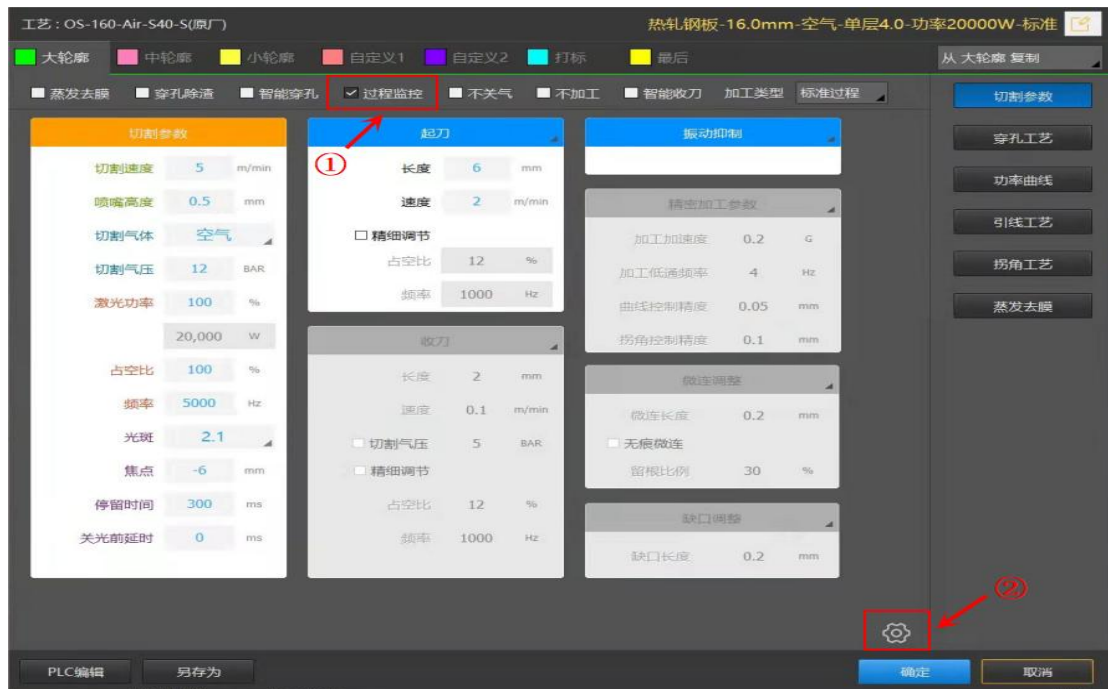


Step 2: Click on "Cutting Head" and select "BLT64X", and check "Enable Process Monitoring".



1.3 Functional debugging steps

Step 1: Click on "Process Correction" and select a tuned air or nitrogen cutting process.

Step 2: Check the "Process Monitoring" box and click the "Settings" icon at the

bottom right to enter the advanced parameters interface.

Step 3: Advanced parameters inside the process monitoring sensitivity control, sensitivity level 1 lowest, 10 highest, the default is 6, the mouse left and right dragging the blue button to adjust the sensitivity.



- If the cutting process can cut through but the cutting head is still retreat to make up the cut, indicating that the current sensitivity is too high need to reduce the sensitivity.
- If the cutting process can not cut through and the cutting head does not retreat to make up the cut, the current sensitivity is too low and needs to be increased.



Note: The process monitoring function can be commissioned only after the commissioning of other conventional processes is completed.

Please contact the relevant technical personnel of the manufacturer in a timely manner when the following conditions occur.

- 1) When the sensitivity is level 1, the cutting head can cut through but still retreat to make up the cut.
- 2) At a sensitivity of 10, it cannot cut through but no retreat to make up for it.

2. Smart piercing

2.1 Function Description

The BLT smart cutting head monitors the piercing process in real time through sensors, and stops when it senses a hole has been pierced and immediately performs the next piercing action, thus effectively saving piercing time and increasing productivity. At the same time, it can avoid blowout, part scrap, nozzle or protective lens damage caused by starting to cut before the hole is pierced, which can greatly reduce the risk of consumables costs.

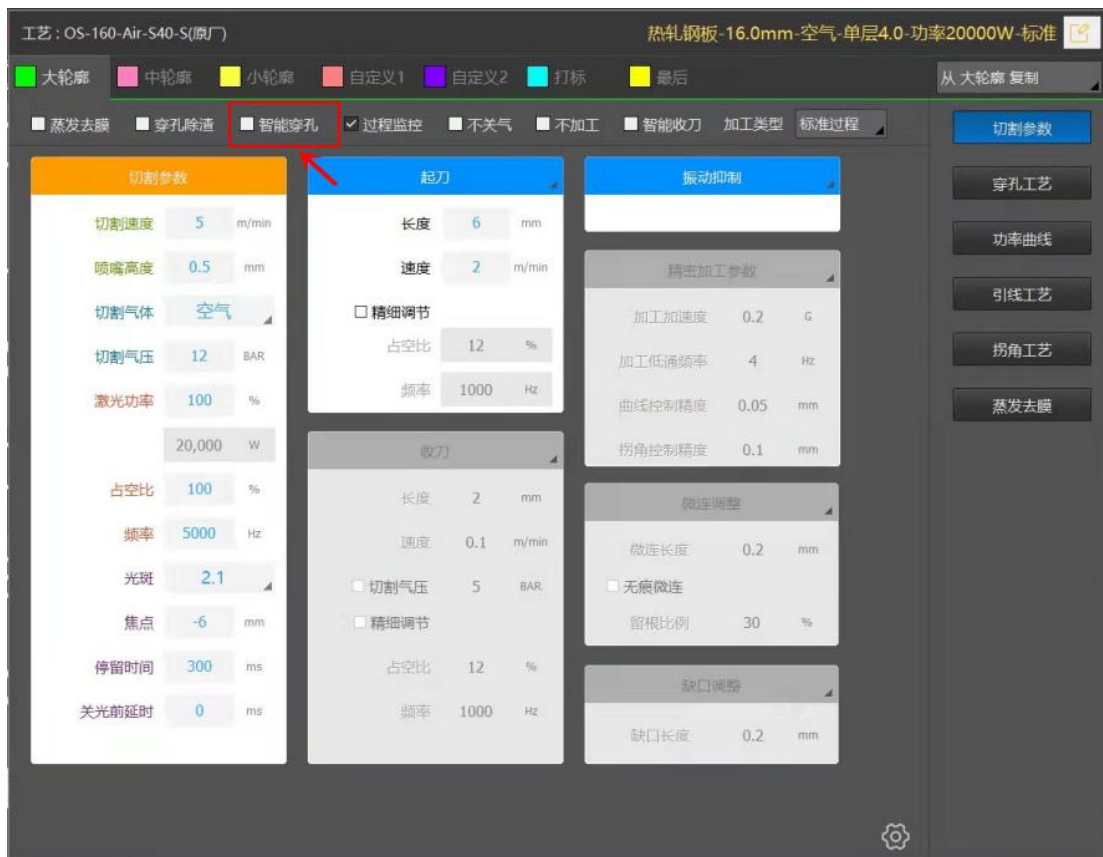
不穿孔	一级	二级
穿孔类型	分段穿孔	分段穿孔
穿孔时间(ms)	0 ms	0 ms
喷嘴高度(mm)	10 mm	15 mm
穿孔气体	氧气	氧气
穿孔气压(BAR)	0.7 BAR	0.7 BAR
侧吹气压(BAR)	0 BAR	0 BAR
激光功率(%)	65 %	80 %
激光功率(W)	7,800 W	9,600 W
占比(%)	30 %	35 %
频率(Hz)	300 Hz	3000 Hz
光斑(X)	2.1	2.1
焦点(mm)	-5 mm	0 mm
焦点(终止)(mm)	-5 mm	0 mm
停留时间(ms)	999 ms	100 ms
停光吹气(ms)	100 ms	100 ms
吹气气体	氧气	空气
吹气气压(BAR)	0.7 BAR	0.7 BAR

常规	穿孔检测
开始穿孔	开始穿孔
穿孔中	穿孔中
穿透	穿透
等待延时	检测后不再等待
切割	切割

2.2 Functional debugging steps

Step 1: Click on "Process Correction" and select the already debugged cutting process.

Step 2: Check the "Smart Perforation" option.



Note: normal perforation process to increase the level of 200-300ms perforation time, select the intelligent perforation function.

Please contact the relevant technical personnel of the manufacturer in a timely manner when the following conditions occur.

- 1) The hole is pierced, still waiting for the remaining piercing time to end.
- 2) The hole is not pierced during the piercing time, and continue to cut.

