MAX 创鑫激光

MFSC-10000M-ELW 5.2

使用手册

版权说明

引 语

MFSC

,

,

MFSC

2

MAX 创鑫激光

公司简介

2004

http://www.maxphotonics.com

深圳市创鑫激光股份有限公司

:
: http://www.maxphotonics.com
: 400-900-9588
: +86-755-36869371
: info@maxphotonics.com

第一章　特性说明

MFSC

MFSC　　1060nm　1100 nm

>33%

MFSC　　Class 4

第二章 安全信息

1 - 安全规定

MFSC 1060nm 1100 nm
20KW

2- 激光防护

1

2

LaserVision USA Kentek Corporation Rochwell Laser Industries

3- 引用标准

电磁兼容与抗干扰性：

EN IEC 61000-6-4:2019

CISPR 16-2-1

CISPR 16-2-3

EN IEC 61000-6-2:2019

EN 61000-4-2:2009

EN 61000-4-3:2020

EN 61000-4-4:2012

EN 61000-4-5:2014+A1:2017

EN 61000-4-6:2014

EN 61000-4-11:2020

激光安全：

EN 60825-1:2014+A11:2021

CDRH 21 CFR 1040.10

电气安全：

EN 60204-1:2018

MFSC CE EMC

EMC Directive EMC EMC EN 61000-6-4

EN 61000-6-2

MFSC Class 4 21 CFR

J 1040.10 d

Class 4 EN 60825-1 9

4- 一般安全指示

1

2

MFSC

3

1
2
3
4

5
6

7
8
9

10
11

12

"

"

"

"

"

4

1 360-440VAC,3P+PE

2

3

4

360-440VAC,3P+PE

5

1

1.0m

2

1.5m 1m

3

4

5

6

7

5- 更多安全信息

Laser Institute of America(LIA)

13501 Ingenuity Drive, Suite 128

Orlando,Florida 32826

Phone:407 380 1553,Fax: 407 380 5588

Toll Free:1 800 34 LASER

American National Standards Institute

ANSI Z136.1, American National Standard for the Safe Use of Lasers

(Available through LIA)

International Electro-technical Commission

IEC 60825-1,Edition 1.2

Center for Devices and Radiological Health

21 CFR 1040.10 - Performance Standards for Light-Emitting Products

US Department of Labor - OSHA

Publication 8-1.7 - Guidelines for Laser Safety and Hazard Assessment.

Laser Safety Equipment

Laurin Publishing

Laser safety equipment and Buyer s Guides

第三章 产品描述

1- 特性简介

MFSC

1
2
3
4
5

1
2

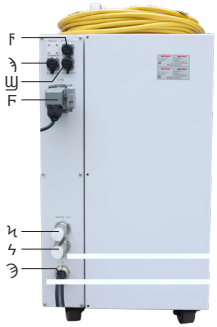
2- 模块配置

4- 合格证

5- 前面板说明

6		400VAC
5		
4		
3	START	
2	ALARM	
1	ACTIVE	
0	POWER	

6- 后面板说明



6	CTRL	
5	ETHERNET	
4	WATER OUT	(1.25
3	WATER IN	(1.25
2	AC 400V	360-440VAC
1	ECAT IN	
0	ECAT OUT	

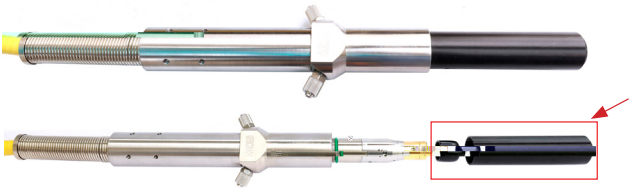
7- 光输出端子

1

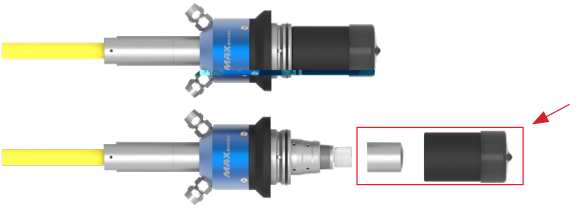
QBH

LOE

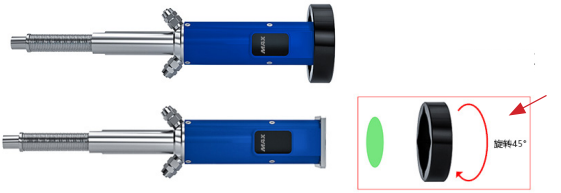
QBH

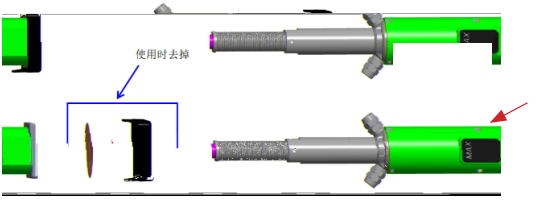


LOE2.0



LOE3.1





第四章 详细规格

1- 光学特性参数表

	/				
MFSC-10000M(G5.2)	100%		9200		W
		10		100	%
	100%	1070	1080	1090	nm
3dB	100%		5	7	nm
	100% >1h		± 1	± 2	%
	100% >24h		± 2	± 3	%
BPP	50um	1.4		1.9	mm x mrad
			150	200	μs
			150	200	μs
	100%			5	KHz
	100%	200			uW
			25		m
	50				μm
		200			mm
	LOE				

2- 一般特性参数

		360	400	440	VAC
	MFSC-10000M(G5.2) 100%			36	KW
		10	25	40	，
		10		80	%
	0， / 0，				
		-10	25	60	，
	* * =480*950*780 /				mm
	MFSC-10000M(G5.2)	270(± 10)			kg

3- 激光器水冷条件

1			
2		24 20	，
3		≥ 4	bar
4	MFSC-10000M(G5.2)	100	L/min
5	MFSC-10000M(G5.2)	28	KW

" 40， 22， ；

" ¦p ≤ 0.5bar

；

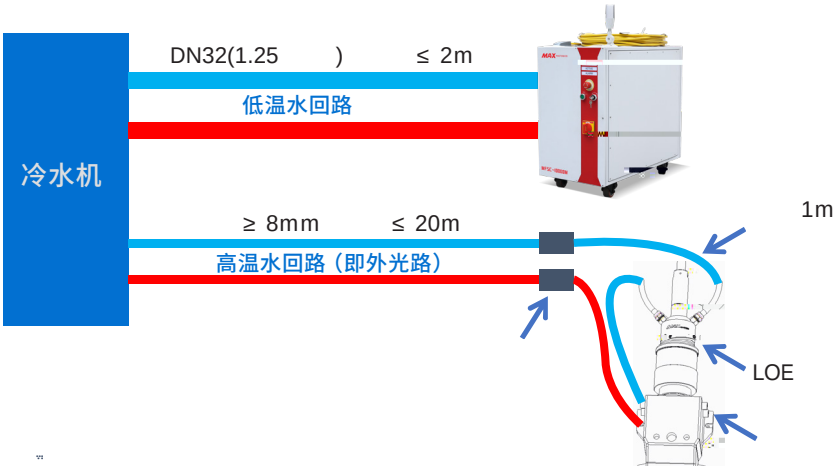
" 0，

20% ( )

4-LOE&QBH 水冷条件

			L/min	bar	
LOE		Φ8	≥ 4	≥ 4	28-30

- 8mm ≤ 20m;
- QBH Φ6 LOE Φ8 ≤ 1m;
- QBH/LOE ;
- QBH ¦p ≤ 1.5bar
  ;
- LOE ¦p ≤ 3bar



5- 安装环境需求

1 1000

2 10¸ ¨ 40¸

3 10% - 85%

4 :

环境温度、相对湿度、露点对照表

相对湿度%	30	35	40	45	50	55	60	65	70	75	80	85	90	95
环温(℃)	露点Td(℃)													
10	-7.0	-5.0	-3.0	-1.3	0.0	1.5	2.5	3.6	4.8	5.8	6.7	7.6	8.4	9.2
11	-6.5	-4.0	-2.0	-0.5	1.0	2.5	3.5	4.8	5.8	6.7	7.7	8.6	9.4	10.2
12	-5.0	-3.0	-1.0	0.5	2.0	3.3	4.4	5.5	6.7	7.7	8.7	9.5	10.9	11.2
13	-4.5	-2.0	-0.2	1.4	2.8	4.1	5.3	6.6	7.7	8.7	9.6	10.5	11.4	12.2
14	-3.2	-1.0	0.7	2.2	3.5	5.1	6.4	7.5	8.6	9.6	10.6	11.5	12.4	13.2
15	-2.3	-0.3	1.5	3.1	4.6	6.0	7.3	8.4	9.6	10.6	11.6	12.5	13.4	14.2
16	-1.3	0.5	2.4	4.0	5.6	7.0	8.3	9.5	10.6	11.6	12.6	13.4	14.3	15.2
17	-0.5	1.5	3.2	5.0	6.5	8.0	9.2	10.2	11.5	12.5	13.5	14.5	15.3	16.2
18	0.2	2.3	4.0	5.8	7.4	9.0	10.2	11.3	12.5	13.5	14.5	15.4	16.4	17.2
19	1.0	3.2	5.0	7.2	8.4	9.8	11.0	12.2	13.4	14.5	15.4	16.5	17.3	18.2
20	2.0	4.0	6.0	7.8	9.4	10.7	12.0	13.2	14.4	15.4	16.5	17.4	18.3	19.2
21	2.8	5.0	7.0	8.6	10.2	11.0	12.9	14.2	15.3	16.4	17.4	18.4	19.3	20.2
22	3.5	5.8	7.8	9.5	11.0	12.5	13.8	15.2	16.3	17.3	18.4	19.4	20.3	21.2
23	4.4	6.8	8.7	10.4	12.0	13.5	14.8	16.2	17.3	18.4	19.4	20.4	21.3	22.2
24	5.3	7.7	9.7	11.4	13.0	14.5	15.8	17.0	18.2	19.3	20.4	21.4	22.3	23.1
25	6.2	8.6	10.5	12.3	14.0	15.4	16.8	18.0	19.1	20.3	21.3	22.3	23.2	23.9
26	7.0	9.4	11.4	13.2	14.8	16.3	17.7	19.0	20.1	21.2	22.3	23.3	24.2	25.1
27	8.0	10.3	12.2	14.0	15.8	17.3	18.7	19.9	21.1	22.2	23.2	24.3	25.2	26.1
28	8.8	11.2	13.2	15.0	16.7	18.0	19.6	20.9	22.0	23.0	24.2	25.2	26.2	27.1
29	9.7	12.0	14.0	15.9	17.6	19.2	20.5	21.3	23.0	24.1	25.2	26.2	27.2	28.1
30	10.5	12.9	14.9	16.8	18.5	20.0	21.4	22.8	23.9	25.1	26.2	27.2	28.2	29.1
31	11.4	13.8	15.9	17.8	19.4	20.9	22.4	23.0	24.8	26.0	26.9	28.2	29.2	30.1
32	12.2	14.7	16.8	18.6	20.3	21.9	23.3	24.6	25.8	27.0	28.1	29.2	30.1	31.1
33	13.0	15.6	17.6	19.6	21.3	22.9	24.2	25.6	26.8	28.0	29.0	30.1	32.1	32.1
34	13.9	16.5	18.6	20.5	22.2	23.8	25.2	26.5	27.7	29.0	29.5	31.1	32.1	33.1
35	14.9	17.4	19.5	21.4	23.0	24.6	26.2	27.5	28.7	29.9	31.0	32.1	33.1	34.1
36	15.7	18.1	20.3	22.2	24.0	25.0	27.0	28.4	29.0	30.9	32.0	33.1	34.1	35.2
37	16.6	19.2	21.2	23.2	24.9	26.5	27.9	29.5	30.7	31.8	33.0	34.1	35.2	36.2
38	17.5	19.9	22.0	23.9	25.8	27.4	28.9	30.3	31.5	32.0	33.9	35.1	36.0	37.0
39	18.1	20.8	23.0	24.9	26.6	28.3	29.8	31.2	32.5	33.8	34.9	36.2	36.8	38.1
40	19.2	21.6	23.8	25.8	27.6	29.2	30.7	32.1	33.5	34.7	35.8	36.8	38.1	39.1

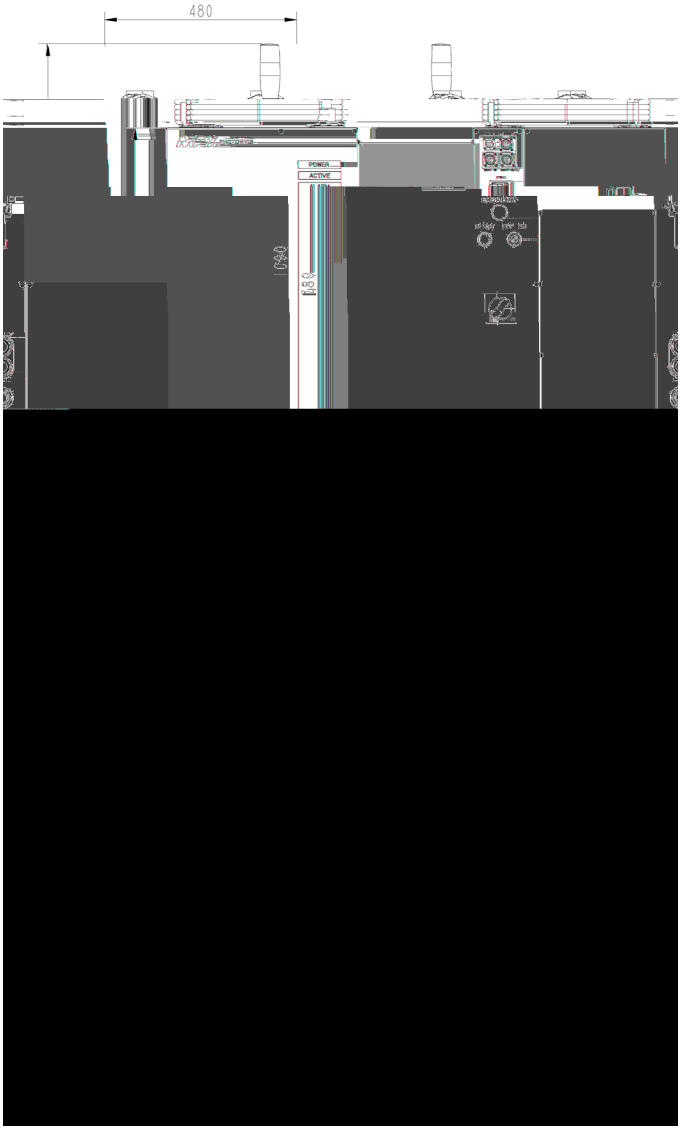
¤

≤ 28¸ ≤ 50%

¤

6- 结构布局

mm



第五章 使用指南

1- 注意事项

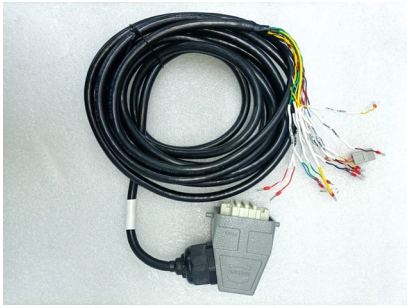
2- 电源连接

360-440VAC

机器型号 /W	电压 /VAC	额定电流 /A	断路器 /A	稳压器功率 /kW
MFSC-10000M	400V ± 10%,3P+PE	54	100	≥ 46

3- 扩展接口

CTRL 55P



CTRL				
1		EX_LOCK_-	-	ON/OFF (ON- ,OFF-)
2		EX_LOCK_+	+	
7		CONTROL-	-	ON/OFF (ON- ,OFF-)
8		CONTROL+	+	
31		ERROR2	2	ON- OFF-
32		ERROR1	1	
10		EX_DA+	0-10V +	(1V-10% 10V-100%)
11		EX_DA-	0-10V -	
13		EX_M-	-	HIGH:20VDC ≤ V ≤ 24VDC LOW:0VDC ≤ V ≤ 5VDC 5mA ≤ I ≤ 15mA
14		EX_M+	+	
15		EX_EN-	-	HIGH:20VDC ≤ V ≤ 24VDC LOW:0VDC ≤ V ≤ 5VDC 5mA ≤ I ≤ 15mA (:HIGH :LOW)
16		EX_EN+	+	
27		EMGERNCY1_ INPUT-	1-	HIGH:20VDC ≤ V ≤ 24VDC LOW:0VDC ≤ V ≤ 5VDC 5mA ≤ I ≤ 15mA (:HIGH :LOW)
28		EMGERNCY1_ INPUT+	1+	

4- 启动步骤

"

"

"

启动流程如下所示：

1

2

3

4

5 (MAIN SWITCH) ON

6 “ON”

7 START

8 3 3

5- 模式说明

1

2

3

外控信号时序图如下：

输入

激光调制输入

功率输入
0-10V

T>20ms

红光输出

激光输出

6-

1 - - G3 -

NET4.6 G3-Series-n.n.n.n

http://www.maxphotonics.com/Cn/Software.html

2 G3 -

NET4.6 G3-Series-n.n.n.n Win10

.NET 4.6 NET4.6

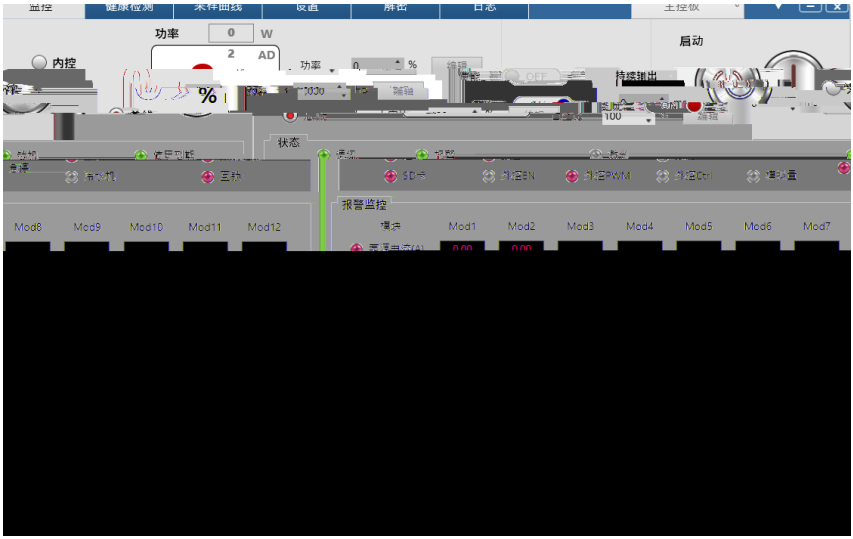
3 G3-Series

4 RS232 EtherNet

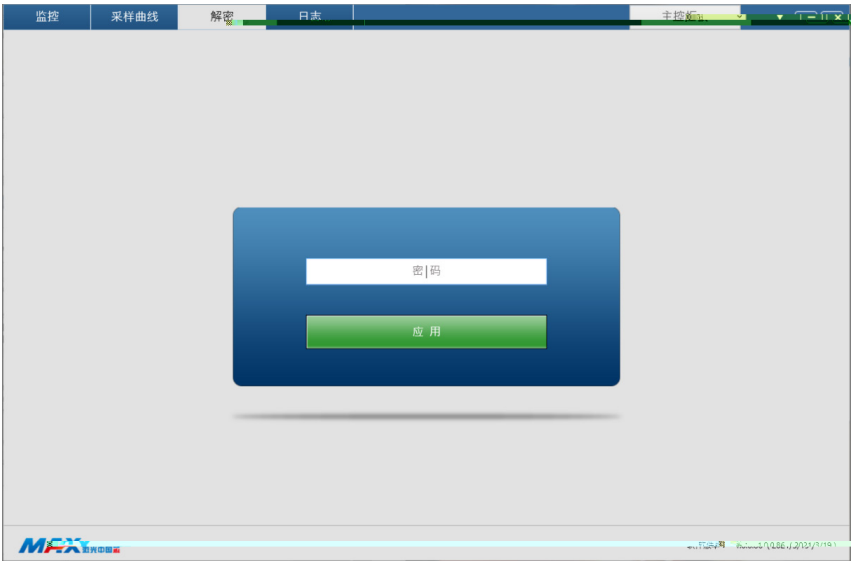
5 G3-Series


光纤激光器 - 应用软件
IP
192.168.0.178
登陆
http://www.maxphotonics.com
软件版本 1.0.1.41（2024/04/30）（测试版）

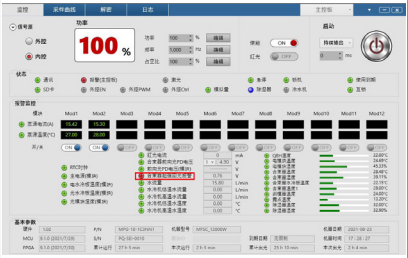
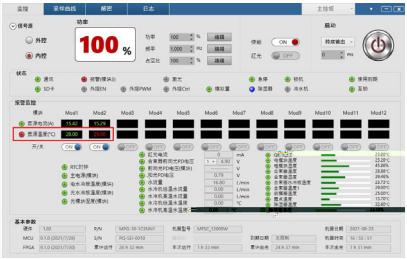
6 PC IP


功率
内控
状态
报警监控
Mod8
Mod9
Mod10
Mod11
Mod12
Mod1
Mod2
Mod3
Mod4
Mod5
Mod6
Mod7

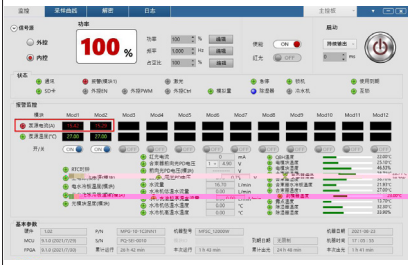
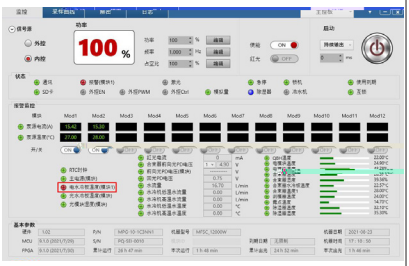
7



7- 故障列表

			/ /
1		PD	保护措施： 可能原因： PD 解决办法： 1. 2.
2			保护措施： 可能原因： 解决办法： 1. 2. 3. 4. 5. 3-5
3			保护措施： 可能原因： 解决办法：

4		QBH	保护措施： 可能原因： QBH 解决办法： QBH
5			保护措施： 可能原因： 解决办法：
6			保护措施： 可能原因： 解决办法：
7			保护措施： 可能原因： 解决办法： 1. 2.

8			保护措施： 可能原因： 解决办法： 1. 2. MOS
9			保护措施： 可能原因： 解决办法：
10			保护措施： 可能原因： 解决办法：

第六章 光纤连接器检查和清洁指南

1- 维修须知

1

2

3 >99.5%

4

5 20

2- 外观检查

1

LOE 1000

2

1 OFF

2 20

2.2.5

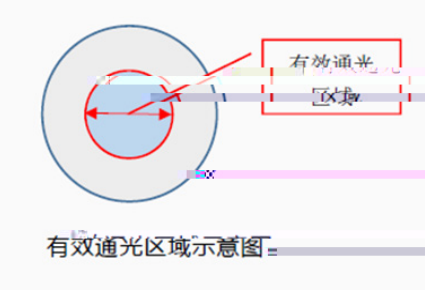
3

4 3

5 :

	(φ3mm)	(φ3mm)
4000W-20KW		≤ 0.1 ≤ 0.005
2000W-4000W	≤ 0.05 ≤ 0.002	≤ 0.1 ≤ 0.005
2000W ( )	≤ 0.1 ≤ 0.005	≤ 0.1 ≤ 0.01

mm



有效通光区域示意图

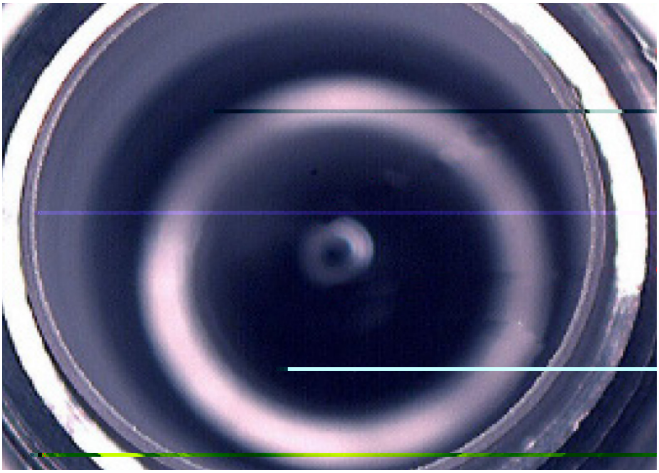
3- 清洁步骤

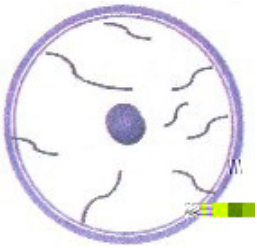
1 **“OFF”**

2

1 20

180° 2



2

3

1

2 20

3.2.1

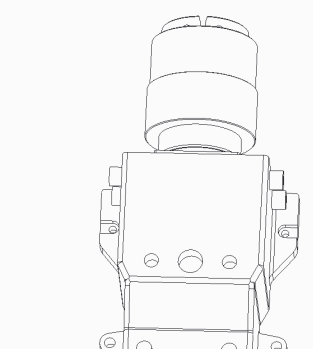
3

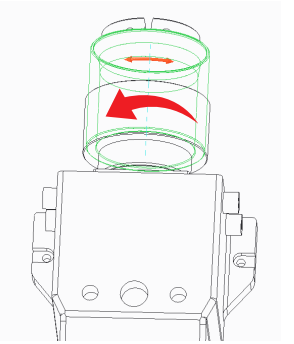
-
-
-
-
-
-
-
-
-

4-LOE 安装切割头及注意事项

1

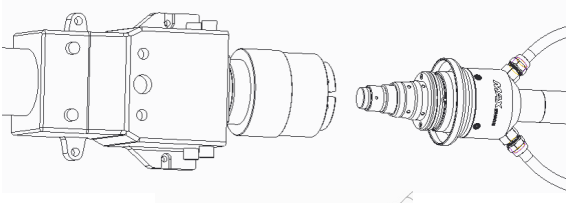
1 LOE LOE

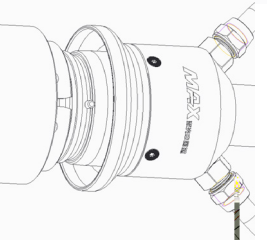


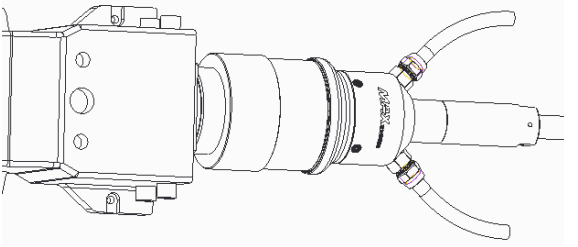


2 LOE LOE

LOE







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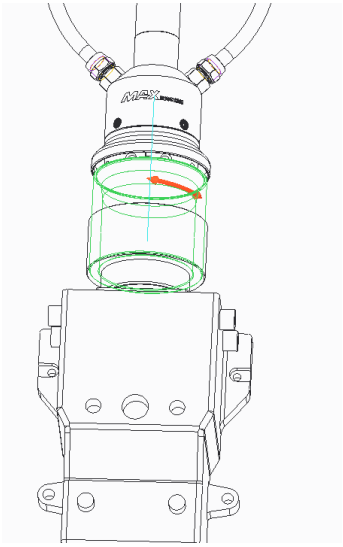

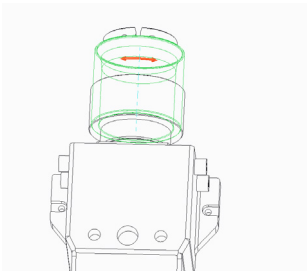

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第七章 拆装指南

1- 拆装步骤

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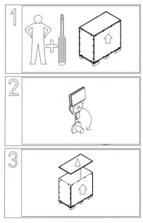
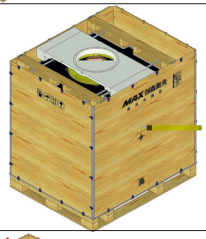
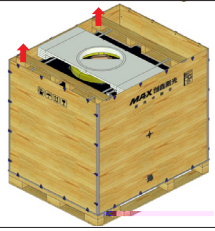
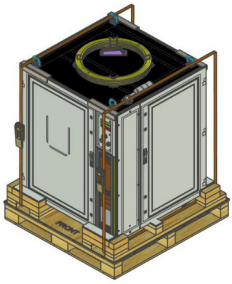
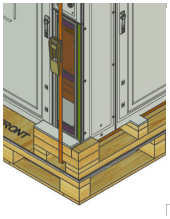
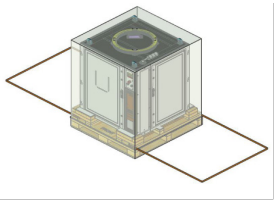
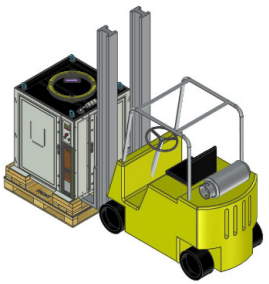
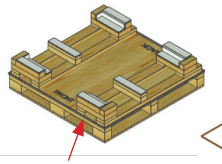
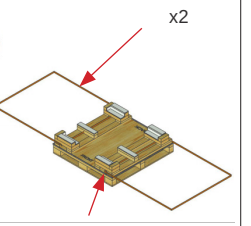
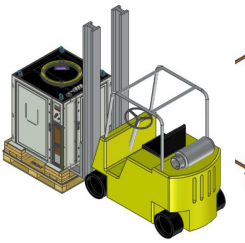
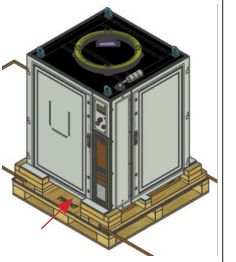
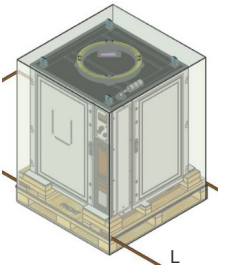
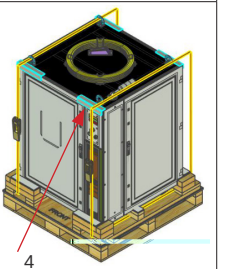
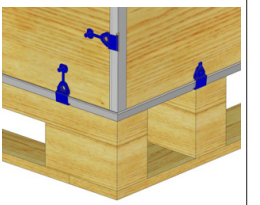
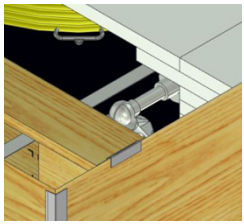
	 
	

	
-> -> ->	
PE 1. 2. 180° 3.	   
	

,	 
	 
PE 4 1. 2. 3. 4.	 
-> -> ->	 

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2- 装箱清单

1		MFSC-XXX		1
2				1
3				1
4				3
5				2
6				2
7				1
8				1
9	PCBA			1
10	2*2			6
11	QBH			1
12				1
13				1
14				1

第八章　服务与维修

1- 维修须知

18682447838

2- 服务声明

1

1 7X24 400-900-9588

1 -> 2 -> 3 -> 4 -> 5

18682446878

18682447838

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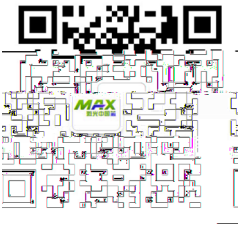

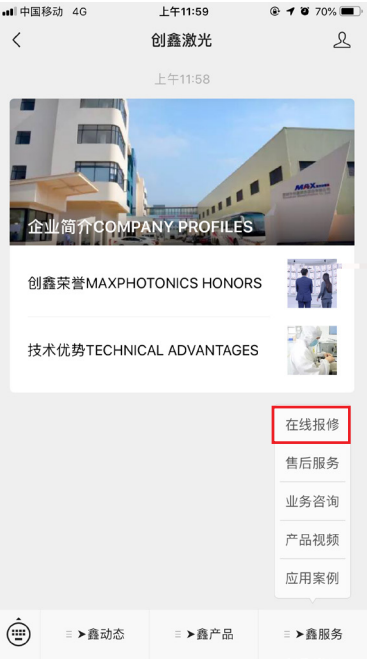

3 www.maxphotonics.com --

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1 PN

2 SN

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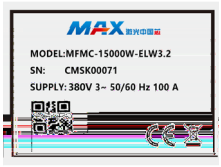
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SN: CMSK00071
SUPPLY: 380V 3~ 50/60 Hz 100 A

第九章　保修声明

1- 综合条款

2- 保修限制

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